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

E89704-10
May 2019
Contents

Preface

Audience vii
Documentation Accessibility vii
Related Resources vii
Conventions ix

1 Understand the Oracle E-Business Suite Adapter

Oracle E-Business Suite Adapter Capabilities 1-1
What Application Version Is Supported? 1-5
Workflow to Create and Add an Oracle E-Business Suite Adapter Connection to an Integration 1-5

2 Set Up and Enable the Oracle E-Business Suite Adapter for Integrations

Setup Tasks for Enabling the Oracle E-Business Suite Adapter 2-1
Setup Tasks for a TLS-Enabled Oracle E-Business Suite Environment 2-4
Setup Tasks for Using the Oracle E-Business Suite Adapter as a Trigger (Source) Connection 2-5

3 Create an Oracle E-Business Suite Adapter Connection

Create a Connection 3-1
Add a Contact Email 3-2
Configure Connection Properties 3-3
Configure Connection Security 3-3
Configure an Agent Group (Conditional) 3-4
Test the Connection 3-5

4 Add the Oracle E-Business Suite Adapter Connection to an Integration

Add the Oracle E-Business Suite Adapter as a Trigger Connection 4-1
5 Implement Common Patterns Using the Oracle E-Business Suite Adapter

- Use Oracle E-Business Suite Business Events to Trigger Integration Endpoint in Oracle Integration 5-4
- Use Oracle E-Business Suite XML Gateway Messages to Trigger Integration Endpoint in Oracle Integration 5-6
  - Post Activation Manual Steps for XML Gateway Messages as a Trigger 5-8
- Invoke Oracle E-Business Suite PL/SQL APIs from Oracle Integration 5-9
- Invoke Oracle E-Business Suite Concurrent Programs from Oracle Integration 5-11
- Invoke Oracle E-Business Suite Open Interfaces from Oracle Integration 5-13
  - Create Filters in the Add Filter Conditions Page (Optional) 5-16
- Invoke Oracle E-Business Suite Java APIs from Oracle Integration 5-17

6 Oracle E-Business Suite Adapter Samples

- An Example of Using a Business Event as a Trigger (Source) in an Integration 6-1
- Prepare the Oracle E-Business Suite Instances 6-2
  - Prepare the Order Management Instance 6-2
  - Prepare the Oracle Accounts Receivables Instance 6-3
- Establish Oracle E-Business Suite Connections 6-4
  - Create the Connection for Oracle E-Business Suite Order Management 6-4
  - Create the Connection for Oracle E-Business Suite Accounts Receivables 6-5
- Create an Integration 6-6
- Add the Oracle E-Business Suite Adapter (Trigger) and the REST Adapter (Invoke) to the Integration 6-8
  - Add the Oracle E-Business Suite Adapter as a Trigger with a Business Event 6-9
  - Add a Switch with Two Branch Rules 6-10
  - Add the Oracle E-Business Suite Adapter as an Invoke for the “Get_Order” Activity 6-11
  - Add the REST Adapter as an Invoke for the “Receivables” Activity 6-12
Create Mappings 6-15
Assign Business Identifier for Tracking 6-22
Activate and Test the Integration 6-22
Sample XSD for the Oracle E-Business Suite Adapter as a Trigger with a Business Event Example 6-24
An Example of Using an XML Gateway Message as a Trigger (Source) in an Integration 6-26
Prepare the Oracle E-Business Suite Purchasing Instance 6-27
Establish an Oracle E-Business Suite Connection for Publishing XML Gateway Messages 6-27
Create an Integration 6-28
Add the Oracle E-Business Suite Adapter as a Trigger (Source) Connection 6-30
Assign Business Identifier for Tracking 6-31
Activate the Integration 6-31
Configure Trading Partner Information for Post Integration 6-32
Test and Validate the Integration 6-33
An Example of Using an XML Gateway Message as a Trigger (Source) in an Integration 6-26
Sample XSD for the Oracle E-Business Suite Adapter as a Trigger with a Business Event Example 6-24
An Example of Using a PL/SQL REST Service as an Invoke (Target) Connection in an Integration 6-35
Establish the Connections for Oracle E-Business Suite and REST Services 6-36
Create an Integration 6-38
Add the Oracle E-Business Suite Adapter as an Invoke (Target) Connection 6-39
Add the REST Adapter as a Trigger (Source) Connection 6-43
Create Mappings 6-46
Assign Business Identifier for Tracking 6-50
Activate and Test the Integration 6-51
Sample JSON Payloads for the Oracle E-Business Suite Adapter as an Invoke Example for a PL/SQL REST Service 6-52
An Example of Using an Open Interface REST Service as an Invoke (Target) Connection in an Integration 6-53
Establish the Connections for Oracle E-Business Suite and REST Services 6-55
Create an Integration with App Driven Orchestration 6-57
Add the REST Adapter (Trigger) and the Oracle E-Business Suite Adapter (Invoke) to the Integration 6-58
Add the REST Adapter as a Trigger Connection 6-59
Add the Oracle E-Business Suite Adapter as an Invoke Connection for Inserting Records 6-60
Add the Oracle E-Business Suite Adapter as an Invoke Connection for Submitting a Concurrent Program 6-63
Add the Loggers 6-65
Create Mappings 6-67
Assign Business Identifier for Tracking 6-70
Activate and Test the Integration 6-70
Sample XSD for the Oracle E-Business Suite Adapter as an Invoke Example for an Open Interface REST Service 6-73
An Example of Using a Java REST Service as an Invoke (Target) Connection in an Integration

- Establish the Connections for Oracle E-Business Suite and REST Services
- Create an Integration
- Add the REST Adapter as a Trigger (Source) Connection
- Add the Oracle E-Business Suite Adapter as an Invoke (Target) Connection
- Create Mappings
- Assign Business Identifier for Tracking
- Activate and Test the Integration

7 Troubleshoot the Oracle E-Business Suite Adapter and Related Error Messages

- Error Messages While Testing an Oracle E-Business Suite Connection
- Troubleshoot the Oracle E-Business Suite Adapter While Using it as a Trigger (Source) in an Integration
  - Disabled Event Error Message
- Troubleshoot the Oracle E-Business Suite Adapter While Using it as an Invoke (Target) in an Integration
  - Undeployed REST Service Error Message
  - Method with "Not Deployed" Status Error Message
Preface

This guide describes how to configure the Oracle E-Business Suite Adapter as a connection in an integration in Oracle Integration.

Note:

The information in this guide applies to all of your Oracle Integration 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 when necessary.

Topics

• Audience
• Documentation Accessibility
• Related Resources
• Conventions

Audience

This guide is intended for developers who want to use the Oracle E-Business Suite Adapter in integrations in Oracle Integration.

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.

Access to Oracle Support

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.

Related Resources

See these Oracle resources:
Oracle Cloud
http://cloud.oracle.com

Using Integrations in Oracle Integration

Using the Oracle Mapper with Oracle Integration

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 the latest:

- Release 12.2 documentation at https://docs.oracle.com/cd/E26401_01/index.htm
- Release 12.1 documentation at https://docs.oracle.com/cd/E18727_01/index.htm

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.


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.


  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.

## Conventions

The following text conventions are used in this document:

<table>
<thead>
<tr>
<th>Convention</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>boldface</strong></td>
<td>Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.</td>
</tr>
<tr>
<td><em>italic</em></td>
<td>Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.</td>
</tr>
<tr>
<td><strong>monospace</strong></td>
<td>Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.</td>
</tr>
</tbody>
</table>
Understand the Oracle E-Business Suite Adapter

Review the following conceptual topics to learn about the Oracle E-Business Suite Adapter and how to use it as a connection in integrations in Oracle Integration. A typical workflow of adapter and integration tasks is also provided.

Topics:

• Oracle E-Business Suite Adapter Capabilities
• What Application Version Is Supported?
• Workflow to Create and Add an Oracle E-Business Suite Adapter Connection to an Integration

Oracle E-Business Suite Adapter Capabilities

The Oracle E-Business Suite Adapter is one of many predefined adapters included with Oracle Integration allowing you to securely connect and use Oracle E-Business Suite services in integrations in Oracle Integration. 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 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 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:

Supporting Inbound and Outbound Integrations
In this diagram, Business Events and XML Gateway messages are available for inbound integrations in Oracle Integration 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, Concurrent Programs, Java APIs, as well as Open Interface Tables and Views are available as REST services for invocation from Oracle Integration.

**Note:**

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

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

**Key Features**

The Oracle E-Business Suite Adapter in Oracle Integration 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.
- 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 when using the Oracle E-Business Suite Adapter as **trigger (source)** connections.
- It provides Oracle E-Business Suite services (PL/SQL APIs, concurrent programs, Java API, as well as open interface tables and views) for outbound integrations from Oracle Integration 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.

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. You can then create an integration by selecting a desired Oracle E-Business Suite service. The supported interface types for integrations in Oracle Integration 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.

• 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 when adding the Oracle E-Business Suite Adapter as invoke (target) connections.

- **Java API**
  Java APIs are business interfaces based on Java classes.
  Some specialized Java APIs whose methods must use parameters of either serializable Java Beans or simple data such as String, Int, and so forth can be categorized as **Java Bean Services**, a subtype of Java interface.

  Some Java class provides access to business logic governing the OA Framework-based components and pages. Such Java classes are called **Application Module Services** and are also categorized as a subtype of Java interface.

  When you add the Oracle E-Business Suite Adapter as invoke (target) connections, Java REST services including both subtype of Java APIs are available for outbound integrations from Oracle Integration.

- **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.

- **Open Interface Table**
  An open interface consists of the interface tables to store data from external sources and concurrent programs, as well as to validate and apply this data into the Oracle E-Business Suite base tables. All open interfaces are implemented using concurrent programs. Please note that Open Interface Table is often referred as Open Interface.

  When you add the Oracle E-Business Suite Adapter as invoke (target) connections, open interface table REST services are available for outbound integrations from Oracle Integration.

- **Open Interface View**
  Open interface views are database objects that make data from Oracle E-Business Suite products available for selection.

  Similar to open interface table, open interface view REST services are available for outbound integrations from Oracle Integration when adding the Oracle E-Business Suite Adapter as invoke (target) connections.

- **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 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; POST and GET are the supported methods for Java REST services. For open interface tables with Inbound direction, four HTTP methods are supported for REST service. For open interface tables with Outbound direction and open interface views, only the GET method is supported.

HTTP Basic Authentication

HTTP Basic Authentication is the only supported authentication 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, the username and password information is provided when creating an Oracle E-Business Suite connection. This credential information is then passed from Oracle Integration to Oracle E-Business Suite at runtime.

What Application Version Is Supported?

For information about which application version is supported by this adapter, see the Oracle Integration Adapters Certification Matrix under section Oracle Integration Adapters Certification at the top of the page:

Oracle Integration Adapters Certification Matrix

Workflow to Create and Add an Oracle E-Business Suite Adapter Connection to an Integration

You follow a very simple workflow to create a connection with an adapter and include the connection in an integration in Oracle Integration.

This table lists the workflow steps for both adapter tasks and overall integration tasks, and provides links to instructions for each step.
### Task Description

<table>
<thead>
<tr>
<th>Prerequisites</th>
<th>Set Up and Enable the Oracle E-Business Suite Adapter for Integrations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Create the adapter connections for the applications you want to integrate. The connections can be reused in multiple integrations and are typically created by the administrator.</td>
</tr>
<tr>
<td>2</td>
<td>Create the integration. When you do this, you add the Oracle E-Business Suite Adapter as a trigger (source) or an invoke (target) connection to the integration.</td>
</tr>
<tr>
<td>3</td>
<td>Map data between the trigger connection data structure and the invoke connection data structure.</td>
</tr>
<tr>
<td>4</td>
<td>Manage lookups that map the different values used by those applications to identify the same type of object (such as gender codes or country codes).</td>
</tr>
<tr>
<td>5</td>
<td>Activate the integration. 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.</td>
</tr>
<tr>
<td>6</td>
<td>Monitor the integration on the dashboard.</td>
</tr>
</tbody>
</table>
Workflow to Create and Add an Oracle E-Business Suite Adapter Connection to an Integration

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Track payload fields in messages during runtime.</td>
<td>Assign Business Identifiers for Tracking Fields in Messages and Manage Business Identifiers for Tracking Fields in Messages of <em>Using Integrations in Oracle Integration</em></td>
</tr>
<tr>
<td>8</td>
<td>Manage errors at the integration level, connection level, or specific integration instance level.</td>
<td>Manage Errors of <em>Using Integrations in Oracle Integration</em> and <em>Troubleshoot the Oracle E-Business Suite Adapter and Related Error Messages</em> while testing the connection and creating the integration with the Oracle E-Business Suite Adapter at design time.</td>
</tr>
</tbody>
</table>

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

- Implement Common Patterns Using the Oracle E-Business Suite Adapter
- Oracle E-Business Suite Adapter Samples
  - An Example of Using a Business Event as a Trigger (Source) in an Integration
  - An Example of Using an XML Gateway Message as a Trigger (Source) in an Integration
  - An Example of Using a PL/SQL REST Service as an Invoke (Target) Connection in an Integration
  - An Example of Using an Open Interface REST Service as an Invoke (Target) Connection in an Integration
  - An Example of Using a Java REST Service as an Invoke (Target) Connection in an Integration

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

- Oracle E-Business Suite Adapter Issues of *Known Issues for Oracle Integration*
- *What's New for Oracle Integration*
Set Up and Enable the Oracle E-Business Suite Adapter for Integrations

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.

Topics:

• **Setup Tasks for Enabling the Oracle E-Business Suite Adapter**

  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.

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

  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. See: Post Activation Manual Steps for XML Gateway Messages as a Trigger.

**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. It is the path to access all Oracle E-Business Suite REST services that you can use in integrations in Oracle Integration.

   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**


   • **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

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, 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.


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

  For information about agents, see Manage the Agent Group and the On-Premises Connectivity Agent in Using Integrations in Oracle Integration.

  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 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, 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, 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 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, 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 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 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. For example, if you plan to use an Oracle E-Business Suite user **hrmanager** from Oracle Integration 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.

   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.
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, import additional certificates into Oracle Integration.

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 trusted certificate list, perform the following steps to export the Oracle E-Business Suite certificates:
   a. Access the Oracle E-Business Suite instance with the HTTPS URL from a web browser.
   b. 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:
      i. In Internet Explorer, select Internet Options from the Tools drop-down menu to open the Internet Options pop-up window.
      ii. In the Content tab, click Certificates.
      iii. In the Personal (or Other People) tab, select your certificates and click Export.
   c. 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.
   d. If the intermediate certificates mentioned in certificate chain is not present in the Oracle Integration 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.
   a. Log in to the Oracle Integration home page, select the Designer option from the navigation pane, and then Integrations.
   b. Click Settings and then Certificates.
   c. Click Upload at the top of the page.
   d. In the Upload Certificate dialog box, select the certificate type as "Trust Certificate".
   e. Enter a unique alias for the certificate.
f. Click **Browse** and then select the trust file (for example, .cer or .crt) to upload.

g. 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 Manage Security Certificates in *Using Integrations in Oracle Integration*.
- 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, you would have to import Oracle E-Business Suite certificates to the connectivity agent.

See: Download and Install the Agent in *Using Integrations in Oracle Integration*.

---

**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 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 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.

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

      ```
      sqlplus apps/apps_password
      ```

   b. Execute the script to upload the Oracle Integration user name:

      ```
      @$FND_TOP/sql/afvltput.sql FND REST_USERNAME <Oracle Integration user name>
      ```

      Replace `<Oracle Integration user name>` with the user name used to log in to Oracle Integration, such as `oiuser`.

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

   c. Execute the script to upload the Oracle Integration user password:

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

      Replace `Password` with the actual password value associated with the Oracle Integration user.

At runtime, the Oracle Integration 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. It is included based on the HTTP Basic Authentication scheme. Oracle Integration then authenticates the user credentials.
2. **Configure proxy host and port for XML Gateway messages.**
   a. 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**.
   b. Click **AutoConfig**.
   c. In the Context Files page, click the **Edit Parameters** icon for the Applications tier context file.
   d. 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.
   e. Run AutoConfig from the application tier.
      
      
      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 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.
   a. 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**.
   b. Click **AutoConfig**.
   c. In the Context Files page, click the **Edit Parameters** icon for the Applications tier context file.
   d. 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"**).
   e. Enter the following additional JVM parameters:
      
      -Dhttp.proxyHost=<http proxy host>
      -Dhttp.proxyPort=<http proxy port>
-Dhttps.proxyHost=<ssl proxy host>
-https.proxyPort=<ssl proxy port>

Save your work.

f. Run AutoConfig from the application tier.

Refer to Using AutoConfig to Manage System Configurations in 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.

a. 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.

b. 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 is the minimum required version for JDK 7 in Oracle E-Business Suite. For AIX platform, the minimum required version is JDK 1.7 SR10 FP1.

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

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

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

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

iv. 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
d. Run AutoConfig using the adautocfg.sh script in the application tier $ADMIN_SCRIPTS_HOME directory.

e. 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 the Oracle Integration server certificate is not in the Oracle E-Business Suite trusted certificate list.

Export the Oracle Integration Certificates
Perform the following steps to export the Oracle Integration certificates:

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

b. After the Oracle Integration 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:

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

ii. In the Content tab, click Certificates.

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

c. 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.

d. 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.

Import the Oracle Integration Certificates to Oracle E-Business Suite
Perform the following steps to import the Oracle Integration certificates to Oracle E-Business Suite:
a. Navigate to the $AF_JRE_TOP/lib/security directory.

b. Back up the existing cacerts file.

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

d. Execute the following command to ensure that cacerts has the write permissions:

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

e. 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
```

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

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

g. 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.
Create an Oracle E-Business Suite Adapter Connection

A connection is based on an adapter. You define connections to the specific cloud applications that you want to integrate.

Important:
Before establishing an Oracle E-Business Suite connection using the Oracle E-Business Suite Adapter in Oracle Integration, 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 the setup information, see Set Up and Enable the Oracle E-Business Adapter for Integrations.

Topics:
• Create a Connection
• Add a Contact Email
• Configure Connection Properties
• Configure Connection Security
• Configure an Agent Group (Conditional)
• Test the Connection

Create a Connection

The first step in creating an integration is to create the connections to the applications with which you want to share data.

1. In the navigation pane, click Integrations, then click Connections. Click Create.

Note:
You can also create a connection in the integration canvas of:
• An orchestrated integration (See Define Inbound Triggers and Outbound Invokes.)
• A basic routing integration (See Add a Trigger (Source) Connection.)
The Create Connection — Select Adapter dialog is displayed.

3. Select an adapter from the dialog. You can also search for the type of adapter to use by entering a partial or full name in the Search field, and clicking Search. The Create New Connection dialog is displayed.

4. Enter the information to describe the connection.
   - Enter a meaningful name to help others find your connection when they begin to create their own integrations. The name you enter is automatically added in capital letters to the Identifier field. If you modify the identifier name, do not include a blank space (for example, Sales Opportunity).
   - Select the role (direction) in which to use this connection (trigger, invoke, or both). Only the roles supported by this adapter are displayed for selection. When you select a role, only the connection properties and security policies appropriate to that role are displayed on the Connections page. If you select an adapter that supports both invoke and trigger, but select only one of those roles, then try to drag the adapter into the section you did not select, you receive an error (for example, configure an Oracle Service Cloud (RightNow) Adapter as only an invoke, but drag the adapter to the trigger section).
   - Enter an optional description of the connection.

5. Click Create.

Your connection is created and you are now ready to configure connection details, such as email contact, connection properties, security policies, connection login credentials, and (for certain connections) agent group.

Add a Contact Email

From the Connection Administrator section of the connection, you can add a contact email address for notifications.
1. In the **Email Address** field, enter an email address to receive email notifications when problems occur.

2. In the upper right corner, click **Save**.

**Configure Connection Properties**

Enter connection information so your application can process requests.

1. Click **Configure Connectivity**.

   The Connection Properties dialog is displayed. You can enter a URL (http://<ebs host name>:<port>) to connect to an Oracle E-Business Suite instance.

   **Note:**
   
   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 agent framework. See the step about configuring the access to Oracle E-Business Suite services, as described in **Setup Tasks for Enabling the Oracle E-Business Suite Adapter**.

2. Click **OK**.

   You are now ready to configure connection security.

**Configure Connection Security**

Configure security for your Oracle E-Business Suite Adapter connection by selecting the security policy and security token.

1. Click **Configure Credentials**.

2. Enter your login credentials to access the Oracle E-Business Suite instance you specified earlier in the Connection Properties dialog.
Configure an Agent Group (Conditional)

If your Oracle E-Business Suite is not directly accessible to Oracle Integration, you must configure an agent group to access the Oracle E-Business Suite services behind the fire wall.

1. Click Configure Agents.
   The Select an Agent Group page appears.
2. Click the name of the agent group.
3. Click Use.
   To configure an agent group, you must download and install the on-premises connectivity agent. See Download and Run the On-Premises Agent Installer and About Agents and Integrations Between On-Premises Applications and Oracle Integration in Using Integrations in Oracle Integration.
Test the Connection

After creating an Oracle E-Business Suite connection with Oracle E-Business Suite Adapter, you can test the connection to ensure that it is successfully configured.

1. In the upper right corner of the page, click Test.
2. If successful, the following message is displayed and the progress indicator shows 100%.
   
   Connection connection_name was tested successfully.

3. If your connection was unsuccessful, an error message is displayed with details. Verify that the configuration details you entered are correct.

4. When complete, click Save, then click Close.

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.

For information about error messages if occur while testing the connection, see Error Messages While Testing an Oracle E-Business Suite Connection.
Add the Oracle E-Business Suite Adapter Connection to an Integration

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

These topics 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.

Topics
• Add the Oracle E-Business Suite Adapter as a Trigger Connection
• Add the Oracle E-Business Suite Adapter as an Invoke Connection

Add the Oracle E-Business Suite Adapter as a Trigger Connection

When adding the Oracle E-Business Suite Adapter as a trigger (invoke) connection, the Configure Oracle E-Business Suite Adapter Endpoint Wizard is invoked. Based on your selections in the wizard, the following pages can be displayed.

Topics:
• Oracle E-Business Suite Adapter Trigger Basic Information Page
• Oracle E-Business Suite Adapter Business Events Page
• Oracle E-Business Suite Adapter XML Gateway Message Page
• Oracle E-Business Suite Adapter Trigger Summary Page

Oracle E-Business Suite Adapter Trigger Basic Information Page

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. Enter a name, description, and desired interface type for each trigger connection.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
</table>
| What do you want to call your endpoint? | Provide a meaningful name so that others can understand the responsibilities of this connection. You can include English alphabetic characters, numbers, underscores, and dashes in the name. You cannot include the following:  
  • Blank spaces (for example, My Inbound Connection)  
  • Special characters (for example, #;83 or righ(t)now4)  
  • Multibyte characters |
| What does this endpoint do?      | Enter an optional description of the connection’s responsibilities. For example: 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 for your integration:  
  • Business Event - allows the selection of a business event in an integration.  
  • XML Gateway Map - allows the selection of an XML Gateway message map in an integration. |

### Oracle E-Business Suite Adapter Business Events Page

Select a business event for your integration by entering its associated product family and product information in the Business Events page.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
</table>
| Product Family | Select a desired Oracle E-Business Suite application product family for your integration. For example, select “Order Management Suite” from the drop-down list.  
Note that the available product families for your selection are based on the Oracle E-Business Suite instance to which you are connecting. |
<p>| Product   | Select a desired product from the selected product family. For example, &quot;Order Management&quot;. |</p>
<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
</table>
| **Business Event** | Once you select a product, a list of business events including both Oracle seeded events and custom ones contained in the selected product is populated for your selection.  
Locate a desired business event through either of the following ways:  
• Select a desired event name from the drop-down list. For example, select an “Event for OIP status update notification” event.  
• Use the Filter by Name field to find your desired event. For example, enter Oracle in this field to find the event name starting with “Oracle”. |

**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.  
For information on creating custom business events, see Creating Custom Integration Interfaces of the Creating and Using Custom Integration Interfaces chapter of Oracle E-Business Suite Integrated SOA Gateway Developer’s Guide. For information on uploading custom interfaces to Oracle Integration Repository residing in Oracle E-Business Suite Integrated SOA Gateway, see Generating and Uploading ILDT Files and Uploading ILDT Files to Integration Repository of the Oracle E-Business Suite Integrated SOA Gateway Implementation Guide.

| Internal Name | Displays the internal name of the selected event, such as "oracle.apps.ont.oip.statuschange.update" for the selected event “Event for OIP status update notification". |
Element | Description
---|---
**Status** | Displays the corresponding event status for the selected business event. It can have either of the following values:
- **Enabled**
  This indicates that the selected event has the associated event subscription created, and this event is ready to use in an integration.
- **Disabled**
  If there is no event subscription created for the selected event, “Disabled” is shown. A warning message also appears indicating that this event is not ready to use in an integration. To use this event, you must enable it first from Oracle E-Business Suite.
For information on enabling the event subscription, see Defining Events, Managing Business Events chapter, *Oracle Workflow Developer’s Guide*.

**Description** | Displays the event description information.

Click **Next**. The **Summary page appears with the selected business event information.**

For information on using business events as a trigger connection, see *Use Oracle E-Business Suite Business Events to Trigger Integration Endpoint in Oracle Integration.*

**Oracle E-Business Suite Adapter XML Gateway Message Page**

Enter XML Gateway message information that you plan to use as a trigger in your integration.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product Family</strong></td>
<td>Select a desired Oracle E-Business Suite application product family for your integration. For example, select “Applications Technology” from the drop-down list. Note that the available product families for your selection are based on the Oracle E-Business Suite instance to which you are connecting.</td>
</tr>
<tr>
<td><strong>Product</strong></td>
<td>Select a desired product from the selected product family. For example, “Service Suite”.</td>
</tr>
</tbody>
</table>
Once you select a product, a list of XML Gateway messages including both Oracle seeded and custom messages contained in the selected product is populated for your selection.

Locate a desired XML Gateway message through either of the following ways:

- Select a desired XML Gateway message name from the drop-down list. For example, select “Add Salesorder”.
- Use the Filter by Name field to find your desired XML Gateway message. For example, enter Add in this field to find the event name starting with “Add”.

**Note:**
You can define custom XML Gateway messages to meet your needs. If required, annotate the custom events, and then upload them to the Integration Repository.

For information on creating custom XML Gateway messages, see Creating Custom Integration Interfaces of the Creating and Using Custom Integration Interfaces chapter of *Oracle E-Business Suite Integrated SOA Gateway Developer’s Guide*. For information on uploading custom interfaces to Oracle Integration Repository residing in Oracle E-Business Suite Integrated SOA Gateway, see Generating and Uploading ILDT Files and Uploading ILDT Files to Integration Repository of the *Oracle E-Business Suite Integrated SOA Gateway Implementation Guide*.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>XML Gateway Map</td>
<td>Once you select a product, a list of XML Gateway messages including both Oracle seeded and custom messages contained in the selected product is populated for your selection. Locate a desired XML Gateway message through either of the following ways: • Select a desired XML Gateway message name from the drop-down list. For example, select “Add Salesorder”. • Use the Filter by Name field to find your desired XML Gateway message. For example, enter Add in this field to find the event name starting with “Add”.</td>
</tr>
<tr>
<td>IREP Name</td>
<td>Displays the corresponding Integration Repository name after you selected an XML Gateway message. For example, “XNB:SOO” is shown for the selected XML Gateway message “Add Salesorder”.</td>
</tr>
<tr>
<td>Internal Name</td>
<td>Displays the internal name of the selected XML Gateway message, such as “XNB_OM_SALESORDER_OAG72_OUT” for “Add Salesorder”.</td>
</tr>
<tr>
<td>Standard</td>
<td>Displays the integration standard information, such as “OAG 7.2”.</td>
</tr>
<tr>
<td>Description</td>
<td>Displays the description information of the selected XML Gateway message.</td>
</tr>
</tbody>
</table>
Click **Next**.

The Summary page appears with the selected XML Gateway information.

For information on using XML Gateway message as a trigger connection, see Use Oracle E-Business Suite XML Gateway Messages to Trigger Integration Endpoint in Oracle Integration.

### Oracle E-Business Suite Adapter Trigger Summary Page

You can review the trigger (source) endpoint configuration details on the Oracle E-Business Suite Adapter Trigger Endpoint Configuration Summary page.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product Family</strong></td>
<td>Displays the selected product family for your configuration, such as “Order Management Suite”.</td>
</tr>
<tr>
<td><strong>Product</strong></td>
<td>Displays the selected product for your configuration, such as “Order Management”.</td>
</tr>
<tr>
<td><strong>Business Event</strong> (or XML Gateway Map)</td>
<td>Displays the internal name of the selected interface, either an event or XML Gateway message, such as &quot;oracle.apps.ont.oip.statuschange.update&quot; for an event or &quot;itg_process_po_007_out&quot; for a message.</td>
</tr>
<tr>
<td><strong>Integration Pattern</strong></td>
<td>Request only.</td>
</tr>
<tr>
<td><strong>Instructions</strong> (for XML Gateway only)</td>
<td>If the selected interface is an XML Gateway message, this field appears. It displays a list of manual steps that you must perform for the integration with an XML Gateway message map. These tasks include activating the integration and configuring a desired trading partner in Oracle E-Business Suite.</td>
</tr>
<tr>
<td></td>
<td>See <a href="#">Post Activation Manual Steps for XML Gateway Messages as a Trigger</a>.</td>
</tr>
</tbody>
</table>

Click **Done**.

### Add the Oracle E-Business Suite Adapter as an Invoke Connection

When adding the Oracle E-Business Suite Adapter as an invoke (target) connection, you can integrate with an Oracle E-Business Suite REST service in an integration through the Configure Oracle E-Business Suite Adapter Endpoint Wizard. The supported Oracle E-Business Suite REST services can be any of the following interface types:

- PL/SQL
- Concurrent Program
- Java
- Open Interface

**Topics:**

- **Basic Information**
• Oracle E-Business Suite Adapter Web Services Page
• Oracle E-Business Suite Adapter Operations Page
• Oracle E-Business Suite Adapter Invoke Summary Page

Basic Info Page

You can enter a name and description on the Basic Info page of each adapter in your integration.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
</table>
| **What do you want to call your endpoint?**     | Provide a meaningful name so that others can understand the responsibilities of this connection. You can include English alphabetic characters, numbers, underscores, and dashes in the name. You cannot include the following:  
  • Blank spaces (for example, My Inbound Connection)  
  • Special characters (for example, #;83\ or righ(t)now4)  
  • Multibyte characters |
| **What does this endpoint do?**                 | Enter an optional description of the connection's responsibilities. For example:  
  This connection receives an inbound request to synchronize account information with the cloud application. |

Oracle E-Business Suite Adapter Web Services Page

Select a desired API or REST service that you plan to use in an integration by entering its associated product family, product, and interface type in the Web Services page.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
</table>
| **Product Family**  | Select a desired Oracle E-Business Suite application product family that you want to use for your integration. For example, select “Order Management Suite” from the drop-down list.  
  Note that the available product families for your selection are based on the Oracle E-Business Suite instance you are connecting. |
<p>| <strong>Product</strong>         | Select a desired product from the selected product family. For example, “Order Management”. |</p>
<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interface Type</td>
<td>Select a desired interface type from the following values:</td>
</tr>
<tr>
<td></td>
<td>• <strong>All</strong>: This value is selected by default.</td>
</tr>
<tr>
<td></td>
<td>All the supported interfaces when adding the Oracle E-Business Suite Adapter as an invoke (target) connection will be listed in the API field for selection. These include interface types of PL/SQL APIs, Java APIs, concurrent programs, open interface tables, and open interface views.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Concurrent Program</strong>: This displays all concurrent program names in the API field for your selection.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Open Interface</strong>: This displays all open interface tables and open interface views in the API field for your selection.</td>
</tr>
<tr>
<td></td>
<td>• <strong>PL/SQL</strong>: This displays all PL/SQL APIs in the API field for your selection.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Java</strong>: This displays all Java-based APIs including Java Bean Services and Application Module Services subtypes in the API field for your selection.</td>
</tr>
<tr>
<td>Element</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
</tr>
<tr>
<td>API</td>
<td>Displays a list of API names based on your selected interface type including both Oracle seeded and custom interfaces contained in the selected product. For example, select “Sales Order Services” API.</td>
</tr>
</tbody>
</table>

**Note:**

If one or more of the methods contained in the selected API are deployed as REST services, after you click **Next**, the Operations page appears. However, if none of the methods within the selected API is deployed as a REST service, an error message is shown indicating that the associated REST service is not available. You must deploy the selected API as a REST service first before using it in your integration.

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*.

You can define custom PL/SQL APIs, Java-based APIs, and concurrent programs to meet your needs if required, annotate the custom interface based on the annotation standards, and then upload it to the Integration Repository. You can deploy the custom interface as a REST service from Oracle E-Business Suite Integrated SOA Gateway. The REST service will then be available to use for integrations from Oracle Integration.

**Note:**

Custom interface types of open interface tables and open interface views are not supported.

- For information on creating custom interfaces, see Creating Custom Integration Interfaces, Creating and Using Custom Integration Interfaces chapter, *Oracle E-Business Suite Integrated SOA Gateway Developer’s Guide*. 
<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• For information on annotating custom APIs, see Integration Repository Annotation Standards, <em>Oracle E-Business Suite Integrated SOA Gateway Developer's Guide</em>.</td>
</tr>
<tr>
<td></td>
<td>• 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, <em>Oracle E-Business Suite Integrated SOA Gateway Implementation Guide</em>.</td>
</tr>
</tbody>
</table>

| Internal Name    | Displays the internal name of the selected interface, such as OE_INBOUND_INT for the "Sales Order Services" API.                               |
| Description      | Displays the selected interface description information.                                                                                   |

**Oracle E-Business Suite Adapter Operations Page**

Enter REST service operation or method information that you plan to use as an invoke in your integration.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>API</td>
<td>Displays the API name (such as &quot;OE_INBOUND_INT&quot;) that you selected earlier in the Web Services page.</td>
</tr>
<tr>
<td>Element</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Methods</td>
<td>Select a desired method contained in the selected API. For example, select “PROCESS_ORDER” as the method from the “OE_INBOUND_INT” API.</td>
</tr>
<tr>
<td></td>
<td>If the selected interface is an open interface (such as RAXMTR), a list of open interface tables contained in the selected open interface is</td>
</tr>
<tr>
<td></td>
<td>displayed as the methods, along with the associated concurrent program submission method SUBMIT_CP_&lt;internal name of the associated concurrent program&gt;</td>
</tr>
<tr>
<td></td>
<td>(such as “SUBMIT_CP_RAXMTR”) shown as the last entry in the table.</td>
</tr>
</tbody>
</table>

**Note:**

SUBMIT_CP_<internal name of the associated concurrent program> is only displayed for an open interface. This method will not be shown if the selected interface is an open interface view.
<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Direction</strong> (for Open Interfaces only)</td>
<td>Appears only if the selected interface is an open interface table or open interface view. It displays a read-only value (<strong>Inbound</strong> or <strong>Outbound</strong>) for the selected method of an open interface table or view.</td>
</tr>
</tbody>
</table>

**Note:**

If the selected method is `SUBMIT_CP_<internal name of the associated concurrent program>`, **Direction** and **CRUD Operation** (described in the next row) are not shown in this page.
### Element Description

**CRUD Operation (for Open Interfaces only)**

Appears only if the selected interface is an open interface table or open interface view.

- If the selected method is an open interface table with **Inbound** direction, the available operations for your selection are:
  - **Create** (default): Creates or adds new entries for the selected method in the open interface table.
  - **Read**: Reads, retrieves, searches, or views existing data for the selected method in the open interface table.
  - **Update**: Updates or edits existing entries for the selected method in the open interface table.
  - **Delete**: Deletes or removes existing entries for the selected method in the open interface table.

**Note:**

If the selected operation value is **Read**, **Update**, or **Delete**, the **Add Filter Conditions** link appears. Clicking this link allows you to optionally create filter conditions for the selected method if desired in the Add Filter Conditions page. See: [Oracle E-Business Suite Adapter Operations — Add Filter Conditions Page](#).

- If the selected method is an open interface table or view with **Outbound** direction, **Read** is the only available operation and is automatically selected by default.

- If the selected method is **SUBMIT_CP_<internal name of the associated concurrent program>**, this field is not shown.
<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operation</strong> (for Java APIs only)</td>
<td>Appears only if the selected interface is a Java API. The available options for your selection are:</td>
</tr>
<tr>
<td></td>
<td>• <strong>Create</strong> (default): Performs the HTTP &quot;POST&quot; action to the selected method in the Java API.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Read</strong>: Performs the HTTP &quot;GET&quot; action to the selected method in the Java API.</td>
</tr>
<tr>
<td></td>
<td>By default, you cannot perform <strong>Read</strong> operation on all Java methods. Only if HTTP &quot;GET&quot; is enabled for a desired method first, you can deploy that method with GET option in Oracle E-Business Suite and then can use <strong>Read</strong> operation from the Oracle E-Business Suite Adapter for an integration. Otherwise, you can use the <strong>Create</strong> operation for the same method if it is deployed as a REST operation in Oracle E-Business Suite. For information on deploying a Java API as a REST service with desired HTTP verbs, see:</td>
</tr>
<tr>
<td></td>
<td>• &quot;Deploying REST Web Services&quot; section in <em>Oracle E-Business Suite Integrated SOA Gateway Implementation Guide</em></td>
</tr>
<tr>
<td></td>
<td>• &quot;Annotations for Application Module Services&quot; section and &quot;Annotations for Java Bean Services&quot; section in <em>Oracle E-Business Suite Integrated SOA Gateway Developer's Guide</em></td>
</tr>
<tr>
<td>Element</td>
<td>Description</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Service Status</td>
<td>Displays the corresponding REST service status for the selected method.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Ready to Use</strong></td>
</tr>
<tr>
<td></td>
<td>This indicates that the selected method is deployed as a REST service and it is ready to use for your integration.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Not Deployed</strong></td>
</tr>
<tr>
<td></td>
<td>If the selected method is not deployed as a REST service, then <strong>Not Deployed</strong> is shown as the service status instead. Additionally a warning message appears, indicating that you must deploy the method as a REST service first before using it for your integration. To deploy the selected method as a REST service, you need to log in to Oracle E-Business Suite as a user who has the Integration Administrator role. Select the <strong>Integrated SOA Gateway</strong> responsibility and the <strong>Integration Repository</strong> 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 then proceed to the process of adding Oracle E-Business Suite as a target connection. For information on deploying REST services, see Deploying REST Web Services, Administering Native Integration Interfaces and Services chapter, <em>Oracle E-Business Suite Integrated SOA Gateway Implementation Guide</em>.</td>
</tr>
<tr>
<td>Description</td>
<td>Displays the selected method description information.</td>
</tr>
</tbody>
</table>

**Oracle E-Business Suite Adapter Operations — Add Filter Conditions Page**

You can optionally create filter conditions for a selected open interface in your integration if the selected **CRUD Operation** value for a method is **Read**, **Update**, or **Delete**. Use this feature to add conditions to only allow certain data to be passed in your integration.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Element</td>
<td>Select a desired open interface table or view column from the drop-down menu. This returns the elements filtered by the text you selected. For example, select “QUANTITY_ORDER” as the filter text. Then only the column names with “QUANTITY_ORDER” will be retrieved.</td>
</tr>
<tr>
<td>Element</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Operator</td>
<td>Select an appropriate operator for your filter condition.</td>
</tr>
<tr>
<td></td>
<td>The available operation options are:</td>
</tr>
<tr>
<td></td>
<td>• Equals (default)</td>
</tr>
<tr>
<td></td>
<td>• Not Equals</td>
</tr>
<tr>
<td></td>
<td>• Less Than</td>
</tr>
<tr>
<td></td>
<td>• Less or Equal To</td>
</tr>
<tr>
<td></td>
<td>• Greater Than</td>
</tr>
<tr>
<td></td>
<td>• Greater or Equal To</td>
</tr>
<tr>
<td></td>
<td>• In</td>
</tr>
<tr>
<td></td>
<td>• Not In</td>
</tr>
<tr>
<td></td>
<td>For example, select &quot;Greater Than&quot; for the filter element &quot;QUANTITY_ORDER&quot;.</td>
</tr>
<tr>
<td>Value</td>
<td>Enter a literal value or a parameter in this field. For example, enter 1 for the filter element “QUANTITY_ORDER”.</td>
</tr>
<tr>
<td></td>
<td>If the value is a parameter or variable, add : (colon) before the parameter name as a prefix. For example, :BATCH_NUM would be a parameter</td>
</tr>
<tr>
<td></td>
<td>whose value is determined at runtime.</td>
</tr>
<tr>
<td></td>
<td>Please note that the :BATCH_NUM parameter specified here will be available for mapping later at the design time and will be part of the</td>
</tr>
<tr>
<td></td>
<td>input parameters in the schema (xsd) file generated for this integration.</td>
</tr>
<tr>
<td>AND/OR</td>
<td>If there are more than one filter conditions listed in the table, specify desired logical operator values (AND and OR) to associate</td>
</tr>
<tr>
<td></td>
<td>with these conditions in the table.</td>
</tr>
</tbody>
</table>

To update an existing condition, select a desired condition that you want to edit first. The entered values become editable. To remove a filter condition entered earlier in the table, click the x icon next to the condition you want to remove. Click Detach to manage the filter conditions in a separate Detached Table page. Click Clear All to remove all the filter conditions listed in the table.

Click OK to save the filter conditions and return back to the Operations page. See: [Oracle E-Business Suite Adapter Operations Page](https://example.com).

Oracle E-Business Suite Adapter Invoke Summary Page

You can review the invoke (target) endpoint configuration details on the Oracle E-Business Suite Adapter Invoke Endpoint Configuration Summary page.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Family</td>
<td>Displays the selected product family for your configuration, such as &quot;Financial Receivables Suite&quot;.</td>
</tr>
<tr>
<td>Product</td>
<td>Displays the selected product for your configuration, such as &quot;Receivables&quot;.</td>
</tr>
<tr>
<td>Element</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Web Service</strong></td>
<td>Displays the internal name of the selected interface, such as “RAXMTR”.</td>
</tr>
<tr>
<td><strong>Method</strong></td>
<td>Displays the selected method or operation name, such as “RA_INTERFACE_LINES_ALL”.</td>
</tr>
<tr>
<td><strong>Direction</strong> (for Open Interface only)</td>
<td>Displays either &quot;Inbound&quot; or &quot;Outbound&quot; for the selected open interface table or open interface view.</td>
</tr>
<tr>
<td><strong>CRUD Operation</strong> (for Open Interface only)</td>
<td>Displays selected operation value for the open interface table or open interface view.</td>
</tr>
<tr>
<td><strong>Operation</strong> (for Java API only)</td>
<td>Displays selected operation value for the Java method.</td>
</tr>
<tr>
<td><strong>Status</strong></td>
<td>Displays the service status of the selected method or operation, such as “Ready to Use”.</td>
</tr>
<tr>
<td><strong>Integration Pattern</strong></td>
<td>Synchronous</td>
</tr>
</tbody>
</table>

Click **Done**.
Implement Common Patterns Using the Oracle E-Business Suite Adapter

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

• **For Inbound Integration from Oracle E-Business Suite to Oracle Integration**
  When adding the Oracle E-Business Suite Adapter as a trigger (source) connection, you can use either of the following interface types to trigger an inbound integration in Oracle Integration:
  – Business Event
  – XML Gateway Message

• **For Outbound Integration from Oracle Integration to Oracle E-Business Suite**
  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. The available interface types that support this integration pattern are:
  – PL/SQL
REST Header Mapping

This type of integration requires the following RESTHeader elements to be passed as part of the input parameters in invoking Oracle E-Business Suite services. These header elements are used to set applications context values which are required in the API used in an integration for service invocation.

- **Responsibility**: It represents responsibility_key (such as "SYSTEM_ADMINISTRATOR").
- **RespApplication**: It represents Application Short Name (such as "FND").
- **SecurityGroup**: It represents Security Group Key (such as "STANDARD").
- **NLSLanguage**: It represents NLS Language (such as "AMERICAN").
- **Org_Id**: It represents Org Id (such as "202").

At design time, you need to map each of these RESTHeader elements from the Source section to the corresponding elements in the Target section while creating a mapping.
Additionally, you assign appropriate values to these elements if required in your mapping to pass application context values for invoking an Oracle E-Business Suite service. For example, you can assign the following values for each element listed in the table required to invoke a “SUBMIT_CP_RAXMTR” REST service.

<table>
<thead>
<tr>
<th>Element</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responsibility</td>
<td>&quot;EMPLOYEE_DIRECT_ACCESS_V4.0&quot;</td>
</tr>
<tr>
<td>RespApplication</td>
<td>&quot;PER&quot;</td>
</tr>
<tr>
<td>SecurityGroup</td>
<td>&quot;STANDARD&quot;</td>
</tr>
<tr>
<td>NLSLanguage</td>
<td>&quot;AMERICAN&quot;</td>
</tr>
<tr>
<td>Org_Id</td>
<td>&quot;204&quot;</td>
</tr>
</tbody>
</table>

After assigning the values listed above for the RESTHeader elements, you can find these values are mapped and displayed in the Target section.

For information about RESTHeader mapping, see the “Creating Mappings” section described in the following examples:

- An Example of Using a PL/SQL REST Service as an Invoke (Target) Connection in an Integration
- An Example of Using an Open Interface REST Service as an Invoke (Target) Connection in an Integration
- An Example of Using a Java REST Service as an Invoke (Target) Connection in an Integration
Topics:

- Use Oracle E-Business Suite Business Events to Trigger Integration Endpoint in Oracle Integration
- Use Oracle E-Business Suite XML Gateway Messages to Trigger Integration Endpoint in Oracle Integration
- Invoke Oracle E-Business Suite PL/SQL APIs from Oracle Integration
- Invoke Oracle E-Business Suite Concurrent Programs from Oracle Integration
- Invoke Oracle E-Business Suite Open Interfaces from Oracle Integration
- Invoke Oracle E-Business Suite Java APIs from Oracle Integration

Use Oracle E-Business Suite Business Events to Trigger Integration Endpoint in Oracle Integration

⚠️ Important:

Before adding the Oracle E-Business Suite Adapter as a trigger (source) connection for an inbound integration in Oracle 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.

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.

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 to trigger the integration.
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 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.

When adding a business event in an integration, you can locate an event through either of the following ways in the Business Events page of the Configure Oracle E-Business Suite Adapter Endpoint Wizard:

- Select a desired event name from the drop-down list. For example, select "Event for OIP status update notification".
• Use the **Filter by name** field to find your desired event. For example, enter an event partial name along with wildcard characters "*OIP*" in this field to search the event names containing "OIP".

After you selected an event, if the event status is "Disabled" indicating that there is no event subscription created for the event, to use that event for an integration, you must enable it first from Oracle E-Business Suite. For information on enabling the event subscription, see Subscribing to Business Events, Administering Native Integration Interfaces and Services chapter, *Oracle E-Business Suite Integrated SOA Gateway Implementation Guide*.

• 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*.

• For information about error messages if occur while adding the Oracle E-Business Suite Adapter as a trigger (source) connection in an integration, see *Troubleshoot the Oracle E-Business Suite Adapter While Using it as an Invoke (Target) in an Integration*.

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

**Important:**

Before adding the Oracle E-Business Suite Adapter as a trigger (source) connection for an inbound integration in Oracle 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.

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 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 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.

**Note:**

You can define custom XML Gateway message maps to meet your needs if required.

After you completed the configuration with an XML Gateway message through the Oracle E-Business Suite Adapter, to successfully use the selected message map in Oracle Integration, 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.

For information on how to perform these manual steps, see Post Activation Manual Steps for XML Gateway Messages as a Trigger.

- 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.
For information about error messages if occur while adding the Oracle E-Business Suite Adapter as a trigger (source) connection in an integration, see Troubleshoot the Oracle E-Business Suite Adapter While Using it as an Invoke (Target) in an Integration.

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, 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://<Oracle Integration 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.

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

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

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

   d. 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://<Oracle Integration Host>:<Port>/ic/api/integration/v1/flows/ebusiness/<integration>/1.0/

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

      - **Username:** <Oracle Integration user name>
Enter the Oracle Integration user credentials used to execute integrations in Oracle Integration.

- **Password:** Password

Replace password with the actual password value of the associated Oracle Integration user.

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

### Invoke Oracle E-Business Suite PL/SQL APIs from Oracle Integration

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. 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 example, select “Sales Order Services” PL/SQL API in the Web Services page of the Configure Oracle E-Business Suite Adapter Endpoint Wizard. The corresponding interface information is automatically populated. This includes the interface internal name (OE_INBOUND_INT) and description.

After the selection, if one or more methods contained in the selected interface are deployed as REST service operations, after you click Next, the Operations page appears.

In the Operations page of the Configure Oracle E-Business Suite Adapter Endpoint Wizard, the selected interface internal name OE_INBOUND_INT is automatically populated.
For more information about using PL/SQL REST services in an integration, refer to:

- 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.
- For troubleshooting information while creating an integration with the Oracle E-Business Suite Adapter as an invoke (target) connection in Oracle Integration, see Troubleshoot the Oracle E-Business Suite Adapter While Using it as an Invoke (Target) in an Integration.

Invoke Oracle E-Business Suite Concurrent Programs from Oracle Integration

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.

Note:

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

When adding the Oracle E-Business Suite Adapter as an invoke (target) connection, in the Web Services page of the Configure Oracle E-Business Suite Adapter Endpoint Wizard, you can navigate to a desired product family, such as “Marketing Suite”, and
select “Trade Management” as the product name to locate a concurrent program called “Claim Settlement Fetcher Program” for your integration.

If one or more methods contained in the selected “Claim Settlement Fetcher Program” interface are deployed as REST service operations, after you click Next, the Operations page appears.

In the Operations page of the Configure Oracle E-Business Suite Adapter Endpoint Wizard, you can then select a desired service operation, such as “Process” as the method name for your integration.
For more information about using concurrent program REST services in an integration, refer to:

- For more information on configuring the Oracle E-Business Suite Adapter with concurrent program REST services, see Add the Oracle E-Business Suite Adapter as an Invoke (Target) Connection.
- 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, see Troubleshoot the Oracle E-Business Suite Adapter While Using it as an Invoke (Target) in an Integration.

Invoke Oracle E-Business Suite Open Interfaces from Oracle Integration

This pattern allows you to directly interact with the Oracle E-Business Suite application data stored in a desired open interface table. When you add the Oracle E-Business Suite Adapter as invoke (target) connections, open interface table and open interface view REST services are available for outbound integrations from Oracle Integration.

Depending on the direction of a selected open interface table in an integration, you can perform various actions to manage the data.

- You can use an open interface table with Inbound direction to read, insert, update, or remove data stored in an open interface table.
- You can use an open interface table with Outbound direction to only read the data stored in the table.
Open interface views are database objects that make data from Oracle E-Business Suite products available for selection. If you use an open interface view in an integration, you can only read the data stored in the selected open interface view.

**Note:**

Custom interface types of open interface tables and open interface views are not supported.

For example, in the Web Services page of the Configure Oracle E-Business Suite Adapter Endpoint Wizard, select “AR Autoinvoice” open interface from the drop-down list. Its internal name is that of the associated concurrent program (such as “RAXMTR”), and the description is the full description of the associated concurrent program as well.

In the Operations page of the wizard, a list of tables contained in the selected open interface “RAXMTR” is displayed as the methods, along with the associated concurrent program submission SUBMIT_CP_<internal name of the associated concurrent program> (such as SUBMIT_CP_RAXMTR) shown in the last entry of the list.
**Note:**

SUBMIT_CP_<internal name of the associated concurrent program> is only displayed for an open interface table. This method will not be shown if the selected interface is an open interface view. If the SUBMIT_CP_RAXMTR method in this example is selected, then the **Direction** and **CRUD Operation** fields (shown in the screenshot below) are not displayed in this page.

---

**CRUD Operation**

- If the selected method is an open interface table with **Inbound** direction, you can select a desired operation (**Create**, **Read**, **Update**, or **Delete**) for that method.

  For information on each CRUD operation, see [Oracle E-Business Suite Adapter Operations Page](#).
Note:

If you select Read, Update, or Delete as its value, you can optionally create filter conditions for the selected method by clicking Add Filter Conditions link.

![CRUD Operation Read Add Filter Conditions]

See: Create Filters in the Add Filter Conditions Page (Optional).

- If the selected method is an open interface table or view with Outbound direction, Read is the only available operation and is automatically selected by default.
- If the selected method is `SUBMIT_CP_<internal name of the associated concurrent program>`, this field is not shown.

For more information on using open interface tables and open interface views in an integration, refer to:

- For an integration example of using open interface REST services, see An Example of Using an Open Interface REST Service as an Invoke (Target) Connection in an Integration.
- For troubleshooting information while creating an integration with the Oracle E-Business Suite Adapter as an invoke (target) connection in Oracle Integration, see Troubleshoot the Oracle E-Business Suite Adapter While Using it as an Invoke (Target) in an Integration.

Create Filters in the Add Filter Conditions Page (Optional)

If the selected CRUD Operation value for an open interface table or view method is Read, Update, or Delete, you can optionally click the Add Filter Conditions link to create conditions to filter the endpoint data before it is passed to the associated REST service for your integration at runtime.

Use the Add Filter Conditions page to specify conditions for your integration.
For more information on creating filter conditions, see Oracle E-Business Suite Adapter Operations — Add Filter Conditions Page.

Invoke Oracle E-Business Suite Java APIs from Oracle Integration

When you use the Oracle E-Business Suite Adapter as invoke connections, Java REST services including Java Bean Services and Application Module Services subtypes are available for outbound integrations from Oracle Integration. You can use a Java-based REST service to access Oracle E-Business Suite application data to add new entries or fetch existing records to meet your integration needs.

Note:

In addition to Oracle seeded Java APIs, you can use custom Java APIs or REST services for your integration needs.

For example, you can select "Self-Service HR" Java API in the Web Services page of the Configure Oracle E-Business Suite Adapter Endpoint Wizard, and then select "Get Person Absence Type Balances" as the method in the Operations page of the wizard.
Note that the Operation field appears only if the selected interface is a Java API.
Java REST services support **Create** (default) and **Read** operations.

For information on how to use these two operations, see Oracle E-Business Suite Adapter Operations Page.

**Important:**

By default, you cannot perform **Read** (using "GET" HTTP verb) operation on all Java methods when using the Oracle E-Business Suite Adapter. Only if HTTP "GET" is enabled for a desired method first, you can deploy that method with GET option in Oracle E-Business Suite and then can use **Read** operation from the Oracle E-Business Suite Adapter for an integration. Otherwise, you can use the **Create** operation for the same method if it is deployed as a REST operation in Oracle E-Business Suite. For information on deploying a Java API as a REST service with desired HTTP verbs, see:

- “Deploying REST Web Services” section in Oracle E-Business Suite Integrated SOA Gateway Implementation Guide
- “Annotations for Application Module Services” section and “Annotations for Java Bean Services” section in Oracle E-Business Suite Integrated SOA Gateway Developer's Guide

For more information on using Java APIs in an integration, refer to:

- For an integration example of using Java REST services, see An Example of Using a Java REST Service as an Invoke (Target) Connection in an Integration.
For troubleshooting information while creating an integration with the Oracle E-Business Suite Adapter as an invoke (target) connection in Oracle Integration, see Troubleshoot the Oracle E-Business Suite Adapter While Using it as an Invoke (Target) in an Integration.
Oracle E-Business Suite Adapter Samples

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

Topics:

• An Example of Using a Business Event as a Trigger (Source) in an Integration
• An Example of Using an XML Gateway Message as a Trigger (Source) in an Integration
• An Example of Using a PL/SQL REST Service as an Invoke (Target) Connection in an Integration
• An Example of Using an Open Interface REST Service as an Invoke (Target) Connection in an Integration
• An Example of Using a Java REST Service as an Invoke (Target) Connection in an Integration

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.

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. As a result, the draft invoice is created in Oracle Accounts Receivables.

Assumption
• Assume that REST services are directly accessible from Oracle Integration; therefore, Oracle Integration 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.

Based on the integration scenario, the sample tasks for using an Oracle E-Business Suite business event in an integration are included in the Topics section:

Topics:

1. Prepare the Oracle E-Business Suite Instances
2. Establish Oracle E-Business Suite Connections
3. Create an Integration
4. Add the Oracle E-Business Suite Adapter (Trigger) and the REST Adapter (Invoke) to the Integration
5. Create Mappings
6. Assign Business Identifier for Tracking
7. Activate and Test the Integration
8. Sample XSD for the Oracle E-Business Suite Adapter as a Trigger with a Business Event Example

Prepare 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.

• Prepare the Order Management Instance
• Prepare the Oracle Accounts Receivables Instance

Prepare 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:

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.

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

These tasks include storing the Oracle Integration 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.

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.

Prepare 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:

   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.

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
Establish Oracle E-Business Suite Connections

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

- Create the Connection for Oracle E-Business Suite Order Management
- Create the Connection for Oracle E-Business Suite Accounts Receivables

Create 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-Business Suite Order Management in Oracle Integration:

1. Log in to the Oracle Integration 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://<Oracle E-Business Suite 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 user name 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.

Create 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 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.

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://Oracle E-Business Suite 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 user name and its associated password in the Credentials dialog to access the Invoice Creation REST service you specified earlier in the Connection Properties dialog.

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.

Create 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 home page, select the **Designer** option from the navigation pane, and then **Integrations**.

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

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: Add the Oracle E-Business Suite Adapter (Trigger) and the REST Adapter (Invoke) to the Integration.

- Add mappings in the integration.
  See: Create Mappings.

- Assign business identifiers for tracking.
  See: Assign Business Identifier for Tracking.

Add 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.
  See: Add the Oracle E-Business Suite Adapter as a Trigger with a Business 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.
  See: Add a Switch with Two Branch Rules.

- 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: Create Mappings.

  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.
  See: Add the Oracle E-Business Suite Adapter as an Invoke for the "Get_Order" Activity.

- 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: Create Mappings.

- 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.

See: Add the REST Adapter as an Invoke for the "Receivables" Activity.

Topics:
- Add the Oracle E-Business Suite Adapter as a Trigger with a Business Event
- Add a Switch with Two Branch Rules
- Create Mappings
- Add the Oracle E-Business Suite Adapter as an Invoke for the "Get_Order" Activity
- Add the REST Adapter as an Invoke for the "Receivables" Activity

Add 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. 

  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`), event status “Enabled”, and description, is automatically populated in this 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.

### Add 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.

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.

   a. 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**.

   b. 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.

Save your work. Click Close to return to the integration.

Add 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".
   • Interface Type: Select "PL/SQL".
• **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.

  Click **Next**.

4. **In the Operations page,** select a desired method name contained in the selected API (OE_ORDER_PUB). For example, select "GET_ORDER". The corresponding service status value "Ready to Use" is displayed in this page, along with the description information.

   **Note:**

   The Service Status of the selected method GET_ORDER should be "Ready to Use".

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).

  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: Create Mappings.
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.

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.

- 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.

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: Create Mappings

Save the integration.

At the end of this step, the integration flow contains the activities added in this section.
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 mappings for Get_Order
- Define mappings for Create_Invoice

### Create Mappings for Get_Order

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.
   
   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:
   a. 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.
   b. In the Mapping area of the Build Mappings page, notice that the P_HEADER_ID element is displayed as the Target element.
   c. 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.
   d. Drag and drop the Value element from the Source section to the Mapping section as the value for the P_HEADER_ID element.
   e. 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'">.
   f. 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">.
g. 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:

   a. 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.

   b. 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:

<table>
<thead>
<tr>
<th>Path</th>
<th>Element</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>GET_ORDER_Input/</td>
<td>RespApplication</td>
<td>ONT</td>
</tr>
<tr>
<td>RESTHeader</td>
<td>SecurityGroup</td>
<td>STANDARD</td>
</tr>
<tr>
<td>GET_ORDER_Input/</td>
<td>NLSLanguage</td>
<td>AMERICAN</td>
</tr>
<tr>
<td>RESTHeader</td>
<td>Org_Id</td>
<td>204</td>
</tr>
<tr>
<td>GET_ORDER_Input/</td>
<td>P_API_VERSION_NUMBER</td>
<td>1.0</td>
</tr>
<tr>
<td>InputParameters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GET_ORDER_Input/</td>
<td>P_INIT_MSG_LIST</td>
<td>F</td>
</tr>
<tr>
<td>InputParameters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GET.Order_Input/</td>
<td>P_ORG_ID</td>
<td>204</td>
</tr>
<tr>
<td>InputParameters</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

After you complete the mappings for Get_Order, the mapped source values should appear in the Mapping column of the Target section.
5. Click **Save** to save your work.

**Create 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.
   a. 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.
   b. 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:

<table>
<thead>
<tr>
<th>Path</th>
<th>Element</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CREATE_SINGLE_INVOICE</td>
<td>RespApplication</td>
<td>AR</td>
</tr>
<tr>
<td>_Input/RESTHeader</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CREATE_SINGLE_INVOICE</td>
<td>SecurityGroup</td>
<td>STANDARD</td>
</tr>
<tr>
<td>_Input/RESTHeader</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CREATE_SINGLE_INVOICE</td>
<td>NLSLanguage</td>
<td>AMERICAN</td>
</tr>
<tr>
<td>_Input/RESTHeader</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CREATE_SINGLE_INVOICE</td>
<td>Org_Id</td>
<td>204</td>
</tr>
<tr>
<td>_Input/RESTHeader</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CREATE_SINGLE_INVOICE</td>
<td>P_API_VERSION</td>
<td>1.0</td>
</tr>
<tr>
<td>_Input/InputParameters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CREATE_SINGLE_INVOICE</td>
<td>P_INIT_MSG_LIST</td>
<td>T</td>
</tr>
<tr>
<td>_Input/InputParameters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CREATE_SINGLE_INVOICE</td>
<td>P_COMMIT</td>
<td>T</td>
</tr>
<tr>
<td>_Input/InputParameters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CREATE_SINGLE_INVOICE</td>
<td>BATCH_SOURCE_ID</td>
<td>1188</td>
</tr>
<tr>
<td>_Input/InputParameters/</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>P_BATCH_SOURCE_REC</td>
<td></td>
</tr>
<tr>
<td>Path</td>
<td>Element</td>
<td>Value</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>-----------------------</td>
<td>-------</td>
</tr>
<tr>
<td>CREATE_SINGLE_INVOICE _Input/InputParameters/</td>
<td>TRX_HEADER_ID</td>
<td>101</td>
</tr>
<tr>
<td>P_TRX_HEADER_TBL/</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P_TRX_HEADER_TBL_ITE</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>CREATE_SINGLE_INVOICE _Input/InputParameters/</td>
<td>CUST_TRX_TYPE_ID</td>
<td>1684</td>
</tr>
<tr>
<td>P_TRX_HEADER_TBL/</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P_TRX_HEADER_TBL_ITE</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>CREATE_SINGLE_INVOICE _Input/InputParameters/</td>
<td>BILL_TO_CUSTOMER_ID</td>
<td>1290</td>
</tr>
<tr>
<td>P_TRX_HEADER_TBL/</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P_TRX_HEADER_TBL_ITE</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>CREATE_SINGLE_INVOICE _Input/InputParameters/</td>
<td>SHIP_TO_CUSTOMER_ID</td>
<td>1290</td>
</tr>
<tr>
<td>P_TRX_HEADER_TBL/</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P_TRX_HEADER_TBL_ITE</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>CREATE_SINGLE_INVOICE _Input/InputParameters/</td>
<td>COMMENTS</td>
<td>Invoice created via ICS integration for booked Sales Order in Order Management</td>
</tr>
<tr>
<td>P_TRX_HEADER_TBL/</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P_TRX_HEADER_TBL_ITE</td>
<td>M</td>
<td></td>
</tr>
</tbody>
</table>

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

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.

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

<table>
<thead>
<tr>
<th>Source Path</th>
<th>Source Element</th>
<th>Target Path</th>
<th>Target Element</th>
</tr>
</thead>
<tbody>
<tr>
<td>BusinessEvent_Input</td>
<td>LINE_NUMBER</td>
<td>execute/</td>
<td>LINE_NUMBER</td>
</tr>
<tr>
<td>/InputParameters/</td>
<td></td>
<td>CREATE_SINGLE_I</td>
<td></td>
</tr>
<tr>
<td>BusinessEvent/</td>
<td></td>
<td>VOICE_Input/</td>
<td></td>
</tr>
<tr>
<td>X_LINE_TBL/</td>
<td></td>
<td>InputParameters/</td>
<td></td>
</tr>
<tr>
<td>X_LINE_TBL_ITEM</td>
<td></td>
<td>P_TRX_LINES_TBL/</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>P_TRX_LINES_TBL_ITEM</td>
<td></td>
</tr>
<tr>
<td>BusinessEvent_Input</td>
<td>ORDERED_ITEM</td>
<td>execute/</td>
<td>DESCRIPTION</td>
</tr>
<tr>
<td>/InputParameters/</td>
<td></td>
<td>CREATE_SINGLE_I</td>
<td></td>
</tr>
<tr>
<td>BusinessEvent/</td>
<td></td>
<td>VOICE_Input/</td>
<td></td>
</tr>
<tr>
<td>X_LINE_TBL/</td>
<td></td>
<td>InputParameters/</td>
<td></td>
</tr>
<tr>
<td>X_LINE_TBL_ITEM</td>
<td></td>
<td>P_TRX_LINES_TBL/</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>P_TRX_LINES_TBL_ITEM</td>
<td></td>
</tr>
<tr>
<td>BusinessEvent_Input</td>
<td>ORDERED_QUANTITY</td>
<td>execute/</td>
<td>QUANTITY_ORDER</td>
</tr>
<tr>
<td>/InputParameters/</td>
<td>TY</td>
<td>CREATE_SINGLE_I</td>
<td></td>
</tr>
<tr>
<td>BusinessEvent/</td>
<td></td>
<td>VOICE_Input/</td>
<td></td>
</tr>
<tr>
<td>X_LINE_TBL/</td>
<td></td>
<td>InputParameters/</td>
<td></td>
</tr>
<tr>
<td>X_LINE_TBL_ITEM</td>
<td></td>
<td>P_TRX_LINES_TBL/</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>P_TRX_LINES_TBL_ITEM</td>
<td></td>
</tr>
</tbody>
</table>
Once you complete this step, the mapped source values should appear next to the corresponding target elements with the green check mark icons:

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_SALESCREDITS_TBL` node.

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

   In the Mapping section, enter the following information:

   `<nsmpr1:P_TRX_SALESCREDITS_TBL_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.

---

<table>
<thead>
<tr>
<th><img src="image" alt="Diagram" /></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Diagram" /></td>
</tr>
</tbody>
</table>

Save your work.

6. Click **Exit Mapper**.

7. Save the integration.

### Assign 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**.

### Activate and Test 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.

   Notice that a status message is displayed in the banner at the top of the Integrations page.

### Test 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

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)

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 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. 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.

**Monitor the Result in Oracle Integration**

1. Log in to Oracle Integration 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.

**Validate 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.

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: Add the Oracle E-Business Suite Adapter (Trigger) and the REST Adapter (Invoke) to the Integration.

```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="TRX_HEADER_ID" type="xs:int"></xs:element>
                                    </xs:sequence>
                                </xs:complexType>
                            </xs:element>
                            <xs:element name="P_TRX_HEADER_TBL_ITEM">
                                <xs:complexType>
                                    <xs:sequence>
                                        <xs:element name="TRX_HEADER_ID" type="xs:int"></xs:element>
                                    </xs:sequence>
                                </xs:complexType>
                            </xs:element>
                        </xs:sequence>
                    </xs:complexType>
                </xs:element>
            </xs:sequence>
        </xs:complexType>
    </xs:element>
</xs:schema>
```
Chapter 6
An Example of Using a Business Event as a Trigger (Source) in an Integration

<x:element name="TRX_NUMBER" type="xs:string"></x:element>
<x:element name="CUST_TRX_TYPE_ID" type="xs:string"></x:element>
<x:element name="BILL_TO_CUSTOMER_ID" type="xs:int"></x:element>
<x:element name="SHIP_TO_CUSTOMER_ID" type="xs:string"></x:element>
<x:element name="COMMENTS" type="xs:string"></x:element>
</x:sequence>
</xs:complexType>
</xs:element>
</xs:complexType>
</xs:complexType>
</xs:element>
<x:element name="P_TRX_LINES_TBL">
<x:complexType>
<x:sequence>
<x:element name="P_TRX_LINES_TBL_ITEM">
<x:complexType>
<x:sequence>
<x:element name="TRX_HEADER_ID" type="xs:int"></x:element>
<x:element name="TRX_LINE_ID" type="xs:string"></x:element>
<x:element name="LINE_NUMBER" type="xs:string"></x:element>
<x:element name="DESCRIPTION" type="xs:int"></x:element>
<x:element name="QUANTITY_ORDERED" type="xs:string"></x:element>
<x:element name="QUANTITY_INVOICED" type="xs:int"></x:element>
<x:element name="UNIT_SELLING_PRICE" type="xs:string"></x:element>
<x:element name="LINE_TYPE" type="xs:int"></x:element>
</x:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<x:element name="P_TRX_DIST_TBL">
<x:complexType>
<x:sequence>
<x:element name="P_TRX_DIST_TBL_ITEM">
<x:complexType>
<x:sequence>
<x:element name="TRX_DIST_ID"></x:element>
</x:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<x:element name="P_TRX_SALESCREDITS_TBL">
<x:complexType>
<x:sequence>
<x:element name="P_TRX_SALESCREDITS_TBL_ITEM">
<x:complexType>
<x:sequence>
<x:element name="TRX_SALESCREDIT_ID"></x:element>
</x:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
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.

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. 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.

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.

Based on the integration scenario, the sample tasks for using an Oracle E-Business Suite XML Gateway message in an integration are included in the Topics section:

Topics:

1. Prepare the Oracle E-Business Suite Purchasing Instance
2. Establish an Oracle E-Business Suite Connection for Publishing XML Gateway Messages
3. Create an Integration
4. Add the Oracle E-Business Suite Adapter as a Trigger (Source) Connection
5. Assign Business Identifier for Tracking
6. Activate the Integration
7. Configure Trading Partner Information for Post Integration
8. Test and Validate the Integration
Prepare the Oracle E-Business Suite 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.

   
   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.

2. (Optional) Import TLS certificates of Oracle Integration 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.

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.

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.

Establish an Oracle E-Business Suite Connection for Publishing XML Gateway Messages

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

1. Log in to the Oracle Integration 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://<Oracle E-Business Suite 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 user name 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.

**Create 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 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.

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: Add the Oracle E-Business Suite Adapter as a Trigger (Source) Connection.

• Assign business identifiers for tracking.

See: Assign Business Identifier for Tracking.

Add 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.

   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.

   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.

   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-Business Suite (called "Purchasing" in this example) now appears in the Trigger (Source) area on the canvas.

Assign 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.

3. Click Done.

4. Save your work and then click Exit Integration.

Activate the Integration

Activate 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**.

**Record the Integration Endpoint in Oracle Integration**

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://<Oracle Integration 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 **Configure Trading Partner Information for Post Integration**.

**Configure 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://<Oracle Integration 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://<Oracle Integration 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: <Oracle Integration user name>

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

• Password: password

Replace password with the actual password value of the associated Oracle Integration user.

5. Save your work.

Test and Validate 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. 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

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. 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.

Monitor the Result in Oracle Integration

1. Log in to Oracle Integration.

   In the Oracle Integration 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, 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.

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.

Once the integration is successfully executed at runtime, a sales order will be created in Oracle E-Business Suite.

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.

Based on the integration scenario, the sample tasks for using an Oracle E-Business Suite PL/SQL REST service in an integration are included in the Topics section:

Topics:

1. Establish the Connections for Oracle E-Business Suite and REST Services
2. Create an Integration
3. Add the Oracle E-Business Suite Adapter as an Invoke (Target) Connection
4. Add the REST Adapter as a Trigger (Source) Connection
5. Create Mappings
6. Assign Business Identifier for Tracking
7. Activate and Test the Integration
8. Sample JSON Payloads for the Oracle E-Business Suite Adapter as an Invoke Example for a PL/SQL REST Service

Establish 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.

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

Perform the following steps to establish the connection for Oracle E-Business Suite in Oracle Integration:
1. Log in to the Oracle Integration 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://<Oracle E-Business Suite host name>:<port>) to connect to an Oracle E-Business 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 user name 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.

**Create 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://<Oracle E-Business Suite 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 user name 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.

Create 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 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.

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”.

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:
  
  – Add the Oracle E-Business Suite Adapter as an Invoke (Target) Connection.
  
  – Add the REST Adapter as a Trigger (Source) Connection.

• Add mappings to the integration.
  
  See: Create Mappings.

• Assign business identifiers for tracking.
  
  See: Assign Business Identifier for Tracking.

### Add 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”.

   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".
- **Interface Type**: Select "PL/SQL" from the list.

After you select a desired product family, a product, and an interface type, 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".
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.

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-Business Suite now appears in the Invoke (Target) area on the canvas.

Add 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**

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.

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

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

Create 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

**Create mappings for the request message:**

1. In the middle of the integration, click the **Mapper** icon for the request.

Click **Create** (the + icon) to display the mapper.
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.

   Similarly, use the same approach to complete the mappings for the elements listed in the following table.

<table>
<thead>
<tr>
<th>Source Path</th>
<th>Source Element</th>
<th>Target Path</th>
<th>Target Element</th>
</tr>
</thead>
<tbody>
<tr>
<td>execute/equest-wrapper/PROCESS_ORDER_Input/RESTHeader</td>
<td>Responsibility</td>
<td>PROCESS_ORDER_Input/RESTHeader</td>
<td>Responsibility</td>
</tr>
<tr>
<td>execute/equest-wrapper/PROCESS_ORDER_Input/RESTHeader</td>
<td>RespApplication</td>
<td>PROCESS_ORDER_Input/RESTHeader</td>
<td>RespApplication</td>
</tr>
</tbody>
</table>
### Create mappings for the response message:

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.

<table>
<thead>
<tr>
<th>Source Path</th>
<th>Source Element</th>
<th>Target Path</th>
<th>Target Element</th>
</tr>
</thead>
<tbody>
<tr>
<td>execute/equest-wrapped/PROCESS_ORDER</td>
<td>SecurityGroup</td>
<td>PROCESS_ORDER_INPUT/RESTSecurityGroupHeader</td>
<td>SecurityGroup</td>
</tr>
<tr>
<td>_Input/RESTHeader</td>
<td>NLSLanguage</td>
<td>PROCESS_ORDER_INPUT/RESTHeader</td>
<td>NLSLanguage</td>
</tr>
<tr>
<td></td>
<td>Org_Id</td>
<td>PROCESS_ORDER_INPUT/RESTHeader</td>
<td>Org_Id</td>
</tr>
<tr>
<td></td>
<td>P_INIT_MSG_LIST</td>
<td>PROCESS_ORDER_INPUT/InputParameters</td>
<td>P_INIT_MSG_LIST</td>
</tr>
<tr>
<td></td>
<td>P_RETURN_VALUE</td>
<td>PROCESS_ORDER_INPUT/InputParameters</td>
<td>P_RETURN_VALUE</td>
</tr>
<tr>
<td></td>
<td>P_ACTION_COMMIT</td>
<td>PROCESS_ORDER_INPUT/InputParameters</td>
<td>P_ACTION_COMMIT</td>
</tr>
</tbody>
</table>

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**.

---

An Example of Using a PL/SQL REST Service as an Invoke (Target) Connection in an Integration

---

Chapter 6

6-48
Create mappings for the fault message:

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.

<table>
<thead>
<tr>
<th>Source Path</th>
<th>Source Element</th>
<th>Target Path</th>
<th>Target Element</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROCESS_ORDER Response/</td>
<td>MESSAGE_TEXT</td>
<td>executeResponse/</td>
<td>MESSAGE_TEXT</td>
</tr>
<tr>
<td>OutputParameters/</td>
<td></td>
<td>response-wrapper/</td>
<td></td>
</tr>
<tr>
<td>X_MESSAGES/</td>
<td></td>
<td>OutputParameters/</td>
<td></td>
</tr>
<tr>
<td>X_MESSAGES_ITE M</td>
<td></td>
<td>X_MESSAGES/</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>X_MESSAGES_ITE</td>
<td></td>
</tr>
<tr>
<td>PROCESS_ORDER Response/</td>
<td>ORDER_NUMBER</td>
<td>executeResponse/</td>
<td>ORDER_NUMBER</td>
</tr>
<tr>
<td>OutputParameters/</td>
<td></td>
<td>response-wrapper/</td>
<td></td>
</tr>
<tr>
<td>X_HEADER_REC</td>
<td></td>
<td>OutputParameters/</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>X_HEADER_REC</td>
<td></td>
</tr>
</tbody>
</table>
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.

**Assign 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.
3. Click **Done**.  
   Save your work and then click **Exit Integration**.

**Activate and Test the Integration**

**Activate 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 a status message is displayed in the banner at the top of the Integrations page.

**Test 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://<Oracle Integration Host>:<Port>/ic/api/integration/v1/flows/ebusiness/CREATE_ORDER/1.0/](https://<Oracle Integration 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.
Verify 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.

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: Add the REST Adapter as a Trigger (Source) Connection.

Sample Request Payload for the request.json File

```json
{}

"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"
  }
} 
```
An Example of Using an Open Interface REST Service as an Invoke (Target) Connection in an Integration

Sample Business Scenario
An open interface "AR Autoinvoice" (RAXMTR) is used to explain how to insert invoice data in Oracle E-Business Suite through the invocation of REST services.
In this example, the REST Adapter is used as a trigger (source) connection and the Oracle E-Business Suite Adapter is used as invoke (target) connections to invoke the REST services contained in the RAXMTR open interface.

At runtime when the integration is triggered, the Oracle E-Business Suite Adapter receives a request with input payload from the trigger (source) connection, invokes the RA_INTERFACE_LINES_ALL REST service to insert data, and invokes the SUBMIT_CP_RAXMTR REST service to submit the corresponding concurrent program. Once the integration is executed and completed successfully, invoice line data is inserted into the RA_INTERFACE_LINES_ALL open interface table in Oracle Receivables. Additionally, you will find the log messages as output responses indicating the number of records are inserted into the table and the concurrent request ID. You can then use the request ID to view and verify the report of the RAXMTR concurrent program.

Prerequisites:

Before creating the integration in Oracle Integration, you need to ensure the following tasks are in place:

- The “AR Autoinvoice” (RAXMTR) open interface is deployed as a REST service with alias autoinvoice. All included service operations or interface tables are selected and deployed as REST service operations.

Record the following REST service endpoint from the WADL:

https://<host>:<port>/webservices/rest/<alias>/RA_INTERFACE_LINES_ALL/

Replace <alias> with autoinvoice in this example. You will use this service endpoint later when you create a REST connection in Oracle Integration.
Security grants are created for the operations user.

Based on the integration scenario, the sample tasks for using an Oracle E-Business Suite Open Interface REST service in an integration are included in the Topics section:

Topics:
1. Establish the Connections for Oracle E-Business Suite and REST Services
2. Create an Integration with App Driven Orchestration
3. Add the REST Adapter (Trigger) and the Oracle E-Business Suite Adapter (Invoke) to the Integration
4. Create Mappings
5. Assign Business Identifier for Tracking
6. Activate and Test the Integration
7. Sample XSD for the Oracle E-Business Suite Adapter as an Invoke Example for an Open Interface REST Service

Establish the Connections for Oracle E-Business Suite and REST Services

In this integration example, 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 invoke (target) connections later in an integration.

• Connection for REST services
  
  You need to establish the connection for REST services. You can add this REST connection as a trigger (source) connection later in an integration.

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

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

1. Log in to the Oracle Integration 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 "EBSDemo".
   • Identifier: Accept the default populated identifier, such as "EBSDEMO".
   • 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://<Oracle E-Business Suite host name>:<port>) to connect to an Oracle E-Business 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 user name 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 "EBSDemo", 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 “EBSDemo” now appears in the Connections page.

**Create an Connection for REST Services in This Example**

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 "RESTSample" 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://<Oracle E-Business Suite host name>:<port>/webservices/
rest/autoinvoice/RA_INTERFACE_LINES_ALL 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 user name 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 "RESTSample" connection for REST services appears in the Connections page, along with the Oracle E-Business Suite connection "EBSDemo" that you created earlier.

Create an Integration with App Driven Orchestration

Perform the following steps to create an integration between REST services and Oracle E-Business Suite:

1. Log in to the Oracle Integration 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.

In this example, click Select for the "App Driven Orchestration" integration pattern to create an integration.

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

- What do you want to call your integration? Enter "EBS OIT Demo" as the name.
- Identifier: Accept the default identifier value such as "EBS_OIT_DEMO".
- Version: Accept the default version number.
- What does this integration do? Enter description information for your integration, such as "Inserting records in an Open Interface Table".

3. Click Create and Save.

An empty canvas is displayed.

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: Add the REST Adapter (Trigger) and the Oracle E-Business Suite Adapter (Invoke) to the Integration.
- Add mappings to the integration.
  See: Create Mappings.
- Assign business identifiers for tracking.
Add the REST Adapter (Trigger) and the Oracle E-Business Suite Adapter (Invoke) to the Integration

After creating an integration with "App Driven Orchestration" pattern, you need to orchestrate desired activities for the integration.

In this example, the "EBS OIT Demo" orchestration flow diagram created for this integration includes the following activities:

• The REST Adapter as a trigger connection "REST"

  This activity provides the invoice line information as an input payload for invocation of the RA_INTERFACE_LINES_ALL REST service through the Oracle E-Business Suite Adapter.

  See: Add the REST Adapter as a Trigger Connection.

• Mapping defined for "RA_Interface_Lines"

  This activity allows you to map and pass the invoice related parameters to the "RA_Interface_Lines" activity to invoke the RA_INTERFACE_LINES_ALL REST service contained in the "AR Autoinvoice" (RAXMTR) open interface.

  See: Create Mappings.

• The Oracle E-Business Suite Adapter as an invoke connection (called RA_Interface_Lines) for inserting invoice line data

  This activity invokes the RA_INTERFACE_LINES_ALL REST service when adding the Oracle E-Business Suite Adapter as an invoke connection. This activity will insert multiple invoice line records into the RA_INTERFACE_LINES_ALL open interface table in Oracle Receivables when the service is invoked successfully.

  See: Add the Oracle E-Business Suite Adapter as an Invoke Connection for Inserting Records.

• The first logger called "Interface"

  This activity allows you to log message about the "Success Count" information after the successful invocation of the RA_INTERFACE_LINES_ALL REST service.

• Mapping defined for "Submit_RAXMTR"

  This activity provides the parameter values to the "Submit_RAXMTR" activity in order for the concurrent program to run successfully.

  See: Create Mappings.

• The Oracle E-Business Suite Adapter as an invoke connection (called "Submit_RAXMTR") for submitting associated concurrent program

  This activity invokes the "SUBMIT_CP_RAXMTR" REST service to submit the RAXMTR (Autoinvoice Master Program) concurrent program. When the request of running the concurrent program is processed or executed, validation is performed on the corresponding open interface.

  See: Add the Oracle E-Business Suite Adapter as an Invoke Connection for Submitting a Concurrent Program.

• The second logger called "CPSubmitResponse"
Once the concurrent request is successfully processed, use this activity to log message about the concurrent request ID. You can view the associated report through the concurrent request ID for validation.

See: Add the Loggers.

Topics:
- Add the REST Adapter as a Trigger Connection
- Add the Oracle E-Business Suite Adapter as an Invoke Connection for Inserting Records
- Create Mappings
- Add the Oracle E-Business Suite Adapter as an Invoke Connection for Submitting a Concurrent Program
- Add the Loggers

Add the REST Adapter as a Trigger Connection

The REST Adapter is used in this example to provide invoice information as an input to the RA_INTERFACE_LINES_ALL REST service invocation through the Oracle E-Business Suite Adapter.

Perform the following steps to add the REST Adapter as a trigger (source) connection:

1. In the "EBS OIT Demo" integration page, drag and drop the REST Adapter connection called "RESTSample" from the Triggers section in the upper right corner to the large + section within the circle in the integration canvas. The Configure REST Endpoint wizard appears.

2. Enter the following information:
   - **What do you want to call your endpoint?** - Enter the name of this endpoint, such as "REST".
   - **What does this endpoint do?** - Enter the usage of this endpoint, such as "Provide REST endpoint with input payload".
   - **What is the endpoint's relative resource URI?** - Enter /RA_INTERFACE_LINES_ALL/.
   - **What action does the endpoint perform?** - Select "POST" from the drop-down list.

   Ensure that you select the following check box for this trigger (source) connection:
   - **Configure a request payload for this endpoint**

   Click Next.

3. In the Request page, perform the following tasks:
   - In the "Select the request payload file" section, select the **XML 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 "input.xsd". Click **Open** to attach the selected file. System will parse the schema and
display the root element (RA_INTERFACE_LINES_ALL_input) in the Element field.

For the sample request payload, see Sample XSD for the Oracle E-Business Suite Adapter as an Invoke Example for an Open Interface REST Service.

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

Click **Next**.

4. This displays the Summary page with the following REST service information that you specified earlier:

• **REST Service URI:** /RA_INTERFACE_LINES_ALL/
• **Method:** POST
• **Request Media Type:** application/xml

Click **Done**.

Click **Save** to save your work.

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

Add the Oracle E-Business Suite Adapter as an Invoke Connection for Inserting Records

After adding the REST Adapter as a trigger connection, you can add the Oracle E-Business Suite connection that you created earlier as an invoke (target) connection in your integration. This allows you to invoke an open interface table REST service to insert invoice line data into the open interface table RA_INTERFACE_LINES_ALL in Oracle Receivables.

Perform the following steps to add the Oracle E-Business Suite Adapter in the orchestration flow:

1. In the "EBS OIT Demo" integration page, drag and drop the "EBSDemo" connection from the Invokes toolbar on the right to the integration, right after the "REST" activity you created earlier.

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

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

   • **What do you want to call your endpoint?** - Enter "RA_Interface_Lines".
   • **What does this endpoint do?** - Enter "Insert invoice data in Oracle Receivables".

   Click **Next**.

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

   • **Product Family:** Select "Financial Receivables Suite" from the drop-down list.
   • **Product:** Select "Receivables".
   • **Interface Type:** Select "Open Interface" from the list.
   • **API:** Select "AR Autoinvoice" for this example.
The corresponding API internal name (RAXMTR) and description are automatically populated.

Click **Next**.

4. In the Operations page, select a desired method name contained in the selected API (RAXMTR) for this invoke (target) connection.

   For example, select "RA_INTERFACE_LINES_ALL".

   In the CRUD Operation field, select "Create" from the drop-down list.
Click **Next**.

5. The Summary page displays all the selected interface details. This information includes the selected "RA_INTERFACE_LINES_ALL" operation (with CRUD "Create" operation) contained in the "RAXMTR" web service from the Financial Receivables Suite product family and Receivables product. This page also displays the default interaction pattern "Synchronize" for the selected service.
The Oracle E-Business Suite Adapter Target Endpoint configuration is successfully created.

Click **Done**.

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

The connection for Oracle E-Business Suite called "RA_Interface_lines" now appears as part of the orchestration flow.

Add the Oracle E-Business Suite Adapter as an Invoke Connection for Submitting a Concurrent Program

After adding the Oracle E-Business Suite Adapter as an invoke connection (RA_Interface_lines) to invoke the RA_INTERFACE_LINES_ALL REST service, you can add the second invoke connection in the flow to invoke the SUBMIT_CP_RAXMTR REST service to submit the RAXMTR (Autoinvoice Master Program) concurrent program.

Perform the following steps to add the Oracle E-Business Suite Adapter as an invoke (target) connection for concurrent program submission:

1. In the "EBS OIT Demo" integration page, drag and drop the "EBSDemo" connection from the Invokes toolbar on the right to the integration, right after the "RA_Interface_lines" activity you just created in Step 2.
The Configure Oracle E-Business Suite Adapter Endpoint wizard appears.

2. In the Basic Info page, enter the following information for your endpoint:
   - **What do you want to call your endpoint?** - Enter "Submit_RAXMTR".
   - **What does this endpoint do?** - Enter "Submit the concurrent program for RAXMTR".
   
   Click **Next**.

3. In the Web Services page, specify the following information for your target connection:
   - **Product Family**: Select "Financial Receivables Suite" from the drop-down list.
   - **Product**: Select "Receivables".
   - **Interface Type**: Select "Open Interface" from the list.
   - **API**: Select "AR Autoinvoice".
     
     The corresponding API internal name (RAXMTR) and description are automatically populated.
   
   Click **Next**.

4. In the Operations page, select a desired method name contained in the API (RAXMTR) for this invoke (target) connection. In this example, select "SUBMIT_CP_RAXMTR".
The Summary page displays all the selected interface details. This information includes the selected "SUBMIT_CP_RAXMTR" operation contained in the "RAXMTR" REST service from the Financial Receivables Suite product family and Receivables product. This page also displays the default interaction pattern "Synchronize" for the selected service.

The Oracle E-Business Suite Adapter Target Endpoint configuration is successfully created.

Click **Done**.

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

### Add the Loggers

After adding both the trigger and invoke connections in the canvas, you can add the logger to log messages. In this example, you need to add the following two loggers in the orchestration flow:

- **Add the first logger after "RA_Interface_Lines"**
  This activity is to log message about the "Success Count" information after the successful invocation of the RA_INTERFACE_LINES_ALL REST service.

- **Add the second logger after "Submit_RAXMTR"**
  Once the concurrent program is successfully processed, use this activity to log message about the concurrent request ID. You can then view the associated report through the concurrent request ID for validation.

Perform the following steps to add loggers:

**1. Add the First Logger "Interface" for Success Count**

Click **Next**.
In the "EBS OIT Demo" integration page, from Actions section on right side of canvas, drag and drop the Logger activity to the canvas, right after "RA_Interface_Lines" and before "Submit_RAXMTR".

The Create Action page appears.

2. Enter "Interface" as the Name field in the Create Action page.

![Create Action Page](image)

Click Create.

The logger "Interface" is created successfully.

3. In the Logger Action page, perform the following tasks:

   - In the Log field, select the **Always** button.
   - In the Logger Message field, click the **Pencil** icon to provide the logger message in the Log Message page.
Use the String Concat function as Expression to display Success Count. In the Source section, expand the RAINTERFACE_LINES_ALLResponse node, then the OutputParameters node, and then the Summary node. Drag and drop the SuccessCount element to the right top under the Expression section. Click Close.

4. **Add the Second Logger "CPSubmitResponse" for Concurrent Program Submit ID**

   In the "EBS OIT Demo" integration page, from Actions section on right side of canvas, drag and drop the Logger activity to the canvas, right after "Submit_RAXMTR".

   The Create Action page appears.

5. **Enter "CPSubmitResponse" as the Name field in the Create Action page. Click Create.**

6. **In the Logger Action page, select the Always button. Click the Pencil icon to provide log message in the Log Message page.**

   Use the String Concat function as Expression to display CP Submit ID. In the Source section, expand the Submit_RAXMTR node, then the RAXMTRResponse node, and then the OutputParameters node.

   Drag and drop the CP_Submit element to the right top under the Expression section. Click Close.

**Create Mappings**

After orchestrated the required activities in this example, you need to create the following mappings to ensure the source and target data between activities can be processed successfully for the integration:

- Create mappings for "RA_Interface_Lines"
- Create mappings for "Submit_RAXMTR"

**Create Mappings for the RA_Interface_Lines Map**
1. In the "EBS OIT Demo" integration page, click the **Edit** icon for the **Map to RA_Interface_Lines** icon.

2. Perform the following tasks to creating mapping:

   In this example, you need to map all the elements under the **RA_INTERFACE_LINES_ALL_Input** node from the Source section to the corresponding elements in the **RA_INTERFACE_LINES_ALL_Input** node under the Target section.

   For example, create the first mapping using the following steps:
   - In the Source section, expand the **execute** node, then the **RA_INTERFACE_LINES_ALL_Input** node, and then the **RESTHeader** node.
     
     Select the **Responsibility** element from the **RESTHeader** node.
   - In the Target section, expand the **RA_INTERFACE_LINES_ALL_Input** node, and then the **RESTHeader** node.
     
     Select the **Responsibility** element.

   Drag and drop the **Responsibility** element from the Source section to the **Responsibility** element in the Target section to map the data.

3. Use the same mapping mechanism described above to map all the elements under the **RA_INTERFACE_LINES_ALL_Input** node from the Source section to the corresponding elements in the **RA_INTERFACE_LINES_ALL_Input** node under the Target section. Specifically, you need to creating mappings for the following elements:
   - All elements under the **RESTHeader** node from the Source section to the corresponding elements in the Target section
   - The **Select** element from the Source section to the **Select** element in the Target section

   - All elements under the **InputParameters** node from the Source section to the corresponding elements in the **InputParameters** node in the Target section
4. Save your work.

Create Mappings for the Submit_RAXMTR Map

1. In the "EBS OIT Demo" integration page, click the **Edit** icon for the **Map to Submit_RAXMTR** icon.

2. In the Mapper page, assign constant values to the target elements.
   a. In the Target section, expand the **RA_INTERFACE_LINES_ALL_Input** node, and then the **RESTHeader** node.
      - Click the **Responsibility** element to open the Build Mappings page.
   b. 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:

<table>
<thead>
<tr>
<th>Path</th>
<th>Element</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RA_INTERFACE_LINES_ALL_INPUT</td>
<td>RespApplication</td>
<td>&quot;AR&quot;</td>
</tr>
<tr>
<td>RA_INTERFACE_LINES_ALL_INPUT</td>
<td>SecurityGroup</td>
<td>&quot;STANDARD&quot;</td>
</tr>
<tr>
<td>RA_INTERFACE_LINES_ALL_INPUT</td>
<td>NLSLanguage</td>
<td>&quot;AMERICAN&quot;</td>
</tr>
<tr>
<td>RA_INTERFACE_LINES_ALL_INPUT</td>
<td>Org_Id</td>
<td>&quot;204&quot;</td>
</tr>
<tr>
<td>RA_INTERFACE_LINES_ALL_INPUT</td>
<td>APPLICATION</td>
<td>&quot;AR&quot;</td>
</tr>
<tr>
<td>RA_INTERFACE_LINES_ALL_INPUT</td>
<td>PROGRAM</td>
<td>&quot;RAXMTR&quot;</td>
</tr>
<tr>
<td>RA_INTERFACE_LINES_ALL_INPUT</td>
<td>SUB_REQUEST</td>
<td>&quot;0&quot;</td>
</tr>
<tr>
<td>RA_INTERFACE_LINES_ALL_INPUT</td>
<td>NumberOfInstances</td>
<td>&quot;1&quot;</td>
</tr>
<tr>
<td>RA_INTERFACE_LINES_ALL_INPUT</td>
<td>Organization</td>
<td>&quot;204&quot;</td>
</tr>
</tbody>
</table>
After you complete this step, the mapped source values should appear in the Mapping column of the Target section.

### Assign Business Identifier for Tracking

Perform the following steps to provide identifiers for tracking during runtime:

1. In the "EBS OIT Demo" Integration page, click **Tracking**. The Business Identifiers For Tracking dialog appears.
2. From the Available Source Fields section, expand the `RA_INTERFACE_LINES_ALL_Input` node and then the `RESTHeader` node. Drag and drop the `Org_Id` element to the Tracking Field column in the table as the primary Tracking field.
3. Click **Done**.
4. Save your work and then click **Close**.

### Activate and Test the Integration

Perform the following steps to activate the integration:

1. On the Integrations page, click the switch icon for the "EBS OIT Demo" integration that you created earlier to activate the integration.
2. The Confirmation dialog appears. Click **Activate** to confirm this action.

Notice that a status message is displayed in the banner at the top of the Integrations page.

When this integration is activated, the endpoint to trigger the integration is displayed on top of the page, along with a link to the Tracking page to track instances.

The REST endpoint URL may be as: https://<Oracle Integration host>:<port>/ic/api/integration/v1/flows/rest/EBS_OIT_DEMO/1.0/metadata

**Test the Integration at Runtime**

1. Open a REST client.
2. Post the following HTTP request:

```xml
<?xml version="1.0" encoding="utf-8"?>
<RA_INTERFACE_LINES_ALL_Input>
  <RESTHeader>
    <Responsibility>RECEIVABLES_VISION_OPERATIONS</Responsibility>
    <RespApplication>AR</RespApplication>
    <SecurityGroup>STANDARD</SecurityGroup>
    <NLSLanguage>AMERICAN</NLSLanguage>
    <Org_Id>204</Org_Id>
  </RESTHeader>
  <Select>QUANTITY,TRX_NUMBER,BATCH_SOURCE_NAME</Select>
  <InputParameters>
    <RA_INTERFACE_LINES_ALL_REC>
      <INTERFACE_LINE_ATTRIBUTE9>1</INTERFACE_LINE_ATTRIBUTE9>
      <INTERFACE_LINE_ATTRIBUTE11>1</INTERFACE_LINE_ATTRIBUTE11>
      <INTERFACE_LINE_ATTRIBUTE10>1</INTERFACE_LINE_ATTRIBUTE10>
      <ORG_ID>204</ORG_ID>
      <COMMENTS>Created by Service</COMMENTS>
      <QUANTITY>10</QUANTITY>
      <TRX_NUMBER>Demo-Rec1</TRX_NUMBER>
      <CONVERSION_RATE>1</CONVERSION_RATE>
      <CONVERSION_DATE>2018-08-18</CONVERSION_DATE>
      <CONVERSION_TYPE>User</CONVERSION_TYPE>
      <ORIG_SYSTEM_SHIP_ADDRESS_ID>1030</ORIG_SYSTEM_SHIP_ADDRESS_ID>
      <ORIG_SYSTEM_SHIP_CUSTOMER_ID>1004</ORIG_SYSTEM_SHIP_CUSTOMER_ID>
      <ORIG_SYSTEM_BILL_ADDRESS_ID>1030</ORIG_SYSTEM_BILL_ADDRESS_ID>
      <ORIG_SYSTEM_BILL_CUSTOMER_ID>1004</ORIG_SYSTEM_BILL_CUSTOMER_ID>
      <TERM_ID>4</TERM_ID>
      <TERM_NAME>30 Net</TERM_NAME>
      <CUST_TRX>Type_ID>1</CUST_TRX_TYPE_ID>
      <CUST_TRX_TYPE_NAME>Invoice</CUST_TRX_TYPE_NAME>
      <AMOUNT>1000.00</AMOUNT>
      <CURRENCY_CODE>USD</CURRENCY_CODE>
      <DESCRIPTION>Project Invoices</DESCRIPTION>
      <LINE_TYPE>Line</LINE_TYPE>
      <SET_OF_BOOKS_ID>1</SET_OF_BOOKS_ID>
      <BATCH_SOURCE_NAME>PROJECTS INVOICES</BATCH_SOURCE_NAME>
      <INTERFACE_LINE_ATTRIBUTE7>Line</INTERFACE_LINE_ATTRIBUTE7>
      <INTERFACE_LINE_ATTRIBUTE6>1</INTERFACE_LINE_ATTRIBUTE6>
      <INTERFACE_LINE_ATTRIBUTE5>Sole, Mr. Samuel</INTERFACE_LINE_ATTRIBUTE5>
    </RA_INTERFACE_LINES_ALL_REC>
  </InputParameters>
</RA_INTERFACE_LINES_ALL_Input>
```
3. Click the Tracking page link mentioned earlier to display the Tracking Instances page.

4. Click the business identifier (such as Org_Id: 204) to display the orchestration flow diagram of the integration instance.

5. From the menu, select View Activity Stream to view log messages about Success Count from the Interface step and the log message about concurrent program Submit ID from the 'CPSubmitResponse' step.

Log messages can be like:
a. LogActivity --<Date Time>-- Success Count <no. of records in payload that was successfully inserted to RA_INTERFACE_LINES_ALL> - Interface

b. LogActivity --<Date Time>-- CP Submit ID <Request ID returned by CP Submit> - CPSubmitResponse

6. Use the Submit ID to track the status of the associated concurrent program in Oracle E-Business Suite. Once the execution of the concurrent program is completed, you can view the report for the result of this concurrent program.

Sample XSD for the Oracle E-Business Suite Adapter as an Invoke Example for an Open Interface REST Service

This section includes the XML request payload used in the example of using an open interface table REST service as an invoke connection in an integration.

For information on using this payload in the Configure REST Endpoint wizard page, see: An Example of Using an Open Interface Table REST Service as an Invoke (Target) Connection in an Integration.

Sample Request Payload for the input.xsd File

```xml
<xs:schema attributeFormDefault="unqualified" elementFormDefault="qualified" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:element name="RA_INTERFACE_LINES_ALL_Input">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="RESTHeader">
          <xs:complexType>
            <xs:sequence>
              <xs:element type="xs:string" name="Responsibility"/>
              <xs:element type="xs:string" name="RespApplication"/>
              <xs:element type="xs:string" name="SecurityGroup"/>
              <xs:element type="xs:string" name="NLSLanguage"/>
              <xs:element type="xs:string" name="Org_Id"/>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
        <xs:element type="xs:string" name="Select"/>
        <xs:element name="InputParameters">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="RA_INTERFACE_LINES_ALL_REC" maxOccurs="unbounded" minOccurs="0">
                <xs:element type="xs:string" name="INTERFACE_LINE_ATTRIBUTE11"/>
                <xs:element type="xs:string" name="INTERFACE_LINE_ATTRIBUTE10"/>
                <xs:element type="xs:decimal" name="ORG_ID"/>
                <xs:element type="xs:string" name="COMMENTS"/>
                <xs:element type="xs:decimal" name="QUANTITY"/>
                <xs:element type="xs:decimal" name="CONVERSION_RATE"/>
                <xs:element type="xs:date" name="CONVERSION_DATE"/>
                <xs:element type="xs:string" name="CONVERSION_TYPE"/>
              </xs:element>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```
An Example of Using a Java REST Service as an Invoke (Target) Connection in an Integration

Sample Business Scenario

An Application Module Service, a subtype of Java interface, called "Self-Service HR" is used to explain how to obtain available absence details from Oracle E-Business Suite through the invocation of a Java REST service.

In this example, the REST Adapter is used as a trigger (source) connection and the Oracle E-Business Suite Adapter is used as invoke (target) connections to invoke the "Get Person Absence Type Balances" (getPersonAbsenceBalanceDtls) REST service operation contained in the "Self-Service HR" Java API.

At runtime when the integration is triggered, the Oracle E-Business Suite Adapter receives a request with input payload from the trigger (source) connection, invokes the getPersonAbsenceBalanceDtls REST service operation to obtain data. Once the integration is executed and completed successfully, the available person absence data is retrieved and returned as part of the JSON response message.

Prerequisites:
Before creating the integration in Oracle Integration, you need to ensure the following tasks are in place:

- The "Self-Service HR" is deployed as a REST service with alias sshr. All included service operations are selected and deployed as REST service operations.

Record the following REST service endpoint from the WADL:

https://<host>:<port>/webservices/rest/<alias>/
getPersonAbsenceBalanceDtls/

Replace <alias> with sshr in this example. You will use this service endpoint later when you create a REST connection in Oracle Integration.

- Security grants are created for the bpalmer user.

Based on the integration scenario, the sample tasks for using an Oracle E-Business Suite Java REST service in an integration are included in the Topics section:

**Topics:**

1. Establish the Connections for Oracle E-Business Suite and REST Services
2. Create an Integration
3. Add the REST Adapter as a Trigger (Source) Connection
4. Add the Oracle E-Business Suite Adapter as an Invoke (Target) Connection
5. Create Mappings
6. Assign Business Identifier for Tracking
7. Activate and Test the Integration
Establish the Connections for Oracle E-Business Suite and REST Services

In this integration example, 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 invoke (target) connections later in an integration.

- **Connection for REST services**
  You need to establish the connection for REST services. You can add this REST connection as a trigger (source) connection later in an integration.

**Create an Oracle E-Business Suite Connection with Oracle E-Business Suite Adapter**

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

1. Log in to the Oracle Integration 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 "EBSDemo".
   - **Identifier**: Accept the default populated identifier, such as "EBSDEMO".
   - **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://<Oracle E-Business Suite host name>:<port>) to connect to an Oracle E-Business 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 bpalmer as the user name 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 "EBSDemo", 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 "EBSDemo" now appears in the Connections page.

### Create a Connection for REST Services in This Example

Perform the following steps to create a 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 a connection through the REST Adapter.

3. The New Connection - Information dialog appears.

   Enter "RESTSample" 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://<Oracle E-Business Suite host name>:<port>/webservices/rest/sshr) to connect to an instance for REST services.

   Click **OK** to save your work.

6. Click **Configure Security** to open the Credentials dialog.

   Enter sshr as the user name 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 "RESTSample" connection for REST services appears in the Connections page, along with the Oracle E-Business Suite connection "EBSDemo" that you created earlier.
Create an Integration

Perform the following steps to create an integration for invoking a Java REST service:

1. Log in to the Oracle Integration 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.

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

   • What do you want to call your integration? Enter "EBS Java Service Demo" as the name.
   • Identifier: Accept the default identifier value such as "EBS_JAVA_SERVICE_DEMO".
   • Version: Accept the default version number.
   • What does this integration do? Enter description information for your integration.

   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:
     – Add the REST Adapter as a Trigger (Source) Connection.
     – Add the Oracle E-Business Suite Adapter as an Invoke (Target) Connection.
   • Add mappings to the integration.
     See: Create Mappings.
   • Assign business identifiers for tracking.
     See: Assign Business Identifier for Tracking.

Add the REST Adapter as a Trigger (Source) Connection

After creating an integration “EBS Java Service Demo”, 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 "RESTSample" connection that you created earlier by entering "RESTSample" in the Connections field.
2. Drag `RESTSample` from the Connections panel on the right to the Trigger (Source) area on the canvas.
   
   The Configure 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 "REST".
   
   - **What does this endpoint do?** - Enter the usage of this endpoint, such as "Provide REST endpoint with input payload to obtain person absence details".
   
   - **What is the endpoint's relative resource URI?** - Enter "/getPersonAbsenceBalanceDtls/".
   
   - **What action does the endpoint perform?** - Select "GET" from the drop-down list.

   Ensure that you select the following two check boxes for this trigger (source) connection:

   - Add and review parameters for this endpoint
   
   - Configure this endpoint to receive the response

   ![Configure REST Endpoint](image)

   Click **Next**.

4. In the Request Parameters page, perform the following tasks:
• The Resource URI field displays the "/getPersonAbsenceBalanceDtls/" information you entered earlier,

• In the “Specify Query Parameters” region, click the Add icon to enter the following information in a new row:
  – Name: Enter “personid”.
  – Data Type: Select “Integer” from the list.

Click Next.

5. In the Response page, select the JSON Sample button for this example.

Click <<inline>> to enter the following JSON payload:

```json
{
    "getPersonAbsenceBalanceDtls" : {
        "OutputParameters" : {
            "Output" : {
                "PerAbsenceBalanceDataBean" : [ {
                    "Personid" : 1,
                    "BusinessGroupId" : 2,
                    "AbsenceAttendanceTypeId" : 3,
                    "AbsenceTypeName" : "string",
                    "Total" : 0.0,
                    "Available" : 0.0,
                    "Taken" : 0.0,
                    "Planned" : 0.0
                } ]
            }
        }
    }
}
```
6. This displays the Summary page of the REST service information that you specified earlier.

Click Done.

Click Save to save your work. The RESTSample connection now appears in the Trigger (Source) area on the canvas in the Invoke (Target) area.

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

After adding the source connection in the integration “EBS Java Service Demo”, you can add the Oracle E-Business Suite connection “EBSDemo” as an invoke (target) connection in the 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 “EBSDemo” connection that you created earlier from the Connections panel.

2. In the Integration Designer, drag EBSDemo 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 “Get person absence details”.

Click Next.

4. In the Web Services page, specify the following information for your target connection:
Product Family: Select "Human Resources Suite" from the drop-down list.

Product: Select "Human Resources".

Interface Type: Select "Java" from the list.

After you select a desired product family, a product, and an interface type, a list of Java APIs including Oracle seeded APIs and custom ones contained in the selected product "Human Resources" is populated for further selection.

Select a desired Java API name, such as “Self-Service HR”. The corresponding API internal name and description are automatically populated.

Click Next.

5. The selected API internal name appears in the Operations page.
Method: Select a desired method name contained in the selected “Self-Service HR” API for this invoke (target) connection. For example, select “Get Person Absence Type Balances”.

Operation: Select “Read” as the value from the drop-down list.

Click Next.

6. The Summary page displays all the selected interface details. This information includes the selected “getPersonAbsenceBalanceDtls” Method and Operation “Read” (with “Ready to Use” status) contained in the selected Java REST web service from the Human Resources Suite product family and Human Resources product. This page also displays the default interaction pattern “Synchronize” for the selected service operation.

The Oracle E-Business Suite Adapter Target Endpoint configuration is successfully created.
7. Click **Save** to save your work.

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

### Create Mappings

After adding the trigger (source) connection and invoke (target) connection in your integration, you can create mappings between the source and target data structures in the integration. It includes the following mappings:

- Map the data for the request message
- Map the data for the response message

#### Create mappings for the request message:

1. In the middle of the integration, click the **Mapper** icon for the request.
   
   Click **Create** (the + icon) to display the mapper.

2. Perform the following tasks to assign constant values to the target elements:
   
   - In the Target section, expand the `getPersonAbsenceBalanceDtls_Input` node, and then the `RESTHeader` node.
   
   Click the `ctxt_responsibility` element to open the Build Mappings page.
   
   - Enter “EMPLOYEE_DIRECT_ACCESS_V4.0” in the text box as the value for `ctxt_responsibility` element.

   Similarly, use the same approach to assign values to the target elements listed in the following table:
Path | Element | Value
--- | --- | ---
getPersonAbsenceBalanceD | ctx_respapplication | PER
getPersonAbsenceBalanceD | ctx_securitygroup | STANDARD
getPersonAbsenceBalanceD | businessGroupId | 202
getPersonAbsenceBalanceD | absenceAttendanceTypeId | 12

Notice that a green check mark icon appears for the element that has a mapping value assigned. Additionally, the mapped data appears in the Mapping column of the Target section.

3. Create the mappings between the source and target elements:

- In the Source section, expand the `execute` node, then the `QueryParameters` node.
  Select the `personid` element.

- In the Target section, expand the `getPersonAbsenceBalanceDtls_Input` node, and then the `FilterParameters` node.
  Select the `personid` element.

Drag the `personid` element from the Source section to the `personid` element in the Target section to map the data.

Once you complete this step, the mapped source value and the corresponding target element are marked with green checks.

4. Once the mapping is complete, click Validate and save your work.

5. Click Exit Mapper.

Create mappings for the response message:

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 `getPersonAbsenceBalanceDtlsResponse` node, then the `getPersonAbsenceBalanceDtls_Output` node, then the `OutputParameters` node, then the `Output` node, and then the `PerAbsenceBalanceDataBean` node.

Select the **Personid** element.

• In the Target section, expand the `executeResponse` node, then the `response-wrapper` node, then the `getPersonAbsenceBalanceDtls` node, then the `OutputParameters` node, then the `Output` node, and then the `PerAbsenceBalanceDataBean` node.

Select the **Personid** element.

Drag the **Personid** element from the Source section to the **Personid** 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.

<table>
<thead>
<tr>
<th>Source Path</th>
<th>Source Element</th>
<th>Target Path</th>
<th>Target Element</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>getPersonAbsenceBalanceDtlsResponse/</code></td>
<td><code>BusinessGroupId</code></td>
<td><code>executeResponse/</code></td>
<td><code>BusinessGroupId</code></td>
</tr>
<tr>
<td><code>getPersonAbsenceBalanceDtls_Output/</code></td>
<td></td>
<td><code>response-wrapper/</code></td>
<td></td>
</tr>
<tr>
<td><code>OutputParameters/</code></td>
<td></td>
<td><code>getPersonAbsenceBalanceDtls/</code></td>
<td></td>
</tr>
<tr>
<td><code>Output/</code></td>
<td></td>
<td><code>OutputParameters/</code></td>
<td></td>
</tr>
<tr>
<td><code>PerAbsenceBalanceDataBean</code></td>
<td></td>
<td><code>Output/</code></td>
<td></td>
</tr>
<tr>
<td><code>getPersonAbsenceBalanceDtlsResponse/</code></td>
<td><code>AbsenceAttendanceTypeId</code></td>
<td><code>executeResponse/</code></td>
<td><code>AbsenceAttendanceTypeId</code></td>
</tr>
<tr>
<td><code>getPersonAbsenceBalanceDtls_Output/</code></td>
<td></td>
<td><code>response-wrapper/</code></td>
<td></td>
</tr>
<tr>
<td><code>OutputParameters/</code></td>
<td></td>
<td><code>getPersonAbsenceBalanceDtls/</code></td>
<td></td>
</tr>
<tr>
<td><code>Output/</code></td>
<td></td>
<td><code>OutputParameters/</code></td>
<td></td>
</tr>
<tr>
<td><code>PerAbsenceBalanceDataBean</code></td>
<td></td>
<td><code>Output/</code></td>
<td></td>
</tr>
<tr>
<td><code>getPersonAbsenceBalanceDtlsResponse/</code></td>
<td><code>AbsenceTypeName</code></td>
<td><code>executeResponse/</code></td>
<td><code>AbsenceTypeName</code></td>
</tr>
<tr>
<td><code>getPersonAbsenceBalanceDtls_Output/</code></td>
<td></td>
<td><code>response-wrapper/</code></td>
<td></td>
</tr>
<tr>
<td><code>OutputParameters/</code></td>
<td></td>
<td><code>getPersonAbsenceBalanceDtls/</code></td>
<td></td>
</tr>
<tr>
<td><code>Output/</code></td>
<td></td>
<td><code>OutputParameters/</code></td>
<td></td>
</tr>
<tr>
<td><code>PerAbsenceBalanceDataBean</code></td>
<td></td>
<td><code>Output/</code></td>
<td></td>
</tr>
<tr>
<td><code>getPersonAbsenceBalanceDtlsResponse/</code></td>
<td><code>Total</code></td>
<td><code>executeResponse/</code></td>
<td><code>Total</code></td>
</tr>
<tr>
<td><code>getPersonAbsenceBalanceDtls_Output/</code></td>
<td></td>
<td><code>response-wrapper/</code></td>
<td></td>
</tr>
<tr>
<td><code>OutputParameters/</code></td>
<td></td>
<td><code>getPersonAbsenceBalanceDtls/</code></td>
<td></td>
</tr>
<tr>
<td><code>Output/</code></td>
<td></td>
<td><code>OutputParameters/</code></td>
<td></td>
</tr>
<tr>
<td><code>PerAbsenceBalanceDataBean</code></td>
<td></td>
<td><code>Output/</code></td>
<td></td>
</tr>
</tbody>
</table>
Assign Business Identifier for Tracking

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

1. In the “EBS Java Service Demo” Integration page, click Tracking.
   The Business Identifiers For Tracking dialog appears.

2. From the Available Source Fields section, expand the QueryParameters node.
Drag the **personid** element to the Tracking Field column in the table as the primary Tracking field.

3. Click **Done**.

4. Save your work and then click **Close**.

### Activate and Test the Integration

**Activate the Integration**

After you complete the integration with desired source and target connections and mappings, you can activate the "EBS Java Service Demo" integration.

Perform the following steps to activate the integration:

1. On the Integrations page, click the switch icon for the "EBS Java Service Demo" integration that you created earlier to activate the integration.

2. The Confirmation dialog appears. Click **Activate**.

   Notice that a status message is displayed in the banner at the top of the Integrations page.

3. **Click the displayed URL in the banner**: https://<Oracle Integration Host>:<Port>/ic/api/integration/v1/flows/rest/EBS_JAVA_SERVICE_DEMO/1.0/metadata.

**Test the Integration**

Perform the following steps to test the integration:

1. **Copy the Endpoint URL** ([https://<Oracle Integration Host>:<Port>/ic/api/integration/v1/flows/rest/EBS_JAVA_SERVICE_DEMO/1.0/getPersonAbsenceBalanceDtls/?personid=[personid-value]](https://<Oracle Integration Host>:<Port>/ic/api/integration/v1/flows/rest/EBS_JAVA_SERVICE_DEMO/1.0/getPersonAbsenceBalanceDtls/?personid=[personid-value])).

2. Paste the URL address in a web browser and replace the value of **[personid-value]** with "125".

   Press "Enter".

3. When prompted, provide Oracle Integration user name and password for authentication.

   The absence information for the person whose Id 125 is displayed.
### JSON

#### Raw Data

<table>
<thead>
<tr>
<th>Headers</th>
</tr>
</thead>
<tbody>
<tr>
<td>JSON</td>
</tr>
</tbody>
</table>

#### Output

**getPersonAbsenceBalanceDtls:**

**OutputParameters:**

**Output:**

**PerAbsenceBalanceDataBean:**

**0:**

- **PersonId:** 125
- **BusinessGroupId:** 202
- **AbsenceAttendanceTypeId:** 12
- **AbsenceTypeName:** "Vacation"
- **Total:** 50
- **Available:** 50
- **Taken:** 0
- **Planned:** 0
7 Troubleshoot the Oracle E-Business Suite Adapter and Related Error Messages

This chapter describes troubleshooting information and 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. The possible resolutions are also included.

Topics:
• Error Messages While Testing an Oracle E-Business Suite Connection
• Troubleshoot the Oracle E-Business Suite Adapter While Using it as a Trigger (Source) in an Integration
• Troubleshoot the Oracle E-Business Suite Adapter While Using it as an Invoke (Target) in an Integration

For additional information on managing errors, see Manage Errors in Using Integrations in Oracle Integration.

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:

<table>
<thead>
<tr>
<th>Error Code</th>
<th>Error Message</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>CASDK-0004</td>
<td>Invalid user name or password.</td>
<td>Provide valid Oracle E-Business Suite user name and password combination.</td>
</tr>
<tr>
<td>CASDK-0005</td>
<td>User is not authorized to execute the service. Please check the user grants.</td>
<td>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, Setup Tasks for Enabling the Oracle E-Business Suite Adapter. Alternatively, this error could also occur if the access to Oracle E-Business Suite instance is forbidden or blocked from Oracle Integration. Ensure that Oracle Integration is able to access the Oracle E-Business Suite instance.</td>
</tr>
<tr>
<td>Error Code</td>
<td>Error Message</td>
<td>Resolution</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>CASDK-0005</td>
<td>CASDK-0005 Error connecting to the Oracle E-Business Suite: &lt;URL&gt;</td>
<td>Provide valid Oracle E-Business Suite host and port information (http(s)://&lt;Oracle E-Business Suite host name&gt;:&lt;port&gt;), where Oracle E-Business Suite is configured for ISG REST services.</td>
</tr>
<tr>
<td>CASDK-0005</td>
<td>CASDK-0005 A connector specific exception was raised by the application. The connection URL should be of the format: http://&lt;Oracle E-Business Suite host name&gt;:&lt;port&gt;</td>
<td>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)://&lt;Oracle E-Business Suite host name&gt;:&lt;port&gt;</td>
</tr>
<tr>
<td>CASDK-0005</td>
<td>CASDK-0005 Verify if Metadata Provider service is deployed with alias 'provider'. Ensure that all its methods are deployed with GET verb.</td>
<td>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 &quot;provider&quot;. To resolve the issue, ensure to deploy all the methods in the Metadata Provider API with GET verb and with service alias &quot;provider&quot;. For information on deploying Metadata Provider service, see step 3, as described in Setup Tasks for Enabling the Oracle E-Business Suite Adapter.</td>
</tr>
<tr>
<td>CASDK-0005</td>
<td>CASDK-0005 Verify Integrated SOA Gateway setup on Oracle E-Business Suite. For details, refer to documentation.</td>
<td>Ensure to complete the setup tasks for Oracle E-Business Suite Integrated SOA Gateway (ISG), as described in Setup Tasks for Enabling the Oracle E-Business Suite Adapter.</td>
</tr>
</tbody>
</table>

**Chapter 7**

Error Messages While Testing an Oracle E-Business Suite Connection
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.SunCertPathBuilderException:
  unable to find valid certification path to requested target
- PKIX path building failed:
  sun.security.provider.certpath.SunCertPathBuilderException: unable to find valid certification path to requested target

Resolution
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. See: Setup Tasks for a TLS-Enabled Oracle E-Business Suite Environment.

CASDK-0005
Connection URL should be of the format: http://<hostname>:<port>

Resolution
This issue occurs because of protocol error. To resolve the issue, the connection URL should be of the format: http://Oracle E-Business Suite host name>:<port>

Troubleshoot the Oracle E-Business Suite Adapter While Using it as a Trigger (Source) in an Integration

The following table describes troubleshooting information while using the Oracle E-Business Suite Adapter as a trigger (source) connection in an integration:

<table>
<thead>
<tr>
<th>Issue</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>If there is no XML Gateway map selected in the XML Gateway Message page, after you click Next, the following error may occur: Please select a XML Gateway Map to proceed. If no maps are listed, select another Product / Product family.</td>
<td>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 Oracle E-Business Suite Adapter XML Gateway Message Page.</td>
</tr>
<tr>
<td>If there is no business event selected in the Business Events page, after you click Next, the following error may occur: Please select a Business Event to proceed. If no events are listed, select another Product / Product family.</td>
<td>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 Oracle E-Business Suite Adapter Business Event Page.</td>
</tr>
<tr>
<td>Issue</td>
<td>Resolution</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>When you attempt to edit an integration endpoint with Oracle E-Business Suite connection that has been successfully executed, the API used in the integration is not selected and an error occurs.</td>
<td>The cause of this issue could be due to product name change of the API used in the integration. To resolve the issue, you must reselect the product name of that API in the Web Services page of the Configure Oracle E-Business Suite Adapter Endpoint Wizard.</td>
</tr>
<tr>
<td>If you select a business event with “Disabled” status in the Business Events page of the Configure Oracle E-Business Suite Adapter Endpoint Wizard, then the following error occurs: Business Event is disabled in Oracle E-Business Suite. To use this Business Event, enable it from Oracle E-Business Suite. Contact Oracle E-Business Suite Integration Administrator.</td>
<td>If a business event is not “Enabled” in Oracle Workflow Business Event System, you will not be able to use it in an integration when adding the Oracle E-Business Suite Adapter as a trigger connection. To resolve this issue, perform the following steps to enable the event: 1. Log in to Oracle E-Business Suite as a user who has the Workflow Administrator Web Applications responsibility. 2. Select the Workflow Administrator Web Applications responsibility, then Administrator Workflow, and then Business Events from the navigation menu. 3. Search for your desired business event. 4. Notice that the Event Status is displayed in the Events Results table. 5. If the event is disabled, click the Update icon from the table. Select “Enabled” and save the changes.</td>
</tr>
</tbody>
</table>

Once the business event is enabled in Oracle E-Business Suite, perform the following tasks: 1. Log in to Oracle Integration and click Connections. 2. On the Connections page, locate the Oracle E-Business Suite connection. 3. From the Actions menu icon, click Refresh Metadata. The business event you just enabled will be available for use in Oracle Integration.

Disabled Event Error Message

If a selected business event is not enabled in Oracle Workflow Business Event System, then “Disabled” is shown as the Status field value, along with an error indicating that you need to enable it enable first before using it in an integration.
Troubleshoot the Oracle E-Business Suite Adapter While Using it as an Invoke (Target) in an Integration

The following table describes troubleshooting information while using the Oracle E-Business Suite Adapter as an invoke (target) connection in an integration:

<table>
<thead>
<tr>
<th>Issue</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>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, then the following error may occur: Empty set of values appear in the drop down during the Product Family selection.</td>
<td>To resolve the issue, ensure to deploy all the methods in the Metadata Provider API with GET verb and with service alias &quot;provider&quot;. For information on deploying the Metadata Provider service, see step 3, as described in Setup Tasks for Enabling the Oracle E-Business Suite Adapter.</td>
</tr>
<tr>
<td>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, the following error may occur: The application has encountered an unexpected error. Please check the application connection details and credentials, and retry your request.</td>
<td>To resolve the issue, in addition to deploying all the methods in the Metadata Provider API with GET verb, ensure that you grant the required user privileges to the Metadata Provider service, as described in step 4, Setup Tasks for Enabling the Oracle E-Business Suite Adapter.</td>
</tr>
<tr>
<td>Issue</td>
<td>Resolution</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>When you attempt to edit an integration endpoint with Oracle E-Business Suite connection that has been successfully executed, the API used in the integration is not selected and an error occurs.</td>
<td>The cause of this issue could be due to product name change of the API used in the integration. To resolve the issue, you must reselect the product name of that API in the Web Services page of the Configure Oracle E-Business Suite Adapter Endpoint Wizard.</td>
</tr>
</tbody>
</table>

If you select an interface that is not deployed as a REST service in the Web Services page of the Configure Oracle E-Business Suite Adapter Endpoint Wizard, the following error occurs:

Service is not deployed as REST 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. (See Undeployed REST Service Error Message)  

This error occurs because none of the methods within the selected interface is deployed as a REST service operation. To resolve this issue, ensure that you deploy the selected interface as a REST service first before using it in an integration. 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.
<table>
<thead>
<tr>
<th>Issue</th>
<th>Resolution</th>
</tr>
</thead>
</table>
| If you select a method or operation that is not deployed as a REST service operation in the Operations page of the Configure Oracle E-Business Suite Adapter Endpoint Wizard, then "Not Deployed" is shown as the Service Status field, along with the following error: Service operation is not deployed 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. (See Method with "Not Deployed" Status Error Message) | Ensure that you deploy the selected method as a REST service operation first by using the following steps:  
1. Log in to Oracle E-Business Suite as a user who has the Integration Administrator privileges.  
2. Navigate to the Integrated SOA Gateway responsibility and then select Integration Repository from the navigation menu.  
3. Search for the desired API. It can be an interface type of PL/SQL, Java, concurrent program, or open interface table or view.  
4. Ensure that you select the desired method or operation that you want to use in an integration before deploying it as a REST service operation. See: Deploying REST Web Services, Oracle E-Business Suite Integrated SOA Gateway Implementation Guide.  
5. Log in to Oracle Integration.  
6. Navigate to an Oracle E-Business Suite connection that you want to use in your integration.  
7. From the Actions menu, click Refresh Metadata. The deployed interface should be available for use in Oracle Integration. |
### Issue

When attempting to select the **Read** operation for a Java method in the Operations page of the Configure Oracle E-Business Suite Adapter Endpoint Wizard, you cannot find it displayed for selection.

### Resolution

The **Read** operation performs the **GET** HTTP verb for a Java method. When it is not available for selection in the Operations page of the Configure Oracle E-Business Suite Adapter Endpoint Wizard, this indicates that the Java method does not have **GET** selected during the REST service deployment in Oracle E-Business Suite.

To use this operation for a Java method in an integration, perform the following tasks:

1. Ensure the **GET** check box for the Java method that you want to use is selected before service deployment. Otherwise, you can only use the default "Create" operation that performs the HTTP "POST" action for that Java method in an integration.


2. Select the **Read** operation for that Java method in the Operations page of the Configure Oracle E-Business Suite Adapter Endpoint Wizard when adding the Oracle E-Business Suite Adapter as an invoke connection.

   See: *Invoke Oracle E-Business Suite Java APIs from Oracle Integration*.

---

### Undeployed REST Service Error Message

If none of the methods within the selected interface is deployed as a REST service operation, then an error message is shown 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.
Method with “Not Deployed” Status Error Message

If a selected method is not deployed as a REST service operation, then “Not Deployed” is shown as the Service Status field value, along with an error indicating that you need to deploy the selected method first before using it in an integration.
Troubleshoot the Oracle E-Business Suite Adapter While Using it as an Invoke (Target) in an Integration