Oracle
Primavera Unifier
Integration Interface Guide

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Title and Copyright Information

Oracle Primavera Unifier Integration Interface Guide

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Primary Author: Oracle Corporation

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Introduction

The interface to integrate Unifier and an external system is based on Simple Object Access Protocol (SOAP) and Representational State Transfer (REST) web services.

This document describes how to use the web services for:

- Integration and passing data
- Codes used in web services
- Return values

> **Note:** Oracle develops all new web services as Representational State Transfer (RESTful or REST) web services and not Simple Object Access Protocol (SOAP) web services. Support for SOAP services is deprecated beginning with version 23.5. Oracle recommends that the new integrations use RESTful web services.

The following services are included in the Web Service Description Language (WSDL) file, but these services are reserved for internal use only (not for customer use):

- createSapBPRecord
- getSapBPList
- getSapBPRecord
- updateSapBPRecord
- Ping
- getTransactionStatus

> **Note**: Unifier contains multiple additional RESTful web services that are not documented in this guide. These RESTful web services are subject to change, for internal purposes only, and must not be used.

Within our documentation, some content might be specific for cloud deployments while other content is relevant for on-premises deployments. Any content that applies to only one of these deployments is labeled accordingly.

Security

Unifier web services and RESTful services are sent and received through a secured server using "https" protocol. After https is set up at both ends, the client must accept the server certificate to continue with the Integration procedure.

The system also requires clients to register Unifier with the `shortname` (the Company identifier) and `authcode` (the Company authentication code).

> **Note**: Web services calls can only be made using Owner Company details.

List of Updated Topics

Here is a list of topics that have been updated:

Date	Topics
July 2025	**V2 REST Services** Updated information for the following service: ▸ ***Create WBS Code*** (on page 779)
June 2025	Updated the following topics: ▸ ***General Validation Rules Across All Services*** (on page 29) ▸ ***V1 Get Token REST Service for OAuth Authentication*** (on page 169) ▸ ***V2 Get Token REST Service for OAuth Authentication*** (on page 171) **V2 REST Services** Updated information for the following service: ▸ ***Get Assignments*** (on page 930)
April 2025	**V2 REST Services** Updated information for the following service: ▸ ***Add Assignees to Workflow BP Records*** (on page 693)
December 2024	**V1 REST Services** Updated information for the following services: ▸ ***Get Documents by Path*** (on page 223) ▸ ***Get Documents by Parent Folder ID*** (on page 227) ▸ ***Create BP Record*** (on page 280) ▸ ***Update BP Record*** (on page 288) ▸ ***Create BP Record with Attachment*** (on page 296) ▸ ***Update BP Record with Attachment*** (on page 306) ▸ ***Create Distribution Profiles*** (on page 478) ▸ ***Create User*** (on page 581)

Date	Topics
	▸ ***Update User*** (on page 579) ▸ ***Update Partner Company*** (on page 575) **V2 REST Services** Added the following services: ▸ ***Get Spread File*** (on page 970) ▸ ***Create or Update Activity Spreads*** (on page 985) ▸ ***Create or Update Assignment Spreads*** (on page 938) ▸ ***Get Assignments*** (on page 930) ▸ ***Create or Update Mapped External Projects*** (on page 767) ▸ ***Get Mapped External Projects*** (on page 776) Updated information for the following services: ▸ ***Create BP Record*** (on page 651) ▸ ***Update BP Record*** (on page 658) ▸ ***Create BP Record with Attachment*** (on page 666) ▸ ***Update BP Record with Attachment*** (on page 677) ▸ ***Get BP Record Permission*** (on page 687) ▸ ***Update BP Record Permission*** (on page 690) ▸ ***Add Assignees to Workflow BP Records*** (on page 693) ▸ ***Bulk Create Records*** (on page 698) ▸ ***Bulk Create Workflow BPs*** (on page 701) ▸ ***Bulk Update Records*** (on page 707) ▸ ***Get Shell*** (on page 756) ▸ ***Create WBS Code*** (on page 779) ▸ ***Get External WBS Sheet Data*** (on page 791) ▸ ***Get Assignments*** (on page 930) ▸ ***Create or Update Assignment Spreads*** (on page 938) ▸ ***Get Activity Spread*** (on page 965) ▸ ***Get Assignment Spread*** (on page

Date	Topics
	960) ▸ ***Create or Update Activity Spreads*** (on page 985) ▸ ***Create Activity Dependency*** (on page 1085)
October 2024	**V2 REST Services** Added the following services: ▸ ***Get Lock Status of Cost Sheet*** (on page 868) ▸ ***Update Lock Status of Cost Sheet*** (on page 870) ▸ ***Terminate Workflow and Non-Workflow BP Records*** (on page 711) ▸ ***Create Manual Activity Sheet*** (on page 1053) ▸ ***Create or Update Baseline Schedule for Manual Activity Sheet*** (on page 1065) ▸ ***Create Activity Dependency*** (on page 1085) ▸ ***Schedule Creation of Manual Activity Sheet*** (on page 1074) ▸ ***Recost Project for Manual Activity Sheet*** (on page 1079) Updated information for the following services: ▸ ***Update BP Record*** (on page 658) ▸ ***Create BP Record with Attachment*** (on page 666) ▸ ***Update BP Record with Attachment*** (on page 677) ▸ ***Create and Update Resources in the Master Rate Sheet*** (on page 794) ▸ ***Create and Update Roles in the Master Rate Sheet*** (on page 806)
August 2024	**SOAP Services** Updated information for the following services: ▸ ***Update User Group Membership*** ▸ ***Update User Shell Membership*** **V1 REST Services**

Date	Topics
	Updated information for the following services: ▸ ***Update BP Record*** (on page 288) ▸ ***Update BP Record with Attachment*** (on page 306) ▸ ***Update User Shell Membership*** ▸ ***Update User Group Membership***
June 2024	**V2 REST Services** Added the following services: ▸ ***Create Work Package*** (on page 855) ▸ ***Get Work Package*** (on page 861) ▸ ***Update Work Package*** (on page 863)
May 2024	**V1 REST Services** Updated information for the following services: ▸ ***Document Services*** (on page 203) ▸ ***Create BP Record*** (on page 280) ▸ ***Update BP Record*** (on page 288) ▸ ***Create BP Record with Attachment*** (on page 296) ▸ ***Update BP Record with Attachment*** (on page 306) **V2 REST Services** Updated information for the following services: ▸ ***Create BP Record*** (on page 651) ▸ ***Update BP Record*** (on page 658) ▸ ***Create BP Record with Attachment*** (on page 666) ▸ ***Update BP Record with Attachment*** (on page 677) ▸ ***Get Activities in the Manual Activity Sheet of a Specific Shell*** (on page 1069) Added the following services: ▸ ***Create Cost Sheet Snapshot*** (on page 849) ▸ ***Get Names of Cost Sheet Snapshots*** (on page 853)

Date	Topics
April 2024	**V1 REST Services** Updated information for the following services: ▸ ***Document Services*** (on page 203) ▸ ***Create BP Record*** (on page 280) ▸ ***Update BP Record*** (on page 288) ▸ ***Create Cash Flow*** (on page 379) ▸ ***Create Cash flow By WBS from Activity Sheet*** (on page 391) ▸ ***Get Cash Flow Properties*** (on page 423) ▸ ***Update Cash Flow Properties*** (on page 459) ▸ ***Create User*** (on page 581) ▸ ***Update User*** (on page 579) ▸ ***User Defined Report (UDR)*** (on page 585) **V2 REST Services** Updated information for the following services: ▸ ***Create BP Record*** (on page 651) ▸ ***Update BP Record*** (on page 658) ▸ ***Create Shell*** (on page 718) ▸ ***Update Shell*** (on page 737) ▸ ***Get Shell*** (on page 756) ▸ ***Create, Update, and Remove Assignments*** (on page 874) Added the following services: ▸ ***Bulk Create Workflow BPs*** (on page 701) ▸ ***Create Snapshot at the Summary Level Cashflow Worksheet*** (on page 829) ▸ ***Delete Snapshot from Cashflow Curve*** (on page 834) ▸ ***Get Snapshot Names for the Selected Cashflow*** (on page 839) ▸ ***Create Snapshot of Cashflow Detail Curves*** (on page 842) ▸ ***Delete an Existing Snapshot for Cashflow Summary Curves*** (on page 844)

Date	Topics
	▸ ***Get Snapshot Names for Existing Summary Curves*** (on page 847) ▸ ***Get Assignment Spread*** (on page 960) ▸ ***Get Activity Spread*** (on page 965) ▸ ***Callback API to Update Status of Integration Instance from Oracle Integration*** (on page 1096)
December 2023	Updated all topics in ***Accessing Representational State Transfer (REST) Services V1 and V2*** (on page 165). **V2 REST Services** Updated information for the following services: ▸ ***Add Assignees to Workflow BP Records*** (on page 693) ▸ ***Create, Update, and Remove Activities from the System Activity Sheet of a Specific Shell*** (on page 996) ▸ ***Get Activities from the System Activity Sheet of a Specific Shell*** (on page 1015) ▸ ***Create, Update, and Delete Activities in the Manual Activity Sheet of a Specific Shell*** (on page 1021) ▸ ***Get Activities in the Manual Activity Sheet of a Specific Shell*** (on page 1069)
November 2023	**V1 REST Services** Updated information for the following services: ▸ ***Create Shell*** (on page 328) ▸ ***Update Shell*** (on page 329) ▸ ***Get Shell*** (on page 331) **V2 REST Services** Updated information for the following services: ▸ ***Create Shell*** (on page 718) ▸ ***Update Shell*** (on page 737) ▸ ***Get Shell*** (on page 756)

Date	Topics
October 2023	Updated the following topics: ▸ ***Introduction*** (on page 13) ▸ ***Simple Object Access Protocol (SOAP) Web Services*** (on page 47)
April 2023	Updated the following topics: ▸ ***Introduction*** (on page 13) ▸ ***Integration Users*** (on page 25) ▸ ***Unifier Web Services*** (on page 27) **SOAP Services** Updated information for the following services: ▸ ***Update BP Record V2*** (on page 139) ▸ ***Update BP Record V2 (Additional Information)*** (on page 140) ▸ ***Get Complete BP Record*** (on page 153) **V1 REST Services** Updated information for the following services: ▸ ***Fetch List of Attached Files in a BP*** (on page 321) ▸ ***Download a Single Attached File in a BP*** (on page 324) ▸ ***Download Multipart or Large Files*** (on page 325) ▸ ***Get Shell*** (on page 331) ▸ ***Sort Cost Sheet*** (on page 367) ▸ ***Authorization*** (on page 370) ▸ ***Create Cash Flow Manual - Project or Shell*** (on page 381) ▸ ***Delete Cash Flow*** (on page 402) ▸ ***Delete Cash Flow Curve*** (on page 403) ▸ ***Delete Cash Flow - Summary Curves*** (on page 405) ▸ ***Get Cash Flow Properties*** (on page 423) ▸ ***Update Cash Flow Schedule*** (on page 477)

Integration Users

The system supports the creation of integration users in **User Administration** for different permissions towards SOAP and REST services.

> **Note**: Oracle develops all new web services as RESTful web services and not SOAP web services. Oracle recommends that the new integrations use RESTful web services.

The *username* and *password* for these integration users can be used in SOAP services instead of the *shortname* (the Company identifier) and *authcode* (the Company authentication code) to run the requests.

> **Note**: All the other web services, including SOAP and REST (but excluding V1 and V2), will still be accessible by the Company *shortname* and *authcode* and do not have any impact on existing end-users.

Unifier Web Services

Tag Requirements

- All input XML tags must be wrapped within the tags <list_wrapper> </list_wrapper>
- All BP Tag names must start with <_bp> and end with </_bp>
- All BP Line Items must start with <_bp_lineitems> and end with </_bp_lineitems>

Terminology

- **Shells**

  Shells are designed in uDesigner and can represent anything you want. For example, a shell can represent a building, a project, or a concept such as "innovative ideas."
- **Shell with Cost Code CBS**

  These are shell types for use with the CBS Cost Manager.
- **Shell with Cost Code Generic**

  These are shell types with for use with the Generic Cost Manager.

> **Note:** Oracle develops all new web services as RESTful web services and not SOAP web services. Support for SOAP services is deprecated beginning with version 23.5. Oracle recommends that the new integrations use RESTful web services.

Internationalization and Web Services

About Web Services

New records can be created and line items can be added using Integration through web services. Also, the Schedule Manager integrates with Primavera scheduling software by way of web services.

As Project Administrator, you can receive email notification of the successful creation of a shell instance, for shells that are created manually, through web services or a CSV file upload, or through auto-creation. This notification can be set up in email notifications in uDesigner. Also, you can set your **Preferences** to control whether you receive these notifications.

Web Services and Internationalization

The output data generated by web services is always in the source language.

> **Note**: If a record (Example: Business Process) is created by using web services and the Data Definition (DD) label includes a non-ASCII string,

the record creation will fail.

Number formatting of data

When you enter numeric data in XML, you can only use the decimal point (period) and negative sign (dash).

Examples

XML Tag: <Committed_Amount>100.99</Committed_Amount>

XML Tag: <Credited_Amount>-1423.99</Credited_Amount>

Sample JSON request

```
"data": [
        {
            "uuu_quantity": 6000.258,
            "amount": -27600.0,
}
```

When you run a Get call, the input content in the response XML or JSON will be in the language of the source strings.

Get Web Services

You can use the Get Web Services call methods to get various attributes of Shell, CBS, and the list of Business Process records, Shells, and User defined data.

When you run a Get call, the input content in the response XML will be in the language of the source strings.

Number formatting does not apply to the numeric data and the decimal point is a period. The negative numbers are displayed with the minus sign before the numeric data, for example, -12345.99.

Note: Number formatting is not supported for Symbols that are based on a right-to-left language such as official languages of Afghanistan or Hebrew.

General Validation Rules Across All Services

General commenting is only supported by `getCompleteBPRecord` service.

Special characters must be escaped in a valid XML document. The following characters `", ‘, < , >, &` will be escaped to:

- `"`
- `'`
- `<`
- `>`
- `&`

For Web Services (`createBPRecord`, `addBPLineItems`, `updateBPRecord`, `createProject`), the XML is scanned for validity and any errors are reported when found.

A non-required tag like <hello>hello</hello> is ignored.

Date fields (which are set as Date type) must be in the following format:

- `MM/dd/yyyy`
- `MM-dd-yyyy`
- `MM/dd/yyyy HH:mm:ss`
- `MM-dd-yyyy HH:mm:ss`
- `MM-dd-yyyy HH:mm:ss z (this format accepts timezone)`
- `MM/dd/yyyy HH:mm:ss z (this format accepts timezone)`
- `yyyy/MM/dd HH:mm:ss`
- `yyyy-MM-dd'T'HH:mm:ss`
- `yyyy-MM-dd`

`MM-dd-yyyy hh:mm` is a 24-hour clock. Users should specify time in hours instead of AM/PM notation.

The "z" in `MM/dd/yyyy HH:mm:ss z` signifies timezone.

The system converts user specified time to server time zone and stores in the database.

Tag names are *case sensitive*. For example: <_BP> is not a valid tag.

When designing Business Processes (BPs) that are related to Integration:

- All BPs must have the `record_no` tag in the Upper forms.
- For Cost related BPs, the Amount field must be present in the Line Items.

If the XML has a leading tag `<?xml encoding="iso-8859-1" ?>`, the system supports all characters within this ISO standard.

There are no form-level validations (required field, form level validation rules, and so forth).

There is no auto-populate feature through Integration, if the integration interface is not designed for the BP. Additionally, if a Data Picker DE is excluded from the integration interface for a BP, changes to the source DE are not reflected in the line item as a result of a REST call. Conversely, if a Data Picker DE is included in the integration interface for a BP, changes to the source DE are reflected in the line item as a result of a REST call.

General Limitations Across all Services

The `getBPList` service always returns the label data for a Pull Down (drop-down) field.

The `getBPList` service does not return the values.

You cannot send fund related information for Cost Type BPs such as **General Spends** and **Payment Applications**.

Only the following ISO tags are supported as part of Web Services message:

Tag	Tag	Tag	Tag	Tag	Tag	Tag	Tag	Tag	Tag	Tag	Tag	Tag	Tag	Tag	Tag	Tag
–	NB SP 00 A0 160	¡ 00 A1 161	¢ 00 A2 162	£ 00 A3 163	¤ 00 A4 164	¥ 00 A5 165	¦ 00 A6 166	§ 00 A7 167	¨ 00 A8 168	© 00 A9 169	ª 00 AA 170	« 00 AB 171	¬ 00 AC 172	SH Y 00 AD 173	® 00 AE 174	¯ 00 AF 175
B–	° 00 B0 176	± 00 B1 177	² 00 B2 178	³ 00 B3 179	´ 00 B4 180	µ 00 B5 181	¶ 00 B6 182	· 00 B7 183	¸ 00 B8 184	¹ 00 B9 185	º 00 BA 186	» 00 BB 187	¼ 00 BC 188	½ 00 BD 189	¾ 00 BE 190	¿ 00 BF 191
C–	À 00 C0 192	Á 00 C1 193	Â 00 C2 194	Ã 00 C3 195	Ä 00 C4 196	Å 00 C5 197	Æ 00 C6 198	Ç 00 C7 199	È 00 C8 200	É 00 C9 201	Ê 00 CA 202	Ë 00 CB 203	Ì 00 CC 204	Í 00 CD 205	Î 00 CE 206	Ï 00 CF 207
D–	Ð 00 D0 208	Ñ 00 D1 209	Ò 00 D2 210	Ó 00 D3 211	Ô 00 D4 212	Õ 00 D5 213	Ö 00 D6 214	× 00 D7 215	Ø 00 D8 216	Ù 00 D9 217	Ú 00 DA 218	Û 00 DB 219	Ü 00 DC 220	Ý 00 DD 221	Þ 00 DE 222	ß 00 DF 223
E–	à 00 E0 224	á 00 E1 225	â 00 E2 226	ã 00 E3 227	ä 00 E4 228	å 00 E5 229	æ 00 E6 230	ç 00 E7 231	è 00 E8 232	é 00 E9 233	ê 00 EA 234	ë 00 EB 235	ì 00 EC 236	í 00 ED 237	î 00 EE 238	ï 00 EF 239
F–	ð 00F0 240	ñ 00F1 241	ò 00F2 242	ó 00F3 243	ô 00F4 244	õ 00F5 245	ö 00F6 246	÷ 00F7 247	ø 00F8 248	ù 00F9 249	ú 00FA 250	û 00FB 251	ü 00FC 252	ý 00FD 253	þ 00FE 254	ÿ 00FF 255

Tag	Tag	Tag	Tag	Tag	Tag	Tag	Tag	Tag	Tag	Tag	Tag	Tag	Tag	Tag	Tag	Tag
	—0	—1	—2	—3	—4	—5	—6	—7	—8	—9	—A	—B	—C	—D	—E	—F

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Pickers

The following pickers are not supported through Web Services call:

- Commit Short Description
- Asset Picker
- Account Code Picker
- Planning Item Picker
- Resource Picker
- Project Picker
- Activity Picker
- Role Picker
- User Picker

Auto-populate from following attribute forms is not supported:

- Cost Attribute Form
- Fund Attribute Form
- DMS Attribute Form

For all Web Services that allow the addition of attachments, the zip format is supported only if the `iszipfile` tag is set to "yes". The `gzip` files (including the similar file formats) are not supported.

Company Picker

- Both the PUT and GET methods of the REST API support the Company Picker field.

- In the PUT calls, when the tag includes value for a Company Picker field, post validation values are inserted into the system. Similarly, the GET calls will retrieve values for the Company Picker fields in the response output. This is applicable to both Upper Form and Detail Form data elements of the Company Picker type.

File Size Limit for REST APIs

Unifier does not support creation / upload of files greater than 1GB through REST API. However, you can also upload the files manually through the Unifier user interface. To upload files successfully through the Unifier user interface, ensure the files are within the file size limit specified in the **Size Limit per File in MB** setting of Unifier. Contact your Company Administrator if you need to modify the file size limit.

Known Issues Across all Services

The `createWBS` service is case insensitive. The service creates a CBS code with A-B-C-D and a-b-c-d.

Any transaction against inactive FBS code will not be rejected.

Auto-population of the Amount field on header form (from Line Items) is only supported if it is included in the form during the form design in uDesigner. Refer to the following guides for more information:

- *Unifier uDesigner User Guide*
- *Unifier General Administration Guide*
- *Unifier Modules Setup Administration Guide*

The shell name can be the same under different parents. In this scenario, if you try to create a business process record by passing in a value for a shell picker data element, the system displays an error (more than one shell with same name).

Business Process (BP) Picker Support

The following Web Services calls will support Business Process Picker:

- `createBPRecord`
- `updateBPRecord`
- `addLineItem`
- `getBPRecord`
- `getCompleteBPRecord`
- `getBPList`

The following validation will be performed when a value is sent for the BP Picker data element:

- System will assume that the value send through the integration message is the value for the Source Element selected as part of reference process definition.
- One, and only one, combination exists.
- If the combination is not valid, or results in two records from reference business process, the integration will error out.

Similar process will be followed for the Line Item Picker on Detail Form.

Business Process (BP) Record Data Processing Rules

Data Definition tags which have invalid value names will produce an error. If the tag is not sent, the default value 0 (zero) is set if the type of the field is an integer.

Character fields: Check for length.

Amount tag, where specified, checks for valid amount

For Cost type BPs, the CBS code must be there.

For cost BPs, if the status tag is not given, the system scans to check if the BP has one or more status values.

- If it has only one status value, the system will assume it is the default value for this record.
- If the system finds more than one status value, an error is reported.

> **Note:** Error checking is currently supported for Cost BPs only.

Data element of type Pull Down (drop-down) will always take the label value, when a message is sent to the system.

For a BP that is involved in fund information, the FBS code will be validated.

Transactions against an inactive CBS code will be rejected.

If a business process form has a dynamic data set (DDS) definition, the data combination will be validated while creating, or updating records, through integration.

Creating and Updating Schedule Sheet through Primavera P6 Integration

If you have access to the Schedule Manager feature, a Schedule Sheet under Schedule Manager supports the following objects. For more information, refer to the *Unifier General User Guide*, *Unifier General Administration Guide*, and *Unifier uDesigner User Guide*.

- Activities
- Resource Assignments
- Activity Dependencies (Successors and Predecessors) along with relationship (Start to Finish, Finish to Start, and so on) and lag information.
- Association of an activity with a cost code (CBS Code) from Unifier Cost Manager.

Integration with P6 involves creation, modification, and association of these objects automatically through Web Services calls.

Integration with P6 Server supports the following information for each object:

- Activities: All elements including User Defined Fields.
- Resource Assignments: All elements including User Defined Fields and Unit of Measure
- Activity Dependencies: Based on Activity Dependencies option
- Association with Cost Codes: Unifier uses special logic as part of integration to build CBS Code to match with Unifier CBS Code or Cost Codes under Cost Manager. See ***Associate CBS Codes with Activities*** (on page 45).

To create and update these objects as part of Integration, you must first create a data mapping relationship between data elements of Unifier and P6. The following section explains Data Mapping concepts and how to create one.

Apart from data mapping, Unifier should also know how to identify Activities and Resources that are coming from Primavera P6. This is to allow the system to support the update web service method. The application currently supports two ways to identify an Activity and one way to identify a Resource.

An Activity can be identified by a GUID. Each activity in Primavera P6 has a GUID. This GUID will be stored when an activity is created in Unifier and can be used later as part of update process.

The second way to identify an activity is through Activity ID. Each activity in Primavera P6 has an Activity ID. This ID will be stored when an activity is created and will be used later as part of update process.

Resources are identified by their name. Each resource in Primavera P6 has a name and this will be stored when a resource assignment is created in Unifier.

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Data Mapping

To create and update these objects as part of integration, you must first create a data mapping relationship between Unifier and P6 data elements. You can create one or more data mapping for each schedule sheet.

To define data mapping:

1) Go to the project/shell tab and switch to **User** mode.
2) In the left Navigator, select **Schedule Manager**, and then select **Schedule Sheets**.
3) Open a schedule sheet.
4) From the **File** menu, select **Data Mapping**. The Data Mappings window opens.

   The **Data Mappings** window lists any mappings that you have created, and their default statuses. At run time, the system uses the mapping status and prevents the **Select Default Mapping** window from opening.
5) Click the **Add** button. The Data Mapping window opens.
6) On the **General** tab, enter the name and the description for the data mapping and click **Apply** to save changes and keep the window open, or click **OK** to save changes and close the window.
7) On the **Activity** tab, you can map Unifier schedule sheet columns to external CSV headers and XML tags for the import or export of activity information. Choose data elements from Activity and Resource Attribute forms. See the **Activity Tab Fields** table for details.
8) On the **Resources** tab, you can map resource information through XML integration. Enter the header in the XML element that corresponds to the column. Mapping resources is required only if you select Import Resource Assignments on the Options tab.
9) On the **Options** tab you can configure XML options that the system uses when importing data. See the **Options Tab Fields** table for details.
10) Click **OK**.

One of the data mappings can be selected as default. This defaulting concept will be used while processing a web services call. How to use a data mapping and where default data mapping is used is explained in Web Service Methods section.

Data mapping can be marked to override existing data or merge existing data. Based on the web services call and business need appropriate option must be selected.

Activity Tab Fields

Data Format	Data Mapping Requirements
Column	Select the data elements you want to import. Minimum required fields for XML import are Activity ID, Activity Name, Start Date, Finish Date, and Duration.
CSV Header	Enter the CSV header from the external source.
XML Element	Enter the corresponding XML from the external source

Options Tab Fields

In this Field:	Do This:
XML Import	Define options for importing XML activity schedules into Unifier. Mapping options are the same for Primavera XML and Microsoft Project XML.
Options	You can either retain existing schedule information in Unifier, or overwrite it complete upon importing an external XML file. 1. Merge into existing schedule. With this selection, you have a sub-option to Delete Activities removed from the source schedule. 2. Overwrite existing schedule replaces the existing schedule.
Data Elements	Select the appropriate check boxes if you want to: - Import activities (rows) - Include dependencies - Assign resources - Assign CBS codes

In this Field:	Do This:
Data Elements *(continued)*	1. Activity Dependencies: Select this check box to retain activities from the XML source file. 2. Activity Calendar: Select this check box to retain the activity calendar from the XML source file. If imported, the activity calendar will trigger the recalculation of activity dates as needed and will override any existing activity calendar association. If a calendar is not imported, the activity will use the existing calendar defined in the Schedule Sheet properties.
Data Elements *(continued)*	There must be a calendar in the system with the same name as the calendar in the import file. (For more information, see **Creating Multiple Calendars** in the *Unifier Modules Setup Administration Guide*.) 1. Resource Assignments: Select this check box to retain the resource assignments from the XML source file. If you want to import resources, define the resource types for the data definition SYS Resource Type. For Microsoft Project files, use standard resource types: Work, Material, and Cost. Upon import, these resource types will soft book. 2. CBS Codes: Select this check box to import CBS codes 3. Number of Levels: If you choose to import Primavera CBS codes, you can specify the segments that should be considered in the Primavera XML file for the codes (from 1 to 9) and the CBS code suffix mask. For more information, see **CBS code options for Primavera XML and Microsoft Project XML** in the *Unifier Modules Setup Administration Guide*. 4. Suffix Mask: Does not apply for Microsoft Project XML files, and this value is ignored when files of this type are imported. You can use a constant or a data element value in the Suffix Mask.

Associate CBS Codes with Activities

Activities in a project are grouped together by CBS codes.

To associate an activity with a CBS Code, the system go through the hierarchical structure of CBS segments to build the final CBS Code. Unifier performs this function when CBS Code import option is checked on the Options tab of Data Mapping. The CBS Code string generated is then validated with leaf level CBS Codes created under Cost Manager. If the CBS Code is available, the activity is associated with the CBS Code. If the CBS Code is not available, the import process fails.

Additional options are available to create the entire string of CBS Code. These options can be used to address any structural differences between the way CBS Codes are built in Unifier Cost Manager and CBS Codes in Primavera P6.

- **Levels**: User can choose number of CBS segments that should be considered while processing a Primavera XML file. For example, if user enters 8 then last segment CAct04 will not be considered while building CBS Code.
- **Suffix Mask**: User can optionally enter a suffix mask, which will be added to the end of CBS Codes built based on Primavera XML file. Users can either enter a constant value of select a data element from activity attribute form.

> **Note:** With the help of this data element being selected as suffix, it is possible to build CBS Code and assign it to an activity based on attributes of activities coming from P6 instead of the CBS Code hierarchy of the activities.

Simple Object Access Protocol (SOAP) Web Services

Figure 1: Support for SOAP is deprecated starting with Unifier 23.10.

The following topics explain the Unifier SOAP web services.

Note: Oracle develops all new web services as RESTful web services and not SOAP web services. Support for SOAP services is deprecated beginning with version 23.5. Oracle recommends that the new integrations use RESTful web services.

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Resource Manager Methods

Figure 2: Support for SOAP is deprecated starting with Unifier 23.10.

Create and/or update Role

Figure 3: Support for SOAP is deprecated starting with Unifier 23.10.

Description

This method creates (and updates) Resource Manager Roles.

Support

This method can only support creating and updating Roles at the company level.

Installation: ASP and Self host

Level	Yes or No
Company Level	Yes
Project/Shell Level	No

Prototype

public XMLObject createUpdateRole (String shortname, String authcode, String rolesXML);

Parameters

Parameter	Description
shortname	identifier of the company, company's short name
authcode	authentication key for the company, in text string
rolesXML	Information of the role(s) that must be created and/or updated

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Sample Method

createUpdateRole("acme", "acme_authcode", "XML")

Additional Information

_role tag can be repeated to create multiple roles.

Role name will be used as a unique identifier to update existing role information.

Value of <role_currency> element should be valid. For a list of valid country names, see Currency.

Get Role List

Figure 4: Support for SOAP is deprecated starting with Unifier 23.10.

Description

This method gets a list of roles created at company level.

Support

This method is only supported at company level.

Installation: ASP and Self host

Level	Yes or No
Company Level	Yes
Project/Shell Level	No

Prototype

public XMLObject getRoleList (String shortname, String authcode, String filterCondition);

Parameters

Parameter	Description
shortname	identifier of the company, company's short name
authcode	authentication key for the company, in text string
filtercondition	Condition based on which list of roles can be filtered

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Sample Method

getRoleList("acme", "acme_authcode",uuu_role_status=Active)

Additional Information

Only one filter condition can be provided at a time.

Only operator available for filter condition will be "=".

Example:

If user wants to get a list of roles with status Active, filterCondition should be <filterCondition>uuu_role_status = Active</filterCondition>

If user wants to get a role with name "Architect," filterCondition should be <filterCondition>uuu_role_name = Architect</filterCondition>.

Create and/or update Resource

Figure 5: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method creates (and updates) Resource Manager Resources.

Support

This method can only support creating and updating Resources at the company level.

Installation: ASP and Self host

Level	Yes or No
Company Level	Yes
Project/Shell Level	No

Prototype

public XMLObject createUpdateResource (String shortname, String authcode, String resourceXML);

Parameters

Parameter	Description
shortname	identifier of the company, company's short name
authcode	authentication key for the company, in text string
resourceXML	Information of the resource(s) that will be created and/or updated

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Sample Method

createUpdateResource("acme", "acme_authcode", XML)

Additional Information

_resource tag can repeat to create multiple resources.

Get Resource List

Figure 6: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method gets a list of resources created at company level.

Support

This method is only supported at company level.

Installation: ASP and Self host

Level	Yes or No
Company Level	Yes
Project/Shell Level	No

Prototype

public XMLObject getResourceList(String shortname, String authcode, String filterCondition);

Parameters

Parameter	Description
shortname	identifier of the company, company's short name
authcode	authentication key for the company, in text string
filtercondition	Condition based on which list of roles can be filtered

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Sample Method

getRoleList("acme", "acme_authcode",uuu_resc_status=Active)

Additional Information

Only one filter condition can be provided at a time.

Only operator available for filter condition will be "=".

Example:

If user wants to get a list of resources with status Active, filterCondition should be <filterCondition>uuu_resc_status = Active</filterCondition>

Space Manager Methods

Figure 7: Support for SOAP is deprecated starting with Unifier 23.10.

Create Level

Figure 8: Support for SOAP is deprecated starting with Unifier 23.10.

Description

This method creates level record in the system. This works only for project/shell level.

Support

Installation: ASP and Self host

Level	Yes or No
Company Level	No
Project/Shell Level	Yes

Prototype

public XMLObject createLevel (String shortname, String authcode, string projectNumber, String levelXML);

Parameters

Parameter	Description
shortname	identifier of the company, company's short name
authcode	authentication key for the company, in text string
projectNumber	Identifier of the project/shell.
levelXML	XML that contains information related to level that is getting created

Return Value

XMLObject (XMLObject is described at the beginning of this document)

Sample Method

createLevel ("acme", "acme_authcode", "proj-01", levelXML) will return the XML Record of the Level created.

Additional Information

Multiple levels can be created by repeating <_level> for each level record.

This service can be used for both Shells of cost code type CBS and Generic.

XML tags under _level element are based on the integration interface definition of level form.

Update Level

Figure 9: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method updates level record in the system. This works only for project/shell level.

Support

Installation: ASP and Self host

Level	Yes or No
Company Level	No
Project/Shell Level	Yes

Prototype

public XMLObject updateLevel (String shortname, String authcode, string projectNumber, String levelXML);

Parameters

Parameter	Description
shortname	identifier of the company, company's short name
authcode	authentication key for the company, in text string
projectNumber	Identifier of the project/shell.

Parameter	Description
levelXML	XML that contains information related to level that is getting created

Return Value

XMLObject (XMLObject is described at the beginning of this document)

Sample Method

updateLevel ("acme", "acme_authcode", "proj-01", levelXML) will return the XML Record of the Level updated.

Additional Information

Multiple levels can be updated by repeating <_level> for each level record.

This service can be used for both Shells of cost code type CBS and Generic.

XML tags under _level element are based on the integration interface definition of level form.

To update a level record, value under <uuu_sp_level_name> will be used as identifier.

Get Level List

Figure 10: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method will get a list of level record from the system. This works only for project/shell level.

Support

Installation: ASP and Self host

Level	Yes or No
Company Level	No
Project/Shell Level	Yes

Prototype

public XMLObject getLevelList(String shortname, String authcode, string projectNumber);

Parameters

Parameter	Description
shortname	identifier of the company, company's short name

Parameter	Description
authcode	authentication key for the company, in text string
projectNumber	Identifier of the project/shell in Unifier.

Return Value

XMLObject (XMLObject is described at the beginning of this document)

Sample Method

getLevelList ("acme", "acme_authcode", "proj-01") will return the XML Record of the Level records.

Additional Information

XML tags under _level will be based on integration interface definition of level form.

This service can be used for both Shells of cost code type CBS and Generic.

Create Space

Figure 11: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method creates space record of a space type in the system. This works only for project/shell level.

Support

Installation: ASP and Self host

Level	Yes or No
Company Level	No
Project/Shell Level	Yes

Prototype

public XMLObject createSpace (String shortname, String authcode, string projectNumber, String spacetype, String spaceXML);

Parameters

Parameter	Description
shortname	identifier of the company, company's short name
authcode	authentication key for the company, in text string
projectNumber	Identifier of the project/shell.
spacetype	Identifier of the space type
spaceXML	XML that contains information related to space that is getting created

Return Value

XMLObject (XMLObject is described at the beginning of this document)

Sample Method

createSpace ("acme", "acme_authcode", "proj-01", "Useable Spaces", spaceXML) will return the XML Record of the Level created.

Additional Information

Multiple spaces can be created by repeating <_space> for each space record.

This service can be used for both Shells of cost code type CBS and Generic.

XML tags under _space element are based on the integration interface definition of space form.

uuu_sp_level_picker element value will be used to identify the level under which the space record should be created.

Update Space

Figure 12: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method will update space record in the system. This works only for project/shell level.

Support

Installation: ASP and Self host

Level	Yes or No
Company Level	No
Project/Shell Level	Yes

Prototype

public XMLObject updateSpace(String shortname, String authcode, string projectNumber, String spacetype, String spaceXML);

Parameters

Parameter	Description
shortname	identifier of the company, company's short name
authcode	authentication key for the company, in text string
projectNumber	Identifier of the project/shell.
spacetype	Identifier of the space type
spaceXML	XML that contains information related to space that is getting updated

Return Value

XMLObject (XMLObject is described at the beginning of this document)

Sample Method

updateSpace ("acme", "acme_authcode", "proj-01","Useable Spaces", spaceXML) will return the XML Record of the Level updated.

Additional Information

Multiple spaces can be updated by repeating <_level> for each space record.

This service can be used for both Shells of cost code type CBS and Generic.

XML tags under _space element are based on the integration interface definition of space form.

To update a space record in Unifier, value under <uuu_sp_level_picker> and data element based on data definition Sys Space Name will be used as identifier.

Get Space List

Figure 13: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method will get a list of space record from the system. This works only for project/shell level.

Support

Installation: ASP and Self host

Level	Yes or No
Company Level	No
Project/Shell Level	Yes

Prototype

public XMLObject getSpaceList(String shortname, String authcode, string projectNumber);

Parameters

Parameter	Description
shortname	identifier of the company, company's short name
authcode	authentication key for the company, in text string
projectNumber	Identifier of the project/shell.

Return Value

XMLObject (XMLObject is described at the beginning of this document)

Sample Method

getSpaceList ("acme", "acme_authcode", "proj-01") will return the XML Record of the Level records.

Additional Information

XML tags under _space will be based on integration interface definition of level form.

This service can be used for both Shells of cost code type CBS and Generic.

Planning Manager Methods

Figure 14: Support for SOAP is deprecated starting with Unifier 23.10.

Get Planning Item Record

Figure 15: Support for SOAP is deprecated starting with Unifier 23.10.

Description

This method gets a specific Planning Item record in the system. This works for both company-level and project/shell-level Planning Items.

Support

This process supports all type of Planning Items.

Installation: ASP and Self host

Level	Yes or No
Company Level	Yes
Project/Shell Level	Yes

Prototype

public XMLObject getPlanningItem (String shortname, String authcode, string projectNumber, String BPName, String planning Item);

Parameters

Parameter	Description
shortname	identifier of the company, company's short name
authcode	authentication key for the company, in text string
projectNumber	Identifier of the project/shell. Pass null for company-level Planning Items
BPName	identifier of the planning item type, for example: Capital Projects
planningItem	identifier of the planning item example: Tower

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Sample Method

getPlanningItem("acme", "acme_authcode", "proj-01", "Capital Projects","Tower") will return the XML Record of the Planning Item.

Additional Information

If the planningItem is left blank or invalid planningItem, the method returns the Planning Item's skeletal XML.

To get company-level Planning Item record information, send null for projectNumber parameter. If you send a project number for a Planning Item type that is at company level, you will get an error that Planning Item type is not correct.

This service can be used for Projects/Shells of cost code type CBS and Generic.

User Administration Methods

Figure 16: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Create User

Figure 17: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This public method will allow users to create one or more company users.

Support

Installation: ASP and Self host

Level	Yes or No
Company Level	Yes
Project/Shell Level	No

Prototype

public XMLObject createUser(String shortname, String authcode, String copyFromUserPreferenceTemplate, String userXML);

Parameters

Parameter	Description
Shortname	Identifier of the company, company's short name
Authcode	Authentication key for the company, in text string
copyFromUserPreferenceTemplate	Name of the template from which user preference should be copied over when new user is created

Parameter	Description
userXML	▸ If the User Attribute Form is defined, it should be based on the integration interface definition of the user attribute form in uDesigner. ▸ If the User Attribute Form is not defined, the element of userXML will be from the table in the following "userXML Elements" section, below.

userXML Elements (When User Attribute Form is not Defined)

Tag Name	Required	Description	Valid values
<username>	Yes	User name that is going to be used by user to sign in to Unifier.	
<password>	Yes	User's password	
<firstname>	No	First name of the user	
<lastname>	No	Last name of the user	
<title>	No	Title information	
<email>	No	Email of the user	
<workphone>	No	Work phone number of the user	
<homephone>	No	Home phone number of the user	
<fax>	No	Fax number of the user	
<cellphone>	No	Cell phone number of the user	
<pager>	No	Pager number of the user	
<status>	No	Status of the newly created user (Active, Inactive, On-Hold)	Active: 1 Inactive: 0 On-Hold: 2

Tag Name	Required	Description	Valid values
<timezone>	No	Time zone of the user	See Time Zone. You must send the data from value column, for example, for time zone GMT -11:00, Samoa Standard Time (Samoa) send 10.
<dateformat>	No	User preference date format	See Date Format. You must send the data from value column, for example for MM/DD/YYYY AM send 0 (zero).HH:mm
<usertype>	No	Defines the user type, based on license terms.	0 for Standard User 1 for Portal User

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Sample Method

createUser("acme", "acme_authcode", "User Pref Temp 1", "<user information>")

Additional Information

If the user preference template is provided, the user preference will be set based on the user preference template on the newly created company user.

'_user' will be the base tag which can be repeated with the data to create multiple company users.

The Web Services call for user administration includes an XML tag to support the Proxy login setup. The Data Element (DE) for the XML tag is: "`uuu_user_proxy_config`."

This is not a required field, so the default value remains unchecked.

Users can be created using the CreateOject WS method, and the XML tag is: "`allowproxy`."

To map the values for check box:

- If `uuu_user_proxy_config` or `allowproxy` is set to Yes, the “Do not allow Proxies” check box in the Proxy tab should be deselected.
- If `uuu_user_proxy_config` or `allowproxy` is set to No, the “Do not allow Proxies” check box in the Proxy tab should be selected.

Update User

Figure 18: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This public method will allow users to update one or more company users.

Support

Installation: ASP and Self host

Level	Yes or No
Company Level	Yes
Project/Shell Level	No

Prototype

public XMLObject updateUser(String shortname, String authcode, String userXML);

Parameters

Parameter	Description
Shortname	identifier of the company, company's short name
Authcode	authentication key for the company, in text string
userXML	▸ If the User Attribute Form is defined, it should be based on the integration interface definition of the user attribute form in uDesigner. ▸ If the User Attribute Form is not defined, the element of userXML will be from the userXML Elements table in the "Create User" section above.

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Sample Method

updateUser("acme", "acme_authcode", "<user information>")

Additional Information

'_user' will be the base tag which can be repeated with the data to update multiple company users.

The unique identifier will be the user name and based on the matching user name, the passed on fields should be updated.

The Web Services call for user administration includes an XML tag to support the Proxy login setup. The Data Element (DE) for the XML tag is: "`uuu_user_proxy_config`."

This is not a required field, so the default value remains unchecked.

Users can be created using the CreateOject WS method, and the XML tag is: "`allowproxy`."

To map the values for check box:

- If `uuu_user_proxy_config` or `allowproxy` is set to Yes, the “Do not allow Proxies” check box in the Proxy tab should be deselected.
- If `uuu_user_proxy_config` or `allowproxy` is set to No, the “Do not allow Proxies” check box in the Proxy tab should be selected.

Get User List

Figure 19: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This public method will allow users to get a list of company users.

Support

Installation: ASP and Self host

Level	Yes or No
Company Level	Yes
Project/Shell Level	No

Prototype

public XMLObject getUserList(String shortname, String authcode, String filterCondition);

Parameters

Parameter	Description
Shortname	identifier of the company, company's short name
Authcode	authentication key for the company, in text string

Parameter	Description
filterCondition	Information or condition to filter users list

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Sample Method

If User Attribute Form is defined:

```
getUserList("acme", "acme_authcode", "uuu_user_status=0 or uuu_user_status=1 or uuu_user_status=2");
```

If User Attribute Form is not defined:

```
getUserList("acme", "acme_authcode", " status=0 or status=1 or status=2");
```

Additional Information

This method will allow users to get a list of company users based on the matching filter condition on either Username or First Name or Last Name or Email or Status. The XML element for these fields will be based on whether the User Attribute Form has been defined, as shown below:

Field	When User Attribute Form is Defined	When User Attribute Form is not Defined
Username	uuu_user_loginname	username
First Name	uuu_user_firstname	firstname
Lastname	uuu_user_lastname	lastname
Email	uuu_user_email	email
Status	uuu_user_status	status

Only one filter condition can be provided at a time using the "=" operator.

Method will return the list of Users with matching conditions.

Update User Group Membership

Figure 20: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This public method will allow users to update one or more company user's membership to company-level groups.

Note: Although the system audits the addition or removal of users to or

from a shell, it does not audit group membership. Because of this, changes to group membership are not reflected in the Group Audit Log.

Support

Installation: ASP and Self host

Level	Yes or No
Company Level	Yes
Project/Shell Level	No

Prototype

public XMLObject updateUserGroupMembership(String shortname, String authcode, String membershipXML);

Parameters

Parameter	Description
Shortname	identifier of the company, company's short name
Authcode	authentication key for the company, in text string
membershipXML	Information of the user(s) that must be added and/or removed from company-level groups

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Sample Method

updateUserGroupMembership("acme", "acme_authcode", "<user information>")

Additional Information

'_user' will be the base tag which can be repeated with the data to update multiple company users' group membership.

The unique identifier will be the user name and based on the matching user name, the passed on fields should be updated.

Update User Shell Membership

Figure 21: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This public method adds users to shell membership, updates user status in shell membership, and adds/removes users to/from groups at shell level.

> **Note:** Although the system audits the addition or removal of users to or from a shell, it does not audit group membership. Because of this, changes to group membership are not reflected in the Group Audit Log.

Support

Installation: ASP and Self host

Level	Yes or No
Company Level	No
Project/Shell Level	Yes

Prototype

public XMLObject updateUserShellMembership(String shortname, String authcode, String projectNumber, String membershipXML);

Parameters

Parameter	Description
Shortname	Identifier of the company, company's short name
Authcode	Authentication key for the company, in text string
projectNumber	Identifier of project/shell in Unifier
membershipXML	Information of the user(s) that must be added and/or removed from shell groups including activation / inactivation of user under a project/shell

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Sample Method

updateUserShellMembership("acme", "acme_authcode", "Proj-0001", "<user information>")

Additional Information

The project/shell number is mandatory.

'_ shelluser' will be the base tag which can be repeated with the data to update multiple company/shell users and their group membership.

The unique identifier will be the user name and based on the matching user name, the passed on fields should be updated.

'group_add', 'group_remove' and 'status' are optional tags.

Status can be either 'Active', 'Inactive', or empty.

Empty status or no status should be interpreted as 'Active' status.

Prerequisite for this web service to successfully add users to the shell membership:

Add the company user to the shell membership only if the user exists in company users log at the company level and is with active or on-hold status.

Add the partner user to the shell membership if the user exists in partner user log at the company level and is with active or on-hold status. If the partner user does not exist at the company level, the web service will add the user to both company-level partner user log and to the shell membership after checking for license restrictions.

Schedule of Values (SOV) Methods

Figure 22: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Get SOV

Figure 23: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method will get schedule of values information of a commitment.

Support

Installation: ASP and Self host

Level	Yes or No
Company Level	No
Project/Shell Level	Yes

Prototype

public XMLObject getSOV(String shortname, String authcode, String projectNumber, String BPName, String recordNumber);

Parameters

Parameter	Description
Shortname	Identifier of the company, company's short name
Authcode	Authentication key for the company, in text string
projectNumber	Identifier of a project/shell.
BPName	Identifier of the base commits business process, for example: Contracts. This is case-sensitive and should be the name as given in uDesigner.
RecordNumber	The record number is base commit record number that the SOV is associated to.

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Sample Method

getSOV("acme", "acme_authcode", "PRJ-0001", "Contracts", "CON-0001")

Additional Information

getSOV can be used to get the SOV for General Spends and Payment Applications.

Tags under <SOV_header> parent tag will change if the SOV is group by commit codes or individual line items.

Exchange Rates Methods

Figure 24: Support for SOAP is deprecated starting with Unifier 23.10.

Update Exchange Rates

Figure 25: Support for SOAP is deprecated starting with Unifier 23.10.

Description

This method adds and updates exchange rates defined at company level.

Support

This applies to exchange rates at company level only.

Installation: ASP and Self host

Level	Yes or No
Company Level	Yes
Project/Shell Level	No

Prototype

public XMLObject updateExchangeRates(String shortname, String authcode, String rates;

Parameters

Parameter	Description
Shortname	identifier of the company, company's short name
Authcode	authentication key for the company, in text string
Rates	Exchange rates of one or more currency codes with respect to company base currency.

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Sample Method

updateExchangeRates ("acme", "acme_authcode", "XML")

Additional Information

User can add rates using Web Services call.

updateExchangeRates will always create new exchange rate record and will mark it "Active."

New currency codes can be added as part of this call.

If an invalid currency code is provided as part of currency code, that code will be ignored and other codes will be processed.

If the call is successful, new record with rates will be added.

Currency name is not mandatory. For valid currency codes, see Currencies and Codes.

Get Exchange Rates

Figure 26: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method will get exchange rates from the latest exchange rates record.

Support

Installation: ASP and Self host

Level	Yes or No
Company Level	Yes
Project/Shell Level	No

Prototype

public XMLObject getExchangeRates(String shortname, String authcode);

Parameters

Parameter	Description
Shortname	identifier of the company, company's short name
Authcode	authentication key for the company, in text string
Rates	Exchange rates of one or more currency codes with respect to company base currency.

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Sample Method

getExchangeRates("acme", "acme_authcode", rates)

Configurable Manager Methods

Figure 27: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Create Records in Code and Records-based Generic Manager

Figure 28: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method creates records under a generic manager class. This applies only to code-& records based generic managers.

Support

This applies to code-& records based generic managers at company and project/shell levels.

Installation: ASP and Self host

Level	Yes or No
Company Level	Yes
Project/Shell Level	Yes

Prototype

public XMLObject createConfigurableModuleRecord(String shortname, String authcode, String projectNumber, String CMCode, String ClassName, String copyFromRecord, String recordXML);

Parameters

Parameter	Description
Shortname	identifier of the company, company's short name
Authcode	authentication key for the company, in text string
projectNumber	Identifier of a project/shell. Value can be left empty/ignored if specified CM is a company-level manager.
CMCode	Identify CM (‘CM1', ‘CM2', …)
ClassName	Name of the class (Buildings, Electrical, IT Equipments, and so on)
copyFromRecord	Can be left empty if not copying from another record
recordXML	content of the record that needs to be created. This is based on Integration interface design for class in uDesigner.

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Sample Method

createConfigurableModuleRecord ("acme", "acme_authcode", "Buildings","CM5", "Electrical","", "XML")

Additional Information

Same logic while creating new records from UI will be used while creating a record from integration. This includes validation logic, setting status, and so on.

All validations on detail form including required fields and user defined form validations will be retained while creating new records through web services.

After a record is created, detail form will be in Finish Editing mode. Data will be rolled up to the corresponding manager sheet.

Data Element, which is based on data definition as follows, SYS Numeric Logical Datasource, SYS Date Logical Datasource, SYS Business Process Datasource and SYS Project Cost Datasource, will not be available as part of Integration.

This service can be used for Projects/Shells of cost code type CBS and Generic.

Update Records in Code and Records-based Generic Manager

Figure 29: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method updates records under a generic manager class. This applies only to code-& records based generic managers.

Support

This applies to code-& records based generic managers at company and project/shell levels.

Installation: ASP and Self host

Level	Yes or No
Company Level	Yes
Project/Shell Level	Yes

Prototype

public XMLObject updateConfigurableModuleRecord(String shortname, String authcode, String projectNumber, String CMCode, String ClassName, String copyFromRecord, String recordXML);

Parameters

Parameter	Description
Shortname	identifier of the company, company's short name
Authcode	authentication key for the company, in text string
projectNumber	Identifier of a project/shell. Value can be left empty/ignored if specified CM is a company-level manager.
CMCode	Identify CM (‘CM1', ‘CM2', …)
ClassName	Name of the class (Buildings, IT Equipments, and so on)
copyFromRecord	Can be left empty if not copying from another record
recordXML	Content of the record that needs to be created. This is based on Integration interface design for class in uDesigner.

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Sample Method

updateConfigurableModuleRecord ("acme", "acme_authcode", "Buildings","CM5", "Electrical","", "XML")

Additional Information

Same logic while creating new records from UI will be used while creating a record from integration. This includes validation logic, setting status, and so on.

All validations on detail form including required fields and user defined form validations will be retained while creating new records through web services.

After a record is created, detail form will be in Finish Editing mode. Data will be rolled up to the corresponding manager sheet.

Data Element, which is based on data definition as follows, SYS Numeric Logical Datasource, SYS Date Logical Datasource, SYS Business Process Datasource and SYS Project Cost Datasource, will not be available as part of Integration.

This service can be used for Projects/Shells of cost code type CBS and Generic.

Shell Methods

Figure 30: Support for SOAP is deprecated starting with Unifier 23.10.

Create Shell

Figure 31: Support for SOAP is deprecated starting with Unifier 23.10.

Description

This method will allow users to create shell instances under a shell type. User can create more than one shell at a time.

Support

This method only supports creation of shells under a company and is not associated with any project.

Installation: ASP and Self host

Level	Yes or No
Company Level	Yes
Project/Shell Level	No

Prototype

public XMLObject createShell(String shortname, String authcode, String copyFromShellTemplate, String shellXML);

Parameters

Parameter	Description
shortname	Identifier of the company, company's short name
authcode	Authentication code for the company, in text string
copyFromShellTemplate	This will be number of another shell instance or shell template. Based on shell template, shell type will be determined to create new shell

Parameter	Description
shellXML	This will be based on Shell integration interface definition. Without this definition defined user will not be allowed to create a shell instance

shellXML Elements

Tag Name	Required	Description	Valid values
<_shell>	Yes	Base tag for new shell data. This tag can be repeated to create more than one shell instance	NA
<_moduleoptions>	No	Base tag for options.	This tag is optional. If this tag is not provided, Unifier will create shell by copying user / groups from template or shell provided under copyFromShellTemplate.

Tag Name	Required	Description	Valid values
<copyModules>	No	Option to either copy modules or not.	This tag can only go as a child element under <_moduleOptions> tag. This tag is identified either to create a new shell by copying all modules including user / group or create a new shell by copying user / group from template provided under copyFromShellTemplate. Only valid values are Yes / No. Yes means copy all modules including user / groups. No means copy only user / groups. If tag is not provided or value is empty then default behavior will be to No.

Tag Name	Required	Description	Valid values
<defaultCurrency>	No	Option to specify the currency code for the shell	A new child element of <defaultCurrency> will be available within the <_moduleoptions> tag. Valid values for the <defaultCurrency> tag are the codes for the currency rather than the names. For example, USD is valid, United States Dollars is not. If the code is not a valid code, the web service will fail. If the tag is present and the value is empty, template currency will be selected.

The Document Manager attribute that is used to define the Document Management Structure (DMS) originates from the shell template that was used to create the shell using "copyFromShellTemplate" parameter. If the shell template does not contain any references to the DM attribute form, the shell that was created by using such template will have the system-defined attribute form to define the DMS.

Return Value

See ***Appendix A: Return Values*** (on page 1113).

> **Note**: The message will contain new Shell Number and Shell Name that is created within the system.

Sample Method

createShell("acme", "acme_authcode", "Proj-0001","<XML Content>");

Note: If you do not provide values for elements that are not required then the values from template will be used to create new shell.

Additional Information

User will be allowed to create shells of type CBS and Generic. For more information about types of shells, refer to the *Unifier uDesigner User Guide*.

User will be able to pass in a value for Location Picker element while creating shell instance.

All other validation while creating shell instance manually will be honored through Integration as follows, required fields, duplicate shell id, and so on.

Users will be allowed to create multiple shells using this service call. If creation of one shell fails, the entire transaction will be rolled back.

All shells created will be based on same template.

Shell currency will be based on the template.

Update Shell

Figure 32: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method will allow users to update shell instances. User can update more than one shell at a time.

The user will be able to pass in a value for Location Picker element (`Datadefinition : uuu_location`) while updating the shell instance.

Location picker value will be validated.

Support

This method only supports update of shells under a company and is not associated with any project.

Installation: ASP and Self host

Level	Yes or No
Company Level	Yes
Project/Shell Level	No

Prototype

public XMLObject updateShell (String shortname, String authcode, String shellType, String shellXML);

Parameters

Parameter	Description
shortname	Identifier of the company, company's short name
authcode	Authentication code for the company, in text string
shellType	To identify type of the shell that is getting updated, for example, Building, Projects, Capital Projects, Properties, and so on
shellXML	This will be based on Shell integration interface definition. Without this definition defined user will not be allowed to update a shell instance

shellXML Elements

Tag Name	Required	Description	Valid values
<_shell>	Yes	Base tag for new shell data. This tag can be repeated to create more than one shell instance	

Return Value

See ***Appendix A: Return Values*** (on page 1113). Message will contain Shell Number and Shell Name that is updated within Unifier.

Sample Method

updateShell("acme", "acme_authcode", "Buildings","<XML Content>");

Additional Information

Shell that will be updated will be based on shell type and shell number provided as part of XML content.

User will be allowed to update both CBS and Generic shells. For more information about shells, refer to the *Unifier uDesigner User Guide*.

User will be able to pass in a value for Location Picker element while updating shell instance. Location picker value will be validated.

All other validation while creating shell instance manually will be retained through Integration as follows, required fields, duplicate shell id, and so on.

This method will allow user to update one more shell of same type at a time.

Get Shell List

Figure 33: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method will allow users to get a list of shell instances. User can get information of more than one shell at a time.

Support

Installation: ASP and Self host

Level	Yes or No
Company Level	Yes
Project/Shell Level	No

Prototype

public XMLObject getShellList(String shortname, String authcode, String shellType, String filterCondition);

Parameters

Parameter	Description
shortname	Identifier of the company, company's short name
authcode	Authentication code for the company, in text string
shellType	To identify type of the shell that is getting updated, for example, Building, Projects, Capital Projects, Properties, and so on
filtercondition	This will allow user to filter list of shells returned. Following is list of elements that use can filter shell list on <shell number>: data element used to capture shell number <shell name>: data element used to capture shell name Status (uuu_shell_status): Status of the shell

Return Value

See ***Appendix A: Return Values*** (on page 1113).

> **Note**: The message will return list of shells based on filer condition.

Sample Method

getShellList("acme", "acme_authcode", "Buildings", uuu_shell_status=Active);

Additional Information

Only one filter condition can be provided at a time.

Only operator available for filter condition will be "=".

Example:

If user wants to get a list of shells with status Active, filterCondition should be <filterCondition>uuu_shell_status = Active</filterCondition>

If user wants to get a shell with name Building 101, filterCondition should be <filterCondition>my_building_name = Building 101</filterCondition). Assuming that my_building_name is the data element used to capture name of the shell using SYS Shell Name.

Get Project/Shell List

Figure 34: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method will allow users to get a list of project/shell instances. User can get information of more than one project/shell at a time.

Support

Installation: ASP and Self host

Level	Yes or No
Company Level	Yes
Project/Shell Level	No

Prototype

public XMLObject getProjectShellList(String shortname, String authcode, String options);

Parameters

Parameter	Description
Shortname	Identifier of the company, company's short name
Authcode	Authentication code for the company, in text string

Options	This parameter allows the user to filter the list based on the following:
	▸ <status>: select a status of Active, Inactive, On-Hold or View-Only. If no status is provided, all projects/shells are returned.
	▸ <type>: select the type to be returned. Value can be project, CBS_shell or generic_shell. If no type is provided, all projects/shells are returned.
	▸ <filter_condition>: filter the results based on either the projectnumber or projectname.
	Example:
	`<gen:options>`
	`<![CDATA[`
	`<options>`
	`<type>CBS_shell</type>`
	`<status>Active</status>`
	`<filter_condition>projectname=Building 101</filter_condition>`
	`</options>`
	`]]>`
	`</gen:options>`

Return Value

See ***Appendix A: Return Values*** (on page 1113).

> **Note**: The message will return list of projects/shells based on filter conditions.

Sample Method

getShellList("acme", "acme_authcode", type=CBS_shell);

Schedule Manager Methods

Figure 35: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Create Schedule Sheet Activities from Primavera P5 and P6 XML

Figure 36: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method creates activities into an existing Unifier project-level (cost code type CBS) schedule sheet, using the default data mapping.

Support

This method can only support creation of activities in project-level (cost code type CBS) schedule sheets.

Installation: ASP and Self host

Level	Yes or No
Company Level	No
Project/Shell Level	Yes

Prototype

public XMLObject createScheduleActivities(String shortname, String authcode, String projectNumber, String scheduleSheet, String scheduleXML);

Parameters

Parameter	Description
Shortname	Identifier of the company, company's short name
authcode	Authentication code for the company, in text string
projectNumber	Identifier of a project/shell.
scheduleSheet	Name of Schedule Sheet to import activities into.

Parameter	Description
scheduleXML	Content of activities to import. This is obtained from the Primavera P5/P6 xml content. The Primavera XML content should be generated by exporting the full Primavera project.

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Sample Method

createScheduleActivities("acme","acme_authcode","Proj-0001","Schedule Sheet 001", "<XML Content>");

Additional Information

You must perform appropriate data mapping setups on the target schedule sheet. This includes mapping Unifier Schedule Sheet columns to Primavera XML elements and setting appropriate XML Import options. Only elements that are mapped will be copied.

This method can only be used to create new activities not for updating existing activities.

If invoked on an empty schedule sheet, this method will insert activities into the schedule sheet. If invoked on a non-empty schedule sheet, it will overwrite all existing activities (delete and recreate) in the non-empty schedule sheet if this function is allowed in the data mapping setup.

If the method is called on a non-empty schedule sheet and the data mapping setup does not allow overwrite, the method will return an error in the response.

This service can be used for Projects/Shells of cost code type CBS.

Activity identified with this creation method will be the globally unique identifier (GUID).

Data Mapping Marked as default will be used.

Create Schedule Sheet Activities V2 from Oracle Primavera P6 XML

Figure 37: Support for SOAP is deprecated starting with Unifier 23.10.

Description

This method creates activities into an existing Unifier project/shell (cost code type CBS) level schedule sheet based on the data mapping parameter and schedule options provided as part of Web Service call.

Support

This method can only support creation of activities in project/shell (cost code type CBS) level schedule sheets.

Installation: ASP and Self host

Level	Yes or No
Company Level	No
Project/Shell Level	Yes

Prototype

public XMLObject createScheduleActivitiesV2(String shortname, String authcode, String projectNumber, String sheetName, String sheetXML, String scheduleOptions);

Parameters

Parameter	Description
Shortname	Identifier of the company, company's short name
Authcode	Authentication code for the company, in text string
projectNumber	Identifier of a project/shell.
sheetName	Name of Schedule Sheet to import activities into.
sheetXML	Content of activities to import. This is obtained from the Primavera P5/P6 xml content. The Primavera XML content should be generated by exporting the full Primavera project.
scheduleOptions	This element will allow message to carry optional information. Following are the tags under this element: ▸ <MapName/> ▸ <ActivityIdentifier/> ▸ <CBS_NoOfLevelsToMerge/> ▸ <CBS_StartMergeFrom/>
MapName	Name of the data mapping that should be used while processing an XML file. If there is no map name, the one marked "Default" in Unifier on the schedule sheet will be used.

Parameter	Description
ActivityIdentifier	Possible values are the globally unique identifier (GUID)or ID. ID is the tag of Activity Id in Primavera. This tag will be used if you want to update an activity through udpateScheduleActivities webservice call. If Id tag is used for create and update, the value provided under Id tag will be used as task / activity identifier.
CBS_NoOfLevelsToMerge	This parameter will take a numeric value. This parameter can be used by user to specify how many levels (CBS Levels) in P6 XML file should be merged. EXAMPLE: Assume that P6 has following structure: (5.ON.DA.DA03.F350.U11.095.ABC20.CAct04). If you specify 3, three levels will be merged and the 3 segments will be based on the next parameter (CBS_startmergefrom). Value of this parameter can be 0.
CBS_StartMergeFrom	This parameter will take a numeric value. Value of this parameter will be used to determine the level from which this merge should start. EXAMPLE: In the above example, if a user specifies 2, the system will start from level 2 and merge ON, DA and DA03. So after the merge the CBS Code build by import program will be 5.ONDADA03.F350.U11.095.ABC20.CAct04. Value of this parameter can be 0.

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Sample Method

createScheduleActivitiesV2("acme","acme_authcode","Proj-0001","Schedule Sheet 001", "<XML Content>","<scheduleoptions>");

Additional Information

You must perform appropriate data mapping setups on the target schedule sheet. This includes mapping Unifier Schedule Sheet columns to Primavera XML elements and setting appropriate XML Import options. Only elements that are mapped will be copied.

This method can only be used to create new activities not for updating existing activities.

If invoked on an empty schedule sheet, this method will insert activities into the schedule sheet. If invoked on a non-empty schedule sheet, it will overwrite all existing activities (delete and recreate) in the non-empty schedule sheet if this function is allowed in the data mapping setup.

If the method is called on a non-empty schedule sheet and the data mapping setup does not allow overwrite, the method will return an error in the response.

This service can be used for Projects/Shells of cost code type CBS.

- Activity identified with this creation method can be GUID or ID
- CBS Code will be derived automatically based on the XML file. For more information, see ***Associate CBS Codes with Activities*** (on page 45).

Create Schedule Activities from file V2

Figure 38: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This option will allow user to process a P6 XML file and add activities and resources to a Unifier schedule sheet. Along with activity information this process will also take activity spread information. Since the activity spread information data can be a lot, this method allows user to send in information in a .zip file.

Support

Installation: ASP and Self host

Level	Yes or No
Company Level	No
Project/Shell Level	Yes

Prototype

public XMLObject createScheduleActivitiesFromFileV2(String shortname, String authcode, String projectNumber, String sheetname, String scheduleoptions, String iszipfile, FileObject[] files);

Parameters

Parameter	Description
Shortname	identifier of the company, company's short name
Authcode	authentication key for the company, in text string
projectNumber	Identifier of the project/shell.
sheetName	Identifies the name of the schedule sheet.
iszipfile	This tag identifies if the file provided under files tag is a zip file or .xml file with just activity and resource information. If user wants to send activity spread information, the value of this tag should be yes and the file provided under files tag should be a zip file containing activity/ resource information and the spread information.
files	FileObject containing the Activity / Resource information and the activity spread information. FileObject is made up of two components String filename (this should be the name of the zip file) and the zip file with two files, one for activity / resource information and one with activity spread information. Name of the activity/ resource information should be same as the one given under <scheduleoptions>.<ActivityFileName>tag and the name of the name of the activity spread information should be same as the one given under <scheduleoptions>.<SpreadFileName>.
scheduleOptions	This element will allow message to carry optional information. Following are the tags under this element: <MapName/> <ActivityIdentifier/> <CBS_NoOfLevelsToMerge/> <CBS_StartMergeFrom/> <ActivityFileName/> <SpreadFileName/>
MapName	Name of the data mapping that should be used while processing XML file

Parameter	Description
ActivityIdentifier	Possible values are GUID, ID. ID is the tag of Activity Id in Primavera.
CBS_NoOfLevelsToMerge	This parameter will take a numeric value. This parameter can be used by user to specify how many levels (CBS Levels) in P6 XML file should be merged. EXAMPLE: Assume that P6 has following structure: (5.ON.DA.DA03.F350.U11.095.ABC20.CAct04). If you specify 3 then three levels will be merged, and the 3 segments will be based on the next parameter (CBS_startmergefrom)
CBS_StartMergeFrom	▸ This parameter will take a numeric value. Value of this parameter will be used to determine the level from which this merge should start. ▸ EXAMPLE: In the above example, if a user specifies 2, the system will start from level 2 and merge ON, DA and DA03. So after the merge the CBS Code build by import program will be 5.ONDADA03.F350.U11.095.ABC20.CAct04
ActivityFileName	Name of the file that contains the activity and resource information. Please refer to files tag
SpreadFileName	Name of the activity spread file name. Please refer to files tag

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Sample Method

createScheduleActivitiesFromFileV2("acme","acme_authcode","Proj-0001","Schedule Sheet 001", "<XMLContent>","yes","<scheduleoptions>",files);

Additional Information

Format of spread file should be similar to Sample Spread Data example.

While processing spread information, the system will only look for <amt> tag.

If the Import from external source option is checked in Unifier and spread information is not available in XML file then system will error out. This error condition is also valid when this tag is not available in the XML file.

Activity File should start and end with <List_Wrapper> tag

Spread file should not contain any <List_Wrapper> tag

Update Schedule Sheet Activities from Oracle Primavera P5 and P6 XML

Figure 39: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method will insert/update activities into any project/shell schedule sheet. It will not overwrite existing activities in the schedule sheet.

Support

This method can only update activities in project/shell-level schedule sheets.

Installation: ASP and Self host

Level	Yes or No
Company Level	No
Project/Shell Level	Yes

Prototype

public XMLObject updateScheduleActivities(String shortname, String authcode, String projectNumber, String sheetName, String sheetXML);

Parameters

Parameter	Description
shortname	Identifier of the company, company's short name
authcode	Authentication code for the company, in text string
projectNumber	Identifier of a project/shell.
sheetName	Name of Schedule Sheet to import activities into.

Parameter	Description
sheetXML	Content of activities to import. This is obtained from the Primavera P5/P6 xml content. The Primavera XML content should be generated by exporting the full Primavera project.

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Sample Method

updateScheduleActivities("acme","acme_authcode","Proj-0001","Schedule Sheet 001", "<XML Content>");

Additional Information

You must perform appropriate data mapping setups on the target schedule sheet. This includes mapping Unifier Schedule Sheet columns to Primavera XML elements and setting appropriate XML Import options.

This method will insert/update activities into any project/shell schedule sheet. It will not overwrite existing activities in the schedule sheet. The method will utilize the data mapping setup to update only those elements that are mapped.

The method errors out if the data mapping option does not allow merge.

Activities are uniquely identified within Primavera by the Globally Unique Id (<GUID>). The GUID is assumed to be unique not just within Primavera but across all products including Unifier.

Resource assignments will be imported (inserted/updated) if the 'Import Resource Assignments' check box is selected. Resource assignments will be matched by Resource Name.

This service can be used for Projects/Shells of cost code type CBS.

Update Schedule Sheet Activities V2 from Oracle Primavera P6 XML

Figure 40: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method will insert/update activities into any project/shell schedule sheet. It will not overwrite existing activities in the schedule sheet based on the data mapping parameter.

Support

This method can only support updating of activities in project/shell-level schedule sheets.

Installation: ASP and Self host

Level	Yes or No
Company Level	No
Project/Shell Level	Yes

Prototype

public XMLObject updateScheduleActivitiesV2(String shortname, String authcode, String projectNumber, String sheetName, String sheetXML, String scheduleOptions);

Parameters

Parameter	Description
shortname	Identifier of the company, company's short name
authcode	Authentication code for the company, in text string
projectNumber	Identifier of a project/shell.
sheetname	Name of Schedule Sheet to import activities into.
sheetXML	Content of activities to import. This is obtained from the Primavera P5/P6 xml content. The Primavera XML content should be generated by exporting the full Primavera project.
scheduleOptions	This element will allow message to carry optional information. Following are the tags under this element: <MapName/> <ActivityIdentifier/> <CBS_NoOfLevelsToMerge/> <CBS_StartMergeFrom/> <ActivityDeletion/>
MapName	Name of the data mapping that should be used while processing XML file
ActivityIdentifier	Possible values are GUID, ID. ID is the tag of Activity Id in Primavera.

Parameter	Description
CBS_NoOfLevelsToMerge	This parameter will take a numeric value. This parameter can be used by user to specify how many levels (CBS Levels) in P6 XML file should be merged. ▸ EXAMPLE: Assume that P6 has following structure (5.ON.DA.DA03.F350.U11.095.ABC20 .CAct04) If you specify 3 then two levels will be merged. But which 3 segments will be based on the next parameter (CBS_startmergefrom)
CBS_StartMergeFrom	▸ This parameter will take a numeric value. Value of this parameter will be used to determine the level from which this merge should start. ▸ EXAMPLE: In the above example, if a user specifies 2, the system will start from level 2 and merge ON, DA and DA03. So after the merge the CBS Code build by import program will be 5.ONDADA03.F350.U11.095.ABC20.C Act04
ActivityDeletion	Indicate to delete activities from schedule sheet in Unifier if it is deleted in P6.

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Sample Method

updateScheduleActivitiesV2("acme","acme_authcode","Proj-0001","Schedule Sheet 001", "<XML Content>","Data Mapping 001","Id");

Additional Information

You must perform appropriate data mapping setups on the target schedule sheet. This includes mapping Unifier Schedule Sheet columns to Primavera XML elements and setting appropriate XML Import options.

This method will insert/update activities into any project/shell schedule sheet. The method will utilize the data mapping setup to update only those elements that are mapped.

The method errors out if the data mapping option does not allow merge.

Activities are uniquely identified within Primavera by the Globally Unique Id (<GUID>) or the identified provided as part of XML file. GUID will be used if ActivityIdentifier is empty or blank.

Resource assignments will be imported (inserted/updated) if the ‘Import Resource Assignments' check box is selected. Resource assignments will be matched by Resource Name.

This service can be used for Projects/Shells of cost code type CBS.

- Activity identified with this creation method can be GUID or ID
- On the options tab of Data Mapping, merge existing schedule option should be checked.
- CBS Code will be derived automatically based on the XML file. For more information, see ***Associate CBS Codes with Activities*** (on page 45).
- ActivityDeletion tag logic is based on the "Delete Activity" check box available on data mapping window in Unifier. Following is the logic for this tag. ActivityDeletion tags are only considered for updateScheduleSheetFromFileV2 service and not for create.

Delete Check Box	Activity Deletion	Behavior
Deselected	Auto or Confirm	Activity Deletion tag is ignored. Activities that are removed under source schedule will not be removed from the Schedule Sheet.
Selected	Auto	Activity Deletion tag is considered. Activities that are removed under source schedule will be deleted automatically under Unifier Schedule Sheet.
Selected	Confirm	Activity Deletion tag is considered. Activities that are removed under source schedule will not be deleted. System will return an error and will not update Unifier schedule sheet. If no activities are removed under source schedule, the system will update the Schedule Sheet.

Update Schedule Activities From File V2

Figure 41: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This option will allow user to process a P6 XML file and add and update activities and resources to a Unifier schedule sheet. Along with activity information this process will also take activity spread information.

Support

Installation: ASP and Self host

Level	Yes or No
Company Level	No
Project/Shell Level	Yes

Prototype

public XMLObject updateScheduleActivitiesFromFileV2(String shortname, String authcode, String projectNumber, String sheetname, String scheduleoptions, String iszipfile, FileObject[] files);

Parameters

Parameter	Description
Shortname	identifier of the company, company's short name
Authcode	authentication key for the company, in text string
projectNumber	Identifier of the project/shell.
sheetName	Identify the name of the schedule sheet.
iszipfile	This tag identifies if the file provided under files tag is a zip file or .xml file with just activity and resource information. If user wants to send activity spread information, the value of this tag should be yes and the file provided under files tag should be a zip file containing both activity and resource information and the spread information.

Parameter	Description
files	FileObject containing the Activity / Resource information and the activity spread information. FileObject is made up of two components String filename (this should be the name of the zip file) and the zip file with two files, one for activity / resource information and one with activity spread information. Name of the activity/ resource information should be same as the one given under <scheduleoptions>.<ActivityFileName>tag and the name of the name of the activity spread information should be same as the one given under <scheduleoptions>.<SpreadFileName>.
scheduleOptions	This element will allow message to carry optional information. Following are the tags under this element: <MapName/> <ActivityIdentifier/> <CBS_NoOfLevelsToMerge/> <CBS_StartMergeFrom/> <ActivityDeletion> <ActivityFileName> <SpreadFileName>
MapName	Name of the data mapping that should be used while processing XML file
ActivityIdentifier	Possible values are GUID, ID. ID is the tag of Activity Id in Primavera.
CBS_NoOfLevelsToMerge	This parameter will take a numeric value. This parameter can be used by user to specify how many levels (CBS Levels) in P6 XML file should be merged. ▸ EXAMPLE: Assume that P6 has following structure (5.ON.DA.DA03.F350.U11.095.ABC20.CAct04) If you specify 3 then two levels will be merged. But which 3 segments will be based on the next parameter (CBS_startmergefrom)

Parameter	Description
CBS_StartMergeFrom	▸ This parameter will take a numeric value. Value of this parameter will be used to determine the level from which this merge should start. ▸ EXAMPLE: In the above example, if a user specifies 2, the system will start from level 2 and merge ON, DA and DA03. So after the merge the CBS Code build by import program will be 5.ONDADA03.F350.U11.095.ABC20.CAct04
ActivityDeletion	This tag will allow user to determine if the activities that do not exist in P6 should be deleted from Unifier schedule sheet. Possible values are Auto / Confirm.
ActivityFileName	Name of the file that contains the activity and resource information. Please refer to files tag
SpreadFileName	Name of the activity spread file name. Please refer to files tag

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Sample Method

updateScheduleActivitiesFromFileV2 ("acme","acme_authcode","Proj-0001","Schedule Sheet 001", "<XML Content>","yes","<scheduleoptions>",files);

Additional Information

ActivityDeletion tag logic is based on the "Delete Activity" check box available on the data mapping window. Following is the logic for this tag.

Delete Check Box	Activity Deletion	Behavior
Deselected	Auto or Confirm	Activity Deletion tag is ignored. Activities that are removed under source schedule will not be removed from Unifier Schedule Sheet

Delete Check Box	Activity Deletion	Behavior
Selected	Auto	Activity Deletion tag is considered. Activities that are removed under source schedule will be deleted automatically under the Schedule Sheet.
Selected	Confirm	Activity Deletion tag is considered. Activities that are removed under source schedule will not be deleted. System will return an error and will not update the schedule sheet. If no activities are removed under source schedule, system will update Unifier Schedule Sheet.

ActivityDeletion tags are only considered for updateScheduleSheetFromFileV2 service and not for create.

While processing spread information, the system will only look for ""tag.

If the Import from external source option is checked in Unifier and spread information is not available in XML file then system will error out. This error condition is also valid when this tag is not available in the XML file.

Activity File should start and end with <List_Wrapper> tag

Spread file should not contain any <List_Wrapper> tag

Get Schedule Sheet Activities from Unifier

Figure 42: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method will extract activities from any project/shell (cost code of type CBS) schedule sheet.

Support

This method can only extract activities from project/shell-level schedule sheets.

Installation: ASP and Self host

Level	Yes or No
Company Level	No
Project/Shell Level	Yes

Prototype

public XMLObject getScheduleActivities(String shortname, String authcode, String projectNumber, String scheduleSheet);

Parameters

Parameter	Description
Shortname	Identifier of the company, company's short name
Authcode	Authentication code for the company, in text string
projectNumber	Identifier of a project/shell.
scheduleSheet	Name of Schedule Sheet to import activities into.

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Sample Method

getScheduleActivities("acme", "acme_authcode", "Proj-0001","Schedule Sheet 001");

Additional Information

The XML return object contains a Unifier specific format. You will need to write additional integration logic to convert it to other formats.

This service can be used for Projects/Shells of cost code type CBS.

Get a List of Project Schedule Sheets

Figure 43: Support for SOAP is deprecated starting with Unifier 23.10.

Description

This method will return a list of Schedule Sheets within a project/shell.

Support

This method can only list Schedule Sheets from projects/shells.

Installation: ASP and Self host

Level	Yes or No
Company Level	No
Project/Shell Level	Yes

Prototype

public XMLObject getScheduleSheetList(String shortname, String authcode, String projectnumber, String options);

Parameters

Parameter	Description
shortname	Identifier of the company, company's short name
authcode	Authentication code for the company, in text string
projectnumber	Identifier of a project/shell.
options	This parameter allows the user to filter the list based on the following: <status>: select a status of Active or Inactive. If no status is provided, all sheets are returned. <main_sheet>: Set to true or false to specify whether the master sheet is to only be returned. Setting true will return only the master schedule. <filter_condition>: two filter conditions are available; name and sheet_lock. The name is the name of the sheet and sheet_lock can have a value of true or false to only return locked schedule sheets.

Return Value

See ***Appendix A: Return Values*** (on page 1113). Message will return list of Schedule Sheets based on filter condition.

Sample Method

getScheduleSheetList("acme", "acme_authcode", "P-000001", status=Active);

Get a List of Schedule Sheet Data Mappings

Figure 44: Support for SOAP is deprecated starting with Unifier 23.10.

Description

This method will return a list of Data Mappings configured for a Schedule Sheet within a project/shell.

Support

This method can only list Data Mappings from Schedule Sheets within projects/shells.

Installation: ASP and Self host

Level	Yes or No
Company Level	No
Project/Shell Level	Yes

Prototype

public XMLObject getScheduleSheetDataMaps(String shortname, String authcode, String projectnumber, String sheetname, String options);

Parameters

Parameter	Description
shortname	Identifier of the company, company's short name
authcode	Authentication code for the company, in text string
projectnumber	Identifier of a project/shell.
sheetname	Identifier of the schedule sheet within the project/shell.
options	This parameter allows the user to filter the list based on the following: <datamap_name>: The name of a specific data mapping to be retrieved. <filter_condition>: one filter conditions is available; isdefault. If set to true only the data mapping flagged as the default will be returned.

Return Value

See ***Appendix A: Return Values*** (on page 1113). Message will return list of Schedule Sheets based on filter condition.

Sample Method

getScheduleSheetDataMaps ("acme", "acme_authcode", "P-00001", "Master Schedule", isdefault=true);

User Defined Reports (UDR) Methods

Figure 45: Support for SOAP is deprecated starting with Unifier 23.10.

Get UDR Data

Figure 46: Support for SOAP is deprecated starting with Unifier 23.10.

Description

This method gets XML data from UDR output.

Support

This process is supported under both company and project/shell-level reports. Only reports that are marked for Integration are eligible for integration.

Installation: ASP and Self host

Level	Yes or No
Company Level	Yes
Project/Shell Level	Yes

Prototype

public XMLObject getUDRData(String shortname, String authcode, string projectNumber, String reportName);

Parameters

Parameter	Description
shortname	identifier of the company, company's short name

Parameter	Description
authcode	authentication key for the company, in text string
projectNumber	identifier of the project/shell. If you want to get company-level report, pass null for this parameter.
reportName	name of the report user defined report

Return Value

Response will contain following data elements

Tag Name	Description
<report>	Main report tag
<report_header>	Element that carries all report header column names.
<report_row>	Element that carries data of all rows. This element will also show following information: **Group By**: If report has group by condition, the data value will show under this element **Subtotal:** If report is configured to show sub-total, the data value will show under this element **Count:** If report is configured to show count, the data value will show under this element.

Sample Method

getUDRData ("acme", "acme_authcode", "project_info", "Funding Report")

The XML output of an UDR will be based on report design.

- Tabular UDR with no Group
- Tabular UDR with Group
- Tabular UDR with Sub-Total
- Tabular UDR with Count
- Cross Tab UDR
- Summary UDR
- Alert UDR

Additional Information

A user-defined report (UDR) always runs upon receiving the message. This ensures that the latest data is returned.

Web Services call does not need any additional permission to run a UDR that is marked for Integration.

If UDR has query parameters defined, the Web Services method will retain that if the query parameters are pre-populated during report design.

Following are the failure reasons and descriptions:

Reason	Description
Report name is not valid. Check if report exists or is enabled for Integration	Invalid Report Name (If report does not exist or is not marked for Integration)
Unable to run report. Contact System Administrator	While running report if there is a system error or for any reason Unifier cannot run this report

This service can be used for Projects/Shells of cost code type CBS and Generic.

In case of the getUDR web-service call:

- If the report data being retrieved is based on permission aware data sources, nothing will be returned.
- If the report being retrieved is based on system defined data sources, it will work as per existing functionality.

Cost Sheet Methods

Figure 47: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Get Column Data

Figure 48: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method gets data from a project/shell (with cost codes CBS) cost sheet column.

Support

This method is only supported for cost sheet columns. The Get Column Data Web Services call method will only fetch data for the following combination of Type and Datasource:

(1) Type = Direct Entry and Datasource = Project Cost (1 - 100)

(2) Type = Line Item Content and Datasource = Project Cost (1 - 100)

(3) Type = Line Item Content and Datasource = AFC

(4) Type = Line Item Content and Datasource = YTB (Yet To Buy)

Installation: ASP and Self host

Level	Yes or No
Company Level	No
Project/Shell Level	Yes

Prototype

public XMLObject getColumnData(String shortname, String authcode, string projectNumber, String ColumnName);

Parameters

Parameter	Description
shortname	identifier of the company, company's short name
authcode	authentication key for the company, in text string
projectNumber	Identifier of the project/shell.

Parameter	Description
columnName	Identifier of the cost sheet column. This is case-sensitive and should be the name of Column that is defined in Unifier.

Return Value

See ***Appendix A: Return Values*** (on page 1113). Response will contain following data elements.

Tag Name	Description
<CBS_code>	CBS Code is a required field.
<short_description>	Short Description
<long_description>	Long Description
<work_package>	Work Package Name
<spends_category>	Spends Category Label
<quantity>	Quantity
<unit_of_measure>	Unit of Measure
<unit_cost>	Unit Cost Label
<amount>	Amount

Sample Method

getColumnData("acme", "acme_authcode", "project_info","my column name")

Additional Information

Following are the failure reasons and descriptions:

Reason	Description
Column is not valid	Invalid Column Name
Column is not manual	Column is not defined as manual entry

If the cost sheet column entry method is "Line Item Content," this web service call will only return lines for CBS Code which has valid lines. For example, if there are 2 CBS Codes on cost sheet and one has line item content and other does not then only CBS Code with line item content will be returned.

If the cost sheet column entry method is "Direct Entry," this web service call will return a line for a CBS Code even if there is no data manually entered against that CBS Code in project/shell cost sheet. For example, if there are 2 CBS Codes on cost sheet and one has a value entered directly on cost sheet and other does not have any value, even then this service call will return 2 lines, one for each CBS Code. Following are the elements that will be returned as part of each CBS Code.

Observe that short_description element will automatically get a value "Direct Entry Line Item". This is to indicate that the value was entered directly on cost sheet.

This service can be used for projects/shells of cost code type CBS.

Update Column Data

Figure 49: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method updates data of a project/shell (cost code type CBS) cost sheet column. This method replaces entire data.

Support

This method can only support for project/shell level cost sheet column that is defined as Manual Entry Method. This column does not support Assigned Budget column. This method does not support incremental or delta changes to a column.

Installation: ASP and Self host

Level	Yes or No
Company Level	No
Project/Shell Level	Yes

Prototype

public XMLObject updateColumnData(String shortname, String authcode, string projectNumber, String ColumnName, String DataXML);

Parameters

Parameter	Description
shortname	identifier of the company, company's short name
authcode	authentication key for the company, in text string
projectNumber	Identifier of the project/shell.
columnName	Identifier of the cost sheet column. This is case-sensitive and should be the name of Column that is defined in Unifier.
columnXML	identifier for Column content in XML format

Return Value

DataXML Elements

The elements that include as part of DataXML parameter are:

Tag Name	Description
<CBS_code>	CBS Code is a required field.
<short_description>	This is a required field.
<long_description>	This is an optional field
<work_package>	This is an optional field. But use should specify a work package name which is valid under a project/shell. Data entered under this element will be ignored for company-level cost column
<spends_category>	This is an optional field. Data sent through this data element should be validated against the data set values
<quantity>	This is an optional field. Data sent through this data element should be numeric. Any other data will be considered as illegal and error should be returned back to user. If user did not send a value for this, "0" will be assumed as value.
<unit_of_measure>	This is an optional field. Data sent through this data element should be validated against the data set values
<unit_cost>	This is an optional field. Data sent through this data element should be numeric. Any other data will be considered as illegal. If user did not send a value for this, "0" will be assumed as value.
<amount>	This is an optional field. User cannot enter any value for this element. Value of this data element should be automatically calculated as (Quantity * Unit Cost)

Project/Shell → Administrator will be used as user who is performing this integration. Audit log will track and trace all changes done through this web services method.

Sample Method

updateColumnData("acme", "acme_authcode", "project_info","my column name", "DataXML")

Additional Information

Following are the failure reasons and descriptions:

Reason	Description
Column is not valid	Invalid Column Name
Column is not manual	Column is not defined as manual entry
Administrator is inactivated	Administrator is inactive. Cannot create column data.

This service can be used for projects/shells of cost code type CBS.

Business Process (BP) Methods

Figure 50: Support for SOAP is deprecated starting with Unifier 23.10.

Create BP Record

Figure 51: Support for SOAP is deprecated starting with Unifier 23.10.

Description

This method can be used to:

- Create business process records in Unifier based on Integration design that has been defined in uDesigner. For more information, refer to the *Unifier uDesigner User Guide*.
- Create group line items together. You can assign a group name to provide the context of the line items.

If you want to create a BP record with line item information, you must use this service. If this is a cost related BP, line items will be rolled up to the cost sheet.

> **Note**: When you a create record through a web service, and you want to send the newly created record with a record number (record_no) value to Unifier, to avoid duplicating record numbers, do not include a value for the next record number because the value has already been configured in the BP setup. You can only enter a value in the record number (record_no) field, if you are getting the value from an external system, or you are self-generating a value, and the value does not fall into the same sequence number pattern as set in the BP setup. In this scenario, when you are sending the record number (record_no) value to the application, it is important to know that providing a unique record number

(record_no) value is your responsibility.

See ***Create BP Record (Additional Information)*** (on page 114) for important additional details.

Support

This process supports all type of BPs

Installation: ASP and Self host

Level	Yes or No
Company Level	Yes
Project/Shell Level	Yes

Prototype

public XMLObject createBPRecord(String shortname, String authcode, string projectNumber, String BPName, String BPXML);

Parameters

Parameter	Description
shortname	identifier of the company, company's short name
authcode	authentication key for the company, in text string
projectNumber	Identifier of the project/shell. If you want to create a BP record at company level, pass null for this parameter.
BPName	Identifier of the business process, for example: Invoice. This is case-sensitive and should be the name as given in uDesigner.
BPXML	identifier for BP content in XML format

BPXML Elements

The elements that include as part of BPXML parameters is dependent on the Integration interface design of your BP in uDesigner. XML format can be exported (downloaded) from uDesigner. Elements with direction marked as "Input" or "Both" will be part of XML format.

Note that elements lists should be send based on the type of BP and your design in uDesigner.

Following a list of elements that can be included as part of integration design in uDesigner and behavior when you include them. Note that elements lists should be sent based on the type of BP for which you are creating a record.

Tag Name	BP Type	Description
<amount>	Cost	Amount is a required field if you are sending line item information under _bp_lineitems. You will see same value on Unifier.
<CBS_code>	Cost	CBS Code is a required field if you are sending line information under _bp_lineitems.
<status>	Any	a) If BP uses a status field then you can send status tag. b) If the BP is a workflow based, the record will be created and will stay in the initial status that is valid. User must go through remaining workflow process. c) If it is non-workflow based, the message can send a valid status and the record will take that status. If there is only one status defined for the BP, by default that status will be picked even if user sends a wrong status value.

Tag Name	BP Type	Description
<record_no>	Any	You can send record number by using this tag. If you do not specify a record_no tag as part of message, a new record will be created. The system will assign a record number. If you specify a record_no then system will create a record with the given record number. If the record number is a duplicate number, an error message will be send back as response. If the record_no is specified and if it does not exist, a new record will be created.
<_comment>	Text BP	Enter the responses (comments) associated with the BP record.
<li_group_name>	All BPs that support Summary line items other than Summary Payment Application BPs of Base Commit, Change Commit and Payment Applications.	Use to specify group name.

Return Value

See ***Appendix A: Return Values*** (on page 1113). This is dependent on which WSDL you are going to use.

If you use WSDL -1, you should expect XMLObject as return value.

If you use WSDL - 2, you should expect XMLFileObject as return value.

Create BP Record (Additional Information)

Figure 52: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

This topic includes additional information about creating BP records.

Sending Integration Request

When you send an integration request that updates or inserts a formula field, check to ensure that the input data for the formula field complies with the data definition. If the input data for the formula field does not comply with the data definition, the system will reject your request for update or insert.

BP XML Structure

To get the BP XML structure, first send a message to get BP record. Refer to the Web Service ***getBPRecord*** for more information.

Interface

This interface can be extended with additional data elements. For Unifier to recognize those elements, the data element name must match those created in uDesigner for this business process.

YTB/AFC

If the tags YTB or AFC are present in the line items, the system processes these tags. If they are not present, Unifier will check the uDesigner BP setup configuration for Cost Adjustment. If this field has been set, the line item amount is treated as YTB/AFC and processed.

Single Record BP

Record Exists

If you send a message for a single record BP and the record exists, Unifier will not send back an error; but if you send an invalid record number, it will send back an error.

Record does not exist

If you send a message for single record BP and a record does not exist, Unifier will create a record for you. If the BP type is of Line item, any line items included in the message will be added to the BP record. If the BP type is of Simple, any line items added as part of message will be ignored.

If your BP has **uuu_creation_date** then it will be populated when you send a message

If your Cost BP has fund related information, you must send Fund code details. If you are using multi segment fund code, send the code segments with delimiters.

Example:

Fundseg1-Fundseg2-Fundseg3.

The fund information send as part of Cost BP will be rolled up to Funding Sheet or Cost Sheet.

You cannot send fund related information for Cost Type BPs such as General Spends and Payment Applications.

All data element values provided as part of integration message will be validated against the action form selected as part of design in uDesigner. Validation includes required field, form validation, and so on.

The following XML tag <_refnum> </refnum> should be added under BP line item tag <_bp_lineitem> </bp_lineitem> to support the ability to import the line items for General Spends and Payment Applications if SOV is individual line items. For Group by commit codes lines are identified by CBS Code.

If the action form used for validation is auto-populating values from a Business Process picker, the system will auto-populate these values if a valid value is provided for that Business Process Picker.

This service can be used for Projects/Shells of cost code type CBS and Generic.

Additional element and sub elements (XML tags) within the line items (_bp_lineitems) of Summary Payment Application SOV Type

To perform Cost allocation to line items, use the following information:

Note: For additional details, refer to the *Unifier Data Reference Guide*.

Tag Name	BP Type	Description
<_cost_allocation>	Cost (Base Commit and Change Commit of Summary Payment Application SOV type)	Cost allocation for the summary line item will be done using _cost_allocation.
<bItemID>	Cost (Base Commit and Change Commit of Summary Payment Application SOV type)	bItemID, which is CBS Code, is a required field if you are sending costed line item information under _cost_allocation.
<short_desc>	Cost (Base Commit and Change Commit of Summary Payment Application SOV type)	Required field.
<uuu_quantity>	Cost (Base Commit and Change Commit of Summary Payment Application SOV type)	Required field if cost line item type specified in _bp_lineitems has been set as Unit Cost. The Unit Cost information is specified in _bp_lineitems.

Tag Name	BP Type	Description
<amount>	Cost (Base Commit and Change Commit of Summary Payment Application SOV type)	Required field if cost line item type specified in _bp_lineitems has been set as Lump Sum.
<_bp_lineitems>	Cost (Base Commit and Change Commit of Summary Payment Application SOV type)	Optional field. Use when modifications are needed for line items that have already been committed in an SOV.

The Payment Application detail form is a customized form that is designed in uDesigner. This form will have a set of fixed and user-defined fields. The Input XML for Payment Application will include the following:

- All existing XML tags that are currently applicable for the classic Payment Application Business Process.
- The tags listed in the following table:

Note: The table only lists the system defined Data Element behavior specific to Payment Applications of SPA SOV type

Available for data input in Elements	Tags / Data elements specific to Payment Application	Additional comments
_bp_lineitems and _cost_allocation	Reference (_refnum)	This will be the identifier for the line item that needs to be paid. This field cannot be empty when the _bp_lineitems block has values in other fields. This will be the identifier for the costed line item as well.
_cost_allocation	bItemID (Cost Code)	This field cannot be empty when the _cost_allocation block has values in the other fields. Combination of _refnum and bItemID will be used to identify the costed line against which the payment has to be made. If there are duplicate _refnum and CBS codes in multiple cost allocation blocks then the creation/update will fail.

Available for data input in Elements	Tags / Data elements specific to Payment Application	Additional comments
_bp_lineitems and _cost_allocation	short_desc (Description)	Both at summary and costed line levels.
_bp_lineitems and _cost_allocation	uuu_spa_qty_tp (Quantity this Period)	Since the Input XML will be common for both Lump Sum and Unit cost the tags will always be available. Any value entered in this field when cost type is Lump Sum, will be ignored.
_bp_lineitems and _cost_allocation	uuu_spa_amt_tp (Amount this Period)	Since the Input XML will be common for both Lump Sum and Unit cost the tags will always be available. Any value entered in this field when cost type is Unit Cost, will be ignored.
_bp_lineitems and _cost_allocation	uuu_spa_other_tp (Other Amount this Period	Both summary line items and costed lines can have this field value.
_bp_lineitems and _cost_allocation	uuu_spa_mat_stored (Material Stored)	Both summary line items and costed lines can have this field value.
_bp_lineitems	uuu_spa_per_comp (Percentage Complete To Date)	Only summary line items can have this field value.

Notes:

- The "_bp_lineitems" elements will be as per the detailed integration interface design.
- The "_cost_allocation" elements will mostly be the same as "_bp_lineitems" elements, but the editability of the fields is governed by the logic currently existing in the system.
- The Payment Application has certain restrictions regarding fields that can be edited at the Summary or Allocation levels:
- If the XML template has values in the "_bp_lineitems" elements that are not allowed, for example, CBS codes, such values are ignored.
- There are certain fields such as "uuu_cost_li_type" which should be entered only at the Summary level.
- If the XML has the value in the "_cost_allocation", such values are ignored.

Behavior Specific to Summary Payment Application SOV type BPs

The following information is applicable to the *Base Commit*, *Change Commit*, and *Payment Application Business Processes of Summary Payment Application SOV type*.

- Business Process records can be created both with and without line items, by using various Create methods.
- Standalone Create methods also exist by using a line items that can be added to an existing Business Process record, for example, Add BP Line Item.

In both cases mentioned above, you can add the summary line items along with the cost allocation.

For adding line items to the Change Commit BP records from SOVs (modifying committed line items) using Input XMLs use the following:

- The reference tag uuu_sovlinum in the _bp_lineitems element determines the SOV line that will be modified. The costed lines that need to be updated will be identified by the uuu_sovlinum and Cost Code/ bItemId. The combination of uuu_sovlinum and Cost Code/ bItemId must be unique. Post record creation of all costed lines belonging to the summary line item will be added.
- If the input XML has the cost line item type field, the system checks to ensure that the uuu_sovlinum and uuu_cost_li_type are as per SOV line. If there is a mismatch, the system generates an integration error.
- If the input XML has both uuu_sovlinum and uuu_cost_li_type fields, but the uuu_cost_li_type field has an invalid value, the system generates an integration error.
- If the input XML has just the uuu_sovlinum and the uuu_cost_li_type field is blank, no check will be performed for cost line item type validation.
- The Short description from a committed line comes from the SOV. When a line item has the uuu_sovlinum value, the short description field can empty. At runtime the value comes from SOV; however, if the short description value is included in the XML, the existing value replaces the one coming from SOV.

Payment Application

The following information is specific to Payment Application.

At the time of creating a Payment Application record, details of the line items that are getting paid will be entered in the Input XML. Post creation of the record, all the line items existing for the Commit record will be seen in the record.

Example

Payment is made against Contract CON-009 and this record has 5 line items which exist in the SOV, but the payment has to be made only for Line item 1. The input XML will have all the data for this line item. After a successful integration, PayApp-010 gets created. When you open this record, all the 5 line items will be seen in PayApp-010.

Validation

Since the system adds all the line items from the SOV, which do not exist in the Input XML, the system performs additional checks at the time of creating the record.

- All auto-population and default values set for String fields will be retained at the time of creating the records. If no auto-population and default values exist for these required string fields, the creation of record through integration will fail.
- All auto-population and default values for Numeric fields will also be retained. If no values exist, the system will default these fields to 0.
- Errors messages will be pertaining to the required field check validations.

Create Complete BP Record

Figure 53: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method can be used to create new business process records with attachments in Unifier based on Integration design that has been defined in uDesigner. It allows attachments to be added to the upper form and line items.

> **Note**: If you want to create a BP record with line item information with attachments, you should use this service. If this is a cost related BP, line items will be rolled up to the cost sheet.

Support

This process supports all type of BPs

Installation

ASP and Self host

Level	Yes or No
Company Level	Yes
Project/Shell Level	Yes

Prototype

public XMLObject createCompleteBPRecord(String shortname, String authcode, string projectNumber, String BPName, String BPXML, String iszipfile, FileObject[] fileobjects);

Parameters

Parameter	Description
shortname	identifier of the company, company's short name
authcode	authentication key for the company, in text string
projectNumber	Identifier of the project/shell. If you want to create a BP record at company level, pass null for this parameter.
BPName	Identifier of the business process, for example: Invoice. This is case-sensitive and should be the name as given in uDesigner.
BPXML	identifier for BP content in XML format
fileobjects	Array of FileObjects, each FileObject is made up of two components: String filename (this should be the same name as in the record data <_attachment><filename> tag, and javax.activation.DataHandler as filestream. Files can be sent as a single zipped file or individual files.
isZipFile	Identifies if the file provided under the fileobjects tag is a zip file. The value for this tag is "yes" or "no". Yes to allow zip file as an attachment. Otherwise, select No. **Note:** Only .zip file format is acceptable. When using .zip file as an attachment, you should attach one zip file at a time that includes a single attachment of each file in the zip file.

BPXML Elements

The elements that include as part of BPXML parameters is dependent on the Integration interface design of your BP in uDesigner. XML format can be exported (downloaded) from uDesigner. Elements with direction marked as "Input" or "Both" will be part of XML format.

Note that elements lists should be send based on the type of BP and your design in uDesigner.

Following a list of elements that can be included as part of integration design in uDesigner and behavior when you include them. Note that elements lists should be sent based on the type of BP for which you are creating a record.

Tag Name	BP Type	Description
<amount>	Cost	Amount is a required field if you are sending line item information under _bp_lineitems. You will see same value on Unifier.
<status>	Any	a) If BP uses a status field then you can send status tag. b) If the BP is a workflow based, the record will be created and will stay in the initial status that is valid. User must go through remaining workflow process. c) If it is non-workflow based, the message can send a valid status and the record will take that status. If there is only one status defined for the BP, by default that status will be picked even if user sends a wrong status value.

Tag Name	BP Type	Description
<record_no>	Any	You can send record number by using this tag. If you do not specify a record_no tag as part of message, a new record will be created. The system will assign a record number. If you specify a record_no then system will create a record with the given record number. If the record number is a duplicate number, an error message will be send back as response. If the record_no is specified and if it does not exist, a new record will be created.
attachment	Simple BP, Text BP, Line Item BP, Cost BP, Document Type BPs	Multiple attachment elements can be added to the upper form and to line items (if applicable). The attachment element contains sub elements that identify: File name Title Revision Number Issue Date Version Reference
<_comment>	Text BP	Enter the responses (comments) associated with the BP record.

Tag Name	BP Type	Description
<li_group_name>	All BPs that support Summary line items other than Summary Payment Application BPs of Base Commit, Change Commit and Payment Applications.	Use to specify group name.

Return Value

See ***Appendix A: Return Values*** (on page 1113). This is dependent on which WSDL you are going to use. If you use WSDL -1, you should expect XMLObject as return value and if you use WSDL - 2, you should expect XMLFileObject as return value.

Create Complete BP Record (Additional Information)

Figure 54: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

This topic includes additional information about creating complete BP records.

Acceptable File Formats

Only .zip file format is acceptable. When using a Zip file as an attachment, you should attach one zip file at a time that includes the single attachment for each file in the zip file. To get the BP XML structure, first send a message to get BP record. Refer to the Web Service ***getBPRecord*** for more information.

This interface can be extended with additional data elements. For Unifier to recognize those elements, the data element name must match those created in uDesigner for this business process.

YTB/AFC

If the tags YTB or AFC are present in the line items, the system processes these tags. If they are not present, Unifier will check the uDesigner BP setup configuration for Cost Adjustment. If this field has been set, the line item amount is treated as YTB/AFC and processed.

Single Record BP

Record Exists

If you send a message for a single record BP and a record exists, Unifier will not send back an error; but if you send an invalid record number, it will send back an error.

Record does not exist

If you send a message for single record BP and a record does not exist, Unifier will create a record for you. If the BP type is of Line item, any line items included in the message will be added to the BP record. If the BP type is of Simple, any line items added as part of message will be ignored.

If your BP has **uuu_creation_date,** it will be populated when you send a message.

If your Cost BP has fund related information, you must send Fund code details. If you are using multi segment fund code, send the code segments with delimiters.

Example

Fundseg1-Fundseg2-Fundseg3.

The fund information send as part of Cost BP will be rolled up to Funding Sheet or Cost Sheet.

All data element values provided as part of integration message will be validated against the action form selected as part of design in uDesigner. Validation includes required field, form validation, and so on.

If the action form used for validation is auto-populating values from a Business Process picker, the system will auto-populate these values if a valid value is provided for that Business Process Picker.

Attachments can be added to upper form and line items, and multiple records.

Files can be sent as a single zipped file or individual files for the complete transaction record, the same file can be referenced multiple times in the same transaction; however, files contained in the zip file should still be described by separate attachment elements.

API

This API requires Integration Design to be published in uDesigner for the business process.

Attachment file cross references is not supported. The reference sub element under attachments should always have the value ‘No'.

Adding attachments is optional. If attachment elements are not provided, the API behaves exactly like createBPRecord API.

> **Note**: This API is not compatible with non Java web services client platforms.

Total attachment size per request across all files is limited to 250 MB. It is recommended that files are compressed into 1 zip file for submission to the API.

This service can be used for Projects/Shells of cost code type CBS and Generic.

The following XML tag <_refnum> </refnum> should be added under BP line item tag <_bp_lineitem> </bp_lineitem> to support the ability to import the line items for General Spends and Payment Applications.

Creating Complete BP Record for Document type BP with Folder Structure

The Web Services calls support creating new records and allows users to include the line items assigned to a particular folder.

- The tag <folder_path> specifies the path of the folder for the line item. This tag exists in the current input XML for Document Type BP with folder structure.
- The folder path (<folder_path>) contains the names of the folders.
  - If the folders mentioned in the folder path do not exist, the folders are created and the line items are added to the last folder mentioned in the folder path.
  - If the folder names exist, the line items are created under the last folder mentioned in the path.
- The Input integration XML contains the tags, as part of bp_lineitems elements.
- The syntax of the entry for the <folder_path> field is: "/<Folder Name1>/"
- If you create the line items under the root node, the valid inputs within the tag are either "/" or blank.
- If the folder path is blank, the line item is created at the root node "Attachments" and the folder name will be "Attachments".
- If the line items have attachments in the <_attachment> elements, the line items are added to the respective folder.

When the folders are being created through Web Services, the validations (in web interface of Unifier) are completed during the naming of the folders. You can enter non-ASCII characters as folder names. For example, you can enter Chinese characters as folder names in the folder path.

Behavior Specific to Summary Payment Application SOV Type BPs

> **Note**: The information is applicable to Base Commit, Change Commit, and Payment Application Business Processes of Summary Payment Application SOV Type BPs.

For more details about XML tags, see Create and Add Methods in the ***Create BP Record (Additional Information)*** (on page 114) section.

Add BP Line Item

Figure 55: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method adds a BP line item to an existing business process record based on Integration design that has been defined in uDesigner. For more information, refer to the *Unifier uDesigner User Guide*.

This method can also be used to create new BP records with line items, check LineXML elements sub-topic to find out more.

Support

This process supports all type of BPs.

Installation

ASP and Self host

Level	Yes or No
Company Level	Yes
Project/Shell Level	Yes

Prototype

public XMLObject addBPLineItem(String shortname, String authcode, string projectNumber, string BPName, String ItemXML);

Parameters

Parameter	Description
shortname	identifier of the company, company's short name
authcode	authentication key for the company, in text string
projectNumber	identifier of the project/shell
BPName	identifier of the business process, for example: Invoice. This is case-sensitive and should be the name as given in uDesigner.
ItemXML	identifier for line item content in XML format

ItemXML Elements

The elements that include as part of LineXML parameter are dependent on the Integration interface design of your BP in uDesigner. ItemXML format can be exported (downloaded) from uDesigner. Elements with direction marked as "Input" or "Both" will be part of XML format.

The following is a list of elements that can be added as part of integration design and their behavior when you include them. Note that elements lists should be sent based on the type of BP for which you are creating a record.

Tag Name	BP Type	Description
<amount>	Cost	Amount is a required field if you are sending line item information under _bp_lineitems. You will see same value on Unifier.

Tag Name	BP Type	Description
<CBS_code>	Cost	CBS Code is a required field if you are sending line information under _bp_lineitems.
<record_no>	Any	You can send record number by using this tag. If you do not specify a record_no tag as part of message, a new record will be created with the line item information that is provided as part of ItemXML If you specify a record_no then system will add new line item(s) based on the data provided as part of ItemXML If the record_no is specified and if it does not exist, a new record will be created with the line item information that is provided as part of ItemXML.

Tag Name	BP Type	Description
<status>	Any	You can send record status by using this tag. This tag is valid only for multi-record BPs. If the record_no is specified and if it does not exist, a new record will be created with the line item information that is provided as part of ItemXML. If the BP is a workflow based, the record will be created and will be created and will stay in the initial status that is valid. User must go through remaining workflow process. If it is a non-workflow based, the message can send a valid status and the record will take that status. If there is only one status defined for the BP, by default that status will be picked even if user sends a wrong status value.
<li_group_name>	All BPs that support Summary line items other than Summary Payment Application BPs of Base Commit, Change Commit and Payment Applications.	Use to specify group name.

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Add BP Line Item (Additional Information)

Figure 56: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

This topic includes additional information about adding BP line items.

Interface

This interface can be extended with additional data elements. For Unifier to recognize those elements, the data element name has to match those created in uDesigner for this business process.

YTB/AFC

If the tags YTB or AFC are present in the line items, the system processes these tags. If they are not present, Unifier will check the uDesigner BP setup configuration for Cost Adjustment. If this field has been set, the line item amount is treated as YTB/AFC and processed.

To add a line item to company-level BP record, send null for projectNumber parameter. If you send a project number for a BP that is at company level, you will get an error that BP name is not correct.

This service can be used for Projects/Shells of cost code type CBS and Generic.

The following XML tag <_refnum> </refnum> should be added under BP line item tag <_bp_lineitem> </bp_lineitem> to support the ability to import the line items for General Spends and Payment Applications.

This service can be used to add lines to Payment Applications and General Spends type of business process. When adding lines to Payment Applications type of business process, existing lines if any will be removed and new lines will be added that are provided as part of the service call. For General spends line will be appended like any other business process.

Behavior Specific to Summary Payment Application SOV Type BPs

> **Note**: The information is applicable to Base Commit, Change Commit, and Payment Application Business Processes of Summary Payment Application SOV Type BPs.

For more details about XML tags, see Create and Add Methods in the ***Create BP Record (Additional Information)*** (on page 114) section.

Add Complete BP Line Item

Figure 57: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method adds a BP line item to an existing business process record based on Integration design that has been defined in uDesigner. For more information, refer to *Unifier uDesigner User Guide*. It allows multiple files to be attached to the BP line item.

This method can also be used to create new BP records with line items, check LineXML elements sub-topic to find out more.

Support

This process supports all type of BPs.

Installation

ASP and Self host

Level	Yes or No
Company Level	Yes
Project/Shell Level	Yes

Prototype

public XMLObject addCompleteBPLineItem(String shortname, String authcode, string projectNumber, string BPName, String ITemXML , FileObject[] fileobjects);

Parameters

Parameter	Description
shortname	identifier of the company, company's short name
authcode	authentication key for the company, in text string
projectNumber	identifier of the project/shell in Unifier
BPName	identifier of the business process in Unifier, for example: Invoice. This is case-sensitive and should be the name as given in uDesigner.
ItemXML	identifier for line item content in XML format
fileobjects	Array of FileObjects, each FileObject is made up of two components: String filename (this should be the same name as in the record data <_attachment><filename> tag, and javax.activation.DataHandler as filestream. Files can be sent as a single zipped file or individual files

ItemXML Elements

The elements that include as part of LineXML parameter are dependent on the Integration interface design of your BP in uDesigner. ItemXML format can be exported (downloaded) from uDesigner. Elements with direction marked as "Input" or "Both" will be part of XML format.

The following is a list of elements that can be added as part of integration design and their behavior when you include them. Note that elements lists should be send based on the type of BP for which you are creating a record.

Tag Name	BP Type	Description
<amount>	Cost	Amount is a required field if you are sending line item information under _bp_lineitems. You will see same value on Unifier.
<record_no>	Any	You can send record number by using this tag. If you do not specify a record_no tag as part of message, a new record will be created with the line item information that is provided as part of ItemXML If you specify a record_no then system will add new line item(s) based on the data provided as part of ItemXML If the record_no is specified and if it does not exist, a new record will be created with the line item information that is provided as part of ItemXML.

Tag Name	BP Type	Description
<status>	Any	You can send record status by using this tag. This tag is valid only for multi-record BPs. If the record_no is specified and if it does not exist, a new record will be created with the line item information that is provided as part of ItemXML. If the BP is a workflow based, the record will be created and will be created and will stay in the initial status that is valid. User must go through remaining workflow process. If it is a non-workflow based, the message can send a valid status and the record will take that status. If there is only one status defined for the BP, by default that status will be picked even if user sends a wrong status value.
attachment	Any	Multiple attachment elements can be added to the upper form and to line items (if applicable). The attachment element contains sub elements that identify: ▸ File name ▸ Title ▸ Revision Number ▸ Issue Date ▸ Version ▸ Reference

Tag Name	BP Type	Description
<li_group_name>	All BPs that support Summary line items other than Summary Payment Application BPs of Base Commit, Change Commit and Payment Applications.	Use to specify group name.

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Add Complete BP Line Item (Additional Information)

Figure 58: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

This topic includes additional information about adding complete BP line items.

Interface

This interface can be extended with additional data elements. For Unifier to recognize those elements, the data element name has to match those created in uDesigner for this business process.

YTB/AFC

If the tags YTB or AFC are present in the line items, Unifier processes these tags. If they are not present, Unifier will check the uDesigner BP setup configuration for Cost Adjustment. If this field has been set, the line item amount is treated as YTB/AFC and processed.

To add a line item to company-level BP record, send null for projectNumber parameter. If you send a project number for a BP that is at company level, you will get an error that BP name is not correct.

Attachments

Attachments can be added to line items.

Files can be sent as a single zipped file or individual files for the complete transaction record, the same file can be referenced multiple times in the same transaction. However, files contained in the zip file should still be described by separate attachment elements.

API

This API requires Integration Design to be published in uDesigner for the business process.

Attachment elements specified as part of upper form data will be ignored by this API.

Attachment file cross references is not supported. The reference sub element under attachments should always have the value ‘No'.

Adding attachments is optional. If attachment elements are not provided, the API behaves exactly like addBPLineItem API.

> **Note:** This API is not compatible with non Java web services client platforms.

Total attachment size per request across all files is limited to 250 MB. It is recommended that files are compressed into 1 zip file for submission to the API.

This service can be used for Projects/Shells of cost code type CBS and Generic.

The following XML tag <_refnum> </refnum> should be added under BP line item tag <_bp_lineitem> </bp_lineitem> to support the ability to import the line items for General Spends and Payment Applications.

This service can be used to add lines to Payment Applications and General Spends type of business process. When adding lines to Payment Applications type of business process, existing lines if any will be removed and new lines will be added that are provided as part of the service call. For General spends line will be appended like any other business process.

Adding Complete BP Line Item for Document type BP with Folder Structure

You can add additional line items (including a document) into a particular folder in the Document Type BP with folder structure for an existing, or new, BP record.

- The tag <folder_path> specifies the path of the folder for the line item. This tag exists in the current input XML for Document Type BP with folder structure.
- The folder path (<folder_path>) contains the names of the folders.
  - If the folders mentioned in the folder path do not exist, the folders are created and the line items are added to the last folder mentioned in the folder path.
  - If the folder names exist, the line items are created under the last folder mentioned in the path.
- The Input integration XML contains the tags, as part of bp_lineitems elements.
- The syntax of the entry for the <folder_path> field is: “/<Folder Name1>/”
- If you create the line items under the root node, the valid inputs within the tag are either “/” or blank.
- If the folder path is blank, the line item is created at the root node “Attachments” and the folder name will be “Attachments”.
- If the line items have attachments in the <_attachment> elements, the line items are added to the respective folder.

When the folders are being created through Web Services, the validations (in web interface of Unifier) are completed during the naming of the folders. You can enter non-ASCII characters as folder names. For example, you can enter Chinese characters as folder names in the folder path.

Behavior Specific to Summary Payment Application SOV Type BPs

> **Note**: The information is applicable to Base Commit, Change Commit, and Payment Application Business Processes of Summary Payment

Application SOV Type BPs.

For more details about XML tags, see Create and Add Methods in the ***Create BP Record (Additional Information)*** (on page 114) section.

Note: You can use this method to add line items to a BP record that does not have any line items. If a record already has the SOV line items that existed at the time of the record creation, new line items cannot be added. If the call is started, the system generates an error message.

Update BP Record

Figure 59: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method updates a record in Unifier.

Support

This service is available at both company-level and project/shell-level BPs of type non-workflow Line Item type and can only update information on upper form. Line items will be ignored. Additionally, the service is also available at project/shell level for Cost (Non-Payment type), Simple, Text type, and Document Type (Basic and Advanced) business process. In these cases, too, the service can only update information on upper form. Line items will be ignored.

Installation

ASP and Self host

Level	Yes or No
Company Level	Yes
Project/Shell Level	Yes

Prototype

public XMLObject updateBPRecord(String shortname, String authcode, String projectNumber, String BPName, String BPXML);

Parameters

Parameter	Description
shortname	identifier of the company, company's short name
Authcode	authentication key for the company, in text string

Parameter	Description
projectNumber	Identifier of the project/shell.
BPName	Identifier of the BP
BPXML	Content of the BP that needs to be updated

BPXML Elements

The BPXML Elements are based on BP design. To use this method, the user must first use getBPRecord service. getBPRecord service will provide user with valid XML elements that are part of BP design.

If you want to update record for a BP at company level, do not pass projectnumber parameter.

If you send invalid projectnumber, you will get an error.

<record_no> tag as part of <_bp> element is required while send updateBPRecord message.

This service can be used for Projects/Shells of cost code type CBS and Generic.

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Sample Method

updateBPRecord("acme", "acme_authcode", "Proj-0001", "Blanket PO", "<XML Content>")

Update BP Record (Additional Information)

Figure 60: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Behavior Specific to Summary Payment Application SOV Type BPs

The information is applicable to Base Commit, Change Commit, and Payment Application Business Processes of Summary Payment Application SOV Type BPs.

For more details about XML tags, see the Create and Add Methods topic in the ***Create BP Record (Additional Information)*** (on page 114) section.

The "Enable Step for Integration" option in the Workflow BP setup is not available for the REST integration.

Update Complete BP Record

Figure 61: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method updates a record in Unifier. It also provides the ability to add attachments to the upper form. It will not delete existing attachments.

Support

This service is available at both company-level and project/shell-level BPs of type non-workflow Line Item type and can only update information on upper form. Line items will be ignored. Additionally, the service is also available at project/shell level for Cost (Non-Payment type), Simple, Text type, and Document Type (Basic and Advanced) business process. In these cases, too, the service can only update information on upper form. Line items will be ignored.

Installation

ASP and Self host

Level	Yes or No
Company Level	Yes
Project/Shell Level	Yes

Prototype

public XMLObject updateCompleteBPRecord(String shortname, String authcode, string projectNumber, String BPName, String BPXML, String iszipfile, FileObject[] fileobjects);

Parameters

Parameter	Description
shortname	identifier of the company, company's short name
Authcode	authentication key for the company, in text string
projectNumber	Identifier of the project/shell in Unifier.
BPName	Identifier of the BP
BPXML	Content of the BP that needs to be updated
iszipfile	This tag identifies if the file provided under the fileobjects tag is a zip file or not. Values for this tag are "yes" or "no".

fileobjects	Array of FileObjects, each FileObject is made up of two components: String filename (this should be the same name as in the record data <_attachment><filename> tag, and javax.activation.DataHandler as filestream. Files can be sent as a single zipped file or individual files.

BPXML Elements

The BPXML Elements are based on BP design. To use this method, the user must first use getBPRecord service. getBPRecord service will provide user with valid XML elements that are part of BP design.

If you want to update record for a BP at company level, do not pass projectnumber parameter.

If you send invalid projectnumber, you will get an error.

<record_no> tag as part of <_bp> element is required while send updateBPRecord message.

Attachments can be added only to the upper form.

Files can be sent as a single zipped file or individual files for the complete transaction record, the same file can be referenced multiple times in the same transaction. However, files contained in the zip file should still be described by separate attachment elements.

API

This API requires Integration Design to be published in uDesigner for the business process.

Attachment file cross references is not supported. The reference sub element under attachments should always have the value 'No'.

Adding attachments is optional. If attachment elements are not provided, the API behaves exactly like updateBPRecord API.

> **Note:** This API is not compatible with non Java web services client platforms.

Total attachment size per request across all files is limited to 250 MB. It is recommended that files are compressed into 1 zip file for submission to the API.

This service can be used for Projects/Shells of cost code type CBS and Generic.

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Update Complete BP Record (Additional Information)

Figure 62: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Updating Complete BP Record for Document type BP with Folder Structure

The existing Web Services call updates the Upper form elements and you can add attachments to the Upper form.

> **Note**: The Document type BP with folder structure does not have record-level attachments.

Behavior Specific to Summary Payment Application SOV Type BPs

> **Note**: The information is applicable to Base Commit, Change Commit, and Payment Application Business Processes of Summary Payment Application SOV Type BPs.

For more details about XML tags, see Create and Add Methods in the ***Create BP Record (Additional Information)*** (on page 114) section.

Update BP Record V2

Figure 63: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This option will allow external systems to update a business process record and advance it to next step.

Support

This service is available at both company-level and project/shell-level BPs of type non-workflow Line Item type and can only update information on upper form. Additionally, the service is also available at project/shell level for Cost (Non-Payment type), Simple, Text type and Document Type (Basic and Advanced) business process. In these cases, too, the service can only update information on upper form.

> **Note**: By design, there are no web services available for the Request for Bid (RFB) business process.

Installation

ASP and Self host

Level	Yes or No
Company Level	Yes
Project/Shell Level	Yes

Prototype

public XMLObject updateBPRecordV2(String shortname, String authcode, String shellNumber, String BPName, String BPXML, String options).

Parameters

Parameter	Description
Shortname	identifier of the company, company's short name
Authcode	authentication key for the company, in text string
shellNumber	Identifier of the project/shell.
BPName	Identifier of the BP
BPXML	Content of the BP that needs to be updated and moved to next step.
Options	This tag will allow user to send additional information related to workflow and line items. Following are the tags under options tag and their description: ▸ LineItemIdentifier: Name of the DE on the detail form / line item to uniquely identify line items. ▸ WFCurrentStepName: Name of the current workflow setup ▸ WFActionName: Action that should be taken to move the WF to next step ▸ SYS Auto Sequence type DE

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Sample Method

updateBPRecordV2("acme", "acme_authcode", "PRJ-0001", "Contracts", <XML content>,<options>)

Update BP Record V2 (Additional Information)

Figure 64: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

This topic includes additional information about updating BP record V2.

> **Note**: The "Enable Step for Integration" option in the Workflow BP setup is not available for the REST integration.

Simple Object Access Protocol (SOAP)

To send SOAP services as XML, ensure that you follow the general rules of XML:

- All tag data (not CDATA) needs to be escaped for < > & "
- Escaping must be a part of the client code which generates the web service call

> **Note**: Those using SOAPUI to make a call must do it manually.

Unifier supports MTOM base64 encoded files in our Unifier Web Service SOAP platform for:

- createCompleteBPRecord
- updateCompleteBPRecord
- addCompleteBPRecord
- getCompleteBPRecord

> **Note**: By design, there are no web services available for the Request for Bid (RFB) business process.

Shell and Company Levels

If the Shell number is null, the record will be assumed for company-level record.

The step involved in sending a record (Send To) is pre-assigned.

Options

- **WFCurrentStepName**

  Value of this tag identifies the current step of the record. This is to ensure that web service call is called for correct step with correct action.

- **WFActionName**

  Value of this tag determines the action that should be taken. This action name will be validated against the WFCurrentStepName

WFActionName

If the option WFActionName tag is empty, the system only updates the record. WFCurrentStepName in this case is not validated.

If the option WFActionName tag has a value, the system pushes workflow to the next step, based on the value of WFActionName tag. All form level validations will be triggered before pushing workflow to the next step. In this scenario WFCurrentStepName will be validated to make sure that the step is valid and action is valid. The option WFActionName tag will be ignored for non-workflow business processes.

Validations while processing WFCurrentStepName and WFActionName tags

- If WFActionName tag *is empty*, do not validate WFCurrentStepName
- If WFActionName tag *is not empty*, validate WFCurrentStepName

WFCurrentStepName

The record is still on the step identified by WFCurrentStepName. If it is not, the system generates an error.

Step identified by WFCurrentStepName value has "Enable Step for Integration" option set to "Yes". If it is not, the system generates an error. The "Enable Step for Integration" option is specific to SOAP.

Validate WFActionName is valid action that can be taken from step identified by the value of WFCurrentStepName.

After going through all validations rules, the system moves the record to next step. The Creator, who has been selected on the Auto Creation tab (for more information, see the *Unifier Modules Setup Administration Guide*), is the person who takes action on the step.

It is possible that someone would have accepted the task on step identified by the value of WFCurrentStepName. (This can happen because "Assignees" option for this step under BP Setup is not disabled). There are three possible scenarios under this condition:

- No one accepted the task: In this scenario system will automatically accepts the task, update record and line items and move record to next step. System will remove task from all other users list.
- Someone accepted the task: In this scenario system will update record and move it to next step and will remove task from other users list including the use who accepted the task.
- Someone accepted the task and move workflow to next step. System will generate an error message as the task is already accepted and WF is moved out of that step.

LineItemIdentifier

There are two scenarios for this option:

a. LineItemIdentifier value is empty: In this scenario, system will add all line items. <_delete_bp_lineitems> tag will be ignored.

b. LineItemIdentifier value is not empty: In this scenario, value provided as part of LineItemIdentifier should be a tag under _bp_lineitems. If not, system will error out.

If LineItemIdentifier value is an element under _bp_lineitems, the system will try to query up a line item based on the value provided under this element.

If the line is found, it will be updated.

If two lines are found, the system generates an error (duplicate rows).

If the line is not found, it will be added.

Notes:

- The mentioned behavior mentioned above is applicable to all lines on all tabs.
- The system will not update/remove/add line items of Cost type of Business Process records that have reached terminal status (not just end step), using this new service.

The "LineItemIdentifier" option is ignored for following type of business processes:

- Simple: Document with Detail form

- Text

WFActionName and **WFCurrentStepName**

This option is ignored for non-workflow Business Processes.

Import the line items for General Spends and Payment Applications

The following XML tag <_refnum> </refnum> should be added under BP line item tag <_bp_lineitem> </bp_lineitem> to support the ability to import the line items for General Spends and Payment Applications.

This service can be used to add lines to Payment Applications and General Spends type of business process. When adding lines to Payment Applications type of business process, existing lines if any will be removed and new lines will be added that are provided as part of the service call. For General spends line will be appended like any other business process.

> **Note:** *updateBPRecordv2* cannot be used to update existing line items for Payment Applications type of business process.

Updating BP Record V2 for Document type BP with Folder Structure

The Web Service call supports the adding of line items to a specific folder to an existing Document type BP record.

The **Update BP Record V2** is applicable to Base Commit and Change Commit of *Summary Payment Application* type business processes.

The **Update BP Record V2** is partially supported for Payment Application business processes of Summary Payment Application type. Use this service to add standard tab line items to a payment record only when the record does not have any standard tab line items created yet (in such case, the same service can also be used to optionally progress the workflow). Alternately, this service can be used only to progress the workflow on a record.

This service is not available to modify or delete standard tab line items.

Payment BP (both the classic and summary payment) line items belonging to tabs other than the standard tab can be added/modified/deleted by using: updatebprecordv2 call.

Behavior Specific to Summary Payment Application SOV Type BPs

> **Note**: The information is applicable to Base Commit and Change Commit of Summary Payment Application SOV Type BPs.

For more details about XML tags, see Create and Add Methods in the ***Create BP Record (Additional Information)*** (on page 114) section.

Update Methods (Update BP Record V2)

The Cost Allocation using the Update BP Record V2 method is necessary when Summary Line Item is added at the creation step and Actual Cost Allocation is added in the subsequent step.

When you need to add Cost Allocation to an existing Line Item, the existing “LineItemIdentifier” tag can hold the information of the Line Item that needs to be updated with the Cost Allocation

The LineItemIdentifier is the key tag for identifying the Line Item that needs to be updated.

You can add new Summary Line Items and Costed Line Items.

If the XML template has the Summary Line Item fields, along with the Cost Allocation, the Summary Line Items need to be updated.

> **Note**: In this case, the LineItemIdentifier tag is the key.

For modifying Line Items, either by adding new Costed Line Items or updating existing Costed Line Items for Base Commit and Change Commit Business Process records, the following rules are applied:

- CBS Code forms the identifier for identifying the Costed Line Items that need to be updated in Base Commit BPs.
- For a Base Commit BP record:
  - If a CBS Code that is specified in the _cost_allocation block does not exist in the Line Item, this will be treated as a new Costed Line Item for the specified Line Item.
  - If the CBS Code specified in the _cost_allocation block exists, this will be treated as an update and the Costed Line Item for the specified Line Item will be updated.
  - If there are multiple Cost Allocation blocks with the same CBS Codes, the update will not take place and results in a duplicate CBS Code error.

> **Note**: The above rule also applies to updating the existing Line Items in the Change Commit BP.

New modifications to Line Items existing in the SOV can be done by specifying the sovlinum. For modifying the Costed Line Items in the Summary Line Items, the combination of sovlinum and CBS Code will be used.

Since the Short Description exists for the Line Items, this is as an Optional field.

The Costed Line Items that need to be updated will be identified by the Cost Code/ bItemId.

All operations that are currently possible with the updateBPRecordV2 call will also be applicable here.

Example

Workflow progress, deletion of line items, and so on

Validation

If the input XML used for updating Line Items has only Cost Allocation details, along with the Line Item reference, the Line Items update with the Cost Allocation will go through without any errors.

All validations for the required fields in the Summary level and the Cost Allocation level will be applicable.

All system level validations existing for the above-mentioned BPs will be applicable.

Example

Costed amount = Line item amount at a given step

Existing validations for update BP record V2 will be applicable.

Data Elements in Line Items

If the following Data Elements are present in the Line Items, they will not be updated.

- bitemid
- budgetid
- sovitemid
- uuu_cm0_picker
- xid
- ds_code
- fsm_lineitem_id
- asm_lineitem_id
- uuu_lat
- uuu_long
- uuu_company_account_name
- uuu_company_account_code
- uuu_company_acc_codepicker
- uuu_activity_picker
- uuu_asset_picker
- ref_bpo_lineitem
- ref_bpo
- ref_rfb
- refid
- uuu_sovlinum
- otherCompanyID
- uuu_costcode_picker
- scheduled_value
- uuu_asset_cum_depreciation
- uuu_asset_curr_period_dep
- uuu_asset_net_book_value
- uuu_unit_price
- currencyid
- due_date
- uuu_asset_calc_as_of_date
- uuu_from_date
- uuu_issue_date
- uuu_last_update_date
- uuu_rfb_due_date
- uuu_to_date
- uuu_week_picker
- uuu_datasource
- uuu_depreciation_mtd
- uuu_line_item_status
- row_id

- uuu_bid_count
- uuu_bidders_count
- uuu_planning_item_picker
- uuu_proj_picker
- record_no
- uuu_resc_picker
- uuu_role_picker
- uuu_commit_short_desc
- end_date
- uuu_creation_date
- uuu_asset_name
- uuu_commit_breakdown
- uuu_asset_code
- uuu_asset_navigation_code
- uuu_timescale_units
- creator_id
- wpid
- uuu_cost_costattribute
- uuu_cost_external_refid
- uuu_cost_status
- uuu_cost_cost_type
- uuu_cost_description
- uuu_cost_item
- uuu_cost_owner
- uuu_cost_code
- uuu_dm_create_date
- uuu_file_create_date
- uuu_file_issue_date
- uuu_dm_percent_complete
- uuu_file_size
- uuu_file_version
- uuu_dm_description
- uuu_dm_node_path
- uuu_dm_node_name
- uuu_file_revision_no
- uuu_file_title
- uuu_dm_create_by
- uuu_file_create_by
- uuu_fund_fundcategory
- uuu_fund_long_desc

- uuu_fund_description
- uuu_fund_fundname
- uuu_fund_code
- uuu_description
- uuu_resc_nwd_type
- uuu_resc_interest
- uuu_resc_proficiency
- uuu_resc_skill
- uuu_role_status
- uuu_role_name
- uuu_resc_capacity
- uuu_user_address
- uuu_user_city
- uuu_user_country
- uuu_user_email
- uuu_user_fax
- uuu_user_firstname
- uuu_user_homephone
- uuu_user_lastname
- uuu_user_mobilephone
- uuu_user_pager
- uuu_user_state
- uuu_user_timezone
- uuu_user_title
- uuu_user_workphone
- uuu_user_zip
- uuu_resc_status
- uuu_resc_code
- uuu_resc_name
- uuu_early_finish
- uuu_early_start,uuu_finish
- uuu_late_finish
- uuu_late_start
- uuu_start
- uuu_act_pct_complete
- uuu_activity_work_hrs
- uuu_duration
- uuu_fixed_cost
- uuu_float
- uuu_labor_cost

- uuu_non_labor_cost
- uuu_total_cost
- uuu_activity_id
- uuu_flag_complete
- uuu_flag_milestone
- uuu_activity_resources
- uuu_dependency_type
- uuu_activity_name
- uuu_outline_code
- uuu_cost_li_type

Get BP Record

Figure 65: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method gets a specific Business Process record in Unifier based on Integration design that has been defined in uDesigner. For more information, refer to the *Unifier uDesigner User Guide*. This method works for both company-level and project/shell-level BPs.

Support

This process supports all type of BPs.

Installation

ASP and Self host

Level	Yes or No
Company Level	Yes
Project/Shell Level	Yes

Prototype

public XMLObject getBPRecord(String shortname, String authcode, string projectNumber, String BPName, String recordNumber);

Parameters

Parameter	Description
shortname	identifier of the company, company's short name

Parameter	Description
authcode	authentication key for the company, in text string
projectNumber	Identifier of the project/shell. Pass null for company-level BP
BPName	identifier of the business process, for example: Invoice
recordNumber	identifier of the business process example: inv-0001

Return Value

See ***Appendix A: Return Values*** (on page 1113).

For Text BPs, the contents of the <_comment> tag, which contains the response list (comments), is also returned.

Sample Method

getBPRecord("acme", "acme_authcode", "proj-01", "Invoice","innv-0001") will return the XML Record of the BP.

Get BP Record (Additional Information)

Figure 66: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

This topic includes additional information about getting a BP record.

Use the <li_group_name> tag to specify group names. This tag is applicable to all BPs that support Summary line items other than Summary Payment Application BPs of Base Commit, Change Commit and Payment Applications.

recordNumber

If the recordNumber is left blank or invalid recordNumber, the method will returns the BP's skeletal XML. BP template can also be downloaded from uDesigner.

To get company-level BP record information, send null for projectNumber parameter. If you send a project number for a BP that is at company level, you will get an error that BP name is not correct.

To get Single Record BP you need a record number populated on the record. If you do not have a record number populated, getBPRecord will return back the structure of the BP.

If you are getting information for a Cost Type BP, you will always get <bItemID> and <fund_code> elements as part of return XML.

This service can be used for Projects/Shells of cost code type CBS and Generic.

Behavior Specific to Summary Payment Application SOV Type BPs

> **Note**: The information is applicable to Base Commit, Change Commit, and Payment Application Business Processes of Summary Payment Application SOV Type BPs.

When this method is used for the above-mentioned BPs, the response file will contain Cost Allocation details for various Line Items.

Get BP List

Figure 67: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method gets all the records for a specific Business Process in Unifier based on Integration design that has been defined in uDesigner. For more information, see **uDesigner Overview** in the *Unifier General Administration Guide*.

Support

This process supports all type of BPs.

Installation

ASP and Self host

Level	Yes or No
Company Level	Yes
Project/Shell Level	Yes

Prototype

public XMLObject getBPList (String shortname, String authcode, string projectNumber, String BPName, String[] fieldnames, String filterCondition, String[] filterValues);

Parameters

Parameter	Description
shortname	identifier of the company, company's short name
authcode	authentication key for the company, in text string
projectNumber	identifier of the project/shell

BPName	identifier of the business process, for example: Invoice
fieldnames	names of the elements in the BP that you want to retrieve; this is an optional parameter. If not specified, all elements will be returned. Currently this parameter is not supported through Web services.
filterCondition	a list of supported condition, this is an optional parameter. If not specified, no conditions will be applied. Field names that you enter as filterCondition should match with the elements that you have selected while designing Integration Interface in uDesigner.
filterValues	a list of values depending on the filter conditions. Currently this parameter is not supported through Web services.

fieldnames

Values that you are going to send through fieldnames parameter are dependent on your BP design. Only those filed can send through fieldnames that are part of your BP design. You can send a name from line item list.

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Sample Method

getBPList("acme", "acme_authcode", "proj-01", "Invoice",null,null,null) will return the XML List of all the Records of the BP Invoice.

```
<gen:getBPList>
       <!--Optional:-->
         <gen:shortname>4C</gen:shortname>
         <!--Optional:-->
         <gen:authcode>123</gen:authcode>
         <!--Optional:-->
         <gen:projectNumber></gen:projectNumber>
         <!--Optional:-->
         <gen:BPName>Vendors</gen:BPName>
         <!--Zero or more repetitions:-->
         <gen:fieldnames></gen:fieldnames>
```

```
<!--Optional:-->
<gen:filterCondition></gen:filterCondition>
<!--Zero or more repetitions:-->
<gen:filtervalues>showlineitems=yes</gen:filtervalues>
```

Or: `<gen:filtervalues>showlineitems=`**no**`</gen:filtervalues>` for only Upper form details.

```
</gen:getBPList>
```

Get BP List (Additional Information)

Figure 68: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

This topic includes additional information about getting a BP list.

Company-level BP Record

To get company-level BP record information, do not send projectNumber parameter. If you send project number and the BP exists at company level, you will get an error that BP name is not correct.

Single Record BP

To get Single Record BP you need a record number populated on to the record. If you do not have a record number populated, getBPRecord will return back the structure of the BP.

filterCondition

If you cannot send filterCondition and filter values currently then it is recommended that these be set to "null." If you want to filter out the records that you want to retrieve then you can use this element. If you want to include more than one filter condition then following this syntax

<_filterCondition>fieldname=value && fieldname=value<_filterCondition>

You can add custom field clause through filters.

Example

end_date=04-13-2005, && record_no=uas-1200

If condition value is string (for example, ABC Inc), the value should be entered as follows <_filterCondition>Vendor Name='ABC Inc'</_filterCondition>. Observe that the value has single quotes. Only equal to "=" operation is supported.

> **Note:** If errors are present when evaluating the basic filter condition system will ignore it, but if there are errors in custom filter condition field names and values, system will return an empty list. All condition fields are evaluated using AND. If the combination has only basic fields and it has an error in processing all the records will be returned.

filterNames

The Filter name will contain list of elements that you want to see as part of output XML. For example, if you want to see project name and project number as output, include projectname and projectnumber.

filterValues, and filterNames are *not supported* as part of Web services for this release.

This service can be used for Projects/Shells of cost code type CBS and Generic.

li_group_name

Use the <li_group_name> tag to specify group names. This tag is applicable to all BPs that support Summary line items other than Summary Payment Application BPs of Base Commit, Change Commit and Payment Applications.

Behavior Specific to Summary Payment Application SOV Type BPs

> **Note**: The information is applicable to Base Commit, Change Commit, and Payment Application Business Processes of Summary Payment Application SOV Type BPs.

When this method is used for the above-mentioned BPs, the response file will contain Cost Allocation details for various Line Items.

Get Complete BP Record

Figure 69: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

Methods returns back complete BP record information. This includes any attachments, general comments, and so on.

Support

This service is available at both company-level and project/shell-level BPs

Note: By design, there are no web services available for the Request for Bid (RFB) business process.

Installation

ASP and Self host

Level	Yes or No
Company Level	Yes
Project/Shell Level	Yes

Prototype

public XMLObject getCompleteBPRecord(String shortname, String authcode, String projectNumber, String BPName, String record_no);

Parameters

Parameter	Description
shortname	identifier of the company, company's short name
Authcode	authentication key for the company, in text string
projectNumber	Identifier of the project/shell.
BPName	Identifier of the BP
record_no	A valid record number.

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Sample Method

getCompleteBPRecord("acme", "acme_authcode", "Proj-0001", "Invoices", "Inv-0001")

Get Complete BP Record (Additional Information)

Figure 70: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

This topic includes additional information about getting a complete BP record.

Use the <li_group_name> tag to specify group names. This tag is applicable to all BPs that support Summary line items other than Summary Payment Application BPs of Base Commit, Change Commit and Payment Applications.

Company-Level BP Record

If you want to get company-level BP record information, pass null for projectnumber element.

You will get a zip file as an output. The zip file contains any attachments and a PDF file that contains BP record information.

<record_no> tag as part of <_bp> element is required while send getCompleteBPRecord message.

This service can be used for Projects/Shells of cost code type CBS and Generic.

> **Note**: By design, there are no web services available for the Request for Bid (RFB) business process.

Getting Complete BP Record for Document type BP with Folder Structure

The existing Get Complete BP record displays the <folder_path> in <bp_lineitems> elements and <attachments_folder> elements. The folder path seen in the line items elements matches the folder path seen in the <attachments_folder>. The <folder_name> is displayed with the <folder_path> in the <attachments_folder> section.

Behavior Specific to Summary Payment Application SOV Type BPs

> **Note**: The information is applicable to Base Commit, Change Commit, and Payment Application Business Processes of Summary Payment Application SOV Type BPs.

When this method is used for the above-mentioned BPs, the response file will contain Cost Allocation details for various Line Items.

CBS Code Methods

Figure 71: Support for SOAP is deprecated starting with Unifier 23.10.

This section covers the following:

- Get CBS Structure
- Create CBS Code
- Get CBS Codes
- Update CBS Codes

> **Note**: The Cost Breakdown Structure (CBS) methods have replaced the Work Breakdown Structure (WBS) methods; however, for legacy purposes the initials "WBS" have remained as is (for example, *WBS*XML in the Create CBS Code method is the identifier used for the CBS creation XML format).

Get CBS Structure

Figure 72: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method gets CBS Structure in Unifier for a company.

Support

This service is available at company level.

Level	Yes or No
Company Level	Yes
Project/Shell Level	No

Prototype

Public XMLObject getWBSStructure(String shortname, String authcode);

Parameters

Parameter	Description
Shortname	identifier of the company, company's short name
Authcode	authentication key for the company, in text string

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Sample Method

getWBSStructure ("acme", "acme_authcode")

Create CBS Code

Figure 73: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method creates CBS code under project/shell (cost code type as CBS) cost sheet.

Prototype

Public XMLObject createWBS(String shortname,String authcode, string projectNumber, String WBSXML);

Parameters

Parameter	Description
shortname	identifier of the company, company's short name
authcode	authentication key for the company, in text string
projectNumber	identifier of the project or a shell
WBSXML	identifier used for CBS creation XML format

WBSXML Elements

The following is a list of elements that are supported while creating CBS code. Any other codes that are defined as part of Cost Attribute form will be supported except User and BP Picker

Parameter	Description
<status>	Status is not a required tag when you are sending createWBS message. But if you include this tag, the following are the valid values Active: Code will be created with Active status Inactive: Code will be created with Inactive status If you do not send this tag, the code will be created without any status which is equivalent to Inactive status.
<cost_type>	This is not a required tag when you are sending createWBS message. But if you include this tag, the following are the valid values Capital: To create CBS of type Capital Expense: To create CBS of type Expense If you do not send this tag, code will be created with Capital as Cost Type.

Parameter	Description
<costattribute>	This is not a required tag when you are sending createWBS message. But if you include this tag, send data that is defined as values under Cost Attribute data definition.

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Additional Information

You can create CBS Code with a Tree Structure.

getWBSStructure

Use getWBSStructure service to get the CBS attribute structure. The retrieved structure can be used to create new CBS codes. User can define a Cost Attribute form in uDesigner. To send XML message to create new Cost codes, the user has to send data using schema that is generated as output from getCBSStrucutre service.

If the project/shell CBS structure is in tree mode, or a parent / child relationship is required, the CBS code passed via the integration interface must concatenate the parent CBS code and child CBS code with "~~" as the delimiter.

If you have multilevel parent child relationship, you must pass in "~~" as delimiter at all levels to separate parent and child.

Parent will be automatically created when you create child.

CBS Item element will take value of Description element.

This service will only work for Shells with Cost Code: CBS

Get CBS Codes

Figure 74: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method gets the CBS Codes in Unifier for a particular project/shell.

Support

This service is available at project/shell level.

Level	Yes or No
Company Level	No

Level	Yes or No
Project/Shell Level	Yes

Prototype

Public XMLObject getWBSCodes(String shortname, String authcode, String projectnumber, String options);

Parameters

Parameter	Description
shortname	identifier of the company, company's short name
authcode	authentication key for the company, in text string
projectnumber	Identifier of the project/shell.
options	Three options are available: <status>: can be set to active or inactive. If status is blank or not provided it will return all status. <cost_type>: can be set to capital or expense. If cost_type is blank or not provided it will return all cost types. <summary_detail>: can be set to true or false. Setting to true, leaving blank or not providing the value will return all summaries and detail CBS codes. Setting to false will return on the detail CBS codes with no summaries.

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Sample Method

getWBSCodes ("acme", "acme_authcode", "P-00001" status=active)

Update CBS Codes

Figure 75: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method updates CBS code under project/shell (cost code type as CBS) cost sheet. The updateWBS allows existing CBS attributes to be changed. All user-defined and system-attributes are available to be modified. The CBS Code cannot be edited.

Support

This service is available for Project/Shell.

Prototype

Public XMLObject updateWBS(String shortname,String authcode, string projectNumber, String WBSXML);

Parameters

Parameter	Description
shortname	identifier of the company, company's short name
authcode	authentication key for the company, in text string
projectNumber	identifier of the project or a shell
WBSXML	identifier used for CBS update XML format

Return Value

See ***Appendix A: Return Values*** (on page 1113).

Additional Information

You can update CBS Code with a Tree Structure.

getWBSStructure

Users will be able to update CBS codes with tree structure.

Use getWBSStructure service to get the CBS attribute structure. The retrieved structure can be used to update CBS codes; however, the retrieved structure XML is needed to be wrapped as follows:

```
<![CDATA[
<List_Wrapper>  <!-- List Wrapper Added -->
<_bp_wbscode>
  <wbs_code></wbs_code>
  <wbs_item></wbs_item>
  <description></description>
  <costattribute></costattribute>
  <external_refid></external_refid>
  <owner></owner>
  <status></status>
  <cost_type></cost_type>
  <exposed_to_p6></exposed_to_p6>
</_bp_wbscode>
</List_Wrapper> <!-- List Wrapper Closed-->
]]>
```

User can define a Cost Attribute form in uDesigner. To send XML message to update Cost codes, the user has to send data using schema that is generated as output from getWBSStrucutre service.

If the project/shell CBS structure is in tree mode, or a parent / child relationship is required, the CBS code passed via the integration interface must concatenate the parent CBS code and child CBS code with "~~" as the delimiter.

If you have multilevel parent child relationship, you must pass in "~~" as delimiter at all levels to separate parent and child.

This service will only work for projects/shells with a CBS Cost Code.

Sort Cost Sheet

Figure 76: Support for SOAP is deprecated starting with Unifier 23.10.

DEPRECATED

Description

This method sorts the project Cost Sheet on CBS code.

Support

This method only supports sorting of CBS code for project/shell.

Level	Yes or No
Company Level	No
Project/Shell Level	Yes

Prototype

Public XMLObject sortCostSheet (String shortname, String authcode, String projectNumber, String type, String sortOrder);

Parameters

The following is a list of parameters.

Parameter	Description
shortname	identifier of the company, company's short name
authcode	authentication key for the company, in text string
projectNumber	identifier of the project or a shell

The following is a list of optional parameters.

Parameter	Description
type	Identifier for the column (the column that the sorting must happen). The only supported value is: CBS. This is an optional parameter, and if the parameter is not present the project Cost Sheet will be sorted based on CBS codes.
sortOrder	Identifier to define the sort order (ascending or descending). The values are: 'asc' or 'desc'. This is an optional input parameter. By default, the sort order is ascending.

Return Value

The Return values for this service are:

Code	Description
200	Ok
602	Project/Shell Number is not correct.
605	No Budget set up for the project.
500	Server Error, contact the system administrator.
1059	The type name does not match the column name from cost sheet.
1060	Invalid sort order. You must provide a value for either 'asc' or 'desc'.

Sample Method

sortCostSheet ("acme", "acme_authcode", “CBS","desc");

Additional Information

The following are the rules for sorting:

- For a flat structured Project Cost Sheet, there will be a simple alphanumeric sort on all the segment codes. The sorting will be case insensitive.
- For a tree structured Cost Sheet, the level sorting will happen first (the parent level first followed by the child level). Further alphanumeric sorting will happen within the level. The sorting will be case insensitive.

> **Note:** The user must not perform any action on the project Cost Sheet when `sortCostSheet webservice` is running.

Accessing Representational State Transfer (REST) Services V1 and V2

The following types of authentications are supported for REST APIs (V1 and V2):

- Basic
- OAuth

Depending on the authentication, a token is generated using an end-point URL.

This section describes how to obtain a token to authenticate yourself for using REST services.

For basic authentication, see ***Setting Up Integration Users with Basic Authentication*** (on page 165).

For OAuth authentication, see ***Setting Up Integration Users with OAuth Authentication*** (on page 169).

> **Note**: If the endpoint URL has a project number that contains special characters such as / \ : * ? " < > or |, you must change those special characters to URL escape characters. For example, A project number with a special number sign (hash) such as 2020#7 must be changed to 2020%7. You can use a browser to access the list of URL escape characters.

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Setting Up Integration Users with Basic Authentication

To set up integration users with basic authentication for V1 and V2 REST APIs:

1) Create an integration user (for more information, see **Creating Integration Users** in the *Unifier General Administration Guide*.
2) Enable appropriate module permissions for the integration user.

To fetch a token for users with basic authentication for V1 REST Service, use the ***V1 Get Token REST Service for Basic Authentication*** (on page 166)

To fetch a token for users with basic authentication for V2 REST Service, use the ***V2 Get Token REST Service for Basic Authentication*** (on page 167).

V1 Get Token REST Service for Basic Authentication

GET http://<host>:<port./ws/rest/service/v1/login

Prerequisite

Your user integration status must be set to *Active*.

Purpose

Use this REST service to generate an authentication token to access V1 REST services.You can set the token expiration from the integration user interface in terms of days, hours, and minutes. The validity of the token in terms of date and time is displayed in the response.

Valid values for expiry duration is 1 through 500. By default the expiry duration is set to 180 days.

Instructions For Using Any Generic REST Client

To generate a token using any generic rest client:

1) In the **Authorization** tab, select *Basic Authentication* **Type**.
2) Enter your user name and password.
3) Click **Update Request** to generate the necessary Authorization header in the **Headers** tab.

Response Format

Headers -Authorization:Basic <*Basic Auth of integration user*>

Sample Response

```
{
"expiryDate": "05/18/2021",
"Timezone": "(UTC-08:00) Pacific Time (US & Canada)",
"expiryTime": "05/18/2021 11:44 AM",
"status": 200,
"token":
"eyJ0eXAiOiJEQiJ9.eyJ1c2VybmFtZSI6IiQkZGVsdDMifQ==.02318C44-9F3A-F93
1-3F14-C6FA7576F55E7D8D9975C46B5805179BD10D890DF15F"
}
```

You can use this token in the Header section of all REST services for authentication.

Note: The expiry date is displayed as per the user date format preferences set in the Integration user interface.

Sample Header

Key	Value
Authorization	Basic eyJ0eXAiOiJEQiJ9.eyJ1c2VybmFtZSI6IiQkZGVsdDMifQ==.02318C44-9F3A-F931-3F14-C6FA7576F55E7D8D9975C46B5805179BD10D890DF15F

Supported HTTP Status Codes

The following HTTP status codes are supported for this rest service:

HTTP Status Code	Status Message	Error Message
200	Success	none
400	Bad Request	*Invalid expiry.*
401	Unauthorized	*Empty or Invalid Authorization Header.* *Invalid Authorization Header*

V2 Get Token REST Service for Basic Authentication

GET https://<hostname>/ws/rest/service/v2/auth/token

Purpose

Use this REST service with your credentials to fetch a JWT token to access the V2 REST services. The token is valid for date/time available in the response.

Sample Request

Send an API request for a token with the end point URL included in the following curl command.

```
curl --location --request GET
'http://<HOST_NAME/ws/rest/service/v2/auth/token' \
--header 'Authorization: Basic XXXXXXX'
```

Sample Success Response

```
{
    "data": {
        "expiryDate": "30/09/2023",
        "Timezone": "(UTC+05:30) Chennai, Kolkata, Mumbai, New Delhi",
        "access_token":
"eyJ0eXAiOiJEQiJ9.eyJ1c2VybmFtZSI6IiQkbW9oYW5kMzIifQ==.6CCC9E5E-9266-E1
54-59F2-DB861A6C7142205367E35B6B058F4B6A03BD6E4BD814",
        "auth_type": "Basic",
        "expiryTime": "30/09/2023 08:20 PM",
        "expires_in": 172800
    },
    "message": [],
    "status": 200
}
```


Supported Response Parameters for Basic Authentication

For basic authentication, the following parameters display values in the response output:

Response Parameter	Data Type	Description
access_token	string	Displays the bearer token.
expires_in	string	Displays the expiry duration in seconds.
expiryDate	string	Displays the expiry date formatted in accordance to the integration user's timezone.
Timezone	string	Displays the integration user's timezone.
auth_type	string	Displays the authentication type used by the integration user. Choices include: Basic, and OAuth.
expiryTime	string	Displays the expiry time formatted in accordance to the integration user's timezone.
message	string	Displays the error message.

Response Parameter	Data Type	Description
status	string	Displays the http status code.

Supported HTTP Status Codes

The following HTTP status codes are supported for this REST service:

HTTP Status Code	Status Message	Error Message
200	Success	not applicable.
400	Bad Request	*Invalid expiry.*
401	Unauthorized	*Empty or Invalid Authorization Header.* *Invalid Authorization Header*
500	Internal Server Error	*Please contact Administrator with Diagnostic code.*

Setting Up Integration Users with OAuth Authentication

V1 and V2 REST services can be authenticated using OAuth Authentication by integrating with your identity domain.

> **Note:** OAuth authentication is only possible for Cloud customers.

New OAuth integration users must be set up on Primavera Administration. You will need to raise a service request accordingly.

To switch existing users from basic authentication to OAuth authentication, you will need to raise a service request. After the service request is completed, existing basic authentication users will now have an *inactive* status.

V1 Get Token REST Service for OAuth Authentication

GET /ws/rest/service/v1/oauth/token

Version: 21.7

Purpose

Use this REST service to generate an OAuth token to access V1 REST services.

Authorization

Use the OAuth type integration user and password reset using email.

Input Authorization

Username and password using Basic Authentication

All parameters should be URL encoded.

```
curl --location 'http://<HOST>/ws/rest/service/v1/oauth/token' \
--header 'Authorization: Basic XYZ'
```

Optional Request Parameter

Use the following parameter to modify the token expiration in the API request:

Request Parameter	Data Type	Description
expiry	string	Enter the optional token expiration duration in seconds. For example, expiry=300. The default value is 3600 seconds.

Response Format

A JSON object is returned containing 'status', 'data', and 'message'.

For a successful status (status code 200), the token details will be sent in the JSON output response.

If the status is not a success, a JSON object containing a 'message' is returned.

Sample Response

{

"access_token":
"eyJ4NXQjUzI1NiIdds6IkRoQXRBNENzTDRUdEIza1BLRlY3TTZSUzlCbExBamIxbDBvV2V6OXpaUXMiLCJ4NXQiOiJXMlR2WXlBeTZZTEpUSndBRC1YdENRRXFmbnMiLCJraWQiOiJTSUdOSU5HX0tFWSIsImFsZyI6IlJTMjU2In0.eyJ1c2VyX3R6IjoiQW1lcmljYVwvQ2hpY2FnbyIsInN1YiI6Imp5b3RoaS5nYXR0dUBvcmFjbGUuY29tIiwidXNlcl9sb2NhbGUiOiJlbiIsInVzZXIudGVuYW50Lm5hbWUiOiJpZGNzLWM5YWFkYjYwZmJhMjRhN2RiYTU2N2NiZGM4NDRmYjUxIiwiaXNzIjoiaHR0cHM6XC9cL2lkZW50aXR5Lm9yYWNsZWNsb3VkLmNvbVwvIiwidXNlcl90ZW5hbnRuYW1lIjoiaWRjcy1jOWFhZGI2MGZiYTI0YTdkYmE1NjdjYmRjODQ0ZmI1MSIsImNsaWVudF9pZCI6IjlhZmI3MmY5OWFjMTQ1ZmY5MWUwYmEyMTg2ZjA3M2U5Iiwic3ViX3R5cGUiOiJ1c2VyIiwic2NvcGUiOiJ1cm46b3BjOmlkbTp0LnNlY3VyaXR5LmNsaWVudCIsImNsaWVudF90ZW5hbnRuYW1lIjoiaWRjcy1jOWFhZGI2MGZiYTI0YTdkYmE1NjdjYmRjODQ0ZmI1MSIsInJlZ2lvbl9uYW1lIjoidXMtYXNoYnVybi0xIiwidXNlcl9sYW5nIjoiZW4iLCJ1c2VyX2Rpc3BsYXluYW1lIjoiSnlvdGhpVW5pZmllcl9SZXNvdXJjZUdyYW50IiwidGVuYW50IjoiaWRjcy1jOWFhZGI2MGZiYTI0YTdkYmE1NjdjYmRjODQ0ZmI1MSIsImp0aSI6IjExZWJhN2YyZjU4ZDYzMzRhYjM5YmZjNWM3ZmQyZjlliwiZ3RwIjoicm8iLCJ1c2VyX2Rpc3BsYXluYW1lIjoiSnlvdGhpIEdhdHR1Iiwic3ViX21hcHBpbmdhdHRyIjoidXNlck5hbWUiLCJwcmltVGVuYW50Ijp0cnVlLCJ0b2tfdHlwZSI6IkFUIiwiY2FfZ3VpZCI6ImNhY2N0LWI2MWUxZmMyMjlkNTQ2ZDg4ODQ0NGMxMWE3ZTIzNzgwIiwiYXVkIjpbImh0dHBzOlwvXC9pZGNzLWM5YWFkYjYwZmJhMjRhN2RiYTU2N2NiZGM4NDRmYjUxLmlkZW50aXR5LmM5ZGV2Mi5vYzIxYWRldi5jb20iLCJodHRwczpcL1wvaWRjcy1jOWFhZGI2MGZiYTI0YTdkYmE1NjdjYmRjODQ0ZmI1MS51cy1hc2hidXJuLTEuc2VjdXJlLmlkZW50aXR5LmM5ZGV2Mi5vYzIxYWRldi5jb20iLCJ1cm46b3BjOmxiYWFzOmxvZ2ljYWxndWlkPWlkY3MtYzlhYWRiNjBmYmEyNGE3ZGJhNTY3Y2JkYzg0NGZiNTEiXSwidXNlcl9pZCI6Ijg2ZWMxNTE2MDUyYjRlNGI4ZTRkZDVjYzJhNDA2NGQ0IiwiY2xpZW50QXBwUm9sZXMiOlsiQXV0aGVudGljYXRlZCBDbGllbnQiXSwidGVuYW50X2lzcyI6Imh0dHBzOlwvXC9pZGNzLWM5YWFkYjYwZmJhMjRhN2RiYTU2N2NiZGM4NDRmYjUxLmlkZW50aXR5LmM5ZGV2Mi5vYzIxYWRldi5jb206NDQzIn0.exvW4qPZDf6oGJKp71ZNggSLZ44G4dKS5f53QfeTp1HDzldili0PdETspZxyDA1IkhVzTFfMjFI1-V6MOTPHMxplMiMXC3gGA_23_p-ZLEVTssub09NeIx3CCuOraIS1lo8c3T5W8x_H_ZQyHYyOnr8FGMczwbvSZZ0Iwlcusf9DLUFxAWnBq25y0FfJ2z6S8TthZqRo6vo0_PqtkuiskmG6Ig48JW2m038jfIsrve7ZYAoB-eWAGE5xfuVkYwD4s5mtDQnNldQpsoOQilSGBb51s_KxSAv5mbvmeHg8omVHTHtOmVfDXfEbVlZE5ccdSy5w_yWT3Egxv-uFxo8MLdiQ",

"token_type": "Bearer",

"expires_in": 3600,

"status": 200

}

V2 Get Token REST Service for OAuth Authentication

GET https://<hostname>/ws/rest/service/v2/auth/token

Purpose

Use this rest service with your credentials to fetch a JWT token to access V2 REST services. The token is valid for date/time available in the response. The token expiration is set to 3600 seconds by default.

Sample Request

Send an API request for a token with the end point URL included in the following curl command.

```
curl --location --request GET
'http://<HOST_NAME/ws/rest/service/v2/auth/token' \
--header 'Authorization: Bearer XXXXXXX'
```

> **Note:** If the endpoint URL has a project number that contains special characters such as / \ : * ? " < > or |, you must change those special characters to URL escape characters. For example, a project number with a special number sign (hash) such as 2020#7 must be changed to 2020%7. You can use a browser to access the list of URL escape characters.

Optional Request Parameter

Use the following parameter to modify the token expiration in the API request:

Request Parameter	Data Type	Description
expiry	string	Enter the optional token expiration duration in seconds. For example, expiry=300.

Sample Success Response

```
{
    "data": {
```

```
        "access_token":
"eyJ4NXQjUzI1NiI6IjN2dFl1OU04ejFJSWlieDI2c2k1b2J1ekZ4RlBlRFpTcmhjX01kcH
pjcE0iLCJ4NXQiOiItZlVTYTJVeGNzRGxJUzBxbHRrT3c5cEtyNlUiLCJraWQiOiJTSUdOS
U5HX0tFWSIsImFsZyI6IlJTMjU2In0.eyJjbGllbnRfb2NpZCI6Im9jaWQxLmRvbWFpbmFw
cC5vYzEuaWFkLmFtYWFhYWFhYXF0cDViYWE1Z3Rwd25zbW5nbjY1eGdmcTIyZ3hsamFpeHp
idWp3ZmVpNTY0Zmp5YjduYSIsInVzZXJfdHoiOiJBbWVyaWNhXC9DaGljYWdvIiwic3ViIj
oiJCRtb2hhbmludCIsInVzZXJfbG9jYWxlIjoiZW4iLCJzaWRsZSI6NDgwLCJ1c2VyLnRlb
mFudC5uYW1lIjoiaWRjcy1lOWEyZTBiMWU5MmU0MjQyYWQxM2Y4YWQ2OWJkNzk3ZiIsImlz
cyI6Imh0dHBzOlwvXC9pZGVudGl0eS5vcmFjbGVjbG91ZC5jb21cLyIsImRvbWFpbl9ob21
lIjoidXMtYXNoYnVybi0xIiwiY2Ffb2NpZCI6Im9jaWQxLnRlbmFuY3kub2MxLi5hYWFhYW
FhYXFoZTZzZ2Y0bnNsbjdyNDN2eXVhbHVwY21nZnBuazZmaG54MzJuZmhhdWEzYnpjY2RoY
2EiLCJ1c2VyX3RlbmFudG5hbWUiOiJpZGNzLWU5YTJlMGIxZTkyZTQyNDJhZDEzZjhhZDY5
YmQ3OTdmIiwiY2xpZW50X2lkIjoiY2VnYnUtbXVtLTQxOV91bmlmaWVyX3d0c3NfYXBwX0F
QUElEIiwiZG9tYWluX2lkIjoib2NpZDEuZG9tYWluLm9jMS4uYWFhYWFhYWF5bnVnc2NkNX
ZiMjRmNW50N2VkbTUzdnBteDZwbHFkamR3bDdsajJsZ3pmM3l4ZG0yNmFhIiwic3ViX3R5c
GUiOiJ1c2VyIiwic2NvcGUiOiJ1cm46b3BjOmlkbTp0LnNlY3VyaXR5LmNsaWVudCIsInVz
ZXJfb2NpZCI6Im9jaWQxLnVzZXIub2MxLi5hYWFhYWFhYW9ja3p5c2V0YXQ0eXR1cnJ6bnV
sYXFiaDZuaHc0NnFreDRsY2NmaXJxcWI1ZGEzYjNwbGEiLCJjbGllbnRfdGVuYW50bmFtZS
I6ImlkY3MtZTlhMmUwYjFlOTJlNDI0MmFkMTNmOGFkNjliZDc5N2YiLCJyZWdpb25fbmFtZ
SI6InVzLWFzaGJ1cm4tMSIsInVzZXJfbGFuZyI6ImVuIiwidXNlckFwcFJvbGVzIjpbIkF1
dGhlbnRpY2F0ZWQiXSwiZXhwIjoxNjk1OTEyMzY2LCJpYXQiOjE2OTU5MDg3NjYsImNsaWV
udF9ndWlkIjoiMDUxMjhlMmMwZDZjNDY3MTlhMzY5NTQ5MTk3YzM5NDAiLCJjbGllbnRfbm
FtZSI6ImNlZ2J1LW11bS00MTlfdW5pZmllcl93dHNzX2FwcCIsInRlbmFudCI6ImlkY3MtZ
TlhMmUwYjFlOTJlNDI0MmFkMTNmOGFkNjliZDc5N2YiLCJqdGkiOiI3NWExYzEyMmU1ZjQ0
ZjExODc1MTIzODgyNTRkMzkzMCIsImd0cCI6InJvIiwidXNlcl9kaXNwbGF5bmFtZSI6Ik1
vaGFuIEQiLCJvcGMiOnRydWUsInN1Yl9tYXBwaW5nYXR0ciI6InVzZXJOYW1lIiwicHJpbV
RlbmFudCI6dHJ1ZSwidG9rX3R5cGUiOiJBVCIsImF1ZCI6WyJodHRwczpcL1wvaWRjcy1lO
WEyZTBiMWU5MmU0MjQyYWQxM2Y4YWQ2OWJkNzk3Zi51cy1hc2hidXJuLTEuc2VjdXJlLmlk
ZW50aXR5LnBpbnQub2M5cWFkZXYuY29tIiwidXJuOm9wYzpsYmFhczpsb2dpY2FsZ3VpZD1
pZGNzLWU5YTJlMGIxZTkyZTQyNDJhZDEzZjhhZDY5YmQ3OTdmIiwiaHR0cHM6XC9cL2lkY3
MtZTlhMmUwYjFlOTJlNDI0MmFkMTNmOGFkNjliZDc5N2YuaWRlbnRpdHkucGludC5vYzlxY
WRldi5jb20iXSwiY2FfbmFtZSI6InVuaWZpZXJtdGRldiIsInVzZXJfaWQiOiJiZWU4ZmRm
YTNiYjA0NDMyOTcxMDg2ZDUyMGQ4OWZmZSIsImRvbWFpbiI6IkRlZmF1bHQiLCJjbGllbnR
BcHBSb2xlcyI6WyJBdXRoZW50aWNhdGVkIENsaWVudCIsIkNsb3VkIEdhdGUiXSwidGVuYW
50X2lzcyI6Imh0dHBzOlwvXC9pZGNzLWU5YTJlMGIxZTkyZTQyNDJhZDEzZjhhZDY5YmQ3O
TdmLmlkZW50aXR5LnBpbnQub2M5cWFkZXYuY29tOjQ0MyJ9.V05olhXu5B9J4cpNcCV4dSY
IcfvcjM83Oybko3vJN7dCkCdGhEIUyZoD-sZAz8jGOIgwbWSQapiXoaClNk6Zn-_ZJz6Jos
CDeHFcLDcOUGsMSNJ2nHTxe7bUijTtzR2U2vegq_p5jpo9s8gRkXQeQLYHagiDmlN0zd9aA
R6NZJcppOCh_cat6V7MMrGfMSDaxeUSVrUfkrNkMk4uZHNX0YhWljcD1Ox24ePKiPDh--yx
Xyomrf4w_aQkxVzGItsjJozAONLMtX1h-2Am00YeF5A2JYwtDs7a3U-__7wlCvWB-wTFyJt
HuZUTNGmx-Ihx3QARNJgIVih5G9XLXrZfZg",
        "expires_in": 3600,
        "token_type": "Bearer",
        "auth_type": "oAuth"
    },
    "message": [],
    "status": 200
```

```
}
```

Supported Response Parameters for OAuth Authentication

The following parameters display with values in the response output:

Response Parameter	Data Type	Description
access_token	string	Displays the bearer token.
expires_in	string	Displays the expiry duration in seconds. By default, 3600 seconds.
token_type	string	Displays the Bearer token type.
auth_type	string	Displays the authentication type used by the integration user. Choices include: Basic, and OAuth.
message	string	Displays the error message.
status	string	Displays the http status code.

Supported HTTP Status Codes

The following HTTP status codes are supported for this rest service:

HTTP Status Code	Status Message	Error Message
200	Success	not applicable.
400	Bad Request	*Invalid expiry.*
401	Unauthorized	*Empty or Invalid Authorization Header.* *Invalid Authorization Header*
500	Internal Server Error	*Please contact Administrator with Diagnostic code.*

Representational State Transfer (REST) Web Services V1

HTTP Methods

GET, POST, PUT, DELETE

Authentication

If the customer is using the *Basic Authentication*, the steps in the ***Setting Up Integration Users with Basic Authentication*** topics must be followed to create an Integration user and retrieve the Auth token.

If the customer is using *OAuth Authentication*, the steps in the ***Setting Up Integration Users with OAuth Authentication*** topics must be followed to create the Integration user and retrieve the Auth token.

Prerequisite for invoking any REST service - Integration user and JWT Auth token should be available.

Integration User:

All REST services should be accessed via Integration User.

Token can now be used in all REST services for authentication mechanism. All REST services should have the following set in the 'Header'.

Header - Sample

Key	Value
Authorization	Bearer eyJ0eXAiOiJEQiJ9.eyJ1c2VybmFtZSI6IiQkZGVsdDMifQ==.02318C44-9F3A-F931-3F14-C6FA7576F55E7D8D9975C46B5805179BD10D890DF15F

Note: Validity of the token is as given in the login. The same can be re-used for subsequent REST requests until the expiry date.

User can change Expiry Date to minutes, hours, and days in UI. REST will retain those settings and generate new token with given Expiry Duration in the UI.

If the Authorization token is not valid/correct for subsequent REST requests, those services will throw 401 status code (Unauthorized).

If the Authorization token is correct but the user for whom token is generated does not have permission for any REST request, that service will throw 403 status code (Forbidden).

For every login REST service initiated, a new token is generated, old token is invalidated.

Data

If integration interface is defined for BP, integration form will be used for this service; otherwise, all custom DEs defined in the form will be used.

For update, specify only the DEs to be updated.

Data Format

Input and output data will be in JSON format. Set HTTP header **Content-Type : application/json.**

Data Transfer

- HTTP request body will be used to send the JSON data.
- Multipart/form-data will be used to handle files.

Default Integration User

For migrating customers before 19.7, default integration user with company shortname and authcode with access to existing system services.

Default cloud user has 500 days Auth token validity.

Standards

Get Method

Will be used to request data from a source when no parameters are sent in the body.

> **Note:** Do not use the word "get" in the URL.

URL Encoding GET call parameter values

All parameters in GET call must be URL encoded.

For Postman REST client, use following code in "**pre-request Script**" tab, which will trim extra spaces in params key and encode special characters in params value.

```
pm.request.url.query.all().forEach( (param) =>
{
        param.key = param.key.trim();
        param.value = encodeURIComponent(param.value );
    }
);
```

POST Method

POST can be used to retrieve data with parameters in body.

Can be used for CREATE, Retrieve data with parameters.

For example, getBprecordlist - bpname is mandatory and needs to be a sent in request body.

> **Note:** Do not use the word "create" in the URL.

To distinguish create and get data with parameters, term list can be added in the URL.

PUT Method

PUT is used update data.

> **Note:** Do not use the word "update" in the URL.

Logging:

All REST operations get audited in internal audit log table (not accessible to User, as it is not business case audit logs).

A background CRON job is created to run on every SUNDAY 4:00AM (server time zone) which will purge older REST internal audit logs which goes beyond 25000 audit rows.

IP Filtering:

Customers can provide the list of IP addresses that can consume REST Web Services (V1 or V2). The IP Filtering option is available in the portal in the **Company Properties** - **Security** tab.

If the 'IP Filtering Policy' field is checked in company properties, the remote host will be validated based on their IP Version.

1. If the remote host is IPv4 version, it will be checked against the list of IP addresses provided in the IPv4 text box.
2. If the remote host is of IPv6 version, it will be checked against the list of IPs provided in the IPV6 text box.
3. If IP addresses are provided in CIDR format, the remote host IP will be checked against all addresses that come in the range.

Additional Information

If the endpoint URL has a project number and the project number contains special characters (such as / \ : * ? " < > |), you must change those special characters to URL escape characters.

Example

Project number with a special number sign (hash) such as 2020#7 must be changed to 2020%7.

> **Note:** You can use a browser to access the list of URL escape characters.

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Document Manager

The Unifier Document Management Representational State Transfer (REST) Application Program Interface (API) has the following components:

- ***Folder Services*** (on page 178)
- ***Document Services*** (on page 203)

Notes:

- The UserServices uses the login user access control to run the service calls. The web service uses the company or project admin to run the service calls.
- Before making the REST calls, set the JSESSIONID cookie (with valid value) in the request header (from the REST client code).

Folder Services

Create Folders by Path

```
POST /ws/rest/service/v1/dm/folder/create
```

Purpose

This service allows you to create folders under a parent folder. You can also use this service to create folders under different parent folders.

- projectnumber (String) Optional. Not required for company level.
- data (JSON String) Required: List of field and values for the folder attribute form.
  - Path: Specify the full parent path where folder has to created.
  - Name: Name of the folder to create: "Folder1"
  - Path and Name are required fields, other fields are optional/required based on the attribute form design.

Prerequisites

To use this REST service:

- Configure the Document Manager in the shell where folder is to be created.
- To include categories and phases in the request, ensure the categories are configured in the **Project Phase**.
  1. Go to the **Company Workspace** tab and switch to **Admin** mode.
  2. In the left Navigator, select **Data Structure Setup**, select **Data Definitions**, and then select **Basic**.
  3. Open **Project Phase**.
- As an integration user, you must also have create access on DM functionality.

Request Format

Send an API request in the following format:

```
(Form Data (content type : application/x-www-form-urlencoded))
data:[
        {
           "Path": "<value>",
           "Name": "<value>",
           "Owner": "<value>",
           "Creation Date": "<value>",
           "% Complete": "<value>",
           "node_id": "<value>"
        }
     ]
```

Note: `Creation Date, % Complete,` and `Owner` are optional fields and are loaded by default with appropriate values. The `Owner` is the shell-level administrator.

Supported Request Parameters

The following parameters can be included in the request:

Request Parameter	Required?	Data Type	Description
projectnumber	Yes	String	The project number or shell that is to be included in the folder. However, if you creating a folder at the company level, the projectnumber is not mandatory. By default, when the projectnumber is not provided, the folder is then created in the specified path within the Company Level Shell.
Data JSON Map: The following parameters can be included. Optional fields are based on the **Attribute** form design.			
Path	Yes	String	Path in the Document Manager where you want to create a folder.
Name	Yes	String	Name of the folder to be created. A maximum length of 250 characters is supported. Names that will not be supported are those that contain non-printable ascii, / or \, names with trailing spaces, and the special names "." and "..".
Description	No	String	A short description of the folder's purpose.
Categories	No	String	The folder category associated with the folder to be created.
Phases	No	String	The phase associated with the folder to be created. For example, Preplanning.

Sample Request

To create a folder "REST Folder" under "/Project Documents/Folder112" then data should as below

```
projectnumber:TestProj-C
```

```
data:[
    {
        "Path":"/Folder112",
        "Name":"REST Folder",
        "Owner":"Company Administrator",
        "Creation Date":"01/01/2016",
        "% Complete":"100",
        "Comments":"Fold 1"
    }
]
```

Response Format

A JSON object is returned in the following format:

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

where:

`"data": []` contains list of fields defined in the Folder Attribute form.

Sample Success Response

In addition to the data, a successful response displays:

- a response "status" code of 200
- a `_record_status` key with a "SUCCESS" value or an error message

```
{
"data":
[
{
"Path":"/Folder112/Folder112",
"Creation Date":"01/01/2016",
"Owner":"Company Administrator",
"Comments":"Fold 1",
"% Complete":"100",
```

```
"Name":"REST Folder",
"node_id":"2003150"
}
],
"message":[{"message":"OK"}],
"status":200
}
```


Sample Failed Response

The following is an example of the failed response:


```
{
"data":
[
{
"Path":"/Folder112/Folder112",
"Creation Date":"01/01/2016",
"Owner":"Company Administrator",
"Comments":"Fold 1",
"% Complete":"100",
"Name":"REST Folder"
}
],
"message":[{"message":"Folder with given name already exists"}],
"status":1043
}
```


Supported Validation Messages and Status Codes

The following error messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status code	Error Message
projectnumber	An invalid projectnumber is specified in the request.	602	Project/Shell Number is not correct.
projectnumber	The projectnumber is blank and the path is not valid.	1043	Parent path or node id is invalid or does not exist.
Path	The Path is not specified.	500	Server Error, contact system administrator.

Field Name	Use-case Scenario	Status code	Error Message
Path	An invalid path is specified.	1043	Parent path or node id is invalid or does not exist.
Name	Name is blank.	1043	Input Name Required-Empty Name Given.
Name	Name is not specified in the data JSON object.	1043	Server Error, contact system administrator.
Name	An invalid Name is specified including special characters.	1043	Folder Name cannot have special characters '/','\\',':','*','?','\"','<','>','|'
Name	An existing Name is specified (case-insensitive).	1043	Folder with given name already exists.
Description	The Description exceeds 2000 characters.	1043	Valid Input required for fields : 'Description'.
Categories	An invalid Category is specified	1043	Invalid Categories, Please provide correct Category values.
Phases	An invalid Phase is specified.	1043	Invalid Phases, Please provide correct Phase values.

Create Folders by Parent Folder ID

`POST /ws/rest/service/v1/dm/folder/create/<parent_folder_id>`

Purpose

This service allows you to create folders under a specific folder. The parent folder is specified as node id in the service call's path parameter.

Prerequisites

To use this REST service:

- Configure the Document Manager in the shell where folder is to be created.

- To include categories and phases in the request, ensure the categories are configured in the **Project Phase**.
  1. Go to the **Company Workspace** tab and switch to **Admin** mode.
  2. In the left Navigator, select **Data Structure Setup**, select **Data Definitions**, and then select **Basic**.
  3. Open **Project Phase**.

  Multiple categories and phases can be included in the request.
- As an integration user, you must also have create access on DM functionality.

Request Format

Send an API request in the following format.

```
(Form Data (content type :
application/x-www-form-urlencoded))<parent_node_id value>
data:[
        {
            "Path": "<value>",
            "Description": "<value>",
            "Phases": "<value>",
            "Categories": "<value>",
            "Name": "<value>"
        }
    ]
```

> **Note:** parent_node_id can be provided as a part of path parameter in request.

Supported Request Parameters

The following parameters can be included in the request:

Request Parameter	Required?	Data Type	Description
parent_node_id	Yes	Integer	The node_id under which the folder is created. To get the node_id value for the parent folder, use the ***Get Folders or Documents Meta Data by Path*** (***English/NEC4/NEC4_admin/index.html***) REST service.
Data JSON Map: The following parameters can be included. All other fields are required or optional based on the **Attribute** form design.			

Request Parameter	Required?	Data Type	Description
Name	Yes	String	Name of the folder to be created. A maximum length of 250 characters is supported. Names that will not be supported are those that contain non-printable ascii, / or \, names with trailing spaces, and the special names "." and "..".
Description	No	String	A short description of the folder's purpose.
Categories	No	String	The folder category associated with the folder to be created.
Phases	No	String	The phase associated with the folder to be created. For example, Preplanning.

Sample Request

To create a "2023" folder under "/Project Documents/Service docs" whose node id (2002896) is specified in path parameter, send the request as shown below:

```
URL:http://unifier-intg.oracle.com/ws/rest/dm/folder/create/2002896
data:[
            {
                        "Name":"2023",
                        "Owner":"Company Administrator",
                        "Creation Date":"01/01/2016",
                        "% Complete":"100",
                        "Description":"Fold 1"
            }
     ]
```

Response Format

A JSON object is returned in the following format:

> **Note**: The data will be same as input data with new folder id and parent folder ID.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>,
    "rest_audit_id": <value>
}
```

Sample Success Response

In addition to the data, a successful response displays:

- a response "status" code of 200
- a `_record_status` key with a "SUCCESS" value or an error message

```
{
"data":
[
{
"Path":"/Service docs",
"Creation Date":"01/01/2016",
"Owner":"Company Administrator",
"Description":"Fold 1",
"% Complete":"100",
"Name":"REST Folder",
"node_id":"2003152"
}
],
"message":
[
{
"message":"OK"
}
],
"status":200
}
```

Sample Failed Response

The following is an example of a failed response.

```
{
    "data":
      [
            {
                "Path":"/Service docs",
                "Creation Date":"01/01/2016",
                "Owner":"Company Administrator",
                "Description":"Fold 1",
                "% Complete":"100",
                "Name":"REST Folder"
            }
      ],
    "message":
      [
            {
                "message":"Folder with given name already exists"
            }
      ],
    "status":1043
}
```


Supported Validation Messages and Status Codes

The following error messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status code	Error Message
parent_node_id	parent_node_id is blank.	500	Server Error, Contact System Administrator.
parent_node_id	parent_node_id is invalid.	1039	Parent path or node id is invalid or does not exist.
Name	Name is blank.	1043	Input Name Required-Empty Name Given.

Field Name	Use-case Scenario	Status code	Error Message
Name	Name is not specified in the data JSON object.	1043	Server Error, contact system administrator.
Name	An invalid Name is specified including special characters.	1043	Folder Name cannot have special characters '/','\\',':','*','?','\"','<','>','|'
Name	An existing Name is specified (case-insensitive).	1043	Folder with given name already exists.
Description	The Description exceeds 2000 characters.	1043	Valid Input required for fields : 'Description'.
Categories	An invalid Category is specified	1043	Invalid Categories, Please provide correct Category values.
Phases	An invalid Phase is specified.	1043	Invalid Phases, Please provide correct Phase values.

Update Folder Metadata by Path

`POST /ws/rest/service/v1/dm/folder/update`

Purpose

This service allows you to modify the metadata for documents under a folder using the folder path value.

Prerequisites

To use this REST service:

- Configure the Document Manager (DM) in the shell where folder is to be created.
- To include categories and phases in the request, ensure the categories are configured in the **Project Phase**.
  1. Go to the **Company Workspace** tab and switch to **Admin** mode.
  2. In the left Navigator, select **Data Structure Setup**, select **Data Definitions**, and then select **Basic**.
  3. Open **Project Phase**.

Multiple categories and phases can be included in the request.

- As an integration user, you must also have update access on DM functionality.

Request Format

Send an API request in the following format:

```
(Form Data (content type :
application/x-www-form-urlencoded))projectnumber: <value>
data:[
        {
            "Path": "<value>",
            "Description": "<value>",
            "Name": "<value>",
            "Categories": "<value>",
            "Phases": "<value>"
        }
    ]
```

> **Note**: parent_node_id can be provided as a part of path parameter in request.

Supported Request Parameters

The following parameters can be included in the request:

Request Parameter	Required?	Data Type	Description
projectnumber	Yes	String	The project number or shell that is to be included in the folder. However, if you are creating a folder at the company level, the projectnumber is not mandatory. By default, when the projectnumber is not provided, the folder is then created in the specified path within the Company Level Shell.
Data JSON Map: The following parameters can be included. Optional fields are based on the **Attribute** form design.			

Request Parameter	Required?	Data Type	Description
Path	Yes	String	Path in the Document Manager where you want to update a folder. Specify the full path of the document to update. For example, "/Project Documents/Service docs/Folder1/pipeline estimate.doc"
Name	No	String	The new name of the renamed folder. A maximum length of 250 characters is supported. Names that will not be supported are those that contain non-printable ascii, / or \, names with trailing spaces, and the special names "." and "..".
Description	No	String	A short description of the folder's purpose.
Categories	No	String	The folder category associated with the folder being updated.
Phases	No	String	The phase associated with the folder being updated. For example, Preplanning.

Sample Request

To update a document "dm1.PNG" under "/test" folder, the data must be:

```
URL: http://<host>:<port>/ws/rest/service/v1/dm/document/update
data:[
            {
                 "Path":"/test/dm1.PNG",
                 "Name":"dm1.PNG",
                 "Owner":"Company Administrator",
                 "Creation Date":"01/01/2016",
                 "% Complete":"100",
                 "Description":"dm1.PNG df"
            }
     ]
```

Tip: Use the GET call to get the structure of the JSON data.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>,
    "rest_audit_id": <value>
}
```

Note: The read-only fields will not be updated with values from input.

Sample Success Response

This is an example of a successful response:

```
{
       "data":[
                              {
                                   "Path":"/test/dm1.PNG",
                                   "Creation Date":"01/01/2016",
                                   "Owner":"Company Administrator",
                                   "Description":"dm1.PNG df",
                                   "% Complete":"100",
                                   "Name":"dm1.PNG"
                              }
            ],
       "message":[
                              {
                                   "message":"OK"
                              }
                 ],
       "status":200
}
```

Sample Failed Response

This is an example of a failed response with a status code 505 for an invalid folder name.


```
{
	"data":[
				{
					"Path":"/test/dm2.PNG",
					"Creation Date":"01/01/2016",
					"Owner":"Company Administrator",
					"Description":"dm1.PNG df",
					"% Complete":"100",
					"Name":"d1.PNG"
				}
		],
	"message":[
				{
					"message":"Invalid folder name."
				}
		],
	"status":505
}
```


Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status code	Error Message
projectnumber	The projectnumber is invalid.	602	Server Error, Contact System Administrator.
projectnumber	The projectnumber is blank and Path is not valid.	505	Invalid folder name.
projectnumber	The projectnumber is blank and Path is valid at the company level.	200	Ok

Field Name	Use-case Scenario	Status code	Error Message
Path	The Path is blank	500	Server Error, contact system administrator.
Path	An invalid Path is specified.	505	Invalid folder name.
Name	The Name is blank.	505	Input Required: Name
Name	An invalid Name is specified including special characters.	505	Folder Name cannot have special characters '/','\\',':','*','?','\"','<','>','|'
Name	Name is not specified in the data JSON object.	505	Server Error, contact system administrator.
Name	Renamed a folder in a blank shell.	505	Invalid folder name.
Name	Renamed a root folder.	505	Root folder cannot be renamed.
Name	An existing folder is duplicated (case-insensitive)	505	Folder with given name already exists
Categories	An invalid Category is specified.	505	Invalid Categories, Please provide correct Category values
Phases	An invalid Phase is specified.	505	Invalid Phases, Please provide correct Phase values

Update Folder Metadata by Folder ID

```
POST /ws/rest/service/v1/dm/folder/update/<node_id>
```

Purpose

This service allows user to update a specific folder meta data using the folder node id.

Prerequisites

To use this REST service:

- Configure the Document Manager (DM) in the shell where folder is to be created.
- To include categories and phases in the request, ensure the categories are configured in the **Project Phase**.
  1. Go to the **Company Workspace** tab and switch to **Admin** mode.
  2. In the left Navigator, select **Data Structure Setup**, select **Data Definitions**, and then select **Basic**.
  3. Open **Project Phase**.

  Multiple categories and phases can be included in the request.
- As an integration user, you must also have update access on DM functionality.

Request Format

Send a request in the following format.

```
(Form Data (content type : application/x-www-form-urlencoded))
http://<host>:<port>/ws/rest/service/v1/document/update/<node_id>
```

> **Note**: Use the ***Get Folders or Documents Meta Data by Path*** (***English/NEC4/NEC4_admin/index.html***)" REST service to get the node_id value for the folder.

Supported Request Parameters

The following parameters can be included in the request:

Request Parameter	Required?	Data Type	Description
node_id	Yes	String	The node_id whose meta data is to be updated.
Data JSON Map: The following parameter can be included.			
Name	No	String	The name of the folder whose meta data is being updated. A maximum length of 250 characters is supported. Names that will not be supported are those that contain non-printable ascii, / or \, names with trailing spaces, and the special names "." and "..".

Sample Request

To update the folder, "trial2" under "/abcd10/f2" specified in the path parameter with node_id 754

```
(Form Data (content type : application/x-www-form-urlencoded))
http://localhost:7003/ws/rest/service/v1/dm/folder/update/754
data:[ {"Name":"trial2" } ]
```

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

> **Note:** The read-only fields will not be updated with input values.

Sample Success Response

This is an example of a successful response to the above sample request.

```
{
     "data": [
                         {
                              "Path": "/abcd10/f2",
                              "Name": "trial2"
                         }
                ],
     "message": [
                         {
                              "message": "OK"
                         }
          ],
    "status": 200
}
```

> **Note:** Use the GET call to get the structure of the JSON data.

Sample Failed Response

This is an example of a failed response to a request when an invalid node_id is specified in the request.

```
{
    "data":[
                        {
                             "Creation Date":"01/01/2016",
                             "Comments":"Fold 2 update dmpick",
                             "% Complete":"100",
                             "Name":"DmPicker"
                        }
         ],
    "message":[
                        {
                             "message":"Parent path or node id is invalid
or does not exists."
                        }
             ],
    "status":1039
}
```


Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status code	Error Message
node_id	The node_id is invalid.	1039	Parent path or node id is invalid or does not exist.
node_id	The projectnumber is blank.	500	Server Error, Contact System Administrator.
Name	The Name is blank.	505	Input Required: Name
Name	An invalid Name is specified including special characters.	505	Folder Name cannot have special characters '/','\\',':','*','?','\"','<','>','|'
Name	Renamed a folder in a blank shell.	505	Invalid folder name.

Field Name	Use-case Scenario	Status code	Error Message
Name	Renamed a root folder.	505	Root folder cannot be renamed.
Name	An existing folder is duplicated (case-insensitive)	505	Folder with given name already exists

Get Folders or Documents Metadata by Path

```
GET /ws/rest/service/v1/dm/node/properties
```

Purpose

This service allows you to retrieve a folder's or a document's meta data using a folder path.

Prerequisites

To use this REST service:

- Configure the Document Manager (DM) in the shell where folder is to be created.
- To include categories and phases in the request, ensure the categories are configured in the **Project Phase**.
  1. Go to the **Company Workspace** tab and switch to **Admin** mode.
  2. In the left Navigator, select **Data Structure Setup**, select **Data Definitions**, and then select **Basic**.
  3. Open **Project Phase**.

  Multiple categories and phases can be included in the request.
- As an integration user, you must also have update access on DM functionality.

Request Format

Send a request in the following format.

```
URL:
http://<host>:<port>/ws/rest/service/v1/dm/node/properties?projectnumber=<value>&parentpath=<value>
```

Supported Request Parameters

The following parameters can be included in the request.

Request Parameter	Mandatory?	Data Type	Description
projectnumber	Yes	String	The shell in which the folder is to be created. Empty for company level DM.
parentpath	Yes	String	The path of the folder in Document Manager whose meta data is being requested.
nodetype	No	String	The properties of the Folder or Document depending on the nodetype. Valid values include: "Folder" and "Document". If no value is specified, then both, the folder and document properties will be returned.

Sample Request

To obtain the meta data of the project, TestProj-C, with parentpath, /u17.1, send a request as shown below.

```
http://<host>:<port>/ws/rest/service/v1/dm/node/properties?projectnumber=TestProj-C&parentpath=/u17.1
```

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

Sample Success Response

This is an example where the "data" is an array of document or folder properties.

```
{
  "data":
```

```
  [
    {
      "Owner":"Company Administrator",
      "projectnumber":null,
      "node_path":"/Company Documents",
      "Description":"",
      "type":"Folder",
      "foreignKeyId":-1000,
      "parentUuid":null,
      "Name":"Company Documents",
      "parent_node_id":285,
      "foreignEntityType":"company",
      "% Complete":"0",
      "Location":"/",
      "node_id":700,
      "upload_date":"2017-12-07T07:54"
    },

    {
      "Revision No.":"",
      "Owner":"Company Administrator",
      "projectnumber":null,
      "node_path":"/Folder
City/Fremont/AutoVue_Applet-Free_Client_TUD.pdf",
      "Description":"",
      "Pub No.":"1",
      "file_name":"AutoVue_Applet-Free_Client_TUD.pdf",
      "annotate":true,
      "type":"Document",
      "title":"",
      "foreignKeyId":-1000,
      "parentUuid":294,
      "file_size":"448519",
      "uuu_create_by":"Company Administrator",
```

```
      "file_id":58,
      "Issue Date":"",
      "foreignEntityType":"company",
      "% Complete":"0",
      "Location":"/Folder City/Fremont",
      "node_id":306,
      "upload_date":"2017-11-03T14:02"
    },

  ],
  "message":
  [
  ],
  "status":200
}
```


Sample Failed Response

The REST service returns a failed response with status code 1039 when a parentpath is incorrect or blank in the following format:


```
{
  "data":[ ],
  "message":[
    {
        "message":"Parent path or node id is invalid or does not exists."
    }
          ],
  "status":1039
}
```


Get Folders or Documents Metadata by Parent Folder ID

```
GET /ws/rest/service/v1/dm/node/properties/<parent_folder_id>
```

Purpose

This service allows you to retrieve the folders or documents meta data under a folder path by using the parent folder node id.

Request Format

Send a request in the following format:

```
http://<host>:<port>/ws/rest/service/v1/dm/node/properties/<parent_folder_id>?nodetype=<value>
```

Supported Request Parameters

The following parameters can be included in the request.

Request Parameter	Required?	Data Type	Description
parent_folder_id	Yes	Integer	The node id of the parent folder of the folder or document meta data is to be retrieved.
nodetype	No	String	The properties of the Folder or Document depending on the nodetype. Valid values include: "Folder" and "Document". If no value is specified, then both, the folder and document properties will be returned.

Sample Request

This is an example of a request to retrieve a document's meta data with a parent folder ID,2003148.

```
http://<host>:<port>/ws/rest/dm/node/properties/2003148?nodetype=Document
```

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
```

```
    "message": [],
    "status": <REST status code value>
}
```

Sample Success Response

This is an example of a successful response.


```
{
"data":
[
{
"Revision No.":"",
"Owner":"Company Administrator",
"projectnumber":"B-001",
"node_path":"/DmPicker/dm1.PNG",
"Description":"",
"Pub No.":"1",
"Size":"125718",
"Default Status for Leased Space":"",
"Title":"",
"PWO Line Item No":"",
"type":"Document",
"Name":"dm1.PNG",
"parent_node_id":298716,
"Creation Date":"2018/02/13 12:45",
"project_id":1170,
"file_id":139100,
"Issue Date":"",
"Upload By":"Company Administrator",
"Upload Date":"2018/02/13 12:45",
"% Complete":"0",
"Location":"/DmPicker",
"node_id":298717
}
],
```

```
"message":
[
],
"status":200
}
```

Document Services

Antivirus scanning of files

If you are using an Oracle Cloud-based deployment, Unifier includes a virus scanner. To prevent virus attacks from infiltrating your system through external files, the system scans each file that is uploaded. Until the scan is completed, the file remains in a Scan Pending state.

At a minimum, the system scans each file that is uploaded, submitted, or attached through the following channels:

- Document Manager
- Business processes (BPs)
- Image pickers
- Cells within forms or sheets
- Custom Templates for use with custom prints and reports
- XML Localization Interchange File Format (XLIFF) files used for translation support
- Custom Help files, such as those provided through a uDesigner object
- Bluebeam sessions
- Webservice Get calls
- Import of comma-separated values (CSV) or Microsoft Excel files

Depending on how your environment is configured, the following actions might occur:

- If the virus scanner detects an issue with a file that a user is uploading, the system sends an email to the user who uploaded the file and the designated company contact. Depending on the location of the infected file, the system might display a bug icon (if the system is configured to display alerts) or an ellipsis icon (if the system is configured to prevent the display of alerts).
- If a user tries to access or download a file that has not yet been scanned and the environment is configured to display alerts, the system displays a Confirmation message that requires a response to continue. If a Confirmation message appears, the user can wait and try to access the file later.
- If the virus scanner detects an issue with a file that a user is trying to view or download, an alert is displayed that indicates the file contains a threat. If multiple files were selected for download, the uninfected files are downloaded.

Note: If you are using an Oracle Cloud-based Unifier deployment, see **Edit Company (Security Tab)** in the *Unifier General Administration Guide* for more information about configuring the environment to allow the display of messages regarding Scan Pending states.

Create Documents by Path

`POST /ws/rest/service/v1/dm/document/create`

Purpose

Add documents (files) with metadata for a particular folder. It also supports adding revisions to an existing document.

Prerequisites

Ensure the following:

- Configure the Document Manager in the shell where the document is to be created in a folder.
- You must have **Create** permission to use this REST service of Document Manager.
- Create the folder before you create or upload the document.

Request Format

`Form Data (content type : application/x-www-form-urlencoded)`

This is a multi-part request and *all* parameters must be listed *before* all file parts.

```
data: [ {"Path":"<value>",
         "Name":"<value>",
         "docTitle":"<value>",
         "revNo":"<value>",
         "issueDate":"<value>"
     }]
```

Request Parameters

This a multi-part request and all parameters must be listed before all the file parts in the order listed below, then upload the file contents by giving the filename(with extension) in key value and select file under the value:

Request Parameter	Required?	Data Type	Description
projectnumber	No	String	The project associated with the document. Not required for company level.
Path	Yes	String	Full path where the document will be created. The folder path must exist for the document to be created.
Name	Yes	String	Name of the document to be created.
dorevise	No	String	Indicates whether to revise the f**ile using the same** file name. Valid values include: "yes", and "no" (default).
% Complete	No	Integer	The amount of work completed on that type of file/document.
Description	No	String	A description of the folder to be updated.

Note: Creation Date, Owner, Upload By, Pub No., and Size are loaded by default with appropriate values. Owner and Upload By is specifies the shell-level administrator.

Sample Request

Send an API request in the following format to create a document "ProjectDetails.doc" under "/Project Documents/Service docs" folder:

```
data [{"path":"/Service docs",
       "fileName":"ProjectDetails.doc",
       "docTitle":"project details",
       "revNo":"1",
       "issueDate":"06/01/2016",
```

```
      <additional document attribute form properties, excluding creation
date and owner>
}]
```

Notes:

- Except for creation date and owner, you can add any additional document attribute form properties as key value pairs in the preceding JSON.
- This call only updates the elements visible in the **Upload** window, such as **Document Title**, **Revision No**, and **Issue Date**. The system cannot update custom data elements that are not listed in the **Upload** window.

Sample Multipart Form Request

Note: The form data body boundary in the example below is "—file upload—", but can be anything (or left unset).

```
-----file upload---
Content-Disposition: form-data; name="shortname"
unifier
-----file upload---
Content-Disposition: form-data; name="authcode"
MTIzMTIz
-----file upload---
Content-Disposition: form-data; name="dorevise"
yes
-----file upload---
Content-Disposition: form-data; name="projectnumber"
Shell-001
 -----file upload---
Content-Disposition: form-data; name="data"
[
{"Path":"/Service
docs","Name":"ProjectDetails.doc","docTitle":"project
details","revNo":"1","issueDate":"06/01/2016", additional document
attribute form properties, excluding creation date and owner }
]
-----file upload---
Content-Disposition: form-data; name="0"; filename="b.txt"
Content-Type: text/plain
test document contents
-----file upload-----
```

Sample Success Request

To upload a document, export(2).doc from the local storage, to the test folder, specify a request in the following format:

```
projectnumber:AP
data:[{"Path":"/test","Name":"export (2).doc"}]
```

Sample Success Response

A successful message displays in the following format, with status code 200, when the ProjectDetails.doc document is created in the Service docs folder:

```
{
  "data":[{
            "Path":"/Service docs",
            "from_object_id":"713",
            "file_id":"629",
            "parentId":"713",
            "Name":"export (2).doc",
            "node_id":"1000"
}],
  "message":[{"message":"OK",
              "status":200
         }],
  "status":200
```

Sample Failed Request

The following request contains a file name with invalid characters.

```
projectnumber:AP
data:[{"Path":"/test","Name":"<>*||.doc"}]
```

Sample Failed Response

A failed response displays in the following format, with status code 1045, when a parent path is not specified in the request:

```
{
  "data": [{
             "Path":"/test",
```

```
            "from_object_id":"713",
            "Name":"<>*||.doc"
        }],
  "message": [ { "message":"Invalid file name.", "status":1048 } ],
  "status":1045 }
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status code	Error Message
projectnumber	projectnumber is invalid.	602	Project/Shell Number is not correct.
projectnumber	projectnumber is blank and path is invalid.	1039	Invalid folder name.
Path	Path is invalid.	500	Server Error, contact system administrator.
Path	Path is blank.	1039	Parent path or node id is invalid or does not exists.
Name	File name is blank.	1054	Input required : Name
Name	Invalid Name is given(against the rules of naming).	1048	Invalid file name.
Name	Name is not specified in the data object.	1054	Input required : Name
Name	An existing name is specified (upper and lower case.)	1047	File already exists in the path.
dorevise	When random values are specified, it assumes the default value as "no".		

Field Name	Use-case Scenario	Status code	Error Message
% Complete	When random values are specified, it assumes the default value as "0".		
Description	Description exceeds 4000 characters.	500	Server error.

Create Documents by Parent Folder ID

`POST /ws/rest/service/v1/dm/document/create/<parent_node_id>`

Purpose

Add documents (files) to a particular folder using the folder node id. It also supports adding revisions to an existing document.

Request Format

Send an API request in the following format:

```
https://<host>:<port>/ws/rest/service/v1/dm/document/create/<parent_node_id>
data: [ {"Name":"<value>",
         "docTitle":"<value>",
         "revNo":"<value>",
         "issueDate":"<value>"
       }]
```

Path Parameter

Specify the following path parameter:

Request Parameter	Required?	Data Type	Description
parent_folder_id	Yes	Integer	The ID of the parent folder's node where the documents will be created.

Use the ***Get Folders or Documents Metadata by Path*** (on page 197) REST Service to get the node_id value for the folder.

Request Parameters

This a multi-part request and *all* parameters must be listed *before* all file parts in the following order:

Request Parameter	Required?	Data Type	Description
projectnumber	No	String	The project associated with the document. Not required for company level. If the projectnumber is not specified, the document is created in the Company Workspace. If the parent folder Id is not in the Company Workspace, the document will not be visible even in Company Workspace.
dorevise	No	String	Indicates whether to revise the file using the same file name. Valid values include: "yes", and "no" (default).
data	Yes	JSON String	List of field and values for the **Document Attribute** form.
Name	Yes	String	Name of the document to be created.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
```

```
}
```

Sample Request

To create a document "ProjectDetails.doc" in the"/Project Documents/Service docs" folder with node ID 6561, send the API request in the following format:

```
http://<host>:<port>/ws/rest/service/v1/dm/document/create/6561
[ {"fileName":"ProjectDetails.doc",
   "docTitle":"project details",
   "revNo":"1",
   "issueDate":"06/01/2016",
<any additional document attribute form properties, excluding creation date
and owner> }
]
```

> **Notes:**
>
> - Except for the creation date and owner, you can add any additional document attribute form properties as key value pairs in the preceding JSON.
> - This call only updates the elements visible in the **Upload** window, such as **Document Title**, **Revision No**, and **Issue Date**. The system cannot update custom data elements that are not listed in the **Upload** window.

Sample Multipart Form Request

> **Note:** The form data body boundary in the example below is "—file upload—", but can be anything (or left unset).

```
-----file upload---
Content-Disposition: form-data; name="shortname"
unifier
-----file upload---
Content-Disposition: form-data; name="authcode"
MTIzMTIz
-----file upload---
Content-Disposition: form-data; name="dorevise"  yes
 -----file upload---
Content-Disposition: form-data; name="data"
[
 {"Name":"ProjectDetails.doc","Owner":"Company
Administrator","Creation Date":"01/01/2016","%
Complete":"100","Description":"Fold 1" }
```

```
]
-----file upload---
Content-Disposition: form-data; name="0"; filename="b.txt"
Content-Type: text/plain
test document contents
-----file upload-----
```

Sample Success Request

Send an request in the following format to upload the document, export (3).doc, from local storage:

```
http://<host>:<port>/ws/rest/service/v1/dm/document/create/713
projectnumber:AP
dorevise:yes
data:[{"Name":"export (3).doc"}]
```

> **Note:** parent_node_id is provided as part of the path parameter in above REST call.

Sample Success Response

A successful message is displays in the following format when a ProjectDetails.doc document is successfully created in the Service docs folder:

```
{
  "data": [{
              "Path":"/test",
              "from_object_id":"713",
              "parentId":"713",
             "Name":"export (3).doc"
          }],
  "message": [{"message": "OK", "status": 200 }],
  "status": 200
}
```

Sample Failed Request

An invalid parent_node_id is sent in the following request:

```
http://<host>:<port>/ws/rest/service/v1/dm/document/create/71345
projectnumber:AP
```

```
data:[{"Name":"trial10.doc"}]
```

> **Note:** The parent_node_id is provided as part of the path parameter in the above REST call.

Sample Failed Response

A failed response displays in the following format with status code 1045 for the above request when an invalid parent_node_id is specified:

```
{
  "data": [ {
             "Name": "ProjectDetails.doc"
           }],
  "message": [ { "message": "parent_node_id parameter is invalid",
"status": 1046 }],
  "status": 1045
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status code	Error Message
parent_node_id	parent_node_id is blank.	500	Server error. Contact System Administrator.
parent_node_id	parent_node_id is invalid.	1046	parent_node_id parameter is invalid.
projectnumber	projectnumber is invalid.	602	Project/Shell number is not correct.
Name	Name is blank.	1054	Input required: Name
Name	Name is not specified in the data JSON object.	1054	Input required: Name
Name	Name is invalid (against the rules of naming).	1048	Invalid file name.

Field Name	Use-case Scenario	Status code	Error Message
Name	Existing name is specified(upper or lower case).	1047	File already exists in the path.
dorevise	Random values are specified.		
% Complete	Characters are given	200	In UI, characters are not reflected instead "0" is kept.
Description	Description exceeds 4000 characters.	500	Server error. Contact System Administrator.

Update Document's Metadata by Path

`POST /ws/rest/service/v1/dm/document/update`

Purpose

Modifies the metadata for a document in a folder using the folder path value.

Request Format

Form Data (content Type: application/x-www-form-urlencoded)

Request Parameters

The following parameters can be included in the request:

Request Parameter	Required?	Data Type	Description
projectnumber	No	String	The project number for the project /shell level DM. Not required for company level. If the projectnumber is not specified, the document is created in the Company Workspace. If the parent folder Id is not in the Company Workspace, the document will not be visible even in Company Workspace.

Request Parameters in data JSON Object

The data JSON object contains a List of field and values for the **Document Attribute** form. The following parameters can be included in this object:

Request Parameter	Required?	Data Type	Description
Path	Yes	String	The full path of the document to update. For example, Example "/Project Documents/Service docs/Folder1/pipeline estimate.doc"
Description	No	String	A description about the document to be updated.
Name	No	String	The name to be used for renaming the document.
Title	No	String	The title of the document.

Request Parameter	Required?	Data Type	Description
Revison No.	No	Integer	The revision number of the file when it is duplicated with the same file name.
Issue Date	No	Date	The date on which the document was originally issued.
% Complete	No	Integer	The amount of work completed on that type of file/document.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

Note: The read-only fields will not be updated with values from input.

Sample Request

To update a document "response.tif" in the "/test" folder, specify the request as:

projectnumber: "AP"

and

```
data:[{"Path":"/test/response(2).tif",
       "Title":"Tiff File",
       "Description":"Viewing file as tiff for an output",
       "Revision No.":"1",
       "% Complete":"100",
       "Issue Date":"01/18/2024 11:44 AM"
    }]
```

Use the ***Get Folders or Documents Metadata by Path*** (on page 197) or ***Get Folders or Documents Metadata by Parent Folder ID*** (on page 200) to get the structure of the JSON data.

Sample Success Response

The REST service returns a successful response with status code 200 for the above request:

```
{
  "data":[{
            "Path":"/test/response(2).tif",
            "Revision No.":"1",
            "Description":"Viewing file as tiff for an output",
            "Title":"Tiff File",
            "Issue Date":"01/18/2024 11:44 AM",
            "% Complete":"100"
         }],
  "message":[{"message":"OK"}],
  "status":200
}
```

Sample Error Request

The following request is sent specifying an invalid folder name, test.

```
projectnumber:AP
data:[{"Path":"/test/trialtes.doc",
       "% Complete":"100"
     }]
```

Sample Failed Response

A failed response displays in the following format with status code 505 when an invalid folder is specified:

```
{
   "data":[{
           "Path":"/test/trialtes.doc",
           "% Complete":"100"
         }],
  "message":[{"message":"Invalid folder name."}],
  "status":505
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status code	Error Message
projectnumber	projectnumber is invalid.	602	Project/Shell Number is not correct.
projectnumber	projectnumber is blank and path is invalid.	505	Invalid folder name.
Path	Path is invalid.	1039	Parent path or node id is invalid or does not exists.
Path	Path is blank.	500	Server Error, contact system administrator.
Description	Description exceeds 4000 characters.	505	
Name	File name is blank or just the file extension is specified.	505	New file name is not valid
Name	Invalid Name is given(against the rules of naming).	200	(uploading even invalid)
Name	Existing folder name is duplicated(upper or lower case).	200	(appends (1) to the name and updates.)
Name	Name is a read-only field.	505	Cannot rename as the node_name field is readonly.
Name	Document is locked.	505	Cannot rename locked node.
Name	File extension is changed.	505	File extension cannot be changed.
Name	Current name is specified as the new name.	505	New node name and old node name are same.

Field Name	Use-case Scenario	Status code	Error Message
Title	Title exceeds 250/2000 characters.	505	
Revision No.	Revision No. exceeds 250/2000 characters.	505	
Issue Date	Date is invalid.		
% Complete	Characters are given	200	In UI, characters are not reflected instead "0" is kept.

Update Document Metadata by Document ID

`POST /ws/rest/service/v1/dm/document/update/<document_node_id>`

Purpose

Modifies the metadata for a particular document using the node id.

Prerequisites

Ensure the following:

- Configure the Document Manager in the shell where the document is to be updated in a folder.
- You must have **Update** permissions to use this REST service of Document Manager.
- Create the folder and the document before you upload the document.

Request Format

Form Data (content Type: application/x-www-form-urlencoded)

Path Parameter

Ensure you follow the order given below for path and request parameters while providing the request, then upload the file contents by giving the filename(with extension) in key value and select file under the value.

Specify the following path parameter:

Request Parameter	Required?	Data Type	Description
node_id	Yes	Integer	The node id to be updated. Use the ***Get Folders or Documents Metadata by Path*** (on page 197) REST service to get the node_id.

Use the ***Get Folders or Documents Metadata by Path*** (on page 197) REST Service to get the node_id value for the document.

Request Parameters in data JSON Object

The data JSON object is a required object. It contains a List of field and values for the **Document Attribute** form. The following parameters can be included in this object:

Request Parameter	Required?	Data Type	Description
Description	No	String	A description about the document to be updated.
Name	No	String	The name to be used for renaming the document.
Title	No	String	The title of the document.
revNo.	No	Integer	The revision number of the file when it is duplicated with the same file name.
issueDate	No	Date	The date on which the document was originally issued.
%Complete	No	Integer	The amount of work completed on that type of file/document.

Note: The following optional fields are loaded by default with appropriate values: Creation Date, Owner, Upload By, Pub No., and Size.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

To update a document in node ID 1011, send a request in the following format:

```
http://<host>:<port>/ws/rest/service/v1/dm/document/update/1011
data:[{"Title":"Important",
       "Description":"Output File",
       "Revision No.":"1",
       "% Complete":"50",
       "Issue Date":"02/02/2024 12:00 AM"}]
```

Use the GET call to get the structure of the JSON data.

Sample Success Response

For the above request, the REST service returns a successful response with status code 200 in the following format:

```
{
   "data":[{"Path":"/testing/trial.pdf",
           "Revision No.":"1",
           "Description":"Output File",
           "Title":"Important",
           "Issue Date":"02/02/2024 12:00 AM",
          "% Complete":"50"} ],
   "message": [ { "message":"OK" } ],
   "status":200
```

```
}
```

Sample Failed Request

A non-existent node_id is specified in the following request:

```
http://<host>:<port>/ws/rest/service/v1/dm/document/update/10115
data:[{"Title":"Sample Document","Description":"Describes the test"}]
```

> **Note:** The Document ID is provided as a part of the path parameter.

Sample Failed Response

When an invalid Document ID is specified in the above request, a failed response displays in the following format with status code 1039:

```
{
  "data": [ "Description":"Describes the test",
           "Title":"Sample Document"} ],
  "message": [ { "message":"Parent path or node id is invalid or does not exists." } ],
  "status":1039
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status code	Error Message
node_id	node_id is invalid.	1039	Parent path or node id is invalid or does not exists.
node_id	node_id is blank.	500	Server Error, Contact System Administrator
Description	Description exceeds 4000 characters.	505	
Name	File name is blank or just the file extension is specified.	505	New file name is not valid.

Field Name	Use-case Scenario	Status code	Error Message
Name	Invalid Name is given(against the rules of naming).	1048	Invalid file name.
Name	Existing folder name is duplicated(upper or lower case).		(appends (1) to the name and updates.)
Name	Name is a read-only field.	505	Cannot rename as the node_name field is readonly.
Name	Document is locked.	505	Cannot rename locked node.
Name	File extension is changed.	505	File extension cannot be changed.
Name	Current name is specified as the new name.	505	New node name and old node name are same.
Title	Title exceeds 250/2000 characters.	505	
Revision No.	Revision No. exceeds 250/2000 characters.	505	
Issue Date	Date is invalid.		
% Complete	Characters are specified.	200	In UI, characters are not reflected instead "0" is kept.

Get Documents by Path

`GET /ws/rest/service/v1/dm/document`

Purpose

Retrieves all the documents (files) and meta data under a folder using the folder path.

Prerequisites

Ensure the following:

- Configure the Document Manager in the shell where the document is to be retrieved.
- You must have **Get** permissions to use this REST service of Document Manager.

Query Parameters

Specify the following path parameters:

Request Parameter	Required?	Data Type	Description
projectnumber	Yes	String	The shell in which the document is located.
parentpath	Yes	String	The properties of the documents listed under this path.
iszip	No	Boolean	Generates a single zip for the document files if provided. Otherwise retrieves individual files. Valid values include: "yes", and "no".
blockScanPendingFiles	No	Boolean	Blocks or allows the download of files or attachments that have not been scanned for viruses. Valid values include `false` and `true`. `False` (the default) allows the download of unscanned files or attachments while `true` prevents it. **Note:** By default, attachments are downloaded through REST, whether or not they have been scanned for viruses. To download only those attachments that have been scanned and identified as clean, you must use the blockScanPendingFiles parameter.

Note: For a successful response, specify the parameters in the URL.

This REST service call does not permit you to specify the parameters in the JSON body.

Response Format

Output is a multi-part response.

- If iszip option is set to "yes", the response file part is a zip file containing all the documents.
- If iszip option is set to "no", the file part outputs individual documents.

Sample Request

Specify the following query parameters:

```
projectnumber:AP
parentpath:/testingfold4
iszip:no
```

Sample Success Response

```
--5MJDL8Wb3f7FtknE7iXUzMYy-W1KqjuFfd6bye
Content-Disposition: form-data; name="response"
Content-Type: text/plain; charset=ISO-8859-1
Content-Transfer-Encoding: 8bit
{"status":200,"data":[],"message": ""}
--5MJDL8Wb3f7FtknE7iXUzMYy-W1KqjuFfd6bye
Content-Disposition: form-data; name=""response(2).tif";
filename="response(2).tif"
Content-Type: application/octet-stream
Content-Transfer-Encoding: binary
test test
--5MJDL8Wb3f7FtknE7iXUzMYy-W1KqjuFfd6bye
Content-Disposition: form-data; name="ucm_migration_issue.txt";
filename="ucm_migration_issue.txt"
Content-Type: application/octet-stream
Content-Transfer-Encoding: binary
*Data from the file*
  "data":  [  ],
  "message":    ],
  "status":0
}
```

```
--epJEmgJS2xCc6yZSOtu25ty6dkCcRntJjsVnPg--
{
  "data":  [  ],
  "message":  [  ],
  "status":200
}
```

Sample Failed Request

An invalid folder is specified in the query parameters:

```
projectnumber:AP
parentpath:/SampleFolder
```

Sample Failed Response

A failed response is returned in the following format for the above request:

```
{
  "data": [  ],
  "message": [{
                  "message":"Parent path or node id is invalid or does not
exists."
              }],
  "status":1039
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status code	Error Message
projectnumber	projectnumber is invalid.	602	Project/Shell Number is not correct.
projectnumber	projectnumber is blank and path is not valid.	1039	Parent path or node id is invalid or does not exists.
parentpath	parentpath is invalid.	1039	Parent path or node id is invalid or does not exists.

Field Name	Use-case Scenario	Status code	Error Message
parentpath	parentpath is empty or blank.	1039	Parent path or node id is invalid or does not exists.
iszip	Random value is provided.	200	Success. It assumes the default value as "yes' and generates a zip file.
blockScanPendingFiles	Random string is provided.	11008	blockscanpendingfiles should be one of [true, false].

Get Documents by Parent Folder ID

```
GET /ws/rest/service/v1/dm/document/<parent_node_id>
```

Purpose

Retrieves all the documents (files) and metadata under a folder using the parent folder node id.

Prerequisites

Ensure the following:

- Configure the Document Manager in the shell where the document is to be retrieved.
- You must have **Get** permissions to use this REST service of Document Manager.

Request Format

Send a request in the following format:

```
http://<host>:<port>/ws/rest/service/v1/dm/document/<parent_node_id>
```

Path Parameters

Specify the following path parameters:

Path Parameter	Required?	Data Type	Description
parent_node_id	Yes	Integer	The properties of the documents listed under this parent_node_id.

Path Parameter	Required?	Data Type	Description
iszip	No	Boolean	Generates a single zip for the document files if provided. Otherwise retrieves individual files. Valid values include: "yes", and "no".
blockScanPendingFiles	No	Boolean	Blocks or allows the download of files or attachments that have not been scanned for viruses. Valid values include `false` and `true`. `False` (the default) allows the download of unscanned files or attachments while `true` prevents it. **Note:** By default, attachments are downloaded through REST, whether or not they have been scanned for viruses. To download only those attachments that have been scanned and identified as clean, you must use the blockScanPendingFiles parameter.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

```
http://localhost:7003/ws/rest/service/v1/dm/document/885
```

> **Note:** Parent_node_id is given as path parameter in the above request.

Sample Success Response

A successful response is returned with status 200 in the following format:

```
*Binary Data*
{
  "data":  [  ],
  "message":  [  ],
  "status":200
}
```

Sample Failed Response

http://<host>:<port>/ws/rest/service/v1/dm/document/123456

> **Note:** parent_node_id is given as path parameter in the above request.

Sample Failed Response

A failed response for the above invalid parent_node_id displays in the following format:

```
{
   "data":           [  ],
   "message":[
               {"message":"Parent path or node id is invalid or does not
exists."}
            ],
   "status":1039
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status Code	Error Message
parent_node_id	parent_node_id is invalid.	1039	Project/Shell Number is not correct.
parent_node_id	parent_node_id is blank.	1039	Parent path or node id is invalid or does not exists.
iszip	Random value is provided.	200	Success. It assumes the default value as "yes' and generates a zip file.
blockScanPendingFiles	Random string is provided.	11008	blockscanpendingfiles should be one of [true, false].

Get Document as Tiff File

```
GET /ws/rest/service/v1/dm/file/view/<file_id>
```

Purpose

Retrieves a file as a multi-page tiff file.

Prerequisites

Ensure the following:

- Configure the Document Manager in the shell where the document is to be retrieved.
- You must have **Get** permissions to use this REST service of Document Manager.
- Configure the properties to view any file as a tiff file.
- Create or upload a document/file and view it as a tiff file using the file_id.

Path Parameter

Specify the following path parameter:

Request Parameter	Required?	Data Type	Description
file_id	Yes	Integer	The file id of the document you want as a tiff file.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response

A tiff file can be downloaded and viewed.

Sample Failed Request

An invalid file_id is specified in the following request:

```
http://<host>:<port>/ws/rest/service/v1/dm/file/download/5924
```

> **Note:** File_id is provided as a part of the path parameter in the above request.

Sample Failed Response

A failed response displays in the following format:

```
{
  "data":  [  ],
  "message":  [  ],
  "status":1041
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status code	Error Message
file_id	file_id is invalid.	1069	File does not exist.

Get Document by File ID

```
GET /ws/rest/service/v1/dm/file/download/<file_id>
```

Purpose

Downloads the contents of a single document based on file ID.

Prerequisites

Ensure the following:

- Configure the Document Manager in the shell where the document is to be retrieved.
- You must have **Get** permissions to use this REST service of Document Manager.
- Create or upload a document/file to download using the file_id.

Path Parameter

Specify the following path parameter:

Request Parameter	Required?	Data Type	Description
file_id	Yes	Integer	The file id of the document you want. Use the ***Get Folders or Documents Metadata by Path*** (on page 197) REST service to get the file_id value for the document. as a tiff file.

Response Format

A document file stream object or a failed response displays with a status code in the following format:

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

Sample Success Response

```
HTTP/1.1 200 OK
Date: Thu, 01 Sep 2016 15:35:07 GMT
Transfer-Encoding: chunked
Content-Type: application/octet-stream
```

```
Content-Disposition: attachment; filename=Autovue_reply.txt
<< Contents of the file being downloaded >>
```

Sample Failed Response

A failed response displays with a status code in the following format:

```
{
  "data":[  ],
  "message": [ "File does not exist."],
  "status":1069
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status Code	Error Message
file_id	file_id is invalid.	1069	File does not exist.

Search Document or Folder Properties

`POST /ws/rest/service/v1/dm/search`

Purpose

Searches a document/folder properties.

Prerequisites

Ensure the following:

- Configure the Document Manager in the shell where the document is to be retrieved.
- You must have **Full** permissions to use this REST service of Document Manager.

Request Format

Form Data (content Type: application/x-www-form-urlencoded)

To get the name field values:

1) Go to the **Company Workspace** tab and switch to **Admin** mode.
2) In the left Navigator, select **uDesigner**, and then select **Document Manager**.
3) Select the **Folder and Document Attributes**.
4) From the toolbar, click **Status**, and select **Draft**.
5) Open the applicable Folder or Document Properties form.

6) From the toolbar, click **Custom**, and search for the field name using the given label.

Name	Label
uuu_dm_node_name	Name
uuu_dm_create_by	Owner
uuu_file_title	Title

Request Parameters

The following parameters can be included in the request:

Request Parameter	Required?	Data Type	Description
projectnumber	Yes	String	The project number/shell associated with the document/folder. If the projectnumber is not specified, the document is created in the Company Workspace.
parentpath	Yes	String	The path to locate the document/folder in the Document Manager.
match	No	String	Specify this field when you want to search for multiple search query terms. Valid values include "AND" (default), "OR".
nodetype	No	String	Indicate if you want to search for documents or folders. Valid values include "document", and "folder".

Request Parameters in Query JSON Object

For multiple search terms, each search term is joined with an AND condition. The following parameters can be included for multiple search terms in the request:

Field Name	Required?	Data Type	Description
name	Yes	String	Specify the uDesigner field for filtering the search for the specified folder/document.
value	Yes	String	The values specified for the search.
label	No	String	The label specified in uDesigner for a specific field.
value2	No	String	This is mostly used for range comparators to search for documents/folders created/issued in between the value and value2 fields.

Field Name	Required?	Data Type	Description
Comparator	No	String	The type of search operation to perform. Valid values include: "like" (default): For string data types, searches for a like query, %value%. "eq": For string and numeric data types, searches for an exact match. "lt": For numeric and date values, searches for less than the specified value. "gt": For numeric and date values, searches for greater than the specified value. "le": For numeric and date values, searches for less than or equal to the specified value. "ge: For numeric and date values, searches for greater than or equal to the specified value. "ne": For numeric and date values, searches for not equal to the specified value. "range": For numeric and date values, searches for a range of values between "value" and "value2".

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

The "data" is an array of document or folder properties matching the search terms specified in the request.

Sample Query Request

To search for documents with title like "first document title" and issue date between 2017-12-07T07:54 and 2017-20-07T07:54:

```
"query":[{ "name":"uuu_file_title", "label":"Title","value":"first
document title", "comparator":"like" }, { "name":"uuu_file_issue_date",
"label":"Issue Date", "value":"2017-12-07T07:54",
"value2":"2017-20-07T07:54", "comparator":"range" } ]
```

Sample Request

For projectnumber:AP and parentpath: /trial1, send a query request in the following format:

```
query:[{ "name":"uuu_dm_node_name",
"label":"Name","value":"Bug_Status.txt", "comparator":"like" }]
```

Sample Success Response

A successful response is returned with status 200 in the following format:

```
{
  "data":
  [
    {
      "uuu_lock_iserid":0,
      "Revision No.":"",
      "Owner":"Company Administrator",
      "projectnumber":"AP",
      "node_path":"/trial1/Bug_Status.txt",
      "Description":"",
```

```
      "Pub No.":"1",
      "Size":"3529",
      "Title":"trial text",
      "type":"Document",
      "Name":"Bug_Status.txt",
      "parent_node_id":779,
      "Creation Date":"2023/12/08 07:16",
      "project_id":1008,
      "uuu_content_status":0,
      "file_longitude":null,
      "file_id":526,
      "file_latitude":null,
      "Issue Date":"2023/05/12 12:30",
      "Upload By":"Company Administrator",
      "uuu_lock_owner":null,
      "% Complete":"0",
      "Location":"/trial1",
      "node_id":806
    }
  ],
  "message":  [  ],
  "status":200
}
```


Sample Failed Request

The following request is sent with an invalid node_id, `uuu_dm_node_name`:

```
projectnumber:AP
parentpath:/trial156
query:[{ "name":"uuu_dm_node_name",
"label":"Name","value":"Bug_Status.txt", "comparator":"like" }]
```

Sample Failed Response

A failed response to the above request is returned with a status code 1039 in the following format:


```
{
```

```
   "data": [{
               "comparator": "like",
               "name": "uuu_dm_node_name",
               "label": "Name",
               "value": "Bug_Status.txt"
           }],
   "message": [
        {"message": "Parent path or node id is invalid or does not exists."}
               ],
   "status": 1039
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status Code	Error Message
projectnumber	Projectnumber is invalid.	602	Project/Shell Number is not correct.
parentpath	Path is invalid	1039	Parent path or node id is invalid or does not exist.
nodetype	nodetype value is not valid.	1049	Invalid 'nodetype', please provide either 'document' or 'folder'.

Rename a Node by Node ID

`POST /ws/rest/service/v1/dm/node/rename/{node_id}`

Purpose

Renames a node(folder/document) based on the node id.

Prerequisites

Ensure the following:

- Configure the Document Manager in the shell where the node is to be renamed.
- You must have **Full** permissions to use this REST service of Document Manager.

Request Format

Send a request in the following format:

```
Form Data (content Type: application/x-www-form-urlencoded)
data: [{"new_node_name":"rename.json","forceful":"yes" }]
```

Path Parameter

The following path parameter must be included in the request:

Path Parameter	Required?	Data Type	Description
node_id	Yes	Integer	The node (folder/document) that needs to be renamed with the specified node_id.

Request Parameters

The following parameters can be included in the request:

Request Parameter	Required?	Data Type	Description
projectnumber	Yes	Integer	The shell associated with the node (folder/document) that needs to be renamed.
new_node_name	Yes	String	The new name for the specified node.
forceful	No	String	Determines whether to enforce the renaming. Valid values include: "yes": Forcefully renames the nodes. If a duplicate is found, adds a suffix (1) to the file name. If the name exists, then displays an error. "no" (default)

Sample Request

To rename a folder/document with node_id 856, give the URL as below:

```
http://<host>:<port>/ws/rest/service/v1/dm/node/rename/856
data:[{ "new_node_name":"newname"}]
```

Sample Success Response

A successful response with status code 200 displays in the following format:

```
{
   "data": [{
            "Path": "/try",
            "node_name_input": "newname",
            "Name": "newname.pdf"
            }],
   "message": [{
                "message": "Renamed node successfully"
             }],
   "status": 200
}
```

Sample Failed Request

The following request is sent with the new node name identical to the current name:

```
http://<host>:<port>/ws/rest/service/v1/dm/node/rename/856
data:[{ "new_node_name":"newname.pdf","forceful":"no"}]
```

Sample Failed Response

A failed response to the above request displays with status code 505 in the following format:

```
{
   "data": [{
            "Path": "/try",
            "forceful": "no",
            "node_name_input": "newname.pdf",
            "Name": "newname.pdf"
        }],
   "message": [{
              "message": "New node name and old node name are same"
```

```
            }],
   "status": 505
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status Code	Error Message
node_id	node_id is invalid.	1069	Node not found.
projectnumber	Projectnumber is invalid.	602	Project/Shell Number is not correct.
new_node_name	New name is identical to the current name.	505	New node name and old node name are same.
new_node_name	Rename with an existing name, and "forceful" parameter is set to "no".	1067	Cannot rename node as the name already exists.
new_node_name	Name is blank / empty	505	New node name is not valid.
forceful	Renames with an existing name, and forceful parameter is set to "yes".	200	Renamed node successfully.

Rename Unpublished Document by File ID

`POST /ws/rest/service/v1/dm/node/rename/unpublished/{file_id}`

Purpose

Renames an unpublished document based on the file ID.

Prerequisites

Ensure the following:

- Configure the Document Manager in the shell where the document is to be retrieved.
- You must have **Full** permissions to use this REST service of Document Manager.

Request Format

Specify the request in the following format:

```
Form Data (content Type: application/x-www-form-urlencoded)
data: [{"new_node_name":"rename.json",
       "forceful":"yes"
     }]
```

Path Parameters

The following path parameters must be included in the request:

Request Parameter	Required?	Data Type	Description
projectnumber	Yes	String	The shell associated with the node (document) that needs to be renamed.
file_id	Yes	String	The unpublished node(document) with this unique ID that needs to be renamed.

Request Parameters in data JSON Object

The following request parameters can be included in the data [] of the request:

Request Parameter	Required?	Data Type	Description
new_node_name	Yes	String	The new name of the specified node.

Request Parameter	Required?	Data Type	Description
forceful	No	String	Determines whether to enforce the renaming. Valid values include: "yes": Forcefully renames the nodes. If a duplicate is found, adds a suffix (1) to the file name. If the name exists, then displays an error. "no" (default)

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

To rename an unpublished document with file_id 409, specify the following URL and data object:

```
http://<host>:<port>/ws/rest/service/v1/dm/node/rename/unpublished/409
data: [{"new_node_name":"renamefile.xlsx",
        "forceful":"yes"
     }]
```

Sample Success Response

A successful response is returned with status 200 in the following format:

```
{
   "data": [{
            "Path": "",
            "node_name_input": "just.xlsx",
```

```
            "Name": "just.xlsx"
           }],
    "message": [{
            "message": "Renamed unpublished document successfully"
               }],
   "status": 200
}
```

Sample Failed Response

A failed response for a name that already exists is returned with status 505 in the following format:

```
{
   "data": [{
            "Path": "",
            "forceful": "yes",
            "node_name_input": "renamep.xlsx",
            "Name": "renamep.xlsx"
        }],
   "message": [
        {"message": "New file name and old file name are same"
        }],
   "status": 505
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status Code	Error Message
file_id	file_id is invalid.	505	Unpublished document not found in the current project.
projectnumber	Projectnumber is invalid.	602	Project/Shell Number is not correct.

Field Name	Use-case Scenario	Status Code	Error Message
new_node_name	New name is identical to the current name.	505	New node name and old node name are same.
new_node_name	Rename with an existing name, and "forceful" parameter is set to "no".	1067	Cannot rename node as the name already exists.
new_node_name	Name is blank / empty	505	New node name is not valid.
nodetype	nodetype value is not valid.	1049	Invalid 'nodetype', please provide either 'document' or 'folder'.
forceful	Renames with an existing name, and forceful parameter is set to "yes".	200	Renamed node successfully.

Set Permissions in Document Manager

You can set permissions for files and folders in the Document Manager (DM) by way of the RESTful web services.

Setting permissions to folders and documents in the DM to users or groups through REST Services involves one of the following:

- Granting explicit permissions (calling out a file or folder, specifying user or group name, and granting permissions to those users or groups)
- Inheriting permissions from a parent folder into child files or folders
- Applying (pushing) permissions from a parent folder to sub-folders or files
- Remove users or groups from having permissions to files or folders in the DM through REST Services
- Get permissions on files or folders using REST Services

Authorization

Each V1 REST service includes a JWT token in the Authorization header. The integration username and password are required to create this token (for more information on creating this user, see **Integration Users** in the *Unifier General Administration Guide*). Make a GET request to "`/ws/rest/service/v1/login`" service with integration username and password as Basic Authentication. For more details, see ***V1 Get Token REST Service for Basic Authentication*** (on page 166).

If the call is successful with 200 response code, the response will contain the JWT token and the expiry date (the token is valid for 6 months from issuance).

The 401 status code will be returned when the username/password combination is incorrect, the User is not an integration user, or when the User is not active.

Sample Response


```
{
    "expiryDate": "2019/01/10 12:00 AM",
    "status": 200,
    "token":
"eyJ0eXAiOiJEQiJ9.eyJ1c2VybmFtZSI6IiQkaW50ZWdyYXRpb25icCJ9.2F17ECA4-F553-DF21-BD3F-389AE3680675C80772B0EBF7BAD220BF36BA611BB6A5"
}
```


All REST Services must have the following set in the Header.

Header Sample

Key	Value
Authorization	Bearer eyJ0eXAiOiJEQiJ9.eyJ1c2VybmFtZSI6IiQkaW50ZWdyYXRpb25icCJ9.2F17ECA4-F553-DF21-BD3F-389AE3680675C80772B0EBF7BAD220BF36BA611BB6A5

Note: The same authorization token can be re-used for subsequent REST Service requests, until the expiry date.

Get Node Permissions by Node Path and Project Number

`GET /ws/rest/service/v1/dm/permission/{projectNumber}/node/{node_path}`

Purpose

Retrieves permissions of a node by node_path and project number.

Prerequisites

Ensure the following:

- Configure the Document Manager in the shell where the document is to be retrieved.
- You must have **Full** permissions to use this REST service of Document Manager.

Path Parameters

projectnumber: (Optional) project number(if not given, default is company workspace).

node_path: (Path parameter) full node_path of the required node.

Response Format

A JSON object is returned containing permissions data.

Sample Request

To get the permissions of node "test3" under path "/tes2" of projectnumber b1, give the URL as follows:

```
http://<host>:port>/ws/rest/service/v1/dm/permission/b1/node/test2/test
3
```

Sample Success Response

```
{
   "Inheritance": false,
   "ApplyToAllSubFolders": false,
   "UserPermission": [{
                         "Type": "PG",
                         "GroupName": "Asset Managers",
                         "FullName": "Asset Managers",
                         "DocumentPermission": {
                                                  "View": 1,
                                                   "Move": 1,
                                                   "Copy": 1,
                                                   "Delete": 1,
                                                   "Download": 1,
                                                   "ModifyProperties":
1,
                                                   "ModifyPermissions":
1,
                                                   "AddComments": 1,
                                                   "Revise": 1
                                                },
                           "FolderPermission": {
                                                     "View": 1,
                                                     "Move": 1,
                                                     "Copy": 1,
                                                     "Delete": 1,
```

```
"ModifyProperties": 1,

"ModifyPermissions": 1,

"CreateSubFolders": 1,
                                                    "AddDocuments": 1
                                            },
                        {
                           "Type": "U",
                           "LoginName": "coadmin",
                           "FullName": "Company Administrator",
                           "DocumentPermission": {
                                                    "View": 1,
                                                    "Move": 0,
                                                    "Copy": 0,
                                                    "Delete": 0,
                                                    "Download": 0,

"ModifyProperties": 0,

"ModifyPermissions": 0,
                                                    "AddComments": 0,
                                                    "Revise": 0
                                                }
                           "FolderPermission": {
                                                    "View": 1,
                                                    "Move": 0,
                                                    "Copy": 1,
                                                    "Delete": 1,

"ModifyProperties": 1,

"ModifyPermissions": 1,

"CreateSubFolders": 1,
```

```
                                                    "AddDocuments": 1
                                                }
                        }
                    ]
}
```

Sample Failed Response

A failed response returns an error message with a status code.

```
{
"message": ["Invalid Node Path"],
"status": 1075
}
```

Get Node Permissions by Node Path, Project Number, and User or Group

```
GET
/ws/rest/service/v1/dm/permission/{projectNumber}/node/{node_path}/user
/{username}?usertype={usertype}
```

Purpose

This REST service retrieves permissions of a node by node_path, project number, user/group name and userType (either 'U' for user, 'PG' for group).

Request Parameters

Path parameters:

- projectnumber: (Optional) project number (if not given, default is company workspace)
- node_path : full node_path of the required node.
- username: user/group name. If it is user (user login name should be given, if its group, group name should be given)
- usertype: QueryParameter: 'U' for user, 'PG' for group.
- POST body is JSON

Sample Request

To get the permissions of node "test3" under path "/test2" of projectnumber b1 for a given group "Asset Managers", give the URL as follows.

```
http://<host>:port>/ws/rest/service/v1/dm/permission/b1/node/test2/test
3/user/Asset%20Managers?usertype=PG
```

The usertype is 'U' for user or 'PG' for project group.

Response Format

A JSON object is returned containing permissions data.

Sample Success Response


```
"Inheritance": false,
"ApplyToAllSubFolders": false,
"UserPermission": [
                        {
                                "Type": "PG",
                                "GroupName": "Asset Managers",
                                "FullName": "Asset Managers",
                                "DocumentPermission": {
                                                                "View": 1,
                                                                "Move": 1,
                                                                "Copy": 1,
                                                                "Delete": 1,
                                                                "Download": 1,

"ModifyProperties": 1,

"ModifyPermissions": 1,
                                                                "AddComments":
1,
                                                                "Revise": 1
                                                        },
                                "FolderPermission": {
                                                                "View": 1,
                                                                "Move": 1,
                                                                "Copy": 1,
                                                                "Delete": 1,

"ModifyProperties": 1,

"ModifyPermissions": 1,

"CreateSubFolders": 1,
                                                                "AddDocuments":
1}
                        }
```

```
                    ]
}
```

Sample Failed Response

```
{
"message": ["Invalid user Type. Type is mandatory to identify either a user or a group"],
"status": 1075
}
```

Add Node Permissions by Node Path and Project Number

`POST /ws/rest/service/v1 /dm/permission/{projectNumber}/node/{node_path}`

Purpose

This service provides the ability to add/update permissions of a node.

Request Parameters

Path parameters:

- projectnumber: (Optional) project number(if not given, default is company workspace)
- node_path : full node_path of the required node.

POST body is a JSON Request body.:

Sample Request

To add permission of a node test3 under node path "/test2" of project b1 send a request in the following format.

URL:
`http://<host>:<port>/ws/rest/service/v1/dm/permission/b1/node/test2/test3`

Request body:

```
{
    "Inheritance": false,
    "ApplyToAllSubFolders": false,
    "UserPermission": [
                        {
                            "Type": "PG",
                            "GroupName": "Asset Managers",
                            "FullName": "Asset Managers",
```

```
                              "DocumentPermission": { "View": 1, "Move":
1, "Copy": 1, "Delete": 1, "Download": 1, "ModifyProperties": 1,
"ModifyPermissions": 1, "AddComments": 1, "Revise": 1},
                              "FolderPermission": {"View": 1, "Move": 1,
"Copy": 1, "Delete": 1, "ModifyProperties": 1, "ModifyPermissions": 1,
"CreateSubFolders": 1, "AddDocuments": 1}
                           }
                     ]
}
```

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

Sample Success Response

```
[{
   "message":[ "given permissions are added successfully"],
   "status":200
}]
```

Sample Failed Response

```
[{
   "message":[ "Invalid user name or user does not have permission to the
current project"],
   "status":1076
}]
```

Update Node Permissions by Node Path and Project Number

```
PUT /ws/rest/service/v1 /dm/permission/{projectNumber}/node/{node_path}
```

Purpose

This service provides the ability to add/update permissions of a node.

Request Parameters

Path parameters:

projectnumber: (Optional) project number(if not given, default is company workspace)

node_path : full node_path of the required node.

Sample Request

To update permission of a node test3 under node path /test2 of project b1, give input as follows:

URL:
`http://<host>:<port>/ws/rest/service/v1/dm/permission/b1/node/test2/test3`

Request Body

```
{
   "Inheritance": false,
   "ApplyToAllSubFolders": false,
   "UserPermission": [
      {
           "Type": "PG",
           "GroupName": "Asset Managers",
           "FullName": "Asset Managers",
           "DocumentPermission": {
                                    "View": 1,
                                    "Move": 1,
                                    "Copy": 1,
                                    "Delete": 1,
                                    "Download": 1,
                                    "ModifyProperties": 1,
                                    "ModifyPermissions": 1,
                                    "AddComments": 1,
                                    "Revise": 1
                                },
             "FolderPermission": {
                                    "View": 1,
                                    "Move": 1,
                                    "Copy": 1,
                                    "Delete": 1,
                                    "ModifyProperties": 1,
                                    "ModifyPermissions": 1,
```

```
                                    "CreateSubFolders": 1,
                                    "AddDocuments": 1
                                }
        }
                    ]
}
```

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

Sample Success Response

```
[
   {
      "message":[ "node permissions are updated successfully"],
      "status":200
   }
]
```

Sample Failed Response

```
[
   {
        "message": [ "Invalid user name or user does not have permission
to the current project" ],
        "status":1076
   }
]
```

Remove Node Permissions by Node Path and Project Number

```
PUT
/ws/rest/service/v1/dm/permission/{projectNumber}/node/{node_path}/remo
ve
```

Purpose

This service allows user to retrieve permissions of a node by node_path and project number.

Request Parameters

projectnumber: (Optional) project number(if not given, default is company workspace)

node_path : full node_path of the required node.

Sample Request

To remove the permissions of node test3 under "/test2" of projectnumber b1, give the URL as follows.

URL

```
http://<host>:port>/ws/rest/service/v1/dm/permission/b1/node/test2/test3
```

Response Format

The REST service returns the status of the remove permission.

Sample Success Response

```
[
   {
       "message":[ "all permissions removed successfully for this node"],
       "status":200
   }
]
```

Sample Failed Response

```
[
   {
       "message":[ "The given node path does not exist"],
       "status":1074
   }
]
```

Remove Node Permissions by Node Path, Project Number, and User or Group

```
PUT
/ws/rest/service/v1/dm/permission/{projectNumber}/node/{node_path}/remove/user/{username}?usertype={usertype}
```

Purpose

This service allows user to retrieve permissions of a node by node_path, project number, user/group name and user Type (either 'U' for user, 'PG' for group)

Request Parameters

projectnumber: (Optional) project number(if not given, default is company workspace)

node_path : full node_path of the required node.

username: comma separated user/group names based on usertype. If it is user(user login name should be given, if its group, group name should be given)

usertype: QueryParameter: 'U' for user, 'PG' for group.

Sample Request

To remove permissions of node "test3" under node path /test2 of projectnumber b1 for a given group "Asset Managers", give the URL as follows.

http://<host>:port>/ws/rest/service/v1/dm/permission/b1/node/test2/test3/user/Asset%20Managers?usertype=PG

> **Note**: The usertype is either 'U' for user or 'PG' for project group.

Response Format

The REST service returns the status of the remove permission.

Sample Success Response

```
[
   { "message": [ "Permissions removed successfully" ],
     "status":200
   }
]
```

Sample Failed Response

If a given node path does not exist in the existing permission list, a response is returned with a status code.

```
[
   {"message": [ "The given node path does not exist"],
     "status":1074
   }
]
```

Granting, Inheriting, and Pushing permissions to files or folders

Users can use REST Services to call out a file or folder in the DM (Company, Shell, or Project), specify names of the users or groups at that location, and *grant* any (or all) of the existing permissions (users or groups) available in the UI for that file or folder.

Users can grant permissions to a file or folder in REST Services by stating that a file or folder "Inherit permissions from the parent folder."

If a user states that a file or folder "Inherit permissions from the parent folder" and also calls user or group names and grants permissions to those individually, the "Inherit permissions from the parent folder" setting will take precedence and the manually called out permissions will be ignored.

Users can call out a folder and grant permissions to files or folders located within the folder by stating in the REST Services: "Apply these permissions to documents and sub-folders."

Removing Permissions to Files or Folders

Users can use REST Services to call out a file or folder in the DM (Company, Shell, or Project), specify names of the users or groups at that location, and *delete* any (or all) of the existing permissions (users or groups) available in the UI for that file or folder.

You can remove users or groups from permissions through REST Services only if the **Inherit permissions from the parent folder** option is not selected. If this option is selected, the remove of users or groups will not go through. You can change the inherit permissions condition (on a file or folder by) by clearing the **Inherit permissions from the parent folder** through REST Services.

Business Processes

Ensure that the integration user has the required Business Process Permissions.

If a BP has integration option, that BP can use BP services.

> **Note:** By design, there are no web services available for the Request for Bid (RFB) business process.

Antivirus scanning of files

If you are using an Oracle Cloud-based deployment, Unifier includes a virus scanner. To prevent virus attacks from infiltrating your system through external files, the system scans each file that is uploaded. Until the scan is completed, the file remains in a Scan Pending state.

At a minimum, the system scans each file that is uploaded, submitted, or attached through the following channels:

- Document Manager
- Business processes (BPs)
- Image pickers
- Cells within forms or sheets
- Custom Templates for use with custom prints and reports

- XML Localization Interchange File Format (XLIFF) files used for translation support
- Custom Help files, such as those provided through a uDesigner object
- Bluebeam sessions
- Webservice Get calls
- Import of comma-separated values (CSV) or Microsoft Excel files

Depending on how your environment is configured, the following actions might occur:

- If the virus scanner detects an issue with a file that a user is uploading, the system sends an email to the user who uploaded the file and the designated company contact. Depending on the location of the infected file, the system might display a bug icon (if the system is configured to display alerts) or an ellipsis icon (if the system is configured to prevent the display of alerts).
- If a user tries to access or download a file that has not yet been scanned and the environment is configured to display alerts, the system displays a Confirmation message that requires a response to continue. If a Confirmation message appears, the user can wait and try to access the file later.
- If the virus scanner detects an issue with a file that a user is trying to view or download, an alert is displayed that indicates the file contains a threat. If multiple files were selected for download, the uninfected files are downloaded.

> **Note:** If you are using an Oracle Cloud-based Unifier deployment, see **Edit Company (Security Tab)** in the *Unifier General Administration Guide* for more information about configuring the environment to allow the display of messages regarding Scan Pending states.

Fetch BP Record List

```
POST /ws/rest/service/v1/bp/records/{project_number}
```

Purpose

Get all list of record in of a specific BP in a shell based on shell number or from company level if project/shell number is not provided.

The input JSON shall provide various options to be considered for fetching the data.

Request Parameters

All parameters should be URL encoded.

Path Parameter

project_number: Specify the Project number in which the records exists; if not provided, records are fetched from Company Level.

filter_condition

```
{
    "bpname" : "Vendors",
    "lineitem" : "yes",
    "lineitem_fields" : " uuu_tab_id;title",
    "filter_condition" : "status=Active",
    "record_fields" : "uuu_user_id;uuu_record_last_update_date"
}
```

POST body is a JSON, POST call has input & output both as JSON in the body.

The "bpname" is mandatory.

The "record_fields" (optional) is list of fields. That is to state: The data element names in the record upper form, only those fields (along with record_no) will be listed out in result.

The "lineitem_fields"(optional) is list of fields in the record lineitem form (only those fields will be listed out in the result).

The "lineitem" values "yes' or "no", default "yes," if not provided. If "no," then the record lineitem details will not be fetched in the result.

The "filter_condition" (optional) is the condition on the record level. The records which satisfy that criteria will be fetched. Only the "=" (equal) condition is supported.

Filter Criteria

A BP record list can be filtered further using filter_criteria,

- Text, String = Pattern matching
- Number, Cost = Ranges and arithmetic / logical operators
- Date = Ranges

"filter_criteria" should be added in POST data.

filter_criteria

```
{
    "bpname" : "Vendors",
    "lineitem" : "yes",
    "lineitem_fields" : "uuu_tab_id;title",
    "record_fields" : "uuu_user_id;uuu_record_last_update_date",

    "filter_criteria":{
        "join":"OR",
        "filter":[
            {
```

```
                "field":"record_no",
                "value":"VEN",
                "condition_type":"like"
            },
            {
                "field":"status",
                "value":"Active",
                "condition_type":"eq"
            },
            {
                "field":"uuu_file_title",
                "value":"first document title",
                "condition_type":"like"
            },
            {
                "field":"uuu_file_issue_date",
                "value":"12-07-2017 07:54:00",
                "value2":"05-07-2018",
                "condition_type":"range"
            }
        ]
    }
}
```

filter_criteria key Definitions

1) The "join": (optional) Specify if the filter condition has to be combined using OR or AND operator. Default is AND.
2) The "filter": List of filter conditions. Each condition will have "field", "value" ("value2" if condition_type is range) and condition_type.
   - The "field": BP form DE name for which the filter condition has to be applied.
   - The "value": value for the DE to filter the data.
   - The "value2": second value for the range condition. Not required to be specified for other conditions.
   - The "condition_type": the filter condition that needs to be applied.

Possible Values For condition_type

condition_type	Notes	Supported Data Element Types
like	For string data types. The value can contain the SQL wildcard characters when like is specified.	Text (String)
eq	For string, numeric and date data type. Will perform the exact match.	Text (String), Number, Cost, Date
lt	For numeric values. Will perform less than value.	Number, Cost, Date
gt	For numeric values. Will perform greater than value.	Number, Cost, Date
lteq	For numeric values. Will perform less than or equal value.	Number, Cost, Date
gteq	For numeric values. Will perform greater than or equal value.	Number, Cost, Date
neq	For numeric values. Will perform not equal value.	Text (String), Number, Cost, Date
range	Numeric, Date values. Will perform range search between value and value2.	Number, Cost, Date

Note: The **Input Date** fields should be provided in "MM-dd-yyyy HH:mm:ss" or ""MM-dd-yyyy" format in **filter_criteria**.

Earlier "filter_condition" (optional) is still supported, and it is the condition on the record level, records which satisfy that criteria will be fetched.

If both "filter_condition" and "filter_criteria" are provided together then It will be "AND" condition between "filter_condition" and "filter_criteria".

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
```

```
}
```

For general spends, payment application, or generic cost BPs, the following funding details are also included in the response:

- unassigned_amount
- fund information as a JSON array with the following values:
  - code
  - fund_balance
  - assigned_amount

See the example in the **Sample Success Response with Fund Details** section below.

> **Note:** If an integration interface is defined for the BP, all the fields defined in the interface will be sent in the response. If an integration interface is not defined, all the custom-defined fields will be sent in response.

Sample Success Response For Get BP List

```
{
  "data":
  [
    {
      "uuu_user_id":"a@abc.com",
      "uuu_record_last_update_date":"2018/04/23 11:06",
      "_bp_lineitems":
      [
        {
          "uuu_tab_id":"List of Contacts",
          "li_num":1,
          "title":"t"
        }
      ],
      "record_no":"VEN-0023"
    },
    {
      "uuu_user_id":"a@abc.com",
      "uuu_record_last_update_date":"2018/05/28 04:34",
```

```
      "_bp_lineitems":
      [
        {
          "uuu_tab_id":"List of Contacts",
          "li_num":1,
          "title":"t"
        },
        {
          "uuu_tab_id":"List of Contacts",
          "li_num":2,
          "title":"t"
        }
      ],
      "record_no":"VEN-0024"
    }
  ],
  "message":
  [ "success"
  ],
  "status":200
}
```

Sample Success Response with Fund Details

```
// For lineitem and CBS assignment rule
{
  "data": [
    {
      "amount": 140,
      "_bp_lineitems": [
        {
          "uuu_quantity": 1,
          "amount": 10,
          "group_id": 0,
          "bItemID": "1_D_D~~1_D_D",
```

```
    "uuu_tab_id": "Standard",
    "uuu_unit_price": 10,
    "short_desc": "a1",
    "li_num": 1,
    "unassigned_amount":20.30
    "funds": [
      {
        "code": "City Funding",
        "fund_balance": 790,
        "assigned_amount":20
      },
      {
        "code": "State Funding",
        "fund_balance": 3500,
        "assigned_amount":560
      }
    ]
  },
  {
    "uuu_quantity": 2,
    "amount": 40,
    "group_id": 0,
    "bItemID": "2_D_D~~2_D_D",
    "uuu_tab_id": "Standard",
    "uuu_unit_price": 20,
    "short_desc": "a2",
    "li_num": 2
  },
  {
    "uuu_quantity": 3,
    "amount": 90,
    "group_id": 0,
    "bItemID": "1_D_D~~1_D_D",
    "uuu_tab_id": "Standard",
```

```
          "uuu_unit_price": 30,
          "short_desc": "a3",
          "li_num": 3
        }
      ],
      "record_no": "uxcost5-0010",
      "due_date": null,
      "title": "multiple li 2",
      "status": "Pending"
    }
  ],
  "message": [
    "success"
  ],
  "status": 200
}

//For record level assignment rule
{
  "data": [
    {
      "amount": 51600,
      "unassigned_amount":7000,
      "funds": [
        {
          "code": "City Funding",
         "fund_balance": 3500,
         "assigned_amount":560
        },
        {
          "code": "State Funding",
          "fund_balance": 3500,
          "assigned_amount":560
```

```
      }
    ],
    "_bp_lineitems": [
      {
        "uuu_quantity": 50,
        "amount": 50000,
        "uuu_effective_date": null,
        "group_id": 0,
        "bItemID": "1_D_D~~1_D_D",
        "uuu_tab_id": "Standard",
        "upaItemUnitPrice": 1000,
        "short_desc": "short desc 1",
        "li_num": 1
      },
      {
        "uuu_quantity": 4,
        "amount": 1600,
        "uuu_effective_date": null,
        "group_id": 0,
        "bItemID": "1_D_D~~1_D_D",
        "uuu_tab_id": "Standard",
        "upaItemUnitPrice": 400,
        "short_desc": "short desc 2",
        "li_num": 2
      }
    ],
    "record_no": "uxcost4-0004",
    "due_date": null,
    "refid": "uxcost1-0001",
    "title": null,
    "status": "Approved"
  }
],
"message": [
```

```
    "success"
  ],
  "status": 200
}
```

Get BP Record

GET /ws/rest/service/v1/bp/record/{project_number}

Purpose

Get a record in of a specific BP in a shell based on shell number or from company level if project/shell number is not provided.

The input JSON shall provide various options to be considered for fetching the data

Request Parameters

All parameters should be URL encoded.

Path Parameter

project_num: Specify the Project number in which the records exists; if not provided, records are fetched from Company Level.

GET URL Parameter

```
input =
 {
    "bpname" : "Vendors",
    "record_no" : "VEN-0023",
    "lineitem":"yes"
 }
 Here "record_no" and "bpname" are mandatory input parameter.
 The "lineitem" is by default "yes", if not provided.
```

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

> **Note**: If Integration interface is defined for that BP, all fields defined in this interface will be sent in the response.

If the Integration interface is not defined, all custom-defined fields will be sent in response.

For general spends, payment application, or generic cost BPs, the following funding details are also included in the response:

- unassigned_amount
- fund information as a JSON array with the following values:
  - code
  - fund_balance
  - assigned_amount

Sample Success Response


```
{
  "data":
  [
    {
      "uuu_user_id":"a@abc.com",
      "uuu_record_last_update_date":"2018/04/23 11:06",
      "uveFaxTB16":null,
      "uveCertificateNoTB64":null,
      "uvePrimaryContactTB64":"a",
      "title":"v-00101",
      "uveLicenseNoTB16":null,
      "uuu_contact_company":"v-00101",
      "uveCOIAmoutCA":0.0,
      "_bp_lineitems":
      [
        {
          "uirCntctFstNmTB":"a",
          "uuu_user_workphone":null,
          "uuu_tab_id":"List of Contacts",
          "title":"t",
          "ugenAddress1TXT120":null,
          "ugenAddress2TXT120":null,
```

```
      "ugenCountryPD":null,
      "ugenCityTXT50":null,
      "short_desc":"Vendor Contact",
      "li_num":1,
      "uriCntctLstNmTB":"b",
      "ugenStatePD":null,
      "ugenZipCodeTXT16":null,
      "uveEmailTB120":null,
      "ugenAddress3TXT120":null
    }
  ],
  "uvePolicyNoTB32":null,
  "record_no":"VEN-0023",
  "uveVendorTypePD":"Architect",
  "ugenCityTXT50":null,
  "uveCoiExpDOP":null,
  "uuu_dm_publish_path":"v_path",
  "uuu_contact_last_name":"b",
  "ugenZipCodeTXT16":null,
  "uveEmailTB120":"a@abc.com",
  "ugenAddress3TXT120":null,
  "uveReferenceIdTB16":null,
  "uuu_creation_date":"2018/04/12 09:01",
  "ugenRemarksTB4000":null,
  "uvePhoneTB64":null,
  "uveTaxIDTB16":null,
  "uveMinorityBusCB":0,
  "uveInsuranceCoTB32":null,
  "ugenExpirationDateDOP":null,
  "uveWomanOwnedCB":0,
  "uveVendorNameTB50":"v-00101",
  "ugenAddress1TXT120":null,
  "uveDisadvantagedBusCB":0,
  "ugenDiscipline":null,
```

```
      "creator_id":"Company Administrator",
      "ugenAddress2TXT120":null,
      "ugenCountryPD":null,
      "uveVendorIDTB16":"v-00101",
      "ugenStatePD":null,
      "uuu_contact_first_name":"a",
      "status":"Active"
    }
  ],
  "message": [ "success"  ],
  "status":200
}
```


Get BP Record With Attachments

GET /ws/rest/service/v1/bp/record/file/{project_number}

Purpose

Get a record detail and all the attachments in the record and its lineitem and general comments, based on input parameter, of a specific BP in a shell based on shell number or from company level if project/shell number is not provided.

The input JSON shall provide various options to be considered for fetching the data

Request Parameters

All parameters should be URL encoded.

Path Parameter

project_num: Specify the Project number in which the records exists; if not provided, records are fetched from Company Level.

GET URL Parameter


```
input =
 {
     "bpname":"Vendors",
     "record_no":"VEN-0024",
     "lineitem":"yes",
     "lineitem_file":"yes",
     "general_comments":"yes",
```

```
            "attach_all_publications":"yes"
        }
```

The "record_no" and "bpname" are mandatory input parameters.

The "lineitem" values "yes" or "no"; default is "yes", if not provided.

The "lineitem_file" values "yes" or "no"; default is "yes", but if "lineitem" is "no" then "lineitem_file" will be considered "no".

The "lineitem_file" input parameter is decided if lineitem attachments will be download or not.

The "general_comments" is for having general comment data in response along with its attachment; by default, it is "yes".

The "attach_all_publications" is for downloading all the publications/revisions for file attached; by default, it is "no".

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

For general spends, payment application, or generic cost BPs, the following funding details are also included in the response:

- unassigned_amount
- fund information as a JSON array with the following values:
  - code
  - fund_balance
  - assigned_amount

Record data will be part of response field "record_data", and record level attachments will always return in response.

Attachments will be part of response field "file_handler", which is base64 encoded zip file String and should be decoded with base64 decoder application or online decoder, for example: `https://www.base64decode.org/`

The file name is outermost "file_name" field in response.

If multiple revision or publication of file is attached, the attachment detail in response will contain all the publications; however, the file with latest publication will be part of downloaded attachment.

To download all the publication/revisions of file attached in record, set "attach_all_publications" in input JSON. It will get all publications from Record upper and detail forms only.

Output Folder structure

zip_file

```
           |
               +-- attachments
               |            |
               |            +-- files attached to record ( upper form )
               |            |
               |            +-- lineitem_<lineitem number>
               |                                        |
               |                                        +-- files
attached to lineitem
               |
               +-- gc_attachments ( general comment attachments )
               |
               +-- comment_<comment number>
                                |
                                +-- files attached to comment
```

Output Folder structure when "attach_all_publications" is "yes"

zip_file

```
      |
        +-- attachments
        |            |
        |            +-- publication_<publication number>
        |            |             |
        |            |            +-- files attached to record which has
same publication number as in parent folder suffix
        |            |
        |            +-- lineitem_<lineitem number>
        |                         |
        |                         +-- publication_<publication number>
        |                                                 |
        |                                              +-- files attached to
lineitem which has same publication number as in parent folder suffix
```

```
        |
       +-- gc_attachments ( general comment attachments )
                   |
                   +-- comment_<comment number>
                                    |
                                    +-- files attached to comment
```

> **Note**: If Integration interface is defined for that BP, all fields defined in this interface will be sent in the response.

If the integration interface is not defined, all Custom defined Fields will be sent in response.

Sample Response


```
{
   "data":[
      {
         "record_data":{
            "uuu_user_id":"a@abc.com",
            "uuu_record_last_update_date":"2018/05/28 04:34",
            "uveFaxTB16":null,
            "uveCertificateNoTB64":null,
            "uvePrimaryContactTB64":"a",
            "title":"v-00024",
            "uveLicenseNoTB16":null,
            "_general_comments":[
               {
                  "firstname":"Company",
                  "comment_state":"Active",
                  "create_date_iso":"2018-05-28T04:34",
                  "page_num":"0",
                  "lastmodified_iso":"2018-05-28T04:34",
                  "shortname":"idc",
                  "content":"\nNew attach comment",
                  "has_annotation":"0",
                  "lastname":"Administrator",
                  "attachment":{
```

```
            "issue_date":null,
            "revision_no":null,
            "file_name":"27362157.jpg",
            "publication_no":1,
            "title":null,
            "file_size":201571
         },
         "companyname":"idc",
         "attachment_id":"0",
         "fullname":"Company Administrator",
         "create_date":[
            "05-28-2018 04:34:55",
            "05-28-2018 04:34:55"
         ],
         "attachment_count":"1"
      },
      {
         "firstname":"Company",
         "comment_state":"Active",
         "create_date_iso":"2018-05-28T04:07",
         "page_num":"0",
         "lastmodified_iso":"2018-05-28T04:07",
         "shortname":"idc",
         "content":"\nThis is a wonderful general comment",
         "has_annotation":"0",
         "lastname":"Administrator",
         "companyname":"idc",
         "attachment_id":"0",
         "fullname":"Company Administrator",
         "create_date":[
            "05-28-2018 04:07:03",
            "05-28-2018 04:07:03"
         ],
         "attachment_count":"0"
```

```
      }
   ],
   "uuu_contact_company":"v-00024",
   "uveCOIAmoutCA":0.0,
   "_bp_lineitems":[
      {
         "uirCntctFstNmTB":"a",
         "uuu_user_workphone":null,
         "uuu_tab_id":"List of Contacts",
         "title":"t",
         "ugenAddress1TXT120":null,
         "attachment":[
            {
               "reference":"NO",
               "issue_date":null,
               "revision_no":null,
               "file_name":"sample_upload_1.pdf",
               "publication_no":1,
               "title":null,
               "create_date":"2018/05/21 19:39",
               "file_size":83768
            }
         ],
         "ugenAddress2TXT120":null,
         "ugenCountryPD":null,
         "ugenCityTXT50":null,
         "short_desc":"Vendor Contact",
         "li_num":1,
         "uriCntctLstNmTB":"b",
         "ugenStatePD":null,
         "ugenZipCodeTXT16":null,
         "uveEmailTB120":null,
         "ugenAddress3TXT120":null
      },
```

```
{
   "uirCntctFstNmTB":"a",
   "uuu_user_workphone":null,
   "uuu_tab_id":"List of Contacts",
   "title":"t",
   "ugenAddress1TXT120":null,
   "attachment":[
      {
         "reference":"NO",
         "issue_date":null,
         "revision_no":null,
         "file_name":"sample_upload_1.pdf",
         "publication_no":0,
         "title":null,
         "create_date":"2018/05/21 19:39",
         "file_size":83768
      },
      {
         "reference":"NO",
         "issue_date":null,
         "revision_no":null,
         "file_name":"sample_upload_2.pdf",
         "publication_no":1,
         "title":null,
         "create_date":"2018/05/21 19:39",
         "file_size":83768
      }
   ],
   "ugenAddress2TXT120":null,
   "ugenCountryPD":null,
   "ugenCityTXT50":null,
   "short_desc":"Vendor Contact",
   "li_num":2,
   "uriCntctLstNmTB":"b",
```

```
            "ugenStatePD":null,
            "ugenZipCodeTXT16":null,
            "uveEmailTB120":null,
            "ugenAddress3TXT120":null
         }
      ],
      "attachment":[
         {
            "reference":"NO",
            "issue_date":null,
            "revision_no":null,
            "file_name":"sample_upload_3.pdf",
            "publication_no":1,
            "title":null,
            "create_date":"2018/05/21 19:39",
            "file_size":83768
         },
         {
            "reference":"NO",
            "issue_date":null,
            "revision_no":null,
            "file_name":"sample_upload_3.pdf",
            "publication_no":2,
            "title":null,
            "create_date":"2018/05/27 23:55",
            "file_size":83768
         }
      ],
      "uvePolicyNoTB32":null,
      "record_no":"VEN-0024",
      "uveVendorTypePD":"Architect",
      "ugenCityTXT50":null,
      "uveCoiExpDOP":null,
      "uuu_dm_publish_path":"v_path",
```

```
            "uuu_contact_last_name":"b",
            "ugenZipCodeTXT16":null,
            "uveEmailTB120":"a@abc.com",
            "ugenAddress3TXT120":null,
            "uveReferenceIdTB16":null,
            "uuu_creation_date":"2018/04/19 02:13",
            "ugenRemarksTB4000":null,
            "uvePhoneTB64":null,
            "uveTaxIDTB16":null,
            "uveMinorityBusCB":0,
            "uveInsuranceCoTB32":null,
            "ugenExpirationDateDOP":null,
            "uveWomanOwnedCB":0,
            "uveVendorNameTB50":"v-00024",
            "ugenAddress1TXT120":null,
            "uveDisadvantagedBusCB":0,
            "ugenDiscipline":null,
            "creator_id":"Company Administrator",
            "ugenAddress2TXT120":null,
            "ugenCountryPD":null,
            "uveVendorIDTB16":"v-00024",
            "ugenStatePD":null,
            "uuu_contact_first_name":"a",
            "status":"Active"
         },
         "file_name":"uv_VEN-0024_0_attachments.zip",
         "file_handler":" base64 encoded zip file "
      }
   ],
   "message":[ "success" ],
   "status":200
}
```

Create BP Record

`POST /ws/rest/service/v1/bp/record/{project_number}`

Purpose

Create a record in a specific BP in a shell based on shell number or from company level if project/shell number is not provided.

The input JSON shall provide various options to be considered for fetching the data.

Request Format

All parameters should be URL encoded. POST body is a JSON

> **Note**: POST call has input & output both as JSON in the body.

If "record_no" is not provided, an auto-generated record_no is assigned to the record. If a unique "record_no" is provided, the record is created with the specified record_no.

- "bpname" is mandatory and is part of options form parameter.
- If "workflow_details" is not specified, the fall back will be the auto-creation settings defined on the BP Setup.
- If "workflow_details" is specified, all three parameters, user_name, workflow_name, and action_name are mandatory.
- Summary CBS codes cannot be included in Cost allocation line items when creating or updating commits of SPA BP records through REST services.
- When a data element (DE) is set to auto-populate from a Base Commit, Change Commit, or an SOV, the auto-populated values takes precedence when 0 value is sent for those DEs in CSV, Excel, or Rest API. Any value specified in the input request is ignored and the auto-populated values from Base Commit, Change Commit, or SOV will be used.

Behavior of the Due Date (due_date) Field

When you create workflow BP records through a REST service, the system currently sets the Due Date automatically based on the **Workflow Settings**; the Due Date provided in the input request is ignored.

When you update workflow BP records through a REST service, you cannot change the Due Date.

The following validations are performed:

- If the user is a valid active user in the project.

> **Note:** The system validates whether the selected user's company exists. If not, the system adds the Partner Company as a Member Company.

- Workflow name is valid and active.
- User is an assignee (user/group) on the creation step of the workflow.
- Action name is valid outgoing link from the creation step.

- Error messages:
  - Enter a valid or an active user. (Missing key or invalid user name)
  - The workflow name is not valid. (Missing key or invalid/inactive workflow name)
  - The user does not have an active workflow template. (User is not an assignee on the creation step)
  - The workflow action name is not valid. (Missing key or invalid outgoing action name from creation step)

Path Parameter

project_number: Specify the Project number in which the records exists; if not provided, records are from Company Level.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

```
{
    "options": {
        "bpname": "Vendors",
        "workflow_details":
        {
            "workflow_name": "workflow_name",
            "user_name" : "first_name  last_name",
            "action_name" : "action_name"
        }
    },
    "data": [
            {
                "record_no":"hello",
                "uuu_user_id": "a@abc.com",
```

```
"uuu_record_last_update_date": "04-12-2018",
"uveFaxTB16": null,
"uveCertificateNoTB64": null,
"uvePrimaryContactTB64": "a",
"title": "v-00101",
"uveLicenseNoTB16": null,
"uuu_contact_company": "v-00101",
"uveCOIAmoutCA": 0,
"_bp_lineitems": [
    {
        "uirCntctFstNmTB": "a",
        "uuu_user_workphone": null,
        "uuu_tab_id": "List of Contacts",
        "title": "t",
        "ugenAddress1TXT120": null,
        "ugenAddress2TXT120": null,
        "ugenCountryPD": null,
        "ugenCityTXT50": null,
        "short_desc": "Vendor Contact",
        "uriCntctLstNmTB": "b",
        "ugenStatePD": null,
        "ugenZipCodeTXT16": null,
        "uveEmailTB120": "hello@abc.com",
        "ugenAddress3TXT120": null
    }
],
"uvePolicyNoTB32": null,
"uveVendorTypePD": "Architect",
"ugenCityTXT50": null,
"uveCoiExpDOP": null,
"uuu_dm_publish_path": "v_path",
"uuu_contact_last_name": "b",
"ugenZipCodeTXT16": null,
"uveEmailTB120": "a@abc.com",
```

```
                "ugenAddress3TXT120": null,
                "uveReferenceIdTB16": null,
                "uuu_creation_date": "04-12-2018",
                "ugenRemarksTB4000": null,
                "uvePhoneTB64": null,
                "uveTaxIDTB16": null,
                "uveMinorityBusCB": 0,
                "uveInsuranceCoTB32": null,
                "ugenExpirationDateDOP": null,
                "uveWomanOwnedCB": 0,
                "uveVendorNameTB50": "v-00101",
                "ugenAddress1TXT120": null,
                "uveDisadvantagedBusCB": 0,
                "ugenDiscipline": null,
                "creator_id": "Company Administrator",
                "ugenAddress2TXT120": null,
                "ugenCountryPD": null,
                "uveVendorIDTB16": "v-00101",
                "ugenStatePD": null,
                "uuu_contact_first_name": "a",
                "status": "Active"
            }
        ]
}
```


Sample Success Response


```
{
    "data": [],
    "message": [
        {
                "_record_status": "success",
                "uuu_user_id": "a@abc.com",
                "uuu_record_last_update_date": "04-12-2018",
                "uveFaxTB16": null,
```

```
"uveCertificateNoTB64": null,
"uvePrimaryContactTB64": "a",
"title": "v-00101",
"uveLicenseNoTB16": null,
"uuu_contact_company": "v-00101",
"uveCOIAmoutCA": 0,
"_bp_lineitems": [
    {
        "uirCntctFstNmTB": "a",
        "uuu_user_workphone": null,
        "uuu_tab_id": "List of Contacts",
        "title": "t",
        "ugenAddress1TXT120": null,
        "ugenAddress2TXT120": null,
        "ugenCountryPD": null,
        "ugenCityTXT50": null,
        "short_desc": "Vendor Contact",
        "uriCntctLstNmTB": "b",
        "ugenStatePD": null,
        "ugenZipCodeTXT16": null,
        "uveEmailTB120": "hello@abc.com",
        "ugenAddress3TXT120": null
    }
],
"uvePolicyNoTB32": null,
"record_no": "hello",
"_attachment": [
    {
        "file_name": "new 1.txt"
    }
],
"uveVendorTypePD": "Architect",
"ugenCityTXT50": null,
"uveCoiExpDOP": null,
```

```
                "uuu_dm_publish_path": "v_path",
                "uuu_contact_last_name": "b",
                "ugenZipCodeTXT16": null,
                "uveEmailTB120": "a@abc.com",
                "ugenAddress3TXT120": null,
                "uveReferenceIdTB16": null,
                "uuu_creation_date": "04-12-2018",
                "ugenRemarksTB4000": null,
                "uvePhoneTB64": null,
                "uveTaxIDTB16": null,
                "uveMinorityBusCB": 0,
                "uveInsuranceCoTB32": null,
                "ugenExpirationDateDOP": null,
                "uveWomanOwnedCB": 0,
                "uveVendorNameTB50": "v-00101",
                "ugenAddress1TXT120": null,
                "uveDisadvantagedBusCB": 0,
                "ugenDiscipline": null,
                "creator_id": "Company Administrator",
                "ugenAddress2TXT120": null,
                "ugenCountryPD": null,
                "uveVendorIDTB16": "v-00101",
                "ugenStatePD": null,
                "uuu_contact_first_name": "a",
                "status": "Active"
            }
    ],
    "status": 200
}
```


Sample Failed Response


```
{
    "data": [],
    "message": [
```

```
        {
            "_record_status": "Error Business Process record_no hello
already exists. ",
            "record": {
                "uuu_user_id": "a@abc.com",
                "uuu_record_last_update_date": "04-12-2018",
                "uveFaxTB16": null,
                "uveCertificateNoTB64": null,
                "uvePrimaryContactTB64": "a",
                "title": "v-00101",
                "uveLicenseNoTB16": null,
                "uuu_contact_company": "v-00101",
                "uveCOIAmoutCA": 0,
                "_bp_lineitems": [
                    {
                        "uirCntctFstNmTB": "a",
                        "uuu_user_workphone": null,
                        "uuu_tab_id": "List of Contacts",
                        "title": "t",
                        "ugenAddress1TXT120": null,
                        "ugenAddress2TXT120": null,
                        "ugenCountryPD": null,
                        "ugenCityTXT50": null,
                        "short_desc": "Vendor Contact",
                        "uriCntctLstNmTB": "b",
                        "ugenStatePD": null,
                        "ugenZipCodeTXT16": null,
                        "uveEmailTB120": "hello@abc.com",
                        "ugenAddress3TXT120": null
                    }
                ],
                "uvePolicyNoTB32": null,
                "record_no": "hello",
                "_attachment": [
```

```
            {
                "file_name": "new 1.txt"
            }
        ],
        "uveVendorTypePD": "Architect",
        "ugenCityTXT50": null,
        "uveCoiExpDOP": null,
        "uuu_dm_publish_path": "v_path",
        "uuu_contact_last_name": "b",
        "ugenZipCodeTXT16": null,
        "uveEmailTB120": "a@abc.com",
        "ugenAddress3TXT120": null,
        "uveReferenceIdTB16": null,
        "uuu_creation_date": "04-12-2018",
        "ugenRemarksTB4000": null,
        "uvePhoneTB64": null,
        "uveTaxIDTB16": null,
        "uveMinorityBusCB": 0,
        "uveInsuranceCoTB32": null,
        "ugenExpirationDateDOP": null,
        "uveWomanOwnedCB": 0,
        "uveVendorNameTB50": "v-00101",
        "ugenAddress1TXT120": null,
        "uveDisadvantagedBusCB": 0,
        "ugenDiscipline": null,
        "creator_id": "Company Administrator",
        "ugenAddress2TXT120": null,
        "ugenCountryPD": null,
        "uveVendorIDTB16": "v-00101",
        "ugenStatePD": null,
        "uuu_contact_first_name": "a",
        "status": "Active"
    }
}
```

```
    ],
    "status": 3000
}
```

Update BP Record

```
PUT /ws/rest/service/v1/bp/record/{project_number}
```

Purpose

Update record in a specific BP in a shell based on shell number or from company level if project/shell number is not provided.

Path Parameter

project_number: Specify the Project number in which the records exists; if not provided, records are from Company Level.

Request Parameters

All parameters should be URL encoded. The input JSON provides various options to be considered for fetching the data.

Notes:

- Auto-Creation setting is mandatory in Shell or Company BP Setup in Admin mode.
- The "record_no" is mandatory and is part of the data for the `UpdateBPRecord` call.
- The "bpname" is mandatory and is part of options form parameter.
- The system validates whether the selected user's company exists. If not, the system adds the Partner Company as a Member Company.
- The WFCurrentStepName and WFActionName are part of the "workflow_details" and are for Workflow-type BPs. If the values for the WFCurrentStepName and WFActionName are provided, the record will be updated and sent to the next step of the workflow. If the values for the WFCurrentStepName and WFActionName are not provided, the record will be updated but will remain in same workflow step.
- The LineItemIdentifier is a part of options form parameter. The LineItemIdentifier value will be the DE name present in the lineItem. The DE name present in the lineItem should be present in the "data" (input record JSON) with its value.
- When you update a record using this REST service to add standard lines, do not include LineItemIdentifier as part of the options in the request. Updating the standard lines in a Payment Application BP is not currently supported.
- The "Enable Step for Integration" option in the Workflow BP setup is

not available for the REST integration.

- Summary CBS codes cannot be included in Cost allocation line items when creating or updating commits of SPA BP records through REST services.
- When a data element (DE) is set to auto-populate from a Base Commit, Change Commit, or an SOV, the auto-populated values takes precedence when 0 value is sent for those DEs in CSV or Excel or Rest API. Any value specified in the input request is ignored and auto-populated values from Base and Change Commit or SOV are used.
- When a required DE is not included or included with a blank value in the request, a successful response is returned by the REST service. However, an error message is displayed when a required Rich Text Editor (RTE) DE is not included in the request, or included with a blank value.

Behavior of the Due Date (due_date) Field

When you create workflow BP records through a REST service, the system currently sets the Due Date automatically based on the **Workflow Settings**; the Due Date provided in the input request is ignored.

When you update workflow BP records through a REST service, you cannot change the Due Date.

Additional Information

The "record_no" is mandatory, and it is a part of data for the `UpdateBPRecord` call.

The "bpname" is mandatory, and it is a part of options form parameter.

The "WFCurrentStepName" and "WFActionName" are part of the "workflow_details," and they are for Workflow type BPs.

If the values for "WFCurrentStepName" and "WFActionName" are provided, the record will be updated and sent to the next step of workflow.

If the values for "WFCurrentStepName" and "WFActionName" are not provided, the record will be updated but will remain in the same workflow step.

The "LineItemIdentifier" is a part of options form parameter. The "LineItemIdentifier" value will be the DE name that is present in the "lineItem." The DE is present in the "data" (input record JSON) along with its value.

In the "_bp_lineitems" section, if "row_id" is modified along with other attributes, update the Fund Code for the line item in the "data" (with the "Lineitemidentifier" specified).

Any auto-populate DEs that are based on the "row_id" (Fund Code) will be populated by means of the update.

Formulas based on auto-populate DES will be evaluated in the line item.

When a record is routed to next step for workflow BPs, if the "work_flow" details are specified, verify that in the Fund sheet the line item amount is rolled up to the modified Fund Code.

The rules that are based on the Fund Code will be evaluated when routing the record through the "UpdateBPRecord" call.

For non-workflow Fund BP, if in the input request the status is specified along with the Fund Code in the line item, upon successful request the existing line item will be updated with the specified Fund Code, and the Fund Sheet will show the line item amount against the modified Fund Code.

> **Note:** For the line item with both Fund Code and CBS Code BPs, only the Fund Code for the existing line items can be modified, by using the "UpdateBPRecord" call.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

PUT

```
   {
           "options":{
               "bpname":"line6",
               "LineItemIdentifier":"upwoLISAS",
               "workflow_details" :
               {
                  "WFCurrentStepName":"Step 4",
                  "WFActionName":"Line 3"
               }
           },
           "data": [
               {
                   "ugenUserIDPK":null,
                   "_bp_lineitems":
                   [
                       {
                       "ugenShellPK":"/AP1",
```

```
                    "uuu_tab_id":"Standard",
                    "short_desc":"desc3_m11",
                    "upwoLISAS":"0001",
                    "uuu_line_item_status":"Active"
                    }
                ],
                "record_no":"uxli6-0020",
                "title":"new title"
            }
            ]
    }
```

Adding LineItemIdentifiers in the BP Design

To add LineItemIdentifier in the BP design:

1) Create a custom DE with DD: Sys Auto Sequence.
2) Add this DE to the Detail Form of the BP with the line items that need to be updated.
3) Go to the **Company Workspace** tab and switch to **Admin** mode.
4) In the left Navigator, select **uDesigner**, and then select **Business Processes**.
5) Open the BP.
6) From the toolbar, click **Open**, and select **Data Elements** to open the **Data Elements Configuration** window.
7) Click the Auto Sequence tab and click Add.
8) Select the data element added in the Detail Form and select the level as: Per Record.
9) Provide the start value and click Create.
10) Add the parameter "Sys Sequence counter" and click OK.
11) Select Integration, select Detail, and then add the DE.
12) Set the "Direction" to "Both" for that DE.
13) Complete and deploy the BP.
14) In the body of the request, add the DE name as Lineitem identifier and send the request.

Sample Request to Delete a Line-Item

To delete a line-Item using update request, the field "_delete_line_item" should be used (value of which will be comma separated values of LineItemIdentifier DE) as shown in the following example:

Sample: Delete line-item input

```
    {
                        "options": {
```

```
                "bpname":"line6",
               "LineItemIdentifier":"upwoLISAS"
               },
              "data": [
             {
                 "ugenUserIDPK":null,
                 "_delete_bp_lineitems":"0002,0001,0003",
                 "record_no":"uxli6-0021",
                 "title":"title_m112244"
           }
       ]
  }
```

Note: PUT call has input & output, both as JSON in the body.

Sample Response

```
{
    "data": [],
    "message": [
        {
            "_record_status": "success",
            "record": {
                "ugenUserIDPK": null,
                "record_no": "uxli6-0021",
                "title": "title_m112244"
            }
        }
    ],
    "status": 200
}
```

An Integration user can modify the Fund Code for an existing record line items, by using `UpdateBPRecord` call.

A user can see the Fund Code for an existing record line items being updated and the line item amount is rolled up to the Fund Sheet, based on updated Fund Code.

Data Elements in Line Items

If the following Data Elements are present in the Line Items, they will not be updated during UpdateBPRecord call.

- bitemid
- budgetid
- sovitemid
- uuu_cm0_picker
- xid
- ds_code
- fsm_lineitem_id
- asm_lineitem_id
- uuu_lat
- uuu_long
- uuu_company_account_name
- uuu_company_account_code
- uuu_company_acc_codepicker
- uuu_activity_picker
- uuu_asset_picker
- ref_bpo_lineitem
- ref_bpo
- ref_rfb
- refid
- uuu_sovlinum
- otherCompanyID
- uuu_costcode_picker
- scheduled_value
- uuu_asset_cum_depreciation
- uuu_asset_curr_period_dep
- uuu_asset_net_book_value
- uuu_unit_price
- currencyid
- due_date
- uuu_asset_calc_as_of_date
- uuu_from_date
- uuu_issue_date
- uuu_last_update_date
- uuu_rfb_due_date
- uuu_to_date
- uuu_week_picker
- uuu_datasource
- uuu_depreciation_mtd
- uuu_line_item_status
- row_id
- uuu_bid_count

- uuu_bidders_count
- uuu_planning_item_picker
- uuu_proj_picker
- record_no
- uuu_resc_picker
- uuu_role_picker
- uuu_commit_short_desc
- end_date
- uuu_creation_date
- uuu_asset_name
- uuu_commit_breakdown
- uuu_asset_code
- uuu_asset_navigation_code
- uuu_timescale_units
- creator_id
- wpid
- uuu_cost_costattribute
- uuu_cost_external_refid
- uuu_cost_status
- uuu_cost_cost_type
- uuu_cost_description
- uuu_cost_item
- uuu_cost_owner
- uuu_cost_code
- uuu_dm_create_date
- uuu_file_create_date
- uuu_file_issue_date
- uuu_dm_percent_complete
- uuu_file_size
- uuu_file_version
- uuu_dm_description
- uuu_dm_node_path
- uuu_dm_node_name
- uuu_file_revision_no
- uuu_file_title
- uuu_dm_create_by
- uuu_file_create_by
- uuu_fund_fundcategory
- uuu_fund_long_desc
- uuu_fund_description
- uuu_fund_fundname

- uuu_fund_code
- uuu_description
- uuu_resc_nwd_type
- uuu_resc_interest
- uuu_resc_proficiency
- uuu_resc_skill
- uuu_role_status
- uuu_role_name
- uuu_resc_capacity
- uuu_user_address
- uuu_user_city
- uuu_user_country
- uuu_user_email
- uuu_user_fax
- uuu_user_firstname
- uuu_user_homephone
- uuu_user_lastname
- uuu_user_mobilephone
- uuu_user_pager
- uuu_user_state
- uuu_user_timezone
- uuu_user_title
- uuu_user_workphone
- uuu_user_zip
- uuu_resc_status
- uuu_resc_code
- uuu_resc_name
- uuu_early_finish
- uuu_early_start,uuu_finish
- uuu_late_finish
- uuu_late_start
- uuu_start
- uuu_act_pct_complete
- uuu_activity_work_hrs
- uuu_duration
- uuu_fixed_cost
- uuu_float
- uuu_labor_cost
- uuu_non_labor_cost
- uuu_total_cost
- uuu_activity_id

- uuu_flag_complete
- uuu_flag_milestone
- uuu_activity_resources
- uuu_dependency_type
- uuu_activity_name
- uuu_outline_code
- uuu_cost_li_type

Create BP Record with Attachment

`POST /ws/rest/service/v1/bp/record/file/{project_number}`

Purpose

Create a record in a specific BP in a shell based on shell number or from company level if project/shell number is not provided.

The input JSON shall provide various options to be considered for fetching the data

Request Format

All parameters should be URL encoded. POST body is a JSON

Path Parameter

project_number: Specify the Project number in which the records exists; if not provided, records are from Company Level.

> **Note**: POST call has input & output both as JSON in the body.

Request Parameters

- If "adding attachment" is disabled in the Upper form or Detail form, and user is trying to attach file to corresponding form. Creating record will fail.
- If "record_no" is not provided, an auto-generated record_no will be assigned to the record
- If a unique "record_no" is provided, the record will be created be given record_no.
- "bpname" is mandatory and is part of options form parameter.
- If "workflow_details" is not specified, the fall back will be the auto-creation settings defined on the BP Setup.
- If specified, all three params - user_name, workflow_name and action_name - are mandatory.
- When a data element (DE) is set to auto-populate from a Base Commit, Change Commit, or an SOV, the auto-populated values takes precedence when 0 value is sent for those DEs in CSV, Excel, or Rest API. Any value specified in the input request is ignored and the auto-populated values from Base Commit, Change Commit, or SOV will be used.

Behavior of the Due Date (due_date) Field

When you create workflow BP records through a REST service, the system currently sets the Due Date automatically based on the **Workflow Settings**; the Due Date provided in the input request is ignored.

When you update workflow BP records through a REST service, you cannot change the Due Date.

The following validations are performed:

- If the user is a valid active user in the project.
- Workflow name is valid and active.
- User is an assignee (user/group) on the creation step of the workflow.
- Action name is valid outgoing link from the creation step.

The following error messages may display:

- Enter a valid or an active user. (Missing key or invalid user name)
- The workflow name is not valid. (Missing key or invalid/inactive workflow name)
- The user does not have an active workflow template. (User is not an assignee on the creation step)
- The workflow action name is not valid. (Missing key or invalid outgoing action name from creation step)
- If "_attachment" (outside data list) for zip file is not provided, the record will be created without attachment.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

```
{
    "options": {
        "bpname": "Vendors",
        "workflow_details":
        {
            "workflow_name": "workflow_name",
```

```
            "user_name" : "first_name  last_name",
            "action_name" : "action_name"
        }
    },
    "data": [
            {
                "uuu_user_id": "a@abc.com",
                "uuu_record_last_update_date": "04-12-2018",
                "uveFaxTB16": null,
                "uveCertificateNoTB64": null,
                "uvePrimaryContactTB64": "a",
                "title": "v-00101",
                "uveLicenseNoTB16": null,
                "uuu_contact_company": "v-00101",
                "uveCOIAmoutCA": 0,
                "_bp_lineitems": [
                    {
                        "uirCntctFstNmTB": "a",
                        "uuu_user_workphone": null,
                        "uuu_tab_id": "List of Contacts",
                        "title": "t",
                        "ugenAddress1TXT120": null,
                        "ugenAddress2TXT120": null,
                        "ugenCountryPD": null,
                        "ugenCityTXT50": null,
                        "short_desc": "Vendor Contact",
                        "uriCntctLstNmTB": "b",
                        "ugenStatePD": null,
                        "ugenZipCodeTXT16": null,
                        "uveEmailTB120": "hello@abc.com",
                        "ugenAddress3TXT120": null,
                "_attachment":[
                    {
                        "file_name":"new 1.txt",
```

```
            "title":"file_title",
            "issue_date":"05/06/2018",
            "revision_no":"100"
        }
        ]
        }
    ],
    "uvePolicyNoTB32": null,
    "uveVendorTypePD": "Architect",
    "ugenCityTXT50": null,
    "uveCoiExpDOP": null,
    "uuu_dm_publish_path": "v_path",
    "uuu_contact_last_name": "b",
    "ugenZipCodeTXT16": null,
    "uveEmailTB120": "a@abc.com",
    "ugenAddress3TXT120": null,
    "uveReferenceIdTB16": null,
    "uuu_creation_date": "04-12-2018",
    "ugenRemarksTB4000": null,
    "uvePhoneTB64": null,
    "uveTaxIDTB16": null,
    "uveMinorityBusCB": 0,
    "uveInsuranceCoTB32": null,
    "ugenExpirationDateDOP": null,
    "uveWomanOwnedCB": 0,
    "uveVendorNameTB50": "v-00101",
    "ugenAddress1TXT120": null,
    "uveDisadvantagedBusCB": 0,
    "ugenDiscipline": null,
    "creator_id": "Company Administrator",
    "ugenAddress2TXT120": null,
    "ugenCountryPD": null,
    "uveVendorIDTB16": "v-00101",
    "ugenStatePD": null,
```

```
                "uuu_contact_first_name": "a",
                "status": "Active",
                "_attachment":[
                    {
                        "file_name":"new 1.txt",
                        "title":"file_title1",
                        "issue_date":"05/06/2018",
                        "revision_no":"300"
                    },
                    {
                        "file_name":"exp1.txt",
                        "title":"file_title2",
                        "issue_date":"05/06/2018",
                        "revision_no":"200"
                    }
                    ]
            }
        ]
    ,
    "_attachment": {
             "zipped_file_name" : "create.zip",
             "zipped_file_size": "746089",
             "zipped_file_content" :"< base64_encoded string of
create.zip file>"
    }
}
```

Sample Success Response

```
{
    "data": [],
    "message": [
        {
            "uuu_user_id": "a@abc.com",
            "uuu_record_last_update_date": "04-12-2018",
```

```
"uveFaxTB16": null,
"uveCertificateNoTB64": null,
"uvePrimaryContactTB64": "a",
"title": "v-00101",
"uveLicenseNoTB16": null,
"uuu_contact_company": "v-00101",
"_record_status": "success",
"uveCOIAmoutCA": 0,
"_bp_lineitems": [
    {
        "uirCntctFstNmTB": "a",
        "uuu_user_workphone": null,
        "uuu_tab_id": "List of Contacts",
        "title": "t",
        "ugenAddress1TXT120": null,
        "_attachment": [
            {
                "issue_date": "05/06/2018",
                "revision_no": "100",
                "file_name": "new 1.txt",
                "title": "file_title"
            }
        ],
        "ugenAddress2TXT120": null,
        "ugenCountryPD": null,
        "ugenCityTXT50": null,
        "short_desc": "Vendor Contact",
        "uriCntctLstNmTB": "b",
        "ugenStatePD": null,
        "ugenZipCodeTXT16": null,
        "uveEmailTB120": "hello@abc.com",
        "ugenAddress3TXT120": null
    }
],
```

```
"uvePolicyNoTB32": null,
"_attachment": [
    {
        "issue_date": "05/06/2018",
        "revision_no": "300",
        "file_name": "new 1.txt",
        "title": "file_title1"
    },
    {
        "issue_date": "05/06/2018",
        "revision_no": "200",
        "file_name": "exp1.txt",
        "title": "file_title2"
    }
],
"record_no": "VEN-0086",
"uveVendorTypePD": "Architect",
"ugenCityTXT50": null,
"uveCoiExpDOP": null,
"uuu_dm_publish_path": "v_path",
"uuu_contact_last_name": "b",
"ugenZipCodeTXT16": null,
"uveEmailTB120": "a@abc.com",
"ugenAddress3TXT120": null,
"uveReferenceIdTB16": null,
"uuu_creation_date": "04-12-2018",
"ugenRemarksTB4000": null,
"uvePhoneTB64": null,
"uveTaxIDTB16": null,
"uveMinorityBusCB": 0,
"uveInsuranceCoTB32": null,
"ugenExpirationDateDOP": null,
"uveWomanOwnedCB": 0,
"uveVendorNameTB50": "v-00101",
```

```
            "ugenAddress1TXT120": null,
            "uveDisadvantagedBusCB": 0,
            "ugenDiscipline": null,
            "creator_id": "Company Administrator",
            "ugenAddress2TXT120": null,
            "ugenCountryPD": null,
            "uveVendorIDTB16": "v-00101",
            "ugenStatePD": null,
            "uuu_contact_first_name": "a",
            "status": "Active"
        }
    ],
    "status": 200
}
```


Sample Failed Response


```
{
    "data": [],
    "message": [
        {
            "_record_status": "Error Business Process record_no hello
already exists. ",
            "record": {
                "uuu_user_id": "a@abc.com",
                "uuu_record_last_update_date": "04-12-2018",
                "uveFaxTB16": null,
                "uveCertificateNoTB64": null,
                "uvePrimaryContactTB64": "a",
                "title": "v-00101",
                "uveLicenseNoTB16": null,
                "uuu_contact_company": "v-00101",
                "uveCOIAmoutCA": 0,"uveTaxIDTB16": null,
                "_bp_lineitems": [
```

```
        {
            "uirCntctFstNmTB": "a",
            "uuu_user_workphone": null,
            "uuu_tab_id": "List of Contacts",
            "title": "t",
            "ugenAddress1TXT120": null,
            "ugenAddress2TXT120": null,
            "ugenCountryPD": null,
            "ugenCityTXT50": null,
            "short_desc": "Vendor Contact",
            "uriCntctLstNmTB": "b",
            "ugenStatePD": null,
            "ugenZipCodeTXT16": null,
            "uveEmailTB120": "hello@abc.com",
            "ugenAddress3TXT120": null
        }
    ],
    "uvePolicyNoTB32": null,
    "record_no": "hello",
    "_attachment": [
        {
            "file_name": "new 1.txt"
        }
    ],
    "uveVendorTypePD": "Architect",
    "ugenCityTXT50": null,
    "uveCoiExpDOP": null,
    "uuu_dm_publish_path": "v_path",
    "uuu_contact_last_name": "b",
    "ugenZipCodeTXT16": null,
    "uveEmailTB120": "a@abc.com",
    "ugenAddress3TXT120": null,
    "uveReferenceIdTB16": null,
    "uuu_creation_date": "04-12-2018",
```

```
                "ugenRemarksTB4000": null,
                "uvePhoneTB64": null,
                "uveTaxIDTB16": null,
                "uveMinorityBusCB": 0,
                "uveInsuranceCoTB32": null,
                "ugenExpirationDateDOP": null,
                "uveWomanOwnedCB": 0,
                "uveVendorNameTB50": "v-00101",
                "ugenAddress1TXT120": null,
                "uveDisadvantagedBusCB": 0,
                "ugenDiscipline": null,
                "creator_id": "Company Administrator",
                "ugenAddress2TXT120": null,
                "ugenCountryPD": null,
                "uveVendorIDTB16": "v-00101",
                "ugenStatePD": null,
                "uuu_contact_first_name": "a",
                "status": "Active"
            }
        }
    ],
    "status": 3000
}
or if zip_file_size of uploaded zip file is not correct :
{
    "data": [],
    "message": [
        "Uploaded Zip file is invalid"
    ],
    "status": 3003
}
```

Update BP Record with Attachment

The following applies to the **Update BP Record with Attachment** (REST API Details in Business Processes) Web Services V1:

```
PUT /ws/rest/service/v1/bp/record/file/{project_number}
```

Purpose

Update a record with attachment in a specific BP in a shell based on shell number or from company level if the project/shell number, is not provided.

The input JSON shall provide various options to be considered for fetching the data.

Path Parameter

project_number: Specify the Project number in which the records exists; if not provided, records are from Company Level.

Request Parameters

All parameters must be URL encoded. Both input & output in JSON format in the body.

Notes:

- If "adding attachment" is disabled in Upper form or Detail form, and user is trying to attach file to corresponding form. Updating record will fail.
- Only one record update with attachments is supported in this call. If the file exists in a record, that file will be ignored and will not get revised.
- If integration form has "add attachment" disabled, files will not get attached.
- If the "_attachment" (outside data list) for zip file is not provided, the record will be updated without attachment.
- Auto-Creation setting is mandatory in Shell or Company BP Setup in the Admin mode.
- In input JSON options, the "project_number" specifies the shell in which the records exist; if the "project_number" is not provided, the records are from Company Level.
- The "record_no" is mandatory and is a part of data.
- The "bpname" is mandatory and is a part of options form parameter.
- The WFCurrentStepName and WFActionName are part of the "workflow_details" and are for Workflow type BPs. If the values for WFCurrentStepName and WFActionName are provided, the record will be updated and sent to next step of the workflow. If the values for WFCurrentStepName and WFActionName are not provided, the record will be updated but it will remain on the same workflow step.
- The LineItemIdentifier is part of options form parameter. The LineItemIdentifier value will be DE name present in the lineItem. That

DE should be present in "data" (input record JSON) with its value.

- The "Enable Step for Integration" option in the Workflow BP setup is not available for the REST integration.
- When a data element (DE) is set to auto-populate from a Base Commit, Change Commit, or an SOV, the auto-populated values takes precedence when 0 value is sent for those DEs in CSV, Excel, or Rest API. Any value specified in the input request is ignored and the auto-populated values from Base Commit, Change Commit, or SOV will be used.

Behavior of the Due Date (due_date) Field

When you create workflow BP records through a REST service, the system currently sets the Due Date automatically based on the **Workflow Settings**; the Due Date provided in the input request is ignored.

When you update workflow BP records through a REST service, you cannot change the Due Date.

Adding LineItemIdentifiers in BP Design

To add a LineItemIdentifier in the BP design:

1) Create a custom DE with DD: Sys Auto Sequence.
2) Add this DE to the Detail Form of the BP with the line items that need to be updated.
3) Go to the **Company Workspace** tab and switch to **Admin** mode.
4) In the left Navigator, select **Business Processes**, and then open the BP.
5) Click Open drop-down to open and select Data Elements to open the Data Elements Configuration window.
6) Click the Auto Sequence tab and click Add.
7) Select the data element added in the Detail Form and select the level as: Per Record.
8) Provide the start value and click Create.
9) Add the parameter "Sys Sequence counter" and click OK.
10) Select Integration, select Detail, and then add the DE.
11) Set the "Direction" to "Both" for that DE.
12) Complete and deploy the BP.
13) In the body of the request, add the DE name as Lineitem identifier and send the request.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request


```
{
   "options":{
      "bpname":"line6",
      "LineItemIdentifier":"upwoLISAS",
      "workflow_details":{
         "WFCurrentStepName":"Step 4",
         "WFActionName":"Line 3"
      }
   },
   "data":[
      {
         "ugenUserIDPK":null,
         "_bp_lineitems":[
            {
               "ugenShellPK":"/AP1",
               "uuu_tab_id":"Standard",
               "short_desc":"desc3_m11",
               "upwoLISAS":"0001",
               "uuu_line_item_status":"Active"
            }
         ],
         "record_no":"uxli6-0020",
         "title":"new title",
         "_attachment":[
            {
               "file_name":"file_1.txt",
               "title":"file_title1",
               "issue_date":"05/06/2018",
               "revision_no":"300"
            },
```

```
            {
               "file_name":"file_2.txt",
               "title":"file_title2",
               "issue_date":"05/06/2018",
               "revision_no":"200"
            }
         ]
      }
   ],
   "_attachment":
   {
        "zipped_file_name" : "zip_file_name.zip",
        "zipped_file_size": "746089",
        "zipped_file_content" :"<base64_encoded string of
zip_file_name.zip file>"
    }
}
```

Sample Request to Delete the Line-Item

To delete the line-Item using update request, the field "_delete_line_item" should be used (value of which will be comma separated values of LineItemIdentifier DE) as shown in the following example:

Sample: *Delete line-item input*

```
{
   "options":{
      "bpname":"line6",
      "LineItemIdentifier":"upwoLISAS"
   },
   "data":[
      {
         "ugenUserIDPK":null,
         "_delete_bp_lineitems":"0002,0001,0003",
         "record_no":"uxli6-0021",
         "title":"title_m112244"
      }
```

```
   ]
}
```

Sample Success Response

This is an example of an *Update record with attachment response.*

```
{
   "data":[

   ],
   "message":[
      {
         "_record_status":"success",
         "record":{
            "ugenUserIDPK":null,
            "record_no":"uxli6-0021",
            "title":"title_m112244"
         }
      }
   ],
   "status":200
}
```

Sample Failed Response

This is an example of a failed response when the zip_file_size of an uploaded zip file is incorrect.

```
{
    "data": [],
    "message": ["Uploaded Zip file is invalid"],
    "status": 3003
}
```

Data Elements in Line Items

If the following Data Elements are present in the Line Items, they will not be updated during UpdateBPRecord call.

- `bitemid`
- `budgetid`
- `sovitemid`

- uuu_cm0_picker
- xid
- ds_code
- fsm_lineitem_id
- asm_lineitem_id
- uuu_lat
- uuu_long
- uuu_company_account_name
- uuu_company_account_code
- uuu_company_acc_codepicker
- uuu_activity_picker
- uuu_asset_picker
- ref_bpo_lineitem
- ref_bpo
- ref_rfb
- refid
- uuu_sovlinum
- otherCompanyID
- uuu_costcode_picker
- scheduled_value
- uuu_asset_cum_depreciation
- uuu_asset_curr_period_dep
- uuu_asset_net_book_value
- uuu_unit_price
- currencyid
- due_date
- uuu_asset_calc_as_of_date
- uuu_from_date
- uuu_issue_date
- uuu_last_update_date
- uuu_rfb_due_date
- uuu_to_date
- uuu_week_picker
- uuu_datasource
- uuu_depreciation_mtd
- uuu_line_item_status
- row_id
- uuu_bid_count
- uuu_bidders_count
- uuu_planning_item_picker
- uuu_proj_picker

- record_no
- uuu_resc_picker
- uuu_role_picker
- uuu_commit_short_desc
- end_date
- uuu_creation_date
- uuu_asset_name
- uuu_commit_breakdown
- uuu_asset_code
- uuu_asset_navigation_code
- uuu_timescale_units
- creator_id
- wpid
- uuu_cost_costattribute
- uuu_cost_external_refid
- uuu_cost_status
- uuu_cost_cost_type
- uuu_cost_description
- uuu_cost_item
- uuu_cost_owner
- uuu_cost_code
- uuu_dm_create_date
- uuu_file_create_date
- uuu_file_issue_date
- uuu_dm_percent_complete
- uuu_file_size
- uuu_file_version
- uuu_dm_description
- uuu_dm_node_path
- uuu_dm_node_name
- uuu_file_revision_no
- uuu_file_title
- uuu_dm_create_by
- uuu_file_create_by
- uuu_fund_fundcategory
- uuu_fund_long_desc
- uuu_fund_description
- uuu_fund_fundname
- uuu_fund_code
- uuu_description
- uuu_resc_nwd_type

- uuu_resc_interest
- uuu_resc_proficiency
- uuu_resc_skill
- uuu_role_status
- uuu_role_name
- uuu_resc_capacity
- uuu_user_address
- uuu_user_city
- uuu_user_country
- uuu_user_email
- uuu_user_fax
- uuu_user_firstname
- uuu_user_homephone
- uuu_user_lastname
- uuu_user_mobilephone
- uuu_user_pager
- uuu_user_state
- uuu_user_timezone
- uuu_user_title
- uuu_user_workphone
- uuu_user_zip
- uuu_resc_status
- uuu_resc_code
- uuu_resc_name
- uuu_early_finish
- uuu_early_start,uuu_finish
- uuu_late_finish
- uuu_late_start
- uuu_start
- uuu_act_pct_complete
- uuu_activity_work_hrs
- uuu_duration
- uuu_fixed_cost
- uuu_float
- uuu_labor_cost
- uuu_non_labor_cost
- uuu_total_cost
- uuu_activity_id
- uuu_flag_complete
- uuu_flag_milestone
- uuu_activity_resources

- uuu_dependency_type
- uuu_activity_name
- uuu_outline_code
- uuu_cost_li_type

Fetch BP Record List with filter_criteria

POST /ws/rest/service/v1/bp/records/{project_number}

Purpose

Earlier in REST V1 service, "POST /ws/rest/service/v1/bp/records/{projectnumber}" used "filter_condition" to filter the BP records. Only '=' (equal) condition was supported for Data Elements 'end_date','record_no' and 'status'"

filter_condition

```
{
    "bpname" : "Vendors",
    "lineitem" : "yes",
    "lineitem_fields" : " uuu_tab_id;title",
    "filter_condition" : "status=Active",
    "record_fields" : "uuu_user_id;uuu_record_last_update_date"
}
```

Enhancing BP Record list V1 REST API to support for filters like:

- Text, String = Pattern matching
- Number, Cost = Ranges and arithmetic / logical operators
- Date = Ranges

To support the new BP filters, new "**filter_criteria**" should be added in POST data.

filter_criteria

```
{
    "bpname" : "Vendors",
    "lineitem" : "yes",
    "lineitem_fields" : "uuu_tab_id;title",
    "record_fields" : "uuu_user_id;uuu_record_last_update_date",
    "filter_criteria":{
        "join":"OR",
```

```
        "filter":[
            {
                "field":"record_no",
                "value":"VEN",
                "condition_type":"like"
            },
            {
                "field":"uuu_file_title",
                "value":"first document title",
                "condition_type":"like"
            },
            {
                "field":"uuu_file_issue_date",
                "value":"12-07-2017 07:54:00",
                "value2":"20-07-2018",
                "condition_type":"range"
            }
        ]
    }
}
```

filter_criteria key Definitions

1) The "join": (optional) Specify if the filter condition has to be combined using OR or AND operator. Default is AND.
2) The "filter": List of filter conditions. Each condition will have "field", "value" ("value2" if condition_type is range) and condition_type.
   - The "field": BP form DE name for which the filter condition has to be applied.
   - The "value": value for the DE to filter the data.
   - The "value2": second value for the range condition. Not required to be specified for other conditions.
   - The "condition_type": the filter condition that needs to be applied.

Possible value for condition_type:

condition_type	Notes	Supported Data Element Types
like	For string data types. The value can contain the SQL wildcard characters when like is specified.	Text (String)
eq	For string, numeric and date data type. Will perform the exact match.	Text (String), Number, Cost, Date
lt	For numeric values. Will perform less than value.	Number, Cost, Date
gt	For numeric values. Will perform greater than value.	Number, Cost, Date
lteq	For numeric values. Will perform less than or equal value.	Number, Cost, Date
gteq	For numeric values. Will perform greater than or equal value.	Number, Cost, Date
neq	For numeric values. Will perform not equal value.	Text (String), Number, Cost, Date
range	Numeric, Date values. Will perform range search between value (from) and value2 (to).	Number, Cost, Date

Notes:

- The **Input Date** fields should be provided in "MM-dd-yyyy HH:mm:ss" or ""MM-dd-yyyy" format in **filter_criteria**.
- All parameters should be URL encoded.
- POST body is a JSON, POST call has input and output both as JSON in the body, "bpname" is mandatory.
- The "record_fields" (optional) is list of fields. That is to state that the upper form DR names in the record upper form, only those fields (along with the "record_no) will be listed in the result.
- The "lineitem_fields" (optional) is a list of fields in the record lineitem form, and only those fields will be listed in the result.
- Earlier "filter_condition" is still supported, and it is the condition on the record level, the records which satisfy that criteria will be fetched. Only "=" (equal) condition is supported.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Response of Get BP list after applying filter_criteria

```
{
  "data":
  [
    {
      "uuu_user_id":"a@abc.com",
      "uuu_record_last_update_date":"2018/04/23 11:06",
      "_bp_lineitems":
      [
        {
          "uuu_tab_id":"List of Contacts",
          "li_num":1,
```

```
          "title":"t"
        }
      ],
      "record_no":"VEN-0023"
    },
    {
      "uuu_user_id":"a@abc.com",
      "uuu_record_last_update_date":"2018/05/28 04:34",
      "_bp_lineitems":
      [
        {
          "uuu_tab_id":"List of Contacts",
          "li_num":1,
          "title":"t"
        },
        {
          "uuu_tab_id":"List of Contacts",
          "li_num":2,
          "title":"t"
        }
      ],
      "record_no":"VEN-0024"
    }
  ],
  "message":
  [ "success"
  ],
  "status":200
}
```


Payment Application with Auto-populate from SOV and Commits

Any auto-populate from SOV, Base Commit, or Change Commit will take precedent over the input provided in the JSON request file.

Asynchronous Bulk BP Operations

Purpose

To make these operations Asynchronous:

- BulkCreateRecords (***Bulk Create Records*** (on page 698))
- BulkUpdateRecords (***Bulk Update Records*** (on page 707))
- BulkReverseAutoPopulateRecords (***Bulk Reverse Auto Populate Records*** (on page 708))

See the pertinent topics for details.

> **Note**: The destination BP must be of Simple type BP or Line Item type BP.

Request Format

Both input & output in JSON format in the body.

When input JSON contains "async" : "true" inside "options", the REST call will become asynchronous. The REST call will return URL to check status of BP operation.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

```
{
    "options":
                {
                       "async" : "true",
                       "bpname" : "Source BP name",
                       "project_number" :"P-0001"
                }
}
```

Sample Response

```
{
  "message": {
                "@uri": "/ws/rest/service/status/job/110",
                 "job_id": "110"
           },
  "status": "202"
}
```

Asynchronous REST Call Status

Bulk Reverse Auto Populate Records

`GET /ws/rest/service/status/job/{job_id}`

Purpose

To check the status (success/pending/failed) of Asynchronous BP REST call.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Response

```
{
  "message": {
    "job-message": "success",
    "job-status": "200"
  },
  "status": 200
}
```

Fetch List of Attached Files in a BP

```
GET /ws/rest/service/v1/bp/record/file/list/P-0001?input={"bpname" :
"<value>","record_no" : "<project Number>"}
```

If a project number is specified, the record is fetched from that project.

If a project number is *not* specified, the record is fetched from company-level BP.

Purpose

This web service enables the external application to fetch a list of attachments in a specific BP record in a:

- Project/shell, based on the project/shell number.
- Company, if the project/shell number is not available or has not been provided.

If there is a revision performed on any attached files, the list API returns the latest revised file details.

If any of the attached files are revised (at the record level, or at the line item level), the API list will contain all those revised files.

> **Note**: By design, there are no web services available for the Request for Bid (RFB) business process.

JSON input provides many options for fetching the data.

Request Parameters

Request parameters must be added with the above parameters. All parameters should be URL encoded.

Path Parameter

- project_number: Specify the project number for the project that contains the BP records. If you do not specify the project number, the system will fetch the BP records at company level.
- filter_condition: input= {"bpname" : "<value>", "record_no" : "<value>" }

The "bpname" and "record_no" are mandatory.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

```
GET /ws/rest/service/v1/bp/record/file/list/P-0001?input={"bpname" :
"Purchase Orders","record_no" : "PO-0104"}
```

Where "P-0104" is the project number.

Get BP Record Attachment list Sample Response


```
{
    "data": [
        {
            "bpname": "Purchase Orders",
            "attachments": [
                {
                    "issue_date": null,
                    "revision_no": null,
                    "file_name": "abc - Copy (3).txt",
                    "file_id": 13392,
                    "tab_name": "",
                    "publication_no": 8,
                    "title": null,
                    "file_size": 5
                },
                {
                    "issue_date": null,
                    "revision_no": null,
                    "file_name": "abc - Copy (4).txt",
                    "file_id": 13393,
                    "tab_name": "",
                    "publication_no": 12,
                    "title": null,
                    "file_size": 5
                }
            ],
            "detailTabs": [
```

```
{
    "attachments": [
        {
            "issue_date": null,
            "revision_no": null,
            "file_name": "abc - Copy (5).txt",
            "file_id": 13394,
            "tab_name": "Line Items",
            "publication_no": 11,
            "title": null,
            "file_size": 5
        },
        {
            "issue_date": null,
            "revision_no": null,
            "file_name": "abc - Copy (6).txt",
            "file_id": 13395,
            "tab_name": "Line Items",
            "publication_no": 11,
            "title": null,
            "file_size": 5
        },
        {
            "issue_date": null,
            "revision_no": null,
            "file_name": "abc - Copy (7).txt",
            "file_id": 13396,
            "tab_name": "Line Items",
            "publication_no": 11,
            "title": null,
            "file_size": 5
        },
        {
            "issue_date": null,
```

```
                            "revision_no": null,
                            "file_name": "abc - Copy (8).txt",
                            "file_id": 13397,
                            "tab_name": "Line Items",
                            "publication_no": 8,
                            "title": null,
                            "file_size": 5
                        }
                    ],
                    "tab_name": "Line Items"
                }
            ],
            "record_no": "PO-0104"
        }
    ],
    "message": [ "success" ],
    "status": 200
}
```


Download a Single Attached File in a BP

`GET ws/rest/service/v1/bp/record/download/file/{file_id}`

where `file_id` is the file that you want to download.

Purpose

This REST service enables the external application to download a specific attachment in a specific BP record, using the file id, in a:

- Project/shell, based on the project/shell number.
- Company, if the project/shell number is not available or has not been provided.

If there is a revision performed on any attached files, the list API returns the latest revised file details.

If any of the attached files are revised (at the record level, or at the line item level), the API list will contain all those revised files.

Notes:

- Reference files are not downloaded, only the base file is downloaded when using this REST API.
- By design, there are no web services available for the Request for Bid (RFB) business process.

Request Parameters

All parameters should be URL encoded.

Path Parameter

file_id: Specify the file id.

Response Format

An octet-stream of the file along with a JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

If the file id is valid, the file content will come as a zip file, as a part of the response. To get the file, you must save the response.

Note: The output is in octet-stream format, which only has arbitrary binary data.

Download Multipart or Large Files

If the BP has large drawing and 3d Model files as attachments and downloading all the attachments in the BP is not possible, you can "Fetch" a list of attachments (in the BP) first, determine which files you need, and proceed to download those needed attachments.

This service will enable third-party applications to fetch just a list of the BP attachments (and any updates because of subsequent changes to the list) to determine which attachments to download.

Fetch all Attachments in a Record as Multipart

```
GET /ws/rest/service/v1/bp/record/multipart/file
```

Purpose

To provide the attachments as a multipart file in the response along with the BP details and get all the attachments in a record as a zip file as a multipart octet-stream response.

After you save the response, it will be saved as a zip file with name as `<<model name>>_<<record number>>_<<random number>>_attachments.zip`, for example: `Purchase Orders_PO-0115_0_attachments.zip`.

The zip file maintains folder structure inside as "Attachments" folder for the upper form level attachments. Inside the folder the "`lineitems_0_1`" folder for the line items level attachments.

A folder will be created for the comment level attachments under the zip file: "`gc_attachments`."

The response content type will be application/octet-stream (sent with the header file), and the response cannot be parsed as JSON data (the response will not contain the record information).

The new multipart endpoint is implemented to handle large file download, similar to the downloading of large files in Document Manager.

Request Parameters

All parameters should be URL encoded.

Mandatory

- "projectNumber"
- "bpname"
- "record_no"

Optional

"lineitem"

If the "lineitem" is set as "no", the lineitem-related attachments will not be pulled.

filter_condition

```
input= {
    "projectNumber":"P-0001",
    "bpname":"Action Items",
    "record_no":"AI-000017",
    "lineitem":"yes"
}
```

Add the filter condition with the above request parameters.

Response Format

An octet-stream of the attachments zip along with a JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

> **Note:** The output is in octet-stream format, which only has arbitrary binary data.

Response Header

The following table contains the response header details.

Header (5)

Status Code: 200 OK

Key	Value
Connection	close
Date	Wed, 12 Oct 2022 06:12:27 GMT
Transfer-Encoding	chunked
Content-Type	The “Content-Type” header parameter would be the application/Octet-stream.
Content-Disposition	The “Content-Disposition” header parameter would be the attachment details, such as the file name, in standard and UTF8 formats. For example: attachment; filename="Action Items_AI-000017_0_attachments.zip";filename*=utf-8''Action%20Items_AI-000017_0_attachments.zip

Shell Manager

- Create Shell
- Update Shell
- Get Shell

- Get BPs in Shell or Company
- Get Project Shell List

Create Shell

`POST /ws/rest/service/v1/admin/shell`

This REST service also supports the Shell Manager Attribute Form

Sample Request

```
{
   "options" : {
   "copy_from_shell_template" : "OFF-00",
   "copy_modules" : "",
   "default_currency" : ""
},
"data" :[
            {
               "uBuildingNumber" : "BLD - 31",
               "uBuildingName" : "BUILDING 31",
               "uuu_location" : "/All Properties",
               "uuu_administrator" : "Company Administrator"
            },
            {
               "uBuildingNumber" : "BLD - 32",
               "uBuildingName" : "BUILDING 32",
               "uuu_location" : "/All Properties",
               "uuu_administrator" : "Company Administrator"
            }
        ]
}
```

Sample Response

```
{
   "data":[],
   "message":[
              {
```

```
                "uBuildingNumber":"BLD - 31",
                "uuu_administrator":"Eadlin Jay",
                "_record_status":"uBuildingName BUILDING 31 already
exists under /All Properties. ",
                "uuu_location":"/All Properties",
                "uBuildingName":"BUILDING 31"
              },
              {
                "uBuildingNumber":"BLD0032",
                "uuu_administrator":"Eadlin Jay",
                "_record_status":"SUCCESS",
                "uuu_location":"/All Properties",
                "uBuildingName":"BUILDING 32"
              }
            ],
   "status":3000
}
```


- If all the shells are created successfully, the response status code will be 200.
- The copy_modules and default_currency are optional.
- The response will have the input data sent in plus the _record_status.
- The _record_status will indicate if the shell creation is a success or the respective error message.

> **Note**: The shell number in the response might not be the same as the input if auto-numbering is set.

Update Shell

`PUT /ws/rest/service/v1/admin/shell`

> **Note**: As a best practice, delay invoking this REST call when reverse auto-population is configured in a business process.

This REST service also supports the Shell Manager Attribute Form

Request Format

Send an API request as a JSON Map with the following structure:


```
{
          "options":{},
```

```
          "data":[]
}
```

Response Format

The REST service returns a JSON Map in the following format:

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

If all the shells are updated successfully, the response status code will be 200.

The response will have the input data sent in plus the `_record_status` to indicate if the shell update is a success or the respective error message.

Sample Request

```
{
  "options" : { "shelltype" : "All Properties"},
  "data" :[
            {
              "uPropertyNumber" : "RE00000",
              "description" : "TEST35"
            } ,
            {
              "uPropertyNumber" : "BLD0005",
              "description" : "TEST35"
            }
         ]
}
```

Sample Failed Response

```
{
  "data":[ ],
  "message":[
              {
                  "_record_status":"SUCCESS",
```

```
                "description":"TEST35",
                "uPropertyNumber":"RE00000"
            },
            {
                "_record_status":"Shell Number is not correct. ",
                "description":"TEST35",
                "uPropertyNumber":"BLD0005"
            }
        ],
  "status":3000
}
```

Get Shell

`GET /ws/rest/service/v1/admin/shell`

This REST service also supports the Shell Manager Attribute Form

Request Format

Optional filter condition can be provided as parameter to the GET request.

Name of key is options and value is in JSON format as below:

```
{
 "filter": {"shell_type" : "Buildings"}
}
```

The only applicable filter condition is the `"shell_type"`.

Only one value for shell_type is supported.

Sample Success Response

When filter condition is not provided, Response will contain all the shells (not template) that are in "Active" status.

```
{
    "data":[
            {
                "shell_model_name":"us_apr",
                "shell_number":"RE00000",
                "shell_name":"All Properties",
                "shell_phase":null,
```

```
                    "latitude":null,
                    "longitude":null,
                    "shell_location":null
                },
                {
                    "shell_model_name":"us_st",
                    "shell_number":"site-001",
                    "shell_name":"Site_1",
                    "shell_phase":null,
                    "latitude":null,
                    "longitude":null,
                    "shell_location":"/All Properties"
                },
                {
                    "shell_model_name":"us_bld",
                    "shell_number":"B-0001",
                    "shell_name":"Building_1",
                    "shell_phase":null,
                    "latitude":null,
                    "longitude":null,
                    "shell_location":"/All Properties/Site_1"
                }
            ],
    "message": [""],
    "status":200
}
```


Sample Success Response

When the filter condition is provided (shell type "Buildings"), the response will contain shells only of type "Buildings" as shown below.


```
{
    "data":
    [
        {
```

```
            "shell_model_name":"us_bld",
            "shell_number":"B-0001",
            "shell_name":"Building_1",
            "shell_phase":null,
            "latitude":null,
            "longitude":null,
            "shell_location":"/All Properties/Site_1"
        }
    ],
    "message": [""],
    "status":200
}
```


Sample Failed Response

If an incorrect shell_type is provided in the filter condition, the Error with status 2051 and message "Invalid Shell Type : input shell type " is included in the Response.


```
{
    "data": [ ],
    "message": [ "Invalid Shell Type : Buildings_1" ],
    "status":2051
}
```


Get BPs in Shell or Company

```
GET /ws/rest/service/v1/admin/bps/project_number
```

Purpose

This GET service results all the Business Processes available (BP set ups) in shell:

- If project_number in URL is provided, or
- The company Level, if project_number is left empty.

Sample Success Response

When project number is provided, for example: /ws/rest/service/v1/admin/bps/B-0001, the response returns all the shell-level BPs available in that project/shell.

When project number is not provided, for example: /ws/rest/service/v1/admin/bps, the response returns all the company-level BPs available in that Company Level.


```
{
  "data":
```

```
    [
        {
            "bp_model_name":"uab",
            "bp_name":"Annual Budget",
            "studio_source":"cost",
            "studio_type":"other",
            "no_workflow":false
        },
        {
            "bp_model_name":"uatc",
            "bp_name":"Assets Creator",
            "studio_source":"simple",
            "studio_type":null,
            "no_workflow":false
        },
        {
            "bp_model_name":"ubcfm",
            "bp_name":"Budget Changes-FM",
            "studio_source":"cost",
            "studio_type":"other",
            "no_workflow":false
        }
    ],
  "message": [""],
  "status":200
}
```


Sample Failed Response

When incorrect shell number is provided, the Result would be error response with status 602 and message: "Project/Shell Number is not correct.," as shown below.


```
{
     "data":      [ ],
     "message": [ "Project/Shell Number is not correct."],
     "status":602
```

```
}
```

Get Project Shell List

```
GET /ws/rest/service/v1/admin/projectshell
```

Purpose

Get Project and Shells.

Request Parameters

Input in JSON format in the body. All parameters must be URL encoded.

URL Parameters:

- "options" (Optional): options attribute can be used to filter the list with the possible attributes.
- "status"(Optional): "Active, Inactive, On-Hold, View-Only" are possible values.
- "type"(Optional):"wbs_shell,generic_shell" are possible types.
- "filter_condition"(Optional): projectname or projectnumber.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

Successful responses are returned with a status code of 200.

Failed responses display a relevant message.

Sample Request

```
ws/rest/service/v1/admin/projectshell?options={"filter_condition":
"projectname=project001", "status": "Active", "type" : "wbs_shell"}
```

Sample Success Response

```
{
  "data":
  [
    {
      "projectname":"All Projects",
      "projectnumber":"AP",
      "status":"Active",
```

```
      "type":"wbs_shell"
    },
    {
      "projectname":"Fred's Test Project 1",
      "projectnumber":"P-0001",
      "status":"Active",
      "type":"wbs_shell"
    },
    {
      "projectname":"Ray's Test Project 1",
      "projectnumber":"P-0002",
      "status":"Active",
      "type":"wbs_shell"
    }
],
  "message":  [ "Success"  ],
  "status":200
}
```


Level

- Authorization
- Response Error Codes
- Get Level List
- Create Level
- Update Level

Authorization

For more information, see the **Authentication** section in ***REST Services V1***.

Get Level List

`GET /ws/rest/service/v1/level`

Purpose

Get list of level record from Unifier. This works only at project/shell level.

Request Format

All parameters should be URL encoded.

Request Parameters

- project_number(Required): specify the project/shell number to get project/shell level list.
- filter_condition
  - filter_condition key definition

    "record_fields" (optional) is a list of fields, that is, DE names in Level; only those fields will be listed out in result.
  - filter_criteria Key Definitions
    - "join": (optional)Specify if the filter condition has to be combined using OR or AND operator. Default is AND.
    - "filter": List of filter conditions. Each condition will have "field", "value" ("value2" if condition_type is range) and condition_type.
      - "field": BP form DE name for which the filter condition has to be applied.
      - "value": value for the DE to filter the data.
      - "value2": second value for the range condition. Not required to be specified for other conditions.

Possible Values For condition_type

condition_type	Notes	Supported Data Element Types
like	For string data types. The value can contain the SQL wildcard characters when like is specified	Text (String)
eq	For string, numeric and date data type. Will perform the exact match.	Text (String), Number, Cost, Date
lt	For numeric values. Will perform less than value.	Number, Cost, Date
gt	For numeric values. Will perform greater than value.	Number, Cost, Date
lteq	For numeric values. Will perform less than or equal value.	Number, Cost, Date
gteq	For numeric values. Will perform greater than or equal value.	Number, Cost, Date
neq	For numeric values. Will perform not equal value.	Text (String), Number, Cost, Date

condition_type	Notes	Supported Data Element Types
range	Numeric, Date values. Will perform range search between value and value2	Number, Cost, Date

Note: Input Date fields should be provided in "MM-dd-yyyy HH:mm:ss" or ""MM-dd-yyyy" format in filter_criteria.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample filter_condition

This is an example of a filter condition included in the request.

```
"filter_condition" : {
    "record_fields" : "uuu_floor_id, uuu_floor_name",
    "filter_criteria":{
        "join":"OR",
        "filter":[
            {
                "field":"status",
                "value":"Vacant",
                "condition_type":"like"
            },
            {
                "field":"App_date",
                "value":"10-09-2019 07:54:00",
                "value2":"10-17-2019",
                "condition_type":"range"
```

```
            }
        ]
    }
}
```

Sample Success Response


```
{
  "data": [
    {
      "App_date": "10/Oct/2019 10:00 AM",
      "uuu_sp_level_name": "F-1008"
    },
    {
      "App_date": "10/Oct/2019 12:00 AM",
      "uuu_sp_level_name": "F-1009"
    },
    {
      "App_date": "10/Oct/2019 12:00 AM",
      "uuu_sp_level_name": "F-1010"
    },
    {
      "App_date": "10/Oct/2019 12:00 AM",
      "uuu_sp_level_name": "F-1011"
    }
  ],
  "message": [],
  "status": 200
}
```


Create Level

`POST /ws/rest/service/v1/level`

Purpose

To create level record. This works only at project/shell level.

Request Format

All parameters should be URL encoded.

Both input & output in JSON format in the body

Request Parameters

- uuu_sp_level_name(Required): specify the floor name
- project_number(Required): specify the project/shell number to create level in that project

> **Note:** Input Date fields should be provided in Integration user preference format in input JSON.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

```
{
 "options" :
  {
      "project_number":"Shell/Project number"
  },
  "data": [
    {
      "uuu_sp_level_name": "F-0001",
      "status": "Occupied",
      "App_date": "25/Dec/2019 7:00 PM",
      "ulevStorAreaND": "0.00000000",
      "ulevGrossBuildAreaNLD": "0.00000000",
      "uuu_sp_uom": "Sq Ft",
      "ulevStorAreaBasNLD": "0.00000000",
      "ulvlCode": "1.00000000",
```

```
      "ulevStackOrdDA": "123.00000000",
      "NumericPullDown": "One",
      "multiselect": "One",
      "CPLGrossAreaND": 2345.0
     }
  ]
}
```


Sample Success Response


```
{
  "data": [
    {
      "uuu_sp_level_name": "F-0001",
      "status": "Occupied",
      "App_date": "25/Dec/2019 7:00 PM",
      "ulevStorAreaND": "0.00000000",
      "ulevGrossBuildAreaNLD": "0.00000000",
      "uuu_sp_uom": "Sq Ft",
      "ulevStorAreaBasNLD": "0.00000000",
      "ulvlCode": "1.00000000",
      "ulevStackOrdDA": "123.00000000",
      "NumericPullDown": "One",
      "multiselect": "One",
      "CPLGrossAreaND": 2345.0,
      "ulevMajorVertPenND": 0.0,
      "uuu_sp_level_drawing": null,
      "ulevBuildRatioNLD": 0.0
    }
  ],
  "message": [
    {
      "uuu_sp_level_name": "F-0001",
      "message": "success"
    }
```

```
  ],
  "status": 200
}
```

Update Level

`PUT /ws/rest/service/v1/level`

Purpose

To update level record. This works only at project/shell level.

Request Format

All parameters must be URL encoded.

Both input & output must be specified in JSON format in the body of the request.

Request Parameters

- project_number (Required): specify the project/shell number to update level.
- uuu_sp_level_name(Required): specify the floor name to update level

> **Note:** Input Date fields should be provided in Integration user preference format in input JSON.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

```
{
  "options" :
  {
      "project_number":"Shell/Project number"
  },
  "data": [
```

```
    {
      "uuu_sp_level_name": "F-0001",
      "status": "Occupied",
      "App_date": "26/Dec/2019 1:00 PM",
      "NumericPullDown": "One, Two"
      }
   ]
}
```


Sample Success Response


```
{
  "data": [
    {
      "uuu_sp_level_name": "F-0001",
      "status": "Occupied",
      "App_date": "26/Dec/2019 07:00 PM",
      "ulevStorAreaND": "0.00000000",
      "ulevGrossBuildAreaNLD": "0.00000000",
      "uuu_sp_uom": "Sq Ft",
      "ulevStorAreaBasNLD": "0.00000000",
      "ulvlCode": "1.00000000",
      "ulevStackOrdDA": "123.00000000",
      "NumericPullDown": "One",
      "multiselect": "One, Two",
      "CPLGrossAreaND": 2345.0,
      "uuu_sp_level_drawing": null,
      "ulevBuildRatioNLD": 0.0
    }
  ],
  "message": [
    {
      "uuu_sp_level_name": "F-0001",
      "message": "success"
    }
```

```
  ],
  "status": 200
}
```

Response Error Codes

The following status codes and error messages can display in the response to your request:

Code	Message	Details
200	success	If the request is successful
500	Server Error, contact the system administrator.	If there is any exception when running this service
602	Project/Shell Number is not correct	Project number is incorrect or does not exist
603	Invalid 'space_type' provided in filter	
603	invalid 'space_type' provided in options	
618	Shell Number is not correct.	If incorrect project_number is provided or project_number is not provided in input
695	Project Number cannot be blank	
811	Invalid Filter Condition.	
855	Space Type is inactive at company level	
855	Level is inactive at company level	
1101	Empty or Invalid JSON data	If required input JSON is empty
3000	Partial failure.	Partial failure of REST service
3002	Invalid input	If input JSON did not contain the "data"/required parameter

Space

- Authorization
- Response Error Codes
- Get Space List
- Create Space
- Update Space

Authorization

For more information, see the **Authentication** section in ***REST Services V1***.

Get Space List

```
GET /ws/rest/service/v1/space
```

Purpose

Get list of Space records from Unifier. This works only at project/shell level.

Request Format

All parameters must be URL encoded.

Request Parameters

The following parameters can be included in the request:

- project_number(Required): specify the project/shell number to get project/shell Space record list.
- filter_condition: Required parameter, as "space_type" (Space bp name) is always required.
  - filter_condition key definition
    - "space_type" is mandatory.
    - "record_fields" (optional) is list of fields, that is, DE names in Space; only those fields (along with space_sp_space_name & uuu_sp_level_picker) will be listed out in result.
  - filter_criteria key Definitions
    - "join": (optional) Specify if the filter condition has to be combined using OR or AND operator. Default is AND.
    - "filter": A list of filter conditions where each condition will have a "field", "value" ("value2" if condition_type is range) and condition_type).
      - "field": A BP form DE name for which the filter condition has to be applied.
      - "value": A value for the DE to filter the data.
      - "value2": A second value for the range condition. Not required to be specified for other conditions.

Possible Values For condition_type

The following condition-type are supported.

condition_type	Notes	Supported Data Element Types
like	For string data types. The value can contain the SQL wildcard characters when like is specified	Text (String)
eq	For string, numeric and date data type. Will perform the exact match.	Text (String), Number, Cost, Date
lt	For numeric values. Will perform less than value.	Number, Cost, Date
gt	For numeric values. Will perform greater than value.	Number, Cost, Date
lteq	For numeric values. Will perform less than or equal value.	Number, Cost, Date
gteq	For numeric values. Will perform greater than or equal value.	Number, Cost, Date
neq	For numeric values. Will perform not equal value.	Text (String), Number, Cost, Date
range	Numeric, Date values. Will perform range search between value and value2	Number, Cost, Date

Note: Input Date fields should be provided in "MM-dd-yyyy HH:mm:ss" or ""MM-dd-yyyy" format in filter_criteria.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request With Query Parameters

This is an example of a request with parameters and filter conditions specified in the following format.

```
project_number = Building_shell_number
filter_condition = {
    "space_type" : "space_bp_name",
    "record_fields":"space_sp_space_name; uuu_rsv_overbook;
uuu_sp_level_picker; uSiteName; uBuildingName",
    "filter_criteria":{
        "join":"AND",
        "filter":[
           {
              "field":"space_sp_space_name",
              "value":"Space_00%",
              "condition_type":"like"
           },
           {
              "field":"uuu_rsv_overbook",
              "value":"No overbooking",
              "condition_type":"eq"
           }
        ]
    }
}
```

Sample Success Response

This is an example of a successful response with a status code of 200.

```
{
  "data":
  [
    {
      "uuu_rsv_overbook":"No overbooking",
      "uBuildingName":"Building_01",
      "space_sp_space_name":"Space_001",
      "uSiteName":"Site_01",
```

```
      "uuu_sp_level_picker":"floor_01",
      "uplRoomTB250":"sp_901",
      "uuu_rsv_reservable":"Yes"
    },
    {
      "uuu_rsv_overbook":"No overbooking",
      "uBuildingName":"Building_01",
      "space_sp_space_name":"Space_002",
      "uSiteName":"Site_01",
      "uuu_sp_level_picker":"floor_01",
      "uplRoomTB250":"sp_901",
      "uuu_rsv_reservable":"Yes"
    }
  ],
  "message": [ "success"],
  "status":200
}
```


Create Space

`POST /ws/rest/service/v1/space`

Purpose

To create Space record. This works only at project/shell level.

Request Format

All parameters must be URL encoded.

Specify the input and output in JSON format in the body

Request Parameters

The following parameters can be included in the request:

- project_number (Required): specify the project/shell number to create space record.
- space_type (Required): specify the Space BP name, for which record will be created.
- space_sp_space_name (Required) : Unique "**space_sp_space_name**" must be provided in "data" for each space record.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

The following example sends a request to create a space record for a project/shell.

```
{
  "options" :
  {
      "project_number":"Shell/Project number",
      "space_type" : "Space BP name"
  },
  "data": [
    {
      "uuu_rsv_overbook":"No overbooking",
      "uBuildingName":"Building_01",
      "space_sp_space_name":"Space_003",
      "uSiteName":"Site_01",
      "uuu_sp_level_picker":"floor_01",
      "uplRoomTB250":"sp_901",
      "uuu_rsv_reservable":"Yes"
    },
    {
      "uuu_rsv_overbook":"No overbooking",
      "uBuildingName":"Building_01",
      "space_sp_space_name":"Space_004",
      "uSiteName":"Site_01",
      "uuu_sp_level_picker":"floor_01",
      "uplRoomTB250":"sp_901",
      "uuu_rsv_reservable":"Yes"
```

```
    }
  ]
}
```

Sample Success Response

This is an example of a successful response when a space record is created.

```
{
  "data": [
    {
      "uuu_rsv_overbook":"No overbooking",
      "uBuildingName":"Building_01",
      "space_sp_space_name":"Space_003",
      "uSiteName":"Site_01",
      "uuu_sp_level_picker":"floor_01",
      "uplRoomTB250":"sp_901",
      "uuu_rsv_reservable":"Yes"
    },
    {
      "uuu_rsv_overbook":"No overbooking",
      "uBuildingName":"Building_01",
      "space_sp_space_name":"Space_004",
      "uSiteName":"Site_01",
      "uuu_sp_level_picker":"floor_01",
      "uplRoomTB250":"sp_901",
      "uuu_rsv_reservable":"Yes"
    }
  ],
  "message": [
    {
      "space_sp_space_name":"Space_003",
      "message":"success"
    },
    {
      "space_sp_space_name":"Space_004",
```

```
      "message":"success"
    }
  ],
  "status": 200
}
```

Update Space

```
PUT /ws/rest/service/v1/space
```

Purpose

To update Space record. This works only at project/shell level.

Request Format

All parameters should be URL encoded.

Both input & output in JSON format in the body.

Request Parameters

The following parameters can be specified in the request.

- project_number (Required): specify the project/shell number to update space record.
- space_type (Required): specify the Space BP name, where record will be Updated.
- space_sp_space_name (Required) : "**space_sp_space_name**" must be provided in the "data" to identify space record to be updated.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

The following example sends a request to update a space record for a project/shell.

```
{
  "options" :
```

```
  {
      "project_number":"Shell/Project number",
      "space_type" : "Space BP name"
  },
  "data": [
    {
      "uuu_rsv_overbook":"No overbooking",
      "uBuildingName":"Building_01",
      "space_sp_space_name":"Space_003",
      "uSiteName":"Site_01",
      "uuu_sp_level_picker":"floor_01",
      "uplRoomTB250":"sp_901",
      "uuu_rsv_reservable":"Yes"
    },
    {
      "uuu_rsv_overbook":"No overbooking",
      "uBuildingName":"Building_01",
      "space_sp_space_name":"Space_004",
      "uSiteName":"Site_01",
      "uuu_sp_level_picker":"floor_01",
      "uplRoomTB250":"sp_901",
      "uuu_rsv_reservable":"Yes"
    }
  ]
}
```

Sample Response

This is an example of a successful response when a space record is updated.

```
{
  "data": [
    {
      "uuu_rsv_overbook":"No overbooking",
      "uBuildingName":"Building_01",
      "space_sp_space_name":"Space_003",
```

```
      "uSiteName":"Site_01",
      "uuu_sp_level_picker":"floor_01",
      "uplRoomTB250":"sp_901",
      "uuu_rsv_reservable":"Yes"
    },
    {
      "uuu_rsv_overbook":"No overbooking",
      "uBuildingName":"Building_01",
      "space_sp_space_name":"Space_004",
      "uSiteName":"Site_01",
      "uuu_sp_level_picker":"floor_01",
      "uplRoomTB250":"sp_901",
      "uuu_rsv_reservable":"Yes"
    }
  ],
  "message": [
    {
      "space_sp_space_name":"Space_003",
      "message":"success"
    },
    {
      "space_sp_space_name":"Space_004",
      "message":"success"    }
            ],
  "status": 200
}
```


Response Error Codes

The following status codes and error messages can display in the response to your request:

Code	Message	Details
200	success	If the request is successful
500	Server Error, contact the system administrator.	If there is any exception when running this service

Code	Message	Details
602	Project/Shell Number is not correct	Project number is incorrect or does not exist
603	Invalid 'space_type' provided in filter	
603	invalid 'space_type' provided in options	
618	Shell Number is not correct.	If incorrect project_number is provided or project_number is not provided in input
695	Project Number cannot be blank	
811	Invalid Filter Condition.	
855	Space Type is inactive at company level	
855	Level is inactive at company level	
1101	Empty or Invalid JSON data	If required input JSON is empty
3000	Partial failure.	Partial failure of REST service
3002	Invalid input	If input JSON did not contain the "data"/required parameter

Cost

Note: The integration user must have the required Cost Services Permissions.

Get CBS Codes

`POST /ws/rest/service/v1/cost/cbs/list/{project_number}`

Purpose

Get a list of CBS codes for a specified project number.

The input JSON includes options for fetching the data.

Request Format

All parameters must be URL encoded.

POST body is in JSON format.

All the options specified are optional.

Path Parameter

`project_num`: (Required) Specify the project number in which the records exists.

If the `hierarchy` is not specified, the default value is false. Complete hierarchy of the CBS code is displayed if the value is true.

> **Note**: POST call has input & output both as JSON in the body

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

> **Note**: Cost code attributes defined is sent in JSON format in the response.

Sample Request

The following is an example of a request for a full hierarchy of the CBS code.

```
{
"options":
{
"cost_type":"Capital",
"summary_detail":"true",
"status":"active",
"hierarchy":true
}
}
```

Sample Success Response


```
{
   "data":[
      {
         "bitemid" : 24,
         "code": "CostB",
         "description": "Desc of CostB",
         "item": " Cost Item",
         "uResProgressAmount": 10,
         "status": "Active",
         "cost_type": "Food",
         "parentid": "1",
         "orderid": "1",
         "budgetid": "6"
      },
      {
         "bitemid" : 25,
         "code": "CostB~~Cost1",
         "description": "Desc of CostB~Cost1",
         "item": " Cost Item",
         "uResProgressAmount": 10,
         "status": "Active",
         "cost_type": "Food",
         "parentid": "24",
         "orderid": "2",
         "budgetid": "6"
      },
      {
         "bitemid" : 26,
         "code": "Cost1",
         "description": "Desc of Cost1",
         "item": " Cost1 Item",
         "uResProgressAmount": 10,
```

```
          "status": "Active",
          "cost_type": "Capital",
          "parentid": "1",
          "orderid": "0",
          "budgetid": "6"
       },
      "codestructure": [
         {
             "treemode": true,
             "segsize": 1,
             "seperator": "-"
          }
      ],
   ],
   "message":[ "success"],
   "status":200
}
```


Create CBS Codes

`POST /ws/rest/service/v1/cost/cbs/{project_number}`

Purpose

Create CBS Codes for the specified Project

Request Format

All parameters should be URL encoded. Both the input & output are in JSON format, in the body.

Path Parameter

project_number: (Required) Specify the project number.

In the input request, "code" is a Required field.

Notes:

- If the CBS code is given in this format 'A~~B', CBS code B will be created under A. If the cost code A does not exist, the CBS code A will be created first, before creating the CBS code B under it.
- If the input code does not contain delimiter '~~', that CBS code will be created under valid 'parentid'. If the 'parentid' is not available in the

input request, the code will be created under root.

- If the input code has delimiter '~~', and the 'parentid' is included in input request, the 'parentid' will be ignored, and the code will be created as per hierarchy in the code.
- If multiple codes are sent in one request, and if the creation of one of the codes fails, the entire request will be canceled.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

```
{
    "data": [
        {
            "code": "CostB~~Cost1",
            "description": "Creating Cost Code using REST webservice",
            "item": " Cost Item",
            "uResProgressAmount": 10,
            "status": "Active",
            "cost_type": "Food"
        },
        {
            "code": "Cost1",
            "description": "Creating Cost Code using REST webservice",
            "item": "Cost1 Item",
            "uResProgressAmount": 10,
            "status": "Active",
            "cost_type": "Capital"
        }
```

```
    ]
}
```

Sample Success Response


```
{
   "data":[
      {
         "bitemid" : 24,
         "code": "CostB",
         "description": "Creating Cost Code using REST webservice",
         "item": " Cost Item",
         "uResProgressAmount": 10,
         "status": "Active",
         "cost_type": "Food",
         "parentid": "23",
         "orderid": "1",
         "budgetid": "6"
      },
      {
         "bitemid" : 25,
         "code": "CostB~~Cost1",
         "description": "Creating Cost Code using REST webservice",
         "item": " Cost Item",
         "uResProgressAmount": 10,
         "status": "Active",
         "cost_type": "Food",
         "parentid": "24",
         "orderid": "2",
         "budgetid": "6"
      },
      {
         "bitemid" : 26,
         "code": "Cost1",
         "description": "Creating Cost Code using REST webservice",
```

```
            "item": " Cost1 Item",
            "uResProgressAmount": 10,
            "status": "Active",
            "cost_type": "Capital",
            "parentid": "1",
            "orderid": "0",
            "budgetid": "6"
         }
      ],
      "message":[       "success"   ],
      "status":200
}
```


Update CBS Codes

`PUT /ws/rest/service/v1/cost/cbs/{project_number}`

Purpose

Update CBS Codes for the specified Project.

Request Format

All parameters should be URL encoded.

Path Parameter

- project_number: Specify the Project number. Project number is mandatory.
- input query parameter -

  options=

  ```
  {
  "key": "bitemid"
  }
  ```
- Based on the key value provided in 'options' parameter, required field will be chosen. If key value is not given then 'code' will be considered as required field.
- "key" <<code>,<bitemid>>

Notes:

- The complete path from parent to child CBS code (separated by delimiter '~~') should be given in code field of input request if code is chosen as value for key.
- The "orderid" and "parentid" cannot be updated. All other cost attributes can be updated.
- The value in the CBS code field can be updated when the value of key in options parameter is '"bitemid."
- Partial Update is not allowed.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

```
{
    "data": [
        {
         "bitemid": "26",
         "code": "CostX"
         "description": "Updating Cost Code using REST webservice",
         "status": "InActive"
        }
    ]
}
```

Sample Success Response

```
{
   "data":[
      {
         "bitemid" : 26,
```

```
            "code": "CostX",
            "description": "Updating Cost Code using REST webservice",
            "item": " Cost1 Item",
            "uResProgressAmount": 10,
            "status": "inactive",
            "cost_type": "Capital",
            "parentid": "1",
            "orderid": "0",
            "budgetid": "6"
         }
      ],
      "message":[       "success"   ],
      "status":200
}
```


Get Column Data

`GET /ws/rest/service/v1/cost/columndata/{project_number}`

Purpose

Get column data of all rows / lineitems of cost sheet for a given column name

Request Format

All parameters should be URL encoded.

Both input & output in JSON format in the body.

Path Parameter

project_number(Required): Specify the project/shell number to get column data of project cost sheet

Query Parameter

columnname(Required): Specify the column name of cost sheet.

Response Format

A JSON object is returned in the following format.


```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
```

```
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response


```
{
  "data": [
    {
      "wbs_code": "Cost Code 1",
      "short_description": "Direct Entry Line Item",
      "amount": "1000.0",
      "spends_category": "",
      "quantity": "10.0",
      "work_package": "",
      "unit_of_measure": "each",
      "unit_cost": "100.0",
      "long_description": ""
    },
    {
      "wbs_code": "Cost Code 2",
      "short_description": "Direct Entry Line Item",
      "amount": "100.0",
      "spends_category": "",
      "quantity": "10.0",
      "work_package": "",
      "unit_of_measure": "",
      "unit_cost": "10.0",
      "long_description": ""
    }
  ],
  "message": [    "success"  ],
  "status": 200
}
```

Update Column Data

```
PUT /ws/rest/service/v1/cost/columndata/{project_number}
```

Purpose

Update column data of all rows / lineitems of cost sheet for a given column name

Request Format

All parameters should be URL encoded.

Both input & output in JSON format in the body

Path Parameter

project_number(Required): Specify the project/shell number to update column data of project cost sheet

Query Parameter

columnname(Required): Specify the column name of cost sheet.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

```
{
    "data": [
    {
      "wbs_code": "Code 1",
      "short_description": "Code 1 Description",
      "amount": "20.0",
      "spends_category": "",
      "quantity": "2.0",
      "work_package": "",
      "unit_of_measure": "each",
```

```
    "unit_cost": "10.0",
    "long_description": ""
  },
  {
    "wbs_code": "Code 2",
    "short_description": "Code 2 Description",
    "amount": "90.0",
    "spends_category": "",
    "quantity": "3.0",
    "work_package": "",
    "unit_of_measure": "fl. oz",
    "unit_cost": "30.0",
    "long_description": ""
  },
  {
    "wbs_code": "Code 3",
    "short_description": "Code 3 Description",
    "amount": "160.0",
    "spends_category": "",
    "quantity": "4.0",
    "work_package": "",
    "unit_of_measure": "",
    "unit_cost": "40.0",
    "long_description": ""
  },
  {
    "wbs_code": "Code 3",
    "short_description": "Code 3 Description",
    "amount": "250.0",
    "spends_category": "",
    "quantity": "5.0",
    "work_package": "",
    "unit_of_measure": "yd.",
    "unit_cost": "50.0",
```

```
      "long_description": ""
    }
  ],
  "message": [    "success"  ],
  "status": 200
}
```


> **Note**: Data of all rows must be provided in the request; otherwise, their respective line items will be deleted and amounts of the rows which are not part of request will be reset to 0.

Sample Success Response


```
{
    "data": [
    {
      "wbs_code": "Code 1",
      "short_description": "Code 1 Description",
      "amount": "20.0",
      "spends_category": "",
      "quantity": "2.0",
      "work_package": "",
      "unit_of_measure": "each",
      "unit_cost": "10.0",
      "long_description": ""
    },
    {
      "wbs_code": "Code 2",
      "short_description": "Code 2 Description",
      "amount": "90.0",
      "spends_category": "",
      "quantity": "3.0",
      "work_package": "",
      "unit_of_measure": "fl. oz",
      "unit_cost": "30.0",
      "long_description": ""
```

```
    },
    {
      "wbs_code": "Code 3",
      "short_description": "Code 3 Description",
      "amount": "160.0",
      "spends_category": "",
      "quantity": "4.0",
      "work_package": "",
      "unit_of_measure": "",
      "unit_cost": "40.0",
      "long_description": ""
    },
    {
      "wbs_code": "Code 3",
      "short_description": "Code 3 Description",
      "amount": "250.0",
      "spends_category": "",
      "quantity": "5.0",
      "work_package": "",
      "unit_of_measure": "yd.",
      "unit_cost": "50.0",
      "long_description": ""
    }
  ]
  "message": [    "success"  ],
  "status": 200
}
```


Sort Cost Sheet

`PUT /ws/rest/service/v1/cost/cbs/sort`

Purpose

This sorts the WBS codes present in the Project Cost Sheet.

Notes:

- Do not perform any other actions when the RESTful web service for Sort Cost Sheet Web Service is being executed by the system.
- When one user is manually sorting from the UI and at the same time another user sorts from RESTful, the system prevents the RESTful sorting to override the manual sorting.

Request Format

There are three input parameters for the web service call:

Project number

project_number(Required): Specify the project/shell number to update column data of project cost sheet

If the user enters a wrong project number and the web service call fails, the existing error code on incorrect project number will be used to report the error to the user.

Note: The Sort Cost Sheet must be used only for one project at a time.

Type

This is an optional parameter, and if the parameter is not present, the project Cost Sheet will be sorted based on the CBS codes.

Default value will be CBS

Identifier for the column (the column that the sorting must happen)

The only supported value is: CBS

Sort order

This is an optional input parameter.

Default value will be ascending

sortOrder: Identifier to define the sort order (ascending or descending).

The values are: 'asc' or 'desc'.

Note: The user should not perform any action when sortCostSheet web service is being executed.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Additional Information

The following are the rules for sorting:

- For a flat structured Project Cost Sheet, there will be a simple alphanumeric sort on all the segment codes. The sorting will be case insensitive.
- For a tree structured Cost Sheet, the level sorting will happen first (the parent level first followed by the child level). Further alphanumeric sorting will happen within the level. The sorting will be case insensitive.

Sample Request

URL: `http://www.example.com:1234/ws/rest/service/v1/cost/cbs/sort`

Body:

```
{
"options":
{
    "type":" CBS",
    "sortOrder":"desc",
    "projectNumber":"proj-3"
}
}
```

Sample Success Response

```
{
    "data": [],
    "message": [],
    "status": 200
}
```

Cash Flow

> **Note**: The integration user must have the required Cashflow Services Permissions.

1) Properties (Project/Shell, Summary CBS, CBS, Commitment)
   a. Get Properties
   b. Create Properties
   c. Update Properties
2) Detail Curve (Baseline, Spends, Forecast, Custom, Derived, Portfolio Budget)
   a. Get Detail Curve
   b. Update Detail Curve

c. Delete Curve

3) Refresh Curve
4) Get Templates
5) Schedule Refresh Curve
6) Add/update CF permission
7) GET Property by prop_name (one record)

Authorization

Update Effective Date deletion of profile.

For more information, see the **Authentication** section in ***REST Services V1***.

Ensure that the integration user has the required cash flow services permissions.

Definitions or Values Used

DE	Value	Label	Display UI Text
rollup_status	0	Active	Active
rollup_status	1	Inactive	Inactive
detail_level	0	Project / Shell	Project / Shell
detail_level	1	CBS	CBS
detail_level	2	Summary CBS	Summary CBS
detail_level	3	Commitment	Commitment
period_type	No	Standard Planning Period	Standard Planning Period
period_type	Yes	Financial Periods	Financial Periods
inc_spends_opt	0	next_month	The next month if after the cutoff date
inc_spends_opt	2	same_month	The same month as the effective date
distribution >type	0	manual	Manual

DE	Value	Label	Display UI Text
distribution >type	2	manual_autodistribution	manual auto distribute by default profile
distribution >type	3	schedule_sheet	Use data from Schedule Sheet
distribution >type	4	p6_sheet	Use data from P6 Source
Cost >Type	0	manual	Manually enter amounts for each period
Cost >Type	1	auto_distribution	Auto distribute total amount across all periods
Cost >Type	2	cost_sheet	Distribute amount from cost sheet column
Cost >Type	3	p6_sheet	Use Actuals from P6 Summary Sheet
Schedule >Type	0	manual	Manual
Schedule >Type	1	schedule_sheet	Use dates from Schedule Sheet
Schedule >Type	2	p6_sheet	Use dates from P6 Source
Schedule >Type	3		
Filter >Type	0	all	All CBS codes from cost sheet
Filter >Type	1	summary_cbs	Select summary CBS codes
Filter >Type	2	cbs	Select CBS codes
Forecast > Option	TRUE	begin_end_of_curve	Begin calculations at

DE	Value	Label	Display UI Text
			end of curve
Forecast > Option	TRUE	current_actual_cut_off_date	Replace current period forecast with Actuals on cut Off date
Distribute unassigned amounts from Spends			
Distribute unassigned amounts from Spends	0	weighted_avg_all_periods	Using weighted average over all remaining periods
Derived > Float Rate Option			
Derived > Float Rate Option	0	beginning_period	At the beginning of the period
Derived > Float Rate Option	1	end_period	At the end of the period
Derived > Float Rate Option	2	weighted_period	A weighted average for the period
Detail level > Commitment Granularity	0	single_distribution	Single distribution of sum of base commit and all changes
Detail level > Commitment Granularity	1	individual_record	By individual record(base commit and all changes separately)
Detail level > Commitment Granularity	2	by_lineitem	By line items within each individual record
Distribution method	0	manual	

DE	Value	Label	Display UI Text
Distribution method	1	Autodistribution_manual	Autodistribution - manual dates and profile
Distribution method	1	Autodistribution_bp {bp:"",from:"",to:"",profile:""}	Autodistribution - BP dates and default profile selection
Commit change Processes		BP : Status	

Response Error Codes (REST API Details in Cash Flow)

The following status codes and error messages can display in the response to your request:

Code	Message	Details
200	success	If the request is successful
500	Server Error, contact the system administrator.	If there is any exception when running this service
505	token+" is not present, it is required in the formula:"+value+" for field "+name	If the data provided is not correct like pull down with a label which does not exist.
602	Project/Shell Number is not correct	project number is incorrect or does not exist
603	Business Process Name is not correct	"bpname" is not specified in the input JSON and or is invalid value
651	CBS Code is not present.	"cbs_code" is not present in the input JSON
657	Invalid record_no.	"record_no" value is not specified in the input JSON or is invalid value.
663	Status field value is not correct.	If status value is not valid; that is, it is neither active nor inactive

Code	Message	Details
701	Invalid Column Name	If column name given in the filter condition does not belong to funding sheet
1101	Empty or Invalid JSON data	If required input JSON is empty
1301	Cash Flow name is not present in input request	
1302	Cash Flow Template name provided is not valid	
1303	Cash Flow data provided is not valid for field :	If invalid data is provided in input JSON for fields
1304	Required Cash Flow data is not provided for field :	If data is not provided in input JSON for mandatory fields
1305	Cash Flow do not exist	Cash flow record with given property name does not exist
1306	System-defined Summary Cash Flow Curve cannot be deleted	
1307	Cash Flow not Found	
1308	Summary Cash Flow Curve name already exists	If the name exists when creating cash flow summary
1309	More than one Cash Flow Curve is required to create a Summary Cash Flow Curve	
1310	Error in creating Summary Cash Flow Curve	
1311	Created Summary Cash Flow Curve without these invalid Cash Flow Curve(s):	
1312	Cannot create Summary Cash Flow Curve since all Cash Flow Curve(s) are invalid	
1313	Summary Cash Flow Curve name is required	

Code	Message	Details
1314	Cash Flow name provided already exists.	
1315	Cost sheet is required for detail_level CBS/Summary CBS/Commitment.	
1316	Cost sheet is required for Summary CBS/CBS filters.	
1317	Financial Period is not assigned to the shell.	
1318	Filter Type Summary CBS can only be assigned to Tree mode of Cost sheet.	
1319	Cash Flow Template name is required.	
1320	Request is valid for Shell or Project	If the request is not valid for company.
1321	Template Number is not correct.	
1322	Invalid Job ID.	
1323	Job processing failed with errors.	
1324	Detail curve is not present in the Cash Flow	when performing get data for a cash flow which doesn't have a detail curve.
1325	This operation is not supported on Inactive or View-only Shell/Project	
1326	Detail curves cannot be created for Template	
1327	Summary Cash Flow status Should be 'Active' or 'Inactive'.	
1328	Request is not valid for shell template.	
1329	<different validation error for different fields in input JSON>	If fields provided in input JSON fails validation.
1330	Cash Flow Curve do not	If Update/Delete curve

Code	Message	Details
	exist	request input JSON contains curve details which does not exist on given Cash Flow
1331	Error in deleting Cash Flow Curve	
1332	No Curves are defined for this Cash Flow	If Update/Delete curve request input JSON contains curve details for Cash Flow which does not have any curve.
1333	Rollup Cash Flow name is required	Name is a required field in Rollup curve creation
1335	Rollup curves can be created/updated only for Company	Rollup curves can be created only for company
1336	Detail curves cannot be updated for Template	
1337	Distribution Profile do not exist	
1338	Distribution Profile is used in Cash Flows Curves	
1339	filter parameter is required	For GET cash flow data & summary cash flow data , filter parameter is required.
1340	filter parameter is invalid	If filter condition is invalid for GET cash flow data
1341	Error in updating the Cash Flow Data	
1342	Value for Number is not provided in the input data	
1343	Value for No is not provided in the input data	Value for Line Number is not provided in the input data
1344	Number or No has invalid value in the input data	
1345	Date values provided in the input is invalid	
1346	Profile name is invalid in the	

Code	Message	Details
	input request	
1347	Total value is invalid in the input request	
1348	Update data is not allowed	
1349	Cash Flow Curve name is not present in input request	
1350	Invalid CBS Code	
1351	From date is not set	
1352	To date is not set	
1353	Invalid distribution amount	
1354	Provided Currency is not a valid transaction currency	
1355	Duplicate data exists in details	
1356	Cash Flow operations are not possible on Generic type of Project	
1357	Rollup Cash Flow Curve does not exist	
1368	Create/update request contains conflicting values for noenddate and enddate	
1359	Cash Flow id is required	
1360	Cash Flow Curve details are not present in the input request	If input JSON for update cash flow data contains curves but curve details are not provided
1361	Project number is required	This error is raised if cash flow data update REST call is for company level
1362	Detail level Summary CBS cannot have filters of type CBS	
1363	Detail level CBS cannot have filters of type Summary CBS	
1364	GET Detail curves	

Code	Message	Details
	operation is not supported for Template/Company	
1365	From Date should be greater than Financial Period Start Date and Less than Financial Period End Date	
1367	To Date should be less than Financial Period End Date and Greater than Financial Period Start Date	
1368	Cannot update distribution as dates are not defined for this Cash Flow curve	
1369	No data are updated as both setup and distribution options are not set	
1370	Cash Flow data provided cannot be updated for the field :	
3000	Partial failure.	Partial failure of REST service
3002	Invalid input	If input JSON did not contain the "data"/required parameter
3003	Business Process is not Active.	When fund consumption is performed on a inactive BP
13001	Project/Shell number is mandatory and is missing in the input request	When no project number is provided
13002	Cashflow curve name is mandatory and is missing in the input request	When curve name is not provided
13003	Invalid curve name provided in input request	When curve name provided no longer exists
13004	Provide a snapshot name	When snapshot name is not provided
13005	Snapshot name already exists	When snapshot name exists

Code	Message	Details
13006	Snapshot name specified does not exist in the cashflow <name>	When snapshot name does not exist for selected curve
13007	The selected curve name is a summary type, and summary snapshots are not supported through integration	When summary type curve is processed
13008	Snapshots <name1>, <name2> do not exist in the selected cash flow curve <curve name>.	When none of the provided snapshot names exist in the selected cashflow curve
13009	Snapshots <name1>, <name2>, <name3> do not exist in the cash flow curve <curve name>.	When some cashflow names in the delete request are invalid
13010	Cash Flow snapshot name cannot exceed 64 characters.	When snapshot name exceeds 64 characters

Create Cash Flow

`POST /ws/rest/service/v1/cashflow/{project_number}`

Purpose

Creates a cash flow from a template or by specifying the property values.

If a `template name` is provided, then cash flow properties are created from a template in combination with the parameters specified in the request.

If a `template_projectid` is not provided, the company template will be fetched.

Prerequisites

Ensure the following:

- You have full access to the cash flow being created.
- project administrator/company administrator has full access to the cash flow created from this service.
- To change permissions, use the **Update or Modify Cashflow Permission** REST service.

Request Format

To create a cash flow, send a request with a project_number in the end-point URL as shown above.

To create a cash flow from a template, send a request in the following format:

```
{
    "data":
        {
            "template":"<value>",
            "template_project":"<value>",
            "name": "<value>"
        }
}
```

The following will be ignored if provided in the request:

- Period name, if provided in the request, will be ignored.
- Irrelevant attributes in the create/update service.

Notes:

- All request parameters must be URL-encoded.
- For a cash flow to work, it is recommended to not duplicate leaf/child CBS codes that have been created under different parents in a cost sheet.

Request Parameters

The following parameter must be included in the request:

Request Parameters	Required?	Data Type	Description
project_number	Yes	String	The P6 EPPM project ID configured in the Primavera Gateway application.

Request Parameters For Cash Flow From Template

To create a cash flow from a template, additionally specify the following parameters:

Request Parameters	Required?	Data Type	Description
template_name	Yes		
template_project	No		The Project number of the template.

Response Format

The REST service returns a JSON map in the following format:

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>,
    "rest_audit_id": <value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Notes:

- If the name, template, and schedule details are specified in the request, the cash flow will be created with template details, but the schedule will be as per the input request.
- Defaults are used if the data is not provided in the input request.
- You can provide the Effective_date in the Actuals Curve at CBS/Summary CBS level if Set Effective Date is selected as Yes. For more details, refer to the format of the Actuals Curve Request.

Create Cash Flow From Template Only

Sample Request For Cash Flow From Template

This request creates a cash flow using the template and a template project.

```
{
    "data":
        {   "template":"Project Cash Flow - Cost Controls",
            "template_project":"T-001",
            "name": "fromtemplate"
       }

}
```

Create Cash Flow Manual - Project or Shell

```
{
    "data":
        {
```

```
 "name": "project type cashflow",
 "description": null,
 "rollup_status": "Active",
 "detail_level": "Project / Shell",
 "period_type": "Standard Planning Period",
 "period_name": "Standard Planning Period",
 "period_by": "Month",
 "period_format": "M YYYY",
 "decimal_places": 2,
 "decimal_option": "0"
"snapshot": {
    "sn_week_num": "First",
    "sn_week_day": "Sunday",
    "cutoff_spends": {
        "cutoff_week_num": "First",
        "cutoff_week_day": "Sunday",
        "inc_spends_opt": "same_month"
    }
 },
 "schedule": {
    "enable_refresh": false
 },

 "summary": [
    {
        "name": "summary",
        "summary_type": "User_Defined"
    }
 ],
 "curves": [
    {
        "name": "Actuals",
        "type": "Spends",
```

```
                    "cost": {
                        "type":"cost_sheet",
                        "cost_sheet_column": "152 Base Commit WF
(Approved)"
                    }
                },
                {
                    "name": "Cash flow3",
                    "type": "Derived",
                    "cost": {
                        "base_currency": "United States Dollar (USD)",
                        "source_curve_name": "Actuals",
                        "derived_curve_currency": "Australia Dollar
(AUD)",
                        "exchange_rate": "Peg",
                        "peg_rate_as": "Dynamic",
                        "peg_dynamic_ds": "Single Record BPs / 922_Simple
PNW/FSingle LL",
                        "peg_dynamic_de": "Currency amount 1",
                        "float_rate_as": "weighted_period"
                    }
                },
                {
                    "name": "Today",
                    "type": "Portfolio Budget",
                    "cost": {
                        "currency_code": "Australia Dollar (AUD)",
                        "distribut_amount_from": "approved"
                    }
                },
                {
                    "name": "Forecast",
                    "type": "Forecast",
                    "distribution": {
```

```
                        "type": "auto_profile",
                        "distribution_profile": "Front Load"
                    },
                    "cost": {
                        "type": "cost_sheet",
                        "cost_sheet_column": "152 Base Commit WF (Open)"
                    },
                    "schedule": {
                        "type": "manual"
                    },
                    "forecast_options": {
                        "begin_end_of_curve": true,
                        "fc_curve_name": "Actuals",
                        "current_actual_cut_off_date": true,
                        "fc_dist": "weighted_avg_over_next",
                        "periods": 3
                    }
                }
            ]
        }

}
```

Create Cash Flow Manual - CBS

```
{
    "data":
        {
           "name": "cbsfromservice",
            "description": "cbs type",
            "rollup_status": "Active",
            "detail_level": "CBS",
            "period_type": "Standard Planning Period",
            "period_name": "Standard Planning Period",
            "period_by": "Month",
```

```
        "period_format": "M YYYY",
        "decimal_places": 2,
        "snapshot": {
            "sn_dayof": 1,
            "cutoff_spends": {
                "cutoff_week_num": "First",
                "cutoff_week_day": "Sunday",
                "inc_spends_opt": "same_month"
            }
        },
    "filters": {
            "filter_option": "cbs",
            "cbs": [
                {
                    "cbs_code": "16000~~16700",
                    "bitemid": 235,
                    "item": "Communications"
                },
                {
                    "cbs_code": "99999",
                    "bitemid": 237,
                    "item": "Contingencies"
                }
            ]
        },
        "summary": [
            {
                "name": "Cash Flow Summary Curve",
                "summary_type": "System_Defined"
            }
        ],
        "curves": [
            {
                "name": "P6Actuals",
```

```
                    "type": "Spends",
                    "cost": {
                        "type":"P6 Summary Sheet",
                        "p6_datasource":"Original Baseline" //"Current
Schedule"
                        "cost_sheet_column": "A_Commit_01 (Approved)"
                    }
                },
                {
                    "name": "custom_Float",
                    "type": "Derived",
                    "cost": {
                        "base_currency": "United States Dollar (USD)",
                        "source_curve_name": "Actuals",
                        "derived_curve_currency": "Bhutan Ngultrum
(BTN)",
                        "exchange_rate": "Float",
                        "float_rate_as": "weighted_period"
                    }
                },
                {
                    "name": "Cash flow3",
                    "type": "Derived",
                    "cost": {
                        "base_currency": "United States Dollar (USD)",
                        "source_curve_name": "Actuals",
                        "derived_curve_currency": "Australia Dollar
(AUD)",
                        "exchange_rate": "Peg",
                        "peg_rate_as": "Dynamic",
                        "peg_dynamic_ds": "Single Record BPs / 922_Simple
PNW/FSingle LL",
                        "peg_dynamic_de": "Currency amount 1",
                        "float_rate_as": "weighted_period"
                    }
```

```
                },
                {
                    "name": "custom_Peg_Constant",
                    "type": "Derived",
                    "cost": {
                        "base_currency": "United States Dollar (USD)",
                        "source_curve_name": "Actuals",
                        "derived_curve_currency": "Bhutan Ngultrum
(BTN)",
                        "exchange_rate": "Peg",
                        "peg_rate_as": "Constant",
                        "peg_constant_value":"1"
                    }
                },
                {
                    "name": "custom_Peg_Project",
                    "type": "Derived",
                    "cost": {
                        "base_currency": "United States Dollar (USD)",
                        "source_curve_name": "Actuals",
                        "derived_curve_currency": "Bhutan Ngultrum
(BTN)",
                        "exchange_rate": "Peg",
                        "peg_rate_as": "Project"
                    }
                },
                {
                    "name": "Today",
                    "type": "Portfolio Budget",
                    "cost": {
                        "currency_code": "Indian Rupee (INR)",
                        "distribut_amount_from": "approved"
                    }
                }
```

```
            ]
        }

}
```

Create Cash Flow Manual - Summary CBS

```
{
    "data":
        {
            "name": "Manual Curve",
            "detail_level": "CBS",
            "curves": [
                {
                    "name": "Actuals",
                    "type": "Spends",
                    "cost": {
                        "type":"cost_sheet",
                        "cost_sheet_column": "152 Base Commit WF
(Approved)"
                    }
                },
                {
                    "name": "Today",
                    "type": "Portfolio Budget",
                    "cost": {
                        "currency_code": "Australia Dollar (AUD)",
                        "distribut_amount_from": "original"
                    }
                },
                {
                    "name": "Cash flow1",
                    "type": "Derived",
                    "cost": {
                        "base_currency": "United States Dollar (USD)",
```

```
                        "source_curve_name": "Today",
                        "derived_curve_currency": "Afghani (AFN)",
                        "exchange_rate": "Peg",
                        "peg_rate_as": "Dynamic",
                        "peg_dynamic_ds": "Single Record BPs / 922_Simple
PNW/FSingle LL",
                        "peg_dynamic_de": "Integer Amount 1",
                        "float_rate_as": "weighted_period"
                    }
                }
            ]
        }

}
```

Create Cash Flow Manual - Commitment

```
{
    "data":
        {
            "name": "commitment",
            "description": "commitment",
            "rollup_status": "Active",
            "detail_level": "Commitment",
            "bp_name": "Purchase Orders",
            "reference_elements": "record_no:upoPONumberTXT16",
            "base_commit_record": "PO-0001",
            "period_type": "Standard Planning Period",
            "period_name": "Standard Planning Period",
            "period_by": "Month",
            "period_format": "M YYYY",
            "decimal_places": 2,
             "schedule": {
                "enable_refresh": true,
                "frequency": "Weekly",
```

```
                "weekday": "Sunday",
                "startdate": "06/10/2019 12:00 AM",
                "noenddate": false,
                "enddate": "06/24/2019 12:00 AM"
            },
            "summary": [
                {
                    "name": "Cash Flow Summary Curve",
                    "summary_type": "System_Defined"
                },
                {
                    "name": "summary",
                    "summary_type": "User_Defined"
                }
            ]
        }
            "curves": [
                {
                    "name": "commitActuals",
                    "type": "Spends",
                    "cashflow_granularity": "by_lineitem", // "" or
"single_distribution"
                    "cost": {
                        "spends_bp": [{"bp_name" :"A_Commit_01",
"status":"Approved"}]
                    }
                },
                {
                    "name": "Today",
                    "type": "Portfolio Budget",
                    "cost": {
                        "currency_code": "Ariary (MGA)",
                        "distribut_amount_from": "original"
                    }
```

```
                },
                {
                    "name": "Cash flow1",
                    "type": "Derived",
                    "cost": {
                        "base_currency": "United States Dollar (USD)",
                        "source_curve_name": "Spend",
                        "derived_curve_currency": "Chile Peso (CLP)",
                        "exchange_rate": "Peg",
                        "peg_rate_as": "Dynamic",
                        "peg_dynamic_ds": "Single Record BPs /
91ProjectinformationBP",
                        "peg_dynamic_de": "% Phase Cmplete",
                        "float_rate_as": "end_period"
                    }
                }
            ]
        }

}
```

Create Cash flow By WBS from Activity Sheet

Note: Activity sheet data can be used to bring cost, schedule & distribution or only for schedule.

```
{
    "data":
        {
            "id": 326,
            "name": "ManualActivitySheetRest",
            "description": null,
            "rollup_status": "Active",
            "detail_level": "CBS",
            "period_type": "Standard Planning Period",
            "period_name": "Standard Planning Period",
```

```
            "period_by": "Month",
            "period_format": "M YYYY",
            "decimal_option": 0,
            "decimal_places": 2,
            "schedule": {
                "enable_refresh": false
            },
            "curves": [
                {
                    "id": 1060,
                    "name": "Baseline", -- Curve uses activity sheet only
for schedule
                    "type": "Baseline",
                    "variance": null,
                    "distribution": {
                        "type": "manual"
                    },
                    "cost": {
                        "type": "manual"
                    },
                    "schedule": {
                        "type": "activity_sheet",
                        "sheet_name": "TempManualSheet",
                        "sch_start_source": "Planned Start",
                        "sch_end_source": "Planned Finish",
                        "project_type": "Current",
                        "as_sch_cost_dist_opt": 0
                    }
                },
                {
                    "id": 1061,
                    "name": "BaselineAS",--Curve uses activity sheet for
cost, schedule and Distribution
                    "type": "Baseline",
```

```
                    "variance": null,
                    "distribution": {
                        "type": "activity_sheet",
                        "sheet_name": "TempManualSheet(Resource)",
                        "project_type": "Current"
                    },
                    "cost": {
                        "type": "activity_sheet",
                        "activity_sheet_column": "Planned Cost"
                    },
                    "schedule": {
                        "type": "activity_sheet",
                        "activity_sch_data_type": "From Activity Sheet"
                    }
                }
            ],
            "filters": {
                "filter_option": "all"
            }
        }

}
```

Create Summary Curve

`POST /ws/rest/service/v1/cashflow/summary/{project_number}`

Purpose

Create Cashflow summary curves.

Request Format

All parameters should be URL encoded.

Path Parameter

project_number(Required): Specify the project/shell number.

Note: POST call has input & output both as JSON in the body

In the input request:

- "name"(Required).
- "status" (Optional): If not specified then the summary curve will be active.
- "description" (Optional): If no value is specified, the summary curve will be created with no description.
- "curves" (Optional): List of cash flow curve names, which has to be part of the summary curve. If no value is specified, the summary curve will be created without any cash flow curve.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

The data will contain the name and the id of the summary curve which was created successfully. The message will contain the status of the curve creation for all the input data.

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

```
{
   "data":[
      {
         "name":"summary curve 1",
         "status":"active",
         "description":"This summary curve is created from REST API",
         "curves":[
            "CF For buildings",
            "Curve 1"
         ]
      },
      {
```

```
         "name":"summary curve 2",
         "status":"active",
         "description":"This summary curve is created from REST API",
         "curves":[
            "Manual curve 0120",
            "cashflow for bridge 20"
         ]
      }
   ]
}
```

Sample Success Request

```
{
   "data":[
      {
         "name":"summary curve 1",
         "id":31
      }
   ],
   "message":[
      {
         "name":"summary curve 1",
         "status":"200",
         "message":"success"      },
      {
         "name":"summary curve 2",
         "status":"1308",
         "message":"Summary name already exists"      }
           ],
   "status":3000
}
```

Create Rollup Cash Flows for Company

```
POST /ws/rest/service/v1/cashflow/rollup/
```

Purpose

Create Rollup Cash Flows.

Request Format

All parameters should be URL encoded.

Path Parameter

Both input & output in JSON format in the body

In the input request:

- "name" (Required)
- "status" (Optional): If not specified, by default 'Active' will be taken.
- "data_source" (Optional): List of data sources, which has to be part of the rollup curve. If no value is specified, the rollup curve will be created without any data sources.
- "period_type" (Required): If no value is given, by default "Standard Planning Period" will be taken
- "period_by": Is Required if period_type is "Standard Planning Period" and by default 'Year' will be taken.
- "period_format": Is Required if period_type is "Standard Planning Period" and by default 'YYYY' will be taken.
- "period_name": Is Required if period_type is "Financial Periods"
- "decimal_places" (Optional)

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

The data will contain the name and the id of the rollup curve which was created successfully. The message will contain the status of the curve creation for all the input data.

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

```
{
    "data": [
        {
            "template": "Rollup Template"
```

```
            "name": "Rollup Curve 1",
            "status": "Active",
            "period_type": "Standard Planning Period",
            "period_name": "Standard Planning Period",
            "period_by": "Year",
            "period_format": "YYYY",
            "decimal_places": 5,
            "data_source": [
                {
                    "name": "Baseline",
                    "curve_type": "Baseline"
                },
                {
                    "name": "Vendor Approved Budget",
                    "curve_type": "Baseline"
                }
            ]
        },
        {
            "name": "Rollup Curve 3",
            "status": "Active",
            "period_type": "Financial Periods",
            "period_name": "FP",
            "decimal_places": 5,
            "data_source": []
        }
    ]
}
```

Sample Response

The following response is returned for the above request:

- A success response is returned for Rollup Curve 1.
- A failed response with status 1303 is returned for Rollup Curve 3.
- An overall status code of 3000 is returned as it was a partial failure/success.

```
{
```

```
   "data":[
      {
         "id": "208"
         "name": "Rollup Curve 1",
         "status": "Active",
         "period_type": "Standard Planning Period",
         "period_name": "Standard Planning Period",
         "period_by": "Year",
         "period_format": "YYYY",
         "decimal_places": 5,
         "data_source": [
             {
                "name": "Baseline",
                "curve_type": "Baseline"
             },
             {
                 "name": "Vendor Approved Budget",
                 "curve_type": "Baseline"
             }
          ]
      }
   ],
   "message":[
      {
         "name":"Rollup Curve 1",
         "status":"200",
         "message":"success"
      },
      {
         "name":"Rollup Curve 3",
         "status": 1303,
         "message": "CashFlow data provided is not valid for field :
period_name"
```

```
      }
   ],
   "status":3000
}
```

Update Rollup Cash Flows for Company

```
PUT  /ws/rest/service/v1/cashflow/rollup/
```

Purpose

Update Rollup Cash Flows.

Request Format

All parameters should be URL encoded.

Both input & output in JSON format in the body

Request Parameter

In the input request, "id" is a required field

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

The data will contain the name and the id of the rollup curve which was created successfully. The message will contain the status of the curve creation for all the input data.

A successful response displays a status code 200.

Sample Request

```
{
    "data": [
        {
            "name": "Rollup Curve 1",
            "status": "Active",
            "period_type": "Standard Planning Period",
            "period_name": "Standard Planning Period",
```

```
            "period_by": "Month",
            "period_format": "M YYYY",
            "decimal_places": 3
        },
        {
            "name": "Rollup Curve 2",
            "status": "Active",
            "period_type": "Financial Periods",
            "period_name": "FP1",
            "decimal_places": 5,
            "data_source": [
                    {
                        "name": "Baseline"
                    },
                    {
                        "name": "Vendor Approved Budget",
                        "action": "delete"
                    }
            ]
        }
    ]
}
```

Sample Success Response

```
{
   "data":[
      {
         "id": "208"
         "name": "Rollup Curve 1",
         "status": "Active",
         "period_type": "Standard Planning Period",
         "period_name": "Standard Planning Period",
         "period_by": "Month",
         "period_format": "M YYYY",
```

```
        "decimal_places": 3,
        "data_source": [
            {
               "name": "Baseline",
               "curve_type": "Baseline"
            },
            {
                "name": "Vendor Approved Budget",
                "curve_type": "Baseline"
            }
         ]
    },
    {
        "id": 198,
        "name": "Rollup Curve 2",
        "description": "description",
        "status": "Active",
        "period_type": "Financial Periods",
        "period_name": "FP1",
        "period_by": "Custom",
        "decimal_places": 5,
        "data_source": [
            {
               "name": "Baseline",
               "curve_type": "Baseline"
            }
         ]
    }
],
"message":[
    {
        "name":"Rollup Curve 1",
        "status":"200",
        "message":"success"
```

```
      },
      {
         "name":"Rollup Curve 2",
         "status": "200",
         "message": "success"

      }
   ],
   "status":200
}
```

Delete Cash Flow

`PUT/ws/rest/service/v1/cashflow/{project_number}`

> **Note:** The owner permissions cannot be deleted via REST or Web Services.

Purpose

Delete detail/rollup cash flows

Request Format

All parameters should be URL encoded.

Path Parameter

project_number (Optional): Specify the project/shell number to delete the cash flows of project; otherwise, to delete the company rollup curves

Both input & output in JSON format in the body

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
```

```
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

To delete Cash Flow 1 and Cash Flow 2, send a request in the following format:

```
{
    "data": {
        "names": ["Cash Flow 1","Cash Flow 2"]
    }
}
```

Sample Response

A partial success / failure response is returned to the above request, wherein:

- Cash Flow 1 was deleted successfully.
- Cash Flow 2 could not be deleted as it did not exist, and displays a status code of 1305.

```
{
    "data": [],
    "message": [
        {
            "status": 200,
            "message": "success",
            "name": "Cash Flow 1"
        },
        {
            "status": 1305,
            "message": "Cash Flow do not exist",
            "name": "Cash Flow 2"
        }
    ],
    "status": 3000
}
```

Delete Cash Flow Curve

```
DELETE /ws/rest/service/v1/cashflow/curve/{project_number}
```

Version: 19.7

`PUT /ws/rest/service/v1/cashflow/delete/curve/{project_number}`

Version: 22.11

Purpose

Delete cashflows curves

Request Format

All parameters should be URL encoded.

Request Parameters

- project_number (Required): Specify the project/shell number.

In input request JSON:

- "name" (Required): Specify the cashflow name
- "curves"(Required): Specify an array of curve names that need to be deleted.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

To delete two cash flow curves, Spends and Derived 1, send a request in the following format.

```
{
    "data": {
        "name":"Cashflow 1"
        "curves": ["Spends","Dervied 1"]
    }
}
```

Sample Success Response

A successful response is returned in the following format when both the cash flow curves are deleted.

```
{
    "data": [],
    "message": [
        {
            "status": 200,
            "message": "success",
            "name": "Spends"
        },
        {
            "status": 200,
            "message": "success",
            "name": "Dervied 1"
        }
    ],
    "status": 200
}
```


Delete Cash Flow - Summary Curves

`DELETE /ws/rest/service/v1/cashflow/summary/{project_number}`

Version: 19.7

`PUT /ws/rest/service/v1/cashflow/delete/curve/{project_number}`

Version: 22.11

Purpose

Delete summary cash flow.

Request Format

All parameters should be URL encoded.

Both input & output in JSON format in the body.

Request Parameter

project_number(Required): Specify the project/shell number to delete the summary cash flows of project

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

To delete summary curves for a cash flow, send an API request in the following format:

```
{
    "data": {
        "names": ["Summary Cash Flow 1","Cash Flow Summary Curve"]
    }
}
```

Sample Response

A partial success / failure response is returned with a status code 3000 to the above request, wherein:

- Summary Cash Flow 1 was deleted successfully.
- Summary Cash Flow 2 is not deleted, and displays a status code of 1306.

```
{
    "data": [],
    "message": [
        {
            "status": 200,
            "message": "success",
            "name": "Summary Cash Flow 1"
        },
        {
            "status": 1306,
            "message": "System-defined Summary Cash Flow Curve cannot be
deleted",
            "name": "Cash Flow Summary Curve"
        }
```

```
    ],
    "status": 3000
}
```

Get Cash Flow Data

```
GET /ws/rest/service/v1/cashflow/data/{project_number}
```

Purpose

Get cash flow curve data.

Request Format

All parameters should be URL encoded.

Path Parameter

project_number(Optional): Specify the project/shell number. If no value is specified, the company-level cash flow data will be retrieved.

URL Parameters

- filter (Required): Filter condition to be used when retrieving the data. It is a JSON object with the below information:
  - "name"(Required): Specify the cash flow name to get the data
  - "curves"(Optional): Specify the curve name for which the data is to be retrieved. Invalid curve name will be ignored. If no value is specified, all the curves data will be sent in the response.

Sample filter parameter

```
filter={  "name":"cashflow 1",   "curves":[  "Baseline", "Forecast"  ] }
```

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Response

```
{
   "data":[
```

```
{
   "name":"cashflow 1",
   "alert_message":[
      {
         "projectname":"Shell-Weekly",
         "name":"CF-New",
         "curvename":"Actuals",
         "errormessage":"Curve timescale is yearly"
      },
      {
         "projectname":"SUNEEL-RETEST-YEARLY",
         "name":"CashFlow-Suneel-Retest-Yearly",
         "curvename":"Actuals",
         "errormessage":"Curve timescale is yearly"
      }
   ],
   "curves":[
      {
         "Name":"Baseline",
         "alert_message":"",
         "Currency":"Indian Rupee (INR)",
         "Type":"Baseline",
         "From Date":"01/01/17",
         "To Date":"12/30/17",
         "Total":"1742.56"
         "Unassigned":"300.90",
         "2 2016":"800.56"
         "details":[
            {
               "Number":"A0001-B0001-C0001-D0001-E0001",
               "Name":"Row-00001",
               "Profile":"Front Load",
               "Total":"1742.56",
               "From Date":"02/29/16",
```

```
            "To Date":"12/30/16",
            "Unassigned":"345.90",
            "2 2016":"1742.56"
         },
         {
            "Number":"A0003-B0003-C0003-D0003-E0003",
            "Name":"Row-00003",
            "Profile":"S Curve",
            "Total":"800.56",
            "From Date":"01/01/17",
            "To Date":"12/30/17",
            "Unassigned":"300.90",
            "2 2016":"800.56"
         }
      ]
   },
   {
      "name":"Forecast",
      "Type":"Forecast",
      "alert_message":"",
      "currency":"Indian Rupee (INR)",
      "Total":"800.56",
      "From Date":"02/02/19",
      "To Date":"04/12/19",
      "Total":"1742.56"
      "Unassigned":"7443.20",
      "2 2016":"689.53"
      "details":[
         {
            "Number":"A0009-B0009-C0009-D0009-E00011",
            "Name":"Row-00011",
            "Profile":"S Curve",
            "Total":"800.56",
            "From Date":"02/02/19",
```

```
                    "To Date":"04/12/19",
                    "Unassigned":"7443.20",
                    "2 2016":"689.53"
                 },
                 {
                    "Number":"A0007-B0007-C0007-D0007-E0007",
                    "Name":"Row-00007",
                    "Profile":"S Curve",
                    "Total":"800.56",
                    "From Date":"05/05/19",
                    "To Date":"12/30/19",
                    "Unassigned":"280.43",
                    "2 2016":"3321.56"
                 }
              ]
           },
           {
              "alert_message":"",
              "Name":"Original",
              "Currency":"Canada Dollar (CAD)",
              "Type":"Portfolio Budget",
              "From Date":"",
              "To Date":"",
              "Total":"0.00",
              "Unassigned":"0.00",
              "1 2017":"100.00",
              "2 2017":"",

           }
        ]
     }
  ],
  "message":[       "success"   ],
```

```
   "status":"200"
}
```

Get Summary Cash Flow Data

```
GET /ws/rest/service/v1/cashflow/summary/data/{project_number}
```

Purpose

Get Summary Cash Flow Curve data.

Request Format

All parameters should be URL encoded.

Path Parameter

project_number (Required): Specify the project/shell number.

Url Parameter

- filter (Required): Filter condition to be used when retrieving the data. It is a JSON object with the below information:
- "name"(Required): Specify the cash flow name to get the data
- "curves"(Optional): Specify the curve name for which the data is to be retrieved. Invalid curve name will be ignored. If no value is specified, all the curves data will be sent in the response.

Sample filter parameter

```
filter={  "name":"cashflow 1",   "curves":[  "Baseline", "Forecast"  ] }
```

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

```
{
   "data":[
      {
         "name":"cashflow 1",
```

```
"alert_message":[
   {
      "projectname":"Shell-Weekly",
      "name":"CF-New",
      "curvename":"Actuals",
      "errormessage":"Curve timescale is yearly"
   },
   {
      "projectname":"SUNEEL-RETEST-YEARLY",
      "name":"CashFlow-Suneel-Retest-Yearly",
      "curvename":"Actuals",
      "errormessage":"Curve timescale is yearly"
   }
],
"curves":[
   {
      "name":"Baseline",
      "alert_message":"",
      "currency":"Indian Rupee (INR)",
      "Type":"Baseline",
      "Total":"1742.56",
      "From Date":"02/29/16",
      "To Date":"12/30/16",
      "Unassigned":"345.90",
      "2 2016":"1742.56"
      "details":[
         {
            "Number":"A0001-B0001-C0001-D0001-E0001",
            "Name":"Row-00001",
            "Profile":"Front Load",
            "Total":"1742.56",
            "From Date":"02/29/16",
            "To Date":"12/30/16",
            "Unassigned":"345.90",
```

```
            "2 2016":"1742.56"
         },
         {
            "Number":"A0003-B0003-C0003-D0003-E0003",
            "Name":"Row-00003",
            "Profile":"S Curve",
            "Total":"800.56",
            "From Date":"01/01/17",
            "To Date":"12/30/17",
            "Unassigned":"300.90",
            "2 2016":"800.56"
         }
      ]
   },
   {
      "name":"Forecast",
       "Type":"Forecast",
      "alert_message":"",
      "currency":"Indian Rupee (INR)",
      "Total":"800.56",
      "From Date":"05/05/19",
      "To Date":"12/30/19",
      "Unassigned":"280.43",
      "2 2016":"3321.56"
      "details":[
         {
            "Number":"A0009-B0009-C0009-D0009-E00011",
            "Name":"Row-00011",
            "Profile":"S Curve",
            "Total":"800.56",
            "From Date":"02/02/19",
            "To Date":"04/12/19",
            "Unassigned":"7443.20",
            "2 2016":"689.53"
```

```
                },
                {
                   "Number":"A0007-B0007-C0007-D0007-E0007",
                   "Name":"Row-00007",
                   "Profile":"S Curve",
                   "Total":"800.56",
                   "From Date":"05/05/19",
                   "To Date":"12/30/19",
                   "Unassigned":"280.43",
                   "2 2016":"3321.56"
                }
             ]
          },
          {
             "alert_message":"",
             "Name":"Original",
             "Currency":"Canada Dollar (CAD)",
             "Type":"Portfolio Budget",
             "From Date":"",
             "To Date":"",
             "Total":"0.00",
             "Unassigned":"0.00",
             "1 2017":"100.00",
             "2 2017":"",

          }
       ]
    }
 ],
 "message":[
    "success"
 ],
 "status":"200"
```

```
}
```

Get Rollup Status

```
GET /ws/rest/service/v1/cashflow/rollup/status/{project_number}
```

Purpose

Get Cashflow Rollup Status

Request Format

All parameters should be URL encoded.

Request Parameters

project_number(Required): Specify the project/shell number to get the rollup status of project cash flows

url parameter(Optional)

filter= {"names":["Cash Flow 1" ,"Cash Flow 2"] }

Filter can be used to filter on name to get the cash flow rollup status. If cash flow does not exist with the given name, that name will be ignored. Cashflows of other names will be returned.

If project number is not specified in the URL, an error message will be returned

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response

The following is an example of a success response that displays the status of a Cash Flow Rollup.

```
{
    "data": [
        {
            "name": "Cash Flow 1",
            "id": "21",
```

```
            "status": "Active"
        }
    ],
    "message": [ "success" ],
    "status": 200
}
```

Get Rollup Status - for Template Cash Flows

```
GET
/ws/rest/service/v1/cashflow/template/rollup/status/{template_number}
```

Purpose

Get Rollup Status of template cash flows.

Request Format

All parameters should be URL encoded.

Request Parameters

The following parameters can be specified in the request:

- template_number(Optional): Specify the template number to get the rollup status of template cash flows; otherwise, to get the rollup status of standard template cash flows
- URL parameter(Optional): Specify an optional filter parameter in the following format.
  `filter= {"names":["Cash Flow 1" ,"Cash Flow 2"]}`
  Filter can be used to filter on name to get the cash flow rollup status. If cash flow does not exist with the given name, that name will be ignored. Cash flows of other names will be returned.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response

```
{
```

```
    "data": [
        {
            "name": "Cash Flow 1",
            "id": "21",
            "status": "Active"
        }
    ],
    "message": [        "success"    ],
    "status": 200
}
```

Update Rollup Status

```
PUT /ws/rest/service/v1/cashflow/rollup/status/{project_number}
```

Purpose

Update Cashflow Rollup status

Request Format

All parameters should be URL encoded.

Both input & output in JSON format in the body

Request Parameter

project_number(Required): Specify the project/shell number to update the rollup status of project cash flow

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

To update the rollup status for three cash flows, send an API request in the following format:

```
{
    "data" : [
                {"name": "Cash Flow 1", "rollup_status": "Inactive"},
                {"name": "Cash Flow 2", "rollup_status": "Open"},
                {"name": "Cash Flow 3", "rollup_status": "Active"}
    ]
}
```

Sample Response

A partial success / failure response is returned with a status code 3000 to the above request, wherein:

- Rollup status of Summary Cash Flow 1 is successful
- Rollup status of Cash Flows 2 is not updated and displays status code 663
- Rollup status of Cash Flow 3 is not updated, and displays a status code of 1305

```
{
    "data": [
        {
            "rollup_status": "Active",
            "name": "Cash Flow 1",
            "id": "61"
        }
    ],
    "message": [
        {
            "name": "Cash Flow 1",
            "message": "success",
            "status": 200
        },
        {
            "name": "Cash Flow 2",
            "message": "Status field value is not correct.",
            "status": 663
        },
        {
            "name": "Cash Flow 3",
```

```
            "message": "Cash Flow do not exist",
            "status": 1305
        }
    ],
    "status": 3000
}
```

Update Rollup Status - For Template Cash Flows

PUT
/ws/rest/service/v1/cashflow/template/rollup/status/{template_number}

Purpose

Update Rollup status of template cash flows

Request Format

All parameters should be URL encoded.

Both input & output in JSON format in the body

Request Parameter

template_number(Optional): Specify the template number to update the rollup status of template cash flows; otherwise, to update the rollup status of standard template cash flows

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

To update the rollup status for three template cash flows, send an API request in the following format:

```
{
    "data" : [
                {"name": "Cash Flow 1", "rollup_status": "Inactive"},
```

```
                {"name": "Cash Flow 2", "rollup_status": "Open"},
                {"name": "Cash Flow 3", "rollup_status": "Active"}
    ]
}
```

Sample Response

A partial success / failure response is returned with a status code 3000 to the above request, wherein:

- Rollup status of Summary Cash Flow 1 is successful
- Rollup status of Cash Flows 2 is not updated and displays status code 663
- Rollup status of Cash Flow 3 is not updated, and displays a status code of 1305

```
{
    "data": [
        {
            "rollup_status": "Active",
            "name": "Cash Flow 1",
            "id": "61"
        }
    ],
    "message": [
        {
            "name": "Cash Flow 1",
            "message": "success",
            "status": 200
        },
        {
            "name": "Cash Flow 2",
            "message": "Status field value is not correct.",
            "status": 663
        },
        {
            "name": "Cash Flow 3",
            "message": "Cash Flow do not exist",
            "status": 1305
```

```
        }
    ],
    "status": 3000
}
```

Refresh Cash Flow

```
PUT /ws/rest/service/v1/cashflow/refresh/{project_number}
```

Purpose

Refresh Cashflow Properties

Request Format

All parameters must be URL encoded.

Specify the request in JSON format in the body.

```
        {
        "names": ["CBS CF", cash_flow_2"]
        }
```

project_number:Required parameter.

Request Parameters in Options

The following parameters can be included in the Options:

Request Parameter	Description
"names"	Name of the cash flow. Enter multiple cash flows as comma-separated values..
rollup_status	The rollup status of the cash flow. Valid options include: *Active*, or *Inactive*
`detail_level`	The detail level of the cash flow curve. Valid values include: *CBS, Summary CBS, Project / Shell,* or *Commitment*

For any other values, an error message is displayed in the response.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
```

```
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response

This is an example of successful response.

```
{
    "data": "",
    "message": ["http://slc12knf.us.oracle.com:912<server
url>/ws/rest/service/v1/cashflow/jobs/1503681423559"],
    "status": 202
}
```

Sample Failed Response

This is an example of a failed response with status code 3000.

```
{
   "invalid_names": "[Summary1, Curve2]",
   "data": [],
   "message": [
       "http://blr00bti.in.oracle.com:3883/idchyd<server
url>/ws/rest/service/v1/cashflow/jobs/1556455198417"
              ],
   "status": 3000
}
```

Get Cash Flow Refresh Job Status

```
GET /ws/rest/service/v1/cashflow/jobs/{job_id}
```

Purpose

To retrieve cash flow refresh job status

Request Format

All parameters should be URL encoded.

Request Parameter

job_id: Required

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response

```
{
    "data":"",
    "job_status":"Finished",
    "status_code":200,
    "message":"OK"
}
```

when a job is in progress:

```
{
    "data":"",
    "job_status":"In progress",
    "status_code":200,
    "message":"OK"
}
```

Sample Failed Response

```
{
    "data":"Failure detail",
    "job_status":"Finished with errors",
    "status_code":1006,
    "message":"Job processing failed with errors."
}
```

Get Cash Flow Properties

```
GET /ws/rest/service/v1/cashflow/{project_number}
```

Purpose

Get cash flow properties.

Request Format

Send an API Get request in the following format with all parameters URL-encoded.

```
GET /ws/rest/service/v1/cashflow/{project_number}
{
    filter
         {
                "names":<cashflow 1, cashflow 2>
                "curve_name":<value>
                "rollup_status":<value>
                "detail_level":<value>
                "include_curves":<value>
         }
}
```

For CBS/Summary CBS, if the Set Effective Date is *Yes* then you can see the Effective Date distribution details in the Actuals Curve.

Request Parameters

The following parameters can be included in the request:

Request Parameters	Required?	Data Type	Description
project_number	No	String	If the project_number is not provided, the company cash flow is fetched.

Request Parameters	Required?	Data Type	Description
filter	No	String	If a filter is not specified, then all cash flow curves from the project are returned. The following filter options are supported: ▸ "names": The name of the cashflow. Enter multiple cash flows as comma-separated values. ▸ "curve_name": The name of the cash flow curve. ▸ "rollup_status": Indicate the rollup status of the cash flow. Valid options include: *Active*, *Inactive* ▸ "detail_level": Specify the detail level of the cash flow curve. Valid options include: *Summary CBS*, *CBS*, *Project / Shell*, and *Commitment*. ▸ "include_curves": Indicate whether to include curves. Valid options include: *Yes* (default), *No*.

Response Format

The REST service returns a JSON map in the following format:

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful request returns a status code 200.

A failed request displays a status code and a message in the response.

Sample Response: Cash Flow Properties for Project/Shell

This is an example of a response for cash flow properties returned for a project/shell.

```
{
    "data": [
        {
            "name": "Project_CF",
            "description": "test webservice get Cashflow Properties",
            "rollup_status": "Active",
            "detail_level": "Project / Shell",
            "period_type": "Standard Planning Period",
            "period_name": "Standard Planning Period",
            "period_by": "Month",
            "period_format": "M YYYY",
            "decimal_places": 8,
            "decimal_option": "0"
            "snapshot": {
                "snapshot_day_of": 1,
                "cutoff_spends": {
                    "cutoff_week_num": "First",
                    "cutoff_week_day": "Sunday",
                    "inc_spends_opt": "next_month"
                }
            },
            "curves": [
                {
                    "name": "Baseline",
```

```
            "type": "Baseline",
            "distribution": {
                "type": "auto_profile",
                "distribution_profile": "Front Loaded"
            },
            "cost": {
                "type": "auto_distribution"
            },
            "schedule": {
                "type": "schedule_sheet",
                "sheet_name": "sheet3",
                "sch_start_source": "Estimated Finish Date",
                "sch_end_source": "Estimated Start Date"
            }
        },
        {
            "name": "Forecast",
            "type": "Forecast",
            "distribution": {
                "type": "manual"
            },
            "cost": {
                "type": "manual"
            },
            "schedule": {
                "type": "schedule_sheet",
                "sheet_name": "Sheet1",
                "sch_start_source": "AP_Date6",
                "sch_end_source": "AP_Date only 1"
            },
            "forecast_options": {
                "begin_end_of_curve": true,
                "fc_curve_name": "Actuals",
                "current_actual_cut_off_date": true,
```

```
                    "edit_until_replace_by_actual": true
                }
            },
            {
                "name": "Actuals",
                "type": "Spends",
                "cost": {
                    "cost_sheet_column": "Purchase Orders
(Pending)",
                    "type": "cost_sheet"
                }
            },
            {
                "name": "Original Budget",
                "type": "Portfolio Budget",
                "cost": {
                    "currency_code": "United States Dollar (USD)",
                    "distribut_amount_from": "original"
                }
            },
            {
                "name": "Approved Budget",
                "type": "Portfolio Budget",
                "cost": {
                    "currency_code": "RADO",
                    "distribut_amount_from": "approved"
                }
            },
            {
                "name": "Shared Budget",
                "type": "Portfolio Budget",
                "cost": {
                    "currency_code": "Afghani (AFN)",
                    "distribut_amount_from": "shared"
```

```
            }
        },
        {
            "name": "custom_D",
            "type": "Derived",
            "cost": {
                "base_currency": "United States Dollar (USD)",
                "source_curve_name": "Baseline",
                "derived_curve_currency": "Afghani (AFN)",
                "exchange_rate": "Float",
                "float_rate_as": "end_period"
            }
        }
    ],
    "filters": {
        "filter_option": "all"
    },
    "schedule":{
        "enable_refresh" : true,
        "frequency" : "Quarterly",
        "quarterday" : 4,
        "startdate": "2019/03/30",
        "noenddate": false,
        "enddate"    : "2020/03/30"
    },
    "summary_curves":[
        {
            "name":"curve_1",
            "summary_type" : "System Defined",
            "status" : "Active"
        },
        {
            "name":"curve_2",
            "summary_type" : "System Defined",
```

```
                    "status" : "Active"
                }
            ]
         }
    ],
    "message": [
        "success"
    ],
    "status": 200
}
```


Sample Response: Cash Flow Properties for CBS

This is an example of a response received for the cash flow properties of a CBS cash flow.


```
{
    "data": [
        {
            "name": "CBS_CF",
            "description": "CBS  Cashflow",
            "rollup_status": "Active",
            "detail_level": "CBS",
            "period_type": "Standard Planning Period",
            "period_name": "Standard Planning Period",
            "period_by": "Year",
            "period_format": "YYYY",
            "decimal_places": 3,
            "snapshot": {
                "snapshot_week_num": 1,
                "snapshot_week_day": "1"
            },
            "curves": [
                {
                    "name": "Actuals",
                    "type": "Spends",
                    "cost": {
```

```
                        "cost_sheet_column": "Purchase Orders
(Pending)",
                        "type": "cost_sheet"
                    }
                },
                {
                    "name": "Baseline",
                    "type": "Baseline",
                    "distribution": {
                        "type": "auto_profile",
                        "cbs": [
                            {
                                "cbs_code": "s1-a 1-b 1-a123~~s3-a 2-b
1-a123",
                                "bitemid": 13,
                                "item": "A123",
                                "default_profile": "Front Loaded"
                            },
                            {
                                "cbs_code": "s1-a 1-b 1-a123~~s2-a 2-b
1-a123",
                                "bitemid": 12,
                                "item": "A123",
                                "default_profile": null
                            }
                        ]
                    },
                    "cost": {
                        "type": "auto_distribution"
                    },
                    "schedule": {
                        "type": "schedule_sheet",
                        "sheet_name": "Sheet1",
                        "sch_start_source": "Finish date",
```

```
            "sch_end_source": "Late Start date"
        }
    },
    {
        "name": "Forecast",
        "type": "Forecast",
        "distribution": {
            "type": "schedule_sheet",
            "sch_sheet_name": "sheet2"
        },
        "cost": {
            "type": "manual"
        },
        "schedule": {
            "type": "manual"
        },
        "forecast_options": {
            "begin_end_of_curve": true,
            "fc_curve_name": "Actuals",
            "current_actual_cut_off_date": true,
            "fc_dist": "weighted_avg_over_next",
            "periods": 1
        }
    },
    {
        "name": "Portfolio Budget",
        "type": "Portfolio Budget",
        "cost": {
            "currency_code": "Costa Rica Colon (CRC)",
            "distribut_amount_from": "original"
        }
    },
    {
        "name": "custom_D",
```

```
                    "type": "Derived",
                    "cost": {
                        "base_currency": "United States Dollar (USD)",
                        "source_curve_name": "Actuals",
                        "derived_curve_currency": "Bhutan Ngultrum
(BTN)",
                        "exchange_rate": "Float",
                        "float_rate_as": "weighted_period"
                    }
                },
                {
                    "name": "Approved Budget",
                    "type": "Portfolio Budget",
                    "cost": {
                        "currency_code": "Bhutan Ngultrum (BTN)",
                        "distribut_amount_from": "approved"
                    }
                },
                {
                    "name": "Original Budget",
                    "type": "Portfolio Budget",
                    "cost": {
                        "currency_code": "RADO",
                        "distribut_amount_from": "original"
                    }
                },
                {
                    "name": "Shared Budget",
                    "type": "Portfolio Budget",
                    "cost": {
                        "currency_code": "RADO",
                        "distribut_amount_from": "shared"
                    }
                },
```

```
        {
            "name": "Derive",
            "type": "Derived",
            "cost": {
                "base_currency": "United States Dollar (USD)",
                "source_curve_name": "Forecast",
                "derived_curve_currency": "Dirham (AED)",
                "exchange_rate": "Float",
                "float_rate_as": "beginning_period"
            }
        },
        {
            "name": "Forecast 2",
            "type": "Forecast",
            "distribution": {
                "type": "manual"
            },
            "cost": {
                "type": "manual"
            },
            "schedule": {
                "type": "p6_sheet",
                "p6_datasource": "Original Baseline",
                "sch_dates_type": "At Completion"
            },
            "forecast_options": {}
        }
    ],
    "filters": {
        "filter_option": "all"
    },
    "schedule":{
        "enable_refresh" : true,
        "frequency" : "Quarterly",
```

```
                "quarterday" : 4,
                "startdate": "2019/03/30",
                "noenddate": false,
                "enddate"    : "2020/03/30"
            },
            "summary_curves":[
                {
                    "name":"curve_1",
                    "summary_type" : "System Defined",
                    "status" : "Active"
                },
                {
                    "name":"curve_2",
                    "summary_type" : "System Defined",
                    "status" : "Active"
                }
            ]
         }
    ],
    "message": [
        "success"
    ],
    "status": 200
}
```


Sample Response: Cash Flow Properties for Summary CBS

This is an example of a response received for the cash flow properties of a Summary CBS cash flow.


```
{
    "data": [
        {
            "name": "SummaryCBS_CF",
            "description": "SummaryCBS_CF for Cashflow Properties",
            "rollup_status": "Active",
```

```
            "detail_level": "Summary CBS",
            "period_type": "Standard Planning Period",
            "period_name": "Standard Planning Period",
            "period_by": "Month",
            "period_format": "M YYYY",
            "decimal_places": 3,
            "snapshot": {
                "snapshot_week_num": 1,
                "snapshot_week_day": "2",
                "cutoff_spends": {
                    "cutoff_week_num": 2,
                    "cutoff_week_day": "6",
                    "inc_spends_opt": "next_month"
                }
            },
            "curves": [
                {
                    "name": "Actuals",
                    "type": "Spends",
                    "cost": {
                        "cost_sheet_column": "Purchase Orders
(Pending)",
                        "type": "cost_sheet"
                    }
                },
                {
                    "name": "Baseline",
                    "type": "Baseline",
                    "distribution": {
                        "type": "auto_profile"
                    },
                    "cost": {
                        "type": "cost_sheet",
                        "cost_sheet_column": "Purchase Orders (Pending)"
```

```
        },
        "schedule": {
            "type": "schedule_sheet",
            "sheet_name": "Sheet1",
            "sch_start_source": "Start date",
            "sch_end_source": "Finish date"
        }
    },
    {
        "name": "Forecast",
        "type": "Forecast",
        "distribution": {
            "type": "manual"
        },
        "cost": {
            "type": "manual"
        },
        "schedule": {
            "type": "manual"
        },
        "forecast_options": {}
    },
    {
        "name": "Approved Budget",
        "type": "Portfolio Budget",
        "cost": {
            "currency_code": "test",
            "distribut_amount_from": "approved"
        }
    },
    {
        "name": "Original Budget",
        "type": "Portfolio Budget",
        "cost": {
```

```
                        "currency_code": "Yen (JPY)",
                        "distribut_amount_from": "original"
                    }
                },
                {
                    "name": "Shared Budget",
                    "type": "Portfolio Budget",
                    "cost": {
                        "currency_code": "Algeria Dinar (DZD)",
                        "distribut_amount_from": "shared"
                    }
                },
                {
                    "name": "Derive",
                    "type": "Derived",
                    "cost": {
                        "base_currency": "United States Dollar (USD)",
                        "source_curve_name": "Baseline",
                        "derived_curve_currency": "Bhutan Ngultrum
(BTN)",
                        "exchange_rate": "Float",
                        "float_rate_as": "beginning_period"
                    }
                }
            ],
            "filters": {
                "filter_option": "all"
            },
            "schedule":{
                "enable_refresh" : true,
                "frequency" : "Quarterly",
                "quarterday" : 4,
                "startdate": "2019/03/30",
                "noenddate": false,
```

```
                "enddate"    : "2020/03/30"
            },
            "summary_curves":[
                {
                    "name":"curve_1",
                    "summary_type" : "System Defined",
                    "status" : "Active"
                },
                {
                    "name":"curve_2",
                    "summary_type" : "System Defined",
                    "status" : "Active"
                }
            ]
        }
    ],
    "message": [
        "success"
    ],
    "status": 200
}
```


Sample Response: Cash Flow Properties for Commitment Type

This is an example of a response received for the cash flow properties of a Commitment Type cash flow.


```
{
    "data": [
        {
            "name": "Commitment_CF",
            "description": "commit",
            "rollup_status": "Active",
            "detail_level": "Commitment",
            "bp_name": "Purchase Orders",
            "reference_elements": "record_no:Record No.",
```

```
            "base_commit_record": "PO-0001",
            "period_type": "Standard Planning Period",
            "period_name": "Standard Planning Period",
            "period_by": "Month",
            "period_format": "M YYYY",
            "decimal_places": 2,
            "curves": [
                        {
                         "name": "Actuals",
                         "type": "Spends",
                         "cashflow_granularity": "by_lineitem",
                         "cost": {
                                    "spends_bp": [{"bp_name"
:"A_Commit_01", "status":"Approved"}]
                                  }
                        },
                       {
                         "name": "Baseline",
                         "type": "Baseline",
                         "cashflow_granularity": "individual_record",
                         "distribution": {
                                           "type": "auto_profile",
                                           "commit_profile":
"business_process",
                                           "bp_dates_profile": [
                                                                {

"bp_name": "Purchase Orders",

"todate": "uuu_creation_date ",

"profile": "Front Loaded",

"fromdate": "ugenP6PlannedStartDOP"
                                                                }
```

```
                                                                ],
                "commit_change_processes": [
                 {
                   "bp_name": "PO Amendments",
                   "status": "Approved"
                },
                 {
                  "bp_name": "PO Amendments",
                  "status": "Canceled"
                 },
                 {
                  "bp_name": "PO Amendments",
                  "status": "Pending"
                 },
                 {
                   "bp_name": "PO Amendments",
                   "status": "Rejected"
                 }
        ]
    },
    {
        "name": "Forecast",
        "type": "Forecast",
        "cashflow_granularity": "by_lineitem",
        "distribution": { "type": "manual" },
        "commit_change_processes": "",
        "forecast_options": {}
    },
    {
        "name": "Approved Budget",
        "type": "Portfolio Budget",
        "cost": {
                  "currency_code": "Costa Rica Colon (CRC)",
                  "distribut_amount_from": "approved"
```

```
                        }
                },
                {
                    "name": "Shared Budget",
                    "type": "Portfolio Budget",
                    "cost": {
                        "currency_code": "Dirham (AED)",
                        "distribut_amount_from": "shared"
                    }
                },
                {
                    "name": "Original Budget",
                    "type": "Portfolio Budget",
                    "cost": {
                        "currency_code": "Afghani (AFN)",
                        "distribut_amount_from": "original"
                    }
                },
                {
                    "name": "Derive",
                    "type": "Derived",
                    "cost": {
                        "base_currency": "United States Dollar (USD)",
                        "source_curve_name": "Baseline",
                        "derived_curve_currency": "Costa Rica Colon
(CRC)",
                        "exchange_rate": "Float",
                        "float_rate_as": "weighted_period"
                    }
                }
            ],
            "schedule":{
                "enable_refresh" : true,
                "frequency" : "Quarterly",
```

```
                "quarterday" : 4,
                "startdate": "2019/03/30 00:00",
                "noenddate": false,
                "enddate": "2020/03/31 00:00"
            },
            "summary_curves":[
                {
                    "name":"curve_1",
                    "summary_type" : "System Defined",
                    "status" : "Active"
                },
                {
                    "name":"curve_2",
                    "summary_type" : "System Defined",
                    "status" : "Active"
                }
            ]
        }
    ],
    "message": [
        "success"
    ],
    "status": 200
}
```

All Possible Schedule Values

```
"schedule":{
    "enable_refresh" : false
}
"schedule":{
    "enable_refresh" : true,
    "frequency" : "Daily",
    "startdate": "2019/03/30 00:00",
    "noenddate": true,
```

```
    "enddate": null
}
"schedule":{
    "enable_refresh" : true,
    "frequency" : "Weekly",
    "weekday"    : "Thursday",
    "startdate": "2019/03/30 00:00",
    "noenddate": false,
    "enddate": "2020/03/31 00:00"
}
"schedule":{
    "enable_refresh" : true,
    "frequency" : "Monthly",
    "bymonthday": true,
    "monthday": 11,
    "startdate": "2019/03/30 00:00",
    "noenddate": false,
    "enddate": "2020/03/31 00:00"
}
"schedule":{
    "enable_refresh" : true,
    "frequency" : "Monthly",
    "bymonthday": false,
    "monthweeknum"    : 2
    "monthweekday": "Thursday",
    "startdate": "2019/03/30 00:00",
    "noenddate": false,
    "enddate": "2020/03/31 00:00"
}
"schedule":{
    "enable_refresh" : true,
    "frequency" : "Quarterly",
    "quarterday" : 4,
    "startdate": "2019/03/30 00:00",
```

```
    "noenddate": false,
    "enddate": "2020/03/31 00:00"
}
```

Sample Response: Company Level

```
{
    "data": [
        {
            "name": "Company cashflow- roll up curves",
            "description": null,
            "status": "Active",
            "period_type": "Standard Planning Period",
            "period_name": "Standard Planning Period",
            "period_by": "Month",
            "period_format": "M YYYY",
            "decimal_places": 2,
            "filters": {
                "filter_option": "all"
            },

            "data_source": [
                {
                    "name": "Baseline",
                    "curve_type": "Baseline"
                },
                {
                    "name": "Forecast",
                    "curve_type": "Forecast"
                },
                {
                    "name": "Actuals",
                    "curve_type": "Spends"
                }
            ]
```

```
        }
    ],
    "message": [
        "success"
    ],
    "status": 200
}
```


Sample Response: CBS Curve with Schedule from Activity Sheet

This is an example of a Cash flow curve using a schedule from an activity sheet with a **Periods of Cost Distribution** (`as_sch_cost_dist_opt`) option.


```
{
    "data": [
        {
            "id": 2089,
            "name": "CBS Curve",
            "description": null,
            "rollup_status": "Active",
            "detail_level": "CBS",
            "period_type": "Standard Planning Period",
            "period_name": "Standard Planning Period",
            "period_by": "Month",
            "period_format": "M YYYY",
            "decimal_option": 0,
            "decimal_places": 2,
            "schedule": {
                "enable_refresh": false
            },
            "curves": [
                {
                    "id": 9574,
                    "name": "Baseline",
                    "type": "Baseline",
                    "variance": null,
```

```
            "distribution": {
                "type": "auto_profile",
                "cbs": [
                    {
                        "cbs_code": "100~~101",
                        "bitemid": 3,
                        "item": "Subcode 101",
                        "default_profile": "Copy of test 5"
                    }
                ]
            },
            "cost": {
                "type": "auto_distribution"
            },
            "schedule": {
                "type": "activity_sheet",
                "sheet_name": "System Activity Sheet",
                "sch_start_source": "Actual Start",
                "sch_end_source": "Actual Finish",
                "project_type": "Current",
                "as_sch_cost_dist_opt": 1
            }
        }
    ],
    "filters": {
        "filter_option": "all"
    },
    "summary": [
        {
            "name": "Cash Flow Summary Curve",
            "summary_type": "System_Defined"
        }
    ]
}
```

```
    ],
    "message": [
        "success"
    ],
    "status": 200
}
```

Get Summary Cash Flow Properties

```
GET /ws/rest/service/v1/cashflow/summary/{project_number}
```

Purpose

Get Summary Cash Flow properties

Request Format

All parameters should be URL encoded.

Path Parameter

project_number(Mandatory): Specify the project/Shell number to get project cash flow properties

input query parameter -

filter=

```
{
 "names":["Summary Cash Flow 1" ,"Summary Cash Flow 2"]
 }
```

Filter can be used to filter on name to get the summary cash flow properties. If summary cashflow does not exist with the given name, that name will be ignored.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response

```
{
    "data": [
        {
            "curves": [
                "Cash Flow 1",
                "Cash flow 2"
            ],
            "name": "Sum Cash Flow 1",
            "description": "This summary curve is created from REST API",
            "summary_type": "User_Defined",
            "status": "Active"
        }
    ],
    "message": [        "success"    ],
    "status": 200
}
```

Get Cash Flow Permissions

```
GET /ws/rest/service/v1/cashflow/permission/{project_number}
```

Purpose

Fetch Cash flow Permissions

The input JSON shall provide various options to be considered for fetching cash flow permissions.

POST body is a JSON

> **Note:** POST call has input & output both as JSON in the body

input query parameter

filter = `{"names": [ "cash flow 1", "cash flow 2" ]}`

Request Format

All parameters must be URL encoded.

project_number: Specify the Project number in which the cash flow exists. If not provided, Company workspace will be considered.

In the request body, "names" is an optional parameter. For multiple cash flows, specify a comma-separated list in the following format:

```
"names": ["cash flow 1", "cash flow 2", "cash flow 3"]
```

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response

This is an example of a successful response with status 200.

```
{
    "data": {
        "cash flow 1": {
           "permissions": [
                {
                    "login_name": "coadmin",
                    "full_name": "Company Administrator",
                    "permission": {
                        "edit_data": "1",
                        "view": "1",
                        "modify_permission": "0"
                    },
                    "type": "U"
                },
                {
                    "full_name": "Company Group 1",
                    "group_name": "Company Group 1",
                    "permission": {
                        "edit_data": "1",
```

```
                        "view": "1",
                        "modify_permission": "1"
                    },
                    "type": "CG"
                }
            ]
        },
        "Cash flow 2": {
            "permissions": [
                {
                    "login_name": "firstname",
                    "full_name": "Firstname Lastname",
                    "permission": {
                        "edit_data": "1",
                        "view": "1",
                        "modify_permission": "1"
                    },
                    "type": "U"
                }
            ]
        }
    },
    "message": [
        "success"
    ],
    "status": 200
}
```


Get Distribution Profiles

`GET /ws/rest/service/v1/cashflow/profile`

Purpose

Get Distribution profiles of company

Request Format

All parameters must be URL encoded.

Path Parameter

URL parameter(Optional)

```
filter= {"names":["Linear" , "L Curve"]}
```

Filter can be used to filter on profile name to get the distribution profile data. If profile does not exist with the given name, that name will be ignored. Profiles of other names will be returned.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Response

```
{
    "data": [
        {
            "name": "Linear",
            "status": "Active",
            "distribution": [
                "5.0",
                "5.0",
                "5.0",
                "5.0",
                "5.0",
                "5.0",
                "5.0",
                "5.0",
                "5.0",
                "5.0",
                "5.0",
```

```
                "5.0",
                "5.0",
                "5.0",
                "5.0",
                "5.0",
                "5.0",
                "5.0",
                "5.0",
                "5.0",
                "5.0"
            ]
        }
    ],
    "message": ["success"],
    "status": 200
}
```

Create (Add User or Group) Cash Flow Permission

`POST /ws/rest/service/v1/cashflow/permission/{project_number}`

Purpose

Add User or Group to cash flow permission (in user mode) of a specific BP in a shell based on shell number or from company level if project/shell number is not provided.

The input JSON shall provide various options to be considered for fetching the data

Request Format

All parameters must be URL encoded.

Path Parameter

`project_number`: Specify the project number in which the cash flow exists; if not provided, cash flows are fetched from the company level.

POST body is a JSON

> **Note:** POST call has input & output both as JSON in the body

Sample Request

This is an example of sample request.

```
{
    "data" :
    {
        "names": ["cash flow 1"] ,
        "permissions": [
                {
                    "login_name": "PU1",
                    "type": "U",
                    "full_name": "P1 user",
                    "permission": {
                        "edit_data": "1",
                        "modify_permission": "1",
                        "view": "1"
                    }
                }
            ]
    }
}
```

Here "cash_flow" are mandatory in options.

In the request body names can be provided in below two formats

1. "names": ["cash flow 1", "cash flow 2", "cash flow 3"] For one or more cash flows.
2. "names": "cash flow 1" For only one cash flow.

If names are not provided, an error response will be provided to user to provide cash flows.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response

This is an example of a successful response with status 200.

```
{
```

```
"data": {
    "cash flow 1": {
        "added_users": [PU1],
        "permissions": [
            {
                "login_name": "PU1",
                "full_name": "PU1 P",
                "permission": {
                    "edit_data": "1",
                    "view": "1",
                    "modify_permission": "1"
                },
                "type": "U"
            },
            {
                "login_name": "coadmin",
                "full_name": "Company Administrator",
                "permission": {
                    "edit_data": "1",
                    "view": "1",
                    "modify_permission": "1"
                },
                "type": "U"
            },
            {
                "full_name": "Space Planners",
                "group_name": "Space Planners",
                "permission": {
                    "edit_data": "1",
                    "view": "1",
                    "modify_permission": "1"
                },
                "type": "CG"
            }
```

```
            ],
            "added_groups": []
        }
    },
    "message": [
        "success"
    ],
    "status": 200
}
```

Sample Failed Response

This is an example of a failed response with a status code 3000.

```
{
    "data": {
        "cash flow 1": {
            "permissions": [
                {
                    "login_name": "donna",
                    "full_name": "Donna Pinciotti",
                    "permission": {
                        "edit_data": "1",
                        "view": "1",
                        "modify_permission": "1"
                    },
                    "type": "U"
                },
                {
                    "full_name": "Project Managers",
                    "group_name": "Project Managers",
                    "permission": {
                        "edit_data": "1",
                        "view": "1",
                        "modify_permission": "0"
                    },
```

```
                    "type": "PG"
                }
            ],
            "added_users": [
                "donna"
            ],
            "added_groups": [
                "Project Managers"
            ]
        }
    },
    "message": [
        {
            "name": "cash flow 2",
            "status": "add permission error message"
        },
        {
            "name": "cash flow 3",
            "status": "add permission error message"
        }
    ],
    "status": 3000
}
```


Delete (Remove User or Group) Cash Flow Permission

`DELETE /ws/rest/service/v1/cashflow/permission/{project_number}`

Purpose

Add User/Group to cash flow permission (in user mode) of a specific BP in a shell based on shell number or from company level if project/shell number is not provided.

The input JSON provides various options to be considered for fetching the data

Request Format

All parameters must be URL encoded.

Path Parameter

project_number: Specify the project number in which the cash flow exists; if not provided, cash flows are fetched from company level.

POST body is a JSON

> **Note:** POST call has input & output both as JSON in the body

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

```
{
    "data" :
    {
        "names": ["cash flow 1"],
        "user_names" : ["coadmin","donna","PU1"],
        "group_names" : [ "group1", "group2" ]
    }
}
```

Here "cash_flow" are mandatory in options.

In the request body, "names" is an optional parameter. For multiple cash flows, specify a comma-separated list in the following format:

```
"names": ["cash flow 1", "cash flow 2", "cash flow 3"]
```

If names are not provided, an error response will be provided to user to provide cash flows.

Sample Success Response

This is an example of a successful response with status 200.

```
{
    "data": {
        "cash flow 1": {
```

```
            "deleted_groups": [],
            "deleted_users": [
                "PU1 P"
            ]
        }
    },
    "message": [
        "success"
    ],
    "status": 200
}
```

Sample Failed Response

This is an example of a failed response with status 3000.

```
{
    "data": {
               "cash flow 1": {
                                    "deleted_groups": [],
                                    "deleted_users": ["PU1 P"]
                                }
           },
    "message": [
                  {
                      "name": "cash flow 2",
                      "status": "delete permission error message"},
                 {
                     "name": "cash flow 3",
                     "status": "delete permission error message"}
             ],
    "status": 3000
}
```

Update Cash Flow Properties

```
PUT /ws/rest/service/v1/cashflow/{project_number}
```

Purpose

Update cash flow properties data. You can also use this REST service to add new curves to a cash flow.

Ensure the following:

- All parameters are URL encoded.
- Specify only the data that needs to be updated.
- Specify the cash flow ID to update cash flow curves

If an attribute is not provided, the value will not be updated.

If an attribute is provided with value, it is validated and the value updated.

If an attribute is provided, but the value is empty, the value is deleted.

Any irrelevant attributes specified in the create/update request are ignored.

> **Tip:** Use the response from the ***Get Cash Flow Properties*** (on page 423) REST service to write the update request.

Request Format

Send an API request in the above PUT format.

Request Parameters

The following parameters can be included in the API request:

Request Parameters	Required?	Data Type	Description
project_number	No	String	If the project_number is not provided, the company cash flow is fetched.
as_sch_cost_dist_opt	No	String	Displays the cost distribution when schedule is pulled from activity sheet. Valid values include: - *0*: Consecutive Periods - *1*: Exclude Gap Periods - *2*: Honor Working Days

Response Format

The REST service returns a JSON map in the following format:

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful request returns a status code 200. Otherwise, a message with a corresponding status code is displayed.

Sample Request: Delete a Profile

Send a request in the following format to delete a profile from profile list of CBS or Summary CBS by providing an empty default profile as shown below:

```
"distribution": {
                    "type": "auto_profile",
                    "cbs": [
                            {
                                "cbs_code": "t30001~~t30002",
                                "bitemid": 242,
                                "item": "T30002",
                                "default_profile": ""
                             }
                        ]
                   }
```

Sample Request: Delete a Change Commit BP

Send a request in the following format to delete a change commit BP list. Specify the "action" attribute value as "delete" as shown below:

```
"commit_change_processes": [
                        {
                            "bp_name": "PO Amendments",
                            "status": "Canceled",
                            "action":"delete"
                        }
                    ]
```

Sample Request: Update Distribution Profile with a Commitment Detail Level Cash Flow

Send an API request in the following format to update distribution profiles with a Commitment detail level Cashflow, All values of "that profile map" must be provided. Other maps (or rows in UI) of `bp_date_profiles` which are not subject to update, are optional (may or may not be in `bp_date_profiles list`).

```
"bp_dates_profile": [
                        {
                            "bp_name": "PO Amendments",
                            "todate": "ugenP6PlannedFinishDOP",
                            "profile": "Back Loaded",
                            "fromdate": "due_date"
                        }
                    ]
```

Sample Request: Delete Distribution Profile with a Commitment Detail Level Cash Flow

Send an API request in the following format to delete a distribution profile with a Commitment Detail level cash flow. Specify the correct "bp_name". Ensure the "to_date", "fromdate" & "profile" are empty strings, in "bp_dates_profiles as shown below:

```
"bp_dates_profile": [
                        {
                            "bp_name": "PO Amendments",
                            "todate": "",
                            "profile": "",
                            "fromdate": ""
                        }
                    ]
```

Note: POST call has input & output both as JSON in the body.

Sample: Update Cashflow Manual - Project/Shell

```
{
    "data":
        {   "id":12,
            "name": "project type cashflowupdated",
            "description": null,
            "rollup_status": "Active",
            "detail_level": "Project / Shell",
```

```
            "period_type": "Standard Planning Period",
            "period_name": "Standard Planning Period",
            "period_by": "Month",
            "period_format": "M YYYY",
            "decimal_places": 2,
            "decimal_option": "0"
           "snapshot": {
                "sn_week_num": "First",
                "sn_week_day": "Sunday",
                "cutoff_spends": {
                    "cutoff_week_num": "First",
                    "cutoff_week_day": "Sunday",
                    "inc_spends_opt": "same_month"
                }
            },
            "schedule": {
                "enable_refresh": false
            },

            "summary": [
                {
                    "name": "summary",
                    "summary_type": "User_Defined"
                }
            ],
            "curves": [
                {
                    "name": "Actuals",
                    "type": "Spends",
                    "cost": {
                        "type":"cost_sheet",
                        "cost_sheet_column": "152 Base Commit WF
(Approved)"
                    }
```

```
                },
                {
                    "name": "Cash flow3",
                    "type": "Derived",
                    "cost": {
                        "base_currency": "United States Dollar (USD)",
                        "source_curve_name": "Actuals",
                        "derived_curve_currency": "Australia Dollar
(AUD)",
                        "exchange_rate": "Peg",
                        "peg_rate_as": "Dynamic",
                        "peg_dynamic_ds": "Single Record BPs / 922_Simple
PNW/FSingle LL",
                        "peg_dynamic_de": "Currency amount 1",
                        "float_rate_as": "weighted_period"
                    }
                },
                {
                    "name": "Today",
                    "type": "Portfolio Budget",
                    "cost": {
                        "currency_code": "Australia Dollar (AUD)",
                        "distribut_amount_from": "approved"
                    }
                },
                {
                    "name": "Forecast",
                    "type": "Forecast",
                    "distribution": {
                        "type": "auto_profile",
                        "distribution_profile": "Front Load"
                    },
                    "cost": {
                        "type": "cost_sheet",
```

```
                    "cost_sheet_column": "152 Base Commit WF (Open)"
                },
                "schedule": {
                    "type": "manual"
                },
                "forecast_options": {
                    "begin_end_of_curve": true,
                    "fc_curve_name": "Actuals",
                    "current_actual_cut_off_date": true,
                    "fc_dist": "weighted_avg_over_next",
                    "periods": 3
                }
            }
        ]
    }

}
```

Sample Response: CBS Curve to Update Periods of Cost Distribution

This is an example of a successful response to update the **Periods of Cost Distribution** (`as_sch_cost_dist_opt`) for a CBS Cash flow curve that uses a schedule from an activity sheet.

```
{
    "data":
        {
            "id": 2091,
            "name": "CBS Curve 3",
            "description": null,
            "rollup_status": "Active",
            "detail_level": "CBS",
            "period_type": "Standard Planning Period",
            "period_name": "Standard Planning Period",
            "period_by": "Month",
            "period_format": "M YYYY",
            "decimal_option": 0,
```

```
"decimal_places": 2,
"schedule": {
    "enable_refresh": false
},
"curves": [
    {
        "id": 9577,
        "name": "Baseline",
        "type": "Baseline",
        "variance": null,
        "distribution": {
            "type": "auto_profile"
        },
        "cost": {
            "type": "auto_distribution"
        },
        "schedule": {
            "type": "activity_sheet",
            "sheet_name": "System Activity Sheet",
            "sch_start_source": "Actual Start",
            "sch_end_source": "Actual Finish",
            "project_type": "Current",
            "as_sch_cost_dist_opt": 0
        }
    }
],
"filters": {
    "filter_option": "all"
},
"summary": [
    {
        "name": "Cash Flow Summary Curve",
        "summary_type": "System_Defined"
```

```
                }
            ]
        }

}
```

Update or Modify Cash Flow Permission

`PUT /ws/rest/service/v1/cashflow/permission/{project_number}`

Purpose

Update permission (in user mode) of a specific cash flow in a shell based on shell number or from company level if project/shell number is not provided.

The input JSON shall provide various options to be considered for fetching the data

Request Format

All parameters must be URL encoded.

POST body is in JSON format.

> **Note:** POST call has input & output both as JSON in the body

Path Parameter

project_number: Specify the project number in which the cash flow exists; if not provided, cash flows are fetched from Company Level.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

This is an example of a sample request.

```
{
```

```
    "data" :
             {
                "names": ["cash flow 1", "cash flow 2", "cash flow 3"],
                "permissions": [
                                  {
                                      "login_name": "coadmin",
                                      "type": "U",
                                      "full_name": "Company
Administrator",
                                      "permission": {
                                                          "edit_data":
"1",
"modify_permission": "0",
                                                        "view": "1"
                                                  }
                                },
                               {
                                      "type": "PG"
                                      "full_name": "Project Manager 1",
                                      "group_name": "Project Manager 1",
                                      "permission": {
                                                          "edit_data":
"1",
                                                          "view": "1",
"modify_permission": "0"
                                                  },
                                }
                              ]
             }
}
```

In request, "names" is mandatory.

In the request body names can be provided in below two formats

1. "names": ["cash flow 1", "cash flow 2", "cash flow 3"] For one or more cash flows.

2. "names": "cash flow 1" For only one cash flow.

If names not provided, an error response will be provided to user to provide cash flows.

Sample Success Response

This is an example of a successful response with status code 200.

```
{
    "data": {
        "cash flow 1": {
            "permissions": [
                {
                    "login_name": "donna",
                    "full_name": "Donna Pinciotti",
                    "permission": {
                        "edit_data": "1",
                        "view": "1",
                        "modify_permission": "1"
                    },
                    "type": "U"
                },
                {
                    "login_name": "coadmin",
                    "full_name": "Company Administrator",
                    "permission": {
                        "edit_data": "1",
                        "view": "1",
                        "modify_permission": "0"
                    },
                    "type": "U"
                },
                {
                    "full_name": "Project Managers",
                    "group_name": "Project Managers",
                    "permission": {
                        "edit_data": "1",
```

```
                    "view": "1",
                    "modify_permission": "0"
                },
                "type": "PG"
            }
        ],
        "updated_users": [
            "coadmin"
        ],
        "updated_groups": [
            "Project Managers"
        ]
    },
    "cash flow 2": {
        "permissions": [
            {
                "login_name": "coadmin",
                "full_name": "Company Administrator",
                "permission": {
                    "edit_data": "1",
                    "view": "1",
                    "modify_permission": "1"
                },
                "type": "U"
            }
        ],
        "updated_users": [],
        "updated_groups": []
    },
    "cash flow 3": {
        "permissions": [
            {
                "login_name": "coadmin",
                "full_name": "Company Administrator",
```

```
            "permission": {
                "edit_data": "1",
                "view": "1",
                "modify_permission": "0"
            },
            "type": "U"
        },
        {
            "login_name": "donna",
            "full_name": "Donna Pinciotti",
            "permission": {
                "edit_data": "1",
                "view": "1",
                "modify_permission": "1"
            },
            "type": "U"
        },
        {
            "full_name": "Project Managers",
            "group_name": "Project Managers",
            "permission": {
                "edit_data": "1",
                "view": "1",
                "modify_permission": "0"
            },
            "type": "PG"
        }
    ],
    "updated_users": [
        "coadmin"
    ],
    "updated_groups": [
        "Project Managers"
    ]
```

```
        }
    },
    "message": [
        "success"
    ],
    "status": 200
}
```

Sample Failed Response

This is an example of a failed response with a status code 3000.

```
{
    "data": {
        "cash flow 1": {
            "permissions": [
                {
                    "login_name": "donna",
                    "full_name": "Donna Pinciotti",
                    "permission": {
                        "edit_data": "1",
                        "view": "1",
                        "modify_permission": "1"
                    },
                    "type": "U"
                },
                {
                    "login_name": "coadmin",
                    "full_name": "Company Administrator",
                    "permission": {
                        "edit_data": "1",
                        "view": "1",
                        "modify_permission": "0"
                    },
                    "type": "U"
                },
```

```
                {
                    "full_name": "Project Managers",
                    "group_name": "Project Managers",
                    "permission": {
                        "edit_data": "1",
                        "view": "1",
                        "modify_permission": "0"
                    },
                    "type": "PG"
                }
            ],
            "updated_users": [
                "coadmin"
            ],
            "updated_groups": [
                "Project Managers"
            ]
        }
    },
    "message": [
        {
            "name": "cash flow 2",
            "status": "update permission error message"},
        {
            "name": "cash flow 3",
            "status": "update permission error message"}
    ],
    "status": 3000
}
```


Update Cash Flow Data

```
PUT /ws/rest/service/v1/cashflow/data/{project_number}
```

Purpose

This service will update the cash flow detail curve data.

Request Format

All parameters should be URL encoded.

Specify the PUT body is in JSON format.

Request Parameters

The following parameters can be included in the request.

- project_number(Required): Specify the project/shell number.
- "options": Specify if curve "setup" or "distribution" data has to be updated. If no data is provided, the default will be setup = "yes".
- "setup": Optional, default is "yes". Specify "yes" if you need to update the curve setup data (From Date, To Date, Profile and Total), "no" if curve setup is not required to be updated.
- "distribution": Optional, default is "no". Specify "yes" if you need to update the distribution data (distribution values of the Total amount entered in the date period), "no" if the distribution is not required to be updated.
- "data": Specify the curve data which needs to be updated. Use the response from the REST API, "/cashflow/data". Use the "details" part of the response.

Notes:

- If both setup and distribution are set to "yes" then only "setup" data will be updated.
- If both setup and distribution are set to "no" then no data will be updated.
- The "From Date" and "To Date" uses your preferred data format.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

```
{
   "options":{
```

```
   "setup":"yes",
   "distribution":"no"
},
"data":[
   {
      "Name":"cashflow 1",
      "curves":[
         {
            "Type":"Forecast",
            "Name":"Forecast",
            "details":[
               {
                  "Number":"TestProj-C",
                  "Name":"TestProj-C-TestProj-C Name",
                  "From Date":"05-31-2019 00:00:00",
                  "To Date":"10-25-2019 00:00:00",
                  "Profile":"",
                  "Total":"230.00",
                  "Unassigned":"-48.00",
                  "5 2019":"450.00",
                  "6 2019":"40.00",
                  "7 2019":"10.00",
                  "8 2019":"-44.00",
                  "9 2019":"-44.00",
                  "10 2019":"-44.00"
               }
            ]
         },
         {
            "Type":"Baseline",
            "Name":"Baseline",
            "details":[
               {
                  "Number":"TestProj-C",
```

```
                    "Name":"TestProj-C-TestProj-C Name",
                    "From Date":"05-01-2019 00:00:00",
                    "To Date":"10-25-2019 00:00:00",
                    "Profile":"",
                    "Total":"100.00",
                    "Unassigned":"90.00",
                    "5 2019":"5.00",
                    "6 2019":"0.00",
                    "7 2019":"0.00",
                    "8 2019":"0.00",
                    "9 2019":"10.00",
                    "10 2019":"0.00"
                }
            ]
        }
    ]
}
```


Sample Success Response

This is an example of a successful response with status code 200.


```
{
    "data": [],
    "message": [
        {
            "curve_name": "Baseline",
            "status_code": 200,
            "name": "cashflow 1",
            "message": "success"
        }
    ],
    "status": 200
}
```

Update Cash Flow Schedule

`PUT /ws/rest/service/v1/cashflow/schedule/{project_number}`

Version: 19.7

Purpose

Updates cashflow schedule details.

Request Format

All parameters must be URL encoded.

Specify only the schedule data that needs to be updated. Use the response from the ***Get Cash Flow Properties*** (on page 423) REST service to get schedule data.

If the attribute is not provided, the value will not be updated.

If the attribute is provided with value, validation will be performed and the value will be updated.

When the attribute is provided and the value is empty, the value will be deleted.

Irrelevant attributes specified in the request for update are ignored.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

```
{
    "data":{

            "id":198,
            "name": "test7521",
             "schedule": {
                "enable_refresh": true,
                "frequency": "Weekly",
                "weekday": "Sunday",
```

```
                "startdate": "06/16/2019 12:00 AM",
                "noenddate": false,
                "enddate": "06/24/2019 12:00 AM"
            }
        }
}
```

Note: POST call has input & output both as JSON in the body.

For other detail_type sample output, please refer to create/Update Cashflow call.

Create Distribution Profiles

`POST /ws/rest/service/v1/cashflow/profile`

Purpose

Create distribution profiles of company.

Request Format

Both input & output in JSON format in the body.

Request Parameters

The "distribution" must be a list of at least 20 elements, and the sum of all elements must total 100.

If the "distribution" is not provided, the "distribution" with 20 elements, all with value 5, will be considered.

Supported values for "status" is "Active" or "Inactive".

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

This is an example of a request.

```
{
    "data": [
        {
            "name": "S Curve new",
            "status": "Active",
            "distribution": [
                "0.5",
                "0.5",
                "1.5",
                "1.5",
                "4.0",
                "4.0",
                "7.5",
                "7.5",
                "11.5",
                "11.5",
                "11.5",
                "11.5",
                "7.5",
                "7.5",
                "4.0",
                "4.0",
                "1.5",
                "1.5",
                "0.5",
                "0.5"
            ]
        },
        {
            "name": "Front Loaded",
            "status": "Active",
            "distribution": [
                "6.5",
                "6.5",
```

```
                "6.5",
                "6.5",
                "6.5",
                "6.5",
                "6.5",
                "6.5",
                "6.5",
                "6.5",
                "3.5",
                "3.5",
                "3.5",
                "3.5",
                "3.5",
                "3.5",
                "3.5",
                "3.5",
                "3.5",
                "3.5"
            ]
        }
    ]
}
```

Sample Partial Success Response

This is an example of a partially successful response with a status code 200, and a failed status code 3000.

```
{
    "data": [
            {
                "id": 5,
                "name": "S Curve new"
            }
     ],
    "message": [
```

```
            {
                "name": "S Curve new",
                "status": 200,
                "message": "success"
            },
            {
                "name": "Front Loaded",
                "status": 1337,
                "message": "Distribution Profile already exist"
            }
    ],
    "status": 3000
}
```

Update Distribution Profiles

`PUT /ws/rest/service/v1/cashflow/profile`

Purpose

Update the distribution profiles of company.

Request Format

Both input & output in JSON format in the body.

Request Parameters

Supported values for "status" is "Active" or "Inactive".

The "distribution" must be a list of at least 20 elements, the sum of them all must be 100.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

This is an example of a request to update two active distribution profiles.


```
{
    "data": [
        {
            "id": 1,
            "name": "S Curve new",
            "status": "Active",
            "distribution": [
                "0.5",
                "0.5",
                "1.5",
                "1.5",
                "4.0",
                "4.0",
                "7.5",
                "7.5",
                "11.5",
                "11.5",
                "11.5",
                "11.5",
                "7.5",
                "7.5",
                "4.0",
                "4.0",
                "1.5",
                "1.5",
                "0.5",
                "0.5"
            ]
        },
        {
            "id": 2,
```

```
            "name": "Front Loaded",
            "status": "Active",
            "distribution": [
                "6.5",
                "6.5",
                "6.5",
                "6.5",
                "6.5",
                "6.5",
                "6.5",
                "6.5",
                "6.5",
                "6.5",
                "3.5",
                "3.5",
                "3.5",
                "3.5",
                "3.5",
                "3.5",
                "3.5",
                "3.5",
                "3.5",
                "3.5"
            ]
        }
    ]
}
```

Sample Response

This is an example of a successful response with status code 200.

```
{
    "data": [],
    "message": [
        {
```

```
            "id" : 1,
            "name": "S Curve new"
            "status": 200,
            "message": "success"
        },
        {
            "id" : 2,
            "name": "Front Loaded"
            "status": 200,
            "message": "success"
        }
    ],
    "status": 200
}
```

Delete Distribution Profiles

`DELETE /ws/rest/service/v1/cashflow/profile`

Purpose

Delete distribution profiles of company

Request Format

Both input & output in JSON format in the body

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

This is an example of a request to delete the following distributions profiles.

```
{
    "data": {
        "names": ["Linear", "L Curve", "S Curve"]
    }
}
```

Sample Success Response

This is an example of a partially successful response with status codes 200, 1337, and 1338 for the respective distribution profiles.

```
{
    "data": [],
    "message": [
        {
            "name": "Linear"
            "status": 200,
            "message": "success"
        },
        {
            "name": "L Curve"
            "status": 1337,
            "message": "Distribution Profile do not exist"
        },
        {
            "name": "S Curve"
            "status": 1338,
            "message": "Distribution Profile is used in Cashflow Curves"
        }
    ],
    "status": 3000
}
```

Refresh Cash Flow Curves

```
POST /ws/rest/service/v1/cashflow/prop/refresh/{project_number}
```

Purpose

Refresh selected cash flow properties.

The input JSON shall provide various options to be considered for refreshing Curves.

Request Format

All parameters should be URL encoded.

project_number: (Required) Specify the Project number in which the curve exists.

POST body is a JSON

> **Note**: POST call has input & output both as JSON in the body.

```
{
"options":{
"property_name": "CBS CF"
}
}
```

Request Parameters for Options

The following parameters can be included in the options {} of the request:

- "property_name": The name of the property.
- "rollup_status": Valid values include: *Active*, and *Inactive.*
- "detail_level": Valid values include: *Summary CBS, CBS, Project / Shell, or Commitment*.
- "include_curves":Valid values include: *Yes*(default), and *No.*

Any other values for the above parameters displays an error message in the response of the request.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response

This is an example of a response with status code 200.

```
{
    "data": [
        {
            "id": 13,
            "name": "Project CF",
            "_record_status": "SUCCESS"
        },
        {
            "id": 14,
            "name": "Project CF FP",
            "_record_status": "SUCCESS"
        },
        {
            "id": 15,
            "name": "xyz",
            "_record_status": "SUCCESS"
        }
    ],
    "message": ["success"],
    "status": 200
}
```


Get Cash Flow Permissions

`GET /ws/rest/service/v1/cashflow/prop/permission/{project_number}`

Purpose

Fetches cash flow permissions.

The input JSON provides various options for fetching cashflow permissions.

Request Format

All parameters must be URL encoded.

project_number: (Required) Specify the Project number in which the curve exists.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response

This is an example of successful response with status code 200.

```
 "data":
  [
    {
      "property_name":"Project CF",
      "user_group":
      [
        {
          "name":"Admin",
          "type":"U",
          "id":1000,
          "permission":
          {
            "modify_permission":1,
            "edit_data":1,
            "view":1
          }
        },
        {
          "name":"test Group",
          "type":"PU",
          "id":1000014,
          "permission":
          {
            "modify_permission":0,
```

```
            "edit_data":1,
            "view":1
          }
        }
      ]
    },
    {
      "property_name":"xyz",
      "user_group":
      [
        {
          "name":"Admin",
          "type":"U",
          "id":1000,
          "permission":
          {
            "modify_permission":1,
            "edit_data":1,
            "view":1
          }
        }
      ]
    }
  ],
  "message":  [ "success"  ],
  "status":200
}
```


Schedule Sheet

Get Schedule Sheet Data Mapping

```
GET /ws/rest/service/v1/schedule/mapping/{project_number}
```

Purpose

Get all list of data mappings defined for this schedule sheet.

Request Parameters

The following parameters can be included in the request:

- project_number(Required): Specify the project/shell number.

URL Parameters

- sheetname: (Required) The name of the schedule sheet.
- filter: (Optional) A filter condition to be used when retrieving the data mapping. It is a JSON object with the below information:
  - "name": (Optional) Name of data mapping
  - "isdefault": (Optional) Specify "yes" to get only the default data mapping and "no" to get all the data mappings. Default is "no"

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Response

```
{
   "data":[
      {
        "name":"p6_mapping",
        "isdefault":"true"
     },
    {
        "name":"stage_mapping",
        "isdefault":"false"
     }
```

```
  ]
}
```

Get Schedule Sheets

```
GET /ws/rest/service/v1/schedule/{project_number}
```

Purpose

Get the list of schedule sheet attributes defined in the project/shell.

Request Format

Path Parameter

project_number: (Required) Specify the project/shell number.

URL Parameter

filter: (Optional) Filter condition to be used when retrieving the schedule sheet. It is a JSON object with the below information:

- "status": The status of the schedule sheet that needs to be retrieved. Valid values include: "active" and "inactive".
- "main_sheet": The main schedule sheet. Valid values include: "true" for main schedule sheet, or "false" for other non-main schedule sheets.
- "sheet_lock": The schedule sheets that are locked. Valid values include: "true" to get locked schedule sheets, or "false" to get unlocked schedule sheets.
- "name": Specify the name of the schedule sheet that needs to be returned in the response.

> **Note**: All fields values of filter condition are case insensitive except the value of "name" field

Sample Request Parameter

This is an example of a filter condition in the request.

```
{
   "filter":
      {
        "name":"Gas pipeline schedule",
        "status": "open"
      }
}
```

Response Format

A JSON object is returned in the following format.

```
{
```

```
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Failed Response

This is an example of a failed response to the request

```
{
  "data": [],
  "message": [
    "Invalid Filter Condition : status"
  ],
  "status": 811
}
```

Update Schedule Activities

`PUT /ws/rest/service/v1/schedule/file/{project_number}`

Purpose

Update schedule sheet activities using P6 xml file as an attachment to this service.

Request Format

Path Parameter

project_number(Required): Specify the project/shell number.

POST body is a JSON with the below options.

Sample Request

```
{
  "data": {
    "sheetName": "Gas pipeline schedule",
    "iszipfile": "yes"
  },
  "scheduleOptions": {
    "MapName": "p6_mapping",
```

```
    "ActivityIdentifier": "Id",
    "WBS_NoOfLevelsToMerge": "5",
    "WBS_StartMergeFrom": "2",
    "ActivityDeletion": "Auto",
    "ActivityFileName": "activity.xml",
    "SpreadFileName": "spreaddfile.xml",
    "CBS_FullPath":"Yes",
    "is_cumulative":"no"
  },
  "_attachment": {
    "file_name": "pipeline_schedule_p6.zip",
    "file_size": "746089",
    "file_content": "base64_encoded string of create.zip file"
  }
}
```

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response

This is an example of a successful response with status code 200

```
{
    "data": [],
    "message": ["success"],
    "status": 200
}
```

Response Codes

Code	Message	Details
1400	Schedule Sheet operations are not possible on Generic type of Project	Not available.

Exchange Rates

Get Exchange Rates

```
GET /ws/rest/service/v1/exchange
```

Purpose

Get company exchange rates.

Response Format

A JSON object is returned in the following format:

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response

This is an example of a successful response with status code 200.

```
{
    "data":{
    "base_currency": "Indian Rupee (INR)",
    "exchange_rates": [
          {
            "currencyid":2,
            "rate":101.0,
            "currency_name":"Afghani (AFN)",
```

```
            "currency_code":"AFN"
          },
          {
            "currencyid":12,
            "rate":211.0,
            "currency_name":"Barbados Dollar (BBD)",
            "currency_code":"BBD"
          },
          {
            "currencyid":40,
            "rate":134.0,
            "currency_name":"Algeria Dinar (DZD)",
            "currency_code":"DZD"
          }
          ]
    },
    "message": ["success"],
    "status": 200
}
```


Update Exchange Rates

`PUT /ws/rest/service/v1/exchange`

Purpose

To add or modify currency rates of active exchange rates set.

Notes:

- When a request is made to this service, a new exchange rate is created (with currencies of currently active exchange rate set). The new exchange rate is activated immediately.
- If a currency object included in the request does not exist in the active exchange rate set, then this currency object will be added to the existing currency list.
- If currency object included in the request exists in the currently active exchange rate set, the currency rate will be updated with the value given in the request.

Request Format

Both input & output in JSON format in the body.

'currency_code' is required in the request.

Response Format

A JSON object is returned in the following format:

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

This is an example of a request.

```
{
  "data":[
            {
                "currencyid":2,
                "rate":110.0,
                "currency_name":"Afghani (AFN)",
                "currency_code":"AFN"
            },
            {
                "currencyid":3,
```

```
                "rate":12.0,
                "currency_name":"Lek (ALL)",
                "currency_code":"ALL"
            }
  ]
}
```


Sample Success Response

This is an example of a successful response with status code 200.


```
{
  "data":[
            {
                "currencyid":2,
                "rate":110.0,
                "currency_name":"Afghani (AFN)",
                "currency_code":"AFN"
            },
            {
                "currencyid":3,
                "rate":12.0,
                "currency_name":"Lek (ALL)",
                "currency_code":"ALL"
            }
            {
                "currencyid":40,
                "rate":134.0,
                "currency_name":"Algeria Dinar (DZD)",
                "currency_code":"DZD"
            },
            {
                 "currencyid":12,
                 "rate":211.0,
                 "currency_name":"Barbados Dollar (BBD)",
                 "currency_code":"BBD"
```

```
            },
  ],
  "message": ["success"],
  "status": 200
}
```

Data Structure Setup

Authorization

For more information, see the **Authentication** section in ***REST Services V1***.

Ensure that the integration user has the required Company Administration Permissions.

Get Data Elements

`GET /ws/rest/service/v1/ds/data-elements`

Version: 20.10

Purpose

To get list of custom data elements

Request Format

All parameters must be URL encoded.

Path Parameter

```
filter = {
    "data_element": "",
    "data_definition": "Decimal Amount" ,
    "form_label": "" ,
    "description": "" ,
    "tooltip": ""
}
```

Notes:

- All field values in the filter object are case insensitive.
- If filter object is not provided in the request, all data elements list are returned.
- Condition type contains will be used to fetch the data elements.
- Filter condition is applied only if the provided filter values are not-null or non-empty.

Response Format

A JSON object is returned in the following format:

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response

This is an example of a successful response with a status code 200.

```
{
  "data": [
    {
      "data_element": "sampleDE",
      "data_definition": "Decimal Amount",
      "form_label": "Sample Decimal Element",
      "description": "Test DE",
      "tooltip": null,
      "decimal_format": "5",
      "Pre-Defined Category": null
     },
    {
      "data_element": "sampleDE2",
      "data_definition": "Decimal Amount",
      "form_label": "Sample Decimal Element 2",
```

```
      "description": "Decimal DE",
      "tooltip": null,
      "decimal_format": "6",
      "Pre-Defined Category": null
     },
  ],
  "message": ["success"],
  "status": 200
}
```


Create Data Element

`POST /ws/rest/service/v1/ds/data-elements`

Version: 20.10

Purpose

To create custom data elements

Request Format

All parameters should be URL encoded.

Both input and output in JSON format in the body.

Request Parameters

The following parameters can be included in the request:

Request Parameter	Required?	Description
data_element	Yes	Name of the unique data element
data_definition	Yes	Field definition to create the data element of that type
form_label	Yes	The DE label name
Description	No	
Tooltip	No	

Valid Fields Based on the data_definition Value

Specify the following field for a data element that has the corresponding data_definition value.

Data Element Field	Required	data_definition Value
height	Yes	Image Picker
height	Yes	SYS Rich Text
no_of_lines	Yes	textarea (as data_source)
decimal_format (default value is '8')	No	Decimal Amount
hide_currency_symbol (valid values are *Yes*, and *No* (default).	No	SYS Numeric Query Based

Response Format

A JSON object is returned in the following format:

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

This is an example of a sample request.

```
{
  "data": [
    {
      "data_element": "sampleDE",
      "data_definition": "Decimal Amount",
      "form_label": "Sample Decimal Element",
      "description": "Test DE",
      "decimal_format": "5"
    },
    {
      "data_element": "sampleImgDE",
      "data_definition": "Image Picker",
      "form_label": "Sample Image Picker",
```

```
      "description": "Test Image DE",
      "tooltip": "Test Image DE"
    }
  ]
}
```

Sample Partial Success Response

This is an example of a response that created the data element `SampleDE`, but failed creating the data element, `sampleImgDE`.

```
{
  "data": [
    {
      "data_element": "sampleDE",
      "data_definition": "Decimal Amount",
      "form_label": "Sample Decimal Element",
      "description": "Test DE",
      "tooltip": null,
      "decimal_format": "5" ,
      "Pre-Defined Category": null
     }
  ],
  "message": [
    {
      "data_element": "sampleDE",
      "message": "success"
    },
    {
      "data_element": "sampleImgDE",
      "message": "height is required",
      "status": 505
    }
  ],
  "status": 3000
}
```

Supported Validation Messages and Status Codes

The following status codes and messages can display in the response to a request.

Status Code	Validation Message
200	Success
1101	Empty or Invalid JSON data
3000	Partial create
3002	Invalid JSON input

Update Data Element

`PUT /ws/rest/service/v1/ds/data-elements`

Version: 20.10

Purpose

Update custom data elements.

Request Format

All parameters should be URL encoded.

Both input & output in JSON format in the body

Request Parameters

The following parameters can be included in the request:

Request Parameter	Required?	Description
data_element	Yes	The name of the existing data element.
`Description`	No	
`Tooltip`	No	

Valid Fields Based on the data_definition Value

Specify the following data element field that has the corresponding data_definition value below. Existing values are used if there are no values in the request body.

Data Element Field	Required?	data_definition Value
height	Yes	Image Picker
height	Yes	SYS Rich Text

Data Element Field	Required?	data_definition Value
no_of_lines	Yes	textarea (as data_source)
decimal_format Default value is '8'.	No	Decimal Amount
hide_currency_symbol Valid values are *Yes*, and *No* (default).	No	SYS Numeric Query Based

Notes:

- data_element field value is used to uniquely identify existing data elements.
- Specify an empty string in the request to clear field values.
- data_definition and form_label values cannot be emptied/cleared. If no values are provided in the request, existing values are used.
- data_definition field value of a DE cannot be updated if that DE is pre-defined or already deployed.
- If no values are provided in the request for the above fields, existing values of the given data element are used.

Response Format

A JSON object is returned in the following format:

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

This is an example of a request to update the data element `SampleDE` and `SampleImgDE`.

```
{
  "data": [
    {
      "data_element": "sampleDE",
      "data_definition": "SYS Rich Text",
```

```
      "form_label": "Sample Rich Text Element",
      "description": "Test DE",
      "height": "50"
    },
    {
      "data_element": "sampleImgDE",
      "data_definition": "Image Picker",
      "form_label": "Sample Image Picker",
      "description": "Test Image DE",
      "tooltip": "Test Image DE"
    }
  ]
}
```

Sample Response

This is an example of a partially successful response for two data elements listed below.

```
{
  "data": [
    {
      "data_element": "sampleDE",
      "data_definition": "SYS Rich Text",
      "form_label": "Sample Rich Text Element",
      "description": "Test DE",
      "tooltip": null,
      "height": "50" ,
      "Pre-Defined Category": null
     }
  ],
  "message": [
    {
      "data_element": "sampleDE",
      "message": "success"
    },
    {
```

```
      "data_element": "sampleImgDE",
      "message": "sampleImgDE does not exists",
      "status": 505
    }
  ],
  "status": 3000
}
```

Supported Validation Messages and Status Codes

The following status codes and messages can display in the response to a request.

Status Code	Validation Message
200	Success
1101	Empty or Invalid JSON data
3000	Partial create
3002	Invalid JSON input

Delete Data Elements

`DELETE /ws/rest/service/v1/ds/data-elements`

Version: 20.10

Purpose

Deletes custom data elements

Request Format

All parameters should be URL encoded.

Both input and output in JSON format in the body.

Response Format

A JSON object is returned in the following format:

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

This is an example of a request to delete four data elements listed below.

```
{
"data":{
    "data_elements": ["simpleDE1", "simpleDE2", "simpleDE3",
"uuu_P6CSIndex"]
    }
}
```

Sample Response

This is an example of a partially successful response with status code 3000. An error or success message is displayed for each data element.

```
{
    "data": [],
    "message": [
                    {"data_element": "SimpleDE1","status":
"200","message":"success"}  ,
                    {"data_element": "SimpleDE2","status":
"1521","message":"Data Element is used in Unifier, it cannot be deleted."}
,
                    {"data_element": "SimpleDE3","status":
"1522","message":"This data element is being used in uDesigner and cannot
be deleted."} ,
                    {"data_element": "uuu_P6CSIndex","status":
"1523","message":"Pre-Defined Data Elements cannot be deleted."}
                ],
    "status": 3000
}
```

The following status codes and messages can display in the response to a request.

Status Code	Validation Message
200	Success
3000	Partial delete.

Create DDS Definition

`POST /ws/rest/service/v1/ds/dds`

Version: 20.10

Purpose

Creates Dynamic Data Set Definitions.

Request Format

All parameters should be URL encoded.

Both input & output in JSON format in the body.

Request Parameters

The following fields can be included in the request:

Request Parameter	Required?	Description
dds_name	Yes	Specify the unique DDS name.
master_de_name	Yes	Specify the master DE.
data_element in value_set	Yes if value_set is included in teh request.	
order	Yes	Order of the value_set DEs.
description	No	

Response Format

A JSON object is returned in the following format:

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

This is an example of request

```
{
```

```
"data": [
         {
           "dds_name": "sampleDDS",
           "master_de_name": "countryDE",
           "dds_desc": "sampleDDS",
           "value_set":[
                           {
                              "data_element":"stateDE",
                              "order":1
                           },
                           {
                              "data_element":"cityDE",
                              "order":2
                           }
                       ],
           "behavior_set":[
                           {"data_element":"zipcodeDE"}
                         ]
         },
         {
             "dds_name": "sampleDDS2",
             "master_de_name": "countryDE",
             "dds_desc": "sampleDDS",
             "value_set":[
              {
                   "data_element":"stateDE",
                   "order":2
              },
              {
                   "data_element":"cityDE",
                   "order":1
              }
                         ],
             "behavior_set":[
```

```
                {"data_element":"zipcodeDE"}
                            ]
            }
        ]
}
```

Sample Response

This is an example of a partially successful response.

```
{
   "data": [
           {
            "id":12,
            "dds_name": "sampleDDS2",
            "master_de_name": "countryDE",
            "dds_desc": "sampleDDS",
            "value_set":[
              {
              "data_element":"stateDE",
               "order":1
               },
              {
               "data_element":"cityDE",
               "order":2
              }
              ],
              "behavior_set":[
               {
                "data_element":"zipcodeDE"
               }
               ]
              }]
},
  "message": [
               {
```

```
                    "dds_name": sampleDDS
                    "message": Name already exists. Enter a different
name.,
                    "status": 1500
                },
                {
                    "dds_name": "sampletest1",
                    "message": "usrServiceCategoryPD122",
                    "status": 200
                }
  ],
  "status": 3000
}
```


Supported Validation Message and Status Codes

The following status codes and messages can display in the response to a request:

Status Code	Validation Message
200	Success
1101	Empty or Invalid JSON data
1500	Name already exists. Enter a different name.
3002	Invalid JSON input

Update DDS Definition

`PUT /ws/rest/service/v1/ds/dds`

Version: 20.10

Purpose

To Update Dynamic Data Set Definition. Action JSON value 'delete' will used to remove any value or Behavior set data element for DDS Definition.

Previously existing value set or Behavior set data elements will be reordered based on the latest order provided in values set/Behavior set in update DDS definition.

Request Format

All parameters should be URL encoded.

Both input and output in JSON format in the body.

Request Parameters

The following parameters can be included in the request:

id : (Required) Specify the DDS id which needs to be updated.

> **Note:** action: "delete" required to delete value set or behavior set data element in DDS Definition.

Response Format

A JSON object is returned in the following format:

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

This is an example of a request to update the following DDS definitions.

```
{
 "data": [
          { "id":12,
            "dds_name": "sampleDDS",
            "master_de_name": "countryDE",
            "dds_desc": "desc",
            "value_set":[
               {
                "data_element":"stateDE",
                "order":1
                },
                {
                 "data_element":"cityDE",
                 "action":"delete"
                },
```

```
                {
                 "data_element":"address",
                 "order":2
                }
               ],
              "behavior_set":[
                {
                "data_element":"zipcodeDE"
                }
               ]
            },
            {
            "dds_name": "sampleDDS2",
            "master_de_name": "countryDE",
            "dds_desc": "desc",
            "value_set":[
               {
                "data_element":"stateDE",
                "order":1
                },
                {
                 "data_element":"cityDE",
                 "order":2
                }
               ],
              "behavior_set":[
                {
                "data_element":"zipcodeDE"
                }
               ]
            }
        ]
}
```

Sample Success Response

This is an example of a successful response to the request.


```
{
   "data": [
           {
            "id":12,
            "dds_name": "sampleDDS",
            "master_de_name": "countryDE",
            "dds_desc": "desc",
            "value_set":[
              {
              "data_element":"stateDE",
               "order":1
               },
              {
               "data_element":"address",
               "order":2
              }
              ],
              "behavior_set":[
               {
                "data_element":"zipcodeDE"
               }
               ]
              }]
         },
   "message": [
                 {
                    "dds_name": "sampleDDS"
                    "message": "usrServiceCategoryPD122",
                    "status": 200
                 },
                 {
```

```
                    "dds_name": "sampleDDS2",
                    "message": Name already exists. Enter a different
name.,
                    "status": 1500

                }
  ],
  "status": 3000
}
```

Supported Validation Messages and Status Codes

The following status codes and messages can display in the response to a request.

Status Code	Validation Message
200	Success
1101	Empty or Invalid JSON data
3000	Partial create
3002	Invalid JSON input

Delete DDS Definition

`DELETE /ws/rest/service/v1/ds/dds`

Version: 20.10

Purpose

To delete Dynamic Data Set Definition

Request Format

All parameters should be URL encoded.

Both input & output in JSON format in the body

Response Format

A JSON object is returned in the following format:

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
```

```
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Delete Dynamic Data Set input JSON

```
{
 "data": {
   "dds_name": ["sampleDDS","sampleDDS2"]
  }
}
```

Input JSON field description:

- **Required Fields:**
  dds_name: DDS name

Delete Dynamic Data Set ouptut JSON

```
{
    "data": {

    },
    "message": [

          { name: "SampleDDS","status": "200","message":"success"},
          { name: "SampleDDS2","status": "1509","message":"DDS does not
exist"}

    ],
    "status": 3000
}
```

Supported Validation Messages and Status Codes

The following status codes and messages can display in the response to a request.

Status Code	Validation Message
200	Success
1101	Empty or Invalid JSON data
3000	Partial create
3002	Invalid JSON input

Get DDS Definition

`GET /ws/rest/service/v1/ds/dds`

Version: 20.10

Purpose

Gets Dynamic Data set Definition.

Request Format

All parameters should be URL encoded.

Both input & output in JSON format in the body.

Request Parameters

The following parameters can be included in the URL query parameter, filter. Use the following format:

`filter= {"dds_name":"<value>}`

Filter Parameter	Description
dds_name	The name of the data definition set.
master_de_name	The master data element.
dds_desc	Description of the data definition set.
master_de_label	Form label of the Master DE.

Note: If no filter options provided service will return all DDS.

The following parameters can be included in the request:

Request Parameter	Required?	Description
dds_name	No	The name of the data definition set.
`dds_desc`	No	Description of the data definition set.
`master_de_name`	No	The master data element for the data definition set.
`master_de_label`	No	Form label of the master data element.

It has a "contains" performs a case insensitive search.

Response Format

A JSON object is returned in the following format:

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Filter Query in the Request

This is an example of a filter query.

```
"filter":
         {
           "dds_name": "sampleDDS",
           "master_de_name": "countryDE",
           "dds_desc": "sampleDDS",
           "master_de_label": "my sample"
           }
```

Sample Success Response

This is an example of a successful response with status code 200.

```
{
   "data": [
             {
               "id":12,
               "dds_name": "sampleDDS",
               "master_de_name": "countryDE",
               "dds_desc": "sampleDDS",
               "master_de_label": "my sample"
               "value_set":[
                            {"data_element":"stateDE","order":1},
                            {"data_element":"cityDE","order":2}
                           ],
              "behavior_set":[
```

```
                                {"data_element":"zipcodeDE"}
                              ]
             }]
},
  "message":  ["Success"],
  "status":200
}
```

Supported Validation Messages and Status Codes

The following status codes and messages can display in the response to a request.

Status Code	Validation Message
200	Success
1101	Empty or Invalid JSON data
3000	Partial create
3002	Invalid JSON input

Create DDS Data

`POST /ws/rest/service/v1/ds/ddsdata`

Version: 20.10

Purpose

Creates data set for a given Dynamic Data Set.

Request Format

All parameters should be URL encoded.

Both input and output in JSON format in the body.

Request Parameters

The following parameters can be included in the request:

Request Parameter	Required?	Description
dds_name	Yes	The name of the data definition set for which the data needs to be created.

Request Parameter	Required?	Description
value_set	Yes, if configured	The set of values for the DEs defined as value
behavior_set	Yes, if configured	The value for the DEs defined as behavior.

Response Format

A JSON object is returned in the following format:

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

This is an example of a request to create a DDS called "mydds".

```
{   "data": {
        "dds_name": "mydds",
        "data_set": [{
                "masterDE":"value2",
                "value_set": {"valueDE1": "value1", "valueDE2":
"value2"},
                "behavior_set": {"behavede1": "disabled"}
                     },
                    {"masterDE":"value1",
                     "value_set": {"valueDE1": "value1","valueDE2":
"value3"},
                     "behavior_set": {"behavede1": "Required"}
                    }
        ]
    }
}
```

Sample Response

This is an example of a successful response with status code 200.

```
{
    "data": {
        "dds_name": "mydds",
        "data_set": [{
                "id": 710,
                "masterDE":"value1",
                "value_set": {"dename1": "value","dename2": "value"},
                "behavior_set": {"dename3": "disabled"}
            },
            {
                "id": 711,
                "masterDE":"value2",
                "value_set": {"dename1": "value", "dename2": "value"},
                "behavior_set": {"dename3": "disabled"}
            }
        ]
    },
    "message": "success",
    "status": 200
}
```

Supported Validation Messages and Status Codes

The following status codes and messages can display in the response to a request.

Status Code	Validation Message
200	Success
1101	Empty or Invalid JSON data
3000	Partial create
3002	Invalid JSON input

Update DDS Data

`POST /ws/rest/service/v1/ds/ddsdata`

Version: 20.10

Purpose

To update data set for a given Dynamic Data Set

Request Format

All parameters should be URL encoded.

Both input and output in JSON format in the body.

Request Parameters

The following parameters can be included in the request:

Request Parameter	Required?	Description
dds_name	Yes	The name of the data definition set for which the data needs to be updated.
id	Yes	The dda data row id to uniquely identify the data set

Response Format

A JSON object is returned in the following format:

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

This is an example of a request to update DDS data.

```
{   "data": {
        "dds_name": "mydds",
        "data_set": [{
```

```
                "id": 710,
                "masterDE":"value1updated",
                "value_set": {
                    "valueDE1": "value1updated",
                    "valueDE2": "value2updated"
                },
                "behavior_set": {
                    "behavede1": "disabled"
                }
            },
            {
                "id": 711,
                "countryDE":"value2updated",
                "value_set": {
                    "valueDE1": "value1",
                    "valueDE2": "value3"
                },
                "behavior_set": {
                    "behavede1": "Required"
                }
            }
        ]
    }
}
```

Sample Success Response

This is an example of a response to update the DDS object "mydds" with status code 200.

```
{
    "data": {
        "dds_name": "mydds",
        "data_set": [{
                "id": 710,
                "masterDE":"value1updated",
                "value_set": {
```

```
                    "dename1": "value",
                    "dename2": "value"
                },
                "behavior_set": {
                    "dename3": "disabled"
                }
            },
            {
                "id": 711,
                "masterDE":"value1updated",
                "value_set": {
                    "dename1": "value",
                    "dename2": "value"
                },
                "behavior_set": {
                    "dename3": "disabled"
                }
            }
        ]
    },
    "message":  "success"   ,
    "status": 200
}
```


Supported Validation Messages and Status Codes

The following status codes and messages can display in the response to a request.

Status Code	Validation Message
200	Success
1101	Empty or Invalid JSON data
3002	Invalid JSON input

Delete DDS Data

`DELETE /ws/rest/service/v1/ds/ddsdata`

Version: 20.10

Purpose

Deletes DDS data. Multiple DDS can be deleted in one request.

Request Format

All parameters should be URL encoded.

Both input and output in JSON format in the body.

Request Parameters

The following parameters can be included in the request:

Request Parameter	Required?	Description
dds_name	Yes	The name of the data definition set that needs to be deleted.
id	Yes	The ID of the dds data set.

Note: Use id vs value set and behavior set combination.

Response Format

A JSON object is returned in the following format:

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

This is an example of a request for deleting a DDS, "sampleDDS".

```
{
 "data": {
   "dds_name": "sampleDDS",
   "id":[712,714]
```

```
  }
}
```

Sample Failed Response

This is an example of partial failed response with a status code 3000.

```
{
    "data": {},
    "message": [
                { id: "712","status": "200","message":"success"},
                { id: "714","status": "1509","message":"DDS does not
exist"}
              ],
    "status": 3000
}
```

Supported Validation Messages and Status Codes

The following status codes and messages can display in the response to a request.

Status Code	Validation Message
200	Success
1101	Empty or Invalid JSON data
3002	Invalid JSON input

Get DDS Data

`GET /ws/rest/service/v1/ds/ddsdata`

Version: 20.10

Purpose

To get DDS data

Request Format

All parameters should be URL encoded..

Both input & output in JSON format in the body.

Filter Parameters in Query

The following parameters can be included in the filter query.

- master_de_value: Specify the master DE value.
- value_de: Specify the value de with the values if configured.
- behavior_de : Specify the value of behavior de with the values if configured.

Sample Filter Query

This is an example of a filter query.

```
    dds_name="sample dds"
    filter= {
                "masterDE":"val1",
                "value_set":{ "leed":"test","uuu_state":"TS"}

"behavior_set":{"uuu_name":"Required","uuu_desc":"Disabled"}
            }
```

Request Parameters

The following parameters can be included in the request.

Request Parameter	Required?	Description
dds_name	Yes	The name of the data definition set.
master_de_value	No	Value of the value_de if configured
value_de1_value	No	
behavior_de1_value	No	Value of the behavior_de if configured

It is a equals and case insensitive search

> **Note:** If more than one Value DE is configured, it can be used in filter using value_de2

Response Format

A JSON object is returned in the following format:

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Response

This is an example of a successful response with status code 200.

```
{
    "data": [{
        "id":720,
        "dds_name": "sampleDDS",
        "data_set": [{
                "id": 710,
                "CountryDE":"IN",
                "value_set": {
                    "leed": "test",
                    "uuu_state": "TS"
                },
                "behavior_set": {
                    "contract_name": "disabled"
                }
                }]
          }],
  "message":  [
     "Success"
  ],
  "status":200
}
```

Supported Validation Messages and Status Codes

The following status codes and messages can display in the response to a request.

Status Code	Validation Message
200	Success
1101	Empty or Invalid JSON data
3002	Invalid JSON input

Get Data Definition

`GET /ws/rest/service/v1/ds/data-def`

Version: 20.11

Purpose

Gets a list of data definitions.

Request Format

All parameters should be URL encoded.

Sample Filter Query Parameter

```
type = Basic / Cost Codes / Data Picker
filter =
{
    "name": "Sample DD Name",
          "data_source": ""
       }
```

Notes:

- All field values in the filter object are case insensitive type is case insensitive.
- If filter object is not provided in the request, all data definitions list will be returned
- Condition type contains will be used to fetch the data definitions
- Filter condition will be applied only if the provided filter values are not-null/non-empty.
- type: possible values will be Basic, Cost Codes, Data Picker
- name: Name of the Data definition
- data_source: Data source of the data picker. Only applicable for data picker type.

Response Format

A JSON object is returned in the following format:

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response

This is an example of a response with a status code 200.


```
{
 "data": [
        {
            "data_size": 0,
            "name": "Account Code Picker",
            "data_type": "Integer",
            "input_type": "Picker",
            "used": "Yes",
            "category": "System"
        },
        {
            "data_size": 128,
            "name": "Account Type PD",
            "data_type": "String",
            "input_type": "Pull-down Menu",
            "data_set": [],
            "used": "Yes",
            "category": "Company"
        },
        {
            "data_size": 128,
            "name": "Action Required PD",
            "data_type": "String",
            "input_type": "Pull-down Menu",
            "dataset_non_modifiable": "No",
            "data_set": [
                {
                    "status": "Active",
                    "value": "No",
```

```
                    "label": "No",
                    "row_num": 1,
                    "is_default": "No"
                },
                {
                    "status": "Active",
                    "value": "Yes",
                    "label": "Yes",
                    "row_num": 2,
                    "is_default": "No"
                }
            ],
            "used": "Yes",
            "category": "^Company"
        }
    ],
    "message": ["success"],
    "status": 200
}
```


Sample Response to Get Data Definition of Cost Code Type

This is an example of a successful response for getting data definitions of cost code type.


```
{
 "data": [{
            "data_size": 32,
            "name": "Segment 1",
            "data_type": "String",
            "input_type": "Text Box",
            "used": "Yes",
            "label": "Segment 1",
            "category": "CBS Code"
        },
        {
            "data_size": 32,
```

```
            "name": "segment 2",
            "data_type": "String",
            "input_type": "Pull-down Menu",
            "label": "Segment 2",
            "dataset_non_modifiable": "Yes",
            "data_set": [
                {
                    "status": "Active",
                    "value": "Yes",
                    "label": "Yes",
                    "row_num": 1,
                    "is_default": "No"
                },
                {
                    "status": "Active",
                    "value": "No",
                    "label": "No",
                    "row_num": 2,
                    "is_default": "No"
                }
            ],
            "used": null,
            "category": "CBS Code"
        }
    ],
    "message": ["success"],
    "status": 200
}
```


Sample Response to Get Data Definition of Data Pickers Type

This is an example of a successful response for getting data definitions of data pickers type.


```
{
 "data": [
        {
```

```
            "data_element": "uuu_user_name",
            "display_element": "Name",
            "name": "Action Item Approver DP",
            "used": "Yes",
            "category": "User Attributes",
            "data_source": "User Attributes"
        },
        {
            "data_element": "space_sp_space_name",
            "display_element": "Space Name",
            "name": "Usable Space DP",
            "used": "Yes",
            "category": "Space Manager",
            "data_source": "Usable Space"
        },
        {
            "data_element": "ugenPropertyName",
            "display_element": "Property Name",
            "name": "Property DP",
            "used": "Yes",
            "category": "Business Process",
            "data_source": "Prospective Properties"
        },
        {
            "data_element": "uveVendorNameTB50",
            "display_element": "Vendor Name",
            "name": "Vendors PK",
            "used": "Yes",
            "category": "Business Process",
            "data_source": "Vendors"
        }
    ],
    "message": ["success"],
    "status": 200
```

```
}
```

Create Data Definition

`POST /ws/rest/service/v1/ds/data-def`

Version: 20.11

Purpose

To create data definition

Request Format

All parameters should be URL encoded.

Both input & output in JSON format in the body

Create DD Basic type

Input JSON field description:

Required Fields:

- name: specify the data definition name
- type: Basic
- data_type: Integer/String are possible values.
- input_type: Text Box, Pull-down Menu, Radio Buttons, Multi-select Input, Multiple Text Lines, Checkbox are possible values based on the data type.
- data_size: has to be provided for Text Box and Multiple Text Lines.

Non-required Fields:

- default_value: Default value can be set.
- data_set: Value and Labels for Pull-down Menu , Radio buttons, Multi-select Input
- dataset_non_modifiable: Yes/No.

Valid Fields based on the data_definition:

data_type	input_type	datasize	separator	data_set
Integer	Checkbox	not applicable	not applicable	not applicable
Integer	Pull-down Menu	not applicable	not applicable	pull down value and labels need to be set
Integer	Radio Buttons	not applicable	not applicable	value and labels need to be set
String	Text Box	required	not applicable	not applicable
String	Multiple Text Lines	required	not applicable	not applicable

data_type	input_type	datasize	separator	data_set
String	Pull-down Menu	not applicable	not applicable	pull down value and labels need to be set
String	Radio Buttons	not applicable	not applicable	value and labels need to be set
String	Multi-select Input	not applicable	comma is the separator.	value need to be set

Notes:

- Category will be defaulted to "Company" in case of basic type of data definition.
- "System" category type of data definition cannot be created.
- type is case insensitive.
- dataset_non_modifiable is case insensitive.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Basic type input JSON

```
{
 "options":{
            "type": "Basic"
  },
 "data": [{
            "name": "sample basic 1",
            "data_size": "128",
            "data_type": "String",
            "input_type": "Text Box"
```

```
        },
        {
            "name": "sample basic 2",
            "data_type": "Integer",
            "input_type": "Pull-down Menu",
            "dataset_non_modifiable": "Yes",
            "data_set": [{
                    "value": 0,
                    "label": "first",
                    "row_num": 1,
                    "status": "Active",
                    "is_default": "No"
                },
                {
                    "value": 1,
                    "label": "Fixed Amount",
                    "row_num": 2,
                    "status": "Active",
                    "is_default": "Yes"
                },
                {
                    "value": 2,
                    "label": "last",
                    "row_num": 3,
                    "status": "Active",
                    "is_default": "No"
                }
            ]
        }
    ]
}
```

Basic type output JSON

```
{
```

```
"data": [
    {
        "data_size": "128",
        "name": "sample basic 1",
        "data_type": "String",
        "input_type": "Text Box",
        "default_value": "",
        "used": "",
        "category": "Company"
    },
    {
        "data_size": "0",
        "dataset_non_modifiable": "Yes",
        "name": "sample basic 2",
        "data_type": "Integer",
        "input_type": "Pull-down Menu",
        "data_set": [
            {
                "value": "0",
                "row_num": 1,
                "status": "Active",
                "label": "first",
                "is_default": "No"
            },
            {
                "value": "1",
                "row_num": 2,
                "status": "Active",
                "label": "Fixed Amount",
                "is_default": "Yes"
            },
            {
                "value": "2",
                "row_num": 3,
```

```
                    "status": "Active",
                    "label": "last",
                    "is_default": "No"
                }
            ],
            "used": "",
            "category": "Company"
        }
    ],
    "message": [
        {
            "message": "success",
            "data_definition": "sample basic 1",
            "status": 200
        },
        {
            "message": "success",
            "data_definition": "sample basic 2",
            "status": 200
        }
    ],
    "status": 200
}
```


Create DD Cost Code type

Input JSON field description:

Required Fields:

name: specify the field definition name

type: Cost Codes

label : has to be specified.

input_type: Text Box, Pull-down Menu are possible values.

Non-required Fields:

default value: Default value can be set.

data_set: Value and Labels are applicable for Pull down menu.

dataset_non_modifiable: Yes/No.

Notes:

- Category will be defaulted to "CBS Code" in case of cost codes type of data definition.
- type is case insensitive.
- dataset_non_modifiable is case insensitive.

Cost Codes type input JSON

```
{
"options":{
            "type": "Cost Codes"
 },
 "data": [{
            "name": "sample costcode 1",
            "input_type": "Text Box",
            "label": "Test 1"
        },
        {
            "name": "sample costcode 2",
            "input_type": "Pull-down Menu",
            "label": "Test 2",
            "dataset_non_modifiable": "No",
            "data_set": [{
                    "value": "Type 1",
                    "label": "first",
                    "row_num": 1,
                    "status": "Active",
                    "is_default": "Yes"

                },
                {
                    "value": "Type 2",
                    "label": "Fixed Amount",
                    "row_num": 2,
```

```
                    "status": "Active",
                    "is_default": "No"

                },
                {
                    "value": "Type 3",
                    "label": "last",
                    "row_num": 3,
                    "status": "Inactive",
                    "is_default": "No"
                }
            ]
        }
    ]
}
```

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Cost Codes type output JSON

```
{
    "data": [
        {
            "data_size": "32",
            "name": "sample costcode 1",
            "data_type": "String",
            "input_type": "Text Box",
            "default_value": "",
```

```
        "used": "",
        "label": "Test 1",
        "category": "CBS Code"
    },
    {
        "data_size": "32",
        "dataset_non_modifiable": "No",
        "name": "sample costcode 2",
        "data_type": "String",
        "input_type": "^ull-down Menu",
        "data_set": [
            {
                "value": "Type 1",
                "row_num": 1,
                "status": "Active",
                "label": "first",
                "is_default": "Yes"
            },
            {
                "value": "Type 2",
                "row_num": 2,
                "status": "Active",
                "label": "Fixed Amount",
                "is_default": "No"
            },
            {
                "value": "Type 3",
                "row_num": 3,
                "status": "Inactive",
                "label": "last",
                "is_default": "No"
            }
        ],
        "used": "",
```

```
            "label": "Test 2",
            "category": "CBS Code"
        }
    ],
    "message": [
        {
            "message": "success",
            "data_definition": "sample costcode 1",
            "status": 200
        },
        {
            "message": "success",
            "data_definition": "sample costcode 2",
            "status": 200
        }
    ],
    "status": 200
}
```

Create DD Data Picker type

Input JSON field description:

Required Fields:

name: specify the field definition name

category: Business process, Shell Manager, Planning Items, Resource Manager (if you have access to it), User Attributes and Space Manager are the system defined categories. You can provide other category values based on the modules loaded in the environment, for example, Material Inventory Manager.

data_source: name of the data source for the given category

data_element: provide the data element for the selected data source.

type: Data Picker

> **Note:** Type is case insensitive.

Data Picker type input JSON

```
{
 "options":{
            "type": "Data Picker"
```

```
 },
 "data": [{
            "name": "sample dp 1",
            "category": "Business Process",
            "data_source": "Vendors",
            "data_element": "uuu_user_name"
        },
        {
            "name": "sample dp 2",
            "category": "Shell Manager",
            "data_source": "Buildings",
            "data_element": "uBuildingNumber"
        }
    ]
}
```

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Data Picker type output JSON

```
{
    "data": [
        {
            "data_element": "uBuildingNumber",
            "display_element": "Building Code",
            "name": "sample dp 2",
            "used": "",
```

```
            "category": "Shell Manager",
            "data_source": "Buildings"
        }
    ],
    "message": [
        {
            "message": "invalid data element provided for Vendors",
            "data_definition": "sample dp 1",
            "status": 619
        },
        {
            "message": "success",
            "data_definition": "sample dp 2",
            "status": 200
        }
    ],
    "status": 3000
}
```


Supported Validation Messages and Status Codes

The following status codes and messages can display in the response to a request.

Status Code	Validation Message
200	Success.
619	Invalid field value.
620	Input is required.
1101	Empty or Invalid JSON data
3000	Partial create
3002	Invalid JSON input

Update Data Definition

`PUT /ws/rest/service/v1/ds/data-def`

Version: 20.11

Purpose

To update data definition

Request Format

All parameters should be URL encoded.

Both input & output in JSON format in the body

Request Parameters

The following fields can be included in the request.

Request Parameter	Required?	Description
	Yes	

Update Basic Data Defintion:

Input JSON field description:

Required Fields:

- name: specify the data definition name
- type: Basic

Non-required Fields:

- default_value: Default value can be set.
- data_set: Value and Labels for Pull-down Menu , Radio buttons, Multi-select Input
- dataset_non_modifiable: Yes/No.
- dataset_delete_all: Yes

Notes:

- Default value for a data picker can only be updated as part of basic data definition type.
- Sequential ordering of data set is mandatory else it returns an error.
- The data_set which is provided in the input will completely replace the existing data_set. So be sure to get the data_set through GET call and use it for any type of update operations on data_set.
- If data_set is not provided or is empty then existing data_set will not be modified at all.
- Type is case insensitive.
- dataset_non_modifiable is case insensitive.
- dataset_delete_all: if user wants to remove all data set values then they can use this field. This field is case insensitive.

Update Basic Data Definition input JSON

```
{
  "options":{"type": "Basic"},
  "data": [
    {
        "name": "sample basic 1",
        "default_value": "Entering default value"
    },
    {
     "name": "sample basic 2",
     "dataset_non_modifiable": "No",
     "data_set": [
                {
                    "value": "0",
                    "row_num": 1,
                    "status": "Active",
                    "label": "first",
                    "is_default": "No"
                },
                {
                    "value": "1",
                    "row_num": 2,
```

```
                    "status": "Inactive",
                    "label": "Fixed Amount",
                    "is_default": "No"
                }
        ]
    }
  ]
}
```

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Update Basic Data Definition output JSON

```
{
    "data": [
        {
            "data_size": "128",
            "name": "sample basic 1",
            "data_type": "String",
            "input_type": "Text Box",
            "default_value": "Entering default value",
            "used": "",
            "category": "Company"
        },
        {
            "data_size": "0",
            "dataset_non_modifiable": "No",
            "name": "sample basic 2",
```

```
            "data_type": "Integer",
            "input_type": "Pull-down Menu",
            "data_set": [
                {
                    "value": "0",
                    "row_num": 1,
                    "status": "Active",
                    "label": "first",
                    "is_default": "No"
                },
                {
                    "value": "1",
                    "row_num": 2,
                    "status": "Inactive",
                    "label": "Fixed Amount",
                    "is_default": "No"
                }
            ],
            "used": "",
            "category": "Company"
        }
    ],
    "message": [
        {
            "message": "success",
            "data_definition": "sample basic 1",
            "status": 200
        },
        {
            "message": "success",
            "data_definition": "sample basic 2",
            "status": 200
        }
    ],
```

```
    "status": 200
}
```

Update Cost Codes Data Defintion:

Input JSON field description:

Required Fields:

- name: specify the data definition name
- type: Cost Codes
- Non-required Fields:
- default_value: Default value can be set.
- data_set: Value and Labels for Pull-down Menu
- dataset_non_modifiable: Yes/No.
- dataset_delete_all: Yes

Notes:

- Sequential ordering of data set is mandatory else it returns an error.
- The data_set which is provided in the input will completely replace the existing data_set. So be sure to get the data_set through GET call and use it for any type of update operations on data_set.
- If data_set is not provided or is empty then existing data_set will not be modified at all.
- Type is case insensitive.
- dataset_non_modifiable is case insensitive
- dataset_delete_all: if user wants to remove all data set values then they can use this field. This field is case insensitive.

Update Cost Codes Data Definition input JSON

```
{
  "options":{
            "type": "Cost Codes"
  },
  "data": [
    {
        "name": "sample costcode 1",
        "default_value": "Entering default value"
    },
    {
     "name": "sample costcode 2",
     "dataset_non_modifiable": "No",
```

```
     "data_set": [
                {
                    "value": "0",
                    "row_num": 1,
                    "status": "Active",
                    "label": "first",
                    "is_default": "No"
                },
                {
                    "value": "1",
                    "row_num": 2,
                    "status": "Inactive",
                    "label": "Fixed Amount",
                    "is_default": "No"
                }
        ]
    }
  ]
}
```

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Update Cost Codes Data Definition output JSON

```
{
    "data": [
        {
```

```
        "data_size": "32",
        "name": "sample costcode 1",
        "data_type": "String",
        "input_type": "Text Box",
        "default_value": "Entering default value",
        "used": "",
        "label": "Test 1",
        "category": "CBS Code"
    },
    {
        "data_size": "32",
        "dataset_non_modifiable": "No",
        "name": "sample costcode 2",
        "data_type": "String",
        "input_type": "Pull-down Menu",
        "data_set": [
            {
                "value": "0",
                "row_num": 1,
                "status": "Active",
                "label": "first",
                "is_default": "No"
            },
            {
                "value": "1",
                "row_num": 2,
                "status": "Inactive",
                "label": "Fixed Amount",
                "is_default": "No"
            }
        ],
        "used": "",
        "label": "Test 2",
        "category": "CBS Code"
```

```
        }
    ],
    "message": [
        {
            "message": "success",
            "data_definition": "sample costcode 1",
            "status": 200
        },
        {
            "message": "success",
            "data_definition": "sample costcode 2",
            "status": 200
        }
    ],
    "status": 200
}
```


Status codes are:

1> 200, for success

2> 3000, for partial create.

3> 3002, for invalid JSON input

4> 1101, for Empty or Invalid JSON data

5> 619, for invalid field value

6> 620, for input is required.

Delete Data Definition

`DELETE /ws/rest/service/v1/ds/data-def`

Version: 20.11

Purpose

Deletes data definition

Request Format

All parameters should be URL encoded.

Both input & output in JSON format in the body

options: user has to specify the type of data definition; that is, Basic, Cost Codes, Data Picker.

Note: Type is case insensitive.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

```
{
    "options":{"type": "Basic"},
    "data":{
              "data_definitions": ["simple DD1", "simple DD2"]
           }
}
```

Sample Success Response

```
{
    "data": [],
    "message": [
        { data_definition: "Simple DD1","status": "1531","message":"You
can not delete deployed definitions."}  ,
        { data_definition: "Simple DD2","status":
"200","message":"success"}
    ],
    "status": 3000
}
```

Supported Validation Messages and Status Codes

The following status codes and messages can display in the response to a request.

Status Code	Validation Message
200	Success
1531	Cannot delete data definition
1532	data definition does not exist
3000	Partial delete
3002	Invalid JSON input

Response Error Codes

The following lists the response error codes for the REST API Details in Data Structure Setup:

Code	Message	Details
200	success	If the request is successful
500	Server Error, contact the system administrator.	If there is server exception when running this service
600	Invalid options	
619	Invalid field value (or) a field-specific error message will be displayed	If an unsupported value is provided for any field
620	Input Required (or) a field-specific error message will be displayed	If the required field value is not provided in the request
1101	Empty or Invalid JSON data	
1500	Required field validation for DDS Name	
1501	Cannot begin with a number .	
1502	Allowed characters are A-Z a-z 0-9 _	
1503	Reserved word validation (Eg: starts with sys,uuu..etc)	
1504	Starts with Underscore validation	
1505	Field Max length validation.	
1506	Value set contains Master	

Code	Message	Details
	data element	
1507	Invalid Order for Value set and Behavior set	
1508	DDS name already Exist	
1509	Invalid Data element in DDS Definition	
1510	DDS usage validation for update and delete DDS Definition.	
1511	Invalid DDS name	
1512	Value Set is Required	
1513	Invalid DDS Data Options	
1514	Option value was doesn't match the available data options	
1515	Duplicate dds data combination.	
1516	Restricted data element that is part of the behavior. The value of this data element cannot be set as Disabled and Clear	
1517	Value Set/Behavior Set contains duplicate DE's for DDS name	
1518	Invalid DDS Data id	
1519	Invalid Action for Update DDS Definition	
1520	data_definition value cannot be updated	If the DE is pre-defined or deployed then data_definition of that DE cannot be updated
1521	Data Element is used in Unifier, it cannot be deleted.	
1522	This data element is being used in uDesigner and cannot be deleted.	
1523	Pre-Defined Data Elements	

Code	Message	Details
	cannot be deleted.	
1531	Cannot delete data definition.	
1532	Data definition does not exists.	
3000	Partial delete	
3002	Invalid Input	

Partner Company

The following table contains detailed information on Data Elements related to Partner Company REST Services V1:

Element	Sub-element	UI Label	Data Type	Mandatory?	GET	CREATE	UPDATE	Note
companyname		Name	String	Y	√	√	√	
shortname		Short Name	String	Y	√	√	√	
description		Description	String		√	√	√	
duns		DUNS	String		√	√	√	
url		Home Page URL	String		√	√	√	
helpurl		Help URL	String		√	√	√	
status		Status	Integer		√	√	√	This is optional. If not supplied, inactive company will be created. Possible values are 0 for

Element	Sub-element	UI Label	Data Type	Mandatory?	GET	CREATE	UPDATE	Note
								inactive, and 1 for active.
support_contactemail		Support Contact Info - Email	String		√	√	√	
support_contactphone		Support Contact Info - Phone	String		√	√	√	
support_instructions		Support Contact Info - Instructions	String		√	√	√	
support_emailnotification		Support Contact Info - Email Notifications	String		√	√	√	
elearn_url		eLearning Access - URL	String		√	√	√	
elearn_label		eLearning Access - Label	String		√	√	√	
elearn_contactemail		eLearning Access - Contact Email	String		√	√	√	
elearn_instructions		eLearning Access - Instructi	String		√	√	√	

Element	Sub-element	UI Label	Data Type	Mandatory?	GET	CREATE	UPDATE	Note
		ons						
addresses					√	√	√	This is optional. If not supplied, one of the owner company address will be added to this company.
	address type	At Address Tab - Address Type	Integer	Y	√	√	√	For possible value, see ***Company Address***. If not sure, provide 1 for address type "Headquarter".
	addressline1	At Address Tab - Address 1	String	Y	√	√	√	
	addressline2	At Address Tab - Address 2	String		√	√	√	

Element	Sub-element	UI Label	Data Type	Mandatory?	GET	CREATE	UPDATE	Note
	addressline3	At Address Tab - Address 3	String		√	√	√	
	city	At Address Tab - City	String	Y	√	√	√	
	state	At Address Tab - State	String	Y	√	√	√	
	zip	At Address Tab - Zip/Postal Code	String	Y	√	√	√	
	country	At Address Tab - Country/Region	String	Y	√	√	√	For a list of country codes, see the table later in this topic.
	phone	At Address Tab - Phone	String		√	√	√	
	fax	At Address Tab - Fax	String		√	√	√	
passwordpolicy					√	√	√	This is optional. If not supplied, owner

Element	Sub-element	UI Label	Data Type	Mandatory?	GET	CREATE	UPDATE	Note
								company password policy will be added to this company.
	min_length	At Security Tab - Minimum overall character(s)	Integer	Y	√	√	√	
	max_length	At Security Tab - Maximum overall character(s)	Integer		√	√	√	
	min_numericchar	At Security Tab - Minimum numeric character(s)	Integer		√	√	√	
	min_alpchar	At Security Tab - Minimum alphabetic character(s)	Integer		√	√	√	
	min_spe	At	Integer		√	√	√	

Element	Sub-element	UI Label	Data Type	Mandatory?	GET	CREATE	UPDATE	Note
	char	Security Tab - Minimum special character(s)						
	chk_uname	At Security Tab - Password cannot be same as Username	Integer		√	√	√	
	chk_flname	At Security Tab - Password cannot be same as First or Last Name	Integer		√	√	√	
	chk_prevpwd	At Security Tab - Password cannot be same as last	Integer		√	√	√	
	pwd_validfor	At Security Tab - Password expiratio	Integer		√	√	√	

Element	Sub-element	UI Label	Data Type	Mandatory?	GET	CREATE	UPDATE	Note
		n						
	inform_exp	At Security Tab - Inform user before expiration	Integer		√	√	√	
	max_attempts	At Security Tab - Maximum login attempts	Integer		√	√	√	
	max_inactive	At Security Tab - Suspend inactive user after	Integer		√	√	√	

Country List and Country Codes

Code	Country/Territory
AF	Afghanistan
AL	Albania
DZ	Algeria
AS	American Samoa
AD	Andorra
AO	Angola
AI	Anguilla
AQ	Antarctica
AG	Antigua and Barbuda

Code	Country/Territory
AR	Argentina
AM	Armenia
AW	Aruba
AU	Australia
AT	Austria
AZ	Azerbaijan
BS	Bahamas
BH	Bahrain
BD	Bangladesh
BB	Barbados
BY	Belarus
BE	Belgium
BZ	Belize
BJ	Benin
BM	Bermuda
BT	Bhutan
BO	Bolivia
BA	Bosnia and Herzegovina
BW	Botswana
BV	Bouvet Island
BR	Brazil
IO	British Indian Ocean Territory
BN	Brunei
BG	Bulgaria
BF	Burkina Faso
BI	Burundi
KH	Cambodia
CM	Cameroon
CA	Canada
CV	Cape Verde
KY	Cayman Islands

Code	Country/Territory
CF	Central African Republic
TD	Chad
CL	Chile
CN	China
CX	Christmas Island
CC	Cocos (Keeling) Islands
CO	Colombia
KM	Comoros
CG	Congo
CK	Cook Islands
CR	Costa Rica
CI	Côte d'Ivoire
HR	Croatia (Hrvatska)
CU	Cuba
CY	Cyprus
CZ	Czech Republic
CD	Congo (DRC)
DK	Denmark
DJ	Djibouti
DM	Dominica
DO	Dominican Republic
TP	East Timor
EC	Ecuador
EG	Egypt
SV	El Salvador
GQ	Equatorial Guinea
ER	Eritrea
EE	Estonia
ET	Ethiopia
FK	Falkland Islands (Islas Malvinas)
FO	Faroe Islands

Code	Country/Territory
FJ	Fiji Islands
FI	Finland
FR	France
GF	French Guiana
PF	French Polynesia
TF	French Southern and Antarctic Lands
GA	Gabon
GM	Gambia
GE	Georgia
DE	Germany
GH	Ghana
GI	Gibraltar
GR	Greece
GL	Greenland
GD	Grenada
GP	Guadeloupe
GU	Guam
GT	Guatemala
GN	Guinea
GW	Guinea-Bissau
GY	Guyana
HT	Haiti
HM	Heard Island and McDonald Islands
HN	Honduras
HK	Hong Kong SAR
HU	Hungary
IS	Iceland
IN	India
ID	Indonesia
IR	Iran
IQ	Iraq

Code	Country/Territory
IE	Ireland
IL	Israel
IT	Italy
JM	Jamaica
JP	Japan
JO	Jordan
KZ	Kazakhstan
KE	Kenya
SZ	Kingdom of Swaziland
KI	Kiribati
KR	Korea
KW	Kuwait
KG	Kyrgyzstan
LA	Laos
LV	Latvia
LB	Lebanon
LS	Lesotho
LR	Liberia
LY	Libya
LI	Liechtenstein
LT	Lithuania
LU	Luxembourg
MO	Macao SAR
MK	Macedonia, Former Yugoslav Republic of
MG	Madagascar
MW	Malawi
MY	Malaysia
MV	Maldives
ML	Mali
MT	Malta
MH	Marshall Islands

Code	Country/Territory
MQ	Martinique
MR	Mauritania
MU	Mauritius
YT	Mayotte
MX	Mexico
FM	Micronesia
MD	Moldova
MC	Monaco
MN	Mongolia
MS	Montserrat
MA	Morocco
MZ	Mozambique
MM	Myanmar
NA	Namibia
NR	Nauru
NP	Nepal
NL	Netherlands
AN	Netherlands Antilles
NC	New Caledonia
NZ	New Zealand
NI	Nicaragua
NE	Niger
NG	Nigeria
NU	Niue
NF	Norfolk Island
KP	North Korea
MP	Northern Mariana Islands
NO	Norway
OM	Oman
PK	Pakistan
PW	Palau

Code	Country/Territory
PA	Panama
PG	Papua New Guinea
PY	Paraguay
PE	Peru
PH	Philippines
PN	Pitcairn Islands
PL	Poland
PT	Portugal
PR	Puerto Rico
QA	Qatar
RE	Reunion
RO	Romania
RU	Russia
RW	Rwanda
WS	Samoa
SM	San Marino
ST	São Tomé and Príncipe
SA	Saudi Arabia
SN	Senegal
YU	Serbia and Montenegro
SC	Seychelles
SL	Sierra Leone
SG	Singapore
SK	Slovakia
SI	Slovenia
SB	Solomon Islands
SO	Somalia
ZA	South Africa
GS	South Georgia and the South Sandwich Islands
ES	Spain

Code	Country/Territory
LK	Sri Lanka
SH	St. Helena
KN	St. Kitts and Nevis
LC	St. Lucia
PM	St. Pierre and Miquelon
VC	St. Vincent and the Grenadines
SD	Sudan
SR	Suriname
SJ	Svalbard and Jan Mayen
SE	Sweden
CH	Switzerland
SY	Syria
TW	Taiwan
TJ	Tajikistan
TZ	Tanzania
TH	Thailand
TG	Togo
TK	Tokelau
TO	Tonga
TT	Trinidad and Tobago
TN	Tunisia
TR	Turkey
TM	Turkmenistan
TC	Turks and Caicos Islands
TV	Tuvalu
UG	Uganda
UA	Ukraine
AE	United Arab Emirates
UK	United Kingdom
US	United States
UM	United States Minor Outlying Islands

Code	Country/Territory
UY	Uruguay
UZ	Uzbekistan
VU	Vanuatu
VA	Vatican City
VE	Venezuela
VN	Viet Nam
VG	Virgin Islands (British)
VI	Virgin Islands
WF	Wallis and Futuna
YE	Yemen
ZM	Zambia
ZW	Zimbabwe

Get Partner Company

```
GET http://<environment url>ws/rest/service/v1/admin/company?shortname=<urlencoded_shortname>
```

Purpose

Gets partner company information.

If the `shortname` parameter is not specified in the URL, it will retrieve the entire list of partner companies.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response With Shortname Parameter

When the shortname is included in the request, the response is returned in the following format:


```
{
  "data":
  [
    {
      "support_contactphone":null,
      "elearn_url":null,
      "addresses":
      [
        {
          "zip":"94588",
          "country":"US",
          "city":"Pleasanton",
          "phone":null,
          "addressline3":null,
          "addresstype": 1,
          "addressline2":null,
          "addressline1":"5815 Owens Drive",
          "state":"CA",
          "fax":null
        }
      ],
      "support_emailnotification":null,
      "passwordpolicy":
      {
        "inform_exp":7,
        "min_specchar":1,
        "max_inactive":360,
        "min_length":6,
        "min_numericchar":1,
        "max_attempts":5,
        "min_alpchar":1,
        "pwd_validfor":180,
        "chk_uname":1,
        "chk_prevpwd":0,
        "max_length":0,
        "chk_flname":1
      },
```

```
        "helpurl":null,
        "description":null,
        "support_contactemail":null,
        "shortname":"partner01",
        "url":null,
        "companyname":"Partner Company - 01",
        "elearn_instructions":null,
        "elearn_contactemail":null,
        "support_instructions":null,
        "duns":null,
        "elearn_label":null,
        "status":1
      }
    ],
    "message":  [  ],
    "status":200
  }
```


Sample Success Response For All Partner Companies

When the shortname is *not* included in the request, the response returns a list of all partner companies in the following format:


```
{
  "data":[{
            "companyname":"Partner Company - 01",
            "shortname":"partner01",
            "status":1
          },
          {
            "companyname":"Partner Company - 02",
            "shortname":"partner02",
            "status":1
          }
        ],
  "message":["success"],
  "status":200
}
```

Create Partner Company

```
POST http://<environment url>/ws/rest/service/v1/admin/company
```

Purpose

Creates a partner company based on information provided.

Request Format

The user will be required to enter the company information in JSON format.

Minimum data requirements are the mandatory fields when creating partner company or you can specify detailed data, similar to output of GET request.

Sample Request

```
{
    "companyname":"Partner Company - 01",
    "shortname":"partner01",
    "addresses": [{
            "addresstype": 1,
            "addressline1":"San Jose CA",
            "city":"San Jose",
            "state":"CA",
            "zip":"95110",
            "country":“US”
    }],
    "passwordpolicy":{
            "min_length": 3,
            "max_length": 7,
    }
    }
```

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response

```
{
    "data":[],
    "message":["The partner company has been created"'],
    "status":200
}
```

Sample Failed Response

```
    {
    "data": [
             "companyname is mandatory to create partner company",
             "passwordpolicy is mandatory to create partner company",
             "addresses is mandatory to create partner company"
            ],
    "message": ["One or more records contain errors."],
    "status": 5555
    }
```

The mandatory existing validations that exist for creating partner company will be applicable in REST service as well.

Validations For Creating Partner Company

Status	Condition	Message
200	Success	The partner company has been created.
900	Mandatory field not specified	<data_element> is mandatory to create partner company
500	Server Error	Server Error, contact the system administrator.
901	Invalid data value	Invalid data for <data_element>.
5555	One or more records contain errors.	One or more records contain errors.

Update Partner Company

```
PUT http://<environment url>/ws/rest/service/v1/admin/company
```

Purpose

Provide the ability to update partner company based on information provided.

Request Format

Company information in JSON format.

Sample Request

```
{
  [{"companyname":"Partner Company - 01",
  "shortname":"partner01",
  "addresses": [{
  "addresstype": 1,
  "addressline1":"488 Almaden Blvd",
  "city":"San Jose",
  "state":"CA",
  "zip":"95110",
  "country":"US"}
],
  "passwordpolicy":{"min_length": 1,"max_length": 3}
}
```

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

The mandatory existing validations that exist for updating partner company will be applicable in REST service as well

The shortname is the identifier for updating the partner company details.

The other data elements which are not included as part of the update request will retain its value on execution.

Validations For Updating Partner Company

Status	Condition	Message
200	Success	The partner company {partner company name} has been created.
901	Invalid data value	Invalid data for <data_element>.
902	Partner company specified does not exist as shortname specified is not matching.	The partner company does not exist.
5555	One or more records contain errors.	One or more records contain errors.

Update Partner Company Shortname

Method: POST

The Company "shortname" is the identifier.

URL: <unifier_url>/ws/rest/service/v1/admin/company/shortname

Sample Request

```
{
    "shortname":"partner07",
    "new_shortname":"partner07123"
}
```

Add (Update) Partner Company Shell Membership

```
PUT http://<environment
url>/ws/rest/service/v1/admin/company/shell/member/add
```

URL: <unifier_url>/ws/rest/service/v1/admin/company/shell/member/add

Purpose

Add a partner company to a shell based on the information provided.

Request Format

Company information in JSON format.

Sample Request

To add a member company to a shell:

```
{
    "shortname":"partner01",
    "shellnumber":"7896"
}
```

Response Format

Return data will be JSON format.

Validations

Status	Condition	Message
200	Success	The member company {name} has been added to shell {name}
910	Adding inactive partner company to a given shell.	The inactive partner company {name} cannot be added to shell {name}.
911	Adding member company to an inactive shell.	The partner company {name} cannot be added to inactive shell {name}
902	Partner company specified does not exist as shortname specified is not matching.	The partner company does not exist.
500	Server Error.	Server Error, contact the system administrator.
901	Invalid data value.	Invalid data for <data_element>.
5555	One or more records contain errors.	The partner company does not exist

Remove (Update) Partner Company Shell Membership

```
PUT http://<environment
url>/ws/rest/service/v1/admin/company/shell/member/remove
```

URL: <unifier_url>/ws/rest/service/v1/admin/company/shell/member/remove

Purpose

Remove partner company from shell based on information provided.

Request Format

Company information in JSON format.

Sample Request

To add member company to a shell:

```
{
   "shortname":"partner01",
   "shellnumber":"7896"
}
```

Response Format

Return data will be status and message.

Validations

Status	Condition	Message
200	Success	The member company {name} has been removed from the shell {name}
902	Partner company specified does not exist as shortname specified is not matching.	The partner company does not exist.
602	When shell number is invalid or does not exist.	The shell number is invalid/does not exist.
913	When shell number specified is for inactive shell.	The shell specified is inactive.
500	Server Error.	Server Error, contact the system administrator.
5555	One or more records contain errors.	The partner company does not exist.

User

Get User

Method: POST

This will not return Hosting and Partner company users (same as SOAP web service). The Get User REST is different than the SOAP web service. The REST will return the owner company and partner company users, based on the filter condition.

URL: `<unifier_url>/ws/rest/service/v1/admin/user/get`

Request

For filter condition:

```
{
    "filterCondition":"uuu_user_status=1"
}
```

For Get User call, the input filter condition has to be specified.

Update User

`PUT http://<environment url>/ws/rest/service/v1/admin/user`

Purpose

Update company/partner user based on information provided.

> **Note:** To update the user successfully, ensure that the integration user has the proper update permissions (for more information, see **Updating Permissions for Integration Users** in the *Unifier General Administration Guide*).

This will be a PUT request.

The service URL to be used will be: `http://<environment url>/ws/rest/service/v1/admin/user`

Request Format

User information in JSON format

Response Format

Return data will be JSON format.

- `uuu_user_loginname` will be the identifier to identify whether the user can be updated

- uuu_user_company will be URLencoded

Sample Request to Update Partner User


```
{
    "users": [
     {
      "uuu_user_workphone": "1-800-333-8989",
      "uuu_user_name": "Company Administrator",
      "uuu_user_status": "1",
      "uuu_user_email": "user123@oracle.com",
      "empEmployeeIDTB50": "",
      "uuu_user_dateformat": "0",
      "uuu_user_proxy": "",
      "uuu_user_type": "0",
      "uuu_user_timezone_pref": "50",
      "uuu_user_pager": "",
      "empEmployeeRegHrsDA": "0.0",
      "uuu_user_homephone": "",
      "uuu_user_fax": "",
      "uuu_user_lastname": "Administrator",
      "ugenFlrTB120": "",
      "uemSpace1DPK": "",
      "uuu_user_title": "Administrator",
      "uempCurrLocBldDPK": "",
      "uplRoomTB250": "",
      "empEmployeeManagerTB120": "",
      "uuu_user_mobilephone": "1-650-323-32324",
      "uuu_user_proxy_config": "1",
      "usmUSAssignedDeptPD": "",
      "uSiteDP": "",
      "uuu_user_loginname": "coadmin",
      "uuu_user_company": "unifier",
      "uuu_user_firstname": "Company",
      "uuu_user_password": "123",
```

```
      "uuu_disableusermobileaccess": "0"
      }
    ]
}
```

Validations Messages and Status Codes

Status	Condition	Message
200	Success	The {first name last name} user has been updated.
500	Server Error.	Server Error, contact the system administrator.
5555	One or more records contain errors.	One or more records contain errors.

Create User

Method: POST

Purpose

Create partner/company user based on information provided.

Usage:

This will be POST request.

The service URL to be used will be: `http://<environment url>/ws/rest/service/v1/admin/user`

Request Format

The user will be required to enter the company/partner user information.

The JSON input to create owner company or partner company users are similar. The Minimum input is:

```
  {
      "copyFromUserPreferenceTemplate": "",
      "users": [
          {
              "uuu_user_loginname": "user010",
              "uuu_user_password": "123123",
              "uuu_user_firstname": "User",
              "uuu_user_lastname": "010",
              "uuu_user_email": "user010@oracle.com",
```

```
            "uuu_user_type": "0",
            "uuu_user_status": "1",
            "uuu_user_dateformat": "0",
            "uuu_user_timezone_pref": "50",
            "uuu_user_company": "unifier"
            "uuu_disableusermobileaccess": "1"
        }
    ]
}
```

Sample JSON to create Partner user

```
{
  "copyfromuserpreferencetemplate":"92Template1",
  "users":
  [
    {
      "uuu_user_workphone":"1-800-333-8989",
      "uuu_user_name":"Company Administrator",
      "uuu_user_status":"1",
      "uuu_user_email":"userabc@oracle.com",
      "empEmployeeIDTB50":"",
      "uuu_user_dateformat":"0",
      "uuu_user_proxy":"",
      "uuu_user_type":"0",
      "uuu_user_timezone_pref":"50",
      "uuu_user_pager":"",
      "empEmployeeRegHrsDA":"0.0",
      "uuu_user_homephone":"",
      "uuu_user_fax":"",
      "uuu_user_lastname":"Administrator",
      "ugenFlrTB120":"",
      "uemSpace1DPK":"",
      "uuu_user_title":"Administrator",
      "uempCurrLocBldDPK":"",
      "uplRoomTB250":"",
      "empEmployeeManagerTB120":"",
      "uuu_user_mobilephone":"1-650-323-32324",
      "uuu_user_proxy_config":"1",
      "usmUSAssignedDeptPD":"",
      "uSiteDP":"",
      "uuu_user_loginname":"coadmin",
```

```
        "uuu_user_company":"unifier",
        "uuu_user_firstname":"Company",
        "uuu_user_password" : "123"
      }
    ]
  }
```

For creating company user the minimum requirement will be:

Sample JSON to create Company User

```
{
"user": {
        "loginname":"abcuser",
        "password":"123",
        "firstname":"ABC",
        "lastname":"User",
        "mobilephone":"951-109-8347",
        "homephone":"951-109-8347",
        "workphone":"951-109-8347",
        "email":"abc@oracle.com",
        "pager":"951-109-8347",
        "fax":"951-109-8347",
        "title":"Lead",
        "date_format":"10",
        "timezone":"50",
        "user_type":"Standard"
},
}
```

Response Format

If the service runs successfully the output is status and message.

The mandatory existing validations that exist for creating partner/company user will be applicable in REST service as well.

Validations Messages and Status Codes For Creating Partner Company Users

Status	Condition	Message
200	Success	The partner user has been created.
500	Server Error.	Server Error, contact the system administrator.

Status	Condition	Message
5555	One or more records contain errors.	One or more records contain errors.

Update User Shell Membership

Method: PUT

URL: `<unifier_url>/ws/rest/service/v1/admin/user/shell/membership`

Sample Request

```
{
    "shellnumber":"State0003",
    "users":[
        { "username":"ConfUser3",
          "status":"Active",
          "group_add": "G1",
                 "group_remove": "Project Administrator"
        }
    ]
}
```

Notes:

- To update the user successfully, ensure that the integration user has the proper update permissions (for more information, see **Updating Permissions for Integration Users** in the *Unifier General Administration Guide*).
- Although the system audits the addition or removal of users to or from a shell, it does not audit group membership. Because of this, changes to group membership are not reflected in the Group Audit Log.

Update User Group Membership

Method: PUT

URL: `<unifier_url>/ws/rest/service/v1/admin/user/group/membership`

Sample Request

```
[
```

```
  {
      "username":"ConfUser9",
       "group_add":"Group_A",
       "group_remove":"new group"
  }
]
```

Notes:

- To update the user successfully, ensure that the integration user has the proper update permissions (for more information, see **Updating Permissions for Integration Users** in the *Unifier General Administration Guide*).
- Although the system audits the addition or removal of users to or from a shell, it does not audit group membership. Because of this, changes to group membership are not reflected in the Group Audit Log.

User Defined Report (UDR)

`POST /ws/rest/service/v1/data/udr/get/{project_number}`

Purpose

Get User Defined Report Data in a project/shell based on {project_number} or from company level if {project_number} is not provided.

Request Format

Path Parameter

`project_number`: Specify the project/shell number to generate the UDR data; is generated at the company level.

UDR information in JSON format

Minimum data requirement is:`{"reportname":"partner01_UDR"}`

Method : POST

With project Number (Shell level reports): `http://<environment url>/ws/rest/service/v1/data/udr/get /<project-number>`

Method : POST

Request Format

UDR information in JSON format

Minimum data requirement is: `{"reportname":"partner01_UDR" }`

Response Format

Return data will be JSON format by default.

Supported Validation Messages and Status Codes

The following messages can display in the response to a request.

Error Code	Condition	Message
200	Success	Ok
500	Server Error	Server Error. Contact the system administrator.

Passing Values to UDR

To pass parameter for query condition for a UDR:

Sample JSON to Pass Parameters

```
{
    "reportname": "UDR for Request for Bid",
    "query": [
                {
                    "label":"Requests for Bid / Title",
                    "value1":"Standard"
                },
                {
                    "label":"Requests for Bid / Title",
                    "value1":"34",
                    "value2":"43"
                },
                {
                    "label":"Formula_01",
                    "value1":"100"
                },
                {
                    "label":"Formula_02",
                    "value1":"200"
```

```
            },
            {
                "label":"Requests for Bid / Due Date",
                "value1":"2018-07-31",
                "value2":"5"
            },
            {
                "label":"Requests for Bid / Bid Sponsor",
                "value1":"XYZ"
            }
        ]
}
```

Parameter for Passing Values

Parameter	Condition
label	This must match the query condition label in the UDR.
Value 1	This will help user to enter value for given query condition.
Value 2	This parameter will help user to enter the secondary value in case of between query condition.

Get Templates List

`POST /ws/rest/service/v1/cashflow/template/list/{project_number}`

Purpose

Get a list of all cashflow templates with all curves types defined. The request provides various options for fetching the data.

Request Format

All parameters should be URL encoded.

Path Parameter

project_number: (Required) Specify the project number in which the curve exists.

POST body is a JSON

Note: POST call has input & output both as JSON in the body.

```
{
    "options":{ "property_name": "CBS CF" }
}
```

Supported Options Properties

The following parameters can be included in the "Options" JSON map:

- "property_name": "CBS CF"
- "curve_name": << Name of The Curve>>,
- "rollup_status"<<Active><Inactive>>

  If rollup_status value provided is other than above-mentioned values, invalid options message will be thrown.
- "detail_level"<<Summary CBS>< CBS><Project / Shell><Commitment>>

  If detail_levelvalue provided is other than above-mentioned values, invalid options message will be thrown.
- "include_curves":<< Yes/ No>> <!-- default is Yes if not provided→>

  If include_curves value provided is other than above-mentioned values, invalid options message will be thrown.

If no options are provided, the service returns all templates with cash flow curves from the project.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Project or Shell Sample

```
{
    "data": [
        {
            "name": "Project Cash Flow - Capital Planning",
            "description": null,
```

```
"rollup_status": "Active",
"detail_level": "Project / Shell",
"period_type": "Standard Planning Period",
"period_name": "Standard Planning Period",
"period_by": "Month",
"period_format": "M YYYY",
"decimal_places": 2,
"curves": [
    {
        "name": "Baseline",
        "type": "Baseline",
        "distribution": {
            "type": "auto_profile",
            "distribution_profile": "S Curve"
        },
        "cost": {
            "type": "cost_sheet",
            "cost_sheet_column": "Revised Budget"
        },
        "schedule": {
            "type": "manual"
        }
    },
    {
        "name": "Actuals",
        "type": "Spends",
        "cost": {
            "cost_sheet_column": "Spends",
            "type": "cost_sheet"
        }
    },
    {
        "name": "Forecast",
        "type": "Forecast",
```

```
            "distribution": {
                "type": "auto_profile",
                "distribution_profile": "S Curve"
            },
            "cost": {
                "type": "cost_sheet",
                "cost_sheet_column": "Forecast"
            },
            "schedule": {
                "type": "manual"
            },
            "forecast_options": {}
        },
        {
            "name": "Original Budget",
            "type": "Portfolio Budget",
            "cost": {
                "currency_code": "United States Dollar (USD)",
                "distribut_amount_from": "original"
            }
        },
        {
            "name": "Approved Budget",
            "type": "Portfolio Budget",
            "cost": {
                "currency_code": "United States Dollar (USD)",
                "distribut_amount_from": "approved"
            }
        },
        {
            "name": "Shared Budget",
            "type": "Portfolio Budget",
            "cost": {
                "currency_code": "United States Dollar (USD)",
```

```
                        "distribut_amount_from": "shared"
                    }
                }
            ],
            "filters": {
                "filter_option": "all"
            }
    ],
    "message": [        "success"    ],
    "status": 200
}
```


Data

If integration interface is defined for BP, the integration form will be used for this service; otherwise, all custom DEs defined in the form will be used.

For update, specify only the DEs to be updated.

Data Format

Input and output data will be in JSON format. Set HTTP header Content-Type as: application/json.

Data Transfer

HTTP request body will be used to send the JSON data.

Multi-part/form-data will be used to handle files.

Event Driven Notification

To integrate Unifier with third-party software seamlessly, the application stores the relevant events in the database and provides an integration end point making those events available to the external application.

All the information that is captured within the **Event Notifications** log, about each event, will be available by way of the ***Get Event Driven Notification*** (on page 592) REST service. This REST service helps you get all the notification events by using the available filter parameters.

The following data can be pulled about any event:

#	Attribute Name/Label in Unifier	JSON label
1	project_id	project_id
2	object_prefix	object_prefix
3	Shell Number	shell_number
4	Shell Name	shell_name
5	Object Type	object_type
6	Object Sub-Type	object_subtype
7	Object Name	object_name
8	Record Number	record_no
9	Event Date	event_date
10	WF Step From WF type BPs only	workflow_from
11	WF Step To WF type BPs only	workflow_to
12	WF Action Name WF type BPs only	workflow_action
13	Old Status	old_status
14	New Status	new_status

Get Event Driven Notification

`GET /ws/rest/service/v1/event/notification`

Purpose

Get all notification events based on user configuration/request.

Request Format

All parameters are optional.

Filter parameters include: `"object_type", "event_date", "object_name", "old_status","new_status", "record_no", "project_id" & "shell_number"`

Supported event date formats are: "2019-11-13T10:42" and with milliseconds "2019-11-13T10:42:19.799"

"max_records": (Optional) The maximum records that can be included in the request. If not provided, system returns 1000 records by default.

Sample Filter Condition

```
"filter":{event_date:"2015-07-04T12:08:56.235",object_type:"Business
Process", shell_number:"XTB-100"}
```

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>,
    "latest_event_date": <value>,
    "total_records": "<value>",
    "fetched_records": "<value>"
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response

This is an example of successful response with a status code 200.

```
{
"data":
     {
     "latest_event_date": "2019-12-05T16:01:04.062",
     "total_records": 2,
     "items": [
               {
                    "workflow_from": "Review",
                    "workflow_action": "To Approver",
                    "workflow_to": "Approve",
                    "object_type": "Business Process",
                    "shell_number": "XTB-100",
                    "object_prefix": "uxsov",
                    "project_id": 1002,
                    "object_name": "SOV-W-100",
                    "record_no": "uxsov-0031",
```

```
                    "event_date": "2019-12-05T11:16:26.918",
                    "object_subtype": "WorkFlow",
                    "old_status": "Rejected",
                    "new_status": "Pending"
               },
               {
                    "workflow_from": null,
                    "workflow_action": null,
                    "workflow_to": null,
                    "object_type": "Business Process",
                    "shell_number": "XTB-100",
                    "object_prefix": "uxnwf1",
                    "project_id": 1002,
                    "object_name": "Commit NWF1",
                    "record_no": "uxnwf1-0004",
                    "event_date": "2019-12-04T08:47:46.994",
                    "object_subtype": null,
                    "old_status": "Pending",
                    "new_status": "Pending"
               }
     ],
     "fetched_records": 2
},
"message": [ "Success"],
"status": 200
}
```


Funding

Get Funds List

`GET /ws/rest/service/v1/fund/{project_number}`

Purpose

Get all list of Funds

Request Format

All parameters should be URL encoded.

Path Parameter

- project_number: specify the project/shell number if you need to get project/shell level fund code. If no value is specified, the company-level fund code will be returned in the response.

URL Parameter

```
filter= { "category":"All Bond Fund Sources",     "status":"Active"    }
```

Category filter is the display label of the category and is case sensitive.

Only one category can be included in the filter of each request. Multiple categories filters are not supported.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response

```
{
  "data":
  [{   "id":3,
        "code":MaintainFund,
        "name":"MaintainFund",
        "category":"Grants",
        "description":"College Maintenance Fund",
        "status":"active"
      },
      {
        "id":4,
        "code":MiscFund,
        "fundname":"MiscFund",
```

```
        "fundcategory":"Grants",
        "description":"MiscellaenousFund",
        "status":"active"
      }
    ],
  "message":  ["Success"],
  "status":200
}
```

Create Fund

`POST /ws/rest/service/v1/fund/{project_number}`

Purpose

Create Fund Codes.

If the project number is specified and the fund does not exist at the company level, an error message is displayed.

Request Format

All parameters should be URL encoded.

Path Parameter

project_number: Specify the project/shell number to create the fund codes from company fund sheet. If no value is specified, the fund code will be created in company.

POST body is a JSON

Data JSON is a list of fund codes attributes.

> **Note**: POST call has input & output both as JSON in the body

For Company:

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request For Create Fund - Company

```
{"data":[{
        "name":"MiscFund",
        "category":"Grants",
        "description":"Miscellaneous Fund",
         "upermitIssuerURL": "http://google.com test",
      }
]
}
```

Parentid is not accepted for tree mode. If provided, will be ignored.

Sample Success Response For Create Fund - Company

```
{
    "data": [
       {
         "id":4,
         "code":Fund6,
         "name":"Fund6",
         "category":"Grants",
         "description":"MiscellaenousFund",
         "upermitIssuerURL": "http://google.com test",
         "status":"active"
      }
    ],
    "message":
        [

          { code: "Fund5","status": "1206","message":"Fund Code is
referenced in lineitems"},
          { code: "Fund6","status": "200","message":"success"}
    ],
    "status": 200
```

```
}
```

Sample Request For Create Fund - Project

For projects, the list of fund codes are required to create fund codes.

```
{"data":{
      "codes": ["Fund1","Fund2","Fund3"]
      }
}
```

Sample Partial Success Response For Create Fund - Project

```
{
    "data": {
         {
            "code": "Fund1",
            "id":31
         }
    },
    "message": [

          { code: "Fund2","status": "1201","message":"Fund Code used
already exists."},
          { code: "Fund1","status": "200","message":"success"}  ,
         { code: "Fund2","status": "1201","message":"Fund Code used
already exists."}
    ],
    "status": 3000
}
```

Multiple fund codes can be created in a single request. For Partial Success/Failure, status will be 3000.

Update Fund

```
PUT /ws/rest/service/v1/fund/
```

Purpose

Update company fund code attributes.

Request Format

All parameters should be URL encoded.

POST body is a JSON. Data will be list of fund code attributes to be updated at company level

> **Note**: POST call has input & output both as JSON in the body.

Update Fund

```
{"data":[{
        "code":"MiscFund",
        "category":"Grants",
        "description":"Miscellaneous Fund"
      }
]
}
```

Code, Name, ID, Status and orderid cannot be updated. If provided, they will be ignored.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response

```
{
    "data": [
          {
                "id":4,
                "code":MiscFund,
                "name":"MiscFund",
                "category":"Grants",
                "description":"MiscellaenousFund",
                "status":"active"
```

```
      }
    ],
    "message":
        [
          { code: "MiscFund","status": "200","message":"success"}
    ],
    "status": 200
}
```

Multiple fund codes can be updated in a single request.

Delete Fund

```
DELETE /ws/rest/service/v1/fund/{project_number}
```

Purpose

Deletes Fund codes

Request Format

All parameters should be URL encoded.

Path Parameter

project_number: Specify the project/shell number in which fund ids exists. If no value is specified, the fund ids will be deleted from company.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

```
{
"data":{
"codes": ["Fund9","Fund5","Fund6"]
```

```
}
}
```

Sample Partial Success Response

```
{
    "data": {
    },
    "message": [
          { code: "Fund5","status": "1206","message":"Fund Code is
referenced in lineitems"},
          { code: ""Fund6"","status": "200","message":"success"}  ,
          { code: "Fund9","status": "1201","message":"Fund Code do not
exist"}
    ],
    "status": 3000
}
```

Manual Fund Consumption

`POST /ws/rest/service/v1/fund/consumption/{project_number}`

Purpose

This API is used to perform the manual fund consumption on a record that is either in terminal state or non-terminal state. In case of transient state, this service can be used at both view only and action form of the BP.

Notes:

- Commitment funding is not supported by this service.
- Will support remove and replace of fund similar to UI.
- The uDesigner settings regarding funding option will also be validated as part of the service.
- All the BP records will be processed even if there are any failures in one of the record. Within the BP records all the line items will be processed. Failed record and line items will be reported in the response.
- The order of processing of the lineitem will be based on li_num value.
- This service will not roll up the amount to the fund sheet. Use update BP service or from UI when the BP is sent to next step or finish editing in case of Non workflow BP then the amount will be rolled up to the fund sheet.
- The integration user should have "Full Access" or "Update"

permission under "Business Process Services" to run this service.

Request Format

All parameters should be URL encoded.

Path Parameter

project_number(Required): Specify the project/shell number of the funding sheet.

POST body contains the JSON object with array of BP assignments.

"data" is a JSON array which can have one or more BP records fund consumption data.

"bpname" (Required): Name of the BP corresponding to the BP record.

"record_no" (Required): The BP record number for which the fund consumption has to be processed.

"funds" is a JSON array which contains one or more fund consumption details.

"code" (Required) : Specify the fund code associated with project/shell or CBS.

"amount" (Required) : Datatype is Double. Specify the assignment value to be consumed from the fund.

"_bp_lineitems" : JSON Array to specify the BP lineitems. Required for "Project Level - Manual(Assign by BP Line Item)" and "CBS Level - Manual" assignment setting.

"li_num" (Required) : Use the "li_num" in "_bp_lineitems" from the response to "GET /ws/rest/service/v1/bp/record/" REST call with lineitem":"yes" as part of the request.

"uuu_tab_id" (Required) : Use the "uuu_tab_id" in"_bp_lineitems" from the response to "GET /ws/rest/service/v1/bp/record/" REST call with lineitem":"yes" as part of the request.

"group_id" (Required if lineitem has group else optional) : Use the "group_id" in"_bp_lineitems" from the response to "GET /ws/rest/service/v1/bp/record/" REST call with lineitem":"yes" as part of the request.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

//Spends BP data is an example for Project Level - Manual(Assign by BP Record Total) assignment and //Payments BP data is an example for Manual (Assign by BP Line Item)" and "CBS Level - Manual" assignment.

```
{
   "data":[
      {
         "bpname":"Spends",
         "record_no":"uxsp-001",
         "funds":[
            {
               "code":"grants",
               "amount":300.25
            },
            {
               "code":"bonds",
               "amount":750.30
            }
         ]
      },
      {
         "bpname":"Payments",
         "record_no":"uxpa-001",
         "_bp_lineitems":[
            {
               "uuu_tab_id":"List of Contacts",
               "li_num":1,
               "group_id":60,
               "funds":[
                  {
                     "code":"grants",
                     "amount":250.80
                  },
                  {
```

```
                  "code":"bonds",
                  "amount":750.40
               }
            ]
         },
         {
            "uuu_tab_id":"List of Contacts",
            "li_num":2,
            "group_id":60,
            "funds":[
               {
                  "code":"grants",
                  "amount":250.40
               },
               {
                  "code":"bonds",
                  "amount":750.16
               }
            ]
         },
         {
            "uuu_tab_id":"List of Contacts",
            "li_num":3,
            "group_id":60,
            "funds":[
               {
                  "code":"federal",
                  "amount":650.45
               }
            ]
         }
      ]
   }
]
```

```
}
```

Sample Partial Success Response

```
{
   "data":[
      {
         "record_no":"uxsp-001",
         "fund_consumed":500.0
      },
      {
         "record_no":"uxpa-001",
         "_bp_lineitems":[
            {
               "uuu_tab_id":"List of Contacts",
               "li_num":1,
               "cbs_code":"1_D_D",
               "fund_consumed":500.0
            },
            {
               "uuu_tab_id":"List of Contacts",
               "li_num":2,
               "cbs_code":"2_D_D",
               "fund_consumed":450.0
            }
         ]
      }
   ],
   "message":[
      {
         "record_no":"uxsp-001",
         "funds":[
            {
               "code":"grants",
               "status":1214,
```

```
            "message":"Fund assignment amount is required."
         },
         {
            "code":"bonds",
            "status":200,
            "message":"Success"
         }
      ]
   },
   {
      "record_no":"uxpa-001",
      "_bp_lineitems":[
         {
            "uuu_tab_id":"List of Contacts",
            "li_num":1,
            "funds":[
               {
                  "code":"grants",
                  "status":1214,
                  "message":"Fund assignment amount is required."
               },
               {
                  "code":"bonds",
                  "status":200,
                  "message":"Success"
               }
            ]
         },
         {
            "uuu_tab_id":"List of Contacts",
            "li_num":2,
            "funds":[
               {
                  "code":"grants",
```

```
                    "status":200,
                    "message":"Success"
                 },
                 {
                    "code":"bonds",
                    "status":200,
                    "message":"Success"
                 }
              ]
           }
        ]
     }
  ],
  "status":3000
}
```


Get Fund Columns

GET /ws/rest/service/v1/fund/column/{project_number}

Purpose

Get the funding column data. This API can be used to get the fund balance as user can use a formula column to calculate the balance.

Request Format

All parameters should be URL encoded.

Path Parameter

project_number(Optional): Specify the project/shell number to get the project/shell funding data or empty to get the company data.

url parameter -

filter=

{

"column_names":["Manual Funding by Project" ,"Project Funding"],

"codes":["Fund0","Fund1","Fund2"]

}

Notes:

- Filter can be used to filter on column name and the fund code to get

the data.

- For funding sheets with tree as display mode, if parent fund code is given in filter condition, error will be thrown.
- If with given filter column name, multiple columns exists in the funding sheet then validation error will be thrown.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Note: If no columns are defined in the fund sheet then the REST service returns an empty data array in the response.

Sample Response

```
{
  "data":[
     {
        "Project Funding":{
        "Data Source" : "Project_Funding",
        "Funds":{
                  "fund0":101.00,
                  "fund1":100.2,
                  "fund2":100.3
                }
        }
     },
     {
        "Manual Funding by Project":{
        "Data Source" : "Manual_Funding",
        "Funds":{
```

```
                "fund0":101.00,
                "fund1":100.2,
                "fund2":100.3
             }
          }
       }
    ],
    "message":[
       "success"
    ],
    "status":"200"
}
```

Partial get is not allowed; that is, if one of the filter conditions fails, only an error message will be returned.

Get Fund Assignment Order

```
GET /ws/rest/service/v1/fund/order/{project_number}
```

Purpose

Get Fund Order

Request Format

All parameters should be URL encoded.

Path Parameter

project_number(Required): Specify the project/shell number of the funding sheet.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Status	Message	Condition
200	success	If all the data is retrieved in the response
500	exception message	If there is any exception when running this service
1240	Request is valid for Shell or Project.	
1207	Funding sheet do not exist.	If shell does not have funding sheet

Sample Success Response

```
{
   "data": [{"code_order": ["f1001", "f1002", "f1003"]}],
"message": ["success"],
    "status": 200
}
```

Get Fund Assignment Order for Cost Sheet

```
GET /ws/rest/service/v1/cost/fund/order/{project_number}
```

Purpose

Get Fund Order

Request Format

All parameters should be URL encoded.

Path Parameter

project_number(Required): Specify the project/shell number of the funding sheet

optional URL parameter

```
filter= {"cbs_codes":["code1" ,"code2"]}
```

If cbs_codes in filter do not have fund assigned to them, empty code_order List will return in response for those cbs_codes.

When filter is not provided, only those cbs_codes which have fund assigned to them will return in response.

Response Format

A JSON object is returned in the following format.

```
{
```

```
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response Without filter Condition

The response contains only those cbs_codes which have funds assigned.

```
{
   "data": [{
            "cbs_code": "cost_code_1",
            "code_order": ["f1001", "f1002", "f1003"]
        },
        {
            "cbs_code": "cost_code_2",
            "code_order": ["f1002", "f1004", "f1003"]
        }
 ],
  "message": ["success"],
  "status": 200
}
```

Sample Success Response With filter Condition

The response returns an empty code_order List for "cost_code_3". It does not have fund assigned.

```
{
   "data": [{
            "cbs_code": "cost_code_1",
            "code_order": ["f1001", "f1002", "f1003"]
        },
        {
            "cbs_code": "cost_code_2",
            "code_order": ["f1002", "f1004", "f1003"]
        },
```

```
        {
            "cbs_code": "cost_code_3",
            "code_order": []
        }
 ],
"message": [
        "success"
    ],
    "status": 200
}
```

Validation Messages and Status Codes

Status	Message	Condition
200	success	If all the data is retrieved in the response
500	exception message	If there is any exception when running this service
1240	Request is valid for Shell or Project.	
1207	Funding sheet do not exist.	If shell does not have funding Sheet
707	Cost sheet does not exist.	If shell does not have Cost Sheet

Update Fund Assignment Order

`PUT /ws/rest/service/v1/fund/order/{project_number}`

Purpose

Fund ordering to be used for fund assignment when auto order rule is specified for the business process. this API will allow user to change the fund order in the project/shell funding sheet.

Request Format

All parameters should be URL encoded. POST body (JSON)

Path Parameter

project_number(Required): Specify the project/shell number of the funding sheet.

The data object will contain all the fund codes listed in order.

Sample Request

```
{
    "data": [{"code_order": ["1001", "1002", "1003"]}]
}
```

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

If update for one code fails, all the changes will be rolled back.

Sample Success Response

```
{
    "data": [{"code_order": ["1001", "1002", "1003"]}],
    "message": ["success"],
    "status": 200
}
```

Validation Messages and Status Codes

Status	Message	Condition
200	success	If all the data is retrieved in the response

Update Fund Assignment Order for Cost Sheet

`PUT /ws/rest/service/v1/cost/fund/order/{project_number}`

Purpose

Fund ordering to be used for fund assignment when auto order rule is specified for the business process. this API will allow user to change the fund order in the project/shell funding sheet.

Request Format

All parameters should be URL encoded. POST body (JSON)

Path Parameter

project_number(Required): Specify the project/shell number of the funding sheet.

The data object will contain the list of all fund codes for a given cbs code listed in order.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request to Order Fund Codes by CBS codes

```
{
   "data": [
        {
            "cbs_code": "00000~~00500",
            "code_order": ["f1001", "f1002", "f1003"]
        },
        {
            "cbs_code": "00000~~005001",
            "code_order": ["f1002", "f1004", "f1003"]
        }
   ]
}
```

Sample Partial Success Response

```
{
    "data": [{
            "cbs_code": "00000~~00500",
            "code_order": ["f1001", "f1002", "f1003"]
```

```
        }
    ],
    "message": [  {
            "code": "00000~~005001",
            "message": "CBS Code is invalid.",
            "status": 1241
        },
        {
            "code": "00000~~00500",
            "message": "success",
            "status": 200
        }
    ],
    "status": 3000
}
```

Partial update is allowed.

Update Fund Status

`PUT /ws/rest/service/v1/fund/status/{project_number}`

Purpose

API will allow user to change the fund status in the project/shell funding sheet.

Request Format

All parameters should be URL encoded. POST body (JSON)

Path Parameter

project_number(Optional): Specify the project/shell number of the funding sheet. If not specified, will update company fund codes.

The data object will have fund IDs and the status to be updated to. It will take the ID as the key and the status as value.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
```

```
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

```
{
   "data": [
        {"code":"1001","status":"Active"},
        {"code":"1002","status":"Open"},
        {"code":"1003","status":"Inactive"}
   ]
}
```

Sample Partial Success Response

```
{
    "data": [
        {
            "code": "1003",
            "status": "Inactive"
        }
    ],
    "message": [
        {
            "code": "1001",
            "message": "Fund Code do not exist.",
            "status": "1203"
        },
        {
            "code": "1002",
            "message": "Status field value is not correct.",
            "status": "663"
        },
        {
            "code": "1003",
```

```
            "message": "success",
            "status": "200"
        }
    ],
    "status": 3000
}
```

Partial update is allowed.

Get Fund Consumption for CBS Level SOV (Auto-Order / Auto-Ratio)

```
GET /ws/rest/service/v1/fund/sov/consumption/{project_number}
```

Purpose

To Fetch assigned Funds to CBS in SOV of types "General Spends" & "Payment Applications".

Request Parameters

All parameters should be URL encoded.

Both input & output in JSON format.

Get Fund Consumption for CBS Level SOV input JSON

```
filter = {
    "commit_bp_name" : ["bp_name"],
    "record_no" : ["base_record_no"],
    "cbs_code" : ["100~~101"],
    "item#" : [1234],
    "sov_type" : "General Spends",
    "assignment_type": "SOV Auto-Order"
}
```

If a filter is not provided, all SOVs (from "General Spends" & "Payment Applications") will be fetched. If a filter is provided, the "AND" condition is seen.

Filter Condition Key Definitions

Key	Definition
commit_bp_name	Optional. The commit_bp_name references those BPs that have SOV Auto-Order, or SOV Auto-Ratio, fund assignment selected in Funding Sheet properties. One or more inputs are supported in filter.

Key	Definition
record_no	Optional. The base record number of the SOV sheet. One or more inputs are supported in filter. The record_no supports '%' wildcard character to filter record_no. For example: The "record_no" : "PO-001%", will fetch SOV details for all the records starting with "PO-001".
cbs_code	Optional. The CBS code to which the fund is assigned. One or more inputs are supported in filter.
item#	Optional. Uniquely identifiable row number "item#" in the SOV sheet. One or more inputs are supported in filter.
sov_type	Optional. Only one value is supported at a time in the filter: General Spends" or "Payment Applications".
assignment_type	Optional. Only one value is supported at a time in the filter: "SOV Auto-Order" or "SOV Auto-Ratio".

'Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response


```
{
  "data": {
    "Purchase Orders": {
      "sov_type": "General Spends",
      "assignment_type": "SOV Auto-Ratio",
      "record_no": {
        "PO-0002": {
          "rows": [
            {
              "item#": "000010",
              "cbs_code": "100~~101",
              "fund_assignment": [
                {
                  "fund_code": "funding",
                  "fund_ratio": "40",
                  "status" : "Active"
                },
                {
                  "fund_code": "State Funding",
                  "fund_ratio": "0",
                  "status" : "Inactive"
                },
                {
                  "fund_code": "Federal Funding",
                  "fund_ratio": "60",
                  "status" : "Active"
                }
              ]
            },
            {
              "item#": "000020",
              "cbs_code": "100~~102",
```

```
        "fund_assignment": [
          {
            "fund_code": "State Funding",
            "fund_ratio": "100",
            "status" : "Active"
          }
        ]
      },
      {
        "item#": "000030",
        "cbs_code": "100~~102",
        "fund_assignment": []
      },
      {
        "item#": "000040",
        "cbs_code": "300~~302",
        "fund_assignment": []
      }
    ]
  },
  "PO-0001": {
    "rows": [
      {
        "item#": "000010",
        "cbs_code": "100~~101",
        "fund_assignment": [
          {
            "fund_code": "funding",
            "fund_ratio": "100",
            "status" : "Active"
          }
        ]
      }
    ]
```

```
    }
  }
},
,
"Group_by_CBS_base_commit_bp": {
  "sov_type": "General Spends",
  "assignment_type": "SOV Auto-Order",
  "record_no": {
    "uxfund20-0000": {
      "rows": [
        {
          "item#": "000010",
          "cbs_code": "100~~101",
          "fund_assignment": [
            {
                "fund_code" : "funding",
                "status" : "Active"
            },
            {
                "fund_code" : "State Funding",
                "status" : "Active"
            }
            {
                "fund_code" : "Federal Funding",
                "status" : "Active"
            }
          ]
        }
      ]
    }
  }
},
"SM Cost PG Commit WF": {
  "sov_type": "Payment Applications",
```

```
      "assignment_type": "SOV Auto-Order",
      "record_no": {
        "uxfund4-0001": {
          "rows": [
            {
              "item#": "000010",
              "cbs_code": "100~~101",
              "fund_assignment": [
                    {
                        "fund_code" : "funding",
                        "status" : "Active"
                    }
              ]
            }
          ]
        }
      }
    }
  },
  "message": [    "Success"  ],
  "status": 200
}
```


Notes:

- To perform this call, the Integration user need to have the **Get** permission under **Cost CBS Services** permission (under "User Administration in Company Admin mode").
- Only the SOV sheets with "Fund Assignment" enabled (in the sheets) will be fetched as part of GET SOV consumption call.
- The SOV sheets that are funded from Commit Fund Sheet will not get fetched from this GET call.
- From the SOV sheet, the Summary rows will not be fetched. Only the rows with Cost code assigned to them (normal rows or breakdown of summary row) will be fetched in GET call.

Update Fund Consumption for CBS Level SOV (Auto-Order / Auto-Ratio)

```
PUT /ws/rest/service/v1/fund/sov/consumption/{project_number}
```

Purpose

To assign Funds to CBS in SOV of types "General Spends" & "Payment Applications".

Request Format

All parameters should be URL encoded.

Both input & output in JSON format in the body.

Sample Request For SOV Auto-Ratio

```
{
   "data":{
      "Purchase Orders" ( commit_bp_name ):{
         "sov_type":"General Spends", ( optional )
         "assignment_type":"SOV Auto-Ratio", ( optional )
         "record_no":{
            "PO-0002" ( SOV base record number ):{
               "rows":[
                  {
                     "item#":"000010",
                     "cbs_code":"100~~101", ( optional )
                     "fund_assignment":[
                        {
                           "fund_code":"funding",
                           "fund_ratio":"40",
                           "status" : "Active" ( optional )
                        },
                        {
                           "fund_code":"State Funding",
                           "fund_ratio":"0"
                           "status" : "Active"
                        },
                        {
                           "fund_code":"Federal Funding",
```

```
                        "fund_ratio":"60"
                     }
                  ]
               },
               {
                  "item#":"000020.00001",
                  "breakdown" : "BD1",
                  "cbs_code":"100~~102",
                  "fund_assignment":[
                     {
                        "fund_code":"State Funding",
                        "fund_ratio":"100"
                     }
                  ]
               }
            ]
         },
         "PO-0001":{
            "rows":[
               {
                  "item#":"000010",
                  "cbs_code":"100~~101",
                  "fund_assignment":[
                     {
                        "fund_code":"funding",
                        "fund_ratio":"100"
                     }
                  ]
               }
            ]
         }
      }
   }
```

```
}
```

SOV Auto-Order

fund_assignment can be provided in two ways:

1)

```
   {
       "data":{
         "Group_by_CBS_base_commit_bp" ( commit_bp_name ): {
           "sov_type": "General Spends",
           "assignment_type": "SOV Auto-Order",
           "record_no": {
               "uxfund20-0000" ( SOV base record number ): {
               "rows": [
                   {
                   "item#": "000010",
                   "cbs_code": "100~~101",
                   "fund_assignment": [
                       "funding",
                       "State Funding",
                       "Federal Funding"
                   ]
                   }
               ]
               }
           }
         }
      }
   }
```

2)

```
   {
       "data":{
           "Group_by_CBS_base_commit_bp": {
               "sov_type": "General Spends",
               "assignment_type": "SOV Auto-Order",
               "record_no": {
                   "uxfund20-0000": {
                       "rows": [
                           {
                               "item#": "000010",
```

```
                            "cbs_code": "100~~101",
                            "fund_assignment": [
                                {
                                    "fund_code" : "funding"
                                },
                                {
                                    "fund_code" : "State Funding"
                                },
                                {
                                    "fund_code" : "Federal Funding"
                                }
                            ]
                        }
                    ]
                }
            }
        }
    }
}
```

Notes:

- The "item#" is mandatory, to uniquely identify row to be updated, in SOV sheet.
- For SOV Auto-Order, if only one fund_code is provided in input without fund_ratio, the default 100% will be applied to that fund_code.
- SOV sheets configured to be funded from Commit Fund Sheet, will not get updated from this update call.
- To perform this call, the Integration user needs to have the **Get** permission under **Cost CBS Services** permission (under "User Administration in Company Admin mode").
- The update operation supports only one Commitment Business process in Input.
- Only the SOV sheets with "Fund Assignment" enabled (in the sheets) will be updated.
- In the SOV sheet, only the rows that have Cost code assigned to them are provided in input JASON.
- If a row is divided in breakdowns, both the "item#" and the "breakdown" values must be provided for identification for the row to be updated. For the SOV Auto-Order, if only one fund_code is provided in input, without fund_ratio, the default value of 100% will be applied to that fund_code.
- The SOV sheets that have been configured to be funded from the Commit Fund Sheet will not get updated from this update call.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Response message contains key as "<record_no>/<item#>/<breakdown, if present>

And "item_status", "item_message" contains individual response for that row in SOV record.

Sample Response For SOV Auto-Ratio

```
{
   "data":[
```

```
   ],
   "message":[
      {
         "PO-0002/000010" :
        {
                "item_status":200,
                "item_message":"success"
        }
        "PO-0002/000020.00001/BD1" :
        {
                "item_status":200,
                "item_message":"success"
        },
        "PO-0001/000010" :
        {
                "item_status":200,
                "item_message":"success"
         }
      }
   ],
   "status":200
}
```

Sample Response For SOV Auto-Order

```
{
   "data":[ ],
   "message":[
                {"uxfund20-0000/000010" :{
                                    "item_status":200,
                                    "item_message":"success"
                                  }
               }
            ],
   "status":200
```

}

Status codes are:

- 200, for success
- 3000, for Partial success.

Response Error Codes (Funding REST API Details)

Code	Message	Details
200	success	If the request is successful
500	Server Error, contact the system administrator.	If there is any exception when running this service
505	token+" is not present, it is required in the formula:"+value+" for field "+name	If the data provided is not correct like pull down with a label which does not exist.
602	Project/Shell Number is not correct	project number is incorrect or does not exist
603	Business Process Name is not correct	"bpname" is not specified in the input JSON and or is invalid value
651	CBS Code is not present.	"cbs_code" is not present in the input JSON
657	Invalid record_no.	"record_no" value is not specified in the input JSON or is invalid value.
663	Status field value is not correct.	If status value is not valid; that is, it is neither active nor inactive
701	Invalid Column Name	If column name given in the filter condition does not belong to funding sheet
707	Cost sheet does not exist.	If shell does not have Cost Sheet
811	Invalid Filter Condition.	
859	This record is already terminated.	When BP specified in the input JSON is terminated.
1101	Empty or Invalid JSON data.	Input request JSON is invalid
1202	Fund Code cannot be	

Code	Message	Details
	deleted as child funds exist.	
1203	Fund Code do not exist.	If the input fund code does not belong to project funding sheet or configured in cost sheet for CBS
1204	Fund Code is referenced in lineitems.	Fund Code is referenced in lineitems and has data.
1205	Fund Code has funds allocated manually.	
1206	This operation cannot be performed on Root/Unassigned/Parent Fund Code	
1207	Funding sheet do not exist	project fund sheet is not defined
1208	Fund Code is not valid.	
1209	Fund Code is required	When input JSON did not contain "code" parameter in "funds" array.
1210	Only manual funding assignment rule is supported	if the assignment rule for BP is not set for manual funding or it is a commitment funding BP.
1211	Only General Spends, Payment Application or Generic Cost BP are supported	BP name specified in the input is not a spends, payment or generic cost BP type
1212	code not present in input request	
1213		If Fund status is inactive
1214	Fund assignment amount is required.	
1215	Business Process line item is required.	"_bp_lineitems" is not specified in the input JSON for lineitem or CBS assignment
1216	li_num is not present	"li_num" is not present in the input JSON

Code	Message	Details
1217	li_num is Invalid.	"li_num" has invalid value like not a number or it does not belong to the BP lineitem
1218	Invalid CBS Code for lineitem.	For CBS manual assignment rule the "cbs_code" and "li_num" values in input JSON does not match
1219	Project status is Inactive.	
1220	Fund code cannot be empty	
1221	Consumption cannot be done on a negative fund balance	When the fund balance is negative
1222	Amount cannot be greater than fund balance	When input amount is greater than available fund balance
1223	Amount must be between	validation message based on the input amount and total fund amount and other values
1224	Amount cannot be greater than unassigned amount	Input amount is greater than unassigned amount
1225	Total amount must be between	Input amount is less or greater than the lineitem or record amount
1226	Funds are not provided for consumption.	"funds" array is not specified in the input JSON or it is empty
1227	Fund consumption is not allowed.	If funding option is disabled in uDesigner settings.
1228	Fund Code is used in Projects.	
1229	Fund amount is required.	"amount" value is not specified in the input JSON
1230	Fund amount is invalid.	"amount" value is invalid in input JSON
1231	Separator cannot be	

Code	Message	Details
	included in the value.	
1232	Fund consumption failed.	When there is an exception or error when processing the fund consumption
1233	No Fund Codes are assigned to CBS for this lineitem	If the CBS code provided in the input JSON does not have any fund code associated with it.
1234	Fund Code is not assigned to this CBS	If Fund Code is not assigned to CBS
1235	Multiple Fund Columns with same name exists	If multiple columns of a fund sheet exists with same column name.
1236	Tab name is invalid.	tab name specified in uuu_tab_id parameter is not a valid value.
1237	Fund codes specified in the given project are not valid:	Fund codes specified are in valid.
1238	All the fund codes in the project are not specified.	All the fund codes in the project are not specified.
1239	Fund Code specified is duplicate:	Fund code specified is duplicate
1409	Invalid fund_assignment.	
1410	Invalid funds: <fund names >	
1411	Inactive funds: <fund names>	
1412	Invalid fund_ratio : <input value>	
1413	Sum of fund_ratio is not 100% : < total value >	
1414	Invalid item# or breakdown.	
1415	Fund Assignment not enabled.	
1416	Invalid Commitment Business process.	
1240	Request is valid for Shell or Project.	Request is valid for Shell or Project.

Code	Message	Details
1241	CBS Code is invalid.	CBS Code is invalid.
1242	All the fund codes in the cbs code are not specified.	All the fund codes assigned in the cbs code are not specified.
1243	Fund consumption cannot be performed when the project/shell status is Inactive or View-Only or On-Hold.	Fund consumption is allowed only active project/shell status.
1244	Invalid Fund Category, Please provide correct Category.	Provide correct Category.
1245	Update cannot be performed when project/shell status is Inactive or View-Only or On-Hold.	
1246	group_id is Invalid.	group_id value specified in fund consumption call for lineitems is invalid.
1247	group_id is required.	group_id value is required for lineitem BP with groups when invoking the fund consumption call.
3000	Partial failure.	Partial failure of REST service
3002	Invalid input	If input JSON did not contain the "data" parameter
3002	Only one business process is supported.	
3002	No data in input JSON.	
3003	Business Process is not Active.	When fund consumption is performed on an inactive BP.

Non-Workflow BP Permissions

> **Note**: Ensure that the integration user has the required Business Process Permissions.

Get BP Records Permission

`POST /ws/rest/service/v1/bp/record/permission/list/{project_number}`

Purpose

Get non-workflow records permission (in user mode) of a specific BP in a shell based on shell number or from company level if project/shell number is not provided.

The input JSON shall provide various options to be considered for fetching the data.

Request Format

All parameters should be URL encoded.

Path Parameter

project_number: Specify the Project number in which the records exists; if not provided, records are fetched from Company Level.

POST body is a JSON

> **Note**: POST call has input & output both as JSON in the body.

For one or more records

```
{
   "bpname" : "Vendors",
   "record_no" : ["VEN-0023","VEN-0024"],
    "filter_condition" : "status=Active"
}
```

For only one record

```
{
   "bpname" : "Vendors",
   "record_no" : "VEN-0023",
    "filter_condition" : "status=Inactive"
}
```

"bpname" is mandatory input parameter.

In the request body record_no can be provided in below two formats:

1. "record_no": ["VEN-0023","VEN-0024"] For one or more records.

2. "record_no": "VEN-0023" For only one record.

"record_no" is optional. If no value is specified, all the BP record permission will be returned.

"filter_condition" is optional parameter and filter is supported only on "status" field. It will be "AND" condition between "record_no" & "filter_condition".

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response

```
{
    "data": {
        "VEN-0024": {
            "record_status": "Active",
            "permissions": [
                {
                    "login_name": "coadmin",
                    "full_name": "Company Administrator",
                    "permission": {
                        "edit_data": "1",
                        "view": "1",
                        "modify_permission": "0"
                    },
                    "type": "U"
                },
                {
                    "full_name": "Space Planners",
                    "group_name": "Space Planners",
                    "permission": {
```

```
                        "edit_data": "1",
                        "view": "1",
                        "modify_permission": "1"
                    },
                    "type": "CG"
                }
            ]
        },
        "VEN-0023": {
            "record_status": "Terminated",
            "permissions": [
                {
                    "login_name": "coadmin",
                    "full_name": "Company Administrator",
                    "permission": {
                        "edit_data": "1",
                        "view": "1",
                        "modify_permission": "1"
                    },
                    "type": "U"
                }
            ]
        }
    },
    "message": [
        "success"
    ],
    "status": 200
}
```


Update/Modify BP Records Permission

```
PUT /ws/rest/service/v1/bp/record/permission/{project_number}
```

Purpose

Update non-workflow records permission (in user mode) of a specific BP in a shell based on shell number or from company level if project/shell number is not provided.

The input JSON shall provide various options to be considered for fetching the data

Request Format

All parameters should be URL encoded.

Path Parameter

project_number: Specify the Project number in which the records exists; if not provided, records are fetched from Company Level.

POST body is a JSON

> **Note**: POST call has input & output both as JSON in the body.

```
{
    "options":{
        "bpname" : "simple1"
    },
    "data": {
        "record_no": ["uxss1-0007", "uxss1-0006", "uxss1-0005"]
        "permissions": [
                {
                    "login_name": "coadmin",
                    "type": "U",
                    "full_name": "Company Administrator",
                    "permission": {
                        "edit_data": "1",
                        "modify_permission": "0",
                        "view": "1"
                    }
                }
                {
                    "full_name": "Building Managers",
                    "group_name": "Building Managers",
                    "permission": {
                        "edit_data": "1",
```

```
                        "view": "1",
                        "modify_permission": "0"
                    },
                    "type": "PG"
                }
            ]
        }
}
```

Here "bpname" & "record_no" are mandatory in options.

In the request body record_no can be provided in below two formats

1. "record_no": ["uxss1-0007", "uxss1-0006", "uxss1-0005"] For one or more records.

2. "record_no": "uxss1-0007" For only one record.

If record_no not provided, error response will be provided to user to provide record_number.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response

```
{
    "data": {
        "uxss1-0007": {
            "record_status": "Active",
            "permissions": [
                {
                    "login_name": "firstname",
                    "full_name": "Firstname Lastname",
                    "permission": {
                        "edit_data": "1",
```

```
                    "view": "1",
                    "modify_permission": "1"
                },
                "type": "U"
            },
            {
                "login_name": "coadmin",
                "full_name": "Company Administrator",
                "permission": {
                    "edit_data": "1",
                    "view": "1",
                    "modify_permission": "0"
                },
                "type": "U"
            },
            {
                "full_name": "Building Managers",
                "group_name": "Building Managers",
                "permission": {
                    "edit_data": "1",
                    "view": "1",
                    "modify_permission": "0"
                },
                "type": "PG"
            }
        ],
        "updated_users": [
            "coadmin"
        ],
        "updated_groups": [
            "Building Managers"
        ]
    },
    "uxss1-0005": {
```

```
        "record_status": "Terminated",
        "permissions": [
            {
                "login_name": "coadmin",
                "full_name": "Company Administrator",
                "permission": {
                    "edit_data": "1",
                    "view": "1",
                    "modify_permission": "1"
                },
                "type": "U"
            }
        ],
        "updated_users": [],
        "updated_groups": []
    },
    "uxss1-0006": {
        "record_status": "Active",
        "permissions": [
            {
                "login_name": "coadmin",
                "full_name": "Company Administrator",
                "permission": {
                    "edit_data": "1",
                    "view": "1",
                    "modify_permission": "0"
                },
                "type": "U"
            },
            {
                "login_name": "firstname",
                "full_name": "Firstname Lastname",
                "permission": {
                    "edit_data": "1",
```

```
                        "view": "1",
                        "modify_permission": "1"
                    },
                    "type": "U"
                },
                {
                    "full_name": "Building Managers",
                    "group_name": "Building Managers",
                    "permission": {
                        "edit_data": "1",
                        "view": "1",
                        "modify_permission": "0"
                    },
                    "type": "PG"
                }
            ],
            "updated_users": [
                "coadmin"
            ],
            "updated_groups": [
                "Building Managers"
            ]
        }
    },
    "message": [
        "success"
    ],
    "status": 200
}
```


Create (Add User/Group) BP Records Permission

```
POST /ws/rest/service/v1/bp/record/permission/{project_number}
```

Purpose

Add User/Group to non-workflow records permission (in user mode) of a specific BP in a shell based on shell number or from company level if project/shell number is not provided.

The input JSON shall provide various options to be considered for fetching the data

Request Format

All parameters should be URL encoded.

Path Parameter

project_number: Specify the Project number in which the records exists; if not provided, records are fetched from Company Level.

POST body is a JSON

> **Note**: POST call has input & output both as JSON in the body.

```
{
    "options":{
        "bpname" : "Vendors"
    },
    "data": {
        "record_no": ["VEN-002598"],
        "permissions": [
                {
                    "login_name": "PU1",
                    "type": "U",
                    "full_name": "P1 user",
                    "permission": {
                        "edit_data": "1",
                        "modify_permission": "1",
                        "view": "1"
                    }
                }
            ]
        }
}
```

Here "bpname" & "record_no" are mandatory in options.

In the request body record_no can be provided in below two formats.

1. "record_no": ["uxss1-0007", "uxss1-0006", "uxss1-0005"] For one or more records.

2. "record_no": "uxss1-0007" For only one record.

If record_no not provided, error response will be provided to user to provide record_number.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response

```
{
    "data": {
        "VEN-0025": {
            "record_status": "Active",
            "added_users": [PU1],
            "permissions": [
                {
                    "login_name": "PU1",
                    "full_name": "PU1 P",
                    "permission": {
                        "edit_data": "1",
                        "view": "1",
                        "modify_permission": "1"
                    },
                    "type": "U"
                },
                {
                    "login_name": "coadmin",
                    "full_name": "Company Administrator",
                    "permission": {
```

```
                        "edit_data": "1",
                        "view": "1",
                        "modify_permission": "1"
                    },
                    "type": "U"
                },
                {
                    "full_name": "Space Planners",
                    "group_name": "Space Planners",
                    "permission": {
                        "edit_data": "1",
                        "view": "1",
                        "modify_permission": "1"
                    },
                    "type": "CG"
                }
            ],
            "added_groups": []
        }
    },
    "message": [
        "success"
    ],
    "status": 200
}
```


Delete (Remove User/Group) BP Records Permission

`DELETE /ws/rest/service/v1/bp/record/permission/{project_number}`

Purpose

Add User/Group to non-workflow records permission (in user mode) of a specific BP in a shell based on shell number or from company level if project/shell number is not provided.

The input JSON shall provide various options to be considered for fetching the data.

Request Format

All parameters should be URL encoded.

Path Parameter

project_number: Specify the Project number in which the records exists; if not provided, records are fetched from Company Level.

POST body is a JSON

> **Note**: POST call has input & output both as JSON in the body.

```
{
    "options":{
        "bpname" : "Vendors"
    },
    "data": {
        "record_no": ["VEN-002589"],
         "user_names" : ["coadmin","donna","PU1"]
        }
}
```

Here "bpname" & "record_no" are mandatory in options.

In the request body record_no can be provided in below two formats

1. "record_no": ["uxss1-0007", "uxss1-0006", "uxss1-0005"] For one or more records.

2 "record_no": "uxss1-0007" For only one record.

If record_no not provided, error response will be provided to user to provide record_number.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response

```
{
```

```
    "data": {
        "VEN-0025": {
            "deleted_groups": [],
            "record_status": "Active",
            "deleted_users": [
                "PU1 P"
            ]
        }
    },
    "message": [
        "success"
    ],
    "status": 200
}
```

Representational State Transfer (REST) Web Services V2

HTTP Methods

GET, POST, PUT,DELETE

Authentication

Prerequisite for invoking any REST service - Integration user and JWT auth token should be available.

Integration User:

All REST services should be accessed via Integration User.

Create an Integration User at Company Workspace → User Administration → Integration User.

Make sure the integration user has the required module permissions enabled.

Integration user token expiration can be set from the Integration user UI. User can create, update Auth Token expiry date to - days, hours, and minutes.

1 to 500 is a valid value for Expiry Duration.

By default, the value is set to 180 days.

Auth Token:

Authentication token is required to access the REST services.

Token is set to be valid for date available in the response.

The token can be obtained by the following URL.

http://<host>:<port>/ws/rest/service/v2/login

Method - GET

Headers -Authorization:Basic <Basic Auth of integration user>

(To Generate one via Postman REST client - Go to 'Authorization' tab → choose 'Basic Auth' in 'Type' dropdown → Enter Integration user name and password -. Click 'Update Request'. This generates the necessary Authorization header in 'Headers' tab.)

If the user name/password combination shared in the above Authorization Header is not valid/correct, the service throws **401** status code(Unauthorized)

Other conditions that are checked are - Integration user must be active.

The expiry date is displayed as per the user date format preferences set in the Integration UI.

Sample response -


```
 {
"expiryDate": "05/18/2021",
"Timezone": "(UTC-08:00) Pacific Time (US & Canada)",
"expiryTime": "05/18/2021 11:44 AM",
"status": 200,
```

```
"token":
"eyJ0eXAiOiJEQiJ9.eyJ1c2VybmFtZSI6IiQkZGVsdDMifQ==.02318C44-9F3A-F93
1-3F14-C6FA7576F55E7D8D9975C46B5805179BD10D890DF15F"
}
```

Token can now be used in all REST services for authentication mechanism. All REST services should have the following set in the 'Header'.

Header - Sample

Key	Value
Authorization	Bearer eyJ0eXAiOiJEQiJ9.eyJ1c2VybmFtZSI6IiQkZGVsdDMifQ==.02318C44-9F3A-F931-3F14-C6FA7576F55E7D8D9975C46B5805179BD10D890DF15F

Notes:

- Validity of the token is as given in the login. The same can be re-used for subsequent REST requests until the expiry date.
- User can change Expiry Date to minutes, hours, and days in UI. REST will retain those settings and generate new token with given Expiry Duration in the UI.
- If the Authorization token is not valid/correct for subsequent REST requests, those services will throw **401** status code(Unauthorized)
- If the Authorization token is correct but user (for whom token is generated) does not have permission for any REST request, that service will throw **403** status code(Forbidden).
- For every login REST service initiated, a new token is generated, old token is invalidated.

Data

If integration interface is defined for BP, the integration form will be used for this service; otherwise, all custom DEs defined in the form will be used.

For update, specify only the DEs to be updated.

Data Format

Input and output data will be in JSON format. Set HTTP header **Content-Type : application/json**.

Data Transfer

- HTTP request body will be used to send the JSON data.
- multipart/form-data will be used to handle files.

Standards

Get Method -

Will be used to request data from a source when no parameters are sent in the body.

> **Note:** Do not use the word "get" in the URL.

URL Encoding GET call parameter values

All parameters in GET call must be URL encoded.

For Postman REST client, use below code in "**pre-request Script**" tab, which will trim extra spaces in params key and encode special characters in params value.

```
pm.request.url.query.all().forEach( (param) =>
{
        param.key = param.key.trim();
        param.value = encodeURIComponent(param.value );
    }
);
```

POST Method -

POST can be used to retrieve data with parameters in body.

Can be used for CREATE, Retrieve data with parameters.

For example, getBprecordlist - bpname is mandatory and needs to be a sent in request body.

> **Note:** Do not use the word "create" in the URL.

To distinguish create and get data with parameters term list can be added in the URL.

PUT Method -

PUT is used update data.

> **Note:** Do not use the word "update" in the URL.

Logging:

All REST operations get audited in internal audit log table (not accessible to User, as it is not business case audit logs).

A background CRON job is created to run on every SUNDAY 4:00AM (server time zone) which will purge older REST internal audit logs which goes beyond 25000 audit rows.

IP Filtering:

Customers can provide the list of IP addresses that can consume Unifier REST Web Services (V1 or V2). IP Filtering option is available in the portal in Company Properties - Security Tab.

If the 'IP Filtering Policy' field is checked in company properties, the remote host will be validated based on their IP Version

1. If the remote host is IPv4 version then it will be checked against the list of IP addresses provided in the IPv4 text box.
2. If the remote host is of IPv6 version it will be checked against the list of IPs provided in the IPV6 text box.

3. If IP addresses are provided in CIDR format then the remote host IP will be checked against all addresses that come in the range.

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Business Processes

If a BP has integration option, that BP can use BP services.

> **Note:** By design, there are no web services available for the Request for Bid (RFB) business process.

Antivirus scanning of files

If you are using an Oracle Cloud-based deployment, Unifier includes a virus scanner. To prevent virus attacks from infiltrating your system through external files, the system scans each file that is uploaded. Until the scan is completed, the file remains in a Scan Pending state.

At a minimum, the system scans each file that is uploaded, submitted, or attached through the following channels:

- Document Manager
- Business processes (BPs)
- Image pickers
- Cells within forms or sheets
- Custom Templates for use with custom prints and reports
- XML Localization Interchange File Format (XLIFF) files used for translation support
- Custom Help files, such as those provided through a uDesigner object
- Bluebeam sessions
- Webservice Get calls
- Import of comma-separated values (CSV) or Microsoft Excel files

Depending on how your environment is configured, the following actions might occur:

- If the virus scanner detects an issue with a file that a user is uploading, the system sends an email to the user who uploaded the file and the designated company contact. Depending on the location of the infected file, the system might display a bug icon (if the system is configured to display alerts) or an ellipsis icon (if the system is configured to prevent the display of alerts).
- If a user tries to access or download a file that has not yet been scanned and the environment is configured to display alerts, the system displays a Confirmation message that requires a response to continue. If a Confirmation message appears, the user can wait and try to access the file later.
- If the virus scanner detects an issue with a file that a user is trying to view or download, an alert is displayed that indicates the file contains a threat. If multiple files were selected for download, the uninfected files are downloaded.

> **Note:** If you are using an Oracle Cloud-based Unifier deployment, see **Edit Company (Security Tab)** in the *Unifier General Administration Guide* for more information about configuring the environment to allow the display of messages regarding Scan Pending states.

Create BP Record

```
POST /ws/rest/service/v2/bp/record
```

Purpose

Creates a record in a specific BP in a shell based on a "project_number" (provided in input JSON options) or from company-level if the project/shell number is not provided.

The input JSON provides various options to be considered for fetching the data.

This V2 service will use the step form (creation form) to create the BP record. All the required fields and validation rules will be run against the creation form used in the workflow details.

Prerequisites

Auto-Creation setting is mandatory in Shell or Company BP Setup in the Admin mode.

Request Format

All parameters should be URL encoded.

Both input & output in JSON format in the body.

Notes:

- If the record_no is not provided, an auto-generated record_no is assigned to the record. If a unique "record_no" is provided, the record will be created with a record number.

- Field properties such as Read-only in Step Form (Creation Form) will be retained. The Field mandatory in Step Form must be present in the Integration Form with **Direction** set as **Both** or **Input**.
- Field direction provided in Integration Form will be retained.
- If "workflow_details" is not specified, **Auto Creation** settings defined in **Setup** for the **Business Process** will be used.
- If "workflow_details" is specified, the three parameters, "user_name," "workflow_name," and "action_name" are mandatory.
- Summary CBS codes cannot be included in Cost allocation line items when creating or updating commits of SPA BP records through REST services.
- If data elements are set to auto populate from Base Commit as well as auto-populate from SOV in the payment business process standard line items, then the values from Base Commit takes precedence for auto-population. Also, the auto-populate from Base Commit or Change Commit takes precedence in payment line items if 0 or no value is provided via integration.

Request Parameters

- In input JSON options, the "project_number" specifies the shell in which the records exist; if the "project_number" is not provided, the records are from Company Level.
- The "bpname" is mandatory and is part of options form parameter.

Behavior of the Due Date (due_date) Field

When you create workflow BP records through a REST service, the system currently sets the Due Date automatically based on the **Workflow Settings**; the Due Date provided in the input request is ignored.

When you update workflow BP records through a REST service, you cannot change the Due Date.

Sample Request

```
{
   "options":{
      "project_number" : "P-0002",
      "bpname":"Vendors",
      "workflow_details":{
         "workflow_name":"workflow_name",
         "user_name":"first_name  last_name",
         "action_name":"action_name"
      }
   },
   "data":[
      {
```

```
        "record_no":"hello",
        "uuu_user_id":"a@abc.com",
        "title":"v-00101",
        "uveLicenseNoTB16":null,
        "uuu_contact_company":"v-00101",
        "uveCOIAmoutCA":0,
        "_bp_lineitems":[
           {
              "uirCntctFstNmTB":"a",
              "uuu_tab_id":"List of Contacts",
              "title":"t",
              "short_desc":"Vendor Contact",
              "uriCntctLstNmTB":"b",
              "ugenStatePD":null,
              "ugenZipCodeTXT16":null,
              "uveEmailTB120":"hello@abc.com",
              "ugenAddress3TXT120":null
           }
        ],
        "creator_id":"Company Administrator",
        "uveVendorIDTB16":"v-00101",
        "uuu_contact_first_name":"a",
        "status":"Active"
     }
  ]
}
```


Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response


```
{
    "data": [],
    "message": [
        {
                "_record_status": "success",
                "uuu_user_id": "a@abc.com",
                "uuu_record_last_update_date": "04-12-2018",
                "uveFaxTB16": null,
                "uveCertificateNoTB64": null,
                "uvePrimaryContactTB64": "a",
                "title": "v-00101",
                "uveLicenseNoTB16": null,
                "uuu_contact_company": "v-00101",
                "uveCOIAmoutCA": 0,
                "_bp_lineitems": [
                    {
                        "uirCntctFstNmTB": "a",
                        "uuu_user_workphone": null,
                        "uuu_tab_id": "List of Contacts",
                        "title": "t",
                        "ugenAddress1TXT120": null,
                        "ugenAddress2TXT120": null,
                        "ugenCountryPD": null,
                        "ugenCityTXT50": null,
                        "short_desc": "Vendor Contact",
                        "uriCntctLstNmTB": "b",
                        "ugenStatePD": null,
                        "ugenZipCodeTXT16": null,
                        "uveEmailTB120": "hello@abc.com",
                        "ugenAddress3TXT120": null
```

```
    }
],
"uvePolicyNoTB32": null,
"record_no": "hello",
"_attachment": [
    {
        "file_name": "new 1.txt"
    }
],
"uveVendorTypePD": "Architect",
"ugenCityTXT50": null,
"uveCoiExpDOP": null,
"uuu_dm_publish_path": "v_path",
"uuu_contact_last_name": "b",
"ugenZipCodeTXT16": null,
"uveEmailTB120": "a@abc.com",
"ugenAddress3TXT120": null,
"uveReferenceIdTB16": null,
"uuu_creation_date": "04-12-2018",
"ugenRemarksTB4000": null,
"uvePhoneTB64": null,
"uveTaxIDTB16": null,
"uveMinorityBusCB": 0,
"uveInsuranceCoTB32": null,
"ugenExpirationDateDOP": null,
"uveWomanOwnedCB": 0,
"uveVendorNameTB50": "v-00101",
"ugenAddress1TXT120": null,
"uveDisadvantagedBusCB": 0,
"ugenDiscipline": null,
"creator_id": "Company Administrator",
"ugenAddress2TXT120": null,
"ugenCountryPD": null,
"uveVendorIDTB16": "v-00101",
```

```
                "ugenStatePD": null,
                "uuu_contact_first_name": "a",
                "status": "Active"
            }
    ],
    "status": 200
}
```


Sample Failed Response

This is an example of a failed response


```
   {
       "data": [],
       "message": [
           {
               "_record_status": "Error Business Process record_no hello
   already exists. ",
               "record": {
                   "uuu_user_id": "a@abc.com",
                   "uuu_record_last_update_date": "04-12-2018",
                   "uveFaxTB16": null,
                   "uveCertificateNoTB64": null,
                   "uvePrimaryContactTB64": "a",
                   "title": "v-00101",
                   "uveLicenseNoTB16": null,
                   "uuu_contact_company": "v-00101",
                   "uveCOIAmoutCA": 0,
                   "_bp_lineitems": [
                       {
                           "uirCntctFstNmTB": "a",
                           "uuu_user_workphone": null,
                           "uuu_tab_id": "List of Contacts",
                           "title": "t",
                           "ugenAddress1TXT120": null,
                           "ugenAddress2TXT120": null,
                           "ugenCountryPD": null,
                           "ugenCityTXT50": null,
                           "short_desc": "Vendor Contact",
                           "uriCntctLstNmTB": "b",
                           "ugenStatePD": null,
```

```
            "ugenZipCodeTXT16": null,
            "uveEmailTB120": "hello@abc.com",
            "ugenAddress3TXT120": null
        }
    ],
    "uvePolicyNoTB32": null,
    "record_no": "hello",
    "_attachment": [
        {
            "file_name": "new 1.txt"
        }
    ],
    "uveVendorTypePD": "Architect",
    "ugenCityTXT50": null,
    "uveCoiExpDOP": null,
    "uuu_dm_publish_path": "v_path",
    "uuu_contact_last_name": "b",
    "ugenZipCodeTXT16": null,
    "uveEmailTB120": "a@abc.com",
    "ugenAddress3TXT120": null,
    "uveReferenceIdTB16": null,
    "uuu_creation_date": "04-12-2018",
    "ugenRemarksTB4000": null,
    "uvePhoneTB64": null,
    "uveTaxIDTB16": null,
    "uveMinorityBusCB": 0,
    "uveInsuranceCoTB32": null,
    "ugenExpirationDateDOP": null,
    "uveWomanOwnedCB": 0,
    "uveVendorNameTB50": "v-00101",
    "ugenAddress1TXT120": null,
    "uveDisadvantagedBusCB": 0,
    "ugenDiscipline": null,
    "creator_id": "Company Administrator",
    "ugenAddress2TXT120": null,
    "ugenCountryPD": null,
    "uveVendorIDTB16": "v-00101",
    "ugenStatePD": null,
    "uuu_contact_first_name": "a",
    "status": "Active"
```

```
            }
        }
    ],
    "status": 3000
}
```

Validations

The following validations are performed:

- The workflow name is valid and active.
- User is an assignee (user/group) in the Creation step of the workflow.
- Action name is a valid outgoing link from the Creation step.
- Checks whether the selected user's company exists. If not, adds the Partner Company as a Member Company.
- BP records will be created successfully:
  - If a single user with a specific First Name and Last Name exists in a project with a status of **Active**/**On-hold**.
  - If multiple users exist with identical First Name and Last Name, but only one user's status is **Active**/**On-hold** while all other users have an **Inactive** status.
- BP records will not be created if multiple users exist with identical First Name and Last Name, with a status of **Active**/**On-hold**/**Inactive**.

Error Messages

The following error messages may display:

- Enter a valid or an active user. (Missing key or invalid user name)
- The workflow name is not valid. (Missing key or invalid/inactive workflow name)
- The user does not have an active workflow template. (User is not an assignee on the creation step)
- The workflow action name is not valid. (Missing key or invalid outgoing action name from creation step)

Update BP Record

`PUT /ws/rest/service/v2/bp/record`

Purpose

Update a record in a specific BP in a shell based on "project_number" (provided in input JSON options) or from company level if the project/shell number is not provided.

The input JSON shall provide various options to be considered for fetching the data.

This V2 service will use the step form to update the BP record. All the required fields and validation rules run against the step form used in the workflow details. The form in the End step is a View form and cannot be updated.

Prerequisite

Auto Creation settings are mandatory in **Setup** of the **Business Process** for the Shell or Company in the **Admin** mode.

Request Format

All parameters should be URL encoded.

Both input & output in JSON format in the body.

Notes:

- Field properties such as Read-only in step form will be retained. The Field mandatory in step form must be present in the Integration Form with direction set as "both" or "input".
- The Field direction provided in the Integration form will be retained.
- In input JSON options, the "project_number" specifies the shell in which the records exists; if the "project_number" is not provided, the records are from company-level.
- The "record_no" is mandatory and is part of data.
- The "bpname" is mandatory and is part of options form parameter.
- The system validates whether the selected user's company exists. If not, the system adds the Partner Company as a Member Company.
- If a Workflow BP record is already accepted by an assignee, the Update REST call will fail with error message: Record has already been accepted by Task Assignee.
- The WFCurrentStepName and WFActionName are part of the "workflow_details" and are for Workflow-type BPs. If the values for the WFCurrentStepName and WFActionName are provided, the record will be updated and sent to the next step of the workflow. If the values for the WFCurrentStepName and WFActionName are not provided, the record will be updated but will remain in same workflow step.
- The LineItemIdentifier is a part of options form parameter. The LineItemIdentifier value will be the DE name present in the lineItem. The DE name present in the lineItem should be present in the "data" (input record JSON) with its value.
- When you update a record using this REST service to add standard lines, do not include LineItemIdentifier as part of the options in the request. Updating the standard lines in a Payment Application BP is not currently supported.
- The optimizedPickerExecution is a part of the options form parameter. The optimizedPickerExecution controls the pickers 'populate' execution, on the existing line items. The values can be True or False.

  When the value is True, the Upper Form, or the Lineitem Form, input JSON is required to send the Datapicker DE tag (with values) to trigger 'populate' on the other DEs that are configured per design. If the input JSON does not contain the Datapicker DE property, the system will not process the Datapicker DE as a part of the update to 'populate' the values from the data picker record to the current record and lineitems that get updated.

  When the value is False, or non-existent, the system will continue to process according to the existing behavior.
- Summary CBS codes cannot be included in Cost allocation line items when creating or updating commits of SPA BP records through REST services.

- If data elements are set to auto populate from Base Commit as well as auto populate from SOV in the payment business process standard line items, then the values from Base Commit takes precedence for auto-population. Also, the auto populate from Base Commit or Change Commit takes precedence in payment line items if 0 or no value is provided via integration.
- When a required data element (DE) is not included or included with a blank value in the request, a successful response is returned by the REST service. However, an error message is displayed when a required Rich Text Editor (RTE) data element (DE) is not included in the request, or included with a blank value.
- When BP records and line items, that have auto-populate data elements defined from pickers (all data pickers, BP picker), are updated through integration (Rest API and Excel update), the auto-populate data elements from the picker are *not* updated when the input *req*uest does not include a picker value

  > **Note**: Auto-population is also not triggered if the picker element is in the Main form of the record, when the input r*equ*est (Rest API and Excel update) includes the same value for the picker.

  Additionally, when a picker (destination picker) in a detail form is designed to be is auto-populated from another picker (source picker) from the **Upper** form, the system auto-populates the data elements from the former picker (destination picker) when a line item is created, only if a picker value (from the source picker) exists in the **Upper** form.
- The "Enable Step for Integration" option in the Workflow BP setup is not available for the REST integration.
- BP records will be created successfully:
  - If a single user with a specific First Name and Last Name exists in a project with a status of **Active**/**On-hold**.
  - If multiple users exist with identical First Name and Last Name, but only one user's status is **Active**/**On-hold** while all other users have an **Inactive** status.
- BP records will not be created if multiple users exist with identical First Name and Last Name, with a status of **Active**/**On-hold**/**Inactive**.

Behavior of the Due Date (due_date) Field

When you create workflow BP records through a REST service, the system currently sets the Due Date automatically based on the **Workflow Settings**; the Due Date provided in the input request is ignored.

When you update workflow BP records through a REST service, you cannot change the Due Date.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
```

```
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

Send a request in the following format:

```
{
   "options":{
      "project_number" : "P-0002",
      "bpname":"line6",
      "LineItemIdentifier":"upwoLISAS",
      "optimizedPickerExecution" : "true",
      "workflow_details":{
         "WFCurrentStepName":"Step 4",
         "WFActionName":"Line 3"
      }
   },
   "data":[
      {
         "ugenUserIDPK":null,
         "_bp_lineitems":[
            {
               "ugenShellPK":"/AP1",
               "uuu_tab_id":"Standard",
               "short_desc":"desc3_m11",
               "upwoLISAS":"0001",
               "uuu_line_item_status":"Active"
            }
         ],
         "record_no":"uxli6-0020",
         "title":"new title"
      }
   ]
}
```

Adding LineItemIdentifiers in the BP Design

To add LineItemIdentifier in the BP design:

1) Create a custom DE whose Data definition is 'Sys Auto Sequence'.
2) Add this DE to the detail form of the BP whose line items needs to be updated.
3) Go to the **Company Workspace** tab and switch to **Admin** mode.
4) In the left Navigator, select **uDesigner**, and then select **Business Processes**.
5) Open the BP.
6) From the toolbar, click **Open**, and select **Data Elements** to open the **Data Elements Configuration** window.
7) Click the Auto Sequence tab and click Add.
8) Select the Data element added in the detail form and select the level as 'Per record'.
9) Provide the start value and click Create (next to format), add the parameter 'Sys Sequence counter', and click OK.
10) Select Integration, select Detail, and then add the DE.
11) Set the "Direction" to "Both" for that DE.
12) Complete and deploy the BP.
13) In the body of the request add this DE name as Lineitem identifier and send the request.

1)

Delete the Line-Item, using Update Request

To delete the line-Item using update request, the field "_delete_line_item" should be used (value of which will be comma separated values of LineItemIdentifier DE) as shown in the following example:

Sample Delete Request

```
{
   "options":{
      "project_number" : "P-0002",
      "bpname":"line6",
      "LineItemIdentifier":"upwoLISAS"
   },
   "data":[
      {
         "ugenUserIDPK":null,
         "_delete_bp_lineitems":"0002,0001,0003",
         "record_no":"uxli6-0021",
         "title":"title_m112244"
```

```
      }
   ]
}
```

Sample Update Response

```
{
    "data": [],
    "message": [
        {
            "_record_status": "success",
            "record": {
                "ugenUserIDPK": null,
                "record_no": "uxli6-0021",
                "title": "title_m112244"
            }
        }
    ],
    "status": 200
}
```

Unsupported Data Elements in Line Items

If the following Data Elements are present in the Line Items, they will not be updated.

- bitemid
- budgetid
- sovitemid
- uuu_cm0_picker
- xid
- ds_code
- fsm_lineitem_id
- asm_lineitem_id
- uuu_lat
- uuu_long
- uuu_company_account_name
- uuu_company_account_code
- uuu_company_acc_codepicker
- uuu_activity_picker
- uuu_asset_picker
- ref_bpo_lineitem

- ref_bpo
- ref_rfb
- refid
- uuu_sovlinum
- otherCompanyID
- uuu_costcode_picker
- scheduled_value
- uuu_asset_cum_depreciation
- uuu_asset_curr_period_dep
- uuu_asset_net_book_value
- uuu_unit_price
- currencyid
- due_date
- uuu_asset_calc_as_of_date
- uuu_from_date
- uuu_issue_date
- uuu_last_update_date
- uuu_rfb_due_date
- uuu_to_date
- uuu_week_picker
- uuu_datasource
- uuu_depreciation_mtd
- uuu_line_item_status
- row_id
- uuu_bid_count
- uuu_bidders_count
- uuu_planning_item_picker
- uuu_proj_picker
- record_no
- uuu_resc_picker
- uuu_role_picker
- uuu_commit_short_desc
- end_date
- uuu_creation_date
- uuu_asset_name
- uuu_commit_breakdown
- uuu_asset_code
- uuu_asset_navigation_code
- uuu_timescale_units
- creator_id
- wpid

- uuu_cost_costattribute
- uuu_cost_external_refid
- uuu_cost_status
- uuu_cost_cost_type
- uuu_cost_description
- uuu_cost_item
- uuu_cost_owner
- uuu_cost_code
- uuu_dm_create_date
- uuu_file_create_date
- uuu_file_issue_date
- uuu_dm_percent_complete
- uuu_file_size
- uuu_file_version
- uuu_dm_description
- uuu_dm_node_path
- uuu_dm_node_name
- uuu_file_revision_no
- uuu_file_title
- uuu_dm_create_by
- uuu_file_create_by
- uuu_fund_fundcategory
- uuu_fund_long_desc
- uuu_fund_description
- uuu_fund_fundname
- uuu_fund_code
- uuu_description
- uuu_resc_nwd_type
- uuu_resc_interest
- uuu_resc_proficiency
- uuu_resc_skill
- uuu_role_status
- uuu_role_name
- uuu_resc_capacity
- uuu_user_address
- uuu_user_city
- uuu_user_country
- uuu_user_email
- uuu_user_fax
- uuu_user_firstname
- uuu_user_homephone

- uuu_user_lastname
- uuu_user_mobilephone
- uuu_user_pager
- uuu_user_state
- uuu_user_timezone
- uuu_user_title
- uuu_user_workphone
- uuu_user_zip
- uuu_resc_status
- uuu_resc_code
- uuu_resc_name
- uuu_early_finish
- uuu_early_start,uuu_finish
- uuu_late_finish
- uuu_late_start
- uuu_start
- uuu_act_pct_complete
- uuu_activity_work_hrs
- uuu_duration
- uuu_fixed_cost
- uuu_float
- uuu_labor_cost
- uuu_non_labor_cost
- uuu_total_cost
- uuu_activity_id
- uuu_flag_complete
- uuu_flag_milestone
- uuu_activity_resources
- uuu_dependency_type
- uuu_activity_name
- uuu_outline_code
- uuu_cost_li_type

Create BP Record with Attachment

`POST /ws/rest/service/v2/bp/record/file`

Purpose

Creates a record with attachments for the following types of BPs:

- Shell-level BPs based on project_number
- Company-level BPs if project/shell number is not provided

This REST service uses the Step form (Creation form) to create a BP record. All the required fields and validation rules run against the Creation form used in the workflow details.

Notes:

- Only one record with attachments is supported in this call.
- For Document-type BPs, new attachments can be added to existing line items only in the Custom Detail Form. If the attachment already exists for a record, it will be ignored and will not get revised.

Prerequisites

Ensure the following:

- **Auto Creation** settings are mandatory in the shell or company **Setup** for the **Business Process** (**Admin** mode).
- For all BPs, select the **Adding Attachment** check box in the Upper Form or Detail Form.
- To add attachments to line item records in Document-type BPs, select the **Allow Attachments to Line Items** check box only in the Custom Detail Form in uDesigner.

Request Format

All parameters must be URL encoded. Both input & output in JSON format in the body. The input JSON provides various options to fetch the data.

Notes:

- If "adding attachment" is disabled in Upper Form or Detail Form, and you try to attach file to the corresponding form, the record creation will fail.
- Only one record creation with attachments is supported in this call.
- If the creation form has the "add attachment" disabled, the files will not get attached.
- If the "_attachment" (outside data list) for zip file is not provided, the record will be created without attachment.
- Field properties such as Read-only in step form (Creation Form) will be retained. The Field mandatory in step form must be present in Integration Form with direction set as "both" or "input".
- Field direction provided in Integration form will be retained.
- In input JSON options, the "project_number" specifies the shell in which the records exist; if the "project_number" is not provided, the records are from Company Level.
- If the "record_no" is not provided, an auto-generated "record_no" will be assigned to the record. If a unique "record_no" is provided, the record will be created with a record number.
  - The "bpname" is mandatory and is part of options form parameter.
  - If the "workflow_details" is not specified, the auto-creation settings, defined on the BP setup, will be used.

- If the "workflow_details" are specified, the three params "user_name," "workflow_name," and "action_name" are mandatory.

- If data elements are set to auto-populate from Base Commit as well as auto-populate from SOV in the payment business process standard line items, then the values from Base commit takes precedence for auto-population. Also, the auto-populate from Base Commit or Change commit takes precedence in payment line items if 0 or no value is provided via integration.

If files from the Document Manager (DM) need to be attached, the field **"_attachment_from_dm"** must be used. Within that field, a string of comma separated file IDs for the relevant DM files must be provided to the **"dm_file_ids"** field. Up to 50 files can be attached from the DM at the record and each line item level. Text Type BPs are not currently supported. Validations performed for attaching files from the DM using file IDs include:

- If the integration user has DM permissions.
- If the string provided to field "dm_file_ids" is a string of comma separated file IDs.
- If the file IDs provided are valid file IDs.
- Record and line item each have up to 50 files attached from the DM.
- Example input field: "*_attachment_from_dm*":{"*dm_file_ids*":"*123,345*"}

Behavior of the Due Date (due_date) Field

When you create workflow BP records through a REST service, the system currently sets the Due Date automatically based on the **Workflow Settings**; the Due Date provided in the input request is ignored.

When you update workflow BP records through a REST service, you cannot change the Due Date.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

```
{
    "options": {
        "project_number" : "P-0002",
        "bpname": "Vendors",
        "workflow_details":
```

```
    {
        "workflow_name": "workflow_name",
        "user_name" : "first_name  last_name",
        "action_name" : "action_name"
    }
},
"data": [
        {
            "uuu_user_id": "a@abc.com",
            "uuu_record_last_update_date": "04-12-2018",
            "uveFaxTB16": null,
            "uveCertificateNoTB64": null,
            "uvePrimaryContactTB64": "a",
            "title": "v-00101",
            "uveLicenseNoTB16": null,
            "uuu_contact_company": "v-00101",
            "uveCOIAmoutCA": 0,
            "_bp_lineitems": [
                {
                    "uirCntctFstNmTB": "a",
                    "uuu_user_workphone": null,
                    "uuu_tab_id": "List of Contacts",
                    "title": "t",
                    "ugenAddress1TXT120": null,
                    "ugenAddress2TXT120": null,
                    "ugenCountryPD": null,
                    "ugenCityTXT50": null,
                    "short_desc": "Vendor Contact",
                    "uriCntctLstNmTB": "b",
                    "ugenStatePD": null,
                    "ugenZipCodeTXT16": null,
                    "uveEmailTB120": "hello@abc.com",
                    "ugenAddress3TXT120": null,
            "_attachment":[
```

```
        {
            "file_name":"new 1.txt",
            "title":"file_title",
            "issue_date":"05/06/2018",
            "revision_no":"100"
        }
        ],
          "_attachment_from_dm":{
                "dm_file_ids":"456,789"
            }
        }
    ],
    "uvePolicyNoTB32": null,
    "uveVendorTypePD": "Architect",
    "ugenCityTXT50": null,
    "uveCoiExpDOP": null,
    "uuu_dm_publish_path": "v_path",
    "uuu_contact_last_name": "b",
    "ugenZipCodeTXT16": null,
    "uveEmailTB120": "a@abc.com",
    "ugenAddress3TXT120": null,
    "uveReferenceIdTB16": null,
    "uuu_creation_date": "04-12-2018",
    "ugenRemarksTB4000": null,
    "uvePhoneTB64": null,
    "uveTaxIDTB16": null,
    "uveMinorityBusCB": 0,
    "uveInsuranceCoTB32": null,
    "ugenExpirationDateDOP": null,
    "uveWomanOwnedCB": 0,
    "uveVendorNameTB50": "v-00101",
    "ugenAddress1TXT120": null,
    "uveDisadvantagedBusCB": 0,
    "ugenDiscipline": null,
```

```
                "creator_id": "Company Administrator",
                "ugenAddress2TXT120": null,
                "ugenCountryPD": null,
                "uveVendorIDTB16": "v-00101",
                "ugenStatePD": null,
                "uuu_contact_first_name": "a",
                "status": "Active",
                "_attachment":[
                    {
                        "file_name":"new 1.txt",
                        "title":"file_title1",
                        "issue_date":"05/06/2018",
                        "revision_no":"300"
                    },
                    {
                        "file_name":"exp1.txt",
                        "title":"file_title2",
                        "issue_date":"05/06/2018",
                        "revision_no":"200"
                    }

                    ],
                "_attachment_from_dm":{
                    "dm_file_ids":"123,345"
                }
            }
        ]
    ,
    "_attachment": {
             "zipped_file_name" : "create.zip",
             "zipped_file_size": "746089",
             "zipped_file_content" :"<base64_encoded string of create.zip
file>"
    }
```

```
}
```

Sample Success Response


```
{
    "data": [],
    "message": [
        {
            "uuu_user_id": "a@abc.com",
            "uuu_record_last_update_date": "04-12-2018",
            "uveFaxTB16": null,
            "uveCertificateNoTB64": null,
            "uvePrimaryContactTB64": "a",
            "title": "v-00101",
            "uveLicenseNoTB16": null,
            "uuu_contact_company": "v-00101",
            "_record_status": "success",
            "uveCOIAmoutCA": 0,
            "_bp_lineitems": [
                {
                    "uirCntctFstNmTB": "a",
                    "uuu_user_workphone": null,
                    "uuu_tab_id": "List of Contacts",
                    "title": "t",
                    "ugenAddress1TXT120": null,
                    "_attachment_from_dm":{
                        "dm_file_ids":"456,789"
                    },
                    "_attachment": [
                        {
                            "issue_date": "05/06/2018",
                            "revision_no": "100",
                            "file_name": "new 1.txt",
                            "title": "file_title"
```

```
            }
        ],
        "ugenAddress2TXT120": null,
        "ugenCountryPD": null,
        "ugenCityTXT50": null,
        "short_desc": "Vendor Contact",
        "uriCntctLstNmTB": "b",
        "ugenStatePD": null,
        "ugenZipCodeTXT16": null,
        "uveEmailTB120": "hello@abc.com",
        "ugenAddress3TXT120": null
    }
],
"uvePolicyNoTB32": null,
"_attachment_from_dm":{
        "dm_file_ids":"123,345"
 }
"_attachment": [
    {
        "issue_date": "05/06/2018",
        "revision_no": "300",
        "file_name": "new 1.txt",
        "title": "file_title1"
    },
    {
        "issue_date": "05/06/2018",
        "revision_no": "200",
        "file_name": "exp1.txt",
        "title": "file_title2"
    }
],
"record_no": "VEN-0086",
"uveVendorTypePD": "Architect",
"ugenCityTXT50": null,
```

```
            "uveCoiExpDOP": null,
            "uuu_dm_publish_path": "v_path",
            "uuu_contact_last_name": "b",
            "ugenZipCodeTXT16": null,
            "uveEmailTB120": "a@abc.com",
            "ugenAddress3TXT120": null,
            "uveReferenceIdTB16": null,
            "uuu_creation_date": "04-12-2018",
            "ugenRemarksTB4000": null,
            "uvePhoneTB64": null,
            "uveTaxIDTB16": null,
            "uveMinorityBusCB": 0,
            "uveInsuranceCoTB32": null,
            "ugenExpirationDateDOP": null,
            "uveWomanOwnedCB": 0,
            "uveVendorNameTB50": "v-00101",
            "ugenAddress1TXT120": null,
            "uveDisadvantagedBusCB": 0,
            "ugenDiscipline": null,
            "creator_id": "Company Administrator",
            "ugenAddress2TXT120": null,
            "ugenCountryPD": null,
            "uveVendorIDTB16": "v-00101",
            "ugenStatePD": null,
            "uuu_contact_first_name": "a",
            "status": "Active"
        }
    ],
    "status": 200
}
```


Sample Failed Response


```
   {
       "data": [],
       "message": [
```

```
        {
            "_record_status": "Error Business Process record_no hello
already exists. ",
            "record": {
                "uuu_user_id": "a@abc.com",
                "uuu_record_last_update_date": "04-12-2018",
                "uveFaxTB16": null,
                "uveCertificateNoTB64": null,
                "uvePrimaryContactTB64": "a",
                "title": "v-00101",
                "uveLicenseNoTB16": null,
                "uuu_contact_company": "v-00101",
                "uveCOIAmoutCA": 0,
                "_bp_lineitems": [
                    {
                        "uirCntctFstNmTB": "a",
                        "uuu_user_workphone": null,
                        "uuu_tab_id": "List of Contacts",
                        "title": "t",
                        "ugenAddress1TXT120": null,
                        "ugenAddress2TXT120": null,
                        "ugenCountryPD": null,
                        "ugenCityTXT50": null,
                        "short_desc": "Vendor Contact",
                        "uriCntctLstNmTB": "b",
                        "ugenStatePD": null,
                        "ugenZipCodeTXT16": null,
                        "uveEmailTB120": "hello@abc.com",
                        "ugenAddress3TXT120": null
                    }
                ],
                "uvePolicyNoTB32": null,
                "record_no": "hello",
                "_attachment_from_dm": {
                        "dm_file_ids": "115"
                 }
                "_attachment": [
                    {
                        "file_name": "new 1.txt"
                    }
```

```
                    ],
                    "uveVendorTypePD": "Architect",
                    "ugenCityTXT50": null,
                    "uveCoiExpDOP": null,
                    "uuu_dm_publish_path": "v_path",
                    "uuu_contact_last_name": "b",
                    "ugenZipCodeTXT16": null,
                    "uveEmailTB120": "a@abc.com",
                    "ugenAddress3TXT120": null,
                    "uveReferenceIdTB16": null,
                    "uuu_creation_date": "04-12-2018",
                    "ugenRemarksTB4000": null,
                    "uvePhoneTB64": null,
                    "uveTaxIDTB16": null,
                    "uveMinorityBusCB": 0,
                    "uveInsuranceCoTB32": null,
                    "ugenExpirationDateDOP": null,
                    "uveWomanOwnedCB": 0,
                    "uveVendorNameTB50": "v-00101",
                    "ugenAddress1TXT120": null,
                    "uveDisadvantagedBusCB": 0,
                    "ugenDiscipline": null,
                    "creator_id": "Company Administrator",
                    "ugenAddress2TXT120": null,
                    "ugenCountryPD": null,
                    "uveVendorIDTB16": "v-00101",
                    "ugenStatePD": null,
                    "uuu_contact_first_name": "a",
                    "status": "Active"
                }
            }
        ],
        "status": 3000
    }
```


or if zip_file_size of uploaded zip file is not correct:


```
    {
        "data": [],
        "message": [
            "Uploaded Zip file is invalid"
        ],
```

```
    "status": 3003
}
```

Validations

The following validations are performed:

- If the user is a valid active user in the project.
- The workflow name is valid and active.
- User is an assignee (user/group) on the creation step of the workflow.
- Action name is valid outgoing link from the creation step.
- BP records will be created successfully:
  - If a single user with a specific First Name and Last Name exists in a project with a status of **Active**/**On-hold**.
  - If multiple users exist with identical First Name and Last Name, but only one user's status is **Active**/**On-hold** while all other users have an **Inactive** status.
- BP records will not be created if multiple users exist with identical First Name and Last Name, with a status of **Active**/**On-hold**/**Inactive**.

Error Messages

The following error messages may display:

- Enter a valid or an active user. (Missing key or invalid user name)
- The workflow name is not valid. (Missing key or invalid/inactive workflow name)
- The user does not have an active workflow template. (User is not an assignee on the creation step)
- The workflow action name is not valid. (Missing key or invalid outgoing action name from creation step)
- If the "_attachment" (outside data list) for zip file is not provided, the record will be created without attachment.

Update BP Record with Attachment

```
PUT /ws/rest/service/v2/bp/record/file
```

Purpose

Update a record with attachments for the following types of BPs:

- Shell-level BPs based on a project_number
- Company-level BPs if the project/shell number is not provided

This REST service uses the Step form to update the BP record. All required fields and validation rules run against the Step form used in the workflow details. The form in the End step is a View Form, and cannot be updated.

Notes:

- Only one record update with attachment is supported in this call.
- For Document-type BPs, new attachments can be added to existing line items only in the Custom Detail Form. If the attachment already exists for a record, it will be ignored and will not get revised.

Prerequisite

To add attachments to line item records, ensure you have selected the **Allow Attachments to Line Items** checkbox for only Custom Detail Form in uDesigner.

Request Format

All parameters should be URL encoded. Both input & output in JSON format in the body.

Notes:

- If the file exists in a record, that file will be ignored and will not get revised.
- If step form has "add attachment" disabled, files will not get attached.
- If the "_attachment" (outside data list) for zip file is not provided, the record will be updated without attachment.
- Field properties such as Read-only in step form will be retained. The Field mandatory in step form must be present in Integration Form with the direction set as "both" or "input".
- Field direction provided in Integration form will be retained.
- Auto-Creation setting is mandatory in Shell or Company BP Setup in the Admin mode.
- In input JSON options, the "project_number" specifies the shell in which the records exist; if the "project_number" is not provided, the records are from Company Level.
- The "record_no" is mandatory and is a part of data.
- The "bpname" is mandatory and is a part of options form parameter.
- If a Workflow BP record is already accepted by an assignee, the Update REST call will fail with error message: "Record has already been accepted by Task Assignee".
- The WFCurrentStepName and WFActionName are part of the "workflow_details" and are for Workflow type BPs. If the values for WFCurrentStepName and WFActionName are provided, the record will be updated and sent to next step of the workflow. If the values for WFCurrentStepName and WFActionName are not provided, the record will be updated but it will remain on the same workflow step.
- The LineItemIdentifier is part of options form parameter. The LineItemIdentifier value will be DE name present in the lineItem. That DE should be present in "data" (input record JSON) with its value.
- If data elements are set to auto-populate from Base Commit as well as auto-populate from SOV in the payment business process standard line items, then the values from Base commit takes precedence for auto-population. Also, the auto-populate from Base Commit or Change commit takes precedence in payment line items if 0 or no value is provided via integration.
- The "Enable Step for Integration" option in the Workflow BP setup is not available for the REST integration.
- BP records will be created successfully:
- If a single user with a specific First Name and Last Name exists in a project with a status of **Active**/**On-hold**.
- If multiple users exist with identical First Name and Last Name, but only one user's status is **Active**/**On-hold** while all other users have an **Inactive** status.

- BP records will not be created if multiple users exist with identical First Name and Last Name, with a status of **Active**/**On-hold**/**Inactive**.

If files from the Document Manager (DM) need to be attached, the field "**_attachment_from_dm**" must be used. Within that field, a string of comma separated file IDs for the relevant DM files must be provided to the "**dm_file_ids**" field. Up to 50 files can be attached from the DM at the record and each line item level. Text Type BPs are not currently supported. Validations performed for attaching files from the DM using file IDs include:

- If you have the appropriate DM permissions.
- If the string provided to field "**dm_file_ids**" is a string of comma separated file IDs.
- If the file IDs provided are valid.
- Record and line item each have up to 50 files attached from the DM.
- Example input field: `"_attachment_from_dm":{"dm_file_ids":"123,345"}`

Behavior of the Due Date (due_date) Field

When you create workflow BP records through a REST service, the system currently sets the Due Date automatically based on the **Workflow Settings**; the Due Date provided in the input request is ignored.

When you update workflow BP records through a REST service, you cannot change the Due Date.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

```
{
   "options":{
      "project_number" : "P-0002",
      "bpname":"line6",
      "LineItemIdentifier":"upwoLISAS",
      "workflow_details":{
         "WFCurrentStepName":"Step 4",
```

```
      "WFActionName":"Line 3"
   }
},
"data":[
   {
      "ugenUserIDPK":null,
      "_bp_lineitems":[
         {
            "ugenShellPK":"/AP1",
            "uuu_tab_id":"Standard",
            "short_desc":"desc3_m11",
            "upwoLISAS":"0001",
            "uuu_line_item_status":"Active",
             "_attachment_from_dm": {
                    "dm_file_ids": "115"
              }
         }
      ],
      "record_no":"uxli6-0020",
      "title":"new title",
      "_attachment":[
         {
            "file_name":"file_1.txt",
            "title":"file_title1",
            "issue_date":"05/06/2018",
            "revision_no":"300"
         },
         {
            "file_name":"file_2.txt",
            "title":"file_title2",
            "issue_date":"05/06/2018",
            "revision_no":"200"
         }
      ],
```

```
       "_attachment_from_dm": {
            "dm_file_ids": "114"
         }
    }
   ],
   "_attachment":
   {
        "zipped_file_name" : "zip_file_name.zip",
        "zipped_file_size": "746089",
        "zipped_file_content" :"<base64_encoded string of create.zip
file>"
    }
}
```

Adding LineItemIdentifier in the BP Design

To add LineItemIdentifier in the BP design:

1) Create a custom DE with DD: Sys Auto Sequence.
2) Add this DE to the Detail Form of the BP with the line items that need to be updated.
3) Go to the **Company Workspace** tab and switch to **Admin** mode.
4) In the left Navigator, select **uDesigner**, and then select **Business Processes**.
5) Open the BP.
6) From the toolbar, click **Open**, and select **Data Elements** to open the **Data Elements Configuration** window.
7) Click the Auto Sequence tab and click Add.
8) Select the data element added in the Detail Form and select the level as: Per Record.
9) Provide the start value and click Create.
10) Add the parameter "Sys Sequence counter" and click OK.
11) Select Integration, select Detail, and then add the DE.
12) Set the "Direction" to "Both" for that DE.
13) Complete and deploy the BP.
14) In the body of the request, add the DE name as Lineitem identifier and send the request.

Delete the Line-Item Using Update Request

To delete the line-Item using update request, the field "_delete_line_item" should be used (value of which will be comma separated values of LineItemIdentifier DE) as shown in the following example:

Sample: *Delete line-item input*

```
{
   "options":{
      "project_number" : "P-0002",
      "bpname":"line6",
      "LineItemIdentifier":"upwoLISAS"
   },
   "data":[
      {
         "ugenUserIDPK":null,
         "_delete_bp_lineitems":"0002,0001,0003",
         "record_no":"uxli6-0021",
         "title":"title_m112244"
      }
   ]
}
```

Sample Success Response

```
{
   "data":[
   ],
   "message":[
      {
         "_record_status":"success",
         "record":{
            "ugenUserIDPK":null,
            "record_no":"uxli6-0021",
            "title":"title_m112244"
         }
      }
   ],
   "status":200
}
```

Sample Failed Response

If zip_file_size of uploaded zip file is not correct, a status code and message displays in the following format:

```
{
    "data": [],
    "message": [ "Uploaded Zip file is invalid"    ],
    "status": 3003
}
```

Data Elements in Line Items

If the following Data Elements are present in the Line Items, they will not be updated.

- bitemid
- budgetid
- sovitemid
- uuu_cm0_picker
- xid
- ds_code
- fsm_lineitem_id
- asm_lineitem_id
- uuu_lat
- uuu_long
- uuu_company_account_name
- uuu_company_account_code
- uuu_company_acc_codepicker
- uuu_activity_picker
- uuu_asset_picker
- ref_bpo_lineitem
- ref_bpo
- ref_rfb
- refid
- uuu_sovlinum
- otherCompanyID
- uuu_costcode_picker
- scheduled_value
- uuu_asset_cum_depreciation
- uuu_asset_curr_period_dep
- uuu_asset_net_book_value
- uuu_unit_price
- currencyid
- due_date

- uuu_asset_calc_as_of_date
- uuu_from_date
- uuu_issue_date
- uuu_last_update_date
- uuu_rfb_due_date
- uuu_to_date
- uuu_week_picker
- uuu_datasource
- uuu_depreciation_mtd
- uuu_line_item_status
- row_id
- uuu_bid_count
- uuu_bidders_count
- uuu_planning_item_picker
- uuu_proj_picker
- record_no
- uuu_resc_picker
- uuu_role_picker
- uuu_commit_short_desc
- end_date
- uuu_creation_date
- uuu_asset_name
- uuu_commit_breakdown
- uuu_asset_code
- uuu_asset_navigation_code
- uuu_timescale_units
- creator_id
- wpid
- uuu_cost_costattribute
- uuu_cost_external_refid
- uuu_cost_status
- uuu_cost_cost_type
- uuu_cost_description
- uuu_cost_item
- uuu_cost_owner
- uuu_cost_code
- uuu_dm_create_date
- uuu_file_create_date
- uuu_file_issue_date
- uuu_dm_percent_complete
- uuu_file_size

- uuu_file_version
- uuu_dm_description
- uuu_dm_node_path
- uuu_dm_node_name
- uuu_file_revision_no
- uuu_file_title
- uuu_dm_create_by
- uuu_file_create_by
- uuu_fund_fundcategory
- uuu_fund_long_desc
- uuu_fund_description
- uuu_fund_fundname
- uuu_fund_code
- uuu_description
- uuu_resc_nwd_type
- uuu_resc_interest
- uuu_resc_proficiency
- uuu_resc_skill
- uuu_role_status
- uuu_role_name
- uuu_resc_capacity
- uuu_user_address
- uuu_user_city
- uuu_user_country
- uuu_user_email
- uuu_user_fax
- uuu_user_firstname
- uuu_user_homephone
- uuu_user_lastname
- uuu_user_mobilephone
- uuu_user_pager
- uuu_user_state
- uuu_user_timezone
- uuu_user_title
- uuu_user_workphone
- uuu_user_zip
- uuu_resc_status
- uuu_resc_code
- uuu_resc_name
- uuu_early_finish
- uuu_early_start,uuu_finish

- uuu_late_finish
- uuu_late_start
- uuu_start
- uuu_act_pct_complete
- uuu_activity_work_hrs
- uuu_duration
- uuu_fixed_cost
- uuu_float
- uuu_labor_cost
- uuu_non_labor_cost
- uuu_total_cost
- uuu_activity_id
- uuu_flag_complete
- uuu_flag_milestone
- uuu_activity_resources
- uuu_dependency_type
- uuu_activity_name
- uuu_outline_code
- uuu_cost_li_type

Payment Application with Auto-populate from SOV and Commits

Any auto-populate from SOV, Base Commit, or Change Commit will take precedent over the input provided in the JSON request file.

Get BP Record Permission

`POST /ws/rest/service/v2/bp/record/wf/permission`

Purpose

Retrieve a list of users associated to a single workflow business process record of an active project/shell with **Active**, **View-Only**, or **On-Hold** statuses, including the assignee as well as CCs of the record.

Request Format

Request parameters are specified as a JSON Map {} - structure : { "options":{} }

In options JSON map : "options":{ "project_number": "<value>", "bpname": "<value>", "record_no": "<value>" },

Any other fields in the options map will be ignored.

Project number is an optional input. BP name and record number are mandatory.

Get BP Record Permission - Sample Input JSON

```
{
    "options": {
        "project_number" : "RE00000",
        "bpname" : "Action Items",
        "record_no" : "AI-000734"
    }
}
```

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>,
    "rest_audit_id": <rest_audit_id value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Response Format

```
{
           "data": [
                      {
                           "record_id" : "<Internal record ID for the
specified BP record>",
                           "record_no" : "<Record number for the
specified BP record>",
                           "record_status" : "<BP record status>",
                           "users" : <List of maps>
                      }
                 ],
            "message": [ "<message string>"],
           "status":<integer value>,
           "rest_audit_id" : <ID from the rest audit table matching this
request>
```

```
    }
```

Message will be present if status is not 200; otherwise, it will be "success".

Sample Success Response

```
{
  "data":
  [
    {
        "record_id" : "798",
        "record_no" : "AI-000734",
        "record_status" : "Pending",
        "users" : [
            {
                "username", "coadmin",
                "fullname", "Company Administrator"
            },
            {
                "username", "testuser1",
                "fullname", "Test User1"
            }
        ]
    }
  ],
  "message":
  [
    "success"
  ],
  "status":200,
  "rest_audit_id" : 720
}
```

Sample Failed Response

```
{
    "data": [],
    "message": [
```

```
        "Business Process Name is required."
    ],
    "status": 603,
    "rest_audit_id": 721
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request:

Field Name	Use-case Scenario	Status Code	Error Message
	Project status is inactive.		Update cannot be performed when project/shell status is Inactive or View-Only or On-Hold.

Update BP Record Permission

`PUT /ws/rest/service/v2/bp/record/wf/permission`

Purpose

Add or remove users from a single workflow business process record of an active project/shell.

> **Note**: When a user from a company is removed from a record, and that user is the only representative of their company on that record, the company's permission to access the record is also removed to maintain data security and integrity. If a user from the same company is added back to the record at any other phase, the previously removed user will begin to see the entry in the log again.

Request Format

Request parameters are specified as a JSON Map {} - structure : { "options":{} }

In options JSON map : { "project_number": "<value>", "bpname": "<value>", "record_no": "<value>", "add_users" : <List of user names>, "remove_users" : <List of user names> }

Project number is an optional input. Add users and remove users are also optional, but one or the other is required. If using add users or remove users, user name is a mandatory input. BP name and record number are mandatory.

Sample Request

```
{
```

```
    "options": {
        "project_number" : "RE00000",
        "bpname" : "Action Items",
        "record_no" : "AI-000734",
        "add_user" : ["testuser1", "coadmin"],
        "remove_user" : ["testuser2", "testuser3"]
    }
}
```

Response Format

A JSON object is returned in the following format.

```
{
    "data": [{"record_id" : "<Internal record ID for the specified BP record>"}],
    "message": [ "<message string>"],
    "status":<integer value>,
    "rest_audit_id" : <ID from the rest audit table matching this request>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response

```
{
  "data":[{"record_id" : "798"}],
  "message":["success" ],
  "status":200,
  "rest_audit_id" : 720
}
```

Sample Failed Response

```
{
    "data": [],
    "message": ["AI-000734 specified is in Initiation step"],
    "status": 17007,
    "rest_audit_id": 721
}
```

Notes for Removing a User

- The user should be part of the project/company.
- CC user(s)'s permissions can be removed at any time. They will not be able to view records in the Notification or Record log.
- The task will be marked closed if required and Permissions will be removed if the user is an assignee and:
  - Is not on the current step.
  - Is on the current step, the record is not accepted yet, and the user is not the only assignee on the current step.
  - Is on the current step, the record is accepted, and the completion policy is set to **Single**, but the user has not accepted the task.
- You cannot remove a user's permissions if that user is an assignee on the current step and:
  - The record is not accepted, and the user is the only assignee on the current step.
  - The record is accepted, the completion policy is set to **Single**, and the user has accepted the task.
  - The record is accepted, and the completion policy is set to **All-Major** or **All-Consensus**.
- No mail/notification will be sent when a user is removed from a workflow BP record.
- For the **Record Received by Me** Log View, permissions must be checked. Only records with the necessary permissions will be available for the user to access.

Notes for Adding a User

- The user can only be added as a CC user to the current step and will be able to access records under notifications (for the current step) and the BP record log.
- The user should be an active user and part of the project/company.
- Adding users will not be dependent on Workflow Setup.
- The user will be added to the record if they have not been added either as an assignee or CC.
- A user cannot be added if the record is terminated.
- A mail/notification will be sent when the user is added in the workflow BP record.

> **Note:** If a user is initially added to in-flight records and is subsequently removed and re-added, no notifications will be generated, and the workflow progress will remain unchanged. However, the user will still be included as a CC user in the current step and will have access to the record from the BP log.

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request:

Field Name	Use-case Scenario	Status Code	Error Message
	Project status is inactive, view-only, or on-hold		Update cannot be performed when project/shell status is Inactive or View-Only or On-Hold.

Add Assignees to Workflow BP Records

```
PUT /ws/rest/service/v2/bp/record/wf/addassignees
```

Purpose

Add existing project users as assignees to a list of existing in-flight workflow BP records of a project/shell with an **Active**, **View-Only**, or **On-Hold** status.

The system updates the BP Record Audit Log to reflect changes made using this REST service.

Notes:

- Users who have already accepted a task as Assignees cannot be added to the corresponding workflow BP records using this REST service. Including them causes the request to fail.
- You can use this REST service for workflows with a Completion Policy of All-Majority and All-Consensus; you cannot use it for a Single Completion Policy.

Prerequisites

- You must be an active user and a member of the company and the applicable project/shell.
- You must have Workflow Business Process Permissions (Get, Update) in the User Administration to use this API. Otherwise, contact your company administrator to update your Integration permission settings for Workflow Business Processes as outlined in **Updating Permissions for Integration Users** in the *Unifier General Administration Guide*.
- The Completion Policy must be All-Majority or All-Consensus.

Request Format

The request parameters are specified as a JSON Map {} - structure: `{ "options":{}, "data":[{}] }`

In the options JSON map: `{"project_number": "<value>", "bpname": "<value>","email_notification" : "<yes/no>"}`

In the data list: `[ {"record_numbers": <List of record numbers>, "add_assignees" : <List of usernames>} ]`

The data list size is restricted to one.

Request Parameters

The following parameters can be included in the request:

Request Parameter	Mandatory?	Data Type	Description
`project_number`	No	String	A valid 'Active' Unifier Shell number. For example, RE00000. If no value is specified, it is considered as Company.
`bpname`	Yes	String	A Business Process name of a Workflow BP. For example, Action Items.
`email_notification`	No	Boolean	Specify if an email notification is to be sent. Values include: *Yes* or *No* (default).
`record_numbers`	Yes	List	Record numbers of a Workflow BP. For example, ["AI-000734", "AI-000735"].
`add_assignees`	Yes	List	A list of user names (login name) to be added as assignees to the current step of the workflow record. For example, ["testuser1", "coadmin"].

Recommendations

When submitting the request, you can specify in the array up to 1000 records and 10 assignees.

Sample Request

```
{
    "options": {
        "project_number" : "RE00000",
        "bpname" : "Action Items",
```

```
        "email_notification" : "yes"
    },
    "data" : [
        {
            "record_numbers" : ["AI-000734", "AI-000735"],
          "add_assignees" : ["testuser1", "coadmin"]
        }
    ]
}
```

Response Format

A JSON object is returned in the following format.

```
{
    "data": [{"record_id" : "<Internal record ID for the specified BP
record>"}],
    "message": [ "<list of messages>"],
    "status":<integer value>,
    "rest_audit_id" : <ID from the rest audit table matching this request>
}
```

A successful response displays a status code 200.

A partially failed response displays a message with a status code 3010.

Sample Success Response

```
{
   "data":  [     ],
  "message":  [    "success"  ],
  "status":200,
  "rest_audit_id" : 720
}
```

Sample Failed Response 1

```
{
    "data": [],
    "message": ["Business Process Name is not correct."],
    "status": 17002,
```

```
    "rest_audit_id": 721
}
```

Sample Failed Response 2

```
{
    "data": [],
    "message": [
                "AI-000734 specified is in Initiation step.",
                "AI-000735 is terminated, cannot add assignee.",
                "testuser1 is not an active member of RE00000."
            ],
   "status": 3010,
    "rest_audit_id": 722
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request:

Field Name	Use-case Scenario	Status Code	Error Message
project_number	Project number was not specified for a shell-level BP.	1361	Project number is required
project_number	Specified project number is invalid (only applies to shell-level BPs).	602	Project/Shell Number is not correct.
project_number	Specified project number is not active (only applies to shell-level BPs).	17022	Update cannot be performed when project/shell status is Inactive or View-Only or On-Hold.
bpname	BP name was omitted.	603	Business Process Name is required.
bpname	Comma-separated list of BP names specified.	17001	Cannot support multiple business processes.
bpname	Specified BP name is invalid.	17002	Business Process Name is not correct.

Field Name	Use-case Scenario	Status Code	Error Message
bpname	Specified BP name is not a Workflow BP.	17003	Business Process is not a workflow BP.
bpname	Specified BP name is not active.	3006	Business Process is not Active.
email_notification	email_notification is specified but value is empty or incorrect.	17021	Invalid email notification, provide either 'yes' or 'no' value.
record_numbers	Record number was omitted.	17004	Record number is required.
record_numbers	Specified record number is invalid.		<record number> is not correct.
record_numbers	Specified record is in Initiation step.		<record number> is in Initiation step, cannot add assignee.
record_numbers	Specified record is terminated.		<record number> is terminated, cannot add assignee.
record_numbers	Completion Policy is Single for specified record number and record has been accepted by an assignee.		<record number> has already been accepted, cannot add assignee.
record_numbers	Specified record is closed.		<record number> is closed, cannot add assignee.
add_assignees	add_assignees was omitted.	17020	Add assignees is required.
add_assignees	add_assignees is specified but value is blank.	17016	User name is required for add assignees.
add_assignees	Specified user is not active in the project/shell or company.		<user name> is not an active member of <project number>/company.

Bulk Create Records

`POST /ws/rest/service/v2/bp/record/bulk`

Purpose

To create bulk BP records of Simple and Line Item BP (non-workflow) type.

There are a couple of optimizations done in this service with reference to existing v1/v2 BP Create services.

> **Note**: The RAP will not be triggered upon creation of the records. (since 19.12.13.1)

Request Format

Authentication

Integration user authorization token is required as part of Authorization header with necessary BP Create service permission for that integration user.

The integration user token can be generated by using the Unifier Admin UI or by using API (for more information, see REST Services V1).

Header

Authorization:`Bearer eyJ0eXAiOiJEQiJ9.eyJ1c2VybmFtZSI6IiQkaW50ZWcxIn0=.43E4736D-37C2-60AF-E643-C6B648DE07DD26CDA133C93F3DF5B37D129FA40232F6`

Content-Type:`application/json`

Both input & output in JSON format in the body.

> **Notes:**
>
> - The "async" param in the options JSON is optional and if true, processes the request asynchronously. A call back URL is obtained in response for the caller to ping back on the status of the request.
> - The record_no will be auto generated; even if it is specified, it will be ignored.
> - Logic for auto-population of values from Details form (sum of all lines) for the amount type fields was not included in bulk BP records creation code.
> - Amount DE in upper form is rolled up from line items; it should not be a part of upper form data.
> - Auto-population from Data Picker Data Element (DE): When you use Bulk Create or Bulk Update, you start by exporting the BP design structure to a Microsoft Excel or CSV file and then populating the

required fields. During a Bulk Update, in cases where one or more DEs in the Upper Form selected as the Integration Form is configured for auto-population from a Data Picker DE, the system allows these DEs to be auto-populated from the data picker or updated independently. To allow for auto-population, the DEs should be excluded from the Integration Data Elements tab; in this case, if the value of the data picker is updated during Bulk Update, the configured auto-population is applied. However, if the DEs are included in the Data Elements tab, the auto-population is ignored, which allows these DEs to be updated individually.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

```
{
   "options":{
     "project_number":"P-0001",
      "bpname":"Areas Bulk Create",
      "async": true
   },
    "data":[
     {"ugenProjectName": "P-002", "Quantity": 1.0, "uMatCost": 1.0,
"ugenVendorBP": "VEN-0001","title":
"AreasBulkCreate1","uem_rate": 1.0,"Assigned_To": "Company
Administrator","ugenProjectNumber": "P-0001", "uriEnvironImpactPD":
"Yes","CPLGrossAreaND": 0.0,"creator_id": "Company
Administrator","uPracqSiteVisDateDOP": "06-05-2020
00:00:00","WaterMeterBPDP": "uwm-0000","status": "Active"},
```

```
     {"ugenProjectName": "P-002", "Quantity": 2.0, "uMatCost": 1.0,
"ugenVendorBP": "VEN-0001","title":
"AreasBulkCreate2","uem_rate": 1.0,"Assigned_To": "Company
Administrator","ugenProjectNumber": "P-0001", "uriEnvironImpactPD":
"Yes","CPLGrossAreaND": 0.0,"creator_id": "Company
Administrator","uPracqSiteVisDateDOP": "06-05-2020
00:00:00","WaterMeterBPDP": "uwm-0001","status": "Active"},
     {"ugenProjectName": "P-002", "Quantity": 3.0, "uMatCost": 1.0,
"ugenVendorBP": "VEN-0001","title":
"AreasBulkCreate3","uem_rate": 1.0,"Assigned_To": "Company
Administrator","ugenProjectNumber": "P-0001", "uriEnvironImpactPD":
"Yes","CPLGrossAreaND": 0.0,"creator_id": "Company
Administrator","uPracqSiteVisDateDOP": "06-05-2020
00:00:00","WaterMeterBPDP": "uwm-0000","status": "Active"}
  ]
}
```


Sample Response


```
{
  "message": {
    "@uri": "/ws/rest/service/status/job/115",
    "job_id": "115"
  },
  "status": "202"
}
```


Sample Response

For when async parameter is false or not available in options.


```
{
  "data":
  [
  ],
  "message":
  [ "success"
  ],
  "status":200
}
```

Bulk Create Workflow BPs

```
POST /ws/rest/service/v2/bp/record/bulk
```

Purpose

To bulk create workflow BP records for Simple and Line Item types without configurable module. The REST service supports a maximum of 1000 upper form records.

The REST service does *not* support:

- records with attachments
- assignee filtering conditions
- email notifications to assignees
- generating event notification logs for each workflow or non-workflow record

This REST service is *not* supported for integration with Oracle Integration.

Assumptions For Creation Service

- Record_no is auto-generated. User input is ignored.
- Status of a BP record is determined by the action taken. User input is ignored.
- Record due date is determined by the workflow setup. User input is ignored.

Behavior of the Due Date (due_date) Field

When you create workflow BP records through a REST service, the system currently sets the Due Date automatically based on the **Workflow Settings**; the Due Date provided in the input request is ignored.

When you update workflow BP records through a REST service, you cannot change the Due Date.

Request Format

To use this REST service:

- Authentication token is required in the Authorization header.
- Generate the token through the Unifier Administration interface or by using the REST service.
- Set the Content-Type as "application/json"

Send an API request as a JSON Map with the following structure:

```
{
          "options":{
                      "bpname": "<value>",
                      "project_number": "<value>",
                      "async": "<value>" },
//For a workflow BP include the required workflow details below//
        "workflow_details": {
```

```
                        "workflow_name": "<value>",
                        "action_name": "<value>",
                        "user_name": "<value>"
                    }
  "data":[<one or more JSON map of BP records>]
}
```

Notes:

- If "workflow" is not present in "options", the template and action selection use the default setting in the Auto-Creation.
- A maximum of 1000 upper form records can be included in the data [ ] section of the request.
- In the workflow, if the conditional link is under creation step directly, the routing is not dynamically evaluated. The inbound action name to the conditional step goes to the resolving step, and outbound action name from the conditional step goes to the corresponding next step.
- When you use Bulk Create or Bulk Update, you start by exporting the BP design structure to a Microsoft Excel or CSV file and then populating the required fields. If you leave a Data Picker Data Element (DE) field blank that is configured to Auto Populate, the system completes the field when you run a Bulk Create; however, it does not complete the field when you run a Bulk Update. To reduce confusion and maintain consistency for both Bulk Create and Bulk Update, the system uses the Excel or CSV file to populate the Data Picker field if the field is excluded from the Integration Form for the BP design.

Request Parameters

The following parameters can be included in the request:

Request Parameter	Required?	Data Type	Description
bpname	Yes	String	The name of the workflow BPs of the following types: ▸ Simple BPs ▸ Line Item BPs
project_number	Yes	String	The active shell number where the project details will be updated.

Request Parameter	Required?	Data Type	Description
async	No	String	Indicate whether to process the API request asynchronously. Valid values include: ▸ True: Request is processed asynchronously ▸ False: A URL is returned in the response for you to check on the status of the request.
workflow_name	Yes, for workflow BPs	String	The workflow setup associated with a workflow template.
action_name	Yes, for workflow BPs	String	The action name to a step under creation.
user_name	Yes, for workflow BPs	String	The first name and last name of the user who create the record.

Response Format

A JSON object is returned in the following format:

```
{
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": "Value"
}
```

Sample Create Request

To create a non-workflow BP with two line items, send a request in the following format:

```
{
    "options": {
        "project_number":"91FMWBS0001",
```

```
        "bpname": "Workflow LI BP",
        "async": true,

        "workflow_details": {
        "workflow_name": "wf1setup",
        "action_name": "SendAsOpen",
        "user_name": "madhuALL auto"
                              }
    },

    "data": [
        {
            "title": "test102",
            "creator_id": "madhuALL auto",
            "status": "Pending",
            "uuu_float": 101.0,
             "_bp_lineitems": [
                {
                    "amount": 1.0,
                    "tab_id": 0,
                    "description": "a1",
                    "uuu_tab_id": "Standard-u4001",
                    "short_desc": "S1",
                    "li_num": 1
                },
                                {
                    "amount": 2.0,
                    "tab_id": 0,
                    "description": "a2",
                    "uuu_tab_id": "Standard-u4001",
                    "short_desc": "S2",
                    "li_num": 2
                }
```

```
            ]
        },
        {
            "title": "test103",
            "creator_id": "madhuALL auto",
            "status": "Pending",
            "uuu_float": 99.1
        }
    ]
}
```

Sample Success Response to Process Request Asynchronously

When you choose to process the request asynchronously, the following URL is included in the response for you to check the status periodically.

```
{
    "message": {
        "@uri": "/ws/rest/service/status/job/756",
        "job_id": "756"
    },
    "status": "202"
}
```

Sample Success Response Without Asynchronous Process

When you don't choose to process the request asynchronously, a response is sent in the following format.

```
{
  "data": [],
    "message": [
        "success"
    ],
    "status": 200,
    "rest_audit_id": 353
}
```

Supported Validation Messages and Status Codes

The following error messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status Code	Error Message
bpname	The business process name is not provided in the request.	603	*Business Process Name is required.*
bpname	The business process name is invalid.	603	*Business Process Name is not correct."*
bpname	The business process is of workflow type.	4006	*BP must be of Non Workflow.*
bpname	The business process name is not a Simple or Line Item type BP.	4006	*BP must be of 'simple' or 'lineitem' type.*
bpname	The business process is a Lineitem type BP with configurable module.	4006	*Business Process having Line items with Configurable Module code is not supported for bulk creation.*
bpname	A business process of type, single record.	4006	*Single record Business Process is not supported for bulk creation.*
project_number	An invalid project number is entered in the request.	602	*Project/Shell Number is not correct.*
project_number	An inactive project number is entered in the request.	1219	*Project status is Inactive.*
workflow_name	workflow_name is missing, empty, or invalid.	901	*The workflow name is not valid.*
action_name	action_name is missing, empty, or invalid	903	*The workflow action name is not valid.*

Field Name	Use-case Scenario	Status Code	Error Message
`user_name`	user_name is missing, empty, or invalid	900	*Enter a valid or an active user.*
`user_name`	Invalid user_name value as an assignee.	902	*The user does not have an active workflow template.*
Maximum records	The data[] element has more than 1000 records.	19001	*Total number of Upper form records exceeds limit of 1000.*

Bulk Update Records

`PUT /ws/rest/service/v2/bp/record/bulk`

Purpose

To update BP records upper form details.

Notes:

- Only the Simple type and the Line Item type BPs are supported.
- When you use Bulk Create or Bulk Update, you start by exporting the BP design structure to a Microsoft Excel or CSV file and then populating the required fields. If you leave a Data Picker Data Element (DE) field blank that is configured to Auto Populate, the system completes the field when you run a Bulk Create; however, it does not complete the field when you run a Bulk Update. To reduce confusion and maintain consistency for both Bulk Create and Bulk Update, the system uses the Excel or CSV file to populate the Data Picker field if the field is excluded from the Integration Form for the BP design.

Behavior of the Due Date (due_date) Field

When you create workflow BP records through a REST service, the system currently sets the Due Date automatically based on the **Workflow Settings**; the Due Date provided in the input request is ignored.

When you update workflow BP records through a REST service, you cannot change the Due Date.

Request Format

Both input & output in JSON format in the body.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request For Bulk Update Records

```
{
  "options":{
     "bpname" : "Simple_bp",
     "project_number" :"P-0002"
  },
  "data": [
   { "ugenAmountCA":600.0, "unameofAgentDPK": "vendor_002",
"record_no":"uxsim02-0000" },
   { "ugenAmountCA":600.0, "unameofAgentDPK": "vendor_002",
"record_no":"uxsim02-0001" },
   { "ugenAmountCA":600.0, "unameofAgentDPK": "vendor_002",
"record_no":"uxsim02-0002" }
  ]
}
```

Sample Success Response For Bulk Update Records

```
{
  "data":  [  ],
  "message":  [ "success"  ],
  "status":200
}
```

Bulk Reverse Auto-populate Records

```
PUT /ws/rest/service/v2/bp/record/bulk
```

Purpose

To update Destination BP records upper form details from Source BP record Line items.

> **Note:** The destination BP must be of Simple type BP or Line Item type BP.

Request Format

Both input & output in JSON format in the body.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

```
{
    "options":
    {
            "bpname" : "Source BP name",
            "project_number" :"P-0001",
            "record_no":"record number in Source BP",
            "bulk_type":"lineitem_to_upperform",
            "li_picker_field":"Picker Data Element name",
            "destination":{
                "bpname" : "Destination BP name",
                "field_mapping":{
                    "li_field0 (Data Element) in source BP":"upper_field0
(Data Element) in destination BP",
                    "li_field1":"upper_field1",
                    "li_field2":"upper_field2",
                    "li_field3":"upper_field3"
```

```
                },
                "filter" :[
                    {
                     "field_name":"Source BP Line item Data Element name",
                     "operator" :"eq",
                     "value":"Data Element Value"
                    },
                    {
                     "field_name":"ugenAmountCA",
                     "operator" :"eq",
                     "value":"100"
                    }
                ]
            }
    }
}
```

Notes:

- The "filter" in input JSON is optional. Only the records that match with the filter criteria will be Reverse Auto-populated.
- The li_picker_field: BP Picker in the destination BP.
- The bulk_type: Only the line item of the Upper form is supported.
- The bpname: Is the source BP Name.

Supported Filter Operators

Operators	Interpretation
eq	+
Lt	<
Lteq	<=
gt	>

Operators	Interpretation
gteq	>=

Note: The Filter field value must be placed inside double quotation marks (String).

Sample Response

```
{
  "data":  [  ],
  "message":  [ "success"  ],
  "status":200
}
```

Terminate Workflow and Non-Workflow BP Records

```
PUT /ws/rest/service/v2/bp/record/terminate
```

Purpose

Terminate multiple workflow and non-workflow BP records (maximum 10,0000) in a single request, except Cost BPs. The Audit Log will display an entry for the terminated with the **Event** and **Action** fields indicating a termination through REST.

The REST service does not support:

- Reservation BPs,
- Single-record BPs,
- Any BPs that does not have integration defined

Prerequisites

Ensure you have **Update Access** for **Business Process Services** to process the requests.

Request Format

Send an request as a JSON Map with the following structure:

```
{
   "options":{
                "bpname": "<value>",
                "project_number": "<value>",
           }
   "data":[
```

```
            {
              "record_no":"[<value>","<Value>"],
              "override_rule ": "<value>"
            }
          ]
}
```

Request Parameters

Specify the following parameter in the Options JSON map:

Request Parameter	Required?	Data Type	Description
bpname	Yes	String	The business process name of the record to be terminated. For example, Contracts.
project_number	No	String	If the project_number is not provided, it defaults to the company-level.
record_no	Yes	String	The BP record number. For example, CON-99993.
override_rule	No	Boolean	Indicate whether BP rules should be applied for the record to be terminated. Valid values include: ▸ Yes (default): Ignore the rules applicable for the BP. ▸ No: Apply the rules applicable for the BP.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <id from the audit table>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Request to Terminate Cost BP Record

To terminate a Cost BP record number, CON-99993, send a request in the following format:

```
{
     "options": {
        "bpname": "Contracts",
        "project_number" : "PRJ-004"

 },
    "data": [
        {
           "record_no": ["CON-99993"],
          "override_rule" : "No"
        }
     ]
}
```

Sample Success Response to Terminate Cost BP Record

A successful response with status code 200 displays in the following format:

```
{
    "data": [],
    "message": ["[CON-99993] terminated successfully."],
    "status": 200,
    "rest_audit_id": 2678
}
```

Sample Success Request to Terminate Line Item BP Records

To terminate line item BP records, send a request in the following format:

```
{
     "options": {
                  "bpname": "Punchlist",
                  "project_number" : "PRJ-004"
                },
    "data": [
                 {
```

```
"record_no":["PL-0809","PL-0819","PL-0808","PL-2125","PL-0806"]
                }
            ]
 }
```

Sample Failed Response for Terminating Line Item BP Records

A failed response to the above request displays validation errors with the corresponding status code in the following format:

```
{
    "data": [],
    "message": [
        "[PL-0800] Duplicate Record found.",
        "[PL-0800666, PL-0800666] is not correct.",
        "[PL-2125]in initiation step.",
        "[PL-0796, PL-0799, PL-0800, PL-0801, PL-0802, PL-0806, PL-0808,
PL-0809, PL-0819, PL-2125] already terminated.",
        "[PL-0759] terminated successfully."
    ],
    "status": 12755,
    "rest_audit_id": 2680
}
```

Sample Request to Terminate Cost BP with Rules

To terminate a Cost BP with rules, a request is sent in the following format:

```
{
     "options": {
        "bpname": "Contracts",
        "project_number" : "PRJ-004"

 },
    "data": [
        {
           "record_no": ["CON-4911"]
        }
          ]
```

```
 }
```

Sample Failed Response for Terminating Cost BP with Rules

A failed response displays for the above request in the following format:

```
{
    "data": [],
    "message": [],
    "errors": "Rule failed",
    "status": 3000,
    "rest_audit_id": 2681
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request:

Field Name	Use-case Scenario	Status Code	Error Message
project_number	project_number is not specified.	13001	Project/Shell number is mandatory and is missing in the input request
project_number	project_number is inactive.	602	Project/Shell Number is not correct.
project_number	Multiple project numbers are specified in the request.	1245	Project/Shell Number is not correct.
bpname	BP name is not specified	603	Business Process Name is required.
bpname	BP name does not exist	603	Business Process Name is required.
bpname	BP is inactive	3006	Business Process is not Active.
record_no	Record number is not specified in the request.	17004	Record number is required.
record_no	Record number does not exist.	12756	[Record Numbers] do not exist.
record_no	Record is in the Initiation step.	12757	[Record Numbers] is/are in the initiation step.

Field Name	Use-case Scenario	Status Code	Error Message
record_no	Record is in the terminal step or with terminal status.	12758	[Record Numbers] is/are in terminal status. This action can only be performed on records that are not terminated or are not in the terminal step.
record_no	Record is already terminated.	12759	[Record Numbers] is/are already terminated.
record_no	Partial list of records are successfully terminated.	12755	[List of record numbers] terminated successfully. Error messages display for those records that failed to terminate.
record_no	Duplicate record numbers are provided in the request.	12760	[List of record numbers] are duplicate values in the request.
record_no	Request includes more than 10,000 records.	12753	You can terminate a maximum of 10,000 records at a time.
record_no	Multiple record numbers are specified in the request for Cost BPs.	12754	You cannot terminate multiple records simultaneously for Cost Type Business Process.
record_no	BPs do not support the termination of records in the UI, and the Reservation BP does not support termination of records through the UI.	12761	Selected Business Processes do not support termination of record.

Response Error Codes

The following applies to the Response Error Codes (REST API Details in Business Processes) Web Services V2:

Code	Message	Details
200	success	If the request is successful
500	Server Error, contact the system administrator.	If there is any exception when running this service
603	Business Process Name is not correct.	
650	Create Business Process failed reasons, files cannot be attached to upper form. Create Business Process failed reasons, files cannot be attached to detail form: <tab_name> Update Business Process failed reasons, files cannot be attached to upper form. Update Business Process failed reasons, files cannot be attached to detail form: <tab_name>	
657	Invalid record_no.	
895	Record has already been accepted by Task Assignee	
1101	Empty or Invalid JSON data	If required input JSON is empty
1419	The Project Funding Sheet has to be created prior to this operation.	When user is creating a Fund type BP record or Funding and WBS type BP Record, but a Project Funding Sheet has not been created.
3000	Partial failure.	Partial failure of REST service
3002	Invalid Input	
11001	File not found for file ID(s):	If the user provides invalid file IDs for which there are no files in DM
11002	Currently, Document Type BP is not supported for attachments from DM	If the user tries to attach files from DM for Document Type BP

Code	Message	Details
11003	No of files attached exceeds the allowed limit. Allowed limit: [50]	If the user tries to attach more than 50 files from DM at either record- or line item-level
11004	Invalid value for field dm_file_ids	If the user tries to give any value other than comma-separated numbers for the dm_file_ids field
11005	Currently, Text Type BP is not supported for attachments from DM	If the user tries to attach files from DM for Text Type BP

Shell Manager

- Create Shell
- Update Shell
- Get Shell

Create Shell

```
POST /ws/rest/service/v2/admin/shell
```

Purpose

Creates a new shell with additional properties such as Options, Links, Currency, Images, and Gateway Integration. You can create only one new shell with each request.

> **Note:** If auto-numbering is set, the shell number in the response might not be the same as the input.

This REST service further supports all options available through the user interface, including:

- All currencies added by the user
- Any links added by the user
- Options: Phase, Email Address, Send Notifications To (list of emails), Document Manager Attribute Form, E-Signature Type, Time Zone, Financial Period, Template Name, Shell Manager Attribute Form
- Default Calendar
- Custom Print Template
- View Forms: Form Name and Permission Structure

Request Format

Send an API request with the following structure:

```
{
          "options":{},
          "data":[]
}
```

Options JSON Map Format

In the "options" object, you can include the following parameters:

```
 "options":{
       "copy_from_shell_template": "<value>",
       "copy_modules": "<value>",
       "default_currency": "<value>" }
           }
```

To view a master list of all fields supported in the request:

1) Go to the **Company Workspace** tab and switch to **Admin** mode.
2) In the left Navigator, select **uDesigner**, and then select **Shell Manager**.
3) Open the **[shell template]**.
4) In the left Navigator, select **Integration**, and then select **Detail**.

The fields in the Detail menu are applicable to the **Shell General** tab.

uuu_shell_addl_props Key JSON Map Format

To support all other tabs, specify a `uuu_shell_addl_props` key with the following JSON map structure:

```
{
     "uuu_shell_addl_props":
        {
             "options": { },
             "links": [ ],
             "currency": [ ],
             "images": { },
             "gateway": [ ]
        }
}
```

All keys within uuu_shell_addl_props key are optional. The folllowing topics provide a detailed listing of all optional request parameters supported in each submap listed above within the uuu_shell_addl_props key.

Request Parameters Supported in "Options" JSON Map

The following parameters can be included in the request:

Request Parameters	Required?	Data Type	Description
copy_from_shell_template	Yes	String	The name of the shell template
copy_modules	No	String	Indicates whether the sub-modules are to be copied to the new shell. Choices include: *Yes* or *No* (default).
default_currency	No	String	The currency code available in the Shell template/Company Currencies. If a currency code is not specified, defaults to the currency code of the shell template.

Optional Request Parameters Supported in uuu_shell_addl_props Key

To support optional fields in the request, specify a `uuu_shell_addl_props` key with the following JSON map structure.

```
{
    "uuu_shell_addl_props": {
                "options": { },
                "links": [ ],
                "currency": [ ],
                "images": { },
                "gateway": [ ]
                           }
}
```

All keys within the uuu_shell_addl_props key are optional. The following topics provide a detailed listing of all optional request parameters supported in each submap listed above within the uuu_shell_addl_props key.

Optional Request Parameters Supported in the "Options" JSON Map of uuu_shell_addl_props Key

Specify optional "options" within the "uuu_shell_addl_props" key using the following JSON Map structure:

```
{
    "uuu_shell_addl_props": {
        "options": {
            "dmFormUsed": "<value>",
            "financialPeriod": "<value>",
            "eSign": "<value>",
            "projectPhase": "<value>",
            "timezone": "<value>",
            "notification": {
                                "users": []
                            },
        }
    }
}
```

Request Parameters	Required?	Data Type	Description
dmFormUsed	No	String	Document Manager value.
financialPeriod	No	String	Financial Period value.
eSign	No	Integer	e-Signature value. Choices include: None (Default), DocuSign, and Adobe.
projectPhase	No	String	Project Phase value.
timezone	No	String	Timezone value.
notification users []	No	String Array	List of user names.

Optional Request Parameters Supported in the "Links" JSON Map of uuu_shell_addl_props Key

Specify optional links within the "uuu_shell_addl_props" key using the following JSON Map structure:

```
{
    "uuu_shell_addl_props": {
        "links": [
            {
                "name": "<value>",
                "url": "<value>",
                "orderId": <value>
            }
        ]
    }
}
```

Request Parameters	Required?	Data Type	Description
name	Yes	String	The name of the link.
url	Yes	String	URL for the link.
orderId	No	Integer	The number that specifies the order in which the link displays in a sequence.

Optional Request Parameters Supported in Currency JSON list [] in uuu_shell_addl_props Key

Specify optional currency values within the "uuu_shell_addl_props" key using the following JSON Map structure:

```
{
    "uuu_shell_addl_props": {
        "currency": [
            {
                "currencyCode": "<value>",
```

```
                "rateType": "<value>",
                "rate": <value>
                "comments": "<value>",
            }
        ]
    }
}
```

Request Parameters	Required?	Data Type	Description
currencyCode	Yes	String	The currency code.
rateType	Yes	String	Indicate the type of currency. Choices include: FLOAT (default) or PEG.
rate	No	Number (Decimal supported)	Specify the rate only if the rate type is PEG.
comments	No	String	Enter more details about the currency.

Optional Request Parameters Supported in the "Images" JSON Map of uuu_shell_addl_props Key

Specify optional "Images" within the `"uuu_shell_addl_props"` key using the following JSON Map structure:

```
{
    "uuu_shell_addl_props": {
        "images": {
            "shell_images": [
                {
                    "file_name": "<value>",
                    "title": "<value>"
                },
                {
                    "file_name": "<value>",
                    "title": "<value>"
```

```
                }
            ],
            "_attachment": {
                "zipped_file_content": "<value>",
                "zipped_file_name": "<value>",
                "zipped_file_size": <value>
            }
        }
    }
}
```

Request Parameters	Required?	Data Type	Description
The following parameters are supported for shell_images.			
file_name	Yes	String	The image file name included in the zip file. Choices include: GIF, PNG, JPG, JPEG, TIF, TIFF
title	Yes	String	Name of the new image
The following parameters are supported for attachments.			
zipped_file_content	Yes	String	Base64 content of the ZIP file
zipped_file_name	Yes	String	Original ZIP file name
zipped_file_size	Yes	String	Original ZIP file size in bytes

Optional Request Parameters Supported in the "gateway" JSON Map of uuu_shell_addl_props Key

Specify optional "gateway" within the `"uuu_shell_addl_props"` key using the following JSON Map structure:

```
{
    "uuu_shell_addl_props": {
        "gateway": [
            {
                "p6_project_id": "<value>"
            },
            {
```

```
                "p6_project_id": "<value>"
            }
        ]
    }
}
```

Request Parameters	Required?	Data Type	Description
p6_project_id	Yes	String	The P6 EPPM project ID configured in the Primavera Gateway application.

Response Format

The REST service returns a JSON Map in the following format:

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>,
    "rest_audit_id": <value>
}
```

Response Parameters Supported in JSON Map

The following response parameters are supported in the above response format:

Request Parameters	Data Type	Description
data	String	The name of the shell template

Request Parameters	Data Type	Description

message	String	Each JSON map as the response for every request.
		{
		"message": [
		{
		"<shellNumberDE>": "",
		"_record_status": "",
		"errors": []
		}
		]
		}
		where:
		▸ <shellNumberDE> is the unique key for each shell
		▸ "_record_status" indicates the status of each shell
		▸ "errors" displays any errors in processing the additional properties

status	Integer	The overall REST status code
rest_audit_id	Integer	The audit ID

Sample Success Request

In addition to the data, a successful response displays:

- a response "status" code of 200
- a `_record_status` key with a "SUCCESS" value or an error message

```
{
  "data": [
    {
      "uBuildingNumber": "BLDCBS - 0006",
      "uuu_administrator": "Company Administrator",
```

```
      "uuu_location": "/All Properties",
      "uuu_shell_addl_props": {
        "images": {
          "shell_images": [
            {
              "file_name": "Image_1.png",
              "title": "image one"
            },
            {
              "file_name": "Image_2.png",
              "title": "image two"
            }
          ],
          "_attachment": {
            "zipped_file_content":
"UEsDBBQAAAAIAHhl7lZhg1mDOAQAAN4IAAALAAAASW1hZ2VfMS5wbmfrDPBz5+WS4mJgYO
D19HAJYmBgnADCHGxAkYb9ZmcYGDiWero4hlTMeXt3b/bkWvljD+OX1Lc94l7UIRSt6ypy8
OjRo6qRPl4rOXbt3GEZEXMnJubIyZOe0/1ira4udHYU2SViVaIhwtXa1PHI+91am9od8W8y
J2lPl2MvOVta9uvD3rYlF19/",
            "zipped_file_size": 15657,
            "zipped_file_name": "Image.zip"
          }
        },
        "options": {
          "dmFormUsed": "Folder and Document Attributes",
          "financialPeriod": "FP1",
          "eSign": "Default",
          "projectPhase": "Preplanning",
          "timezone": "(UTC-12:00) International Date Line West",
          "notification": {
              "users": ["tt"]
          }
        },
        "links": [
          {
```

```
            "orderId": 1,
            "name": "Google",
            "url": "http://www.google.com"
          }
        ],
        "currency": [
          {
            "rateType": "PEG",
            "comments": "Metadata for the currency value",
            "rate": 150.0503,
            "currencyCode": "JPY"
          }
        ],
        "gateway": [
          {
            "p6_project_id": "EVM242"
          },
          {
            "p6_project_id": "EVM241"
          }
        ]
      },
      "uBuildingName": "W_BUILDING_CBS 0006"
    }
  ],
  "message": [
    {
      "uBuildingNumber": "BLDCBS - 0006",
     "_record_status": "SUCCESS"
    }
  ],
  "status": 200,
  "rest_audit_id": 9074
```

```
}
```

Sample Failure Request

The following is an example of a failed request.

```
{
  "options": {
    "copy_from_shell_template": "BPCBS_T0001",
    "copy_modules": "yes",
    "default_currency": "AFN"
  },
  "data": [
    {
      "uBuildingNumber": "BLDCBS - 0007",
      "uBuildingName": "W_BUILDING_CBS 0007",
      "uuu_location": "/All Properties",
      "uuu_administrator": "Company Administrator",
      "uuu_shell_addl_props": {
        "gateway": [
          {
            "p6_project_id": "EVM242"
          },
          {
            "p6_project_id": "EVM241"
          }
        ],
        "links": [
          {
            "orderId": 1,
            "name": "Google",
            "url": "h://www.google.com"
          }
        ],
        "options": {
```

```
          "dmFormUsed": "Folder and Dcument Attributes",
          "financialPeriod": "FP",
          "eSign": "Default",
          "projectPhase": "Preplaning",
          "timezone": "(UTC-12:00)International Date Line West",
          "notification": {
              "users": ["tts"]
          }
        },
        "currency": [
          {
            "currencyCode": "",
            "comments": "Metadata for the currency value",
            "rateType": "PEG",
            "rate": 150.0503
          }
        ],
        "images": {
          "shell_images": [
            {
              "file_name": "Image_1.pg",
              "title": "image one"
            },
            {
              "file_name": "Image_10.png",
              "title": "image two"
            }
          ],
          "_attachment": {
            "zipped_file_content":
"UEsDBBQAAAAIAHhl7lZhg1mDOAQAAN4IAAALAAAASW1hZ2VfMS5wbmfrDPBz5+WS4mJgYO
D19HAJYmBgnADCHGxAkYb9ZmcYGDiWero4hlTMeXt3b/bkWvljD+OX1Lc94l7UIRSt6ypy8
OjRo6qRPl4rOXbt3GEZEXMnJubIyZOe0/1ira4udHYU2SViVaIhwtXa1PHI+91am9od8W8y
J2lPl2MvOVta9uvD3rYlF19/rWJl4HsRcJWZYYU6I6OCkgKDCwtLQ0cDg4CgAIMSE5PDkjL
Gn9/eRs+cPVs7OTl56cWML3/",
```

```
            "zipped_file_name": "Image.zip",
            "zipped_file_size": 15657
          }
        }
      }
    }
  ]
}
```


Sample Failure Response

The following is an example of the response to the above sent failed request. A failed response displays a status code and error messages in the body of the "message".


```
{
  "data": [
    {
      "uBuildingNumber": "BLDCBS - 0007",
      "uuu_administrator": "Company Administrator",
      "uuu_location": "/All Properties",
      "uuu_shell_addl_props": {
        "images": {
          "shell_images": [
            {
              "file_name": "Image_1.pg",
              "title": "image one"
            },
            {
              "file_name": "Image_10.png",
              "title": "image two"
            }
          ],
          "_attachment": {
```

```
            "zipped_file_content":
"UEsDBBQAAAAIAHhl7lZhg1mDOAQAAN4IAAALAAAASW1hZ2VfMS5wbmfrDPBz5+WS4mJgYO
D19HAJYmBgnADCHGxAkYb9ZmcYGDiWero4hlTMeXt3b/bkWvljD+OX1Lc94l7UIRSt6ypy8
OjRo6qRPl4rOXbt3GEZEXMnJubIyZOe0/1ira4udHYU2SViVaIhwtXa1PHI+91am9od8W8y
J2lPl2MvOVta9uvD3rYlF19/rWJl4HsRcJWZYYU6I6OCkgKDCwtLQ0cDg4CgAIMSE5PDkjL
Gn9/eRs+cPVs7OTl56cWML3/f//",
            "zipped_file_size": 15657,
            "zipped_file_name": "Image.zip"
          }
        },
        "options": {
          "dmFormUsed": "Folder and Dcument Attributes",
          "financialPeriod": "FP",
          "eSign": "Default",
          "projectPhase": "Preplaning",
          "timezone": "(UTC-12:00)International Date Line West",
          "notification": {
              "users": ["tts"]
          }
        },
        "links": [
          {
            "orderId": 1,
            "name": "Google",
            "url": "h://www.google.com"
          }
        ],
        "currency": [
          {
            "rateType": "PEG",
            "comments": "Metadata for the currency value",
            "rate": 150.0503,
            "currencyCode": ""
          }
        ],
```

```
        "gateway": [
          {
            "p6_project_id": "EVM242"
          },
          {
            "p6_project_id": "EVM241"
          }
        ]
      },
      "uBuildingName": "W_BUILDING_CBS 0007"
    }
  ],
  "message": [
    {
      "uBuildingNumber": "BLDCBS - 0007",
      "_record_status": "Shell creation failed because of errors found while processing the additional shell options",
      "errors": [
        "url is invalid; cannot exceed 250 chars",
        "Same project available in the other shells: (EVM242 -> W_BUILDING_CBS 0006), (EVM241 -> W_BUILDING_CBS 0006)",
        "Invalid project phase",
        "currencyCode is a required field",
        "Invalid timezone",
        "DM name does not exist",
        "Non-image files found in the request"
      ]
    }
  ],
  "status": 3000,
  "rest_audit_id": 9076
}
```

Supported Validation Messages and Status Codes

The following error messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status code	Error Message
copy_from_shell_template	The key is missing or an incorrect shell template name is given.	812	Copy from shell/template number is not correct
default_currency	An incorrect currency code is included in the request.	3000	Shell not created due to an invalid currency code
In the "links" JSON map:			
name	The name is not specified in the request	3000	Name is a required field.
name	The name is more than 50 characters in length.	3000	name is invalid; cannot exceed 50 chars
In the "currency" JSON map:			
currencyCode	The currencyCode is not included in the request.	3000	currencyCode is a required field
currencyCode	The currencyCode is invalid.	3000	Currency exchange rates are not available
currencyCode	The base currency of the project is altered.	3000	Update to the currency is not allowed because it matches Company Currency
currencyCode	Multiple currency details are available for the same currency code.	3000	Duplicate currency found in the request
currencyCode	Unable to find the company currency.	3000	Unable to find the Company Currency
rate	The rateType is PEG, but no rate is included in the request.	3000	Rate value for the PEG type is not a number

Field Name	Use-case Scenario	Status code	Error Message
comments	The length of the comments is more than 250 characters.	3000	Comments are invalid; cannot exceed 250 chars
In the "options" JSON map:			
projectPhase	The projectPhase does not have a value in the request.	3000	Invalid project phase.
projectPhase	Multiple values are found with a given value.	3000	Multiple Project phase found
timezone	No timezone is found with a given value.	3000	Invalid timezone
timezone	Multiple timezones are found with a given value.	3000	Multiple timezone entries found
financialPeriod	No financial period is found with a given value.	3000	Financial period does not exist
notification → users	An invalid user is included in the request.	3000	User(s) do not have access or not found: user1, user2.
dmFormUsed	No document manager is found with a given value.	3000	DM name does not exist.
eSign	eSign is not configured in the company workspace.	3000	Requested E-Signature not configured
eSign	an invalid eSign is given in the request	3000	Invalid e-sign
In the "images" JSON map:			
file_name	An invalid request is found in the request.	3000	Invalid JSON structure found in the request for additional properties
file_name	The file_name is missing.	3000	File_name and title are required for shell images

Field Name	Use-case Scenario	Status code	Error Message
file_name	Other image formats included in the request	3000	File upload prevented due to blocked file extension
title	The title is missing.	3000	file_name and title are required for shell images
zipped_file_content	Non-images are found in the zip file.	3000	Non-image files found in the request
zipped_file_content	no image is available in the zip.	3000	No images found in the ZIP file
zipped_file_content	Issue in unzipping the file.	3000	Unable to unzip the files
zipped_file_content	An invalid attachment is available.	3000	Invalid attachment found in the request
zipped_file_size	A mismatch with the file size in the request.	3000	File size is mismatched with the incoming file
In the "gateway" JSON map:			
p6_project_id	An invalid request is found in the request.	3000	Invalid JSON structure found in the request for additional properties
p6_project_id	p6_project_id is null/missing/empty string.	3000	p6_project_id is a required field
p6_project_id	EVM license is not provided.	3000	Invalid EVM License
p6_project_id	Cloud schedule project exists	3000	Cloud schedule project exists
p6_project_id	Duplicate project id available in the request.	3000	Same project is available multiple times in the same shell: id1, id2, ...
p6_project_id	Trying to delete the integrated project.	3000	Unable to delete the project as it is integrated.
p6_project_id	Same project available in other shells	3000	Same project available in the other shells: EVM > shell name

Update Shell

```
PUT /ws/rest/service/v2/admin/shell
```

> **Note:** As a best practice, delay invoking this REST call when reverse auto-population is configured in a business process.

Purpose

The Update Shell REST service supports all options available through the user interface, including:

- Currency: All currencies that you added
- Options: Phase, Email Address, Send Notifications To (list of emails), Document Manager Attribute Form, E-Signature Type, Time Zone, Financial Period, Template Name, Shell Manager Attribute Form
- Links: Your added links
- Default Calendar
- Custom Print Template
- Gateway Integration: Project ID
- Primavera Integration: Project ID
- View Forms: Form Name, Permission Structure

> **Note:** Only one shell can be updated per request.

Request Format

Send a request as a JSON Map with the following structure:

```
{
          "options":{"shelltype": "<value>"},
          "data":[]
}
```

To view a master list of all fields supported in the request:

1) Go to the **Company Workspace** tab and switch to **Admin** mode.
2) In the left Navigator, select **uDesigner**, and then select **Shell Manager**.
3) Open the **[shell template]**.
4) In the left Navigator, select **Integration**, and then select **Detail**.

The fields in the Detail menu are applicable to the **Shell General** tab.

Supported Request Parameter

The following request parameter must be included:

Request Parameters	Required?	Data Type	Description
shelltype	Yes	String	The name of the shell template

Optional Request Parameters Supported in uuu_shell_addl_props Key

To support all other tabs in the request, apart from the **General** tab, specify the key, uuu_shell_addl_props, in the following JSON map structure.

> **Note:** All fields in the uuu_shell_addl_props key are *optional.*

```
{
    "uuu_shell_addl_props": {
                                                "options": { },
                                                "links": [ ],
                                                "currency": [ ],
                                                "images": { },
                                                "gateway": [ ],
                                                "cloud": [ ]
                                }
}
```

Options JSON Map Format in uuu_shell_addl_props Key

In the "options" JSON Map of "uuu_shell_addl_props" key, you can include the following optional parameters:

```
{
    "uuu_shell_addl_props": {
                                   "options": {
                                                "projectPhase": "<value>",
                                                 "timezone": "<value>",
                                                "financialPeriod":
"<value>",
                                                "notification": {
                                                                    "users":
[]

"groups": []
```

```
                                                    },
                                            "dmFormUsed": "<value>",
                                            "eSign": "<value>",
                                            "mailBoxId": "<value>",
        }
    }
}
```

Request Parameters	Required?	Data Type	Description
projectPhase	No	String	Project Phase value
timezone	No	String	Timezone value
financialPeriod	No	String	Financial Period value
notification → users [ ]	No	String Array	List of usernames. For example, ["jdoe", "jsmith"]
notification → groups [ ]	No	String Array	List of groups. For example, ["Contractors", "Accommodation Managers"]
dmFormUsed	No	String	Document Manager value
eSign	No	String	e-Signature value. Valid values include: None, Default, DocuSign, Adobe.
mailBoxId	No	String	The Mailbox ID excluding the mail pattern.

Links JSON Map Format in uuu_shell_addl_props Key

In the "links" JSON Map of `"uuu_shell_addl_props"` key, you can include the following optional parameters:

```
{
    "uuu_shell_addl_props": {
```

```
                                "links": [
                                        {
                                            "orderId": 0,
                                            "name": "",
                                            "url": "",
                                        }
                                    ]
                            }
}
```

If you specify the links JSON map, the following parameters can be included:

Request Parameters	Required?	Data Type	Description
name	Yes	String	URL name for the link.
url	Yes	String	URL for the link.
orderId	No	Integer	Specify the order of the links. An Incorrect value in the orderId changes the order value into 0.

Currency JSON Map Format in uuu_shell_addl_props Key

In the "currency" JSON Map of `"uuu_shell_addl_props"` key, you can include the following optional parameters:

```
{
    "uuu_shell_addl_props": {
                                "currency": [
                                        {
                                            "currencyCode": "",
                                            "comments": "",
                                            "rateType": "",
                                            "rate": 0.0
                                        }
                                    ]
```

```
                                    }
}
```

If you specify the "currency" JSON map, the following parameters can be included:

Request Parameters	Required?	Data Type	Description
currencyCode	Yes	String	Currency code.
rateType	Yes	String	Indicate the rate type of the currency. Valid values include: FLOAT (default), PEG.
rate	No	Number, decimal supported.	Alter the currency rate only if the rateType is PEG.
comments	No	String	Specify currency details.

Images JSON Map Format in uuu_shell_addl_props Key

In the "images" JSON Map of "`uuu_shell_addl_props`" key, you can include the following optional parameters:

```
{
    "uuu_shell_addl_props": {
                          "images": {
                                   "shell_images": [
                                                       {"file_name":
"<value>", "title": "<value>"},
                                                       {"file_name":
"<value>", "title": "<value>"}
                                                   ],
                          "_attachment": {"zipped_file_content":
"<value>", "zipped_file_name": "<value>", "zipped_file_size": 0},
                          "shell_images_from_dm": ["image1",
"path/image2"]
                                   }
                              }
}
```

If you specify the "images" JSON map, the following parameters can be included:

Request Parameters	Required?	Data Type	Description
file_name	Yes	String	Name of the file in the ZIP file. Valid values include: GIF, PNG, JPG, JPEG, TIF, TIFF.
title	Yes	String	New name to the image
zipped_file_content	Yes	String	Base64 content of the ZIP file
zipped_file_name	Yes	String	Original ZIP file name
zipped_file_size	Yes	Number	Original ZIP file size in bytes
shell_images_from_dm	Yes	String	Image name from the Document Manager

Gateway JSON Map Format in uuu_shell_addl_props Key

In the "gateway" JSON Map of `"uuu_shell_addl_props"` key, you can include the following optional parameters:

```
{
    "uuu_shell_addl_props": {
                              "gateway": [
                                           {"p6_project_id":
"<value>"},
                                           {"p6_project_id":
"<value>"}
                                         ]
                            }
}
```

If you specify the "gateway" JSON map, the following parameters can be included:

Request Parameters	Required?	Data Type	Description
`p6_project_id`	Yes	String	P6 project ID configured in the Primavera Gateway application.

Cloud JSON Map Format in uuu_shell_addl_props Key

In the "cloud" JSON Map of "uuu_shell_addl_props" key, you can include the following optional parameters:

```
{
    "uuu_shell_addl_props": {
        "cloud": [
            {
                "ext_project_id": "EVM268",
                "ext_workspace_code": "OPCWORKSPACE",
                "ext_project_name": "OPC03",
                "integration_type": "Primavera Cloud Cash Flow"
            }
        ]
    }
}
```

If you specify the "cloud" JSON map, the following parameters can be included:

Request Parameters	Required?	Data Type	Description
ext_project_id	Yes	String	Name of the Oracle Primavera Cloud project ID.
ext_workspace_code	Yes	String	Workspace name.
ext_project_name	Yes	String	Project name.
integration_type	Yes	String	The project type is Cashflow or Schedule. Valid values include: Primavera Cloud Cash Flow.

Response Format

A JSON object is returned in the following format:

```
{
```

```
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": "Value"
}
```

Sample Success Request

This is an example of a successful request with status code 200.

```
{
  "options": { "shelltype": "Building Properties - CBS"  },
  "data": [
              {
                 "uBuildingNumber": "BLDCBS - 0004",
                 "uuu_shell_status": "Active",
                 "uuu_shell_addl_props": {
                                                "gateway":
[{"p6_project_id": "EVM243"}, {"p6_project_id": "EVM244"}],
                                                "links": [{"orderId": 1,
"name": "Google", "url": "http://www.google.com"}],
                                                "options": {
                                                            "dmFormUsed":
"Folder and Document Attributes",

"financialPeriod": "FP1",
                                                            "eSign":
"Default",

"projectPhase": "Preplanning",
                                                            "timezone":
"(UTC-12:00) International Date Line West",

"notification": {"users": ["tt"],"groups": ["Accommodation Managers"]},
                                                           },
                                                "currency": [

{"currencyCode": "JPY",
```

```
                                                                    "comments":
"Metadata for the currency value",
                                                                    "rateType":
"PEG",
                                                                    "rate":
150.0503
                                                                  }
                                                                ],
                                                "images": {
"shell_images": [
{"file_name": "Image_1.png", "title": "image one"},
{"file_name": "Image_2.png", "title": "image two"}
],
                                                                "_attachment":
{
"zipped_file_content": "UEsDBBQAAAAIAHhl7lZhg1mDOAQAAN4IAAALAAAA",
"zipped_file_name": "Image.zip",
"zipped_file_size": 15657
},
"shell_images_from_dm": ["image1.png", "/Sample/image2.jpg"]
                                                              },
                                                "cloud": [
                                                            {
"ext_project_id": "OPC03",
"ext_workspace_code": "OPCWORKSPACE",
"ext_project_name": "OPC03",
```

```
"integration_type": "Primavera Cloud Cash Flow"
                                                                    }
                                                                ]
                                                }
                }
            ]
}
```


Sample Success Response

This is a successful response to the above request with status code 200.


```
{
  "data": [
            {"uBuildingNumber": "BLDCBS - 0004",
             "uuu_shell_status": "Active",
             "uuu_shell_addl_props": {
                                        "cloud": [
                                                    {
                                                      "ext_project_id":
"OPC03",
                                                      "ext_project_name":
"OPC03",
                                                      "integration_type":
"Primavera Cloud Cash Flow",

"ext_workspace_code": "OPCWORKSPACE"
                                                    }
                                                ],
                                        "images": {
                                                    "shell_images": [
{"file_name": "Image_1.png", "title": "image one"},

{"file_name": "Image_2.png", "title": "image two"}
                                                                     ],
                                                    "_attachment": {

"zipped_file_content": "UEsDBBQAAAAIAHhl7lZhg1mDOAQAAN4IAAALAA",
```

```
"zipped_file_size": 15657,

"zipped_file_name": "Image.zip"
                                                                    },

"shell_images_from_dm": ["image1.png", "/Sample/image2.jpg"]},
                                        "options": {
                                                    "dmFormUsed":
"Folder and Document Attributes",
                                                    "financialPeriod":
"FP1",
                                                    "eSign": "Default",
                                                    "projectPhase":
"Preplanning",
                                                    "timezone":
"(UTC-12:00) International Date Line West",
                                                    "notification": {

"users": ["tt"],

"groups": ["Accommodation Managers"]
                                                                       },
                                                 },
                                       "links": [
                                                  {"orderId": 1, "name":
"Google", "url": "http://www.google.com"}
                                                ],
                                      "currency": [
                                                    {
                                                      "rateType": "PEG",
                                                      "comments":
"Metadata for the currency value",
                                                      "rate": 150.0503,
                                                      "currencyCode":
"JPY"
                                                    }
```

```
                                                    ],
                                        "gateway": [{"p6_project_id":
"EVM243"}, {"p6_project_id": "EVM244"}]
                                }
            }
          ],
  "message": [{"uBuildingNumber": "BLDCBS - 0004", "_record_status":
"SUCCESS"}],
  "status": 200,
  "rest_audit_id": 9080
}
```


Sample Failed Request

This is an example of a failed request to update a shell.


```
{
  "options": { "shelltype": "Building Properties - CBS" },
  "data": [
            {
               "uBuildingNumber": "BLDCBS - 0004",
               "uuu_shell_status": "Active",
               "uuu_shell_addl_props": {
                                          "gateway": [ {"p6_project_id":
"EVM242"}, {"p6_project_id": "EVM241"}],
                                          "links": [{"orderId": 1,
"name": "Google", url": "h://www.google.com"}],
                                          "options": {"dmFormUsed":
"Folder and Dcument Attributes",

"financialPeriod": "FP",
                                                      "eSign":
"Default",
                                                      "projectPhase":
"Preplaning",
                                                      "timezone":
"(UTC-12:00)International Date Line West",
                                                      "notification": {
```

```
"users": ["tts"],

"groups": ["Accommodation Managers"]

},
                                                    },
                                                "currency": [{"currencyCode":
"",
                                                    "comments":
"Metadata for the currency value",
                                                    "rateType":
"PEG",
                                                    "rate":
150.0503}
                                                  ],
                                                "images": {"shell_images": [

{"file_name": "Image_1.pg", "title": "image one"},

{"file_name": "Image_10.png", "title": "image two"}
                                                                                ],
                                                               "_attachment":
{"zipped_file_content": "UEsDBBQAAAAIAHhl7lZhg1mDOAQAAN4IAAALAAAASW1h",

"zipped_file_name": "Image.zip",

"zipped_file_size": 15657
                                                                              }
                                                    },
                                                "cloud": [{

"ext_project_id": "OPC04",

"ext_project_name": "OPC04",

"integration_type": "Primavera Cloud Schedule",

"ext_workspace_code": "OPCWORKSPACE"}
```

```
                                                    ]
                                }
                    }
                ]
}
```


Sample Failed Response

This is an example of a failed response with status code 3000, with a list of errors displayed below.


```
{
  "data": [{
            "uBuildingNumber": "BLDCBS - 0004",
            "uuu_shell_status": "Active",
            "uuu_shell_addl_props": {
                                        "cloud": [

{"ext_project_id": "OPC04",

"ext_project_name": "OPC04",

"integration_type": "Primavera Cloud Schedule",

"ext_workspace_code": "OPCWORKSPACE"
                                                          }],
                                        "images": {
                                                            "shell_images": [
{"file_name": "Image_1.pg", "title": "image one"},

{"file_name": "Image_10.png", "title": "image two"}
                                                                                ],
                                                          "_attachment":
{"zipped_file_content": "UEsDBBQAAAAIAHhl7lZhg1mDOAQAAN4IAAALAAAASW1h",

"zipped_file_size": 15657,

"zipped_file_name": "Image.zip"
                                                                              }
```

```
                                                    },
                                                "options": { "dmFormUsed":
"Folder and Dcument Attributes",
                                                             "financialPeriod":
"FP",
                                                             "eSign":
"Default",
                                                             "projectPhase":
"Preplaning",
                                                             "timezone":
"(UTC-12:00)International Date Line West",
                                                             "notification":
{"groups": ["Accommodation Managersss"]},
                                                     },
                                                "links": [{"orderId": 1, "name":
"Google", "url": "h://www.google.com"}],
                                                "currency": [{
                                                               "rateType":
"PEG",
                                                               "comments":
"Metadata for the currency value",
                                                               "rate":
150.0503,
                                                               "currencyCode":
""
                                                     }],
                                                "gateway": [{"p6_project_id":
"EVM242"},{"p6_project_id": "EVM241"}]
                                            }
          }
  ],
  "message": [{
                "uBuildingNumber": "BLDCBS - 0004",
                "_record_status": "Shell creation failed because of errors
found while processing the additional shell options",
                "errors": [
                            "url is invalid; cannot exceed 250 chars",
```

```
                            "Same project available in the other shells:
(EVM242 -> W_BUILDING_CBS 0006), (EVM241 -> W_BUILDING_CBS 0006)",
                            "Invalid project phase",
                            "currencyCode is a required field",
                            "Multiple cashflow projects cannot be added",
                            "Invalid timezone",
                            "DM name does not exist",
                            "Non-image files found in the request"
                        ]
                }],
  "status": 3000,
  "rest_audit_id": 9083
}
```


Supported Validation Messages and Status Codes

The following error messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status code	Error Message
shelltype	The key is missing or an incorrect shell template name is given.	813	Invalid shelll type.
projectPhase	Project phase is not found with the given value.	3000	Invalid project phase.
projectPhase	Multiple values are found with the given value.	3000	Multiple project phase found.
timezone	Timezone is not found with the given value.	3000	Invalid timezone.
timezone	Multiple timezones are found with the given value.	3000	Multiple timezone entries found.
financialPeriod	Financial period is not found with the given value.	3000	Financial period does not exist.

Field Name	Use-case Scenario	Status code	Error Message
financialPeriod	Cashflow curve data is associated with the financial period being updated.	3000	Cash flow Curves are already referring to Financial Period, Can't modify: <FP Name>.
financialPeriod	EVM analysis data is associated with the financial period being updated.	3000	Earned Value Analysis Graphs are referring to Financial Period, Can't modify: <FP Name.
notification users []	An invalid user is given in the request.	3000	User(s) do not have access or not found: <user1>, <user2>, ...
notification groups []	An invalid group name is given in the request.	3000	Group(s) do not have access or not found: <user1>, <user2>, ...
dmFormUsed	No document manager is found with the given value.	3000	DM name does not exist.
eSign	eSign is not configured in the company workspace.	3000	Requested E-Signature not configured.
eSign	an invalid eSign is given in the request.	3000	Invalid e-sign.
mailBoxId	The email prefix is invalid or wrong.	3000	Invalid mailBox ID.
mailBoxId	The same project email is already taken.	3000	Duplicate project email found.
name	The name is given empty/null or not present.	3000	Name is a required field.
name	The name is more than 50 characters.	3000	Name is invalid; cannot exceed 50 chars.
url	The url is given empty/null or not present.	3000	URL is a required field.

Field Name	Use-case Scenario	Status code	Error Message
url	The url is more than 250 characters or in incorrect format.	3000	URL is invalid; cannot exceed 250 chars.
currencyCode	The currencyCode is given empty/null or not present.	3000	currencyCode is a required field
currencyCode	The currencyCode is invalid.	3000	Currency exchange rates are not available
currencyCode	Altering the base currency of the project.	3000	Update to the currency is not allowed because it matches Company Currency.
currencyCode	Multiple currency details available for same currency code.	3000	Duplicate currency found in the request
currencyCode	Unable to find the company currency.	3000	Unable to find the Company Currency.
rate	The rateType is PEG, and no rate value is provided.	3000	Rate value for the PEG type is not a number.
comments	Comments exceed 250 characters.	3000	Comments are invalid; cannot exceed 250 chars.
file_name	An invalid request is found in the request.	3000	Invalid JSON structure found in the request for additional properties.
file_name	File_name is missing.	3000	file_name and title are required for shell images.
file_name	Other image formats are included.	3000	File upload prevented due to blocked file extension.
title	New name of the image.	3000	file_name and title are required for shell images.

Field Name	Use-case Scenario	Status code	Error Message
zipped_file_content	zip contains non-images.	3000	Non-image files found in the request.
zipped_file_content	zip does not contain the image.	3000	No images found in the ZIP file.
zipped_file_content	Issue with unzipping the file.	3000	Unable to unzip the files.
zipped_file_content	An invalid attachment is available.	3000	Invalid attachment found in the request.
zipped_file_size	A mismatch with the file size in the request.	3000	File size is mismatched with the incoming file.
shell_images_from_dm	multiple images found with the same name in the DM.	3000	Multiple image(s) found with the same name from DM: <image1>, <image2>, ...
shell_images_from_dm	Image is not found with the given name.	3000	No image(s) found with the name from DM: <image1>, <image2>,...
p6_project_id	invalid request is found in the request.	3000	Invalid JSON structure found in the request for additional properties
p6_project_id	p6_project_id is null/missing/empty string.	3000	p6_project_id is a required field
p6_project_id	EVM license is not provided.	3000	Invalid EVM License
p6_project_id	Cloud schedule project exists.	3000	Cloud schedule project exists
p6_project_id	Duplicate project id available in the request.	3000	Same project is available multiple times in the same shell: <id1>, <id2>, ...
p6_project_id	Attempt to delete the integrated project.	3000	Unable to delete the project as it is integrated

Field Name	Use-case Scenario	Status code	Error Message
p6_project_id	Same project is available in other shells.	3000	Same project available in the other shells: EVM > shell name, ...
ext_project_id	An invalid request is included in the request.	3000	Invalid JSON structure found in the request for additional properties
ext_project_id	ext_project_id is null/missing/empty string.	3000	ext_project_id is a required field.
ext_project_id	Schedule project is integrated already.	3000	Unable to delete the project as its linked
ext_project_id	Multiple cashflow projects are added.	3000	Multiple cashflow projects cannot be added
ext_project_id	Duplicate project ID is included in the request.	3000	Found duplicate cloud projects in the request
ext_project_id	Cloud schedule project added when Gateway project exists.	3000	Gateway project exists

Get Shell

```
GET /ws/rest/service/v2/admin/shell?options:{"filter": {"shell_type" :
"Project"}
```

Purpose

Get all existing shells with additional properties such as Options, Links, and Currency. Get Shell REST service supports all options available through the user interface, including:

- All currencies you added
- Options such as Phase, Email Address, Send Notifications To (list of emails), Document Manager Attribute Form, E-Signature Type, Time Zone, Financial Period, Template Name, Shell Manager Attribute Form
- Links you added
- Default Calendar
- Custom Print Template

- Primavera Gateway integration
- Primavera Cloud integration
- View Forms such as Form Name, Permission Structure

Request Format

Send a GET request in the above format.

Supported Request Parameter

The following request parameter can be included:

Request Parameters	Required?	Data Type	Description
filter > shelltype	No	String	Filters the shell data based on the shell type. If a filter condition is not provided, then the response displays all shells (*not* shell templates) with an Active status. If a filter condition is specified, then the response returns shells of the specified shell type only. Only one value for shell_type is supported.

Response Format

A JSON object is returned in the following format:

```
{
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": "Value"
}
```

Sample Success Response

This is an example of a response that fetches two shells in an active status, with a success status code 200.


```
{
  "data": [{
              "uuu_latitude": null,
              "upropYrBuiltPD": null,
              "description": "Desc is updated",
              "ulseLocationBuildingAreaIA": 0,
              "LEED_Cert_Dateonly": null,
              "uuu_longitude": null,
              "upropOwnStatusPD": null,
              "ugenPropertySubClass": null,
              "ugenPropertyClass": null,
              "LEED_Total_Score": 0.0,
              "ugenCityTXT50": null,
              "ugenZipCodeTXT16": null,
              "ugenAddress3TXT120": null,
              "uBuildingNumber": "BLDCBS - 0002",
              "uuu_administrator": "Company Administrator",
              "uuu_location": "/All Properties",
              "uuu_address_code": "United States of America",
              "ugenAddress1TXT120": null,
              "uBuildingName": "W_BUILDING_CBS 0002",
              "LEED_level_name": null,
              "uuu_shell_status": "Active",
              "ugenAddress2TXT120": null,
              "ulvlUOMPD": "Sq Ft",
              "ugenCountryPD": "United States of America",
              "ugenStatePD": null,
              "uRegionName": null,
              "uSiteName": null,
              "uSiteID": null,
              "shell_type": "Building Properties - CBS",
```

```
              "shell_model_name": "us_xbpcb",
              "shell_number": "BLDCBS - 0002",
              shell_name": "W_BUILDING_CBS 0002",
              "shell_phase": "Preplanning",
              "shell_location": "/All Properties",
              "latitude": null,
              "longitude": null,
              "shell_id": 5074,
              "uuu_shell_addl_props": {
                                  "cloud": [{
                                            "ext_project_id": "OPC02",
                                            "ext_workspace_code":
"OPCWORKSPACE",
                                            "ext_project_name":
"OPC02",
                                            "ext_intg_type": 0,
                                            "integration_type":
"Primavera Cloud Cash Flow"
                                          },
                                          {
                                            "ext_project_id": "OPC02",
                                            "ext_workspace_code":
"OPCWORKSPACE",
                                            "ext_project_name":
"OPC02",
                                            "ext_intg_type": 1,
                                            "integration_type":
"Primavera Cloud Schedule"
                                          },
                                          {
                                            "ext_project_id":
"OPC_INT02",
                                            "ext_workspace_code":
"OPCWORKSPACE",
                                            "ext_project_name":
"OPC_INT02",
```

```
                                        "ext_intg_type": 1,
                                        "integration_type":
"Primavera Cloud Schedule"
                                    }],
                                "images": {
                                        "shell_images": [{"id":
28608,
"file_name": "CICD Environment.png",
"file_size": 742909}
                                                        ],
                                        "shell_images_from_dm": []
                                    },
                                "options": {"projectPhase":
"Preplanning",
                                        "timezone": "(UTC-12:00)
International Date Line West",
                                        "projectEmail":
"127+5055232@internal-mail-router.oracle.com",
                                        "financialPeriod": "FP1",
                                        "dmFormUsed": "Folder and
Document Attributes",
                                        "notification": {"users":
["Company Administrator"],"groups": []},
                                        "eSign": "None"
                                    },
                                "links": [{"orderId": 1, "name":
"Googles","url": "https://www.google.com"},
                                    {"orderId": 2, "name":
"Yahoo","url": "https://www.yahoo.com"}],
                                "currency": [{"rateType": "PEG",
                                        "comments": "Metadata for
the currency value",
                                        "currencyName": "Indian
Rupee (INR)",
                                        "rate": 150.232,
                                        "enableHedge": 0,
```

```
                                                    "currencySymbol": "",
                                                    "hedgeamount": 0.0,
                                                    "currencyCode": "INR",
                                                    "isfloatpeg": 1,
                                                    "isProjectCurrency":
"Yes",
                                                    "hedgerate": 0.0 },
                                                   {
                                                    "rateType": "FLOAT",
                                                    "comments": "",
                                                    "currencyName": "United
States Dollar (USD)",
                                                    "rate": 1.0,
                                                    "enableHedge": 0,
                                                    "currencySymbol": "$",
                                                    "hedgeamount": 0.0,
                                                    "currencyCode": "USD",
                                                    "isfloatpeg": 0,
                                                    "isProjectCurrency":
"No",
                                                    "hedgerate": 0.0
                                                   }],
        "gateway": [{"p6_project_id": "Shell2","p6_project_name":
null,"schedule_type": null},
                    {"p6_project_id": "EVM239","p6_project_name":
null,"schedule_type": null},
                    {"p6_project_id": "EVM239","p6_project_name":
null,"schedule_type": null},
                    {"p6_project_id": "EVM239","p6_project_name":
null,"schedule_type": null}
                  ]
            }
    },
    {
             "uuu_latitude": null,
             "upropYrBuiltPD": null,
```

```
"description": null,
"ulseLocationBuildingAreaIA": 0,
"LEED_Cert_Dateonly": null,
"uuu_longitude": null,
"upropOwnStatusPD": null,
"ugenPropertySubClass": null,
"ugenPropertyClass": null,
"LEED_Total_Score": 0.0,
"ugenCityTXT50": null,
"ugenZipCodeTXT16": null,
"ugenAddress3TXT120": null,
"uBuildingNumber": "BLDCBS - 0003",
"uuu_administrator": "Company Administrator",
"uuu_location": "/All Properties",
"uuu_address_code": "United States of America",
"ugenAddress1TXT120": null,
"uBuildingName": "W_BUILDING_CBS 0003",
"LEED_level_name": null,
"uuu_shell_status": "Active",
"ugenAddress2TXT120": null,
"ulvlUOMPD": "Sq Ft",
"ugenCountryPD": "United States of America",
"ugenStatePD": null,
"uRegionName": null,
"uSiteName": null,
"uSiteID": null,
"shell_type": "Building Properties - CBS",
"shell_model_name": "us_xbpcb",
"shell_number": "BLDCBS - 0003",
"shell_name": "W_BUILDING_CBS 0003",
"shell_phase": "Preplanning",
"shell_location": "/All Properties",
"latitude": null,
"longitude": null,
```

```
              "shell_id": 5141,
              "uuu_shell_addl_props": {"cloud": [],
                                       "images": {"shell_images":
[],"shell_images_from_dm": []},
                                       "options": {
                                                   "projectPhase":
"Preplanning",
                                                   "timezone":
"(UTC-12:00) International Date Line West",
                                                   "projectEmail":
"127+5141@internal-mail-router.oracle.com",
                                                   "financialPeriod":
"FP1",
                                                   "dmFormUsed":
"Folder and Document Attributes",
                                                   "notification":
{"users": [],"groups": []},
                                                   "eSign": "None"
                                                 },
                                       "links": [{"orderId": 1,"name":
"Google","url": "http://www.google.com"}],
                                       "currency": [{"rateType":
"FLOAT",
                                                   "comments": "",
                                                   "currencyName":
"Afghani (AFN)",
                                                   "rate": 110.0,
                                                   "enableHedge": 0,
                                                   "currencySymbol":
"؋",
                                                   "hedgeamount":
0.0,
                                                   "currencyCode":
"AFN",
                                                   "isfloatpeg": 0,
"isProjectCurrency": "Yes",
                                                   "hedgerate": 0.0
```

```
                                                    },
                                                    {
                                                     "rateType":
"FLOAT",
                                                     "comments": "",
                                                     "currencyName":
"Indian Rupee (INR)",
                                                     "rate": 300.0,
                                                     "enableHedge": 0,
                                                     "currencySymbol":
"",
                                                     "hedgeamount":
0.0,
                                                     "currencyCode":
"INR",
                                                     "isfloatpeg": 0,
"isProjectCurrency": "No",
                                                     "hedgerate": 0.0
                                                    },
                                                    {
                                                     "rateType":
"FLOAT",
                                                     "comments": "",
                                                     "currencyName":
"United States Dollar (USD)",
                                                     "rate": 1.0,
                                                     "enableHedge": 0,
                                                     "currencySymbol":
"$",
                                                     "hedgeamount":
0.0,
                                                     "currencyCode":
"USD",
                                                     "isfloatpeg": 0,
"isProjectCurrency": "No",
```

```
                                                    "hedgerate": 0.0
                                                  }],
                                        "gateway": [
                                                  {"p6_project_id":
"EVM238","p6_project_name": null,"schedule_type": null}
                                                  ]
      }
    }
  ],
  "message": ["success"],
  "status": 200,
  "rest_audit_id": 9082
}
```


Sample Failed Response

If an incorrect shell_type is provided in the filter condition, status code 2051 displays with the following message in the response.


```
{
    "data":[],
    "message":[ "Invalid Shell Type : Buildings_1"],
    "status":2051
}
```

Mapped Projects

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Create or Update Mapped External Projects

`POST /ws/rest/service/v2/activity/sheet/mappedprojects`

Purpose

Create or update externally-synced project data in the Activity Sheet of a specified Unifier shell based on sourceProjectId and project_number. This REST service updates the current project data and creates or updates the baseline project data.

> **Note**: Validations are not implemented for System Activity Sheet data as it is assumed to be sent correctly from the source system.

Prerequisites

Ensure the source project ID is configured or added by selecting **Shell Details**, and then selecting the **Primavera Cloud Integration** tab in Unifier.

Request Format

Send an request in the following format, wherein the "data" object can contain one or more - JSON Maps:

```
 {
   "options":{
               "Source": "<value>",
               "project_number": "<value>",
               "sourceProjectId":"<value>"}
   "data":[{"projectId":"<value>", "projectName":"<value>"}]
}
```

Request Parameters - Options Object

The following parameters can be specified in the "Options" object:

Request Parameter	Mandatory?	Data Type	Description
source	Yes	String	The external application or data from which the project data will be populated. Valid values include: "Primavera Cloud".
project_number	Yes	String	A valid shell number with an Active status.
sourceProjectId	Yes	String	The project code in Oracle Primavera Cloud.

Request Parameters - Options Object

The following parameters can be specified in the "Data" object:

Request Parameter	Mandatory?	Data Type	Description
workspaceCode	Yes	String	If the project is integrated from Oracle Primavera Cloud application, specify the code of the workspace where the project is located in Oracle Primavera Cloud.
projectType	Yes	String	The type of project in Unifier. Valid values include: "Current" and "Baseline".
dataDate	Yes	Timestamp	Date when the project is scheduled in the source application.
projectStartDate	Yes	Timestamp	The project start date specified in the source application.
projectName	Yes	String	The name of the project specified in the source application.
projectId	Yes	String	The project ID of the project. For "Current" projectType, it is identical to the sourceProjectId. For "Baseline" projectType, it differs.
externalProjectId	No	Integer	The DB internal ID of the project in the source application.
scheduleType	No	String	THe schedule type for the project created or updated. Valid values include: "Resource Loaded" (default), "Duration", and "Cost Loaded".

Request Parameters For Baseline Projects

The following parameters must be specified for a "Baseline" projectType:

Request Parameter	Mandatory?	Data Type	Description
currentProjectId	Yes	String	The reference project ID of the current project for baseline project.
currentProjectExternalId	Yes	Integer	The DB internal reference id of the project from the source application for baseline project.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <id from the audit table>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Request For Current Project and Baseline Project

Send a request in the following format:

```
{
   "options":{
      "project_number":"P-0099",
      "source":"Primavera Cloud",
      "sourceProjectId":"Reg235"
   },
  "data":[
     {
        "projectName": "Reg235",
        "projectId": "Reg235",
        "externalProjectId": 16101,
        "dataDate": "2021-04-04T10:00:00",
        "projectStartDate": "2019-02-02T00:00:00",
        "workspaceCode": "Integration",
```

```
        "projectType": "Current",
        "scheduleType":"Duration"
    },

     {
        "projectName": "Reg235-B1",
        "projectId": "Reg235-B1",
        "externalProjectId": 16102,
        "dataDate": "2021-04-04T10:00:00",
        "projectStartDate": "2019-02-02T00:00:00",
        "workspaceCode": "Integration",
        "projectType": "Baseline",
        "scheduleType":"Duration",
        "currentProjectId":"Reg235",
        "currentProjectExternalId":16101
    }

  ]
}
```

Sample Success Response For Current Project and Baseline Project

A successful response with status code 200 displays in the following format:

```
{
    "data": [
        {
            "dataDate": "2021-04-04T10:00:00",
            "scheduleType": "Duration",
            "externalProjectId": 16101,
            "projectStartDate": "2019-02-02T00:00:00",
            "workspaceCode": "Integration",
            "projectType": "Current",
            "id": 641,
            "projectName": "Reg235",
            "projectId": "Reg235"
```

```
        },
        {
            "currentProjectId": "Reg235",
            "dataDate": "2021-04-04T10:00:00",
            "scheduleType": "Duration",
            "currentProjectExternalId": 16101,
            "externalProjectId": 16102,
            "projectStartDate": "2019-02-02T00:00:00",
            "workspaceCode": "Integration",
            "projectType": "Baseline",
            "id": 643,
            "projectName": "Reg235-B1",
            "projectId": "Reg235-B1"
        }
    ],
    "message": ["success"],
    "status": 200,
    "rest_audit_id": 5891
}
```


Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request:

Field Name	Use-case Scenario	Status Code	Error Message
source	source is not specified in the request.	12007	The API request is missing the required information: [source].
source	source value is invalid.	12008	Invalid value was found in a field: [source]. Allowed values: [Primavera Cloud].
source	source value is empty.	12030	The API request contains empty value for: [source]. Allowed values: [Primavera Cloud].
project_number	project_number is not specified in the request.	12018	The API request is missing the required information: [project_number].

Field Name	Use-case Scenario	Status Code	Error Message
project_number	project_number is empty/blank.	12128	The API request contains empty value for: [project_number].
project_number	project_number is invalid, blank, or not specified in the request.	602	Project/Shell Number is not correct.
project_number	Project/Shell is not an active shell.	12020	The API request contains an invalid value: [project_number]. Check the status of this project_number in Unifier.
sourceProjectid	sourceProjectId is not configured in the source Unifier shell.	12021	The API request contains an invalid value: [sourceProjectId]. Please check if this sourceProjectId has been configured in Unifier.
sourceProjectid	sourceProjectId value has invalid special characters.	12022	The API request contains invalid characters in: [source_project_id]. The following characters are not allowed : / \\ : * ? \" < > | ' =
sourceProjectid	sourceProjectId is not specified in the request.	12005	The API request is missing the required information: [sourceProjectId]
sourceProjectid	sourceProjectid value is empty.	12032	The API request contains empty value for: [sourceProjectId].
sourceProjectid	sourceProjectid exceeds maximum length.	12014	Invalid value was found in a field: [source_project_id]. Allowed length: [250]
workspaceCode	Input is not alphanumeric. Special character validation is not required.	12115	Invalid value was found in a field: [workspaceCode]. Allowed only alphanumeric value.
workspaceCode	workspaceCode is not configured in Unifier.	12146	The API request contains an invalid value: [workspaceCode]. Check if this workspaceCode has been configured corresponding to sourceProjectId in Unifier.
projectType	projectType is not specified in the request.	12143	The API request is missing the required information: [projectType].

Field Name	Use-case Scenario	Status Code	Error Message
projectType	projectType is empty/blank.	12144	The API request contains empty value for: [projectType]. Allowed values: [Current, Baseline]
projectType	projectType is an incorrect data type.	12142	Invalid value was found in a field: [projectType]. Allowed only alphanumeric value.
projectType	An invalid value is passed in projectType.	12145	Invalid value was found in a field: 'projectType'. Allowed values: [Current, Baseline]
dataDate	dataDate is not specified in the request.	12107	The API request is missing the required information: [dataDate].
dataDate	dataDate is an incorrect data type.	12105	The API request contains an invalid value: [dataDate]. Please check if this dataDate has been in correct date format [yyyy-MM-dd].
dataDate	dataDate value is empty.	12130	The API request contains empty value for: [dataDate].
dataDate	dataDate exceeds maximum length.	12148	Invalid value was found in a field [dataDate]. The value provided should be equal to or greater than Project Schedule Start Date.
projectStartDate	projectStartDate is not specified in the request.	12108	The API request is missing the required information: [projectStartDate]
projectStartDate	projectStartDate is specified with an incorrect date format.	12106	The API request contains an invalid value: [projectStartDate]. Please check if this projectStartDate has been in correct date format [yyyy-MM-ddTHH:mm:ss].
projectStartDate	projectStartDate value is empty.	12131	The API request contains an invalid value: [projectStartDate]. Please check if this projectStartDate has been in correct date format [yyyy-MM-ddTHH:mm:ss].

Field Name	Use-case Scenario	Status Code	Error Message
projectName	projectName value has invalid special characters.	12117	The API request contains invalid characters in: [projectName]. The following characters are not allowed : / \\ : * ? \" < > | ' =
projectName	projectName exceeds maximum length.	12118	Invalid value was found in a field: [projectName]. Allowed length: [250].
projectName	projectName is not alphanumeric.	12121	Invalid value was found in a field: [projectName]. Allowed only alphanumeric value.
projectName	projectName value is empty.	12127	The API request contains empty value for: [projectName].
projectName	projectName is not specified in the request.	12126	The API request is missing the required information: [projectName].
projectId	projectId is not specified in the request.	12005	The API request is missing the required information: [projectId]
projectId	projectId exceeds maximum length.	12014	Invalid value was found in a field: [project_id]. Allowed length: [250]
projectId	projectId is not configured in the source Unifier shell.	12109	The API request contains an invalid value: [projectId]. Check if this projectId has been configured in Unifier.
projectId	projectId value has invalid special characters.	12110	The API request contains invalid characters in: [projectId]. The following characters are not allowed : / \\ : * ? \" < > | ' =
projectId	projectId value is empty.	12132	The API request contains empty value for: [projectId].
projectId	projectId of the baseline project matches the projectId of the Current project.	12149	Baseline [projectId] cannot be same as Current [projectId].

Field Name	Use-case Scenario	Status Code	Error Message
projectId	projectId is already present as the current or baseline projectId in the same or different Unifier shell.	12151	Invalid value was found in a field: [projectId]. The same projectId is configured as current or baseline project id in Unifier Shell-<ShellNumber>
externalProjectId	externalProjectId value has invalid special characters.	12113	The API request contains invalid characters in: [externalProjectId]. The following characters are not allowed : / \\ : * ? \" < > | ' =
externalProjectId	externalProjectId exceeds maximum length.	12114	Invalid value was found in a field: [externalProjectId]. Allowed length: [10]
externalProjectId	externalProjectId is an incorrect data type.	12120	Invalid value was found in a field: [externalProjectId]. Allowed only numeric value.
scheduleType	scheduleType value is invalid.	12125	Invalid value was found in a field: 'scheduleType'. Allowed values: [Duration, Cost, Resource].
scheduleType	scheduleType value is not alphanumeric.	12124	Invalid value was found in a field: [scheduleType]. Allowed only alphanumeric value.
scheduleType	scheduleType value is empty.	12147	The API request contains empty value for: [scheduleType]. Allowed values: [Duration, Cost, Resource]
currentProjectId	currentProjectId is not specified in the baseline data.	12133	The API request is missing the required information for baseline data: [currentProjectId].
currentProjectId	currentProjectId exceeds maximum length.	12136	Invalid value was found in a field: 'currentProjectId'. Allowed length: [250].
currentProjectId	currentProjectId value is empty.	12134	The API request contains empty value for: [currentProjectId].
currentProjectId	currentProjectId value contains special characters.	12137	The API request contains invalid characters in: [currentProjectId]. The following characters are not allowed : / \\ : * ? \" < > | ' =

Field Name	Use-case Scenario	Status Code	Error Message
currentProjectExternalId	currentProjectExternalId value contains special characters.	12138	The API request contains invalid characters in: [currentProjectExternalId]. The following characters are not allowed : / \\ : * ? \" < > | ' =
currentProjectExternalId	currentProjectExternalId exceeds maximum length.	12139	Invalid value was found in a field: [currentProjectExternalId]. Allowed length: [10].
currentProjectExternalId	currentProjectExternalId is an incorrect data type.	12140	Invalid value was found in a field: [currentProjectExternalId]. Allowed only numeric value.
currentProjectExternalId	currentProjectExternalId is not specified in the baseline data.	12141	The API request is missing the required information for baseline data: [currentProjectExternalId].

Get Mapped External Projects

```
GET
/ws/rest/service/v2/activity/sheet/mappedprojects?project_number={project number}&source_project_id={mapped external project id}
```

Purpose

Retrieves externally-synced project data in the Activity Sheet of a specified Unifier shell based on source_Project_Id and project_number. This REST service fetches the current project data and baseline project data.

> **Note**: Validations are not implemented for System Activity Sheet data as it is assumed to be sent correctly from the source system.

Prerequisites

Ensure the source project ID is configured or added by selecting **Shell Details**, and then selecting the **Primavera Cloud Integration** tab in Unifier.

Request Format

Send an GET request in the format specified above.

Request Parameters

The following parameters can be specified in the request:

Request Parameter	Mandatory?	Data Type	Description
project_number	Yes	String	A valid shell number with an Active status.
source_Project_Id	Yes	String	The project code in Oracle Primavera Cloud.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <id from the audit table>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response

A successful response with status code 200 displays in the following format:

```
{
    "data": [
        {
            "dataDate": "2021-04-04T10:00:00",
            "scheduleType": "duration",
            "projectStartDate": "2019-02-02T10:00:00",
            "externalProjectId": 16101,
            "workspaceCode": "NON-PROD",
            "projectType": "Current",
            "id": 289,
            "projectName": "OPC-Sheet",
            "projectId": "OPC-Sheet"
        },
        {
            "dataDate": "2021-02-03T10:00:00",
            "scheduleType": "duration",
```

```
            "projectStartDate": "2020-02-02T10:00:00",
            "externalProjectId": 16102,
            "workspaceCode": "NON-PROD",
            "projectType": "Baseline",
            "id": 290,
            "projectName": "OPC-Sheet-B1",
            "projectId": "OPC-Sheet-B1"
        }
    ],
    "message": [],
    "status": 200,
    "rest_audit_id": 4587
}
```


Sample Failed Response

A failed response is returned with a status code in the following format:


```
{
    "data": [],
    "message": [
        "The API request contains invalid characters in: [source_project_id]. The following characters are not allowed : / \\ : * ? \" < > | ' ="
    ],
    "status": 12204,
    "rest_audit_id": 4633
}
```


Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request:

Field Name	Use-case Scenario	Status Code	Error Message
project_number	project_number is empty/blank.	620	Missing Project Number.

Field Name	Use-case Scenario	Status Code	Error Message
project_number	project_number is invalid, blank, or not specified in the request.	602	Project/Shell Number is not correct.
project_number	Project/Shell is not an active shell.	12020	The API request contains an invalid value: [project_number]. Check the status of this project_number in Unifier.
source_project_id	source_project_id is not configured in the source Unifier shell.	12205	The API request contains an invalid value: [source_project_id]. Check if this source_project_id has been configured in Unifier.
source_project_id	source_project_id value has invalid special characters.	12204	The API request contains invalid characters in: [source_project_id]. The following characters are not allowed : / \\ : * ? \" < > | ' =
source_project_id	source_project_id value is blank.	12206	The API request is missing the required information: [source_project_id].
source_project_id	source_project_id exceeds maximum length.	12202	Invalid value was found in a field: 'source_project_id'. Allowed length: [250].

WBS Sheet

Create WBS Code

`POST /ws/rest/service/v2/wbs`

Purpose

Create WBS Codes in a specific shell from a different system. Use this REST service to create and update WBS codes.

Notes:

- If you are creating a WBS sheet/codes manually by using the REST service, do not include a period (".") in the name of the shell when you create the shell. Because the shell name becomes part of the WBS path and WBS does not currently accept periods, the shell name cannot contain periods.
- Validations are not implemented for System Activity Sheet data in any of the API's assuming the data from source system is sent properly

Prerequisites

Ensure the following:

- You have the required **WBS Sheet Services** permissions under the **Activity Manager**.
- The Unifier shell is configured.
- The WBS sheet is configured.

Request Format

Send an request in the following format, wherein the "data" object can contain one or more - JSON Maps:

```
{
   "options":{"source": "<value>", "project_number": "<value>",
"sheetType": "<value>", "removeUnreferencedData": "<value>"}
   "data":[{
               "uuu_cmwbs_code":"<value>",
               "uuu_cmwbs_name":"<value>",
               "uuu_P6WBSPath": "<value>",
               "uuu_cmwbs_status": "<value>",
               "uuu_P6ETCComputeType": <value>,
               "uuu_P6ETCUserValue": <value>",
               "isETCApplicableToChild": flag}]
}
```

Request Parameters - Options Object

The following parameters can be specified in the "Options" object:

Request Parameter	Required ?	Data Type	Description
source	Yes	String	The external application or data from which WBS codes will be populated. Valid values include: "Primavera Cloud" and "Others".

Request Parameter	Required ?	Data Type	Description
project_number	Yes	String	A valid shell number with an Active status.
sourceProjectId	Yes	String	The Oracle Primavera Cloud code.
sheetType	Yes	String	Indicate the type of WBS sheet to be populated. Valid values include: ▸ "System": Specify this value for Primavera Cloud/P6 integrations to insert data into a System WBS Sheet. ▸ "Manual" Specify this value if the source parameter is specified as "Others
removeUnreferencedData	No	Boolean	Valid values include: ▸ "True": Creates and updates WBS codes present in the request and removes the WBS codes not included in the current request data from the existing WBS sheet. ▸ "False": (Default) Will not remove any WBS codes from the existing WBS sheet; Creates WBS codes from the request data if they don't exist and updates WBS codes data if they exist.

Request Parameters - Data Object

The following parameters can be specified in the "Data" object:

Request Parameter	Required?	Data Type	Description
uuu_cmwbs_code	Yes	String	The Id or code of the activity. This is expected to be unique for each activity in the activity sheet.
uuu_cmwbs_name	Yes	String	Name of the WBS code.
uuu_P6WBSPath	Yes	String	Path of the WBS Code in WBS sheet.
uuu_P6ETCComputeType	No	Integer	Specify a value in the range 1 through 5. ▸ 1: (Default) Remaining Cost for Activity ▸ 2: 1 x (BAC - EV) ▸ 3: (1 / CPI) x (BAC - EV) ▸ 4: (1 / (CPI x SPI)) x (BAC - EV) ▸ 5: (BAC-EV)

Request Parameter	Required?	Data Type	Description
uuu_P6ETCUserValue	No	Float	If the uuu_P6ETCComputeType parameter value in the request is between 1 to 4 , then this value is ignored in Unifier and is updated to 0.01. If the uuu_P6ETCComputeType parameter value in the request is 5 , then this value is accepted in Unifier. It will be a positive floating value.
isETCApplicableToChild	No	boolean	Indicates if the ETC Technique type is to be applied to the child or not. Valid values include: "True" and "False". Defaults to "False" if a value is not provided.
uuu_cmwbs_status	No	String	The status of WBS Code. Valid values include: "Active" and "Inactive". Defaults to "Active".

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <id from the audit table>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request For Manual Sheet-Type

For a Manual sheet-type, send a request in the following format:

> **Note:** For the Manual sheet-type, the source should always be “Others”.

```
{
    "options": {
        "source": "Others",
        "project_number": "P-0056", // Manual
       "removeUnreferencedData":false,
```

```
        "sheetType": "manual"
    },
    "data": [
     {
            "uuu_cmwbs_code": "A1083",
            "uuu_cmwbs_name": "WBS1",
            "uuu_P6WBSPath": "P-0056.A1083",
            "uuu_cmwbs_status": "Active",
            "uuu_P6ETCComputeType": 4,
            "uuu_P6ETCUserValue": 5,
            "isETCApplicableToChild" : true
        },
             {
              "uuu_cmwbs_code": "A1084",
            "uuu_cmwbs_name": "WBS2",
            "uuu_P6WBSPath": "P-0056.A1083.A1084",
            "uuu_cmwbs_status": "Active",
            "uuu_P6ETCComputeType": 4,
            "uuu_P6ETCUserValue": 5,
            "isETCApplicableToChild" : true
        }
    ]
}
```


Sample Success Response For Manual Sheet Type

A successful response with status code 200 displays in the following format:


```
{
    "data": [
        {
            "id": 28852,
            "uuu_cmwbs_code": "A1084",
            "uuu_cmwbs_name": "WBS2",
            "uuu_P6WBSPath": "P-0056.A1083.A1084",
            "uuu_cmwbs_status": "Active",
```

```
            "uuu_P6ETCComputeType": 4,
            "uuu_P6ETCUserValue": 0.01
        },
        {
            "id": 28851,
            "uuu_cmwbs_code": "A1083",
            "uuu_cmwbs_name": "WBS1",
            "uuu_P6WBSPath": "P-0056.A1083",
            "uuu_cmwbs_status": "Active",
            "uuu_P6ETCComputeType": 4,
            "uuu_P6ETCUserValue": 0.01
        }
    ],
    "message": [
        "success"
    ],
    "status": 200,
    "rest_audit_id": 11870
}
```


Sample Success Request For System Sheet-Type

For a System sheet-type, send a request in the following format:

> **Note:** For a System Sheet-type, the source must be “Primavera Cloud”.


```
{
    "options": {
        "source": "Primavera Cloud",
       "sourceProjectId": "WBSSystem", // System
        "project_number": "P-0056", // Manual
       "removeUnreferencedData":false,
        "sheetType": "System"
    },
    "data": [
     {
            "uuu_cmwbs_code": "A1083",
```

```
            "uuu_cmwbs_name": "WBS1",
            "uuu_P6WBSPath": "WBSSystem.A1083",
            "uuu_cmwbs_status": "Active",
            "uuu_P6ETCComputeType": 4,
            "uuu_P6ETCUserValue": 5,
            "isETCApplicableToChild" : true
        },
             {
            "uuu_cmwbs_code": "A1084",
            "uuu_cmwbs_name": "WBS2",
            "uuu_P6WBSPath": "WBSSystem.A1083.A1084",
            "uuu_cmwbs_status": "Active",
            "uuu_P6ETCComputeType": 4,
            "uuu_P6ETCUserValue": 5,
            "isETCApplicableToChild" : true
        }
    ]
}
```


Sample Response For System Sheet Type

A successful response with status code 200 displays in the following format:


```
{
    "data": [
        {
            "id": 28852,
            "uuu_cmwbs_code": "A1084",
            "uuu_cmwbs_name": "WBS2",
            "uuu_P6WBSPath": "WBSSystem.A1083.A1084",
            "uuu_cmwbs_status": "Active",
            "uuu_P6ETCComputeType": 4,
            "uuu_P6ETCUserValue": 0.01
        },
        {
            "id": 28851,
```

```
            "uuu_cmwbs_code": "A1083",
            "uuu_cmwbs_name": "WBS1",
            "uuu_P6WBSPath": "WBSSystem.A1083",
            "uuu_cmwbs_status": "Active",
            "uuu_P6ETCComputeType": 4,
            "uuu_P6ETCUserValue": 0.01
        }
    ],
    "message": [
        "success"
    ],
    "status": 200,
    "rest_audit_id": 11868
}
```


Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request:

Field Name	Use-case Scenario	Status Code	Error Message
source	source is not specified in the request.	12007	The API request is missing the required information: [source]
source	source value is invalid.	12008	Invalid value was found in a field: [source]. Allowed values: [Primavera Cloud, Others].
source	source value is blank.	12008	Invalid value was found in a field: [source]. Allowed values: [Primavera Cloud, Others].
source	source is specified with a wrong data type such as boolean or integer.	12035	The API request contains empty value for: [source]. Allowed values: [Primavera Cloud, Others].
project_number	project_number is not specified in the request.	12018	The API request is missing the required information: [project_number].

Field Name	Use-case Scenario	Status Code	Error Message
project_number	project_number is invalid, blank, or not specified in the request.	602	Project/Shell Number is not correct.
project_number	Project/Shell is not an active shell.	1245	Create/Update/Delete cannot be performed when project/shell status is Inactive or View-Only or On-Hold.
project_number	project_number is empty/blank.	12128	The API request contains empty value for: [project_number].
sourceProjectid	sourceProjectId is not configured in the source Unifier shell.	12021	The API request contains an invalid value: [sourceProjectId]. Please check if this sourceProjectId has been configured in Unifier.
sourceProjectid	sourceProjectId value is a blank.	12032	The API request contains empty value for: [sourceProjectId].
sourceProjectid	sourceProjectId is not specified in the request.	12005	The API request is missing the required information: [sourceProjectId]
sheetType	sheetType is not specified in the request.	12327	The API request is missing the required information: [sheetType].
sheetType	sheetType value is invalid.	12335	Invalid value was found in a field: [sheetType]. Allowed values: [Manual, System].
sheetType	sheetType is specified with a wrong data type such as boolean or integer.	12335	Invalid value was found in a field: [sheetType]. Allowed values: [Manual, System].
sheetType	sheetType is empty/blank.	12339	The API request contains empty value for: [sheetType]. Allowed values: [Manual, System].
sheetType	sheetType is "Manual" and source is "Primavera Cloud"/"P6".	12671	Invalid value was found in a field: [sheetType]. If source=Primavera Cloud, allowed values: system.

Field Name	Use-case Scenario	Status Code	Error Message
sheetType	sheetType is "System" and source is "Others".	12671	Invalid value was found in a field: [sheetType]. If source=Others, allowed value: Manual.
removeUnreferencedData	removeUnreferencedData is specified with a wrong data type such as string or integer.	12015	Invalid value was found in a field: [removeUnreferencedData]. Allowed only boolean value.
removeUnreferencedData	removeUnreferencedData is empty/blank.	12031	The API request contains an empty value for: [removeUnreferencedData]. Allowed only boolean value.
uuu_cmwbs_code	uuu_cmwbs_code exceeds 120 characters.	12301	Invalid value was found in a field: [uuu_cmwbs_code]. Allowed length: [120]. [uuu_cmwbs_code]: {uuu_cmwbs_code}
uuu_cmwbs_code	Duplicate uuu_cmwbs_code exists in the sheet.	12302	In the API request duplicate value was found in a field: [uuu_cmwbs_code]. Only unique value allowed for a [uuu_cmwbs_code] under a [uuu_P6WBSPath]. [uuu_cmwbs_code]: {uuu_cmwbs_code}.
uuu_cmwbs_code	uuu_cmwbs_code is empty/blank.	12303	The API request contains empty value for: [uuu_cmwbs_code]. Allowed only string value or use quotations.
uuu_cmwbs_code	uuu_cmwbs_code is not specified in the request.	12304	The API request is missing the required information: [uuu_cmwbs_code].
uuu_cmwbs_code	uuu_cmwbs_code is not specified in a string format.	12305	Invalid value was found in a field: [uuu_cmwbs_code]. Allowed only string value or use quotations. [uuu_cmwbs_code]: {uuu_cmwbs_code}.
uuu_cmwbs_code	uuu_cmwbs_code contains a [.] character.	12306	Invalid character was found in a field: [uuu_cmwbs_code]. This field should not contain character: '.' . [uuu_cmwbs_code]: {uuu_cmwbs_code}

Field Name	Use-case Scenario	Status Code	Error Message
uuu_cmwbs_name	uuu_cmwbs_name exceeds 120 characters	12307	Invalid value was found in a field: [uuu_cmwbs_name]. Allowed length: [250]. [uuu_cmwbs_code]: {uuu_cmwbs_code}
uuu_cmwbs_name	uuu_cmwbs_name is not specified in the request.	12308	The API request is missing the required information: [uuu_cmwbs_name]. [uuu_cmwbs_code]: {uuu_cmwbs_code}
uuu_cmwbs_name	uuu_cmwbs_name is empty/blank.	12309	The API request contains empty value for : [uuu_cmwbs_name]. Allowed only string value or use quotations. [uuu_cmwbs_code]: {uuu_cmwbs_code}
uuu_cmwbs_name	uuu_cmwbs_name is not specified in a string format.	12310	Invalid value was found in a field: [uuu_cmwbs_name]. Allowed only string value or use quotations. [uuu_cmwbs_code]: {uuu_cmwbs_code}
uuu_P6WBSPath	uuu_P6WBSPath is not specified in the request.	12311	The API request is missing the required information: [uuu_P6WBSPath]. [uuu_cmwbs_code]: {uuu_cmwbs_code}
uuu_P6WBSPath	uuu_P6WBSPath is empty/blank.	12312	The API request contains empty value for: [uuu_P6WBSPath]. Allowed only string value or use quotations. [uuu_cmwbs_code]: {uuu_cmwbs_code}
uuu_P6WBSPath	uuu_P6WBSPath is not specified in a string format.	12313	Invalid value was found in a field: [uuu_P6WBSPath]. Allowed only string value or use quotations. [uuu_cmwbs_code]: {uuu_cmwbs_code}
uuu_P6WBSPath	uuu_P6WBSPath hierarchy is incorrect or not an existing WBS Code with the hierarchy.	12314	Incorrect WBS Hierarchy provided in [uuu_P6WBSPath]. [uuu_cmwbs_code]: {uuu_cmwbs_code}

Field Name	Use-case Scenario	Status Code	Error Message
uuu_P6WBSPath	Hierarchy level is invalid.	12315	Invalid level of hierarchy was found in a field: [uuu_P6WBSPath]. Allowed maximum level of hierarchy: [18]. [uuu_cmwbs_code]: {uuu_cmwbs_code}
uuu_P6WBSPath	sheetType is "Manual" and uuu_P6WBSPath does not begin with a project_number.	12316	Invalid project_number was found in a field: [uuu_P6WBSPath]. Provide the correct project_number in [uuu_P6WBSPath]. [uuu_cmwbs_code]: {uuu_cmwbs_code}
uuu_P6WBSPath	sheetType is "System" and uuu_P6WBSPath does not begin with sourceProjectID.	12317	Invalid sourceProjectId was found in a field: [uuu_P6WBSPath]. Provide the correct sourceProjectId in [uuu_P6WBSPath]. [uuu_cmwbs_code]: {uuu_cmwbs_code}
uuu_P6ETCComputeType	uuu_P6ETCComputeType is not a number between 1 and 5.	12318	Invalid value was found in the field: [uuu_P6ETCComputeType]. Only integer values are allowed from 1 to 5. [uuu_cmwbs_code]: {uuu_cmwbs_code}
uuu_P6ETCComputeType	uuu_P6ETCComputeType value is empty/Null.	12319	The API request contains empty value for: [uuu_P6ETCComputeType]. Only integer values are allowed from 1 to 5. [uuu_cmwbs_code]: {uuu_cmwbs_code}
uuu_P6ETCUserValue	uuu_P6ETCUserValue value is empty/Null	12320	Invalid value was found in a field: [uuu_P6ETCUserValue]. Only numeric values are allowed and should be greater than or equal to 0.01. [uuu_cmwbs_code]: {uuu_cmwbs_code}
uuu_P6ETCUserValue	uuu_P6ETCComputeType is 5, and uuu_P6ETCUserValue is not included in the request.	12321	The API request is missing the required information: [uuu_P6ETCUserValue]. [uuu_cmwbs_code]: {uuu_cmwbs_code}

Field Name	Use-case Scenario	Status Code	Error Message
uuu_P6ETCUserValue	uuu_P6ETCUserValue is provided with a null value. i.e., "uuu_P6ETCUserValue":null	12322	The API request contains empty value for: [uuu_P6ETCUserValue]. Only numeric values are allowed and should be greater than or equal to 0.01. [uuu_cmwbs_code]: {uuu_cmwbs_code}
isETCApplicableToChild	'isETCApplicableToChild' is not a boolean value.	12323	Invalid value was found in a field: [isETCApplicableToChild]. Allowed only boolean value. [uuu_cmwbs_code]: {uuu_cmwbs_code}
isETCApplicableToChild	'isETCApplicableToChild' value is empty or null.	12324	The API request contains empty value for: [isETCApplicableToChild]. Allowed only boolean value. [uuu_cmwbs_code]: {uuu_cmwbs_code}
uuu_cmwbs_status	uuu_cmwbs_status value is empty.	12325	The API request contains empty value for: [uuu_cmwbs_status]. [uuu_cmwbs_code]: {uuu_cmwbs_code}
uuu_cmwbs_status	uuu_cmwbs_status value is invalid	12326	Invalid value was found in a field: [uuu_cmwbs_status]. Allowed values: [Active, Inactive]. [uuu_cmwbs_code]: {uuu_cmwbs_code}

Get External WBS Sheet Data

```
GET /ws/rest/service/v2/wbs?project_number={project
number}&sourceProjectId={sourceProjectId}
```

Purpose

Retrieve externally-synced WBS Sheet data in a specified Unifier shell shell based on the source_project_id and project_number.

Also retrieve manual WBS Sheet data based on the project_number.

Prerequisites

Ensure the following:

- You have the required **WBS Sheet Services** permissions under the **Activity Manager**.
- The Unifier shell is configured.
- The WBS sheet is configured.

Request Format For Manual WBS Sheet Data

To retrieve Manual WBS sheet data for a specific project, send a request in the following format:

```
GET /ws/rest/service/v2/wbs?project_number={project number}
```

Request Format For System WBS Sheet Data

To retrieve System WBS sheet data for a specific project, send a request in the following format:

```
GET /ws/rest/service/v2/wbs?project_number={project
number}&sourceProjectId={sourceProjectId}
```

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <id from the audit table>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response

A successful response with status code 200 displays in the following format:

```
{
    "data": [
        {
            "id": 28853,
            "uuu_cmwbs_code": "A1083",
            "uuu_cmwbs_name": "WBS1",
            "uuu_P6WBSPath": "P-0056.A1083",
            "uuu_cmwbs_status": "Active",
            "uuu_P6ETCComputeType": 4,
            "uuu_P6ETCUserValue": 0.01
        },
```

```
        {
            "id": 28854,
            "uuu_cmwbs_code": "A1084",
            "uuu_cmwbs_name": "WBS2",
            "uuu_P6WBSPath": "P-0056.A1083.A1084",
            "uuu_cmwbs_status": "Active",
            "uuu_P6ETCComputeType": 4,
            "uuu_P6ETCUserValue": 0.01
        }
    ],
    "message": [
        "success"
    ],
    "status": 200,
    "rest_audit_id": 11873
}
```


Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request:

Field Name	Use-case Scenario	Status Code	Error Message
project_number	project_number is invalid, blank, or not specified in the request.	602	Project/Shell Number is not correct.
project_number	project_number is inactive.	1219	Project status is Inactive.
sourceProjectId	sourceProjectId is not configured in the source unifier Unifiershell.	12338	The API request contains an invalid value: [sourceProjectId]. Please check if this sourceProjectId has been configured in Unifier.

Master Rate Sheet

Create and Update Resources in the Master Rate Sheet

`POST /ws/rest/service/v2/rate/sheet/resources`

Purpose

Create or update Resources in the Master Rate Sheet.

This POST service includes the creation and updating of Resources. Resources cannot be removed once they are created under the Master Rate Sheet.

There is no PUT or delete API for this.

Prerequisites

- You must have the necessary permissions to run this service.
- rateType and costType are optional fields in the ratesBreakdown array. If they are not entered, Standard and Direct will be the default breakdown for Rates.
- The request must include unique combinations of Rate Type and Cost Type. If there is more than one entry with the same combination and different Rates, you will receive an error message.

> **Note:** All allowed parameter values are case-sensitive.

Request Format

Send an API Request as a JSON map with the following structure:

```
{
    "options":{
                    {"Source": "<value>"}
               },
    "data":[]
}
```

Request Parameters Supported in "options" JSON Map

The following request parameters can be included in the "options" JSON map:

Request Parameter	Mandatory?	Data Type	Description
source	Yes	String	The external application from which project data is populated. Valid values include: "Primavera Cloud", "P6", and "Others".

Request Parameters Supported in "data" JSON Map

The following request parameters can be included in one or more "data" JSON maps:

Request Parameter	Mandatory?	Data Type	Description
parentWorkspaceCode	No	String	Specify this optional field if "Source" value is "Primavera Cloud". This parameter checks if the parent Resource Code exists in the system, and if the parent and child workspace codes are under different workspaces.
ext_resc_id	No	Integer	Specify this optional field if "Source" value is "Primavera Cloud". his is an internal Resource ID in Primavera Cloud. It is used for ResourceCode update.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <id from the audit table>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

This ia a sample request to create Primavera Cloud resources:

```
{
  "options": {
```

```
        "source": "Primavera Cloud"
    },
    "data": [
        {
            "resourceCode": "Child1Rate4",
            "resourceName": "Child1Rate4",
            "workspaceCode": "NON_PROD3",
            "parentResourceCode": "Parent",
            "resourceType": "Labor",
            "resourceCurrency": "USD",
            "resourceStatus": "Active",
            "unitsPerTime": 10,
            "rates": [
                {
                    "resourceEffectiveDate": "2020-02-03",
                    "ratesBreakdown": [
                        {
                           "resourceStandardRate": 100,
                           "costType": "Food",
                           "rateType": "Direct"
                        },
                        {
                           "resourceStandardRate": 100
                        }
                    ]
               },
                {
                  "resourceEffectiveDate": "2020-02-05",
                   "ratesBreakdown" : [
                       {
                            "resourceStandardRate": 50,
                            "costType" : "Food",
                            "rateType" : "Direct"
                       },
```

```
                    {
                        "resourceStandardRate": 100,
                        "costType" : "Standard",
                        "rateType" : "Indirect"
                    }
                ]
            }
        ]
    }

]
}
```

Sample Success Response

A successful response with status code 200 displays in the following format:

```
{
    "data": [
        {
            "resourceStatus": "Active",
            "resourceCurrency": "USD",
            "resourceCode": "Child1Rate4",
            "workspaceCode": "NON_PROD3",
            "unitsPerTime":10,
            "rates": [
                {
                    "ratesBreakdown": [
                        {
                            "rateType": "Direct",
                            "costType": "Food",
                            "id": 920,
                            "resourceStandardRate": 100.0
                        },
                        {
                            "rateType": "Direct",
```

```
                        "costType": "Standard",
                        "id": 921,
                        "resourceStandardRate": 100.0
                    }
                ],
                "resourceEffectiveDate": "2020-02-03",
                "id": 913
            },
            {
                "ratesBreakdown": [
                    {
                        "rateType": "Direct",
                        "costType": "Food",
                        "id": 922,
                        "resourceStandardRate": 50.0
                    },
                    {
                        "rateType": "Indirect",
                        "costType": "Standard",
                        "id": 923,
                        "resourceStandardRate": 100.0
                    }
                ],
                "resourceEffectiveDate": "2020-02-05",
                "id": 914
            }
        ],
        "resourceName": "Child1Rate4",
        "id": 118,
        "parentResourceCode": "Parent",
        "resourceType": "Labor"
    }
],
"message": [
```

```
        "success"
    ],
    "status": 200,
    "rest_audit_id": 1234
}
```

Sample Failed Response for Resources

A failed response to the above request displays the corresponding status code in the following format:

```
{
    "data": [],
    "message": ["The API request is missing the required information: [resourceCode]."],
    "status": 12400,
    "rest_audit_id": 1396
}
```

Sample Failed Request for Resources

A request with incorrect data is sent in the following format:

```
{
  "options": {
        "source": "Primavera Cloud"
    },
    "data": [
        {
            "resourceCode": "Child11Rate41",
            "resourceName": "Child11Rate41",
            "workspaceCode": "NON_PROD",
            "resourceType": "Labor",
            "resourceCurrency": "USD",
            "parentResourceCode":"Rate4",
            "parentWorkspaceCode":123,
            "resourceStatus": "Active",
            "ext_resc_id":100203,
            "unitsPerTime": 10,
```

```
        "rates": [
            {
                "resourceEffectiveDate": "2020-02-03",
                "ratesBreakdown": [
                    {
                       "resourceStandardRate": 100,
                       "costType": "Food",
                       "rateType": "Direct"
                    },
                    {
                       "resourceStandardRate": 100
                    }
                ]
           },

            {
              "resourceEffectiveDate": "2020-02-05",
               "ratesBreakdown" : [
                    {
                         "resourceStandardRate": 50,
                         "costType" : "Food",
                         "rateType" : "Direct"
                    },
                    {
                         "resourceStandardRate": 100,
                         "costType" : "Standard",
                         "rateType" : "Indirect"
                    }
               ]
            }
        ]
    },
     {
```

```
"resourceCode": "Rate42",
"resourceName": "Rate42",
"workspaceCode": "NON_PROD",
"resourceType": "Labor",
"resourceCurrency": "USD",
"resourceStatus": "Active",
"ext_resc_id":100204,
"unitsPerTime": 10,
"rates": [
    {
        "resourceEffectiveDate": "2020-02-03",
        "ratesBreakdown": [
            {
               "resourceStandardRate": 100,
               "costType": "Food",
               "rateType": "Direct"
            },
            {
               "resourceStandardRate": 100
            }
        ]
   },

    {
      "resourceEffectiveDate": "2020-02-05",
       "ratesBreakdown" : [
           {
                "resourceStandardRate": 50,
                "costType" : "Food",
                "rateType" : "Direct"
           },
           {
                "resourceStandardRate": 100,
```

```
                            "costType" : "Standard",
                            "rateType" : "Indirect"
                        }
                    ]
                }
            ]
        },
        {
            "resourceCode": "Child11Rate43",
            "resourceName": "Child11Rate43",
            "workspaceCode": "NON_PROD",
            "resourceType": "Labor",
            "resourceCurrency": "USD",
            "parentResourceCode":"Rate4",
            "parentWorkspaceCode":"NON_PROD",
            "resourceStatus": "Active",
            "ext_resc_id":100206,
            "unitsPerTime": 10

        }

    ]
}
```

Sample Partial Success

The REST service returns a partially successful response in the following format:

```
{
    "data": [
        {
            "resourceStatus": "Active",
            "resourceCurrency": "USD",
            "unitsPerTime": 10,
            "resourceCode": "Rate42",
            "ext_resc_id": 100204,
```

```
"workspaceCode": "NON_PROD",
"rates": [
    {
        "ratesBreakdown": [
            {
                "rateType": "Direct",
                "costType": "Food",
                "id": 122578,
                "resourceStandardRate": 50.0
            },
            {
                "rateType": "Direct",
                "costType": "Standard",
                "id": 122579,
                "resourceStandardRate": 100.0
            },
            {
                "rateType": "Indirect",
                "costType": "Standard",
                "id": 122605,
                "resourceStandardRate": 100.0
            }
        ],
        "resourceEffectiveDate": "2020-02-03",
        "id": 122216
    },
    {
        "ratesBreakdown": [
            {
                "rateType": "Direct",
                "costType": "Food",
                "id": 122580,
                "resourceStandardRate": 50.0
            },
```

```
                        {
                            "rateType": "Indirect",
                            "costType": "Standard",
                            "id": 122581,
                            "resourceStandardRate": 100.0
                        }
                    ],
                    "resourceEffectiveDate": "2020-02-05",
                    "id": 122217
                }
            ],
            "resourceName": "Rate42",
            "id": 2,
            "parentResourceCode": "",
            "resourceType": "Labor"
        }
    ],
    "message": [
        {
            "ResourceCode": "Child11Rate41",
            "WorkspaceCode": "NON_PROD",
            "ErrorStatus": 12476,
            "ErrorMessage": "Invalid value was found in a field:
[parentWorkspaceCode]. Allowed only string value or use quotations. "
        },
        {
            "ResourceCode": "Child11Rate43",
            "workspaceCode": "NON_PROD",
            "ErrorStatus": 12414,
            "ErrorMessage": "Invalid value was found in a field:
[parentResourceCode]. Incorrect [parentResourceCode] provided."
        }
    ],
    "rest_audit_id": 7926,
```

```
    "status": 3000
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status Code	Error Message
source	Source is not specified in the request.	3002	Invalid input.
source	Source value is incorrect.	12008	Invalid value was found in a field: [source]. Allowed values: [Primavera Cloud, P6, Others].
source	Source value is null or empty.	12030	The API request contains empty value for: [source]. Allowed values: [Primavera Cloud, P6, Others].
source	Source value is boolean or number data type.	12008	Invalid value was found in a field: [source]. Allowed values: [Primavera Cloud, P6, Others].
parentWorkspaceCode	parentWorkspaceCode is a non-string value.	12476	Invalid value was found in a field: [parentWorkspaceCode]. Allowed only string value or use quotations. Resource Code: <Resource Code>.
parentWorkspaceCode	parentWorkspaceCode exceeds 60 characters.	12477	Invalid value was found in a field: [parentWorkspaceCode]. Allowed length: [60]. Resource Code: <Resource Code>

Field Name	Use-case Scenario	Status Code	Error Message
ext_resc_id	ext_resc_id is a non-string value.	12478	Invalid value was found in a field: [ext_resc_id]. Allowed only positive integer value.

Create and Update Roles in the Master Rate Sheet

`POST /ws/rest/service/v2/rate/sheet/roles`

Purpose

Create or update Roles in the Master Rate Sheet.

This POST service includes the creation and updating of Roles. Roles created under the Master Rate Sheet cannot be removed.

There is no PUT or delete API for this.

Prerequisites

You must have the necessary permissions to run this service.

Request Format

Send an API Request as a JSON map with the following structure:

```
{
    "options":{
                    {"Source": "<value>"}
              },
    "data":[]
}
```

Request Parameters Supported in "options" JSON Map

The following request parameters can be included in the "options" JSON map:

Request Parameter	Mandatory?	Data Type	Description
source	Yes	String	The external application from which project data is populated. Valid values include: "Primavera Cloud", "P6", and "Others".

Request Parameters Supported in "data" JSON Map

The following request parameters can be included in one or more "data" JSON maps:

Request Parameter	Mandatory?	Data Type	Description
parentWorkspaceCode	No	String	Specify this field if "Source" value is "Primavera Cloud". This parameter checks if the parent Role code exists in the system, and if the parent and child workspace codes are under different workspaces.
ext_resc_id	No	Integer	Specify this optional field if "Source" value is "Primavera Cloud". his is an internal Role ID in Primavera Cloud. It is used for Role code update.

Sample Success Request

```
{
  "options":{
      "source": "Primavera Cloud"},
  "data":[
            {"roleCode":"Manager",
```

```
            "roleName": "Manager",
            "workspaceCode": "Workspace1",
            "unitsPerTime":150,
            "roleCurrency": "USD",
            "roleStatus":"Active",
            "rates": [
                      {"roleEffectiveDate": "2020-02-01",
                       "ratesBreakdown" : [{"roleStandardRate": 100 ,
                                            "costType":"Food",
                                            "rateType":"Direct"
                                           },
                                           {"roleStandardRate": 100}
                                          ]
                     },
                     {"roleEffectiveDate": "2018-02-01",
                      "ratesBreakdown" : [
                                           {"roleStandardRate": 100 ,
                                            "costType":"Food",
                                            "rateType":"Direct"
                                           },
                                          {"roleStandardRate": 100}
                                         ]
                    }
                ]
        }
    ]
}
```

Sample Success Response

```
{
    "data": [
        {
            "roleCurrency": "USD",
            "unitsPerTime": 150,
```

```
"roleCode": "Manager",
"workspaceCode": "Workspace1",
"rates": [
    {
        "ratesBreakdown": [
            {
                "roleStandardRate": 100.0,
                "rateType": "Direct",
                "costType": "Food",
                "id": 1568
            },
            {
                "roleStandardRate": 100.0,
                "rateType": "Direct",
                "costType": "Standard",
                "id": 1569
            }
        ],
        "id": 1247,
        "roleEffectiveDate": "2020-02-01"
    },
    {
        "ratesBreakdown": [
            {
                "roleStandardRate": 100.0,
                "rateType": "Direct",
                "costType": "Food",
                "id": 1570
            },
            {
                "roleStandardRate": 100.0,
                "rateType": "Direct",
                "costType": "Standard",
                "id": 1571
```

```
                        }
                    ],
                    "id": 1248,
                    "roleEffectiveDate": "2018-02-01"
                }
            ],
            "roleName": "Manager",
            "id": 92,
            "roleStatus": "Active"
        }
    ],
    "message": [
        "success"
    ],
    "status": 200,
    "rest_audit_id": 2242
}
```


Sample Failed Response for Roles


```
{
    "data": [],
    "message": ["The API request contains empty value for: [roleCode]."],
    "status": 12422,
    "rest_audit_id": 1395
}
```


Sample Failed Request for Roles

A request with incorrect data is sent in the following format:


```
{
  "options":{
      "source":"Primavera Cloud"
   },
  "data":[
     {
        "roleCode": "CE4",
```

```
        "roleStatus": "Active",
        "roleName": "CE4",
        "ext_role_id" : 231454,    // This id is the internal id from
Primavera Cloud and this attribute will be considered only for Primavera
Cloud Roles
        "workspaceCode": "NON_PROD",
        "roleCurrency": "USD",
        "rates": [
                    {
                        "roleEffectiveDate": "2020-02-07",
                        "ratesBreakdown": [
                         {
                            "roleStandardRate": 50,
                            "costType": "Food",
                            "rateType": "Direct"
                         },
                         {
                            "roleStandardRate": 100,
                            "costType": "Food",
                            "rateType": "Indirect"
                         }
                        ]
                     }
                   ]
        },
        {
        "roleCode": "CE5",
        "roleStatus": "Active",
        "roleName": "CE5",
        "workspaceCode": "NON_PROD3",
        "parentRoleCode": "CE4",
        "parentWorkspaceCode": 123,
        "ext_role_id" : 12390,
        "roleCurrency": "USD",
```

```
        "rates": [
                    {
                        "roleEffectiveDate": "2020-02-07",
                        "ratesBreakdown": [
                         {
                            "roleStandardRate": 50,
                            "costType": "Food",
                            "rateType": "Direct"
                         },
                         {
                            "roleStandardRate": 100,
                            "costType": "Standard",
                            "rateType": "Indirect"
                         }
                        ]
                      }
                    ]
                     }
    ]
 }
```

Sample Partial Success Response for Roles

The REST service returns a partially successful response in the following format:

```
{
    "data": [
        {
            "roleCurrency": "USD",
            "roleCode": "CE4",
            "workspaceCode": "NON_PROD",
            "rates": [
                {
                    "ratesBreakdown": [
                        {
                            "roleStandardRate": 50.0,
```

```
                            "rateType": "Direct",
                            "costType": "Food",
                            "id": 122620
                        },
                        {
                            "roleStandardRate": 100.0,
                            "rateType": "Indirect",
                            "costType": "Food",
                            "id": 122621
                        }
                    ],
                    "id": 122240,
                    "roleEffectiveDate": "2020-02-07"
                }
            ],
            "roleName": "CE4",
            "id": 10,
            "ext_role_id": 231454,
            "parentRoleCode": "",
            "roleStatus": "Active"
        }
    ],
    "message": [
        {
            "WorkspaceCode": "NON_PROD3",
            "ErrorStatus": 12476,
            "ErrorMessage": "Invalid value was found in a field:
[parentWorkspaceCode]. Allowed only string value or use quotations. ",
            "RoleCode": "CE5"
        }
    ],
    "rest_audit_id": 7933,
    "status": 3000
}
```

Get Resources from the Master Rate Sheet

```
GET /ws/rest/service/v2/rate/sheet/resources?source={sourceApplication}
```

Purpose

Retrieve the list of resources synced from a source application based on the source provided in the request.

Prerequisites

The user has access to fetch the data.

Request Format

```
https://<SERVER_URL>/rest1/ws/rest/service/v2/rate/sheet?source="Primavera Cloud"
```

Sample Response For Oracle Primavera Cloud


```
{
    "data": [
        {
            "resourceStatus": "Active",
            "unitsPerTime": 1.0,
            "resourceCurrency": "USD1",
            "resourceCode": "RateDemo5",
            "workspaceCode": "NON_PROD2",
            "rates": [
                {
                    "ratesBreakdown": [
                        {
                            "rateType": null,
                            "costType": null,
                            "id": 901,
                            "resourceStandardRate": 100.1234567890124
                        },
                        {
                            "rateType": null,
                            "costType": null,
```

```
                    "id": 902,
                    "resourceStandardRate": 120.0
                }
            ],
            "resourceEffectiveDate": "2020-02-03T00:00:00",
            "id": 902
        },
        {
            "ratesBreakdown": [
                {
                    "rateType": null,
                    "costType": null,
                    "id": 903,
                    "resourceStandardRate": 50.0
                },
                {
                    "rateType": null,
                    "costType": null,
                    "id": 904,
                    "resourceStandardRate": 100.0
                }
            ],
            "resourceEffectiveDate": "2020-02-05T00:00:00",
            "id": 903
        }
    ],
    "resourceName": "RateDemo5",
    "id": 111,
    "parentResourceCode": "Parent",
    "resourceType": "Labor"
},
{
    "resourceStatus": "Active",
    "unitsPerTime": 1.0,
```

```
"resourceCurrency": "USD",
"resourceCode": "30May12",
"workspaceCode": "NON_PROD2",
"rates": [
    {
        "ratesBreakdown": [
            {
                "rateType": "Direct",
                "costType": "Food",
                "id": 1040,
                "resourceStandardRate": 100.0
            },
            {
                "rateType": "Indirect",
                "costType": "Standard",
                "id": 1041,
                "resourceStandardRate": 20.12
            }
        ],
        "resourceEffectiveDate": "2024-02-03T00:00:00",
        "id": 984
    },
    {
        "ratesBreakdown": [
            {
                "rateType": "Direct",
                "costType": "Food",
                "id": 1042,
                "resourceStandardRate": 500.98
            },
            {
                "rateType": "Indirect",
                "costType": "Standard",
                "id": 1043,
```

```
                        "resourceStandardRate": 60.23
                    }
                ],
                "resourceEffectiveDate": "2025-02-05T00:00:00",
                "id": 985
            }
        ],
        "resourceName": "30May12update2222",
        "id": 183,
        "parentResourceCode": "Parent",
        "resourceType": "Nonlabor"
    }
],
"message": [
    "success"
],
"status": 200,
"rest_audit_id": 1929
}
```


Sample Response For P6


```
{
    "data": [
        {
            "resourceStatus": "Active",
            "unitsPerTime": 1.0,
            "resourceCurrency": "USD",
            "resourceCode": "Child4",
            "rates": [
                {
                    "resourceEffectiveDate": "2020-02-03T00:00:00",
                    "id": 1020
                }
            ],
```

```
            "resourceName": "Child4",
            "id": 211,
            "parentResourceCode": "",
            "resourceType": "Labor"
        },
        {
            "resourceStatus": "Active",
            "unitsPerTime": 100.0,
            "resourceCurrency": "INR",
            "resourceCode": "P6C2",
            "rates": [
                {
                    "ratesBreakdown": [
                        {
                            "rateType": "Direct",
                            "costType": "Food",
                            "id": 1238,
                            "resourceStandardRate": 30.5
                        },
                        {
                            "rateType": "Indirect",
                            "costType": "Food",
                            "id": 1239,
                            "resourceStandardRate": 100.0
                        }
                    ],
                    "resourceEffectiveDate": "2020-02-03T00:00:00",
                    "id": 1093
                }
            ],
            "resourceName": "C2update",
            "id": 229,
            "parentResourceCode": "p6res",
            "resourceType": "Nonlabor"
```

```
        }
    ],
    "message": [
        "success"
    ],
    "status": 200,
    "rest_audit_id": 1930
}
```


Sample Response For Other Applications


```
{
    "data": [
        {
            "resourceStatus": "Active",
            "unitsPerTime": 1.0,
            "resourceCurrency": "USD",
            "resourceCode": "res2",
            "rates": [
                {
                    "ratesBreakdown": [
                        {
                            "rateType": "Direct",
                            "costType": "Standard",
                            "id": 12,
                            "resourceStandardRate": 33.8
                        }
                    ],
                    "resourceEffectiveDate": "2022-06-01T00:00:00",
                    "id": 12
                },
                {
                    "ratesBreakdown": [
                        {
                            "rateType": "Direct",
```

```
                "costType": "Standard",
                "id": 27,
                "resourceStandardRate": 40.0
            }
        ],
        "resourceEffectiveDate": "2022-05-27T00:00:00",
        "id": 27
    },
    {
        "ratesBreakdown": [
            {
                "rateType": "Direct",
                "costType": "Standard",
                "id": 30,
                "resourceStandardRate": 10.0
            }
        ],
        "resourceEffectiveDate": "2022-04-29T00:00:00",
        "id": 30
    },
    {
        "ratesBreakdown": [
            {
                "rateType": "Direct",
                "costType": "Food",
                "id": 10,
                "resourceStandardRate": 10.0
            }
        ],
        "resourceEffectiveDate": "2022-06-23T00:00:00",
        "id": 10
    },
    {
        "ratesBreakdown": [
```

```
            {
                "rateType": "Direct",
                "costType": "Standard",
                "id": 11,
                "resourceStandardRate": 5.0
            }
        ],
        "resourceEffectiveDate": "2022-06-21T00:00:00",
        "id": 11
    },
    {
        "ratesBreakdown": [
            {
                "rateType": "Direct",
                "costType": "Standard",
                "id": 87,
                "resourceStandardRate": 50.0
            }
        ],
        "resourceEffectiveDate": "2020-04-01T00:00:00",
        "id": 87
    },
    {
        "ratesBreakdown": [
            {
                "rateType": "Direct",
                "costType": "Standard",
                "id": 90,
                "resourceStandardRate": 20.0
            }
        ],
        "resourceEffectiveDate": "2019-10-31T00:00:00",
        "id": 90
    }
```

```
            ],
            "resourceName": "Resource2",
            "id": 9,
            "parentResourceCode": "",
            "resourceType": "Labor"
        },

        {
            "resourceStatus": "Active",
            "unitsPerTime": 1.0,
            "resourceCurrency": "USD",
            "resourceCode": "NonLabor",
            "rates": [],
            "resourceName": "NonLabor",
            "id": 223,
            "parentResourceCode": "res2",
            "resourceType": "Nonlabor"
        }
    ],
    "message": [
        "success"
    ],
    "status": 200,
    "rest_audit_id": 1931
}
```


Sample Failed Response


```
{
    "data": [],
    "message": ["Invalid value was found in a field: 'source'. Allowed values: [Primavera Cloud]"],
    "status": 12008,
    "rest_audit_id": 4633
}
```

Get Roles from the Master Rate Sheet

```
GET /ws/rest/service/v2/rate/sheet/roles?source={sourceApplication}
```

Purpose

Retrieve the list of roles synced from a source application based on source provided in the request.

Prerequisites

The user has access to fetch the data.

Sample Success Request

```
https://<SERVER_URL>/rest1/ws/rest/service/v2/rate/sheet?source="Primavera Cloud"
```

Sample Success Response For Oracle Primavera Cloud


```
{
    "data": [
        {
            "roleCurrency": "USD",
            "unitsPerTime": 1.0,
            "roleCode": "Root1",
            "workspaceCode": "Workspace1",
            "rates": [
                {
                    "ratesBreakdown": [
                        {
                            "roleStandardRate": 30.5,
                            "rateType": "Direct",
                            "costType": "Food",
                            "id": 1100
                        },
                        {
                            "roleStandardRate": 100.0,
                            "rateType": "Indirect",
                            "costType": "Food",
                            "id": 1101
```

```
                    }
                ],
                "id": 1014,
                "roleEffectiveDate": "2020-02-03T00:00:00"
            }
        ],
        "roleName": "Root1",
        "id": 28,
        "parentRoleCode": "",
        "roleStatus": "Active"
    },

    {
        "roleCurrency": "USD",
        "unitsPerTime": 1.0,
        "roleCode": "ChildRole1",
        "workspaceCode": "Workspace1",
        "rates": [
            {
                "ratesBreakdown": [
                    {
                        "roleStandardRate": 30.5,
                        "rateType": "Direct",
                        "costType": "Standard",
                        "id": 1098
                    },
                    {
                        "roleStandardRate": 100.0,
                        "rateType": "Indirect",
                        "costType": "Food",
                        "id": 1099
                    }
                ],
```

```
                    "id": 1013,
                    "roleEffectiveDate": "2020-02-03T00:00:00"
                }
            ],
            "roleName": "ChildRoleupdate2",
            "id": 27,
            "parentRoleCode": "Root1",
            "roleStatus": "Active"
        }
    ],
    "message": [
        "success"
    ],
    "status": 200,
    "rest_audit_id": 1932
}
```


Sample Success Response For P6


```
{
    "data": [
        {
            "roleCurrency": "USD",
            "unitsPerTime": 10.0,
            "roleCode": "APIP6Role2C1",
            "rates": [
                {
                    "ratesBreakdown": [
                        {
                            "roleStandardRate": 100.0,
                            "rateType": "Direct",
                            "costType": "Food",
                            "id": 1165
                        },
                        {
```

```
                        "roleStandardRate": 100.0,
                        "rateType": "Direct",
                        "costType": "Standard",
                        "id": 1166
                    }
                ],
                "id": 1053,
                "roleEffectiveDate": "2020-02-01T00:00:00"
            }
        ],
        "roleName": "APIP6Role2C1update",
        "id": 49,
        "parentRoleCode": "APIP6Role2",
        "roleStatus": "Active"
    },
    {
        "roleCurrency": "USD",
        "unitsPerTime": 200.0,
        "roleCode": "APIP6Role2",
        "rates": [
            {
                "ratesBreakdown": [
                    {
                        "roleStandardRate": 100.0,
                        "rateType": "Direct",
                        "costType": "Food",
                        "id": 1169
                    },
                    {
                        "roleStandardRate": 100.0,
                        "rateType": "Direct",
                        "costType": "Standard",
                        "id": 1170
                    }
```

```
                    ],
                    "id": 1055,
                    "roleEffectiveDate": "2020-02-01T00:00:00"
                }
            ],
            "roleName": "APIP6Role2update",
            "id": 50,
            "parentRoleCode": "",
            "roleStatus": "Active"
        }
    ],
    "message": [
        "success"
    ],
    "status": 200,
    "rest_audit_id": 1933
}
```


Sample Success Response For Other Applications


```
{
    "data": [
        {
            "roleCurrency": "USD",
            "unitsPerTime": 150.0,
            "roleCode": "r1",
            "rates": [
                {
                    "ratesBreakdown": [
                        {
                            "roleStandardRate": 100.0,
                            "rateType": "Direct",
                            "costType": "Food",
                            "id": 1288
                        },
```

```
                    {
                        "roleStandardRate": 100.0,
                        "rateType": "Direct",
                        "costType": "Standard",
                        "id": 1289
                    }
                ],
                "id": 1118,
                "roleEffectiveDate": "2020-02-01T00:00:00"
            },
            {
                "ratesBreakdown": [
                    {
                        "roleStandardRate": 100.0,
                        "rateType": "Direct",
                        "costType": "Food",
                        "id": 1290
                    },
                    {
                        "roleStandardRate": 100.0,
                        "rateType": "Direct",
                        "costType": "Standard",
                        "id": 1291
                    }
                ],
                "id": 1119,
                "roleEffectiveDate": "2018-02-01T00:00:00"
            }
        ],
        "roleName": "Role1 update",
        "id": 3,
        "parentRoleCode": "r2",
        "roleStatus": "Active"
    }
```

```
    ],
    "message": [
        "success"
    ],
    "status": 200,
    "rest_audit_id": 1934
}
```


Sample Failed Response


```
{
    "data": [],
    "message": [
        "Invalid value was found in a field: 'source'. Allowed values:
[Primavera Cloud]"
     ],
    "status": 12008,
    "rest_audit_id": 4633
}
```


Cash Flow

Snapshots in Cashflow Summary Curves

The following REST services support snapshots in summary curves.

Create Snapshot at the Summary Level Cashflow Worksheet

`POST /ws/rest/service/v2/cashflow/summary/snapshot`

Purpose

Create a snapshot for an existing cashflow summary curve in a specific shell from a different system. A successful REST API call creates a snapshot with the specified name in the curve with an entry in the snapshot log. Only one snapshot can be created with each request.

Prerequisites

To create and delete snapshots in summary curves, you must have **Full Access** or **Update** permissions for cashflow REST services.

Request Format

Send an API request with the following structure:

```
{
          "options":{
                              "project_number": "<value>",
                              "summary_cashflow_name": "<value>"
                    },
          "data":["snapshotName1":"<value>", "snapshotName2":"<value>"]
}
```

Request Parameters For Options and Data Objects

The following parameters must be specified in the request.

Request Parameter	Required?	Data Type	Description
`project_number`	Yes		A valid project number
`summary_cashflow_name`	Yes	String	A valid summary cashflow name.
`snapshotName`	Yes	String	A valid snapshot name. Alphanumeric values are allowed.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <id from the audit table>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

```
{
"options" :
```

```
  {
        "project_number" :1001,
        "summary_cashflow_name" : "CashFlow By CBS"


    },
 "data":[
      {
         "snapshot_name":"May8th snapshot"

      }
    ]
}
```

Sample Success Response

```
{
    "data": [
        {
        "summary_cashflow_name": [
            "New curve 5"
        ],
```

```
        "snapshot_name": [
            "Rest snapshot 289"
        ]
        }
    ],
    "message": [
        "success"
    ],
    "status": 200,
    "rest_audit_id": 2377
}
```


Sample Failed Response


```
{
    "data": [],
    "message": [
        "Cashflow curve name is mandatory and is missing in the input
request"
    ],
    "status": 13003,
    "rest_audit_id": 2378
}
```


Supported Validation Messages and Status Codes

The following error messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status Code	Error Message
project_number	Project is not an active.	13001	*Create/Update/Delete cannot be performed when project/shell status is Inactive or View-Only or On-Hold.*
project_number	Project number is not provided.	602	*Project/Shell number is mandatory and is missing in the input request.*
project_number	Project number is Invalid.	1245 (create/update - existing code)	*Create/Update/Delete cannot be performed when project/shell status is Inactive or View-Only or On-Hold.*
project_number	Project number is Invalid.	1219 (get - existing code)	*Project status is inactive.*
summary_cashflow_name	Curve name is not provided.	13002	*cashflow curve name is mandatory and is missing in the input request.*
summary_cashflow_name	Curve name provided no longer exists.	13003	*Invalid curve name provided in input request.*
summary_cashflow_name	Cashflow name provided in not summary type	13011	*Cashflow name provided in input request is not a summary curve.*
summary_cashflow_name	Summary curve status in inactive.	13012	*Selected summary cash flow is no longer active.*
snapshotName	Snapshot name is not provided.	13004	*Provide a snapshot name.*
snapshotName	Snapshot name already exists.	13005	*snapshot name already exists.*

Field Name	Use-case Scenario	Status Code	Error Message
`snapshotName`	Snapshot name do not exist for selected curve.	13006	*snapshot name specified do not exist in the cashflow <name>.*
`snapshotName`	Snapshot names exceeds 64 characters.	13010	*Cash Flow snapshot name cannot exceed 64 characters.*

Delete Snapshot from Cashflow Curve

`PUT /ws/rest/service/v2/cashflow/delete/summary/snapshot`

Purpose

Delete multiple snapshots in a single request.

Prerequisites

You must have **Update** permissions for cashflow services to process this request.

Request Format

Send an API request as a JSON Map with the following structure:

```
{
          "options":{
                              "project_number": "<value>"
                              "summary_cashflow_name": "<value>"
                    },
          "data":["snapshotName1":"<list of snapshot names to be deleted>"]
}
```

Request Parameters For Options and Data JSON Map

The following parameters must be specified in the request.

Request Parameter	Required?	Data Type	Description
`project_number`	Yes	String	A valid active project number.

Request Parameter	Required?	Data Type	Description
summary_cashflow_name	Yes	String	The summary cashflow curve name for which the snapshot is created.
snapshotName	Yes	String	A list of snapshot names to be deleted.

Response Format

The REST service returns a JSON Map in the following format:

```
{
    "data": [
                    {
                        "summary_cashflow_name" : "<summary cashflow
curve name>",
                        "snapshot_name" : ["<Snapshot name(s) list>"]
                    }
            ],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <value>
}
```

A successful request returns a response with status 200. Otherwise a failed request returns a response with a status code and an error message

Sample Request

```
{
    "options" :  {
                    "project_number": "P-0002",
                    "summary_cashflow_name" : "New curve 5"
                 },
    "data":[
              {"snapshot_name":["snapshot 1", "snapshot 2"]
              }
            ]
```

```
}
```

Sample Success Response

This is an example of successful response.

```
{
    "data": [
        {
        "summary_cashflow_name": [
            "New curve 5"
        ],
        "snapshot_name": [
            "snapshot 1",
            "snapshot 2"
        ]
        }
    ],
    "message": [
        "success"
    ],
    "status": 200,
    "rest_audit_id": 2383
}
```

Sample Failed Response

The following message and status is displayed for a snapshot that could not be deleted.

```
{
    "data": [],
    "message": ["Snapshot name specified does not exist in the summary
cashflow 'New curve 5'"],
    "status": 13007,
    "rest_audit_id": 2384
}
```

Supported Validation Messages and Status Codes

The following error messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status Code	Error Message
`project_number`	Project is not an active.	13001	*Create/Update/Delete cannot be performed when project/shell status is Inactive or View-Only or On-Hold.*
`project_number`	Project number is not provided.	602	*Project/Shell number is mandatory and is missing in the input request.*
`project_number`	Project number is Invalid.	1245 (create/update - existing code)	*Create/Update/Delete cannot be performed when project/shell status is Inactive or View-Only or On-Hold.*
`project_number`	Project number is Invalid.	1219 (get - existing code)	*Project status is inactive.*
`summary_cashflow_name`	Curve name is not provided	13002	*cashflow curve name is mandatory and is missing in the input request.*
`summary_cashflow_name`	Curve name provided no longer exists	13003	*Invalid curve name provided in input request.*

Field Name	Use-case Scenario	Status Code	Error Message
summary_cashflow_name	Cashflow name provided in not summary type	13011	*Cashflow name provided in input request is not a summary curve.*
summary_cashflow_name	Summary curve status in inactive	13012	*Selected summary cash flow is no longer active.*
snapshotName	Snapshot name is not provided	13004	*Provide a snapshot name.*
snapshotName	Snapshot name already exists	13005	*snapshot name already exists.*
snapshotName	Snapshot name do not exist for selected curve	13006	*snapshot name specified do not exist in the cashflow <name>.*
snapshotName	Snapshot names exceeds 64 characters	13010	*Cash Flow snapshot name cannot exceed 64 characters.*

Get Snapshot Names for the Selected Cashflow

```
GET
/ws/rest/service/v2/cashflow/summary/snapshot?project_number={project
number}&name={cashflow name}
```

Purpose

Get snapshot names for a summary cashflow curve. Only one curve can be processed with each request.

Prerequisites

You must have GET permissions for cashflow services to process this request.

Request Format

Send an API request with the query parameters in the following format:

```
http://<localhost>:<port>/ws/rest/service/v2/cashflow/summary/snapshot?
project_number='<value>'& name='<value>'
```

Request Parameters

The following parameters can be specified in the request.

Request Parameter	Required?	Data Type	Description
project_number	Yes	String	A valid active shell number.
name	Yes	String	The name of the cashflow curve for which snapshot names are to be returned.

Response Format

The REST service returns a JSON Map in the following format:

```
{
    "data": [
                    {
                        "Name" : "<summary cashflow curve name>",
                        "snapshot_name" : ["<list of snapshot names>"]
                    }
            ],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <value>
}
```

A successful request returns a response with status 200. Otherwise a failed request returns a response with a status code and an error message

Sample Success Response

This is an example of a successful response.

```
{
    "data": [
        {
        "Name": ["New curve 5"],
        "snapshot_name": ["Rest snapshot 1"]
        }
           ],
    "message": ["success"],
    "status": 200,
```

```
    "rest_audit_id": 2385
}
```


Sample Failed Response

The following response is returned when the cashflow curve name is not specified in the request.


```
{
    "data": [],
    "message": ["Cashflow curve name is mandatory and is missing in the input request"],
    "status": 13003,
    "rest_audit_id": 2386
}
```


Supported Validation Messages and Status Codes

The following error messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status Code	Error Message
`project_number`	Project number is not provided.	13001	*Project/Shell number is mandatory and is missing in the input request*
`project_number`	Project number is invalid.	602	*Project/Shell Number is not correct.*
`name`	Curve name is not provided.	13002	*Cashflow curve name is mandatory and is missing in the input request.*
`name`	Curve name provided no longer exists.	13003	*Invalid curve name provided in input request.*
`name`	Cashflow name provided in not a summary type.	13011	*Cashflow name provided in input request is not a summary curve.*
`name`	Summary curve status in inactive.	13012	*Selected summary cash flow is no longer active.*

Snapshots of Cashflow Detail Curves

Create Snapshot of Cashflow Detail Curves

`POST /ws/rest/service/v2/cashflow/snapshot`

Purpose

Create a snapshot in an existing cashflow detail curve in specific shell from different system.

A successful API call creates the snapshot with the provided name in the specified curve, with an entry in the snapshot log.

Prerequisite

You must have **Full Access** and **Update** permissions to use this REST service.

Request Format

Send an API request as a JSON Map with the following structure:

```
{
          "options":{
                      "project_number": "<value>",
                      "name": "<value>"
                    },
          "data":["snapshotName1":"<value>", "snapshotName2": "<value>"]
}
```

Request Parameters

In the options map, the following parameters can be included:

Parameter	Required?	Data Type	Description
project_number	Yes	String	A valid project number.
name	Yes	String	A valid cashflow name.
snapshot_name	Yes	String	A valid snapshot name.

Response Format

A JSON object is returned in the following format.

```
{
```

```
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <id from the audit table>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

To create a May 8th snapshot for a cashflow, called CashFlow By CBS, send a request in the following format:

```
{
   "options" :  {
                "project_number" :1001,
                "name" : "CashFlow By CBS",
            },
   "data":[ {"snapshot_name":"May8th snapshot"}]
}
```

Sample Success Response

A successful response with status code 200 displays in the following format:

```
{
   "data" : [ ] ,
   "status: : 200,
   "message": "success",
   "rest_audit_id": 1210
}
```

Supported Validation Messages and Status Codes

The following messages and status codes can display in the response:

Field Name	Use-Case	Status	Message
project_number	Project number is not provided.	13001	Project/Shell number is mandatory and is missing in the input request.

Field Name	Use-Case	Status	Message
project_number	The project number is invalid.	602	Project/Shell Number is not correct.
project_number	Project is not active.	1219 (get - existing code)	Create/Update/Delete cannot be performed when project/shell status is Inactive or View-Only or On-Hold.
curve_name	Curve name is not provided.	13002	Cashflow curve name is mandatory and is missing in the input request.
curve_name	Curve name provided no longer exists.	13003	Invalid curve name provided in input request.
curve_name	curve name provided is a summary curve.	13011	Cashflow name provided in input request is not a summary curve.
snapshot_name	Snapshot name is not provided.	13004	Provide a snapshot name.
snapshot_name	When the snapshot name already exists.	13005	Snapshot name already exists.
snapshot_name	Snapshot name has unsupported characters		Snapshot name specified does not exist in the cashflow <name>.

Delete an Existing Snapshot for Cashflow Summary Curves

`PUT /ws/rest/service/v2/cashflow/delete/snapshot`

Purpose

Delete a snapshot for an existing cashflow detail curve in specific shell from different system.

Prerequisite

You must have **Full Access** and **Update** permissions.

Request Format

Send an API request as a JSON Map with the following structure:

```
{
          "options":{
                      "project_number": "<value>",
                      "name": "<value>"
                    },
          "data":["snapshotName1":"<value>", "snapshotName2":"<value>"]
}
```

Request Parameters

In the request, the following parameters can be included:

Parameter	Required?	Data Type	Description
project_number	Yes	String	A valid project number.
name	Yes	String	A valid cashflow curve name.
snapshot_name	Yes	String	Valid snapshot names.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <id from the audit table>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

This is a request to delete two snapshots, May 8th Snapshot, and April Snapshot.

```
{
   "options" :  {
                  "project_number" :1001,
```

```
                  "name" : "CashFlow By CBS"
               },
 "data":[      {"snapshot_name":["May8th Snapshot", "April Snapshot"] }
```

Sample Success Response

This is the response for a successful deletion of the above snapshots.

```
{
   "data" : [ ],
   "status" : 200,
   "message": "success",
   "rest_audit_id": 7800
}
```

Supported Validation Messages and Status Codes

The following messages and status codes can display in the response:

Field Name	Use-Case	Status	Message
project_number	Project number is not provided.	13001	Project/Shell number is mandatory and is missing in the input request.
project_number	Project number is invalid.	602	Project/Shell Number is not correct.
project_number	Project is not active.	1245 (create/update - existing code)	Create/Update/Delete cannot be performed when project/shell status is Inactive or View-Only or On-Hold.
curve_name	Curve name is not provided.	13002	Cashflow curve name is mandatory and is missing in the input request.
curve_name	curve name no longer exists.	13003	Invalid curve name provided in input request.

Field Name	Use-Case	Status	Message
curve_name	Provided curve name is a summary type.		The selected curve name is a summary type, and summary snapshots are not supported through integration.
snapshot_name	A few snapshot names do not exist in the selected cashflow curve.	13008	Snapshots <name1>, <name2> do not exist in the selected cash flow curve <curve name>. Snapshots <name3> ,<name4> deleted successfully.
snapshot_name	None of the snapshot names exist in the selected cashflow curve.	13004	Snapshots <name1>, <name2>, <name3> do not exist in the selected cash flow curve <curve name>

Get Snapshot Names for Existing Summary Curves

```
GET /ws/rest/service/v2/cashflow/snapshot?project_number={project number}&name={cashflow name}
```

Purpose

Get snapshot names for an existing cashflow detail curve in specific shell from different system.

Prerequisite

You must have **Get** permissions to use this REST service.

Request Format

Send an API request in the following format:

```
GET /ws/rest/service/v2/cashflow/snapshot?project_number={project number}&name={cashflow name}
```

Request Parameters

In the request, the following parameters can be included:

Parameter	Required?	Data Type	Description
project_number	Yes	String	A valid project number.
name	Yes	String	A valid cashflow name.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <id from the audit table>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

To get a curve name,*New curve 5*, from a project, *P-0002*, send a request in the following format:

```
http://<localhost:7001>/ws/rest/service/v2/cashflow/snapshot?project_number='P-0002'& name='New curve 5'
```

Sample Success Response

```
{
 "data" : [
            {
              "name": "Project_CF",
              "snapshot_name" : ["May8th Snapshot", "April Snapshot"]
            }
          ],
    "message": ["success"],
    "status": 200,
    "rest_audit_id": 5892
}
```

Supported Validation Messages and Status Codes

The following messages and status codes can display in the response:

Field Name	Use-Case	Status	Message
project_number	Project number is not provided.	13001	Project/Shell number is mandatory and is missing in the input request.
project_number	Project number is invalid.	602	Project/Shell Number is not correct.
project_number	Project is not active		Project Status is Inactive
curve_name	Curve name is not provided.	13002	Cashflow curve name is mandatory and is missing in the input request.
curve_name	Provided curve name no longer exists.	13003	Invalid curve name provided in input request.
curve_name	Provided curve name provided is of summary type.	13011	The selected curve name is a summary type, and summary snapshots are not supported through integration.

Cost Sheet

Create Cost Sheet Snapshot

`POST /ws/rest/service/v2/costsheet/snapshot`

Purpose

Creates a project cost sheet snapshot of a specified shell. Only one snapshot can be created per request.

Note: It is recommended to avoid creating more than 100 snapshots at a time, as the cost sheet will get locked whenever `update_prior_forecast` is selected.

Prerequisite

You must have **Create**, or **Full Access** permissions for CBS services.

Request Format

Send an API request as a JSON Map with the following structure:

```
{
          "options":{
                      "project_number": "<value>",
                    },
          "data":["snapshotname":"<value>",
                   "update_prior_forecast": "<value>"
                  ]
}
```

Request Parameters

In the options map, the following parameter must be included:

Parameter	Required?	Data Type	Description
project_number	Yes	String	A valid project/shell number.

Request Parameters - Data []

In the Data [], the following parameters can be included:

Parameter	Required?	Data Type	Description
snapshotname	Yes	String	The name of the new snapshot to be created

Parameter	Required?	Data Type	Description
update_prior_forecast	No	Boolean	Indicates whether a prior forecast needs to be checked when the snapshot is created in the cost sheet. Valid values include: "true", and "false".

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <id from the audit table>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

To create a July snapshot of the Project, PRJ-004, send a request in the following format:

```
{
  "options" :{ "project_number" :"PRJ-004"}
  "data":[{
         "snapshotname":"July snapshot"
        }]
}
```

Sample Success Response

A successful response with status code 200 displays in the following format:

```
{
    "data": [{"snapshotname": "July Snapshot"}],
    "message": ["success"],
    "rest_audit_id": 1117,
    "status": 200
```

```
}
```

Sample Failed Response

A failed response displays with the corresponding status code in the following format:

```
{
    "data": [],
    "message": ["Cost sheet does not exist."],
    "status": 707,
    "rest_audit_id": 1278
}
```

Supported Validation Messages and Status Codes

The following messages and status codes can display in the response:

Field Name	Use-Case	Status	Message
project_number	Project number is not provided.	13001	Project/Shell number is mandatory and is missing in the input request.
project_number	The project number is invalid.	602	Project/Shell Number is not correct.
project_number	Project is not active.	1245	Create/Update/Delete cannot be performed when project/shell status is Inactive or View-Only or On-Hold.
project_number	Cost sheet does not exist in the project/shell.	707	Cost sheet does not exist.
snapshotname	snapshotname exceeds 100 characters.	19002	Snapshot name cannot exceed 100 characters.
snapshotname	snapshotname is not provided.	13004	Provide a snapshot name.

Field Name	Use-Case	Status	Message
update_prior_forecast	The update_prior_forecast value is invalid.	19003	The update prior forecast field can have a true or false value.

Get Names of Cost Sheet Snapshots

```
GET
/ws/rest/service/v2/projectcostsheet/snapshot?project_number={project
number}
```

Purpose

Get names of cost sheet snapshots of a specific shell/project.

Prerequisite

You must have at least **Get** permissions for CBS services.

Query Parameter

Specify the following parameter in the request query:

Parameter	Required?	Data Type	Description
project_number	Yes	String	A valid project/shell number.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <id from the audit table>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

To get cost sheet snapshots for Project, PRJ-004, send an API request in the following format:

```
http://<host>:<port>/ws/rest/service/v2/projectcostsheet/snapshot?project_number='PRJ-004'
```

Sample Success Response

A successful response with status code 200 displays in the following format:

```
{
    "data": [{
            "snapshot_name": ["June snapshot", "July snapshot"]}
            ],
    "message": ["success"],
    "status": 200,
    "rest_audit_id": 1281
}
```

Sample Failed Response

A failed response with the corresponding status code displays in the following format:

```
{
    "data": [],
    "message": ["Project/Shell number is mandatory and is missing in the input request."],
    "status": 13001,
    "rest_audit_id": 1282
}
```

Supported Validation Messages and Status Codes

The following messages and status codes can display in the response:

Field Name	Use-Case	Status	Message
project_number	Project number is not provided.	13001	Project/Shell number is mandatory and is missing in the input request.
project_number	The project number is invalid.	602	Project/Shell Number is not correct.
project_number	Project is not active.	1219	Project status is inactive.

Field Name	Use-Case	Status	Message
project_number	Cost sheet does not exist in the project/shell.	707	Cost sheet does not exist.

Create Work Package

`POST /ws/rest/service/v2/projectcostsheet/workpackage`

Purpose

Create one or more work packages per project.

Prerequisites

Ensure you have **Full Access** or **Create** permissions for CBS services.

Request Format

Send an API request as a JSON map with the following structure:

```
{
   "options":{"project_number": "<value>"},
   "data":[ {
            "name":"<value>",
            "ref_no" : "<value>",
            "status": "<boolean value>",
            "description" : "<value>",
            "owner" : "<full name>",
            "vendor" :"<vendor company name>",
            "comments" : "<comments text>"}
            }
         ]
}
```

Request Parameters

Specify the following parameters:

Request Parameter	Required?	Data Type	Description
project_number	Yes	String	A valid 'Active' shell number.

Request Parameter	Required?	Data Type	Description
name	Yes	String	A unique alphanumeric name for a work package, with a maximum of 100 characters.
ref_no	Yes	String	A unique reference number, with a maximum of 100 characters.
status	Yes	String	The status of the project. Valid values include: "Active" and "Inactive".
description	No	String	A description of the work package with a maximum of 3950 characters.
owner	No	String	The full name of the user with an Active status.
vendor	No	String	The name of the sponsor and member company of the shell.
comments	No	String	Comments with a maximum of 3950 characters.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <id from the audit table>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Request

To create a work package, send a request in the following format:

```
{
   "options": {
        "project_number" : "P-0021"
              },
   "data": [
        {
            "status": "Active",
            "name": "A87",
             "ref_no" : "A87",
             "owner": "Company Administrator",
              "vendor" : "IDC Company",
             "comments" : "comments",
             "description": "description"
          }
       ]
}
```

Sample Success Response

A successful response with status code 200 displays in the following format:

```
{
    "data": [
        {
            "owner": "Company Administrator",
            "comments": "comments",
            "_record_status": "success",
            "vendor": "IDC Company",
            "name": "B11",
            "description": "description",
            "ref_no": "B11",
            "status": "Active"
        }
    ],
```

```
    "message": [],
    "status": 200,
    "rest_audit_id": 4039
}
```


Sample Failed Response

A failed response to create a work package displays the corresponding status code in the following format:


```
{
    "data": [],
    "message": [
        "Create/Update/Delete cannot be performed when project/shell status is Inactive or View-Only or On-Hold."
    ],
    "status": 1245,
    "rest_audit_id": 3347
}
```


Sample Failed Response - Multiple Records

A failed response to create a work package displays the corresponding status code in the following format:


```
{
    "data": [],
    "message": [
        {
            "owner": "Company Administrator",
            "comments": "comments",
            "_record_status": "Provide a valid status value - Active or Inactive",
            "vendor": "IDC Company",
            "name": "A87",
            "description": "description",
            "ref_no": "A87",
            "status": "1"
        },
        {
```

```
            "owner": "Company Administrator",
            "comments": "comments",
            "_record_status": "Work package name is already used.",
            "vendor": "IDC Company",
            "name": "A85",
            "description": "description",
            "ref_no": "A85",
            "status": "Active"
        }
    ],
    "status": 3000,
    "rest_audit_id": 3191
}
```


Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status Code	Error Message
project_number	Project_number is not included in the request.	13001	Project/Shell number is mandatory and is missing in the input request
project_number	Project number is invalid.	602	Project/Shell Number is not correct.
project_number	Project/Shell is not active.	1245	Create/Update/Delete cannot be performed when project/shell status is Inactive or View-Only or On-Hold.
project_number	Cost sheet does not exist in the specified shell.	707	Cost sheet does not exist
name	Duplicate work package name.	1805	Work package name is already used.

Field Name	Use-case Scenario	Status Code	Error Message
name	Work package name is not included in the request.	1809	Provide a work package name
name	Work Package name exceeds 100 characters.	1812	Work package name cannot have more than 100 characters
ref_no	Duplicate ref_no.	1806	Work Package Reference No. already exists.
ref_no	ref_no is not included in the request.	1810	Work Package Reference No. is required field
ref_no	ref_no exceeds 100 characters.	1813	Work Package Reference No. cannot have more than 100 characters
status	Status is not provided or incorrect status is provided.	1811	Provide a valid status value - Active or Inactive
vendor	vendor is inactive.	1807	Vendor provided is not an active member company or sponsor company name.
owner	Owner is inactive.	1808	Owner provided is not an active user in Shell
comments	Comments exceeds 3950 characters.	1813	Comments cannot have more than 3950 characters
description	Description exceeds 3950 characters.	1814	Description cannot have more than 3950 characters
All fields	Any other exception	1815	Exception encountered during processing

Get Work Package

```
GET /ws/rest/service/v2/projectcostsheet/workpackage?project_number=
<value>
```

Purpose

Get work packages associated with a specific shell.

Prerequisites

Ensure you have **Full Access** or **Get** permissions for CBS services to retrieve work packages from the shell cost sheet log.

Request Format

Send an API request as a JSON map with the following structure:

```
/ws/rest/service/v2/projectcostsheet/workpackage?project_number =
<value>
```

Request Parameters

Specify the following parameters in the request:

Request Parameter	Required?	Data Type	Description
project_number	Yes	String	A valid Unifier shell number.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <id from the audit table>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Request

To retrieve work packages associated with project, P0021, send a request in the following format:

```
/ws/rest/service/v2/projectcostsheet/workpackage?project_number=P-0021
```

Sample Success Response

A successful response with status code 200 displays in the following format:


```
{
    "data": [
        {
            "owner": "Company Administrator",
            "comments": "comments",
            "vendor": "IDC Company",
            "name": "A81",
            "description": "description",
            "ref_no": "A81",
            "status": "Active"
        },
        {
            "owner": "Company Administrator",
            "comments": "Creating Work Package for Testing",
            "vendor": "IDC Company",
            "name": "68",
            "description": "Work Package-4 Description",
            "ref_no": "68",
            "status": "Active"
        }
    ],
    "message": [
        "success"
    ],
    "status": 200,
    "rest_audit_id": 3353
}
```


Sample Failed Response

A failed response displays the corresponding status code in the following format:


```
{
    "data": [],
```

```
    "message": [
        "Create/Update/Delete cannot be performed when project/shell
status is Inactive or View-Only or On-Hold."
    ],
    "status": 1245,
    "rest_audit_id": 4049
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status Code	Error Message
project_number	project_number is not included in the request.	13001	Project/Shell number is mandatory and is missing in the input request
project_number	project number is invalid.	602	Project/Shell Number is not correct.
project_number	Project/Shell is not active.	1245	Create/Update/Delete cannot be performed when project/shell status is Inactive or View-Only or On-Hold.
project_number	Cost sheet does not exist in the specified shell.	707	Cost sheet does not exist

Update Work Package

`PUT /ws/rest/service/v2/projectcostsheet/workpackage`

Purpose

Update one or more work packages per request, per project.

Prerequisites

Ensure you have **Full Access** or **Update** permissions for CBS services to update work packages in the shell cost sheet log.

Request Format

Send an API request as a JSON map with the following structure:

```
{
    "options":{ }
...."data": []
}
```

Request Parameters

Specify the following parameters in the request:

Request Parameter	Required?	Data Type	Description
project_number	Yes	String	A valid 'Active' shell number.
workpackage_identifier	Yes	String	Identify a work package by its name or an identifier. Valid values include: "name", "ref_no".
name	Yes, if you chose "name" as the workpackage_identifier.	String	A unique alphanumeric name for a work package, with a maximum of 100 characters.
ref_no	Yes,if you chose "ref_no" as the workpackage_identifier.	String	A unique reference number, with a maximum of 100 characters.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <id from the audit table>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Request

To update a work package using its reference number, send a request in the following format:

```
{
    "options": {
        "project_number" : "P-0021",
         "workpackage_identifier" : "ref_no"
    },
    "data": [
        {
            "owner": "Company Administrator",
            "comments": "111",
            "vendor": "IDC Company",
            "name": "111",
            "description": "description",
            "ref_no": "111",
            "status": "Active"
        }

    ]
}
```

Sample Success Response

```
{
    "data": [
        {
            "owner": "Company Administrator",
            "comments": "111",
            "_record_status": "success",
            "vendor": "IDC Company",
            "name": "111",
            "description": "description",
            "ref_no": "111",
            "status": "Active"
```

```
        }
    ],
    "message": [],
    "status": 200,
    "rest_audit_id": 3886
}
```

Sample Failed Response

A failed response displays the corresponding status code in the following format:

```
{
    "data": [],
    "message": [
        {
            "owner": "Company Administrator",
            "comments": "111",
            "_record_status": "Work Package Reference No. is required
field",
            "vendor": "IDC Company",
            "name": "111",
            "description": "description",
            "status": "Active"
        }
    ],
    "status": 3000,
    "rest_audit_id": 3887
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status Code	Error Message
project_number	project_number is not included in the request.	13001	Project/Shell number is mandatory and is missing in the input request

Field Name	Use-case Scenario	Status Code	Error Message
project_number	project number is invalid.	602	Project/Shell Number is not correct.
project_number	Project/Shell is not active.	1245	Create/Update/Delete cannot be performed when project/shell status is Inactive or View-Only or On-Hold.
project_number	Cost sheet does not exist in the specified shell.	707	Cost sheet does not exist
name	Duplicate work package name.	1805	Work package name is already used.
name	Work package name is not included in the request.	1809	Provide a work package name
name	Work Package name exceeds 100 characters.	1812	Work package name cannot have more than 100 characters
ref_no	Duplicate ref_no.	1806	Work Package Reference No. already exists.
ref_no	ref_no is not included in the request.	1810	Work Package Reference No. is required field
ref_no	ref_no exceeds 100 characters.	1813	Work Package Reference No. cannot have more than 100 characters
status	Status is not provided or incorrect status is provided.	1811	Provide a valid status value - Active or Inactive
vendor	vendor is inactive.	1807	Vendor provided is not an active member company or sponsor company name.

Field Name	Use-case Scenario	Status Code	Error Message
owner	owner is inactive.	1808	Owner provided is not an active user in Shell
comments	comments exceeds 3950 characters.	1813	Comments cannot have more than 3950 characters
description	description exceeds 3950 characters.	1814	Description cannot have more than 3950 characters
All fields	Any other exception	1815	Exception encountered during processing

Get Lock Status of Cost Sheet

```
GET
/ws/rest/service/v2/projectcostsheet/lockstatus?project_number=<value>
```

Purpose

Get the lock status of the cost sheet for a specific shell.

Prerequisites

Ensure you have:

- **Full Access** or **Get** permissions for **CBS Services**
- Created the Unifier shell

Request Format

Send a GET request as specified in the above format.

Query Parameter

Specify the following parameter in the Options JSON map:

Request Parameter	Required?	Data Type	Description
project_number	Yes	String	A valid 'Active' shell number associated with the cost sheet whose lock status is to be determined.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <id from the audit table>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Request

To get the lock status of a project, send a request in the following format:

```
GET
/ws/rest/service/v2/projectcostsheet/lockstatus?project_number=P-0007
```

Sample Success Response

A successful response with status code 200 displays in the following format:

```
{
    "data": [{"locked": "false" }],
    "message": ["success"],
    "status": 200,
    "rest_audit_id": 4148
}
```

Sample Failed Response

A failed response to the above request displays the corresponding status code in the following format:

```
{
    "data": [],
    "message": [
                "Create/Update/Delete cannot be performed when
project/shell status is Inactive or View-Only or On-Hold."
               ],
    "status": 1245,
```

```
    "rest_audit_id": 4149
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status Code	Error Message
project_number	project_number is not specified.	13001	Project/Shell number is mandatory and is missing in the input request
project_number	project_number is invalid.	602	Project/Shell Number is not correct.
project_number		1245	Create/Update/Delete cannot be performed when project/shell status is Inactive or View-Only or On-Hold.
project_number	Cost sheet does not exist in the specified shell.	707	Cost sheet does not exist

Update Lock Status of Cost Sheet

`PUT /ws/rest/service/v2/projectcostsheet/lockstatus`

Purpose

Update the lock status of the cost sheet for a specific shell.

> **Note**: The default scope is set to "budget_scope" if the scope is not defined in the **Business Distribution** window.

Prerequisites

Ensure you have:

- **Full Access** or **Update** permissions for **CBS Services**
- Created the Unifier shell

Request Format

Send an API request as a JSON Map with the following structure:

```
{
```

```
   "options":{"project_number": "<value>},
   "data":["action":"<value>",
           "explanation" : "<value>"]
}
```

Request Parameters

Specify the following parameter in the Options JSON map:

Request Parameter	Required?	Data Type	Description
project_number	Yes	String	A valid 'Active' shell number associated with the cost sheet whose lock status is to be determined.
action	Yes	String	Specify the action to be taken on the cost sheet. Valid values include: "lock" and "unlock".
explanation	Yes	String	Provide your comments for the action taken on the cost sheet.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <id from the audit table>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Request

To update the lock status of a cost sheet, send a request in the following format:

```
{
   "options": {"project_number" : "P-0008"},
   "data": [{
            "action": "lock",
            "explanation": "cost sheet locked for budget assignment"
```

```
            }]
}
```

Sample Success Response

A successful response with status code 200 displays in the following format:

```
{
    "data": [
        {
            "_record_status": "success",
            "action": "lock",
            "explanation": "cost sheet locked for budget assignment"
        }
    ],
    "message": [],
    "status": 200,
    "rest_audit_id": 4214
}
```

Sample Failed Response

A response to the above request displays the corresponding status code in the following format:

```
{
    "data": [],
    "message": [
                    {
                      "_record_status": "Field explanation is mandatory
to lock and is missing in the input request",
                      "action": "lock",
                      "explanation": ""
                    }
                ],
    "status": 3000,
    "rest_audit_id": 4215
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status Code	Error Message
project_number	project_number is not specified.	13001	Project/Shell number is mandatory and is missing in the input request
project_number	project_number is invalid.	602	Project/Shell Number is not correct.
project_number	Project/Shell is not an active shell.	1245	Create/Update/Delete cannot be performed when project/shell status is Inactive or View-Only or On-Hold.
project_number	Cost sheet does not exist in the specified shell.	707	Cost sheet does not exist
action	action is not specified.	3000	Field action is mandatory and is missing in the input request.
action	action is specified with an invalid value.	3000	The valid values for field action is lock or unlock.
explanation	explanation is not specified.	3000	Field explanation is mandatory to lock the sheet and is missing in the input request.
explanation	explanation exceeds 4000 characters.	3000	Explanation cannot have more than 4000 characters.
not applicable	No body tag.	1101	Empty or Invalid JSON data.
not applicable	No data tag	1059	Invalid JSON input.
not applicable	No options tag	3002	Invalid input.

Activities and Assignments

Create, Update, and Remove Assignments

`POST /ws/rest/service/v2/activity/sheet/assignments`

Purpose

Create, update, and remove Assignments in the Activity Sheet in a specified Shell based on sourceProjectID, project_number, and the Activity Sheet provided in the input parameters.

Prerequisites

This REST service is specific to updating externally synced Assignment data from other applications. It excludes Manual Activity Sheets, which are generated inside the system. Therefore, sourceProjectID should be configured or added in the user interface tab (go to the applicable project/shell tab; click **My Dashboard**, and select **Details**; click the **Primavera Cloud Integration** tab).

- For the System Activity Sheet, sourceProjectID (the projectID of the external application) should already exist. If not, use the Mapped Projects API.
- The Activity Sheet exists and has activities that need Assignments created, updated, or removed.
- Cost Codes are defined in the Cost Sheet.
- The user has the necessary Activity Sheet Services Permissions in the Activity Manager.

Notes:

- There is no GET or PUT service for this API.
- The Planned Cost, Actual Cost, Remaining Cost, and At Completion Cost values in the Assignments tab are calculated and populated when a user triggers Recost.
- The Rate source, Resource and Role, Planning PricePerUnit, and Actuals PricePerUnit values are populated during Recost. The value is 0 before Recost is triggered.
- Recost only works for the System Activity Sheet if the Assignment Spread is present.
- Scheduling handles spread generation and Recost for the Manual Activity Sheet.
- Inactive resources or roles can be assigned via the System Activity Sheet. This is not available in the Manual Activity Sheet.
- All Timestamp related fields exclusively accept hour formats in the Manual Activity Sheet. Any minutes included in a request are ignored.
- Fixed Duration is the only supported duration type for activities inserted via this REST Service.
- actualDuration is a calculated field for Manual Activity Sheet Assignments and is populated when scheduling the sheet.
- The profile for a supported Assignment is always linear.
- Validations are not implemented for System Activity Sheet data assuming the data from the source system is sent properly.

Request Format

Send an API Request as a JSON map with the following structure:

```
{
    "options":{},
    "data":[]
}
```

Request Parameters Supported in "options" JSON Map

The "options" JSON map can include the following parameters:

```
"options":
              {"source": "<value>",
               "project_number": "<value>",
               "sourceProjectId":"<value>",
               "activitySheetType": "<value>",
               "projectType": "<value>",
```

```
        "activitySheetName": "<value>",
        "removeUnreferencedData": "<value>"
    }
```

The following request parameters can be included in the "options" JSON map:

Request Parameter	Mandatory?	Data Type	Description
source	Yes	String	The external application from which Assignment data is pulled to be populated. Valid values include: "Primavera Cloud", "P6", and "Others".
project_number	Yes	String	The valid 'Active' Unifier Shell number that is to be updated with project details.
sourceProjectId	Yes	String	The project code in the source application. It is always the current Project Id for system and project number for manual.
activitySheetType	Yes	String	Indicate type of activity sheet type. Valid values include: system and manual. For Primavera Cloud integrations,specify "system" to insert data into the System Activity Sheet.
projectType	Yes	String	The type of project for which the assignments have to be created. Valid values include:Current and Baseline.

Request Parameter	Mandatory?	Data Type	Description
activitySheetName	No	String	Specify this parameter if you have selected the"activitySheetType" parameter value as "manual" This parameter checks for any existing manual activity sheet with the same name. Assignments are then removed or added for the activities in that activity sheet. Ignore this parameter if the "activitySheetType" parameter value is set as "system".

Request Parameter	Mandatory?	Data Type	Description
removeUnreferencedData	No	Boolean	Valid values include: *True*: Creates & updates assignments present in the request body for the respective activity. Removes assignments that don't exist in the current request data for the respective activities passed in the API request from the existing activity sheet. *False* (default): Does not remove any assignments under an activity from the existing activity sheet. Creates assignments from the request data if they don't exist. Updates assignments if they exist.

Request Parameters Supported in the "data" JSON List [ ]

The "data" JSON list can contain one or more JSON maps in the following format:

```
{
    "options":{},
    "data":[
              {
                 "activityId": "<value>",
                 "rateSource": "<value>",
                 "workspaceCode": "<value>",
                 "resourceCode": "<value>",
                 "roleCode": "<value>",
                 "plannedPricePerUnit": "<value>",
```

```
                "actualsPricePerUnit": "<value>",
                "plannedUnits": "<value>",
                "actualUnits": "<value>",
                "atCompletionUnits": "<value>",
                "remainingUnits": "<value>",
                "costCode": "<value>",
                "plannedStart": "<value>",
                "plannedFinish": "<value>",
                "plannedDuration": "<value>",
                "actualStart": "<value>",
                "actualFinish": "<value>",
                "remainingStart": "<value>",
                "remainingFinish": "<value>",
                "remainingDuration": "<value>",
                "start": "<value>",
                "finish": "<value>",
                "duration": "<value>",
                "plannedUnitsPerTime": "<value>",
                "remainingUnitsPerTime": "<value>",
                "profile": "<value>"
            }
        ]
}
```

The following parameters can be included in the "data" JSON list [ ] :

Request Parameter	Mandatory?	Data Type	Description
activityId	Yes	String	The unique Id or code of the Activity in the activity sheet.
rateSource	Yes	String	Determines whether the source for price/unit is Resource or Role or Override. Valid values include: "Resource", "Role" and "Override".

Request Parameter	Mandatory?	Data Type	Description
workspaceCode	Yes, if the source is Primavera Cloud	String	If the project is integrated from Primavera Cloud application, specify the code of the workspace where the resource/role is available. This is mandatory field if source is Primavera Cloud
resourceCode	Yes, if the rateSource value is "Resource"	String	The unique identifier for the resource.
roleCode	Yes, if the rateSource value is "Role"	String	The unique identifier for the role.
plannedPricePerUnit	No	Double	▸ This is updated only if the RateSource is set to "Override". Otherwise, it is ignored. ▸ Defaults to zero if the value is not provided in the API request and the RateSource is override. ▸ If the value is not provided in the API request and the RateSource is "role" or "resource", then it is zero. The value will be populated from the Master Rate Sheet after you complete scheduling or recosting.
actualsPricePerUnit	No	Double	▸ This is updated only if the RateSource is set to "Override". Otherwise, it is ignored. ▸ Defaults to zero if the value is not provided in the API request and the RateSource is override. ▸ If the value is not provided in the API request and the RateSource is "role" or "resource", then it is zero. The value will be populated from the Master Rate Sheet after you complete scheduling or recosting.

Request Parameter	Mandatory?	Data Type	Description
plannedUnits	No	Double	**System Activity Sheets** If a value is not provided, it defaults to zero. **Manual Activity Sheets** ▸ If a value is provided, check if PlannedUnits = PlannedDuration X PlannedUnitPerTime. Otherwise, it displays an error. ▸ If a value is not provided, it is updated as PlannedDuration X PlannedUnitPerTime.
actualUnits	Yes if the Activity status is " In Progress" or "Completed".	Double	**System Activity Sheets** If a value is not provided, it defaults to zero. **Manual Activity Sheets** If status = Not Started: ▸ If its provided in the API request for the assignment, then Activity Status will be changed to 'In Progress'. If status = Completed: ▸ This can be updated from the API request
atCompletionUnits	No	Double	**System Activity Sheets** If a value is not provided, it defaults to zero. **Manual Activity Sheets** ▸ If activities with statuses, *Not Started* or *In Progress*, are included in the request, check if: AtCompletionsUnits = RemainingUnits + ActualUnits. Otherwise displays an error. ▸ If completed activities are included in the request, check if: AtCompletionsUnits = ActualUnits. , Otherwise displays an error. ▸ If it is not provided in the request, it is updated as RemainingUnits + ActualUnits.

Request Parameter	Mandatory?	Data Type	Description
remainingUnits	No	Double	**System Activity Sheets** If a value is not provided, it defaults to zero. **Manual Activity Sheets** ▸ If activities with statuses, *Not Started* or *In Progress*, are included in the request, check if: RemainingUnits = RemainingDuration X RemainingUnitsPerTime. Otherwise, displays an error. ▸ If it is not provided in the request, it is updated as: RemainingDuration X RemainingUnitsPerTime. ▸ Activities with *Completed* statues are ignored if provided.
costCode	No	String	Specify the full path of the CBS Code with entire hierarchy present in Cost Sheet, has to be given. Use "~~" will be used as path separators for the hierarchy. ▸ For a new Resource/Role created, displays an error message for an inactive costCode. ▸ For an update to an existing Resource/Role, compares the existing costCode for that assignment. If the costCode is identical, it will not be updated. Otherwise, displays an error message for the inactive costCode.
For **Manual Activity Sheet Assignments**, specify the following request parameters			
plannedStart	No	Timestamp	The plannedStart is determined as follows: ▸ If the plannedStart is not included in the request, defaults to the Activity PlannedStart. ▸ Displays an error if the updated PlannedStart is less than Activity PlannedStart.

Request Parameter	Mandatory?	Data Type	Description
plannedFinish	No	Timestamp	The plannedFinish is determined as follows: ▸ If the plannedFinish is not included in the request, defaults to the Activity PlannedFinish. ▸ If PlannedFinish of the Assignment is greater than the Activity PlannedFinish, the Activity PlannedFinish is also updated.
plannedDuration	No	Integer	The plannedDuration is determined as follows: ▸ If included in the request, checks if PlannedDuration = PlannedFinish - PlannedStart. Otherwise, displays an error message. ▸ If the plannedDuration is not included in the request, it is calculated as: PlannedFinish - PlannedStart.
actualStart	No	Timestamp	If the ActivityStatus is In Progress or Completed and is less than the Activity ActualStart then the Activity ActualStart is also updated. If its not provided in the request then it is updated as the Activity ActualStart.
actualFinish	No	Timestamp	If ActivityStatus is Completed and the ActualFinish of the Assignment in the request is greater than the Activity ActualFinish then the Activity ActualFinish is also updated. If it is not provided in the request then it is updated as the Activity ActualFinish

Request Parameter	Mandatory?	Data Type	Description
remainingStart	No	Timestamp	When ActivityStatus is Not Started: ▸ If it is included in the request, it checks if the RemainingStart is same as Assignment Planned Start. Otherwise, displays an error message. ▸ If it is not provided in the request, then it is updated as the Assignment Planned Start. When ActivityStatus is In Progress: ▸ If it is included in the request, it checks if it is less than Activity Remaining Start. Otherwise, displays an error message. ▸ If it is not provided in the request, then it is updated as the Activity Remaining Start date. If ActivityStatus is Completed, no value is assigned.
remainingFinish	No	Timestamp	If the status is Not Started: ▸ If it's included in the request , it checks if the Remaining Finish is same as the Assignment Planned Finish. Otherwise, displays an error message. ▸ If it is not included in the request, then it is updated as the Assignment Planned Finish. If status is in In Progress: ▸ If it is included in the request, it checks if it is greater than the Activity RemainingFinish, and then also updates the Activity RemainingFinish. ▸ If it is not included in the request, then it is updated as the Activity Remaining Finish. If ActivityStatus is Completed, no value is assigned.

Request Parameter	Mandatory?	Data Type	Description
remainingDuration	No	Integer	If the status is Not Started or In Progress: ▸ If it is included in the request , it checks if the remainingDuration = RemainingFinish - RemainingStart. Otherwise, displays an error message. ▸ If it is not included in the request, then it is updated as RemainingFinish - RemainingStart If the Status is Completed, it is set to zero (0)
start	No	Timestamp	If ActivityStatus is Not Started: ▸ If it is included in the request , it must be identical to the PlannedStart of the Assignment in the API. Otherwise, displays an error message. ▸ If it is not included in the request, then it is updated as the PlannedStart date of that Assignment. ▸ If both Start and PlannedStart are not included in the request, then Start is updated from the Activity PlannedStart. If ActivityStatus is In Progress orCompleted: ▸ If it is included in the request, it must be same as the ActualStart of that Assignment. Otherwise, displays an error message. ▸ If it is not included in the request, then it is updated as the ActualStart of that Assignment. If both, Start and ActualStart are not provided then Start is updated using the Activity ActualStart.

Request Parameter	Mandatory?	Data Type	Description
finish	No	Timestamp	If the ActivityStatus is Not Started: ▸ If it is provided in the request, it should be same as the PlannedFinish of that Assignment. Otherwise, displays an error message. ▸ If it is not included in the request, then it is updated as the PlannedFinish of that Assignment. ▸ If both, Finish and PlannedFinish are not provided then Finish is updated from the Activity PlannedFinish. If the ActivityStatus is In Progress Activities: ▸ If it is included in the request, it should be same as the RemainingFinish of that Assignment in the API request. Otherwise, displays an error message. ▸ If it is not included in the request, it is updated as the RemainingFinish of that Assignment. ▸ If both, Finish and RemainingFinish are not provided, then Finish is updated from the Activity RemainingFinish. If the ActivityStatus is Completed: ▸ If it is included in the request,it should be same as the ActualFinish of that Assignment in the request. Otherwise, displays an error message. ▸ If it is not included in the request, then it is updated as the ActualFinish of that Assignment. ▸ If both, Finish and ActualFinish of the Assignment are not provided, then Finish is updated from the Activity ActualFinish.

Request Parameter	Mandatory?	Data Type	Description
duration	No	Integer	If it is included in the API request, it check if Start + Duration = Finish. Otherwise, displays an error message. If it is not included in the request, it is updated as, Finish - Start.
plannedUnitsPerTime	No	Double	If it is not included in the request, then it is populated from the Master Rate Sheet.
remainingUnitsPerTime	No	Double	If ActivityStatus is Not Started: ▸ If it is included in the request, checks if it is same as the plannedUnitsPerTime. Otherwise, displays an error message. ▸ If it is not included in the request, it is populated from the Master Rate Sheet. If ActivityStatus is In Progress Activities and it is not included in the request, it is populated from the Master Rate Sheet. If ActivityStatus is Completed: ▸ When the assignment is created, it is populated with default value from the Master Rate Sheet. ▸ When the assignment is updated, this value is ignored, and not updated.
profile	No	String	The profile for the assignments. Valid value: "Linear".

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <id from the audit table>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request (System Activity Sheet - Current Project)

This is an example of a request sent for a Current project in a system activity sheet.

```
{
   "options":{
      "project_number":"P-0016",
      "source":"Primavera Cloud",
      "sourceProjectId":"OPC10",
      "activitySheetType":"system",
      "removeUnreferencedData":true,
      "projectType": "Current"
   },
    "data": [
     {
     "activityId":"A1000",
      "roleCode":"APIOPC1",
      "rateSource": "Override",
      "workspaceCode" :"NON_PROD",
      "plannedPricePerUnit": 20.0,
      "actualsPricePerUnit":20.0,
      "plannedUnits":40,
      "actualUnits":0,
      "atCompletionUnits":40,
      "remainingUnits":50,
      "costCode": "00000~~00500",
      "profile" : "Linear"
    },
    {
     "activityId":"A1010",
      "resourceCode":"Child999",
      "rateSource": "Resource",
      "workspaceCode" :"test1",
```

```
  "plannedPricePerUnit": 20.0,
  "actualsPricePerUnit":20.0,
  "plannedUnits":40,
  "actualUnits":0,
  "atCompletionUnits":40,
  "remainingUnits":40,
  "costCode": "00000~~00500",
  "profile" : "Linear"
},
 {
 "activityId":"A1010",
  "roleCode":"APIOPC1",
  "rateSource": "Role",
  "workspaceCode" :"NON_PROD",
  "plannedPricePerUnit": 20.0,
  "actualsPricePerUnit":20.0,
  "plannedUnits":40,
  "actualUnits":0,
  "atCompletionUnits":40,
  "remainingUnits":40,
  "costCode": "00000~~00500",
  "profile" : "Linear"
},
{
 "activityId":"A1020",
  "resourceCode":"Child1Rate4",
  "rateSource": "Resource",
  "workspaceCode" :"NON_PROD3",
  "plannedPricePerUnit": 20.0,
  "actualsPricePerUnit":20.0,
  "plannedUnits":40,
  "actualUnits":0,
  "atCompletionUnits":40,
  "remainingUnits":40,
```

```
      "costCode": "00000~~00500",
      "profile" : "Linear"
    }
  ]
}
```

Sample Response (System Activity Sheet - Current Project)

The REST service returns a response for the above request.

```
{
   "data": [
       {
           "activityId": "A1000",
           "costCode": "00000~~00500",
           "actualsPricePerUnit": 20.0,
           "actualUnits": 0,
           "plannedPricePerUnit": 20.0,
           "workspaceCode": "NON_PROD",
           "roleCode": "APIOPC1",
           "plannedUnits": 40,
           "atCompletionUnits": 40,
           "id": 514,
           "remainingUnits": 50,
           "rateSource": "Override"
       },
       {
           "activityId": "A1010",
           "costCode": "00000~~00500",
           "actualUnits": 0,
           "resourceCode": "Child999",
           "workspaceCode": "test1",
           "plannedUnits": 40,
           "atCompletionUnits": 40,
           "id": 503,
           "remainingUnits": 40,
```

```
            "rateSource": "Resource"
        },
        {
            "activityId": "A1010",
            "costCode": "00000~~00500",
            "actualUnits": 0,
            "workspaceCode": "NON_PROD",
            "roleCode": "APIOPC1",
            "plannedUnits": 40,
            "atCompletionUnits": 40,
            "id": 513,
            "remainingUnits": 40,
            "rateSource": "Role"
        },
        {
            "activityId": "A1020",
            "costCode": "00000~~00500",
            "actualUnits": 0,
            "resourceCode": "Child1Rate4",
            "workspaceCode": "NON_PROD3",
            "plannedUnits": 40,
            "atCompletionUnits": 40,
            "id": 510,
            "remainingUnits": 40,
            "rateSource": "Resource"
        }
    ],
    "message": [
        "success"
    ],
    "status": 200,
    "rest_audit_id": 2648
}
```

Sample Request (Creation of Assignments for Baseline Project from Oracle Primavera Cloud)

This is an example of a request sent to create for a baseline project from Oracle Primavera Cloud.


```
{
   "options":{
      "project_number":"P-0099",
      "source":"Primavera Cloud",
      "sourceProjectId":"Reg235",
      "activitySheetType":"system",
      "projectType":"Baseline",
      "removeUnreferencedData":"true"
   },
  "data": [
     {
     "activityId":"A1000",
      "resourceCode":"Res1",
      "roleCode":"Role1",
      "rateSource": "Resource",
      "plannedPricePerUnit": 10,
      "actualsPricePerUnit":20,
      "plannedUnits":10,
      "actualUnits":10,
      "atCompletionUnits":10,
      "remainingUnits":10,
      "plannedCost": 300.50,
      "actualCost": 200.30,
      "atCompletionCost":500.80,
      "remainingCost":50.00,
      "costCode": "C-001",
      "start": "2023-06-05T08:00:00",
      "finish": "2023-06-09T16:00:00",
      "duration": 40,
      "plannedStart": "2023-06-05T08:00:00",
```

```
      "plannedFinish": "2023-06-09T16:00:00",
      "plannedDuration":40,
      "actualStart": "",
      "actualFinish": "",
      "remainingStart": "2023-06-05T08:00:00",
      "remainingFinish":  "2023-06-09T16:00:00",
      "remainingDuration" : 40,
      "plannedUnitsPerTime" : 0,
      "remainingUnitsPerTime" : 0,
      "profile" : "Linear",
      "workspaceCode":"NON_PROD"
  }
  ]
}
```


Sample Response (Creation of Assignments for Baseline Project from Oracle Primavera Cloud)

The REST service returns a response by creating assignments for the above request.


```
{
    "data": [
       {
      "activityId":"A1000",
      "resourceCode":"Res1",
      "roleCode":"Role1",
      "rateSource": "Resource",
      "plannedPricePerUnit": 10,
      "actualsPricePerUnit":20,
      "plannedUnits":10,
      "actualUnits":10,
      "atCompletionUnits":10,
      "remainingUnits":10,
      "plannedCost": 300.50,
      "actualCost": 200.30,
      "atCompletionCost":500.80,
```

```
      "remainingCost":50.00,
      "costCode": "C-001",
      "start": "2023-06-05T08:00:00",
      "finish": "2023-06-09T16:00:00",
      "duration": 40,
      "plannedStart": "2023-06-05T08:00:00",
      "plannedFinish": "2023-06-09T16:00:00",
      "plannedDuration":40,
      "actualStart": "",
      "actualFinish": "",
      "remainingStart": "2023-06-05T08:00:00",
      "remainingFinish":  "2023-06-09T16:00:00",
      "remainingDuration": 40,
      "plannedUnitsPerTime": 0,
      "remainingUnitsPerTime": 0,
      "profile": "Linear",
        "workspaceCode":"NON_PROD",
      "id" : 123
      }
    ],
    "message": [
        "success"
    ],
    "status": 200,
    "rest_audit_id": 5822
}
```


Sample Failure Request

This is an example of a request sent with erroneous request parameter values.


```
{
   "options":{
      "project_number":"P-0016",
      "source":"Others",
      "sourceProjectId":"Reg235",
```

```
    "activitySheetType":"manual",
    "removeUnreferencedData":true,
    "activitySheetName":"MOD",
    "projectType": "Current1"
},
 "data": [
  {
  "activityId":"A1000",
   "resourceCode":"Res1",
   "roleCode":"Role1",
   "rateSource": "Resource",
   "plannedPricePerUnit": 10,
   "actualsPricePerUnit":20,
   "plannedUnits":10,
   "actualUnits":10,
   "atCompletionUnits":10,
   "remainingUnits":10,
   "plannedCost": 300.50,
   "actualCost": 200.30,
   "atCompletionCost":500.80,
   "remainingCost":50.00,
   "costCode": "C-001",
   "start": "2023-06-05T08:00:00",
   "finish": "2023-06-09T16:00:00",
   "duration": 40,
   "plannedStart": "2023-06-05T08:00:00",
   "plannedFinish": "2023-06-09T16:00:00",
   "plannedDuration":40,
   "actualStart": "",
   "actualFinish": "",
   "actualDuration": 0,
   "remainingStart": "2023-06-05T08:00:00",
   "remainingFinish":  "2023-06-09T16:00:00",
   "remainingDuration" : 40,
```

```
      "plannedUnitsPerTime" : 0,
      "remainingUnitsPerTime" : 0,
      "profile" : "Linear"
    }
  ]
}
```

Sample Failure Response

The REST service returns a response for the above erroneous request.

```
{
    "data": [],
    "message": [
        {
            "message": "Invalid value was found in a field: 'projectType'.
Allowed values: [Current, Baseline]",
            "status": 12145
        }
    ],
    "status": 3000,
    "rest_audit_id": 1794
}
```

Sample Request (Manual Activity Sheet – Current Project – Assignments for Not Started Activity)

This is an example of a request for a manual activity sheet in a current project.

```
{
   "options":{
      "project_number":"P-0016",
      "source":"Others",
      "sourceProjectId":"P-0016",
      "activitySheetType":"manual",
      "removeUnreferencedData":false,
      "activitySheetName":"ACTUTC530",
      "projectType": "Current"
   },
```

```
    "data": [
     {
     "activityId":"A1000",
      "roleCode":"APIOPC1",
      "rateSource": "Override",
      "workspaceCode" :"NON_PROD",
      "plannedPricePerUnit": 30.0,
      "actualsPricePerUnit":30,
      "plannedStart": "2023-06-05T08:00:00",
      "plannedFinish": "2023-06-12T16:00:00",
      "plannedDuration":48,
      "plannedUnits":528.0,
      "atCompletionUnits":528.0,
      "remainingUnits":528.0,
      "costCode": "00000~~00700",
      "start": "2023-06-05T08:00:00",
      "finish": "2023-06-12T16:00:00",
      "duration": 48.0,
      "remainingStart": "2023-06-05T08:00:00",
      "remainingFinish":  "2023-06-12T16:00:00",
      "remainingDuration": 48,
      "remainingUnitsPerTime": 11.0,
      "plannedUnitsPerTime": 11.0,
      "profile": "Linear"
    }
  ]
}
```


Sample Response (Manual Activity Sheet – Current Project – Assignments for Not Started Activity)

The REST service returns a response for the above request.


```
{
    "data": [
        {
```

```
            "actualUnits": null,
            "plannedPricePerUnit": 30.0,
            "plannedUnits": 528.0,
            "remainingFinish": "2023-06-12T16:00:00",
            "start": "2023-06-05T08:00:00",
            "atCompletionUnits": 528.0,
            "remainingUnits": 528.0,
            "plannedStart": "2023-06-05T08:00:00",
            "plannedFinish": "2023-06-12T16:00:00",
             "rateSource": "Override",
            "duration": 48.0,
            "activityId": "A1000",
            "costCode": "00000~~00700",
            "actualsPricePerUnit": 30,
            "roleCode": "APIOPC1",
            "remainingStart": "2023-06-05T08:00:00",
            "remainingDuration": 48.0,
            "plannedDuration": 48.0,
            "finish": "2023-06-12T16:00:00",
            "remainingUnitsPerTime": 11.0,
            "plannedUnitsPerTime": 11.0,
            "id": 567
        }
    ],
    "message": [
        "success"
    ],
    "status": 200,
    "rest_audit_id": 3396
}
```


Sample Request (Manual Activity Sheet – Current Project – Sample of Assignments for Completed Activity)

This is a request sent for a Manual Activity Sheet for a current project with assignments for completed activities.

```
{
   "options":{
      "project_number":"P-0016",
      "source":"Others",
      "sourceProjectId":"P-0016",
      "activitySheetType":"manual",
      "removeUnreferencedData":false,
      "activitySheetName":"ACTUTC530",
      "projectType": "Current"
   },
    "data": [
     {
     "activityId":"A1020",
      "roleCode":"CivEng",
      "rateSource": "Override",
      "workspaceCode" :"NON_PROD",
      "plannedPricePerUnit": 30.0,
      "actualsPricePerUnit":30,
      "plannedStart": "2023-06-06T08:00:00",
      "plannedFinish": "2023-06-07T16:00:00",
      "plannedDuration":16,
      "plannedUnits":176.0,
      "atCompletionUnits":8.0,
      "remainingUnits":440.0,
      "costCode": "00000~~00700",
      "start": "2023-06-06T08:00:00",
      "finish": "2023-06-07T16:00:00",
      "duration": 16.0,
      "actualStart": "2023-06-06T08:00:00",
      "actualFinish": "2023-06-07T16:00:00",
      "remainingUnitsPerTime": 11.0,
      "plannedUnitsPerTime": 11.0,
      "actualDuration": 10,
      "actualUnits": 8,
```

```
      "profile" : "Linear"
    }
  ]
}
```

Sample Response (Manual Activity Sheet – Current Project – Sample of Assignments for Completed Activity)

The REST service returns a response for the above request.


```
{
    "data": [
        {
            "actualUnits": 8.0,
            "plannedUnitsPerTime": 11.0,
            "plannedPricePerUnit": 30.0,
            "plannedUnits": 176.0,
            "remainingFinish": "",
            "start": "2023-06-06T08:00:00",
            "atCompletionUnits": 8.0,
            "remainingUnits": 440.0,
            "plannedStart": "2023-06-06T08:00:00",
            "rateSource": "Override",
            "duration": 16.0,
            "activityId": "A1020",
            "actualFinish": "2023-06-07T16:00:00",
            "plannedFinish": "2023-06-07T16:00:00",
            "costCode": "00000~~00700",
            "actualsPricePerUnit": 30,
            "roleCode": "CivEng",
            "remainingStart": "",
            "remainingDuration": 0,
            "plannedDuration": 16.0,
            "finish": "2023-06-07T16:00:00",
            "id": 571,
            "actualStart": "2023-06-06T08:00:00"
```

```
        }
    ],
    "message": [
        "success"
    ],
    "status": 200,
    "rest_audit_id": 3517
}
```


Sample Request (Manual Activity Sheet – Current Project – Sample of Assignments for In Progress Activity)

This is a request sent for a Manual Activity Sheet for a current project with assignments for *In Progress* activities.


```
{
   "options":{
      "project_number":"P-0016",
      "source":"Others",
      "sourceProjectId":"P-0016",
      "activitySheetType":"manual",
      "removeUnreferencedData":false,
      "activitySheetName":"ACTUTC530",
      "projectType": "Current"
   },
    "data": [
     {
     "activityId":"A1010",
      "roleCode":"CivEng",
      "rateSource": "Override",
      "workspaceCode" :"NON_PROD",
      "plannedPricePerUnit": 30.0,
      "actualsPricePerUnit":30,
      "plannedStart": "2023-06-08T08:00:00",
      "plannedFinish": "2023-06-15T16:00:00",
      "plannedDuration":48,
      "plannedUnits":48.0,
```

```
      "atCompletionUnits":32.0,
      "remainingUnits":32.0,
      "actualUnits":0,
      "costCode": "00000~~00700",
      "actualStart":"2023-06-05T08:00:00",
      "start": "2023-06-05T08:00:00",
      "finish": "2023-06-09T16:00:00",
      "duration": 40.0,
      "remainingStart": "2023-06-08T08:00:00",
      "remainingFinish":  "2023-06-09T16:00:00",
      "remainingDuration" : 16,
      "plannedUnitsPerTime" : 1,
      "remainingUnitsPerTime":2,
      "actualDuration": 0,
      "profile" : "Linear"
    }
  ]
}
```


Sample Response (Manual Activity Sheet – Current Project – Sample of Assignments for In Progress Activity)

The REST service returns a response for the above request.


```
{
    "data": [
        {
            "plannedFinish": "2023-06-15T16:00:00",
            "actualUnits": null,
            "plannedPricePerUnit": 30.0,
            "plannedUnits": 48.0,
            "remainingFinish": "2023-06-09T16:00:00",
            "start": "2023-06-05T08:00:00",
            "atCompletionUnits": 32.0,
            "remainingUnits": 32.0,
            "plannedStart": "2023-06-08T08:00:00",
```

```
            "rateSource": "Override",
            "plannedUnitsPerTime" : 1,
            "remainingUnitsPerTime":2,
            "duration": 40.0,
            "actualUnits":0,
            "activityId": "A1010",
            "costCode": "00000~~00700",
            "actualsPricePerUnit": 30,
            "roleCode": "CivEng",
            "remainingStart": "2023-06-08T08:00:00",
            "remainingDuration": 16.0,
            "plannedDuration": 48.0,
            "finish": "2023-06-09T16:00:00",
            "id": 575,
            "actualStart": "2023-06-05T08:00:00"
        }
    ],
    "message": [
        "success"
    ],
    "status": 200,
    "rest_audit_id": 3555
}
```


Options JSON Map: Supported Validation Messages and Status Codes

The following error messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status Code	Error Message
source	The source is not given in JSON input payload	12007	The API request is missing the required information: [source]

Field Name	Use-case Scenario	Status Code	Error Message
source	A wrong source value.	12008	Invalid value was found in a field: [source]. Allowed values: [Primavera Cloud, Others]
source	A wrong value type for source such as boolean or numbers.	12008	Invalid value was found in a field: [source]. Allowed values: [Primavera Cloud, Others]
source	An empty source value.	12030	The API request contains empty value for: [source]. Allowed values: [Primavera Cloud, Others]
project_number	An invalid project_number.	602	Project/Shell Number is not correct.
project_number	The project_number is not given	12018	The API request is missing the required information: [project_number].
project_number	If the project status is inactive or on-hold or View Only for a given project_number.	12020	The API request contains an invalid value: [project_number]. Please check the status of this project_number in Unifier.
project_number	The project_number is empty.	12128	The API request contains empty value for: [project_number].

Field Name	Use-case Scenario	Status Code	Error Message
sourceProjectId	If the sourceProjectId is not configured in the source shell.	12021	The API request contains an invalid value: [sourceProjectId]. Please check if this sourceProjectId has been configured in Unifier.
sourceProjectId	Invalid special characters in the sourceProjectId.	12022	The API request contains invalid characters in: [sourceProjectId]. The following characters are not allowed : / \\ : * ? \" < > | ' =
sourceProjectId	A missing sourceProjectId.	12005	The API request is missing the required information: [sourceProjectId]
sourceProjectId	A blank sourceProjectId.	12032	The API request contains empty value for: [sourceProjectId].
sourceProjectId	Invalid length of sourceProjectId.	12014	Invalid value was found in a field: 'sourceProjectId'. Allowed length: [250]
activitySheetType	A missing activitySheetType value.	12010	The API request is missing the required information: [activitySheetType]
activitySheetType	Accepts only "manual" or "system", else throwing validation.	12011	Invalid value was found in a field: [activitySheetType]. Allowed values: [manual, system]

Field Name	Use-case Scenario	Status Code	Error Message
activitySheetType	The source is "Primavera Cloud" in the request, and the activitySheetType is "manual".	12671	Invalid value was found in a field: [activitySheetType]. If source=Primavera Cloud, allowed values: [system]
activitySheetType	The source is "Others" in the request and the activitySheetType is "system".	12671	Invalid value was found in a field: [activitySheetType]. If source=Others, allowed values: [manual]
projectType	The projectType is missing in the payload.	12143	The API request is missing the required information: [projectType].
projectType	The projectType is empty/blank.	12144	The API request contains empty value for: [projectType].
projectType	The wrong data type(integer/boolean) value is passed for projectType.	12142	Invalid value was found in a field: [projectType]. Allowed only alphanumeric value.
projectType	Some invalid value except "Current"/"Baseline" passed in projectType.	12145	Invalid value was found in a field: [projectType]. Allowed values: [Current, Baseline]
activitySheetName	The activity sheet name is empty for activity sheet type "manual", and displays validation.	12012	The API request is missing the required information: [activitySheetName].
activitySheetName	The activitySheetName exceeds 250 characters.	12017	Invalid value was found in a field: [activitySheetName]. Allowed length: [250]

Field Name	Use-case Scenario	Status Code	Error Message
activitySheetName	he activitySheetName does not exist.	12013	The API request contains an invalid value: [activitySheetName]. Please check if this activitySheetName with type=manual has been configured in Unifier.
removeUnreferencedData	A non-boolean value is provided in removeUnreferencedData.	12016	Invalid value was found in a field: [removeUnreferencedData]. Allowed values: [true, false]

Data JSON List: Supported Validation Messages and Status Codes

The following error messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status Code	Error Message
activityId	The activityId exceeds 120 characters.	12003	nvalid value was found in a field: [activityId]. Allowed length: [120]
activityId	The activityId is missing in payload.	12009	The API request is missing the required information: [activityId]
activityId	A non-string value is provided for activityId..	12033	Invalid value was found in a field: [activityId]. Allowed only string value or use quotations. Activity ID: <activityId>

Field Name	Use-case Scenario	Status Code	Error Message
activityId	The activityId does not exist in the Activity Sheet.	12606	Invalid value was found in a field [activityId]. Allowed Activity ID that already exists in Activity Sheet. Activity ID: <activityId>
rateSource	The rateSource is empty, or Non-String, or null, or invalid value.	12600	Invalid value was found in a field: [rateSource]. Allowed values: [Resource, Role or Override]. Activity ID: <activityId>
rateSource	The rateSource is missing in payload.	12611	The API request is missing the required information: [rateSource]. Activity ID: <activityId>
workspaceCode	The invalid workspaceCode like not string or not alphanumeric or empty or null.	12115	Invalid value was found in a field: [workspaceCode]. Allowed only alphanumeric value.
workspaceCode	The workspaceCode is missing in payload.	12612	The API request is missing the required information: [workspaceCode].
resourceCode	The rateSource is "Resource" and the resourceCode is missing in the payload.	12400	The API request is missing the required information: [resourceCode]. Activity ID: <activityId>
resourceCode	The rateSource is "Resource" and the Resource Code is empty.	12401	The API request contains an empty value for: [resourceCode]. Activity ID: <activityId>

Field Name	Use-case Scenario	Status Code	Error Message
resourceCode	A non-string value is provided for Resource Code.	12402	Invalid value was found in a field: [resourceCode]. Allowed only string value or use quotations. Activity ID: <activityId>
resourceCode	The Resource Code exceeds 120 characters.	12403	Invalid value was found in a field: [resourceCode]. Allowed length: [120]. Activity ID: <activityId> Resource Code: <resourceCode>
resourceCode	A duplicate resourceCode exists under the same activityId in the request.	12613	Only unique value allowed for [resourceCode] under an Activity. Activity ID: <activityId> Resource Code: <resourceCode>
resourceCode	The Resource Code does not exist in the Master Rate Sheet	12607	Invalid value was found in a field [resourceCode]. Allowed only the Resource codes present in Master Rate Sheet. Activity ID: <activityId> Resource Code: <resourceCode>
roleCode	The rateSource is "Role" and the Role Code is missing.	12421	The API request is missing the required information: [roleCode]. Activity ID: <activityId>
roleCode	The rateSource is "Role" and the Role Code is empty.	12422	The API request contains an empty value for: [roleCode]. Activity ID: <activityId>

Field Name	Use-case Scenario	Status Code	Error Message
roleCode	A non-string value is provided for Role Code.	12423	Invalid value was found in a field: [roleCode]. Allowed only string value or use quotations. Activity ID: <activityId>
roleCode	The Role Code exceeds 120 characters.	12424	Invalid value was found in a field: [roleCode]. Allowed length: [120]. Activity ID: <activityId> Role Code: <roleCode>
roleCode	A duplicate Role Code exists under the same activityId in the request.	12614	Only unique value allowed for [roleCode] under an Activity. Activity ID: <activityId> Role Code: <roleCode>
roleCode	The Role Code does not exist in Master Rate Sheet	12608	Invalid value was found in a field [roleCode]. Allowed only the Role codes present in Master Rate Sheet. Activity ID: <activityId> Role Code: <roleCode>
plannedPricePerUnit	An Invalid plannedPricePerUnit (Not Double) or empty or null.	12601	Invalid value was found in a field: [plannedPricePerUnit]. Allowed only positive decimal value. Activity ID: <activityId>/Resource Code: <resourceCode>/Role Code: <roleCode>

Field Name	Use-case Scenario	Status Code	Error Message
plannedPricePerUnit	The plannedPricePerUnit exceeds 999999999999999 or less than 0.	12602	Invalid value was found in a field: [plannedPricePerUnit]. Allowed Range [0-999999999999999]. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>
actualsPricePerUnit	An invalid actualsPricePerUnit (Not Double) or empty or null.	12601	Invalid value was found in a field: [actualsPricePerUnit]. Allowed only positive decimal value. Activity ID: <activityId>. Resource Code: <resourceCode>/Role Code: <roleCode>
actualsPricePerUnit	The actualsPricePerUnit exceeds 999999999999999 or less than 0.	12602	Invalid value was found in a field: [actualsPricePerUnit]. Allowed Range [0-999999999999999]. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>
plannedUnits	An invalid plannedUnits (Not Double) or empty or null.	12604	Invalid value was found in a field: [plannedUnits]. Allowed only numerical/decimal value. Activity ID: <activityId> Resource Code: <resourceCode>/Role Code: <roleCode>

Field Name	Use-case Scenario	Status Code	Error Message
plannedUnits	The plannedUnits is less than -99999999999999 or exceeds 999999999999999.	12605	Invalid value was found in a field: [plannedUnits]. Allowed Range [-999999999999999 - 999999999999999]. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>
plannedUnits	PlannedUnits != PlannedDuration*PlannedUnitPerTime (for Manual Activity Sheet only).	12615	Invalid value was found in a field [plannedUnits]. The value provided should be equal to (plannedDuration * plannedUnitPerTime) of the assignment. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>
actualUnits	Invalid actualUnits (Not Double) or empty or null.	12604	Invalid value was found in a field: [actualUnits]. Allowed only numerical/decimal value. Activity ID: <activityId> Resource Code: <resourceCode>/Role Code: <roleCode>

Field Name	Use-case Scenario	Status Code	Error Message
actualUnits	actualUnits is less than -99999999999999 or exceeds 999999999999999.	12605	Invalid value was found in a field: [actualUnits]. Allowed Range [-999999999999999 - 999999999999999]. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>
actualUnits	For In Progress or Completed Activities, the actualsUnits is missing in the request.	12670	The API request is missing the required information: [actualUnits]. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>
atCompletionUnits	An invalid atCompletionUnits (Not Double) or empty or null.	12604	Invalid value was found in a field: [atCompletionUnits]. Allowed only numerical/decimal value. Activity ID: <activityId> Resource Code: <resourceCode>/Role Code: <roleCode>

Field Name	Use-case Scenario	Status Code	Error Message
atCompletionUnits	The atCompletionUnits is less than -99999999999999 or exceeds 999999999999999.	12605	Invalid value was found in a field: [atCompletionUnits]. Allowed Range [-999999999999999 - 999999999999999]. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>
atCompletionUnits	For Not Started or In Progress Activities : If AtCompletionsUnits != RemainingUnits + ActualUnits (for Manual Activity Sheet only).	12615	nvalid value was found in a field [atCompletionUnits]. The value provided should be equal to (remainingUnits + actualUnits) of the assignment. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>
atCompletionUnits	For Completed Activities : If AtCompletionsUnits != ActualUnits (for Manual Activity Sheet only).	12615	Invalid value was found in a field [atCompletionUnits]. The value provided should be equal to (actualUnits) of the assignment. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>

Field Name	Use-case Scenario	Status Code	Error Message
remainingUnits	Invalid remainingUnits (Not Double) or null.	12604	Invalid value was found in a field: [remainingUnits]. Allowed only numerical/decimal value. Activity ID: <activityId> Resource Code: <resourceCode>/Role Code: <roleCode>
remainingUnits	The remainingUnits is less than -99999999999999 or exceeds 999999999999999.	12605	Invalid value was found in a field: [remainingUnits]. Allowed Range [-999999999999999 - 999999999999999]. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>
remainingUnits	If RemainingUnits != RemainingDuration* RemainingUnitsPerTime (for Manual Activity Sheet only).	12615	Invalid value was found in a field [remainingUnits]. The value provided should be equal to (remainingDuration * remainingUnitsPerTime) of the assignment. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>

Field Name	Use-case Scenario	Status Code	Error Message
costCode	An Invalid costCode is provided - (Non-String) or empty or null or blank.	12609	Invalid value was found in a field: [costCode]. Allowed only string values. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>
costCode	The costCode does not exist in the Cost Sheet.	12610	Invalid value was found in a field [costCode]. Allowed only the Cost codes present in Cost Sheet. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>
costCode	Inactive costCode provided in the API request.	12623	Invalid value was found in a field: [costCode]. Allowed only active Cost codes. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>
plannedStart	An invalid plannedStart format or null or empty value is provided in the request.	12620	The API request contains an invalid value: [plannedStart]. Correct date format [yyyy-MM-ddTHH:mm:ss]. Activity ID: <activityId>/Resource Code: <Resource Code>/Role Code: <roleCode>

Field Name	Use-case Scenario	Status Code	Error Message
plannedStart	The plannedStart less than Activity Planned Start Date.	12621	Invalid value was found in a field [plannedStart]. plannedStart cannot be less than Activity plannedStart. Activity ID: <activityId>/Resource Code: <Resource Code>/Role Code: <roleCode>
plannedStart	The plannedStart provided is on a holiday or a non-working day.	12672	Invalid value was found in a field: [plannedStart]. Please provide a working day according to the calendar. Activity ID: <activityId>/Resource Code: <Resource Code>/Role Code: <roleCode>
plannedFinish	An invalid plannedFinish format or null or empty value provided in the request.	12620	The API request contains an invalid value: [plannedFinish]. Correct date format [yyyy-MM-ddTHH:mm:ss]. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>

Field Name	Use-case Scenario	Status Code	Error Message
plannedFinish	The plannedFinish provided is on a holiday or a non-working day.	12672	Invalid value was found in a field: [plannedFinish]. Please provide a working day according to the calendar. Activity ID: <activityId>/Resource Code: <Resource Code>/Role Code: <roleCode>
plannedDuration	An invalid plannedDuration (Not Integer) or empty or null.	12616	Invalid value was found in a field: [plannedDuration]. Allowed only positive integer value. Activity ID: <activityId> Resource Code: <resourceCode>/Role Code: <roleCode>
plannedDuration	The plannedDuration is less than zero or exceeds 20000.	12617	Invalid value was found in a field: [plannedDuration]. Allowed Range [0-20000]. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>

Field Name	Use-case Scenario	Status Code	Error Message
plannedDuration	If plannedDuration != plannedFinish - plannedStart.	12618	Invalid value was found in a field [plannedDuration]. The value provided should be equal to (plannedFinish - plannedStart) of the assignment, as per the calendar defined. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>
actualStart	An invalid actualStart format or null or empty value is provided in the request.	12620	The API request contains an invalid value: [actualStart]. Correct date format [yyyy-MM-ddTHH:MM:SS]. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>
actualStart	If Actual Start is in the future.	12625	Invalid value was found in a field [actualStart]. actualStart cannot be later than Today. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>

Field Name	Use-case Scenario	Status Code	Error Message
actualStart	actualStart provided is on holiday or non-working day.	12672	Invalid value was found in a field: [actualStart]. Please provide a working day according to the calendar. Activity ID: <activityId>/Resource Code: <Resource Code>/Role Code: <roleCode>
actualFinish	Invalid actualFinish format or null or empty value provided in the API Request.	12620	The API request contains an invalid value: [actualFinish]. Correct date format [yyyy-MM-ddTHH:mm:ss]. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>
actualFinish	The Actual Finish is in future.	12625	Invalid value was found in a field [actualFinish]. actualFinish cannot be later than Today. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>
actualFinish	The plannedStart provided is on a holiday or a non-working day.	12672	Invalid value was found in a field: [plannedStart]. Please provide a working day according to the calendar. Activity ID: <activityId>/Resource Code: <Resource Code>/Role Code: <roleCode>

Field Name	Use-case Scenario	Status Code	Error Message
actualFinish	The actualFinish provided is on a holiday or a non-working day.	12672	Invalid value was found in a field: [actualFinish]. Please provide a working day according to the calendar. Activity ID: <activityId>/Resource Code: <Resource Code>/Role Code: <roleCode>
remainingStart	An invalid remainingStart format or null or empty value provided in the request.	12620	The API request contains an invalid value: [remainingStart]. Correct date format [yyyy-MM-ddTHH:mm:ss]. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>
remainingStart	For NotStarted Activity, if plannedStart date and remainingStart are provided in the request, they should be the same, otherwise displays an error.	12624	Invalid value was found in a field [remainingStart]. The value provided should be equal to plannedStart, if Activity status = Not Started. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>

Field Name	Use-case Scenario	Status Code	Error Message
remainingStart	For In Progress Activities, if the remaining start date less than Activity Remaining Start date then throw an error.	12626	Invalid value was found in a field [remainingStart]. The value provided should be equal to or greater than remainingStart of the Activity, if Activity status = In Progress. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>
remainingStart	The remainingStart provided is on a holiday or a non-working day.	12672	Invalid value was found in a field: [remainingStart]. Please provide a working day according to the calendar. Activity ID: <activityId>/Resource Code: <Resource Code>/Role Code: <roleCode>
remainingFinish	Invalid remainingFinish format or null or empty value provided in the API Request.	12620	The API request contains an invalid value: [remainingFinish]. Correct date format [yyyy-MM-ddTHH:mm:ss]. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>

Field Name	Use-case Scenario	Status Code	Error Message
remainingFinish	For NotStarted Activity, if remainingFinish date and plannedFinish date are provided in the request, then they should be same, else display an error.	12624	Invalid value was found in a field [remainingFinish]. The value provided should be equal to plannedFinish, if Activity status = Not Started. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>
remainingFinish	The remainingFinish provided is on a holiday or a non-working day.	12672	Invalid value was found in a field: [remainingFinish]. Please provide a working day according to the calendar. Activity ID: <activityId>/Resource Code: <Resource Code>/Role Code: <roleCode>
remainingDuration	An invalid remainingDuration (Not Integer) or empty or null.	12616	Invalid value was found in a field: [remainingDuration]. Allowed only positive integer value. Activity ID: <activityId> Resource Code: <resourceCode>/Role Code: <roleCode>
remainingDuration	The remainingDuration is less than zero or exceeds 20000.	12617	Invalid value was found in a field: [remainingDuration]. Allowed Range [0-20000]. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>

Field Name	Use-case Scenario	Status Code	Error Message
remainingDuration	remainingDuration!= RemainingFinish - RemainingStart.	12618	Invalid value was found in a field [remainingDuration]. The value should be equal to (remainingFinish - remainingStart) of the assignment, as per the calendar defined. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>
start	An invalid start format or null or empty value provided in the request.	12620	The API request contains an invalid value: [start]. Correct date format [yyyy-MM-ddTHH:mm:ss]. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>
start	For NotStarted Activity, if Planned start date and Start date are provided in the request, they should be same, else displays an error.	12624	Invalid value was found in a field [start]. The value provided should be equal to plannedStart, if Activity status = Not Started. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>

Field Name	Use-case Scenario	Status Code	Error Message
start	For In Progress & Completed Activities, if the actual start date and start are not same, then display an error.	12627	Invalid value was found in a field [start]. The value provided should be equal to actualStart (actualStart (Assignment)= actualStart (Activity), if not provided in API), if Activity status = In Progress or Completed. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>
start	The start provided is on aholiday or a non-working day.	12672	Invalid value was found in a field: [start]. Please provide a working day according to the calendar. Activity ID: <activityId>/Resource Code: <Resource Code>/Role Code: <roleCode>
finish	An invalid finish format or null or empty value is provided in the request.	12620	The API request contains an invalid value: [finish]. Correct date format [yyyy-MM-ddTHH:mm:ss]. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>

Field Name	Use-case Scenario	Status Code	Error Message
finish	For NotStarted Activity, if Planned finish date and finish are provided in the Request, they should be same. Otherwise, display an error.	12624	Invalid value was found in a field [finish]. The value provided should be equal to plannedfinish, if Activity status = Not Started. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>
finish	For In Progress Activities, if the Remaining finish date and finish are not same, display an error.	12628	Invalid value was found in a field [finish]. The value provided should be equal to remainingfinish, if Activity status = In Progress. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>
finish	For Completed Activities, if the actual finish date and finish are not same, display an error.	12629	Invalid value was found in a field [finish]. The value provided should be equal to actualFinish (actualFinish (Assignment)= actualFinish (Activity), if not provided in API), if Activity status = Completed. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>

Field Name	Use-case Scenario	Status Code	Error Message
finish	The finish provided is on a holiday or a non-working day.	12672	Invalid value was found in a field: [finish]. Please provide a working day according to the calendar. Activity ID: <activityId>/Resource Code: <Resource Code>/Role Code: <roleCode>
duration	An invalid Duration (Not Integer) or empty or null.	12616	Invalid value was found in a field: [duration]. Allowed only positive integer value. Activity ID: <activityId> Resource Code: <resourceCode>/Role Code: <roleCode>
duration	The duration is less than zero or exceeds 20000	12617	Invalid value was found in a field: [duration]. Allowed Range [0-20000]. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>
duration	If Duration != Finish - Start	12618	Invalid value was found in a field [duration]. The value provided should be equal to (finish - start) of the assignment, as per the calendar defined. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>

Field Name	Use-case Scenario	Status Code	Error Message
plannedUnitsPerTime	An Invalid plannedUnitsPerTime (Not Double).	12604	Invalid value was found in a field: [plannedUnitsPerTime]. Allowed only numerical/decimal value. Activity ID: <activityId> Resource Code: <resourceCode>/Role Code: <roleCode>
plannedUnitsPerTime	The plannedUnitsPerTime is less than -99999999999999 or exceeds 999999999999999.	12605	Invalid value was found in a field: [remainingUnitsPerTime]. Allowed Range [-999999999999999 - 999999999999999]. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>
remainingUnitsPerTime	An invalid remainingUnitsPerTime (Not Double).	12604	Invalid value was found in a field: [remainingUnitsPerTime]. Allowed only numerical/decimal value. Activity ID: <activityId>. Resource Code: <resourceCode>/Role Code: <roleCode>

Field Name	Use-case Scenario	Status Code	Error Message
remainingUnitsPerTime	The remainingUnitsPerTime is less than -99999999999999 or exceeds 999999999999999.	12605	Invalid value was found in a field: [remainingUnitsPerTime]. Allowed Range [-999999999999999 - 999999999999999]. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>
remainingUnitsPerTime	For NotStarted Activity, if the remainingUnitsPerTime is included in the request, it should be same as plannedUnitsPerTime. Otherwise, displays an error.	12624	Invalid value was found in a field [remainingUnitsPerTime]. The value provided should be equal to plannedUnitsPerTime, if Activity status = Not Started. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>
profile	If the profile in the request is empty, (Non-String), null or an invalid value.	12619	Invalid value was found in a field: [profile]. Allowed values: [Linear]. Activity ID: <activityId> Resource Code: <Resource Code>/Role Code: <roleCode>

Get Assignments

```
GET
/ws/rest/service/v2/activity/sheet/assignments?project_number={project_
number}&project_type={project_type}&activity_sheet_type={activity_sheet
_type}&source_project_id={source_project_id}&activity_sheet_name={activ
ity_sheet_name}
```

Purpose

Retrieves Assignments data of Activity Sheet in a specified Unifier Shell based on any of the following combinations of request parameters:

- source_project_id/activity_sheet_name and project_number
- sheet type and project_type

Prerequisities

Ensure the following:

- To get assignments for externally-synced or manual activity sheets from other applications, the source project ID or manual activity sheet is configured.
- To get assignments for system activity sheets, select **Shell Details** and then select the **Primavera Cloud Integration** tab in Unifier.
- For system activity sheets, the sourceProjectId (projectId of the external application configured from Oracle Primavera Cloud) already exists.

  Note: P6 system sheets are not supported.

- For manual activity sheets, the activity sheet already exists.
- The activity sheets are created and activities exist for which assignments have to be fetched.

Request Format For Manual Activity Sheet

For a manual activity sheet, send a request in the following format:

```
{hostUrl}//ws/rest/service/v2/activity/sheet/assignments?project_number
=<value>&project_type=<value>&activitySheetType=manual&activity_sheet_n
ame=<value>
```

Request Format For System Activity Sheet

For a system activity sheet, send a request in the following format:

```
{hostUrl}/ws/rest/service/v2/activity/sheet/assignments?project_number=
<value>&source_project_id=<value>&activity_sheet_name=<value>&activity_
sheet_type=<value>&project_type=<value>
```

Request Parameters

Specify the following parameters in the request:

Request Parameter	Required?	Data Type	Description
project_number	Yes	String	A valid shell number with an Active status to get Assignments data of Activities.
activity_sheet_type	Yes	String	The type of activity sheet to be retrieved. Valid values include: "manual" and "system".
activity_sheet_name	Yes If "activity_sheet_type" is "manual",	String	The name of the activity sheet.
source_project_id	No	String	The project code in Oracle Primavera Cloud. For example, MSK01.
project_type	No	String	The project types for fetching the activities created in corresponding sheets. Valid values include: "Current" (default) and "Baseline"

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <id from the audit table>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Request - Manual Activity Sheet

For a manual activity sheet, send a request in the following format:

```
{hostUrl}//ws/rest/service/v2/activity/sheet/assignments?project_number=P-0115&project_type=Current&activitySheetType=manual&activity_sheet_name=ManualSheet
```

Sample Success Response - Manual Activity Sheet

A successful response with a status code displays in the following format

```
{
```

```
    "data": [
        {
            "plannedPricePerUnit": 0.0,
            "plannedUnits": 80.0,
            "remainingCost": 0.0,
            "atCompletionUnits": 80.0,
            "plannedStart": "2024-01-22T21:30:00",
            "duration": 8.0,
            "plannedCost": 0.0,
            "activityId": "A1000",
            "actualsPricePerUnit": 0.0,
            "resourceCode": "Rahul Anand",
            "atCompletionCost": 0.0,
            "remainingStart": "2024-01-22T21:30:00",
            "remainingDuration": 8.0,
            "remainingUnitsPerTime": 0.0,
            "plannedDuration": 8.0,
            "finish": "2024-01-23T05:30:00",
            "id": 58090,
            "actualCost": 0.0,
            "plannedFinish": "2024-01-23T05:30:00",
            "actualUnits": 0.0,
            "plannedUnitsPerTime": 0.0,
            "profile": "Linear",
            "remainingFinish": "2024-01-23T05:30:00",
            "start": "2024-01-22T21:30:00",
            "remainingUnits": 80.0,
            "rateSource": "Resource",
            "costCode": null,
            "workspaceCode": null
        },
        {
            "plannedPricePerUnit": 150.0,
            "plannedUnits": 80.0,
```

```
        "remainingCost": 12000.0,
        "atCompletionUnits": 80.0,
        "plannedStart": "2024-01-22T21:30:00",
        "duration": 8.0,
        "plannedCost": 12000.0,
        "activityId": "A1010",
        "actualsPricePerUnit": 150.0,
        "resourceCode": "Ravi Sharma",
        "atCompletionCost": 12000.0,
        "remainingStart": "2024-01-22T21:30:00",
        "remainingDuration": 8.0,
        "remainingUnitsPerTime": 0.0,
        "plannedDuration": 8.0,
        "finish": "2024-01-23T05:30:00",
        "id": 58091,
        "actualCost": 0.0,
        "plannedFinish": "2024-01-23T05:30:00",
        "actualUnits": 0.0,
        "plannedUnitsPerTime": 0.0,
        "profile": "Linear",
        "remainingFinish": "2024-01-23T05:30:00",
        "start": "2024-01-22T21:30:00",
        "remainingUnits": 80.0,
        "rateSource": "Resource",
        "costCode": null,
        "workspaceCode": "NON_PROD3"
    },
    {
        "plannedPricePerUnit": 0.0,
        "plannedUnits": 8.0,
        "remainingCost": 0.0,
        "atCompletionUnits": 8.0,
        "plannedStart": "2024-01-22T21:30:00",
        "duration": 8.0,
```

```
        "plannedCost": 0.0,
        "activityId": "A1010",
        "actualsPricePerUnit": 0.0,
        "resourceCode": "Ravi2",
        "atCompletionCost": 0.0,
        "remainingStart": "2024-01-22T21:30:00",
        "remainingDuration": 8.0,
        "remainingUnitsPerTime": 0.0,
        "plannedDuration": 8.0,
        "finish": "2024-01-23T05:30:00",
        "id": 58092,
        "actualCost": 0.0,
        "plannedFinish": "2024-01-23T05:30:00",
        "actualUnits": 0.0,
        "plannedUnitsPerTime": 0.0,
        "profile": "Linear",
        "remainingFinish": "2024-01-23T05:30:00",
        "start": "2024-01-22T21:30:00",
        "remainingUnits": 8.0,
        "rateSource": "Resource",
        "costCode": null,
        "workspaceCode": null
    },
    {
        "plannedPricePerUnit": 30.0,
        "plannedUnits": 8.0,
        "remainingCost": 240.0,
        "atCompletionUnits": 8.0,
        "plannedStart": "2024-01-22T21:30:00",
        "duration": 8.0,
        "plannedCost": 240.0,
        "activityId": "A1000",
        "actualsPricePerUnit": 30.0,
        "atCompletionCost": 240.0,
```

```
            "roleCode": "RoleName7396",
            "remainingStart": "2024-01-22T21:30:00",
            "remainingDuration": 8.0,
            "remainingUnitsPerTime": 0.0,
            "plannedDuration": 8.0,
            "finish": "2024-01-23T05:30:00",
            "id": 58093,
            "actualCost": 0.0,
            "plannedFinish": "2024-01-23T05:30:00",
            "actualUnits": 0.0,
            "plannedUnitsPerTime": 0.0,
            "profile": "Linear",
            "remainingFinish": "2024-01-23T05:30:00",
            "start": "2024-01-22T21:30:00",
            "remainingUnits": 8.0,
            "rateSource": "Role",
            "costCode": null,
            "workspaceCode": "bink"
        }
    ],
    "message": ["success"],
    "rest_audit_id": 24630,
    "status": 200
}
```


Sample Success Request For No Assignments

For a system activity sheet, send a request in the following format:

```
{hostUrl}/ws/rest/service/v2/activity/sheet/assignments?project_number=
P-0115&source_project_id=ActivityManual&activity_sheet_name=SysAct01&ac
tivity_sheet_type=system&project_type=Current
```

Sample Success Response

A successful response with a status code displays in the following format:


```
{
    "data": [],
```

```
    "message": ["success"],
    "rest_audit_id": 24886,
    "status": 200
}
```

Sample Failure Request

This is an example of a failed request:

```
{hostUrl}//ws/rest/service/v2/activity/sheet/assignments?project_number
=P-0115&project_type=Current&activitySheetType=manual&activity_sheet_na
me=
```

Sample Failure Response

A failed response to the above request displays with a status code in the following format:

```
{
    "data": [],
    "message": [
        "The API request contains empty value for: [activity_sheet_name].
If the activity_sheet_type=manual, then activity_sheet_name cannot be
empty."
    ],
    "status": 12068,
    "rest_audit_id": 18721
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request:

Field Name	Use-case Scenario	Status Code	Error Message
project_number	source is not specified in the request.	602	Project/Shell Number is not correct.
project_number	project_number is not specified.	12018	The API request is missing the required information: [project_number].
project_number	project_number is inactive.	12020	The API request contains an invalid value: [project_number]. Check the status of this project_number in Unifier.

Field Name	Use-case Scenario	Status Code	Error Message
project_number	project_number is empty/blank.	12128	The API request contains empty value for: [project_number].
activity_sheet_type	activitySheetType value is not specified in the request.	12010	The API request is missing the required information: [activitySheetType]
activity_sheet_type	Invalid activity_sheet_type specified in the request.	12011	Invalid value was found in a field: [activitySheetType]. Allowed values: [manual, system]
activity_sheet_type	activitySheetType is empty/blank.	12034	The API request contains an empty value for: [activitySheetType]. Allowed values: [manual, system]
activity_sheet_name	activity_sheet_name is not specified in the request.	12012	The API request is missing the required information: [activitySheetName].
activity_sheet_name	activity_sheet_name does not exist.	12013	The API request contains an invalid value: [activitySheetName]. Please check if this activitySheetName with sheet type=manual has been configured in Unifier.
activity_sheet_name	activity_sheet_name exceeds maximum length.	12017	Invalid value was found in a field: [activity_sheet_name]. Allowed length: [250]
activity_sheet_name	activity_sheet_name value is null or empty.	12068	The API request contains empty value for: [activitySheetName].
source_project_id	source_project_id is not specified in the request.	12005	The API request is missing the required information: [sourceProjectId]
source_project_id	source_project_id exceeds maximum length.	12014	Invalid value was found in a field: [source_project_id]. Allowed length: [250]
source_project_id	source_project_id is not configured in the source Unifier shell.	12021	The API request contains an invalid value: [sourceProjectId]. Please check if this sourceProjectId has been configured in Unifier.

Field Name	Use-case Scenario	Status Code	Error Message
source_project_id	source_project_id has invalid special characters.	12022	The API request contains invalid characters in: [source_project_id]. The following characters are not allowed : / \\ : * ? \" < > | ' =
source_project_id	source_project_id value is a blank.	12032	The API request contains empty value for: [sourceProjectId].
project_type	Baseline sheet is not configured.	12036	Invalid value was found in a field: [projectType]. Baseline not defined for this Project.
project_type	projectType is empty/blank for system sheet.	12144	The API request contains empty value for: [projectType]. Allowed values: [Current, Baseline]
project_type	An invalid value is passed in projectType for system sheet.	12145	Invalid value was found in a field: 'projectType'. Allowed values: [Current, Baseline]

Create or Update Assignment Spreads

`POST /ws/rest/service/v2/activity/sheets/assignments/spread`

Purpose

Creates or updates Assignment Spreads in a specific shell from the source system.

> **Note**: The POST method captures both create and update actions. Therefore, selecting or clearing **Update** permissions has no impact on this REST Service.

Prerequisites

You must have **Create** permissions enabled.

This REST service is specific to updating externally synced Assignment Spread data from other applications. Therefore, sourceProjectID should be configured or added in the user interface tab (go to the applicable project/shell tab; click **My Dashboard**, and select **Details**; click the **Primavera Cloud Integration** tab).

Request Format

Send an API request in the following format:

```
{
```

```
   "options":{"Source": "<value>", "project_number": "<value>",
"sourceProjectId": "<value>"}
   "data":[]
}
```

In "data", value is accepted in form-data

```
key : file
value : {filename}.zip
```

Request Parameters - Form Data Fields

Specify the following parameters in the form data:

Request Parameter	Required?	Data Type	Description

_attachment	Yes	A JSON object in the following format:
		{
		"zipped_file_name": "filname.zip",
		"zipped_file_size": Integer,
		"zipped_file_content":""
		}
			The file name uploaded by the REST service.

options	Yes	An Options JSON object in the following format:
		{
		"project_number" : <value>,
		"sourceProjectId":<value>,
		"source": "<value>"
		}
			JSON input containing source and project-related information.

Request Parameters

Specify the following parameters in the Options object:

Request Parameter	Required?	Data Type	Description
source	Yes	String	External application or data from which Activity Spread data are pulled. Valid value includes: "Primavera Cloud".

Request Parameter	Required?	Data Type	Description
project_number	Yes	String	A valid 'Active' shell number where the spread data will be pushed.
sourceProjectId	Yes	String	The Primavera Cloud project code.
projectType	Yes	String	The type of project in Unifier for which the Assignments have to be created. Valid values include: "Current" and "Baseline".

Request Parameters - _attachment JSON Object

Specify the following parameters in the _attachment JSON Object:

equest Parameter	Required?	Data Type	Description
zipped_file_name	Yes	String	The file name uploaded by the REST service.
zipped_file_content	Yes	String	A Base64 encoded zip file.
zipped_file_size	No	Integer	The file size of the zipped file uploaded by the REST service.

Mandatory Fields for Baseline and Current projectType

Specify the following fields in the `zipped_file_content` for a "Baseline" or "Current" Projecttype:

```
{"resourceAssignments","activityCode","resourceCode","timescale","spread",
"actualCost","actualUnits","plannedCost","plannedUnits","remainingUnits",
"remainingCost","atCompletionCost","atCompletionUnits",
"actualCostProject","atCompletionCostProject","plannedCostProject","remainingCostProject",
"spreadDates" }
```

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <id from the audit table>
```

```
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Spread JSON Format

```
{
  "project": {
    "baselineId": 182202,
    "baselineName": "B3",
    "isBaseline": true,
    "projectCode": "AOPC",
    "projectId": 310301,
    "projectName": "AOPC"
  },
  "resourceAssignments": [
    {
      "activityCode": "A11",
      "activityId": 246001,
      "activityName": "Act1",
      "actualCost": 0,
      "actualCostProject": 0,
      "actualUnits": 0,
      "assignmentCode": "AA0",
      "assignmentId": 100001,
      "atCompletionCost": 0,
      "atCompletionCostProject": 0,
      "atCompletionUnits": 40,
      "plannedCost": 0,
      "plannedCostProject": 0,
      "plannedUnits": 40,
      "rateSource": "RESOURCE",
      "remainingCost": 0,
      "remainingCostProject": 0,
      "remainingUnits": 40,
```

```
"resourceCode": "R19",
"resourceId": 56101,
"resourceName": "R1",
"spread": {
  "actualCost": [
    0,
    0,
    0,
    0,
    0,
    0,
    0
  ],
  "actualCostProject": [
    0,
    0,
    0,
    0,
    0,
    0,
    0
  ],
  "actualUnits": [
    0,
    0,
    0,
    0,
    0,
    0,
    0
  ],
  "atCompletionCost": [
    0,
    0,
```

```
      0,
      0,
      0,
      0,
      0
    ],
    "atCompletionCostProject": [
      0,
      0,
      0,
      0,
      0,
      0,
      0
    ],
    "atCompletionUnits": [
      8,
      0,
      0,
      8,
      8,
      8,
      8
    ],
    "plannedCost": [
      0,
      0,
      0,
      0,
      0,
      0,
      0
    ],
    "plannedCostProject": [
```

```
        0,
        0,
        0,
        0,
        0,
        0,
        0
      ],
      "plannedUnits": [
        8,
        0,
        0,
        8,
        8,
        8,
        8
      ],
      "remainingCost": [
        0,
        0,
        0,
        0,
        0,
        0,
        0
      ],
      "remainingCostProject": [
        0,
        0,
        0,
        0,
        0,
        0,
        0
```

```
      ],
      "remainingUnits": [
        8,
        0,
        0,
        8,
        8,
        8,
        8
      ],
      "spreadDates": [
        "2023-06-09T00:00:00",
        "2023-06-10T00:00:00",
        "2023-06-11T00:00:00",
        "2023-06-12T00:00:00",
        "2023-06-13T00:00:00",
        "2023-06-14T00:00:00",
        "2023-06-15T00:00:00"
      ]
    }
  },
  {
    "activityCode": "A22",
    "activityId": 246002,
    "activityName": "Act2",
    "actualCost": 0,
    "actualCostProject": 0,
    "actualUnits": 0,
    "assignmentCode": "AA1",
    "assignmentId": 100002,
    "atCompletionCost": 0,
    "atCompletionCostProject": 0,
    "atCompletionUnits": 40,
    "plannedCost": 0,
```

```
"plannedCostProject": 0,
"plannedUnits": 40,
"rateSource": "RESOURCE",
"remainingCost": 0,
"remainingCostProject": 0,
"remainingUnits": 40,
"resourceCode": "R20",
"resourceId": 56201,
"resourceName": "R2",
"spread": {
  "actualCost": [
    0,
    0,
    0,
    0,
    0,
    0,
    0
  ],
  "actualCostProject": [
    0,
    0,
    0,
    0,
    0,
    0,
    0
  ],
  "actualUnits": [
    0,
    0,
    0,
    0,
    0,
```

```
      0,
      0
    ],
    "atCompletionCost": [
      0,
      0,
      0,
      0,
      0,
      0,
      0
    ],
    "atCompletionCostProject": [
      0,
      0,
      0,
      0,
      0,
      0,
      0
    ],
    "atCompletionUnits": [
      8,
      0,
      0,
      8,
      8,
      8,
      8
    ],
    "plannedCost": [
      0,
      0,
      0,
```

```
      0,
      0,
      0,
      0
    ],
    "plannedCostProject": [
      0,
      0,
      0,
      0,
      0,
      0,
      0
    ],
    "plannedUnits": [
      8,
      0,
      0,
      8,
      8,
      8,
      8
    ],
    "remainingCost": [
      0,
      0,
      0,
      0,
      0,
      0,
      0
    ],
    "remainingCostProject": [
      0,
```

```
        0,
        0,
        0,
        0,
        0,
        0
      ],
      "remainingUnits": [
        8,
        0,
        0,
        8,
        8,
        8,
        8
      ],
      "spreadDates": [
        "2023-06-09T00:00:00",
        "2023-06-10T00:00:00",
        "2023-06-11T00:00:00",
        "2023-06-12T00:00:00",
        "2023-06-13T00:00:00",
        "2023-06-14T00:00:00",
        "2023-06-15T00:00:00"
      ]
    }
  },
  {
    "activityCode": "A33",
    "activityId": 246003,
    "activityName": "Act3",
    "actualCost": 0,
    "actualCostProject": 0,
    "actualUnits": 0,
```

```
"assignmentCode": "AA2",
"assignmentId": 100003,
"atCompletionCost": 0,
"atCompletionCostProject": 0,
"atCompletionUnits": 40,
"plannedCost": 0,
"plannedCostProject": 0,
"plannedUnits": 40,
"rateSource": "RESOURCE",
"remainingCost": 0,
"remainingCostProject": 0,
"remainingUnits": 40,
"resourceCode": "R21",
"resourceId": 56202,
"resourceName": "R3",
"spread": {
  "actualCost": [
    0,
    0,
    0,
    0,
    0,
    0,
    0
  ],
  "actualCostProject": [
    0,
    0,
    0,
    0,
    0,
    0,
    0
  ],
```

```
"actualUnits": [
  0,
  0,
  0,
  0,
  0,
  0,
  0
],
"atCompletionCost": [
  0,
  0,
  0,
  0,
  0,
  0,
  0
],
"atCompletionCostProject": [
  0,
  0,
  0,
  0,
  0,
  0,
  0
],
"atCompletionUnits": [
  8,
  0,
  0,
  8,
  8,
  8,
```

```
        8
      ],
      "plannedCost": [
        0,
        0,
        0,
        0,
        0,
        0,
        0
      ],
      "plannedCostProject": [
        0,
        0,
        0,
        0,
        0,
        0,
        0
      ],
      "plannedUnits": [
        8,
        0,
        0,
        8,
        8,
        8,
        8
      ],
      "remainingCost": [
        0,
        0,
        0,
        0,
```

```
          0,
          0,
          0
        ],
        "remainingCostProject": [
          0,
          0,
          0,
          0,
          0,
          0,
          0
        ],
        "remainingUnits": [
          8,
          0,
          0,
          8,
          8,
          8,
          8
        ],
        "spreadDates": [
          "2023-06-09T00:00:00",
          "2023-06-10T00:00:00",
          "2023-06-11T00:00:00",
          "2023-06-12T00:00:00",
          "2023-06-13T00:00:00",
          "2023-06-14T00:00:00",
          "2023-06-15T00:00:00"
        ]
      }
    }
  ],
```

```
  "timescale": "daily"
}
```

Sample Success Request

```
{hosturl}/ws/rest/service/v2/activity/sheets/assignments/spread
```

Inputs in JSON Raw-Data

```
{
    "options": {
        "project_number": "P-0056",
        "sourceProjectId": "P-0056",
        "source": "Primavera Cloud",
        "projectType": "Current"
    },
    "_attachment": {
        "zipped_file_name": "AssignmentSpread.zip",
        "zipped_file_size": 780,
        "zipped_file_content":
"UEsDBBQAAAAIAKuD7VYD1rN9XAIAAI8fAAAVAAAAQXNzaWdubWVudFNwcmVhZC5qc29u7Z
hda9swFIbvB/sPQdcp6CMNSe/SrBeDbSnpejV2odkiaNhysJRBGfnvkxVbcmzP6soam6IQi
O33yOe1zpH1kN/v300mYJ9nP1mkwM3EnOsrP6hkCRfsY6wvogXGEE8b0heaMi2CWwIqicvb
k1gIKj8wI7gE6yw2Q1ab+zVoaCYTQZBA1FB0IjeqkI4mAORMZoc8Yisp+U6kTCipw76ZwdW
D6DAaKf6LqyebHCGdu6ma9Hg2hzp9S7QOItUYe6DJOpPFzMGu6/fmCTrlR8GVbAj2QazXFQ
Rd+qksEJ671cPSfcIUz0Rlqlt11nqCKoOzmr5PqBAsLu/eFtyNu/Wue+ZUsYeikOaJt1nCQ
E1kKeWCi51N2ZZc0r9FtNO67qmmWjfXcgnaupnq6zmCqKXZJbCtd4Xc54zG1VpqtUTZotVH
+32FM3fy3QntxhyBGVOaQW3UWn7w+tS8jKVKNUudtVo8O8Xi+WdNM+dvkaHLVNoYSYVKN4M
Xx75thy6PNTKSAlk/g5fotDV90BtuywbQhEeu4PwKLr9CeGO+YNoZgaA3AnkjsDeCeCNm3o
hrF1GbkurweDo4Tr3IiHEvMuJeZMQXRkbkQUb81pDx7mHzuF3fDYWNi0UnNjq1BxxxAMcXm
gngWBx7V+ooLA2+8QVwDODon5AAjgEc/zM4EtILjqQXHMmFwRF7wJG8NXDcfLoQNGaJBcbP
VNAdA2di9Sejbr/z60UzuEFFNQIvvtBM4MXi2LtAR2Fp8P0u8GLgRf+EBF4MvPhPvKh/ynk
CiqdMRjQx23tMefKkBx7/AFBLAQI/ABQAAAAIAKuD7VYD1rN9XAIAAI8fAAAVACQAAAAAAA
AAIAAAAAAAAABBc3NpZ25tZW50U3ByZWFkLmpzb24KACAAAAAAAAEAGAB4ZYwTebXZAQAAA
AAAAAAAAAAAAAAAAAABQSwUGAAAAAAEAAQBnAAAAjwIAAAA"
    }
}
```

Sample Success Response

```
{
    "data": {
        "jobId": 1689307060653
    },
```

```
    "message": [
        "Job for spread data created successfully."
    ],
    "status": 202,
    "rest_audit_id": 14317
}
```


Sample Failed Request

```
{hosturl}ws/rest/service/v2/activity/sheets/assignments/spread
```

Inputs in JSON Raw Data:


```
  {
    "options": {
        "project_number": "P-0056",
        "sourceProjectId": "P-0056",
        "source": "Primavera Cloud",
        "projectType": ""
    },
    "_attachment": {
        "zipped_file_name": "AssignmentSpread.zip",
        "zipped_file_size": 780,
        "zipped_file_content":
"UEsDBBQAAAAIAKuD7VYD1rN9XAIAAI8fAAAVAAAAQXNzaWdubWVudFNwcmVhZC5qc29u7Z
hda9swFIbvB/sPQdcp6CMNSe/SrBeDbSnpejV2odkiaNhysJRBGfnvkxVbcmzP6soam6IQi
O33yOe1zpH1kN/v300mYJ9nP1mkwM3EnOsrP6hkCRfsY6wvogXGEE8b0heaMi2CWwIqicvb
k1gIKj8wI7gE6yw2Q1ab+zVoaCYTQZBA1FB0IjeqkI4mAORMZoc8Yisp+U6kTCipw76ZwdW
D6DAaKf6LqyebHCGdu6ma9Hg2hzp9S7QOItUYe6DJOpPFzMGu6/fmCTrlR8GVbAj2QazXFQ
Rd+qksEJ671cPSfcIUz0Rlqlt11nqCKoOzmr5PqBAsLu/eFtyNu/Wue+ZUsYeikOaJt1nCQ
E1kKeWCi51N2ZZc0r9FtNO67qmmWjfXcgnaupnq6zmCqKXZJbCtd4Xc54zG1VpqtUTZotVH
+32FM3fy3QntxhyBGVOaQW3UWn7w+tS8jKVKNUudtVo8O8Xi+WdNM+dvkaHLVNoYSYVKN4M
Xx75thy6PNTKSAlk/g5fotDV90BtuywbQhEeu4PwKLr9CeGO+YNoZgaA3AnkjsDeCeCNm3o
hrF1GbkurweDo4Tr3IiHEvMuJeZMQXRkbkQUb81pDx7mHzuF3fDYWNi0UnNjq1BxxxAMcXm
gngWBx7V+ooLA2+8QVwDODon5AAjgEc/zM4EtILjqQXHMmFwRF7wJG8NXDcfLoQNGaJBcbP
VNAdA2di9Sejbr/z60UzuEFFNQIvvtBM4MXi2LtAR2Fp8P0u8GLgRf+EBF4MvPhPvKh/ynk
CiqdMRjQx23tMefKkBx7/AFBLAQI/ABQAAAAIAKuD7VYD1rN9XAIAAI8fAAAVACQAAAAAAA
AAIAAAAAAAAABBc3NpZ25tZW50U3ByZWFkLmpzb24KACAAAAAAAAEAGAB4ZYwTebXZAQAAA
AAAAAAAAAAAAAAAAABQSwUGAAAAAAEAAQBnAAAAjwIAAAA"
    }
}
```

Sample Failed Response

```
{
    "data": [],
    "message": [
        {
            "message": "The API request contains empty value for:
[projectType].",
            "status": 12144
        }
    ],
    "status": 3000,
    "rest_audit_id": 14316
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status Code	Error Message
_attachment	_attachment is not specified in the request.	12524	The API request is missing the required information: [_attachment].
_attachment	_attachment is empty/blank.	12525	The API request contains empty value for: [_attachment].
options	options is empty/blank or not specified in the request.	3002	Invalid input.
source	Source is not specified in the request	12007	The API request is missing the required information: [source]
source	Wrong source value is specified in the request.	12703	Invalid value was found in a field: [source]. Allowed value: [Primavera Cloud].
source	Source is boolean or integer data type	12703	Invalid value was found in a field: [source]. Allowed value: [Primavera Cloud].

Field Name	Use-case Scenario	Status Code	Error Message
source	Source is empty	12702	The API request contains empty value for: [source]. Allowed value: [Primavera Cloud]
project_number	project_number is not specified.	12018	The API request is missing the required information: [project_number].
project_number	project_number is invalid.	602	Project/Shell Number is not correct.
project_number	Project/Shell is not an active shell.	1245	Create/Update/Delete cannot be performed when project/shell status is Inactive or View-Only or On-Hold.
project_number	project_number is empty/blank.	12128	The API request contains empty value for: [project_number].
sourceProjectId	sourceProjectId is not configured in the source Unifier shell.	12021	The API request contains an invalid value: [sourceProjectId]. Please check if this sourceProjectId has been configured in Unifier.
sourceProjectId	sourceProjectId value is a blank.	12032	The API request contains empty value for: [sourceProjectId].
sourceProjectId	sourceProjectId is not specified in the request.	12005	The API request is missing the required information: [sourceProjectId]
projectType	projectType is not specified in the request.	12143	The API request is missing the required information: [projectType].
projectType	projectType is empty/blank for system sheet.	12144	The API request contains empty value for: [projectType]. Allowed values: [Current, Baseline]
projectType	projectType is of incorrect data type.	12142	Invalid value was found in a field: [projectType]. Allowed only alphanumeric value.
projectType	An invalid value is passed in projectType for system sheet.	12145	Invalid value was found in a field: 'projectType'. Allowed values: [Current, Baseline]

Field Name	Use-case Scenario	Status Code	Error Message
zipped_file_name	zipped_file_name is empty/blank.	12527	The API request contains empty value for: [zipped_file_name].
zipped_file_name	zipped_file_name is missing in the request.	12518	The API request is missing the required information: [zipped_file_name].
zipped_file_name	zipped_file_name is not a .zip file format.	12503	Invalid value was found in a field :[zipped_file_name]. Allowed only .zip files.
zipped_file_name	zipped_file_name is an invalid value.	12521	Invalid value was found in a field: [zipped_file_name]. Allowed only alphanumeric characters in file name.
zipped_file_content	zipped_file_content is not specified in the request.	12520	The API request is missing the required information: [zipped_file_content].
zipped_file_content	zipped_file_content is empty/blank.	12529	The API request contains empty value for: [zipped_file_content].
zipped_file_content	zipped_file_content is an invalid value.	12523	Invalid value was found in a field: [zipped_file_content]. Allowed only base64 encoded value.
zipped_file_size	zipped_file_size is not specified in the request.	12528	The API request contains empty value for: [zipped_file_size].
zipped_file_size	zipped_file_size is empty/blank.	12519	The API request is missing the required information: [zipped_file_size].
zipped_file_size	zipped_file_size is an invalid value.	12522	Invalid value was found in a field: [zipped_file_size]. Allowed only integer value.
zipped_file_size	Size mismatch with base encode file.	12526	Invalid value was found in a field: [zipped_file_size]. Actual file size does not match with [zipped_file_size].

Additional Validation Messages

Upon processing the uploaded zip file or processing the attached JSON file, the following messages may display in the Get Job Status Details section:

Use-case Scenario	Error Message
Zip file is an invalid file format.	The attached zip file contains an invalid file format. Only JSON file is allowed.
[activities] is missing in the uploaded JSON file.	The JSON file is missing the required information: [activities].
Mandatory field is missing in the uploaded JSON file.	The attached JSON file is missing the required information: [{property name}] for [activityCode] : {activityCode}
Mandatory field value is empty in the uploaded JSON file.	The attached JSON file contains empty value for: [{propety name}] for [activityCode] : {activityCode}
Missing field in [spread] object.	The JSON file is missing the required information: [propetyName] in [spread] object. [activityCode]:{activityCode}
Mandatory field is an invalid data type in the uploaded JSON file.	The attached JSON file contains value with invalid data type for: [{propety name}] for [activityCode]: {activityCode}
Spread dates are in an invalid format.	The API request contains an invalid value: [spreadDates]. Correct date format: [yyyy-MM-ddTHH:mm:ss]. [activityCode] :{activityCode}
JSON file contains property/data in an incorrect JSON template.	Issue in parsing the JSON file. Invalid JSON file provided in the zip file.
System Activity Sheet is not configured while inserting System-type Activity Spread Date.	System Activity Sheet is not configured for the shell.
System Activity Sheet is configured through Gateway while inserting System-type Activity Spread Data.	System Activity Sheet is configured with Gateway and is not supported with this API.
System Activity Sheet is configured for Oracle Primavera Cloud but source is given as P6 while inserting System-type Activity Spread Data.	System Activity Sheet is configured with source as Oracle Primavera Cloud.
Timescale is not set as Daily.	The API request contains invalid value for: [timescale]. Allowed values {daily}.

Use-case Scenario	Error Message
Resource Code is missing in the Activity Assignment.	[resourceCode]/roleCode] is not assigned to any activity in Activity Sheet. [activityCode]: {activityCode}/Resource Code: <resourceCode>/role Code: <roleCode>
Activity Code is not configured in Unifier for the project_number and sourceProject Id.	The JSON file containing [activityCode] not configured in the system. [activityCode]: {activityCode}

Get Assignment Spread

POST `/ws/rest/service/v2/activity/sheets/assignments/spread/download/initiate`

Purpose

Gets the spread data associated with activities assignments in the shell. It returns the Job ID for creating the spread file.

Prerequisites

Ensure the source project ID is configured or added by selecting **Shell Details**, and then selecting the **Primavera Cloud Integration** tab in Unifier.

Request Format

Send a GET request in the format specified above.

Request Parameters

The following parameters can be specified in the request:

Request Parameter	Mandatory?	Data Type	Description
source	Yes	String	The external application or data from which activity spread data is being fetched. Valid values include: "Primavera Cloud" and "Others".
project_number	Yes	String	A valid shell number with an Active status in which the activity spread data will reside.
projectType	Yes	String	The type of project in Unifier for which the assignments have to be created. Valid values include: "Current" and "Baseline".

Request Parameter	Mandatory?	Data Type	Description
activitySheetType	Yes	String	The type of activity sheet associated with the project in Unifier. Valid values include: "manual" and "system".
activitySheetName	No	String	If the activitySheetType is "manual" then this field is mandatory and a new manual activity sheet is created in the shell with this name.
sourceProjectId	Yes, if activitySheetType is "system".	String	The project code in Oracle Primavera Cloud.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <id from the audit table>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Request

Send a request in the following format:

```
{hosturl}/ws/rest/service/v2/activity/sheets/assignments/spread/download/initiate
```

Payload:

```
{
"options":{
"project_number" :"P-0056",
"sourceProjectId" :"P-0056",
"source":"Primavera Cloud",
"projectType": "Current",
"sheetType":"System"
```

```
        }
}
```

Sample Success Response

A successful response with status code 200 displays in the following format:

```
{
    "data": {"jobId": 1688383768969},
    "message": ["Job for spread data created successfully."],
    "status": 202,
    "rest_audit_id": 12676
}
```

Sample Failed Request

{hosturl}/ws/rest/service/v2/activity/sheets/assignments/spread/download/initiate

Payload:

```
{
"options":{
            "project_number" :"P-0056",
            "sourceProjectId" :"P-0056",
            "source":"Primavera Cloud",
            "projectType": "",
            "sheetType":"System"
        }
}
```

Sample Failed Response

A failed response is returned with a status code in the following format:

```
{
    "data": [],
    "message": [
        {
            "message": "The API request contains empty value for:
[projectType].",
            "status": 12144
        }
```

```
    ],
    "status": 3000,
    "rest_audit_id": 14302
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request:

Field Name	Use-case Scenario	Status Code	Error Message
source	source is not specified in the request.	12007	The API request is missing the required information: [source]
source	source value is blank.	12008	Invalid value was found in a field: [source]. Allowed values: [Primavera Cloud, P6, Others].
source	Source value is empty.	12702	The API request contains empty value for: [source]. Allowed value: [Primavera Cloud]
source	source is specified in an invalid data format.	12119	Invalid value was found in a field: [source]. Allowed only alphanumeric value.
project_number		12018	Missing Project Number.
project_number	project_number is invalid, blank, or not specified in the request.	602	Project/Shell Number is not correct.
project_number	project_number value is empty/blank.	12128	The API request contains an invalid value: [project_number]. Check the status of this project_number in Unifier.
projectType	projectType is not specified in the request.	12143	The API request is missing the required information: [projectType].
projectType	projectType value is empty/blank.	12144	The API request contains empty value for: [projectType]. Allowed values: [Current, Baseline]
projectType	projectType is specified in an invalid data format.	12142	Invalid value was found in a field: [projectType]. Allowed only alphanumeric value.

Field Name	Use-case Scenario	Status Code	Error Message
projectType	projectType value is invalid.	12145	Invalid value was found in a field: 'projectType'. Allowed values: [Current, Baseline]
projectType	Baseline is not configured for the project.	12036	Invalid value was found in a field: [projectType]. Baseline not defined for this Project.
activitySheetType	sourceProjectId is not specified in the request.	12010	The API request is missing the required information: [activitySheetType]
activitySheetType	Invalid activitySheetType value specified in the request.	12011	Invalid value was found in a field: [activitySheetType]. Allowed values: [manual, system]
activitySheetType	activitySheetType value is empty/null.	12034	The API request contains an empty value for: [activitySheetType]. Allowed values: [manual, system]
activitySheetType	activitySheetType is specified in an invalid data format.	12704	Invalid value was found in a field: [activitySheetType]. Allowed only alphanumeric value.
activitySheetName	activitySheetNameis not specified in the request when the sheet type is Manual.	12012	The API request is missing the required information: [activitySheetName].
activitySheetName	activitySheetName value is empty for Manual sheet type.	12068	The API request contains empty value for: [activitySheetName].
activitySheetName	activitySheetName exceeds maximum length.	12017	Invalid value was found in a field: [activitySheetName]. Allowed length: [250]
activitySheetName	activitySheetName does not exist.	12013	The API request contains an invalid value: [activitySheetName]. Please check if this activitySheetName with sheet type=manual has been configured in Unifier.

Field Name	Use-case Scenario	Status Code	Error Message
sourceProjectId	sourceProjectId is not configured in the source Unifier shell.	12021	The API request contains an invalid value: [sourceProjectId]. Please check if this sourceProjectId has been configured in Unifier.
sourceProjectId	sourceProjectId value is blank.	12032	The API request contains empty value for: [sourceProjectId].
sourceProjectId	sourceProjectId is not specified in the request.	12005	The API request is missing the required information: [sourceProjectId]

Get Activity Spread

POST
`/ws/rest/service/v2/activity/sheets/activities/spread/download/initiate`

Purpose

Retrieves the spread data associated with activities in a shell. It also returns the Job ID for creating the Spread file.

Prerequisites

Ensure the source project ID is configured or added by selecting **Shell Details**, and then selecting the **Primavera Cloud Integration** tab in Unifier.

Request Format

Send a GET request in the format specified above.

Request Parameters

The following parameters can be specified in the request:

Request Parameter	Mandatory?	Data Type	Description
source	Yes	String	The external application or data from which Activity Spread data is being fetched. Valid values include: "Primavera Cloud" and "Others".
project_number	Yes	String	A valid shell number with an Active status.

Request Parameter	Mandatory?	Data Type	Description
projectType	Yes	String	The type of project in Unifier for which the assignments have to be created. Valid values include: "Current" and "Baseline".
activitySheetType	Yes	String	The type of activity sheet associated with the project in Unifier. Valid values include: "manual" and "system".
activitySheetName	No	String	If the activitySheetType is "manual" then this field is mandatory and a new manual activity sheet is created in the shell with this name.
sourceProjectId	No	String	The project code in Oracle Primavera Cloud.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <id from the audit table>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Request

Send a request in the following format:

```
{hosturl}/ws/rest/service/v2/activity/sheets/activities/spread/download/initiate
```

Payload

```
{
"options":
{
"project_number" :"P-0056"
"sourceProjectId" :"SystemOPCSheet",
"source":"Primavera Cloud",
"projectType": "Current",
```

```
"sheetType":"System"
}
}
```

Sample Success Response

A successful response with status code 200 displays in the following format:

```
{
    "data": {
        "jobId": 1688383768969
    },
    "message": ["Job for spread data created successfully."],
    "status": 202,
    "rest_audit_id": 12676
}
```

Sample Failed Request

A request sent in the following format returns a failed response:

```
{hosturl}/ws/rest/service/v2/activity/sheets/activities/spread/download
/initiate
{
"options":{
            "project_number" :"P-0056",
            "sourceProjectId" :"SystemOPCSheet",
            "source":"Primavera Cloud",
            "projectType": "",
            "sheetType":"System"
     }
}
```

Sample Failed Response

A failed response is returned with a status code in the following format:

```
{
    "data": [],
    "message": [
        {"message": "The API request contains empty value for:
[projectType].",
```

```
            "status": 12144
        }
                ],
    "status": 3000,
    "rest_audit_id": 14302
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request:

Field Name	Use-case Scenario	Status Code	Error Message
source	source is not specified in the request.	12007	The API request is missing the required information: [source]
source	source value is blank.	12008	Invalid value was found in a field: [source]. Allowed values: [Primavera Cloud, P6, Others].
source	Source value is empty.	12702	The API request contains empty value for: [source]. Allowed value: [Primavera Cloud]
source	source is specified in an invalid data format.	12119	Invalid value was found in a field: [source]. Allowed only alphanumeric value.
project_number		12018	Missing Project Number.
project_number	project_number is invalid, blank, or not specified in the request.	602	Project/Shell Number is not correct.
project_number	project_number value is empty/blank.	12128	The API request contains an invalid value: [project_number]. Check the status of this project_number in Unifier.
projectType	projectType is not specified in the request.	12143	The API request is missing the required information: [projectType].
projectType	projectType value is empty/blank.	12144	The API request contains empty value for: [projectType]. Allowed values: [Current, Baseline]

Field Name	Use-case Scenario	Status Code	Error Message
projectType	projectType is specified in an invalid data format.	12142	Invalid value was found in a field: [projectType]. Allowed only alphanumeric value.
projectType	projectType value is invalid.	12145	Invalid value was found in a field: 'projectType'. Allowed values: [Current, Baseline]
projectType	Baseline is not configured for the project.	12036	Invalid value was found in a field: [projectType]. Baseline not defined for this Project.
activitySheetType	sourceProjectId is not specified in the request.	12010	The API request is missing the required information: [activitySheetType]
activitySheetType	Invalid activitySheetType value specified in the request.	12011	Invalid value was found in a field: [activitySheetType]. Allowed values: [manual, system]
activitySheetType	activitySheetType value is empty/null.	12034	The API request contains an empty value for: [activitySheetType]. Allowed values: [manual, system]
activitySheetType	activitySheetType is specified in an invalid data format.	12704	Invalid value was found in a field: [activitySheetType]. Allowed only alphanumeric value.
activitySheetName	activitySheetNameis not specified in the request when the sheet type is Manual.	12012	The API request is missing the required information: [activitySheetName].
activitySheetName	activitySheetName value is empty for Manual sheet type.	12068	The API request contains empty value for: [activitySheetName].
activitySheetName	activitySheetName exceeds maximum length.	12017	Invalid value was found in a field: [activitySheetName]. Allowed length: [250]
activitySheetName	activitySheetName does not exist.	12013	The API request contains an invalid value: [activitySheetName]. Please check if this activitySheetName with sheet type=manual has been configured in Unifier.

Field Name	Use-case Scenario	Status Code	Error Message
sourceProjectId	sourceProjectId is not configured in the source Unifier shell.	12021	The API request contains an invalid value: [sourceProjectId]. Please check if this sourceProjectId has been configured in Unifier.
sourceProjectId	sourceProjectId value is blank.	12032	The API request contains empty value for: [sourceProjectId].
sourceProjectId	sourceProjectId is not specified in the request.	12005	The API request is missing the required information: [sourceProjectId]

Get Spread File

```
GET /ws/rest/service/v2/activity/sheets/spread/download?jobId={jobId}
```

Purpose

Gets the spread file downloaded after completion of spread job for Activity and Assignment Spread API.

Request Format

Send a GET request in the format specified above.

Request Parameters

The following parameter must be specified in the request:

Request Parameter	Mandatory?	Data Type	Description
jobId	Yes	Integer	This parameter is a background job reference ID of Unifier. Request raised with activity spread download is considered as a background job and a jobId is returned in the response after the background job is initiated. The same jobId is used for downloading the spread in the get API.

Response Format

A zip file containing the activity spread in JSON format for the current project or baseline project can be downloaded.

Sample Success Request

{hosturl}/ws/rest/service/v2/activity/sheets/spread/download?jobId=121820230812

Sample Success Response File for Activity Spread for Current Project

A successful response with status code 200 displays in the following format:


```
{
  "activities": [
    {
      "activityCode": "A1000",
      "activityId": 502202,
      "activityName": "act1",
      "spread": {
        "actualTotalCost": [0,           0,          0,          0,
0,          0,          0],
        "atCompletionTotalCost": [0,          0,          0,
0,          0,          0,          0],
        "earnedValueCost": [0,          0,          0,          0,
0,          0,          0],
        "estimateAtCompletionCost": [0,          0,          0,
0,          0,          0,          0],
        "estimateToCompleteCost": [0,          0,          0,
0,          0,          0,          0],
        "estimateToCompleteCostProject": [ 0,          0,          0,
0,          0,          0,          0],
        "estimateToCompleteLaborUnits": [8,          8,          8,
8,          0,          0,          8],
        "plannedTotalCost": [0,          0,          0,          0,
0,          0,          0],
        "plannedValueCost": [0,          0,          0,          0,
0,          0,          0],
        "remainingTotalCost": [0,          0,          0,          0,
0,          0,          0],
        "spreadDates": ["2023-05-02T00:00:00",
"2023-05-03T00:00:00",          "2023-05-04T00:00:00",
"2023-05-05T00:00:00",          "2023-05-06T00:00:00",
          "2023-05-07T00:00:00",          "2023-05-08T00:00:00"]
},
      "wbsId": 298601
    }
  ],
  "project": {
```

```
    "projectCode": "testSpread",
    "projectId": 258401,
    "projectName": "testSpread"
  },
  "timescale": "DAILY"
}
```


Sample Success Response File for Activity Spread for Baseline Project

This is an example of a JSON file returned with the activity spread data for a baseline project:


```
{
  "activities": [
    {
      "activityCode": "A1000",
      "activityId": 258003,
      "activityName": "Act1",
      "spread": {
        "actualTotalCost": [0,          0,          0,          0,
0,          0,          0,          0,          0,          0,
0,          0,          0,
          0,          0,          0,          0,          0,
0,          0,          0,          0,          0,          0,
0,          0,          0,          0,          0,          0,
0,          0,          0,          0,          0,          0,
0,          0,          0,          0,          0,          0,
0,          0,          0,          0,          0,          0,
0,          0,          0,          0,          0,          0,
0,          0,          0,          0,          0,          0,
0,          0,          0,          0,          0,          0,
0,          0,          0,          0,          0,          0,
0,          0,          0,          0,          0,          0,
0,          0,          0,          0,          0,          0,
0,          0,          0,          0,          0,          0,
0,          0,          0,          0,          0,          0,
0,          0,          0,          0,          0,          0,
0,          0,          0 ],
```

```
        "atCompletionTotalCost": [          240,          240,
240,          240,          240,          0,          0,          240,
240,          240,          240,          240,          0,          0,
240,          240,          240,          240,          240,
0,          0,          240,          240,          240,          240,
240,          0,          0,          240,          240,          240,
240,          240,          0,          0,          240,          240,
240,          240,          240,          0,          0,          240,
240,          240,          240,          240,          0,          0,
240,          240,          240,          240,          240,
0,          0,          240,          240,          240,          240,
240,          0,          0,          240,          240,          240,
240,          240,          0,          0,          240,          240,
240,          240,          240,          0,          0,          240,
240,          240,          240,          240,          0,          0,
240,          240,          240,          240,          240,
0,          0,          240,          240,          240,          240,
240,          0,          0,          240,          240,          240,
240,          240,          0,          0,          240,          240,
240,          240,          240,          0,          0,          240,
240,          240,          240,          240        ],
        "plannedTotalCost": [          240,          240,          240,
240,          240,          0,          0,          240,          240,
240,          240,          240,          0,          0,          240,
240,          240,          240,          240,          0,          0,
240,          240,          240,          240,          240,
0,          0,          240,          240,          240,          240,
240,          0,          0,          240,          240,          240,
240,          240,          0,          0,          240,          240,
240,          240,          240,          0,          0,          240,
240,          240,          240,          240,          0,          0,
240,          240,          240,          240,          240,
0,          0,          240,          240,          240,          240,
240,          0,          0,          240,          240,          240,
240,          240,          0,          0,          240,          240,
240,          240,          240,          0,          0,          240,
240,          240,          240,          240,          240,
0,          0,          240,          240,          240,          240,
240,          0,          0,          240,          240,          240,
240,          240,          0,          0,          240,          240,
240,          240,          240],
```

```
        "remainingTotalCost": [          240,          240,
240,          240,          240,          0,          0,          240,
240,          240,          240,          240,          0,          0,
240,          240,          240,          240,          240,
0,          0,          240,          240,          240,          240,
240,          0,          0,          240,          240,          240,
240,          240,          0,          0,          240,          240,
240,          240,          240,          0,          0,          240,
240,          240,          240,          240,          0,          0,
240,          240,          240,          240,          240,
0,          0,          240,          240,          240,          240,
240,          0,          0,          240,          240,          240,
240,          240,          0,          0,          240,          240,
240,          240,          240,          0,          0,          240,
240,          240,          240,          240,          0,          0,
240,          240,          240,          240,          240,
0,          0,          240,          240,          240,          240,
240,          0,          0,          240,          240,          240,
240,          240,          0,          0,          240,          240,
240,          240,          240,          0,          0,          240,
240,          240,          240,          240],
```

```
        "spreadDates": ["2023-01-02T00:00:00",
"2023-01-03T00:00:00",          "2023-01-04T00:00:00",
"2023-01-05T00:00:00",          "2023-01-06T00:00:00",
"2023-01-07T00:00:00",          "2023-01-08T00:00:00",
"2023-01-09T00:00:00",          "2023-01-10T00:00:00",
"2023-01-11T00:00:00",          "2023-01-12T00:00:00",
"2023-01-13T00:00:00",          "2023-01-14T00:00:00",
"2023-01-15T00:00:00",          "2023-01-16T00:00:00",
"2023-01-17T00:00:00",          "2023-01-18T00:00:00",
"2023-01-19T00:00:00",          "2023-01-20T00:00:00",
"2023-01-21T00:00:00",          "2023-01-22T00:00:00",
"2023-01-23T00:00:00",          "2023-01-24T00:00:00",
"2023-01-25T00:00:00",          "2023-01-26T00:00:00",
"2023-01-27T00:00:00",          "2023-01-28T00:00:00",
"2023-01-29T00:00:00",          "2023-01-30T00:00:00",
"2023-01-31T00:00:00",          "2023-02-01T00:00:00",
"2023-02-02T00:00:00",          "2023-02-03T00:00:00",
"2023-02-04T00:00:00",          "2023-02-05T00:00:00",
"2023-02-06T00:00:00",          "2023-02-07T00:00:00",
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"2023-02-14T00:00:00",          "2023-02-15T00:00:00",
"2023-02-16T00:00:00",          "2023-02-17T00:00:00",
"2023-02-18T00:00:00",          "2023-02-19T00:00:00",
"2023-02-20T00:00:00",          "2023-02-21T00:00:00",
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"2023-03-04T00:00:00",          "2023-03-05T00:00:00",
"2023-03-06T00:00:00",          "2023-03-07T00:00:00",
"2023-03-08T00:00:00",          "2023-03-09T00:00:00",
"2023-03-10T00:00:00",          "2023-03-11T00:00:00",
"2023-03-12T00:00:00",          "2023-03-13T00:00:00",
"2023-03-14T00:00:00",          "2023-03-15T00:00:00",
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"2023-03-20T00:00:00",          "2023-03-21T00:00:00",
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"2023-03-24T00:00:00",          "2023-03-25T00:00:00",
"2023-03-26T00:00:00",          "2023-03-27T00:00:00",
"2023-03-28T00:00:00",          "2023-03-29T00:00:00",
"2023-03-30T00:00:00",          "2023-03-31T00:00:00",
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"2023-04-03T00:00:00",          "2023-04-04T00:00:00",
"2023-04-05T00:00:00",          "2023-04-06T00:00:00",
"2023-04-07T00:00:00",          "2023-04-08T00:00:00",
```

```
"2023-04-09T00:00:00",          "2023-04-10T00:00:00",
"2023-04-11T00:00:00",          "2023-04-12T00:00:00",
"2023-04-13T00:00:00",          "2023-04-14T00:00:00",
"2023-04-15T00:00:00",          "2023-04-16T00:00:00",
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"2023-04-19T00:00:00",          "2023-04-20T00:00:00",
"2023-04-21T00:00:00",          "2023-04-22T00:00:00",
"2023-04-23T00:00:00",          "2023-04-24T00:00:00",
"2023-04-25T00:00:00",          "2023-04-26T00:00:00",
"2023-04-27T00:00:00",          "2023-04-28T00:00:00"]
      },
      "wbsId": 334101
    }
  ],
  "project": {
    "baselineId": 186201,
    "baselineName": "ACTSR2",
    "isBaseline": true,
    "projectCode": "ACTSR2",
    "projectId": 326301,
    "projectName": "ACTSR2"
  },
  "timescale": "DAILY"
}
```

Sample Failed Response

A failed response is returned with a status code in the following format:

```
{
    "data": [],
    "message": [
        "The API request contains invalid characters in:
[source_project_id]. The following characters are not allowed : / \\ : *
? \" < > | ' ="
    ],
    "status": 12204,
    "rest_audit_id": 4633
}
```

Sample Success Response - JSON data with Current and Baseline Project

This is an example of JSON file containing the spread data for current and baseline project:


```
{
  "project":
  {
    "projectCode":"P-0115",
    "projectName":"23.11_Shell",
    "projectId":1252
  },
  "timescale":"DAILY",
  "resourceAssignments":  [
    {
      "activityCode":"A1010",
      "activityId":1483094,
      "resourceId":38095,
      "resourceCode":"Ravi",
     "activityName":"Act02",
      "resourceName":"Ravi Sharma",
      "rateSource":"RESOURCE",
      "spread":{
        "plannedCost":[ 12000, 12000, 12000, 12000, 12000, 0, 0, 12000,
12000, 12000, 12000, 12000, 0, 0, 12000, 12000, 12000, 12000, 12000, 0, 0,
12000, 12000, 12000, 12000, 12000, 0, 0, 12000, 12000, 12000, 12000],
        "actualUnits":[ 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0],
        "atCompletionCost":[ 12000, 12000, 12000, 12000, 12000, 0, 0,
12000, 12000, 12000, 12000, 12000, 0, 0, 12000, 12000, 12000, 12000, 12000,
0, 0, 12000, 12000, 12000, 12000, 12000, 0, 0, 12000, 12000, 12000, 12000],
        "remainingCost":[ 12000, 12000, 12000, 12000, 12000, 0, 0, 12000,
12000, 12000, 12000, 12000, 0, 0, 12000, 12000, 12000, 12000, 12000, 0, 0,
12000, 12000, 12000, 12000, 12000, 0, 0, 12000, 12000, 12000, 12000],
        "plannedUnits":[ 80, 80, 80, 80, 80, 0, 0, 80, 80, 80, 80, 80, 0,
0, 80, 80, 80, 80, 80, 0, 0, 80, 80, 80, 80, 80, 0, 0, 80, 80, 80, 80],
```

```
        "spreadDates":[ "2024-01-22T00:00:00", "2024-01-23T00:00:00",
"2024-01-24T00:00:00", "2024-01-25T00:00:00", "2024-01-26T00:00:00",
"2024-01-27T00:00:00", "2024-01-28T00:00:00", "2024-01-29T00:00:00",
"2024-01-30T00:00:00", "2024-01-31T00:00:00", "2024-02-01T00:00:00",
"2024-02-02T00:00:00", "2024-02-03T00:00:00", "2024-02-04T00:00:00",
"2024-02-05T00:00:00", "2024-02-06T00:00:00", "2024-02-07T00:00:00",
"2024-02-08T00:00:00", "2024-02-09T00:00:00", "2024-02-10T00:00:00",
"2024-02-11T00:00:00", "2024-02-12T00:00:00", "2024-02-13T00:00:00",
"2024-02-14T00:00:00", "2024-02-15T00:00:00", "2024-02-16T00:00:00",
"2024-02-17T00:00:00", "2024-02-18T00:00:00", "2024-02-19T00:00:00",
"2024-02-20T00:00:00", "2024-02-21T00:00:00", "2024-02-22T00:00:00" ],
        "atCompletionUnits":[ 80, 80, 80, 80, 80, 0, 0, 80, 80, 80, 80, 80,
0, 0, 80, 80, 80, 80, 80, 0, 0, 80, 80, 80, 80, 80, 0, 0, 80, 80, 80, 80
],
        "remainingUnits":[ 80, 80, 80, 80, 80, 0, 0, 80, 80, 80, 80, 80,
0, 0, 80, 80, 80, 80, 80, 0, 0, 80, 80, 80, 80, 80, 0, 0, 80, 80, 80, 80],
        "actualCost":[ 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0]
      }
    },
    {
      "activityCode":"A1010",
      "activityId":1483094,
      "resourceId":38097,
      "resourceCode":"Ravi12",
      "activityName":"Act02",
      "resourceName":"Ravi2",
      "rateSource":"RESOURCE",
      "spread":{
        "plannedCost":[ 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0],
        "actualUnits":[ 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0],
        "atCompletionCost":[ 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0],
        "remainingCost":[ 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0],
        "plannedUnits":[ 8, 8, 8, 8, 8, 0, 0, 8, 8, 8, 8, 8, 0, 0, 8, 8,
8, 8, 8, 0, 0, 8, 8, 8, 8, 8, 0, 0, 8, 8, 8, 8],
```

```
        "spreadDates":[ "2024-01-22T00:00:00", "2024-01-23T00:00:00",
"2024-01-24T00:00:00", "2024-01-25T00:00:00", "2024-01-26T00:00:00",
"2024-01-27T00:00:00", "2024-01-28T00:00:00", "2024-01-29T00:00:00",
"2024-01-30T00:00:00", "2024-01-31T00:00:00", "2024-02-01T00:00:00",
"2024-02-02T00:00:00", "2024-02-03T00:00:00", "2024-02-04T00:00:00",
"2024-02-05T00:00:00", "2024-02-06T00:00:00", "2024-02-07T00:00:00",
"2024-02-08T00:00:00", "2024-02-09T00:00:00", "2024-02-10T00:00:00",
"2024-02-11T00:00:00", "2024-02-12T00:00:00", "2024-02-13T00:00:00",
"2024-02-14T00:00:00", "2024-02-15T00:00:00", "2024-02-16T00:00:00",
"2024-02-17T00:00:00", "2024-02-18T00:00:00", "2024-02-19T00:00:00",
"2024-02-20T00:00:00", "2024-02-21T00:00:00", "2024-02-22T00:00:00"],
        "atCompletionUnits":[ 8, 8, 8, 8, 8, 0, 0, 8, 8, 8, 8, 8, 0, 0, 8,
8, 8, 8, 8, 0, 0, 8, 8, 8, 8, 8, 0, 0, 8, 8, 8, 8],
        "remainingUnits":[ 8, 8, 8, 8, 8, 0, 0, 8, 8, 8, 8, 8, 0, 0, 8, 8,
8, 8, 8, 0, 0, 8, 8, 8, 8, 8, 0, 0, 8, 8, 8, 8],
        "actualCost": [ 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0]
      }
    },
    {
      "activityCode":"A1000",
      "activityId":1483093,
      "resourceId":38118,
      "resourceCode":"Ranand",
      "activityName":"Act01",
      "resourceName":"Rahul Anand",
      "rateSource":"RESOURCE",
      "spread":{
        "plannedCost":[ 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
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0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0],
        "actualUnits":[ 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0],
        "atCompletionCost": [ 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0],
```

"remainingCost": [0, 0, 0,

```
      "activityCode":"A1010",
      "activityId":1483094,
      "roleId":131075,
      "roleCode":"RoleCode7399",
      "activityName":"Act02",
      "roleName":"RoleName7399",
      "rateSource":"ROLE",
      "spread":{
        "plannedCost":[ 240, 240, 240, 240, 240, 0, 0, 240, 240, 240, 240,
240, 0, 0, 240, 240, 240, 240, 240, 0, 0, 240, 240, 240, 240, 240, 0, 0,
240, 240, 240, 240 ],
        "actualUnits":[ 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0],
        "atCompletionCost":[ 240, 240, 240, 240, 240, 0, 0, 240, 240, 240,
240, 240, 0, 0, 240, 240, 240, 240, 240, 0, 0, 240, 240, 240, 240, 240, 0,
0, 240, 240, 240, 240],
        "remainingCost":[ 240, 240, 240, 240, 240, 0, 0, 240, 240, 240, 240,
240, 0, 0, 240, 240, 240, 240, 240, 0, 0, 240, 240, 240, 240, 240, 0, 0,
240, 240, 240, 240],
        "plannedUnits":[ 8, 8, 8, 8, 8, 0, 0, 8, 8, 8, 8, 8, 0, 0, 8, 8,
8, 8, 8, 0, 0, 8, 8, 8, 8, 8, 0, 0, 8, 8, 8, 8],
        "spreadDates":[ "2024-01-22T00:00:00", "2024-01-23T00:00:00",
"2024-01-24T00:00:00", "2024-01-25T00:00:00", "2024-01-26T00:00:00",
"2024-01-27T00:00:00", "2024-01-28T00:00:00", "2024-01-29T00:00:00",
"2024-01-30T00:00:00", "2024-01-31T00:00:00", "2024-02-01T00:00:00",
"2024-02-02T00:00:00", "2024-02-03T00:00:00", "2024-02-04T00:00:00",
"2024-02-05T00:00:00", "2024-02-06T00:00:00", "2024-02-07T00:00:00",
"2024-02-08T00:00:00", "2024-02-09T00:00:00", "2024-02-10T00:00:00",
"2024-02-11T00:00:00", "2024-02-12T00:00:00", "2024-02-13T00:00:00",
"2024-02-14T00:00:00", "2024-02-15T00:00:00", "2024-02-16T00:00:00",
"2024-02-17T00:00:00", "2024-02-18T00:00:00", "2024-02-19T00:00:00",
"2024-02-20T00:00:00", "2024-02-21T00:00:00", "2024-02-22T00:00:00"],
        "atCompletionUnits":[ 8, 8, 8, 8, 8, 0, 0, 8, 8, 8, 8, 8, 0, 0, 8,
8, 8, 8, 8, 0, 0, 8, 8, 8, 8, 8, 0, 0, 8, 8, 8, 8],
        "remainingUnits":[ 8, 8, 8, 8, 8, 0, 0, 8, 8, 8, 8, 8, 0, 0, 8, 8,
8, 8, 8, 0, 0, 8, 8, 8, 8, 8, 0, 0, 8, 8, 8, 8],
        "actualCost":[ 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0]
      }
    },
```

```
    {
      "activityCode":"A1000",
      "activityId":1483093,
      "roleId":131072,
      "roleCode":"RoleCode7396",
      "activityName":"Act01",
      "roleName":"RoleName7396",
      "rateSource":"ROLE",
      "spread":{
        "plannedCost":[ 240, 240, 240, 240, 240, 0, 0, 240, 240, 240, 240,
240, 0, 0, 240, 240, 240, 240, 240, 0, 0, 240, 240, 240, 240, 240, 0, 0,
240, 240, 240, 240, 240, 0, 0, 240, 240, 240, 240, 240, 0, 0, 240, 240, 240,
240, 240, 0, 0, 240, 240, 240, 240, 240, 0, 0, 240, 240, 240, 240, 240, 0,
0, 240, 240, 240, 240],
        "actualUnits":[ 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0],
        "atCompletionCost":[ 240, 240, 240, 240, 240, 0, 0, 240, 240, 240,
240, 240, 0, 0, 240, 240, 240, 240, 240, 0, 0, 240, 240, 240, 240, 240, 0,
0, 240, 240, 240, 240, 240, 0, 0, 240, 240, 240, 240, 240, 0, 0, 240, 240,
240, 240, 240, 0, 0, 240, 240, 240, 240, 240, 0, 0, 240, 240, 240, 240, 240,
0, 0, 240, 240, 240, 240],
        "remainingCost":[ 240, 240, 240, 240, 240, 0, 0, 240, 240, 240, 240,
240, 0, 0, 240, 240, 240, 240, 240, 0, 0, 240, 240, 240, 240, 240, 0, 0,
240, 240, 240, 240, 240, 0, 0, 240, 240, 240, 240, 240, 0, 0, 240, 240, 240,
240, 240, 0, 0, 240, 240, 240, 240, 240, 0, 0, 240, 240, 240, 240, 240, 0,
0, 240, 240, 240, 240],
        "plannedUnits":[ 8, 8, 8, 8, 8, 0, 0, 8, 8, 8, 8, 8, 0, 0, 8, 8,
8, 8, 8, 0, 0, 8, 8, 8, 8, 8, 0, 0, 8, 8, 8, 8, 8, 0, 0, 8, 8, 8, 8, 8, 0,
0, 8, 8, 8, 8, 8, 0, 0, 8, 8, 8, 8, 8, 0, 0, 8, 8, 8, 8, 8, 0, 0, 8, 8, 8,
8],
```

```
        "spreadDates":[ "2024-01-22T00:00:00", "2024-01-23T00:00:00",
"2024-01-24T00:00:00", "2024-01-25T00:00:00", "2024-01-26T00:00:00",
"2024-01-27T00:00:00", "2024-01-28T00:00:00", "2024-01-29T00:00:00",
"2024-01-30T00:00:00", "2024-01-31T00:00:00", "2024-02-01T00:00:00",
"2024-02-02T00:00:00", "2024-02-03T00:00:00", "2024-02-04T00:00:00",
"2024-02-05T00:00:00", "2024-02-06T00:00:00", "2024-02-07T00:00:00",
"2024-02-08T00:00:00", "2024-02-09T00:00:00", "2024-02-10T00:00:00",
"2024-02-11T00:00:00", "2024-02-12T00:00:00", "2024-02-13T00:00:00",
"2024-02-14T00:00:00", "2024-02-15T00:00:00", "2024-02-16T00:00:00",
"2024-02-17T00:00:00", "2024-02-18T00:00:00", "2024-02-19T00:00:00",
"2024-02-20T00:00:00", "2024-02-21T00:00:00", "2024-02-22T00:00:00",
"2024-02-23T00:00:00", "2024-02-24T00:00:00", "2024-02-25T00:00:00",
"2024-02-26T00:00:00", "2024-02-27T00:00:00", "2024-02-28T00:00:00",
"2024-02-29T00:00:00", "2024-03-01T00:00:00", "2024-03-02T00:00:00",
"2024-03-03T00:00:00", "2024-03-04T00:00:00", "2024-03-05T00:00:00",
"2024-03-06T00:00:00", "2024-03-07T00:00:00", "2024-03-08T00:00:00",
"2024-03-09T00:00:00", "2024-03-10T00:00:00", "2024-03-11T00:00:00",
"2024-03-12T00:00:00", "2024-03-13T00:00:00", "2024-03-14T00:00:00",
"2024-03-15T00:00:00", "2024-03-16T00:00:00", "2024-03-17T00:00:00",
"2024-03-18T00:00:00", "2024-03-19T00:00:00", "2024-03-20T00:00:00",
"2024-03-21T00:00:00", "2024-03-22T00:00:00", "2024-03-23T00:00:00",
"2024-03-24T00:00:00", "2024-03-25T00:00:00", "2024-03-26T00:00:00",
"2024-03-27T00:00:00", "2024-03-28T00:00:00" ],
        "atCompletionUnits":[ 8, 8, 8, 8, 8, 0, 0, 8, 8, 8, 8, 8, 0, 0, 8,
8, 8, 8, 8, 0, 0, 8, 8, 8, 8, 8, 0, 0, 8, 8, 8, 8, 8, 0, 0, 8, 8, 8, 8,
0, 0, 8, 8, 8, 8, 8, 0, 0, 8, 8, 8, 8, 8, 0, 0, 8, 8, 8, 8, 8, 0, 0, 8,
8, 8],
        "remainingUnits":[ 8, 8, 8, 8, 8, 0, 0, 8, 8, 8, 8, 8, 0, 0, 8, 8,
8, 8, 8, 0, 0, 8, 8, 8, 8, 8, 0, 0, 8, 8, 8, 8, 8, 0, 0, 8, 8, 8, 8, 8, 0,
0, 8, 8, 8, 8, 8, 0, 0, 8, 8, 8, 8, 8, 0, 0, 8, 8, 8, 8, 8, 0, 0, 8, 8, 8,
8],
        "actualCost":[ 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0]
      }
    }
  ]
}
```


Sample Failed Request

A request is sent with an invalid job ID as follows:

```
URL :
{hosturl}/ws/rest/service/v2/activity/sheets/spread/download?jobId=acti
vity_Spread_
```

Sample Failed Response

A failed response is returned with a status code in the following format:

```
{
    "data": [],
    "message": ["The API request contains invalid value for: [jobId]. Allowed only integer values."],
    "rest_audit_id": 23433,
    "status": 12511
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request:

Field Name	Use-case Scenario	Status Code	Error Message
jobId	jobId is not specified in the request.	12502	The API request is missing the required information: [jobId].
jobId	jobId value is empty.	12512	The API request contains empty value for: [jobId]. Allowed only integer values.
jobId	jobId data type is invalid.	12511	The API request contains invalid value for: [jobId]. Allowed only integer values.
jobId	jobid is not configured in the source Unifier shell.	12520	Job details are not present in Unifier. [jobId] : {jobId}

Get Spread Job Status

`GET /ws/rest/service/v2/activity/sheets/spread/jobStatus/{jobId}`

Purpose

Retrieve the job status of Activity and Assignment Spreads.

Prerequisite

To retrieve the job status of a job created via the POST method, you must have Get Access permissions enabled within Integration Users.

Sample Request

```
URL:
{hosturl}/ws/rest/service/v2/activity/sheets/spread/jobStatus/1688113665288
```

Sample Response

```
{
    "message": [{
                   "jobId": 1690569686180,
                   "jobStatus": "COMPLETED",
                   "jobDetail": "Job is completed successfully."
               }],
    "status": 200,
    "rest_audit_id": 16306
}
```

Create or Update Activity Spreads

```
POST /ws/rest/service/v2/activity/sheets/activities/spread
```

Purpose

Creates or updates activity spreads in a specific shell from the source system.

Notes:

- The POST method captures both create and update actions. Therefore, selecting or clearing **Update** permissions has no impact on this REST service.
- Validations are not implemented for System Activity Sheet data. The data from the source system is assumed to be sent correctly.

Prerequisites

Ensure the following:

- You must have **Create** permissions enabled.
- This REST service is specific to updating externally-synced activity spread data information from other applications. Therefore, sourceProjectID should be configured or added in the applicable project/shell Details tab).

Request Format

Send an API request as a JSON map with the following structure:

```
{
```

```
   "options":{"Source": "<value>", "project_number": "<value>",
"sourceProjectId": "<value>"}
   "data":[]
}
```

In "data", value is accepted in form-data

```
key : file
value : {filename}.zip
```

Request Parameters - Form Data Fields

Specify the following parameters in the form data:

Request Parameter	Required?	Data Type	Description

_attachment	Yes	A JSON object in the following format:
		{
		"zipped_file_name": "filname.zip",
		"zipped_file_size": Integer,
		"zipped_file_content":""
		}
			The file name uploaded by the REST service.

options	Yes	An Options JSON object in the following format:
		{
		"project_number" : <value>,
		"sourceProjectId":<value>,
		"source": <value>
		}
			JSON input containing source and project-related information.

Request Parameters

Specify the following parameters in the Options object:

Request Parameter	Required?	Data Type	Description
source	Yes	String	External application or data from which Activity Spread data are pulled. Valid value includes: "Primavera Cloud".

Request Parameter	Required?	Data Type	Description
project_number	Yes	String	A valid 'Active' shell number where the spread data will be pushed.
sourceProjectId	Yes	String	The Primavera Cloud project code.
projectType	Yes	String	The type of project in Unifier for which the Assignments have to be created. Valid values include: "Current" and "Baseline".

Request Parameters - _attachment fields

Specify the following parameters in the Options JSON map:

Request Parameter	Required?	Data Type	Description
zipped_file_name	Yes	String	The file name uploaded by the REST service.
zipped_file_content	Yes	String	A Base64 encoded zip file.
zipped_file_size	No	Integer	The file size of the zipped file uploaded by the REST service.

Mandatory Fields for Current Project Type

For a "Current" project type, specify the following mandatory fields In the `zipped_file_content` parameter:

```
"activityCode","timescale","spread","actualTotalCost","actualTotalCostProject","atCompletionTotalCost","atCompletionTotalCostProject","earnedValueCost","estimateAtCompletionCost","estimateAtCompletionCostProject","estimateToCompleteCost,"estimateToCompleteCostProject","estimateToCompleteLaborUnits","plannedTotalCost","plannedTotalCostProject","plannedValueCost","plannedValueCostProject","remainingTotalCost","remainingTotalCostProject","spreadDates"
```

Mandatory fields for Baseline Project Type

For a "Baseline" project type, specify the following mandatory fields In the `zipped_file_content` parameter:

```
"activityCode","timescale","spread","actualTotalCost","actualTotalCostProject","atCompletionTotalCost","atCompletionTotalCostProject","plannedTotalCost","plannedTotalCostProject","remainingTotalCost","remainingTotalCostProject","spreadDates"
```

Response Format

A JSON object is returned in the following format.

```
{
```

```
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <id from the audit table>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

CurrentActivitySpread JSON Sample

Send the following data to create a current activity spread:

```
{
  "activities": [
    {
      "activityCode": "A1000",
      "activityId": 502202,
      "activityName": "act1",
      "actualTotalCost": 0,
      "actualTotalCostProject": 0,
      "atCompletionTotalCost": 0,
      "atCompletionTotalCostProject": 0,
      "earnedValueCost": 0,
      "earnedValueCostProject": 0,
      "estimateAtCompletionCost": 0,
      "estimateAtCompletionCostProject": 0,
      "estimateToCompleteCost": 0,
      "estimateToCompleteCostProject": 0,
      "estimateToCompleteLaborUnits": 40,
      "plannedTotalCost": 0,
      "plannedTotalCostProject": 0,
      "plannedValueCost": 0,
      "plannedValueCostProject": 0,
      "remainingTotalCost": 0,
      "remainingTotalCostProject": 0,
      "spread": {
```

```
      "actualTotalCost": [0,0,0,0,0,0,0],
      "actualTotalCostProject": [0,0,0,0,0,0,0],
      "atCompletionTotalCost": [0,0,0,0,0,0,0],
      "atCompletionTotalCostProject": [0,0,0,0,0,0,0],
      "earnedValueCost": [0,0,0,0,0,0,0],
      "earnedValueCostProject": [0,0,0,0,0,0,0],
      "estimateAtCompletionCost": [0,0,0,0,0,0,0],
      "estimateAtCompletionCostProject": [0,0,0,0,0,0,0],
      "estimateToCompleteCost": [0,0,0,0,0,0,0],
      "estimateToCompleteCostProject": [0,0,0,0,0,0,0],
      "estimateToCompleteLaborUnits": [0,0,0,0,0,0,0],
      "plannedTotalCost": [0,0,0,0,0,0,0],
      "plannedTotalCostProject": [0,0,0,0,0,0,0],
      "plannedValueCost": [0,0,0,0,0,0,0],
      "plannedValueCostProject": [0,0,0,0,0,0,0],
      "remainingTotalCost": [0,0,0,0,0,0,0],
      "remainingTotalCostProject": [0,0,0,0,0,0,0],
      "spreadDates": [
                          "2023-05-02T00:00:00",
                          "2023-05-03T00:00:00",
                          "2023-05-04T00:00:00",
                          "2023-05-05T00:00:00",
                          "2023-05-06T00:00:00",
                          "2023-05-07T00:00:00",
                          "2023-05-08T00:00:00"
                      ]
    },
    "wbsId": 298601
  }
],
"project": {
  "projectCode": "testSpread",
  "projectId": 258401,
  "projectName": "testSpread"
```

```
  },
  "timescale": "DAILY"
}
```

Sample Success Request

```
{hosturl}ws/rest/service/v2/activity/sheets/activities/spread
```

Inputs in Raw JSON-data

```
{
    "options": {
        "project_number": "P-0056",
        "sourceProjectId": "P-0056",
        "source": "Primavera Cloud",
        "projectType": "Current"
    },
    "_attachment": {
        "zipped_file_name": "557118_activitySpreads.zip",
        "zipped_file_size": 812,
        "zipped_file_content":
"UEsDBBQAAAAIABxu3FYgih2MigIAADgqAAAOAAAAb3Bjc3ByZWFkLmpzb27tV8tq4zAU3Q
fyD8ZrF+RHEqe7kG4KZRiYzMBQZqEmYvDg2MFW

p5SSf6/iR/1QIl0lLVZAIZAc32Pp+Fi+1nkbjyzLxmsa/Y9oRHL71npkh9jnrfxpqq/LdEN
Y3V64ru1w1fsNq7lBEKBgxle/4W15bu/UZxyvUorjZZpTVkcni9+z9B9Z9zl0mW53

MaFRmtRMCOXoYARnCdn8wvEzYZzTxdMD5DTaYkoWrSkZGcgSDrlKK/JhdhAHONwDfkqzn0l
ED3c+aFF3MU7YFfOu8tVmNp7UNo2vSi3NyBZHSZT8rWeS1o8Ok+8ygtn6bBY1v8Cqlf/x

CZ0vQA34UxREa72viF3QF6C+IsFjwwmaO6eRi7rQ7UJPCH0VVRq4xbeOx871TBwRnHbhTAj
DLpzDFOng0ZG+p4tZ0pY8uGud5q6hIi2tal5un9Xce0pAzb3/riy1DLneK0U6ddDWbmDwFX
7

Qolnz7O5zhmublgWUp4Fn5abvjnUE7vG3PeT5N2hyg7wVQrfF13aOM3wpI5AyJlLGVMqYSR
lhw2hZUv/dN9vhl6e8SGvePJwilx0uytLY53ni2BcKYp9nYh81se8KYp9C34Gj8eiC2Affn
Sig

8QgesAa16DoTn8IEcASTooM5wKinMBMcKWrSyC6T8c4QdhUZT+XK4QioRYPbZtLdhelOYQ4
4AqvRwCIT5kBhzgOHOd8Xh7m5IMz5JsxRE+ZMmDsjzCnMA0fjETw7aSdIA6NMmANsuU2YU5
JmwtwZ

wkyYs0yYu0SLBvaYMCcVZcIcKMz5VZhjP5V/9q68efUuuDlS5zpmKf1R7pSdLqMcdxIGyO1
VWK7rn3sg7MspWY8m+RrHBeVucf/wm1X371BLAQI/ABQAAAAIABxu3FYgih2MigIAADgqAA
AOACQAA

AAAAAAAIAAAAAAAAABvcGNzcHJlYWQuanNvbgoAIAAAAAAAAQAYAJmTLy6ZqdkBAAAAAAAA
AAAAAAAAAAAAAFBLBQYAAAAAAQABAGAAAAC2AgAAAA="
```

```
    }
}
```

Sample Success Response

A successful response displays a status code in the following format:

```
{
    "data": {
        "jobId": 1688383768969
    },
    "message": ["Job for spread data created successfully."],
    "status": 202,
    "rest_audit_id": 12676
}
```

Sample Failed Request

```
{hosturl}/ws/rest/service/v2/activity/sheets/activities/spread
```

Inputs in Raw JSON-data:

```
 {
    "options": {
        "project_number": "P-0056",
        "sourceProjectId": "P-0056",
        "source": "Primavera Cloud",
        "projectType": ""
    },
    "_attachment": {
        "zipped_file_name": "557118_activitySpreads.zip",
        "zipped_file_size": 812,
```

```
        "zipped_file_content":
"UEsDBBQAAAAIABxu3FYgih2MigIAADgqAAAOAAAAb3Bjc3ByZWFkLmpzb27tV8tq4zAU3Q
fyD8ZrF+RHEqe7kG4KZRiYzMBQZqEmYvDg2MFWp5SSf6/iR/1QIl0lLVZAIZAc32Pp+Fi+1
nkbjyzLxmsa/Y9oRHL71npkh9jnrfxpqq/LdENY3V64ru1w1fsNq7lBEKBgxle/4W15bu/U
ZxyvUorjZZpTVkcni9+z9B9Z9zl0mW53MaFRmtRMCOXoYARnCdn8wvEzYZzTxdMD5DTaYko
WrSkZGcgSDrlKK/JhdhAHONwDfkqzn0lED3c+aFF3MU7YFfOu8tVmNp7UNo2vSi3NyBZHSZ
T8rWeS1o8Ok+8ygtn6bBY1v8Cqlf/xCZ0vQA34UxREa72viF3QF6C+IsFjwwmaO6eRi7rQ7
UJPCH0VVRq4xbeOx871TBwRnHbhTAjDLpzDFOng0ZG+p4tZ0pY8uGud5q6hIi2tal5un9Xc
e0pAzb3/riy1DLneK0U6ddDWbmDwFX7Qolnz7O5zhmublgWUp4Fn5abvjnUE7vG3PeT5N2h
yg7wVQrfF13aOM3wpI5AyJlLGVMqYSRlhw2hZUv/dN9vhl6e8SGvePJwilx0uytLY53ni2B
cKYp9nYh81se8KYp9C34Gj8eiC2AffnSig8QgesAa16DoTn8IEcASTooM5wKinMBMcKWrSy
C6T8c4QdhUZT+XK4QioRYPbZtLdhelOYQ44AqvRwCIT5kBhzgOHOd8Xh7m5IMz5JsxRE+ZM
mDsjzCnMA0fjETw7aSdIA6NMmANsuU2YU5JmwtwZwkyYs0yYu0SLBvaYMCcVZcIcKMz5VZh
jP5V/9q68efUuuDlS5zpmKf1R7pSdLqMcdxIGyO1VWK7rn3sg7MspWY8m+RrHBeVucf/wm1
X371BLAQI/ABQAAAAIABxu3FYgih2MigIAADgqAAAOACQAAAAAAAAAIAAAAAAAAABvcGNzc
HJlYWQuanNvbgoAIAAAAAAAAQAYAJmTLy6ZqdkBAAAAAAAAAAAAAAAAAAAAAAAFBLBQYAAAAA
AQABAGAAAAC2AgAAAAA="
```


```
    }
}
```

Sample Failed Response

For the above request, a failed response displays with a status code in the following format:

```
{
    "data": [],
    "message": [ {
            "message": "The API request contains empty value for:
[projectType].",
            "status": 12144
               } ],
    "status": 3000,
    "rest_audit_id": 14302
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status Code	Error Message
_attachment	_attachment is not specified in the request.	12524	The API request is missing the required information: [_attachment].
_attachment	_attachment is empty/blank.	12525	The API request contains empty value for: [_attachment].
options	options is empty/blank or not specified in the request.	3002	Invalid input.
source	Source is not specified in the request	12007	The API request is missing the required information: [source]
source	Wrong source value is specified in the request.	12703	Invalid value was found in a field: [source]. Allowed value: [Primavera Cloud].
source	Source is empty	12702	The API request contains empty value for: [source]. Allowed value: [Primavera Cloud]
source	Source is boolean or integer data type	12703	Invalid value was found in a field: [source]. Allowed value: [Primavera Cloud].
project_number	project_number is not specified.	12018	The API request is missing the required information: [project_number].
project_number	project_number is invalid.	602	Project/Shell Number is not correct.
project_number	Project/Shell is not an active shell.	1245	Create/Update/Delete cannot be performed when project/shell status is Inactive or View-Only or On-Hold.
project_number	project_number is empty/blank.	12128	The API request contains empty value for: [project_number].
sourceProjectId	sourceProjectId is not configured in the source Unifier shell.	12021	The API request contains an invalid value: [sourceProjectId]. Please check if this sourceProjectId has been configured in Unifier.
sourceProjectId	sourceProjectId value is a blank.	12032	The API request contains empty value for: [sourceProjectId].

Field Name	Use-case Scenario	Status Code	Error Message
sourceProjectId	sourceProjectId is not specified in the request.	12005	The API request is missing the required information: [sourceProjectId]
projectType	projectType is not specified in the request.	12143	The API request is missing the required information: [projectType].
projectType	projectType is empty/blank for system sheet.	12144	The API request contains empty value for: [projectType]. Allowed values: [Current, Baseline]
projectType	projectType is of incorrect data type.	12142	Invalid value was found in a field: [projectType]. Allowed only alphanumeric value.
projectType	An invalid value is passed in projectType for system sheet.	12145	Invalid value was found in a field: 'projectType'. Allowed values: [Current, Baseline]
zipped_file_name	zipped_file_name is empty/blank.	12527	The API request contains empty value for: [zipped_file_name].
zipped_file_name	zipped_file_name is missing in the request.	12518	The API request is missing the required information: [zipped_file_name].
zipped_file_name	zipped_file_name is not a .zip file format.	12503	Invalid value was found in a field :[zipped_file_name]. Allowed only .zip files.
zipped_file_name	zipped_file_name is an invalid value.	12521	Invalid value was found in a field: [zipped_file_name]. Allowed only alphanumeric characters in file name.
zipped_file_content	zipped_file_content is not specified in the request.	12520	The API request is missing the required information: [zipped_file_content].
zipped_file_content	zipped_file_content is empty/blank.	12529	The API request contains empty value for: [zipped_file_content].
zipped_file_content	zipped_file_content is an invalid value.	12523	Invalid value was found in a field: [zipped_file_content]. Allowed only base64 encoded value.
zipped_file_size	zipped_file_size is not specified in the request.	12528	The API request contains empty value for: [zipped_file_size].

Field Name	Use-case Scenario	Status Code	Error Message
zipped_file_size	zipped_file_size is empty/blank.	12519	The API request is missing the required information: [zipped_file_size].
zipped_file_size	zipped_file_size is an invalid value.	12522	Invalid value was found in a field: [zipped_file_size]. Allowed only integer value.
zipped_file_size	Size mismatch with base encode file.	12526	Invalid value was found in a field: [zipped_file_size]. Actual file size does not match with [zipped_file_size].

Additional Validation Messages

Upon processing the uploaded zip file or processing the attached JSON file, the following messages may display in the Get Job Status Details section:

Use-case Scenario	Error Message
Zip file is an invalid file format.	The attached zip file contains an invalid file format. Only JSON file is allowed.
[activities] is missing in the uploaded JSON.	The JSON file is missing the required information: [activities].
Mandatory field is missing in the uploaded JSON.	The attached JSON file is missing the required information: [{property name}] for [activityCode] : {activityCode}
Mandatory field is empty in the uploaded JSON.	The attached JSON file contains empty value for: [{propety name}] for [activityCode] : {activityCode}
Missing field in [spread] object.	The JSON file is missing the required information: [propetyName] in [spread] object. [activityCode]:{activityCode}
Mandatory field is an invalid data type in the uploaded JSON.	The attached JSON file contains value with invalid data type for: [{propety name}] for [activityCode]: {activityCode}
Spread dates are in an invalid format.	The API request contains an invalid value: [spreadDates]. Correct date format: [yyyy-MM-ddTHH:mm:ss]. [activityCode] :{activityCode}
JSON file contains property/data in an incorrect JSON template.	Issue in parsing the JSON file. Invalid JSON file provided in the zip file.

Use-case Scenario	Error Message
System Activity Sheet is not configured while inserting System-type Activity Spread Date.	System Activity Sheet is not configured for the shell.
System Activity Sheet is configured through Gateway while inserting System-type Activity Spread Data.	System Activity Sheet is configured with Gateway and is not supported with this API.
System Activity Sheet is configured for Oracle Primavera Cloud but source is given as P6 while inserting System-type Activity Spread Data.	System Activity Sheet is configured with source as Oracle Primavera Cloud.
Timescale is not set as Daily.	The API request contains invalid value for: [timescale]. Allowed values {daily}.
Activity Code is not configured in Unifier for the project_number and sourceProject Id.	The JSON file containing [activityCode] not configured in the system. [activityCode]: {activityCode}

Create, Update, and Remove Activities from the System Activity Sheet of a Specific Shell

```
POST /ws/rest/service/v2/activity/sheet/activities
```

Purpose

Create, update, and delete activities in the Activity Sheet of a shell for a project number specified in the input parameters.

The Activity API creates, updates, or removes activity data as follows:

- Create: If the API request has activities for which the Activity ID is not present in the system, the Activity data will be created or added by the API request.
- Update: If the API request has activities for which the Activity ID is present in the system, the Activity data will be updated by the API request.
- Remove: In the API request options if the remove unreferenced data value passes as true, all the activities not present in the API request but present in Unifier will be removed.

Prerequisites

- For creating activities in the System Activity Sheet, the sourceProjectID should be configured using the **Primavera Cloud Integration** tab in the Shell Details.
- For creating activities in the Manual Activity Sheet, the activity sheet should be created manually under the Activity Sheet sub-node.
- For linking or associating activities to the WBS codes given in the request parameters, it is expected that the WBS codes are already created in the WBS Sheet either using WBS REST API manually, or integration.

Notes:

- Validations are not implemented for the System Activity Sheet data in any of the API's assuming the data from the source system is sent properly.
- If the System Activity Sheet does not exist in the shell, when a user uses this API, the system activity sheet will be created based on the options provided in the request.
- If the WBS Sheet does not exist in the shell, the activities will not be assigned to the respective WBS Codes.

Request Format

Send an API request as a JSON Map with the following structure that includes one or more "data" JSON maps:

```
{
          "options":{
                        "Source": "<value>", "project_number": "<value>",
"activitySheetType": "<value>","activitySheetName": "<value>",
"removeUnreferencedData": "<value>
                    },
          "data":["activityId":"<value>", "activityName":"<value>"]
}
```

For the "options" JSON Map, the following fields and validations are applicable:

Request Parameters in "options" JSON Map

Field Name	Mandatory?	Data Type	Description
source	Yes	String	The external application or data from which Activities are pulled. For example, "Primavera" Cloud. "Primavera Cloud" is the only value supported for this release.
project_number	Yes	String	A valid 'Active' Unifier shell number (a shell number into which project details are updated). For example, "P-0001".

Field Name	Mandatory?	Data Type	Description
sourceProjectId	Yes	String	A Primavera Cloud Project Code. For example, "Msk-P1".
activitySheetType	Yes	String	Accepts only two value "systems." This value indicates if the activity sheet type is system. For Primavera Cloud integrations, it should be "system" as data needs to be inserted into the System Activity Sheet.
projectType	Yes	String	The type of project in Unifier for which the Activities must be created. Allowed values are Current or Baseline.

Field Name	Mandatory?	Data Type	Description
removeUnreferencedData	No	Boolean	Accepts only true or false. If this value is true, activities will be created & updated in the request body. Activities that do not exist in the current request data will be removed from the existing activity sheet. If this value is false, any activities from the existing activity sheet will not be removed. Activities will be created from the request data if they do not exist and updated if they do exist. If the attribute does not pass in the request, the default value is considered as false and the activity data that does not exist in the current API request data will not be removed.

Request Parameters in JSON Map "data"

The "`data`" - JSON List [], can contain one or more JSON Maps
`{"activityId":"<value>", "activityName":"<value>"}`

The mandatory fields and respective validations are listed below.

Field Name	Data Type	Description
uuu_P6ActivityId	String	The ID or Activity code. This is expected to be unique for each activity in the activity sheet. For example, "A1000."

Field Name	Data Type	Description
uuu_P6ActivityName	String	The name of the activity. For example, "Activity1."
bItemId	String	The full path of the CBS Code with entire hierarchy present in Cost Sheet. "~~" will be used as path separators for the hierarchy.

Response Format

A JSON object is returned in the following format.

```
{
   "status" : <integer value> ,
   "data" : [ ] ,
   "messages": [ <list of string>] ,
   "rest_audit_id": <id from the rest audit table matching this request>
}
```

Sample Request - POST Activity API

```
{
   "options":{
      "project_number":"P-0115",
      "source":"Primavera Cloud",
      "sourceProjectId":"ActivityManual",
      "activitySheetType": "system",
      "removeUnreferencedData": false,
     "projectType": "Current"
   },
  "data":[  {
         "uuu_P6ActivityId":"A1010",
          "uuu_P6ActivityName":"sas",
         "uuu_P6EACCost":"0.0",
         "uuu_P6ScheduleVariance":"0.0",
         "uuu_P6ActualTotalUnits":"0.0",
         "uuu_P6ActualStart":"",
         "uuu_P6AtCompletionTotalUnits":"1827.0",
```

```
        "uuu_P6ActualDuration":"0.0",
        "uuu_P6ActualFinish":"",
        "uuu_P6WBSName":"New WBS-1",
        "uuu_P6WBSCode" :"wbs-1",
        "uuu_P6WBSPath":"Msk-P1.1.11",
        "uuu_P6CostVariance":"0.0",
        "uuu_P6BAC":"1461600.0",
        "uuu_P6RemainingEarlyFinish":"2037-08-05T16:00:00",
        "uuu_P6PlannedFinish":"2037-08-05T16:00:00",
        "uuu_P6EVCost":"0.0",
        "uuu_P6PlannedTotalCost":"1461600.0",
        "uuu_P6ActivityType":"Task Dependent",
        "uuu_P6ETC":"1461600.0",
        "uuu_P6RemainingTotalUnits":"1827.0",
        "uuu_P6RemainingEarlyStart":"2030-08-06T08:00:00",
        "uuu_P6AtCompletionDuration":"1827.0",
        "uuu_P6PercentComplete":"0.0",
        "uuu_P6CPIndex":"0.0",
        "uuu_P6VAC":"0.0",
        "uuu_P6PerfPercComplete":"0.0",
        "uuu_P6RemainingTotalCost":"1461600.0",
        "uuu_P6PlannedDuration":"1827.0",
        "uuu_P6ActivityStatus":"Not Started",
        "uuu_P6AtCompletionTotalCost":"1461600.0",
        "uuu_P6PVCost":"0.0",
        "uuu_P6SPIndex":"0.0",
        "uuu_P6ActualTotalCost":"0.0",
        "uuu_P6PlannedStart":"2030-08-06T08:00:00",
        "uuu_P6PlannedTotalUnits":"1827.0",
        "uuu_P6Start":"2030-08-06T08:00:00",
        "uuu_P6RemainingDuration":"1827.0",
        "uuu_P6Finish":"2037-08-05T16:00:00"
    },
    {
```

```
"uuu_P6ActivityId":"A1",
 "uuu_P6ActivityName":"Asde",
"uuu_P6EACCost":"0.0",
"uuu_P6ScheduleVariance":"0.0",
"uuu_P6ActualTotalUnits":"0.0",
"uuu_P6ActualStart":"",
"uuu_P6AtCompletionTotalUnits":"1827.0",
"uuu_P6ActualDuration":"0.0",
"uuu_P6ActualFinish":"",
"uuu_P6WBSName":"New WBS-1",
"uuu_P6WBSCode" :"wbs-1",
"uuu_P6WBSPath":"Msk-P1.1.11",
"uuu_P6CostVariance":"0.0",
"uuu_P6BAC":"1461600.0",
"uuu_P6RemainingEarlyFinish":"2037-08-05T16:00:00",
"uuu_P6PlannedFinish":"2037-08-05T16:00:00",
"uuu_P6EVCost":"0.0",
"uuu_P6PlannedTotalCost":"1461600.0",
"uuu_P6ActivityType":"Task Dependent",
"uuu_P6ETC":"1461600.0",
"uuu_P6RemainingTotalUnits":"1827.0",
"uuu_P6RemainingEarlyStart":"2030-08-06T08:00:00",
"uuu_P6AtCompletionDuration":"1827.0",
"uuu_P6PercentComplete":"0.0",
"uuu_P6CPIndex":"0.0",
"uuu_P6VAC":"0.0",
"uuu_P6PerfPercComplete":"0.0",
"uuu_P6RemainingTotalCost":"1461600.0",
"uuu_P6PlannedDuration":"1827.0",
"uuu_P6ActivityStatus":"Not Started",
"uuu_P6AtCompletionTotalCost":"1461600.0",
"uuu_P6PVCost":"0.0",
"uuu_P6SPIndex":"0.0",
"uuu_P6ActualTotalCost":"0.0",
```

```
        "uuu_P6PlannedStart":"2030-08-06T08:00:00",
        "uuu_P6PlannedTotalUnits":"1827.0",
        "uuu_P6Start":"2030-08-06T08:00:00",
        "uuu_P6RemainingDuration":"1827.0",
        "uuu_P6Finish":"2037-08-05T16:00:00",
   }

   ]
}
```


Sample Success Response


```
{
    "data": [
        {
            "uuu_P6EACCost": "0.0",
            "uuu_P6ScheduleVariance": "0.0",
            "uuu_P6ActualTotalUnits": "0.0",
            "uuu_P6ActualStart": "",
            "uuu_P6AtCompletionTotalUnits": "1827.0",
            "uuu_P6ActualDuration": "0.0",
            "uuu_P6Finish": "2037-08-05T16:00:00",
            "uuu_P6WBSName": "New WBS-1",
            "uuu_P6WBSPath": "Msk-P1.1.11",
            "uuu_P6CostVariance": "0.0",
            "uuu_P6BAC": "1461600.0",
            "uuu_P6RemainingEarlyFinish": "2037-08-05T16:00:00",
            "uuu_P6PlannedFinish": "2037-08-05T16:00:00",
            "uuu_P6EVCost": "0.0",
            "id": 1482870,
            "uuu_P6ActivityName": "sas",
            "uuu_P6PlannedTotalCost": "1461600.0",
            "uuu_P6ActivityType": "Task Dependent",
            "uuu_P6ActualFinish": "",
```

```
        "uuu_P6ETC": "1461600.0",
        "uuu_P6RemainingTotalUnits": "1827.0",
        "uuu_P6RemainingEarlyStart": "2030-08-06T08:00:00",
        "uuu_P6ActivityId": "A1010",
        "uuu_P6AtCompletionDuration": "1827.0",
        "uuu_P6PercentComplete": "0.0",
        "uuu_P6CPIndex": "0.0",
        "uuu_P6WBSCode": "wbs-1",
        "uuu_P6VAC": "0.0",
        "uuu_P6PerfPercComplete": "0.0",
        "uuu_P6RemainingTotalCost": "1461600.0",
        "uuu_P6PlannedDuration": "1827.0",
        "uuu_P6ActivityStatus": "Not Started",
        "uuu_P6AtCompletionTotalCost": "1461600.0",
        "uuu_P6PVCost": "0.0",
        "uuu_P6SPIndex": "0.0",
        "uuu_P6ActualTotalCost": "0.0",
        "uuu_P6PlannedStart": "2030-08-06T08:00:00",
        "uuu_P6PlannedTotalUnits": "1827.0",
        "uuu_P6Start": "2030-08-06T08:00:00",
        "uuu_P6RemainingDuration": "1827.0"
    },
    {
        "uuu_P6EACCost": "0.0",
        "uuu_P6ScheduleVariance": "0.0",
        "uuu_P6ActualTotalUnits": "0.0",
        "uuu_P6ActualStart": "",
        "uuu_P6AtCompletionTotalUnits": "1827.0",
        "uuu_P6ActualDuration": "0.0",
        "uuu_P6Finish": "2037-08-05T16:00:00",
        "uuu_P6WBSName": "New WBS-1",
        "uuu_P6WBSPath": "Msk-P1.1.11",
        "uuu_P6CostVariance": "0.0",
        "uuu_P6BAC": "1461600.0",
```

```
            "uuu_P6RemainingEarlyFinish": "2037-08-05T16:00:00",
            "uuu_P6PlannedFinish": "2037-08-05T16:00:00",
            "uuu_P6EVCost": "0.0",
            "id": 1482871,
            "uuu_P6ActivityName": "Asde",
            "uuu_P6PlannedTotalCost": "1461600.0",
            "uuu_P6ActivityType": "Task Dependent",
            "uuu_P6ActualFinish": "",
            "uuu_P6ETC": "1461600.0",
            "uuu_P6RemainingTotalUnits": "1827.0",
            "uuu_P6RemainingEarlyStart": "2030-08-06T08:00:00",
            "uuu_P6ActivityId": "A1",
            "uuu_P6AtCompletionDuration": "1827.0",
            "uuu_P6PercentComplete": "0.0",
            "uuu_P6CPIndex": "0.0",
            "uuu_P6WBSCode": "wbs-1",
            "uuu_P6VAC": "0.0",
            "uuu_P6PerfPercComplete": "0.0",
            "uuu_P6RemainingTotalCost": "1461600.0",
            "uuu_P6PlannedDuration": "1827.0",
            "uuu_P6ActivityStatus": "Not Started",
            "uuu_P6AtCompletionTotalCost": "1461600.0",
            "uuu_P6PVCost": "0.0",
            "uuu_P6SPIndex": "0.0",
            "uuu_P6ActualTotalCost": "0.0",
            "uuu_P6PlannedStart": "2030-08-06T08:00:00",
            "uuu_P6PlannedTotalUnits": "1827.0",
            "uuu_P6Start": "2030-08-06T08:00:00",
            "uuu_P6RemainingDuration": "1827.0"
        }
    ],
    "message": [
        "success"
    ],
```

```
    "status": 200,
    "rest_audit_id": 20569
}
```


Sample Error Response when the Source Project ID is not given in the Request

An example of an invalid API request and response is provided below.

Sample Invalid Request


```
{
   "options":{
      "project_number":"P-0103",
      "source":"Primavera Cloud",
      "sourceProjectId":"ActSpread",
      "activitySheetType": "system",
      "removeUnreferencedData": false,
      "activitySheetName1":"System Activity Sheet"

   },
  "data":[  {
         "uuu_P6ActivityId":"",
          "uuu_P6ActivityName":"Act1",
         "uuu_P6EACCost":"0.0",
         "uuu_P6ScheduleVariance":"0.0",
         "uuu_P6ActualTotalUnits":"0.0",
         "uuu_P6ActualStart":"",
         "uuu_P6AtCompletionTotalUnits":"1827.0",
         "uuu_P6ActualDuration":"0.0",
         "uuu_P6ActualFinish":"",
         "uuu_P6WBSName":"New WBS-1",
         "uuu_P6WBSCode" :"wbs-1",
         "uuu_P6WBSPath":"Msk-P1.1.11",
         "uuu_P6CostVariance":"0.0",
         "uuu_P6BAC":"1461600.0",
```

```
        "uuu_P6RemainingEarlyFinish":"2037-08-05T16:00:00",
        "uuu_P6PlannedFinish":"2037-08-05T16:00:00",
        "uuu_P6EVCost":"0.0",
        "uuu_P6PlannedTotalCost":"1461600.0",
        "uuu_P6ActivityType":"Task Dependent",
        "uuu_P6ETC":"1461600.0",
        "uuu_P6RemainingTotalUnits":"1827.0",
        "uuu_P6RemainingEarlyStart":"2030-08-06T08:00:00",
        "uuu_P6AtCompletionDuration":"1827.0",
        "uuu_P6PercentComplete":"0.0",
        "uuu_P6CPIndex":"0.0",
        "uuu_P6VAC":"0.0",
        "uuu_P6PerfPercComplete":"0.0",
        "uuu_P6RemainingTotalCost":"1461600.0",
        "uuu_P6PlannedDuration":"1827.0",
        "uuu_P6ActivityStatus":"Not Started",
        "uuu_P6AtCompletionTotalCost":"1461600.0",
        "uuu_P6PVCost":"0.0",
        "uuu_P6SPIndex":"0.0",
        "uuu_P6ActualTotalCost":"0.0",
        "uuu_P6PlannedStart":"2030-08-06T08:00:00",
        "uuu_P6PlannedTotalUnits":"1827.0",
        "uuu_P6Start":"2030-08-06T08:00:00",
        "uuu_P6RemainingDuration":"1827.0",
        "uuu_P6Finish":"2037-08-05T16:00:00"
    },
    {
        "uuu_P6ActivityId":"A1001",
         "uuu_P6ActivityName":"Act2",
        "uuu_P6EACCost":"0.0",
        "uuu_P6ScheduleVariance":"0.0",
        "uuu_P6ActualTotalUnits":"0.0",
        "uuu_P6ActualStart":"",
        "uuu_P6AtCompletionTotalUnits":"1827.0",
```

```
        "uuu_P6ActualDuration":"0.0",
        "uuu_P6ActualFinish":"",
        "uuu_P6WBSName":"New WBS-1",
        "uuu_P6WBSCode" :"wbs-1",
        "uuu_P6WBSPath":"Msk-P1.1.11",
        "uuu_P6CostVariance":"0.0",
        "uuu_P6BAC":"1461600.0",
        "uuu_P6RemainingEarlyFinish":"2037-08-05T16:00:00",
        "uuu_P6PlannedFinish":"2037-08-05T16:00:00",
        "uuu_P6EVCost":"0.0",
        "uuu_P6PlannedTotalCost":"1461600.0",
        "uuu_P6ActivityType":"Task Dependent",
        "uuu_P6ETC":"1461600.0",
        "uuu_P6RemainingTotalUnits":"1827.0",
        "uuu_P6RemainingEarlyStart":"2030-08-06T08:00:00",
        "uuu_P6AtCompletionDuration":"1827.0",
        "uuu_P6PercentComplete":"0.0",
        "uuu_P6CPIndex":"0.0",
        "uuu_P6VAC":"0.0",
        "uuu_P6PerfPercComplete":"0.0",
        "uuu_P6RemainingTotalCost":"1461600.0",
        "uuu_P6PlannedDuration":"1827.0",
        "uuu_P6ActivityStatus":"Not Started",
        "uuu_P6AtCompletionTotalCost":"1461600.0",
        "uuu_P6PVCost":"0.0",
        "uuu_P6SPIndex":"0.0",
        "uuu_P6ActualTotalCost":"0.0",
        "uuu_P6PlannedStart":"2030-08-06T08:00:00",
        "uuu_P6PlannedTotalUnits":"1827.0",
        "uuu_P6Start":"2030-08-06T08:00:00",
        "uuu_P6RemainingDuration":"1827.0",
        "uuu_P6Finish":"2037-08-05T16:00:00"
    }
```

```
   ]
}
```

Sample Invalid Response

```
{
    "data": [],
    "message": [
        "Empty value for mandatory field : uuu_P6ActivityId"
    ],
    "status": 12029,
    "rest_audit_id": 17155
}
```

Sample Error Response When Invalid activitySheetType Parameter is Given in the Request

An example of an invalid API request and response is provided below.

Sample Invalid Request

```
{
   "options":{
      "project_number":"P-0103",
      "source":"Primavera Cloud",
      "sourceProjectId":"ActSpread",
      "activitySheetType": "system123",
      "removeUnreferencedData": false,
      "activitySheetName1":"System Activity Sheet"

   },
  "data":[  {
        "uuu_P6ActivityId":"A1000",
         "uuu_P6ActivityName":"Act1",
        "uuu_P6EACCost":"0.0",
        "uuu_P6ScheduleVariance":"0.0",
        "uuu_P6ActualTotalUnits":"0.0",
        "uuu_P6ActualStart":"",
```

```
        "uuu_P6AtCompletionTotalUnits":"1827.0",
        "uuu_P6ActualDuration":"0.0",
        "uuu_P6ActualFinish":"",
        "uuu_P6WBSName":"New WBS-1",
        "uuu_P6WBSCode" :"wbs-1",
        "uuu_P6WBSPath":"Msk-P1.1.11",
        "uuu_P6CostVariance":"0.0",
        "uuu_P6BAC":"1461600.0",
        "uuu_P6RemainingEarlyFinish":"2037-08-05T16:00:00",
        "uuu_P6PlannedFinish":"2037-08-05T16:00:00",
        "uuu_P6EVCost":"0.0",
        "uuu_P6PlannedTotalCost":"1461600.0",
        "uuu_P6ActivityType":"Task Dependent",
        "uuu_P6ETC":"1461600.0",
        "uuu_P6RemainingTotalUnits":"1827.0",
        "uuu_P6RemainingEarlyStart":"2030-08-06T08:00:00",
        "uuu_P6AtCompletionDuration":"1827.0",
        "uuu_P6PercentComplete":"0.0",
        "uuu_P6CPIndex":"0.0",
        "uuu_P6VAC":"0.0",
        "uuu_P6PerfPercComplete":"0.0",
        "uuu_P6RemainingTotalCost":"1461600.0",
        "uuu_P6PlannedDuration":"1827.0",
        "uuu_P6ActivityStatus":"Not Started",
        "uuu_P6AtCompletionTotalCost":"1461600.0",
        "uuu_P6PVCost":"0.0",
        "uuu_P6SPIndex":"0.0",
        "uuu_P6ActualTotalCost":"0.0",
        "uuu_P6PlannedStart":"2030-08-06T08:00:00",
        "uuu_P6PlannedTotalUnits":"1827.0",
        "uuu_P6Start":"2030-08-06T08:00:00",
        "uuu_P6RemainingDuration":"1827.0",
        "uuu_P6Finish":"2037-08-05T16:00:00"
    },
```

```
{
      "uuu_P6ActivityId":"A1001",
       "uuu_P6ActivityName":"Act2",
      "uuu_P6EACCost":"0.0",
      "uuu_P6ScheduleVariance":"0.0",
      "uuu_P6ActualTotalUnits":"0.0",
      "uuu_P6ActualStart":"",
      "uuu_P6AtCompletionTotalUnits":"1827.0",
      "uuu_P6ActualDuration":"0.0",
      "uuu_P6ActualFinish":"",
      "uuu_P6WBSName":"New WBS-1",
      "uuu_P6WBSCode" :"wbs-1",
      "uuu_P6WBSPath":"Msk-P1.1.11",
      "uuu_P6CostVariance":"0.0",
      "uuu_P6BAC":"1461600.0",
      "uuu_P6RemainingEarlyFinish":"2037-08-05T16:00:00",
      "uuu_P6PlannedFinish":"2037-08-05T16:00:00",
      "uuu_P6EVCost":"0.0",
      "uuu_P6PlannedTotalCost":"1461600.0",
      "uuu_P6ActivityType":"Task Dependent",
      "uuu_P6ETC":"1461600.0",
      "uuu_P6RemainingTotalUnits":"1827.0",
      "uuu_P6RemainingEarlyStart":"2030-08-06T08:00:00",
      "uuu_P6AtCompletionDuration":"1827.0",
      "uuu_P6PercentComplete":"0.0",
      "uuu_P6CPIndex":"0.0",
      "uuu_P6VAC":"0.0",
      "uuu_P6PerfPercComplete":"0.0",
      "uuu_P6RemainingTotalCost":"1461600.0",
      "uuu_P6PlannedDuration":"1827.0",
      "uuu_P6ActivityStatus":"Not Started",
      "uuu_P6AtCompletionTotalCost":"1461600.0",
      "uuu_P6PVCost":"0.0",
      "uuu_P6SPIndex":"0.0",
```

```
        "uuu_P6ActualTotalCost":"0.0",
        "uuu_P6PlannedStart":"2030-08-06T08:00:00",
        "uuu_P6PlannedTotalUnits":"1827.0",
        "uuu_P6Start":"2030-08-06T08:00:00",
        "uuu_P6RemainingDuration":"1827.0",
        "uuu_P6Finish":"2037-08-05T16:00:00"
   }

   ]
}
```


Sample Invalid Response


```
{
    "data": [],
    "message": [
        "Invalid value was found in a field: [activitySheetType]. Allowed
values: [manual, system]"
    ],
    "status": 12011,
    "rest_audit_id": 17153
}
```


Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-Case	Status	Message
source	source not given	12007	The API request is missing the required information: [source]
source	source value is not having value 'Primavera Cloud'	12008	Invalid value was found in a field: 'source'. Allowed values: [Primavera Cloud]
source	source is having empty value	12035	The API request contains empty value for: [source]. Allowed values: [Primavera Cloud].
projectType	projectType is empty/blank.	12144	The API request contains empty value for: [projectType].

Field Name	Use-Case	Status	Message
projectType	projectType is missing in payload.	12143	The API request is missing the required information: [projectType].
projectType	Some invalid value except "Current"/"Baseline" passed in projectType	12145	Invalid value was found in a field: [projectType]. Allowed values: [Current, Baseline]
projectType	Wrong data type(integer/boolean) value passed for projectType	12142	Invalid value was found in a field: [projectType]. Allowed only alphanumeric value.
projectType	If projectType is "Baseline" and not configured.	12036	Invalid value was found in a field: [projectType]. Baseline not defined for this Project.
project_number	project_number not given.	12018	The API request is missing the required information: [project_number].
project_number	Invalid project_number	602	Project/Shell Number is not correct.
project_number	Inactive project_number	1219	Project status is Inactive.
project_number	project_number is empty/blank	12128	The API request contains empty value for: [project_number].
sourceProjectId	If this sourceProjectId is not configured in the source Unifier shell	12021	The API request contains an invalid value: [sourceProjectId]. Please check if this sourceProjectId has been configured in Unifier.
sourceProjectId	Invalid Special characters sourceProjectId	12022	The API request contains invalid characters in: [sourceProjectId]. The following characters are not allowed: / \ : * ? " < > | ' ="
sourceProjectId	Blank sourceProjectId	12005	The API request is missing the required information: [sourceProjectId]
sourceProjectId	Length of sourceProjectId	12014	Invalid value was found in a field: 'sourceProjectId'. Allowed length: [250]
activitySheetType	Blank activitySheetType value	12010	The API request is missing the required information: [activitySheetType]

Field Name	Use-Case	Status	Message
activitySheetType	Accepting only "system", else throwing validation.	12011	Invalid value was found in a field: 'activitySheetType'. Allowed values: [system]
removeUnreferencedData	Non boolean value provided in removeUnreferencedData	12031	Invalid value was found in a field: [removeUnreferencedData]. Allowed only boolean value.
uuu_P6ActivityId	Activity Id exceeds 120 characters.	12003	Invalid value was found in a field: [uuu_P6ActivityId]. Allowed length: [120]. Activity Id: <Activity Id>
uuu_P6ActivityId	Duplicate Activity ID exists in Sheet.	12001	Invalid value was found in a field: [uuu_P6ActivityId]. This uuu_P6ActivityId already exists. Activity Id: <Activity Id>
uuu_P6ActivityId	If not provided in API	12009	The API request is missing the required information: [uuu_P6ActivityId]. Activity Id: <Activity Id>
uuu_P6ActivityId	Activity Id cannot be blank.	12030	The API request contains an empty value for:[uuu_P6ActivityId].
uuu_P6ActivityName	Activity Name exceeds 250 characters.	12002	Invalid value was found in a field: [uuu_P6ActivityName]. Allowed length: [250]. Activity Id: <Activity Id>
uuu_P6ActivityName	Activity Name Missing in payload.	12004	The API request is missing the required information: [uuu_P6ActivityName].
uuu_P6ActivityName	Activity Name cannot be blank.	12030	The API request contains an empty value for:[uuu_P6ActivityName].
bItemID	Invalid costCode provided - (Non-String) or empty or null or blank	12609	Invalid value was found in a field: [bItemID]. Allowed only string values. Activity ID: <activityId>
bItemID	costCode not existing in Cost Sheet	12610	Invalid value was found in a field [bItemID]. Allowed only the Cost codes present in Cost Sheet. Activity ID: <activityId>

Field Name	Use-Case	Status	Message
bItemID	Inactive costCode provided in the API request	12623	Invalid value was found in a field: [bItemID]. Allowed only active Cost codes. Activity ID: <activityId>
n/a	In the Activity Sheet Detail Form in uDesigner, mandatory elements are missing.	12027	The API request is missing the required information: [ ].
n/a	In the Activity Sheet Detail Form in uDesigner, one or more mandatory elements are empty. Along with this in uDesigner -> Activity Sheet Detail form all mandatory elements should not be empty else we need to throw error. If any of the mandatory elements, referencing the uDesigner -> Activity Sheet Detail form, are missing.	12029	The API request contains an empty value for: [ ].

Get Activities from the System Activity Sheet of a Specific Shell

```
GET
/ws/rest/service/v2/activity/sheet/activities?project_number={project
number}&source_project_id={integrated source project id}
```

Purpose

Retrieves a list of activities from the System Activity Sheet of a shell based on the project number and source project ID mentioned in the query parameters.

Request Parameters

The following parameters can be included in the request.

Field Name	Data Type	Description
project_number	String	A valid 'Active' Unifier shell number (shell number into which the system is going to update project details). For example, "P-0001."
source_project_id	String	The Primavera Cloud project code. For example, "Msk-P1."

Supported Validation Messages and Status Codes

The following messages and status codes can display in the response:

Use-Case	Status	Message
project_number not given or blank	620	Missing Project Number.
Invalid project_number	602	Project/Shell Number is not correct.
Inactive/On Hold project_number	12020	The API request contains an invalid value: [project_number]. Please check the status of this project_number in Unifier.
If this source_project_id is not configured in the source Unifier shell	12205	The API request contains an invalid value: [source_project_id]. Please check if this source_project_id has been configured in Unifier.
Invalid Special characters source_project_id	12204	The API request contains an special characters: [source_project_id]. Please check if this source_project_id should not contain characters: / \\ : * ? \" < > | ' =
Blank source_project_id	12201	The API request is missing the required information: [source_project_id].
Length of source_project_id	12202	Invalid value was found in a field: 'source_project_id'. Allowed length: [250].

Response Format

A JSON object is returned in the following format.

```
{
   "status" : <integer value> ,
   "data" : [ ] ,
   "messages": [ <list of string>] ,
   "rest_audit_id": <id from the rest audit table matching this request>
}
```

If the project number and the source project ID is correct, a success response is displayed.

A failed response returns a message with no data.

Sample Success Response


```
{
    "data": [
        {
            "uuu_P6ActualTotalUnits": 0.0,
            "uuu_P6EACCost": 0.0,
            "uuu_P6ScheduleVariance": 0.0,
            "uuu_P6ActualStart": null,
            "uuu_P6AtCompletionTotalUnits": 1827.0,
            "uuu_P6ActualDuration": 0.0,
            "uuu_P6Finish": "2037-08-05T16:00:00",
            "uuu_P6WBSName": "New WBS-1",
            "uuu_P6WBSPath": "Msk-P1.1.11",
            "uuu_P6CostVariance": 0.0,
            "uuu_P6BAC": 1461600.0,
            "uuu_P6RemainingEarlyFinish": "2037-08-05T16:00:00",
            "uuu_P6PlannedFinish": "2037-08-05T16:00:00",
            "id": 1482360,
            "uuu_P6EVCost": 0.0,
            "uuu_P6ActivityName": "Act1",
            "uuu_P6PlannedTotalCost": 1461600.0,
            "uuu_P6ActivityType": "Task Dependent",
```

```
        "uuu_P6ActualFinish": null,
        "uuu_P6ETC": 1461600.0,
        "uuu_P6RemainingEarlyStart": "2030-08-06T08:00:00",
        "uuu_P6RemainingTotalUnits": 1827.0,
        "uuu_P6ActivityId": "A1000",
        "uuu_P6AtCompletionDuration": 1827.0,
        "uuu_P6PercentComplete": 0.0,
        "uuu_P6CPIndex": 0.0,
        "uuu_P6WBSCode": "wbs-1",
        "uuu_P6VAC": 0.0,
        "uuu_P6PerfPercComplete": 0.0,
        "uuu_P6RemainingTotalCost": 1461600.0,
        "uuu_P6ActivityStatus": "Not Started",
        "uuu_P6PlannedDuration": 1827.0,
        "uuu_P6ActualTotalCost": 0.0,
        "uuu_P6AtCompletionTotalCost": 1461600.0,
        "uuu_P6PVCost": 0.0,
        "uuu_P6SPIndex": 0.0,
        "uuu_P6PlannedStart": "2030-08-06T08:00:00",
        "uuu_P6PlannedTotalUnits": 1827.0,
        "uuu_P6Start": "2030-08-06T08:00:00",
        "uuu_P6RemainingDuration": 1827.0
    },
    {
        "uuu_P6ActualTotalUnits": 0.0,
        "uuu_P6EACCost": 0.0,
        "uuu_P6ScheduleVariance": 0.0,
        "uuu_P6ActualStart": null,
        "uuu_P6AtCompletionTotalUnits": 1827.0,
        "uuu_P6ActualDuration": 0.0,
        "uuu_P6Finish": "2037-08-05T16:00:00",
        "uuu_P6WBSName": "New WBS-1",
        "uuu_P6WBSPath": "Msk-P1.1.11",
        "uuu_P6CostVariance": 0.0,
```

```
        "uuu_P6BAC": 1461600.0,
        "uuu_P6RemainingEarlyFinish": "2037-08-05T16:00:00",
        "uuu_P6PlannedFinish": "2037-08-05T16:00:00",
        "id": 1482361,
        "uuu_P6EVCost": 0.0,
        "uuu_P6ActivityName": "Act2",
        "uuu_P6PlannedTotalCost": 1461600.0,
        "uuu_P6ActivityType": "Task Dependent",
        "uuu_P6ActualFinish": null,
        "uuu_P6ETC": 1461600.0,
        "uuu_P6RemainingEarlyStart": "2030-08-06T08:00:00",
        "uuu_P6RemainingTotalUnits": 1827.0,
        "uuu_P6ActivityId": "A1001",
        "uuu_P6AtCompletionDuration": 1827.0,
        "uuu_P6PercentComplete": 0.0,
        "uuu_P6CPIndex": 0.0,
        "uuu_P6WBSCode": "wbs-1",
        "uuu_P6VAC": 0.0,
        "uuu_P6PerfPercComplete": 0.0,
        "uuu_P6RemainingTotalCost": 1461600.0,
        "uuu_P6ActivityStatus": "Not Started",
        "uuu_P6PlannedDuration": 1827.0,
        "uuu_P6ActualTotalCost": 0.0,
        "uuu_P6AtCompletionTotalCost": 1461600.0,
        "uuu_P6PVCost": 0.0,
        "uuu_P6SPIndex": 0.0,
        "uuu_P6PlannedStart": "2030-08-06T08:00:00",
        "uuu_P6PlannedTotalUnits": 1827.0,
        "uuu_P6Start": "2030-08-06T08:00:00",
        "uuu_P6RemainingDuration": 1827.0
    },
    {
        "uuu_P6ActualTotalUnits": 0.0,
        "uuu_P6EACCost": 0.0,
```

```
"uuu_P6ScheduleVariance": 0.0,
"uuu_P6ActualStart": null,
"uuu_P6AtCompletionTotalUnits": 1827.0,
"uuu_P6ActualDuration": 0.0,
"uuu_P6Finish": "2037-08-05T16:00:00",
"uuu_P6WBSName": "New WBS-1",
"uuu_P6WBSPath": "Msk-P1.1.11",
"uuu_P6CostVariance": 0.0,
"uuu_P6BAC": 1461600.0,
"uuu_P6RemainingEarlyFinish": "2037-08-05T16:00:00",
"uuu_P6PlannedFinish": "2037-08-05T16:00:00",
"id": 1482359,
"uuu_P6EVCost": 0.0,
"uuu_P6ActivityName": "Act1",
"uuu_P6PlannedTotalCost": 1461600.0,
"uuu_P6ActivityType": "Task Dependent",
"uuu_P6ActualFinish": null,
"uuu_P6ETC": 1461600.0,
"uuu_P6RemainingEarlyStart": "2030-08-06T08:00:00",
"uuu_P6RemainingTotalUnits": 1827.0,
"uuu_P6ActivityId": "true",
"uuu_P6AtCompletionDuration": 1827.0,
"uuu_P6PercentComplete": 0.0,
"uuu_P6CPIndex": 0.0,
"uuu_P6WBSCode": "wbs-1",
"uuu_P6VAC": 0.0,
"uuu_P6PerfPercComplete": 0.0,
"uuu_P6RemainingTotalCost": 1461600.0,
"uuu_P6ActivityStatus": "Not Started",
"uuu_P6PlannedDuration": 1827.0,
"uuu_P6ActualTotalCost": 0.0,
"uuu_P6AtCompletionTotalCost": 1461600.0,
"uuu_P6PVCost": 0.0,
"uuu_P6SPIndex": 0.0,
```

```
            "uuu_P6PlannedStart": "2030-08-06T08:00:00",
            "uuu_P6PlannedTotalUnits": 1827.0,
            "uuu_P6Start": "2030-08-06T08:00:00",
            "uuu_P6RemainingDuration": 1827.0
        }
    ],


    "message": [
        "success"
    ],
    "status": 200,
    "rest_audit_id": 17150
}
```


Sample Failed Response

If the API request contains special characters in the `source_project_id`, the following response is generated.


```
{
    "data": [],
    "message": [
        "The API request contains an special characters: [source_project_id]. Please check if this source_project_id should not contain characters: / \\ : * ? \" < > | ' ="
    ],
    "status": 12022,
    "rest_audit_id": 4180
}
```


Create, Update, and Delete Activities in the Manual Activity Sheet of a Specific Shell

`POST /ws/rest/service/v2/activity/sheet/manualactivities`

Purpose

Create, update, and delete activities in the Manual Activity Sheet of a shell for a project number and the activity sheet name specified in the input parameters.

Activities data passed as part of the Activity API will be created, updated, or removed based on the details below:

- Create: If the API request has activities for which the Activity ID is not present in the system, the Activity data will be created or added by the API request.
- Update: If the API request has activities for which the Activity ID is present in the system, the Activity data will be updated by the API request.
- Remove: In the API request options, if the remove unreferenced data value passes as true, all the activities not present in the API request but present in Unifier will be removed.

Prerequisites

The activity sheet should be manually created in the Activity Sheet sub-node.

To link or associate activities to WBS codes in the request parameters, ensure that the WBS codes are already created in the WBS sheet using the WBS REST API manually or by integration.

Notes:

- The API uses fields added in the Integration form of the Activity Sheet (uDesigner). The fields that have not been added in the integration form will still adhere to the logic defined in the next section for auto-population, but will not be present in the API payload or response.
- All the request parameter type related validations are applied based on the definitions present in the Detail form (for example, the length of string). Only the Activity ID and Activity Name length checks will be considered as given in the table below.
- The mandatory elements defined in the Detail form are the mandatory elements in this API. If there are any fields that are not given in the mandatory list below but are still in the Manual Activity Sheet detail form marked as Required, the API will throw an appropriate error if the values are not applicable for those fields.
- For the Manual Activity Sheet:
  - All Timestamp (dates) and related fields are considered only in hours. If the request has minutes, it will be ignored.
  - To avoid time-related discrepancies between the web-based interface and API requests, the system assumes that the time zone for the Activity Sheet is the same as the time zone for the server.
- All read-only attributes of the Detail form are not considered for updates through the API (though the values are passed in the API request).

In the Read-Only field, the behavior should not be changed in the Detail form as it can create corrupt data:

- `uuu_P6ActualTotalCost`
- `uuu_P6ActualTotalUnits`
- `uuu_P6PlannedTotalCost`

- uuu_P6PlannedTotalUnits
- uuu_P6AtCompletionTotalCost
- uuu_P6AtCompletionTotalUnits
- uuu_P6AtCompletionDuration
- uuu_P6RemainingTotalCost
- uuu_P6RemainingTotalUnits
- uuu_P6BAC
- uuu_P6CPIndex
- uuu_P6CSIndex
- uuu_P6CostVariance
- uuu_P6EVCost
- uuu_P6EACCost
- uuu_P6ETC
- uuu_P6SPIndex
- uuu_P6ScheduleVariance
- uuu_P6TCPIndex
- uuu_P6VAC
- uuu_float
- uuu_P6PVCost
- uuu_P6WBSCode
- uuu_P6WBSName
- uuu_P6WBSPath
- uuu_P6PerfPercComplete

Request Parameters

The Request parameters are a JSON Map {} - structure `{"options":{}, "data":[] }`

For the `"options"` JSON Map, the following fields and validations are applicable.

Mandatory Fields For "options" JSON Map

The following mandatory fields are applicable to the `"options"` JSON Map.

Field Name	Data Type	Description
`project_number`	String	A valid 'Active' Unifier shell number (shell number into which the system is going to update project details). For example, "P-0001."

Field Name	Data Type	Description
`activitySheetName`	String	The name of the manual Activity Sheet into which activities are inserted, updated, or removed. If there is no activity sheet present with this name, an error will be thrown. For example, "Activity Sheet 1."

Optional Fields For "options" JSON Map

The following optional fields are applicable to the `"options"` JSON Map.

Field Name	Data Type	Description
`removeUnreferencedData`	Boolean	Accepts only true or false. If this value is true, the activities in the API request will be created and updated. Activities that do not exist in the request data will be removed from the existing activity sheet. If this value is false, the activities in the API request will not be removed from the existing activity sheet. Activities will be created from the request data if they are not existing or updated if they are existing. If the attribute does not pass in the request, the default value is considered as false. The activity data that does not exist in the current API request data will not be removed.

Validation Messages and Status Codes For "options" JSON Map

The following messages are displayed for `"options"` JSON Map.

Use-Case	Status	Message
project_number not given.	12018	The API request is missing the required information: [project_number].
Invalid project_number	602	Project/Shell Number is not correct.
Inactive project_number	1219	Project status is Inactive.
project_number is empty/blank	12128	The API request contains empty value for: [project_number].
If activity sheet name is empty or null	12012	The API request is missing the required information: [activitySheetName].
Activity Sheet Name exceeded 250 characters.	12017	Invalid value was found in a field: [activitySheetName]. Allowed length: [250]
Activity Sheet Name doesn't exist.	12013	The API request contains an invalid value: [activitySheetName]. Please check if this activitySheetName with type=manual has been configured in Unifier.
Non boolean value provided in removeUnreferencedData	12031	Invalid value was found in a field: [removeUnreferencedData]. Allowed only boolean value.

Mandatory Fields For "data" JSON Map

Apart from the list of mandatory fields below, any fields added as *Required* in the Activity Sheet, uDesigner, or Detail form are also considered as mandatory by the API, and appropriate error messages will be displayed if the field does not pass for any of the mandatory fields.

Field Name	Data Type	Description
`uuu_P6ActivityId`	String	The ID or Activity code. This is expected to be unique for each activity in the activity sheet. For example, "A1000".

Field Name	Data Type	Description
uuu_P6ActivityName	String	Name of the Activity.
uuu_P6Start	Timestamp	If this data element is not provided in the API, throw an error. If this value is provided in the API, check if uuu_P6Start >= Project Schedule Start Date; otherwise, throw an error. For example, "2022-12-13T08:00:00".
uuu_P6Finish	Timestamp	If this data element is not provided in the API, throw an error. If this value is provided in the API, check if uuu_P6Finish >= uuu_P6Start; otherwise, throw an error. If Activity Type = Start Milestone If this value is provided in the API, check if uuu_P6Finish = uuu_P6Start; otherwise, throw an error. For example, "2022-12-15T16:00:00."
uuu_P6Duration	Integer	If this data element is not provided in the API, throw an error. If this value is provided in the API, check if it is double & >=0; otherwise, throw an error. If this value is provided in the API, check if it is uuu_P6Duration=Finish-Start; otherwise, throw an error. If this value is not provided in the API, update it as Finish-Start.

Validation Messages and Status Codes For "Data" JSON Map

The following messages are displayed for `"Data"` JSON Map.

Use-Case	Status	Message
Activity Id exceeds 120 characters.	12003	Invalid value was found in a field: [uuu_P6ActivityId]. Allowed length: [250]. Activity Id: <Activity Id>
Duplicate Activity ID exists in Sheet.	12001	Invalid value was found in a field: [uuu_P6ActivityId]. This uuu_P6ActivityId already exists. Activity Id: <Activity Id>
If not provided in API	12009	The API request is missing the required information: [uuu_P6ActivityId]. Activity Id: <Activity Id>
Activity Id cannot be blank.	12030	The API request contains an empty value for:[uuu_P6ActivityId].
Activity Name exceeds 250 characters.	12002	Invalid value was found in a field: [uuu_P6ActivityName]. Allowed length: [250]. Activity Id: <Activity Id>
Activity Name Missing in payload.	12004	The API request is missing the required information: [uuu_P6ActivityName].
Activity Name cannot be blank.	12030	The API request contains an empty value for: [uuu_P6ActivityName].
If not provided in the API, throw an error.	12007	The API request is missing required information: [uuu_P6Start]. Activity ID: <activityId>.
Invalid uuu_P6Start format or null or empty value provided in the API Request.	12620	The API request contains an invalid value: [uuu_P6Start]. Correct date format [yyyy-MM-ddTHH:mm:ss]. Activity ID: <activityId>.

Use-Case	Status	Message
uuu_P6Start provided is on holiday or non-working day	12672	Invalid value was found in a field: [uuu_P6Start]. Please provide a working day according to the calendar. Activity ID: <activityId>
If uuu_P6Start < Project Schedule Start Date	12041	Invalid value was found in a field [uuu_P6Start]. The value provided should be greater than or equal to Project Schedule Start Date. Activity ID: <activityId>
Time provided is outside the working hours	12065	Invalid value was found in a field [uuu_P6Start]. Cannot update uuu_P6Start as the time is outside the working hours according to the calendar. Activity ID: <activityId>

Optional Fields

The following list of fields are validated only if they are added in the Integration form. If they are present in the Integration form, they will be ignored and the values will not update in the Activity Sheet.

Field Name	Data Type	Description
`uuu_P6ActivityCalendar`	String	If this value is not provided in the API, it will be populated with the default value defined in the Activity Sheet properties. If the calendar is explicitly specified in the API, validate that the calendar name exists as custom calendars or company calendars. For example, "Company Calendar".

Field Name	Data Type	Description
uuu_P6ActivityStatus	String	If this value is provided in the API, check for the actual start value and proceed with updating accordingly. If this value is not provided in the API, it will be considered as "Not Started." New activities and the current status will be considered for existing activities. If Activity Type = Start Milestone If uuu_P6ActualStart or uuu_P6ActualFinish is provided and uuu_P6ActivityStatus is not provided, the status will be considered as Completed. If uuu_P6ActualStart or uuu_P6ActualFinish is provided and uuu_P6ActivityStatus != Completed then throw an error. If uuu_P6ActualStart and uuu_P6ActualFinish is empty or not provided and uuu_P6ActivityStatus != Not Started, throw an error.

Field Name	Data Type	Description
uuu_P6PlannedStart	Timestamp	The planned start of an activity. If this value is provided in the API, check if it is in the correct date format; otherwise, throw an error. If this value is provided in the API, check if the date entered >= Project Schedule Start Date; otherwise, throw an error. For Status = Not Started If this value is not provided in the API, default it to P6Start. If this value is provided in the API, check if P6Start = PlannedStart; otherwise, throw an error. For example, "2022-12-13T08:00:00."

Field Name	Data Type	Description
uuu_P6PlannedFinish	Timestamp	The planned finish of an activity. If this value is provided in the API, check if it is in the correct date format; otherwise, throw an error. If this value is provided in the API, check if the date entered >= Planned Start Date; otherwise, throw an error. If this value is not provided in the API, default it to P6Finish. If Status = Not Started If this value is provided in the API, check if P6Finish = PlannedFinish; otherwise, throw an error. If Activity Type = Start Milestone If this value is provided in the API, check if uuu_P6PlannedFinish = uuu_P6PlannedStart; otherwise, throw an error. For example, "2022-12-15T16:00:00."
uuu_P6PlannedFinish	Integer	If this value is provided in the API, check if its value is a positive integer; otherwise, throw an error. If this value is provided in the API, check if its uuu_P6PlannedDuration=uuu_P6PlannedFinish -uuu_P6PlannedStart; otherwise, throw an error. If this value is not provided in the API, update it as uuu_P6PlannedFinish -uuu_P6PlannedStart. For example, 10.

Field Name	Data Type	Description
uuu_P6ActualStart	Timestamp	If uuu_P6ActivityStatus =In Progress OR Completed This will be updated from the API Request without any changes to uuu_P6ActivityStatus. If uuu_P6ActivityStatus = Not Started If it is not provided in the API request, uuu_P6ActivityStatus will remain "Not Started." If it is provided in the API request and the uuu_P6ActualFinish is not provided, the uuu_P6ActivityStatus will be updated to "In Progress." If it is provided in the API request, the uuu_P6ActualFinish is not provided and the uuu_P6ActivityStatus is provided in the API but is not equal to In Progress or Completed, throw an error. For example, "2022-12-13T16:00:00."

Field Name	Data Type	Description
uuu_P6ActualFinish	Timestamp	If uuu_P6ActivityStatus = Not Started OR In Progress If it is provided in the API request, the uuu_P6ActivityStatus will be updated to "Completed." If it is provided in the API request, and the uuu_P6ActivityStatus is also provided in the API but is not equal to Completed, throw an error. If Activity Type = Start Milestone If uuu_P6ActivityStatus = completed and this value is provided in the API, check if uuu_P6ActualFinish = uuu_P6ActualStart; otherwise, throw an error. For example, "2022-12-13T16:00:00."
uuu_P6RemainingEarlyStart	Timestamp	If this value is provided in the API, check if it is in the correct date format; otherwise, throw an error. If this value is provided in the API, check if date entered >= Project Schedule Start Date; otherwise, throw an error. For uuu_P6ActivityStatus = Not Started If this value is not provided in the API then default it to P6Start. For uuu_P6ActivityStatus = Completed If this value is provided in the API, throw an error. For example, "2022-12-13T08:00:00."

Field Name	Data Type	Description
uuu_P6RemainingEarlyFinish	Timestamp	If this value is provided in the API, check if it is in correct date format; otherwise, throw an error. If this value is provided in the API, check if the date entered >= Remaining Start Date; otherwise, throw an error. If this value is not provided in the API, default it to P6Finish. For uuu_P6ActivityStatus = Completed If this value is provided in the API, throw an error. For example, "2022-12-15T16:00:00."
uuu_P6RemainingDuration	Integer	If this value is provided in the API, check if it is a positive integer value; otherwise, throw an error. If this value is provided in the API, check if it is uuu_P6RemainingDuration =uuu_P6RemainingEarlyFinish-uuu_P6RemainingEarlyStart; otherwise, throw an error. If this value is not provided in the API, update it as Finish-Start. For uuu_P6ActivityStatus = Completed If this value is provided in the API, throw an error. For example, 10.

Field Name	Data Type	Description
uuu_activity_constraint_type	String	If this value is provided in the API, check if it is [As soon as possible]; otherwise, throw an error. If this value is not provided in the API, update it as "As soon as possible."
uuu_duration_type	String	If this value is provided in the API, check if it is [Fixed Duration, Fixed Units, Fixed units/time]; otherwise, throw an error. If this value is not provided in the API, update it as "Fixed Duration."
uuu_P6ActivityType	String	If this value is provided in the API then check if it is [Task Dependent, Start Milestone]; otherwise, throw an error. If this value is not provided in the API, it will be populated with the value - Task Dependant. If uuu_P6ActivityType value is provided in the API and is updated to Start Milestone, check if Assignments are existing. If assignments exist throw an error. You will must manually remove the assignments to proceed. If the uuu_P6ActivityType value is provided in the API as Task Dependent and uuu_P6Duration is 0, throw an error.

Field Name	Data Type	Description
bItemID	String	This can be updated from the API Request. The full path of the CBS Code with the entire hierarchy present in the Cost Sheet has to be given, otherwise it will throw an error. "~~" will be used as path separators for the hierarchy. If an Inactive costCode is provided in the request, the system checks for the following: If it creates a new activity, the system will throw an error related to inactive costCode. If it is an update of the activity, the system will compare the existing costCode for that activity. If it is same as the existing one, the system will not throw an error. Instead, the system will skip the update of the costCode. But, if it is not same as the existing costCode, the system will throw an error related to the inactive costCode. For example, "C-001~~C-0011."
uuu_cmwbs_picker	String	This can be updated from the API Request. If the WBS Sheet does not exist in the shell, throw an error. If the WBS code does not exist in the WBS Sheet throw an error. For example, "P-001.WBS1."

Field Name	Data Type	Description
uuu_P6PercentComplete	Integer	This can be updated in the API Request. For uuu_P6ActivityStatus = Not Started This value should be zero. If the value is provided in the API Request and the value is not zero, throw an error. For uuu_P6ActivityStatus = In Progress If this value is provided in the API, it should be in the range of [0-100]. For uuu_P6ActivityStatus = Completed This value should be 100. If the value is provided in the API Request and it is not equal to 100, throw error. For example, 50.

Validation Messages and Status Codes For "Data" JSON Map

The following messages are displayed for "Data" JSON Map.

Use-case	Status	Message
Invalid uuu_P6ActivityCalendar value provided (Non-String) or null or empty value provided in the API Request.	12045	Invalid value was found in a field [uuu_P6ActivityCalendar]. Allowed only string values. Activity ID: <activityId>
Calendar not configured in the Unifier Shell/Project	12046	Invalid value was found in a field [uuu_P6ActivityCalendar]. Allowed only Calendars configured in the respective Unifier Project/Shell. Activity ID: <activityId>

Use-case	Status	Message
Invalid value or format or null or empty value provided in the API Request	12042	Invalid value was found in a field [uuu_P6ActivityStatus]. Allowed values: [Not Started, In Progress, Completed]. Activity ID: <activityId>
If uuu_P6ActualStart is provided and uuu_P6ActivityStatus is provided as Not Started.	12051	Invalid value was found in a field: [uuu_P6ActivityStatus]. Cannot update uuu_P6ActivityStatus to Not Started, if uuu_P6ActualStart is not empty. Activity ID: <activityId>
If uuu_P6ActualFinish is provided and uuu_P6ActivityStatus is provided as "In Progress".	12051	Invalid value was found in a field: [uuu_P6ActivityStatus]. Cannot update uuu_P6ActivityStatus to In Progress, if uuu_P6ActualFinish is not empty. Activity ID: <activityId>
If uuu_P6ActualStart is empty or not provided in the API and Status is equal to In Progress or Completed	12052	Invalid value was found in a field: [uuu_P6ActivityStatus]. Cannot update uuu_P6ActivityStatus to In Progress or Completed, if uuu_P6ActualStart is empty. Activity ID: <activityId>
If uuu_P6ActualFinish is empty or not provided in the API and Status is equal to Completed	12053	Invalid value was found in a field: [uuu_P6ActivityStatus]. Cannot update uuu_P6ActivityStatus to Completed, if uuu_P6ActualFinish is empty. Activity ID: <activityId>

Use-case	Status	Message
If uuu_P6ActivityType = Start Milestone, and If uuu_P6ActualStart or uuu_P6ActualFinish is provided and uuu_P6ActivityStatus != Completed	12063	Invalid value was found in a field [uuu_P6ActivityStatus]. Cannot update uuu_P6ActivityStatus to Not Started or In Progress, if uuu_P6ActivityType = Start Milestone and either uuu_P6ActualStart or uuu_P6ActualFinish is not empty. Activity ID: <activityId>
If uuu_P6ActivityType = Start Milestone, and If uuu_P6ActualStart and uuu_P6ActualFinish are empty and uuu_P6ActivityStatus != Not Started	12062	Invalid value was found in a field [uuu_P6ActivityStatus]. Cannot update uuu_P6ActivityStatus to In Progress or Completed, if uuu_P6ActivityType = Start Milestone and uuu_P6ActualStart or uuu_P6ActualFinish are empty. Activity ID: <activityId>
Invalid uuu_P6PlannedStart format or null or empty value provided in the API Request.	12620	The API request contains an invalid value: [uuu_P6PlannedStart]. Correct date format [yyyy-MM-ddTHH:mm:ss]. Activity ID: <activityId>.
uuu_P6PlannedStart provided is on holiday or non-working day	12672	Invalid value was found in a field: [uuu_P6PlannedStart]. Please provide a working day according to the calendar. Activity ID: <activityId>
If uuu_P6PlannedStart < Project Schedule Start Date	12041	Invalid value was found in a field [uuu_P6PlannedStart]. The value provided should be greater than or equal to Project Schedule Start Date. Activity ID: <activityId>

Use-case	Status	Message
If Activity Status = Not Started & P6Start != PlannedStart	12039	Invalid value was found in a field [uuu_P6PlannedStart]. The value provided should be equal to uuu_P6Start, if uuu_P6ActivityStatus = Not Started. Activity ID: <activityId>
Time provided is outside the working hours	12065	Invalid value was found in a field [uuu_P6PlannedStart]. Cannot update uuu_P6PlannedStart as the time is outside the working hours according to the calendar. Activity ID: <activityId>
Invalid uuu_P6PlannedFinish format or null or empty value provided in the API Request.	12620	The API request contains an invalid value: [uuu_P6PlannedFinish]. Correct date format [yyyy-MM-ddTHH:mm:ss]. Activity ID: <activityId>.
uuu_P6PlannedFinish provided is on holiday or non-working day	12672	Invalid value was found in a field [uuu_P6PlannedFinish]. Please provide a working day according to the calendar. Activity ID: <activityId>
If uuu_P6PlannedFinish < uuu_P6PlannedStart	12038	Invalid value was found in a field [uuu_P6PlannedFinish]. The value provided should be greater than or equal to uuu_P6PlannedStart. Activity ID: <activityId>
If Activity Status = Not Started & P6Finish != PlannedFinish	12039	Invalid value was found in a field [uuu_P6PlannedFinish]. The value provided should be equal to uuu_P6Finish, if uuu_P6ActivityStatus = Not Started. Activity ID: <activityId>

Use-case	Status	Message
If uuu_P6ActivityType = Start Milestone, and if uuu_P6PlannedFinish != uuu_P6PlannedStart	12061	Invalid value was found in a field [uuu_P6PlannedFinish]. The value provided should be equal to uuu_P6PlannedStart, if uuu_P6ActivityType = Start Milestone. Activity ID: <activityId>
Time provided is outside the working hours	12065	Invalid value was found in a field [uuu_P6PlannedFinish]. Cannot update uuu_P6PlannedFinish as the time is outside the working hours according to the calendar. Activity ID: <activityId>
If uuu_P6PlannedDuration value provided is null	12047	Invalid value was found in a field [uuu_P6PlannedDuration]. Activity ID: <activityId>
Invalid uuu_P6PlannedDuration(Not Integer) or empty	12616	Invalid value was found in a field [uuu_P6PlannedDuration]. Allowed only positive decimal value. Activity ID: <activityId>
uuu_P6PlannedDuration is less than zero or exceeds 20000	12517	Invalid value was found in a field [uuu_P6PlannedDuration]. Allowed Range [0-20000]. Activity ID: <activityId>
If uuu_P6PlannedDuration != uuu_P6PlannedFinish - uuu_P6PlannedStart	12037	Invalid value was found in a field [uuu_P6PlannedDuration]. The value provided should be equal to (uuu_P6PlannedFinish - uuu_P6PlannedStart) of the activity, as per the calendar defined. Activity ID: <activityId>

Use-case	Status	Message
Invalid uuu_P6ActualStart format or null or empty value provided in the API Request	12620	The API request contains an invalid value: [uuu_P6ActualStart]. Correct date format [yyyy-MM-ddTHH:MM:SS]. Activity ID: <activityId>
If uuu_P6ActualStart provided is on holiday or non-working day	12672	Invalid value was found in a field: [uuu_P6ActualStart]. Please provide a working day according to the calendar. Activity ID: <activityId>
If uuu_P6ActualStart < Project Schedule Start Date	12041	Invalid value was found in a field [uuu_P6ActualStart]. The value provided should be greater than or equal to Project Schedule Start Date. Activity ID: <activityId>
If Activity Status = In Progress and uuu_P6ActualStart != P6Start	12048	Invalid value was found in a field [uuu_P6ActualStart]. The value provided should be equal to uuu_P6Start, if uuu_P6ActivityStatus = In Progress. Activity ID: <activityId>
If Activity Status = Completed and uuu_P6ActualStart != P6Start	12050	Invalid value was found in a field [uuu_P6ActualStart]. The value provided should be equal to uuu_P6Start, if uuu_P6ActivityStatus = Completed. Activity ID: <activityId>
If uuu_P6ActualStart > Today's date	12055	Invalid value was found in a field [uuu_P6ActualStart]. The value cannot be later than today. Activity ID: <activityId>

Use-case	Status	Message
Time provided is outside the working hours	12065	Invalid value was found in a field [uuu_P6ActualStart]. Cannot update uuu_P6ActualStart as the time is outside the working hours according to the calendar. Activity ID: <activityId>
Invalid uuu_P6ActualFinish format or null or empty value provided in the API Request.	12620	The API request contains an invalid value: [uuu_P6ActualFinish]. Correct date format [yyyy-MM-ddTHH:MM:SS]. Activity ID: <activityId>
If uuu_P6ActualFinish is provided is on holiday or non-working day	12672	Invalid value was found in a field [uuu_P6ActualFinish]. Please provide a working day according to the calendar. Activity ID: <activityId>
If uuu_P6ActualFinish < uuu_P6ActualStart	12038	Invalid value was found in a field [uuu_P6ActualFinish]. The value provided should be greater than or equal to uuu_P6ActualStart. Activity ID: <activityId>
If Activity Status = Completed and uuu_P6ActualStart != P6Start	12050	Invalid value was found in a field [uuu_P6ActualFinish]. The value provided should be equal to uuu_P6Finish, if uuu_P6ActivityStatus = Completed. Activity ID: <activityId>
If uuu_P6ActualFinish > Today's date	12055	Invalid value was found in a field [uuu_P6ActualFinish]. The value cannot be later than today. Activity ID: <activityId>

Use-case	Status	Message
If uuu_P6ActivityType = Start Milestone, and if uuu_P6ActualFinish != uuu_P6ActualStart	12061	Invalid value was found in a field [uuu_P6ActualFinish]. The value provided should be equal to uuu_P6ActualStart , if uuu_P6ActivityType = Start Milestone. Activity ID: <activityId>
Time provided is outside the working hours	12065	Invalid value was found in a field [uuu_P6ActualFinish]. Cannot update uuu_P6ActualFinish as the time is outside the working hours according to the calendar. Activity ID: <activityId>
Invalid uuu_P6RemainingEarlyStart format or null or empty value provided in the API Request.	12620	The API request contains an invalid value: [uuu_P6RemainingEarlyStart]. Correct date format [yyyy-MM-ddTHH:mm:ss]. Activity ID: <activityId>.
uuu_P6RemainingEarlyStart provided is on holiday or non-working day	12672	Invalid value was found in a field: [uuu_P6RemainingEarlyStart]. Please provide a working day according to the calendar. Activity ID: <activityId>
If uuu_P6RemainingEarlyStart < Project Schedule Start Date	12041	Invalid value was found in a field [uuu_P6RemainingEarlyStart]. The value provided should be greater than or equal to Project Schedule Start Date. Activity ID: <activityId>

Use-case	Status	Message
If value provided in the API Request for Activity Status=Completed	12040	Invalid value was found in a field [uuu_P6RemainingEarlyStart]. Cannot update uuu_P6RemainingEarlyStart if uuu_P6ActivityStatus = Completed. Activity ID: <activityId>
If Activity Status = Not Started & P6Start != uuu_P6RemainingEarlyStart	12039	Invalid value was found in a field [uuu_P6RemainingEarlyStart]. The value provided should be equal to uuu_P6Start, if uuu_P6ActivityStatus = Not Started. Activity ID: <activityId>
Time provided is outside the working hours	12065	Invalid value was found in a field [uuu_P6RemainingEarlyStart]. Cannot update uuu_P6RemainingEarlyStart as the time is outside the working hours according to the calendar. Activity ID: <activityId>
Invalid uuu_P6RemainingEarlyFinish format or null or empty value provided in the API Request.	12620	The API request contains an invalid value: [uuu_P6RemainingEarlyFinish]. Correct date format [yyyy-MM-ddTHH:mm:ss]. Activity ID: <activityId>.
uuu_P6RemainingEarlyFinish provided is on holiday or non-working day	12672	Invalid value was found in a field: [uuu_P6RemainingEarlyFinish]. Please provide a working day according to the calendar. Activity ID: <activityId>

Use-case	Status	Message
If uuu_P6RemainingEarlyFinish < uuu_P6RemainingEarlyStart	12038	Invalid value was found in a field [uuu_P6RemainingEarlyFinish]. The value provided should be greater than or equal to uuu_P6RemainingEarlyStart. Activity ID: <activityId>
If value provided in the API Request for Activity Status=Completed	12040	Invalid value was found in a field [uuu_P6RemainingEarlyFinish]. Cannot update uuu_P6RemainingEarlyFinish if uuu_P6ActivityStatus = Completed. Activity ID: <activityId>
If Activity Status = Not Started & P6Finish != uuu_P6RemainingEarlyFinish	12039	Invalid value was found in a field [uuu_P6RemainingEarlyFinish]. The value provided should be equal to uuu_P6Finish, if uuu_P6ActivityStatus = Not Started. Activity ID: <activityId>
Time provided is outside the working hours	12065	Invalid value was found in a field [uuu_P6RemainingEarlyFinish]. Cannot update uuu_P6RemainingEarlyFinish as the time is outside the working hours according to the calendar. Activity ID: <activityId>
If uuu_P6RemainingDuration value provided is null	12047	Invalid value was found in a field [uuu_P6RemainingDuration]. Activity ID: <activityId>
Invalid uuu_P6RemainingDuration(Not Integer) or empty	12616	Invalid value was found in a field: [uuu_P6RemainingDuration]. Allowed only positive decimal value. Activity ID: <activityId>

Use-case	Status	Message
uuu_P6RemainingDuration is less than zero or exceeds 20000	12617	Invalid value was found in a field: [uuu_P6RemainingDuration]. Allowed Range [0-20000]. Activity ID: <activityId>
If uuu_P6RemainingDuration != uuu_P6RemainingEarlyFinish - uuu_P6RemainingEarlyStart	12037	Invalid value was found in a field [uuu_P6RemainingDuration]. The value provided should be equal to (uuu_P6RemainingEarlyFinish - uuu_P6RemainingEarlyStart) of the activity, as per the calendar defined. Activity ID: <activityId>
Nonzero value provided in the API Request for Activity Status=Completed	12040	Invalid value was found in a field [uuu_P6RemainingDuration]. Cannot update uuu_P6RemainingDuration, if uuu_P6ActivityStatus = Completed. Activity ID: <activityId>
Invalid uuu_activity_constraint_type value provided (Non-String) or null or empty value provided in the API Request.	12043	Invalid value was found in a field [uuu_activity_constraint_type]. Allowed values: [As soon as possible]. Activity ID: <activityId>
Invalid uuu_duration_type value provided (Non-String) or null or empty value provided in the API Request.	12054	Invalid value was found in a field [uuu_duration_type]. Allowed values: [Fixed Duration, Fixed Units, Fixed units/time]. Activity ID: <activityId>
Invalid uuu_P6ActivityType value provided (Non-String) or null or empty value provided in the API Request.	12044	Invalid value was found in a field [uuu_P6ActivityType]. Allowed values: [Task Dependent, Start Milestone]. Activity ID: <activityId>

Use-case	Status	Message
If uuu_P6ActivityType value is provided as 'Start Milestone' and Assignments are existing	12064	Invalid value was found in a field [uuu_P6ActivityType]. Cannot update uuu_P6ActivityType to Start Milestone, if the activity has assigned resources. Activity ID: <activityId>
If uuu_P6ActivityType value is Task Dependent and uuu_P6Duration is 0, throw error	12066	Invalid value was found in a field [uuu_P6ActivityType]. Cannot update uuu_P6ActivityType to Task Dependent, if the uuu_P6Duration is 0. Activity ID: <activityId>
Invalid costCode provided - (Non-String) or empty or null or blank	12609	Invalid value was found in a field: [costCode]. Allowed only string values. Activity ID: <activityId>
costCode not existing in Cost Sheet	12610	Invalid value was found in a field [costCode]. Allowed only the Cost codes present in Cost Sheet. Activity ID: <activityId>
Inactive costCode provided in the API request	12623	Invalid value was found in a field: [costCode]. Allowed only active Cost codes. Activity ID: <activityId>
Invalid WBS Code provided - (Non-String) or empty or null or blank	12056	Invalid value was found in a field: [uuu_cmwbs_picker]. Allowed only string values. Activity ID: <activityId>
WBS Code not existing in WBS Sheet or WBS Sheet is not existing	12057	Invalid value was found in a field [uuu_cmwbs_picker]. Allowed only the WBS codes present in WBS Sheet. Activity ID: <activityId>
If uuu_P6PercentComplete value provided is null	12047	Invalid value was found in a field [uuu_P6PercentComplete]. Activity ID: <activityId>

Use-case	Status	Message
Invalid uuu_P6PercentComplete (Not Integer or Not Double) or empty	12616	Invalid value was found in a field: [uuu_P6PercentComplete]. Allowed only positive integer value. Activity ID: <activityId>
uuu_P6PercentComplete is less than zero or exceeds 100	12058	Invalid value was found in a field: [uuu_P6PercentComplete]. Allowed Range [0-100]. Activity ID: <activityId>
Nonzero value provided in the API Request for uuu_P6ActivityStatus =Not Started	12059	Invalid value was found in a field [uuu_P6PercentComplete]. Value provided should be 0, if uuu_P6ActivityStatus = Not Started. Activity ID: <activityId>
If uuu_P6ActivityStatus = In Progress and uuu_P6PercentComplete is equal to 100	12067	Invalid value was found in a field [uuu_P6PercentComplete]. Value provided cannot be 100, if uuu_P6ActivityStatus = In Progress. Activity ID: <activityId>
If uuu_P6ActivityStatus = Completed and uuu_P6PercentComplete not equal to 100	12060	Invalid value was found in a field [uuu_P6PercentComplete]. Value provided should be 100, if uuu_P6ActivityStatus = Completed. Activity ID: <activityId>

Input Request Data Validations

For Input Request data validations which are not included in the request parameters section are listed below.

Scenario	Status	Message
If any of the mandatory elements, referencing uDesigner -> Activity Sheet Detail form, is missing.	12027	Mandatory fields are missing: {field name}.

Scenario	Status	Message
If any of the mandatory elements, referencing uDesigner -> Activity Sheet Detail form, is empty.	12029	Empty value for mandatory field : {field name}.

Sample Response Format

```
JSON Map  {
                              "status" : <integer value> ,
                              "data" : [ ] ,
                               "messages": [ <list of string>] ,
                              "rest_audit_id": <id from the rest audit
table matching this request>
                           }
```

where

- "status" is of Integer data type
- "data" is a List of Maps data type
- "messages" is a list if String data type
- "rest_audit_id" is of integer data type

Sample Request

The following Sample Request is based on the Integration form designed in the respective environment. As mentioned above, integration form fields derive requests and responses in this API.

```
{
   "options":{
      "project_number":"P-0115",
      "removeUnreferencedData": true,
      "activitySheetName":"testSheet"
   },
  "data":[

 {
            "uuu_P6ActivityId": "A1000",
```

```
            "uuu_P6ActivityName": "act0123345",
            "uuu_P6Start": "2023-11-02T08:00:00",
            "uuu_P6Finish": "2023-11-02T10:00:00",
            "uuu_P6ActivityType": "Task Dependent",
            "uuu_P6ActivityStatus": "Not Started",
            "uuu_activity_constraint_type": "As Soon As Possible",
            "uuu_duration_type": "Fixed Duration",
            "uuu_P6ActivityCalendar": "Project/Shell Calendar",
             "uuu_cmwbs_picker": "P-0115.WBSCODE10",
            "uuu_P6Duration": 2.0,
            "uuu_P6PlannedDuration":2.0,
            "uuu_P6WBSCode": "AV1",
            "bItemID": "01000~~01100",
            "CheckPullDown": "No",
             "uuu_P6ETCComputeType":"1/(BAC-EV)",
    },
     {
            "uuu_P6ActivityId": "A1010",
            "uuu_P6ActivityName": "act0123345",
            "uuu_P6Start": "2023-11-02T08:00:00",
            "uuu_P6Finish": "2023-11-02T10:00:00",
            "uuu_P6ActivityType": "Task Dependent",
            "uuu_P6ActivityStatus": "Not Started",
            "uuu_activity_constraint_type": "As Soon As Possible",
            "uuu_duration_type": "Fixed Duration",
             "uuu_cmwbs_picker": "P-0115.WBSCODE1",
            "uuu_P6Duration": 2.0,
            "uuu_P6PlannedDuration":2.0,
            "uuu_P6WBSCode": "AV1",
            "bItemID": "01000~~01100",
            "CheckPullDown": "No",
             "uuu_P6ETCComputeType":"1/(BAC-EV)",
    }
```

```
   ]
}
```

Sample Success Response

A Sample Response from the API is listed below. The response returns the database ID of the Activities created newly in the activity table in addition to the activity data that is created or updated.


```
{
    "data": [
        {
            "uuu_P6Duration": 2.0,
            "id": 1482868,
            "uuu_P6EVCost": 0.0,
            "uuu_P6PlannedTotalCost": 0.0,
            "uuu_P6ActivityType": "Task Dependent",
            "uuu_P6ActivityId": "A1000",
            "CheckPullDown": "No",
            "uuu_P6WBSCode": "WBSCODE10",
            "uuu_P6RemainingTotalCost": 0.0,
            "bItemID": "01000~~01100",
            "uuu_P6ActivityStatus": "Not Started",
            "uuu_P6PlannedDuration": 2.0,
            "uuu_cmwbs_picker": "P-0115.WBSCODE10",
            "uuu_P6Finish": "2023-11-02T10:00:00",
            "uuu_P6WBSPath": "P-0115.WBSCODE10",
            "uuu_P6ActivityCalendar": "Project/Shell Calendar",
            "uuu_P6ActivityName": "act0123345",
            "uuu_P6ETCComputeType": "Remaining Cost for Activity",
            "uuu_P6AtCompletionDuration": 2.0,
            "uuu_P6ActualTotalCost": 0.0,
            "uuu_P6Start": "2023-11-02T08:00:00"
        },
        {
```

```
            "uuu_P6Duration": 2.0,
            "id": 1482869,
            "uuu_P6EVCost": 0.0,
            "uuu_P6PlannedTotalCost": 0.0,
            "uuu_P6ActivityType": "Task Dependent",
            "uuu_P6ActivityId": "A1010",
            "CheckPullDown": "No",
            "uuu_P6WBSCode": "WBSCODE1",
            "uuu_P6RemainingTotalCost": 0.0,
            "bItemID": "01000~~01100",
            "uuu_P6ActivityStatus": "Not Started",
            "uuu_P6PlannedDuration": 2.0,
            "uuu_cmwbs_picker": "P-0115.WBSCODE1",
            "uuu_P6Finish": "2023-11-02T10:00:00",
            "uuu_P6WBSPath": "P-0115.WBSCODE1",
            "uuu_P6ActivityName": "act0123345",
            "uuu_P6ETCComputeType": "Remaining Cost for Activity",
            "uuu_P6AtCompletionDuration": 2.0,
            "uuu_P6ActualTotalCost": 0.0,
            "uuu_P6Start": "2023-11-02T08:00:00"
        }
    ],
    "message": [
        "success"
    ],
    "status": 200,
    "rest_audit_id": 20581
}
```


Create Manual Activity Sheet

```
Post /ws/rest/service/v2/activity/sheet/activitysheet
```

Purpose

Creates or updates an activity sheet in a specified Unifiershell based on a project number. Only one activity sheet can be created per request.

The REST service creates an activity sheet if the request data[] contains an activity sheet name which is not present in the system.

The REST service updates an activity sheet if the request data[] contains activities for an existing activity sheet name for a project in the system.

Prerequisites

Ensure you have:

- The required **Activity Sheet Services** permissions under **Activity Manager**
- Created a shell

Request Format

Send an API request as a JSON Map with the following structure:

```
{
   "options":{"project_number": "<value>"},
   "data":[]
}
```

Request Parameters - Options Map

Specify the following parameters in the Options JSON map:

Request Parameter	Required ?	Data Type	Description
project_number	Yes	String	A valid 'Active' shell number.

Request Parameters - Data [] List

Specify the following parameters in the Options JSON map:

Request Parameter	Required ?	Data Type	Description
name	Yes	String	Name of the manual activity sheet. It must be unique for each activity sheet in the shell.
schedule_type	Yes	String	The schedule type of the activity. Valid values include: "Duration", and "Resource".

Request Parameter	Required ?	Data Type	Description
timezone	Yes	String	The timezone configured in Unifier. **Note**: timezone is not updated when you choose to update the activity sheet.
description	No	String	A description of the manual activity sheet.
status	No	String	The status of the manual activity sheet. Valid values include: "Active" (default) or "Inactive" Status is not considered when you choose to create a manual activity sheet using this REST service.
calendar	No	String	The name of a calendar associated with a project/shell. Defaults to "Project/Shell Calendar".
act_sch_attr_start	No	String	The data source for the project schedule start date. Valjd values include: "Manual" (default) and "From Shell Attribute".
act_sch_start_date	No	Date	The project schedule start date. For manual schedule source (Create Activity sheet), it defaults to the current date. If the schedule type is From Shell Details, it uses the from shell details start date. [In this case update of schedule date will be skip. In case of update(for Manual) if the field has not been provided, it will take the old date.] - Can you explain this more clearly?
uuu_duration_type	No	String	Valid values include: "Fixed Duration" (default), "Fixed Units", or "Fixed units/time".
act_id_prefix	No	String	Defaults to "A".
act_id_suffix	No	Integer	An activity ID suffix value between 1 to 999999. Defaults to 1000.
act_id_incr	No	Integer	An activity ID increment value between 1 to 1000. Defaults to "10".
planning_rate_sheet	No	String	An existing rate sheet associated with the activity sheet. Defaults to the "Master Rate Sheet".

Request Parameter	Required ?	Data Type	Description
actual_rate_sheet	No	String	An existing actual rate sheet associated with the activity sheet. Defaults to the "Master Rate Sheet".
uuu_P6ETCComputeType	No	Integer	Specify a alid value 1 through 5, wherein uuu_P6ETCComputeType is computed as follows: "1" (default): Remaining Cost for Activity "2": 1 x (BAC - EV) "3": (1 / CPI) x (BAC - EV) "4": (1 / (CPI x SPI)) x (BAC - EV) "5": (BAC-EV)
uuu_P6ETCUserValue	No	Float	If ETCTechnique is 5 , this value(Performance Factor) is accepted as a positive floating value. If ETCTechnique in the request is between 1 and 4, this value is ignored and is updated as 0.0
created by	No	String	Defaults to the full name of the Owner company administrator. If the field has not been passed, or has a null or empty value, the Company Administrator's name is considered.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <id from the audit table>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Request

```
{
```

```
    "options": {
       "project_number": "P-0038"
    },
    "data": [
     {

            "name": "ManualSheetSample",
            "description": "This is a sample activity sheet",
            "status": "Active",
            "calendar": "custom4",
            "act_sch_attr_start" :  "Manual",
            "act_sch_start_date":"2023-08-25",
            "uuu_duration_type": "Fixed Duration",
            "schedule_type" : "Resource",
            "timezone" : "UTC-10:00",
            "act_id_prefix" : "A",
            "act_id_suffix" : 1000,
            "act_id_incr" : 10,
            "planning_rate_sheet": "RS1",
            "actual_rate_sheet":"RS1",
            "uuu_P6ETCComputeType": 5 ,
            "uuu_P6ETCUserValue": 0.5

        }
    ]
}
```

Sample Success Response

To create a manual activity sheet, send a request in the following format:

```
{
    "data": [
        {
            "calendar": "Project/Shell Calendar",
            "schedule_type": "Resource",
```

```
            "planning_rate_sheet": "Master Rate Sheet",
            "uuu_P6ETCComputeType": 5,
            "timezone": "(UTC+02:00) Helsinki, Kyiv, Riga, Sofia, Tallinn,
Vilnius",
            "uuu_P6ETCUserValue": 0.25,
            "act_id_suffix": 1000,
            "description": "des",
            "created by": "Unifier Unifier",
            "act_id_prefix": "A",
            "act_id_incr": 10,
            "act_sch_attr_start": "Manual",
            "actual_rate_sheet": "Master Rate Sheet",
            "name": "24",
            "act_sch_start_date": "2013-02-28",
            "id": 323,
            "status": "Active",
            "uuu_duration_type": "Fixed Duration"
        }
    ],
    "message": [
        "Field: [planning_rate_sheet] has been updated. Perform recosting
to see the updated cost data in the sheet.",
        "Field: [actual_rate_sheet] has been updated. Perform recosting to
see the updated cost data in the sheet.",
        "success"
    ],
    "rest_audit_id": 1368,
    "status": 200
}
```


Sample Success Response with Warning Messages

A successful response with status code 200 displays in the following format:


```
{
    "data": [
        {
```

```
            "calendar": "custom1",
            "schedule_type": "Resource",
            "planning_rate_sheet": "Master Rate Sheet",
            "uuu_P6ETCComputeType": 5,
            "timezone": "(UTC+10:00) Hobart",
            "uuu_P6ETCUserValue": "0.4",
            "act_id_suffix": 100,
            "description": "This is a sample activity sheet update1",
            "created by": "Unifier Unifier",
            "act_id_prefix": "$",
            "act_id_incr": 10,
            "act_sch_attr_start": "Manual",
            "actual_rate_sheet": "Master Rate Sheet",
            "name": "test",
            "act_sch_start_date": "2022-12-10",
            "id": 309,
            "status": "Active",
            "uuu_duration_type": "Fixed Units"
        }
    ],
    "message": [
        "Field: [planning_rate_sheet] has been updated. Perform recosting
to see the updated cost data in the sheet.",
        "Field: [uuu_P6ETCComputeType] has been updated. Perform recosting
to see the updated cost data in the sheet.",
        "Field: [uuu_P6ETCUserValue] has been updated. Perform recosting
to see the updated cost data in the sheet.",
        "Field: [actual_rate_sheet] has been updated. Perform recosting to
see the updated cost data in the sheet.",
        "Field: [act_sch_start_date] has been updated. Perform scheduling
to see the updated schedule data in the sheet. ",
        "success"
    ],
    "rest_audit_id": 1242,
    "status": 200
```

```
}
```

Sample Failed Response

A failed response to create a manual activity sheet displays the corresponding status code in the following format:

```
{
    "data": [],
    "message": [
        "The API request contains an empty value for: [name]."
    ],
    "rest_audit_id": 1241,
    "status": 12703
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status Code	Error Message
project_number	project_number is not specified.	12018	The API request is missing the required information: [project_number].
project_number	Invalid project_number.	602	Project/Shell Number is not correct.
project_number	Inactive project_number.	12020	The API request contains an invalid value: [project_number]. Check the status of this project_number in Unifier.
name	The name of the manual activity sheet is not specified in the request.	12702	The API request is missing the required information: [name].
name	Activity sheet is blank.	12703	The API request contains an empty value for:[name].
name	Activity Sheet exceeds 50 characters.	12704	Invalid value was found in a field: [name]. Allowed length: [50].

Field Name	Use-case Scenario	Status Code	Error Message
name	name is "System Activity Sheet."	12705	Invalid value was found in a field: [name]. Manual Activity Sheet name cannot be selected as System Activity Sheet.
name	An invalid name value (non-String) is specified in the request.	12733	Invalid value was found in a field [name]. Allowed only string values.
schedule_type	schedule_type is not specified.	12706	The API request is missing the required information: [schedule_type].
schedule_type	An invalid schedule_type value (non-String), or null or empty value is specified in the request.	12707	Invalid value was found in a field [schedule_type]. Allowed values: [Duration, Resource].
timezone	timezone is not specified.	12729	The API request is missing the required information: [timezone].
timezone	An invalid timezone value (non-String) is specified in the request.	12715	The API request contains an invalid value: [timezone].
timezone	timezone is not configured in Unifier.	12716	Invalid value was found in a field [timezone]. Please check if this timezone has been defined in shell.
description	description of the activity sheet exceeds 400 characters.	12708	Invalid value was found in a field: [description]. Allowed length: [400]
description	An invalid description value (non-String) is specified in the request.	12734	Invalid value was found in a field [description]. Allowed only string values.

Field Name	Use-case Scenario	Status Code	Error Message
status	An invalid status value, (non-String), or null or empty value is specified in the request.	12709	Invalid value was found in a field [status]. Allowed only string values.
status	The status of the activity sheet is not specified as "Active" or "Inactive".	12710	Invalid value was found in a field: [status]. Allowed value: [Active, Inactive]
calendar	An invalid calendar value, (non-String), or null or empty value is specified in the request.	12730	Invalid value was found in a field : calendar. Allowed only string values.
calendar	timezone is not configured in Unifier project/shell.	12731	Invalid value was found in a field [calendar]. Allowed only Calendars configured in the respective Unifier Project/Shell.
act_sch_attr_start	An invalid act_sch_attr_start value, (non-String), or null or empty value is specified in the request.	12711	Invalid value was found in a field [act_sch_attr_start]. Allowed only string values.
act_sch_attr_start	Project Schedule Start Date Data source value is an invalid value, other than "Manual" and "From Shell Attribute".	12712	Invalid value was found in a field: [act_sch_attr_start]. Allowed value: [Manual & From Shell Attribute]
act_sch_start_date	An invalid act_sch_start_date format, or null or empty value is specified in the request.	12713	The API request contains an invalid value: [act_sch_start_date]. Correct date format [yyyy-MM-dd].

Field Name	Use-case Scenario	Status Code	Error Message
act_sch_start_date	In the update, the activity sheet has an in progress or completed activity.	12714	Cannot change Project Schedule Start date. One or more activities are in Complete or In-Progress.
act_sch_start_date	The schedule Type is selected as "From Shell Details", and the Project start date is not specified in the shell details.	12735	Project Schedule Start Date: Input Required
uuu_duration_type	An invalid uuu_duration_type format, or null or empty value is specified in the request.	12717	Invalid value was found in a field [uuu_duration_type]. Allowed values: [Fixed Duration, Fixed Units, Fixed units/time].
act_id_prefix	An invalid act_id_prefix format, or null or empty value is specified in the request, or act_id_prefix exceeds 20 characters.	12718	Invalid value was found in a field: [act_id_prefix]. Allowed length: [20].
act_id_suffix	An invalid act_id_suffix value, (non-Integer), null or empty, negative, or a value greater than 999999 is specified in the request.	12719	Invalid value was found in a field [act_id_suffix]. Allowed values between 1 to 999999.

Field Name	Use-case Scenario	Status Code	Error Message
act_id_incr	An invalid act_id_incr value, (non-Integer), null or empty, negative, or value greater than 999999 is specified in the request.	12720	Invalid value was found in a field [act_id_incr]. Allowed values between 1 to 1000.
planning_rate_sheet	A non-existent rate sheet value is specified in the request.	12721	Invalid value was found in a field [planning_rate_sheet]. Please check if this ratesheet has been defined in the respective shell.
actual_rate_sheet	A non-existent rate sheet value is specified in the request.	12722	Invalid value was found in a field [actual_rate_sheet]. Please check if this ratesheet has been defined in the respective shell.
uuu_P6ETCComputeType	uuu_P6ETCComputeType is not a number between 1 and 5.	12723	Invalid value was found in the field: [uuu_P6ETCComputeType]. Only integer values are allowed from 1 to 5.
uuu_P6ETCComputeType	uuu_P6ETCComputeType value is empty or null.	12724	The API request contains empty value for: [uuu_P6ETCComputeType]. Only integer values are allowed from 1 to 5.
uuu_P6ETCUserValue	uuu_P6ETCComputeType is 5, and uuu_P6ETCUserValue is not specified in the request.	12725	The API request is missing the required information: [uuu_P6ETCUserValue].

Field Name	Use-case Scenario	Status Code	Error Message
uuu_P6ETCUserValue	uuu_P6ETCUserValue is a null value.	12726	The API request contains empty value for: [uuu_P6ETCUserValue]. Only numeric values are allowed and should be greater than or equal to 0.01.
uuu_P6ETCUserValue	Value is less than 0.01.	12727	Invalid value was found in a field: [uuu_P6ETCUserValue]. Only numeric values are allowed and should be greater than or equal to 0.01.
created by	Invalid user	900	Enter a valid or an active user.

Create or Update Baseline Schedule for Manual Activity Sheet

`POST /ws/rest/service/v2/activity/sheet/baseline`

Purpose

Creates or updates baseline schedule for a manual activity sheet of a specific Unifier project/shell based on a project_number and activitysheetName as follows:

- If a baseline schedule does not exist for a manual activity sheet, a baseline schedule is created with the most recent schedule data.
- If a baseline schedule already exists for a manual activity sheet, it is updated with the most recent schedule data.

> **Note**: Baseline Creation Date is always set to today's date.

Prerequisites

Ensure you have:

- The required **Activity Sheet Services** permissions under **Activity Manager**
  Contact your Company Administrator to set permissions for **Activity Sheet Services**.
- Created the Unifier project/shell

Request Format

Send an API request as a JSON Map with the following structure:

```
{
```

```
   "options":{"project_number": "<value>",
              "activitySheetName" : "<value>"},
   "data":["baselineProjectName": "<value>"]
}
```

Request Parameters - Options Map

Specify the following parameter in the Options JSON map:

Request Parameter	Required?	Data Type	Description
project_number	Yes	String	A valid 'Active' shell number where the baseline schedule is to be created for a manual activity sheet.
activitySheetName	Yes	String	The name of the manual Sheet in the Activity Manager.

Request Parameters - Data Map

Specify the following parameters in Data []:

Request Parameter	Required ?	Data Type	Description
baselineProjectName	Yes	String	The baseline project name. It should not match the name of the current manual activity sheet.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <id from the audit table>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Request

To create a baseline schedule,, send a request in the following format:

```
{
    "options": {
       "project_number": "P-0056",
       "activitySheetName" : "ManualSheet01"
    },
   "data" :[{
        "baselineProjectName" : "ManualSheet01 - B1"
        }]
}
```

Sample Success Response

A successful response with status code 200 displays in the following format:

```
{
   "data": [{"baselineProjectName": "ManualSheet01 - B1"}],
   "message": ["Baseline is created successfully."],
   "status": 200,
   rest_audit_id": 12676
}
```

Sample Failed Request

This is an example of a failed request with an invalid value:

```
{
   "options": {
       "project_number": "P-0056",
       "activitySheetName" : "ManualSheet01"
    },
   "data" :[{
        "baselineProjectName" : "ManualSheet01 - ABC"
    } ]
}
```

Sample Failed Response

A failed response to create a baseline schedule for a manual activity sheet displays the corresponding status code in the following format:

```
{
   "data": [],
   "message": [
            "message": "The API request contains an invalid value:
[activitySheetName]. Please check if this activitySheetName with
type=manual has been configured in Unifier."
               ],
   "status": 12013,
   "rest_audit_id": 14302
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status Code	Error Message
project_number	project_number is not specified.	12018	The API request is missing the required information: [project_number].
project_number	project_number is invalid.	602	Project/Shell Number is not correct.
project_number	project_number is inactive.	12020	The API request contains an invalid value: [project_number]. Check the status of this project_number in Unifier.
project_number	project_number is empty/blank.	12128	The API request contains empty value for: [project_number].
activitySheetName	Activity sheet name is not specified in the request.	12012	The API request is missing the required information: [activitySheetName].
activitySheetName	Activity sheet name does not exist.	12013	The API request contains an invalid value: [activitySheetName]. Please check if this activitySheetName with sheet type=manual has been configured in Unifier.

Field Name	Use-case Scenario	Status Code	Error Message
activitySheetName	Activity sheet name is not specified in string format	12025	Invalid value was found in a field: [activitySheetName]. Allowed only alphanumeric value.
activitySheetName	Activity sheet name value is null or empty.	12068	The API request contains empty value for: [activitySheetName].
baselineProjectName	baselineProjectName is not specified in the request.	12801	The API request is missing the required information: [baselineProjectName].
baselineProjectName	baselineProjectName value is null or empty.	12802	The API request contains empty value for: [baselineProjectName].
baselineProjectName	baselineProjectName exceeds 250 characters.	12803	Invalid value was found in a field: [baselineProjectName]. Allowed length: [250].
baselineProjectName	baselineProjectName is not a string.	12804	Invalid value was found in a field: [baselineProjectName]. Allowed only alphanumeric value.
baselineProjectName	baselineProjectName matches current activity sheet name.	12805	[baselineProjectName] cannot be same as Current [activitySheetName].
baselineProjectName	Multiple baselineProjectName have been specified in the request.	12806	The API request is trying to perform this action for multiple baseline schedules. Allowed to perform this action only for single baseline schedule per request.

Get Activities in the Manual Activity Sheet of a Specific Shell

```
GET/ws/rest/service/v2/activity/sheet/manualactivities?project_number={
project number}&activity_sheet_name={manual activity sheet
name}&project_type={project_type}
```

Purpose

Retrieves a list of activities from the Manual Activity Sheet of a specified shell based on the project_number and activity sheet name mentioned in the query parameters.

Notes:

- The API uses the fields added in the Integration form of the Activity Sheet (uDesigner) to retrieve the manual activity data from the activity sheet.
- All the request parameter related validations are applied.
- The Activity Sheet Name and Project Number are mandatory fields and validations are applied.
- There is no impact of directions present in the integration form of the Manual Activity Sheet.
- There is no sequence defined for the output response. The properties can be in any sequence.
- The shell status cannot be *Inactive* or *on-hold*.
- The Manual Activity Sheet should exist in the shell to access the activities.

Prerequisites

Ensure the following:

- To use this REST service, you have **Get** permission for Activity Sheet Services.
- The Manual Activity Sheet must be present in the Activity Sheet sub-node.

Request Parameters

The following parameters can be included in the query

Request Parameter	Required?	Data Type	Description
project_number	Yes	String	An 'Active' Unifier shell number (shell number into which the system is going to update project details). For example, "P-0001".
activity_sheet_name	Yes	String	The name of the activity sheet.

Request Parameter	Required?	Data Type	Description
project_type	No	String	The project type category associated with the shell for fetching the activities created in corresponding sheets. Valid values include: "Current" (default) and "Baseline". If project_type is missing, "Current" is used as the default value.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Response Output

A successful response displays with status code 200 in the following format:

```
{
    "data": [
        {
            "uuu_P6ActivityType": "Task Dependent",
            "uuu_P6ActualFinish": null,
            "uuu_P6ActualStart": "2022-12-10T16:00:00",
            "uuu_P6RemainingEarlyStart": "2022-11-30T08:00:00",
            "uuu_P6ActivityId": "A22TestSheet",
            "uuu_P6ActualDuration": 0.0,
            "uuu_P6AtCompletionDuration": 0.0,
```

```
            "uuu_P6Finish": "2022-12-13T16:00:00",
            "uuu_P6PercentComplete": 100.0,
            "uuu_P6RemainingTotalCost": 0.0,
            "uuu_P6RemainingEarlyFinish": "2022-12-13T16:00:00",
            "uuu_P6ActivityStatus": "Not Started",
            "uuu_P6PlannedDuration": 0.0,
            "uuu_P6ActualTotalCost": 0.0,
            "uuu_P6PlannedFinish": null,
            "id": 1482795,
            "uuu_P6PlannedStart": null,
            "uuu_P6EVCost": 40.0,
            "uuu_P6ActivityName": "A22TestSheet",
            "uuu_P6PlannedTotalCost": 1.0,
            "uuu_P6Start": "2022-11-30T08:00:00",
            "uuu_P6RemainingDuration": 80.0
        }
    ],
    "message": [
        "success"
    ],
    "status": 200,
    "rest_audit_id": 18722
}
```


Sample Error Response

A failed response displays a status code in the following format:


```
{
   "data": [],
   "message": ["The API request contains empty value for:
[activity_sheet_name]."],
   "status": 12128,
   "rest_audit_id": 18721
}
```

Validation Messages and Status Codes

The following table lists the messages displayed in each use-case or scenario.

Parameter	Use-Case	Status	Message
project_number	project_number provided as blank	12128	The API request contains empty value for: [project_number].
project_number	The project_number is missing in the URL.	12206	The API request is missing the required information: [project_number].
project_number	Invalid project_number or null	602	Project/Shell Number is not correct.
project_number	Inactive/On Hold project_number	12020	The API request contains an invalid value: [project_number]. Please check the status of this project_number in Unifier.
activity_sheet_name	Activity sheet name is missing in the URL.	12206	The API request is missing the required information: [activity_sheet_name`].
activity_sheet_name	Activity sheet name is empty/null for activity sheet type "manual", throwing validation	12128	The API request contains empty value for: [activity_sheet_name].
activity_sheet_name	Activity Sheet Name exceeds 50 characters.	12202	Invalid value was found in a field: [activity_sheet_name]. Allowed length: [50]

Parameter	Use-Case	Status	Message
activity_sheet_name	Activity Sheet Name does not exist.	12205	The API request contains an invalid value: [activity_sheet_name]. Please check if this activity_sheet_name has been configured in Unifier.
project_type	project_type is null or empty	12144	The API request contains empty value for: [project_type]. Allowed values: [Current, Baseline]
project_type	project_type value is invalid.	12145	Invalid value was found in a field: [project_type]. Allowed values: [Current, Baseline]
project_type	Baseline is not configured	12036	Invalid value was found in a field: [projectType]. Baseline not defined for this Project
project_type	project_type is missing.		The API request is missing the required information: [project_type]. Allowed values: [Current, Baseline].

Schedule Creation of Manual Activity Sheet

`POST /ws/rest/service/v2/activity/sheet/schedule`

Purpose

Schedule the creation of a manual activity sheet in a specified Unifier project/shell based on `project_number` and `activitysheetName`.

This POST service includes scheduling of current manual activity sheet data.

Prerequisites

Ensure you have:

- Created the Unifier shell
- The required **Activity Sheet Services** permissions under **Activity Manager**
- An existing manual/system activity sheet

Request Format

Send an API request as a JSON Map with the following structure:

```
{
      "options": {
                  "project_number": "<value>"
                },
      "data": [
                {
                  "activitySheetName": "<value>",
                  "dataDate": "<value>"
                }
              ]
}
```

Request Parameters - Options Map

Specify the following parameter in the Options JSON map:

Request Parameter	Required?	Data Type	Description
project_number	Yes	String	A valid 'Active' project/shell number where the manual activity sheet is to be created.

Request Parameters - Data Map

Specify the following parameters in Data []:

Request Parameter	Required?	Data Type	Description
activitySheetName	Yes	String	The name of the Manual Activity Sheet Name in the Activity Manager.
dataDate	Yes	String	The data date must be provided by the user, and it must be greater than or equal to the project schedule start date.

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <id from the audit table>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Request

To schedule the creation of a manual activity sheet in a specified Unifier project/shell, send a request in the following format:

```
{
   "options": {"project_number": "P-0056"},
   "data" :[{
                "activitySheetName" : "ManualSheet01",
                "dataDate" : "2024-03-26"
          }
         ]
}
```

Sample Success Response

A successful response with status code 200 displays in the following format:

```
{
    "data": [],
    "message": [
        {
        "activitySheetName": "ManualSheet01",
        "message" : "Schedule job created Successfully.",
        "jobId" : 1688113665288
        }
    ],
```

```
    "status": 202,
    "rest_audit_id": 12676
}
```

Sample Failed Request

A request with an invalid value is sent in the format as shown below:

```
{
    "options": {       "project_number": "P-0056"    },
  "data" :[{
             "activitySheetName" : "ManualSheet01" ,
             "dataDate" : "2020-03-26"
          }]
}
```

Sample Failed Response

A failed response to the above request displays the corresponding status code in the following format:

```
{
    "data": [],
    "message": [
                  {
                      "activitySheetName" : "ManualSheet01",
                      "message" :"Invalid value was found in a field
[dataDate]. The value provided should be equal to or greater than Project
Start Date.
                  }
]
    "status": 12013,
    "rest_audit_id": 14302
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status Code	Error Message
project_number	project_number is not specified.	12018	The API request is missing the required information: [project_number].
project_number	project_number is invalid.	602	Project/Shell Number is not correct.
project_number	project_number is inactive.	12020	The API request contains an invalid value: [project_number]. Check the status of this project_number in Unifier.
project_number	project_number is empty/blank.	12128	The API request contains empty value for: [project_number].
activitySheetName	Activity sheet name is not specified in the request.	12012	The API request is missing the required information: [activitySheetName].
activitySheetName	Activity sheet name does not exist.	12013	The API request contains an invalid value: [activitySheetName]. Please check if this activitySheetName with sheet type=manual has been configured in Unifier.
activitySheetName	Activity sheet name value is null or empty.	12068	The API request contains empty value for: [activitySheetName].
dataDate	dataDate is not specified in the request.	12107	The API request is missing the required information: [dataDate].
dataDate	dataDate is empty/blank	12130	The API request contains empty value for: [dataDate].
dataDate	dataDate s specified with incorrect format.	12105	The API request contains an invalid value: [dataDate]. Please check if this dataDate has been in correct date format [yyyy-MM-dd].

Field Name	Use-case Scenario	Status Code	Error Message
dataDate	projectType is empty/blank for system sheet.	12148	Invalid value was found in a field [dataDate]. The value provided should be equal to or greater than Project Schedule Start Date.

Recost Project for Manual Activity Sheet

```
Post /ws/rest/service/v2/activity/sheet/recost
```

Purpose

Recost Project for Manual/System Activity Sheet in a specified Unifier Shell based on project_number and activitysheetName provided in the payload for the API.

This POST service includes recosting of Current Manual/System Activity Sheet data.

Prerequisites

Ensure you have:

- created the Unifier shell
- the required **Activity Sheet Services** permissions under **Activity Manager**
- the manual/system activity sheet exists.

Request Format

Send an API request as a JSON Map with the following structure:

```
{
   "options":{"project_number": "<value>",
   "data":[{"activitySheetName" : "<value>"},
            "activitySheetType": "<value>"
```

or

```
          {"sourceProjectId" : "<value>",
           "activitySheetType": "<value>",
           "projectType": "<value>"
         ]}
```

Request Parameters - Options Map

Specify the following parameter in the Options JSON map:

Request Parameter	Required?	Data Type	Description
project_number	Yes	String	A valid 'Active' shell number where the baseline schedule is to be created for a manual activity sheet.

Request Parameters - Data Map

Specify the following parameters in Data []:

Request Parameter	Required?	Data Type	Description
activitySheetType	Yes	String	Specify the activity sheet type. Valid values include: "system", "manual". For Primavera Cloud integrations/P6, specify "system" to insert data into the System Activity Sheet.
activitySheetName	Yes, if "activitySheetType" is "manual".	String	The name of the Manual Activity Sheet Name in the Activity Manager,
sourceProjectId	Yes, if activitySheetType is "system".	String	Project added in integration tab in either from Gateway Sync or Primavera Cloud.
projectType	No	String	The type of activity sheet. Valid values include: ▸ "Current" and "Manual" for system sheet. ▸ ""Current" for manual sheet Default is "Current".

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <id from the audit table>
```

```
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Request

To recost a project, send a request in the following format:

```
{
    "options": {
       "project_number": "P-0056"
    },
   "data" :[{
  "activitySheetName" : "ManualSheet01" ,
       "activitySheetType" : "Manual"
        }]
}
```

Sample Success Response

A successful response with status code 200 displays in the following format:

```
{
    "data": [],
    "message": [
        {
        "activitySheetName": "ManualSheet01",
        "message" : "Recost job created Successfully.",
        "jobId" : 1688113665288
        }
    ],
    "status": 202,
    "rest_audit_id": 12676
}
```

Sample Request For System Sheet

Send a equest for a system sheet as shown below:

```
{
    "options": {
```

```
       "project_number": "P-0115"
              },
   "data" :[{
        "activitySheetType" : "system",
        "projectType":"Current",
        "sourceProjectId":"ActivitySystem"
           }]
}}
```

Sample Response

A response to the above request displays the corresponding status code in the following format:

```
{
    "data": [],
    "message": [
        {
            "jobId": 1717136939962,
            "sourceProjectId": "ActivitySystem",
            "message": "Recost job created Successfully."
        }
    ],
    "status": 202,
    "rest_audit_id": 29877
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status Code	Error Message
project_number	project_number is not specified.	12018	The API request is missing the required information: [project_number].
project_number	project_number is invalid.	602	Project/Shell Number is not correct.

Field Name	Use-case Scenario	Status Code	Error Message
project_number	project_number is inactive.	12020	The API request contains an invalid value: [project_number]. Check the status of this project_number in Unifier.
project_number	project_number is empty/blank.	12128	The API request contains empty value for: [project_number].
activitySheetType	activitySheetType value is not specified in the request.	12010	The API request is missing the required information: [activitySheetType]
activitySheetType	activitySheetType is empty/blank.	12034	The API request contains an empty value for: [activitySheetType]. Allowed values: [manual, system]
activitySheetType	activitySheetType is of incorrect data type.	12704	Invalid value was found in a field: [activitySheetType]. Allowed only alphanumeric value.
activitySheetType	Accepting only "manual" or "system", else displaying validation message.	12011	Invalid value was found in a field: [activitySheetType]. Allowed values: [manual, system]
activitySheetName	activitySheetName is not specified in the request.	12012	The API request is missing the required information: [activitySheetName].
activitySheetName	activitySheetName does not exist.	12013	The API request contains an invalid value: [activitySheetName]. Please check if this activitySheetName with sheet type=manual has been configured in Unifier.
activitySheetName	activitySheetName value is null or empty.	12068	The API request contains empty value for: [activitySheetName].

Field Name	Use-case Scenario	Status Code	Error Message
sourceProjectId	sourceProjectId is not configured in the source Unifier shell.	12021	The API request contains an invalid value: [sourceProjectId]. Please check if this sourceProjectId has been configured in Unifier.
sourceProjectId	sourceProjectId is not specified in the request.	12005	The API request is missing the required information: [sourceProjectId]
sourceProjectId	sourceProjectId value is a blank.	12032	The API request contains empty value for: [sourceProjectId].
projectType	projectType is empty/blank for system sheet.	12144	The API request contains empty value for: [projectType]. Allowed values: [Current, Baseline]
projectType	projectType is empty/blank for manual sheet.	12144	The API request contains empty value for: [projectType]. Allowed values: [Current, Baseline]
projectType	projectType is of incorrect data type.	12142	Invalid value was found in a field: [projectType]. Allowed only alphanumeric value.
projectType	An invalid value is passed in projectType for system sheet.	12145	Invalid value was found in a field: 'projectType'. Allowed values: [Current, Baseline]
projectType	An invalid value is passed in projectType for manual sheet.	12145	Invalid value was found in a field: 'projectType'. Allowed values: [Current, Baseline]
projectType	When "baseline" is passed, it is not configured for system sheet.	12036	Invalid value was found in a field: [projectType]. Baseline not defined for this Project.

Create Activity Dependency

`POST /ws/rest/service/v2/activity/sheet/dependencies`

Purpose

Creates updates, and deletes activity dependencies for an activity in a specified activity sheet of a specified shell.

> **Note**: In the System Activity Sheet, the **Dependency** tab although visible, will be view-only.

Prerequisites

Ensure the following:

- A shell has been created.
- Activities in an activity sheet have been created.
- You have Activity Sheet Services permissions under Activity Manager to use this REST service.

Request Format

Send an API request as a JSON Map with the following structure:

```
{
   "options":{"project_number": "<value>"},
   "data":[]
}
```

Request Parameters - Options Map

Specify the following parameters:

Request Parameter	Required ?	Data Type	Description
project_number	Yes	String	A valid 'Active' shell number.
source	Yes	String	The source application or data from which dependency data is retrieved. Valid values include: "Primavera Cloud", "P6", and "Others".
activitySheetType	Yes	String	The type of activity sheet. Valid values include: "system" and "manual". For Primavera Cloud and P6 integrations, specify "system", as the data should be inserted in the system activity sheet.

Request Parameter	Required ?	Data Type	Description
projectType	No	String	The type of project for which dependencies have to be created. Valid values include: "Current" (default), and "Baseline". For Manual activity sheets, the value is ignored. For System activity sheets, defaults to "Current".
sourceProjectId	No	String	The project code in the source application. For example, Project code in Primavera Cloud. For System activity sheets, it is the current project ID by default. For Manual activity sheet, it is the project number. This field is mandatory if the source is P6 or Primavera Cloud, or the "activitySheetType" is "manual".
activitySheetName	No	String	The name of the activity sheet. If "activitySheetType" is specified as "system", the value entered in this field is ignored. If "activitySheetType" is specified as "manual", then this field is mandatory. If a manual activity sheet with same name already exists, a dependency will be added/updated or removed for the activities in that activity sheet.

Request Parameter	Required ?	Data Type	Description
removeUnreferencedData	No	Boolean	Indicate whether to remove unreferenced data. Valid values include: ▸ "true": Creates and updates dependencies specified in the request for the respective activities, and removes dependencies not existing in the current request data for the respective activities from the existing activity sheet. ▸ "false" (default): Dependencies are not removed for an activity from the existing activity sheet. The REST service creates dependencies from the request data if they do not exist, and updates any existing dependencies. By default, any dependency data for an activity not existing in the current request data will not be removed.

Request Parameters - Data [] List

Specify the following parameters in the data [] of the request:

Request Parameter	Required?	Data Type	Description
succ_activityid	Yes	String	The unique activity ID or activity code of the successive activity in the activity sheet.
pred_activityid	Yes	String	The unique activity ID or activity code of the preceding activity in the activity sheet.
relation	No	String	The type of dependency between the tasks. Valid values include: ▸ Finish-to-Start (default) ▸ Finish-to-Finish ▸ Start-to-Finish ▸ Start-to-Start

Request Parameter	Required?	Data Type	Description
lead/lag	No	Integer	For manual Activity sheet, the max lag value is calculated as: max_lag_day = Math.floor(20000 / Number(hours_per_day)) - 1; For system activity sheet, no limit validation is needed. Default to 0 (zero).

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [<list of messages>],
    "status": <REST status code value>,
    "rest_audit_id": <id from the audit table>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Success Request

To create an activity dependendy, send a request in the following format:

```
{
    "options": {
       "project_number": "P-0040",
       "source" : "Primavera Cloud",
       "sourceProjectId" : "OPCProject",
       "activitySheetType" : "system",
       "activitySheetName" : "ActSheet1" ,
       "projectType" : "Current",
       "removeUnreferencedData" : false
    },
```

```
    "data": [
     {
          "succ_activityid": "A1010",
          "pred_activityid": "A1020",
          "relation":"Finish-to-Start",
          "lag": 10
        },
        {
          "succ_activityid": "A1030",
          "pred_activityid": "A1040",
          "relation":"Finish-to-Start",
          "lag": 10
        }
     ]
}
```

Sample Success Response

A successful response with status code 200 displays in the following format:

```
{
    "data": [],
    "message": [
        {
        "activitySheetName": "ManualSheet01",
        "message" : "Job for dependencies data created successfully.",
        "jobId" : 1688113665288
        }
    ],
    "status": 202,
    "rest_audit_id": 28703
}
```

Sample Failed Request in Options Data

A failed response to create an activity dependency displays the corresponding status code in the following format:

```
{
```

```
    "options": {
       "project_number": "P-0040",
       "source" : "ABC",
       "sourceProjectId" : "OPCProject",
       "activitySheetType" : "system",
       "actSheetName" : "ActSheet1" ,
       "projectType" : "Current",
       "removeUnreferencedData" : false
    },
    "data": [
     {
          "succ_activityid": "A1010",
          "pred_activityid": "A1020",
          "relation":"Finish-to-Start",
          "lag": 10
        }
     ]
}
```

Sample Failed Response in Options Data

A failed response to create an activity dependency due to an error in the Options map displays the corresponding status code in the following format:

```
{
    "data": [],
    "message": [
        "Invalid value was found in a field: [source]. Allowed values:
[Primavera Cloud,P6, Others]"
    ],
    "rest_audit_id": 2379,
    "status": 12756
}
```

Sample Data Failure Request

A failed response to create an activity dependency displays the corresponding status code in the following format:

```
{
```

```
    "options": {
       "project_number": "P-0040",
       "source" : "Primavera Cloud",
       "sourceProjectId" : "OPCProject",
       "activitySheetType" : "system",
       "actSheetName" : "ActSheet1" ,
       "projectType" : "Current",
       "removeUnreferencedData" : false
    },
    "data": [
     {
          "succ_activityid": "A1010",
          "pred_activityid": "A1020",
          "relation":"ABC",
          "lag": 10
        },
        {
          "succ_activityid": "A1030",
          "pred_activityid": "A1040",
          "relation":"Finish-to-Start",
          "lag": 10
        }
     ]
}
```

Sample Failed Response in Data []

A failed response to create an activity dependency due to an error in the Data [] displays the corresponding status code in the following format:

```
{
    "data": [],
    "message": [
        {
        "activitySheetName": "ManualSheet01",
        "message" : "Job for dependencies data created successfully.",
```

```
        "jobId" : 1688113665288
        }
    ],
    "status": 202,
    "rest_audit_id": 28703
}
```

Sample Failed Response

A failed response to create an activity dependency due to an invalid value displays the corresponding status code in the following format:

```
{
    "data": [],
    "message": [
        {
            "succ_activityid": "A1010",
             "pred_activityid": "A1020",
            "message": "Invalid value was found in a field: [relation]. Allowed only [Finish-to-Start, Finish-to-Finish, Start-to-Finish, Start-to-Start].",
            "status": 12750
        }
    ],
    "status": 3000,
    "rest_audit_id": 14302
}
```

Supported Validation Messages and Status Codes

The following validation messages and status codes display in the response when incorrect values are provided in the request.

Field Name	Use-case Scenario	Status Code	Error Message
project_number	project_number is not specified.	12018	The API request is missing the required information: [project_number].
project_number	project_number is invalid.	602	Project/Shell Number is not correct.

Field Name	Use-case Scenario	Status Code	Error Message
project_number	project_number is inactive.	12020	The API request contains an invalid value: [project_number]. Please check the status of this project_number in Unifier.
project_number	project_number is blank or empty	12128	The API request contains empty value for: [project_number].
source	source is not specified in the request.	12007	The API request is missing the required information: [source]
source	Wrong source value or value type for source i.e., boolean or numbers are specified.	12008	Invalid value was found in a field: [source]. Allowed values: [Primavera Cloud,P6, Others]
source	source value is blank or empty.	12035	The API request contains empty value for: [source]. Allowed values: [Primavera Cloud, P6 Others]
activitySheetType	activitySheetType value is missing.	12010	The API request is missing the required information: [activitySheetType]
activitySheetType	activitySheetType value is invalid.	12011	Invalid value was found in a field: [activitySheetType]. Allowed values: [manual, system]
activitySheetType	activitySheetType is "manual" when source is "Primavera Cloud" or "P6" in the request.	12671	Invalid value was found in a field: [activitySheetType]. If source=Primavera Cloud or P6, allowed values: [system]
activitySheetType	activitySheetType is "system" when source is "Others" in the request.	12671	Invalid value was found in a field: [activitySheetType]. If source=Others, allowed values: [manual]

Field Name	Use-case Scenario	Status Code	Error Message
projectType	projectType is missing in the request.	12143	The API request is missing the required information: [projectType].
projectType	projectType is blank or empty.	12144	The API request contains empty value for: [projectType].
projectType	projectType is the wrong data type(integer/boolean).	12142	Invalid value was found in a field: [projectType]. Allowed only alphanumeric value.
projectType	Some invalid value except "Current"/"Baseline" passed in projectType.	12145	Invalid value was found in a field: [projectType]. Allowed values: [Current, Baseline]
sourceProjectId	sourceProjectId is not configured in the source Unifier shell.	12021	The API request contains an invalid value: [sourceProjectId]. Please check if this sourceProjectId has been configured in Unifier.
sourceProjectId	sourceProjectId has invalid special characters.	12022	The API request contains invalid characters in: [sourceProjectId]. The following characters are not allowed : / \\ : * ? \" < > | ' =
sourceProjectId	sourceProjectId is missing.	12005	The API request is missing the required information: [sourceProjectId]
sourceProjectId	sourceProjectId is blank.	12032	The API request contains empty value for: [sourceProjectId]
sourceProjectId	sourceProjectId length is invalid.	12014	Invalid value was found in a field: 'sourceProjectId'. Allowed length: [250]
activitySheetName	Activity sheet name is blank for an activity sheet type "manual".	12012	The API request is missing the required information: [activitySheetName].

Field Name	Use-case Scenario	Status Code	Error Message
activitySheetName	ActivitySheetName does not exist.	12013	The API request contains an invalid value: [activitySheetName]. Please check if this activitySheetName with type=manual has been configured in Unifier.
removeUnreferencedData	removeUnreferencedData is a non-boolean value.	12016	Invalid value was found in a field: [removeUnreferencedData]. Allowed values: [true, false]
succ_activityid	succ_activityid is missing in the request.	12740	The API request is missing the required information: [succ_activityid]
succ_activityid	succ_activityid is a non-string value.	12741	Invalid value was found in a field: [succ_activityid]. Allowed only string value or use quotations. Activity ID: <succ_activityid>
succ_activityid	succ_activityid does not exist in the Activity Sheet.	12742	Invalid value was found in a field [succ_activityid]. Allowed Activity ID that already exists in Activity Sheet. Activity ID: <succ_activityid>
succ_activityid	succ_activityid is blank.	12743	The API request contains an empty value for:[succ_activityid].
pred_activityid	pred_activityid is missing in the request.	12744	The API request is missing the required information: [pred_activityid]
pred_activityid	pred_activityid is a non-string value.	12745	Invalid value was found in a field: [pred_activityid]. Allowed only string value or use quotations. Activity ID: <pred_activityid>

Field Name	Use-case Scenario	Status Code	Error Message
pred_activityid	pred_activityid does not exist in the Activity Sheet.	12746	Invalid value was found in a field [pred_activityid]. Allowed Activity ID that already exists in Activity Sheet. Activity ID: <pred_activityid>
pred_activityid	pred_activityid is blank.	12747	The API request contains an empty value for:[pred_activityId].
relation	Invalid dependency relation value has been specified in the request.	12748	Invalid value was found in a field: [relation]. Allowed only [Finish-to-Start, Finish-to-Finish, Start-to-Finish, Start-to-Start]
lead/lag	A non-integer value is provided.	12749	Invalid value was found in a field: [lead]. Allowed only integer value
lead/lag	Value exceeds the max_lag_day.	12750	Value entered exceeds maximum allowed lag of <max_lag_day>. Please check and try again

Oracle Integration

Callback API to Update Status of Integration Instance from Oracle Integration

```
PUT https://<hostname>/ws/rest/service/v2/oic/job
```

Purpose

Updates the status of the OIC instance based on the Job Id.

Integrations from Oracle Integration call this API to update the status of the integration. When Unifier invokes the integration, the job ID is sent as an input in the payload. The same job ID is used by the integration to send the status back to Unifier.

This API can be invoked or plugged-in at several places in the integration, such as, at the start of the integration to indicate the status *Started*, at fault to indicate the status *Failed*, or at the end of the integration to indicate the status *Completed*.

The integration should have the invocation to this job service in the fault flow as well to mark the status as *Failed* and the corresponding fault message/error message in the message attribute of payload.

Prerequisites

- Authorization header must have - Bearer:<access_token>
- For Authentication, refer to V2 authentication in ***Accessing Representational State Transfer (REST) Services V1 and V2*** (on page 165).

Response Format

A JSON object is returned in the following format.

```
{
    "data": [],
    "message": [],
    "status": <REST status code value>
}
```

A successful response displays a status code 200.

A failed response displays a message with a status code.

Sample Request

This is an example of a payload request.

```
{
    "jobId":"3A0429936DD166A",
    "status": "Started",
    "message": "Process Started"
}
```

Sample Success Response

This is an example of a response to the payload request.

```
{
   status : 200,
   message : ["Job updated Successfully" ],
   rest_audit_id : 1234
}
```

Sample Failed Response

This is an example of a response to the payload request.

```
{
    "data": [],
    "message": ["Status should be one of [Started, Completed, Failed]"],
    "status": 1804,
```

```
    "rest_audit_id": 547
}
```

Supported Validation Messages and Status Codes

The following error messages and status codes display in the response when incorrect values are provided in the request.

Use-case Scenario	Status Code	Error Message
Status is missing in input payload	1802	*Status is missing.*
JobId does not exists in Unifier.	1803	JobId not found.
JobId is missing or empty in payload	1801	*JobId is invalid or missing.*
Status not in one of the predefined list <'Started', 'Completed', 'Failed'>.	1804	*Status should be one of [Started, Completed, Failed]*
Positive flow - All validations thru.	200	*Job updated Successfully*
Unexpected error	500	*Unexpected Error in updating Job Status. ErrorCode : <diagnostic code>*

Codes Used in Web Services

The following topics describe the codes the codes that are used in Unifier web services.

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Currency

When importing Business Processes (BPs), you often must specify a project currency that the system can use for cost BPs and other calculations. You may need to enter the code corresponding to the currency used where the project is located. The currency can also be set in a user preference template.

The following tables list the supported currencies and their supporting codes.

Currencies and codes (A-G)

Currency Name	Code
Afghani	AFN
Algeria Dinar	DZD
Ariary	MGA
Australia Dollar	AUD
Azerbaijanian Manat	AZN
Bahamas Dollar	BSD
Bahrain Dinar	BHD
Barbados Dollar	BBD
BCEAO Franc	XOF
Belarus Ruble	BYR
Belize Dollar	BZD
Bermuda Dollar	BMD

Currency Name	Code
Bhutan Ngultrum	BTN
Bolivia Boliviano	BOB
Botswana Pula	BWP
Brazil Real	BRL
Burundi Franc	BIF
Canada Dollar	CAD
Cape Verde Escudo	CVE
Cayman Isl ds Dollar	KYD
CFA Franc BEAC	XAF
Chile Peso	CLP
Chile UF	CLF
China Yuan Renminbi	CNY
Colombia Peso	COP
Comoros Franc	KMF
Comptoirs Francais du Pacifique Franc	XPF
Congo-Kinshasa Franc	CDF
Convertible Marka	BAM
Costa Rica Colon	CRC
Croatia Kuna	HRK
Cuba Peso	CUP
Cyprus Pound	CYP
Czech Republic Koruna	CZK
Denmark Krone	DKK
Dirham	AED
Djibouti Franc	DJF
Dobra	STD
Dominican Republic Peso	DOP
Dram	AMD
East Caribbean Dollar	XCD
Egypt Pound	EGP
El Salvador Colon	SVC

Currency Name	Code
Eritrea Nakfa	ERN
Estonia Kroon	EEK
Ethiopia Birr	ETB
Euro	EUR
Falkland Islands Pound	FKP
Fiji Dollar	FJD
Gambia Dalasi	GMD
Georgia Lari	GEL
Ghana New Cedi	GHs
Gibraltar Pound	GIP
Guatemala Quetzal	GTQ
Guilder	AWG
Guinea Franc	GNF
Guyana Dollar	GYD

Currencies and codes (H-N)

Currency Name	Code
Haiti Gourde	HTG
Honduras Lempira	HNL
Hong Kong Dollar	HKD
Hungary Forint	HUF
Iceland Krona	ISK
Indian Rupee	INR
Indonesia Rupiah	IDR
Iran Rial	IRR
Iraq Dinar	IQD
Israel New Shekel	ILS
Jamaica Dollar	JMD
Jordan Dinar	JOD

Currency Name	Code
Kazakhstan Tenge	KZT
Kenya Shilling	KES
Kuwait Dinar	KWD
Kwanza	AOA
Laos Kip	LAK
Latvia Lat	LVL
Lebanon Pound	LBP
Lek	ALL
Lesotho Loti	LSL
Lev	BGN
Liberia Dollar	LRD
Libya Dinar	LYD
Lithuania Litas	LTL
Macau Pataca	MOP
Macedonia Denar	MKD
Malawi Kwacha	MWK
Malaysia Ringgit	MYR
Maldives Rufiyaa	MVR
Malta Lira	MTL
Mauritania Ouguiya	MRO
Mauritius Rupee	MUR
Mexico Peso	MXN
Mongolia Tughrik	MNT
Morocco Dirham	MAD
Myanmar Kyat	MMK
Namibia Dollar	NAD
Nepal Rupee	NPR
Netherlands Antilles Guilder	ANG
New Mozambique Metical	MZN
New Romania Leu	RON
New Turkish Lira	TRY

Currency Name	Code
New Zealand Dollar	NZD
Nicaragua Gold Cordoba	NIO
Nigeria Naira	NGN
North Korea Won	KPW
Norway Krone	NOK

Currencies and codes (O-T)

Currency Name	Code
OmanRial	OMR
Paanga	TOP
Pakistan Rupee	PKR
PanamaBalboa	PAB
Papua New Guinea Kina	PGK
Paraguay Guarani	PYG
Peru Nuevo Sol	PEN
Peso	ARS
Philippines Peso	PHP
Poland Zloty	PLN
Pound Sterling	GBP
Qatar Riyal	QAR
Riel	KHR
Russia Ruble	RUB
Rwanda Franc	RWF
Saint Helena Pound	SHP
Saudi Arabia Riyal	SAR
Serbian Dinar	RSD
Seychelles Rupee	SCR
Sierra Leone Leone	SLL
Singapore Dollar	SGD

Currency Name	Code
Slovakia Koruna	SKK
Slovenia Tolar	SIT
Solomon Islands Dollar	SBD
Som	KGS
Somalia Shilling	SOS
South Africa Rand	ZAR
South Korea Won	KRW
South Sudanese Pound	SSP
Sri Lanka Rupee	LKR
Sudanese Dinar	SDG
Suriname Dollar	SDG
Sweden Krona	SEK
Switzerland Franc	CHF
Syria Pound	SYP
Taiwan New Dollar	TWD
Taka	BDT
Tala	WST
Tanzania Shilling	TZS
Thailand Baht	THB
Transnistria Moldova Leu	MDL
Trinidad and Tobago Dollar	TTD
Tunisia Dinar	TND
Turkmenistan Manat	TMM
Tuvalu Dollar	TVD

Currencies and codes (U-Z)

Currency Name	Code
Uganda Shilling	UGX
Ukraine Hryvna	UAH

Currency Name	Code
United States Dollar	USD
Uruguay Peso	UYU
Uzbekistan Som	UZS
Vatu	VUV
Venezuela Bolivar Fuerte	VEF
Vietnam Dong	VND
Yemen Rial	YER
Yen	JPY
Zambia Kwacha	ZMK
Zimbabwe Dollar	ZWD

Time Zone

When importing user records, you must enter a starting time zone that the system can use for time stamps. You might want to enter the code corresponding to the company office where the user is located. Time zone is a user preference setting that the user can change later if necessary. The time zone can also be set in a user preference template.

About UTC

The Coordinated Universal Time (UTC) is a 24-hour time standard. The westernmost time zone uses UTC−12, being twelve hours behind UTC; the easternmost time zone, theoretically, uses UTC+12, being twelve hours ahead of UTC. Calculation of the UTC time standard is the same as with Greenwich Mean Time (GMT).

> **Note**: The local time in London is the same as UTC time.

The following table lists the UTC time standards used in the system.

Code	Time Standard/Zone	Information	Type
10	UTC+13:00	Samoa	Pacific/Apia
20	UTC-12:00	International Date Line West	Etc/GMT+12
21	UTC-10:00	Hawaii	Pacific/Honolulu
30	UTC-11:00	Coordinated Universal Time-11	Etc/GMT+11
40	UTC-09:00	Alaska	America/Anchorage

Code	Time Standard/Zone	Information	Type
41	UTC-07:00	Chihuahua, La Paz, Mazatlan	America/Chihuahua
50	UTC-08:00	Pacific Time (US and Canada)	America/Los_Angeles
51	UTC-08:00	Baja California	America/Santa_Isabel
70	UTC-07:00	Arizona	America/Phoenix
71	UTC-07:00	Mountain Time (US and Canada)	America/Denver
80	UTC-06:00	Central America	America/Guatemala
90	UTC-06:00	Central Time (US and Canada)	America/Chicago
91	UTC-06:00	Saskatchewan	America/Regina
92	UTC-06:00	Guadalajara, Mexico City, Monterrey	America/Mexico_City
110	UTC-05:00	Eastern Time (US and Canada)	America/New_York
111	UTC-05:00	Indiana (East)	America/Indianapolis
112	UTC-05:00	Bogota, Lima, Quito	America/Bogota
130	UTC-04:00	Atlantic Time (Canada)	America/Halifax
131	UTC-04:30	Caracas	America/Caracas
132	UTC-04:00	Asuncion	America/Asuncion
133	UTC-04:00	Cuiaba	America/Cuiaba
134	UTC-04:00	Georgetown, La Paz, Manaus, San Juan	America/La_Paz
135	UTC-04:00	Santiago	America/Santiago
140	UTC-03:30	Newfoundland	America/St_Johns
150	UTC-03:00	Brasilia	America/Sao_Paulo
151	UTC-03:00	Buenos Aires	America/Buenos_Aires
152	UTC-03:00	Cayenne, Fortaleza	America/Cayenne
153	UTC-03:00	Greenland	America/Godthab

Code	Time Standard/Zone	Information	Type
154	UTC-03:00	Montevideo	America/Montevideo
155	UTC-03:00	Salvador	America/Bahia
160	UTC-02:00	Coordinated Universal Time-02	Etc/GMT+2
170	UTC-01:00	Azores	Atlantic/Azores
171	UTC-01:00	Cape Verde Is.	Atlantic/Cape_Verde
180	UTC	Dublin, Edinburgh, Lisbon, London	Europe/London
181	UTC	Dublin	Europe/Dublin
182	UTC	Casablanca	Africa/Casablanca
183	UTC	Coordinated Universal Time	Etc/GMT
184	UTC	Monrovia, Reykjavik	Atlantic/Reykjavik
200	UTC+01:00	Amsterdam	Europe/Amsterdam
201	UTC+01:00	Brussels, Copenhagen, Madrid, Paris	Europe/Paris
202	UTC+01:00	Belgrade, Bratislava, Budapest, Ljubljana, Prague	Europe/Budapest
203	UTC+01:00	Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna	Europe/Berlin
204	UTC+01:00	Sarajevo, Skopje, Warsaw, Zagreb	Europe/Warsaw
205	UTC+01:00	West Central Africa	Africa/Lagos
206	UTC+01:00	Windhoek	Africa/Windhoek
210	UTC+02:00	Athens, Bucharest	Europe/Bucharest
211	UTC+02:00	Cairo	Africa/Cairo
212	UTC+02:00	Beirut	Asia/Beirut
213	UTC+02:00	Jerusalem	Asia/Jerusalem
214	UTC+02:00	Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius	Europe/Helsinki
215	UTC+02:00	Harare, Pretoria	Africa/Johannesburg

Code	Time Standard/Zone	Information	Type
220	UTC+02:00	Damascus	Asia/Damascus
221	UTC+02:00	Istanbul	Europe/Istanbul
222	UTC+02:00	Tripoli	Africa/Tripoli
223	UTC+03:00	Amman	Asia/Amman
224	UTC+03:00	Kaliningrad, Minsk	Europe/Kaliningrad
225	UTC+03:00	Kuwait, Riyadh	Asia/Riyadh
230	UTC+03:00	Nairobi	Africa/Nairobi
231	UTC+04:00	Moscow, St. Petersburg, Volgograd	Europe/Moscow
232	UTC+03:00	Baghdad	Asia/Baghdad
240	UTC+03:30	Tehran	Asia/Tehran
250	UTC+04:00	Abu Dhabi, Muscat	Asia/Dubai
251	UTC+04:00	Baku	Asia/Baku
252	UTC+04:00	Port Louis	Indian/Mauritius
253	UTC+04:00	Tbilisi	Asia/Tbilisi
254	UTC+04:00	Yerevan	Asia/Yerevan
260	UTC+04:30	Kabul	Asia/Kabul
261	UTC+05:00	Ashgabat, Tashkent	Asia/Tashkent
270	UTC+06:00	Yekaterinburg	Asia/Yekaterinburg
280	UTC+05:00	Islamabad, Karachi	Asia/Karachi
290	UTC+05:30	Chennai, Kolkata, Mumbai, New Delhi	Asia/Calcutta
300	UTC+06:00	Astana	Asia/Almaty
301	UTC+06:00	Dhaka	Asia/Dhaka
302	UTC+06:30	Yangon (Rangoon)	Asia/Rangoon
310	UTC+07:00	Bangkok, Hanoi, Jakarta	Asia/Bangkok
311	UTC+08:00	Krasnoyarsk	Asia/Krasnoyarsk
320	UTC+08:00	Perth	Australia/Perth
321	UTC+08:00	Beijing, Chongqing, Hong Kong, Urumqi	Asia/Shanghai

Code	Time Standard/Zone	Information	Type
322	UTC+08:00	Kuala Lumpur, Singapore	Asia/Singapore
323	UTC+08:00	Taipei	Asia/Taipei
324	UTC+09:00	Irkutsk	Asia/Irkutsk
340	UTC+09:00	Seoul	Asia/Seoul
341	UTC+09:00	Osaka, Sapporo, Tokyo	Asia/Tokyo
342	UTC+10:00	Yakutsk	Asia/Yakutsk
350	UTC+09:30	Darwin	Australia/Darwin
351	UTC+09:30	Adelaide	Australia/Adelaide
360	UTC+10:00	Brisbane	Australia/Brisbane
361	UTC+10:00	Canberra, Melbourne, Sydney	Australia/Sydney
362	UTC+10:00	Hobart	Australia/Hobart
363	UTC+11:00	Vladivostok	Asia/Vladivostok
364	UTC+10:00	Guam, Port Moresby	Pacific/Port_Moresby
380	UTC+07:00	Novosibirsk	Asia/Novosibirsk
390	UTC+08:00	Ulaanbaatar	Asia/Ulaanbaatar
391	UTC+11:00	Solomon Is., New Caledonia	Pacific/Guadalcanal
392	UTC+12:00	Magadan	Asia/Magadan
400	UTC+12:00	Coordinated Universal Time+12	Etc/GMT-12
410	UTC+12:00	Fiji	Pacific/Fiji
411	UTC+12:00	Auckland, Wellington	Antarctica/McMurdo
420	UTC+13:00	Nuku'alofa	Pacific/Tongatapu
430	UTC+05:30	Sri Jayawardenepura	Asia/Colombo
440	UTC+05:45	Kathmandu	Asia/Katmandu

Date Format

The date format is a user preference. You must enter a value for the user. The date format is a user preference setting that the user can change later if necessary. The date format can also be set in a user preference template.

The following lists the supported date formats:

Note: The time format for all dates is: `HH:mm AM`.

Date Format	Code
MM/DD/YYYY	0
DD/MM/YYYY	1
MM/DD/YY	2
DD/MM/YY	3
MM-DD-YYYY	4
DD-MM-YYYY	5
MM-DD-YY	6
DD-MM-YY	7
DD.MM.YYYY	8
YYYY-MM-DD	9
MMM/DD/YYYY	10
DD/MMM/YYYY	11
YYYY/MMM/DD	12
M/D/YYYY	13
M/D/YY	14
D/M/YYYY	15
D/M/YY	16
YY/M/D	17
YYYY/M/D	18
YY/MM/DD	19

Date Format	Code
YYYY/MM/DD	20

User Type

Use the values included in the following table for any record in which Standard or Portal are the User Type choices.

The User Type you choose, for the import value, will be used as soon as the record is imported.

For example, if you enter a “0” for the User Type, the user will be a Standard user upon successful import of the record; if you enter “1”, the user will be a Portal user.

User Type	Value
Standard	0
Portal	1

Company Address

Use the codes included in the following table for the address fields, when entering the user records.

Address Type	Code
Headquarters	1
Main	2
Branch Office	3
Billing	4
Shipping	5
Billing and Shipping	6
Satellite Office	7

Status

Use the values included in the following table for any record in which Active, Inactive, or On Hold are the status choices. The status you choose for the import value will be effective as soon as the record is imported. For example, if you enter a “1” for the status, the user will be an active user upon successful import of the record; if you enter “2”, the user will be On Hold until an administrator activates the user record.

Status	Value
Inactive	0
Active	1
On Hold	2

Check Box

For check boxes on BP forms, you can import the following values to select (“check”) a check box or leave it unchecked.

Check Box	Value
Check box not selected	0
Check box selected	1

Appendix A: Return Values

For all the following methods, the return object will be XMLObject.

> **Note**: XMLObject is described at the beginning of this document.

XMLObject contains 3 string elements:

- **String Status Code** (see table below)
- **String Array** - error log indicating reason of failure
- **String XMLContents** - a string contains XML values, if a return value is expected
- **XMLFileObject** - a file object that contains files as return value

The following is the list of String status codes and their descriptions:

String Status Code	Description
200	OK
300	Bad Data
302	Invalid Short name/AuthCode
303	Invalid Project Number
304	Invalid Business Process Name
405	Method Not Allowed
406	Invalid Server URL
500	Server Error, contact the system administrator
501	Not Implemented
503	Out of Resources
505	Invalid data
506	Invalid login
507	Error in creating directory for business process
601	Invalid Shortname/Authentication code
602	Project Number is not Correct

String Status Code	Description
603	Business Process Name is not correct
605	No Budget setup for the project
606	Budget is not correct.
608	XML is not valid
609	Project Template/Project Number is not correct
610	Only Cost and Line Item BPs are supported
611	Only Cost and Line Item BPs are supported
612	Project Template/Project name already exists
613	Project number already exists
614	ProjectXML should contain project number and project name tags.
615	Error processing XML.
616	XML is null or empty.
617	Found duplicate project numbers.
650	Create BP failed because …..
651	CBS Code is not Present
654	CBS Code is not in the correct format.
655	Could not create CBS Item.
656	Object Name is null or empty.
657	Invalid record_no.
658	field record_no is not present.
659	field record_no is empty.
660	field record_no is duplicate.
661	Integration settings for default workflow link id not set.

String Status Code	Description
662	Integration setting for default workflow or creator or BP not set. The Integration setting for default workflow, creator, or Business Process (BP) name has not been set. This error is sent for the Project number and the BP name that the user has sent in the web service call.
663	Status field value is not correct.
664	Create Project failed because
665	Data values for field tag
690	Only Lineitem non workflow BPs supported
691	Rule engine.
692	Cannot create multiple records for single record BP
693	Cannot create workflow process
694	Project Name can only contain the following characters: alphanumeric, spaces, and ()[],.;:-_&<>'
695	Project Number can only contain the following characters: alphanumeric and [.-_] characters are allowed
701	Invalid Column Name.
702	Column is not defined as manual entry.
703	Administrator is inactive. Cannot create column data.
704	Duplicate Column Name.
705	Update Column Data failed because:
706	Get Column Data failed because:
707	Cost sheet does not exist.
708	Unable to run report. Contact System Administrator.
709	Report name is not valid. Check if report exists or is enabled for Integration.
710	Cannot create Asset type BP record using createBPRecord interface.

String Status Code	Description
711	Invalid sheet name.
712	Import of Schedule activities failed reason:
713	Schedule sheet name is not valid.
714	Schedule sheet cannot be created; reason XML Import property is set to 'merge into existing schedule'.
715	Schedule sheet cannot be updated, reason XML Import property is set to 'overwrite existing schedule'.
716	The SOV of the selected contract is locked by another Business Process.
717	Selected contract does not have SOV. Check if the contract has reached terminal status.
718	Field name "+bp_picker_source_name +" is required.
719	pickervalue +" is invalid "+"value for "+source_name +"."
720	Reference BP not supported
721	Multiple records found for field "+source_name + " with value " + pickervalue+ "."
722	Invalid field name(s)
723	Spend Business Process not supported.
724	SOV is not created yet for the base commit associated with this Business Process.
725	You cannot change a Business Process picker name + <source_name> + , that has line item(s) associated with it.
726	Reference Commit picker value cannot be changed.
800	No Active multiple instance
803	Copy from shell template is not active

String Status Code	Description
804	(can be a combination of the following given below) can only contain the following characters: alphanumeric and [.-_] characters cannot contain any of the following characters: / \ : * ? " < > | Current shell cannot be a sub-shell of the selected shell Administrator is not a valid user
805	shell_name <shell name> already exists under <location>
806	shell_number <shell num> already exists
807	shell_name <shell name> already exists under <location>
808	shell_number <shell num> already exists
810	Integration Interface not found
811	Invalid Filter Condition
812	Copy from shell/template number is not correct
854	Amount exceeds remaining Reference Commit balance for one or more CBS codes
855	Reference commit value cannot be modified
867	Correct the syntax and resubmit the statement. The Data Type is not supported. Data Type should be one of the following: ▸ TIMESTAMP ▸ INTEGER ▸ FLOAT ▸ VARCHAR ▸ CLOB ▸ XML
869	Number of line items in the input file exceeds number of lines in the SOV