

# Fundamentals of Creating Integrations

# Objectives

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After completing this lesson, you should be able to:

- Define an OIC Integration
- Describe the Integration design styles
- Understand the Publish/Subscribe pattern
- List the steps for creating a basic App Driven Orchestration
- Test a SOAP interface trigger Integration



# Agenda

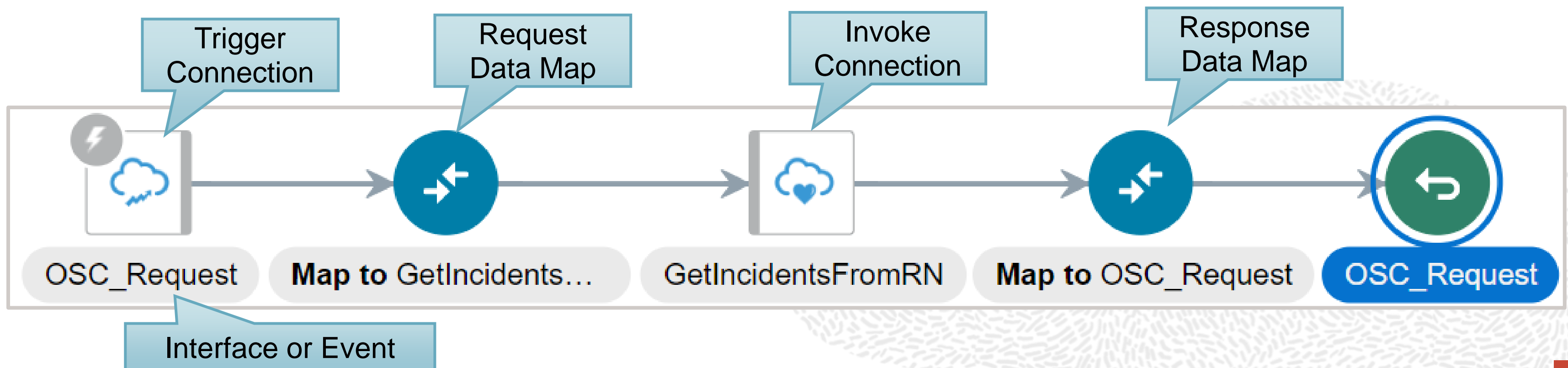
- OIC Integration Patterns and Design Styles
- Creating an Integration





# What Is an OIC Integration?

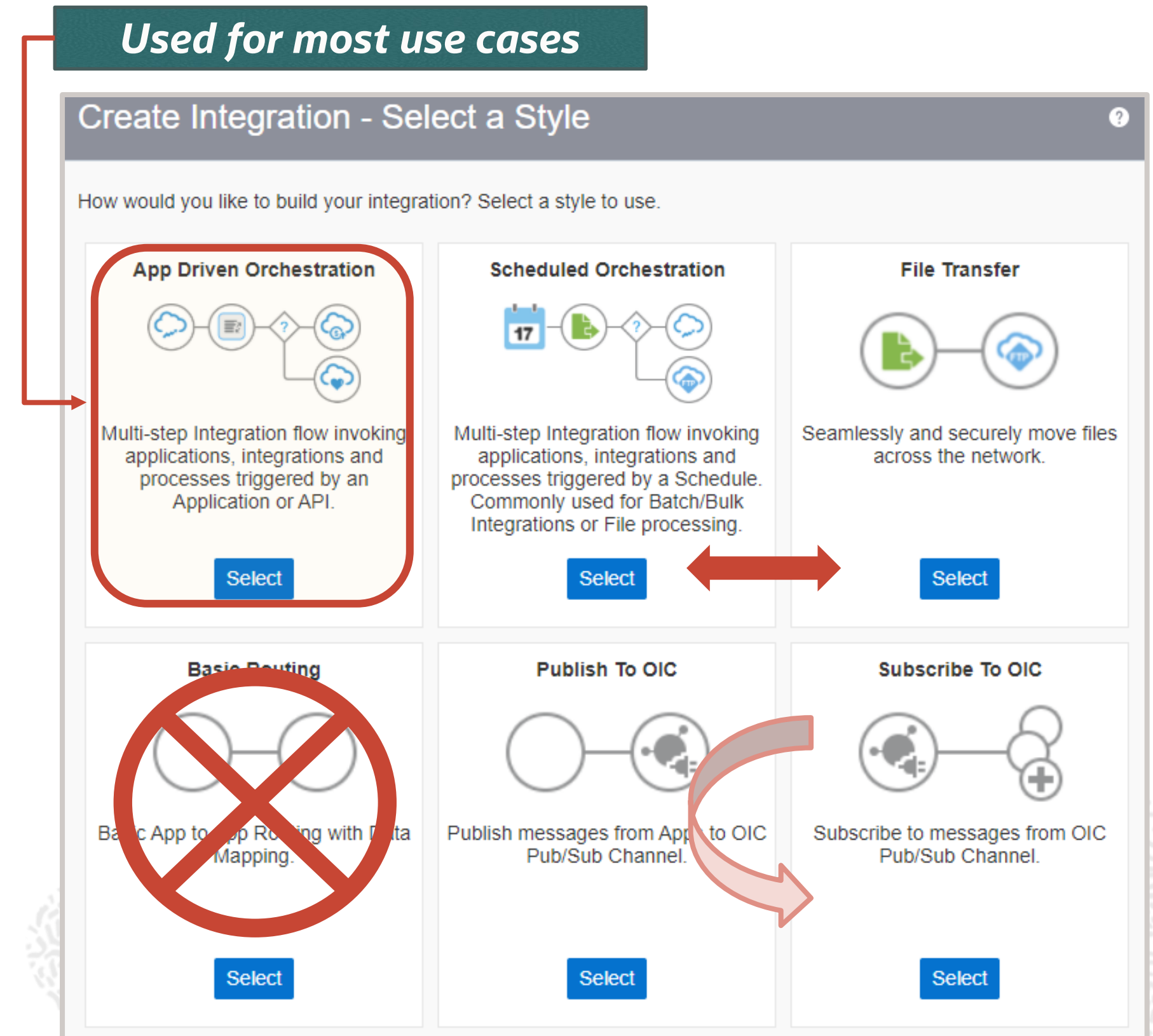
- Defines the flow of messages
- Includes:
  - One **Source** (trigger role) connection for requests sent to OIC
  - One or more **Target** (invoke role) connections for requests sent from OIC
  - Data mapping between two connections (both request and response)



# OIC Integration Styles

When you create a new integration, the *Create Integration* wizard prompts you to select an integration style:

- Basic Routing (*deprecated*)
- **Publish to OIC**
- **Subscribe to OIC** (*subscribes to a Publisher*)
- **App Driven Orchestration**
- **Scheduled Orchestration**
- File Transfer (*same as Scheduled Orchestration*)



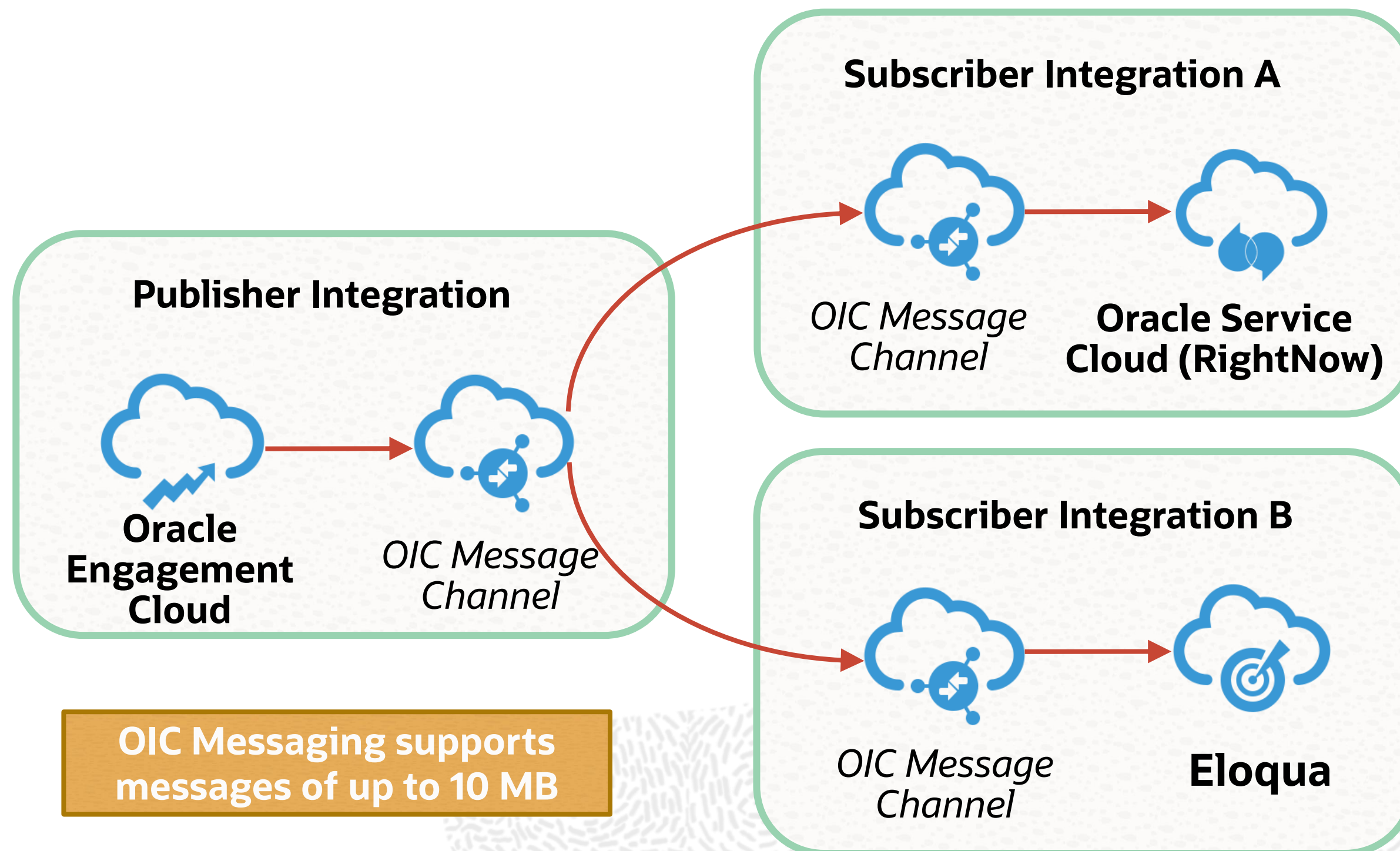
# Integration Style Patterns Described

Pattern	Description
<b>Basic Routing</b>	<i>This integration design canvas style has been deprecated.</i>
<b>Publish to OIC</b>	Create an integration in which you define a trigger adapter to publish messages to OIC through a one-way asynchronous interface or event. This integration is decoupled from all subscribers, since all participating integrations can be activated and deactivated independently of each other.
<b>Subscribe to OIC</b>	Create an integration in which you subscribe to an existing publisher integration. You then define an invoke adapter to process messages that have been published to OIC by that integration.
<b>App Driven Orchestration</b>	Create an integration that uses basic BPEL Process Manager capabilities. You can include Switch expressions and looping constructs as well as robust fault handling strategies. All four message exchange patterns are supported.
<b>Scheduled Orchestration</b>	Create an integration with the same orchestration activity options as the App Driven style. The difference is a schedule, or an on-demand request is used to trigger the integration instead of an interface-based message exchange pattern.
<b>File Transfer</b>	This style is currently identical to the Scheduled Orchestration style.



# Publish/Subscribe Example

The built-in OIC Message channels are used to facilitate Pub/Sub use cases.



# Creating a Publisher Integration

- 1. Locate the desired connection and then drag and drop to the trigger (source).
- 2. On the Request page, select the desired business object.
- 3. On the Response page, select **None**.



Basic Info

Request

Response

Summary

Configure a Request

With Business Objects

Select a Business Object

Filter by business object na

Account

Basic Info

Request

Response

Response Type

Immediate

Delayed

None

You have selected to send no response document back to the source application. No further configuration is required.



Publish To OIC

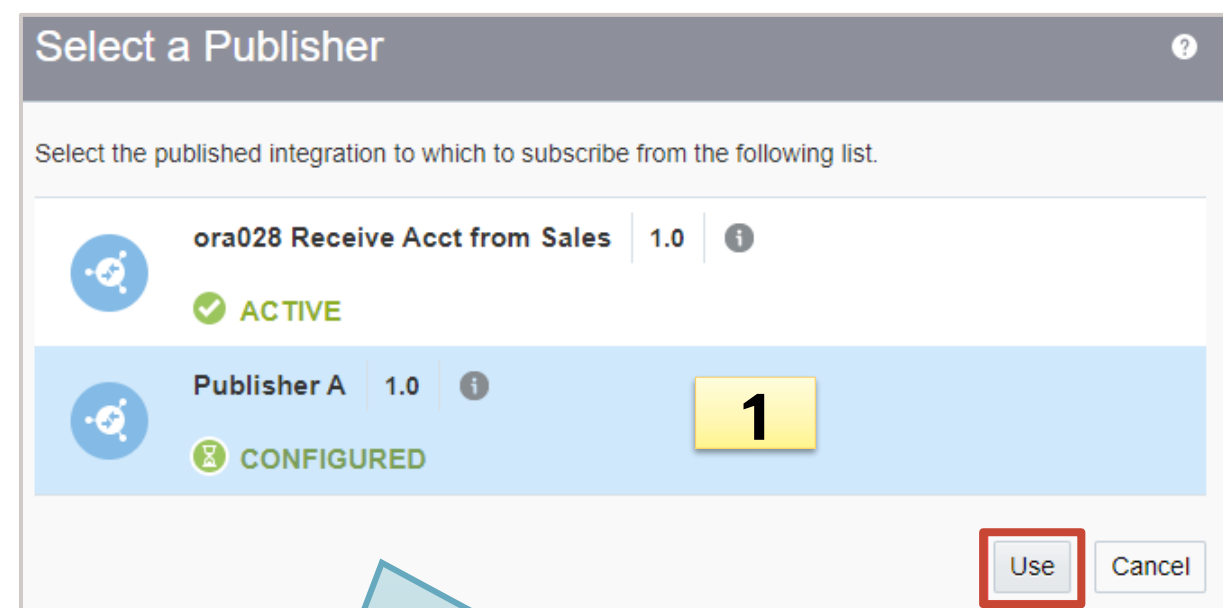
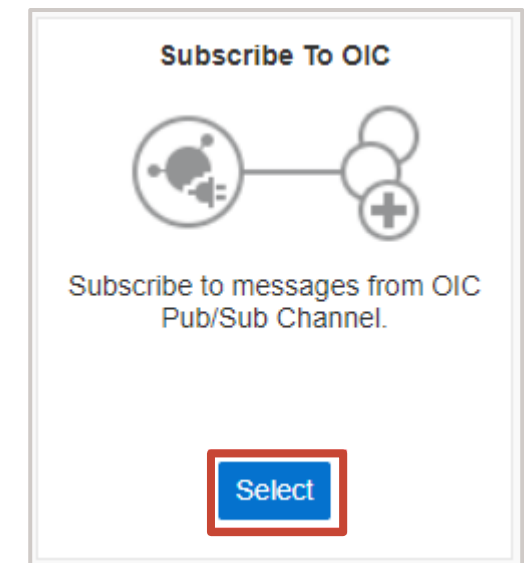
Publish messages from Apps to OIC Pub/Sub Channel.

Select

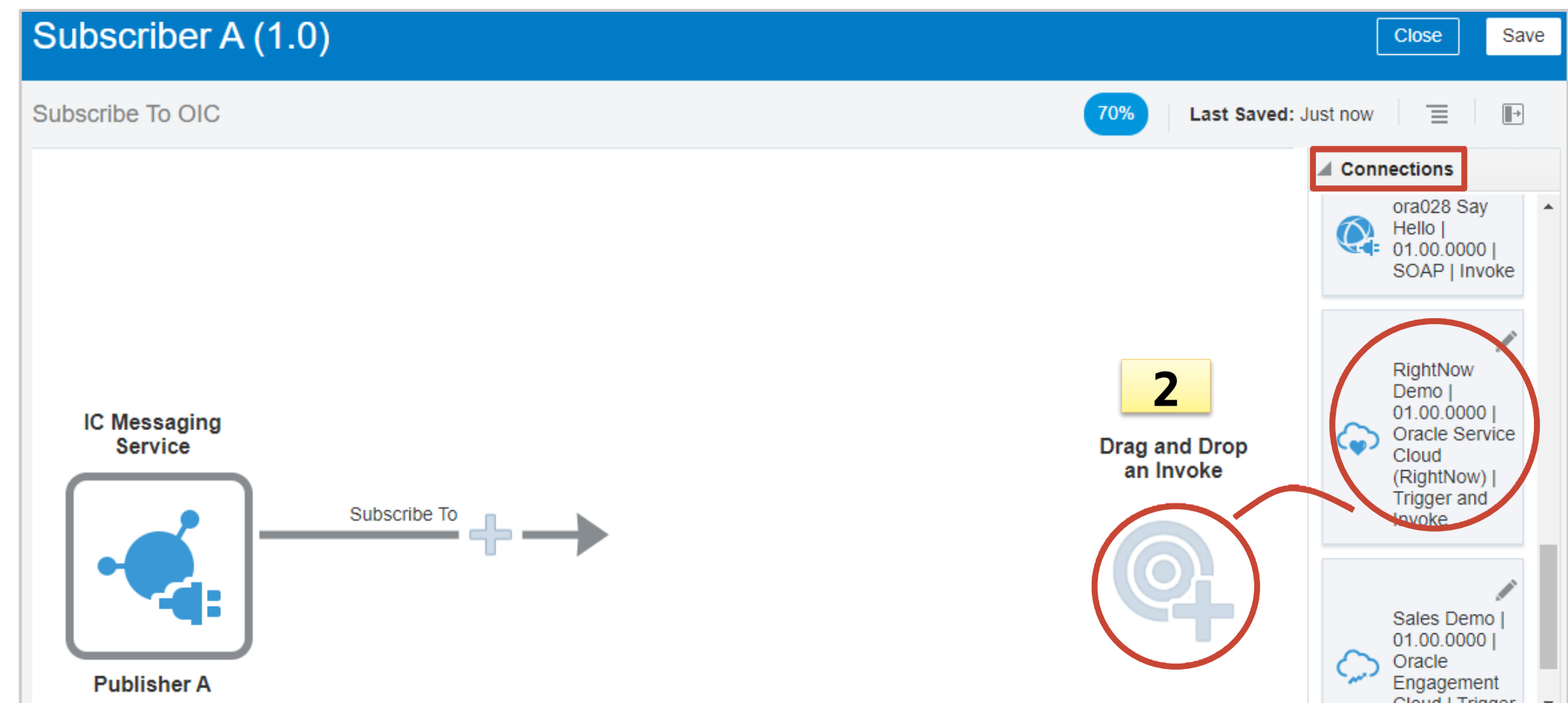


# Creating a Subscriber Integration

1. Select a Publisher integration to which you're subscribing.
2. Locate the desired connection and then drag and drop to the invoke (target).

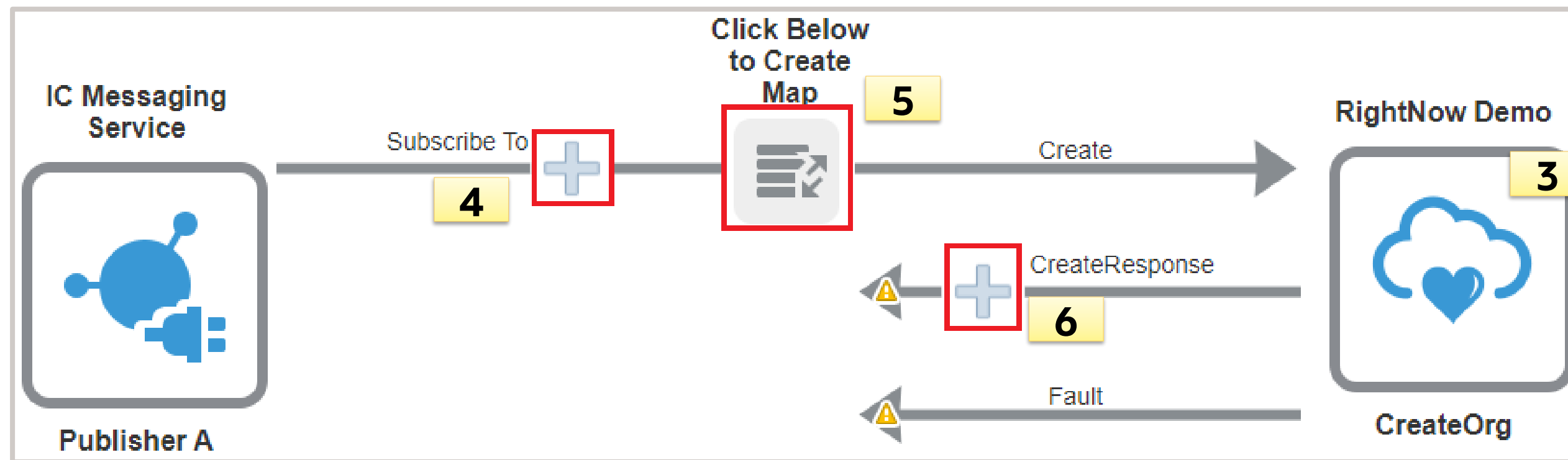


List of Active and Configured Publishers



# Creating a Subscriber Integration

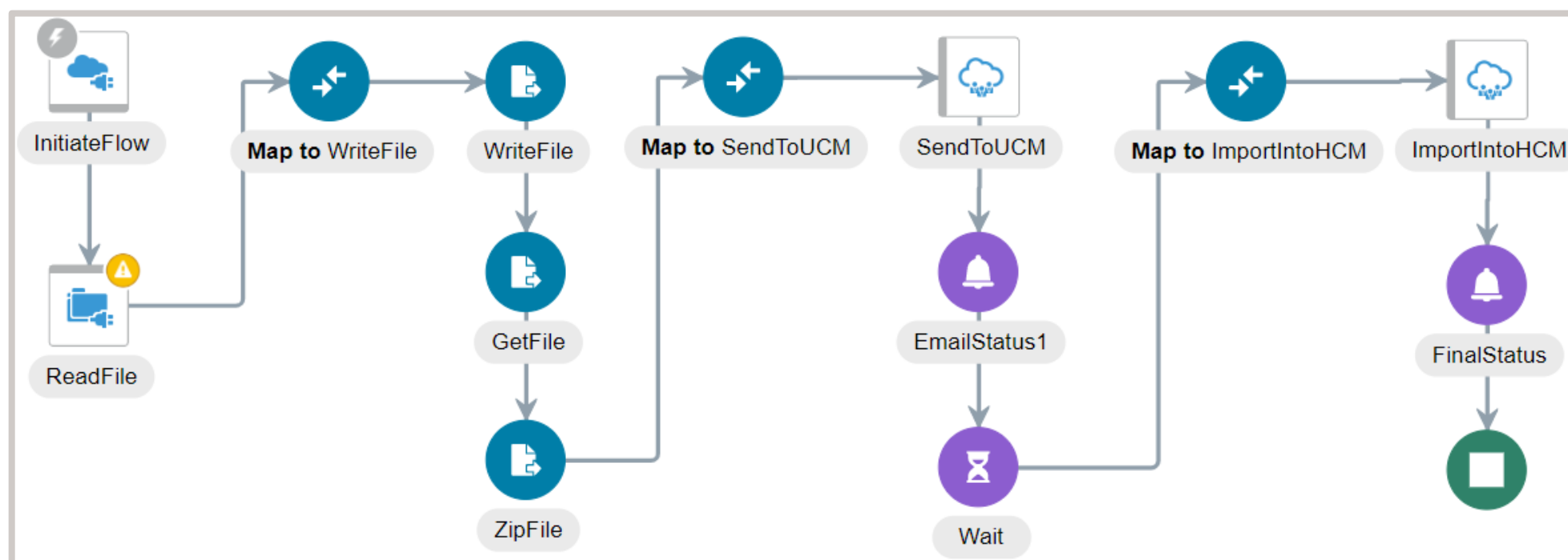
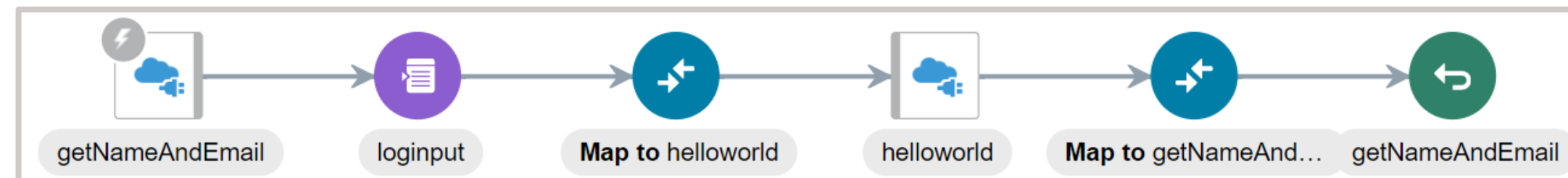
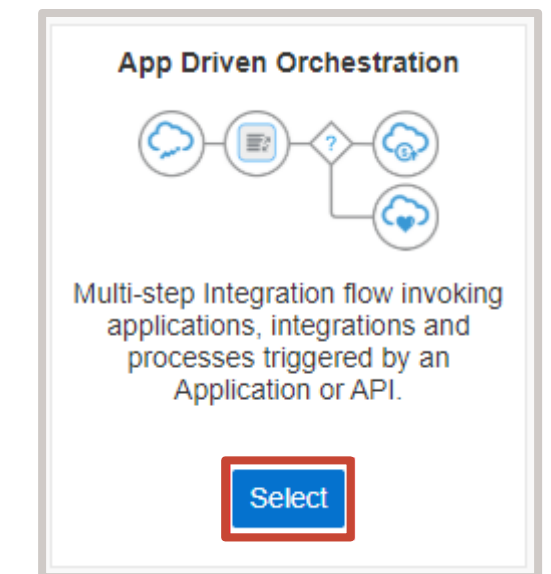
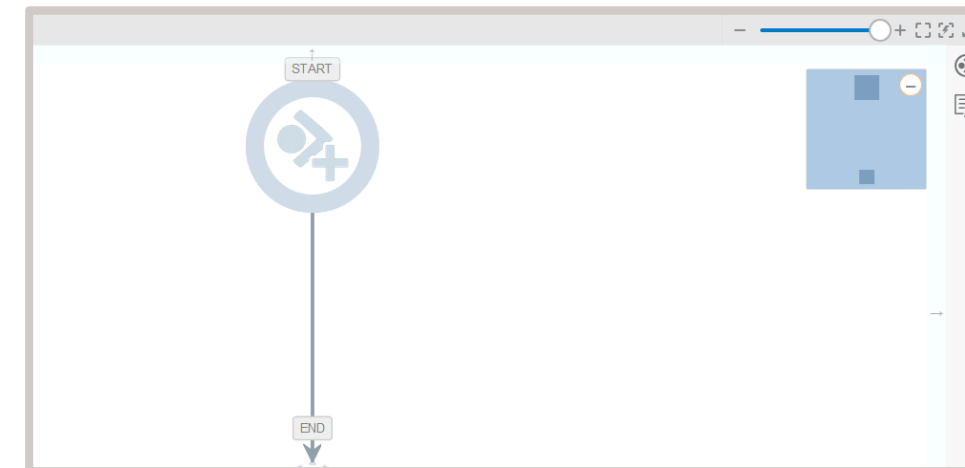
3. Configure the Invoke wizard to define the request use case as desired.
  - *Once the invoke use case has been configured, the design canvas is displayed.*



4. Optionally, add a request enrichment invoking another service.
5. Define the data mapping from the source payload to the target service request.
6. Optionally, add an additional response connection to invoke another service.

# App Driven Orchestration Style

- Start out with a blank design canvas.
  - *Must define a trigger connection first.*
- Add actions based on the desired use case.
  - *Orchestrations can be simple or complex flows.*

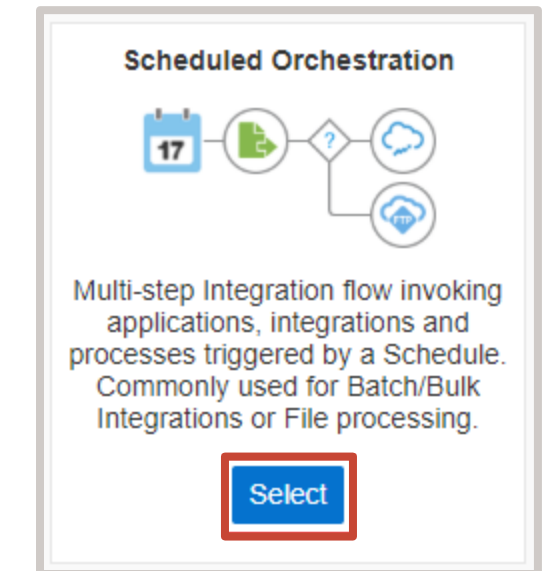
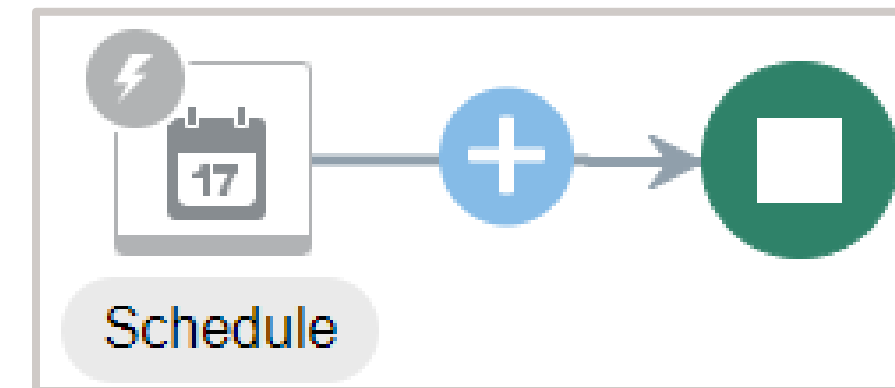


- Allows for all four interaction patterns:
- Synchronous interface [request-response]
  - Asynchronous interface [one-way]
  - Asynchronous interface w/ callback
  - Event based or polling

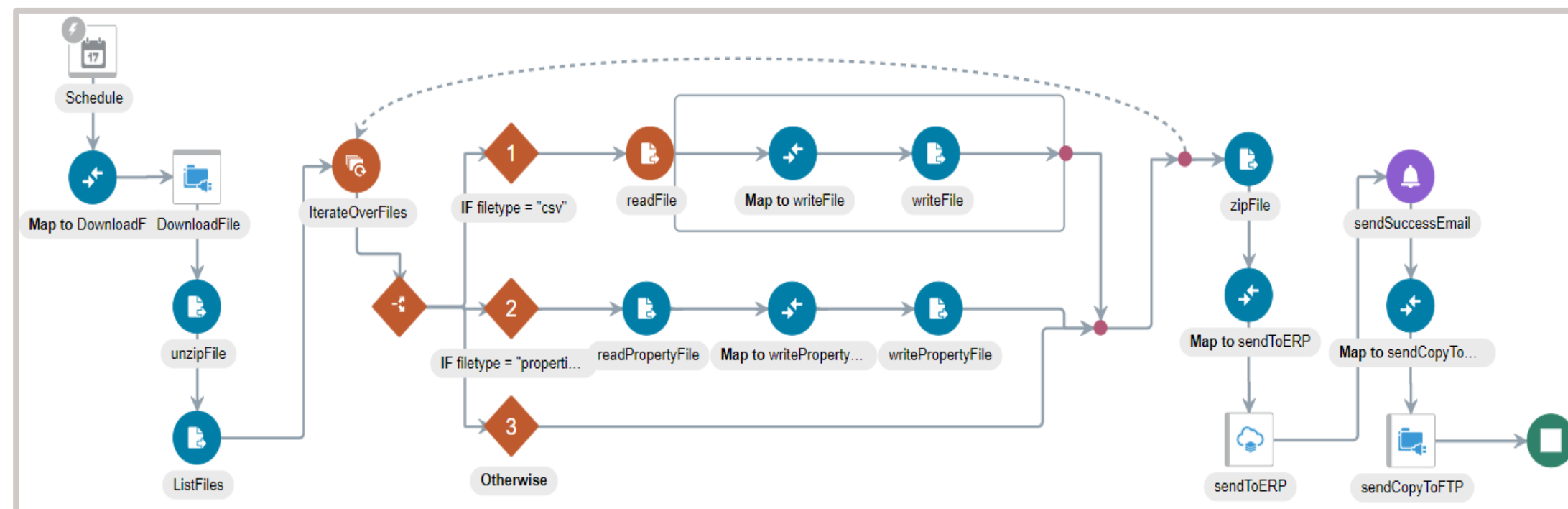


# Scheduled Orchestration Style

- Start out with a blank design canvas.
  - *No trigger, optionally define a schedule.*
- Add actions based on the desired use case.
  - *Orchestrations can be simple or complex flows.*
- Design canvas and configuration options are almost identical to App Driven Orchestrations.



Once activated, these integrations can be triggered with an on-demand ad hoc request or as scheduled runs.



**Type**

☒ Basic ☐ Advanced

**Frequency** ●●●

Every  hour(s)  Minute(s) ✓

**This schedule is effective:**

From Feb 26, 2020 7:52 PM UTC

Until Mar 31, 2020 7:52 PM UTC

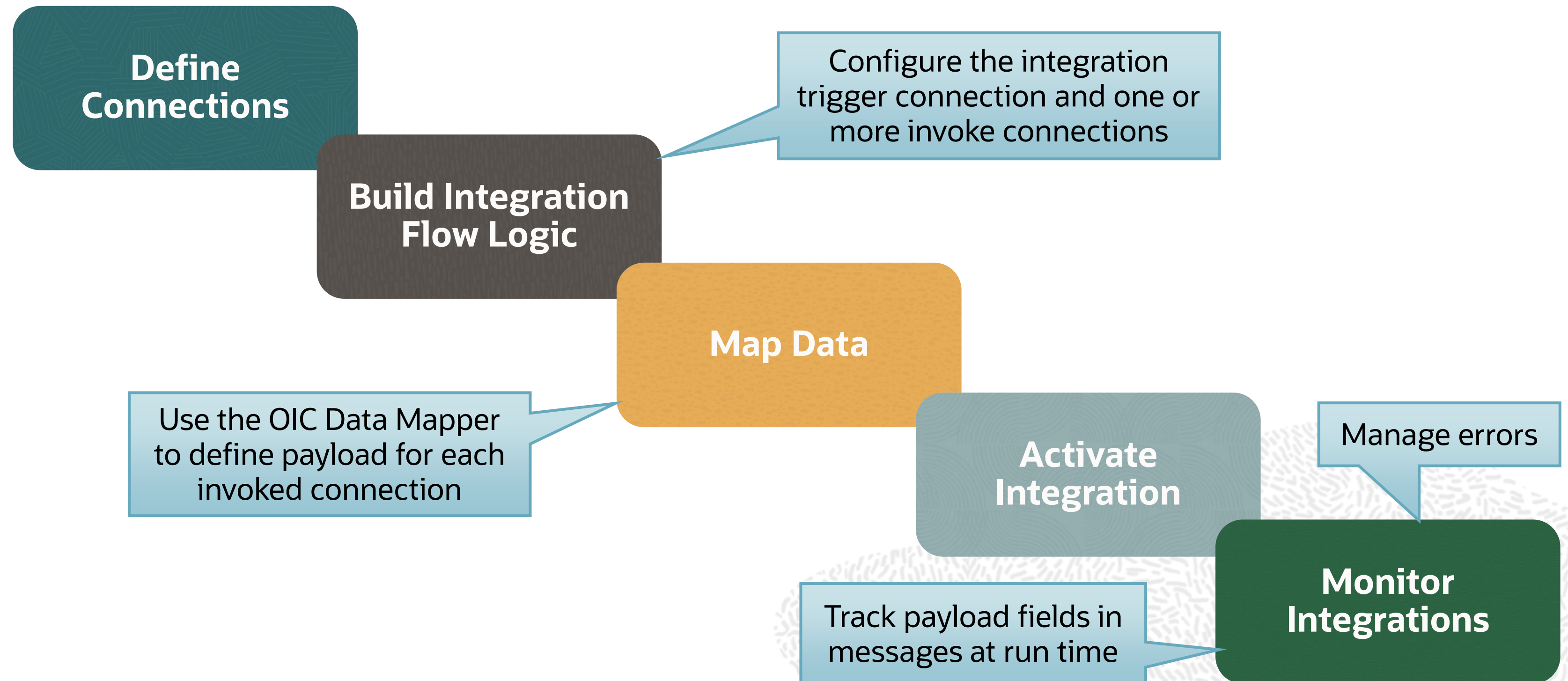
Time zone Coordinated Universal Time

# Agenda

- OIC Integration Patterns
- Creating an Integration



# Integration Development and Management Workflow



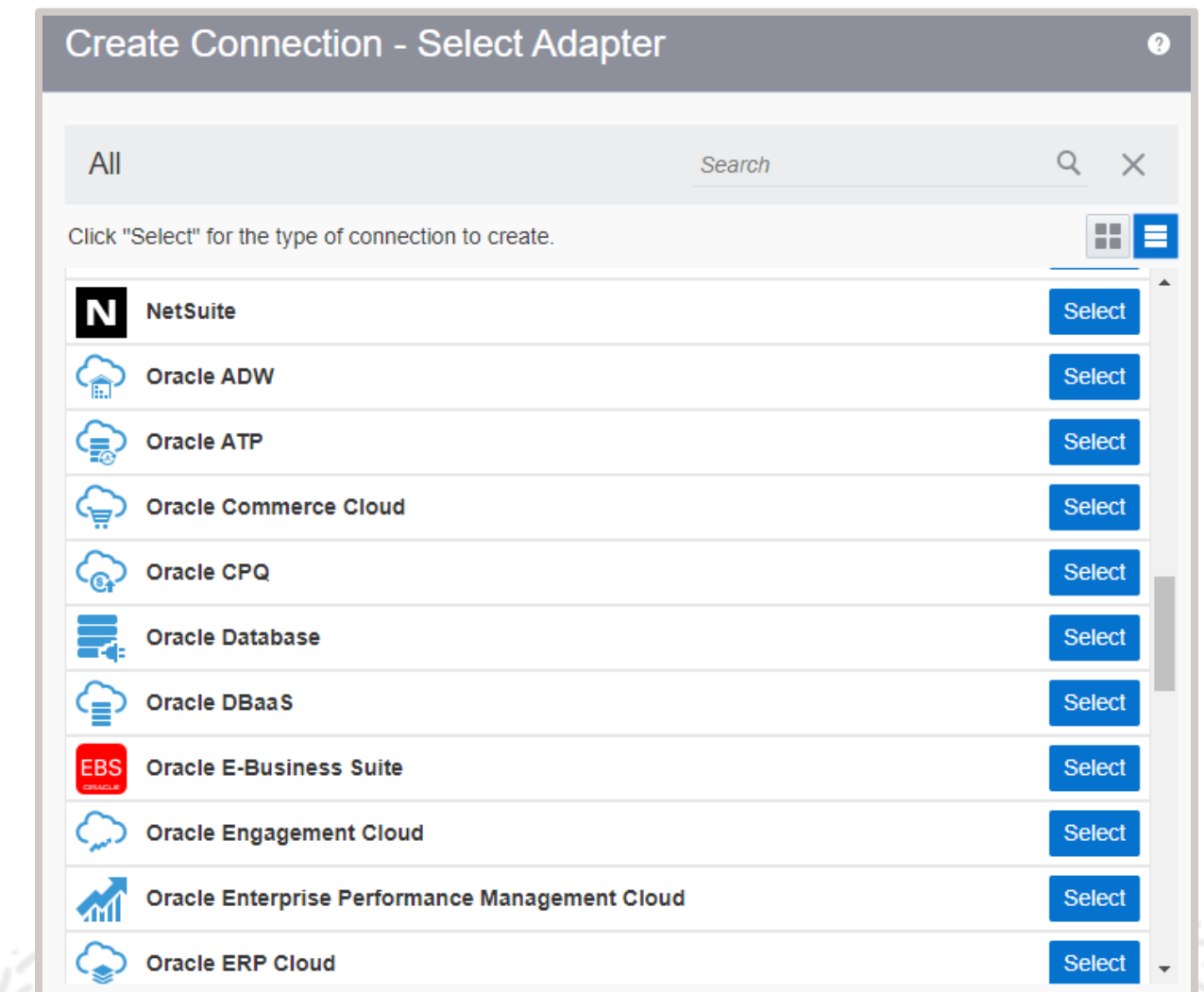
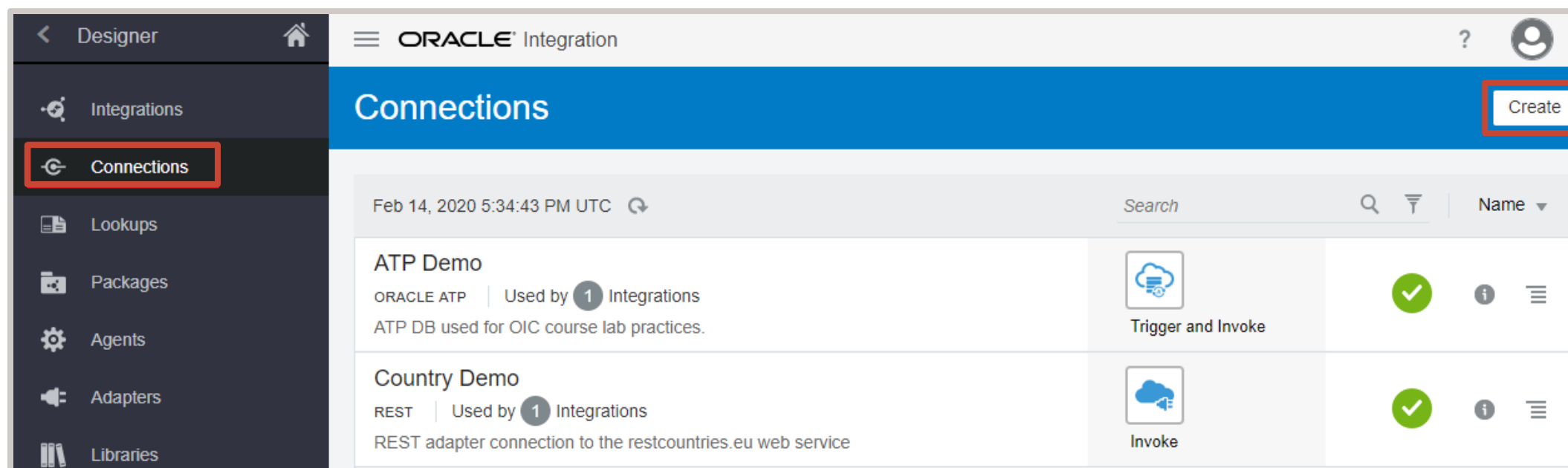


# Basic Integration Development Workflow Steps

1. If necessary, create new connections.
  - Select adapter and define connection and security properties.
2. Create a new integration.
  - Select the App Driven Orchestration style.
  - *Optionally, add it to a package.*
3. Add and configure the trigger (source) connection.
4. Add and configure an invoke (target) connection.
5. Map data for the invoke connection request.
6. Map data for the response to be returned to the source (if applicable).
7. Define key business identifiers for monitoring purposes.
8. Activate and test.

# 1. Creating Connections

- On the Designer Portal, click **Connections**.
- Click **Create**.
- **Select** an adapter from the dialog box or perform a search.



# 1. Creating Connections – Basic Info

1. Provide a meaningful name to help others find the connection when using it for their integrations.
  - Typically, this is related to a specific endpoint or a new interface.
  - An identifier in uppercase is automatically created.
2. Select the role:
  - Trigger (interface or event)
  - Invoke (service endpoint)
  - Both

Create New Connection

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.

\* Name: Order Status

\* Identifier: ORDER\_STATUS

Role: Invoke

Description: Trigger, Invoke, Trigger and Invoke

Create Cancel

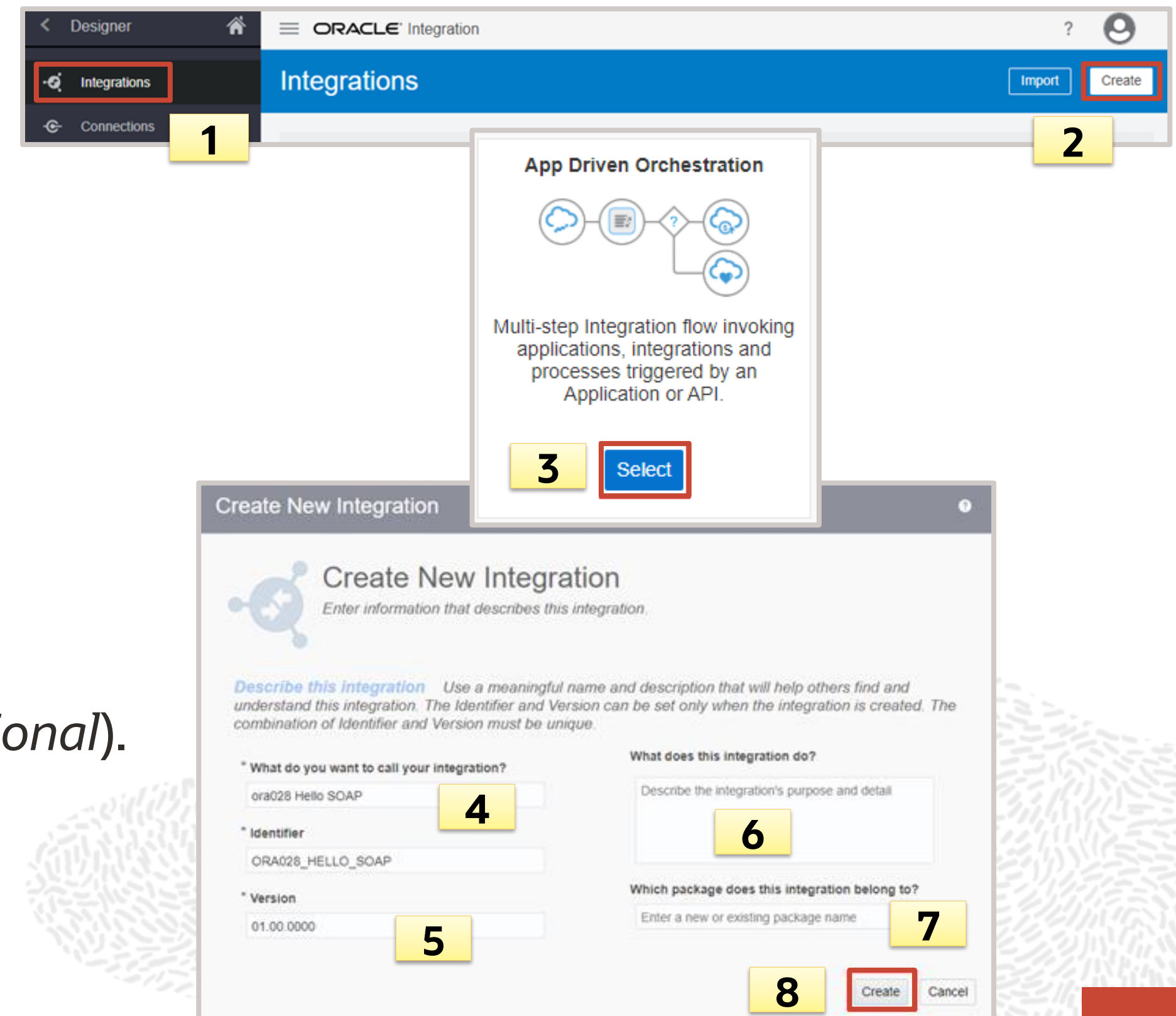
Only the roles supported by the selected adapter are displayed.

More details will be covered in Lesson 5...



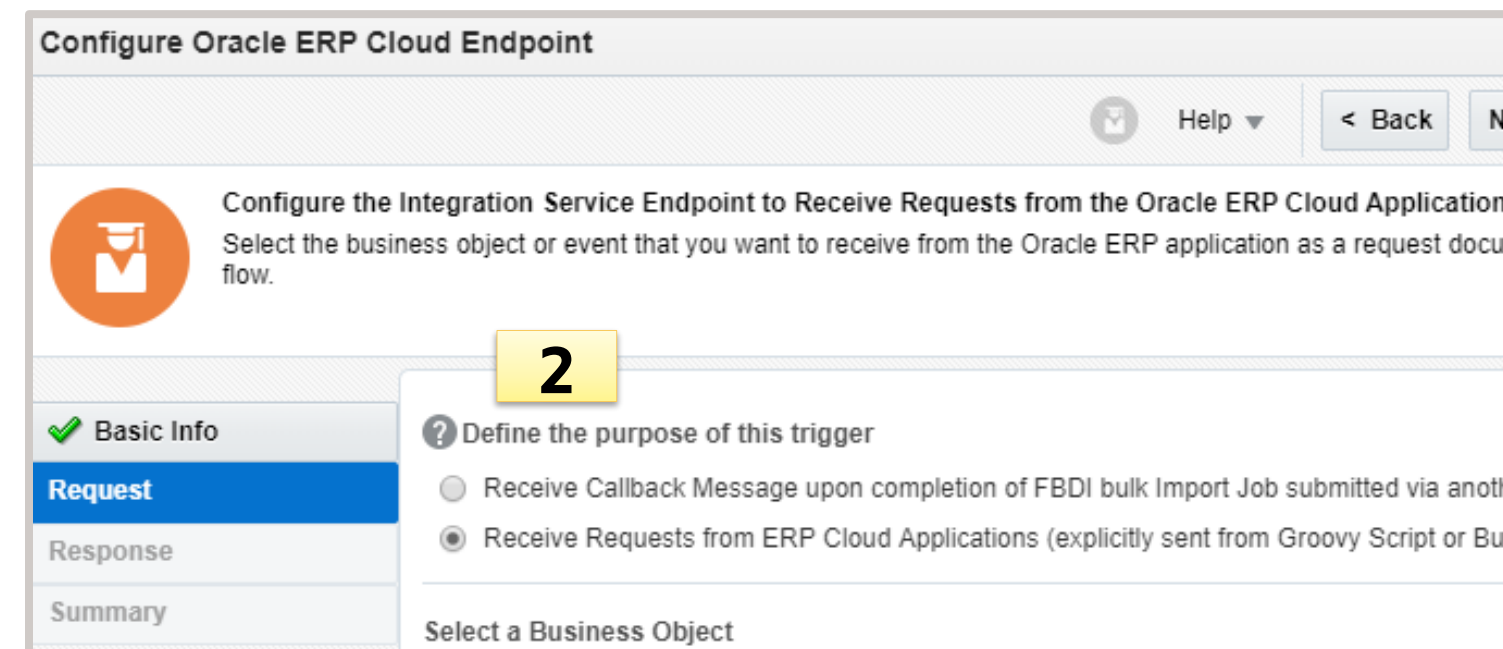
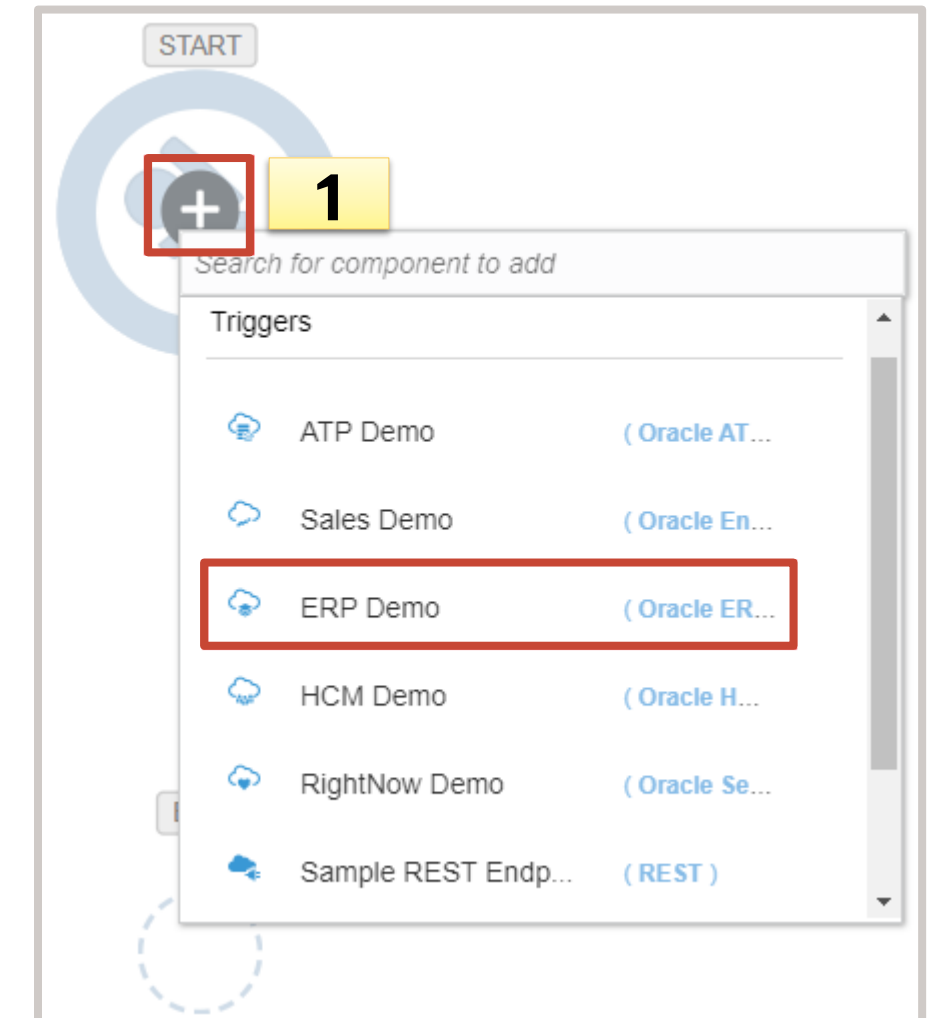
## 2. Creating the Integration

1. On the Designer Portal, click **Integrations**.
2. Click **Create**.
3. Select the App Driven Orchestration style.
4. Provide a unique integration name.
  - Optionally, change the identifier name.
5. Provide a version number.
6. Provide a description (*optional*).
7. Add to a package or create a new one (*optional*).
8. Click **Create**.



# 3. Add and Configure the Trigger (Source) Connection

1. Select the Trigger connection.
2. Configure as an interface or an event leveraging the adapter configuration wizard.
  - The options will depend on the adapter type and your desired use case.
  - Depending on the use case, you will also define a response payload or business object.



More details will be covered in Lesson 6...

# 4. Add and Configure an Invoke (Target) Connection

1. Select the Invoke connection.
2. Define the operation or query leveraging the adapter configuration wizard.
  - The options will depend on the adapter type and your desired use case.

Configure Oracle Service Cloud (RightNow) Endpoint

Configure the Operations to Perform in the Target Oracle Service Cloud (RightNow) Application  
Select the target operation and the business objects on which to perform the operation in the Oracle Service Cloud application.

**Basic Info**  
**Operations**  
Summary

Select an Operation Mode ☒ Single Operation  
Select the operation type appropriate to your business solution.

Select an Operation Type  
ROQL  
**CRUD**  
File Attachment  
ROQL

QueryObjects

Parameter Bindings  
orgID

Test My Query Test query will only display "10" results.

Search for component to add

Invoke **1**

FTP Demo	( FTP )
ATP Demo	( Oracle AT...
Sales Demo	( Oracle En...
ERP Demo	( Oracle ER...
HCM Demo	( Oracle H...
<b>RightNow Demo</b>	<b>( Oracle Se...</b>

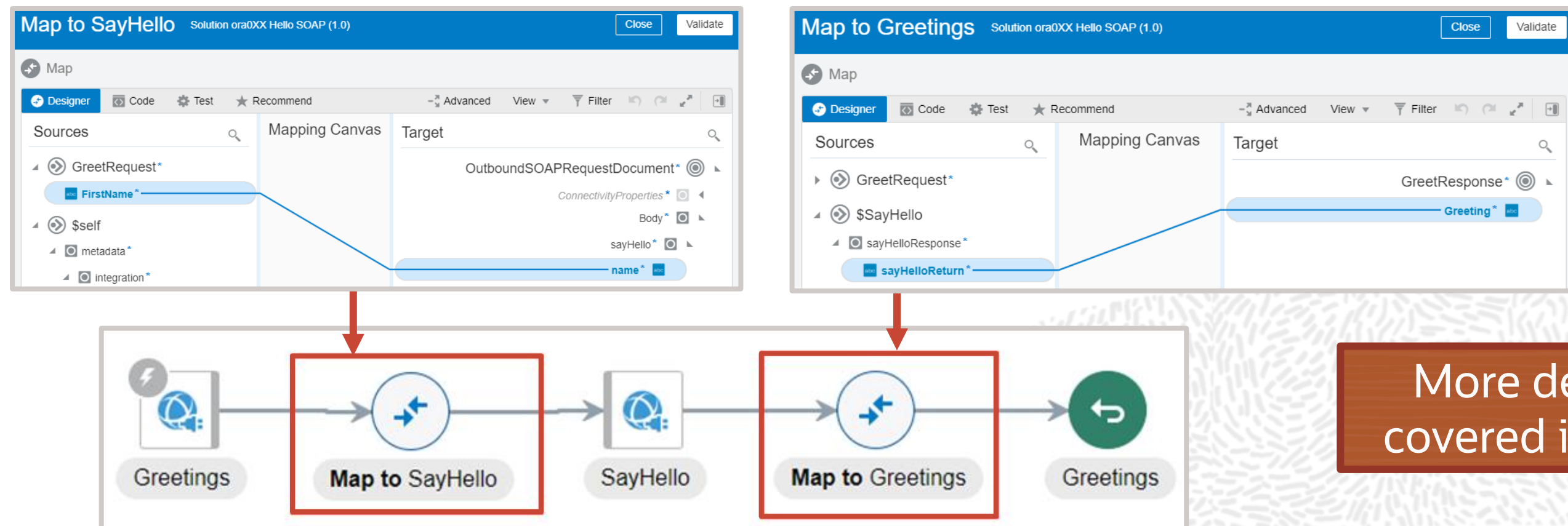
More details will be covered in Lesson 7...



# 5. & 6. Request and Response Data Mapping

A **map** action node (for the request) is automatically added once the **Invoke** is configured. A **map** action node (for the response) is automatically added once the **Trigger** is configured just before the **Return** node (*if applicable*).

- Click each map action node to open the OIC Data Mapper.
  - Sources** provides all available data objects available within the integration at that point.
  - Target** shows the structure of the data expected by the next node.



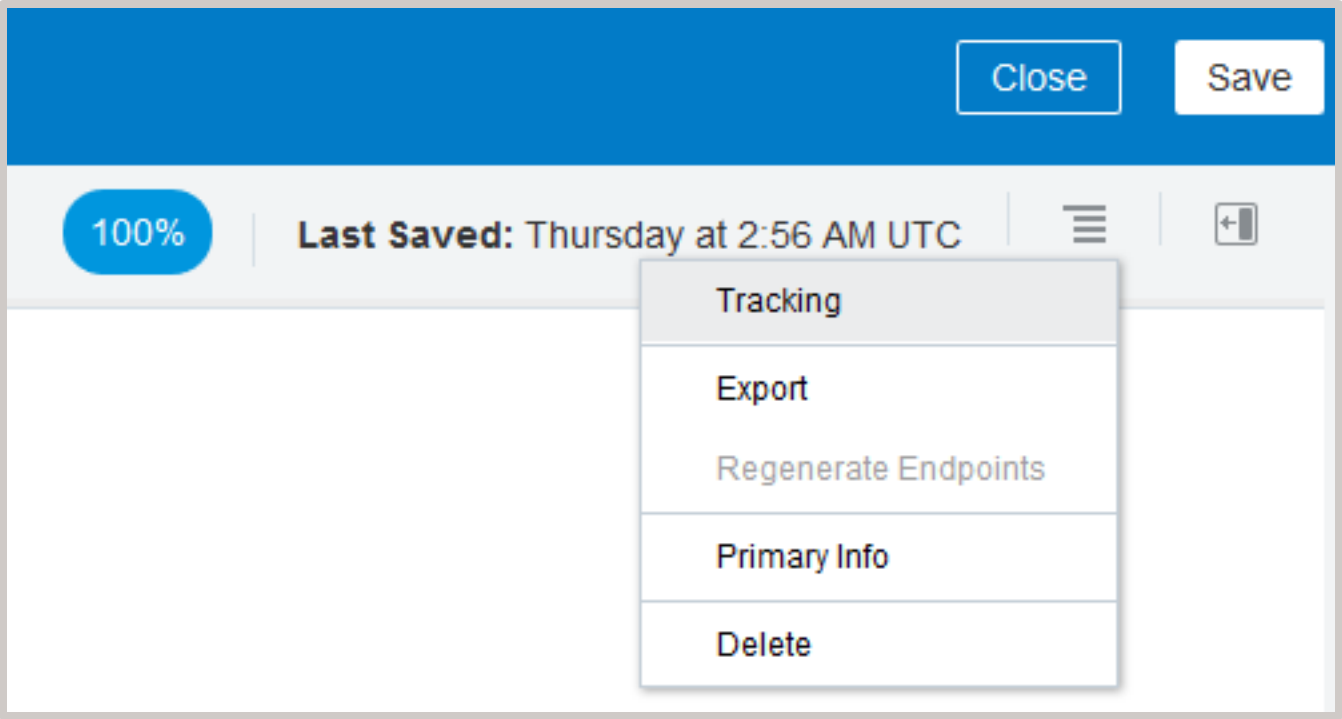
More details will be covered in Lesson 8...

# 7. Assigning Business Identifiers

You must configure at least one **Tracking Field** in order to complete the integration’s configuration.

- *Used for tracking and monitoring instances*

You may define up to three tracking fields per integration.



### Business Identifiers For Tracking

View Filter Detach

Source Find...

process

Account

PartyId

PartyNumber

SourceSystem

SourceSystemReferenceValue

Business identifiers enable runtime tracking on messages. Specify up to three tracking fields. A you to track fields across integration flows and is always available.

Additional business identifier fields are optional. At runtime, they are available for tracking only v

Primary	Tracking Field	Tracking Name	Tracking Variable
✓	PartyId	Account Identifier	tracking_var_1
	OwnerName	Account Owner	tracking_var_2
	Drag a trigger field here	tracking_var_3	tracking_var_3

More details will be covered in Lesson 10...

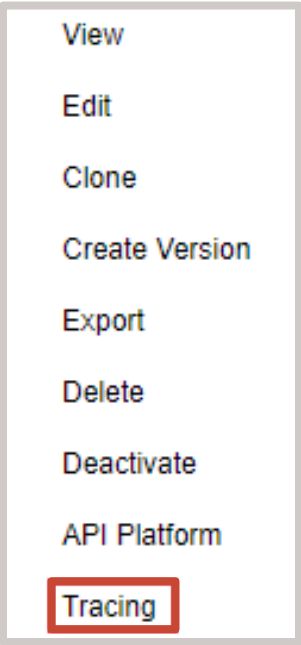


# 8. Activation Options (Review)

When activating, you have the option to enable integration instance tracing with or without the complete payload for all flow activities.

- Alternatively, you can enable tracing later after activation via the Action menu. →

The current status for activated integrations is indicated just below the integration's toggle switch.



An action menu with a list of options: View, Edit, Clone, Create Version, Export, Delete, Deactivate, API Platform, and Tracing. The 'API Platform' option is highlighted with a red rectangular border.

Three integration status indicators are shown. Each consists of a green toggle switch with a white checkmark on the left and a grey gear icon on the right. Below the first two is the text 'TRACE ENABLED' and below the third is 'TRACE WITH PAYLOAD'.

A dialog box titled 'Tracing: When tracing is enabled, integration activity can be viewed in the Activity Stream.' It contains two checked checkboxes: 'Enable tracing' and 'Include payload'. Below these is a yellow warning box with a triangle icon and text: 'When payload is included, sensitive information from the payload is written into log files, which can be downloaded and viewed. This may pose a security risk, and also slow down your system. Not recommended in a production environment.' A 'Learn More' link is below the warning. At the bottom right are 'Activate' and 'Cancel' buttons. The 'Activate' button is highlighted with a red border.

If you have an API Platform Cloud Service account, you can choose to publish endpoint information for integrations that are configured with a REST interface trigger connection.





# Testing a SOAP Interface Trigger Connection

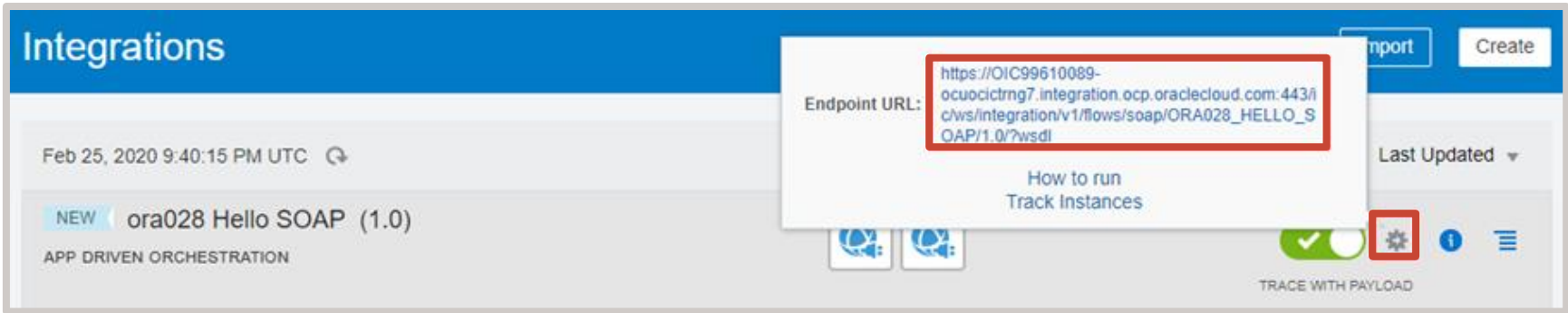
1. Obtain the WSDL URL for the integration from the OIC Designer Portal.
2. Create a project in the test application referencing the WSDL.
3. Set up an operation to test.
  - Provide OIC authentication
  - Update the request body with test data
4. Send the request and view the response.
  - View the HTTP response header values
5. View the integration instance in the OIC Monitoring Console.

You can leverage any SOAP testing application such as:

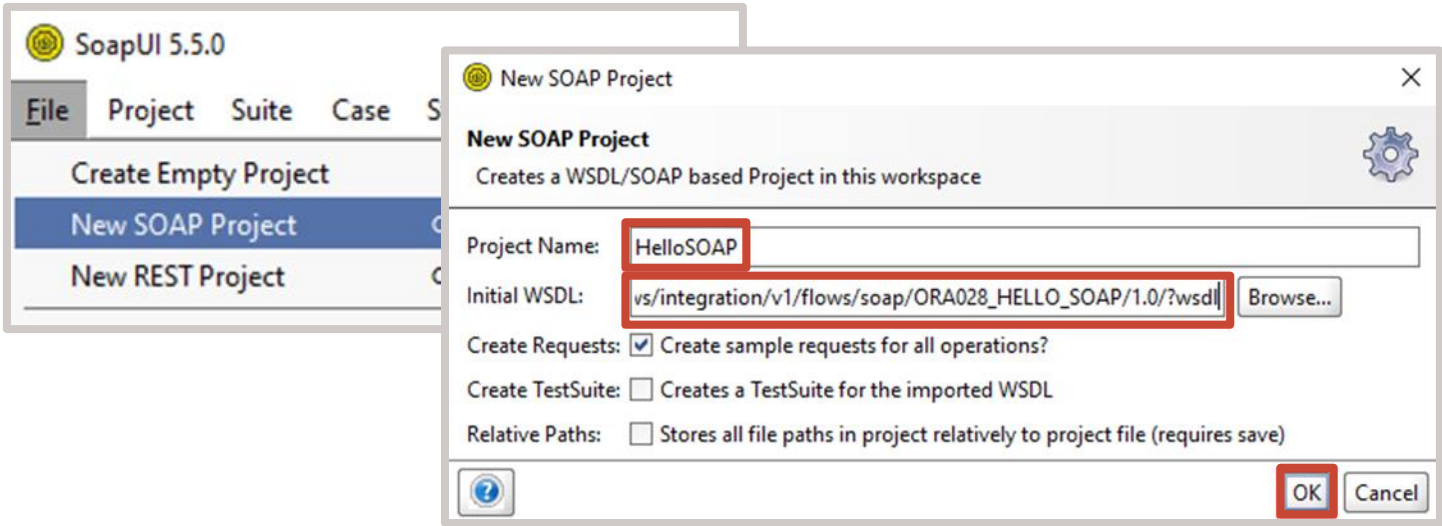
- TestingWhiz
- SOAPSonar
- Storm
- SoapUI

# Testing a SOAP Interface Trigger Connection

1. Obtain the WSDL URL for the integration from the OIC Designer Portal.

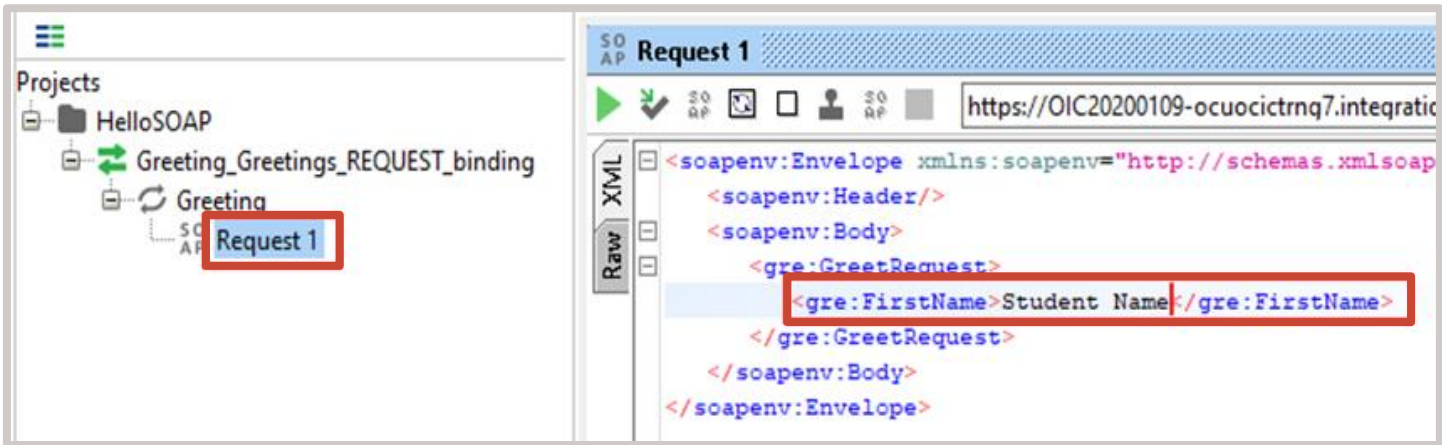


2. Create a project in the test application referencing the WSDL.

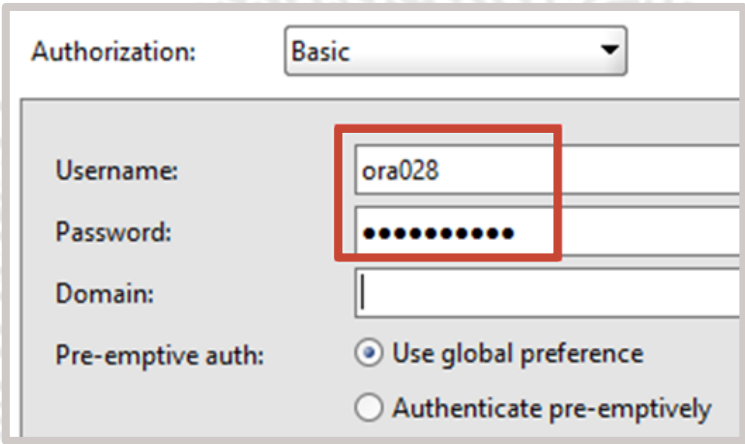


Screenshot examples from SoapUI

3. Set up an operation to test.  
• Update the request body with test data



Provide OIC user authentication





# Testing a SOAP Interface Trigger Connection

4. Send the request and view the response.

Raw XML

HTTP/1.1 200 OK  
Date: Wed, 26 Feb 2020 22:48:38 GMT  
Content-Type: text/xml; charset=UTF-8  
Transfer-Encoding: chunked  
Connection: keep-alive  
X-ORACLE-DMS-ECID: f2fb1b4b-3f0d-47b1-ad1d-440e312dab92-000378a8  
X-ORACLE-DMS-RID: 0  
Content-Encoding: gzip

Raw XML

<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">  
 <env:Header/>  
 <env:Body>  
 <nstrgmp:GreetResponse xmlns:WL5G3N2="http://greet.webservice.n">  
 <nstrgmp:Greeting>Hello Student Name</nstrgmp:Greeting>  
 </nstrgmp:GreetResponse>  
 </env:Body>  
</env:Envelope>

- View the HTTP response header values

5. View the integration instance in the OIC Monitoring Console.

< Integrations

Designer

Monitoring

Settings

< Monitoring

Dashboards

Integrations

Agents

Tracking

Monitor Integrations

Integrations Last 1 Hour Jan 21, 2020 8:56:02 PM UTC

Search Last Updated

ora028 Hello SOAP (1.0)

Last Message 10 minutes ago

2 Received

2 Processed

1 Success

1 Errors

Track Instances

Feb 25, 2020 9:53:56 PM UTC Last 1 Hour Search

Integration is ora028 Hello SOAP (1.0)

First Name: Student Name Instance ID: 1200019

Received just now

Completed just now

Duration 01 seconds

Primary Identifier: undefined Instance ID: 800022

Received 1 minute ago

Failed 1 minute ago

Duration 0 milliseconds

First Name: Student Name | 1200019

Instance of "ora028 Hello SOAP (1.0)"

Completed: 2 minutes ago

Layout: Horizontal Reset

Greetings

Map to SayHello

SayHello

Map to Greetings

Greetings

Business Identifiers

View Errors

Discard

View Audit Trail

View Activity Stream

Primary Info

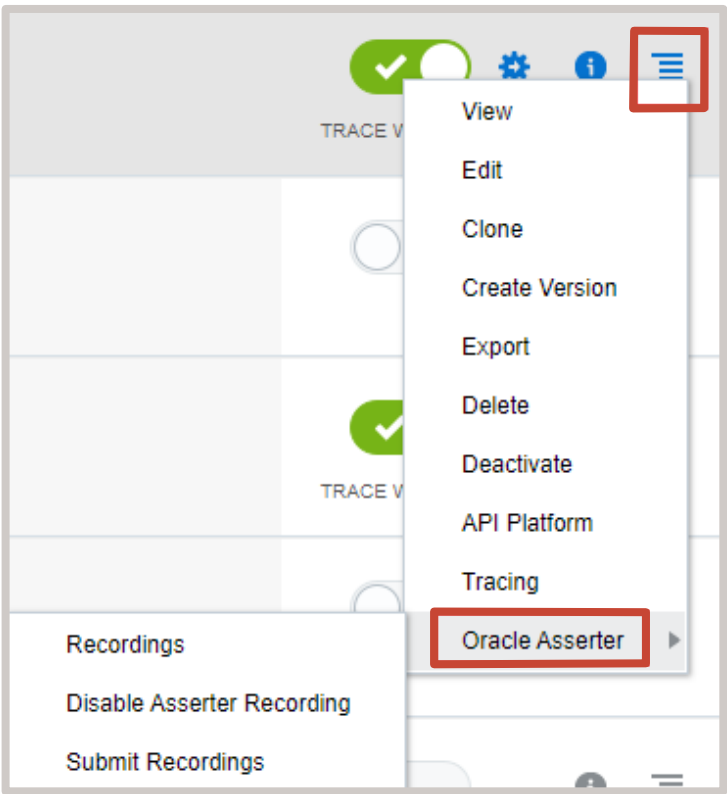




# Oracle Asserter

When activating, you also have the option to enable the Oracle Asserter.

- You can enable or disable the asserter later via the Action menu.
- Click the green **Play** icon to run an instance.
- The asserter will re-run the instance and report a PASS/FAIL result.



Track Instances

Dec 2, 2018 12:41:22 AM UTC

In Retention Period

Search

message: Test4

Echo | 1.2.0

COMPLETED

Instance ID: 24

Asserter Instance

Test Status: PASSED

Recording Id: 23

Started

Tuesday at 10:39 AM UTC

Completed

Tuesday at 10:39 AM UTC

Duration

266 msec

message: Test4

Echo | 1.2.0

COMPLETED

Instance ID: 24

Oracle Asserter:

When Asserter recording is enabled, payloads will be captured and integration instances will be recorded. Recordings can be played later and maximum five recordings will be maintained for an integration.

☒ Enable Asserter Recording

Oracle Asserter - Hello World Invoke (2.0)

Playback recording by selecting the row and clicking **Play** button. Use **Delete** option to delete selected recording.

Recording Name	Instance Id	Primary Identifier	Recording Time	Description	Recent Result
RecordName_4800010	4800010	name: David6	2020-03-18 19:13:48.851		PASSED
RecordName_4400007	4400007	name: David5	2020-03-18 19:13:41.275		PASSED
RecordName_4800007	4800007	name: David4	2020-03-18 19:13:30.362		NO RECENT RUN AVAIL...

Tests can be analyzed in more details by expanding the payload results.

You can also export the integration with the asserter recordings.



# Summary

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In this lesson, you should have learned how to:

- Define an OIC Integration
- Describe the Integration design styles
- Understand the Publish/Subscribe pattern
- List the steps for creating a basic App Driven Orchestration
- Test a SOAP interface trigger Integration



# Practice 4-1: Creating a Basic SOAP-Based Integration

This practice includes:

- PART 1 – Creating the Trigger and Invoke SOAP Adapter Connections
- PART 2 – Creating the “Hello SOAP” Integration Flow
- PART 3 – Testing a SOAP-Based Integration Using a SoapUI Project
- PART 4 – Monitor Your Integration Instance from OIC

