

Oracle® Cloud

Using the FTP Adapter

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This guide describes how to configure and add the FTP Adapter to an integration in Oracle Integration Cloud ServiceOracle Integration Cloud Service.

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6 Creating Mappings and Lookups in Integrations

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Preface

Using the FTP Adapter describes how to configure the FTP Adapter as a connection in an integration in Oracle Integration Cloud Service.

Topics:

- [Audience](#)
- [Related Resources](#)
- [Conventions](#)

Audience

Using the FTP Adapter is intended for developers who want to use the FTP Adapter in integrations in Oracle Integration Cloud Service.

Related Resources

For more information, see these Oracle resources:

- Oracle Cloud
<http://cloud.oracle.com>
- *Using Oracle Integration Cloud Service*
- *Using the Oracle Mapper*

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

Getting Started with the FTP Adapter

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

Topics

- [About the FTP Adapter](#)
- [About Oracle Integration Cloud Service](#)
- [About Oracle Integration Cloud Service Connections](#)
- [About Oracle Integration Cloud Service Integrations](#)
- [Typical Workflow for Creating and Including an Adapter Connection in an Integration](#)

About the FTP Adapter

The FTP Adapter enables you to transfer files to an invoke FTP server in an integration in Oracle Integration Cloud Service.

The FTP Adapter provides the following benefits:

- Transfers (reads and writes) files to any publicly accessible server in either binary or ASCII format.
- Enables you to create integrations in which a file is read from a trigger FTP server and transferred (written) to an invoke FTP server. For these integration scenarios, you can schedule the time and frequency at which the transfer occurs. For more information, see [Scheduling Integration Runs](#).
- Supports a synchronous one-way request message exchange pattern. There is no response from the FTP Adapter.
- Enables you to create a schema file format to use for the files to transfer. The schema can be created (sampled) from either a comma-separated value (CSV) file or from an existing schema file. Supported delimiters in the file are single spaces, commas, semicolons, or tabs.
- Enables you to encrypt or decrypt the invoke (outbound) message file to transfer using Pretty Good Privacy (PGP) cryptography.
- Supports FTP over OpenSSL through the upload of a Public-Key Cryptography Standards (PKCS) .p12 format certificate.

For more information, see [Using Secure FTP with the Oracle FTP Adapter](#).

- Supports secure FTP (SFTP) through the upload of a host key. Host key authentication ensures that you connect to the correct SFTP server. Host key authentication is performed before user name and password authentication. That way, the user name and password are not compromised if you connect to the wrong server. A host key is not mandatory for an SFTP connection. This key only provides additional security for an SFTP connection. Only uploads of RSA host keys are permitted. This file is usually located in `/etc/ssh` on the server. For more information, see [Configuring Connection Properties](#).

The FTP Adapter is one of many predefined adapters included with Oracle Integration Cloud Service. You can configure the FTP Adapter as a connection in an integration in Oracle Integration Cloud Service. For information about Oracle Integration Cloud Service, connections, and integrations, see the following sections:

- [About Oracle Integration Cloud Service](#)
- [About Oracle Integration Cloud Service Connections](#)
- [About Oracle Integration Cloud Service Integrations](#)

About Oracle Integration Cloud Service

Oracle Integration Cloud Service is a complete, secure, but lightweight integration solution that enables you to connect your applications in the cloud. It simplifies connectivity between your applications, and can connect both your applications that live in the cloud and your applications that still live on premises. Oracle Integration Cloud Service provides secure, enterprise-grade connectivity regardless of the applications you are connecting or where they reside.

Oracle Integration Cloud Service provides native connectivity to Oracle Software as a Service (SaaS) applications, such as Oracle Sales Cloud, Oracle RightNow Cloud, and so on. Oracle Integration Cloud Service *adapters* simplify connectivity by handling the underlying complexities of connecting to applications using industry-wide best practices. You only need to create a *connection* that provides minimal connectivity information for each system. Oracle Integration Cloud Service *lookups* map the different codes or terms used by the applications you are integrating to describe similar items (such as country or gender codes). Finally, the visual data mapper enables you to quickly create direct mappings between the trigger and invoke data structures. From the mapper, you can also access lookup tables and use standard XPath functions to map data between your applications.

Once you integrate your applications and activate the integrations to the runtime environment, the dashboard displays information about the running integrations so you can monitor the status and processing statistics for each integration. The dashboard measures and tracks the performance of your transactions by capturing and reporting key information, such as throughput, the number of messages processed successfully, and the number of messages that failed processing. You can also manage business identifiers that track fields in messages and manage errors by integrations, connections, or specific integration instances.

About Oracle Integration Cloud Service Connections

Connections define information about the instances of each predefined configuration you are integrating. Oracle Integration Cloud Service includes a set of predefined *adapters*, which are the types of applications on which you can base your connections, such as Oracle Sales Cloud, Oracle Eloqua Cloud, Oracle RightNow Cloud, and others. A connection is based on an adapter. A connection includes the additional information required by the adapter to communicate with a specific instance of an application (this

can be referred to as metadata or as connection details). For example, to create a connection to a specific RightNow Cloud application instance, you must select the Oracle RightNow adapter and then specify the WSDL URL, security policy, and security credentials to connect to it.


[Video](#)

About Oracle Integration Cloud Service Integrations

Integrations are the main ingredient of Oracle Integration Cloud Service. An integration includes at the least a trigger (source) connection (for requests sent to Oracle Integration Cloud Service) and invoke (target) connection (for requests sent from Oracle Integration Cloud Service to the target) and the field mapping between those two connections.

When you create your integrations, you build on the [connections](#) you already created by defining how to process the data for the trigger (source) and invoke (target) connections. This can include defining the type of operations to perform on the data, the business objects and fields against which to perform those operations, required schemas, and so on. To make this easier, the most complex configuration tasks are handled by Oracle Integration Cloud Service. Once your trigger (source) and invoke (target) connections are configured, the mappers between the two are enabled so you can define how the information is transferred between the trigger (source) and invoke (target) data structures for both the request and response messages.


[Video](#)

Typical Workflow for Creating and Including an Adapter Connection in an Integration

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

Step	Description	More Information
1	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.	Creating an FTP Adapter Connection
2	Create the integration. When you do this, you add trigger and invoke connections to the integration.	Creating an Integration and Adding the FTP Adapter Connection to a Basic Map Data Integration
3	Map data between the trigger connection data structure and the invoke connection data structure.	<i>Mapping Integration Cloud Service Data of Using Oracle Integration Cloud Service</i>
4	(Optional) Create lookups that map the different values used by those applications to identify the same type of object (such as gender codes or country codes).	<i>Creating Lookups of Using Oracle Integration Cloud Service</i>

Step	Description	More Information
5	Activate the integration.	Managing Integrations of <i>Using Oracle Integration Cloud Service</i>
6	Monitor the integration on the dashboard.	Monitoring Integration Cloud Services of <i>Using Oracle Integration Cloud Service</i>
7	Track payload fields in messages during runtime.	Assigning Business Identifiers for Tracking Fields in Messages and Managing Business Identifiers for Tracking Fields in Messages of <i>Using Oracle Integration Cloud Service</i>
8	Manage errors at the integration level, connection level, or specific integration instance level.	Managing Errors of <i>Using Oracle Integration Cloud Service</i>

Creating an FTP Adapter Connection

A connection is based on an adapter. You define connections to the specific cloud applications that you want to integrate. The following topics describe how to define connections:

Topics

- [Prerequisites for Creating a Connection](#)
- [Creating a Connection](#)
- [Editing a Connection](#)
- [Cloning a Connection](#)
- [Deleting a Connection](#)

Prerequisites for Creating a Connection

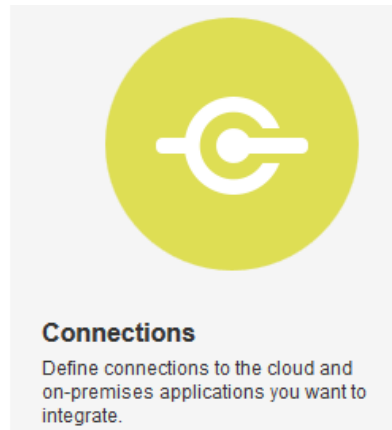
You must satisfy the following prerequisites for creating a connection with the FTP Adapter.

- Ensure that the target FTP server is publicly accessible (that is, not behind a firewall, unless the firewall has been opened for outside FTP client access).
- Ensure that you have write permissions on the FTP server directory to which to transfer files.
- Ensure that you have read permissions on the FTP server directory from which to transfer files.
- Know the host name or IP address and port number of the FTP server.
- Know the user name and password for connecting to the FTP server.
- If want to use an FTP over OpenSSL certificate, know the location of the .p12 format certificate to upload.
- If you want to use secure FTP, know the location of the host key to upload to use for authentication. The default location of the RSA key is `/etc/ssh`.

Creating 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 Integration Cloud Service toolbar, click **Designer**.
2. On the Designer Portal, click **Connections**.



3. Click **Create New Connection**.

The Create Connection — Select Adapter dialog is displayed.

4. 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 New Connection — Information dialog is displayed.

5. 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.
- 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 RightNow Cloud Adapter as only an invoke, but drag the adapter to the trigger section).
- Enter an optional description of the connection.

New Connection - Information

Enter information that describes the connection. Use a meaningful name and description to help others find your connection when they create their own integrations. The Identifier must be unique and can be set only when the connection is created.

* Connection Name: Order Status

* Identifier: ORDER_STATUS

Connection Role: Invoke

Description: Enter a brief description...

Create Cancel

6. Click **Create**.

Your connection is created and you are now ready to configure connection details, such as email contact, connection properties, security policies, and connection login credentials.

Adding 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**.

Configuring Connection Properties

Enter connection information so your application can process requests.

1. Click **Configure Connectivity**.

The Connection Properties dialog is displayed.

2. In the **FTP Server Host Address** field, enter the host address of the FTP server.
3. In the **FTP Server Port** field, enter the FTP server port number.
4. If you are using secure FTP, select **Yes** from the **SFTP Connection** dropdown list.
 - a. Click the **Host Key** checkbox. Host key authentication is a security feature for secure FTP connections that ensures that you connect to the correct SFTP server.
 - b. Click **Upload** to upload the host key. The RSA file is usually located in `/etc/ssh` on the server.
5. If you are using an FTP over OpenSSL certificate, select the **SSL Certificate** checkbox, then click **Upload** to upload a .p12 format certificate.

6. If you plan to specify a processing delay value of greater than zero when configuring the trigger FTP Adapter in the Adapter Endpoint Configuration Wizard, select your FTP server time zone from the **FTP Server Time Zone** dropdown list. This is because the server checks the difference in the time stamp of the file. If you do not select a time zone, the default value is that of the Oracle Integration Cloud Service server. This can delay the processing of files for up to 12 hours. For more information about specifying a processing delay, see [What You See on the FTP Adapter Configure File Read Page](#).

7. Click **OK**.

You are now ready to configure connection security.

Configuring Connection Security

Configure security for your FTP connection by selecting the security policy and setting login credentials. You can also specify a Pretty Good Privacy (PGP) public key for encryption and private key for decryption. An FTP connection is only allowed for publicly accessible FTP servers.

1. Click **Configure Security**.
2. Enter your security credentials.

Element	Description
Security Policy	Note that only the FTP Server Access Policy is supported and cannot be deselected.
User Name	Enter the username to connect to the FTP server.
Password	Enter the password to connect to the FTP server, then enter the password a second time for confirmation. The FTP Adapter supports a nonmanaged connection factory.
SSL Certificate Password	If you uploaded an FTP over OpenSSL certificate, enter the password for the .p12 format certificate. Enter the password a second time for confirmation.
PGP Public Key	If using a PGP public key, click the checkbox, then click Upload to upload the key for encrypting the payload. Pretty Good Privacy (PGP) is a data encryption and decryption program that provides cryptographic privacy and authentication for encrypting and decrypting message files. Message file encryption uses a serial combination of hashing, data compression, symmetric-key cryptography, and public-key cryptography. Each step uses one of several supported algorithms. Each public key is bound to a user name, an e-mail address, or both.

Element	Description
ASCII-Armor Encryption Format	Select to format the encrypted message in ASCII armor. ASCII armor is a binary-to-textual encoding converter. ASCII armor formats encrypted messaging in ASCII. This enables messages to be sent in a standard messaging format. This selection impacts the visibility of message content. If not selected, the message is sent in binary format.
Cipher Algorithm	Select the symmetric cryptographic algorithm to use. Symmetric-key algorithms for cryptography use the same cryptographic keys for both encryption of plain text and decryption of cipher text. <ul style="list-style-type: none"> • CAST5 • 3DES • AES128 • AES192 • AES256
PGP Private Key	If using a PGP private key, click the checkbox, then click Upload to upload the key for decrypting the payload.
PGP Private Key Password	Enter the password to encrypt the payload. Enter the password a second time for confirmation.

3. Click **OK**.

You are now ready to test your connection.

Testing the Connection

Test your connection to ensure that it is successfully configured.

1. In the upper right corner of the page, click **Test**.

If successful, the following message is displayed and the progress indicator shows 100%.

The connection test was successful!

2. If your connection was unsuccessful, an error message is displayed with details. Verify that the configuration details you entered are correct.
3. When complete, click **Save**.

Editing a Connection

You can edit connection settings after creating a new connection.

1. In the Oracle Integration Cloud Service toolbar, click **Designer**.
2. On the Designer Portal, click **Connections**.
3. On the Connections page, select **Edit** from the connection **Actions** menu or click the connection name.



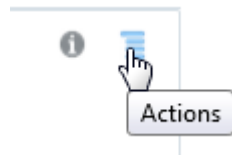
The Connection page is displayed.

4. To edit the notification email contact, change the email address in the **Email Address** field.
5. To edit the connection properties, click **Configure Connectivity**. Note that some connections do not include this button. If your connector does not include a **Configure Connectivity** button, then click the **Configure Credentials** button.

Cloning a Connection

You can clone a copy of an existing connection. It is a quick way to create a new connection.

1. In the Oracle Integration Cloud Service toolbar, click **Designer**.
2. On the Designer Portal, click **Connections**.
3. On the Connections page, select **Clone** from the connection **Actions** menu.



The Clone Connection dialog is displayed.

4. Enter the connection information.
5. Click **Clone**.
6. Click **Edit** to configure the credentials of your cloned connection. Cloning a connection does not copy the credentials.

See [Editing a Connection](#) for instructions.

Deleting a Connection

You can delete a connection from the connection menu.

1. In the Oracle Integration Cloud Service toolbar, click **Designer**.
2. On the Designer Portal, click **Connections**.
3. On the Connections page, click **Delete** from the connection **Actions** menu.



The Delete Connection dialog is displayed if the connection is not used in an integration.

4. Click **Yes** to confirm deletion.

Creating an Integration

Integrations use the adapter connections you created to your applications, and define how information is shared between those applications. You can create, import, modify, or delete integrations; create integrations to publish or subscribe to messages; add and remove request and response enrichment triggers; and create routing paths for different invoke endpoints in integrations. Click the following topics for more information.

Topic

- [Creating Integrations \(in *Using Oracle Integration Cloud Service*\)](#)

Adding the FTP Adapter Connection to a Basic Map Data Integration

When you drag the FTP Adapter into the trigger or invoke area of a basic map data integration, the Adapter Endpoint Configuration Wizard is invoked. This wizard guides you through configuration of FTP Adapter endpoint properties.

The following sections describe the wizard pages that guide you through configuration of the FTP Adapter as a trigger or invoke in an integration. If you configure the FTP Adapter as a trigger connection in a basic map data integration, the only adapter that you can configure as an invoke connection in that same integration is another FTP Adapter. If you configure the FTP Adapter as an invoke connection in an integration, then any adapter can be configured as the trigger connection in that same integration.

Note: The FTP Adapter configuration wizard differs a bit when used in orchestrated integrations. That version of the wizard is described at [Adding the FTP Adapter Connection to an Orchestrated Integration](#).

Topics

- [Configuring Basic Information Properties](#)
- [Configuring FTP Adapter Trigger Configure File Read Properties](#)
- [Configuring FTP Adapter Format Definition Properties](#)
- [Configuring FTP Adapter Invoke Configure File Write Properties](#)
- [Configuring FTP Adapter Invoke PGP Configuration Properties](#)
- [Reviewing Configuration Values on the Summary Page](#)

For more information about the FTP Adapter, see [About the FTP Adapter](#).

Configuring Basic Information Properties

Enter the basic information parameters.

Topics

- [What You Can Do from the Basic Info Page](#)
- [What You See on the Basic Info Page](#)

What You Can Do from the Basic Info Page

You can specify the following values on the Basic Info page. The Basic Info page is the initial wizard page that is displayed whenever you drag the FTP Adapter to the trigger or invoke area.

- Specify a meaningful name.
- Specify a description of the responsibilities.
- Select whether or not to define a schema for the files to transfer.
- Specify whether to create a new schema or select an existing schema.
- Select if you want to encrypt or decrypt the target (outbound) file to transfer using Pretty Good Privacy (PGP) cryptography.

What You See on the Basic Info Page

The following table describes the key information on the Basic Info page.

Element	Description
What do you want to call your endpoint?	Provide a meaningful name so that others can understand the connection. For example, <code>FTPReadWriteConnection</code> . You can include English alphabetic characters, numbers, underscores, and dashes in the name. You cannot include the following: <ul style="list-style-type: none">• Blank spaces (for example, <code>My FTP Connection</code>)• Special characters (for example, <code>#;83&</code> or <code>ri gh(t) now4</code>)• Multibyte characters
What does this endpoint do?	Enter an optional description of the connection's responsibilities. For example: <code>This connection transfers files to a directory.</code>
Do you want to define a schema for this endpoint?	Select Yes to define a schema format to use for the files to transfer. Select No if a schema is not required and you want to send opaque files (for example, a GIF or PNG file). Note: If configuring the FTP Adapter in the trigger (inbound) direction, schema selection is <i>not</i> supported. If you select Yes and upload a schema, it is not used. You must select No to transfer files as an attachment.

Element	Description
Do you want to create a new schema or select an existing one?	<p>Select an option:</p> <ul style="list-style-type: none"> • Create a new schema from a CSV file: Select to create a new schema file from a comma-separated value (CSV) file. On a subsequent page of this wizard, you are prompted to select the CSV file from which to create the schema. • Select an existing schema from the file system: Select an existing schema file. On a subsequent page of this wizard, you are prompted to select the existing schema (XSD) file from the file system.
Do you want to enable PGP security? Note: This selection is only available in the invoke (outbound) direction.	<p>Select Yes if you want to encrypt or decrypt the file to transfer using Pretty Good Privacy (PGP) cryptography. If you select Yes, you must have already configured PGP encryption on the Connections page when you created the FTP Adapter connection.</p>
What security mode do you want to employ? This field is displayed if you selected Do you want to enable PGP security? .	<p>Select to encrypt or decrypt the file to transfer using Pretty Good Privacy (PGP) cryptography. You must have already configured PGP on the Connections page when you created the FTP Adapter connection.</p>

Configuring FTP Adapter Trigger Configure File Read Properties

Enter the FTP Adapter trigger file read parameters.

Topics

- [What You Can Do from the FTP Adapter Configure File Read Page](#)
- [What You See on the FTP Adapter Configure File Read Page](#)

What You Can Do from the FTP Adapter Configure File Read Page

You can configure the following parameters on the invoke FTP Adapter Configure File Read page.

- Select the transfer mode for the files (ASCII or binary).
- Specify the directory path from which to transfer (read) files.
- Select the pattern name for files to transfer.
- Specify the maximum number of files to transfer.
- Specify the chunk size.
- Specify the processing delay.
- Optionally select to delete the file from the directory from which it was read after the transfer is successful.

What You See on the FTP Adapter Configure File Read Page

The following table describes the key information on the FTP Adapter Configure File Read page.

Element	Description
Select a Transfer Mode	<p>Select the transfer mode:</p> <ul style="list-style-type: none"> ASCII: Transfers special control characters to format the data. Binary: Transfers raw bytes of the file data.
Specify an Input Directory	Specify the directory path from which to read the files to transfer (for example, /Oracle/input/file/).
Specify a File Name Pattern	Specify the pattern of file names to transfer from the input directory. Use the pattern inside %%. For example, Oracle%SEQ%ICS.txt creates files in sequence, such as Oracle1ICS.txt, Oracle2ICS.txt, and so on. For a list of supported file patterns, click the information icon.
Maximum Files	Specify the maximum number of files to be processed in one scheduled call. If the schedule is every hour, then every hour the maximum number of files must be processed. For information about scheduling, see Scheduling Integration Runs .
Chunk Size	Enter the portion of the file to transfer in MBs. This action enables you to break up the transfer of very large files into smaller (chunked) portions.
Processing Delay	<p>Specify the delay in seconds. After a file is created, the value specified indicates how long to wait to process the file. For example, if a file is created at 11:02:30 and a processing delay of 60 seconds is provided, the file is not picked up until 11:03:30 for processing.</p> <p>If you specify a processing delay value of greater than zero, select your FTP server time zone from the FTP Server Time Zone dropdown list in the Connection Properties dialog. This is because the server checks the difference in the time stamp of the file. If you do not select a time zone, the default value is that of the Oracle Integration Cloud Service server. This can delay the processing of files for up to 12 hours. For more information, see Configuring Connection Properties.</p>

Element	Description
Delete Files After Successful Retrieval	Select to delete the file from the directory from which it was read after the transfer is successful. If the transfer is initially unsuccessful and the transfer is resubmitted, the source file is deleted after the resubmitted transfer is successful.

Configuring FTP Adapter Format Definition Properties

Enter the FTP Adapter format definition parameters.

Topics

- [What You Can Do from the FTP Adapter Format Definition Page](#)
- [What You See on the FTP Adapter Format Definition Page](#)

What You Can Do from the FTP Adapter Format Definition Page

You can configure the following parameters on the FTP Adapter Format Definition page.

- Create a new schema file from a comma-separated value (CSV) file.
- Use an existing schema file.

What You See on the FTP Adapter Format Definition Page

The following tables describe the key information on the FTP Adapter Format Definition page.

The fields that display on the Format Definition page are determined by your selection on the Basic Info page:

- Selected to create a new schema file
- Selected to use an existing schema file

Note: If configuring the FTP Adapter in the trigger (inbound) direction, schema selection is *not* supported. If you select **Yes** to define a schema for the endpoint on the Basic Info page, nothing prevents you from uploading a schema on the Format Definition page. However, this schema is not used. You must select **No** on the Basic Info page to transfer files as an attachment.

Creating a New Schema File

Element	Description
Select a New Delimited Data File	Select the delimited comma-separated value (CSV) file from which to create the schema file. The content of the file is then displayed at the bottom of the page. This field appears if you selected to create a new schema on the Basic Info page of the wizard.
<ul style="list-style-type: none"> Enter the Record Name 	Enter the record name. This becomes the parent element in the created schema file for the record names selected as column headers from the CSV file.
<ul style="list-style-type: none"> Enter the Recordset Name 	Enter the recordset name. This becomes the root element of the created schema file.
<ul style="list-style-type: none"> Select the Field Delimiter 	<p>Select one of the following supported file delimiter options:</p> <ul style="list-style-type: none"> Single space Comma Semicolon Tab Pipe (for example, Name City Country)
<ul style="list-style-type: none"> Character Set 	Select a character set. The selected value will be used as the encoding format while reading the sample data file.
<ul style="list-style-type: none"> Optionally Enclosed By 	<p>This value causes occurrences of the selected delimiter to be ignored during processing. For example, when processing the following record:</p> <pre>Fred,"2 Old Street, Old Town,Manchester", 20-08-1954,0161-499-1718</pre> <p>If the selected Field Delimiter is “,” and the Optionally Enclosed By value is quot; (”), then the value 2 Old Street, Old Town,Manchester is treated as a single record column.</p>
<ul style="list-style-type: none"> Use the First Row of the File as the Column Headers 	Displays by default the first row of the selected CSV file as the column headers.
<ul style="list-style-type: none"> Detach 	Select to edit the CSV file in a separate window.

Element	Description
<ul style="list-style-type: none"> • Mark All As Optional 	Select to mark elements as optional in the schema file. By default, all elements are mandatory. You can also select the data type (for example, string, byte, integer, and so on) to use for each column in the table and mark specific elements as optional. While this option enables you to select all elements as optional, you must have at least one mandatory element to validate this page. This checkbox provides a convenient method to select the majority of elements as optional.

Using an Existing Schema File

Element	Description
Select a New File	Select the existing schema file to use. This field appears if you selected an existing schema from the file system on the Basic Info page of this wizard.
<ul style="list-style-type: none"> • Selected File Name 	Displays the selected schema file name.
<ul style="list-style-type: none"> • Select the Schema Element 	Select the schema element. This field is displayed after the schema file is selected. The element name is treated as the root element in the uploaded schema file.

Configuring FTP Adapter Invoke Configure File Write Properties

Enter the FTP Adapter invoke file write parameters.

Topics

- [What You Can Do from the FTP Adapter Configure File Write Page](#)
- [What You See on the FTP Adapter Configure File Write Page](#)

What You Can Do from the FTP Adapter Configure File Write Page

You can configure the following parameters on the invoke FTP Adapter Configure File Write page.

- Select the transfer mode for the files (ASCII or binary).
- Specify the directory path to which to transfer files.
- Select the pattern name for files to transfer.
- Optionally select to append files to an existing file name.

Note: You can override the values for the output location and file name pattern in the mapper. Use XPath functions in the mapper to create the output location and file name.

What You See on the FTP Adapter Configure File Write Page

The following table describes the key information on the FTP Adapter Configure File Write page.

Element	Description
Select a Transfer Mode	Select the transfer mode: <ul style="list-style-type: none"> • ASCII: Transfers special control characters to format the data. • Binary: Transfers raw bytes of the file data.
Specify an Output Directory	Specify the directory path to which to transfer files (for example, /Oracle/output/file/).
Specify a File Name Pattern	Specify the pattern of file names to transfer to the output directory. Use the pattern inside %%. For example, Oracle%SEQ%ICS.txt creates files in sequence, such as Oracle1ICS.txt, Oracle2ICS.txt, and so on. For a list of supported file patterns, click the information icon.
Append to Existing File	If selected, the file name is appended to the existing file name and is not overwritten.

Configuring FTP Adapter Invoke PGP Configuration Properties

View the FTP Adapter invoke PGP configuration parameters. For version 16.4.1 and earlier integrations, this page is displayed in view-only mode. This page is not displayed if you created a new PGP-configured FTP Adapter because you now configure those details on the Connections page when creating an FTP Adapter connection.

Topics

- [What You Can Do from the FTP Adapter PGP Configuration Page](#)
- [What You See on the FTP Adapter PGP Configuration Page](#)

What You Can Do from the FTP Adapter PGP Configuration Page

You can configure the following parameters on the invoke FTP Adapter PGP Configuration page.

Pretty Good Privacy (PGP) is a data encryption and decryption program that provides cryptographic privacy and authentication for encrypting and decrypting message files. Message file encryption uses a serial combination of hashing, data compression, symmetric-key cryptography, and public-key cryptography. Each step uses one of several supported algorithms. Each public key is bound to a user name, an e-mail

address, or both. For existing integrations, this page is displayed in view only mode. This page is not displayed if you created a new PGP-configured FTP Adapter.

- If you selected to encrypt the message file on the Basic Info page, the following information is displayed:
 - If the format of the message file is in ASCII-armor.
 - The selected cypher algorithm.

What You See on the FTP Adapter PGP Configuration Page

The following tables describe the key information on the FTP Adapter PGP Configuration page.

The fields that are displayed on this page are based on whether you selected to encrypt or decrypt the message file to transfer using Pretty Good Privacy (PGP) cryptography on the Basic Info page.

Select to Encrypt

Element	Description
Format the Encrypted Message in ASCII-Armor	Displays the format of the encrypted message in ASCII armor. ASCII armor is a binary-to-textual encoding converter. ASCII armor formats encrypted messaging in ASCII. This enables messages to be sent in a standard messaging format. This selection impacts the visibility of message content. If not selected, the message is sent in binary format.
Select the Cipher Algorithm	Displays the symmetric cryptographic algorithm to use. Symmetric-key algorithms for cryptography use the same cryptographic keys for both encryption of plain text and decryption of cipher text. <ul style="list-style-type: none"> • CAST5 • 3DES • AES128 • AES192 • AES256

Select to Decrypt

Element	Description
Select the PGP Private Key to Upload	Displays the private key to use for decryption.
Specify the Private Key Password	Displays the private key password to use to decrypt this message. Only the private key belonging to the receiver can decrypt the key.

Reviewing Configuration Values on the Summary Page

You can review the specified adapter configuration values on the Summary page.

Topics

- [What You Can Do from the Summary Page](#)
- [What You See on the Summary Page](#)

What You Can Do from the Summary Page

You can review configuration details from the Summary page. The Summary page is the final wizard page for each adapter after you have completed your configuration.

- View the configuration details you defined for the adapter. For example, if you have defined an inbound trigger (source) adapter with a request business object and immediate response business object, specific details about this configuration are displayed on the Summary page.
- Click **Done** if you want to save your configuration details.
- Click a specific tab in the left panel or click **Back** to access a specific page to update your configuration definitions.
- Click **Cancel** to cancel your configuration details.

What You See on the Summary Page

The following table describes the key information on the Summary page.

Element	Description
Summary	<p>Displays a summary of the configuration values you defined on previous pages of the wizard.</p> <p>The information that is displayed can vary by adapter. For some adapters, the selected business objects and operation name are displayed. For adapters for which a generated XSD file is provided, click the XSD link to view a read-only version of the file.</p> <p>To return to a previous page to update any values, click the appropriate tab in the left panel or click Back.</p>

Adding the FTP Adapter Connection to an Orchestrated Integration

When you drag the FTP Adapter into the invoke area of an orchestrated integration, the Adapter Endpoint Configuration Wizard is invoked. This wizard guides you through configuration of FTP Adapter endpoint properties.

Note: The FTP Adapter works a bit differently when used in an orchestrated integration rather than a basic map integration. Also, the FTP Adapter can only be configured as an invoke connection in an orchestrated integrations.

The following sections describe the wizard pages that guide you through configuration of the FTP Adapter as an invoke in an orchestrated integration.

Topics

- [Configuring Basic Information Properties](#)
- [Configuring FTP Adapter Invoke Operations Properties](#)
- [Configuring FTP Adapter Invoke Schema Properties](#)
- [Configuring FTP Adapter Format Definition Properties](#)
- [Reviewing Configuration Values on the Summary Page](#)

For more information about the FTP Adapter, see [About the FTP Adapter](#).

Configuring Basic Information Properties

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

Topics

- [What You Can Do from the Basic Info Page](#)
- [What You See on the Basic Info Page](#)

What You Can Do from the Basic Info Page

You can specify the following values on the Basic Info page. The Basic Info page is the initial wizard page that is displayed whenever you drag an adapter to the section of the integration canvas supported by your adapter.

- Specify a meaningful name.

- Specify a description of the responsibilities.

What You See on the Basic Info Page

The following table describes the key information on the Basic Info page.

Element	Description
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: <ul style="list-style-type: none">• 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.

Configuring FTP Adapter Invoke Operations Properties

Enter the FTP Adapter operation properties

Topics

- [What You Can Do from the FTP Adapter Invoke Operations Properties Page](#)
- [What You See on the FTP Adapter Invoke Operations Properties Page](#)

What You Can Do from the FTP Adapter Invoke Operations Properties Page

You can configure the following parameters on the FTP Adapter invoke Operations page.

- Choose to read or write file.
- Select the transfer mode for the files (ASCII or binary).
- Specify the directory path from which to read or write a file.
- Specify the name of a file to read.
- If writing, specify a file name pattern.
- If writing, choose to append files to an existing file name.

What You See on the FTP Adapter Invoke Operations Properties Page

The following table describes the key information on the FTP Adapter invoke Operations page.

Element	Description
Select Operation	Choose whether the operation will <i>read</i> or <i>write</i> files. The Read File operation is used for reading a single file using a wild card pattern. The Write File operation writes a file into the target FTP server.
Select a Transfer Mode	Select the transfer mode: <ul style="list-style-type: none"> • ASCII: Transfers special control characters to format the data. • Binary: Transfers raw bytes of the file data.
Enter Input Directory (Read)	Specify the name of the directory that contains the file to be read. For example, /tmp/Oracle/input.
Enter File Name (Read)	Specify the name of the file to be read.
Specify an Output Directory (Write)	Specify the directory path to which to write the file. For example, /tmp/Oracle/output.
Specify a File Name Pattern (Write)	Specify the pattern of file names to transfer to the output directory. Use the pattern inside %%. For example, Oracle%SEQ%ICS.txt creates files in sequence, such as Oracle1ICS.txt, Oracle2ICS.txt, and so on. For a list of supported file patterns, click the information icon.
Append to Existing File (Write)	If selected, the file content is appended to the existing file content and is not overwritten.

Configuring FTP Adapter Invoke Schema Properties

Enter the FTP Adapter schema properties

Topics

- [What You Can Do from the FTP Adapter Invoke Schema Properties Page](#)
- [What You See on the FTP Adapter Invoke Schema Properties Page](#)

What You Can Do from the FTP Adapter Invoke Schema Properties Page

You can configure the following parameters on the FTP Adapter invoke Schema page.

- Select whether or not to define a schema for the file to transfer.
- Specify whether to create a new schema or select an existing schema.

What You See on the FTP Adapter Invoke Schema Properties Page

The following table describes the key information on the Schema page.

Element	Description
Do you want to define a schema for this endpoint?	Select Yes to define a schema format to use for the file to transfer. Select No if a schema is not required and you want to send the file as attachment.
Do you want to create a new schema or select an existing one?	Select an option: <ul style="list-style-type: none">• Create a new schema from a CSV file: Select to create a new schema file from a comma-separated value (CSV) file. On a subsequent page of this wizard, you are prompted to select the CSV file from which to create the schema.• Select an existing schema from the file system: Select an existing schema file. On a subsequent page of this wizard, you are prompted to select the existing schema (XSD) file from the file system.

Configuring FTP Adapter Format Definition Properties

Enter the FTP Adapter format definition parameters.

Topics

- [What You Can Do from the FTP Adapter Format Definition Page](#)
- [What You See on the FTP Adapter Format Definition Page](#)

What You Can Do from the FTP Adapter Format Definition Page

You can configure the following parameters on the FTP Adapter Format Definition page.

- Create a new schema file from a comma-separated value (CSV) file.
- Use an existing schema file.

What You See on the FTP Adapter Invoke Format Definition Page

The following tables describe the key information on the FTP Adapter Format Definition page.

Note: If configuring the FTP Adapter in the trigger (inbound) direction, schema selection is *not* supported. If you select **Yes** to define a schema for the endpoint on the Schema page, nothing prevents you from uploading a schema on the Format Definition page. However, this schema is not used. You must select **No** on the Schema page to transfer files as an attachment.

The fields that display on the Format Definition page are determined by your selection on the Schema page:

- Selected to create a new schema file
- Selected to use an existing schema file

Creating a New Schema File

Element	Description
Select the Delimited Data File	Select the delimited comma-separated value (CSV) file from which to create the schema file. The content of the file is then displayed at the bottom of the page. This field appears if you selected to create a new schema on the Schema page of the wizard.
<ul style="list-style-type: none"> • Enter the Record Name 	Enter the record name. This becomes the parent element in the created schema file for the record names selected as column headers from the CSV file.
<ul style="list-style-type: none"> • Enter the Recordset Name 	Enter the recordset name. This becomes the root element of the created schema file.
<ul style="list-style-type: none"> • Select the Field Delimiter 	<p>Select one of the following supported file delimiter options:</p> <ul style="list-style-type: none"> • Single space • Comma • Semicolon • Tab • Pipe (for example, Name City Country)
<ul style="list-style-type: none"> • Character Set 	Select a character set. The selected value will be used as the encoding format while reading the sample data file.
<ul style="list-style-type: none"> • Optionally Enclosed By 	<p>This value causes occurrences of the selected delimiter to be ignored during processing. For example, when processing the following record:</p> <pre>Fred,"2 Old Street, Old Town,Manchester", 20-08-1954,0161-499-1718</pre> <p>If the selected Field Delimiter is “,” and the Optionally Enclosed By value is quot ; (”), then the value 2 Old Street, Old Town,Manchester is treated as a single record column.</p>

Element	Description
<ul style="list-style-type: none"> • Mark All As Optional 	Select to mark elements as optional in the schema file. By default, all elements are mandatory. You can also select the data type (for example, string, byte, integer, and so on) to use for each column in the table and mark specific elements as optional. While this option enables you to select all elements as optional, you must have at least one mandatory element to validate this page. This checkbox provides a convenient method to select the majority of elements as optional.

Using an Existing Schema File

Element	Description
Select File	Select the existing schema file to use. This field appears if you selected an existing schema from the file system on the Schema page of this wizard.

Reviewing Configuration Values on the Summary Page

You can review the specified adapter configuration values on the Summary page.

Topics

- [What You Can Do from the Summary Page](#)
- [What You See on the Summary Page](#)

What You Can Do from the Summary Page

You can review configuration details from the Summary page. The Summary page is the final wizard page for each adapter after you have completed your configuration.

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Summary	<p>Displays a summary of the configuration values you defined on previous pages of the wizard.</p> <p>The information that is displayed can vary by adapter. For some adapters, the selected business objects and operation name are displayed. For adapters for which a generated XSD file is provided, click the XSD link to view a read-only version of the file.</p> <p>To return to a previous page to update any values, click the appropriate tab in the left panel or click Back.</p>

Creating Mappings and Lookups in Integrations

You must map data between trigger connections and invoke connections in integrations. You can also optionally create lookups in integrations.

Topics

- Mapping Integration Cloud Service Data (in *Using Oracle Integration Cloud Service*)
- Creating Lookups (in *Using Oracle Integration Cloud Service*)

Administering Integrations

Oracle Integration Cloud Service provides you with the information and tools required to activate, monitor, and manage your integrations in the runtime environment.

Topic

- Administering Integration Cloud Service (in *Using Oracle Integration Cloud Service*)

