Oracle® Cloud

Using the Oracle E-Business Suite Adapter with Oracle Integration Cloud

Release 18.3

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Oracle Cloud Using the Oracle E-Business Suite Adapter with Oracle Integration Cloud, Release 18.3

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Preface

Intended Audience

Welcome to Release 18.3 of the *Oracle Cloud Using the Oracle E-Business Suite Adapter with Oracle Integration Cloud.*

Using the Oracle E-Business Suite Adapter describes how to securely connect and use Oracle E-Business Suite services through the Oracle E-Business Suite Adapter in integrations in Oracle Integration Cloud.

> **Note:** The information in this guide applies to all of your Oracle Integration Cloud instances. It doesn't matter which edition you're using, what features you have, or who manages your cloud environment. You'll find what you need here, including notes about any differences between the various flavors of Oracle Integration Cloud when necessary.

See Related Information Sources on page x for more Oracle E-Business Suite product information.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

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Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info or visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs if you are hearing impaired.

Structure

Related Information Sources

For more information, see these Oracle resources:

- `http://cloud.oracle.com`

- You may want to refer to other Oracle Cloud guides when you set up and use the Oracle E-Business Suite Adapter from Oracle Integration Cloud.

  Using Integrations in Oracle Integration Cloud

  This book describes how to create and connect applications in the cloud and monitor and manage these running integrations.

  Using the Oracle Mapper

  This book describes how to use the mapper to map source data structures to target data structures.

  Getting Started with Oracle Cloud

  This book describes how to get started with subscribing to Oracle Cloud services, how to add users and access service consoles.

Additionally, refer to the following Oracle E-Business Suite documentation, available in the Oracle E-Business Suite Documentation Web Library on the Oracle Technology Network. See http://docs.oracle.com/cd/E26401_01/index.htm for the latest Release 12.2 documentation or http://docs.oracle.com/cd/E18727_01/index.htm for the latest Release 12.1 documentation. Most documents are available in PDF and HTML formats.

Oracle E-Business Suite Concepts

This book is intended for all those planning to deploy Oracle E-Business Suite Release 12.2, or contemplating significant changes to a configuration. After describing the Oracle E-Business Suite architecture and technology stack, it focuses on strategic topics, giving a broad outline of the actions needed to achieve a particular goal, plus the installation and configuration choices that may be available.

Oracle E-Business Suite Integrated SOA Gateway User's Guide

This guide describes the high level service enablement process, explaining how users

can browse and view the integration interface definitions and services residing in Oracle Integration Repository.

Oracle E-Business Suite Integrated SOA Gateway Implementation Guide

This guide explains how integration administrators can manage and administer the Web service activities for integration interfaces including native packaged integration interfaces, composite services (BPEL type), and custom integration interfaces. It also describes how to invoke Web services from Oracle E-Business Suite by employing the Oracle Workflow Business Event System, and how to manage Web service security, configure logs, and monitor SOAP messages.

Oracle E-Business Suite Integrated SOA Gateway Developer's Guide

This guide describes how integration developers can perform end-to-end service integration activities. These include orchestrating discrete Web services into meaningful end-to-end business processes using business process execution language (BPEL), and deploying BPEL processes at run time.

This guide also explains how to invoke Web services using the Service Invocation Framework. This includes defining Web service invocation metadata, invoking Web services, and testing the Web service invocation.

Oracle E-Business Suite Maintenance Guide

This guide explains how to patch an Oracle E-Business Suite system, describing the adop patching utility and providing guidelines and tips for performing typical patching operations. It also describes maintenance strategies and tools that can help keep a system running smoothly.

Oracle E-Business Suite Security Guide

This guide contains information on a comprehensive range of security-related topics, including access control, user management, function security, data security, secure configuration, and auditing. It also describes how Oracle E-Business Suite can be integrated into a single sign-on environment.

Oracle E-Business Suite User's Guide

This guide explains how to navigate, enter and query data, and run concurrent requests using the user interface (UI) of Oracle E-Business Suite. It includes information on setting preferences and customizing the UI. In addition, this guide describes accessibility features and keyboard shortcuts for Oracle E-Business Suite.

Integration Repository

 The Oracle Integration Repository is a compilation of information about the service endpoints exposed by the Oracle E-Business Suite of applications. It provides a complete catalog of Oracle E-Business Suite's business service interfaces. The tool lets users easily discover and deploy the appropriate business service interface for integration with any system, application, or business partner.

 The Oracle Integration Repository is shipped as part of the Oracle E-Business Suite. As

your instance is patched, the repository is automatically updated with content appropriate for the precise revisions of interfaces in your environment.

Do Not Use Database Tools to Modify Oracle E-Business Suite Data

Oracle STRONGLY RECOMMENDS that you never use SQL*Plus, Oracle Data Browser, database triggers, or any other tool to modify Oracle E-Business Suite data unless otherwise instructed.

Oracle provides powerful tools you can use to create, store, change, retrieve, and maintain information in an Oracle database. But if you use Oracle tools such as SQL*Plus to modify Oracle E-Business Suite data, you risk destroying the integrity of your data and you lose the ability to audit changes to your data.

Because Oracle E-Business Suite tables are interrelated, any change you make using an Oracle E-Business Suite form can update many tables at once. But when you modify Oracle E-Business Suite data using anything other than Oracle E-Business Suite, you may change a row in one table without making corresponding changes in related tables. If your tables get out of synchronization with each other, you risk retrieving erroneous information and you risk unpredictable results throughout Oracle E-Business Suite.

When you use Oracle E-Business Suite to modify your data, Oracle E-Business Suite automatically checks that your changes are valid. Oracle E-Business Suite also keeps track of who changes information. If you enter information into database tables using database tools, you may store invalid information. You also lose the ability to track who has changed your information because SQL*Plus and other database tools do not keep a record of changes.

1

Understanding the Oracle E-Business Suite Adapter

This chapter covers the following topics:

- Oracle E-Business Suite Adapter Capabilities
- What Application Version Does the Oracle E-Business Suite Adapter Support?
- Typical Task Flow for Using the Oracle E-Business Suite Adapter

Oracle E-Business Suite Adapter Capabilities

The Oracle E-Business Suite Adapter is one of many predefined adapters included with Oracle Integration Cloud allowing you to securely connect and use Oracle E-Business Suite services in integrations in Oracle Integration Cloud. It not only provides the connectivity between Oracle E-Business Suite and other cloud-based applications, but also significantly simplifies the complexity of typical integration experiences. Through the Oracle E-Business Suite Adapter, you can quickly integrate your systems with desired Oracle E-Business Suite services in the cloud, as well as monitor and manage the integrations when needed.

The Oracle E-Business Suite Adapter in Oracle Integration Cloud leverages the functionality of Oracle E-Business Suite Integrated SOA Gateway (ISG) to provide the access of Oracle E-Business Suite REST services.

> **Note:** The Oracle E-Business Suite Adapter in Oracle Integration Cloud allows you to connect to Oracle E-Business Suite Release 12.1.3 as well as Release 12.2.3 and onwards.

The following diagram illustrates the supported integrations when using the Oracle E-Business Suite Adapter from Oracle Integration Cloud:

Supporting Inbound and Outbound Integrations
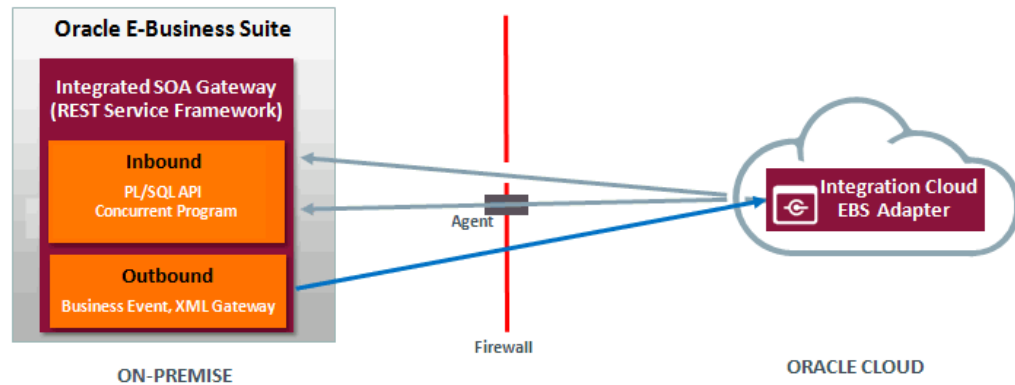
In this diagram, Business Events and XML Gateway messages are available for inbound integrations in Oracle Integration Cloud when adding the Oracle E-Business Suite Adapter as a trigger (source) connection in an integration. If the Oracle E-Business Suite Adapter is added as an invoke (target) connection, PL/SQL APIs and Concurrent Programs are available as REST services for invocation from Oracle Integration Cloud.

To access these REST services or interfaces in Oracle E-Business Suite on-premise which is behind the firewall, Oracle Integration Cloud agents can be used if your Oracle E-Business Suite is not set up in a DMZ configuration.

Please note that an outbound integration from Oracle E-Business Suite into Oracle Integration Cloud is also referred as an inbound (trigger or source) integration in Oracle Integration Cloud.

Key Features

The Oracle E-Business Suite Adapter in Oracle Integration Cloud serves as a connection tool for you to access Oracle E-Business Suite services in the cloud. It has the following key features:

- It provides seamless connection between Oracle E-Business Suite and Oracle Integration Cloud.

- It leverages Oracle E-Business Suite Integrated SOA Gateway to provide Oracle E-Business Suite REST services.

- It supports business events and XML Gateway messages for inbound integrations in Oracle Integration Cloud when using the Oracle E-Business Suite Adapter as **trigger (source)** connections.

- It provides Oracle E-Business Suite services (PL/SQL APIs and concurrent programs) for outbound integrations from Oracle Integration Cloud when adding the Oracle E-Business Suite Adapter as **invoke (target)** connections.

- It supports Oracle seeded and custom interfaces for integrations.

- It supports HTTP Basic Authentication security for REST services.

- It allows you to access and use Oracle E-Business Suite deployed REST-based services.

  > **Note:** If a REST service is not deployed, it cannot be used for integration. When such a service is selected for an integration, "Not Deployed" is shown as the service status and a warning message appears indicating that you need to contact an Integration Administrator in Oracle E-Business Suite to deploy the service through Oracle Integration Repository before using it.

- It allows you to monitor and manage integration activities with Oracle E-Business Suite services.

Common Terminologies

To better understand the Oracle E-Business Suite Adapter, the following common terminologies are explained in this section.

Oracle E-Business Suite Integrated SOA Gateway (ISG)

Oracle E-Business Suite Integrated SOA Gateway provides the functionality to expose integration interfaces published in the Integration Repository as SOAP and REST based web services.

Oracle E-Business Suite users with appropriate privileges can deploy these integration interfaces as REST services and manage the service lifecycle activities through the Integration Repository. The Oracle E-Business Suite Adapter in turn provides the access to these REST services that you can use for creating integrations in Oracle Integration Cloud.

Integration Repository

Integration Repository is an essential component in Oracle E-Business Suite Integrated SOA Gateway. It is the centralized repository that contains numerous interface endpoints within Oracle E-Business Suite.

When the connection to Oracle E-Business Suite is successfully established, Oracle E-Business Suite service metadata will be retrieved from the Integration Repository and imported to Oracle Integration Cloud. You can then create an integration by selecting a desired Oracle E-Business Suite service. The supported interface types for integrations in Oracle Integration Cloud through the Oracle E-Business Suite Adapter are:

- **PL/SQL API**

  A business interface can be based on a PL/SQL package from which you invoke

procedures and functions appropriate to an integration.

When you add the Oracle E-Business Suite Adapter as invoke (target) connections, PL/SQL REST services are available for outbound integrations from Oracle Integration Cloud.

- **Concurrent Program**

  A concurrent program runs as a concurrent process that executes multiple programs running in the background. Functions performed by concurrent programs are normally data-intensive and long-running, such as posting a journal.

  The Oracle E-Business Suite Adapter supports outbound integrations with concurrent programs from Oracle Integration Cloud when adding the Oracle E-Business Suite Adapter as invoke (target) connections.

- **Business Event**

  A business event is an occurrence in Oracle E-Business Suite that might be significant to other objects in a system or to external agents. An example of a business event can be the creation of a new sales order or changes to an existing order.

  When you add the Oracle E-Business Suite Adapter as trigger (source) connections, business events are available for inbound integrations in Oracle Integration Cloud.

- **XML Gateway Message Map**

  Oracle XML Gateway comprises a set of services that allows easy integration with Oracle E-Business Suite to support XML messaging. It uses the message propagation feature of Oracle Advanced Queuing to integrate with Oracle Transport Agent to deliver messages to and receive messages from business partners.

  Similar to business events, XML Gateway messages are available for inbound integrations in Oracle Integration Cloud when adding the Oracle E-Business Suite Adapter as trigger (source) connections.

  For more information about Oracle XML Gateway, see the *Oracle XML Gateway User's Guide*.

Representational State Transfer (REST)

REST is an architecture principle in which the web services are viewed as resources and can be uniquely identified by their URLs. The key characteristic of a REST service is through the use of four HTTP methods (GET, POST, PUT, and DELETE) to denote the invocation of different operations.

Please note that POST is the only supported method for PL/SQL and concurrent program REST services.

HTTP Basic Authentication Security

HTTP Basic Authentication security is the only supported security for REST services in this release.

When an HTTP client application tries to access an Oracle E-Business Suite REST service, user credentials (username/password) should be provided as input data in HTTP header as part of the REST request message. The username and password will be used for authentication and authorization.

From the perspective of the Oracle E-Business Suite Adapter in Oracle Integration Cloud, the username and password information is provided when creating an Oracle E-Business Suite connection. This credential information is then passed from Oracle Integration Cloud to Oracle E-Business Suite at runtime.

What Application Version Does the Oracle E-Business Suite Adapter Support?

For information about which application version is supported by Oracle E-Business Suite Adapter, see the adapter certification matrix:

Oracle Integration Adapters Certification at: http://www.oracle.com/technetwork/middleware/adapters/documentation/index.html

Typical Task Flow for Using the Oracle E-Business Suite Adapter

The following table describes the typical task flow of using the Oracle E-Business Suite Adapter in Oracle Integration Cloud:

Task	Description	More Information
Prerequisites	Before using the Oracle E-Business Suite Adapter, you must perform setup tasks to ensure the appropriate user privileges and required features are in place and the Oracle E-Business Suite Adapter is ready for creating integrations in Oracle Integration Cloud.	Setting Up and Enabling Oracle E-Business Suite Adapter for Integrations, page 2-1

Task	Description	More Information
1	Create an Oracle E-Business Suite connection. Establish the connection between Oracle E-Business Suite and Oracle Integration Cloud through the Oracle E-Business Suite Adapter.	Creating an Oracle E-Business Suite Connection, page 4-1
2	Test the Oracle E-Business Suite connection. Ensure that you can successfully connect to the Oracle E-Business Suite instance you specified.	Testing an Oracle E-Business Suite Connection, page 4-6
3	Create the integration. Add the Oracle E-Business Suite Adapter as a trigger (source) or an invoke (target) connection while creating the integration.	• Creating Integrations, *Using Integrations in Oracle Integration Cloud* • Adding the Oracle E-Business Suite Adapter as a Trigger (Source) Connection, page 5-1 • Adding the Oracle E-Business Suite Adapter as an Invoke (Target) Connection, page 5-12
4	Create mappings between the source and target data structures in the integration. (Optional) Create lookups that map the different values used by those applications to identify the same type of object (such as gender codes or country codes).	Mapping Data and Creating Lookups, *Using Integrations in Oracle Integration Cloud*

Task	Description	More Information
5	Activate the integration. Once an integration is created with the required data mappings between the source and target connections, you can activate the integration to use it at runtime.	• Managing Integrations, *Using Integrations in Oracle Integration Cloud* • If an XML Gateway message is used in an integration, you must perform post activation steps to ensure the integration works properly. See: Post Activation Manual Steps for XML Gateway Messages as a Trigger, page 5-10
6	Monitor the integration on the dashboard.	Monitoring Integrations During Runtime, *Using Integrations in Oracle Integration Cloud*
7	Track payload fields in messages during runtime.	• Assigning Business Identifiers for Tracking Fields in Messages, Developing Integration Cloud chapter, *Using Integrations in Oracle Integration Cloud* • Managing Business Identifiers for Tracking Fields in Messages, Administering Integration Cloud chapter, *Using Integrations in Oracle Integration Cloud*

Task	Description	More Information
8	Manage errors at the integration level, connection level, or specific integration instance level.	• Managing Errors, Administering Oracle Integration Cloud chapter, *Using Integrations in Oracle Integration Cloud* • Error Messages, page B-1 - error messages while testing the connection and creating the integration with the Oracle E-Business Suite Adapter at the design time

To better understand how to use the Oracle E-Business Suite Adapter in an integration, see:

- Implementing Common Patterns Using the Oracle E-Business Suite Adapter, page 3-1

- Oracle E-Business Suite Adapter Samples, page 6-1

    - An Example of Using a Business Event as a Trigger (Source) in an Integration, page 6-1

    - An Example of Using an XML Gateway Message as a Trigger (Source) in an Integration, page 6-38

    - An Example of Using the Oracle E-Business Suite Adapter as an Invoke (Target) in an Integration, page 6-52

Additionally, refer to the following documents for more information about the Oracle E-Business Suite Adapter:

- *Oracle E-Business Suite Adapter in Oracle Integrated Cloud Frequently Asked Questions (FAQ)*, My Oracle Support Knowledge Document 2110687.1

- *Oracle Cloud Known Issues for Oracle Integration Cloud*

- *What's New for Oracle Integration Cloud*

2

Setting Up and Enabling the Oracle E-Business Suite Adapter for Integrations

Setup Overview

Before creating an Oracle E-Business Suite connection with the Oracle E-Business Suite Adapter, you must perform the setup tasks to ensure it works properly.

This chapter includes the following topics:

- Setup Tasks for Enabling the Oracle E-Business Suite Adapter, page 2-1

  If your Oracle E-Business Suite environment is TLS enabled, perform the setup tasks to enable TLS. See: Setup Tasks for a TLS-Enabled Oracle E-Business Suite Environment, page 2-5.

- Setup Tasks for Using the Oracle E-Business Suite Adapter as a Trigger (Source) Connection, page 2-6

If an XML Gateway message is used as a trigger (source) in an integration, you must perform additional post activation tasks once you activate the integration to ensure the message works properly in Oracle Integration Cloud. See: Post Activation Manual Steps for XML Gateway Messages as a Trigger, page 5-10.

Setup Tasks for Enabling the Oracle E-Business Suite Adapter

Perform the following steps to set up the Oracle E-Business Suite Adapter:

1. Configure Oracle E-Business Suite Integrated SOA Gateway REST services.

   Oracle E-Business Suite Integrated SOA Gateway is an essential component for the Oracle E-Business Suite Adapter in Oracle Integration Cloud. It is the path to access all Oracle E-Business Suite REST services that you can use in integrations in Oracle Integration Cloud.

If you have not configured Oracle E-Business Suite Integrated SOA Gateway, perform the setup and configuration steps as described in the following documents:

- For Oracle E-Business Suite 12.2

  Refer to Section B: Configuring Oracle E-Business Suite REST Services, *Installing Oracle E-Business Suite Integrated SOA Gateway, Release 12.2*, My Oracle Support Knowledge Document 1311068.1.

  Ensure that you apply the latest patches for REST services in Document 1311068.1.

- For Oracle E-Business Suite 12.1.3

  Ensure that you configure Oracle E-Business Suite Integrated SOA Gateway to enable the REST service features. If Oracle E-Business Suite Integrated SOA Gateway is not configured, follow the setup tasks as described in My Oracle Support Knowledge Document 556540.1 to configure Oracle E-Business Suite Integrated SOA Gateway Release 12.1.3.

  If Oracle E-Business Suite Integrated SOA Gateway is already configured in your instance, then apply these REST service patches in the sequence as described in My Oracle Support Knowledge Document 1998019.1 to enable the REST service features.

2. Configure access to Oracle E-Business Suite services.

   To access Oracle E-Business Suite services from Oracle Integration Cloud, Oracle E-Business Suite services must be accessible in either of the following ways:

   - These services are deployed in an environment set up in a DMZ (DeMilitarized Zone) configuration so that Oracle E-Business Suite REST services are publicly accessible through the Internet.

     For DMZ configuration instructions in Oracle E-Business Suite, see *Oracle E-Business Suite Release 12.2 Configuration in a DMZ*, My Oracle Support Knowledge Document 1375670.1.

   - If your Oracle E-Business Suite is not set up in a DMZ configuration, these services must be accessible through Oracle Integration Cloud agent framework.

     For information about agents, see *Using Integrations in Oracle Integration Cloud*.

     Please note that the on-premises agent should not be installed in an Oracle E-Business Suite instance. Instead, it should be installed in a separate machine.

3. Deploy the required REST services in Oracle E-Business Suite.

   To use Oracle E-Business Suite REST services for integrations, ensure that you have performed the following tasks:

   - Deploy the Metadata Provider/Integration Repository service

The Metadata Provider/Integration Repository service is an API that fetches a list of services available for integration. To integrate these Oracle E-Business Suite services, you must deploy the "Metadata Provider" API as a REST service.

You can search the "Metadata Provider" API from the Integration Repository, and then select the Metadata Provider API from the search results to display the interface details page.

Please note that you must enter "**provider**" as the service alias name for the Metadata Provider API and select the **GET** HTTP method check boxes for **ALL** the methods contained in the API before deploying it as a REST service.

> **Important:** If the Metadata Provider API is not deployed as a REST service with **GET** HTTP method and "**provider**" as the service alias, the Oracle E-Business Suite Adapter in Oracle Integration Cloud will not work as expected.

- Deploy the Event Manager service

    To use business events from Oracle E-Business Suite as a trigger (source) in an integration in Oracle Integration Cloud, you must deploy the Event Manager API as a REST service.

    Similar to the Metadata Provider service, you can search the "Event Manager" API from the Integration Repository, and then deploy it as a REST service. Before the deployment, you must enter "**subscription**" as the service alias name and select the **POST** HTTP method check boxes for **ALL** the methods contained in the API.

- Deploy business function related APIs as Oracle E-Business Suite REST services

    If you want to integrate or use Oracle E-Business Suite integration interfaces in Oracle Integration Cloud, you must first deploy these interface definitions as Oracle E-Business Suite REST services.

    For example, to process a sales order in Oracle E-Business Suite, you must deploy the Sales Order Service (OE_INBOUND_INT) API as a REST service first before you can use this deployed Sales Order Service REST service from Oracle Integration Cloud through the Oracle E-Business Suite Adapter.

For information on deploying REST services, see Deploying REST Web Services, Administering Native Integration Interfaces and Services chapter, *Oracle E-Business Suite Integrated SOA Gateway Implementation Guide*.

4. Grant the required user privileges.

    To use Oracle E-Business Suite REST services through the Oracle E-Business Suite Adapter in Oracle Integration Cloud, ensure that an Oracle E-Business Suite user has the privileges to:

- Access the Metadata Provider/Integration Repository service

  Allowing the access of the "Metadata Provider" API enables the user to browse Oracle E-Business Suite services in Oracle Integration Cloud through the Oracle E-Business Suite Adapter.

- Access the Event Manager service

  This enables the user to use business events as a trigger in Oracle Integration Cloud when adding the Oracle E-Business Suite Adapter as a trigger (source) in an integration.

- Access or execute desired Oracle E-Business Suite APIs and services

  To protect application data from unauthorized access or execution, you must grant the user the interface access privileges for the REST services provided through Oracle E-Business Suite Integrated SOA Gateway.

The Oracle E-Business Suite user credentials should be used to create an Oracle E-Business Suite connection in Oracle Integration Cloud. For example, if you plan to use an Oracle E-Business Suite user **hrmanager** from Oracle Integration Cloud to "create employee" in Oracle E-Business Suite, you need to:

- Create a security grant on all the methods contained in the Metadata Provider API to the **hrmanager** Oracle E-Business Suite user.

- Create a security grant on all the methods contained in the Event Manager API to the **hrmanager** Oracle E-Business Suite user.

- Create a security grant on the "Create Employee" method in the Employee API to the **hrmanager** Oracle E-Business Suite user.

- Use the **hrmanager** user credentials while creating an Oracle E-Business Suite connection in Oracle Integration Cloud.

At runtime, the username and password information provided through the Oracle E-Business Suite Adapter connection will be passed to Oracle E-Business Suite for user authentication for the service being invoked in an integration.

For information on creating security grants for REST services, see Managing Grants for Interfaces with Support for SOAP and REST Web Services, Administering Native Integration Interfaces and Services chapter, *Oracle E-Business Suite Integrated SOA Gateway Implementation Guide*.

For information on creating a connection with Oracle E-Business Suite Adapter, see: Creating an Oracle E-Business Suite Connection with Oracle E-Business Suite Adapter, page 4-1.

Setup Tasks for a TLS-Enabled Oracle E-Business Suite Environment

If your Oracle E-Business Suite instance is TLS enabled, to access the Oracle E-Business Suite instance in Oracle Integration Cloud, import additional certificates into Oracle Integration Cloud.

Perform the following setup tasks for your TLS-Enabled Oracle E-Business Suite environment:

1. Export the Oracle E-Business Suite Certificates.

   If Oracle E-Business Suite server certificate is not in the Oracle Integration Cloud trusted certificate list, perform the following steps to export the Oracle E-Business Suite certificates:

   1. Access the Oracle E-Business Suite instance with the HTTPS URL from a web browser.

   2. After the Oracle E-Business Suite page has been successfully loaded in a browser, use the following steps to export the certificates from your web browser menu:

      1. In Internet Explorer, select **Internet Options** from the **Tools** drop-down menu to open the Internet Options pop-up window.

      2. In the Content tab, click **Certificates**.

      3. In the Personal (or Other People) tab, select your certificates and click **Export**.

   3. You can export or save the certificates either in DER encoded binary X.509 (`. crt`) or in Base64 encoded. For example, the exported certificate is named as `rootCA.crt`.

   4. If the intermediate certificates mentioned in certificate chain is not present in the Oracle Integration Cloud trusted certificate list, you have to export the intermediate certificates in the sequence of `intCA1.crt`, `intCA2.crt`,... `intCAn.crt`.

2. Import the Oracle E-Business Suite Certificates to Oracle Integration Cloud.

   1. Log in to the Oracle Integration Cloud home page, select the **Designer** option from the navigation pane, and then **Integrations**.

   2. Click **Settings** and then **Certificates**.

   3. Click **Upload** at the top of the page.

4. In the Upload Certificate dialog box, select the certificate type as "Trust Certificate".

5. Enter a unique alias for the certificate.

6. Click **Browse** and then select the trust file (for example, `.cer` or `.crt`) to upload.

7. Click **Upload**.

    Please note that you need to import the root CA certificate first, and then followed by intermediate certificates in sequence.

Additionally, refer to the following documents for more information:

• For information on uploading certificates, see Managing Security Certificates subsection in Creating Connections chapter, *Using Integrations in Oracle Integration Cloud*.

• If your Oracle E-Business Suite environment is TLS enabled and if the Oracle E-Business Suite Adapter connection is configured to use the connectivity agent in Oracle Integration Cloud, you would have to import Oracle E-Business Suite certificates to the connectivity agent.

    See: Downloading and Installing the Agent, Downloading and Running the Connectivity Agent Installer subsection in Managing the Agent Group and the On-Premises Connectivity Agent chapter, *Using Integrations in Oracle Integration Cloud*.

Setup Tasks for Using the Oracle E-Business Suite Adapter as a Trigger (Source) Connection

To successfully use business events and XML Gateway messages as inbound integrations in Oracle Integration Cloud through the Oracle E-Business Suite Adapter, you must perform the following one-time setup tasks in Oracle E-Business Suite to enable the feature:

1. Store the Oracle Integration Cloud (OIC) user credentials in Oracle E-Business Suite FND vault.

    Execute the PL/SQL script `$FND_TOP/sql/afvltput.sql` from Oracle E-Business Suite backend to upload and store the user credentials in Oracle E-Business Suite FND vault.

    1. Connect to an Oracle E-Business Suite database:

        `sqlplus apps/apps_password`

    2. Execute the script to upload the IC username:

```
@$FND_TOP/sql/afvltput.sql FND REST_USERNAME <OIC Username>
```

Replace `<OIC Username>` with the username used to log in to Oracle Integration Cloud, such as `oicuser`.

Ensure that this IC user has a necessary Oracle Integration Cloud user role to execute integrations in Oracle Integration Cloud.

3. Execute the script to upload the associated OIC password:

```
@$FND_TOP/sql/afvltput.sql FND REST_PASSWORD OIC_Password
```

Replace `OIC_password` with the actual password value of the associated OIC username.

At runtime, the user credentials are retrieved from Oracle E-Business Suite FND vault and are embedded in the HTTP request along with business event data to Oracle Integration Cloud. It is included based on the HTTP Basic Authentication scheme. Oracle Integration Cloud then authenticates the user credentials based on the HTTP Basic Authentication method and accepts the business event data.

2. Configure proxy host and port for XML Gateway messages.

   1. Log in to Oracle E-Business Suite as a user who has the System Administrator responsibility.

      Select **Oracle Applications Manager** from the navigation menu. Navigate to the **Site Map**.

   2. Click **AutoConfig**.

   3. In the Context Files page, click the **Edit Parameters** icon for the Applications tier context file.

   4. In the Context File Parameters page, select the System tab.

      Expand the `oa_web_server` node and update the values for the following AutoConfig variables:

Name	Variable	Value
OXTAOutUseProxy	s_oxta_proxy	true
OXTAOutProxyHost	s_oxta_proxyhost	<proxy host>
OXTAOutProxyPort	s_oxta_proxyport	<proxy port>

      Save your work.

5. Run AutoConfig from the application tier.

    Refer to *Using AutoConfig to Manage System Configurations in Oracle E-Business Suite Release 12*, My Oracle Support Knowledge Document 387859.1.

    Refer to the *Oracle E-Business Suite Setup Guide Release 12.2* for information on changing AutoConfig variables and executing AutoConfig in the application tier.

3. Configure proxy host and port at Concurrent Manger Tier JVM.

   To access Oracle Integration Cloud from Oracle E-Business Suite on-premise which is behind the firewall, all outbound requests from Oracle E-Business Suite need to be routed through proxy host and port. Therefore, you need to configure and set up the proxy appropriately at the Concurrent Manger Tier JVM.

   1. Log in to Oracle E-Business Suite as a user who has the System Administrator responsibility.

      Select **Oracle Applications Manager** from the navigation menu. Navigate to the **Site Map**.

   2. Click **AutoConfig**.

   3. In the Context Files page, click the **Edit Parameters** icon for the Applications tier context file.

   4. In the Context File Parameters page, select the Environments tab. Expand the `oa_environments:adovars` node to locate the APPSJREOPTS (AutoConfig variable or OA_VAR "`s_appsjreopts`").

   5. Enter the following additional JVM parameters:

      ```
      -Dhttp.proxyHost=<http proxy host>
      -Dhttp.proxyPort=<http proxy port>
      -Dhttps.proxyHost=<ssl proxy host>
      -Dhttps.proxyPort=<ssl proxy port>
      ```

      Save your work.

   6. Run AutoConfig from the application tier.

      Refer to *Using AutoConfig to Manage System Configurations in Oracle E-Business Suite Release 12*, My Oracle Support Knowledge Document 387859.1.

      Refer to the *Oracle E-Business Suite Setup Guide Release 12.2* for information on changing AutoConfig variables and executing AutoConfig in the application tier.

4. Apply patches and configure the environment for communication over TLS 1.2.

1. Apply the following patches for your Oracle E-Business Suite environment.

   - For Oracle E-Business Suite 12.2, apply patch 22612527 with prerequisite patch 13866584 to the FMW home.

   - For Oracle E-Business Suite 12.1.3, apply patch 22612527 to the 10.1.3.5 home.

2. Update Java.

   Update JDK 7 under `$AF_JRE_TOP` with the Java Cryptography Extension (JCE) updates from the Oracle Technology Network page (http://www.oracle.com/technetwork/java/javase/downloads/jce-7-download-432124.html). If you have a JAN-2016 Java version that already includes JCE, you can skip this step.

   > **Note:** `JDK 1.7.0_131` and `JDK 1.6.0_141` are minimum required versions for JDK 7 and JDK 6 respectively in Oracle E-Business Suite. For AIX platform, minimum required versions are `JDK 1.7 SR10 FP1` and `JDK 6 SR16 FP45` respectively.

3. Update the Oracle E-Business Suite context variables using Oracle Applications Manager.

   1. Log in to Oracle E-Business Suite as a user who has the **Workflow Administrator Web Applications** responsibility.

   2. Select the **Oracle Applications Manager** link from the Navigator, and then select **AutoConfig**.

   3. Select the application tier context file, and choose **Edit Parameters**.

   4. Update the following context variables:

      - `s_afjsmarg =-Dhttps.protocols=TLSv1,TLSv1.1,TLSv1.2 or -Dhttps.protocols=TLSv1.2`

        - To enable TLS 1.2 with backward compatibility, add the following:

          ```
          s_afjsmarg = -Dhttps.protocols=TLSv1,TLSv1.1,
          TLSv1.2
          ```

        - To enable TLS 1.2 only, add the following:

          ```
          s_afjsmarg = -Dhttps.protocols=TLSv1.2
          ```

4. Run AutoConfig using the `adautocfg.sh` script in the application tier `$ADMIN_SCRIPTS_HOME` directory.

5. Use the `adstpall.sh/adstrtal.sh` script in the `$ADMIN_SCRIPTS_HOME` directory to stop and restart all services.

5. (Optional) Import the TLS certificates to `cacerts` in Oracle E-Business Suite.

This step is required only if Oracle Integration Cloud server certificate is not in the Oracle E-Business Suite trusted certificate list.

Exporting the Oracle Integration Cloud Certificates

Perform the following steps to export the Oracle Integration Cloud certificates:

1. Access the Oracle Integration Cloud instance with the HTTPS URL from a web browser.

2. After the Oracle Integration Cloud UI page has been successfully loaded in a browser, double click the **Lock** icon in the bottom right corner of the browser and export the certificates.

> **Note:** Different browser versions may have different steps to export the TLS certificates.

   - In Internet Explorer, double click the **Lock** icon, then select **Certificate Path**. Select the topmost CA and click **View Certificate**. Then select **Details**, and then **Copy to File**.

   - In Mozilla Firefox, double click the **Lock** icon and then select **More Information** next to IC's secure connection information. Select the Security tab in Page Info pop-up window. Click **View Certificate** and then the Details tab. Select the topmost CA and then click **Export**.

   Alternatively, you can use the browser menu to export the certificates using the following steps:

   1. In Internet Explorer, select **Internet Options** from the **Tools** drop-down menu to open the Internet Options pop-up window.

   2. In the Content tab, click **Certificates**.

   3. In the Personal (or Other People) tab, select your certificates and click **Export**.

3. You can export or save the certificates either in DER encoded binary X.509 (`.crt`) or in Base64 encoded. For example, the exported certificate is named as `rootCA.crt`.

4. If the intermediate certificates mentioned in certificate chain is not present in the Oracle E-Business Suite trusted certificate list, you have to export the

intermediate certificates in the sequence of `intCA1.crt, intCA2.crt,...`
`intCAn.crt.`

Importing the Oracle Integration Cloud Certificates to Oracle E-Business Suite

Perform the following steps to import the Oracle Integration Cloud certificates to
Oracle E-Business Suite:

1. Navigate to the `$AF_JRE_TOP/lib/security` directory.

2. Back up the existing `cacerts` file.

3. Copy the Oracle Integration Cloud server's root certificate `rootCA.crt`
   imported earlier to the `security` directory.

4. Execute the following command to ensure that `cacerts` has the **write**
   permissions:

   ```
   $ chmod u+w cacerts
   ```

5. Add the server's root certificate `rootCA.crt` to the `cacerts` file:

   ```
   $ keytool -importcert -keystore cacerts -storepass -alias
   rootCA -file rootCA.crt -v
   ```

   Enter the keystore password when prompted. If the certificate already exists in
   the `cacerts` file, *keytool* will warn you and will allow you to cancel the import.
   Cancel the import.

   > **Note:** If the intermediate certificates need to be imported to the
   > `cacerts` file, import them in the following sequence after
   > importing the root certificate `rootCA.crt`:
   >
   > ```
   > $ keytool -importcert -keystore cacerts -storepass -
   > alias intCA1 -file intCA1.crt -v
   > $ keytool -importcert -keystore cacerts -storepass -
   > alias intCA1 -file intCA2.crt -v
   >  ...
   > $ keytool -importcert -keystore cacerts -storepass -
   > alias intCA1 -file intCAn.crt -v
   > ```

6. When you have completed the modifications to the `cacerts` file, reset the
   permissions:

   ```
   $ chmod u-w cacerts
   ```

7. Restart Oracle E-Business Suite application tier services. Use the `adstpall.sh`
   and `adstrtal.sh` scripts in the $ADMIN_SCRIPTS_HOME directory to stop
   and restart all services.

3

Implementing Common Patterns Using the Oracle E-Business Suite Adapter

Overview

The Oracle E-Business Suite Adapter supports both inbound and outbound integrations in Oracle Integration Cloud. You can use the Oracle E-Business Suite Adapter as a trigger or as an invoke connection in an integration.

When adding the Oracle E-Business Suite Adapter as a trigger (source) connection, you can use a business event or an XML Gateway message to trigger an inbound integration in Oracle Integration Cloud.

- Using Oracle E-Business Suite Business Events to Trigger Integration Endpoint in Oracle Integration Cloud, page 3-2

- Using Oracle E-Business Suite XML Gateway Messages to Trigger Integration Endpoint in Oracle Integration Cloud, page 3-2

When adding the Oracle E-Business Suite Adapter as an invoke (target) connection, you can use an Oracle E-Business Suite REST service to invoke an outbound integration from Oracle Integration Cloud. The available interface types that support this integration pattern are PL/SQL and Concurrent Program.

- Invoking Oracle E-Business Suite PL/SQL APIs from Oracle Integration Cloud, page 3-3

- Invoking Oracle E-Business Suite Concurrent Programs from Oracle Integration Cloud, page 3-4

Using Oracle E-Business Suite Business Events to Trigger Integration Endpoint in Oracle Integration Cloud

A business event is an occurrence in Oracle E-Business Suite that may trigger the next business process or action. An example of a business event can be a purchase order status change which may trigger an notification to be sent to the parties who have subscribed to the event. Oracle E-Business Suite provides various business events for use in integrations. To leverage the business event and event subscription features, you can configure the Oracle E-Business Suite Adapter with business events to invoke an integration endpoint in Oracle Integration Cloud.

You can locate a desired business event based on selected product family and product for your integration. When the selected business event is raised in Oracle E-Business Suite at runtime, the Oracle E-Business Suite Adapter will propagate the event information from Oracle E-Business Suite to Oracle Integration Cloud to trigger the integration.

> **Important:** Before adding the Oracle E-Business Suite Adapter as a trigger (source) connection for an inbound integration in Oracle Integration Cloud, ensure that you have performed the required setup tasks to enable this feature. See Setup Tasks for Using the Oracle E-Business Suite Adapter as a Trigger (Source) Connection, page 2-6.

- For instructions on using business events to trigger an integration in Oracle Integration Cloud, see Configuring an Oracle E-Business Suite Business Event in an Integration, page 5-4.

- For an integration example of configuring the Oracle E-Business Suite Adapter with a business event, see An Example of Using a Business Event as a Trigger (Source) in an Integration, page 6-1.

- For information about error messages if occur while adding the Oracle E-Business Suite Adapter as a trigger (source) connection in an integration, see Error Messages While Creating an Integration with Oracle E-Business Suite Adapter as a Trigger (Source) Connection, page B-4.

Using Oracle E-Business Suite XML Gateway Messages to Trigger Integration Endpoint in Oracle Integration Cloud

Oracle E-Business Suite provides various XML Gateway interfaces for use in integrations with trading partners and third party applications. By leveraging these XML Gateway interfaces and messages, Oracle E-Business Suite Adapter can be configured to support an easy integration between Oracle E-Business Suite and Oracle Integration Cloud through standard-based XML messaging. This integration pattern is

an ideal solution when you need to interact with third party applications that use open standards. Moreover, it is also suitable for scenarios where trading partners change frequently.

Similar to business events, you can use outbound XML Gateway messages from Oracle E-Business Suite to trigger inbound integrations in Oracle Integration Cloud when adding the Oracle E-Business Suite Adapter as trigger (source) connections.

When an XML Gateway outbound transaction occurs in Oracle E-Business Suite at runtime, this message is enqueued to the ECX_OUTBOUND queue as an existing XML Gateway processing. Oracle Transport Agent (OTA) from Oracle XML Gateway will fetch the message from the queue and post it to Oracle Integration Cloud.

> **Note:** You can define custom XML Gateway message maps to meet your needs if required.

> **Important:** Before adding the Oracle E-Business Suite Adapter as a trigger (source) connection for an inbound integration in Oracle Integration Cloud, ensure that you have performed the required setup tasks to enable this feature. See: Setup Tasks for Using the Oracle E-Business Suite Adapter as a Trigger (Source) Connection, page 2-6.
>
> After you create and activate the integration with XML Gateway messages, you must perform the post activation steps for the selected XML Gateway map to be successfully used in Oracle Integration Cloud. See: Post Activation Manual Steps for XML Gateway Messages as a Trigger, page 5-10.

• For information on configuring the Oracle E-Business Suite Adapter with XML Gateway maps, see Configuring an Oracle E-Business Suite XML Gateway Message in an Integration, page 5-6.

• For more information on using XML Gateway messages in integrations, see An Example of Using an XML Gateway Message as a Trigger (Source) in an Integration, page 6-38.

• For information about error messages if occur while adding the Oracle E-Business Suite Adapter as a trigger (source) connection in an integration, see Error Messages While Creating an Integration with Oracle E-Business Suite Adapter as a Trigger (Source) Connection, page B-4.

Invoking Oracle E-Business Suite PL/SQL APIs from Oracle Integration Cloud

Oracle E-Business Suite contains numerous interface integration endpoints which can

be exposed as REST services through Oracle E-Business Suite Integrated SOA Gateway. To leverage and use these Oracle E-Business Suite REST services to access Oracle E-Business Suite application data, you need to configure the Oracle E-Business Suite Adapter as invoke (target) connections.

PL/SQL REST services are one of the available interfaces for use in outbound integrations from Oracle Integration Cloud. In response to a request in an integration, a PL/SQL REST service can be invoked to access or update Oracle E-Business Suite application data to fulfill the integration needs.

> **Note:** In addition to Oracle seeded PL/SQL APIs, you can use custom PL/SQL APIs or REST services for your integration needs.

- For information on configuring the Oracle E-Business Suite Adapter with PL/SQL REST services, see Adding the Oracle E-Business Suite Adapter as an Invoke (Target) Connection, page 5-12.

- For an integration example of using PL/SQL REST services, see An Example of Using a PL/SQL REST Service as an Invoke (Target) Connection in an Integration, page 6-52.

- For information about error messages if occur while creating an integration with the Oracle E-Business Suite Adapter as an invoke (target) connection in Oracle Integration Cloud, see Error Messages While Creating an Integration with the Oracle E-Business Suite Adapter as an Invoke (Target) Connection, page B-5.

Invoking Oracle E-Business Suite Concurrent Programs from Oracle Integration Cloud

In addition to using PL/SQL REST services as explained earlier, you can access and update Oracle E-Business Suite data through the use of concurrent program REST services.

A concurrent program runs as a concurrent process that executes multiple programs running in the background. To leverage the functionality provided by concurrent programs for Oracle E-Business Suite applications, you can configure the Oracle E-Business Suite Adapter to invoke a desired concurrent program REST service as an outbound integration from Oracle Integration Cloud.

> **Note:** Similar to PL/SQL APIs, you can define and use custom concurrent programs in integrations in Oracle Integration Cloud.

- For more information on configuring the Oracle E-Business Suite Adapter with concurrent program REST services, see Adding the Oracle E-Business Suite Adapter as an Invoke (Target) Connection, page 5-12.

- For information about error messages if occur while creating an integration with the Oracle E-Business Suite Adapter as an invoke (target) connection in Oracle Integration Cloud, see Error Messages While Creating an Integration with the Oracle E-Business Suite Adapter as an Invoke (Target) Connection, page B-5.

4

Creating an Oracle E-Business Suite Connection

Overview

This chapter includes the following topics:

- Creating an Oracle E-Business Suite Connection with Oracle E-Business Suite Adapter, page 4-1

- Testing an Oracle E-Business Suite Connection, page 4-6

Please note that you can modify, delete, or clone the connection if needed after creating or testing a connection. See Creating Connections, Developing Integrations with Oracle Integration Cloud chapter, *Using Integrations in Oracle Integration Cloud*.

Creating an Oracle E-Business Suite Connection with Oracle E-Business Suite Adapter

Prerequisites

Before establishing an Oracle E-Business Suite connection using the Oracle E-Business Suite Adapter in Oracle Integration Cloud, you must complete the required setup tasks and apply the latest patches for enabling the Oracle E-Business Suite REST services provided through Oracle E-Business Suite Integrated SOA Gateway.

For setup information, see Setting Up the Oracle E-Business Suite Adapter, page 2-1.

Creating an Oracle E-Business Suite Connection with the Oracle E-Business Suite Adapter

Once you have successfully logged in to Oracle Integration Cloud through a web browser, the home page appears.

1. In the Oracle Integration Cloud home page, select the **Designer** option from the navigation pane, and then **Connections**.

2. On the Connections page, click **Create**.

3. In the Create Connection - Select Adapter dialog appears.

   You can locate the Oracle E-Business Suite Adapter in either of the following ways:

   - Scroll down and select "Oracle E-Business Suite" from the dialog.

   Create Connection - Select Adapter Dialog
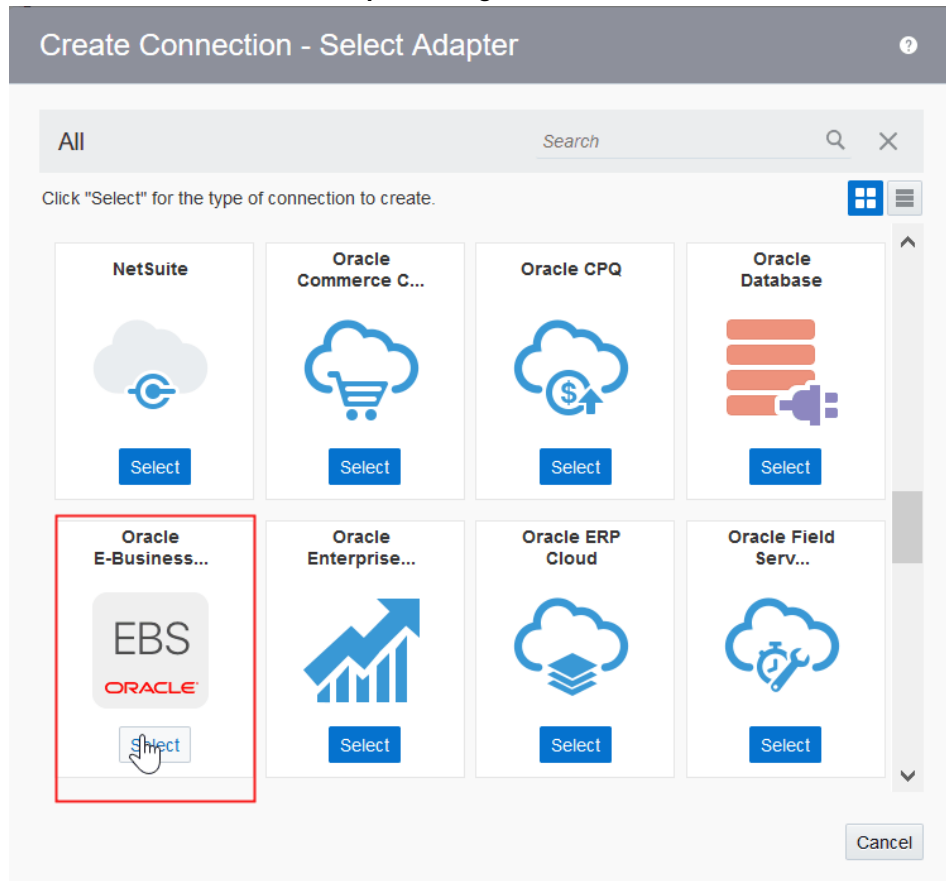
   - Use the search feature to enter a full or partial name to locate "Oracle E-Business Suite" from the dialog.
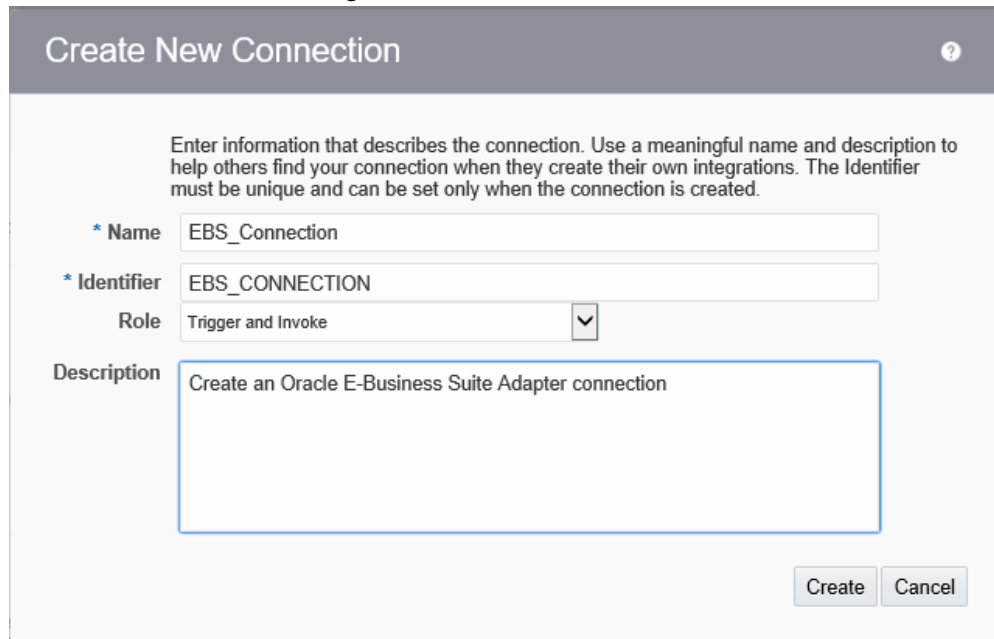
Searching Oracle E-Business Suite Adapter in the Create Connection - Select Adapter Dialog
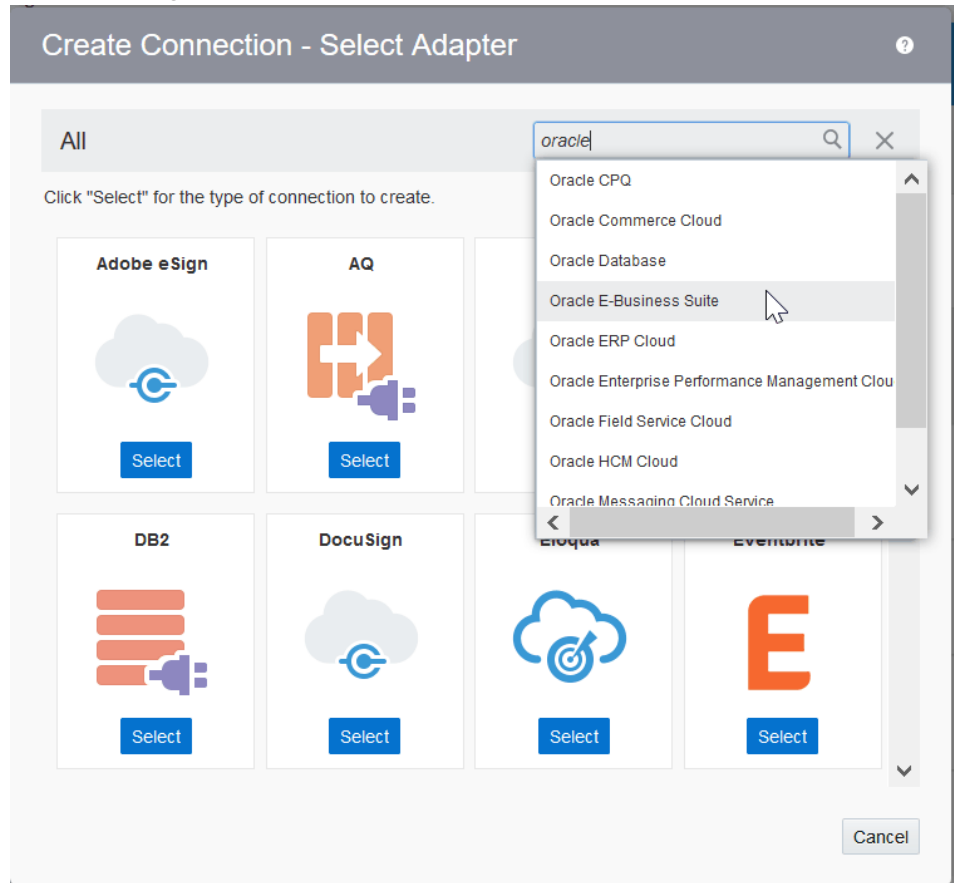
Click the **Select** button for "Oracle E-Business Suite" to use the Oracle E-Business Suite Adapter. The Create New Connection dialog appears.

4. Enter the following information for your connection:

Create New Connection Dialog

Click **Create** to create the connection.

- **Connection Name:** Specify a unique name for your connection, such as EBS_Connection.

- **Identifier:** Enter a unique identifier for your Oracle E-Business Suite connection. You can also accept the default value, such as EBS_CONNNECTION.

- **Connection Role:** Specify either one of the following roles for your connection:

  - **Trigger:** This indicates this connection can only be added as a trigger (source) in an integration.

  - **Invoke:** This indicates this connection can only be added as an invoke (target) in an integration.

  - **Trigger and Invoke:** This indicates this connection can be added as a trigger (source) or an invoke (target) in an integration.

- **Description:** Enter description information for your connection, such as "Create an Oracle E-Business Suite Adapter connection".

5. Enter additional connection details by specifying the following information:

- Email Address: Enter an administrator's email address to receive notifications if problems or changes occur in this connection.

- Connection Properties: Click **Configure Connectivity** to open the Connection Properties dialog where you enter a URL (`http://<ebs host name>: <port>`) to connect to an Oracle E-Business Suite instance.

  Please note that this URL address is where the Oracle E-Business Suite services are deployed and can be publicly accessible either through DMZ configuration or the Oracle Integration Cloud agent framework. See the step about configuring the access to Oracle E-Business Suite services, as described in Setting Up the Oracle E-Business Suite Adapter, page 2-1.

  Connection Properties Dialog

  Click **OK** to save your work.

- Security: Click **Configure Security** to open the Credentials dialog. Specify security policy, username, and password information to access the Oracle E-Business Suite instance you specified earlier in the Connection Properties dialog.

  The username specified here should be granted the privileges to access and execute the Oracle E-Business Suite APIs and services. See the step about granting the required user privileges, as described in Setup Tasks for Enabling the Oracle E-Business Suite Adapter, page 2-1.

  > **Note:** HTTP Basic Authentication is the only security policy supported in this release.

Credentials Dialog

Click **OK** to save your work.

- Agent Group: Click **Configure Agents** to display the Select an Agent group dialog. A list of available agent groups is automatically populated for your selection.

  Select a desired agent group, such as "EBS", and click **Use** to enable the selection.

  The selected agent group serves as a channel for communication between Oracle E-Business Suite and Oracle Integration Cloud.

  For information about agents, refer to *Using Integrations in Oracle Integration Cloud*.

  After you specify the required connection information, the "EBS_Connection" connection detail page appears.

6. Click **Save** to save your connection.

Testing an Oracle E-Business Suite Connection

After creating an Oracle E-Business Suite connection with Oracle E-Business Suite Adapter, you can test the connection by clicking **Test** to test the availability of the Oracle E-Business Suite instance you entered earlier.

Once you have successfully tested and established the connection to the Oracle E-Business Suite instance, a list of serviceable APIs or interfaces (such as XML Gateway maps or business events) from Oracle E-Business Suite licensed products and product families will be imported from the connected instance to Oracle Integration Cloud.

For information about error messages if occur while testing the connection, see Error

Messages for Testing the Oracle E-Business Suite Connection, page B-1.

5

Adding the Oracle E-Business Suite Adapter Connection to an Integration

Overview

When you drag the Oracle E-Business Suite Adapter into the trigger or invoke area of an integration, the Adapter Endpoint Configuration Wizard appears. This wizard guides you through configuration of Oracle E-Business Suite Adapter endpoint properties.

The following sections describe the wizard pages that guide you through configuration of the Oracle E-Business Suite Adapter as a trigger or an invoke in an integration.

- Adding the Oracle E-Business Suite Adapter as a Trigger (Source) Connection, page 5-1

  - Configuring an Oracle E-Business Suite Business Event in an Integration, page 5-4

  - Configuring an Oracle E-Business Suite XML Gateway Message in an Integration, page 5-6

- Adding the Oracle E-Business Suite Adapter as an Invoke (Target) Connection, page 5-12

Adding the Oracle E-Business Suite Adapter as a Trigger (Source) Connection

When you use the Oracle E-Business Suite Adapter as a trigger in an integration, you can have an option to use either a business event or an XML Gateway message as an inbound integration in Oracle Integration Cloud.

> **Important:** Before adding the Oracle E-Business Suite Adapter as a trigger (source) connection for an inbound integration, ensure that you have performed the required setup tasks to enable this feature. See Setup Tasks for Using the Oracle E-Business Suite Adapter as a Trigger (Source) Connection, page 2-6.

For information about error messages if occur while adding the Oracle E-Business Suite Adapter as a trigger (source) connection in an integration, see Error Messages While Creating an Integration with Oracle E-Business Suite Adapter as a Trigger (Source) Connection, page B-4.

Perform the following steps to add the Oracle E-Business Suite Adapter as a trigger (source) connection in your integration:

1. In the Integration Designer, drag **Oracle E-Business Suite** from the Connections panel on the right to the Trigger (Source) area on the canvas.

   The Configure Oracle E-Business Suite Adapter Endpoint wizard appears.

2. In the Basic Info page, enter the following information for the Oracle E-Business Suite Adapter Endpoint that you are creating:

Configure Oracle E-Business Suite Adapter Endpoint - Basic Information Page

- **What do you want to call your endpoint?** - Provide a meaningful name so that others can understand the responsibilities of this connection, such as "EBS_Source_event" or "EBS_Source_XML".

- **What does this endpoint do?** - Enter an optional description of the connection's responsibilities, such as "Raise a business event" or "Use XML Gateway message".

- **What do you want to configure the endpoint for?** - Select either one of the interface types that you want to configure in your integration:

  - **Business Event**

    To configure the endpoint for business events, see: Configuring an Oracle E-Business Suite Business Event in an Integration, page 5-4.

  - **XML Gateway Map**

    To configure the endpoint for XML Gateway message maps, see: Configuring an Oracle E-Business Suite XML Gateway Message in an Integration, page 5-6.

Click **Next** to proceed with the rest of the configuration for your integration.

Configuring an Oracle E-Business Suite Business Event in an Integration

Publishing Business Events from Oracle E-Business Suite to Oracle Integration Cloud

When **Business Event** is selected in the Basic Info page in an integration, you need to specify a desired business event in the Business Events page.

When a business event is raised in Oracle E-Business Suite at runtime, the Oracle E-Business Suite Adapter will propagate the event information from Oracle E-Business Suite to Oracle Integration Cloud.

Perform the following steps to configure a business event in an integration:

1. After adding the Oracle E-Business Suite Adapter as a trigger (source) connection in an integration, select **Business Event** in the Basic Info page.

   See: Adding the Oracle E-Business Suite Adapter as a Trigger (Source) Connection, page 5-1.

2. In the Business Events page, specify the following information:

   • **Product Family:** Select a desired Oracle E-Business Suite application family that you want to use for your integration, for example, Applications Technology.

   The available Oracle E-Business Suite application families from the drop-down list are based on the Oracle E-Business Suite instance you are connecting.

   • **Product:** Select a desired product name available from the selected product family, for example, XML Gateway.

   Once you select a desired product, a list of business events including Oracle seeded events and custom ones contained in the selected product is populated for further selection.

   > **Note:** You can define custom business events to meet your needs if required, annotate the custom events, and then upload them to the Integration Repository. Additionally, make sure that these custom events are enabled (with "Enabled" event status) in Oracle Workflow Business Event System with the **Workflow Administrator Web Applications** responsibility. To use these custom events for integrations, you need to log in to Oracle Integration Cloud and locate the Oracle E-Business Suite connection you plan to use for integrations. Click the **Actions** menu icon and then select **Refresh Metadata**.
   >
   > For information on creating custom business events, see Creating Custom Integration Interfaces, Creating and Using Custom Integration Interfaces chapter, *Oracle E-Business Suite*

Integrated SOA Gateway Developer's Guide.

For information on uploading custom interfaces to Oracle Integration Repository resided in Oracle E-Business Suite Integrated SOA Gateway, see Generating and Uploading iLDT Files, and Uploading ILDT Files to Integration Repository, *Oracle E-Business Suite Integrated SOA Gateway Implementation Guide.*

- **Business Event:** Locate a desired business event through either of the following ways:

  - Select a desired event name from the drop-down list. For example, select "CLN: Event for Notification Processing".

Configure Oracle E-Business Suite Adapter Endpoint - Business Events Page

- Use the **Filter by name** field to find your desired event. For example, enter "CLN" in this field to find the event names starting with "CLN".

Configure Oracle E-Business Suite Adapter Endpoint - Business Events Page to Locate an Event

After you select a business event, the corresponding event information is automatically populated in this page. This includes the event internal name (`oracle.apps.cln.np.processnotification`) and its description information.

Click **Next**.

3. The Summary page appears with the selected business event information.

   The Oracle E-Business Suite Adapter Source Endpoint configuration is successfully created with the selected event.

   Click **Done**.

   The connection for Oracle E-Businses Suite now appears in the Trigger (Source) area on the canvas.

For more information on using business events in integrations, see An Example of Using a Business Event as a Trigger (Source) in an Integration, page 6-1.

Configuring an Oracle E-Business Suite XML Gateway Message in an Integration

When **XML Gateway Map** is selected in the Basic Info page in an integration, you need to specify a desired XML Gateway message in the XML Gateway Message page.

When an XML Gateway outbound transaction occurs in Oracle E-Business Suite at runtime, this message will be enqueued to the ECX_OUTBOUND queue as an existing XML Gateway processing. Oracle Transport Agent (OTA) from Oracle XML Gateway will fetch the message from the queue and post it to Oracle Integration Cloud.

Perform the following steps to configure an XML Gateway message in an integration:

1. After adding the Oracle E-Business Suite Adapter as a trigger (source) connection in an integration, select **XML Gateway Map** in the Basic Info page.

   See: Adding the Oracle E-Business Suite Adapter as a Trigger (Source) Connection, page 5-1.

2. In the XML Gateway Message page, specify the following information for your source connection:

   • **Product Family:** Select a desired Oracle E-Business Suite application family that you want to use for your integration, for example, Service Suite.

     The available Oracle E-Business Suite application families from the drop-down list are based on the Oracle E-Business Suite instance you are connecting.

   • **Product:** Select a desired product name available from the selected product family, for example, Telecommunications Billing Integrator.

     Once you select a desired product, a list of XML Gateway message maps including Oracle seeded message maps and custom ones contained in the selected product is populated for further selection.

     > **Note:** You can define custom XML Gateway message maps to meet your needs if required, annotate the custom message maps, and then upload them to the Integration Repository.
     >
     > For information on creating custom XML Gateway messages, see XML Gateway Annotations, Integration Repository Annotation Standards, *Oracle E-Business Suite Integrated SOA Gateway Developer's Guide*.
     >
     > For information on uploading custom interfaces to Oracle Integration Repository resided in Oracle E-Business Suite Integrated SOA Gateway, see Generating and Uploading iLDT Files, and Uploading ILDT Files to Integration Repository, *Oracle E-Business Suite Integrated SOA Gateway Implementation Guide*.

   • **XML Gateway Message:** Locate a desired message map through either of the following ways:

     • Select a desired message map name from the drop-down list. For example,

select "Add Salesorder".

Configure Oracle E-Business Suite Adapter Endpoint - XML Gateway Message Page

- Use the **Filter by name** field to find your desired map. For example, enter "add" in this field to find the message map names starting with "add".

Configure Oracle E-Business Suite Adapter Endpoint - XML Gateway Message Page to Locate an XML Gateway Message Map

After you select a desired message map, the corresponding information is automatically populated in this page. This includes the Integration Repository name (`XNB:SOO`), internal name (`XNB_OM_SALESORDER_OAG72_OUT`), integration standard (`OAG 7.2`) and the message map description.

Click **Next**.

3. The Summary page appears with the selected XML Gateway message information that you specified earlier. This includes the XML Gateway message name `XNB_OM_SALESORDER_OAG72_OUT` from the selected "Service Suite" product family and "Telecommunications Billing Integrator" product, as well as the "Request Only" interaction pattern.

Configure Oracle E-Business Suite Adapter Endpoint - Summary Page

The Oracle E-Business Suite Adapter Source Endpoint configuration is successfully created with the selected message map.

> **Important:** To successfully use the selected message map in Oracle Integration Cloud, you must perform required manual tasks after you activate the integration. These manual steps are included in the **Instructions** section as part of the Summary page. See: Post Activation Manual Steps for XML Gateway Messages as a Trigger, page 5-10.

4. Click **Done**.

The connection for Oracle E-Businses Suite now appears in the Trigger (Source) area on the canvas.

For more information on using XML Gateway messages in integrations, see An Example of Using an XML Gateway Message as a Trigger (Source) in an Integration, page 6-38.

Post Activation Manual Steps for XML Gateway Messages as a Trigger

After you create an integration with an XML Gateway message from Oracle E-Business

Suite in Oracle Integration Cloud, you must manually perform the following tasks:

1. Activate the integration.

2. Obtain the integration endpoint URL.

   In the Integrations page, click the Integration Details icon ("**i**") for a desired integration. The endpoint URL should be displayed in a pop-up window with the following format:

   ```
   https://<IC host>:
   <Port>/ic/api/integration/v1/flows/ebusiness/<integration>/1.
   0/metadata.
   ```

   The URL will be used later as the protocol address when configuring a trading partner in Oracle XML Gateway.

   > **Note:** `<integration>` indicates the alias name for a deployed REST service, such as "PROCESS_PO" in this sample.

3. Configure a desired trading partner in Oracle E-Business Suite by specifying the communication protocol and address as well as the user credentials for the XML message specified in an integration.

   1. Log in to Oracle E-Business Suite as a user (such as `sysadmin`) who has the XML Gateway responsibility.

   2. Select the XML Gateway responsibility and then select **Define Trading Partners** from the navigator. The Define Trading Partner Setup form appears.

   3. Search and locate a desired trading partner to be configured.

   4. In the Trading Partner Details region, add the following information for the trading partner:

      - Transaction Type: A desired transaction type for your XML Gateway message, such as PO

      - Transaction Subtype: A desired subtype for your XML Gateway message, such as PRO

      - Map: A desired XML Gateway message, such as `itg_process_po_007_out`

      - Connection/Hub: DIRECT

      - Protocol: HTTPS

      - Protocol address: `https://<IC host>:`

```
<Port>/ic/api/integration/v1/flows/ebusiness/<integratio
n>/1.0/
```

Enter the integration endpoint URL (without `metadata` at the end) you recorded earlier.

- Username: `<IC Username>`

  Enter the Oracle Integration Cloud user credentials used to execute integrations in Oracle Integration Cloud.

- Password: `<IC Password>`

Trading Partner Setup Page

5. Save your work.

For more information on setting up trading partners, see Trading Partner Setup, *Oracle XML Gateway User's Guide*.

Adding the Oracle E-Business Suite Adapter as an Invoke (Target) Connection

Perform the following steps to add the Oracle E-Business Suite Adapter as an invoke (target) connection in an integration:

1. In the Integration Designer, drag **Oracle E-Business Suite** from the Connections

panel on the right to the Invoke (Target) area on the canvas.

The Configure Oracle E-Business Suite Adapter Endpoint wizard appears.

2. **Entering Information in the Basic Info page**

   In the Basic Info page, enter the following information for the Oracle E-Business Suite Adapter target endpoint:

   - **What do you want to call your endpoint?** - Provide a meaningful name so that others can understand the responsibilities of this connection, such as "EBS_CreateOrder".

   - **What does this endpoint do?** - Enter an optional description of the connection's responsibilities, such as "Create a Sales Order in Oracle E-Business Suite".

   Configure Oracle E-Business Suite Adapter Endpoint - Basic Information Page

   Click **Next**.

3. **Selecting an Interface in the Web Services page**

   In the Web Services page, specify the following information for your target connection:

   - **Product Family:** Select a desired Oracle E-Business Suite application family that you want to use for your integration, for example, Order Management Suite.

     The available Oracle E-Business Suite application families from the drop-down list are based on the Oracle E-Business Suite instance you are connecting.

   - **Product:** Select a desired product name available from the selected product family, for example, Order Management.

     Once you select a desired product family and a product, a list of the supported interfaces including Oracle seeded and custom interfaces contained in the selected product is populated for further selection.

   - **API:** Select a desired interface through either of the following ways:

> **Note:** You can define custom PL/SQL APIs and concurrent programs to meet your needs if required, annotate the custom integration interfaces, and then upload them to the Integration Repository. You can deploy the custom PL/SQL APIs and concurrent programs as REST services from Oracle E-Business Suite Integrated SOA Gateway. These REST services will then be available to use for integrations in Oracle Integration Cloud.
>
> For information on creating custom PL/SQL APIs and concurrent programs, see Creating Custom Integration Interfaces, Creating and Using Custom Integration Interfaces chapter, *Oracle E-Business Suite Integrated SOA Gateway Developer's Guide*.
>
> For information on uploading custom interfaces to Oracle Integration Repository resided in Oracle E-Business Suite Integrated SOA Gateway, see Generating and Uploading iLDT Files, and Uploading ILDT Files to Integration Repository, *Oracle E-Business Suite Integrated SOA Gateway Implementation Guide*.

- Select a desired interface name from the drop-down list. For example, select the "Sales Order Services" PL/SQL API.

Configure Oracle E-Business Suite Adapter Endpoint - Web Services Page to Select a PL/SQL API

The corresponding interface information is automatically populated. This includes the interface internal name (OE_INBOUND_INT) and description.

> **Note:** Other than selecting a PL/SQL API, you can select a desired concurrent program in your integration. For example, select a concurrent program "Claim Settlement Fetcher Program" from the Marketing Suite product family and the Trade Management product.

Configure Oracle E-Business Suite Adapter Endpoint - Web Services Page to Select a Concurrent Program

- Use the **Filter by name** field to find your desired interface. For example, enter "sales" in this field to find the interface names starting with "sales".

  > **Note:** If one ore more methods contained in the selected interface are deployed as REST service operations, after you click **Next**, the Operations page appears.
  >
  > If none of the methods within the selected interface is deployed as a REST service operation, then an error message is shown instead, indicating that the associated REST service is not available. You must deploy the selected interface as a REST service in Oracle E-Business Suite first.
  >
  > After deploying the service, you need to log in to Oracle Integration Cloud and then locate the Oracle E-Business Suite connection you plan to use for integrations. From the **Actions** menu, click **Refresh Metadata**. You can then use the newly-deployed REST service for integrations in Oracle Integration Cloud.

Error for a Not Available API

Click **Next**.

4. **Configuring the Operations Page for the Selected Interface**

   In the Operations page, the selected interface internal name OE_INBOUND_INT is automatically populated.

   Specify the following information for your target connection:

   • **Methods**: Choose a desired method name contained in the selected interface for this target connection. For example, select "PROCESS_ORDER".

     > **Note:** The list of methods displayed for your selection corresponds to the "resource" element of the deployed interface's WADL description that you can view it through Oracle E-Business Suite Integrated SOA Gateway.

Configure Oracle E-Business Suite Adapter Endpoint - Operations Page

- If you select a concurrent program in your integration, such as "Claim Settlement Fetcher Program" as shown below, you can select "Process" in the Operations page.

Concurrent Program Method Selected in the Operations Page

Once the desired method is selected, its corresponding REST service status is displayed in the Service Status field.

- **Ready to Use**

  This indicates that the selected method is deployed as a REST service operation and it is ready to use in your integration.

- **Not Deployed**

  If the selected method is not deployed as a REST service operation, then "Not Deployed" is shown as the service status instead. A warning message also appears, indicating that you must deploy the method as a REST service operation first before using it in your integration.

Method with "Not Deployed" Service Status
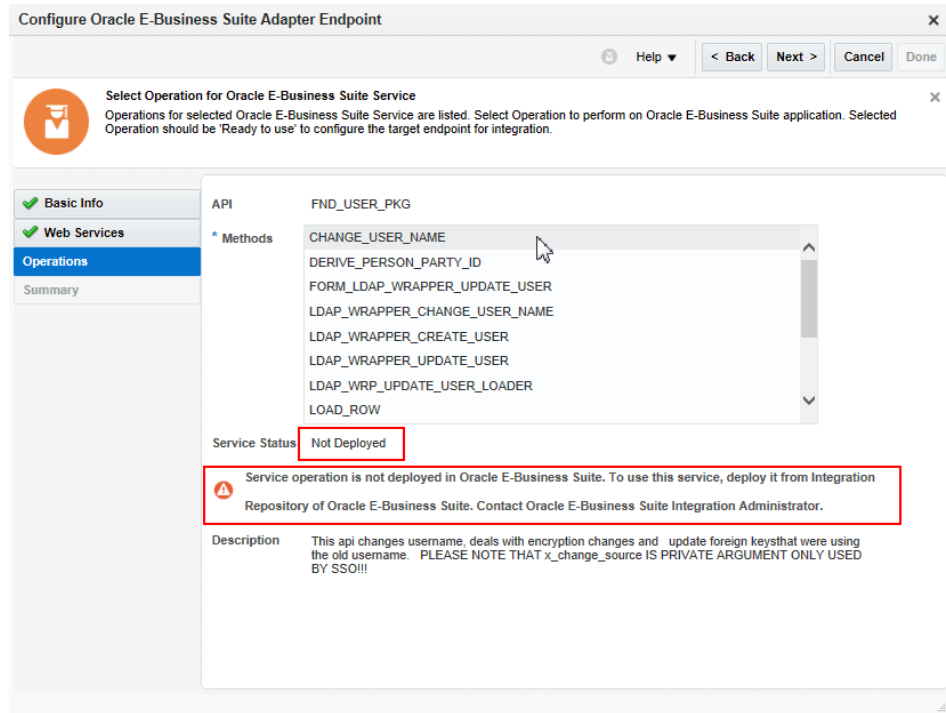
To deploy the selected method as a REST service operation, you need to log in to Oracle E-Business Suite as a user who has the Integration Administrator role. Select the **Integrated SOA Gateway** responsibility and the **Integration Repository** link from the navigation menu. Search and locate the selected interface from the Integration Repository, and then deploy it as a REST service. Only when the REST service is available in Oracle E-Business Suite, you can proceed and complete the process of adding Oracle E-Business Suite as an invoke (target) connection.

For information on deploying REST services, see Deploying REST Web Services, Administering Native Integration Interfaces and Services chapter, *Oracle E-Business Suite Integrated SOA Gateway Implementation Guide*.

Click **Next**.

5. The Summary page appears with the selected interface information. The Oracle E-Business Suite Adapter Target Endpoint configuration is successfully created.

Click **Done**.

The connection for Oracle E-Businses Suite now appears in the Invoke (Target) area on the canvas.

Once the Oracle E-Businses Suite invoke (target) connection is created, you can add an application adapter as a trigger (source) connection to complete your integration

creation. For information on adding a trigger (source) connection, see Developing Integrations with Oracle Integration Cloud, *Using Integrations in Oracle Integration Cloud*.

For information about error messages if occur while creating an integration with the Oracle E-Business Suite Adapter as an invoke (target) connection in Oracle Integration Cloud, see Error Messages While Creating an Integration with the Oracle E-Business Suite Adapter as an Invoke (Target) Connection, page B-5.

6

Oracle E-Business Suite Adapter Samples

Overview

This chapter incudes examples of using the Oracle E-Business Suite Adapter in an integration in Oracle Integration Cloud.

1. An Example of Using a Business Event as a Trigger (Source) in an Integration, page 6-1

2. An Example of Using an XML Gateway Message as a Trigger (Source) in an Integration, page 6-38

3. An Example of Using a PL/SQL REST Service as an Invoke (Target) Connection in an Integration, page 6-52

An Example of Using a Business Event as a Trigger (Source) in an Integration

Sample Business Scenario

A business event "Event for OIP status update notification" (`oracle.apps.ont.oip.statuschange.update`) is used in this example to explain using the Oracle E-Business Suite Adapter to trigger an integration in Oracle Integration Cloud.

In this example, when a sales order is booked as part of the business flow, Oracle Order Management raises the event `oracle.apps.ont.oip.statuschange.update`, and a draft invoice is created in Oracle Accounts Receivables.

At the design time, you need to create an integration called "Order to Invoice" with Oracle E-Business Suite Order Management as a trigger (source) connected through the Oracle E-Business Suite Adapter and Oracle E-Business Suite Accounts Receivables as an invoke (target) connected through a generic REST Adapter. The "Order to Invoice" integration will subscribe to this business event.

During the runtime, when the status of the sales order is changed in the order header, the business event `oracle.apps.ont.oip.statuschange.update` is raised in Oracle E-Business Suite Order Management which triggers the integration. If the status of the sales order is "Booked", the order details information is fetched from Oracle E-Business Suite Order Management. The Oracle E-Business Suite Adapter prepares and propagates the order details as event payload from Order Management to invoke the integration endpoint in Oracle Integration Cloud. As a result, the draft invoice is created in Oracle Accounts Receivables.

Assumption

- Assume that REST services are directly accessible from Oracle Integration Cloud; therefore, Oracle Integration Cloud Connectivity Agent is not used in this example.

- Oracle E-Business Suite Order Management and Oracle E-Business Suite Accounts Receivables are two different instances used in this example.

Using Business Events for Integrations in Oracle Integration Cloud

Based on the integration scenario, the following tasks are included in this section:

1. Preparing the Oracle E-Business Suite Instances, page 6-2

2. Establishing Oracle E-Businss Suite Connections, page 6-4

3. Creating an Integration, page 6-9

4. Adding the Oracle E-Business Suite Adapter (Trigger) and the REST Adapter (Invoke) to the Integration, page 6-11

5. Creating Mappings, page 6-24

6. Assigning Business Identifier for Tracking, page 6-34

7. Activating and Testing the Integration, page 6-34

Preparing the Oracle E-Business Suite Instances

Before adding Oracle E-Business Suite connections, you must prepare the following Oracle E-Business Suite instances to ensure the required setup or configuration is in place.

- Preparing the Order Management Instance, page 6-2

- Preparing the Oracle Accounts Receivables Instance, page 6-4

Preparing the Order Management Instance

Perform the following tasks to ensure the required setup and configuration for Oracle

E-Business Suite Order Management is ready for integrations in Oracle Integration Cloud:

1. Ensure that you perform the required setup tasks to enable the Oracle E-Business Suite Adapter.

   These tasks include configuring Oracle E-Business Suite REST services, configuring the access to these services, deploying required REST services in Oracle E-Business Suite, and granting the user privileges to these services.

   Specifically, ensure that you deploy the following REST services and have grants for the **operations** user:

   - Metadata Provider REST service

     - Deploy the Metadata Provider API with "**provider**" as the service alias name

     - Deploy the Metadata Provider API with **GET** HTTP method for **all** the methods contained in the API

     - Grant the access privileges for **all** the methods contained in the API to the **operations** user

   - Event Manager REST service

     - Deploy the Event Manager API with "**subscription**" as the service alias name

     - Deploy the Event Manager API with **POST** HTTP method for **all** the methods contained in the API

     - Grant the access privileges for **all** the methods contained in the API to the **operations** user

   For detailed instructions on these tasks, see: Setup Tasks for Enabling the Oracle E-Business Suite Adapter, page 2-1.

2. Ensure that you perform the required setup tasks to enable the inbound (trigger or source) integrations.

   These tasks include storing the Oracle Integration Cloud user credentials in Oracle E-Business Suite FND vault, setting up proxy URLs in Oracle E-Business Suite, and importing TLS certificates to Oracle E-Business Suite. For detailed instructions, see: Setup Tasks for Using the Oracle E-Business Suite Adapter as a Trigger (Source) Connection, page 2-6.

3. Deploy the Order Management API, OE_ORDER_PUB (Process Order), as a REST service and grant the method access privileges to the **operations** user.

In this example, only grant the "Get Order" method contained in the API to the **operations** user.

4. Ensure that the profile option "OM: Raise Status Change Business Event" is set to Yes.

Preparing the Oracle Accounts Receivables Instance

Perform the following tasks to ensure the required setup and configuration for Oracle E-Business Suite Accounts Receivables is ready to use in an integration in Oracle Integration Cloud:

1. Configure Oracle E-Business Suite Integrated SOA Gateway REST services.

   Follow the setup tasks as described in My Oracle Support Knowledge Document 556540.1 to configure Oracle E-Business Suite Integrated SOA Gateway Release 12.1.3 and apply the REST service patches to enable the REST service feature. For more information, see step 1, as described in Setup Tasks for Enabling the Oracle E-Business Suite Adapter, page 2-1.

2. Deploy the Invoice Creation API as a REST service with the following requirements and grant the desired method access privilege to the **operations** user:

   • Deploy the Invoice Creation API with "**invoice**" as the service alias name

   • Deploy the Invoice Creation API with **POST** HTTP method only for the "Create Single Invoice" method contained in the API

     > **Note:** PL/SQL APIs can be exposed as REST services only with POST HTTP method.

   • Grant the access privilege only for the Create Single Invoice method contained in the API to the **operations** user

   For information on deploying REST services, see Deploying REST Web Services, Administering Native Integration Interfaces and Services chapter, *Oracle E-Business Suite Integrated SOA Gateway Implementation Guide*.

   For information on creating security grants for REST services, see Managing Grants for Interfaces with Support for SOAP and REST Web Services, Administering Native Integration Interfaces and Services chapter, *Oracle E-Business Suite Integrated SOA Gateway Implementation Guide*.

Establishing Oracle E-Business Suite Connections

Before creating an integration, you need to establish the following connections that will be used later in this example:

Creating the Connection for Oracle E-Business Suite Order Management

This section describes how to create a connection for the Oracle E-Business Suite Order Management instance by using the Oracle E-Business Suite Adapter. This connection will be added later as a trigger (source) in an integration.

Perform the following steps to establish the connection for Oracle E-Businss Suite Order Management in Oracle Integration Cloud:

1. Log in to the Oracle Integration Cloud home page, select the **Designer** option from the navigation pane, and then **Connections**.

2. On the Connections page, click **Create**.

3. In the Create Connection - Select Adapter dialog appears.

   You can locate the Oracle E-Business Suite Adapter by entering a full or partial name to locate "Oracle E-Business Suite" from the dialog.

   For example, enter "Oracle E-Business Suite" in the Search field. The Oracle E-Business Suite Adapter is filtered from the list of adapters.

   Click the **Select** button for "Oracle E-Business Suite" to use the Oracle E-Business Suite Adapter. The Create New Connection dialog appears.

4. Enter the following information for the Oracle E-Business Suite Order Management connection:

   - **Connection Name:** Enter "Order Management".

   - **Identifier:** Accept the default populated identifier such as, ORDER_MANAGEMENT".

   - **Connection Role:** Select the "Trigger and Invoke" role for this connection.

   - **Description:** Enter "Create an Oracle E-Business Suite Order Management connection" as the description.

   Click **Create** to create the connection.

5. The Connection Details page is displayed for the "Order Management" connection you just created. Enter additional connection details by specifying the following information:

   - Email Address: Enter an administrator's email address to receive notifications if

problems or changes occur in this connection.

- Connection Properties: Click **Configure Connectivity** to open the Connection Properties dialog where you enter a URL (`http://<ebs host name>:<port>`) to connect to an Oracle E-Business Suite Order Management instance.

  Click **OK** to save your work.

- Security: Click **Configure Security** to open the Credentials dialog.

  Enter **operations** as the username and its associated password in the Credentials dialog to access the Oracle E-Business Suite Order Management instance you specified earlier in the Connection Properties dialog.

  Click **OK** to save your work.

After you specify the required connection information, the "Order Management" connection detail page appears.

6. Click **Test** to test the "Order Management" connection you just specified.

7. Click **Save** to save your connection.

   Click **Exit Connection**.

Oracle E-Business Suite connection "Order Management" appears in the Connections page.

Creating the Connection for Oracle E-Business Suite Accounts Receivables

As described earlier that Oracle E-Business Suite Order Management and Accounts Receivables are two different instances used in this example, you need to create a connection for the Oracle Accounts Receivables instance by using the REST Adapter. This connection will be added later as an invoke (target) to an integration.

1. Log in to the Oracle Integration Cloud home page, select the **Designer** option from the navigation pane, and then **Connections**.

2. On the Connections page, click **Create**.

3. In the Create Connection - Select Adapter dialog appears.

   Enter "REST" in the Search field. The REST Adapter is filtered from the list of adapters.

Create Connection - Select Adapter Dialog
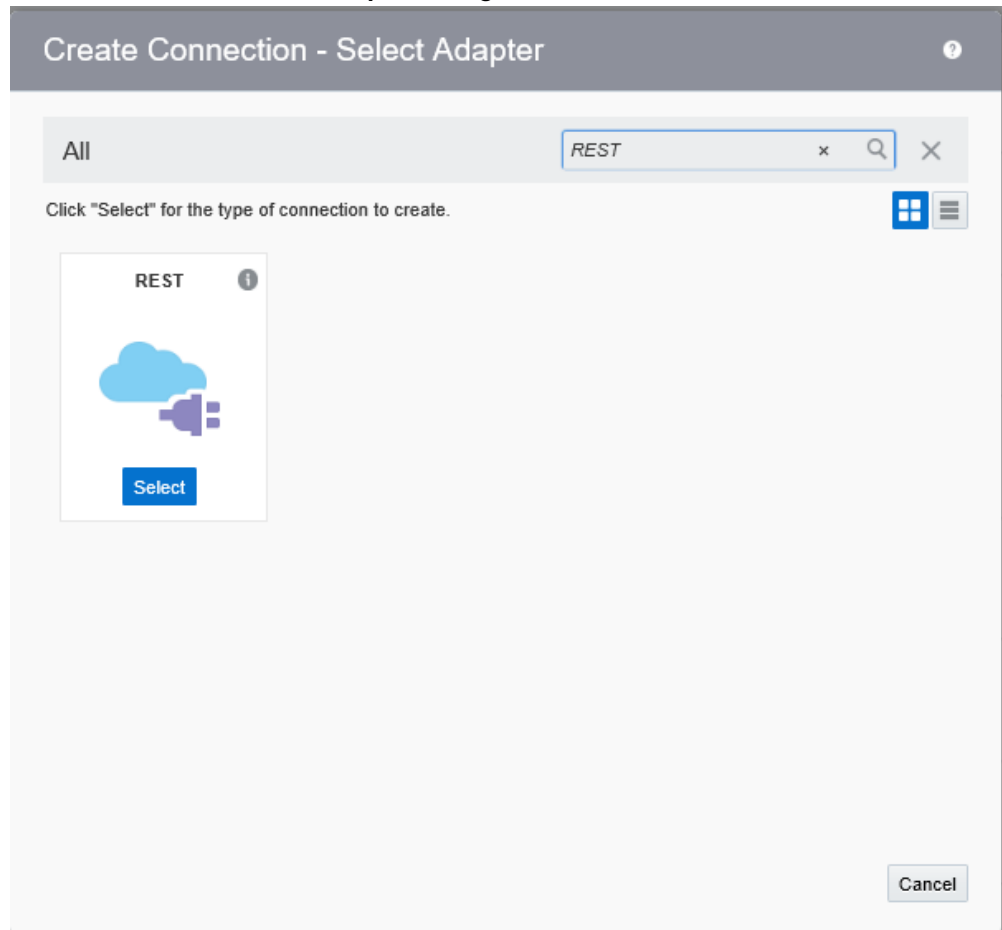
Click the **Select** button for "REST" to use the REST Adapter. The Create New
Connection dialog appears.

4. Enter the following information for the Oracle E-Business Suite Accounts
   Receivables connection:

   • **Connection Name:** Enter "Receivables" as the connection name.

   • **Identifier:** Accept the default populated identifier such as "RECEIVABLES".

   • **Connection Role:** Select the "Trigger and Invoke" role for this connection.

   • **Description:** Enter "Create a connection for Oracle E-Business Suite
     Receivables" as the description.

   Click **Create** to create the connection.

5. The Connection Details page is displayed for the "Receivables" connection you just

created. Enter additional connection details by specifying the following information:

- Email Address: Enter an administrator's email address to receive notifications if problems or changes occur in this connection.

- Click **Configure Connectivity** to open the Connection Properties dialog. Enter the following information:

  - **Connection Type:** Select "REST API Base URL".

  - **Connection URL:** Enter a connection URL (`http://<ebs host name>:<port>/webservices/rest/invoice`) for the Invoice Creation REST service with `invoice` alias name that you deployed earlier while preparing the Receivables instance.

    Click **OK** to save your work.

  - Security: Click **Configure Security** to open the Credentials dialog.

    Accept the "Basic Authentication" as the default security policy.

    Enter **operations** as the username and its associated password in the Credentials dialog to access the Invoice Creation REST service you specified earlier in the Connection Properties dialog.

Credentials Dialog

Credentials

You can configure the Security Policy for this connection. Please select the Security Policy.

Security Policy | Basic Authentication | ⌄

Your application/endpoint requires that users and services provide security credentials for access. Specify the login credentials below.

	Property Name	Property Value
* Username	operations	
* Password	••••••	
* Confirm Password	••••••	

OK   Cancel

Click **OK** to save your work.

6. Click **Test** to test the connection you just specified for Oracle E-Business Suite Accounts Receivables.

7. Click **Save** to save your connection.

    Click **Exit Connection**

Oracle E-Business Suite connection "Receivables" now appears in the Connections page.

Creating an Integration

Based on the business scenario described earlier, you need to create an integration called "Order to Invoice" with the Orchestration pattern. This pattern allows you to orchestrate trigger, invoke, and switch activities if required into a process diagram in an integration. You can also add mappings on switch branches later if needed.

This section describes how to create an integration with the Orchestration pattern. Information on adding each activity in the diagram is explained later in this chapter.

Perform the following steps to create an integration:

1. Log in to the Oracle Integration Cloud home page, select the **Designer** option from the navigation pane, and then **Integrations**.

2. On the Integrations page, click **Create**.

    The Create Integration - Select a Style dialog appears.

    Depending on your integration requirements, when adding the Oracle E-Business Suite Adapter as a trigger (source) connection, you can use it with "App Driven Orchestration", "Basic Routing", and "Publish To OIC" patterns.

    In this example, click **Select** for the "App Driven Orchestration" integration pattern.

Create Integration - Select a Style Dialog with "App Driven Orchestration" Pattern Selected
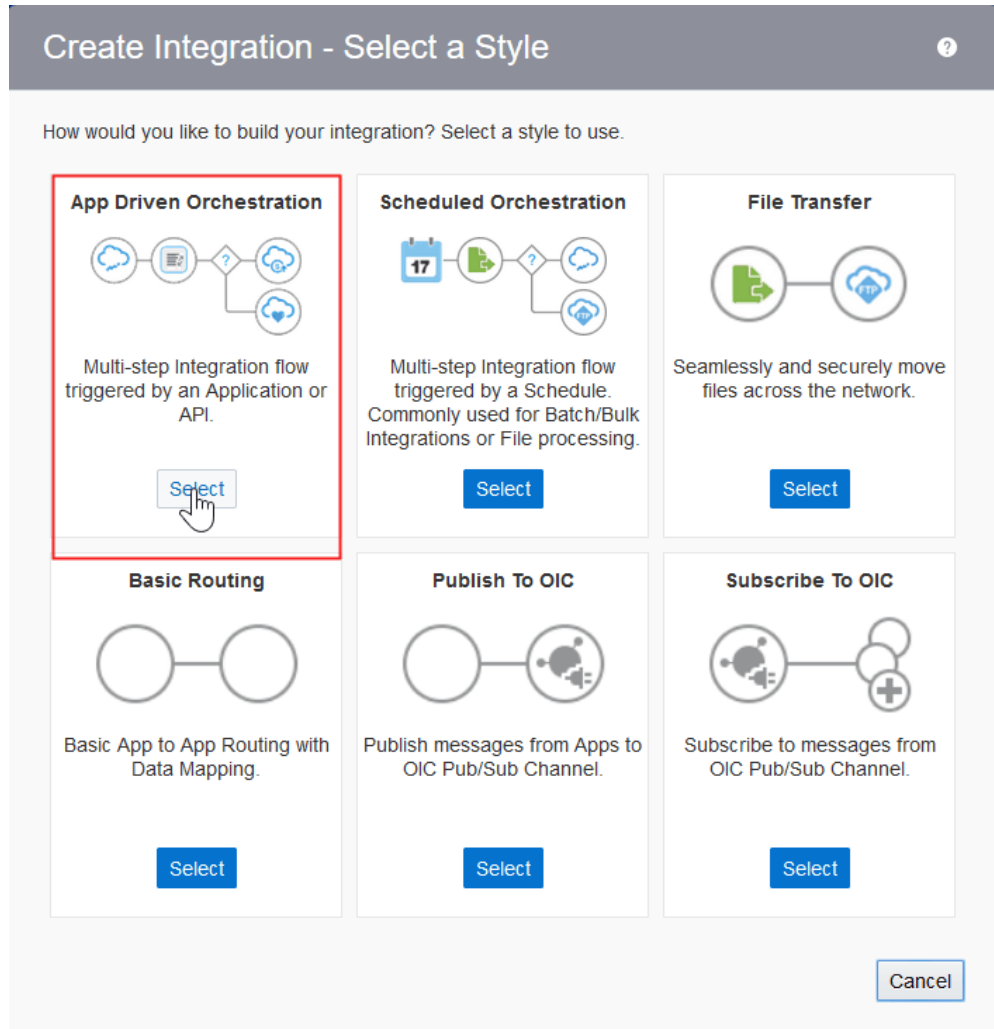
3. The Create New Integration dialog appears. Enter the following information:

    - **What do you want to call your integration?** Enter a meaningful name for your integration, such as "Order to Invoice".

    - **Identifier**: Accept the default identifier value "ORDER_TO_INVOICE".

    - **Version**: Accept the default version number.

    - **What does this integration do?** Enter "Create an integration for order to invoice" as the description for this integration.

    - **Which package does this integration belong to?** Leave it blank.

4. Click **Create** and **Save**.

To complete the integration, you need to add the following tasks that are described in the next few sections:

- Add the desired connections to the integration you just created.

  See: Adding the Oracle E-Business Suite Adapter (Trigger) and the REST Adapter (Invoke) to the Integration, page 6-11.

- Add mappings in the integration.

  See: Creating Mappings, page 6-24.

- Assign business identifiers for tracking.

  See: Assigning Business Identifier for Tracking, page 6-34.

Adding the Oracle E-Business Suite Adapter (Trigger) and the REST Adapter (Invoke) to the Integration

In this example, the orchestration flow diagram created for this integration includes the following activities:

- The Oracle E-Business Suite Adapter as a trigger activity called "Order_Status_Update" for the Oracle E-Business Suite Order Management instance

  This trigger activity uses the business event `oracle.apps.ont.oip.statuschange.update` through the Oracle E-Business Suite Adapter. When the status of a sales order is updated, Oracle Order Management raises this event.

- A switch added with two branches

  - The defined branch called "Booked Order" is the major orchestration flow for the integration.

  - The Otherwise branch is not used in this example.

- Mappings defined for "Get_Order"

  It allows you to map and pass the order related parameters to the "Get_Order" activity to invoke the GET_ORDER REST Service.

  See: Creating Mappings, page 6-24.

- The Oracle E-Business Suite Adapter as an invoke activity called "Get_Order" for the Oracle E-Business Suite Order Management instance.

  This invoke activity uses the GET_ORDER operation of the Process Order (OE_ORDER_PUB) REST service when adding the Oracle E-Business Suite Adapter as an invoke. This service retrieves the sales order information.

- Mappings defined for "Create_Invoice"

  This activity assigns the sales order related elements from the "Get_Order" activity to the Invoice related elements in the "Create_Invoice" activity.

  See: Creating Mappings, page 6-24.

- The REST Adapter as an invoke activity called "Create_Invoice" for the Oracle E-Business Suite Accounts Receivables instance

  This activity configures a request payload using the XML schema file type and then creates an invoice in Oracle Accounts Receivables through the invocation of the CREATE_SINGLE_INVOICE REST service.

Adding the Oracle E-Business Suite Adapter as a Trigger with a Business Event

Perform the following steps to add the first activity called "Order_Status_Update" for the Oracle E-Business Suite Order Management connection:

1. In the "Order to Invoice" integration page, drag and drop the Oracle E-Business Suite connection called "Order Management" from the Triggers section in the upper right corner to the large **+** section within the circle in the integration canvas.

   The Configure Oracle E-Business Suite Adapter Endpoint wizard appears.

2. Enter the following information In the Basic Info page:

   - **What do you want to call your endpoint?** - Enter "Order_Status_Update" as the endpoint name.

   - **What does this endpoint do?** - Enter the description of this integration endpoint.

   - **What do you want to configure the endpoint for?** - Select **Business Event**.

Configure Oracle E-Business Suite Adapter Endpoint - Basic Information Page
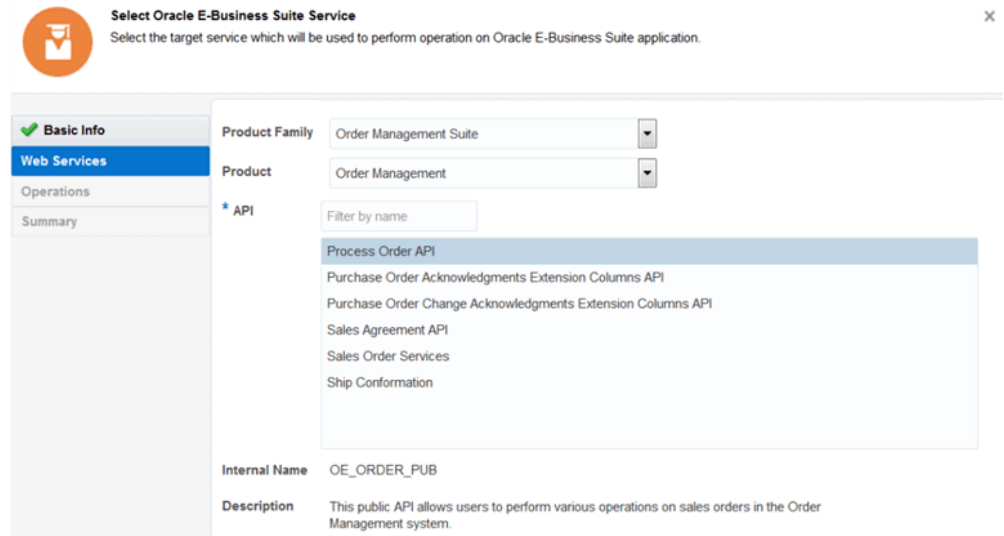

Click **Next** to proceed with the rest of the configuration.

3. In the Business Events page, specify the following information for your connection:

   • **Product Family:** Select "Order Management Suite" from the drop-down list.

   • **Product:** Select "Order Management" from the drop-down list.

   • **Business Event:** Select "Event for OIP status update notification" from the populated list.

     After you select an event name, the corresponding event information, including internal name (`oracle.apps.ont.oip.statuschange.update`) and description, is automatically populated in this page.

Configure Oracle E-Business Suite Adapter Endpoint - Business Event Page

Click **Next**.

4. The Summary page appears with the selected event information.

   The Oracle E-Business Suite Adapter Source Endpoint configuration is successfully created with the selected event.

   Click **Done**.

   The "Order_Status_Update" endpoint now appears as a trigger in the integration flow.

The Order_Status_Update Activity in the Process Flow
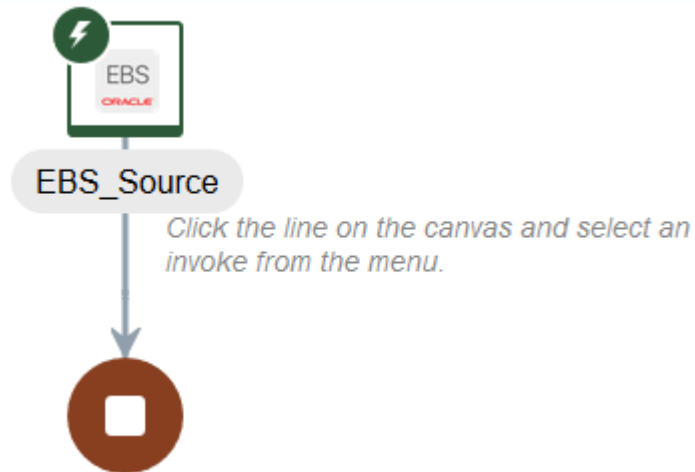
Adding a Switch with Two Branch Rules

Perform the following steps to add a Switch:

1. Drag and drop the "Switch" action from the Actions section on the right to the integration right after the Order_Status_Update activity.

    This action adds two rules allowing you to define routing expression branches for your integration.

Adding Two Branches to the Integration Flow
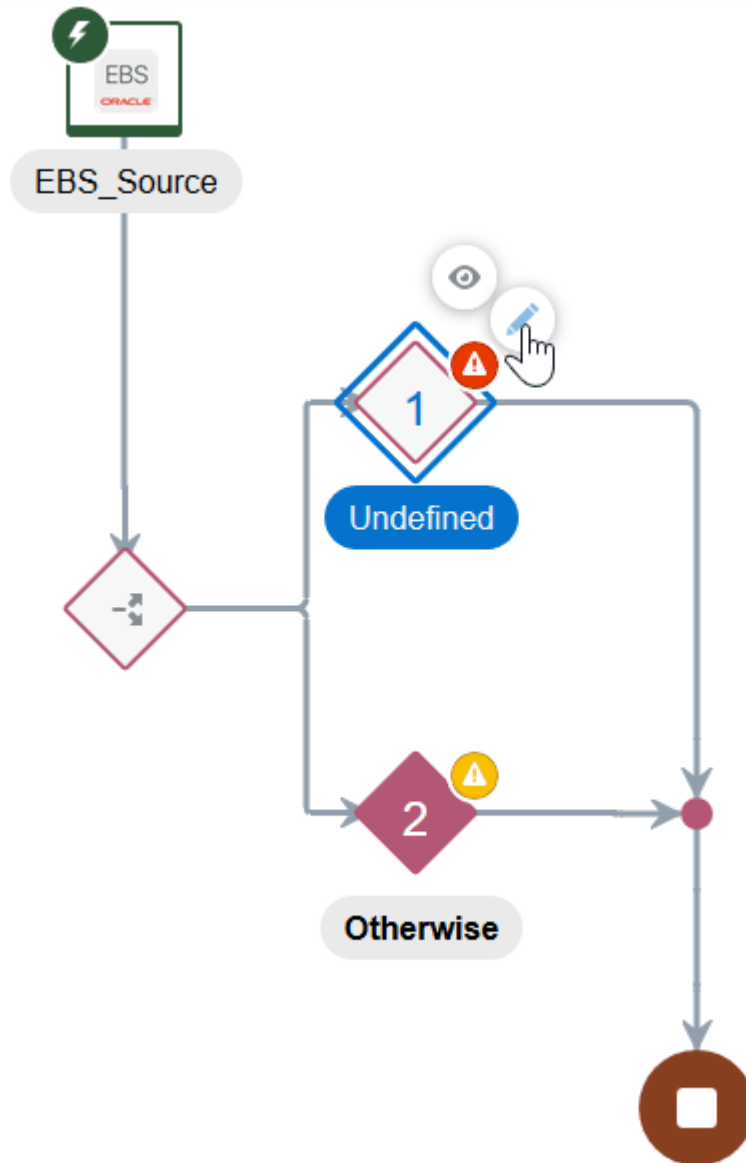
2. Click **edit** on the first rule. The Condition Builder page appears.

3. In the Condition Builder, enter the following information to create the condition:
   `All of Name = 'STATUS_CODE'` and `Value = 'BOOKED'`:

   - Enter "Booked Order" as the Expression Name.

   - In Source section, expand the **BusinessEvent_Input** node, then the

InputParameters node, then the **BusinessEvent** node, then the **ParameterList** node, and then the **Parameter** node.

1. Drag and drop the **Name** element to the right top under the New Condition section.

   - Select = from the drop-down list.

   - Enter `'STATUS_CODE'` in the text box as the condition value.

   Click the **Add Condition** (+) icon.

2. Drag and drop the **Value** element to the right top under the New Condition section.

   - Select = from the drop-down list.

   - Enter `'BOOKED'` in the text box as the condition value.

   Click the **Add Condition** (+) icon.

- In the Match field, select "All of" from the list.

Condition Builder
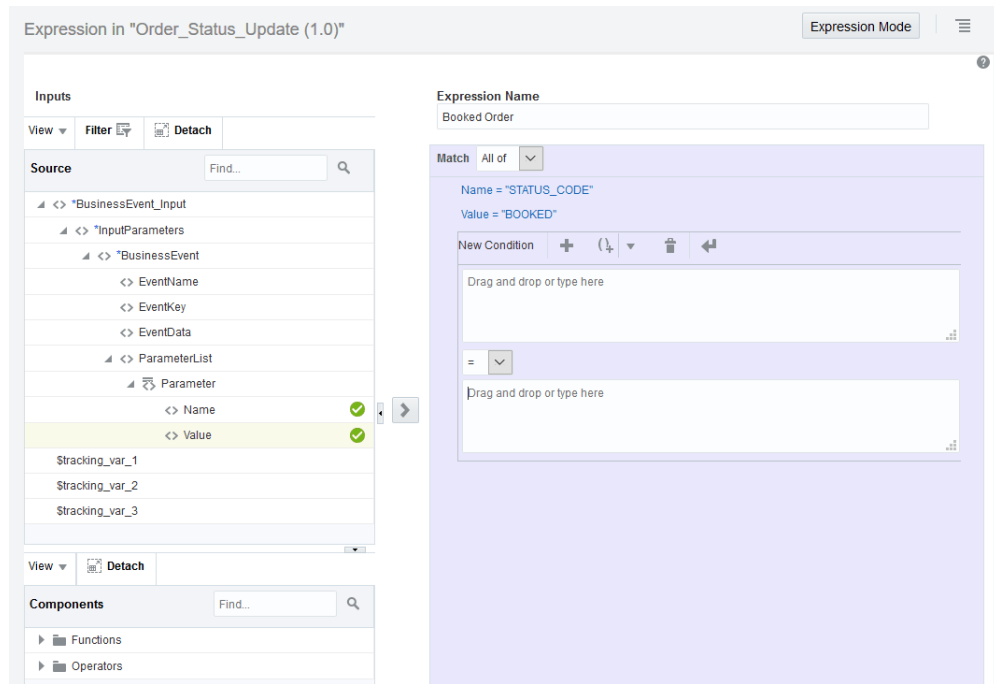
Save your work. Click **Close** to return to the integration.

Adding the Oracle E-Business Suite Adapter as an Invoke for the "Get_Order" Activity

Perform the following steps to add the Oracle E-Business Suite Adapter as an invoke connection:

1. Drag and drop the Oracle E-Business Suite connection "Order Management" from the Invokes section on the right to the integration right after the Booked Order rule.

   The Configure Oracle E-Business Suite Adapter Endpoint wizard appears.

2. In the Basic Info page, enter the following information:

   - **What do you want to call your endpoint?** - Enter "Get_Order" as the endpoint name.

   - **What does this endpoint do?** - Enter the description of this integration endpoint, such as "Get an order in Oracle E-Business Suite".

   Click **Next**.

3. In the Web Services page, specify the following information for your target connection:

- **Product Family:** Select "Order Management Suite" from the drop-down list.

- **Product:** Select "Order Management".

- **API:** Select "Process Order API" from the populated list for this example.

  The corresponding API internal name (OE_ORDER_PUB) and description are automatically populated.

Configure Oracle E-Business Suite Adapter Endpoint - Web Services Page

Click **Next**.

4. The selected API internal name OE_ORDER_PUB appears in the Operations page.

   In the Methods field, select a desired method name contained in the API. For example, select "GET_ORDER". The corresponding service status value is displayed in the Operations page, along with the description information.

   > **Note:** The Service Status of the selected method GET_ORDER should be "Ready to Use".

Configure Oracle E-Business Suite Adapter Endpoint - Operations Page

Click **Next**.

5. The Summary page displays the selected API information. This includes the selected product family name (Order Management Suite), product name (Order Management), web service name (OE_ORDER_PUB), integration pattern (Synchronous), operation name (GET_ORDER), and the operation status (Ready to Use).

Configure Oracle E-Business Suite Adapter Endpoint - Summary Page

Click **Done**.

The "Get_Order" activity for Order Management now appears as part of the integration flow, along with the "Get_Order" map icon where you can define the mapping later. See: Creating Mappings, page 6-24.

Adding the REST Adapter as an Invoke for the "Receivables" Activity

Perform the following steps to add the REST Adapter as an invoke connection:

1. Drag and drop the Oracle E-Business Suite connection "Receivables" from the INVOKES toolbar on the left to the integration, after the Get_Order activity in the Booked Order route.

   The Configure Oracle REST Endpoint wizard appears. Enter the following information in the Basic Info page:

   - **What do you want to call your endpoint?** - Enter the name of this endpoint, such as "Create_Invoice".

   - **What does this endpoint do?** - Enter the usage of this endpoint, such as "Provide REST endpoint with input payload for invoice creation".

   - **What is the endpoint's relative resource URI?** - Enter "`/create_single_invoice/`".

   - **What action does the endpoint perform?** - Select "POST" from the drop-down list.

   - **Configure a request payload for this endpoint** - Select this check box indicating that a request payload is required in this activity.

Configure Oracle REST Endpoint - Basic Info Page

Click **Next**.

2. In the Request page, perform the following tasks:

   - In the "Select the request payload file" section, select the **XML schema** radio button.

     Please note that the request payload file type can be either XML schema or JSON format.

   - Browse and select the sample XSD for the Create Invoice REST service.

     For the sample XSD information, see Sample XSD for the Oracle E-Business Suite Adapter as a Trigger with a Business Event Example, page A-1.

   - In the Element field, select "CREATE_SINGLE_INVOICE_Input" from the drop-down list.

   - In the "Select the type of payload with which you want the endpoint to receive" section, select the **XML** button as the payload type.

Configure Oracle REST Endpoint - Request Page

In this example, we do not need to configure this endpoint to receive Response.

3. Click **Next**. This displays the Summary page with the following REST service information that you specified earlier:

   - REST Service URL: `http://<host name>:` `<port>/webservices/rest/invoice/create_single_invoice/.`

   - Method: POST

   - Request Media Type: `application/xml`

   Click **Done**.

   The `Create_Invoice` activity appears in the integration flow, listed as the last activity in the Booked Order rule.

   Similar to the "Get_Order" activity, the "Create_Invoice" map icon also appears (along with the `Create_Invoice` activity) where you can define the mapping later. See: Creating Mappings, page 6-24

   Save the integration.

At the end of this step, the integration flow contains the activities added in this section.

The "Order to Invoice" Integration Flow Diagram
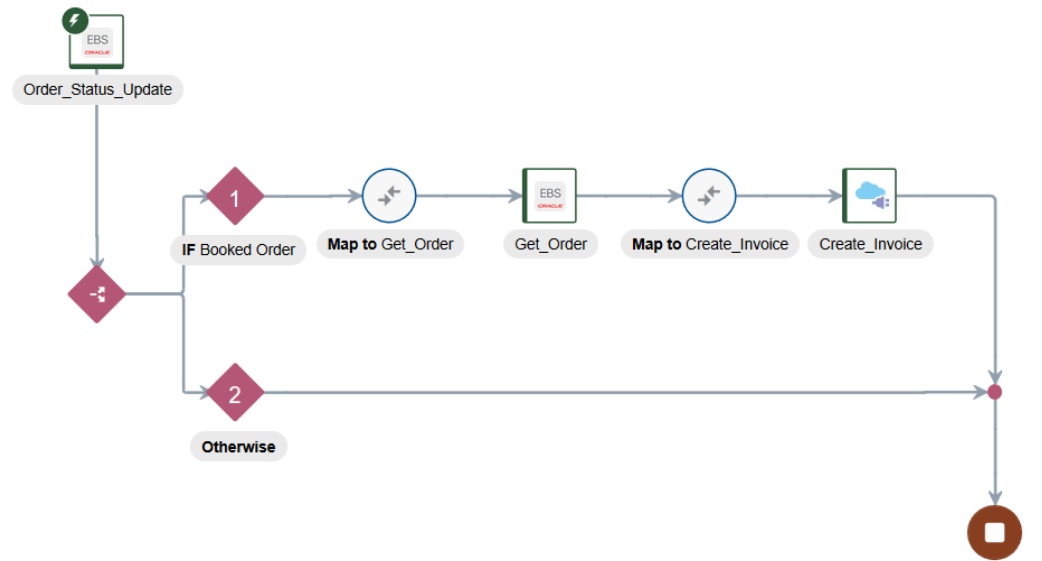
Creating Mappings

Oracle E-Business Suite Business Event is defined by the `WF_EVENT_T` data structure. After adding the required connections to the integration, you need to create the following mappings to pass the required parameter values to the subsequent REST services:

- Define mapping for `Get_Order`

- Define mapping for `Create_Invoice`

Creating Mappings for the `Get_Order` Map

In this example, a sales order Header Id is available as one of the business event parameters. In `WF_EVENT_T`, event parameters are available as `Name-Value` pair in repeating Parameter element. To obtain the value of the Header Id parameter and pass it to the subsequent Get_Order service call, you need to create mappings for `Get_Order`.

1. In the Order_Status_Update integration flow, click **edit** for the `Map to Get_Order` icon.

Get_Order Map for Mapping
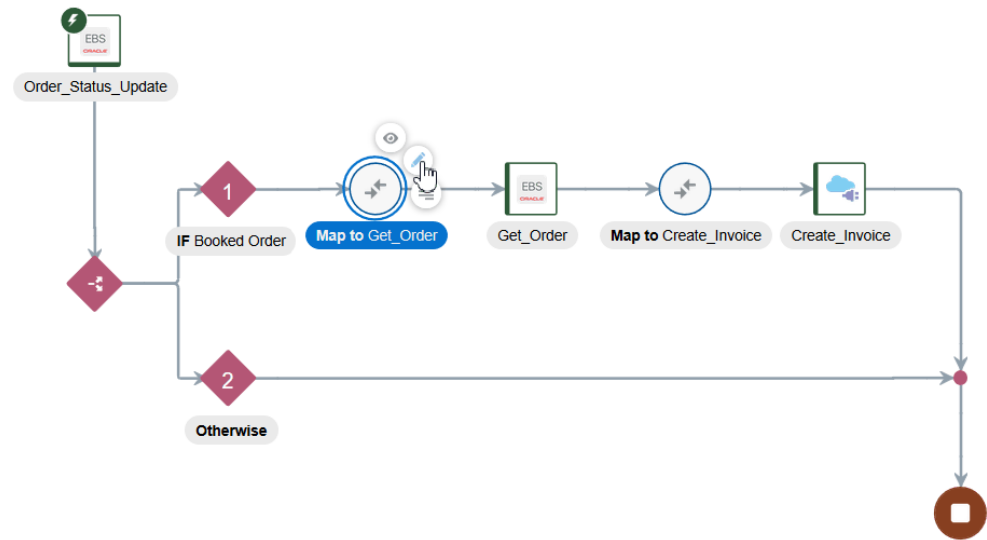
The mapper is displayed.

2. In the mapper, the business event related elements are displayed in the Source section, whereas the Get_Order related parameters are listed in the Target area. To obtain the value of the sales order Header Id (P_HEADER_ID) included as part of the event parameters and pass it to the subsequent Get_Order REST service, you need to define the XSL expression for the P_HEADER_ID parameter.

3. Define the XSL expression for the P_HEADER_ID parameter by performing the following tasks:

    1. In the Target section, expand the **GET_ORDER_Input** node, and then the **InputParameters** node. Click the **P_HEADER_ID** element to open the Build Mappings page.

    2. In the Mapping area of the Build Mappings page, notice that the **P_HEADER_ID** element is displayed as the Target element.

    3. In Source section of the Build Mappings page, expand the **BusinessEvent_Input** node, then the **InputParameters** node, then the **BusinessEvent** node, then the **ParameterList** node, and then the **Parameter** node.

    4. Drag and drop the **Value** element from the Source section to the Mapping section as the value for the **P_HEADER_ID** element.

    5. Similarly, drag and drop the XSL element "`if`" and the Name element from the

Source section to the Mapping section to define the XSL expression `<xsl:if test="nssrcmpr:Name='HEADER_ID'">`.

6. Drag and drop the XSL element "`for-each`" from the Source section to the Mapping section to define the XSL expression `<xsl:for-each select=" /nssrcmpr:BusinessEvent_Input/nssrcmpr: InputParameters/nssrcmpr:BusinessEvent/nssrcmpr: ParameterList/nssrcmpr:Parameter">`.

Mappings for the P_HEADER_ID Parameter
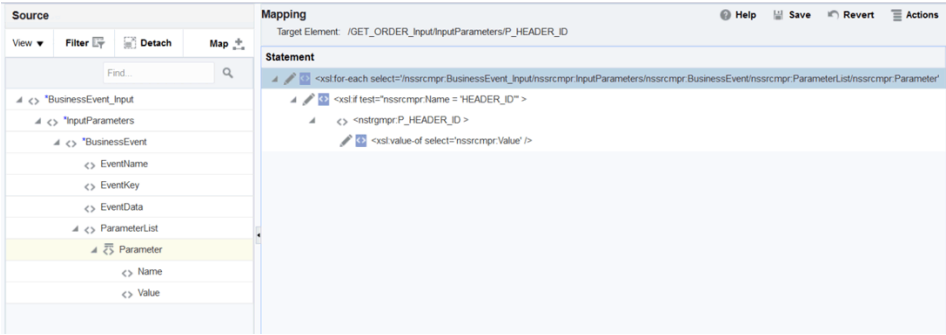
7. Save your work.

   Expand the nodes to ensure that the P_HEADER_ID parameter is included as part of the structure.

4. Perform the following tasks to assign constant values to the target elements:

   1. In the Target section, expand the **GET_ORDER_Input** node, and then the **RESTHeader** node.

      Click the **Responsibility** element to open the Build Mappings page.

   2. Enter "ORDER_MGMT_SUPER_USER" in the text box as the value for the **Responsibility** element.

   Similarly, use the same approach to assign appropriate values to the target elements listed in the following table:

Path	Element	Value
GET_ORDER_Input/RESTHeader	RespApplication	ONT

Path	Element	Value
GET_ORDER_Input/RESTHeader	SecurityGroup	STANDARD
GET_ORDER_Input/RESTHeader	NLSLanguage	AMERICAN
GET_ORDER_Input/RESTHeader	Org_Id	204
GET_ORDER_Input/InputParameters	P_API_VERSION_NUMBER	1.0
GET_ORDER_Input/InputParameters	P_INIT_MSG_LIST	F
GET_ORDER_Input/InputParameters	P_ORG_ID	204

After you complete the mappings for `Get_Order`, the mapped source values should appear in the Mapping column of the Target section.

Mappings for the Get_Order Activity

5. Click **Save** to save your work.

Creating Mappings for `Create_Invoice`

Perform the following steps to create the mappings:

1. In the Order_Status_Update integration flow, click **edit** for the **Map to Create_Invoice** icon.

   The mapper appears.

2. Assign constant values to the target elements.

   1. In the Target section, expand the **execute** node, then the **CREATE_SINGLE_INVOICE_Input** node, and then the **RESTHeader** node.

      Click the **Responsibility** element to open the Build Mappings page.

   2. Enter "RECEIVABLES_VISION_OPERATIONS" in the text box as the value for the **Responsibility** element.

   Similarly, use the same approach to assign appropriate values to the target elements listed in the following table:

Path	Element	Value
CREATE_SINGLE_INVOICE_Input/RESTHeader	RespApplication	AR
CREATE_SINGLE_INVOICE_Input/RESTHeader	SecurityGroup	STANDARD
CREATE_SINGLE_INVOICE_Input/RESTHeader	NLSLanguage	AMERICAN
CREATE_SINGLE_INVOICE_Input/RESTHeader	Org_Id	204
CREATE_SINGLE_INVOICE_Input/InputParameters	P_API_VERSION	1.0
CREATE_SINGLE_INVOICE_Input/InputParameters	P_INIT_MSG_LIST	T
CREATE_SINGLE_INVOICE_Input/InputParameters	P_COMMIT	T
CREATE_SINGLE_INVOICE_Input/InputParameters/P_BATCH_SOURCE_REC	BATCH_SOURCE_ID	1188

Path	Element	Value
CREATE_SINGLE_INVOIC E_Input/InputParameters/P_ TRX_HEADER_TBL/P_TRX _HEADER_TBL_ITEM	TRX_HEADER_ID	101
CREATE_SINGLE_INVOIC E_Input/InputParameters/P_ TRX_HEADER_TBL/P_TRX _HEADER_TBL_ITEM	CUST_TRX_TYPE_ID	1684
CREATE_SINGLE_INVOIC E_Input/InputParameters/P_ TRX_HEADER_TBL/P_TRX _HEADER_TBL_ITEM	BILL_TO_CUSTOMER_ID	1290
CREATE_SINGLE_INVOIC E_Input/InputParameters/P_ TRX_HEADER_TBL/P_TRX _HEADER_TBL_ITEM	SHIP_TO_CUSTOMER_ID	1290
CREATE_SINGLE_INVOIC E_Input/InputParameters/P_ TRX_HEADER_TBL/P_TRX _HEADER_TBL_ITEM	COMMENTS	Invoice created via ICS integration for booked Sales Order in Order Management

After you complete this step, the mapped source values should appear in the Mapping column of the Target section.

Mappings with Constant Values
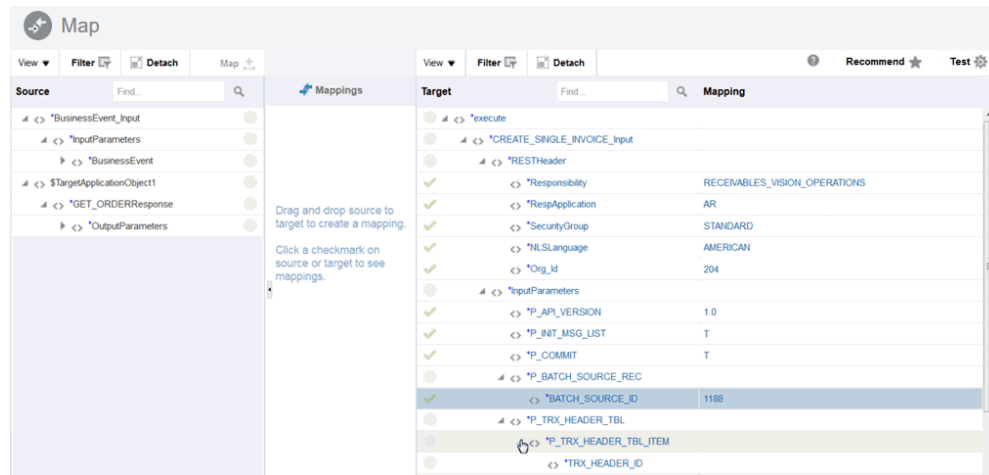
3. Add the following mapping for the header:

   - In the Source section, enter "HEADER_ID" in the Search field to locate this
     parameter.

     Select the **HEADER_ID** element from the **X_HEADER_REC** node.

   - In the Target section, expand the **execute** node, then the
     CREATE_SINGLE_INVOICE_Input node, then the **InputParameters** node,
     then the **P_TRX_HEADER_TBL** node, and then the
     P_TRX_HEADER_TBL_ITEM node.

     Select the **TRX_NUMBER** element.

   Drag the **HEADER_ID** element from the Source section to the **TRX_NUMBER**
   element in the Target section to map the data.

   After the mapping, the source element **HEADER_ID** should appear in the Mapping
   column next to the **TRX_NUMBER** element in the Target section.

Mapping the Source HEADER_ID to the Target TRX_NUMBER

4. Use the same approach, as described in the previous step, to add the following sets of mappings for the line items:

Source Path	Source Element	Target Path	Target Element
BusinessEvent_Input/InputParameters/BusinessEvent/X_LINE_TBL/X_LINE_TBL_ITEM	LINE_NUMBER	execute/CREATE_SINGLE_INVOICE_Input/InputParameters/P_TRX_LINES_TBL/P_TRX_LINES_TBL_ITEM	LINE_NUMBER
BusinessEvent_Input/InputParameters/BusinessEvent/X_LINE_TBL/X_LINE_TBL_ITEM	ORDERED_ITEM	execute/CREATE_SINGLE_INVOICE_Input/InputParameters/P_TRX_LINES_TBL/P_TRX_LINES_TBL_ITEM	DESCRIPTION
BusinessEvent_Input/InputParameters/BusinessEvent/X_LINE_TBL/X_LINE_TBL_ITEM	ORDERED_QUANTITY	execute/CREATE_SINGLE_INVOICE_Input/InputParameters/P_TRX_LINES_TBL/P_TRX_LINES_TBL_ITEM	QUANTITY_ORDERED

Source Path	Source Element	Target Path	Target Element
BusinessEvent_Input/InputParameters/BusinessEvent/X_LINE_TBL/X_LINE_TBL_ITEM	ORDERED_QUANTITY	execute/CREATE_SINGLE_INVOICE_Input/InputParameters/P_TRX_LINES_TBL/P_TRX_LINES_TBL_ITEM	QUANTITY_INVOICED
BusinessEvent_Input/InputParameters/BusinessEvent/X_LINE_TBL/X_LINE_TBL_ITEM	UNIT_SELLING_PRICE	execute/CREATE_SINGLE_INVOICE_Input/InputParameters/P_TRX_LINES_TBL/P_TRX_LINES_TBL_ITEM	UNIT_SELLING_PRICE

Once you complete this step, the mapped source values should appear next to the corresponding target elements with the green check mark icons:

Mappings for the Line Items

○	▶ <> *P_TRX_HEADER_TBL	
○	◢ <> *P_TRX_LINES_TBL	
○	◢ <> *P_TRX_LINES_TBL_ITEM	
✓	<> *TRX_HEADER_ID	101
✓	<> *TRX_LINE_ID	101
✓	<> *LINE_NUMBER	LINE_NUMBER
✓	<> *DESCRIPTION	ORDERED_ITEM
✓	<> *QUANTITY_ORDERED	ORDERED_QUANTITY
✓	<> *QUANTITY_INVOICED	ORDERED_QUANTITY
✓	🖑 *UNIT_SELLING_PRICE	UNIT_SELLING_PRICE
✓	<> *LINE_TYPE	LINE
○	▶ <> *P_TRX_DIST_TBL	
○	▶ <> *P_TRX_SALESCREDITS_TBL	

5. Assign the following values:

   • In the Target section, expand the **execute** node, then the
     CREATE_SINGLE_INVOICE_Input node, then the **InputParameters** node,
     and then the **P_TRX_DIST_TBL** node.

     Click the **P_TRX_DIST_TBL_ITEM** element to open the Build Mappings page.

     In the Mapping section, enter the following information:

     ```
     <nsmpr1:P_TRX_DIST_ID/>.
     ```

   • In the Target section, expand the **execute** node, then the
     CREATE_SINGLE_INVOICE_Input node, then the **InputParameters** node,
     and then the **P_TRX_SALESCREDITS_TBL** node.

     Click the **P_TRX_SALESCREDITS_TBL_ITEM** element to open the Build
     Mappings page.

     In the Mapping area, enter the following information:

     ```
     <nsmpr1:P_TRX_SALESCREDITS_ID/>.
     ```

   The newly assigned mapping values should appear next to the corresponding
   elements in the Target section.

Displaying the Mappings

Save your work.

6. Click **Exit Mapper**.

7. Save the integration.

Assigning Business Identifier for Tracking

Perform the following steps to track payload fields in messages during runtime:

1. In the Create Order Integration page, click **Tracking**.

   The Business Identifiers For Tracking dialog appears.

2. From the Available Source Fields section, expand the **BusinessEvent_Input** node, then the **InputParameters** node, and then the **BusinessEvent** node.

   Drag and drop the **Event Key** element to the Tracking Field column in the table as the primary Tracking field.

3. Click **Done**.

4. Save your work and then click **Exit Integration**.

Activating and Testing the Integration

Perform the following steps to activate the integration:

1. On the Integrations page, click the switch icon for the "Order to Invoice" integration that you created earlier to activate the integration.

2. The Confirmation dialog appears. Click **Activate** to confirm this action.

   The status of the "Order to Invoice" integration is now changed to **ACTIVE** with a green check mark icon.

Testing the Integration at Runtime

1. Log in to Oracle E-Business Suite as the `operations` user who has the Order Management Super User, Vision Operations (USA) responsibility.

2. Select **Order, Returns** and then **Sales Order** from the navigation menu to open the Sales Orders form.

3. In the Sales Orders form, select the Order Information tab.

4. Create a new Sales Order for customer "A.C. Networks" with the following information:

   • Customer: A.C. Networks

   • Operation Unit: Vision Operations

   • Order Type: Mixed

   • Ship To Location: Provo (OPS) 3405 East Bay Blvd. Provo, UT 84606, US

   • Bill To Location: Provo (OPS) 3405 East Bay Blvd. Provo, UT 84606, US

   • Price List: Corporate

   • Currency: USD

Sales Orders Form

5. Select the Line Items tab to add the following line item:

- Ordered Item: AS54888

- Quantity: 1

- Item Type: STANDARD

- UOM: Each

- Unit Price: Accept the populated unit price.

- Request Date: Accept the populated date (such as 14-MAY-2016)

Sales Order Form: Line Items

6. Save this new order.

    This order is created with "Entered" status.

7. Click **Book Order**.

    The order status is now updated to "Booked". It internally raises a business event `oracle.apps.ont.oip.statuschange.update` which will trigger the integration.

In the design time, the "Order to Invoice" integration created earlier in Oracle Integration Cloud will subscribe to this business event. At runtime, since the order status is changed to "Booked", Oracle Order Management will raise the business event which triggers the integration in Oracle Integration Cloud. The order details information is fetched from Oracle E-Business Suite Order Management and passed as event payload to create the invoice in Oracle Accounts Receivables.

Monitoring the Result in Oracle Integration Cloud

1. Log in to Oracle Integration Cloud home page, click **Monitoring**.

2. In the navigation pane, click **Tracking**.

    The Tracking page appears.

3. Click the instance created for the "Order to Invoice" integration.

4. Click "Event Key" to display the flow diagram of the integration instance.

   This page provides the instance tracking information. Notice that the status of this instance is "Completed" indicating that the integration is executed successfully. You can verify if there is any error occurred if desired.

Validating the Result in Oracle E-Business Suite Accounts Receivables

Log in to Oracle Accounts Receivables as the `operations` user who has the Receivables, Vision Operations (USA) responsibility. Select **Transactions** and then **Transactions** from the navigation menu.

Locate the invoice transaction for the "A.C. Networks" customer by selecting **Query for Transaction**. The invoice should be created in Oracle Accounts Receivables.

An Example of Using an XML Gateway Message as a Trigger (Source) in an Integration

Sample Business Scenario

When a purchase order is approved in the Oracle E-Business Suite Purchasing application, a process purchase order XML message should be sent from Oracle E-Business Suite to Oracle Integration Cloud.

In this example, an XML Gateway message "Purchase Order XML message" from Oracle Purchasing is used as a trigger (source) to explain using the Oracle E-Business Suite Adapter to trigger an integration in Oracle Integration Cloud. The Oracle E-Business Suite Adapter is used to connect to the Oracle Purchasing instance. Additionally, you need to configure the trading partner in Oracle XML Gateway to send the outbound XML message from Oracle E-Business Suite to the integration endpoint in Oracle Integration Cloud.

At runtime, when an order is approved, if the supplier or trading partner is configured to receive the outbound XML message for Process Purchase Order, Oracle E-Business Suite Purchasing will trigger the integration and initiate XML Gateway outbound processing to send the process order XML message from Oracle E-Business Suite to Oracle Integration Cloud.

Using XML Gateway Messages for Integrations in Oracle Integration Cloud

Based on the business scenario, the following tasks are included in this section:

1. Preparing the Oracle E-Business Suite Instances Purchasing Instance, page 6-39

2. Establishing an Oracle E-Businss Suite Connection for Publishing XML Gateway Messages, page 6-40

3. Creating an Integration, page 6-41

4. Adding the Oracle E-Business Suite Adapter as a Trigger (Source) Connection, page

6-43

5. Assigning Business Identifier for Tracking, page 6-46

6. Activating the Integration, page 6-47

7. Configuring Trading Partner Information for Post Integration, page 6-48

8. Testing and Validating the Integration, page 6-49

Preparing the Oracle E-Business Suite Instances Purchasing Instance

This example uses the Oracle E-Business Suite Purchasing application to approve a purchase order. Before creating a connection, you must prepare the Oracle E-Business Suite Purchasing instance to ensure the required setup or configuration is in place.

1. Configure Oracle E-Business Suite REST services provided through Oracle E-Business Suite Integrated SOA Gateway.

   Follow the setup tasks, as described in My Oracle Support Knowledge Document 556540.1, to configure Oracle E-Business Suite Integrated SOA Gateway Release 12.1.3 and apply the REST service patches to enable the REST service feature. For more information, see step 1, as described in Setup Tasks for Enabling the Oracle E-Business Suite Adapter, page 2-1.

2. (Optional) Import TLS certificates of Oracle Integration Cloud to Oracle E-Business Suite if required.

   For information on importing TLS certificates, refer to step 4 as described in Setup Tasks for Using the Oracle E-Business Suite Adapter as a Trigger (Source) Connection, page 2-6.

3. (Optional) Set up proxy URLs in Oracle E-Business Suite if required.

   For information on the proxy setup, refer to step 2 as described in Setup Tasks for Using the Oracle E-Business Suite Adapter as a Trigger (Source) Connection, page 2-6.

4. Deploy the Metadata Provider API as a REST service with the following requirements and grant the method access privileges to the **operations** user:

   - Deploy the API with "**provider**" as the service alias name

   - Deploy the API with **GET** HTTP verb for **all** the methods contained in the API

   - Grant the access privileges for **all** the methods contained in the Metadata Provider API to the **operations** user

   For information on deploying REST services, see Deploying REST Web Services,

Administering Native Integration Interfaces and Services chapter, *Oracle E-Business Suite Integrated SOA Gateway Implementation Guide*.

For information on creating security grants for REST services, see Managing Grants for Interfaces with Support for SOAP and REST Web Services, Administering Native Integration Interfaces and Services chapter, *Oracle E-Business Suite Integrated SOA Gateway Implementation Guide*.

Establishing an Oracle E-Businss Suite Connection for Publishing XML Gateway Messages

Perform the following steps to establish the connection for Oracle E-Businss Suite in Oracle Integration Cloud:

1. Log in to the Oracle Integration Cloud home page, select the **Designer** option from the navigation pane, and then **Connections**.

2. On the Connections page, click **Create**.

3. In the Create Connection - Select Adapter dialog appears.

   You can locate the Oracle E-Business Suite Adapter by entering a full or partial name to locate "Oracle E-Business Suite" from the dialog.

   Click the **Select** button for "Oracle E-Business Suite". The Create New Connection dialog appears.

4. Enter the following information for your connection:

   • **Connection Name:** Enter "Purchasing" as the connection name.

   • **Identifier:** Accept the default identifier for your Oracle E-Business Suite connection, such as "PURCHASING".

   • **Connection Role:** Select the "Trigger and Invoke" role for this connection.

   • **Description:** Enter description information for your connection, such as "Create an Oracle E-Business Suite Purchasing connection".

   Click **Create** to create the connection. The Connection Details page is displayed for the "Purchasing" connection.

5. Enter additional connection details by specifying the following information:

   • Email Address: Enter an administrator's email address to receive notifications if problems or changes occur in this connection.

   • Connection Properties: Click **Configure Connectivity** to open the Connection Properties dialog where you enter a URL (`http://<ebs host name>:`

<port>) to connect to an Oracle E-Business Suite instance.

Click **OK** to save your work.

- Security: Click **Configure Security** to open the Credentials dialog.

    Ensure that "Basic Authentication" is selected as the security policy.

    Enter operations as the username and its associated password in the Credentials dialog to access the Oracle E-Business Suite Purchasing instance you specified earlier in the Connection Properties dialog.

    Click **OK**.

6. Click **Test** to test the "Purchasing" connection you just specified.

7. Click **Save** to save your connection.

    Click **Exit Connection**.

Creating an Integration

This section provides the instructions on creating an integration called "PROCESS PO" with the "Publish To OIC" integration pattern. This pattern allows you to add the Oracle E-Business Suite Purchasing connection specified earlier as a trigger in the integration.

Perform the following steps to create an integration:

1. Log in to the Oracle Integration Cloud home page, select the **Designer** option from the navigation pane, and then **Integrations**.

2. On the Integrations page, click **Create**.

    The Create Integration - Select a Style dialog appears.

    Depending on your integration requirements, when adding the Oracle E-Business Suite Adapter as a trigger (source) connection, you can use it with "App Driven Orchestration", "Basic Routing", and "Publish To OIC" patterns.

    In this example, click **Select** for the "Publish To OIC" integration pattern.

Create Integration - Select a Style Dialog with "Publish To OIC" Pattern Selected

3. The Create New Integration dialog appears. Enter the following information:

   • **What do you want to call your integration?** Enter "PROCESS PO" as the integration name.

   • **Identifier**: Accept the default identifier value, such as "PROCESS_PO".

   • **Version**: Accept the default version number.

   • **What does this integration do?** Enter description information for your integration, such as "Create an integration for processing a purchase order in Oracle Purchasing".

4. Click **Create** and **Save**.

To complete the integration, you need to add the following tasks that are described in the next few sections:

- Add the desired connections to the integration you just created.

  See: Adding the Oracle E-Business Suite Adapter as a Trigger (Source) Connection, page 6-43.

- Assign business identifiers for tracking.

  See: Assigning Business Identifier for Tracking, page 6-46.

Adding the Oracle E-Business Suite Adapter as a Trigger (Source) Connection

Once the "PROCESS PO" integration is created, you can add the "Purchasing" connection that you just created by using the Oracle E-Business Suite Adapter as a trigger (source).

Perform the following steps to add the Oracle E-Business Suite Adapter as a trigger in the integration:

1. In the "PROCESS PO" integration page, search the "Purchasing" connection that you created earlier from the Connections panel.

2. In the Integration Designer, drag "Purchasing" from the Connections panel on the right to the Trigger (Source) area on the canvas. The Configure Oracle E-Business Suite Adapter Endpoint wizard appears.

3. Enter the following information In the Basic Info page:

   - **What do you want to call your endpoint?** - Enter "EBS_Source" as the endpoint name.

   - **What does this endpoint do?** - Enter "Process a purchase order in Oracle E-Business Suite".

   - **What do you want to configure the endpoint for?** - Select **XML Gateway Map**.

Configure Oracle E-Business Suite Adapter Endpoint - Basic Info Page

Click **Next** to proceed with the rest of the configuration for your integration.

4. In the XML Gateway Message page, specify the following information for your trigger (source) connection:

- **Product Family:** Select "Procurement" from the product family.

- **Product:** Select "Internet Procurement Enterprise Connector" from the list of product names.

- **XML Gateway Map:** Select a desired XML Gateway message name from the drop-down list. For example, select "Purchase Order XML message".

  After you select the message map, the corresponding information is automatically populated in this page. This includes the Integration Repository name (PO:PRO), internal name (itg_process_po_007_out), integration standard (OAG 7.2) and the message map description.

Configure Oracle E-Business Suite Adapter Endpoint - XML Gateway Message Page

Click **Next**.

5. The Summary page appears with the selected XML Gateway message information that you specified. This includes the XML Gateway message name `itg_process_po_007_out` from the selected "Procurement" product family and the "Internet Procurement Enterprise Connector" product, as well as the "Request Only" interaction pattern.

Configure Oracle E-Business Suite Adapter Endpoint - Summary Page

The Oracle E-Business Suite Adapter Source Endpoint configuration is successfully created with the selected XML Gateway message.

Click **Done**.

The connection for Oracle E-Businses Suite (called "Purchasing" in this example) now appears in the Trigger (Source) area on the canvas.

Assigning Business Identifier for Tracking

Perform the following steps to track payload fields in messages during runtime:

1. In the Create Order Integration page, click **Tracking**.

   The Business Identifiers For Tracking dialog appears.

2. From the Available Source Fields section, expand the **XmlGateway_Input** node, then the **PROCESS_PO_007** node, then the **DATAAREA** node, then the **PROCESS_PO** node, and then the **POORDERHDR** node.

   Drag the **POID** element to the Tracking Field column in the table.

   The **POID** is displayed in the Tracking Field with a green check mark next to it in the table.

Business Identifiers For Tracking Dialog

3. Click **Done**.

4. Save your work and then click **Exit Integration**.

Activating the Integration

Activating the Integration

After you complete the integration with a desired XML Gateway message, you can activate the integration.

1. On the Integrations page, click the switch icon for the "PROCESS PO" integration that you created earlier to activate the integration.

2. The Confirmation dialog appears. Click **Activate** to confirm the action.

    Notice that the status of the "PROCESS PO" integration changes to **ACTIVE**.

Recording the Integration Endpoint in Oracle Integration Cloud

After activating the integration, you need to obtain the integration endpoint URL by clicking the Integration Details icon ("**i**") for the "PROCESS PO" integration. A pop-up window appears. Record the endpoint URL information.

In this example, the endpoint URL should be like:

```
https://<IC Host>:
```

```
<Port>/ic/api/integration/v1/flows/ebusiness/PROCESS_PO/1.
0/metadata
```

This recorded integration endpoint URL (without the metadata at the end) will be
used as the protocol address value when defining a trading partner in the post
integration configuration, as described in Configuring Trading Partner Information for
Post Integration, page 6-48.

Configuring Trading Partner Information for Post Integration

After you activate the integration, you must perform manual tasks to configure the
trading partner ("Advanced Network Devices" in this example) for the outbound
transaction message selected in the integration. This includes specifying the
communication protocol and address as well as the user credentials in Oracle E-
Business Suite.

Additionally, obtain the integration endpoint URL you recorded earlier, such as
```
https://<OIC Host>:
<Port>/ic/api/integration/v1/flows/ebusiness/PROCESS_PO/1.
0/metadata.
```

Perform the following steps to configure the trading partner in Oracle E-Business Suite:

1. Log in to Oracle E-Business Suite as a user (such as sysadmin) who has the XML
   Gateway responsibility.

2. Select the XML Gateway responsibility and then select **Define Trading Partners**
   from the navigation menu. The Define Trading Partner Setup form appears.

3. In the Trading Partner Setup form, search and locate the desired trading partner
   called "Advanced Network Devices".

4. In the Trading Partner Details region, add the following information for the trading
   partner:

   • Transaction Type: PO

   • Transaction Subtype: PRO

   • Standard Code: OAG

   • External Transaction Type: PO

   • External Transaction Subtype: PROCESS

   • Direction: OUT

   • Map: itg_process_po_007_out

   • Connection/Hub : DIRECT

- Protocol: HTTPS

- Protocol address:`https://<OIC Host>:`
  `<Port>/ic/api/integration/v1/flows/ebusiness/PROCESS_PO/1.`
  `0/`

  Enter the integration endpoint URL (without `metadata` at the end) you
  recorded earlier.

- Username: `<OIC Username>`

  Enter the Oracle Integration Cloud user credentials used to execute integrations
  in Oracle Integration Cloud.

- Password: `OIC_password`

  Replace `OIC_password` with the actual password value of the associated OIC
  username.

Trading Partner Setup Form

5. Save your work.

Testing and Validating the Integration

Based on the example scenario, once a purchase order is approved in the Oracle E-
Business Suite Purchasing application, Oracle Purchasing will initiate XML Gateway

outbound processing and publish XML message to Oracle Integration Cloud. Therefore, you need to create a purchase order first and then approve the order to trigger the outbound processing from Oracle E-Business Suite.

Perform the following steps to create and approve a new purchase order:

1. Log in to the Oracle E-Business Suite Purchasing instance as the `operations` user who has the Purchasing, Vision Operations (USA) responsibility.

   Select **Purchase Orders** and then **Purchase Orders** from the navigation menu.

2. In the Purchase Orders form, create a new purchase order for the configured trading partner or supplier called "Advanced Network Devices" with the following information:

   - Supplier: Advanced Network Devices

   - Type: Standard Purchase Order

   - Site: SANTA CLARA-ERS

   - Ship-To: M1- Seattle Mfg

   - Bill-To: V1- New York City

3. In the Line tab, add one line item:

   - Num: 1

   - Item: AS10000

   - Description: 405 Digital Camera

   - UOM: Each

   - Quantity: 1

   - Price: 1

   - Freight: Accept the default value

   - FOB: Accept the default value

   - Promised Date: Enter a desired date

   - Need By Date: Enter a desired date

Purchasing Orders Form: Lines Tab

4. Click **Save**.

   Purchase order is created with "Incomplete" status.

5. Click **Approve**.

   The Approve Document form appears.

6. In the Approval Details tab, select the "Submit for Approval" check box and ensure that the **XML** button is selected in the Transmission Method region.

Approve Document Form

Click **OK**. The order status is now updated from "Incomplete" to "Approved".

This status change will internally trigger the XML Gateway engine for outbound transactions. Additionally, it will trigger the "PROCESS PO" integration you created in Oracle Integration Cloud.

Monitoring the Result in Oracle Integration Cloud

1. Log in to Oracle Integration Cloud.

   In the Oracle Integration Cloud home page, select the **Monitoring** option from the navigation pane, and then **Integrations**.

2. Click the instance created for the "PROCESS PO" integration to monitor the result.

An Example of Using a PL/SQL REST Service as an Invoke (Target) Connection in an Integration

To better understand how to use Oracle E-Business Suite services in Oracle Integration Cloud, this chapter describes an integration example through the use of Oracle E-Business Suite Adapter as an invoke (target) connection.

Sample Business Scenario

Take a PL/SQL API called Sales Order Services (OE_INBOUND_INT) as an example to explain the integration between the Oracle E-Business Suite Adapter and a trigger (source) connection in Oracle Integration Cloud.

In this example, the Oracle E-Business Suite Adapter is used as an invoke (target) connection for service invocation, and the REST Adapter is used as a trigger (source) connection to provide a REST request. When the Oracle E-Business Suite Adapter receives the request message with input payload for order creation from the trigger (source) connection, the OE_INBOUND_INT REST service in Oracle E-Business Suite is invoked to create the order.

> **Note:** Any application adapters can be used as trigger (source) connections to create integrations for your business needs. In this example, the REST Adapter is used as a trigger (source) connection.

Once the integration is successfully executed at runtime, a sales order will be created in Oracle E-Business Suite.

Using Oracle E-Business Suite REST Services for Integrations in Oracle Integration Cloud

Based on the integration scenario, the following tasks are included in this section:

1. Establishing the Connections for Oracle E-Business Suite and REST Services, page 6-53

2. Creating an Integration, page 6-56

3. Adding the Oracle E-Business Suite Adapter as an Invoke (Target) Connection, page 6-58

4. Adding the REST Adapter as a Trigger (Source) Connection , page 6-61

5. Creating Mappings, page 6-65

6. Assigning Business Identifier for Tracking, page 6-71

7. Activating and Testing the Integration, page 6-72

Establishing the Connections for Oracle E-Business Suite and REST Services

Before creating an integration, you need to create the following two connections:

- Connection for Oracle E-Business Suite

  Once the connection to an Oracle E-Business Suite instance is successfully established, you can add the Oracle E-Business Suite Adapter as an invoke (target) connection later in an integration.

- Connection for REST services

  Similar to the Oracle E-Business Suite connection using the Oracle E-Business Suite Adapter, once the connection to REST services is established, you can use it as a trigger (source) connection later in an integration.

Creating an Oracle E-Businss Suite Connection with Oracle E-Business Suite Adapter

Perform the following steps to establish the connection for Oracle E-Businss Suite in Oracle Integration Cloud:

1. Log in to the Oracle Integration Cloud home page, select the **Designer** option from the navigation pane, and then **Connections**.

2. On the Connections page, click **Create**.

   In the Create Connection - Select Adapter dialog appears. Scroll down and select "Oracle E-Business Suite" from the dialog. You can optionally use the search feature to enter a full or partial name to locate the Oracle E-Business Suite Adapter from the dialog. Click the **Select** button for "Oracle E-Business Suite" to create a connection through the Oracle E-Business Suite Adapter.

3. In the Create New Connection dialog, enter the following information for your connection:

   - **Connection Name:** Enter "EBS1225".

   - **Identifier:** Accept the default populated identifier, such as "EBS1225".

   - **Connection Role:** Select the "Trigger and Invoke" role for this connection.

   - **Description:** Enter "Use the Oracle E-Business Suite Adapter connection in an integration" as the description.

   Click **Create** to create the connection.

4. Click **Configure Connectivity** to open the Connection Properties dialog where you enter a URL (`http://<ebs host name>:<port>`) to connect to an Oracle E-Busiess Suite instance.

   Click **OK** to save your work.

5. Click **Configure Security** to open the Credentials dialog.

   Ensure that the Basic Authentication is selected as the security policy.

   Enter `operations` as the username and its associated password in the Credentials dialog to access the Oracle E-Business Suite instance you specified earlier in the Connection Properties dialog.

   Click **OK** to save your work.

6. Click **Configure Agents** to display the Select an Agent group dialog. A list of available agent groups is automatically populated for your selection.

    Select a desired agent group, such as "EBS", and click **Use** to enable the selection.

7. After you specify the connection information for "EBS1225", the connection details page is displayed.

8. Click **Test** to test the connection you just specified for Oracle E-Business Suite.

9. Click **Save** to save your connection.

    Click **Exit Connection**.

The Oracle E-Business Suite connection "EBS1225" now appears in the Connections page.

Creating an Connection for REST Services

Perform the following steps to create an connection for REST APIs:

1. On the Connections page, click **Create**.

    The Create Connection - Select Adapter dialog appears.

2. Scroll down and select "REST" from the dialog. You can optionally use the search feature to enter a full or partial name to locate the REST Adapter from the dialog.

    Click the **Select** button for "REST" to create an connection through the REST Adapter.

3. The New Connection - Information dialog appears.

    Enter "GenericREST" as the Connection Name. The identifier value, GENERICREST, is automatically populated.

    Select "Trigger and Invoke" as the Connection Role. Enter a meaningful description for this connection, such as "The sample source REST endpoint".

4. Click **Create** to create the connection.

5. Click **Configure Connectivity** to open the Connection Properties dialog where you select "REST API Base URL" as the Connection Type and enter a connection URL (`http://<ebs host name>:<port>/webservices/rest/orderMgmt`) to connect to an instance for REST services.

    Click **OK** to save your work.

6. Click **Configure Security** to open the Credentials dialog.

    Enter `operations` as the username and its associated password in the Credentials dialog to access the instance for REST services you specified earlier in the Connection Properties dialog.

Click **OK** to save your work.

7. Click **Test** to test the connection you just specified for REST services.

8. Click **Save** to save your connection.

   Click **Exit Connection**.

The "GenericREST" connection for REST services appears in the Connections page, along with the Oracle E-Business Suite connection "EBS1225" that you created earlier.

Creating an Integration

Perform the following steps to create an integration between REST services and Oracle E-Business Suite:

1. Log in to the Oracle Integration Cloud home page, select the **Designer** option from the navigation pane, and then **Integrations**.

2. On the Integrations page, click **Create**.

   The Create Integration - Select a Style dialog appears.

   When adding the Oracle E-Business Suite Adapter as an invoke (target) connection, you can use it with "Basic Routing", "App Driven Orchestration" and "Subscribe To OIC" patterns based on your business needs.

   In this example, click **Select** for the "Basic Routing" integration pattern to create an integration with a blank source and target.

   > **Note:** This "Basic Routing" integration pattern allows you to add a desired adapter as a trigger (source) or an invoke (target) connection in an integration. Therefore, you can also use this pattern when adding the Oracle E-Business Suite Adapter as a trigger (source) connection to trigger an integration.

Create Integration - Select a Style Dialog with "Basic Routing" Selected

3. The Create New Integration dialog appears. Enter the following information:

- **What do you want to call your integration?** Enter "Create Order" as the name.

- **Identifier**: Accept the default identifier value such as "CREATE ORDER".

- **Version**: Accept the default version number.

- **What does this integration do?** Enter description information for your integration, such as "Create a sales order in Oracle E-Business Suite".

4. Click **Create** and **Save**.

To complete the integration, you need to add the following tasks that are described in

the next few sections:

- Add the desired connections to the integration you just created.

  See:

  - Adding the Oracle E-Business Suite Adapter as an Invoke (Target) Connection, page 6-58

  - Adding the REST Adapter as a Trigger (Source) Connection , page 6-61

- Add mappings to the integration.

  See: Creating Mappings, page 6-65.

- Assign business identifiers for tracking.

  See: Assigning Business Identifier for Tracking, page 6-71.

Adding the Oracle E-Business Suite Adapter as an Invoke (Target) Connection

Once the integration is created, add the Oracle E-Business Suite connection "EBS1225" that you created earlier as an invoke (target) connection in your integration.

Perform the following steps to add the Oracle E-Business Suite Adapter as an invoke (target) connection:

1. In the Create Order integration page, search the "EBS1225" connection that you created earlier from the Connections panel.

2. In the Integration Designer, drag **EBS1225** from the Connections panel on the right to the Target area on the canvas.

   The Configure Oracle E-Business Suite Adapter Endpoint wizard appears.

3. In the Basic Info page, enter the following information for your endpoint:

   - **What do you want to call your endpoint?** - Enter "EBS_Reference".

   - **What does this endpoint do?** - Enter "Create a Sales Order in Oracle E-Business Suite".

Configure Oracle E-Business Suite Adapter Endpoint - Basic Info Page

Click **Next**.

4. In the Web Services page, specify the following information for your target connection:

    *   **Product Family:** Select "Order Management Suite" from the drop-down list.

    *   **Product:** Select "Order Management".

    After you select a desired product family and a product, a list of PL/SQL APIs including Oracle seeded APIs and custom ones contained in the selected product "Order Management" is populated for further selection.

    Select a desired API name, such as "Sales Order Services". The corresponding API internal name (OE_INBOUND_INT) and description are automatically populated.

    Click **Next**.

5. The selected API internal name OE_INBOUND_INT appears in the Operations page.

    Select a desired method name contained in the selected OE_INBOUND_INT API for this invoke (target) connection. For example, select "PROCESS_ORDER".

Configure Oracle E-Business Suite Adapter Endpoint - Operations Page

Click **Next**.

6. The Summary page displays all the selected interface details. This information includes the selected "PROCESS_ORDER" operation (with "Ready to Use" status) contained in the "OE_INBOUND_INT" web service from the Order Management Suite product family and Order Management product. This page also displays the default interaction pattern "Synchronize" and security policy "Username Token" for the selected service.

Configure Oracle E-Business Suite Adapter Endpoint - Summary Page

The Oracle E-Business Suite Adapter Target Endpoint configuration is successfully created.

Click **Done**.

7. Click **Save** to save your work.

The connection for Oracle E-Businses Suite now appears in the Invoke (Target) area on the canvas.

Adding the REST Adapter as a Trigger (Source) Connection

After adding the Oracle E-Business Suite invoke (target) connection, you need to add a trigger (source) connection in the integration. The trigger (source) connection can be any application adapters suitable for your integrations. In this example, the REST Adapter is used for the integration.

Perform the following steps to add the REST Adapter as a trigger (source) connection:

1. In the Create Order integration page, locate the "GenericREST" connection that you created earlier by entering "GenericREST" in the Connections field.

2. Drag **GenericREST** from the Connections panel on the right to the Trigger (Source)

area on the canvas.

The Configure Oracle REST Endpoint wizard appears.

3. Enter the following information:

- **What do you want to call your endpoint?** - Enter the name of this endpoint, such as "Source".

- **What does this endpoint do?** - Enter the usage of this endpoint, such as "Provide REST endpoint with input payload for sales order creation".

- **What is the endpoint's relative resource URI?** - Enter `/process_order`.

- **What action does the endpoint perform?** - Select "POST" from the drop-down list.

Ensure that you select the following two check boxes for this trigger (source) connection:

- **Configure a request payload for this endpoint**

- **Configure this endpoint to receive the response**

Configure Oracle REST Endpoint - Basic Info Page

Click **Next**.

4. In the Request page, perform the following tasks:

   • In the "Select the request payload file" section, select the **JSON schema** button.

     Please note that the request payload file type can be either XML schema or JSON format.

   • Click **Browse** to select a desired request payload file, such as "request.json". Click **Open** to attach the selected file.

     For the sample request payload, see Sample JSON Payloads for the Oracle E-Business Suite Adapter as an Invoke Example for a PL/SQL REST Service, page A-3.

   • In the "Select the type of payload with which you want the endpoint to receive" section, select the **JSON** button as the payload type.

Configure Oracle REST Endpoint - Request Page

Click **Next**.

5. In the Response page, select the **JSON Sample** button for this example.

Similar to the request, the response payload type can be either XML schema or JSON format.

Click **Browse** to select a desired request payload file, such as "response.json". Click **Open** to attach the selected file.

For the sample response payload, see Sample JSON Payloads for the Oracle E-Business Suite Adapter as an Invoke Example for a PL/SQL REST Service, page A-3.

In the "Select the type of payload with which you want the endpoint to reply" section, select the **JSON** button as the payload type.

Configure Oracle REST Endpoint - Response Page

6. Click **Next**.

   This displays the Summary page with the following REST service information that you specified earlier:

   • REST Service URI: `/process_order/`

   • Method: POST

   • Request Media Type: application/json

   • Response Media Type: application/json

   Click **Done**.

   Click **Save** to save your work. The GenericREST connection now appears in the Trigger (Source) area on the canvas, along with the "EBS1225" displayed in the Invoke (Target) area.

Creating Mappings

This step is to create mappings between the source and target data structures in the integration. It includes the following three mappings:
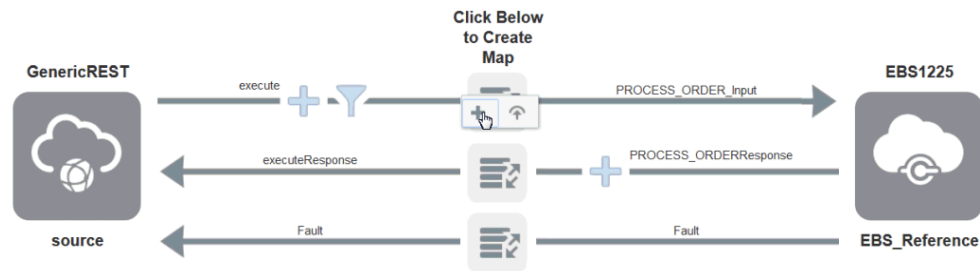
   • Map the data for the request message

- Map the data for the response message

- Map the data for the fault

Creating the first mapping for the request:

1. In the middle of the integration, click the **Mapper** icon for the request.

   Click **Create** (the **+** icon) to display the mapper.

   Icon to Create Mapping for the Request

2. Create the mappings between the source and target elements:

   - In the Source section, expand the **execute** node, then the **request-wrapper** node, then the **PROCESS_ORDER_Input** node, and then the **InputParameters** node.

     Select the **P_API_VERSION_NUMBER** element.

   - In the Target section, expand the **PROCESS_ORDER_Input** node, and then the **InputParameters** node.

     Select the **P_API_VERSION_NUMBER** element.

   Drag the **P_API_VERSION_NUMBER** element from the Source section to the **P_API_VERSION_NUMBER** element in the Target section to map the data.

   Once you complete this step, the mapped source value and the corresponding target element are connected by a green line.

Mapper Page with Mapped Source and Target Fields

Similarly, use the same approach to complete the mappings for the elements listed in the following table.

Source Path	Source Element	Target Path	Target Element
execute/equest-wrapper/PROCESS_ORDER_Input/RESTHeader	Responsibility	PROCESS_ORDER_Input/RESTHeader	Responsibility
execute/equest-wrapper/PROCESS_ORDER_Input/RESTHeader	RespApplication	PROCESS_ORDER_Input/RESTHeader	RespApplication
execute/equest-wrapper/PROCESS_ORDER_Input/RESTHeader	SecurityGroup	PROCESS_ORDER_Input/RESTSecurityGroupHeader	SecurityGroup
execute/equest-wrapper/PROCESS_ORDER_Input/RESTHeader	NLSLanguage	PROCESS_ORDER_Input/RESTHeader	NLSLanguage

Source Path	Source Element	Target Path	Target Element
execute/equest-wrapper/ PROCESS_ORDER_Input/RESTHeader	Org_Id	PROCESS_ORDER_Input/RESTHeader	Org_Id
execute/equest-wrapper/ PROCESS_ORDER_Input/InputParameters	P_INIT_MSG_LIST	PROCESS_ORDER_Input/InputParameters	P_INIT_MSG_LIST
execute/equest-wrapper/ PROCESS_ORDER_Input/InputParameters	P_RETURN_VALUES	PROCESS_ORDER_Input/InputParameters	P_RETURN_VALUES
execute/equest-wrapper/ PROCESS_ORDER_Input/InputParameters	P_ACTION_COMMIT	PROCESS_ORDER_Input/InputParameters	P_ACTION_COMMIT

Notice that a green check mark icon appears for the element that has a mapping created. Additionally, the mapped data appears in the Mapping column of the Target section.

3. Once the mapping is complete, click **Save** to save your work.

4. Click **Exit Mapper**.

Creating the second mapping for the response:

1. In the middle of the integration, click the **Mapper** icon for the response.

   Click **Create** (the **+** icon) to display the mapper.

2. Create mappings to map the source and target elements.

   • In the Source section, expand the **PROCESS_ORDERResponse** node, and then the **OutputParameters** node.

   Select the **X_RETURN_STATUS** element.

   • In the Target section, expand the **executeResponse** node, then the **response-**

wrapper node, and then the **Output Parameters** node.

Select the **X_RETURN_STATUS** element.

Drag the **X_RETURN_STATUS** element from the Source section to the **X_RETURN_STATUS** element in the Target section to map the data.

3. Use the same approach to complete the mappings for the elements listed in the following table.

Source Path	Source Element	Target Path	Target Element
PROCESS_ORDERResponse/OutputParameters/X_MESSAGES/X_MESSAGES_ITEM	MESSAGE_TEXT	executeResponse/response-wrapper/OutputParameters/X_MESSAGES/X_MESSAGES_ITEM	MESSAGE_TEXT
PROCESS_ORDERResponse/OutputParameters/X_HEADER_REC	ORDER_NUMBER	executeResponse/response-wrapper/OutputParameters/X_HEADER_REC	ORDER_NUMBER

Mapper Page with Mapped Source and Target Fields
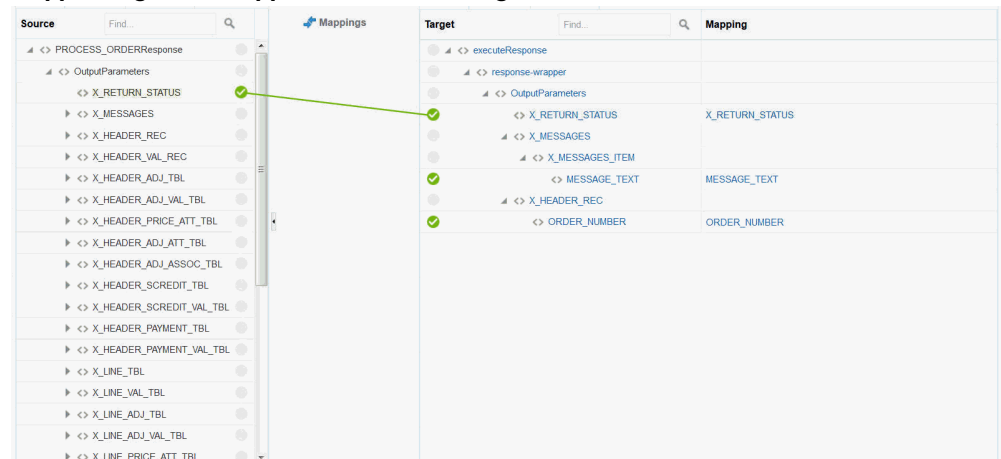
Click **Save** to save your work.

4. Click **Exit Mapper**.

Creating the third mapping for the fault:

1. In the middle of the integration, click the **Mapper** icon for the fault.

   The Fault Mappings dialog appears.

2. Under the **Route To**, select "APIInvocationError" as the fault type.

3. Under **Map**, click the **Mapper** (+) icon to create mapping.

4. Create the mapping between the source and target elements:

   - In the Source section, expand the **fault** node.

     Select the **errorCode** element.

   - In the Target section, expand the **APIInvocationError** node.

     Select the **errorCode** element.

   Drag the **errorCode** element from the Source section to the **errorCode** element in the Target section to map the data.

5. Use the same approach to complete the mappings for the elements listed in the following table.

Source Path	Source Element	Target Path	Target Element
fault	reason	APIInvocationError/ errorDetails	instance
fault	details	APIInvocationError/ errorDetails	errorPath

Mappings for the Fault

6. Click **Save** to save your work, and then click **Exit Mapper**.

The mappings for the request, response, and fault are all created successfully.

Click **Save** to save your work.

Assigning Business Identifier for Tracking

To effectively track payload fields in messages during runtime, you can specify up to three tracking fields to enable runtime tracking on messages.

1. In the Create Order Integration page, click **Tracking**.

   The Business Identifiers For Tracking dialog appears.

2. From the Available Source Fields section, drag the payload field that you want to track to the Tracking Field column.

   For example, drag the INVENTORY_ITEM_ID element from the Available Source Fields section to the Tracking Field column in the table.

   Enter "item" as the Tracking Name for the INVENTORY_ITEM_ID element.

Business Identifiers For Tracking Dialog

3. Click **Done**.

   Save your work and then click **Exit Integration**.

Activating and Testing the Integration

Activating the Integration

After you complete the integration with desired source and target connections and mappings, you can activate the "Create Order" integration.

Perform the following steps to activate the integration:

1. On the Integrations page, click the switch icon for the "Create Order" integration that you created earlier to activate the integration.

2. The Confirmation dialog appears. Click **Activate**.

   Notice that the status of the "Create Order" integration changes to **ACTIVE** indicating that the integration is ready to use at runtime.

Testing the Integration

To view the activated "Create Order" integration, click the **View** icon. A pop-up dialog appears with the integration details.

You can copy the Endpoint URL (`https://<IC Host>:<Port>/ic/api/integration/v1/flows/ebusiness/CREATE_ORDER/1.0/`) and open it in any REST client to invoke the REST service for order creation.

For example, an order number 69359 is created successfully after the service invocation

and is shown in the Response tab.

Response Tab with an Order Number

Verifying Order Creation in Oracle E-Business Suite

Log in to Oracle E-Business Suite as a user who has the Order Management Super User, Vision Operations (USA) responsibility.

Select **Order Returns** and then **Sales Order** from the navigation menu to open the Sales Orders form.

Search for an order by pressing the **F11** key. In the Customer PO field, enter the order ID retrieved from the service invocation. For example, enter 69359 and press the **CTRL+F11** keys to execute the query. You should be able to find the order created in Oracle E-Business Suite.

A

Sample Payloads

This appendix covers the following topics:

- Sample XSD for the Oracle E-Business Suite Adapter as a Trigger with a Business Event Example

- Sample JSON Payloads for the Oracle E-Business Suite Adapter as an Invoke Example for a PL/SQL REST Service

Sample XSD for the Oracle E-Business Suite Adapter as a Trigger with a Business Event Example

The following information shows the sample xsd used for the Create Invoice REST service. This service is added through the REST Adapter for the business event example described earlier. For information on how to use this sample xsd in an integration, see: Adding the Oracle E-Business Suite Adapter (Trigger) and the REST Adapter (Invoke) to the Integration, page 6-11.

```xml
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
elementFormDefault="qualified" attributeFormDefault="unqualified">
<xs:element name="CREATE_SINGLE_INVOICE_Input">
<xs:complexType>
<xs:sequence>
<xs:element name="RESTHeader">
<xs:complexType>
<xs:sequence>
<xs:element name="Responsibility" type="xs:string"></xs:element>
<xs:element name="RespApplication" type="xs:string"></xs:element>
<xs:element name="SecurityGroup" type="xs:string"></xs:element>
<xs:element name="NLSLanguage" type="xs:string"></xs:element>
<xs:element name="Org_Id" type="xs:string"></xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="InputParameters">
<xs:complexType>
<xs:sequence>
<xs:element name="P_API_VERSION" type="xs:int"></xs:element>
<xs:element name="P_INIT_MSG_LIST" type="xs:string"></xs:element>
<xs:element name="P_COMMIT" type="xs:string"></xs:element>
<xs:element name="P_BATCH_SOURCE_REC">
<xs:complexType>
<xs:sequence>
<xs:element name="BATCH_SOURCE_ID" type="xs:int"></xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="P_TRX_HEADER_TBL">
<xs:complexType>
<xs:sequence>
<xs:element name="P_TRX_HEADER_TBL_ITEM">
<xs:complexType>
<xs:sequence>
<xs:element name="TRX_HEADER_ID" type="xs:int"></xs:element>
<xs:element name="TRX_NUMBER" type="xs:string"></xs:element>
<xs:element name="CUST_TRX_TYPE_ID" type="xs:string"></xs:element>
<xs:element name="BILL_TO_CUSTOMER_ID" type="xs:int"></xs:element>
<xs:element name="SHIP_TO_CUSTOMER_ID" type="xs:string"></xs:element>
<xs:element name="COMMENTS" type="xs:string"></xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="P_TRX_LINES_TBL">
<xs:complexType>
<xs:sequence>
<xs:element name="P_TRX_LINES_TBL_ITEM">
<xs:complexType>
<xs:sequence>
<xs:element name="TRX_HEADER_ID" type="xs:int"></xs:element>
<xs:element name="TRX_LINE_ID" type="xs:string"></xs:element>
<xs:element name="LINE_NUMBER" type="xs:string"></xs:element>
<xs:element name="DESCRIPTION" type="xs:int"></xs:element>
<xs:element name="QUANTITY_ORDERED" type="xs:string"></xs:element>
<xs:element name="QUANTITY_INVOICED" type="xs:int"></xs:element>
<xs:element name="UNIT_SELLING_PRICE" type="xs:string"></xs:element>
<xs:element name="LINE_TYPE" type="xs:int"></xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
```

```
                    </xs:complexType>
                    </xs:element>
                    <xs:element name="P_TRX_DIST_TBL">
                    <xs:complexType>
                    <xs:sequence>
                    <xs:element name="P_TRX_DIST_TBL_ITEM">
                    <xs:complexType>
                    <xs:sequence>
                    <xs:element name="TRX_DIST_ID"></xs:element>
                    </xs:sequence>
                    </xs:complexType>
                    </xs:element>
                    </xs:sequence>
                    </xs:complexType>
                    </xs:element>
                    <xs:element name="P_TRX_SALESCREDITS_TBL">
                    <xs:complexType>
                    <xs:sequence>
                    <xs:element name="P_TRX_SALESCREDITS_TBL_ITEM">
                    <xs:complexType>
                    <xs:sequence>
                    <xs:element name="TRX_SALESCREDIT_ID"></xs:element>
                    </xs:sequence>
                    </xs:complexType>
                    </xs:element>
                    </xs:sequence>
                    </xs:complexType>
                    </xs:element>
                    </xs:sequence>
                    </xs:complexType>
                    </xs:element>
                    </xs:sequence>
                    </xs:complexType>
                    </xs:element>
                    </xs:schema>
```

Sample JSON Payloads for the Oracle E-Business Suite Adapter as an Invoke Example for a PL/SQL REST Service

This section includes the JSON request and response payloads used in the example of adding the Oracle E-Business Suite Adapter as an invoke (target) connection in an integration.

For information on using these payloads, see: Adding the REST Adapter as a Trigger (Source) Connection , page 6-61.

Sample Request Payload for the request.json File

```
{
  "PROCESS_ORDER_Input": {
    "RESTHeader": {
      "Responsibility": "ORDER_MGMT_SUPER_USER",
      "RespApplication": "ONT",
      "SecurityGroup": "STANDARD",
      "NLSLanguage": "AMERICAN",
      "Org_Id": "204"
    },
    "InputParameters": {
      "P_API_VERSION_NUMBER": "1.0",
      "P_INIT_MSG_LIST": "T",
      "P_RETURN_VALUES": "T",
      "P_ACTION_COMMIT": "T",
      "P_HEADER_REC": {
        "BOOKED_FLAG": "N",
        "ORDER_TYPE_ID": "1430",
        "ORG_ID": "204",
        "PAYMENT_TERM_ID": "4",
        "PRICE_LIST_ID": "1000",
        "SOLD_TO_ORG_ID": "1002",
        "TRANSACTIONAL_CURR_CODE": "USD",
        "OPERATION": "CREATE"
      },
      "P_LINE_TBL": {
        "P_LINE_TBL_ITEM": {
          "INVENTORY_ITEM_ID": "149",
          "LINE_TYPE_ID": "1427",
          "ORDERED_QUANTITY": "1",
          "PAYMENT_TERM_ID": "4",
          "PRICE_LIST_ID": "1000",
          "UNIT_LIST_PRICE": "12.55",
          "UNIT_SELLING_PRICE": "12.55",
          "OPERATION": "CREATE"
        }
      },
      "P_RTRIM_DATA": "n"
    }
  }
}
```

Sample Response Payload for the response.json File

```
{
  "OutputParameters" : {
    "X_RETURN_STATUS" : "S",
    "X_MESSAGES" : {
      "X_MESSAGES_ITEM" : [ {
        "MESSAGE_TEXT" : " Debug File: "
      } ]
    },
    "X_HEADER_REC" : {
      "ORDER_NUMBER" : 123
    }
  }
}
```

B

Error Messages

Overview

This appendix describes the error messages if occur at the design time while testing an Oracle E-Business Suite connection and while creating an integration with an Oracle E-Business Suite Adapter connection in Oracle Integration Cloud. The possible resolutions are also included in this appendix.

- Error Messages While Testing an Oracle E-Business Suite Connection, page B-1

- Error Messages While Creating an Integration with Oracle E-Business Suite Adapter as a Trigger (Source) Connection, page B-4

- Error Messages While Creating an Integration with Oracle E-Business Suite Adapter as an Invoke (Target) Connection, page B-5

For additional information on managing errors, see Managing Errors, Administering Oracle Integration Cloud chapter, *Using Integrations in Oracle Integration Cloud*.

Error Messages While Testing an Oracle E-Business Suite Connection

The following table describes error messages if occur while testing an Oracle E-Business Suite connection with Oracle E-Business Suite Adapter from Oracle Integration Cloud:

Error Code	Error Message	Resolution
CASDK-0004	Invalid user name or password.	Provide valid Oracle E-Business Suite user name and password combination.

Error Code	Error Message	Resolution
CASDK-0005	User is not authorized to execute the service. Please check the user grants.	All methods of the Metadata Provider service do not have required grants created. Grant the required user privileges to Metadata Provider service, as described in step 4, Setting Up Tasks for Enabling the Oracle E-Business Suite Adapter, page 2-1. Alternatively, this error could also occur if the access to Oracle E-Business Suite instance is forbidden or blocked from Oracle Integration Cloud. Ensure that Oracle Integration Cloud is able to access the Oracle E-Business Suite instance.
CASDK-0005	Verify Integrated SOA Gateway setup on Oracle E-Business Suite. For details, refer to documentation.	Ensure to complete the setup tasks for Oracle E-Business Suite Integrated SOA Gateway (ISG), as described in Setting Up Tasks for Enabling the Oracle E-Business Suite Adapter, page 2-1.

Error Code	Error Message	Resolution
CASDK-0005	Verify if Metadata Provider service is deployed with alias 'provider'. Ensure that all its methods are deployed with GET verb.	This error occurs due to either of the following reasons: • The Metadata Provider API is not deployed as a REST service. • All the methods of the API are not deployed with GET verb. • The API is deployed with GET verb but with a service alias other than "**provider**". To resolve the issue, ensure to deploy all the methods in the Metadata Provider API with GET verb and with service alias "**provider**". For information on deploying Metadata Provider service, see step 3, as described in Setting Up Tasks for Enabling the Oracle E-Business Suite Adapter, page 2-1.
CASDK-0005	Error connecting to the Oracle E-Business Suite: <URL>	Provide valid Oracle E-Business Suite host and port information (`http(s): //<ebs host name>: <port>`) where Oracle E-Business Suite is configured for ISG REST services.
CASDK-0005	A connector specific exception was raised by the application. The connection URL should be of the format: `http: //<ebs host name>: <port>`	This error occurs due to invalid URL format. To resolve the issue, remove any trailing slash in the URL. Ensure that the Oracle E-Business Suite connection URL is of the format: `http (s)://<ebs host name>: <port>`

Error Code	Error Message	Resolution
CASDK-0007	Unable to establish a secure connection to `example.com`. SSL protocol related exception occurred. - sun.security.validator. ValidatorException: PKIX path building failed:`sun. security.provider. certpath. SunCertPathBuilderExce ption: unable to find valid certification path to requested target` - PKIX path building failed: `sun.security.provider. certpath. SunCertPathBuilderExce ption: unable to find valid certification path to requested target` - unable to find valid certification path to requested target	This error occurs because of TLS certificate issues. If Oracle E-Business Suite requires a specific TLS certificate, ensure that you import or upload the Oracle E-Business Suite TLS certificate to Oracle Integration Cloud. See: Setup Tasks for a TLS-Enabled Oracle E-Business Suite Environment, page 2-5.
CASDK-0005	Connection URL should be of the format: `http://<host name>:<port>`	This issue occurs because of protocol error. To resolve the issue, the connection URL should be of the format: `http(s): //<ebs host name>: <port>`

Error Messages While Creating an Integration with Oracle E-Business Suite Adapter as a Trigger (Source) Connection

The following table describes error messages if occur while creating an integration using the Oracle E-Business Suite Adapter as a trigger (source) connection at the design time:

Error Message	Resolution
Please select a Business Event to proceed. If no events are listed, select another Product / Product family.	If no Business Event is selected in the Business Events page, after you click **Next**, this error occurs.
	Ensure that you select a desired business event from the populated list based on your selected product and product family before clicking **Next**.
	For information on configuring the endpoint for business events, see Configuring an Oracle E-Business Suite Business Event in an Integration, page 5-4.
Please select a XML Gateway Map to proceed. If no maps are listed, select another Product / Product family.	If no XML Gateway map is selected in the XML Gateway Message page, after you click **Next**, this error occurs.
	Ensure that you select a desired XML Gateway message from the populated list based on your selected product and product family before clicking **Next**.
	For information on configuring the endpoint for XML Gateway message maps, see Configuring an Oracle E-Business Suite XML Gateway Message in an Integration, page 5-6.

Error Messages While Creating an Integration with the Oracle E-Business Suite Adapter as an Invoke (Target) Connection

The following table describes error messages if occur while creating an integration using the Oracle E-Business Suite Adapter as an invoke (target) connection at the design time:

Error Message	Resolution
Empty set of values appear in the drop down during the Product Family selection.	This error occurs when the Metadata Provider API in Oracle E-Business Suite only has the "isActive" method deployed, but the rest of all methods in the API are not deployed. To resolve the issue, ensure to deploy all the methods in the Metadata Provider API with GET verb and with service alias "**provider**". For information on deploying Metadata Provider service, see step 3, as described in Setup Tasks for Enabling the Oracle E-Business Suite Adapter, page 2-1.
Service is not deployed as a REST service in Oracle E-Business Suite. To use this service, deploy it from Integration Repository of Oracle E-Business Suite. Contact Oracle E-Business Suite Integration Administrator.	This error occurs when the selected interface is not deployed as a REST service. Ensure that you deploy the selected interface as a REST service. For information on deploying an interface as a REST service, see step 3 as described in Setup Tasks for Enabling the Oracle E-Business Suite Adapter, page 2-1.
Service Status: Not Deployed Service is not deployed as a REST service in Oracle E-Business Suite. To use this service, deploy it from Integration Repository of Oracle E-Business Suite. Contact Oracle E-Business Suite Integration Administrator.	When a selected operation or method is not deployed as a REST service operation, this error occurs. Ensure that you deploy the selected method in an interface as a REST service operation.
The application has encountered an unexpected error. Please check the application connection details and credentials, and retry your request.	This error occurs when any of the Metadata Provider API methods (such as getInterfaces, getMethods, getProducts) except the "isActive" method are deployed but do not have grants created. To resolve the issue, in addition to deploying all the methods in the API with GET verb, ensure that you grant the required user privileges to Metadata Provider service, as described in step 4, Setup Tasks for Enabling the Oracle E-Business Suite Adapter, page 2-1.

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