Oracle Fusion Cloud Procurement

Integration Playbooks for Procurement

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1 Integration Playbooks for Procurement

Overview of the Procurement Integration Playbooks

The playbooks in this guide provide comprehensive integration options, use cases, best practices, and examples to help you extend and integrate your Oracle Fusion Cloud Procurement applications with any third-party system in your ecosystem.

What Playbooks Can I Find in the Guide?

Product-specific playbooks currently included in this guide are:

- *Oracle Fusion Cloud Procurement* (information common to all playbooks)
- *Oracle Purchasing*
- *Oracle Self Service Procurement*
- *Oracle Sourcing*
- *Oracle Supplier Model*
- *Oracle Supplier Qualification Management*

> **Note:** The playbooks include links to additional information in My Oracle Support and are identified as such. To view this information, you must have a My Oracle Support subscription.

What Kind of Integration Information is Available?

You'll find integration information that's applicable to all playbooks in the Integration Basics chapter. Each playbook contains more integration information that's applicable only to that Oracle Procurement application.

Who Should Use the Playbooks?

Customers, system integrators, and independent software vendors can use this guide when extending Oracle Procurement applications.

About Oracle Fusion Cloud Procurement

Oracle Fusion Cloud Procurement is an integrated suite that automates business processes, enables strategic sourcing, and improves supplier relationship management. It simplifies buying resulting in lower risk, improved savings and greater profitability.

It enables suppliers to manage activities and document the transactions with an easy-to-use, self-service portal that provides access to supplier onboarding, registration, negotiations, profile management, catalogs, orders, shipments, invoices, forecasts, and more.

Oracle Cloud Procurement is part of the full suite of Oracle Fusion Cloud Applications, including Purchasing, Sourcing, Supplier Qualification Management, and Self Service Procurement.

Terminology for Procurement

These terms are used throughout this guide.

Term	Definition
SCM	Supply chain management or Supply Chain & Manufacturing. The active management of materials and related data as they move from suppliers and manufacturers through the distinction chain to consumers. Supply chain management is the term used for the general business process.
CRUD	Create, Read, Update, Delete.
FBDI	File-Based Data Import. A method that allows users to load large volumes of data from external sources, such as spreadsheets or CSV files, into Oracle Fusion Cloud Applications using predefined templates. This method is particularly useful for migrating data from legacy systems or for bulk data uploads. It streamlines the data loading process and ensures data integrity by validating the data against predefined rules before importing it into the system.
UCM	Oracle Universal Content Management. Provides a comprehensive platform for managing digital content within an organization. It offers a range of features and functionalities to store, organize, secure, and retrieve various types of digital assets, including documents, images, videos, and web content.
BICC	Business Intelligence Cloud Connector. A bulk-data-extract tool that's built into Oracle Fusion Applications and is used to extract applications data and load it into an Oracle Cloud Storage Service or Universal Content Management server.
ADFdi	Oracle ADF Desktop Integration. One of the features of Oracle ADF is that it enables desktop integration with MS Excel spreadsheets to manage large volumes of data. It allows users to import data from Oracle ADF systems into Excel, manipulate the data using Excel's familiar interface, and then seamlessly upload the modified data back into the Oracle ADF application.
Canonical Domain/URL	It's created when an environment is provisioned and contains the environment system name and Oracle's subdomain. For example, `cprabidqy-dev1.fa.ocs.oraclecloud.com`.
Vanity URL	The format of the URL that a customer has customized either by adding a friendly name or by using their own subdomain. For example: • `https://inspire-cprabidqy-dev1.fa.ocs.oraclecloud.com` • `inspire.fa.ocs.oraclecloud.com` • `apps.inspire.com`
Vanity Domain	A type of Vanity URL that uses a customer-owned domain and doesn't include `fa.ocs.oraclecloud.com`. For example, `apps.inspire.com`.
Oracle Analytics Publisher	A reporting solution that's embedded in Oracle Fusion Applications, allowing customers to design, create, and run reports.
REST	A REST service, or RESTful service, is a web service that follows the principles of Representational State Transfer (REST). REST is an architectural style for designing networked applications, particularly web

Term	Definition
	services, that emphasizes a stateless client-server communication model and uniform, resource-based interactions.
SOAP	A SOAP service is a web service that follows the SOAP (Simple Object Access Protocol) protocol for communication. SOAP is a protocol for exchanging structured information in the implementation of web services, often used for exchanging data between applications over a network.
JSON	JavaScript Object Notation. A standard text-based format for representing structured data based on JavaScript object syntax.
OIC	Oracle Integration Cloud. A PaaS service offered by Oracle Cloud Infrastructure as an integration platform that enables businesses to seamlessly connect applications, data sources, and systems across cloud and on-premises environments.
VBCS	Visual Builder Cloud Service. A cloud-based service provided by Oracle that enables developers to rapidly build and deploy web and mobile applications without requiring extensive coding expertise.
SFTP	Secure File Transfer Protocol. A network protocol that enables secure and encrypted file transfers between a client and a server.
EDI	Electronic Data Interchange. A specification for the communication of business documents, such as purchase orders or invoices, in a standard electronic format.
XSL	eXtensible Stylesheet Language. A styling language for XML used to define the transformations between the XML generated by Oracle Fusion Cloud Applications and external XML message formats.
OAGIS	Open Application Group Integration Specification. An XML messaging standard that provides a canonical set of business objects and messages for information integration. The XML-based B2B Message standard published by OAGi (Open Applications Group, Inc.) Open Applications Group Integration Specification. For more information, go to *http://www.oagi.org/*.
B2B Service Provider	An external agency that acts as an intermediary to deliver or receive messages. The service provider handles B2B protocols and partner-specific format transformations based on Trading Partner Agreements that are defined between the two partners involved in the message exchange.
UBL	Universal Business Language. A library of standard XML business documents that businesses can use to create and process business transactions.

Procurement Integration Basics

Integration Methodology

Integrating Oracle Fusion Cloud Procurement with upstream or downstream third-party systems requires you to follow a comprehensive framework that helps you combine different systems or components into a cohesive whole.

This is an example of the integration steps you should follow.

1. Requirements Analysis

- Document the systems involved in integration.
- To serve business purposes, identify the data required for the integration.

- Define the integration type (inbound, outbound, or process)
- Identify data processing (real-time, near real-time, or batch)
- Identify transaction data volume involved (low, medium, or high).
- Identity any other nonfunctional requirements, such as data encryption.

2. Design and Development

- Based on data required for integration, analyze business objects available in Oracle Cloud Procurement.
- Identify the “source of truth” for each data entity.
  - Avoid moving data in both directions unless necessary.
  - Always create data first on the identified source of truth and connect it with other systems.
- Before starting your journey, evaluate the previously built integrations available on Oracle Market Place.
- For available business objects, identify the best integration option based on:
  - Data shape and frequency.
  - Volume (identifies the use of web services versus file import).
  - Performance considerations.
  - End-to-end automation support.
  - Best practices and constraints of each option.
- Identify setup requirements:
  - Identify the authentication mechanism involved (basic authentication, OAuth, SAML, and so on).
  - Identify required roles for the integration user. Each business object needs a specific role before you can do CRUD operations on that object.
  - Server and network level configuration changes from external sources, for example, opening network ports and allow lists).
- Identify custom mappings, transformations, or any lookups that are required. Identify where you'd be doing that transformation or custom mappings, whether at the source, in the integration layer (such as Oracle Integration Cloud [OIC]), or at the target.
- Design for failure. Perform proper error handling and recovery. Be aware of the Oracle Cloud Procurement maintenance window.
- Develop the integration solution according to the design specifications. This might involve coding, configuring existing tools, or a combination of both.

Note: It's recommended to use JSON Web Tokens (JWTs) for authentication from the integration layer to Oracle Fusion, especially for high-volume flows. Concurrent requests above the Oracle Identity Cloud Service (or Identity Domain) thresholds will cause requests to be rejected with HTTP-429 errors. For information about the thresholds for different tiers, see the API Rate Limits sections in the *Administering Oracle Identity Cloud Service* guide and in the *Oracle Cloud Infrastructure Documentation*.

3. Verification and Validation

- Build a verification checklist.
- Ensure the data is clean.
- Ensure prerequisites are set.

- Perform a test before migration using test data to cover all the use cases.
- Conduct rigorous testing to ensure the integrated system meets all specified requirements.
- Document each error and its resolution steps.
- Verify that graceful handling of errors is in place when reviewing edge cases, such as when Oracle Fusion SaaS is down for maintenance.
- During each quarterly update, make sure to check the verification list and run all test cases once the test pods have been migrated to the new release.

4. Production Transition and Monitoring

- Prepare for the transition to the production environment. This includes completing deployment plans, setting up the production environment, and planning for data migration, if necessary.
- If using OIC, ensure the integrations are exported from the test instance and deployed on production. For third-party integration platforms, ensure the same.
- Replicate all the setups that have been done in the test environment in the production environment.
- Do a smoke test for a single transaction before sending the entire load to production.
- Have a strategy in place to recover transactions in case of an outage. Perform a mock drill of each outage scenario.
- Continuously monitor integrations and check their health. Send notifications in case of errors. Generate reports of how many integrations fail daily and look for deviation from the standard.

Integration Types

Oracle Fusion Cloud Procurement supports four integration types.

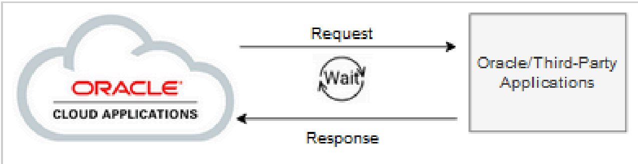
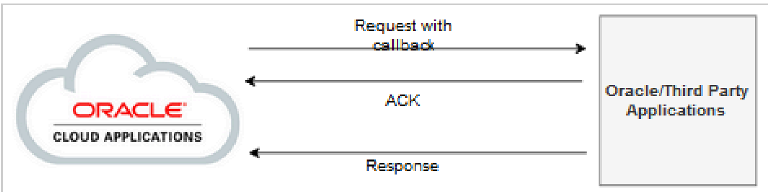
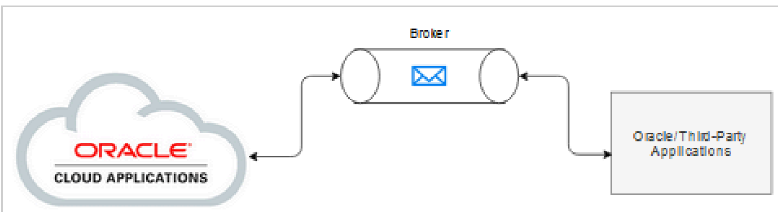
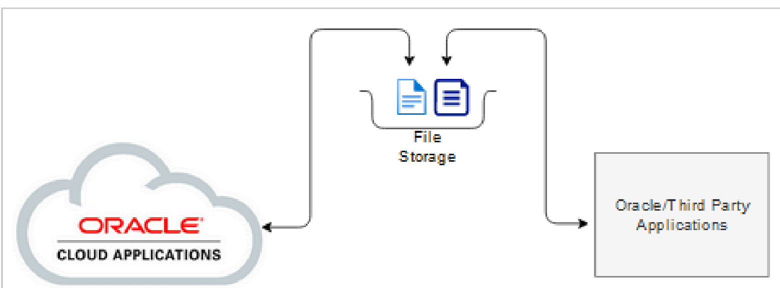
Type	**Description**
Inbound Integration	Imports data into Oracle Procurement applications from upstream on-premise systems or third-party providers.
Outbound Integration	Exports data out of Oracle Procurement applications to integrate with downstream on-premise systems and third-party providers.
Process Integration	Orchestrates an end-to-end business/transaction flow as a single business process where CRUD operations can be performed on multiple objects in Oracle Procurement applications, along with third-party applications
Data Mashup	Extends the Oracle Fusion Cloud Applications user interface and fetches data from third-party applications to display in the interface. **Note:** Because this playbook focuses on back-end integrations, it doesn't include details of data mashups or user-interface extensions.

Integration Patterns

Choosing the best integration pattern depends on your requirements.

- Your need for atomic transactions.
- If your uses cases are synchronous or asynchronous.
- Message size.
- If you require guaranteed delivery.

This diagram shows asynchronous and synchronous integration-pattern flows.

Synchronous		Blocking or near-real-time requests. The result is returned to the caller immediately. Recommended for use-cases where real-time response is expected.
Asynchronous		Non-blocking requests are invoked by a one-way operation. The results and any faults are returned by invoking other one-way operations. **Asynchronous API Call with Callback (Fire & Forget with callback)**- Recommended for use-cases with limited request message size and no real-time response expected.
		**Asynchronous Event-Based Communication** - Recommended for processing continuous stream of transactional data.
		**Asynchronous File-Based Communication** - Recommended for Ingestion or legacy system integrations use-cases.

Overview of Procurement Integration Options

Depending on the integration type, various integration options are available. These standard options are supported across Oracle Fusion Cloud Procurement applications.

It's not unusual to use multiple integration options to achieve the desired outcome. For example, each product also might support other options that are discussed in this guide in product-specific playbooks. In addition, the system integrator can choose the appropriate integration option based on integration type, data volume, frequency, and business objects involved.

Oracle Procurement integration options include:

- *File-Based Data Import (FBDI)*
- *Business Intelligence Cloud Connector*
- *Data Extraction Tool*
- *REST APIs*
- *SOAP Services*
- *Public Business Events Using Oracle Integration Cloud*
- *Collaboration Messaging*
- *Functional Setup Manager*
- *Redwood Application Extension*

File-Based Data Import (FBDI)

You can use FBDI to import data from external sources to interface tables and then to the application tables in Oracle Fusion Cloud Applications.

The import process includes:

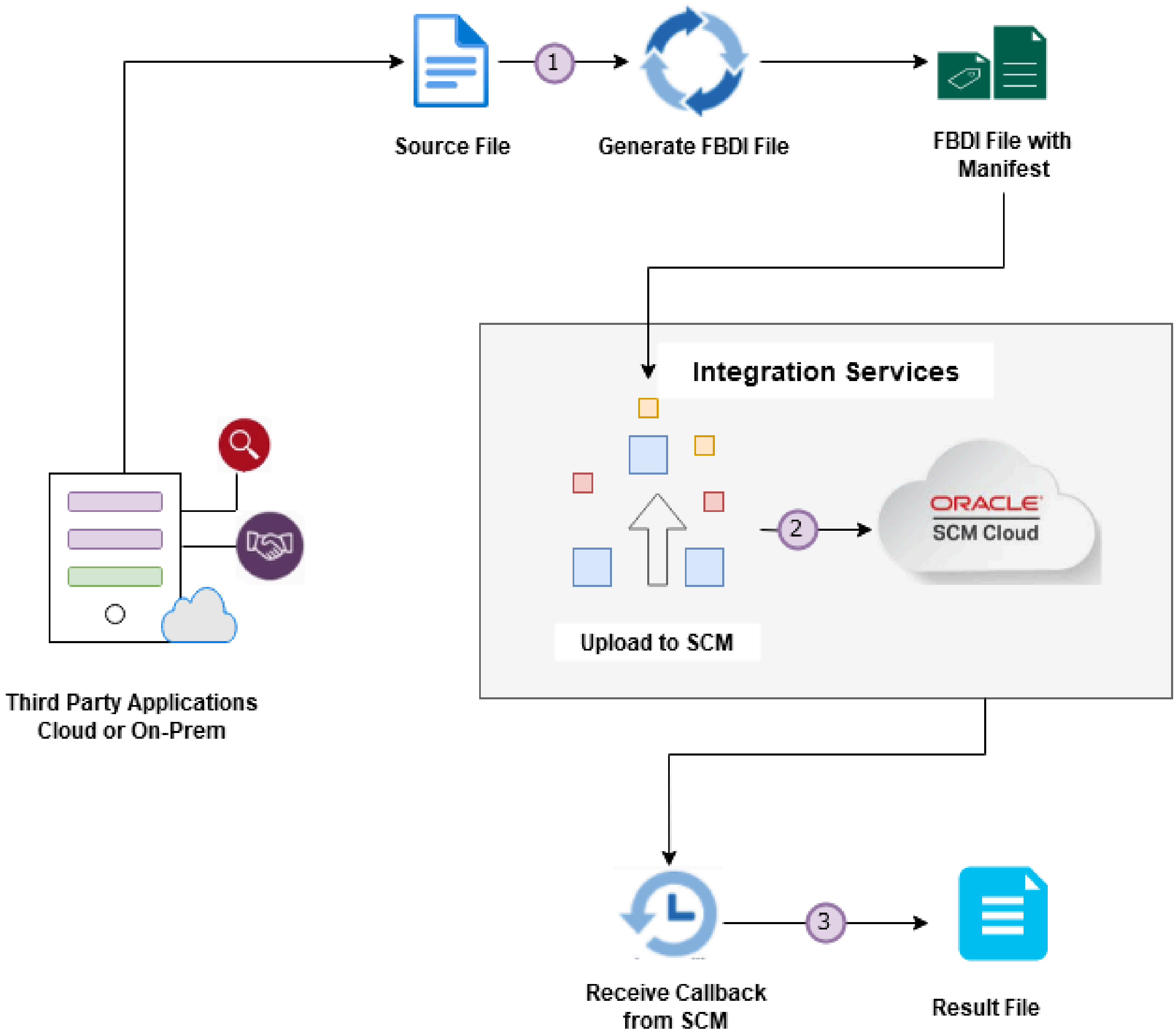
- Microsoft Excel templates that structure, format, and generate the data file according to the requirements of the target application tables.
- The FBDI load process that loads the data files into the interface tables.
- Application-specific data import processes to transfer data from interface tables to the application tables in Oracle Fusion Applications.

The steps for importing data into Oracle Fusion Applications using FBDI are:

1. Download the appropriate Microsoft Excel spreadsheet templates from your source and enter the required data.
2. Run macros in the template to generate the comma-separated values (CSV) files that are used during the import process.
3. Combine the CSV files into a compressed (ZIP) archive so that they can be imported together.
4. Upload the ZIP archive to the designated location.
5. Use the *Load Interface File for Import Process* to move the data into the application tables.

For more information, see *File-Based Data Import (FBDI) for Procurement*.

This diagram shows how external data is imported into Oracle Fusion Applications tables.



Key Features

- Used only for inbound integration.

- Supported by most Oracle Fusion Cloud Procurement applications.
- Supports both automated and manual data import processes, providing user with flexibility based on their specific requirements and IT infrastructure.
- Supports Pretty Good Privacy (PGP) encryption for data at rest.
- Supports loading of complex hierarchical data, loading large volumes of records, handling iterative loads, and being able to manage records that have effective dates.
- FBDI data import using ERP Integration Service also provides callback or event subscription when all processes are complete with a detailed summary of execution.
- Supports bulk loading of attachments and associating them with the corresponding entities using the *Import Attachments* scheduled process.

Best Practices

- FBDI is the ideal way to import voluminous data into Oracle Procurement.
- Useful for both initial data migrations when setting up Oracle Fusion Applications or for ongoing bulk data transfers.
- If possible, FBDI imports should be planned and scheduled during off-peak hours to minimize the impact on system performance and business operations.
- When using FBDI as an integration option, customers automate the generation of CSV and ZIP files uploaded in Oracle Procurement applications. Because FBDI templates can change between releases, verifying the integration before each update is essential.
- To import special characters into the application, ensure encoding of the data file is UTF-8.

  If not encoded correctly, values containing special characters in the data file will appear as fuzzy data in the application or as a question mark sign within the value.
- Deleting or reordering columns will cause the load process to fail and results in an unsuccessful data load.
- Double quotes and commas are reserved characters in CSV files. If a particular field value contains double quotes commas, the values must be properly escaped when creating the CSV.
- To automate data import using FBDI customers can use:
  - Oracle ERP Integration Service: Single stop Operation: importBulkData (both REST/SOAP available)
  - Oracle Integration Cloud (OIC) ERP Adapter
- To achieve the best compression ratio, the uploaded file should be compressed using DEFLATE compression.
- Implement a routine purging mechanism to remove outdated data from interface tables. This approach helps manage storage efficiently, optimizing query execution and enhancing overall performance throughput. You can use the *Purge Interface Tables* scheduled process to purge the tables.

Constraints

- Not suitable for real-time data import.
- Uploading large batches of data using FBDI can cause performance issues, so it's important to find an optimal batch size that the system can handle efficiently.

  Each Oracle Procurement application guide provides more details, but generally, it's recommended to split the data file logically into smaller files to avoid heavy volume processing in a single import.

  Restrict an import to up to 100,000 records in a single import or perform up to five concurrent import activities.

- Overall, the FBDI ZIP file should not exceed 250 MB in size.
- Individual files included as part of ZIP file should not exceed 1 GB in size.

> **Note:** Like FBDI, many product teams provide an Excel template for manual data operation. With Oracle ADF Desktop Integration (ADFdi), users can create, update, delete, and download data from Oracle Fusion Applications with these Excel templates. However, because ADFdi templates are unsuitable for automation, this isn't recommended as an integration option.

Related Topics

- Using External Data Integration Services for Oracle ERP Cloud (Doc ID 2102800.1)
- White Paper on ERP Integration Callback Services Implementation Considerations (Doc ID 2824999.1)
- ERP Integration Service - Operation importBulkData
- Invoke a File-Based Data Import (FBDI) Job
- Learn About Importing File-Based Data to Oracle Fusion Cloud Enterprise Resource Planning

Business Intelligence Cloud Connector

Oracle Business Intelligence Cloud Connector (BICC) is the best integration option to use when exporting bulk data from Oracle Fusion Cloud Applications for downstream integration with data warehouses or other third-party applications.

Oracle Fusion Applications provide optimized business objects for data extractions, packaged as offerings that customers can extract in an automated fashion. For more information, see *Creating a Business Intelligence Cloud Extract*.

Key Features

- Used for outbound flow only.
- Provides previously built data extracts, called offerings, for Oracle Fusion Cloud Procurement applications. Each offering has associated business objects that are all extracted together. Review each offering for which you want to run an extract and configure if necessary.
- Allows customers to create custom offerings, adjust business objects in offerings, and even select the fields they're interested in. For the best experience, extract only the objects and fields necessary for your third-party integration.
- Valid for initial data extract when setting up third-party integration with Oracle Fusion Applications or for ongoing incremental data extracts.
- An ideal way to export voluminous data out of Oracle Procurement.
- Supports both automated and manual data export processes, providing flexibility to users based on their specific requirements and IT infrastructure.
- Can be configured to write the extracted data files to Oracle Universal Content Management (UCM) or Oracle Cloud Infrastructure (OCI) Object Storage.

Best Practices

- Jobs allow you to extract data from Oracle Fusion Applications to support multiple downstream integrations. Different jobs can 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. It's a best practice to create and configure a job for your extraction.

- For same downstream requirement, it's also advisable to create multiple jobs. For example, decouple heavy view-object (VO) extracts into separate jobs. Having them included into common jobs could result in them running late in the cycle and extending the extract window. Multiple jobs can run in parallel.
- Jobs allow users to define priority groups and priority numbers within a job. Understanding job configuration and priorities management is essential to achieve the maximum extract orchestration and better performance.
- If you configure both data and primary key extracts, then create two separate jobs, one for data extract and the other one for primary keys. If you keep them in a single job, then BICC would first do the data extract and pause primary-key extracts until the very last data extract completion.
- Use the entity-specific ExtractPVOs for extracting data using BICC. Those public view objects (PVO) are designed for maximum efficiency of extracts. Other PVOs including Oracle Transactional Business Intelligence (OTBI) reporting PVOs, are available in BICC, but they can cause performance problems if used for integration purposes.
- Audit the list of extract attributes for every single VO and check the bare minimum of the extract columns to address your data integration business requirements.

  > **Note:** Important! By default, all the columns get extracted. You should select only the columns needed as per your use case and don't extract all unless you really need them.

- BICC has the default extract timeout of 10 hours per VO extract. Some large-volume VOs might require more than 10 hours to process initial volumes. You can overwrite the default value to accommodate your initial extract completion in Oracle BI Applications Configuration Manager by going to **Manage Offerings and Data Stores** > **Actions** > **Job Setting** > **Extract preference** > **Timeout in Hours: 10 Hours** (default).
- Plan to run your initial BICC extract jobs outside of normal business hours. Some initial extracts might require larger TEMP and UNDO tablespace to minimize the chance of running out of space during less busier times such as weekends.
- Apply filters to your extraction queries to ensure that only relevant data is retrieved. Not only does this speed up the extraction process, it also reduces the volume of unwanted data and makes the next processing and analysis more efficient.
- Ensure data dependencies across objects are maintained by setting a prune time. This identifies from which extract date to include incremental data, ensuring data consistency and completeness.
- Use broker mode to enhance the performance of data fetching. Broker mode helps parallel processing and efficient data transfer, which significantly improves the speed and reliability of large data extractions.
- Implement a regular purging mechanism to delete downloaded files from UCM. This practice helps in managing storage space effectively and prevents the accumulation of obsolete data files, thereby optimizing storage costs and maintaining a clean data environment. You can use the BICC Delete Expired UCM Files job for this action.

Constraints

- Not suitable for real-time data extraction.
- Frequent and concurrent large data extracts can impact system performance, so it's important to consult each Oracle Procurement application guide for information about how to manage these situations.
- BICC itself doesn't support scheduling jobs more often (for example, every 5 minutes) directly through its native scheduling capabilities.
- Typically, Flex VOs are generated dynamically. Therefore, marking columns for extracts explicitly wouldn't work for Oracle Business Intelligence broker mode. These VOs should continue using Oracle Business Intelligence server mode.

Note: Using Oracle Analytics Publisher to extract data from Oracle Fusion Applications is an unsupported pattern and should not be used by customers. If alternatives such as BICC or REST APIs can't accomplish your use case and you need to use Oracle Analytics Publisher for extraction, we strongly recommend that you create a custom Oracle Enterprise Scheduler (ESS) job of type BIPJobType and use it to schedule and run your report. You can use the downloadEssJobExecutionDetails (synchronous) or exportBulkData (asynchronous) ERP Integration Service operations to fetch the generated report content.

Related Topics

- ERP Integration Service: Operation downloadEssJobExecutionDetails
- ERP Integration Service: Operation exportBulkData
- Extract Data Stores for Procurement
- My Oracle Support: Oracle Fusion Transactional Business Intelligence and BI Cloud Connector Performance Recommendations (Doc ID 2679006.1)
- My Oracle Support: Fusion Applications BICC: How To Add Filter To Data Store (Doc ID 2657806.1)
- My Oracle Support: How To Set Prune Time In BICC PVO To Extract Hourly (Doc ID 2798851.1)
- My Oracle Support: How Does the "Delete Expired UCM Files" Job Work? (Doc ID 2661193.1)

Data Extraction Tool

The Data Extraction tool leverages a read-optimized data store to ensure faster and more reliable data extraction.

By seamlessly integrating with Oracle Autonomous AI Lakehouse, the tool supports near real-time replication of data from Oracle Fusion Cloud Applications. Rather than extracting data directly from the transactional database of Oracle Fusion Applications, the tool performs data extracts against the replicated data. This approach significantly reduces the load on core applications by offloading data extraction to a read-optimized data store, improving overall performance and efficiency for both transactional activities and data extraction needs.

This innovative approach is designed as the long-term replacement for Business Intelligence Cloud Connector (BICC), offering a more modern, efficient, Redwood-based experience.

Key Features

- Select one or more business views or extraction views.
- Perform full and incremental extracts.
- Schedule extractions or run them on demand.
- Monitor and view extract statuses.
- Apply BICC column headers to the selected views and attributes to support migration from BICC for existing customers.
- Export extract data to Universal Content Management (UCM) or Oracle Managed Storage.

Best Practices

- Use only for bulk extracts.
- Don't extract all columns. Extract only what's required.
- Don't schedule all extracts together. Create multiple jobs instead.
  For example, decouple heavy view-object (VO) extracts into separate jobs. Including them in common jobs might cause them to run late in the cycle and extend the extract window. Multiple jobs can run in parallel.

- Apply filters to your extraction queries to ensure that only relevant data is retrieved. Doing this will speed up the extraction process, reduces the volume of unwanted data, and makes the next processing and analysis more efficient.

Constraints

- Custom objects and analytic views aren't supported.
- Not suitable for real-time data extraction.

Related Topics

- Data Extraction Tool

REST APIs

Oracle Fusion Cloud Procurement provides customers and system integrators with a comprehensive set of REST APIs to view, create, update, or delete records for their real-time integration requirements.

In addition to using file-based data import (FBDI) and Business Intelligence Cloud Connector (BICC) to import and export large-volume data from Oracle Fusion Cloud Applications, REST APIs provide a robust and highly scalable tool for integration with Oracle Procurement applications.

For more information, see *REST API for Oracle Fusion Cloud Procurement*.

Key Features

- REST APIs are used for both inbound and outbound flow.
- Support for real-time integration requirements.
- Support for CRUD operations on both single-item and collection.
- Many product teams support BATCH operations on their objects, which allows them to execute multiple updates, insert, delete, and get operations in a single call.
- Along with CRUD operations, many Oracle Procurement applications support custom actions.
- Extensive support across Oracle Procurement applications
- End-to-end process orchestration can easily use REST APIs.
- Support only for JSON format.

Best Practices

- Always consult the REST documentation guide for various headers to pass while making a REST call, and review examples provided by Oracle Procurement product teams.
- While retrieving data, use limit and offset for data pagination.
- When retrieving data, use the field URI parameter to restrict the response to only fields you're interested in.
- Use query parameter **q** to filter and restrict the results.
- Combine multiple API requests into a single request when possible.
- Use the onlyData=true directive to exclude all links from the response, thereby reducing the response size.
- Implement timeout handling and retry logic for HTTP error codes like 500 (Internal Server Error), 502 (Bad Gateway), 503 (Service Unavailable), and 504 (Gateway Timeout). While retrying, always use exponential back-off to avoid overwhelming the server.

- For the 503 (Service Unavailable) error, see if the response output has the word "Maintenance" retry. In such cases, consider a total delay of up to 8 hours because sometimes updates can take a long time.
- If you contact Oracle Support, ensure you log errors and important transaction details. To quickly resolve errors, Oracle Support would need the exact time for the REST call and input and output payloads.
- You can specify an Oracle Business Object REST API framework version for your web application to opt into new functionality offered by a later version of the REST API framework.
- You can use entity tags (ETags) for APIs with a high Read/Write ratio needing frequent updates. To avoid conflicts and improve caching, ETags can be used to validate data, detect stale data, and so on. It ensures better performance and efficiency.

Constraints

- Not suitable for large volumes of data import/export.
- None of the Oracle Procurement REST APIs allow the return of more than 500 records in a single call. You can paginate through the entire set using offset and limit in REST parameters.
- The changes introduced in each framework version are backward incompatible. Therefore, assess your business requirements and use the framework version that supports them.

> **Note:** When building an integration with Oracle Procurement applications, don't use an undocumented REST API. Oracle doesn't guarantee backward compatibility of undocumented REST APIs and they can be deprecated without formal notice.

Oracle Visual Builder Add-In for Microsoft Excel

You can use Excel as a REST client to retrieve, analyze, edit, and load data using the Oracle Visual Builder Add-in for Excel. For more information, see *Oracle Visual Builder Add-in for Excel, Version 3.2.0*.

Related Topics

- Working with ADF REST Framework Versions
- Data consistency checks using ETags

SOAP Services

Oracle Fusion Cloud Procurement provides customers and system integrators with a comprehensive set of SOAP APIs to execute CRUD operations on a business object or participate in a business process in real-time.

Key Features

- SOAP services are used only for both inbound and outbound flow.
- Support for real-time integration requirements.
- Support for CRUD operations on both single-item and collection.
- Many product teams support BATCH operations on their objects, which allows them to execute multiple updates, insert, delete, and get operations in a single call.
- Along with CRUD operations, many Oracle Procurement applications support custom actions.
- Extensive support across Oracle Procurement applications.
- End-to-end process orchestration can easily use SOAP services.
- Support only for XML format.

Best Practices

- Review the *SOAP Web Services for Procurement* guide thoroughly to understand the available functionalities, operations, and data structures.
- When using SOAP services to retrieve data, always try to use the find operation rather than the simple get operation. You can use the find operation to specify a list of attributes to include or exclude in response.
- If parsing SOAP responses programmatically (like in Java), always use an XML parser instead of text parsers. Text parsing is error-prone, especially if the XML structure changes or if namespaces are involved.
- If you contact Oracle Support, ensure you log errors and important transaction details. To quickly resolve errors, Oracle Support would need the exact time for the SOAP call and input and output payloads.

Constraints

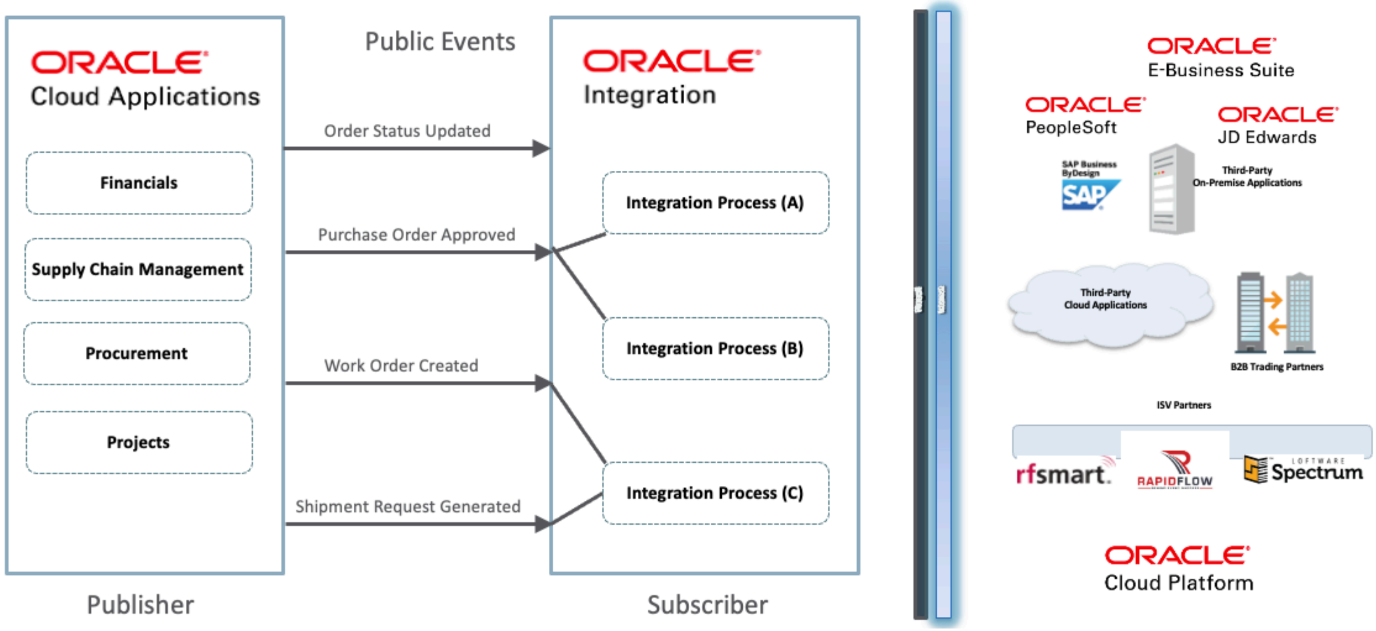
- Not suitable for large volumes of data import/export.
- SOAP services don't support pagination by default and might suffer from timeout for large volumes of data.
- When it comes to performance and scalability, REST APIs outperform SOAP APIs. Therefore, Oracle recommends that customers use REST APIs instead of SOAP services whenever equivalent REST APIs are available.
- Many SOAP APIs have been deprecated in favor of REST equivalents. Deprecated APIs might not be fully supported or enhanced. Check the documentation and don't use deprecated SOAP APIs.

Public Business Events Using Oracle Integration Cloud

A public business event is an outbound integration option supported by many Oracle Fusion Cloud Procurement applications.

Business events are raised at appropriate lifecycle phases by application and can be subscribed to in Oracle Integration Cloud (OIC) to integrate with third-party applications in an asynchronous model.

This diagram shows the integration between Public Business Events and the Oracle Cloud Platform.



Key Features

- Used only for outbound integration.
- Public events support near-real-time integration requirements.

- The public event payload contains specific information about the event. You can use callback services to retrieve more information from Oracle Procurement.

Best Practices

- Most public business events aren't generated by default and must be enabled. Consult individual product guides to see which objects support public business events and how to enable them.
- Public business events can handle low-to-medium integration data loads and are suitable for scenarios where there are fewer than one thousand business events in an hour.
- Having a reconciliation strategy in place is important in case some events are missed because, generally, missed events can't be generated again.

Constraints

- Not suitable for large volumes of data.
- Many Oracle Fusion Cloud Applications don't raise business events during bulk creation/update of business objects. Consult each product integration guide for information about which objects support the business event and in what scenario.
- Business events can be subscribed to only in Oracle Integration Cloud (OIC). Customers can't use any other third-party platform for business event integration.

Additional Information

It's important for you to be aware of this information:

- There are other integration options that OIC supports. An example is defining schedule-based integration. You can define a schedule for running orchestrated integrations, such as the frequency at which to run the integration, if the schedule run should never expire, if the schedule should have a fixed expiration date, and so on. As part of these integrations you can use different adapters like SOAP services or REST APIs for integrating with Oracle Fusion Applications.

  OIC also supports Secure File Transfer Protocol (SFTP) integration, which is the best option to use to receive or send files.
- You can also use Oracle ERP Cloud Adapter within Oracle Integration Cloud (OIC) for importing bulk data using file-based data import (FBDI) into Oracle Fusion Cloud Enterprise Resource Planning (ERP). The adapter streamlines the process of connecting to Oracle Cloud ERP, enabling seamless data exchange and automating business processes across your cloud and on-premise applications. For more information, see *Oracle ERP Cloud Adapter Capabilities*.
- OIC might limit of total number of active integrations running on single instance. If you're hitting this limit, please work with Oracle Support to discuss the possibility of increasing the limit.

Related Topics

- Supported SCM and Procurement Business Events

Collaboration Messaging

Oracle Collaboration Messaging provides native messaging capability for the most widely used B2B messages in Oracle Purchasing, Oracle Fusion Cloud Supply Chain (SCM) & Manufacturing, and Oracle Fusion Cloud Financials.

Applications supporting the Collaboration Messaging raise the collaboration event or invoke the Collaboration Messaging send document service to start sending B2B messages to partners.

Collaboration Messaging retrieves the message payload and, depending on the recipient (service provider or trading partner), delivers the payload in the external message format setup for the recipient.

It also receives B2B messages from service providers or partners in external message formats that are translated and delivered to the application by invoking application web services.

B2B messaging is normally handled by third-party service providers or B2B applications. Collaboration Messaging delivers ready-to-use connectivity with some service providers.

Collaboration Messaging provides the ability to configure what's delivered ready to use, and the ability for customers to create and connect to other B2B service providers, applications, or partners.

Key Features

- Exchange (send or receive) B2B messages with partners (suppliers or customers).
- Message sending triggered by application events or scheduled processes.
- Multiple options for sending messages:
  - Send directly to the partner
  - Send to a B2B service provider (partner or user defined).
  - Deliver to Oracle Universal Content Management (UCM) or an SFTP file location.
  - Trigger an Oracle Integration Cloud (OIC) flow for later enrichment and delivery.
- Ready-to-use multiple message formats supported. For example, UBL, cXML, OAGIS, and Brazil SEFAZ.
- Multiple delivery methods for sending messages:
  - SOAP services or REST APIs (REST using Oracle B2B)
  - SFTP
  - UCM
  - AS2 (using Oracle B2B)
  - OIC (B2B Message Business Event)
- Multiple communication methods for receiving messages:
  - SOAP services
  - REST APIs (using Oracle B2B)
  - UCM folders
  - OIC (B2B Message Business Event)
  - Messages received are delivered to applications through interface tables, file-based data import (FBDI), or directly by calling an application SOAP service or REST API.
- Configuration supported for handling other data elements; value cross-referencing; and simple validations by changing the provided ready-to-use XSL style sheets.
- Support for ready-to-use multiple third-party service providers, with an option for the user to add their own service providers.
- Support for ready-to-use multiple messaging standards, with an option for users to add their own.
- Error-handling capabilities, including automatic retry, error notification, and resending messages.
- Support for a set of ready-to-use documents (for example, Purchase Order Out, Invoice In). For each document, delivers a few external message formats.

- EDI support using OIC or third-party service providers.

Best Practices

- All business processes are enabled, ready to use. Disable the ones you're not using.
- Review the messaging configuration parameters, especially the ones related to message size and attachment handling.
- If you're using service providers for B2B, don't configure override message definitions for trading partners unless you have specific override requirements for those partners. This isn't common.
- If you perform a production-to-test, update your delivery method credentials, and verify the external delivery endpoints after the update.

Constraints

Users can implement new message formats for existing documents but can't add new documents.

Functional Setup Manager

Functional Setup Manager is a key integration option with export and import processes that help in migrating setup data from one instance to another.

Applications also provide comma-separated values (CSV) file export and import, which helps to enter or update a large volume of setup data but is insufficient for managing setup task UIs individually.

For more information, see *Using Functional Setup Manager*.

Key Features

- Used only for setup data.
- Supports exporting and importing an entire offering, functional area, or implementation project.
- Supports the filtering of setup data to limit the export that matches the criteria.
- Provides review of setup data before or after the export or import process using the Setup Data Reports and Comparison Reports.
- Supported by all Oracle Fusion Cloud Procurement applications.
- Supports both automated and manual data-export processes, giving flexibility to users based on their specific requirements and IT infrastructure.
- Supports only XML and CSV formats.

Best Practices

- Create and verify the setup data in a test instance.
- Ensure that the test and production instances are at the same release level.
- Use scope-filtering functionality to limit the data being exported when performing an incremental setup.
- Use comparison reports to review potential setup changes before submitting the import process.
- Review setup in the production instance once import completes.
- Implement only the offering required for the business need to prevent unnecessary data export.
- Export only one offering at a time.

- If you make any configuration changes in the production environment, ensure you make the same changes in the test environment so that the changes will be carried over during the next migration.
- Make sure the functional security associated with the roles exists in both source and target instance.

Constraints

- Not suitable for real-time data extraction.
- Import doesn't delete the records in the target instance if they don't exist in the configuration package. You must delete these records or make deprecate them manually, if necessary.
- Some setups are prerequisites for other setups and have data dependencies. Therefore, the sequence in which setup data is imported from a configuration package is important to prevent any failure due to data dependency.
- You can't combine the export and import processes of different methods. When an offering or functional area is exported, that setup data can only be imported using the same offering or functional area.

> **Note:** Functional Setup Manager isn't a typical integration option but is a way to move your setup data from a test instance to a production instance after your integration has completed end-to-end testing. It enables you to use export and import to quick-start functional setup at different instances and to validate a setup by reviewing setup data reports.

Redwood Application Extension

You can use the Redwood application extension to change and edit a Redwood page delivered by Oracle Fusion Cloud Applications or create a new Redwood application and deploy that with Oracle Fusion Applications.

Though this integration guide focuses on back-end integration, you can extend the Oracle Fusion Cloud Applications user interface using Oracle Visual Builder Cloud Service (VBCS) runtime, which comes default with every Oracle Fusion Applications instance.

A Redwood application has the same look and feel as existing Oracle Fusion Applications and is deployed on the same infrastructure. You can integrate with any Oracle Fusion Applications REST APIs or call external REST APIs. The only constraint is that external REST APIs can't accept any authentication. If you need to access protected external REST APIs, you must buy and provision your own VBCS instance. With the instance, you can call any Oracle Fusion Applications REST APIs, any protected REST APIs, or create your own custom objects. Both options are fully integrated with the Oracle Fusion Applications instance and are single sign-on (SSO) enabled.

Which Integration Option Should You Choose?

Use the information in the table to help you choose what option to use for certain objectives in a specific integration project.

Category	Intent	REST	SOAP	FBDI	Business Event
Integration Frequency	One-time Process	o	o	x	o
	Recurring Process	x	x	x	x
Transactions per Message	Single	x	x	o	x
	Multiple/Batch	x	x	x	–
Integration Pattern	Synchronous	x	x	–	–

Category	Intent	REST	SOAP	FBDI	Business Event
	Asynchronous	x	x	x	x
Integration Scenario	Setup/Implementation	x	x	x	–
	B2B	o	o	o	o
	A2A (Internal)	x	x	x	x
	External 3rd Party	x	x	x	x
Response Pattern	Request/Reply	x	x	–	–
	Publish/Subscribe	–	–	–	x
x = Supported, Recommended; o = Supported, Conditional; – Not Supported					

Note: For all integrations, such as like REST API calls, SOAP calls, and Oracle Integration Cloud (OIC) connections, you must use Canonical URLs and not Vanity URLs.

2 Purchasing

Overview of Purchasing

About Oracle Purchasing

Oracle Purchasing enables you to streamline and automate the procure-to-pay process while enforcing negotiated pricing and terms and ensuring policy compliance.

Terminology for Purchasing

These terms are used throughout the Oracle Purchasing playbook.

Term	Definition
Draft Purchase Order	A document that controls the purchase of an item or a service that's created but isn't yet communicated to the supplier.
Purchase Order	A commercial document that controls purchasing of an item or service, typically from a supplier who resides outside of your organization.
Purchase Agreement	A long-term agreement between a supplier and the requesting organization that can be referenced by purchase orders in the future. Agreements contain the details with which you agree with your supplier on specific terms and conditions, with or without indicating the goods and services that you'll purchase. For example, an agreement with a supplier for 50 laptops, or an agreement with another supplier for installing a television.
Procurement Agent	Users with roles such as buyer, catalog administrator, and supplier manager. These users must be defined as procurement agents to manage procurement documents and perform other procurement actions.
Procurement Approved Supplier List Entry	A repository that links items to the suppliers and supplier sites that are approved to provide the items to a specific ship-to organization or to the entire enterprise.

Integration Types and Options for Purchasing

Overview of Purchasing Integration Types and Options

Several integration types and options are available in an Oracle Purchasing integration.

Integration Types

These integration types are available in Oracle Purchasing.

Inbound

In this type of integration, purchasing data is sourced from external systems and uploaded into Oracle Purchasing.

Outbound

In this integration type, the data stored in Oracle Purchasing can be sent to various external systems.

Process Integration

In this type of integration, Oracle Purchasing might send data and receive data updates from external systems in a single transaction and in an orchestrated manner. You can build a well-coupled, end-to-end automated process by stringing the inbound and outbound integration processes using the business events and REST APIs with Oracle Integration Cloud (OIC) functionalities.

For example, Oracle Purchasing publishes that a purchase order was implemented to an external system. The external system listens to that event and then calls a REST API to acknowledge the purchase order.

Integration Options

These integration options are available in Oracle Purchasing.

Inbound

- *File Based Data Import*
- *REST APIs (Inbound) for Purchasing*
- *SOAP Services (Inbound) for Purchasing*
- *Collaboration Messaging (Inbound) for Purchasing*

Outbound

- *REST APIs (Outbound) for Purchasing*
- *SOAP Services (Outbound) for Purchasing*
- *Collaboration Messaging (Outbound) for Purchasing*
- *Business Intelligence Cloud Connector for Purchasing*

Process Integration

- *Process Integration for Purchasing*

Inbound

File-Based Data Import (FBDI) for Purchasing

Use the FBDI feature to create data in Oracle Purchasing or to import large volumes of data from third-party or other Oracle applications.

For example, you can create purchase or import purchase orders from external applications into Oracle Fusion Cloud Procurement. For a complete list of business objects that can be imported, see *Purchase Orders Import* in File-Based Data Import (FBDI) for Procurement. You also can use some file-based data import features to update large volumes of specific blanket and contract agreement attributes in the application. For example, you can update specific blanket purchase agreement line attributes in Oracle Purchasing.

Spreadsheet Templates

Use the provided FBDI templates to quickly create and import data.

Key Features

- Use spreadsheet templates and macros to organize object data for purchasing-document import and to generate the compressed file (ZIP) file that contains comma-separated values (CSV) files used during the import process.
- Import large volume of data to create purchasing documents.

Best Practices

- Batch ID
    - Because the batch ID provides an index, it's best to use the same batch ID in the FBDI spreadsheet and in the import order job context menu for better performance.
    - Concurrent jobs that are submitted expecting to be processed in parallel should have a unique procurement business unit and batch ID combination. Concurrent jobs with the same procurement business unit and batch ID combination will be processed in serial.
- Purge
    - The volume of data in the interface table could affect the overall performance. Periodically purge this content by running the *Purge Processed Open Interface Documents* scheduled process.
    - We recommend that you review the po_interface_errors table for any errors and take appropriate actions to re-process them.
    - Records in the po_interface_errors table will not be purged automatically. This is now the default behavior to help with debugging. To revert to purging the records after generating the error PDF, enable the PO_PURGE_INTERFACE_ERRORS profile option.
- Approved Transactions
    - To import purchasing documents bypassing approval, enter **BYPASS** in the approval action. Note that do the user doing the import must have the *Import Purchasing Document Bypassing Approval* function security privilege.
- Attachments
    - Use the ERP SOAP Object Attachment Service to add attachments. It's a utility web service that you can use to upload attachments to Oracle Purchasing for purchase orders and agreements. Use this service to upload attachments to documents at the desired level. The operation works only for purchasing documents created by import or by SOAP services. For more information, see:
        - *My Oracle Support: Uploading Attachments to Requisitions Using ERP Object Attachment Service* (My Oracle Support subscription required.)
        - *ERP Object Attachment Service*
- Descriptive Flexfields (DFFs)
    - The valid values for DFFs aren't shown as a drop-down list. They will be treated as free text.
- Parent-Child Relationships
    - Use the interface keys to enforce parent-child relationships.

Constraints

- There's no option to re-process the import for a batch that failed validation. The spreadsheet must be loaded again for import.
- Using FBDI to create Approved Supplier List Entries isn't supported. Use REST APIs instead.

Purchase Orders

Key Features

- Create purchase orders.
- Add purchase order lines.

Best Practices

- This is an ideal way to import many purchase orders in either incomplete or open status.
- To import closed purchase orders, set the receipt close and invoice close tolerances to 100%.
- To add new lines to a purchase order, use the **Update** action. If a purchase order is open, this action will result in a change order.
- Secured by the *Import Purchase Order* function security privilege.
- To source to an agreement, the agreement reference must be provided explicitly. Populate the Source Agreement Procurement BU, Source Agreement, and Source Agreement Line columns on the PO_LINES_INTERFACE sheet. The Source Agreement line is needed only when the source agreement is a blanket agreement.
- FBDI supports the expense and inventory destination types.

Constraints

- FBDI doesn't support the creation or update of purchasing documents with more than 10,000 distributions. Exceeding 10,000 distributions can cause performance issues and could lead to failures.
- Use FBDI instead of REST APIs in these situations:
  - To update (other than adding new lines) and cancel purchase orders, use REST APIs instead of FBDI.
  - To create purchase orders with progress payment schedules, use REST APIs instead of FBDI.
  - To import a purchase order referencing a requisition, use the Requisition Processing Requests REST resource instead of FBDI.

Purchase Agreements

Key Features

- Create and update blanket and contract agreements.
- Add blanket agreement lines.
- Create items during blanket agreement import.

Best Practices

- This is an ideal way to import many purchase orders in either incomplete or open status.
- Update is only supported for a subset of attributes on the blanket and contract agreement. See *How You Import Purchasing Documents* for more information.

- When adding new lines to a blanket purchase agreement:
  - The header action should be UPDATE.
  - The line action should be ADD or SYNC.
    - For ADD, the line number should not be one that already exists on the document.
    - For SYNC, Purchasing Documents Open Interface (PDOI) updates the line for lines that match. For lines that don't match, PDOI creates a new line on the blanket purchase agreement (BPA).
- For information about creating items when importing a blanket agreement, see *How You Create Master Items from the Blanket Purchase Agreement Import*.

Constraints

- Importing blanket purchase agreement lines using FBDI: 10,000.
- To cancel and close purchase agreements use REST APIs instead of FBDI.
- Importing Notification Controls isn't supported.

Related Topics

- External Data Integration Services for Oracle Cloud
- How You Import Purchasing Documents
- Purchase Orders Import
- Blanket Purchase Agreements Import
- Contract Purchase Agreements Import
- Import Orders (scheduled process)
- Import Blanket Agreements (scheduled process)
- Import Contract Agreements (scheduled process)
- What's the application limit on purchasing processes and services?

REST APIs (Inbound) for Purchasing

Use the REST APIs inbound integration option to integrate with Oracle Purchasing if your business process requires near real-time updates to your purchasing data.

For example, you might need to update a price on a purchase order.

Key Features

- Use REST APIs for real-time integration requirements for Purchase Orders, Purchase Agreements, Procurement Agents, Processing Requisitions into Purchase Orders, Work Confirmations, and other Oracle Purchasing REST resources.
- Use the Purchase Order REST resource to view and perform custom actions on open purchase orders.
- Use the Draft Purchase Order REST resource to view, create, update, perform custom actions on draft purchase orders or change orders.
  - BATCH is supported for updates, insert, delete, and GET operations.
  - UPSERT mode is supported.
  - Use the calculateTaxAndAccounting custom action to derive key values quickly, expedite data entry, and to perform certain validations.

- Use the Purchase Agreement REST resource to search for a blanket or contract purchase agreement and child resources.
- Use the Purchase Agreement Import Requests REST resource to import purchase agreements.
- Use the Requisition Processing Requests REST resource to processes approved requisition lines into a new order or add them to an existing order.
- Use REST APIs to achieve end-to-end process orchestration.
- Use the batch action to update multiple blanket agreements.

Best Practices

- Use this option if you need to perform near real-time mode operations in Oracle Purchasing.
- To improve performance and prevent REST APIs from experiencing 504 gateway time outs if a request runs for more than 5 minutes, limit the attributes using the fields query parameter while performing a GET operation whenever it's supported.
- Although we don't expect customers to have hundreds of distributions per purchase order line or schedule, consider splitting the line or schedule to achieve better performance when handling a large purchase order.
- To have more control when organizing requisition lines onto a purchase order, use the Requisition Processing Requests REST resource instead of generating orders.

  > **Note:** To do this, you must first disable automatic purchase order generation.

- POST a batch of records with each batch containing 500 lines until you've looped through all the lines that need to be updated. The POST operation will return interface header IDs that correspond to the blanket purchase agreements (BPAs) being updated. Use any interface header ID that's returned and start the custom action. To process all records in the batch, start a custom action without providing the batch ID.

Constraints

- REST APIs don't allow the return of more than 500 records in a single call. You can paginate through the entire set using offset and limit in REST API parameters.
- Batch mode isn't supported when using custom actions for draft purchase orders. For example, when submitting multiple purchase orders for approval in a single request.

Related Topics

- REST API for Oracle Fusion Cloud Procurement
- Oracle Visual Builder Add-in for Excel
- Rest API for Oracle Fusion Cloud Procurement: Privileges
- Cloud Customer Connect Knowledge Article: Update 21A How to Create, Update and Submit a new Purchase Order using the Oracle
- Cloud Customer Connect Knowledge Article: Update 21A How to Create & Submit a Change Order using the Oracle Visual Builder
- Cloud Customer Connect Knowledge Article: Create & Update Purchase Order & Change Order with Project DFF using Oracle VBCS
- Cloud Customer Connect: How to Mass Close PO schedules using the Oracle Visual Builder Add-in for Excel
- Cloud Customer Connect Event: SCM – PRC: Create and Update Purchase Orders using Visual Builder Add-in for Excel

SOAP Services (Inbound) for Purchasing

You can use SOAP services to create transactions in Oracle Purchasing.

> **Note:** Oracle recommends using REST APIs rather than SOAP services.

Key Features

- Perform data updates in real time (inbound).
- Use the purchase request service to initiate requester changes.
- Use the purchase order service to initiate buyer changes.
- Use with Oracle Integration Cloud (OIC) to perform near real-time operations.

Best Practices

REST APIs versus SOAP Services

SOAP services aren't recommended if an equivalent REST API is available.

GET operation

When developing the integration, consider running the GET operation on an existing purchase order to help identify the values to use in the CREATE or CHANGE operations.

CREATE operation

- When using the CREATE operation, don't provide any key attributes like PO Header ID, PO Line ID, Line Location ID, and PO Distribution ID in the payload because these values will be generated.
- Provide either an ID or a name but not both. (For example, Payment Terms ID, Payment Terms.)
- Provide either a code or a name but not both. (For example, Approval Action Code, Approval Action, Currency Code, Currency.)

CHANGE operation

For a CHANGE operation, the system (for example, PO Header ID) or business keys (for example, PO Number and Sold To LE) can be used to find the document.

Constraints

- This option isn't suitable for importing large volumes of purchasing data.
- Low in performance and scalability compared to REST APIs.
- The CREATE and CHANGE operations of the Purchase Order Web Service only support payloads for purchasing documents no more than 200 lines.
  - Purchase order with 200 lines, one line with 10,000 schedules, one line with one schedule and 10,000 distributions.
  - These options are available for purchase orders with more than 200 lines:
    - Use the purchasing document's open interface or file-based data import (FBDI) to create the purchase orders.
    - Split the payload into multiple Purchase Order Web Service calls if more than 200 lines must be uploaded for a single purchase order.

- To add attachments, use the ERP SOAP Object Attachment Service, which is a utility web service that uploads attachments to Oracle Purchasing purchase agreements and purchase orders. Use this service to upload attachments to documents at the level you want. The operation works only for purchasing documents created by import or by SOAP services.

Related Topics

- SOAP Web Services for Procurement: About SOAP Web Services in Oracle Applications Cloud
- Document Size Limit for Purchase Order Web Service
- What's the application limit on purchasing processes and services?
- ERP Object Attachment Service
- My Oracle Support: Uploading Attachments to Requisitions Using ERP Object Attachment Service – PDF (My Oracle Support subscription required)

Collaboration Messaging (Inbound) for Purchasing

Oracle Collaboration Messaging provides native messaging capabilities for the most widely used B2B messages in Oracle Purchasing.

Key Features

- Receive order acknowledgments (855, 865) from suppliers.
- Acknowledgment might be a simple accept or reject, or acceptance with changes (for example, promised delivery date, price update, and quantity update).
- Depending on the acknowledgment codes in the message and on how order acknowledgment is set up, different services are called to update the purchase order.
- If the acknowledgment contains changes that can't be updated on the order (for example, unit of measure and item substitution), flexfields can be configured to communicate these updates.
- You can change the acknowledgment codes that are delivered ready to use to support partner-specific variants.

Best Practices

None.

Constraints

None.

Related Topics

- Overview of Collaboration Messaging Framework
- Overview of Collaboration Messaging Web Services

Outbound

REST APIs (Outbound) for Purchasing

Use REST APIs to retrieve information – such as purchase orders, work confirmations, purchase agreements, requisition processing requests, compliance checklists, and procurement agents – from a resource.

Key Features

Use the REST API GET method.

Best Practices

- To improve performance and prevent REST APIs from experiencing 504 gateway time outs if a request runs for more than 5 minutes, limit the attributes using the fields query parameter while performing a GET operation whenever it's supported.

  Use the query parameters limit and offset to specify how many records to return, and which batch of records to return. When exporting large amounts of data, these query parameters are needed to retrieve the next batch of records because the maximum number of records you can retrieve at once within a single batch is 500.
- Avoid OR conditions with LIKE clauses.
- For better performance, consider using file-based data import (FBDI) when creating large purchase orders.

Constraints

JSON format only.

Related Topics
- REST API for Oracle Fusion Cloud Procurement
- Rest API for Oracle Fusion Cloud Procurement: Privileges
- Oracle Visual Builder Add-in for Excel

SOAP Services (Outbound) for Purchasing

You can use SOAP services to create transactions in Oracle Purchasing.

> **Note:** Oracle recommends using REST APIs rather than SOAP services.

Key Features

- Access the data available in the database in real time.
- You can use SOAP services to get purchase orders or change orders that have been implemented.
- Use Oracle Integration Cloud (OIC) to perform near real-time operations.
- getpurchaseRequest returns details for a given purchase order header ID and requisition header ID, which are both required. The details might be from the purchase order, purchase order change order, or purchase order schedule.

Best Practices

REST APIs versus SOAP Services

SOAP services aren't recommended if an equivalent REST API is available.

Constraints

Low in performance and scalability compared to REST APIs.

Related Topics

- SOAP Web Services for Procurement: About SOAP Web Services in Oracle Applications Cloud
- Document Size Limit for Purchase Order Web Service
- What's the application limit on purchasing processes and services?

Collaboration Messaging (Outbound) for Purchasing

Oracle Collaboration Messaging provides native messaging capabilities for the most widely used B2B messages in Oracle Purchasing.

Key Features

- Communicate purchase orders to B2B partners (EDI 850, 860) when a new purchase order is created, when an external purchase order revision is implemented, or when a purchase order is canceled.
- An order is sent if B2B communication is enabled for the purchase order site and there's no override enabled on the purchase order.
- Identify and retransmit orders that didn't get communicated because of unanticipated issues.
- Special handling to communicate large orders, for example, orders with many lines.
- Conditionally send orders in different formats, for example, PDF email or XML, using the same or different delivery methods.
- Conditionally or unconditionally send orders to multiple recipients in the same or different format using the same or different delivery methods.
- Option to include purchase-order attachments as MIME parts or embedded binary content in the message transmission.

Best Practices

Ensure that the PO_ELECTRONIC_COMM_DATA_MODEL profile option is enabled. This is required for most B2B messaging scenarios.

Constraints

- If you're using a custom data model for purchase orders and include fields in the data model for B2B, you must configure the message definition XSL to map these fields into the external message. They aren't automatically carried forward.
- If purchase orders aren't visible in Collaboration Messaging's messaging history even after everything is set up correctly, the most likely reason is an issue with the data model definition or setup.
- Normally, only the changes to an order are transmitted in a change order. If you need to transmit the entire order, you'll need to update the data model to communicate the entire order when a change is approved.
- If you're sending purchase orders with large attachments, you might need to update the default maximum message size property in Collaboration Messaging setup depending on the number and size of the attachments.

Related Topics

- Overview of Collaboration Messaging Framework
- Overview of Collaboration Messaging Web Services

Business Intelligence Cloud Connector for Purchasing

Oracle Purchasing offers a collection of public view objects (PVOs) that give you read-only access to the raw data stored in the business objects.

Key Features

- Use the *standard features available in Oracle Business Intelligence Cloud Connector (BICC)*.
- Configure an external storage location that works for your data needs.
- Extract complete or partial data.
- Run extracts on-demand or schedule them to run at specified intervals during the day, in a week, or throughout the month.
- 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.

Best Practices

- Perform periodic extraction close to near real-time extraction.
- Run incremental extracts if you need only the data that changed since your last extract.
- Control who has access to the content and what they can do with it.

Constraints

- Conditional data extraction isn't supported. That is, the data rows from a PVO can't be based on a specific data condition.
- This option isn't suitable for extracting purchasing data on a real-time basis.
- View objects aren't supported for purchasing archive tables.

Related Topics

- Overview of Business Intelligence Cloud Connector
- Extract Data Stores for Oracle Purchasing

Process Integration for Purchasing

You can build an end-end process integration using the supported Oracle Purchasing's integration methods and business events with Oracle Integration Cloud (OIC).

Oracle Purchasing automatically raises a business event associated with the specific business object and actions. Oracle Integration Cloud (OIC) gets the enriched data when listening to this event.

Key Features

Business events are automatically raised when Oracle Purchasing business objects are updated. OIC has native capabilities to subscribe to these business events.

The business events are published when a purchase order is created, changed, finally closed, or reopened.

EventActionCode

- IMPLEMENTED: Raised when a purchase order is implemented.
- CO_IMPLEMENTED: Raised when a change order on a purchase order is implemented.
- FINALLY_CLOSED: Raised when a purchase order is finally closed.
- FINALLY_CLOSE_REMOVED: Raised when a finally closed purchase order is reopened.

Event Payload

- EventActionCode
- POHeaderId
- OrderNumber
- SoldToLegalEntityId
- SoldToLegalEntityName
- RequisitioningBusinessUnitId
- BuyerManagedTransportationFlag
- InterfaceSourceCode
- POChangeOrderSequence
- ChangeOrderTypeCode
- ImplementationDate

Service Callback

- SOAP service: PurchaseOrderService
- Operation: getPurchaseOrder

Best Practices

None.

Constraints

None.

Related Topics

- Supported SCM and Procurement Business Events
- Oracle ERP Cloud Adapter Capabilities
- Oracle Integration Cloud Adapters
- Troubleshoot Oracle Integration
- Cloud Platform Partner Community Blog: Subscribing to Fusion Custom Business Events in OIC by Kishore Katta

Business Objects for Purchasing

Purchasing Business Objects Available for Integration

Oracle Purchasing provides support for multiple business objects to help inbound and outbound integrations.

The families and their child objects are listed in the tables.

Inbound

Key Business Objects	FBDI	REST	SOAP	Collaboration Messaging	Functional Setup Manager
Purchase Order	x	x	x	x	–
Purchase Order Change Order	x (add new lines)	x	x	x	–
Purchase Agreement	x	x	–	–	–
Purchase Agreement Change Order	x	x	–	–	–
Work Confirmations	–	x	–	–	–
Requisition Processing Requests	–	x	–	–	–
Procurement Agents	–	x	–	–	–
Procurement Approved Supplier List Entries	–	x	–	–	–
Setup Objects	–	–	–	–	x

Outbound

Key Business Objects	REST	SOAP	Collaboration Messaging	BICC	Business Events
Purchase Order	x	x	x	x	x
Purchase Order Change Order	x	x	x	x	x
Purchase Agreement	x	x	–	x	–
Purchase Agreement Change Order	–	–	–	x	–
Work Confirmations	x	–	–	–	–

Key Business Objects	REST	SOAP	Collaboration Messaging	BICC	Business Events
Requisition Processing Requests	x	–	–	–	–
Procurement Agents	x	–	–	x	–
Procurement Approved Supplier List Entries	x	–	–	x	–
Setup Objects	–	–	–	x	–

Purchasing Integration Features for Business Objects

Oracle Purchasing offers integration features such as data upload, data updates, and validation.

This table provides a list of key integration features available for each business object.

Integration Feature	SOAP	REST	FBDI	BICC Data Extraction	Business Events
Complete validation	X	X	X		
Bulk Data upload			X		X
Near Real-time upload	X	X			X
Bulk Data extraction				X	

Use Cases and Patterns for Purchasing

Overview of Purchasing Use Cases and Patterns

Oracle Purchasing provides several integration options to support your complex business needs.

These Oracle Purchasing use cases are included as examples:

- *Migrate Your Legacy System into Oracle Purchasing*
- *Frequent Low-Volume Updates from External Systems to Oracle Purchasing*
- *Large-Scale Update to a New External System from Oracle Purchasing*

- *Automated Near Real-Time, Low-Volume Updates to External Systems from Oracle Purchasing*

Migrate Your Legacy System into Oracle Purchasing

In this use case, you want to migrate data from legacy systems into Oracle Purchasing, which is your single source of truth.

Description	Integration Type	Integration Options	Notes
As a company, you've recently expanded by acquiring a new business. This business brings along a suite of legacy systems, such as Oracle E-Business Suite, which are currently responsible for managing extensive purchasing data. The objective is to migrate this data into Oracle Purchasing, which is your single source of truth.	Inbound	File-based data import (FBDI)	Oracle Integration Cloud (OIC), Web Services, and REST APIs aren't recommended for this use case.

Frequent Low-Volume Updates from External Systems to Oracle Purchasing

In this use case, your organization needs to update purchasing documents.

Description	Integration Type	Integration Options	Notes
Your organization might need to update purchasing documents. REST APIs can be called to do this. Consider using the Oracle Visual Builder (VBCS) Microsoft Excel add-in to complete these updates. The REST API custom Submit action, for example, can then submit the purchasing documents for approval.	Inbound	REST APIs	–

Large-Scale Update to a New External System from Oracle Purchasing

In this use case, you need to commission a new external system and quickly extract a large volume of data.

Description	Integration Type	Integration Options	Notes
You might need to commission a new external system and quickly extract a large volume of data.	Outbound	Business Intelligence Cloud Connector (BICC)	REST APIs and SOAP services aren't recommended for this use case.

Automated Near Real-Time, Low-Volume Updates to External Systems from Oracle Purchasing

In this use case, you have an external system where you need to cascade the changes made in Oracle Purchasing.

Description	Integration Type	Integration Options	Notes
You might have an external system where you need to cascade the changes made in Oracle Purchasing.	Outbound	Oracle Integration Cloud (OIC) using the business events raised by Oracle Purchasing.	–

3 Self Service Procurement

Overview of Self Service Procurement

About Oracle Self Service Procurement

Oracle Self Service Procurement provides a user-friendly approach to managing employee requests for goods and services by enabling companies to import requisitions from other Oracle Fusion Cloud Applications or from external systems.

Integrated with Oracle Purchasing, companies can streamline and automate the procure-to-pay process while enforcing negotiated pricing and terms and ensuring policy compliance.

Terminology for Self Service Procurement

These terms are used throughout the Oracle Self Service Procurement playbook.

Term	Definition
Requisition	A business object with a collection of child objects. For example, requisition lines and requisition line distributions.
Content zone	An entity that identifies what shopping content must be made available to users during shopping in the Oracle Self Service Procurement application. It consists of a collection of shopping catalogs, smart forms, and public shopping lists. Collectively, these identify what content is available and how that content is secured for access.
Purchase order	A business object with a collection of child objects. For example, purchase order lines, purchase order schedules, and purchase order change orders.
Purchase agreement	A business object for both blanket and contract purchase agreements. • A blanket agreement is a collection of child objects. For example, blanket agreement lines and blanket agreement change orders. • A contract agreement is a collection of child objects. For example, contract agreement and change orders.

Integration Types and Options for Self Service Procurement

Overview of Self Service Procurement Integration Types and Options

Several integration types and options are available in an Oracle Self Service Procurement integration.

Integration Types

These integration types are available in Oracle Self Service Procurement.

Inbound

In this integration, purchase data is sourced from external systems and uploaded into Oracle Self Service Procurement.

Outbound

In this integration, the data stored in Oracle Self Service Procurement can be sent to various external systems.

End-to-End

This is a complex process integration that couples multiple systems with Oracle Self Service Procurement by using Oracle Self Service Procurement integration methods and Oracle Integration Cloud (OIC) orchestration functionality.

Integration Options

These integration options are available in Oracle Self Service Procurement.

Inbound

- *File-Based Data Import (FBDI) Requisition Import for Self Service Procurement*
- *REST APIs (Inbound) for Self Service Procurement*
- *SOAP Services for Self Service Procurement*

Outbound

- *REST APIs (Outbound) for Self Service Procurement*
- *Business Intelligence Cloud Connector for Self Service Procurement*

End-to-End Integration

- *End-to-End Integration for Self Service Procurement*

Inbound

File-Based Data Import (FBDI) Requisition Import for Self Service Procurement

Use this import option to import requisitions and related entities, such as headers, lines and distributions.

For example, you can create requisitions or import requisitions from third-party or other Oracle Fusion Cloud Applications. For a complete list of business objects that can be imported, see *Import Requisitions* in File-Based Data Import (FBDI) for Procurement.

Key Features

- Uses spreadsheet templates to organize object data for requisition import with macros that generate a compressed file containing comma-separated values (CSV) files used during the import process.
- Imports large volume of data to create requisitions with multiple lines and distributions.
- Optionally, builds an orchestrated integration process with Oracle Integration Cloud (OIC).

Best Practices

For a large volume of data import:

- For incomplete requisitions, the total number of lines can't exceed 500 and the total number of distributions per line can't exceed 500.
- For auto-approved requisitions, the limit is 10,000 lines. For a more comprehensive list of the application limits on requisitions see *What's the application limit on requisitions?*.
- When handling a large requisition where more than a 100 distributions are required per line, consider splitting the line for better performance.
- The maximum batch size parameter limits the number of requisition lines that are batch processed. If the parameter isn't specified, the default value of 2,500 is used as the maximum batch size.

  The parameter limits the number of requisition interface lines processed at one time (per batch) to avoid memory issues. It doesn't limit the total number of requisition interface lines that can be processed.

Common for all use cases:

- Use the interface line key to indicate the sequence in which the imported lines should be ordered. The interface line key isn't a numeric attribute. If you provide values such as 1, 2, and 114, the lines will be sorted as 1, 114 and 2, and not as 1, 2 and 114. This is because the first character of the attribute decides the sort position first, then the next character, and so on.
- There are two distinct ways of grouping requisition lines in requisition headers:
  - Requisition line Group-by Code column: Users can provide any value in this column. All requisition lines with the same group code are grouped together in one requisition header. Null values aren't considered for grouping. The Group-by Code column in requisition lines takes precedence while grouping. If the intention is to group based on the group-by input parameter than the group-by code in the line should be set to null.
  - Requisition import Group By input parameter: This parameter accepts the following values: Buyer, Category, Item, Supplier, Location or None. All requisition lines with the same value in the corresponding column will be grouped together in one requisition header. For example, if the Group By parameter is

set to Category, then requisition lines with the same category will be grouped together in a requisition header. This form of grouping works across batches.

Data validation for all use cases:

- Emails are used to identify the preparer, the requester, the approver, and the suggested buyer. Emails should be unique in the organization or the requisition might be assigned to incorrect users.
- Descriptive flexfield (DFF) context for header, line, and distribution is always defaulted from the Configure Requisitioning Business Function for the requisitioning business unit. Any DFF context provided in the spreadsheet will be ignored. To make sure that DFF segments are properly validated, verify that the profile Import Requisition with Invalid Descriptive Flexfields Allowed (ORA_POR_IMPORT_REQ_WITH_INVALID_DFF) is set to **No**.
- Provide item and revision if you have blanket purchase agreement (BPA) lines with master items and revision. Otherwise, the requisition line won't match the BPA line for pricing.
- The agreement released amount in the BPA header, plus the requisition line amount must be less than or equal to the agreement amount limit in the BPA header. Otherwise, an invalid agreement error will be raised. This validation applies for agreements explicitly provided in the spreadsheet or automatically sourced by the system.
- Set the **Allow requisition-to-agreement** unit of measure (UOM) conversion option in the Configure Requisitioning Business Function page, when the unit of measure of the requisition line may not match the unit of measure of the BPA line, otherwise the BPA won't be automatically sourced.
- When there are multiple active blanket purchase agreements that apply for the same item, the application will try to select the best agreement based on certain criteria. However, there's a way to assign priorities to blanket purchase agreements. See *How You Assign Priorities to Blanket Purchase Agreements to Rank Source Agreements for Requisitions and Purchase Orders*.
- The Oracle Self Service Procurement user's preferences setup doesn't apply for requisition import. This means that:
  - The deliver-to organization must be provided.
  - The deliver-to location must be provided if it can't be defaulted from the requester's Oracle Fusion Cloud Human Capital Management location.
  - The charge account is provided in the spreadsheet or is defaulted from the Transaction Account Builder setup. For inventory or work order destinations, the charge account is always defaulted from the account builder. Transaction Account Builder will always be used for deriving accrual and variance accounts.
- To import requisitions as approved, provide the document status as Approved and the approver unique email. Also, the user doing the import must have the Import Approved Requisition function security privilege.
- To import attachments and associate them to requisitions, first create the requisition, and then use the ERP SOAP Object Attachment Service web service to upload attachments to requisitions. See:
  - *Uploading Attachments to Requisitions Using ERP Object Attachment Service* (Requires a My Oracle Support subscription.)
  - *ERP Object Attachment Service*

Constraints

- For draft requisitions, the maximum number of lines that can be uploaded is 500. For approved requisitions, the maximum number of lines that can be uploaded is 10,000.
- To update requisitions, consider using REST APIs.
- To cancel requisitions, consider using REST APIs or SOAP services.
- The import of legacy data isn't supported. The requisition import via FBDI is to create requisitions to be placed on purchase orders after the approvals are complete.

- There's no option to re-process requisition import for a batch that failed validation. The spreadsheet needs to be loaded again for import.
- The import of requisitions for internal material transfers, maintenance work orders, and with one-time locations isn't supported.
- For DFF attributes, the valid values aren't shown as drop-down list. They will be treated as free text and will be validated as part of the import validations.

Related Topics

- Scheduled Processes for Procurement: Import Requisitions
- Using Procurement: Import Requisitions

REST APIs (Inbound) for Self Service Procurement

Use the REST APIs inbound integration option to integrate with Oracle Self Service Procurement if your business process requires near real-time updates to your data.

The REST APIs enable you to view, create, update, or delete records for your real-time integration requirements.

Key Features

- Use REST APIs for real-time integration requirements.
- Perform CRUD operations on both single-item and collection.
- Perform BATCH operations to perform multiple updates, and INSERT, DELETE, and GET operations in a single call.
- Perform custom actions to quickly derive key values, expedite data entry, and perform certain validations.
- Use REST APIs to achieve end-to-end process orchestration.

Best Practices

- Use this option if you need to perform near real-time mode operations in Oracle Self Service Procurement.
- For better performance, limit the attributes using the fields query parameter while performing a GET operation whenever it's supported.
- For large requisitions, limit the number of lines per requisition to the 500 maximum.
- We don't expect you to have hundreds of distributions per requisition line. For better performance when handling large requisitions, consider splitting the line if more than 100 distributions are required per line.
- After performing a POST operation to create requisition lines, it's recommended that you execute the custom actions to:
    - Create default distributions.
    - Retrieve source document and transfer price.
    - Calculate tax and derive charge account.

Constraints

- The REST APIs don't allow the return of more than 500 records in a single call. You can paginate through the entire set using offset and limit in the REST API parameters.
- The custom actions you can perform on requisitions are limited to 500 lines.

- You can only use the Cancel custom action to cancel requisition lines that aren't placed on purchase orders or transfer orders.

Related Topics

- REST API for Oracle Fusion Cloud Procurement
- Oracle Visual Builder Add-in for Excel, Version 3.2.0
- REST API for Oracle Fusion Cloud Procurement: Privileges

SOAP Services for Self Service Procurement

Use the Simple Object Access Protocol (SOAP) web services to create requisitions.

Note: Oracle recommends using REST APIs rather than SOAP services.

Key Features

- Use these operations to create requisitions:
  - createRequisition
  - populateInterfaceTable
  - submitImportRequisition
- Use this operation to cancel requisitions:
  - changePurchaseRequestAsync
- Use this operation to hold or release hold requisitions:
  - controlPurchaseRequestAsync

Best Practices

- The same file-based data import (FBDI) best practices still apply to SOAP.
- Considerations for the create requisitions operations:
  - createRequisition: The createRequisition operation writes attributes into a requisition interface table and then starts the requisition import process to create a requisition. Each call with this operation will create one requisition or more, depending on the requisition headers.
  - populateInterfaceTable and submitImportRequisition: Large requisitions calling applications first loads the interface table using the populateInterfaceTable operation. Once all data is loaded into the interface table, the application calls the Purchase Request Web Service with the submitImportRequisition operation to initiate the requisition import process to create requisitions.
- Considerations for hold and release hold operations:
  - Applications can request a hold for requisition lines to prevent buyers from adding these lines to purchase orders. Once the requisition line has a hold, the application can request either a cancellation of the line or a release hold so buyers can process it. This feature is available only via SOAP and for externally managed requisitions.
- REST APIs versus SOAP services:
  - Given the deprecation plans of the SOAP services, it's recommended that you use REST APIs rather than SOAP services to create or update requisitions.

Constraints

- Event subscription isn't supported for requisitions.
- To update or cancel requisitions, consider using REST APIs.
- Importing legacy data isn't supported. The requisition import via SOAP is to create requisitions that will be placed on purchase orders after the approvals are complete.
- There's no option to re-process requisition import for a batch that failed validation. You must re-submit the request to create the requisition.
- There's no option to purge the requisition interface tables.
- Importing requisitions for internal material transfers, maintenance work orders, and those with one-time locations isn't supported.

Related Topics

- Purchase Request Web Service in Procurement
- Purchase Request Service Version 1
- Externally and Internally Managed Requisitions
- Use Cases and Example Payloads

Outbound

REST APIs (Outbound) for Self Service Procurement

Use the REST APIs integration option to retrieve information from a resource such as purchase requisitions, requisition preferences, requisition lifecycles, shopping catalog, and content zones.

Key Features

Uses the REST GET method.

Best Practices

- For better performance, limit the attributes using the fields query parameter while performing a GET operation whenever it's supported.
- Use the limit and offset query parameters to specify how many records and which batch of records to return when exporting large amounts of data. These query parameters are required to retrieve the next batch of records because maximum amount of records you can retrieve at once within a single batch is 500.

Constraints

- Uses only the JSON format.
- The contentZones REST resource doesn't limit the number of content zone records, and catalog content/ security assignments that you can create. However, you need to be aware of the following UI limitations in the Security region of the content-zone definition:
  - A maximum of 3,000 deliver-to locations can be displayed when a secured by deliver-to location is used.
  - A maximum of 1,000 users can be displayed when secured by worker is used.

- The contentZones REST resource enables you to secure content by the deliver-to location. However, this security assignment is only applicable to the Oracle Responsive Self Service Procurement application.

Related Topics
- REST API for Oracle Fusion Cloud Procurement
- Oracle Visual Builder Add-in for Excel, Version 3.2.0

Business Intelligence Cloud Connector for Self Service Procurement

Oracle Self Service Procurement offers a collection of public view objects (PVOs) that give you read-only access to the raw data stored in the business objects.

Using Oracle Business Intelligence Cloud Connector (BICC), you can extract the raw data into a comma-separated values (CSV) file that you can upload to external systems, such as data warehouses, for specialized analysis.

Key Features

- Configure an external storage location that works for your data needs.
- Extract complete or partial data.
- Run on-demand extracts or schedule them to run at specified intervals during the day, in a week, or throughout the month.
- 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.

Best Practices

- Perform periodic extraction close to near real-time extraction.
- Run incremental extracts if you need only the data that's changed since your last extract.
- Control who has access to and what they can do with the content.

Constraints

Conditional data extraction isn't supported because the data rows from a PVO can't be based on a specific data condition.

Related Topics
- Creating a Business Intelligence Cloud Extract
- Extract Data Stores for Self Service Procurement

End-to-End Integration for Self Service Procurement

You can build a complex process integration using supported Oracle Self Service Procurement integration methods, Oracle Purchasing business events, and Oracle Integration Cloud (OIC) orchestration functionality.

The process includes these steps:

1. When a requisition in Oracle Self Service Procurement is created and automatically converted into a purchase order, Oracle Purchasing automatically raises a business event that's associated with the specific purchase order.
2. After listening to this event, Oracle Integration Cloud (OIC) calls the relevant enrichment service to fetch more details from Oracle Purchasing about the purchase order.
3. Then, OIC performs complex actions, including:
   - Using File Transfer Protocol (FTP) to transfer output files.
   - Calling other APIs.
   - Submitting scheduled processes in Oracle Fusion Cloud Applications.

Note: No enrichment service is available for deletion activity on a business object.

For more information about OIC adapters, see *Oracle Integration 3 Adapters*. For a complete list of business events and their features, see *Supported SCM and Procurement Business Events*.

Business Objects for Self Service Procurement

Self Service Procurement Business Objects Available for Integration

Oracle Self Service Procurement provides support for multiple business object families to help inbound and outbound integrations.

The families and their child objects are listed in the tables.

Inbound

Business Object Family	Key Business Objects	FBDI	REST	SOAP	Functional Setup Manager	Business Events
Requisitions	Header, Line, Distribution	x	x	x	–	–
Catalogs	Content Zones, Public Shopping Lists, Personal Shopping Lists, Requisition Preferences		x	–	–	–
Catalogs	Setup objects		–	–	x	–

Outbound

Business Object Family	Key Business Objects	REST	Business Intelligence Cloud Connector	Business Events
Requisitions	Header, Line, Distribution	x	x	–
Catalogs	Content Zones, Public Shopping Lists, Personal Shopping Lists, Requisition Preferences	x	–	–
Catalogs	Browsing Categories, Category Hierarchy, Punchout Connections, Purchasing News, Requisition Product Details, Shopping Catalog Information Templates/ Items/Smart Forms Details	x	–	–
Catalogs	Browsing category hierarchies, browsing category translations	–	x	–

Self Service Procurement Integration Features and Options

This table provides a list of key integration features available for each integration option.

Integration Feature	SOAP	REST	FBDI	BICC Data Extraction
Complete validation	X	X	X	
Bulk Data upload			X	
Near Real-time upload	X	X		
Bulk Data extraction				X
CSV File Types			X	X

Use Cases and Patterns for Self Service Procurement

Overview of Self Service Procurement Use Cases and Patterns

Oracle Self Service Procurement provides several integration options to support your complex business needs.

These Oracle Self Service Procurement use cases are included as examples:

- *Frequent Medium/High Volume Requisition to Replenish the Stock of Inventory Items*
- *Automated Medium/High Volume Requisition to Fulfill Customer Orders*
- *Automated Medium/High Volume Requisition to Fulfill Back-to-Back Sales Orders*
- *Periodic Medium/High Volume Requisition for Various Requesters*
- *Periodic Medium/High Volume Creation and Update of Content Zones*

Frequent Medium/High Volume Requisition to Replenish the Stock of Inventory Items

In this use case, your planning system triggers a new requisition to bring an inventory item's balance back to the maximum.

Description	Integration Type	Integration Options	Notes
You might have a min-max planning system to maintain inventory levels for all your items or selected items. When the inventory level for an item drops below the minimum, the external system can trigger a new requisition to bring the balance back up to the maximum. Purchase requisitions for buy items for the suggested replenishment quantities can be created. You then can turn these requisitions into purchase orders that are sent to the suppliers.	Inbound	• REST APIs • Purchase Request Web Service (SOAP) • Oracle Integration Cloud (OIC) can be used with file-based data import (FBDI) if an orchestrated integration is needed.	

Automated Medium/High Volume Requisition to Fulfill Customer Orders

In this use case, you might want to automate customer drop-ship orders.

Description	Integration Type	Integration Options	Notes
You might have customer orders that you need to drop ship. Oracle Fusion Cloud Order Management automates the process by sending purchase requests to Oracle Fusion Cloud Procurement, which places a purchase order with your supplier, and your supplier ships directly to your customers. This scenario may demand more complex data enrichment as you might want to send data from Oracle Order Management to Oracle Procurement. For example, to indicate to Oracle Procurement that prices were negotiated with the supplier when the sales order was created and to send a special note to the buyer about negotiated prices.	Inbound	• Service Mapping • Purchase Request Web Service (SOAP)	For more information, see *Use a Service Mapping to Integrate Order Management with Procurement*.

Automated Medium/High Volume Requisition to Fulfill Back-to-Back Sales Orders

In this use case, you might have a back-to-back supply chain management process where you receive supply at a warehouse and then ship it directly to your customer.

Description	Integration Type	Integration Options	Notes
You might have a back-to-back supply chain management process where you receive supply at a warehouse then ship it directly to your customer. You can use Oracle Global Order Promising to help fulfill your back-to-back orders by releasing supply recommendations to Oracle Supply Chain Orchestration, which triggers	Inbound	• Service Mapping • Purchase Request Web Service (SOAP)	You can enable the Use Service Mappings to Extend Supply Chain Orchestration's Integration with Procurement feature to map more flow data. Perform these enablement steps in Functional Setup Manager: 1. From the default Setup page, select **Manufacturing and Supply Chain Materials**

Description	Integration Type	Integration Options	Notes
the creation of a purchase request in Oracle Procurement. This scenario might demand more complex data enrichment because you might want to: • Create all requisitions with the same text in the **Notes to Supplier** field to request extra packaging materials during shipment. • Add text to the **Note to Receiver** field saying “Original” so the buyer and supplier can tell from the note if there have been any modifications to the original request. • Carry over shipping instructions from the sales order header to the requisition and purchase order headers.			**Management** from the drop-down list. 2. On the **Setup: Manufacturing and Supply Chain Materials Management** page, click **Change Feature Opt In**. 3. Scroll to find **Supply Chain Orchestration** and click the pencil icon to open the **Edit Features: Supply Chain Orchestration** page. 4. Scroll to find **Select Use Service Mappings to Extend Supply Chain Orchestration's Integration with Procurement** and click the pencil icon. 5. Select any of these flows: ◦ Back-to-Back Buy ◦ External Buy (from external systems) ◦ Plan-to-Produce Buy ◦ MinMax Buy ◦ Outside Processing Buy 6. Click **Save and Close**. For more information, see *Extend Supply Chain Orchestration's Integration With Procurement*.

Periodic Medium/High Volume Requisition for Various Requesters

In this use case, your organization might need to collect purchase requests from different departments, organizations, or stores.

Description	Integration Type	Integration Options	Notes
Your organization might need to collect purchase requests from different departments, organizations, or stores. Through an orchestrated integration process, such as Oracle Integration Cloud (OIC), the file-based data import (FBDI) comma-separated values (CSV) files can be created automatically with the purchase request lines	Inbound	• FBDI • OIC with FBDI (if an orchestrated integration is needed) • REST APIs	

Description	Integration Type	Integration Options	Notes
from various sources. Using *Load Interface File for Import Process* and the *Import Requisitions* scheduled process, you can pick up the CSV file and create the requisitions. You can use the Submit custom action of the purchaseRequisitions REST API to submit the requisition for approval without any manual intervention.			

Periodic Medium/High Volume Creation and Update of Content Zones

In this use case your company wants to restrict content access using the catalog content zone feature.

Description	Integration Type	Integration Options	Notes
For better shopping experience in Oracle Responsive Self Service Procurement, your company might want to restrict content access using the catalog content zone feature. The content zone feature enables you to restrict access to catalog content by procurement business units, workers, and locations. However, your company might have a high volume of users, catalog content type, business units, or locations for content zones to be maintained manually. In this scenario, your company can use the contentZones REST resource for mass creation and update of content zone definitions.	Inbound	REST APIs	The contentZones REST resource enables you to secure content by deliver-to location. This security assignment is only applicable to the Oracle Responsive Self Service Procurement application.

4 Sourcing

Overview of Sourcing

About Oracle Sourcing

Oracle Sourcing enables you to streamline and automate the source-to-pay process while enforcing negotiated pricing, terms, and ensuring policy compliance.

Oracle Sourcing offers flexible negotiation capabilities to buyers and sellers, enabling them to efficiently obtain the best possible prices for goods and services. Prices are established based on actual supply and demand at the time the negotiation is transacted.

Terminology for Sourcing

These terms are used throughout the Oracle Sourcing playbook.

Term	Definition
Supplier Negotiation	A document that specifies the details of a negotiation with potential suppliers for the goods and services the buying organization wants to buy. The negotiation document, such as request for information (RFI), request for quote (RFQ), or Auction, is created and stored as a draft until it's approved and published. The negotiation is then managed through collaboration, supplier responses, evaluation, and the award process to create purchasing documents. The Supplier Negotiation business object is a collection of child objects like requirements, lines, contract terms, suppliers, and attachments.
Supplier Negotiation Responses	A document that's prepared and submitted by the suppliers and contains their offers, bids, or quotes for the goods and services in the negotiation document. The response includes pricing, and answers to negotiation requirements, supporting documents as attachments, and negotiated terms. Each supplier response is a business object comprising response child objects such as line prices, answers to requirements, or supporting attachments. These components collectively capture and convey the supplier's offerings and terms in response to the negotiation.
Draft Supplier Negotiation Responses	A draft document that enables suppliers to confirm their intention to participate in a negotiation. While in draft status, suppliers can input response header details like Response Valid Until, Response Type, Reference Number, Note to Buyer, and Attachments directly or via surrogacy. Therefore, a Draft Supplier Negotiation Responses is a business object comprising response child objects such as line prices, answers to requirements, and supporting attachments, collectively forming a draft response.

Integration Types and Options for Sourcing

Overview of Sourcing Integration Types and Options

Several integration types and options are available in an Oracle Sourcing integration.

Integration Types

These integration types are available in Oracle Sourcing.

Inbound

In this integration, sourcing data is sourced from external systems and uploaded into Oracle Sourcing.

Outbound

In this integration, the data stored in Oracle Sourcing can be sent to various external systems.

Process Integration

In this type of integration, Oracle Sourcing might send data and receive data updates from external systems in a single transaction and in an orchestrated manner. You can build a well-coupled, end-to-end automated process by stringing the inbound and outbound integration processes using the business events and REST APIs with Oracle Integration Cloud (OIC) functionalities.

For example, Oracle Sourcing provides the capability to upload spreadsheets. Let's say you want to set up a process to import lines from external source applications to create a request for quote (RFQ). Once it's published and supplier responses are collected, the RFQ will be awarded to the best supplier in the sourcing application. You then can export the award decision to create purchasing documents in an external application. The spreadsheet-upload capabilities make the process of creating negotiations simple and efficient in Oracle Sourcing. To learn more about integration functionality, see *Application Integration*.

Integration Options

These integration options are available in Oracle Sourcing.

Inbound

- *File-Based Data Import (FBDI) for Sourcing*
- *REST APIs (Inbound) for Sourcing*
- *SOAP Services for Sourcing*

Outbound

- *REST APIs (Outbound) for Sourcing*
- *Business Intelligence Cloud Connector for Sourcing*

Process Integration

- *Process Integration for Sourcing*

Inbound

File-Based Data Import (FBDI) for Sourcing

Use the FBDI feature to create data in Oracle Sourcing or to import lines in a large negotiation from external or other Oracle applications.

Use a large negotiation style to create negotiation documents and import thousands of lines with FBDI and scheduled processing. For example, you can import more than 2,000 lines to a negotiation. For a complete list of business objects that can be imported, see *Sourcing: Import Negotiation Lines*.

Key Features

Common for all integrations.

Best Practices

Use FBDI only for large negotiations.

Constraints

- There should be only one instance of the job running at any one time for a given negotiation. For different negotiations, you can run multiple jobs in parallel (one per negotiation). The application will display an error if you try to run multiple jobs at the same time for a single negotiation.
- You can speed up the import process by increasing the value set of the profile option ORA_PON_IMPORT_NEGOTIATION_LINES_PARALLEL_REQUESTS. It's generally recommended not to set this value more than 10. For more information, see Troubleshooting Information in *Import Negotiation Lines*.
- As an administrator user, you can use the ORA_PON_IMPORT_NEGOTIATION_LINES_PARALLEL_REQUESTS profile option to control the number of parallel requests that can run at a time for negotiation lines process. For more information, see *How You Import Large Negotiation Lines*.

REST APIs (Inbound) for Sourcing

You can use Oracle REST APIs to integrate with Oracle Sourcing.

A comprehensive set of REST APIs are available for customers and integration-system architects to view, create, update, or delete records for their real-time integration requirements.

Key Features

- Use Oracle Sourcing REST resources and REST APIs for real-time inbound integration requirements. For example:
  - *Supplier Negotiations*
  - *Draft Supplier Negotiation Responses*
  - *Questionnaire Response Details*
- Supports standard create, read, update, delete operations on both single-item and collections. For more information, see *CRUD Tasks* in Accessing Business Objects Using REST APIs.
- Supports BATCH operation on sourcing business objects, enabling you execute multiple updates and perform post, delete, and get operations in a single call.

- Along with standard operations, Oracle Sourcing also supports custom actions. For example:
  - Create Negotiation from Template
  - Create Amendment and New Round
  - Unlock and Unseal Locked Negotiation
  - Renumber Lines
  - Complete Negotiation
  - Validate and Submit Responses

Best Practices

- Use Oracle Sourcing REST APIs to support real-time inbound integration of third-party applications.
- For better performance, limit the attributes using the fields query parameter while performing a GET operation whenever it's supported.
- Ensure the content type and REST API versions are correctly specified for the POST and PATCH actions and for custom actions.
- You can use the POSTMAN client to execute all standard and custom actions.
- When bulk uploading the same children and grandchildren to the negotiations using the Oracle Visual Builder plug-in for Microsoft Excel follow these steps:
  a. Upload the same section to all the negotiations. This will generate a unique section ID for all the sections of the different negotiations.
  b. Upload the same requirement to the above sections using the *Negotiation Title/Number* and *Section ID* attributes. Because it's unique, use *Section ID* instead of *Section Name*.

Constraints

- All Oracle Sourcing REST APIs don't allow the return of more than 500 records in a single call. You can paginate through an entire set using the offset and limit in REST API parameters.
- You can execute custom actions with the scalar data type in the Oracle Visual Builder plug-in for Microsoft Excel. For example, the supported custom actions in Oracle Visual Builder are RenumberLine, UnlockSupplierNegotiation, and UnsealSupplierNegotiations.
- You can't execute custom actions with the complex or map data type for a request and response payload in the Oracle Visual Builder plug-in for Microsoft Excel. For example, CreateAmendment, CreateNewRound , CreateNegotiationFrom Template, CreateResponse, and ValidateAndSubmitNegotiationResponse.
- You can't bulk update the same children and grandchildren to a negotiation using Oracle Visual Builder in a single upload.

Related Topics

- Cloud Customer Connect Knowledge Article: Create a draft negotiation from template using supplierNegotiations REST service
- Cloud Customer Connect Knowledge Article: Add or update requirements using Oracle Visual Builder Add-in for Excel
- Visual Builder Add-In for Excel: Create Layouts in an Excel Workbook
- REST API for Oracle Fusion Cloud Procurement
- REST API for Oracle Fusion Cloud Procurement: Privileges

SOAP Services for Sourcing

You can use SOAP services to create material and operation transactions in Oracle Sourcing.

Given the deprecation plans for SOAP services, Oracle recommends using REST APIs to create or update negotiations.

Outbound

REST APIs (Outbound) for Sourcing

Use REST APIs if your business processes require that negotiation responses to awarded responses be fetched in near real-time.

Key Features

The REST API GET operation fetches the awarded responses as a supplier or category manager.

Best Practices

For better performance, limit the attributes using the fields query parameter while performing a GET operation whenever it's supported.

Constraints

All Oracle Sourcing REST APIs don't allow the return of more than 500 records in a single call. You can paginate through an entire set using the offset and limit in REST parameters.

Related Topics

- REST API for Oracle Fusion Cloud Procurement: Get all negotiation responses
- Oracle Visual Builder Add-in for Excel, Version 3.8.0

Business Intelligence Cloud Connector for Sourcing

Oracle Sourcing offers a collection of public view objects (PVOs) that give you read-only access to the raw data stored in the business objects.

For example, you can use this information in your data warehouse or integrate it with third-party reporting solutions.

Key Features

- Configure an external storage location that works for your data needs.
- Extract complete or partial data.
- Run extracts on-demand or schedule them to run at specified intervals during the day, in a week, or throughout the month.
- 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.

Best Practices

- Perform periodic extraction close to near real-time extraction.
- Run incremental extracts if you need only the data that changed since your last extract.
- Control who has access to and what they can do with the content.

Constraints

Conditional data extraction isn't supported. That is, the data rows from a PVO can't be based on a specific data condition.

Related Topics

- Overview of Business Intelligence Cloud Connector
- Extract Data Stores for Oracle Sourcing

Process Integration for Sourcing

You can build a process integration using the supported Oracle Sourcing integration methods and business events with Oracle Integration Cloud (OIC).

For example, the supplier negotiation invitation business event in Oracle Sourcing is triggered when a negotiation is published. Subscribing to the event automatically sends the event to other systems. You can enable business events using an opt-in.

Here's an example scenario:

1. A negotiation in Oracle Sourcing is published.
2. OIC listens to the event and calls the relevant enrichment service to fetch more details from Oracle Sourcing.
3. OIC then initiates complex actions that include:
    - Transferring output files.
    - Calling other REST APIs.
    - Running scheduled processes in Oracle Fusion Cloud Applications.

Related Topics

- Oracle Integration Cloud Adapters
- Supported SCM and Procurement Business Events

Business Objects for Sourcing

Sourcing Business Objects Available for Integration

Oracle Sourcing provides support for multiple business object families to help inbound and outbound integrations.

The families and their child objects are listed in the tables.

Inbound

Key Business Objects	Business Objects	FBDI	REST	SOAP	Business Events
Negotiations	Negotiation Header, Attachments	–	x	x	x
Negotiations	Section, Requirements, Attachments, Acceptable Responses	–	x	x	–
Negotiations	Lines, Attachments, External Cost Factors, Price Break, Price Tiers, Attribute Groups, Line Attributes, Acceptable Responses	–	x	x	–
Negotiations	Large Negotiation Lines	x	–	–	–
Negotiations	Suppliers, Line Restrictions	–	x	x	–
Draft Responses	Negotiation Header, Attachments	–	x	–	–
Draft Responses	Section, Requirements, Attachments, Acceptable Responses	–	x	–	–
Draft Responses	Lines, Attachments, External Cost Factors, Price Break, Price Tiers, Attribute Groups, Line Attributes, Acceptable Responses	–	x	–	–
Draft Responses	Large Negotiation Lines	–	x	–	–
Draft Responses	Suppliers, Line Restrictions	–	x	–	–
Responses	Response Header, Attachments	–	x	–	–
Responses	Section, Requirements, Attachments, Acceptable Responses	–	x	–	–
Responses	Lines, Attachments, External Cost Factors, Price Break, Price Tiers,	–	x	–	–

Key Business Objects	Business Objects	FBDI	REST	SOAP	Business Events
	Attribute Groups, Line Attributes, Acceptable Responses				

Outbound

Key Business Objects	Business Objects	REST	SOAP	BICC	Business Events
Negotiations	Negotiation Header, Attachments	x	–	x	x
Negotiations	Section, Requirements, Attachments, Acceptable Responses	x	–	x	–
Negotiations	Lines, Attachments, External Cost Factors, Price Break, Price Tiers, Attribute Groups, Line Attributes, Acceptable Responses	x	–	x	–
Negotiations	Large Negotiation Lines	–	–	–	–
Negotiations	Suppliers, Line Restrictions	x	–	x	–
Draft Responses	Large Negotiation Lines	x	–	–	–
Draft Responses	Suppliers, Line Restrictions	x	–	–	–
Responses	Response Header, Attachments	x	–	x	–
Responses	Section, Requirements, Attachments, Acceptable Responses	x	–	x	–
Responses	Lines, Attachments, External Cost Factors, Price Break, Price Tiers, Attribute Groups, Line Attributes, Acceptable Responses	x	–	x	–

Sourcing Integration Features Available for Business Objects

Oracle Sourcing offers integration features such as data upload, data updates, and validation.

This table provides a list of key integration features available for each business object.

Integration Feature	SOAP	REST	FBDI	BICC Data Extraction
Complete validation	X	X	X	
Bulk Data upload			X	
Near Real-time upload	X	X		
Bulk Data extraction				X
CSV File Types		X	X	X

Use Cases and Patterns for Sourcing

Overview of Sourcing Use Cases and Patterns

Oracle Sourcing provides several integration options to support your business needs.

These Oracle Sourcing use cases are included as examples:

- *Create Negotiations Automatically in Oracle Sourcing from a Custom UI*
- *Use a Spreadsheet to Bulk Upload or Update Sections, Requirements, and Lines to a Negotiation*
- *Create Supplier Responses for a Custom Supplier Portal*
- *Export Awarded Supplier Responses*

Create Negotiations Automatically in Oracle Sourcing from a Custom UI

In this use case, you want to create a negotiation using a predefined negotiation template in Oracle Sourcing.

Description	Integration Type	Integration Options	Notes
You can create negotiations and all the children by calling the REST API and providing required attributes such as negotiation style, outcome,	Inbound	REST APIs	–

Description	Integration Type	Integration Options	Notes
and template. You can further POST or PATCH the negotiation details such as adding lines, requirements, and suppliers. The goal is to create a negotiation using a predefined negotiation template in Oracle Sourcing to ensure that each negotiation adheres to a consistent structure and includes all necessary standard elements.			

Use a Spreadsheet to Bulk Upload or Update Sections, Requirements, and Lines to a Negotiation

In this use case, you want to configure your own Microsoft Excel template to add sections, requirements, and acceptable values directly in Oracle Sourcing using the Oracle Visual Builder plug-in.

Description	Integration Type	Integration Options	Notes
You can configure your own Microsoft Excel template to add sections, requirements, and acceptable values directly in Oracle Sourcing using the Oracle Visual Builder plug-in. Use the template to fetch, create, and update negotiation requirements in bulk. You can create, maintain, and roll out the configured Excel template to your users. The Visual Builder plug-in calls REST web services to add or update sections, requirements, and acceptable response values in your draft negotiation. You can do the same for lines and suppliers as well. This lets you bulk upload, update, and delete the negation entities.	Inbound	REST APIs	–

Create Supplier Responses for a Custom Supplier Portal

In this use case, you want to ease the creation of supplier responses or surrogate responses to ensure validation and seamless submission processes.

Description	Integration Type	Integration Options	Notes
You can capture supplier responses seamlessly. Through an external interface for example, a supplier	Inbound	REST APIs	–

Description	Integration Type	Integration Options	Notes
can create or revise a response, enter the response details, answer requirements questions, upload attachments, and quote the line price and other line details such as cost factors, price tiers, and price breaks. The goal is to is to ease the creation of supplier responses or surrogate responses to ensure validation and seamless submission processes.			

Export Awarded Supplier Responses

In this use case, you want to easily export awarded negotiation information in a spreadsheet from Oracle Sourcing.

Description	Integration Type	Integration Options	Notes
You've conducted a negotiation with your suppliers, analyzed supplier responses, and identified to whom you want to award your business. Now you want to complete your award decision by creating it in your existing purchasing system. The goal is to easily export awarded negotiation information in a spreadsheet from Oracle Sourcing and create purchasing documents in your legacy purchasing execution system.	Outbound	REST APIs	–

Other Sourcing Resources

Use these resources to get more information about Oracle Sourcing integrations.

- *Customer Cloud Connect: Strategic Procurement Integration Options R13 White Paper*

  Provides an overview of integration options for strategic Oracle Fusion Cloud Procurement Cloud applications, including Oracle Sourcing, Oracle Procurement Contracts, and Oracle Supplier Qualification Management.

5 Supplier Model

Overview of Supplier Model

About Oracle Supplier Model

Oracle Supplier Model offers a comprehensive solution to streamline and optimize the supplier management process.

The supplier profile entities primarily capture external information the supplier provides, such as tax identifiers, addresses, and contact details, but also capture internal controls and terms for conducting business with suppliers.

Terminology for Supplier Model

These terms are used throughout the Oracle Supplier Model playbook.

Term	Definition
Supplier	A person or company the buying organization uses to procure goods or services.
Supplier Profile	A business object that encompasses a broad range of supplier information, such as organization details, addresses, sites, contacts, business classifications, bank accounts, and products and services categories.

Integration Types and Options for Supplier Model

Overview of Supplier Model Integration Types and Options

Several integration types and options are available in an Oracle Supplier Model integration.

Integration Types

Inbound

In this integration, supplier data is sourced from external systems and uploaded into Oracle Supplier Model.

Outbound

In this integration, the data stored in Oracle Supplier Model can be sent to various external systems.

Process Integration

In this type of integration, Oracle Supplier Model might send data and receive data updates from external systems in a single transaction and in an orchestrated manner. You can build a well-coupled, end-to-end automated process by stringing the inbound and outbound integration processes using the business events and REST APIs with Oracle Integration Cloud (OIC) functionalities.

For example, when a supplier is created in Oracle Supplier Model, a relevant business event is triggered. When OIC detects this event, it sends requests to the external system with key identifying information for the supplier. The external system then returns enriched data for this supplier to Oracle Supplier Model through the Supplier REST resource.

Integration Options

These integration options are available in Oracle Supplier Model.

Inbound

- *File-Based Data Import (FBDI) for Supplier Model*
- *REST APIs (Inbound) for Supplier Model*
- *SOAP Services for Supplier Model*
- *Collaboration Messaging for Supplier Model*

Outbound

- *REST APIs (Outbound) for Supplier Model*
- *Supplier Outbound Synchronization Service for Supplier Model*
- *Business Intelligence Cloud Connector for Supplier Model*

Process Integration

- *Process Integration for Supplier Model*

Inbound

File-Based Data Import (FBDI) for Supplier Model

Use the FBDI integration option to import large volumes of supplier data from external sources, such as legacy systems and third-party applications, or to create and update bulk data in Oracle Supplier Model.

Supplier data might include supplier firmographic information, contacts, addresses, bank accounts, and sites. For a complete list of business objects that you can import, see the Supplier Model chapter in *File-Based Data Import (FBDI) for Procurement*.

Key Features

- Use FBDI to import high-volume supplier data during the new customer implementation phase.
- Most useful to mass update recurring or ongoing bulk updates to supplier profile entities.
- Enables asynchronous automated integration between systems.
- Use Oracle Fusion Cloud Financials file-based data import for importing supplier bank accounts.
- Use the Oracle Financials Tax Implementation Workbook to import a supplier's transaction tax attributes.

Best Practices

For medium- to very-large volumes of data import (usually at cut-over):

- Limit each batch to 25,000 records. If you have more, split them into multiple batches. We recommend not to schedule more than four concurrent batches.
- We recommend reviewing the error report for any import failures and taking appropriate action.
- When re-running the import after correcting the errors, ensure to load only the required records by selecting the **Rejected** import option from scheduled process parameters.
- Purge records from the supplier interface tables periodically.
- It's recommended to leave the supplier number blank in the Supplier Import template. Doing so will allow the supplier number to be generated automatically. However, in a case where there's a need to retain the supplier number from legacy systems in Oracle Supplier Model as well, specify the supplier numbers for the suppliers being imported.
- If your supplier already exists as a non-supplier party in the application, you must provide the registry ID of that party in the FBDI template when importing your supplier. This will create a supplier relationship for your existing party.
- To prepare supplier data for update cases, use the *Supplier Import - Supplier Real Time* Oracle Transactional Business Intelligence subject area to export the current supplier information. This lets you review and make necessary changes before re-importing the updated data into the system. This method ensures that your updates are correct and applied efficiently.

Common for all use cases, including low-volume data import:

- We recommend that you don't change the names of the comma-separated values (CSV) files generated by import templates. You can change the compressed (.zip) file name but if you need to change the CSV file names, ensure that you don't change the prefix of the file names. For example, you can change the file name for the Supplier Sites CSV file to PozSupplierSitesInt_<*suffix*>.csv, but not to <*prefix*>_PozSupplierSitesInt.csv.
- For more best practices, both general and specific to each entity, see *Create Suppliers with the Import Suppliers Process* in Using Procurement.

Data-specific best practices:

- If you have an extended list of values for any LOV field, you can modify the column in the import template to accept free text. Then, enter the lookup code (use the code rather than the name for LOV values).
- For descriptive flexfield LOVs, you need to enter valid values as free text in the import template. The values will be validated as part of the import validations.
- Extra trailing or leading spaces in the import file will be ignored and can cause errors if they're present in Oracle Supplier Model data. Rather than adjust the import file, correct the data in the Oracle Supplier Model UI before importing.
- Use **#NULL** wherever applicable to update an attribute value to blank. For example, use **#NULL** to remove Acme Corporation as the Alternate Name.

Constraints

- Not recommended for real-time data import.
- Updates to suppliers through FBDI don't go through approval. (Change control isn't imposed.) Therefore, it's important to validate the data before importing because the imported data is directly applied to the supplier profiles.

- Supplier profiles will be locked for editing and can't be updated with an import in these cases:
  - When there's a profile change request in a draft or pending approval status.
  - When a spend authorization request is pending approval.
- You can create bank accounts using FBDI, but updating them can only be done using the External Bank Accounts and Instrument Assignments REST resources or from supplier profiles in the application.

Related Topics

- Scheduled Processes for Procurement
- Resubmit Scheduled Processes and Process Sets
- Create Suppliers with the Import Suppliers Process
- How Supplier Bank Account Import Data is Processed
- Supplier Tax Details Import
- Import Regional Information
- Subject Areas for Transactional Business Intelligence in Procurement: Supplier Import - Supplier Real Time
- How You Use Supplier Import to Create a New Supplier from an Existing Party
- How You Update Supplier Profile Entities
- Purge Supplier Interface Records

REST APIs (Inbound) for Supplier Model

Use the REST APIs integration option if some of your business processes require real-time updates to your supplier data.

For example, your business might need to update the supplier site assignments or business classifications for a supplier you're maintaining in Oracle Supplier Model in real time. You can use REST APIs to integrate with Oracle Supplier Model. A comprehensive set of REST APIs is available for customers and architectures of integrating systems to view, create, update, or delete records for their real-time integration requirements.

Key Features

- Use Suppliers REST resources for real-time integration requirements.
- Perform create, update, and delete operations on supplier entities.
- Use the *Submit supplier spend-authorization request* custom REST API action to submit a supplier spend-authorization request.
- Use Suppliers REST resources to achieve end-to-end process orchestration.
- Supports BATCH operation on the supplier model business object, enabling you execute multiple updates and perform post, delete, and get operations in a single call. You also can combine updates to multiple suppliers in the BATCH mode.
- You can use these Oracle Fusion Cloud Financials REST resources to create or update:
  - External Payees REST resource: Supplier payment attributes.
  - External Party Payment Methods REST resource: Supplier payment methods.
  - External Bank Accounts and Instrument Assignments REST resources: Supplier bank accounts.
  - Taxpayer Identifiers, Tax Registrations, Third Party Fiscal Classifications, Third Party Site Fiscal Classifications, Tax Exemptions, Third-Party Tax Reporting Code Associations, Third-Party Site Tax Reporting Code Associations REST resources: Supplier transaction tax attributes.

Best Practices

- Use this option if you need to perform real-time operations.
- Use REST APIs for making low volume creates and updates to suppliers. For better performance, when creating or updating many supplier records, consider using file-based data import (FBDI).
- When performing POST operations, limit the number of records to a maximum of 500.
- Use the *Oracle Visual Builder Add-in for Excel*, which lets you edit data using Microsoft Excel. It's an intuitive option that you can use instead a REST client.

Constraints

- Only the GET operation is supported for contacts and addresses descriptive flexfields (DFFs). For other operations, use SOAP services or FBDI.
- Updates to suppliers using REST APIs don't go through approval. Change control isn't imposed.
- If a supplier profile entity is enabled for change control, the POST and PATCH operations are allowed only for integration use cases, for example, if the user calling the REST API has integration user access.
- You can't use a single BATCH operation across the Suppliers and Financials REST resources to create or update supplier, payment, transaction tax, and bank account details together.

Related Topics

- REST API for Oracle Fusion Cloud Procurement
- REST API for Oracle Fusion Cloud Procurement: Quick Start
- REST API for Oracle Fusion Cloud Procurement: Privileges
- REST API for Oracle Fusion Cloud Procurement: Suppliers REST resources group
- REST API for Oracle Fusion Cloud Financials: External Bank Accounts REST resources group
- REST API for Oracle Fusion Cloud Financials: Instrument Assignments REST resources group
- REST API for Oracle Fusion Cloud Financials: External Party Payment Methods REST resources group
- REST API for Oracle Fusion Cloud Financials: External Payees REST resources group
- REST API for Oracle Fusion Cloud Financials: Taxpayer Identifiers REST resources group
- REST API for Oracle Fusion Cloud Financials: Tax Registrations REST resources group
- REST API for Oracle Fusion Cloud Financials: Third-Party Fiscal Classifications REST resources group
- REST API for Oracle Fusion Cloud Financials: Third-Party Site Fiscal Classifications REST resources group
- REST API for Oracle Fusion Cloud Financials: Tax Exemptions REST resources group
- REST API for Oracle Fusion Cloud Financials: Third-Party Tax Reporting Code Associations REST resources group
- REST API for Oracle Fusion Cloud Financials: Third-Party Site Tax Reporting Code Associations REST resources group
- Cloud Customer Connect: How to use REST APIs for supplier bank accounts
- Cloud Customer Connect: How to use REST APIs for supplier payment attributes
- Oracle Visual Builder Add-In for Excel

SOAP Services for Supplier Model

Use Simple Object Access Protocol (SOAP) services to create suppliers and to update or delete attributes in existing supplier profiles.

This provides a real-time synchronization of the supplier records in external systems with Oracle Supplier Model.

> **Note:** Oracle highly recommends using REST APIs rather than SOAP services.

Key Features

- Use SOAP Services for real-time integration requirements to help transfer data from external supplier data sources into the Oracle Supplier Model profile. The SOAP service enables you to create suppliers, and update or delete attributes in existing supplier profiles.

  The supplier entities that the SOAP service covers are:

  - Supplier
  - Supplier Site
  - Supplier Site Assignments
  - Supplier Address
  - Supplier Contact
  - Supplier Contact Address
  - Supplier Business Classification
  - Supplier Products and Services Category
- Use with Oracle Integration Cloud (OIC) to perform real-time operations.

Best Practices

It's recommended to use REST APIs or file-based data import (FBDI) for creating and updating supplier data rather than using SOAP services.

Constraints

- SOAP services aren't scalable or as functional as other integration options, such as REST APIs.
- Updates to suppliers using SOAP services don't go through approval. (Change control isn't imposed)

Related Topics

- About SOAP Web Services in Oracle Applications Cloud
- SOAP Web Services for Procurement: Supplier inbound web service

Collaboration Messaging for Supplier Model

Oracle Collaboration Messaging enables your Oracle Fusion Cloud Applications to establish business-to-business (B2B) message-exchanging capabilities with your customers or suppliers.

For example, when customers migrate their messaging from other instances to Collaboration Messaging, they can enable B2B messaging at the supplier site level and import or migrate the relevant setup and associated collaboration documents.

Key Features

To enable B2B for a supplier site:

1. Import Oracle Collaboration Messaging setup data and associated documents.
2. Migrate Oracle B2B setup data and associated documents.

Best Practices

None.

Constraints

None.

Related Topics

- Overview of Importing Collaboration Messaging Setup Data
- Create a Collaboration Messaging Setup Data File

Outbound

REST APIs (Outbound) for Supplier Model

Use the Oracle Supplier Model REST APIs to retrieve information relating to entities such as suppliers, contacts, addresses, business classifications, bank accounts, and sites.

Key Features

- Use Suppliers REST APIs for real-time integration requirements.
- Use Suppliers REST APIs to achieve end-to-end process orchestration.
- Perform BATCH operations to execute multiple GET operations in a single call.
- You can use these Oracle Fusion Cloud Financials REST resources to retrieve:
  - External Payees REST resource: Supplier payment attributes.
  - External Party Payment Methods REST resource: Supplier payment methods.
  - External Bank Accounts and Instrument Assignments REST resources: Supplier bank accounts.
  - Taxpayer Identifiers, Tax Registrations, Third Party Fiscal Classifications, Third Party Site Fiscal Classifications, Tax Exemptions, Third-Party Tax Reporting Code Associations, Third-Party Site Tax Reporting Code Associations REST resources: Supplier transaction tax attributes.

Best Practices

- Use this option only if you need to perform near real-time mode operations.
- Use the *Oracle Visual Builder Add-in for Excel*, which lets you retrieve data using Microsoft Excel. It's an intuitive option that you can use instead a REST client.

- For better performance:
  - Limit the number of attributes using the fields query parameter while performing GET operations whenever it's supported.
  - Avoid OR conditions with LIKE clauses.
  - Use the limit and offset query parameters to specify how many records to return, and which batch of records to return. When exporting large amounts of data, these query parameters are required to retrieve the next batch of records because the maximum number of records you can retrieve at once within a single batch is 500.
- Handle timeouts and other generic errors intelligently at the integration point to avoid leaving generic exceptions unmanaged.

Constraints

- JSON format only.
- You can't retrieve child entities at three or more levels with the main record. For example, third-party payments can't be retrieved directly using the supplier number. Instead, you first must retrieve the site details using the supplier, and then retrieve the third-party payments for the site.

Related Topics

- REST API for Oracle Fusion Cloud Procurement
- REST API for Oracle Fusion Cloud Procurement: Quick Start
- REST API for Oracle Fusion Cloud Procurement: Privileges
- REST API for Oracle Fusion Cloud Procurement: Suppliers REST resources group
- REST API for Oracle Fusion Cloud Financials
- REST API for Oracle Fusion Cloud Financials: Get an external bank account
- REST API for Oracle Fusion Cloud Financials: Get a payment instrument assignment
- REST API for Oracle Fusion Cloud Financials: Get a payment method assigned to a payee
- REST API for Oracle Fusion Cloud Financials: Get all external payees
- REST API for Oracle Fusion Cloud Financials: Get a taxpayer identifier
- REST API for Oracle Fusion Cloud Financials: Get a tax registration
- REST API for Oracle Fusion Cloud Financials: Get a third-party fiscal classification
- REST API for Oracle Fusion Cloud Financials: Get a third-party site fiscal classification
- REST API for Oracle Fusion Cloud Financials: Get a tax exemption
- REST API for Oracle Fusion Cloud Financials: Get a third-party tax reporting code association
- REST API for Oracle Fusion Cloud Financials: Get a third-party site tax reporting code association
- Cloud Customer Connect: How to use query parameters to tailor REST service responses for the GET operation
- Oracle Visual Builder Add-In for Excel

Supplier Outbound Synchronization Service for Supplier Model

The Supplier Outbound Synchronization Service lets you perform real-time synchronization of Oracle Supplier Model updates with other external systems.

> **Note:** Oracle highly recommends using Oracle Supplier Model REST APIs rather than the Supplier Outbound Synchronization Service.

Key Features

- Synchronizes supplier data from Oracle Supplier Model with external systems.
- Supplier creation and updates are communicated through business events. A business event is triggered for any supplier-profile update including all child entities such as addresses, contacts, sites, transaction tax, payments, business classifications, products, and services.

Best Practices

- It's recommended to use REST APIs together with business events in Oracle Integration Cloud (OIC) rather than using the Supplier Outbound Synchronization Service.
- If you're using the Supplier Outbound Synchronization Service and there's an error in the integration, review the error printed in the Supplier Synchronization Service for Supplier <*supplier_name*> Failed worklist notification received by the supplier administrator who performed the update.

Constraints

You can't use the Supplier Outbound Synchronization Service for the integration with OIC.

Related Topics

- Supplier Outbound Synchronization Service

Business Intelligence Cloud Connector for Supplier Model

Oracle Supplier Model offers a collection of public view objects (PVOs) that give you read-only access to the raw data stored in the business objects.

Use Business Intelligence Cloud Connector (BICC) functionalities to extract the raw data into comma-separated values (CSV) files that you can upload to external systems, such as data warehouses, for specialized analysis.

Key Features

- Use the *standard features available in Oracle Business Intelligence Cloud Connector (BICC)*.
- Configure an external storage location that works for your data needs.
- Extract data from Oracle Supplier Model supported entities.
- 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.
- 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.

Best Practices

- Perform periodic extraction close to near real-time extraction.

- Run incremental extracts if you need only the data that changed since your last extract.
- Control who has access to the content and what they can do with it.

Constraints

- This option isn't suitable for real-time data extraction.
- Conditional data extraction isn't supported. That is, the data rows from a PVO can't be based on a specific data condition.

Related Topics

- Overview of Business Intelligence Cloud Connector
- Extract Data Stores for Oracle Supplier Model

Process Integration for Supplier Model

You can build an end-end process integration using the supported Oracle Supplier Model's integration methods and business events with Oracle Integration Cloud (OIC).

Key Features

OIC has native capabilities to subscribe to the available business events. Supplier business events are automatically raised when the Oracle Supplier Model object is updated. OIC listens to the events and gets the enriched data.

Here's an example scenario:

The customer has been using Oracle Supplier Model to manage their suppliers and might need to enrich the supplier information with data from an external data provider. In this case, the customer can use the Suppliers REST resources and business events with OIC to request enriched data from the external data provider.

This is the process flow:

1. A new supplier is created using the Oracle Supplier Model registration process, which raises a business event called *Supplier Created Event*.
2. OIC listens for this event, uses the event attributes, and calls the Suppliers REST resources to retrieve key supplier information from Oracle Supplier Model.
3. OIC then sends this retrieved information to the external system to uniquely identify the supplier on its platform.
4. The external system sends the extra data for the identified supplier back to Oracle Supplier Model for data enrichment using the Suppliers REST resources.

Best Practices

For bulk import using file-based data import (FBDI), such as the initial loading of supplier data from a legacy system into Oracle Supplier Model, first disable the *Enable Outbound Supplier Profile Integration Using Oracle Integration Cloud* opt-in feature to avoid raising too many events.

Constraints

None.

Related Topics

- Supported Procurement Business Events

Business Events for Supplier Model

Oracle Supplier Model supports two business events: one raised when the supplier is created and the other when the supplier is updated.

Subscribe to these events to automatically send supplier master updates to other systems and bring in data from external services through Oracle Integration Cloud (OIC). You can enable these business events using an opt-in.

Business Event	Description	Event Raise Points	Payload ‹Attributes›	Enabled by Using
Supplier Created Event	Signals a supplier is created.	When a supplier is created through the UI, REST APIs, SOAP services, or file-based data import (FBDI), the supplier create event is raised.	SupplierId SupplierNumber	Opt-in: Enable **Outbound Supplier Profile Integration Using Oracle Integration Cloud**.
Supplier Updated Event	Signals a supplier is updated.	When a supplier is updated through the UI, REST APIs, SOAP services, or file-based data import (FBDI), the supplier updated event is raised.		

Related Topics

- Supported Procurement Business Events

Business Objects for Supplier Model

Supplier Model Business Objects Available for Integration

Oracle Supplier Model provides support for the Suppliers business object to help inbound and outbound integrations.

Inbound

Key Business Object	FBDI	REST	SOAP	Business Events
Suppliers	x	x	x	x

Outbound

Key Business Object	REST	SOAP	BICC	Supplier Outbound Synchronization Service	Business Events
Suppliers	x	–	x	x	x

Supplier Model Integration Features Available for Business Objects

Oracle Supplier Model offers integration features such as data upload, data updates, and validation.

This table provides a list of key integration features available for each business object.

Integration Feature	SOAP	REST	FBDI	BICC Data Extraction
Complete validation	X	X	X	
Bulk Data upload			X	
Near Real-time upload	X	X		
Bulk Data extraction				X
CSV File Types			X	X

Oracle Integration Cloud Accelerators for Supplier Model

Previously Built Oracle Integration Cloud (OIC) Recipes for Supplier Model

This previously built OIC integration between EcoVadis and Oracle Supplier Model is available.

Flow Name	Source	Destination	Use Case/Description	Details/Links
Sync ESG Data from EcoVadis to Suppliers in Oracle Procurement Cloud	EcoVadis	Oracle Supplier Model	This recipe synchronizes environment, social, and government (ESG) data from EcoVadis to suppliers in Oracle Fusion Cloud Procurement.	*Sync ESG Data from EcoVadis to Suppliers in Oracle Procurement Cloud*

Use Cases and Patterns for Supplier Model

Overview of Supplier Model Use Cases and Patterns

Oracle Supplier Model provides several integration options to support your complex business needs.

These Oracle Supplier Model use cases are included as examples:

- *Rapid Migration of Legacy System Data into Oracle Supplier Model*
- *Add Large Volumes of New Supplier Data or Perform Mass Updates to Existing Supplier Data in Oracle Supplier Model*
- *Automated Low/Medium-Volume Real-Time Updates from External Systems to Oracle Supplier Model*
- *Automated Large-Scale Update to External System from Oracle Supplier Model*
- *Automated Low-Volume, Real-Time Updates from Oracle Supplier Model to External Systems*

Rapid Migration of Legacy System Data into Oracle Supplier Model

In this use case, file-based data import (FBDI) is used to import high-volume supplier data during the implementation phase to integrate into the system easily and quickly.

Description	Integration Type	Integration Options	Notes
A new Oracle Supplier Model customer can use file-based data import (FBDI) to import high-volume supplier data during the implementation phase, to easily and quickly integrate into the system.	Inbound	FBDI	REST APIs, SOAP services, and Oracle Integration Cloud (OIC) aren't recommended for this use case.

Add Large Volumes of New Supplier Data or Perform Mass Updates to Existing Supplier Data in Oracle Supplier Model

In this use case, you need to update supplier-profile data in bulk.

Description	Integration Type	Integration Options	Notes
An Oracle Supplier Model customer needs to update supplier-profile data in bulk. **Example 1:** The customer acquires a new business that might be using a suite of legacy systems to maintain supplier data. The data needs to be migrated to Oracle Supplier Model. **Example 2:** The customer already uses Oracle Supplier Model as supplier master. However, they enabled supplier portal recently and need to provision user accounts so that users can access the supplier portal to perform various activities like updating the profile. **Example 3:** The customer might want to update a specific field value like Tax Organization Type for a set of suppliers.	Inbound	FBDI	REST APIs, SOAP services, and Oracle Integration Cloud (OIC) aren't recommended for this use case. Consider using the *Supplier Import - Supplier Real Time* Oracle Transactional Business Intelligence (OTBI) subject area to export existing supplier data and quickly populate import templates.

Automated Low/Medium-Volume Real-Time Updates from External Systems to Oracle Supplier Model

In this use case, you need to update the suppliers in Oracle Supplier Model on a real-time basis from an external system.

Description	Integration Type	Integration Options	Notes
For transactions within Oracle Fusion Cloud Applications, customers might need to update the suppliers in Oracle Supplier Model on a real-time basis from an external system.	Inbound	Supplier REST resources	–

Automated Low-Volume, Real-Time Updates from Oracle Supplier Model to External Systems

In this use case, you need to cascade the changes made in Oracle Supplier Model in real-time for consumption by external systems.

Description	Integration Type	Integration Options	Notes
The customer uses Oracle Supplier Model as a source of truth for suppliers and needs to cascade the changes made in Oracle Supplier Model in real-time for consumption by external systems. For example, promoting a supplier for spend when updating the profile.	Outbound	Supplier REST resources and OIC can be used by taking advantage of the business events raised by Oracle Supplier Model.	–

Automated Large-Scale Update to External System from Oracle Supplier Model

In this use case, you're extracting data in bulk and loading it into designated external storage areas using Oracle Business Intelligence Cloud Connector (BICC).

Description	Integration Type	Integration Options	Notes
Use Oracle Business Intelligence Cloud Connector (BICC) to extract data in bulk and load it into designated external storage areas.	Outbound	BICC	REST APIs and SOAP services aren't recommended for this use case.

Reference Architectures for Supplier Model

Enrich Supplier Profile from External Data Provider for Spend Authorized Registration Approval

Overview of the Architecture

You can use this suggested architecture that describes how to enrich the supplier profile with more information to guide you through the design and implementation of your own integrations.

Use Case

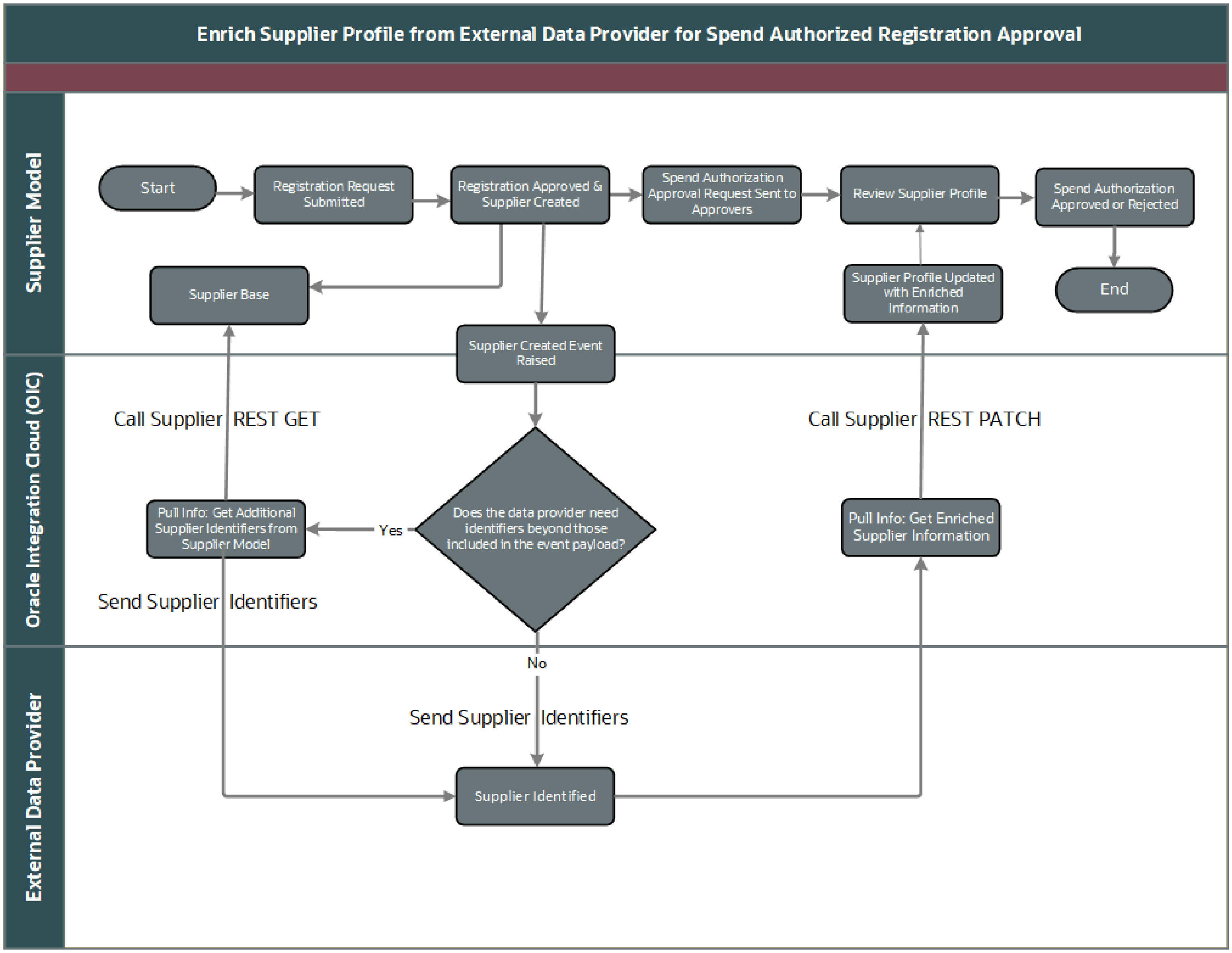
1. A supplier is registered with the business relationship set to "spend-authorized".
2. The registration is approved.

   The supplier is created and a spend authorization request is sent to approvers based on your approval rules.
3. You can enrich the supplier profile with more information, such as risk scores and financial stability metrics, from an external data provider using the Suppliers REST API with Oracle Integration Cloud (OIC) capabilities.

   This provides approvers with more supplier risk details to make a more informed decision when reviewing the spend authorization request for the supplier.

Process Overview

This flow diagram shows the steps you take when designing and implementing the use case.



1. **Register supplier:** The supplier is registered in Oracle Supplier Model either by an internal process with the business relationship set to Spend Authorized or through self-service registration using the spend authorization URL.

2. **Create supplier:** After approval, the supplier is created in Supplier Model. This automatically triggers a spend authorization request and raises a supplier created business event.
3. **(Optional) Retrieve other key supplier identifiers:** If the external data provider requires supplier identifiers beyond those included in the event payload, Oracle Integration Cloud (OIC) can retrieve more information (such as the D-U-N-S Number) from Supplier Model to ensure the supplier is uniquely identified in the provider's platform.
4. **Send key supplier identifiers to the external data provider:** OIC sends the key supplier identifiers to the external data provider for unique identification.
5. **Retrieve enrichment data from the external data provider:** OIC receives enrichment data, such as risk scores and financial stability, from the external data provider.
6. **Update supplier profile with enrichment data:** OIC updates the supplier profile with the new enrichment attributes in Supplier Model and maps them to supplier attributes or descriptive flexfields (DFFs), as configured.
7. **Approvers review enriched supplier profile:** Approvers access the supplier profile from the spend-authorized approval notification and review the enriched supplier information to support their approval decision.

Details of these steps are described in these topics:

- *Configure Oracle Fusion Cloud Procurement*
- *Configure Oracle Integration Cloud (OIC)*
- *Overview of the Integration*
- *Set Up the Integration*

Related Topics

- Overview of Security Reference
- Suppliers REST Endpoints
- Supported Procurement Business Events
- Outbound Supplier Profile Integration Using Oracle Integration Cloud
- Using Integrations in Oracle Integration 3
- Using the Oracle ERP Cloud Adapter with Oracle Integration 3: Understand the Oracle ERP Cloud Adapter
- Using the REST Adapter with Oracle Integration 3

Configure Oracle Fusion Cloud Procurement

To enable seamless integration with Oracle Integration Cloud (OIC), perform these steps in Oracle Fusion Cloud Procurement.

Create an Integration User

1. Sign in as an application administrator.
2. Create a dedicated user account for OIC.
3. Keep the credentials and use them when configuring other OIC connections.

Assign the Required Privileges

Grant your integration user these privileges:

- Enable a privilege that grants your user access to Oracle Fusion Cloud Enterprise Resource Planning (ERP) data.
- Assign an integration specialist role to the user.
  For more information, see *Assign Required Roles to an Integration User*.

Create and Assign a Custom Role for Supplier Update

1. Copy the Supplier Manager (ORA_POZ_SUPPLIER_MANAGER_ABSTRACT) privilege.

   > **Note:** Remove any unnecessary privileges and assign only the required privileges for your site's subscriptions. For more information, see *Advisory Note on Subscription Impact*.

2. Copy the Update Supplier Pending Spend Authorization Using REST Service (POZ_UPDATE_SUPPLIER_PENDING_SPENDAUTH_VIA_REST_PRIV) privilege, adhering to the guidance mentioned in Step 1. Add this privilege to the new role.

   This will allow the supplier profile to be updated with data from the external data provider when it's pending spend approval.
3. Assign this new role to the integration user.

For more information, see *Role Copying or Editing*.

Configure Supplier Descriptive Flexfields (DFFs)

1. Configure DFFs for POZ_SUPPLIERS by adding global segments to store enrichment data from the external data provider.
2. Save and deploy the DFFs to make the new attributes available on supplier profiles.

For more information, see *Overview of Descriptive Flexfields*.

Enable Outbound Supplier Profile Integration

There's a need to share supplier data in Oracle Supplier Model with other systems. For example, when managing supplier information, you might send supplier updates to legacy systems, or automate integration with third party providers to enrich supplier data.

From the Procurement offerings configuration workspace in Functional Setup Manager (FSM), navigate to **Procurement** > **Suppliers** and select Enable Outbound Supplier Profile Integration Using Oracle Integration Cloud to allow integration with Oracle Integration Cloud.

For more information, see *Outbound Supplier Profile Integration Using Oracle Integration Cloud* and *Configure Offerings*.

Configure Oracle Integration Cloud (OIC)

Use the Oracle ERP Cloud Adapter and the REST Adapter to create connections in OIC.

Create an ERP Cloud Adapter Connection

Create an ERP Cloud Adapter connection to act as a trigger for subscribing to events, such as Supplier Created, and for invoking services, such as making REST API calls to Oracle Fusion Cloud Enterprise Resource Planning.

1. Enter connection details, such as name, description, instance URL, and integration user credentials.
2. Select both the Trigger and Invoke roles.
3. Test the connection to ensure that the setup is successful.

For more information, see *Using the Oracle ERP Cloud Adapter with Oracle Integration 3: Understand the Oracle ERP Cloud Adapter*.

Create a REST Adapter Connection for the External Data Provider

Create a REST Adapter connection to integrate with the external data provider.

1. Configure the REST Adapter with the external endpoint and appropriate security (API key, Basic Auth, OAuth, and so on).
2. Test the connection to ensure it's successful.

For more information, see *Using the REST Adapter with Oracle Integration 3*.

Integrate Oracle Supplier Model with External Data

Overview of the Integration

Started by a business event, the integration process orchestrates data retrieval and enrichment steps and updates the supplier profile in Oracle Supplier Model within a single integration flow.

This event-driven integration pattern leverages both previously built adapters and standard REST API invocations to ensure end-to-end automated data enrichment and synchronization between Oracle Fusion Cloud Procurement and external data providers. It also supports robust and informed spend approval decision-making by ensuring that all the required supplier information is available at the point of approval.

High-Level Process Flow

The high-level process flow includes these steps.

1. **Trigger:** The ERP Cloud Adapter listens for the Supplier Created business event from Oracle Supplier Model.
2. **(Optional) Invoke:** The ERP Cloud Adapter retrieves supplier details using the GET Supplier REST API.
3. **Invoke:** The REST Adapter sends supplier data to the external data provider and retrieves enrichment data using the operation required by the provider’s API specification (POST/GET/other).
4. **Invoke:** The ERP Cloud Adapter updates the supplier profile in Supplier Model using the PATCH Supplier REST API with the new enrichment fields.
5. **Completion:** The integration completes. The supplier profile is enriched and is available for approver review.

Set Up the Integration

In Oracle Integration Cloud (OIC), use this procedure to set up the integration.

Create the Integration

1. Select **App Driven Orchestration**.
2. Enter a name and description for the integration.

Add the ERP Cloud Adapter as a Trigger

1. From the **Receive Business Event** drop-down list, select **Supplier Created**.
2. Provide an endpoint name and review payload structure.

Add Actions Within the Integration Flow

Complete these substeps, in sequence, as part of your integration design.

1. (Optional) Retrieve supplier details from Oracle Supplier Model using the GET operation.

   > **Note:** This step is optional and should be used only if the external data provider requires more supplier identifiers to uniquely identify the supplier.

   a. Add an invoke action using the ERP Cloud Adapter connection.
   b. In the data mapper, map `SupplierId` from the event payload to the REST API request.
   c. Configure this invoke to call the Suppliers REST API (for example, `/fscmRestApi/resources/latest/suppliers/{SupplierId}`) with the GET operation.

      The response will include attributes such as SupplierId, SupplierName, D-U-N-S Number, TaxpayerID, and other standard supplier fields.
2. Retrieve enrichment data from the external data provider (API method, per specification).
   a. Add an invoke action using the REST Adapter connection that was created for the external data provider.
   b. Consult the external data provider's API documentation to identify the appropriate operation to use (POST, GET). You then can design your OIC integration according to their guidance. The operation is based on whether data is retrieved synchronously or requires a follow-up call.
      - If data is returned synchronously, use a single invoke action (for example, POST or GET).
      - If data is retrieved asynchronously, implement a two-step flow (for example, an initial POST to start enrichment and then a follow-up GET to retrieve results).
   c. Map relevant supplier data (such as SupplierId, SupplierName, CustomerID, D-U-N-S Number, and TaxpayerID) into the external data provider request as required.

      Whether from the initial or a follow-up call, the response, when invoked successfully, will include the requested enrichment data (such as Risk Score, Credit Score, Days Payable Outstanding, Compliance Screening, and ESG Ranking Score) making these values available as output.
3. Update the Supplier Profile with enrichment data using the PATCH operation.
   a. Add an invoke action using the ERP Cloud Adapter to update the supplier in Supplier Model.
   b. Configure the resource URI for PATCH. For example, `/fscmRestApi/resources/latest/suppliers/{SupplierId}`.
   c. In the data mapper, map the `SupplierId` and each enrichment field (for example, risk scores, and financial stability) from the external data provider response directly to their corresponding supplier attributes or descriptive flexfields (DFFs).

      > **Note:** Ensure that DFF attribute codes are consistent with your Oracle Fusion Cloud Procurement configuration.

   d. Apply any necessary data transformations to meet payload or format requirements for the PATCH operation.
4. Test and activate the integration.
   a. Test the flow to confirm event triggering, data retrieval, external data provider integration, and supplier enrichment work as expected.
   b. Activate the integration.

6 Supplier Qualification Management

Overview of Supplier Qualification Management

About Oracle Supplier Qualification Management

Oracle Supplier Qualification Management provides a complete solution for managing your suppliers' qualifications and capabilities, including monitoring compliance with your business policies and storing supporting documentation.

Terminology for Supplier Qualification Management

These terms are used throughout the Oracle Supplier Qualification Management playbook.

Term	Definition
Qualification	A business object that's used to evaluate suppliers according to a particular function, capability, or aspect of a supplier.
Assessment	A business object that's used to evaluate suppliers through a comprehensive set of criteria.
Initiative	The main tool to create, manage and track qualifications and assessments via the questionnaires sent to supplier and internal responders for their responses.
Questionnaire	A business object that's used to gather supplier information, which consists of questions.
Questionnaire Response	The response the responder provided after responding to the questionnaire.
Question	A reusable business object that's created to ask about or know about a supplier to qualify them.
Qualification Area	The container for questions. You use a qualification area and its questions to evaluate a particular aspect of a supplier known as a qualification.
Qualification Model	The container for qualification areas. You use a qualification model and its qualification areas to perform a comprehensive evaluation of a supplier, which is known as an assessment.
Rule Set	A set of conditions and qualification areas. Conditions are used to include different qualification areas in the generated questionnaire that's sent to a supplier at various points in the supplier's life cycle.
Supplier Eligibility	The assessment required for the supplier to meet the criteria and standards for participation in sourcing.

Integration Types and Options for Supplier Qualification Management

Overview of Supplier Qualification Management Integration Types and Options

Several integration types and options are available in an Oracle Supplier Qualification Management integration.

Integration Types

Inbound

In this type of integration, data is sourced from external systems and uploaded into Oracle Supplier Qualification Management.

Outbound

In this integration type, the data stored in Oracle Supplier Qualification Management can be sent to various external systems.

Integration Options

These integration options are available in Oracle Supplier Qualification Management.

Inbound

- *REST APIs (Inbound) for Supplier Qualification Management*

Outbound

- *REST APIs (Outbound) for Supplier Qualification Management*
- *Business Intelligence Cloud Connector for Supplier Qualification Management*

Inbound

REST APIs (Inbound) for Supplier Qualification Management

Use REST APIs to integrate with Oracle Supplier Qualification Management.

A comprehensive set of REST APIs is available for customers and architects of integrating systems to view, create, update, or delete records for their real-time integration requirements.

Key Features

- Use these REST APIs for real-time integration requirements for initiatives, questions, question responses, and supplier eligibility.
  - Supplier Initiative REST resource: View, create and launch initiatives.
  - Supplier Qualification Questions REST resource: View, create, update, and delete questions.
  - Supplier Qualification Question Responses REST resource: View, create, and update question responses.
  - Supplier Eligibility REST resource: View, create, update, and delete supplier eligibility records.
- Perform actions on both a single-item or collection.
- BATCH is supported for UPDATE, INSERT, DELETE, and GET operations.
- Perform custom actions, such as create a Question draft revision and launch an initiative.
- Use REST APIs to achieve end-to-end process orchestration.

Best Practices

- Use REST APIs if you need to perform near real-time mode operations in Oracle Supplier Qualification Management.
- For questions, limit the total number of branches to a 5-level maximum.

Constraints

- REST APIs don't allow the return of more than 500 records in a single call. You can paginate through the entire set using the offset and limit parameters.
- Supplier Initiatives
  - For large initiatives, the maximum number of suppliers is 400. The maximum number of qualifications, which is the number of suppliers times the number of qualification areas, is 2,000 per initiative.
  - Internal survey initiatives aren't supported.
  - PATCH isn't supported for initiatives; only POST is supported.
- Supplier Qualification Questions
  - The maximum number of acceptable responses can't exceed 500 per question.
  - Questions mapped to supplier attributes aren't supported.
  - Responses to **Text entry box** question-type questions can't exceed 4,000 characters.
  - Internal survey questions aren't supported.

Related Topics

- REST API for Oracle Fusion Cloud Procurement: Manage Supplier Initiatives REST resource
- REST API for Oracle Fusion Cloud Procurement: Manage Supplier Qualification Questions REST resource
- REST API for Oracle Fusion Cloud Procurement: Manage Supplier Qualification Question Responses REST resource
- Cloud Customer Connect: How to import suppliers en masse to initiative using the Oracle Visual Builder Add-in for Excel
- Cloud Customer Connect: Load Supplier Qualifications to SQM Cloud
- Cloud Customer Connect: Import Supplier Qualification Questions using simplified excel workbook layout
- Cloud Customer Connect: Purchasing Attachments FAQ
- REST API for Oracle Fusion Cloud Procurement
- REST API for Oracle Fusion Cloud Procurement: Privileges
- Oracle Visual Builder Add-In for Excel

Outbound

REST APIs (Outbound) for Supplier Qualification Management

Use REST APIs to retrieve information on initiatives, questions, question responses, supplier eligibility, and qualification areas.

Key Features

Use the REST APIs GET method for these REST resources:

- Supplier Initiative
- Supplier Eligibility
- Supplier Qualifications
- Supplier Qualification Questions
- Supplier Qualification Question Responses
- Supplier Qualification Areas

Best Practices

- For better performance, limit the attributes using the fields query parameter while performing GET operations whenever it's supported.
- The limit and offset query parameters are used to specify how many records and which batch of records to return. When exporting large amounts of data, these query parameters are required to retrieve the next batch of records because the maximum number of records you can retrieve at once within a single batch is 500.

Constraints

JSON format only.

Related Topics

- REST API for Oracle Fusion Cloud Procurement
- REST API for Oracle Fusion Cloud Procurement: Privileges
- Oracle Visual Builder Add-In for Excel

Business Intelligence Cloud Connector for Supplier Qualification Management

Oracle Supplier Qualification Management offers a collection of public view objects (PVOs) that give you read-only access to the raw data stored in the business objects.

Use Business Intelligence Cloud Connector (BICC) functionalities to extract the raw data into comma-separated values (CSV) files that you can upload to external systems, such as data warehouses, for specialized analysis.

Key Features

- Configure an external storage location that works for your data needs.
- Extract complete or partial data.
- Run extracts on-demand or schedule them to run at specified intervals during the day, in a week, or throughout the month.
- 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.

Best Practices

- Perform periodic extraction close to near real-time extraction.
- Run incremental extracts if you need only the data that changed since your last extract.
- Control who has access to the content and what they can do with it.

Constraints

Conditional data extraction isn't supported. That is, the data rows from a PVO can't be based on a specific data condition.

Related Topics

- Creating a Business Intelligence Cloud Extract
- Extract Data Stores for Oracle Supplier Qualification Management

Business Objects for Supplier Qualification Management

Supplier Qualification Management Business Objects Available for Integration

Oracle Supplier Qualification Management provides support for multiple business objects to help inbound and outbound integrations.

Key business object and their child objects are listed in the tables.

Inbound

Key Business Object	FBDI	REST
Initiative	–	x
Question	–	x
Question Response	–	x
Supplier Eligibility	–	x

Outbound

Key Business Object	REST	Business Intelligence Cloud Connector (BICC)
Qualification	x	x
Assessment	–	x
Initiative	x	x
Question	x	–
Question Response	x	x
Qualification Area	x	–
Supplier Eligibility	x	–
Questionnaire Response	–	x

Supplier Qualification Management Integration Features Available for Business Objects

Oracle Supplier Qualification Management offers integration features such as data upload, data updates, and validation.

This table provides a list of key integration features available for each integration method.

Integration Feature	REST	BICC Data Extraction
Complete validation	X	
Near Real-time upload	X	
Bulk Data extraction		X
CSV File Types		X

Use Cases and Patterns for Supplier Qualification Management

Overview of Supplier Qualification Management Use Cases and Patterns

Oracle Supplier Qualification Management provides several integration options to support your complex business needs.

Here's a list of common use cases for data integration.

- *Migrate Qualifications from an External System to Oracle Supplier Qualification*
- *Use Information from an External System to Qualify Suppliers*
- *Use Information from an External System to Qualify Suppliers via Supplier Profile Descriptive Flexfields (DFFs)*
- *Update Supplier Eligibility*
- *Update an External System with Supplier Qualification Information*

Migrate Qualifications from an External System to Oracle Supplier Qualification

In this use case, you have qualifications from multiple external sources that you'd like to migrate into Oracle Supplier Qualification Management.

Description	Integration Type	Integration Options	Notes
Load the external question responses and then create the initiatives without sending the questionnaires. Qualifications will be created after the initiative is launched. 1. Create questions with Supplier Qualification Questions REST API. 2. Set up qualification areas required for the qualifications. 3. Load existing question responses using the Supplier Qualification Question Responses REST resource. 4. Use the Supplier Initiative REST resource's POST operation to create initiatives with the imported responses, which will then create qualifications.	Inbound	REST APIs	After question responses are imported, allocate some wait time to ensure that the responses are in the repository before you create the initiatives that will create qualifications.

Use Information from an External System to Qualify Suppliers

In this use case, you want to use external supplier data, such as credit score, to qualify suppliers.

Description	Integration Type	Integration Options	Notes
Load the external information into the response repository and then create qualifications with the imported information. Qualifications will be created automatically after launching the initiative. 1. Set up the questions and qualification areas that are required for the qualifications. 2. Load external supplier data using the Supplier	Inbound	REST APIs	–

Description	Integration Type	Integration Options	Notes
Qualification Question Responses REST resource. 3. Use the Supplier Initiative REST resource to create initiatives without sending the questionnaires.			

Use Information from an External System to Qualify Suppliers via Supplier Profile Descriptive Flexfields (DFFs)

In this use case, you want to import external supplier information into DFFs and then use that information to create qualifications.

Description	Integration Type	Integration Options	Notes
You might have external supplier data, such as energy rating, that's stored as supplier profile DFFs. First, use the Supplier Import or Suppliers REST resources to update the supplier profile DFFs. Then, create qualifications with questions that will map to the supplier profile DFFs. Qualifications will be created automatically without sending the questionnaires. 1. Create supplier DFFs to capture the information from the external system. 2. Create questions that map to the supplier DFFs. 3. Create the qualification area that includes the mapped DFF questions. 4. Update the supplier profile DFFs using Supplier Import or Suppliers REST resources. 5. Use the Supplier Initiative REST resource POST operation to create initiatives with the qualification area that contains the mapped DFF questions to create qualifications.	Inbound	REST APIs	–

Update Supplier Eligibility

In this use case, you want to update the eligibility status of your suppliers from an external system.

Description	Integration Type	Integration Options	Notes
You might want to update the supplier eligibility status for your suppliers from an external system. Use the Supplier Eligibility REST resource to update the eligibility for sourcing of your suppliers. • Use the PATCH operation to update the sourcing eligibility of your suppliers using REST APIs. • Use the POST operation to create or the PATCH operation to update the sourcing eligibility of your supplier for a procurement business unit.	Inbound	REST APIs	–

Update an External System with Supplier Qualification Information

In this use case, you want to export qualifications from Oracle Supplier Qualification Management to an external system.

Description	Integration Type	Integration Options	Notes
You might have an external system to which you want to export qualifications from Oracle Supplier Qualification Management. For example, take sustainability qualification data out and load it into another system for reporting purposes or to combine the data with other data.	Outbound	Oracle Business Intelligence Cloud Connector (BICC)	–