

Oracle Fusion Cloud Applications

Creating a Business Intelligence Cloud Extract

26A



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Get Help

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Thanks for helping us improve our user assistance!

1 Get Started

Overview of Business Intelligence Cloud Connector

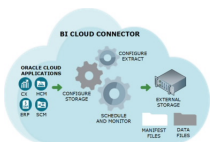
You can use Oracle Business Intelligence Cloud Connector (BICC) to extract business intelligence and other data in bulk and load it into designated external storage areas.

BICC is available as part of the Oracle Applications Cloud subscription. Additional access provisioning is required and you must sign into BICC to perform all tasks related to the data extraction. Details about access provisioning are provided in the Provision Access section.

After you sign into BICC, you can select the offerings from which to extract data, and also specify whether you want to store the extracts on a dedicated external cloud storage or load them into Oracle Universal Content Management (UCM). The extracted data is secure because the security standards applied to Oracle Applications Cloud extend to BICC as well. Extracts run faster depending on what you extract and how. Let's look at what you can do with BICC to extract data efficiently from the products available in your implementation:

- Configure an external storage location that works for your data needs.
- Extract complete or partial data. You can select offerings or specific objects.
- Run extracts on-demand or schedule them to run at specified intervals during the day, in a week, or throughout the month.
- Run incremental extracts if you need only the data that changed since your last extract.
- Schedule multiple independent extracts at convenient intervals.
- Monitor extracts and review logs.
- Export configured offerings and associated data stores.
- Manage refresh metadata and specify dates for incremental refresh comparison.

Here's a simple illustration of the workflow for storing, running, and managing the extracts.



This chapter introduces you to BICC and covers some of the basic tasks required to set up BICC. The subsequent chapters cover details about configuring and running the extracts, and managing the extraction process thereafter.

Note: Use BICC to extract data from the data stores and store them in an external storage for future retrieval and use. For details about downloading the data from external storage, refer to the external storage product documentation.

Provision Access

Overview of Access Provisioning

Before you prepare data extraction from any of the Oracle Cloud applications, you must configure user credentials with access to the BICC Console and the data files generated by BICC and store on the UCM server.

You need access to BICC to select offerings, identify what you want to extract, and specify where you want to store the extracted data. You need access to the files stored on the UCM server so that you can view and download the extracted data.

Access to BICC Console and UCM are provisioned through different roles. In the following topics, you will find details about provisioning users for both BICC Console and UCM.

Provision a User with Access to BICC

Set up a user who can access BICC. Below are details of how to create a custom role; you can also assign a user the BI Administrator role, which also has BICC Console access.

Before you start

You must set up the access using the Security Console of Oracle Applications Cloud. Therefore, make sure you have the Security Manager role assigned to you so that you can access the Security Console.

Here's what to do

1. Sign in to Oracle Applications Cloud and click **Navigator > Tools > Security Console**.
2. Click the Roles tab and click **Create**.
3. On the Basic Information page, enter the following values and click **Next**.

Field	Value
Role Name	BIACM_ADMIN
Role Code	BIACM_ADMIN
Role Category	BI - Abstract Roles

4. Click Next to navigate to the subsequent pages. You can skip entering details on the Function Security Policies and Data Security Policies pages.
5. On the Role Hierarchy page, click **Add Role**.
6. On the Add Role Membership dialog box, search for the following roles and click Add Role Membership to add them.
 - **ESS Administrator Role**: To create and manage schedules for global data extracts or jobs.
 - **ORA_ASM_APPLICATION_IMPLEMENTATION_ADMIN_ABSTRACT**: To have access to global offerings and data stores or jobs.
7. Close the Add Role Membership dialog box and click **Next**.
8. Skip entering details on the Segregation of Duties page and click **Next**.

9. On the Users page, click **Add User**.
10. On the Add User dialog box, search for and select the user to whom you want to assign this role.
11. Click **Add Selected Users** and close the dialog box.
12. Click **Next**. Review the summary and click **Save and Close**.

Provision a User with Access to BICC Content on UCM

Along with the access to BICC Console, you must also ensure that the user has access to the BICC generated content that's stored on the UCM server.

Before you start

Make sure you have the Security Manager role assigned to you so that you can sign into the Security Console.

The extract files are stored in the OBIAImport security group on the UCM server. Use the Security Console of Oracle Applications Cloud to provide the user with access to this security group.

Here's what to do

1. Sign in to Oracle Applications Cloud and click **Navigator > Tools > Security Console**.
2. Click the Roles tab and click **Create**.
3. On the Basic Information page, enter the following values and click **Next**.

Field	Value
Role Name	BICC_UCM_CONTENT_ADMIN
Role Code	BICC_UCM_CONTENT_ADMIN
Role Category	BI - Abstract Roles

4. Click **Next** to navigate to the subsequent pages. You can skip entering details on the Function Security Policies and Data Security Policies pages.
5. On the Role Hierarchy page, click **Add Role**.
6. On the Add Role Membership dialog box, search for **OBIA_EXTRACTTRANSFORMLOAD_RWD** and click **Add Role Membership**. This role membership is required to view and download the extract files on UCM.
7. Close the Add Role Membership dialog box and click **Next**.
8. Skip entering details on the Segregation of Duties page and click **Next**.
9. On the Users page, click **Add User**.
10. On the Add User dialog box, search for and select the user to whom you want to assign this role.
11. Click **Add Selected Users** and close the dialog box.
12. Click **Next**. Review the summary and click **Save and Close**.

Roadmap for the Cloud Extracts

After the accounts are provisioned, you are ready to do the next steps to extract data.

To provide a quick reference, the individual tasks are elaborated and tabulated here. You can use the task descriptions as mapped points and go to the relevant topics for details.

Task Group	Task	Description
Get Started	Sign in to BICC	Use the provisioned account and sign in.
	Set BICC Console Preferences	Personalize the console as per your preferences.
	Review View Object to Database Lineage Mappings	Review and understand how the BI view objects and database lineages are mapped.
Implement	Select BIVOs	Select any of the offerings and select the associated BIVOs.
	Configure External Storage	Select a storage location for the cloud extract files.
Schedule an Extract	Run an Extract	Create an extract schedule or run data extract for the selected BIVOs.
	Schedule an Extract	You can create and run multiple extract schedules and data extracts.
Administer	Monitor an Extract	You can view last cloud extract and check error messages in the case of failures. You can check scheduled jobs' logs to review issues causing errors and get support to resolve them.
	Download extract files	Download the extracted files from the configured storage location.

Review Database Lineage Mappings and View Objects

Before you extract data, you must know the BI View Objects (VOs) and their attributes. The data store guides describe the view objects and attributes that can be used for extracting data out of your application instances.

Use the Extract Data Stores guides available for the following offerings:

- *Oracle Fusion Cloud SCM Extract Data Stores for SCM*
- *Oracle Fusion Cloud Procurement Extract Data Stores for Procurement*
- *Oracle Fusion Cloud Financials Extract Data Stores for Financials*
- *Oracle Fusion Cloud Customer Experience Extract Data Stores for CX Sales and Fusion Service*

You can also review the mapping of VOs to the corresponding database tables and columns available in lineage spreadsheets hosted on the Oracle Cloud Customer Connect site.

Note: Lineage only includes data stores that have predefined extract definitions and are shipped with Oracle Fusion Cloud Applications. Non-standard data stores and attributes aren't available.

To review the mappings, follow these steps.

1. Click the link here that corresponds to your offering and navigate to the Oracle Cloud Customer Connect portal.
 - [R13.x HCM BI Cloud Adapter BI View Object to Database Lineage Mapping Spreadsheet](#)
 - [R13.x FSCM BI Cloud Adapter BI View Object to Database Lineage Mapping Spreadsheet](#)
 - [R13.x CX BI Cloud Adapter BI View Object to Database Lineage Mapping Spreadsheet](#)
2. On the Reporting and Analytics page for your product, review the information and click the link to the recently published .zip file.
3. On prompt, download the .zip file to a location on your local computer.
4. Extract the contents of the .zip file. The extracted folder contains spreadsheets that list the mappings of the BI VOs to database tables and columns.
5. Use the information in the spreadsheet to search for a View Object, the corresponding Database Table and Database Column.

Tip: Use the filters to narrow down and find names of the VOs that are required for your extracts.

To learn more about key performance recommendations, see the sections **BICC Performance monitoring and diagnostics** and **Oracle BI Cloud Connector Performance Considerations** in Oracle Fusion Transactional Business Intelligence and BI Cloud Connector Performance Recommendations ([KB151083](#)) on My Oracle Support.

To learn more about the tables and columns for the respective product areas, see the corresponding Tables and Views guides.

Sign In To BICC

Open any browser and enter **<https://<saas cloud host name>:<saas cloud port number>/biacm>**. Alternatively, you can use the web link supplied to you by Oracle Cloud Support. Enter your credentials and sign in to BICC.

Preferences

Immediately after you sign in to BICC, set your preferences even before you start working with it. You can set preferences such as regional settings, display language, and accessibility options.

1. On the panel tab, click **Preferences**. On the panel tab, click **Preferences**
2. Set these preferences:
 - Click **Regional** to specify the date, time, number, and time zone details.
 - Click **Language** to specify your preferred language.
3. Click **Save**.

Now you're ready to proceed with the data extracts.

Accessibility

To set your accessibility preferences:

1. Click the Accessibility icon on the global header of the BICC Console.

2. On the Enable Accessibility Preferences page, select the check boxes of the preferences you want to enable and click **Apply**.

2 Implement

Configure Where to Load Data

Click the **Configure External Storage** button in the panel tab and select the **Configure External Storage** link to open the Configure External Storage dialog box, where you can specify storage areas into which Cloud data is loaded.

For example, to load into one or more Oracle Cloud Storage Service instances, select the Storage Service Connection Configuration tab. Select the OCI Object Storage Connection tab to configure Cloud Infrastructure connections, and select the UCM Connection Configuration tab to configure Universal Content Management Server connections.

Storage Type — Cloud Storage Service

To specify the connection details for one or more Oracle Storage Service instances, click the name of a provisioned connection or click **Add** to create a new connection. Click **Delete** to delete an existing connection.

Storage areas are associated with extract schedules. You can have as many Cloud Storage Service containers as are required by your Cloud application integrations, but each should be used for its own requirements, so that there's no overlap between them. Runtime metadata, including the last extract date, is managed across all storage locations, so configuring the same data store in multiple schedules with different external storage configurations results in loss of incremental data.

Use the following fields in the Storage Service Connection page to specify the connection details:

Field Name	How to Use
Name	Specify a name for the connection.
OAC External Storage	Select this option if the connection is to an Oracle Analytics Cloud (OAC) storage service. You can specify only one OAC storage service connection. Note that encryption is disabled for OAC storage.
Protocol	Specify http for non-SSL, or https for SSL connection.
Host	Specify the Host name for the Oracle Storage Service. For example, mystorage.storage.oraclecloud.com .
Port	Specify the port number (optional).
User Name	Specify the user that is provisioned to load data. The user should have privileges to upload files in the container specified. User credentials will be stored in the Weblogic credential store under oracle.apps.security/FUSION_APPS_OBIA_STORAGESESV_USER-KEY.
Password	Specify the password for the user specified in the User Name field.
Service Name	Specify the service name of the Oracle Cloud Storage Service. For example, gse-otbie1 .
Container	Specify the name of the container that is allocated to upload extracted files. Click Refresh button to refresh the list of the containers. It's a good idea to check the storage service connection. Click Test Storage Service Connection to verify successful connection.

Field Name	How to Use
Data Encryption — Support Encryption	If you want to encrypt communication, select this option and use the Import Certificate option to specify the encryption keys.
Import Certificate	Click Browse and navigate to and select the location of the key file, or type the literal path location and file name.
Download Folder	Shows the directory in the domain server where the Batch Extract file is downloaded to reset extract dates before the extraction process.
Upload Folder	Shows the directory in the domain server where files are temporarily extracted by the cloud extractor before uploading to the storage service.

Storage Type — OCI Object Storage Connection

Use the following fields in the Configure External Storage page to specify the connection details:

Field Name	How to Use
Name	Specify a name for the connection. .
Host	Specify host name. Host information is available in <i>Object Storage Service API</i> in the OCI API Documentation.
Tenancy OCID	Specify Tenancy OCID. To obtain the Tenancy and user OCID, refer to this to <i>Where to Get the Tenancy's OCID and User's OCID</i> .
User OCID	Specify User OCID.
Namespace	Specify the namespace. Namespace is obtained in the OCI Console.
Bucket	Specify the bucket into which extracts are uploaded. Bucket names are obtained in the OCI Console.
Generate API Signing Key	Generate the required API signing key for OCI. The fingerprint is displayed after generation.
Export Public Key	Export the public key for upload to OCI.
Test Connection	Test the connection.

Storage Type — UCM

Review the connection details for Universal Content Management (UCM) using the following fields:

Field Name	How to Use
Protocol	Specify http for non-SSL, or https for SSL. If you select https here, you must also enable HTTPS on the UCM server, using the UCM Server Console.
Host	Shows the host name for the UCM Server. For example, <code>myserver.companyname.com</code>

Field Name	How to Use
Port	Specify the port number of the UCM Server (optional). For example, 7012 .
Test UCM Connection	Test the UCM connection.
Download Folder	Shows the directory in the domain server where the Batch Extract file is downloaded to reset extract dates before the extraction process.
Upload Folder	Shows the directory in the domain server where files are temporarily extracted by the cloud extractor before uploading to UCM.

Create and Manage an Offering

Click Actions > Create Offering in the Offerings dialog to open the Manage Offering dialog, where you can specify a new offering and associate a data store.

Manage Offering

Field Name	How to Use
Offering Code	Enter a code for the offering.
Offering Name	Enter a name for the offering. This is the name that will appear in the list of Business Intelligence Applications Offerings in the Configure Cloud Extract dialog.
Offering Description	Optionally, enter a description.

Associate Data Store

In the Associate Data Store section of the dialog, filter for the data store, then select and click the **Move selected items to other list** button to add the VO, then click **Save**.

Add a Datastore for an Offering

You can add a data store and specify its details for an offering.

1. On the Data Stores for Offering page, click the **Add** button.
2. On the Data Store Settings page, enter these details to specify a new data store for the selected offering.

Field Name	How to Use
Data Store Key	Enter a key for the data store. This is a mandatory field and is used in the validation process.
Query Filter	Enter a filter to restrict the returned data when you run the query. All column references should

Field Name	How to Use
	<p>follow the format underscore (_) underscore (_) DATASTORE underscore (_) underscore (_) dot (.) >BI VO Column Name>, for example select __DATASTORE__.ViewApplicationId=0 where ViewApplicationId is the column name in the BI VO and of data type number. Similarly, to filter results based on timestamp, you can follow the format __DATASTORE__.CostDistributionLinesEOLastUpdateDate >= TIMESTAMP '2019-01-15 07:45:00' where the results are filtered as per the given parameter TIMESTAMP '2019-01-15 07:45:00'. You can use the appropriate operators such as = or >= to get the expected results. If you don't enter Query Filter, the field displays "(none)" after you save the details.</p> <p>Note: Filters up to 4,000 characters are supported.</p>
Data Store Options	<ul style="list-style-type: none"> ○ Silent Error: When selected, errors on a data store that occur during the extract are ignored. Deselect it if you want to display the errors during the extract process. <p>Note: The last extract date is set on a datastore only when a datastore extract is successful. When Silent Error is enabled and if the scheduled BICC extract fails, the files already extracted for the data stores where extraction was successful are preserved in spite of the extraction failure of other data stores marked with silent error. But if this option is not selected and the extract fails, the already extracted files are removed for all data stores.</p> <ul style="list-style-type: none"> ○ Disable Effective date filter: Select this option to extract all historical records, and not use the date filter. Note that console allows setting this option on all datastores and is not restricted to effective dated datastore. So, set this option only after confirming the nature of the data. ○ Extract Data Store Metadata: This option is selected by default. When selected, this option generates an .mdcsv file with the data extract. ○ Use UNION ALL for incremental extract: Enable this if you schedule incremental extracts.

3. In the Associate Offerings section, from the Available Offerings list, select the offerings you want to associate with the data store. Click the **Move** button to move the selected items to the Selected Offerings list.

Tip: You may double-click an offering in the Available Offerings list to move it to the Selected Offerings list. Double-click an offering in the Selected Offerings list to reverse the selection.

4. Click Save. The details of the newly added data store appear.

To modify details of the newly added data store, click Edit Data Store Details. To define columns for extraction, click Select Columns. The column definitions are retrieved from the BI repository.

For more information, refer to the topic [Preview and Edit a Data Store for an Offering](#).

Configure Extract Preferences

Click Actions > Extract Preferences to open the Extract Preferences dialog, where you can specify preferences for extracts.

Language

In the Preferred Extract Language field, select the language you'd prefer extracts be made in.

Prune Time in Minutes

To ensure data dependencies across objects are maintained during incremental extracts, you can set a prune time that determines how long before the last extract date to extract data from. The default, 1,440 minutes or 24 hours, ensures a look-back that works best for extracts with daily or higher reoccurrence. You should adjust prune time to a smaller window if your extracts are scheduled more frequently or if any downstream system can handle objects extracted in any order. In general, use prune time in accordance with the frequency of your extracts. If you run extracts hourly, set the prune time to 60 minutes. If you run daily, leave it as the default of 1,440 minutes. If you don't need overlapping data to manage early or late dependencies across data stores, you can set the prune time to zero.

Examples:

- With Pruning Time set to the default of 1440 minutes or 24 hours, a daily extract has 48 hours of data because it includes data from 24 hours before the last extract date.
 - a. An extract runs on 7/28, so the last extract date is updated to 7/28.
 - b. Another extract runs 24 hours later on 7/29. It would filter for data from 7/27 forward, representing the last extract date of 7/28 minus prune time of 24 hours. The extract would have data for 7/27 - 7/29, or 48 hours.
- If Pruning Time is set to zero, a daily extract has 24 hours of data.
 - a. An extract runs on 7/28, so the last extract date is updated to 7/28.
 - b. Another extract runs 24 hours later on 7/29. It would filter for data from 7/28 forward, representing the last extract date of 7/28 minus prune time of zero hours. The extract would have data for 7/28 - 7/29, or 24 hours.

Job Settings

In the Timeout in Hours field, enter the number of hours before a job times out. The default is 10. By default, the job fails on timeout. Deselect Timeout Force Fail if you prefer that timed out jobs not be failed.

Note: If timed out jobs aren't failed, all data files for all data stores that were successful before the timeout are uploaded to external storage.

File Parameters

In the Compression type field, select the type of compression you'd like to use. In the Split file size (GB) field, specify the file size by which extracted CSV files are divided for a single VO. The default is 1 GB. You can set the file size from one to five GB.

In the Uploaded file expiry (Days) field, enter the number of days you'd like the extract files to persist.

File Parameters settings can be overridden at the schedule level when creating schedules and assigning external storages to them.

External Storage

Select the **Upload to Multiple External Storage** option to increase the number of external storages that can be selected in the External Storage list when creating or editing schedules. The default is one storage, and the maximum is two.

Retry Parameters

During extraction, connections to the BI Server or queries may fail, causing retries. In the Analytic server connection retry limit field, specify the number of connection attempts made to complete the extraction. In the Analytic server query retry limit field, specify the number of times a query is resubmitted.

The Analytic server connection retry limit setting can be overridden at the schedule level when creating schedules and assigning external storages to them.

Global Extract Schedule Notification

To send notifications when scheduled extract events occur, select the notifications you want upon extract start, success, or failure. In the Mail To Addresses, enter email addresses, separated by commas, to which you want notifications sent.

Global Extract Schedule Notification settings can be overridden at the schedule level when creating schedules and assigning external storages to them.

Configure Flexfield Label Languages

Click Actions > Configure Flex Label Languages in the Offerings dialog to open the Configure Flex Label Languages dialog, in which you can specify a language for flex labels.

In the Flex Label Languages list, scroll to select the language you want, then click the **Move selected items to other list** button to add it to the selected list, then click **Save and Close**. To suspend extraction of flexfield labels during extraction, select the **Suppress Flex Label Extract** option.

Configure Offerings to Extract

You can select offerings that you want to extract, specify VOs from which to extract data, and set up once-only or regular data extracts in the Offerings dialog box.

Click the **Manage Offerings and Data Stores** button in the panel tab and select the **Manage Offerings and Data Stores** link to open the Offerings dialog box.

Offerings

Field Name or Option	How to Use
Offerings list	View the offerings that are available for extraction. Click an offering to view and configure its data stores.
Search	Enter an offering name and click Search to locate it in the list.
Actions > Create Offering	Create a new offering and specify its VOs.
Actions > Reset Last Extract Date	Specify the last extract date from which extraction should begin for incremental loads.
Actions > Configure Flex Label Languages	Specify a language for flexfield labels.
Actions > Extract Preferences	Specify extract parameters, including: job timeout; CSV file size to split files by; retry parameters in case of intermittent BI Server connection or query failures; and extract schedule email notification frequency and recipients.
List View	View the Offerings list as a list with Actions icon for each offering.
Grid View	View the Offerings list as a grid with Actions icon for each offering.
Offering Action > Delete	Delete the currently selected offering and its corresponding VO association. Available only for user-defined offerings.
Offering Action > Edit	Change the Offering Name and VO association of the currently selected offering.
Offering Action > Reset to Shipped Content	Reset the offering to shipped content, removing any changes made.
Offering Action > Reset to Full Extract	Reset the last extract date so that a full data load is performed for the offering, instead of an incremental load. You typically use this option if your business requirements have changed or when fact data has been corrupted.
Offering Action > Reset All Data Stores To Shipped Content	Reset all the mapped data stores to the shipped content, removing all changes made until that point.

Click the **Manage Offerings and Data Stores** button in the panel tab and select the **Export Modification** link to collect modification information from the source environment and export it as compressed CSV files. The source file returns all values in string format and it is enclosed in double quotes whether the data has null or empty value.

Export or Import Customization is used to export or import all user customized metadata from one environment to another of the same version. You can export all jobs or a specific job. To export a specific job, click **Manage Offerings and Data Store** button and select **Export Modification**. On the Export Modification dialog box, click the **Jobs** checkbox, select the specific job from the list, and click **OK**.

Select the **Import Modification** link to apply modifications to the destination environment using the exported compressed CSV files. On the Import Modification dialog box, click Browse and select the exported files, and click **Import**.

Note: If you reset all data stores at the offering level before performing the import, the PVOs attain the schema definition of the imported files.

Data Store for Offering: Offering name

Click an offering in the Offerings list open the Data Store for Offering: Offering Name page, where you can specify View Objects VOs from which to extract data.

Field Name or Option	How to Use
Data Stores list	View the data areas that are available for extraction for the offering you clicked.
View > Columns	Select columns to be displayed in the Offerings list.
View > Detach	Pop out the section of the dialog box so you can see more data.
View > Reorder Columns	Change the display order of the columns in the Data Stores list.
View > Query By Example	Filter the displayed results by entering the first few letters of a name.
Add	<p>Specify a new Data Store for an offering. For example, you might want to add a view object (VO) for extraction. To add a VO, in the wizard's Datastore details page, provide the VO name, then specify whether you want to disable effective data filter, which allows for extraction of all historical records, if required. Enter any required query filter, using column references following the format <code>__DATASTORE__.<BI VO Column Name></code>. In the wizard's Select Columns page, select the column types for the select query from the Column Filter list, then uncheck the columns you don't want included in the SELECT list. If the VO is defined as Effective Date Disabled, you can select the Natural Key option for a Primary Key Column to define a natural key.</p> <p>To add a user-defined data store, enter the name of the VO and provide the name of its Available Offering. When you select the columns, select the primary key for the VO. It will now appear with the predefined VO's.</p>
Remove	Delete the currently selected Data Store.
Refresh	Refreshes the Data Store list.
Query by Example	Filter the displayed results by entering the first few letters of a name.
Detach	Pop out the section of the dialog box so you can see more data.
Actions > Reset to Full Extract	Reset the last extract date so that a full data load is performed at the next load for the data store/VO, instead of an incremental load. You typically use this option if your business requirements have changed or if fact data has been corrupted.
Actions > Reset to Shipped Content	Reset the VO to shipped content, removing any changes made.
Actions > Export Metadata Definition (MDCSV)	<p>Export metadata definition for the data store in the MDCSV format. The selected data store content is exported into a zip file that you can download.</p> <p>Here's some additional information about this format:</p> <ul style="list-style-type: none"> • File extension: .mdcsv • Delimiter: (three vertical pipes) • Includes Primary Key columns: Yes • Includes Incremental columns: No • Includes Select List columns: No <p>You can extract the metadata definition in this format when you run the data extracts.</p>
Actions > Export Metadata Definition (CSV)	<p>Export metadata definition for the data store in the CSV format. The selected data store content is exported into a zip file that you can download.</p> <p>Here's some additional information about this format:</p>

Field Name or Option	How to Use
	<ul style="list-style-type: none"> File extension: .csv Delimiter: , (comma) Includes Primary Key columns: Yes Includes Incremental columns: Yes Includes Select List columns: Yes <p>You can't extract the metadata definition in this format when you run the data extracts.</p>
Actions > Export UI Label	Export user interface labels for the VO. A zip file is generated with files for each configured language.
Actions > Download Sample CSV File	Verify the sample extract from the selected data store.
Actions > Advanced Extract Configuration	Specify initial extract date and chunking for creation date and primary key for full loads.
Actions > Manage Extract Mode	Specify the extract mode. When BI Broker extract mode is enabled, extract jobs don't use the BI Server. They interact directly with data stores and the Cloud Applications source database. To enable it, select BI Broker extract mode in the Manage Extract Mode dialog and click OK . A check is then performed to verify that BI Broker mode is supported for the data store, and if not an error is displayed.
Last Extract Date	View the date and time when the Data Store was last extracted.

Click the **Configure Cloud Extract** button in the panel tab and select the **Review Cloud Extract Configuration** link to return to the Enabled Data Stores dialog box.

Broker Extract Mode

BI Broker extract mode is supported for some data stores, and can be set at the data store, schedule, and job levels. When you set the mode, any affected data stores are verified for Broker mode support. If there's no error, the included data stores using the mode are extracted independently of the BI Server metadata, with extract queries running directly against the data stores in the Oracle Applications Cloud database, which can help extract performance.

New and Deprecated Data Stores

After an update, new and deprecated VOs are documented so that you can add new VOs and columns to your extracts and remove any that aren't available. For more information, see R13.x Deprecated and New BI View Objects.

Perform Advanced Extract Configuration

You can set advanced extract configurations when you run full extracts. You can use advanced extract configuration settings when you extract numeric or CLOB data types.

1. On the Data Store for Offering page, use Actions > Advanced Extract Configuration for a data store to open Advanced Extract Configuration.
2. In the Advanced Extract Configuration page, you can set advanced extract configurations for a selected data store. For full extracts, you can enable chunking by creation date or by primary key.

Filter and/or Chunk By Creation Date Columns

Field Name	How to Use
Initial Extract Date	Optionally, specify the initial date from which the full extract should be performed. This option requires selection of the Is Creation Date option for a column or columns in the column list, which represent the Creation Date.
Support chunking	Optionally, select By Creation Date to chunk by to specify a number of days by which to extract date range batches or chunks of data. This option requires selection of the Is Creation Date option for a column or columns in the column list, which represent the Creation Date.
Number of Days	If you selected to support chunking by creation date, specify the number of days, for example 365, by which to chunk extracts.
Columns	View the columns that are available for designation as creation date. Select the Is Creation Date option for the appropriate column.

Chunk By Primary Key Column

Field Name or Option	How to Use
Support chunking	Support chunking by numeric primary key. This option requires a single numeric primary key column for the data store.
Number of Rows	Specify a number of rows to chunk extracts by.

Extract as String

In the Extract as String tab, you can select columns that are of numeric or CLOB data types for conversion. Select the **Cast to String** checkbox to extract numeric columns with more than 15 digits and CLOB data types. This setting trims the CLOB data to the character string limits supported by VARCHAR datatype. This isn't a data transformation. Data transformations, including data format customizations, aren't supported by BICC.

3 Schedule Extracts and Jobs

Specify When to Run Global Extract Jobs

You can set up and monitor once-only or regular data extract jobs – for example, once per day at midnight – for Business Intelligence data from an Oracle Applications Cloud data source in the Manage Extract Schedules dialog box.

Click the **Manage Extract Schedules** button in the panel tab and select the **Manage Extract Schedules** link to open the dialog box.

Field Name	How to Use
Schedules	<p>This list shows schedules submitted in the last 24 hours. Use the Add option to set up once-only or regular data extract. Use the Delete Schedule option to delete the currently selected schedule. Click a schedule's name to preview or edit its details. In the Schedule Details, click the Edit option to update the details of the currently selected schedule. Use the Switch to BI Broker Extract option to apply BI Broker mode to the schedule. This changes the extract mode of all the data stores in the schedule.</p> <p>Note: When you change a schedule to BI Broker mode, all of its data stores use that mode. This allows you to set the mode for multiple data stores, but BICC won't validate the mode using this option. The implementer has to validate the status after the schedule is updated. BI Broker mode doesn't support all data stores. It's strongly recommended that you set the mode at the the data store level and test before implementing the mode for all data stores in a schedule.</p> <p>It's recommended that you periodically purge the Schedules list, as not all completed schedules are shown. To do this, use the Delete Inactive Schedules option.</p>
Schedule Requests	<p>This list shows the details of data extract processes for the Schedule that's currently selected in the Schedules list. A new row is created in the table every time an Cloud extract request is processed. Use the Delete option to delete the details of the currently selected request. If you delete a schedule job from this list, it doesn't remove the BI Cloud data that's been extracted and loaded by that job.</p>

Monitor a Cloud Extract

In the Schedules dialog, click **Actions** and select the option for the last run corresponding to the job type, Cloud Data Extract or Deleted Record Extract. Each job type displays in its own dialog, which lists the last cloud extract or deleted record extract status of each VO with status of SUCCESS or FAILURE for each data store and error messages in the case of failures. The ESS Request Id column displays the job for which the VO extraction last ran.

Scheduled jobs also write logs that can be used to review issues causing errors or shared with Oracle Support to resolve a service request. To review the extraction details, click the **Download Logs** link in the Status column for each extract job in the **Manage Job Schedules** dialog box.

For scheduled jobs, whether successful or not, an extraction status file in JSON format is uploaded to external storage. The files have a default expiration date, and have the following file name format, depending on job type:

- Cloud Data Extracts: `EXTRACT_STATUS_DATA_SCHEDULE_<Schedule Id>_REQUEST_<request_id>.JSON`
- Deleted Record Extracts: `EXTRACT_STATUS_DELETED_SCHEDULE_<Schedule Id>_REQUEST_<request_id>.JSON`

Column	Content
Name	VO name
status	VO extract status
errorMessage	If extract failed, any resulting error status
runDate	Run date of the extract of the VO
queryDurationInSec	Time the query took to run, in seconds
extractDurationInSec	Time the extract of the query results took, in seconds
uploadDurationInSec	Time the upload to external storage took, in seconds
totalDurationInSec	Total duration of the job
rowCount	Number of rows extracted

Create a New or Edit an Existing Data Extract Schedule

In the Manage Extract Schedules dialog, click **Add** or **Edit** to create a new Cloud data extract or edit an existing one. For example, you might want to extract data from your Cloud data source once per day at midnight.

For a once-only data extract, use the **Simple** option in the **Recurrence** list. You can only create a schedule if there isn't an active schedule for the selected job type (for example, Cloud Data Extract, Deleted Record Extract, or Data and Delete Record Extract). Click **Next** to specify the data stores for extract for an offering in the Data Store List page.

Schedule Details

Field Name or Option	How to Use
Job Type	<p>To extract data, select Application Data Extract. Application Data Extract supports incremental extracts after the last successful extract. To manage deleted records, select Active Primary Key Extract, which extracts all primary key values to identify deleted records. To combine both Application Data Extract and Primary Key Extract into one job, select Application Data and Active Primary Key Extract.</p> <p>To purge expired files from Universal Content Management (UCM), select Delete Expired UCM Files. When a file is extracted and uploaded to UCM, it has a default expiration of 90 days. Expired files are soft deleted from UCM and may eventually require purging to preserve space. The job deletes only expired files from the OBIAImport security group.</p> <p>Ensure you don't use UCM as a repository to archive all the extracts. If you don't delete the files periodically, the UCM storage can experience space management issues. Deleting files over longer period does not scale in UCM.</p> <p>You must have a workflow to purge the files in UCM after you've downloaded them. You can use BICC job Delete Expired UCM Files for this action.</p>

Field Name or Option	How to Use
	To delete all of the files uploaded to one or more selected external storages, select Delete Files in Storage . For a storage service, this job deletes all files from the container associated with the external storage. For UCM, it deletes all file uploaded to the OBIAImport security group.
Name	Specify a short name to identify the schedule in the Schedules list.
Description	Specify a brief description to identify the schedule, which is only displayed on the Edit Schedule dialog.
Global Data Store List	Accept the default of No to select data stores for extraction. Select Yes to use the Global Data Store.
Recurrence	Specify how often you want the extract to be performed. To create a once-only data extract, select Simple .
Hourly Interval	Specify the number of hours to perform hourly interval extracts by (if you select Hourly in the Recurrence list). Use hourly extracts with caution. The total extract time depends on the selected data store design and must be tested by the implementer. Hourly extract adds load on Fusion database and is not recommended.
Date and Time	Specify the date and time to perform a once-only extract (if you select Simple in the Recurrence list).
Time	Specify the time to start an extract, in the format HH:MM:SS AM PM. For example, 3:00:00 AM.
Day	For weekly schedules, select the check box next to each day on which you want to extract data. For Monthly or Yearly extracts, select the day of the month on which you want to extract data.
Month	For Yearly (annual) schedules, select the month in which you want to extract data.

Data Store List

Field Name or Option	How to Use
Offering	Select an offering to extract.
Data Store List	Lists the data stores for a selected offering.
Enabled for Extract	Select to enable a data store for extract.
Query By Example	Filter the displayed results by entering the first few letters of a name.
Detach	Pop out the section of the dialog box so you can see more data.

External Storage

For seamless integration, you can configure a schedule to use application-specific storage service containers, allowing you to schedule extracts for multiple integrations.

Note: To optimize the extraction flow and force reuse of the extracted data files across integrations, it's preferable that separate storage containers be used when there's no overlap on the data stores required for each integration. Runtime metadata, including the last extract date, is managed across all storage locations, so configuring the same data store in multiple schedules with different external storage configurations results in loss of incremental data. If an overlap on the data stores is required, you can enable advanced extract options for extract jobs to upload the same data files to two separate external storage locations. To do this, select the Upload to Multiple External Storage option in the Extract Preferences dialog box.

Field Name or Option	How to Use
External Storage	For extracts, select a data store to upload the extract to. By default, you can select one. If the Upload to Multiple External Storage option is selected in your extract preferences, you can select two data stores if an overlap of the data stores is required. If you're deleting expired UCM files, the UCM external storage is selected. If you're deleting files in storage, select one or more from the list of external storages to delete.
Notification	Select one of the following options: Use Global Extract Notification to use the global settings defined in the Extract Preferences dialog box; Define Notification to set notifications for the schedule and override the global settings; or None. the notifications you want upon extract start, success, or failure. In the Mail To Addresses, enter email addresses, separated by commas, to which you want notifications sent.
Notify On	If you have selected Define Notification for the schedule, select the notifications you want upon extract start, success, or failure.
Mail to Addresses	Enter email addresses, separated by commas, to which you want notifications sent.
Use Global File Parameters	Select Yes to you use the global file parameter settings defined in the Extract Preferences dialog box. Select No to set parameters for the schedule and override the global settings.
Compression Type	Select the type of compression you'd like to use for the schedule.
Split file size (GB)	Specify the file size by which extracted CSV files are divided for a single VO for the schedule. The default is 1 GB. You can set the file size from one to five GB.
Uploaded file expiry (Days)	Enter the number of days you'd like the extract files to persist for the scheduled extract.

Preview and Edit a Data Store for an Offering

You can view the details of the existing data stores. If there are any changes, you can modify them and plan to re-extract, if necessary.

Preview a Data Store

1. On the Manage Offerings and Data Stores tab, click the Manage Offerings and Data Stores link.
2. On the Offerings page, from the list of offerings, click an offering for which you want to view the data stores.

3. On the Data Stores for Offerings page, click a data store to view the data store information.

You can view the following information:

- Data store code.
- Query filter
- Data store options
- Associated offerings
- Data store columns for which the attributes such as incremental key, primary key, and so on are set

Edit Data Store Details

Click the Edit Data Store Details button to edit the saved data store details. You may modify the query filter, select or deselect the data store options, including whether to use Broker Mode for Extract, and change the list of offerings. You can also download the sample CSV file to preview, if required. Save the edits you make before leaving the page.

Select Columns

Click the Select Columns button to modify the list of selected columns that are to be included in the extract. On the Data Store Column Selection page, you can select the columns and make modifications using the various options available. These are explained here:

- Select the check box in the Include column to select a data store column. Selecting the check box in the Primary Key column automatically selects the check box in the Include column.
- Use the Search Column Names field to enter specific keywords and filter the list of columns.
- Use Filter to filter results by various column types. By default, it's set to Show All. Here is a brief description about the other filter options:
 - Date Type Columns: Filters and displays columns that have **TIMESTAMP** as the data type. For such columns, the extracted data might store a detailed timestamp value.
 - Varchar Type Columns: Filters and displays columns that support data of type **varchar**.
 - Numeric Type Columns: Filters and displays columns that contain only numeric data. These columns mostly contain various IDs that are generated or assigned.
 - Primary Key Columns: Filters and displays columns that are primary keys.
 - Incremental Key Columns: Filters and displays columns that store incremental keys.
 - Deprecated Columns: Filters and displays deprecated columns, if any.
- Click the Select list to make bulk selection or deselection of columns. Use Revert to undo the last select all or unselect all action.
- Click **Actions > Retrieve PK** to reset the primary keys.

Once you make all the changes, click **Save**. The columns that you select here for inclusion appear on the Data Store Details page.

Add a Job

You can create jobs, specify and manage their data stores, and schedule and run them using refresh metadata at the job level, isolating them from global refresh dates and allowing for overlapping extracts of the same data stores.

1. Click the Manage Jobs panel tab and click the Manage Jobs link.
2. On the Manage Jobs page, click the Add button.
3. On the Add Jobs page, enter these details to create a new job and manage its refresh metadata.

Field Name	How to Use
Name	Enter the name of the job.
Description	Enter a description of the job.
Offerings	From the list, select the offering that contains the data stores you want to include in the job.
Enabled for Extract	Select the check box for the data store that you want to enable for extract.

4. Click Save. The job is added and the page navigates to the Manage Jobs page.

If you want to modify the job details, click the job name. The Job Details page appears where you can do the following:

- To edit details of the job, click the Edit button. On the Edit Job page, you can modify the job details. For more information on modifying the job details, refer to the topic [Manage Job Data Stores](#).
- To modify the data store details, click the data store name. You are taken to the page where you can modify the data store details. For more information on modifying the data store details, refer to the topic [Preview and Edit Job Data Stores](#).

Manage Jobs

Jobs allow you to extract data from Oracle Applications Cloud to support multiple downstream integrations. All data stores' metadata is managed at the job level. Different jobs may be used for different requirements, and run on whatever schedule is needed, including running different jobs with the same data stores running at the same time.

You can use different frequencies and columns in your jobs. For example, you a Payroll Manager might run a monthly job on a larger set of columns, while a payroll team member might run a more limited weekly extract. If there's a single downstream target for the extracted data, use Manage Extract Schedules.

In this example, there are four columns, A, B, C, and D. The monthly job extracts B, C, and D, while the weekly job extracts A and B. This can be done in two ways, with different query impacts on Oracle Applications Cloud that should be considered when planning jobs. It's important to consider the costs of multiple extracts on Oracle Applications Cloud.

- You can extract all four columns every time and split the extracted data in the destination system without impacting Oracle Applications Cloud transactional processing.
- If your destination system doesn't have the ability to split the data into sets of B, C, and D and A and B, then you can create two different jobs, one for each case. This approach causes two queries on Oracle Applications Cloud.

Use these options to manage the jobs you add:

Field Name	How to Use
Jobs list	View the extract jobs that are available for extraction. Click a job link to view the job definition and configure its data stores.
View > Columns	Select columns to be displayed in the Jobs list.
View > Detach	Pop out the section of the dialog box so you can see more data.
View > Reorder Columns	Change the display order of the columns in the Jobs list.
View > Query By Example	Enter the first few letters of the search string and press Enter.
Add	Specify a name, description for the job, and data stores. The data store metadata definitions are copied to the new job definition. If the data stores have been modified at the global level, the modified versions of the metadata are picked.
Delete	Delete the currently selected job.
Refresh	Refreshes the Jobs list.
Detach	Pops out the table into a separate dialog box to provide better view of the contents.
Query By Example	A shortcut button for the same feature that's available in View > Query By Example.
Actions > Copy	Copy the selected job definition. Schedules for the job aren't copied.
Actions > Reset to Full Extract	Reset the last extract date so that a full data load is performed at the next load for all data stores/VOs selected for the job, instead of an incremental load.
Actions > Reset Last Extract Date	Reset the last extract date for all the data stores within the job.
Actions > Manage Initial Extract Date	Specify the initial extract date for all the data stores in the job that have at least one creation date column.
Actions > Manage Batch Mode Preferences	Specify whether to run the job in batch mode. By default, all data stores defined in a job definition have the Silent Error flag enabled. To turn off the Silent Error flag for all job data stores, set the job to batch mode.
Actions > Manage Extract Mode	Select BI Broker extract mode to apply it to the job. This changes the extract mode of all the data stores in the job. Note: When you change a job to BI Broker mode, all of its data stores use that mode. This allows you to set the mode for multiple data stores, but BICC won't validate the mode using this option. The implementer has to validate the status after the job is updated. BI Broker mode doesn't support all data stores. It's strongly recommended that you set the mode at the the data store level and test before implementing the mode for all data stores in a job.

Manage Job Schedules

Use these options to view and manage your job schedules:

Field Name	How to Use
Search	Use the Job list to filter for specific jobs and the Submission Time After field to decrease the submission time window displayed in the Schedules and Schedule Requests lists. The schedules for the last 24 hours are displayed by default.
Schedules list	This list shows currently defined schedules. Use the Add option to set up a one-time or recurring data extract job schedules. Use the Edit option to update the details of the currently selected schedule. To delete a schedule, cancel it and then use the Delete option to delete it.
Schedule Requests	This list shows the details of data extract processes for the Schedule that's currently selected in the Schedules list. A row in this table corresponds to an ESS request. For a recurring schedule, there will be multiple rows. For each row, you can click the State of the request to download the ESS log. Select the View All Runs checkbox to view all the ESS requests corresponding to the schedule. Use the Delete option to delete the details of the currently selected request. If you delete a schedule job from this list, then this doesn't remove the BI Cloud data that's been extracted and loaded by that job.

Manage Job Data Stores

Click a job in the Jobs list open the Job Details: Job Name page, where you can view and specify data stores from which to extract data. Modify the job data store details as required.

Job Details: Job name

Field Name or Option	How to Use
Edit	Edit job name, job description, and job data stores.
Edit Group	Edit the order of execution within the job. Select the group number and specify group item priority for each data store.
Done	Close the dialog box and return to Manage Jobs.
Actions > Compare Shipped Metadata	Compare shipped data store metadata with modified metadata side-by-side. Available for data stores that are part of a job profile.
Actions > Reset to Full Extract	Reset the last extract date so that a full data load is performed at the next load for the data store/VO, instead of an incremental load.
Actions > Reset to Shipped Content	Reset all the data stores in the job to shipped content.
Actions > Export Metadata Definition (MDCSV)	Export metadata definition for the data store in the MDCSV format. The selected data store content is exported into a zip file that you can download. Here's some additional information about this format: <ul style="list-style-type: none"> File extension: .mdcsv Delimiter: (three vertical pipes) Includes Primary Key columns: Yes Includes Incremental columns: No Includes Select List columns: No You can extract the metadata definition in this format when you run the data extracts.

Field Name or Option	How to Use
Actions > Export Metadata Definition (CSV)	<p>Export metadata definition for the data store in the CSV format. The selected data store content is exported into a zip file that you can download. Here's some additional information about this format:</p> <ul style="list-style-type: none"> • File extension: .csv • Delimiter: , (comma) • Includes Primary Key columns: Yes • Includes Incremental columns: Yes • Includes Select List columns: Yes <p>You can't extract the metadata definition in this format when you run the data extracts.</p>
Actions > Export UI Label	Export user interface labels for the VO. A zip file is generated with files for each configured language.
Actions > Download Sample CSV File	Verify the sample extract from the selected data store.
Actions > Advanced Extract Configuration	For full extracts, use Advanced Configuration to apply a filter or chunk. Select the Cast to String checkbox in the Extract as String tab to extract numeric or CLOB data types. This setting supports CLOB data up to the character string limits supported by the VARCHAR datatype. If data is larger than the string limit, the extract fails. Data transformations, including data format customizations, aren't supported by BICC.
Actions > Manage Extract Mode	Specify the extract mode. When BI Broker extract mode is enabled, extract jobs don't use the BI Server. They interact directly with data stores and the Cloud Applications source database. To enable it, select BI Broker extract mode in the Manage Extract Mode dialog and click OK. A check is then performed to verify that BI Broker mode is supported for the data store, and if not an error is displayed.

Preview and Edit Job Data Stores

On the Job Details page, you can modify the job details. You can also view or modify the details of the associated data stores.

Edit Job Details

1. On the Job Details page, click the Edit button.
2. Modify the job name and description, if required.
3. To add or remove offerings, click the Offerings list and select or deselect the Enable for Extract check box for the identified offerings.
4. Click Save.

Edit Job Data Store Details

1. On the Job Details page, click the data store name that's listed in the Data Store column. The link opens the data store page.
2. Click Edit Data Store Details. On the Data Store Settings page, you can do the following:
 - Click the Download Sample CSV File to validate the data store and download a sample CSV file.

- Add or modify the Query Filter.
- **Note:** Filters up to 4,000 characters are supported.
- Select or deselect the Data Store Options.

3. Click Save.

Select Columns

1. On the Job Details page, click the data store name that's listed in the Data Store column. The link opens the data store page.
2. Click Select Columns. On the Data Store Column Selection page, you can do the following:
 - Click the Download Sample CSV File to validate the data store and download a sample CSV file.
 - Include or exclude the data store columns based on your extract preferences.
3. Click Save.

Customize Job Data Stores

Click **Customize** in the Preview Data Store dialog box to open the Customize Job Data Store for job: Job Name dialog box. All modifications for a data store are stored for the current job.

Customize Data Store for Job

Field Name or Option	How to Use
Silent Error	Default is to use silent error. Deselect to allow errors.
Disable Effective Date Filter	Enable this option if there's a requirement to extract all historical records. Note that the VO not validated as being effective dated in nature, so set this option only after confirming the nature of the data
Extract Data Store Metadata	Enable this option to extract data store metadata with the job, for example attribute definitions.
Use UNION ALL for incremental extract	The default incremental extract strategy is to use OR. Select this option to use UNION ALL.
Query Filter	Specify a query to filter the data.
Support Chunking	Chunk data for large data VOs, splitting the output into chunks by initial extract date, creation date, or primary key. Set an Initial Extract date to filter data on that date for data store columns defined as Creation Date, and select the preferred chunking option in the Support Chunking list.

Note: Silent Error ignores the errors on a VO during an extract. When Silent Error is enabled and the scheduled BICC extract fails, the PVO files already extracted by the same schedule are preserved inspite of the BICC extract failure. On the contrary, if Silent Error is disabled and the scheduled BICC extract fails, the PVO files already extracted by the same schedule are removed.

Add a Job Schedule

Click the **Manage Jobs** button and select the **Manage Job Schedules** link to open the Manage Job Schedules dialog box, where you can manage job level schedules.

Manage Job Schedules

Field Name or Option	How to Use
Show Stateless Schedules	Expand Search and enable the option to view jobs scheduled by web services.
Schedules list	This list shows currently defined schedules. Use the Add option to set up once-only or regular data extract. Select a schedule to view or update its details. Click the Cancel Schedule button to cancel a scheduled extract, and the Delete Schedule button to delete the currently selected schedule.
Schedule Requests list	This list shows the details of data extract processes for the Schedule that is currently selected in the Schedules list. A new row is created in the table every time a Cloud extract request is processed. Use the Cancel option to cancel a scheduled run or delete the details of the currently selected request. If you delete a scheduled job from this list, the data that's been extracted and loaded by that job isn't removed.

In the Manage Job Schedules dialog box, click **Add** to create a new Cloud data extract or click a schedule to preview an existing one and edit it if it's a recurring schedule.

Field Name or Option	How to Use
Job	Specify the job you're creating the schedule for.
Name	Specify a short name to identify the schedule in the Schedules list.
Job Type	To extract data, select Application Data Extract. To sync the job data stores to your source data, select Active Primary Key Extract, which extracts primary key values to identify deleted records. To combine both Application Data Extract and Active Primary Key Extract into one job, select Application Data and Active Primary Key Extract.
Description	Specify a brief description to identify the schedule.
External Storage	Select the external storage for the schedule.
Recurrence	Specify how often you want the extract to be performed. To create a once-only data extract, select Simple.
Hourly Interval	Specify the number of hours to perform hourly interval extracts by (if you select Hourly in the Recurrence list).
Date and Time	Specify the date and time to perform a once-only extract (if you select Simple in the Recurrence list).
Time	Specify the time to start an extract, in the format HH:MM:SS AM PM. For example, 3:00:00 AM.
Day	For weekly schedules, select the check box next to each day on which you want to extract data. For Monthly or Yearly extracts, select the day of the month on which you want to extract data.

Field Name or Option	How to Use
Month	For Yearly (annual) schedules, select the month in which you want to extract data.
Notification	Select one of the following options: Use Global Extract Notification to use the global settings defined in the Extract Preferences dialog box; Define Notification to set notifications for the schedule and override the global settings; or None. the notifications you want upon extract start, success, or failure.
Notify On	If you have selected Define Notification for the schedule, select the notifications you want upon extract start, success, or failure.
Mail to Addresses	Enter email addresses, separated by commas, to which you want notifications sent.
Use Global File Parameters	Select Yes to you use the global file parameter settings defined in the Extract Preferences dialog box. Select No to set parameters for the schedule and override the global settings.
Compression Type	Select the type of compression you'd like to use for the schedule.
Split file size (GB)	Specify the file size by which extracted CSV files are divided for a single VO for the schedule. The default is 1 GB. You can set the file size from one to five GB.
Uploaded file expiry (Days)	Enter the number of days you'd like the extract files to persist for the scheduled extract.

Monitor Extracts

In the Schedules list, click **Actions** and select the option for the last run corresponding to the job type, Application Data Extract or Active Primary Key Extract. Each job type displays in its own dialog box, which lists the last extract status of each VO with status of SUCCESS or FAILURE for each data store and error messages in the case of failures. The ESS Request Id column displays the job for which the VO extraction last ran. You can also select a job in the Job list to filter the results.

View Last Run Status for a Cloud Data Extract

In the Manage Extract Schedules dialog, click **Actions** and select a last run status for a run type to view logging and status for each VO for the last extraction job for each, indicated by the ESS Request Id.

Click **Detach** to expand the dialog to full size.

Statuses

The status for each data store is displayed in the Status column. In the event of an error, the error message is displayed in the Message column. Status includes:

- ERROR: Extract failed with the error message displayed in the Message column.
- EXTRACT_SUCCESS: Extract ran successfully.
- UPLOAD_SUCCESS: Upload to external storage ran successfully.

View Last Run Status for a Deleted Record Extract

The Last Run Status for Active Primary Key Extract dialog provides logging and status for each VO for the last extraction job for each, indicated by the ESS Request Id.

In the Manage Extract Schedules dialog, click **Actions** and select **Last Run Status for Active Primary Key Extract** to open the dialog. Click **Detach** to expand the dialog to full size.

Statuses

The status for each data store is displayed in the Status column. In the event of an error, the error message is displayed in the Message column. Status includes:

- **ERROR:** Extract failed with the error message displayed in the Message column.
- **EXTRACT_SUCCESS:** Extract ran successfully.
- **UPLOAD_SUCCESS:** Upload to external storage ran successfully.

Reset Last Extract Date For All Enabled Data Stores

Click Actions > Reset Last Extract Date in the Offerings dialog to open the Reset Last Extract Date For All Enabled Data Stores dialog.

Specify the last extract date from which extraction should begin for incremental loads for the selected Offering. You typically use this option if your business requirements have changed or when fact data has been corrupted. Click **OK** to reset.

4 Administer

Manage Files in External Storage for Custom Warehouse Integration

During an extract, view object (VO) data in compressed files is uploaded to an external storage with a manifest file that lists the uploaded files from the current batch. Use the information in the manifest file to process data.

For a custom warehouse implementation, you must manage the manifest file and its contents. This section explains the types of files that BICC generates and their properties.

Files Uploaded to External Storage

BICC generates the following files:

File Type	Description	Extension
Application Data Files	Comma-separated value data files that contain extracted BIVO data, and are uploaded as compressed files.	.csv
Metadata Files	Comma-separated value files that contain metadata with details about columns and data type definitions for Data Stores (BIVOs).	.mdcsv
Primary Key Extract Files	Comma-separated value data files that contain data from primary key columns. You can use this data to delete records in your downstream application, such as a warehouse.	.pecsv
Manifest Files	These files contain information about the uploaded files.	.mf

Tip: You may notice when comparing Application Data Files and Primary Key Extract Files that they may have different row counts. The reason for this is that normally, an extract includes all data store attributes, so all tables related to them are included. In the case of a primary extract, only primary key attributes are selected in the extract query, so a subset of rows are included from the tables.

Note:

- The .csv, .pecs, and .mdcdv files are individually zipped. For example, 'file_crmanalyticsam_budgetam_budget-batch1510381061-20190517_004657_<time in milli secs>.zip'. The time differs for each zip file.

The extracted files use a naming convention that matches the name of the data store, with underscores instead of periods.

For example, if the data store name is CrmAnalyticsAM.OpportunityAM.Opportunity, the file name is 'file_crmanalyticsam_opportunityam_opportunity-batch2110193550-20160929_094418.zip'.

- To support parsing of the comma-separated value files, column values are wrapped in double quotes. The double quote value in the column is escaped using two consecutive double quote values. Because of this, a custom delimiter isn't required.
- The decimal floating point numbers will have rounding errors due to representational limitations of binary floating point formats in BICC. For example, a decimal number such as 1.365 may be represented as 1.364999999999999 when converting to DOUBLE type. \

CAUTION: To ensure column names are sorted and appear in the ascending (deterministic) order in the extracted files, you must select columns in the BI Cloud Connector Console. If you don't select columns then BI Cloud Connector Console determines the columns available at run time and includes them in the extract files. Adding or removing a column in the BI Cloud Connector Console changes the order of columns in the extract files.

Manifest File Formats and Content

The first line of a manifest file describes the source version. File name format depends on the configure storage area and are detailed in a manifest file.

In UCM **MANIFEST.MF** files, the body of the file contains information about each of the uploaded files in the format `vo_name;ucm_document_id;md5_check_sum_value`. For example, in the following sample line, from a UCM manifest file, 9526 is the UCM document ID of the uploaded file, ;b2af2bf486366e2c2cb7598849f0df2e is the check sum value.

```
crmanalyticsam_partiesanalyticsam_customer;9526;b2af2bf486366e2c2cb7598849f0df2e
```

In Cloud Storage Service **MANIFEST-[TIMESTAMP].MF** files, the body of the file contains information about each of the uploaded files in the format `extract_uploaded_filename;md5_check_sum_value`. For example, in the following sample line, from a Storage Service manifest file, file_fscmtopmodelam_analyticsserviceam_currrenciestlpvo-batch1209716923-20150615_105514.zip is the uploaded file name, and ;b2af2bf486366e2c2cb7598849f0df2e is the check sum value.

```
file_fscmtopmodelam_analyticsserviceam_currrenciestlpvo-  
batch1209716923-20150615_105514.zip;fa981be0caf70a9a52df3aceb9998cc9
```

Global Data Extract Manifest

- UCM will have MANIFEST.MF.
- Cloud Storage Service and OCI Object Storage manifest files have a file name format as MANIFEST-
<Timestamp>.MF.
- EXTRACT_STATUS_DATA_SCHEDULE_<SCHEDULE ID>_REQUEST_<REQUEST_ID>.JSON is common for all data extracts.

- `EXTRACT_STATUS_PRIMARY_KEYS_SCHEDULE_<SCHEDULE ID>_REQUEST_<REQUEST_ID>.JSON` is common for all key extracts.

Jobs Manifest

Job specific extracts have the following Manifest file format:

- **Data Extract**

`MANIFEST_DATA_<JOB_ID>-SCHEDULE_<SCHEDULE ID>_REQUEST_<ESS_REQUEST_ID>.MF`

`EXTRACT_STATUS_DATA_<JOB_ID>-SCHEDULE_<SCHEDULE ID>_REQUEST_<ESS_REQUEST_ID>.JSON`

- **Keys Extract**

`MANIFEST_PRIMARY_KEYS_<JOB_ID>-SCHEDULE_<SCHEDULE ID>_REQUEST_<ESS_REQUEST_ID>.MF`

`EXTRACT_STATUS_PRIMARY_KEYS_<JOB_ID>-SCHEDULE_<SCHEDULE ID>_REQUEST_<ESS_REQUEST_ID>.JSON`

Download and Process Content from UCM

To download extracted content from UCM, search for DOCTITLE **MANIFEST.MF** and sort by DOCDATE in DESC order. This provides all of the manifest UCM files in order by docid. Download each **MANIFEST** file using docid. Parse the lines in the manifest file to download data files using their respective `ucm_document_ids`. You can use the `md5_check_sum_value` to verify downloaded file content. After downloading the files, unzip them and process them based on their file extension, for example by `.csv`, `.mdcsv`, or `.pecsv`.

Once the data files are processed, rename the corresponding **MANIFEST.MF** file in UCM by adding a timestamp prefix in the format **[TIMESTAMP]_MANIFEST.MF** so that it's not reused in the next download from UCM. Expire the manifest file and all the processed files after 30 days so that UCM storage doesn't run out of space.

Download and Process Content from Cloud Storage Service

To download extracted content from Cloud Storage Service, search for **MANIFEST-** and sort by filename. This provides all of the manifest files in order by date. Download each manifest file and parse the lines in the manifest file to download data files using their respective file names. You can use the `md5_check_sum_value` to verify downloaded file content. After downloading the files, unzip them and process them based on their file extension, for example by `.csv`, `.mdcsv`, or `.pecsv`.

Once the data files are processed, rename the corresponding manifest file in Storage Service by adding a timestamp prefix in the format **[TIMESTAMP]_MANIFEST** so that it's not reused in the next download. Expire the manifest file and all the processed files after 30 days so that storage doesn't run out of space.

Encrypt Extracts

BI Cloud Connector supports signed and unsigned encryption using Pretty Good Privacy (PGP) for files uploaded to Universal Content Management (UCM). Optionally, you can enable signed extract files and download a generated signing key.

Before you start

Before you set up encryption, generate a key pair using PGP and export the public key from the key pair to a location from which it can be imported. Encryption is performed using an imported public key. You can use the private key from the key pair to decrypt your extracts.

To set up encryption for a data store:

Here's what to do

1. Click the **Configure External Storage** button in the panel tab and select the **Configure External Storage** link to open the Configure External Storage dialog box.
2. Select the **UCM Connection Configuration** tab.
3. In the Data Encryption section, select **Data Encryption**.
4. Click **Choose File** to import the certificate from the key pair you generated. In the File Upload dialog box, navigate to your key file, select it, and click **Open**. Click **Update...** to update a key. Imported certificates are stored in the GnuPG keyring on the server host.
5. Optionally, select **Sign Extract File** to generate a signing key for your extracts.
6. If you choose to sign the extract files, click the **Download Signing Key** button to save the signing key.
 - a. In the Opening biccc.gpg dialog box, select **Save File** and click **Browse** to select a location to save the signing key.
 - b. Click **Save**.
7. In the Key list, select the Key Id, then click Actions > Set as default to set a default key.
8. To delete a key, select Actions > Delete.

Results:

Encrypted extracts uploaded to UCM are stored with a suffix of .gpg.

What to do next

Decrypt Extracts

BI Cloud Connector encrypts files before upload to Universal Content Management using the imported certificate you provide. Use your private key to decrypt uploaded files.

To decrypt and verify signed files, download the signing key and verify that the keys are imported into the keystore and appear in the Key list in the Configure External Storage dialog box. Use the following command to decrypt both signed and unsigned .gpg files:

```
gpg --decrypt <inbound_file_name> --output <output_file_name>
```


5 Integrate

SOAP API

Use Simple Object Access Protocol (SOAP) web services to integrate different applications within the enterprise or expose business functions to Oracle Cloud partners and customers.

SOAP helps you submit various XML requests to extract desired data. You can run data extraction and schedule jobs using SOAP web services.**Access SOAP API**

Access SOAP API

Before you schedule extracts, here's how you can access SOAP API and submit SOAP requests.

1. **WSDL Server URL** : For all supported operations, use <https://servername.fa.us2.oraclecloud.com/bi/ess/esswebservice?wsdl>
2. **SOAP Requests**: To submit SOAP requests, use <https://servername.fa.us2.oraclecloud.com/bi/ess/esswebservice>

Global Extract with Given Data Stores

Let's learn how to use the ESS web service to schedule a job for running the BI cloud extracts.

ESS web service is a SOAP web service that provides operations to submit requests and request status for the submitted jobs. Here's what you need to do to schedule an extract:

- Configure the data stores in BICC console.
- Create global extract for specified data stores.

SOAP Headers	Procedure
Security	<ul style="list-style-type: none"> • Add username token for authentication with username and password. • Add timestamp token with 'created' and 'expires' for the message time validation.
SOAP Body	<p>Provide details for the following attributes in the SOAP Body.</p> <ul style="list-style-type: none"> • Job Name: BICloudConnectorJobDefinition • Package: oracle.apps.ess.biccc • Type: JOB_DEFINITION • Start Time: Provide start time in sch:requestedStartTime. If left null, the extract process will start immediately. • sch:application: oracle.biacm (hosting application)

SOAP Headers	Procedure
	<ul style="list-style-type: none"> Request Parameters <ul style="list-style-type: none"> a. SYS_className:oracle.esshost.impl.CloudAdaptorJobImpl (Classname in the hosting app running the job) b. EXTRACT_TYPE: Job Type of the extract. Valid values are VO_EXTRACT (Cloud Data Extract)/PRIMARY_KEY_EXTRACT (Deleted Records Extract)/VO_AND_PK_EXTRACT (Cloud Data and Deleted Records extract) c. Sys_application:BI Cloud Adaptor d. DATA_STORE_LIST: Comma separated list of data stores for which the extract will be run. If you don't provide this list, the extracts will be run for the global data store list enabled in BICCC. Optional Preferences: You can specify the following optional preferences. You can specify data type as STRING for all the parameters. <ul style="list-style-type: none"> a. STARTED_NOTIFICATION - Send notification email when the extract begins? (true/false) b. SUCCESS_NOTIFICATION - Send notification email when the extract succeeds? (true/false) c. FAILURE_NOTIFICATION - Send notification email when the extract fails? (true/false) d. MAIL_TO_ADDRESSES - Provide comma separated list of email addresses to send the notifications emails. e. FILE_EXPIRY_DAYS - Number of days after which the uploaded files will be expired. f. FILE_SPLIT_SIZE - Split size (GB) for the extract files. g. EXTRACT_COMPRESS_TYPE - Compression type for the files (zip/gzip)

Sample Request (*submitRequest*)

```
<soapenv:Envelope
  xmlns:sch="http://xmlns.oracle.com/scheduler"
  xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:typ="http://xmlns.oracle.com/scheduler/types">
  <soapenv:Header>
    <wsse:Security soapenv:mustUnderstand="1"
      xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd"
      xmlns:wsu="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd">
      <wsu:Timestamp wsu:Id="TS-A2DF758C7B92C0123015204688873404">
        <wsu:Created>2018-03-08T00:28:07.339Z</wsu:Created>
        <wsu:Expires>2018-03-08T00:30:07.339Z</wsu:Expires>
      </wsu:Timestamp>
      <wsse:UsernameToken wsu:Id="UsernameToken-A2DF758C7B92C0123015204688787403">
        <wsse:Username>xxxxxxx</wsse:Username>
        <wsse:Password Type="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-username-token-
profile-1.0#PasswordText">xxxxxxx</wsse:Password>
        <wsse:Nonce EncodingType="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-soap-message-
security-1.0#Base64Binary">yPFbN92Ojg6qYmGZHuKZSQ==</wsse:Nonce>
        <wsu:Created>2018-03-08T00:27:58.740Z</wsu:Created>
      </wsse:UsernameToken>
    </wsse:Security>
  </soapenv:Header>
  <soapenv:Body>
    <sch:submitRequest>
      <sch:description>Test ESS Web Service</sch:description>
      <sch:jobDefinitionId>
        <!--Optional:-->
        <typ:name>BICloudConnectorJobDefinition</typ:name>
        <!--Optional:-->
        <typ:packageName>oracle.apps.ess.biccc</typ:packageName>
        <!--Optional:-->
        <typ:type>JOB_DEFINITION</typ:type>
      </sch:jobDefinitionId>
```

```
<sch:application>oracle.biacm</sch:application>
<sch:requestedStartTime/>
<sch:requestParameters>
<!--0 to 1000 repetitions:-->
<typ:parameter>
<!--Optional:-->
<typ:dataType>STRING</typ:dataType>
<!--Optional:-->
<typ:name>SYS_className</typ:name>
<!--Optional:-->
<typ:scope/>
<!--Optional:-->
<typ:value>oracle.esshost.impl.CloudAdaptorJobImpl</typ:value>
</typ:parameter>
<typ:parameter>
<!--Optional:-->
<typ:dataType>STRING</typ:dataType>
<!--Optional:-->
<typ:name>SYS_application</typ:name>
<!--Optional:-->
<typ:scope/>
<!--Optional:-->
<typ:value>BI Cloud Adaptor</typ:value>
</typ:parameter>
<typ:parameter>
<!--Optional:-->
<typ:dataType>STRING</typ:dataType>
<!--Optional:-->
<typ:name>EXTRACT_JOB_TYPE</typ:name>
<!--Optional:-->
<typ:scope/>
<!--Optional:-->
<typ:value>VO_EXTRACT</typ:value>
</typ:parameter>
<typ:parameter>
<!--Optional:-->
<typ:dataType>STRING</typ:dataType>
<!--Optional:-->
<typ:name>DATA_STORE_LIST</typ:name>
<!--Optional:-->
<typ:scope/>
<!--Optional:-->
<typ:value>CrmAnalyticsAM.PartiesAnalyticsAM.Location,CrmAnalyticsAM.PartiesAnalyticsAM.Organization,CrmAnalyticsAM
typ:value>
</typ:parameter>
<typ:parameter>
<!--Optional:-->
<typ:dataType>STRING</typ:dataType>
<!--Optional:-->
<typ:name>EXTERNAL_STORAGE_LIST</typ:name>
<!--Optional:-->
<typ:scope/>
<!--Optional:-->
<typ:value>storage1</typ:value>
</typ:parameter>
</sch:requestParameters>
</sch:submitRequest>
</soapenv:Body>
</soapenv:Envelope>
```

Sample Response (*submitRequest*) - Returns an ESS Job Id

```
<env:Envelope
  xmlns:env="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:wsa="http://www.w3.org/2005/08/addressing">
```

```
<env:Header>
<wsa:Action>submitRequest</wsa:Action>
<wsa:MessageID>urn:uuid:b612af67-4769-4eac-9abc-f2bd8b0ed1bf</wsa:MessageID>
<wsa:RelatesTo>uuid:073d2715-5e6c-4968-a4f5-e1d88da1897b</wsa:RelatesTo>
</env:Header>
<env:Body>
<ns0:submitRequestResponse
xmlns:ns0="http://xmlns.oracle.com/scheduler">
<requestId
xmlns:ns2="http://xmlns.oracle.com/scheduler/types">49318
</requestId>
</ns0:submitRequestResponse>
</env:Body>
</env:Envelope>
```

SOAP Request to Get the Job State (getRequestState)

Pass the Request ID from the submitted job.

Sample Request

```
<soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:sch="http://xmlns.oracle.com/scheduler">
<soapenv:Header>
<wsse:Security
xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd"
xmlns:wsu="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd"
soapenv:mustUnderstand="1">
<wsse:UsernameToken wsu:Id="UsernameToken-096D9A2FA5EEE63DC514744911304045">
<wsse:Username>faadmin</wsse:Username>
<wsse:Password Type="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-username-token-
profile-1.0#PasswordText">xxxxxx</wsse:Password>
<wsse:Nonce EncodingType="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-soap-message-
security-1.0#Base64Binary">96M4RBdl+afFA6MUufbbAQ==</wsse:Nonce>
<wsu:Created>2016-09-21T20:52:10.404Z</wsu:Created>
</wsse:UsernameToken>
</wsse:Security>
</soapenv:Header>
<soapenv:Body>
<sch:getRequestState>
<sch:requestId>49318</sch:requestId>
</sch:getRequestState>
</soapenv:Body>
</soapenv:Envelope>
```

Sample Response - Returns the Job State

```
<env:Envelope
xmlns:env="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:wsa="http://www.w3.org/2005/08/addressing">
<env:Header>
<wsa:Action>getRequestState</wsa:Action>
<wsa:MessageID>urn:uuid:b44f932b-2b21-41c0-b748-1ec5007fe05f</wsa:MessageID>
<wsa:RelatesTo>uuid:374006ab-6fc5-4073-950a-dd6018d1308c</wsa:RelatesTo>
</env:Header>
<env:Body>
<ns0:getRequestStateResponse
xmlns:ns0="http://xmlns.oracle.com/scheduler">
<state
xmlns:ns2="http://xmlns.oracle.com/scheduler/types">RUNNING
</state>
</ns0:getRequestStateResponse>
</env:Body>
```

```
</env:Envelope>
```

SOAP Request to Get the Request Detail (getRequestDetail)

Pass the Request ID from the submitted job.

Sample Request

```
<soapenv:Envelope
  xmlns:sch="http://xmlns.oracle.com/scheduler"
  xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
  <soapenv:Header>
    <wsse:Security soapenv:mustUnderstand="1"
      xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd"
      xmlns:wsu="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd">
      <wsse:UsernameToken wsu:Id="UsernameToken-096D9A2FA5EEE63DC514744918990386">
        <wsse:Username>faadmin</wsse:Username>
        <wsse:Password Type="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-username-token-
profile-1.0#PasswordText">xxxxxx</wsse:Password>
        <wsse:Nonce EncodingType="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-soap-message-
security-1.0#Base64Binary">5WwwWlfii5/6DKpgBafreQ==</wsse:Nonce>
        <wsu:Created>2016-09-21T21:04:59.038Z</wsu:Created>
      </wsse:UsernameToken>
    </wsse:Security>
  </soapenv:Header>
  <soapenv:Body>
    <sch:getRequestDetail>
      <sch:requestId>49318</sch:requestId>
    </sch:getRequestDetail>
  </soapenv:Body>
</soapenv:Envelope>
```

Sample Response - Returns the Job Definition and Status

```
<env:Envelope
  xmlns:env="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:wsa="http://www.w3.org/2005/08/addressing">
  <env:Header>
    <wsa:Action>getRequestDetail</wsa:Action>
    <wsa:MessageID>urn:uuid:bc779307-1819-4667-8cec-b246405011a1</wsa:MessageID>
    <wsa:RelatesTo>uuid:055a802b-ab9e-46f5-9a87-b54bcde19a4a</wsa:RelatesTo>
  </env:Header>
  <env:Body>
    <ns0:getRequestDetailResponse
      xmlns:ns0="http://xmlns.oracle.com/scheduler">
      <requestDetail
        xmlns:ns2="http://xmlns.oracle.com/scheduler/types">
        <ns2:requestId>49318</ns2:requestId>
        <ns2:description>Test_ESS</ns2:description>
        <ns2:jobDefinitionId>
          <ns2:type>JOB_DEFINITION</ns2:type>
          <ns2:packageName>/oracle.apps.ess.biccc</ns2:packageName>
          <ns2:name>BICloudConnectorJobDefinition</ns2:name>
        </ns2:jobDefinitionId>
        <ns2:dispatcherNode>bi_server1</ns2:dispatcherNode>
        <ns2:processorNode>bi_server1</ns2:processorNode>
        <ns2:workAssignmentId>
          <ns2:type>WORK_ASSIGNMENT</ns2:type>
          <ns2:packageName>/oracle/as/ess/essapp/internal</ns2:packageName>
          <ns2:name>defaultWA</ns2:name>
        </ns2:workAssignmentId>
        <ns2:workshiftId>
          <ns2:type>WORKSHIFT</ns2:type>
          <ns2:packageName>/oracle/as/ess/essapp/internal</ns2:packageName>
        </ns2:workshiftId>
      </requestDetail>
    </ns0:getRequestDetailResponse>
  </env:Body>
</env:Envelope>
```

```
<ns2:name>defaultWS</ns2:name>
</ns2:workshiftId>
<ns2:isCancellable>true</ns2:isCancellable>
<ns2:isHoldable>false</ns2:isHoldable>
<ns2:retried>0</ns2:retried>
<ns2:executionAttempt>1</ns2:executionAttempt>
<ns2:submitter>FAAdmin</ns2:submitter>
<ns2:runAsUser>FAAdmin</ns2:runAsUser>
<ns2:submissionTime>2016-09-21T21:00:38.563Z</ns2:submissionTime>
<ns2:requestedStartTime>2016-09-21T21:00:38.563Z</ns2:requestedStartTime>
<ns2:scheduledTime>2016-09-21T21:00:38.563Z</ns2:scheduledTime>
<ns2:actualStartTime>2016-09-21T21:00:53.362Z</ns2:actualStartTime>
<ns2:state>RUNNING</ns2:state>
<ns2:priority>4</ns2:priority>
<ns2:cause>Request in non-terminal state</ns2:cause>
<ns2:parentRequestId>0</ns2:parentRequestId>
<ns2:stepId>0</ns2:stepId>
<ns2:requestType>SINGLETON</ns2:requestType>
<ns2:requestParameters>
<ns2:parameter>
<ns2:dataType>INTEGER</ns2:dataType>
<ns2:name>SYS_priority</ns2:name>
<ns2:scope/>
<ns2:value>4</ns2:value>
</ns2:parameter>
<ns2:parameter>
<ns2:dataType>STRING</ns2:dataType>
<ns2:name>EXTRACT_JOB_TYPE</ns2:name>
<ns2:scope/>
<ns2:value>VO_EXTRACT</ns2:value>
</ns2:parameter>
<ns2:parameter>
<ns2:dataType>STRING</ns2:dataType>
<ns2:name>SYS_userName</ns2:name>
<ns2:scope/>
<ns2:value>FAAdmin</ns2:value>
</ns2:parameter>
<ns2:parameter>
<ns2:dataType>INTEGER</ns2:dataType>
<ns2:name>SYS_retries</ns2:name>
<ns2:scope/>
<ns2:value>0</ns2:value>
</ns2:parameter>
<ns2:parameter>
<ns2:dataType>STRING</ns2:dataType>
<ns2:name>SYS_className</ns2:name>
<ns2:scope/>
<ns2:value>oracle.esshost.impl.CloudAdaptorJobImpl</ns2:value>
</ns2:parameter>
<ns2:parameter>
<ns2:dataType>LONG</ns2:dataType>
<ns2:name>SYS_request_timeout</ns2:name>
<ns2:scope/>
<ns2:value>0</ns2:value>
</ns2:parameter>
<ns2:parameter>
<ns2:dataType>STRING</ns2:dataType>
<ns2:name>SYS_groupName</ns2:name>
<ns2:scope/>
<ns2:value>ESS_DefaultIsolationGroup</ns2:value>
</ns2:parameter>
<ns2:parameter>
<ns2:dataType>STRING</ns2:dataType>
<ns2:name>SYS_submittingApplication</ns2:name>
<ns2:scope/>
<ns2:value>oracle.biadm</ns2:value>
```

```

</ns2:parameter>
<ns2:parameter>
<ns2:datatype>BOOLEAN</ns2:datatype>
<ns2:name>SYS_EXT_userFileDirShared</ns2:name>
<ns2:scope/>
<ns2:value>>false</ns2:value>
</ns2:parameter>
<ns2:parameter>
<ns2:datatype>INTEGER</ns2:datatype>
<ns2:name>SYS_requestExpiration</ns2:name>
<ns2:scope/>
<ns2:value>0</ns2:value>
</ns2:parameter>
<ns2:parameter>
<ns2:datatype>STRING</ns2:datatype>
<ns2:name>SYS_application</ns2:name>
<ns2:scope/>
<ns2:value>oracle.biacc</ns2:value>
</ns2:parameter>
<ns2:parameter>
<ns2:datatype>STRING</ns2:datatype>
<ns2:name>SYS_userFileDir</ns2:name>
<ns2:scope/>
<ns2:value>${ESS_ENV:jrfServerLogPath}/ess_request</ns2:value>
</ns2:parameter>
<ns2:parameter>
<ns2:datatype>INTEGER</ns2:datatype>
<ns2:name>SYS_reprocessDelay</ns2:name>
<ns2:scope/>
<ns2:value>5</ns2:value>
</ns2:parameter>
<ns2:parameter>
<ns2:datatype>BOOLEAN</ns2:datatype>
<ns2:name>SYS_executePast</ns2:name>
<ns2:scope/>
<ns2:value>>true</ns2:value>
</ns2:parameter>
</ns2:requestParameters>
<ns2:ecid>5aa4a1152ec38837:-422f90c2:157393de3be:-8000-000000000006e4bc</ns2:ecid>
<ns2:processPhase>ExecuteFinalize</ns2:processPhase>
</requestDetail>
</ns0:getRequestDetailResponse>
</env:Body>
</env:Envelope>

```

Schedule a Job

Let's look at how to submit schedules for existing jobs using ESS request. You can get the job Id from the Manage Jobs page.

SOAP Headers	Procedure
Security	<ul style="list-style-type: none"> Click the Auth tab to provide authentication information for accessing the web service. Enter the username and password.
SOAP Body	<p>Provide details for the following attributes in the SOAP Body.</p> <ul style="list-style-type: none"> Job Name: BICloudConnectorJobDefinition Package: oracle.apps.ess.biccc Type: JOB_DEFINITION

SOAP Headers	Procedure
	<ul style="list-style-type: none"> Start Time: Provide start time in sch:requestedStartTime. If left null, the extract process will start immediately. sch:application: oracle.biadm (hosting application) Request Parameters. <ul style="list-style-type: none"> a. SYS_className:oracle.esshost.impl.CloudAdaptorJobImpl (Classname in the hosting app running the job) b. SYS_requestCategory: JobSchedule (Identifies as a schedule for a Job definition) c. EXTRACT_JOB_TYPE: Job Type of the extract. Valid values are VO_EXTRACT (Application Data Extract)/PRIMARY_KEY_EXTRACT Active Primary Key Extract)/VO_AND_PK_EXTRACT (Application Data and Active Primary Key extract) d. EXTERNAL_STORAGE_LIST: External Storages to upload the files to. You can obtain the external storage names from the BICCC UI ->Configure External Storage. You can upload files to a maximum of two external storages. e. JOB_ID: Job Id for which the schedule is being created. f. Optional Preferences: You can specify the following optional preferences. You can specify data type as STRING for all the parameters. g. STARTED_NOTIFICATION - Send notification email when the extract begins? (true/false). h. SUCCESS_NOTIFICATION - Send notification email when the extract succeeds? (true/false). i. FAILURE_NOTIFICATION - Should notification email be sent when the extract failed? (true/false). j. MAIL_TO_ADDRESSES - Comma seperated list of email addresses to whom the notification should be sent. k. FILE_EXPIRY_DAYS - Number of days after which the uploaded files will be expired. l. FILE_SPLIT_SIZE - Split size (GB) for the extract files. m. EXTRACT_COMPRESS_TYPE - Compression type for the files (zip/gzip). n. EXTERNAL_STORAGE_FILE_NAME_PREFIX - Uploaded file name prefix support for OCI Object Storage. o. Sys_application:BI Cloud Adaptor.

Sample Request

```

<sch:submitRequest>
<sch:description>job schedule test 1</sch:description>
<sch:jobDefinitionId>
<!--Optional:-->
<typ:name>BICloudConnectorJobDefinition</typ:name>
<!--Optional:-->
<typ:packageName>oracle.apps.ess.biccc</typ:packageName>
<!--Optional:-->
<typ:type>JOB_DEFINITION</typ:type>
</sch:jobDefinitionId>
<sch:application>oracle.biadm</sch:application>
<sch:requestedStartTime/>
<sch:requestParameters>
<!--0 to 1000 repetitions:-->
<typ:parameter>
<!--Optional:-->
<typ:dataType>STRING</typ:dataType>
<!--Optional:-->
<typ:name>SYS_className</typ:name>
<!--Optional:-->
<typ:scope/>
<!--Optional:-->
<typ:value>oracle.esshost.impl.CloudAdaptorJobImpl</typ:value>
</typ:parameter>
<typ:parameter>
<!--Optional:-->

```



```
<typ:dataType>STRING</typ:dataType>
<!--Optional:-->
<typ:name>SYS_requestCategory</typ:name>
<!--Optional:-->
<typ:scope/>
<!--Optional:-->
<typ:value>JobSchedule</typ:value>
</typ:parameter>
<typ:parameter>
<!--Optional:-->
<typ:dataType>STRING</typ:dataType>
<!--Optional:-->
<typ:name>SYS_application</typ:name>
<!--Optional:-->
<typ:scope/>
<!--Optional:-->
<typ:value>BI Cloud Adaptor</typ:value>
</typ:parameter>
<typ:parameter>
<!--Optional:-->
<typ:dataType>STRING</typ:dataType>
<!--Optional:-->
<typ:name>EXTRACT_JOB_TYPE</typ:name>
<!--Optional:-->
<typ:scope/>
<!--Optional:-->
<typ:value>VO_EXTRACT</typ:value>
</typ:parameter>
<typ:parameter>
<!--Optional:-->
<typ:dataType>LONG</typ:dataType>
<!--Optional:-->
<typ:name>JOB_ID</typ:name>
<!--Optional:-->
<typ:scope/>
<!--Optional:-->
<typ:value>142</typ:value>
</typ:parameter>
<typ:parameter>
<!--Optional:-->
<typ:dataType>STRING</typ:dataType>
<!--Optional:-->
<typ:name>EXTERNAL_STORAGE_LIST</typ:name>
<!--Optional:-->
<typ:scope/>
<!--Optional:-->
<typ:value>UCM</typ:value>
</typ:parameter>
</sch:requestParameters>
</sch:submitRequest>
```

Troubleshooting

If the ESS web service fails and displays the error message "Security Token Is Not Valid", verify that the timestamp in the SOAP header is valid and hasn't expired. If expired, generate a new timestamp and resubmit the request.

```
<wsu:Timestamp wsu:Id="TS-A2DF758C7B92C0123015204688873404">
  <wsu:Created>2018-03-08T00:28:07.339Z</wsu:Created>
  <wsu:Expires>2018-03-08T00:30:07.339Z</wsu:Expires>
</wsu:Timestamp>
```

Manage Meta Data REST API

You can use Oracle REST APIs to view data store extract metadata.

Access REST API

To make a REST HTTP request, you need to gather a few bits of information:

- **REST Server URL:** Typically, the URL of your Oracle Cloud service. For example, `https://servername.fa.us2.oraclecloud.com:<host:port>/biacm/rest`
- **User name and password:** An Oracle Cloud service user with permissions to access the resources you're using.

You can find the REST Server URL, user name, and password in the welcome email sent to your Oracle Cloud service administrator.

Get DataStoreMeta

Get a DataStore metadata by passing "dataStoreId" as PathParam. QueryParam "locale" is optional.

Example URL

Here's an example of the resource URL:

GET

`/meta/datastores/CrmAnalyticsAM.PartiesAnalyticsAM.Person`
`/meta/datastores/CrmAnalyticsAM.PartiesAnalyticsAM.Person?locale=ko`

Example Response

Here's an example of the response body in JSON format:

```
{
  "dataStoreId": "CrmAnalyticsAM.PartiesAnalyticsAM.Person",
  "dataStoreName": "CrmAnalyticsAM.PartiesAnalyticsAM.Person",
  "filters": null,
  "isEffectiveDateDisabled": false,
  "isFlexDataStore": false,
  "isSilentError": false,
  "columns": [{
    "name": "CreatedBy",
    "label": "Created By",
    "dataType": "VARCHAR",
    "size": "64",
    "precision": "64",
    "scale": "-127",
    "isPrimaryKey": false,
    "isPopulate": true,
    "isLastUpdateDate": false,
    "isNaturalKey": false
  }, {
    "name": "CreationDate",
    "label": "Creation Date",
    "dataType": "TIMESTAMP",
    "size": "0",
    "precision": "0",
    "scale": "-127",
    "isPrimaryKey": false,
```

```

"isPopulate": true,
"isLastUpdateDate": false,
"isNaturalKey": false
}, {
"name": "LastUpdateDate",
"label": "Last Updated Date",
"dataType": "TIMESTAMP",
"size": "0",
"precision": "0",
"scale": "-127",
"isPrimaryKey": false,
"isPopulate": true,
"isLastUpdateDate": true,
"isNaturalKey": false
}, {
"name": "LastUpdatedBy",
"label": "Last Updated By",
"dataType": "VARCHAR",
"size": "64",
"precision": "64",
"scale": "-127",
"isPrimaryKey": false,
"isPopulate": true,
"isLastUpdateDate": false,
"isNaturalKey": false
}, {
"name": "PartyId",
"label": "PartyId",
"dataType": "NUMERIC",
"size": "8",
"precision": "18",
"scale": "0",
"isPrimaryKey": false,
"isPopulate": true,
"isLastUpdateDate": false,
"isNaturalKey": false
}, {
"name": "PersonProfileId",
"label": "PersonProfileId",
"dataType": "NUMERIC",
"size": "8",
"precision": "18",
"scale": "0",
"isPrimaryKey": true,
"isPopulate": true,
"isLastUpdateDate": false,
"isNaturalKey": false
},

```

VO Metadata Expected Behavior

This section provides additional details about Metadata API attributes for SDM VO and Non SDM VOs.

The following table lists the difference in the VO attributes for SDM VO and Non SDM VOs.

1 VO Attributes for SDM VO and Non SDM VOs

VO Attribute	SDM VO (Attribute Fetched)	Non SDM VO (Attribute Fetched)
dataStoreId	Yes	Yes

VO Attribute	SDM VO (Attribute Fetched)	Non SDM VO (Attribute Fetched)
dataStoreName	Yes	Yes
filters	Yes	No
isEffectiveDateDisabled	Yes	No
isFlexDataStore	Yes	No
isSilentError	Yes	No

The following table lists the difference in the Column attributes for SDM VO and Non SDM VOs.

2 Column Attributes for SDM VO and Non SDM VOs

VO Attribute	SDM VO (Attribute Fetched)	Non SDM VO (Attribute Fetched)
name	Yes	Yes
label	Yes	Yes
dataType	Yes	Yes
size	Yes	Yes
precision	Yes	Yes
scale	Yes	Yes
isPrimaryKey	Yes	No
isPopulate	Yes	No
isLastUpdateDate	Yes	No
isNaturalKey	Yes	No
isEffectiveStartDate	Yes	No
isCreationDate	Yes	No
colConversion	Yes	No

Get DataStoreMeta with User Customization

Get a DataStore metadata by passing "dataStoreId" as PathParam. QueryParam "locale" is optional.

Example URL

Here's an example of the resource URL:

GET

/meta/datastores/CrmAnalyticsAM.PartiesAnalyticsAM.Person?includeCustomization=true

/meta/datastores/CrmAnalyticsAM.PartiesAnalyticsAM.Person?includeCustomization=true&locale=ko

Example Response

Here's an example of the response body in JSON format:

```
{
  "dataStoreId": "CrmAnalyticsAM.PartiesAnalyticsAM.Person",
  "dataStoreName": "CrmAnalyticsAM.PartiesAnalyticsAM.Person",
  "filters": null,
  "isEffectiveDateDisabled": false,
  "isFlexDataStore": false,
  "isSilentError": false,
  "columns": [{
    "name": "CreatedBy",
    "label": "Created By",
    "dataType": "VARCHAR",
    "size": "64",
    "precision": "64",
    "scale": "-127",
    "isPrimaryKey": false,
    "isPopulate": true,
    "isLastUpdateDate": false,
    "isNaturalKey": false
  }, {
    "name": "CreationDate",
    "label": "Creation Date",
    "dataType": "TIMESTAMP",
    "size": "0",
    "precision": "0",
    "scale": "-127",
    "isPrimaryKey": false,
    "isPopulate": true,
    "isLastUpdateDate": false,
    "isNaturalKey": false
  }, {
    "name": "LastUpdateDate",
    "label": "Last Updated Date",
    "dataType": "TIMESTAMP",
    "size": "0",
    "precision": "0",
    "scale": "-127",
    "isPrimaryKey": false,
    "isPopulate": true,
    "isLastUpdateDate": true,
    "isNaturalKey": false
  }, {
    "name": "LastUpdatedBy",
    "label": "Last Updated By",
    "dataType": "VARCHAR",
    "size": "64",
    "precision": "64",
    "scale": "-127",
    "isPrimaryKey": false,
    "isPopulate": true,
    "isLastUpdateDate": false,
    "isNaturalKey": false
  }, {
    "name": "PartyId",
    "label": "PartyId",
    "dataType": "NUMERIC",
    "size": "8",
    "precision": "18",
```

```
"scale": "0",
"isPrimaryKey": false,
"isPopulate": true,
"isLastUpdateDate": false,
"isNaturalKey": false
}, {
"name": "PersonProfileId",
"label": "PersonProfileId",
"dataType": "NUMERIC",
"size": "8",
"precision": "18",
"scale": "0",
"isPrimaryKey": true,
"isPopulate": true,
"isLastUpdateDate": false,
"isNaturalKey": false
},
}
```

Create or Update Data Store

Use this method to create or update a data store. For example, to add filters to a data store. Get a DataStore metadata by passing 'storeId' as PathParam. Add the required filter to the 'filters' attribute and a rootkey **dsmeta** to the JSON file.

Example URL

Here's an example of the resource URL:

PUT

/meta/datastores/

Sample Request

Here's an example of sample request body in JSON format.

```
{
  "offerings": ["HR_AN_OFRRNG"],
  "dsMeta": {
    "storeId": "CrmAnalyticsAM.GeographiesAnalyticsAM.ZoneHelper",
    "storeName": "CrmAnalyticsAM.GeographiesAnalyticsAM.ZoneHelper",
    "filters": null,
    "isEffectiveDateDisabled": false,
    "isFlexDataStore": false,
    "isSilentError": false,
    "columns": [
      {
        "name": "MasChildId",
        "label": "MasChildId",
        "dataType": "NUMERIC",
        "size": "8",
        "precision": "0",
        "scale": "-127",
        "isPrimaryKey": false,
        "isPopulate": true,
        "isLastUpdateDate": false,
        "isNaturalKey": false,
        "isEffectiveStartDate": false,
        "isCreationDate": false,
        "colConversion": null
      },
      {
        "name": "MasHierarchyNodeId",
        "label": "MasHierarchyNodeId",
        "dataType": "NUMERIC",

```

```
"size": "8",
"precision": "18",
"scale": "0",
"isPrimaryKey": true,
"isPopulate": true,
"isLastUpdateDate": false,
"isNaturalKey": false,
"isEffectiveStartDate": false,
"isCreationDate": false,
"colConversion": null
},
{
"name": "MasLastUpdateDate",
"label": "MasLastUpdateDate",
"dataType": "TIMESTAMP",
"size": "0",
"precision": "0",
"scale": "-127",
"isPrimaryKey": false,
"isPopulate": true,
"isLastUpdateDate": true,
"isNaturalKey": false,
"isEffectiveStartDate": false,
"isCreationDate": false,
"colConversion": null
},
{
"name": "MasLevelNumber",
"label": "MasLevelNumber",
"dataType": "NUMERIC",
"size": "8",
"precision": "0",
"scale": "-127",
"isPrimaryKey": false,
"isPopulate": true,
"isLastUpdateDate": false,
"isNaturalKey": false,
"isEffectiveStartDate": false,
"isCreationDate": false,
"colConversion": null
}]
}}
```

Get Job Definition

Get a Job definition by passing "jobId" as PathParam. For example - /meta/jobs/1

Example URL

Here's an example of the resource URL:

GET

/meta/jobs/{jobId}

Sample Response

```
{
  "dataStores": [
    {
      "dataStoreMeta": {
        "columns": [
          {
            "name": "CreatedBy",
            "isPrimaryKey": false,
```

```
"isPopulate": false,
"isLastUpdateDate": false,
"isNaturalKey": false,
"isEffectiveStartDate": false,
"isCreationDate": false,
"colConversion": null
},
{
  "name": "CreationDate",
  "isPrimaryKey": false,
  "isPopulate": false,
  "isLastUpdateDate": false,
  "isNaturalKey": false,
  "isEffectiveStartDate": false,
  "isCreationDate": true,
  "colConversion": null
},
{
  "name": "EnabledFlag",
  "isPrimaryKey": false,
  "isPopulate": false,
  "isLastUpdateDate": false,
  "isNaturalKey": false,
  "isEffectiveStartDate": false,
  "isCreationDate": false,
  "colConversion": null
},
{
  "name": "LastUpdateDate",
  "isPrimaryKey": false,
  "isPopulate": false,
  "isLastUpdateDate": false,
  "isNaturalKey": false,
  "isEffectiveStartDate": false,
  "isCreationDate": false,
  "colConversion": null
},
{
  "name": "LastUpdatedBy",
  "isPrimaryKey": false,
  "isPopulate": false,
  "isLastUpdateDate": false,
  "isNaturalKey": false,
  "isEffectiveStartDate": false,
  "isCreationDate": false,
  "colConversion": null
},
```

Create or Update Job

Use this method to create or update a job. For example - /meta/jobs/

Example URL

Here's an example of the resource URL:

PUT

/meta/jobs/

Sample Request

```
{
  "dataStores": [
    {
```



```
"dataStoreMeta": {
  "columns": [
    {
      "name": "CreatedBy",
      "isPrimaryKey": false,
      "isPopulate": false,
      "isLastUpdateDate": false,
      "isNaturalKey": false,
      "isEffectiveStartDate": false,
      "isCreationDate": false,
      "colConversion": null
    },
    {
      "name": "CreationDate",
      "isPrimaryKey": false,
      "isPopulate": false,
      "isLastUpdateDate": false,
      "isNaturalKey": false,
      "isEffectiveStartDate": false,
      "isCreationDate": true,
      "colConversion": null
    },
    {
      "name": "EnabledFlag",
      "isPrimaryKey": false,
      "isPopulate": false,
      "isLastUpdateDate": false,
      "isNaturalKey": false,
      "isEffectiveStartDate": false,
      "isCreationDate": false,
      "colConversion": null
    },
    {
      "name": "LastUpdateDate",
      "isPrimaryKey": false,
      "isPopulate": false,
      "isLastUpdateDate": false,
      "isNaturalKey": false,
      "isEffectiveStartDate": false,
      "isCreationDate": false,
      "colConversion": null
    },
    {
      "name": "LastUpdatedBy",
      "isPrimaryKey": false,
      "isPopulate": false,
      "isLastUpdateDate": false,
      "isNaturalKey": false,
      "isEffectiveStartDate": false,
      "isCreationDate": false,
      "colConversion": null
    }
  ],
  "dataStoreKey": "FscmTopModelAM.FinGlJrnlEntriesAM.JournalHeaderPVO",
  "filters": "__DATASTORE__.JrnlHdrPeriodName = 'Nov-21' and
__DATASTORE__.JournalBatchPostingStatusCode = 'P'",
  "isEffectiveDateDisabled": false,
  "isFlexDataStore": false,
  "isSilentError": true,
  "initialExtractDate": null,
  "chunkType": null,
  "chunkDateSeqIncr": 0,
  "chunkDateSeqMin": 0,
  "chunkPkSeqIncr": 0,
  "useUnionForIncremental": false
},
"lastExtractDate": "2021-04-01T21:19:30.000",
```

```
"groupNumber": 0,  
"groupItemPriority": 0  
},  
],  
"schedules": null,  
"name": "CFA_RFR_GL_FULL_CUSTOM_JOB",  
"description": "FULL Period Extract Job to sync FCR GL Transaction sync  
tables from ERP"  
}
```

Sample Response

```
{  
"status": <SUCCESS/SUCCESS_WITH_WARNING>,  
"id": <JOB_ID>,  
"message": <Any warning message>  
}
```