ORACLE

4

Fundamentals of Creating Integrations

Objectives

After completing this lesson, you should be able to:

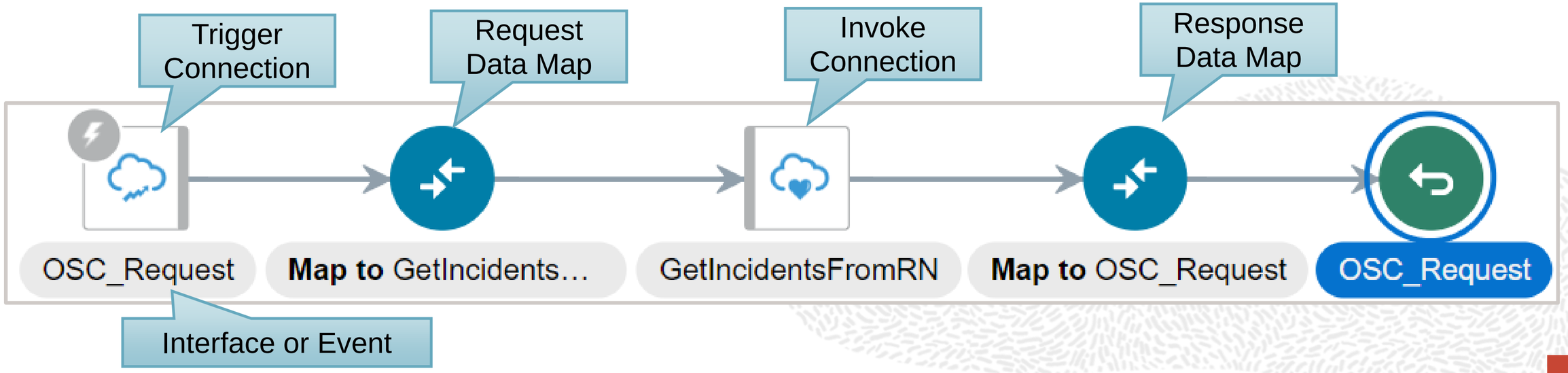
- Define an OIC Integration
- Describe the Integration design styles
- Understand the Publish/Subscribe pattern
- List the steps for creating a basic App Driven Orchestration
- Test a SOAP interface trigger Integration

Agenda

- OIC Integration Patterns and Design Styles
- Creating an Integration

What Is an OIC Integration?

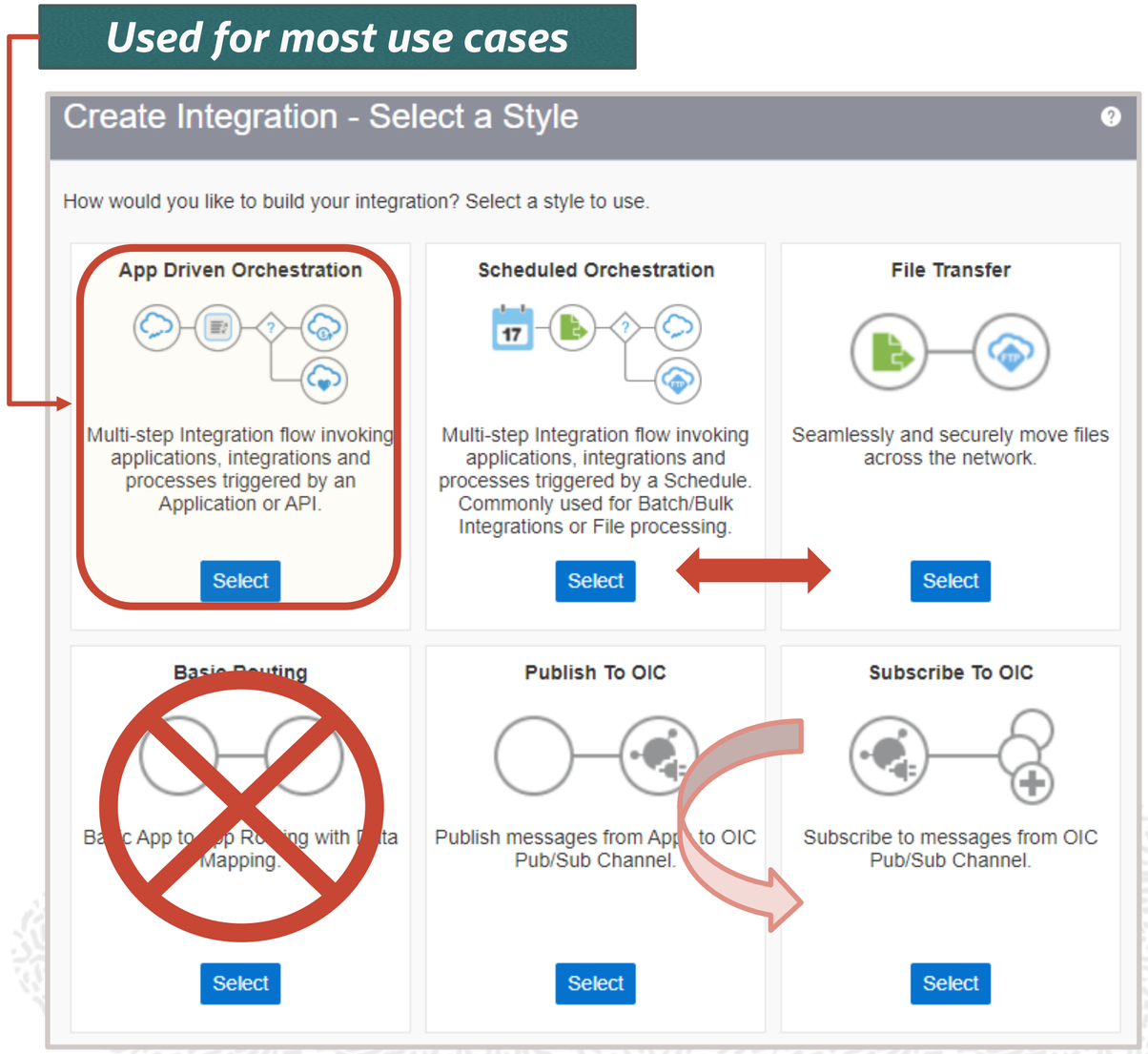
- Defines the flow of messages
- Includes:
  - One **Source** (trigger role) connection for requests sent to OIC
  - One or more **Target** (invoke role) connections for requests sent from OIC
  - Data mapping between two connections (both request and response)



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)*

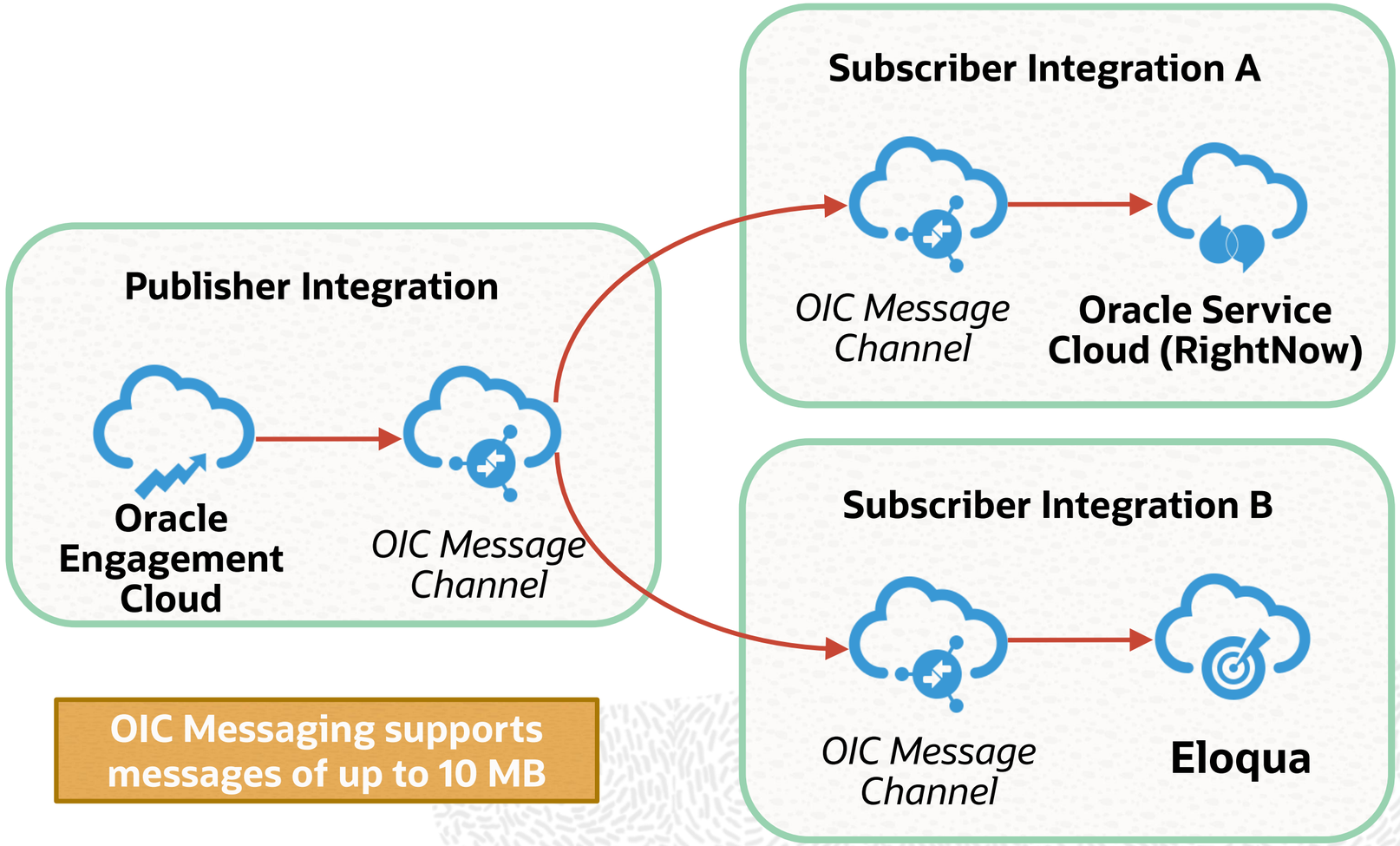


Integration Style Patterns Described

Pattern	Description
Basic Routing	*This integration design canvas style has been deprecated.*
Publish to OIC	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.
Subscribe to OIC	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.
App Driven Orchestration	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.
Scheduled Orchestration	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.
File Transfer	This style is currently identical to the Scheduled Orchestration style.

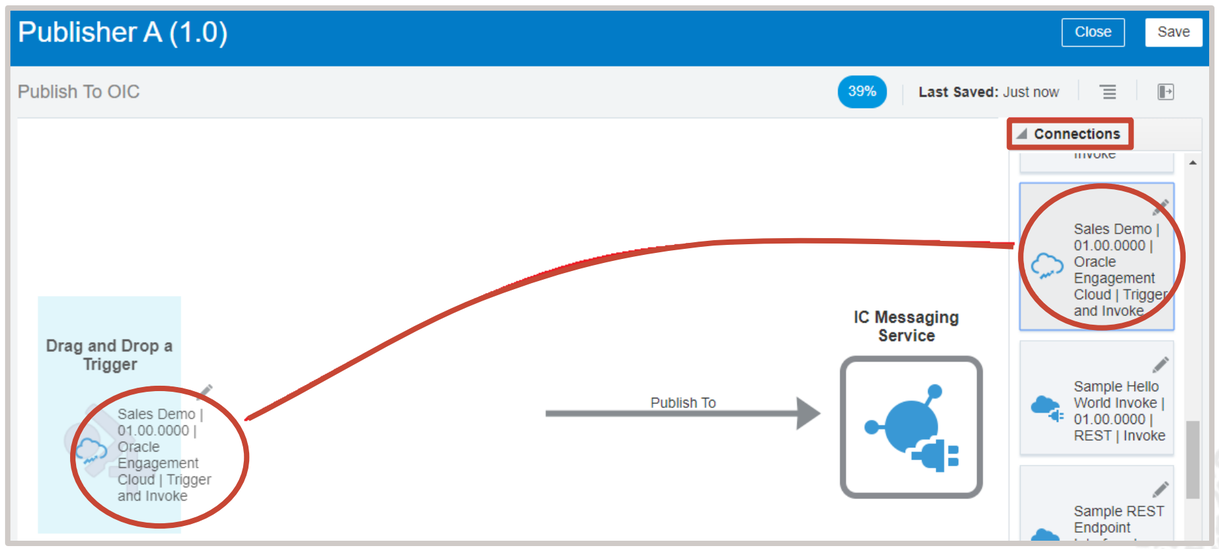
Publish/Subscribe Example

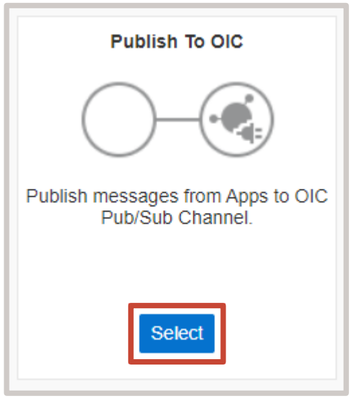
The built-in OIC Message channels are used to facilitate Pub/Sub use cases.

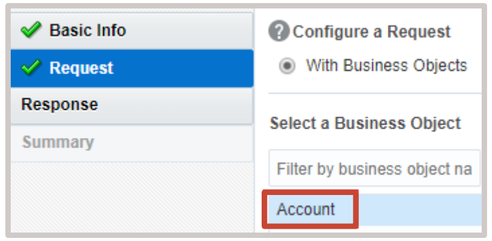


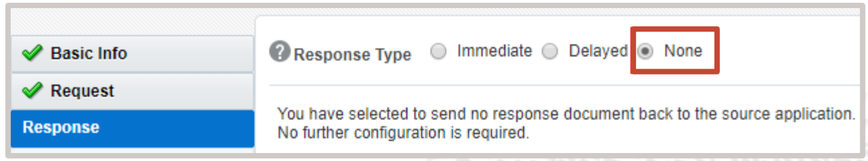
Creating a Publisher Integration

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**.



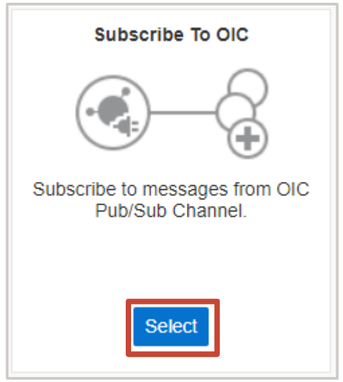


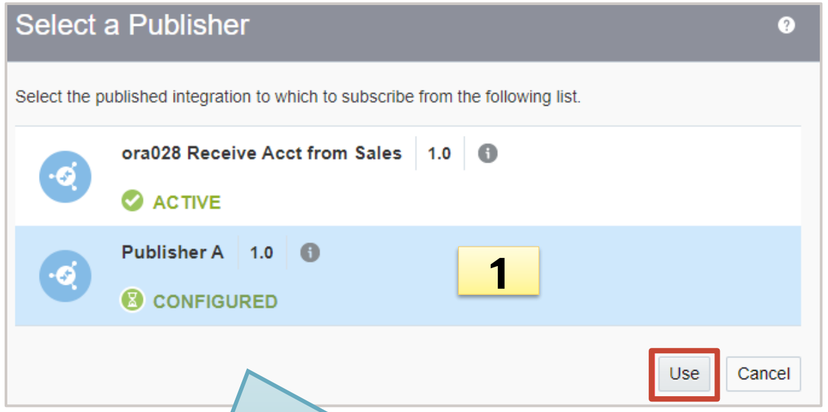




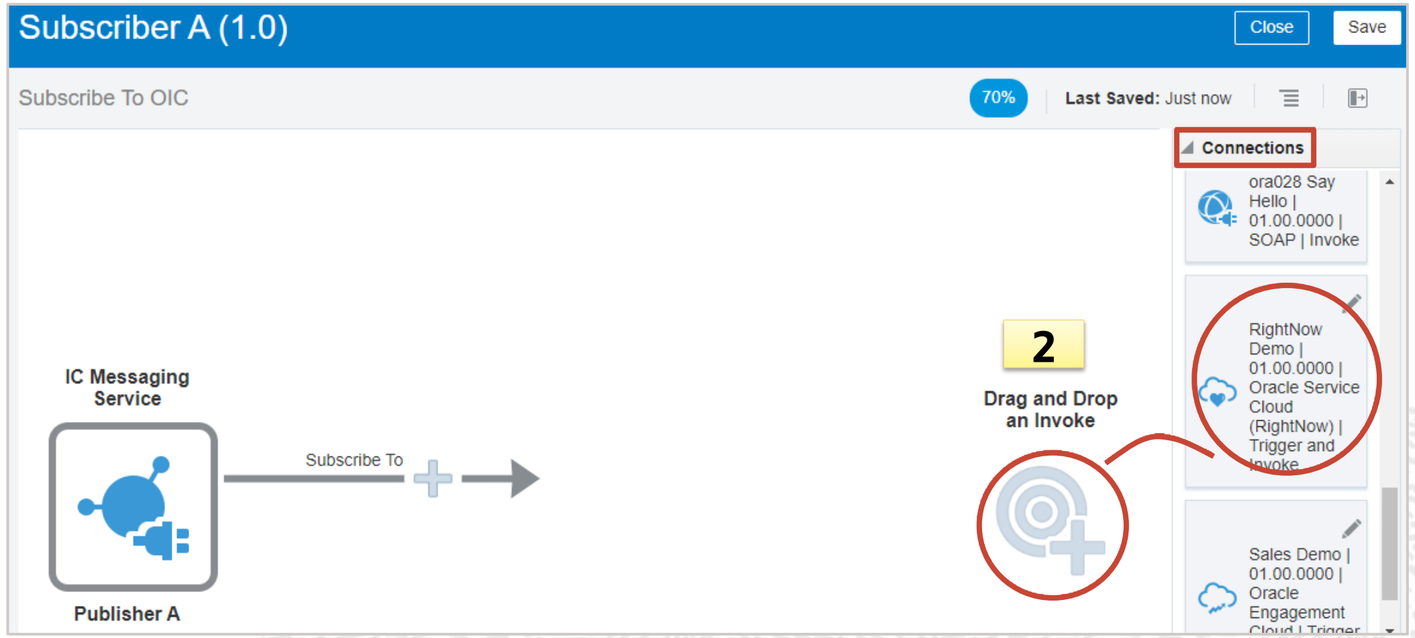
Creating a Subscriber Integration

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



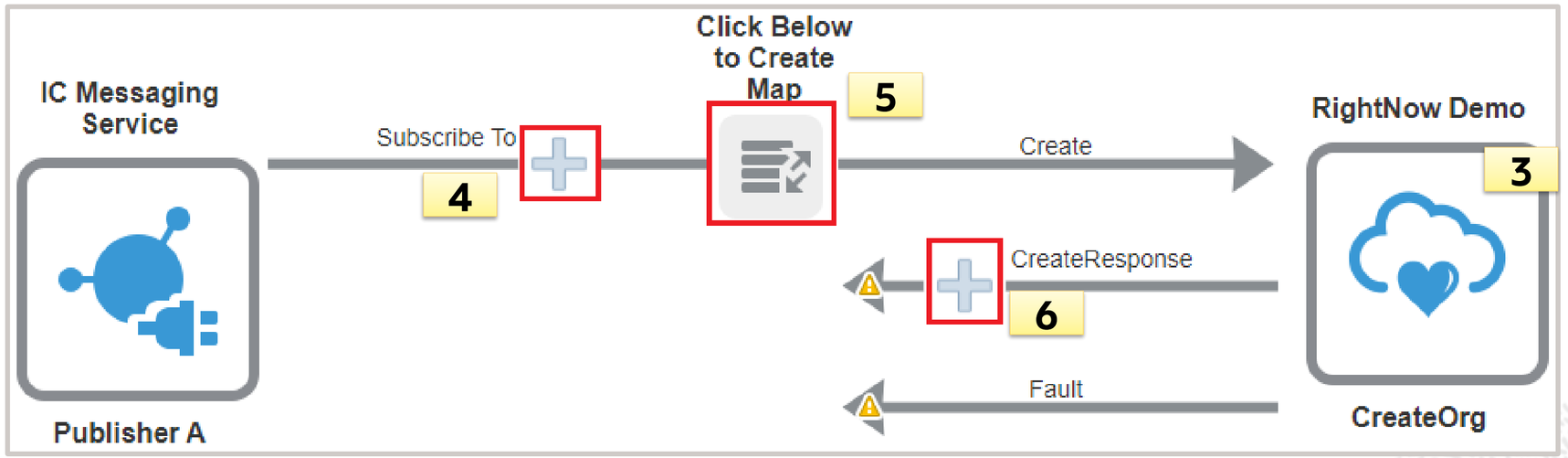


List of Active and Configured Publishers



Creating a Subscriber Integration

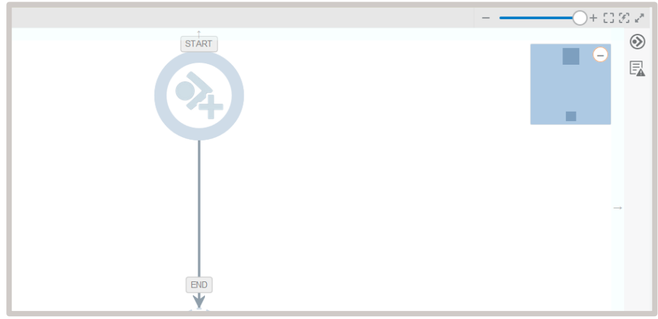
3. Configure the Invoke wizard to define the request use case as desired.
   - *Once the invoke use case has been configured, the design canvas is displayed.*

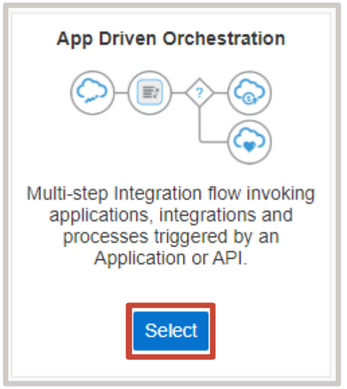


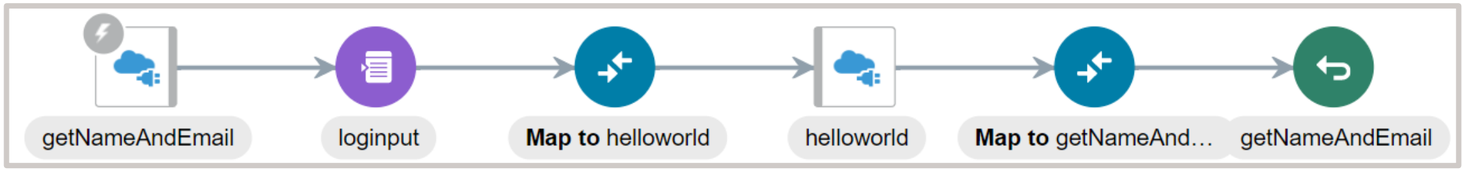
4. Optionally, add a request enrichment invoking another service.
5. Define the data mapping from the source payload to the target service request.
6. Optionally, add an additional response connection to invoke another service.

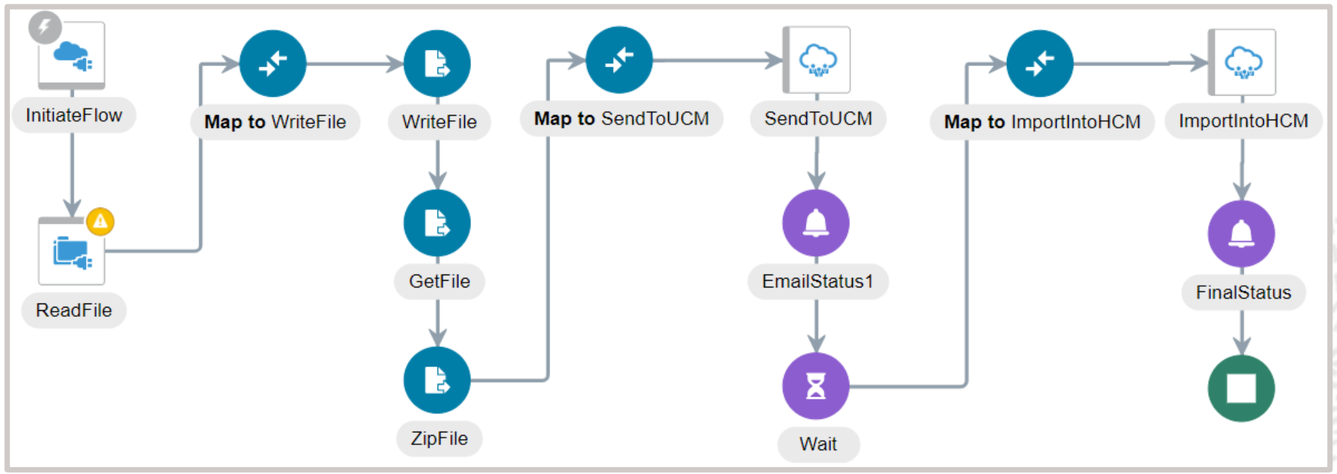
App Driven Orchestration Style

- 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

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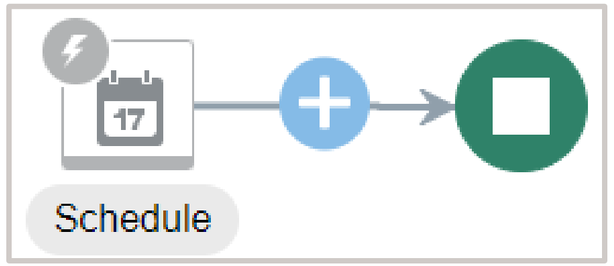
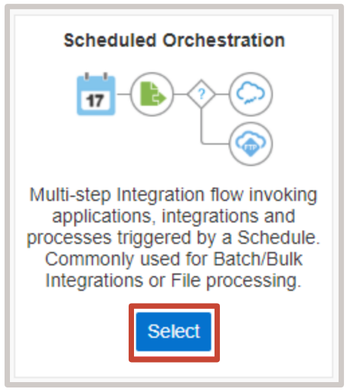
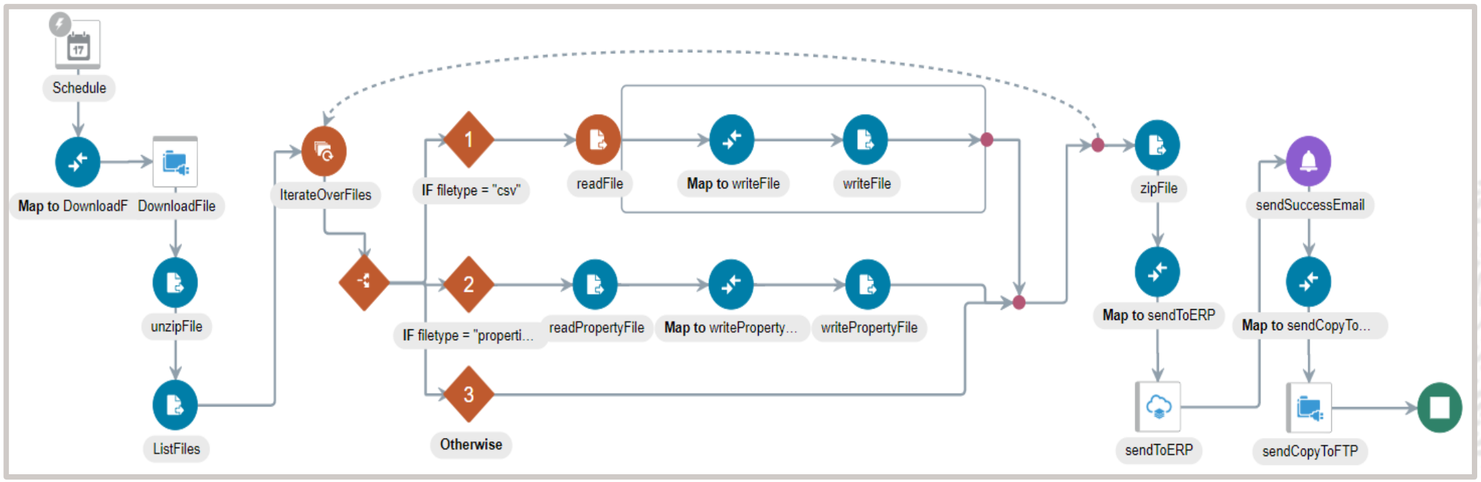
Scheduled Orchestration Style

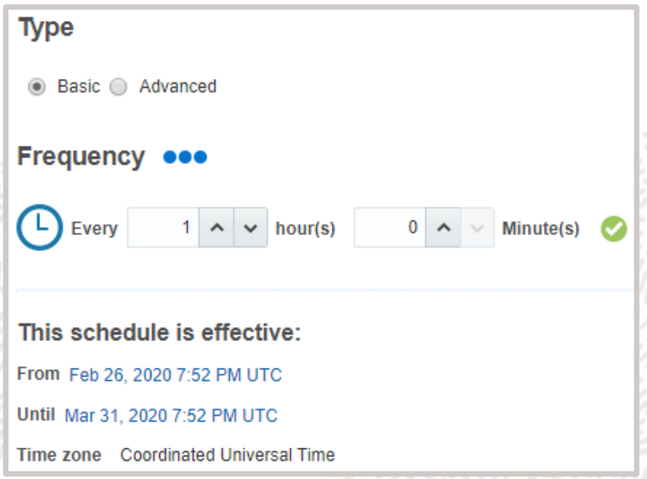
- Start out with a blank design canvas.
  - *No trigger, optionally define a schedule.*
- Add actions based on the desired use case.
  - *Orchestrations can be simple or complex flows.*
- Design canvas and configuration options are almost identical to App Driven Orchestrations.





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

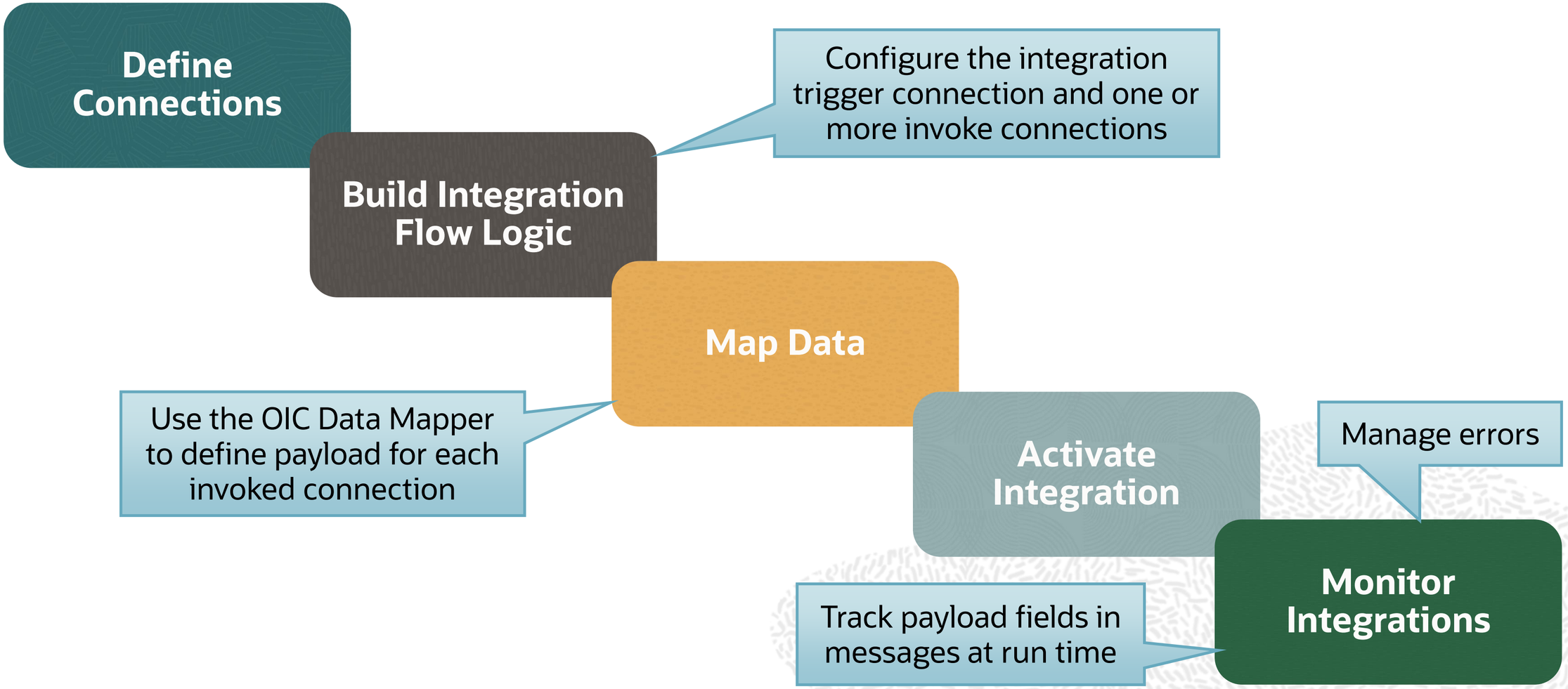




Agenda

- OIC Integration Patterns
- Creating an Integration

Integration Development and Management Workflow

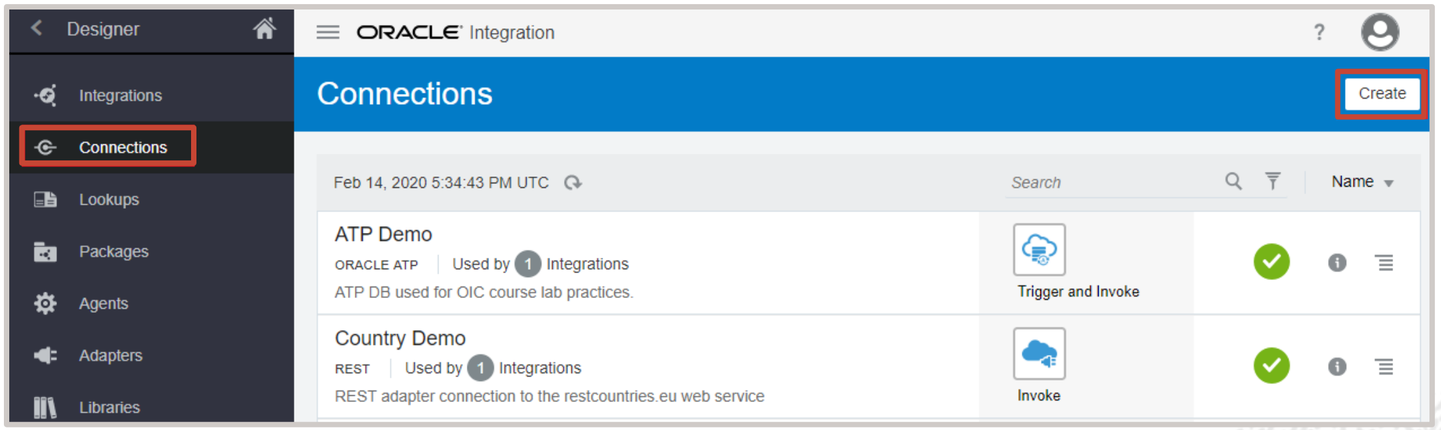


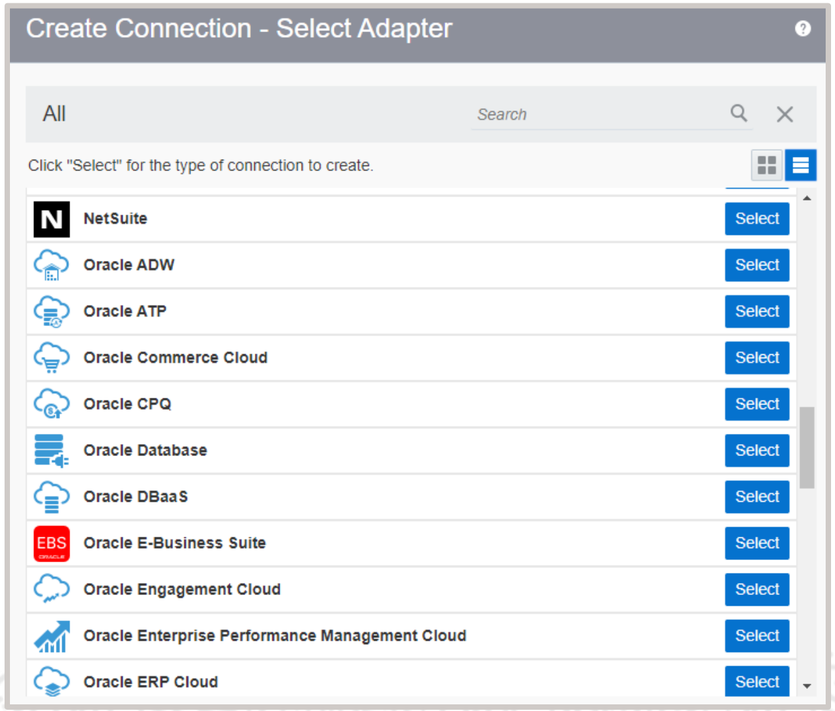
Basic Integration Development Workflow Steps

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

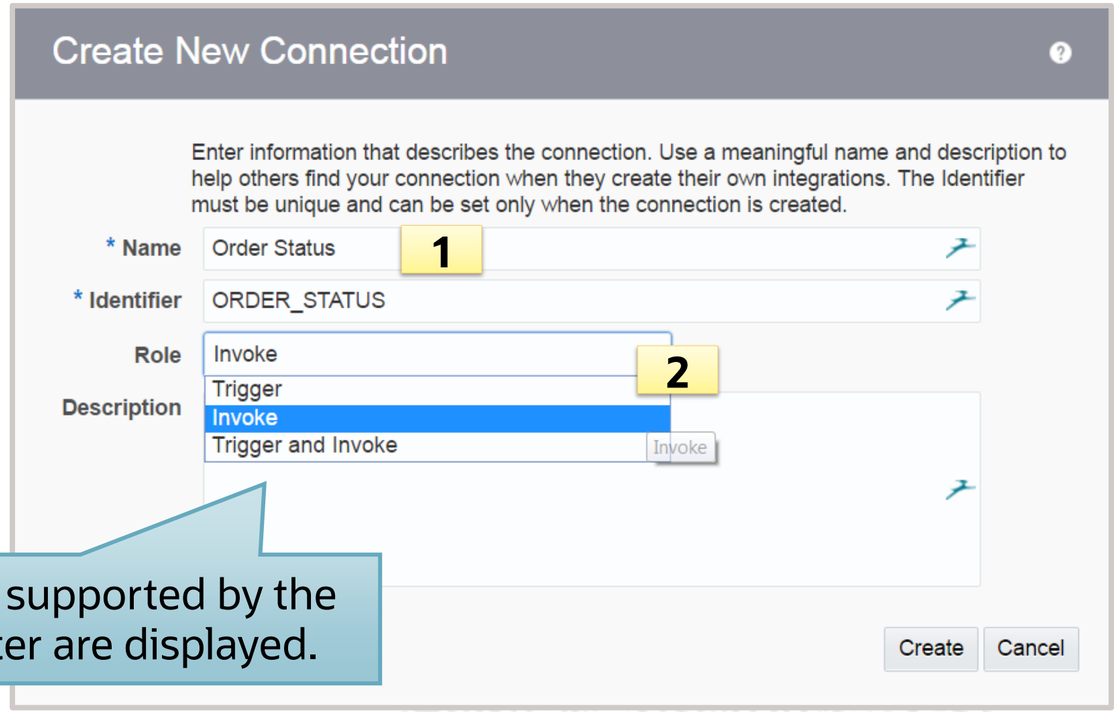
- On the Designer Portal, click **Connections**.
- Click **Create**.
- **Select** an adapter from the dialog box or perform a search.





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

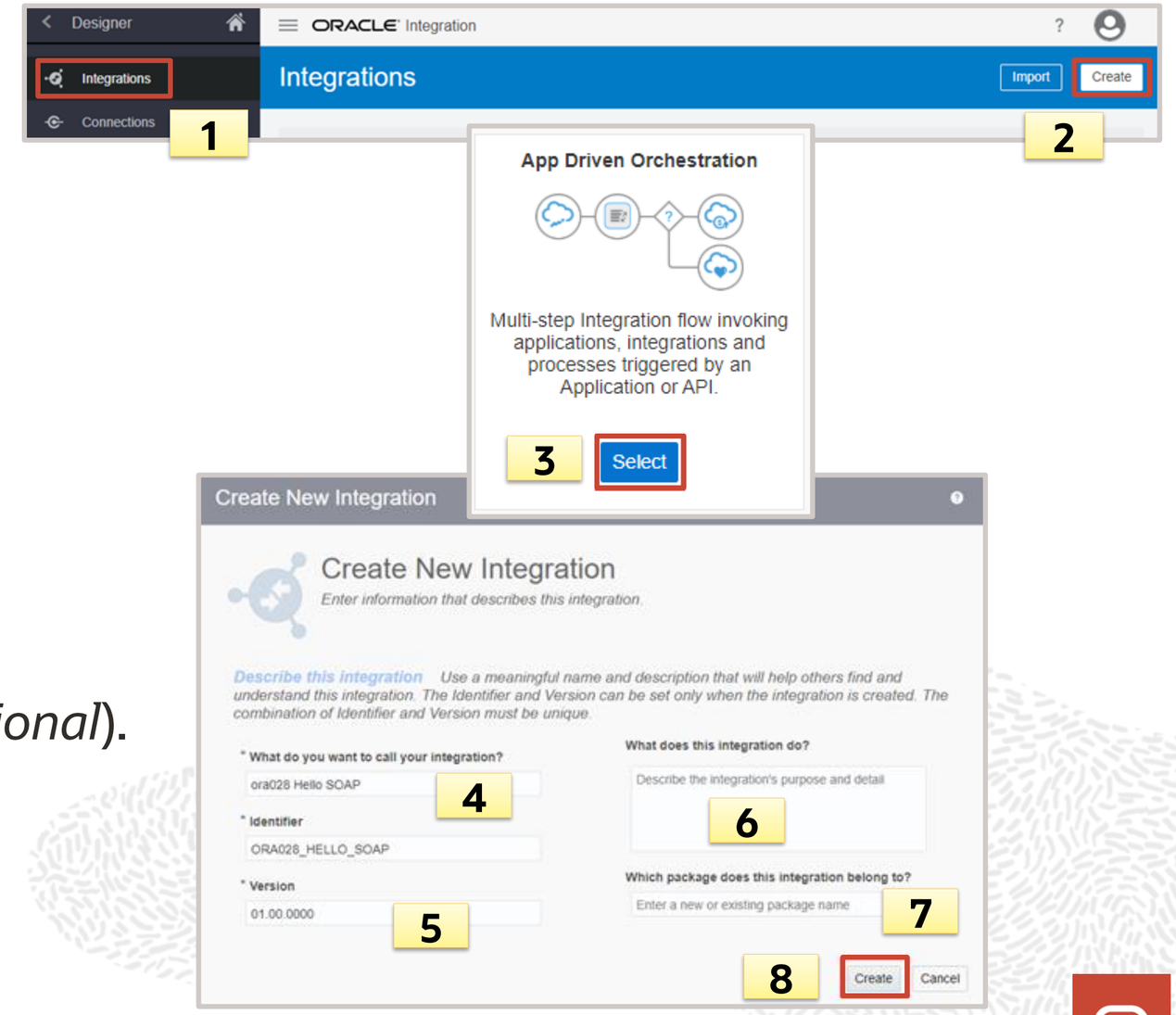


Only the roles supported by the selected adapter are displayed.

More details will be covered in Lesson 5…

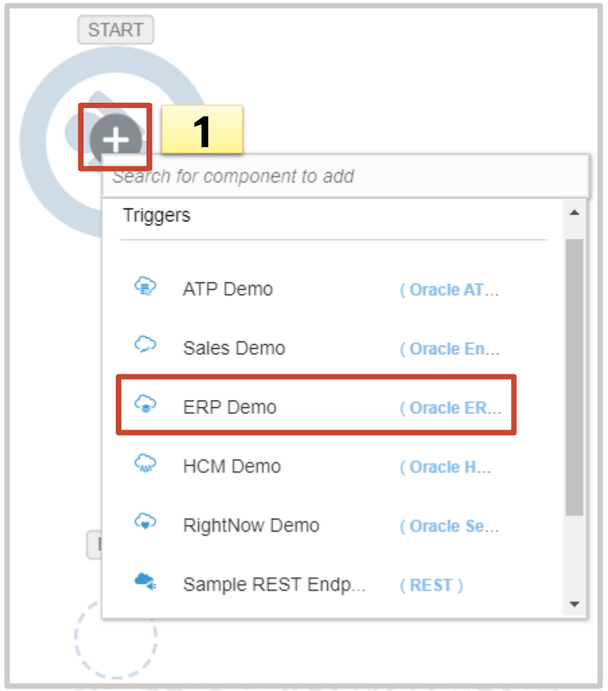
2. Creating the Integration

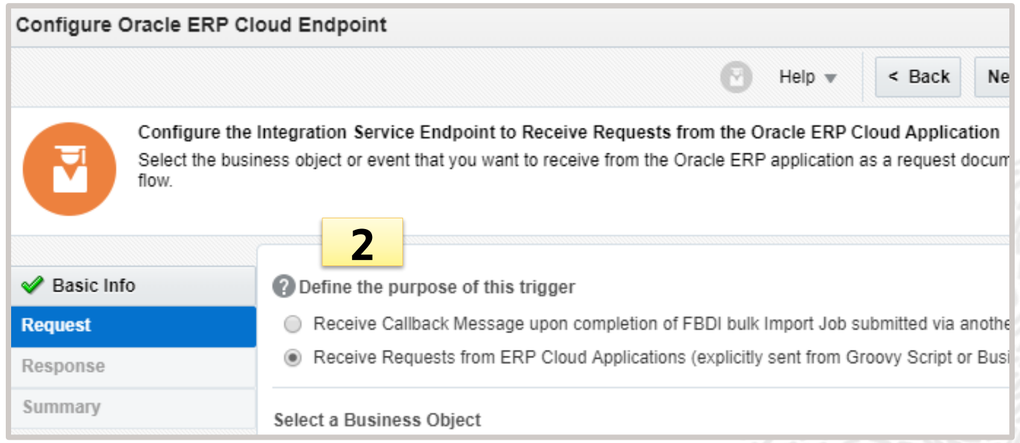
1. On the Designer Portal, click **Integrations**.
2. Click **Create**.
3. Select the App Driven Orchestration style.
4. Provide a unique integration name.
   - Optionally, change the identifier name.
5. Provide a version number.
6. Provide a description (*optional*).
7. Add to a package or create a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

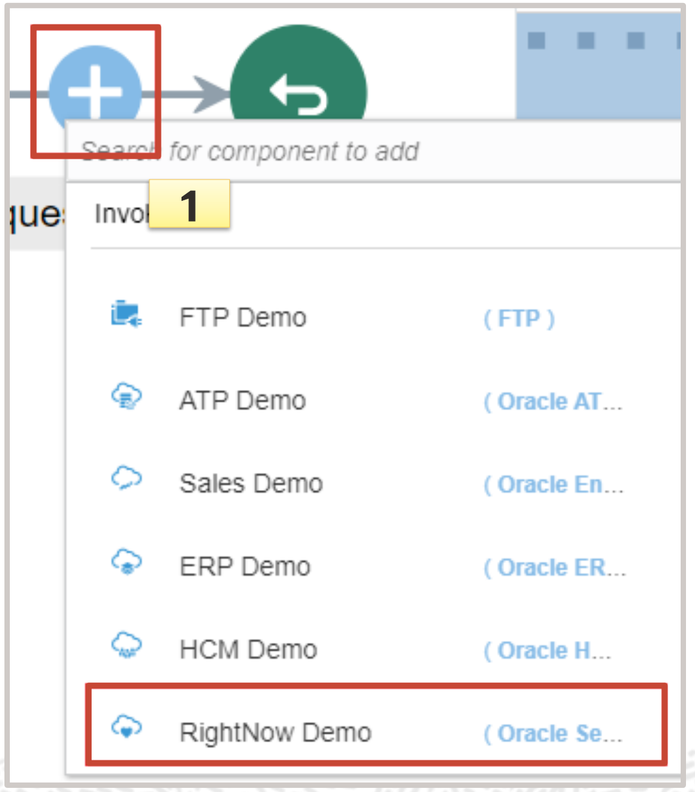


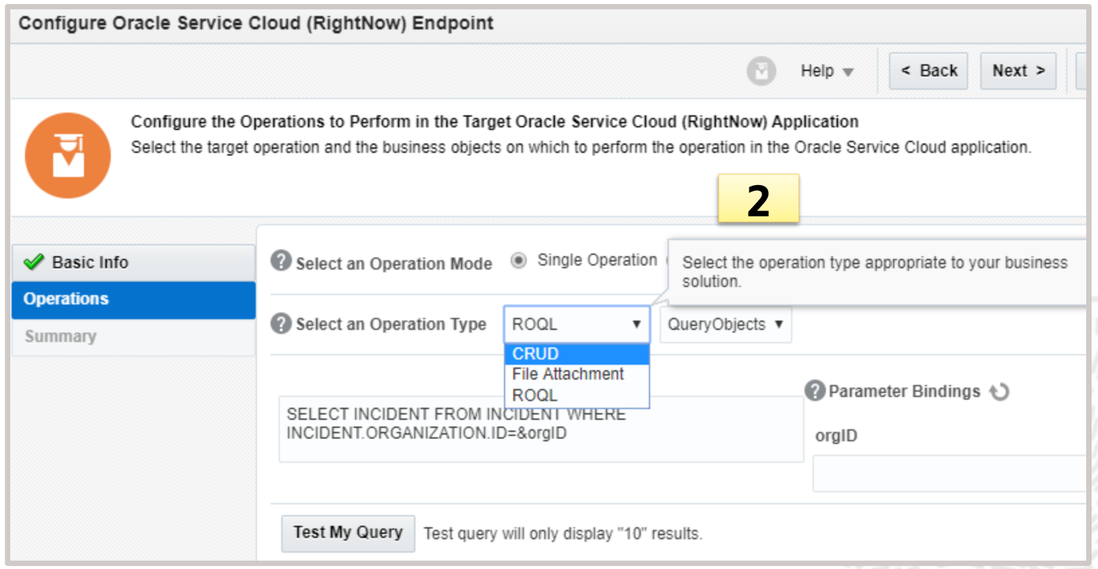


More details will be covered in Lesson 6…

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.





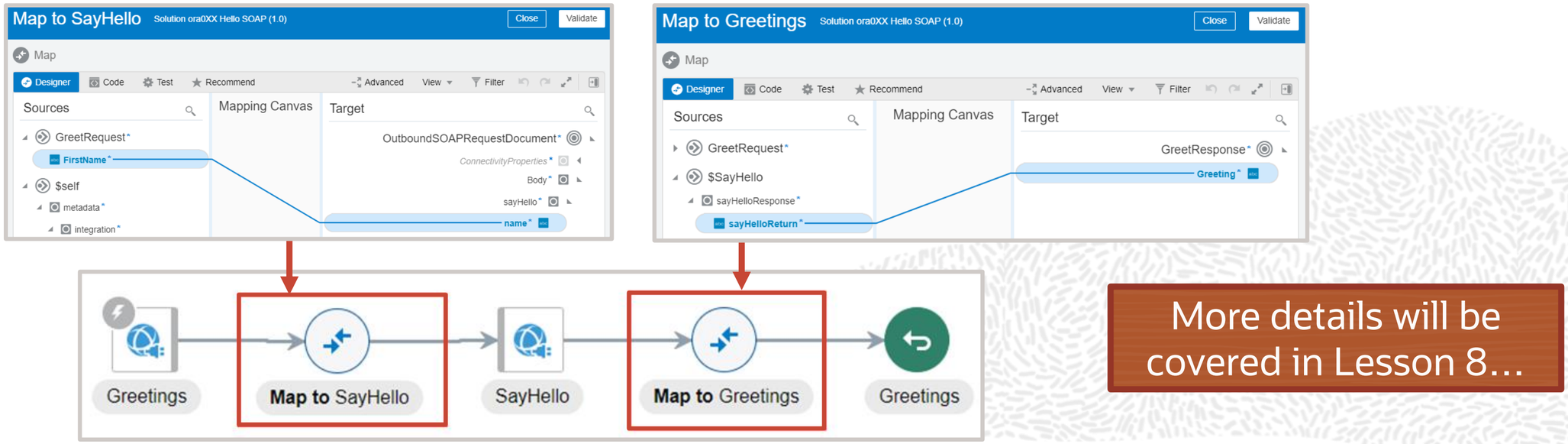
More details will be covered in Lesson 7...

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.

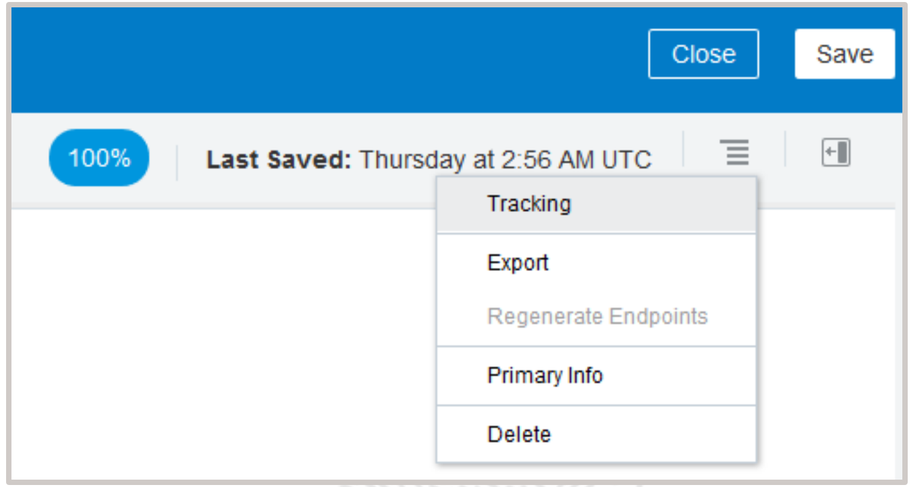


More details will be covered in Lesson 8…

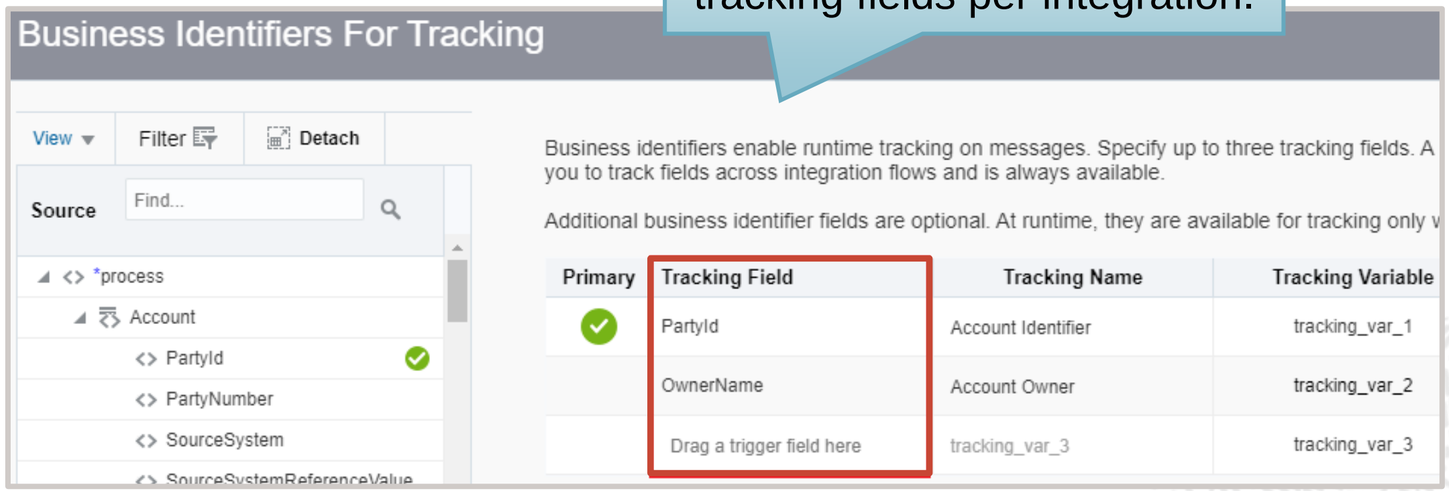
7. Assigning Business Identifiers

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.

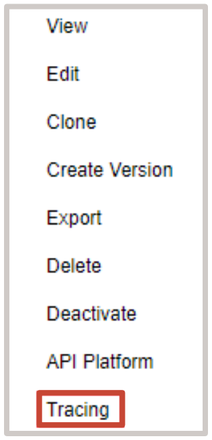


More details will be covered in Lesson 10…

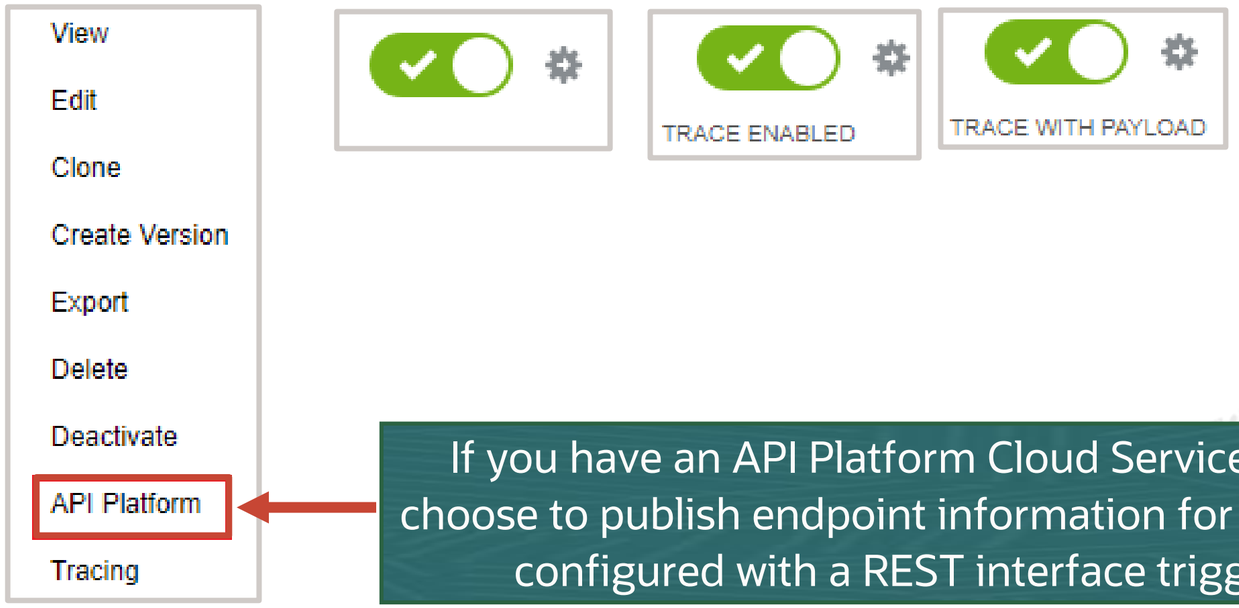
8. Activation Options (Review)

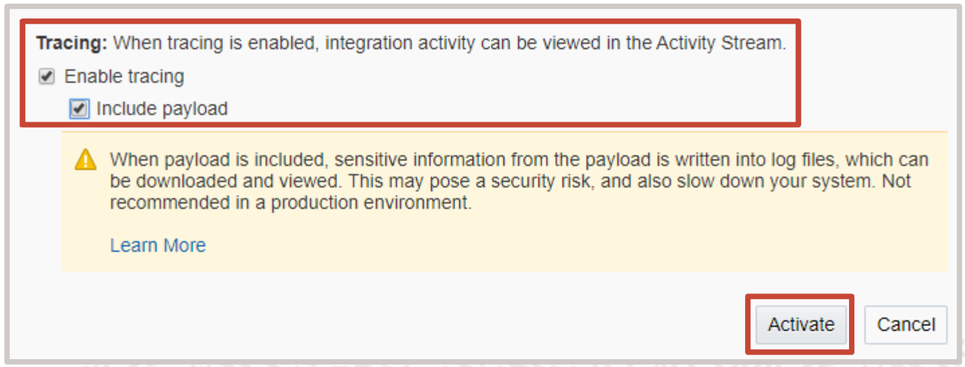
When activating, you have the option to enable integration instance tracing with or without the complete payload for all flow activities.

- 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.





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.

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Testing a SOAP Interface Trigger Connection

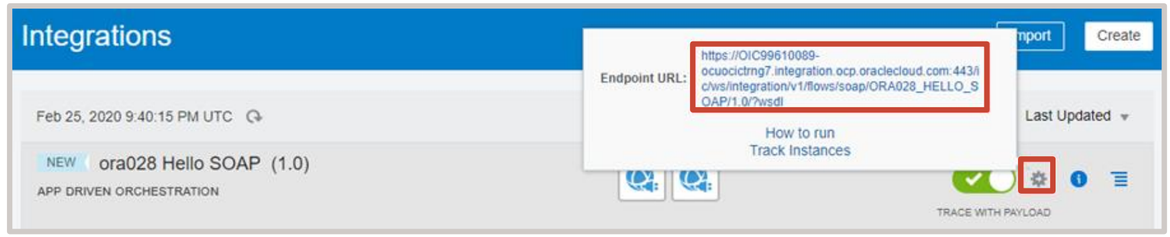
1. Obtain the WSDL URL for the integration from the OIC Designer Portal.
2. Create a project in the test application referencing the WSDL.
3. Set up an operation to test.
   - Provide OIC authentication
   - Update the request body with test data
4. Send the request and view the response.
   - View the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

You can leverage any SOAP testing application such as:

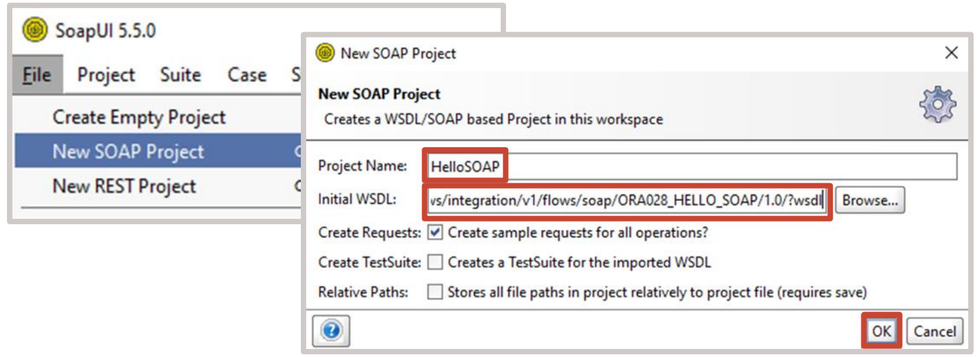
- TestingWhiz
- SOAPSonar
- Storm
- SoapUI

Testing a SOAP Interface Trigger Connection

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



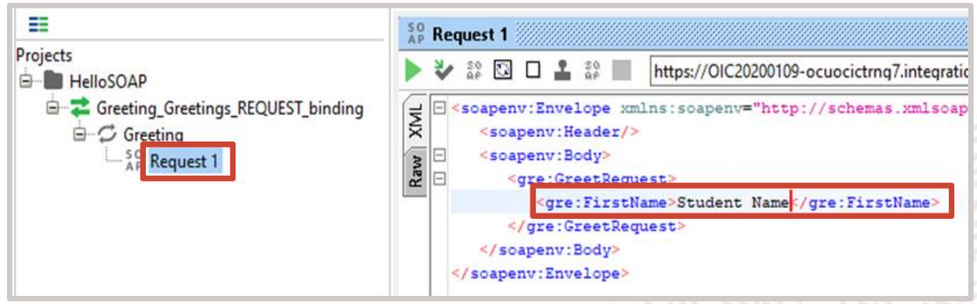
2. Create a project in the test application referencing the WSDL.



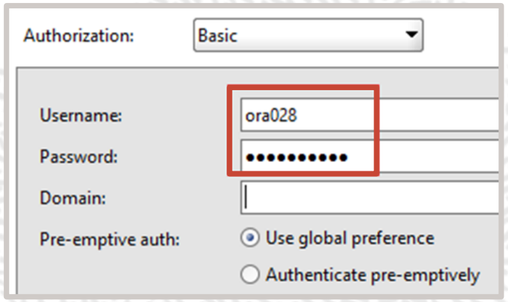
Screenshot examples from SoapUI

3. Set up an operation to test.

- Update the request body with test data

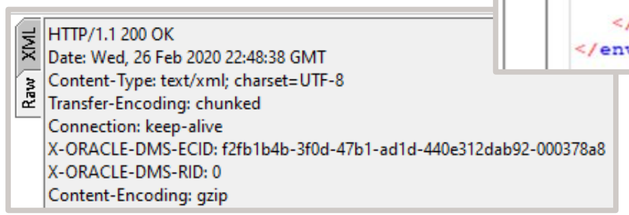


Provide OIC user authentication



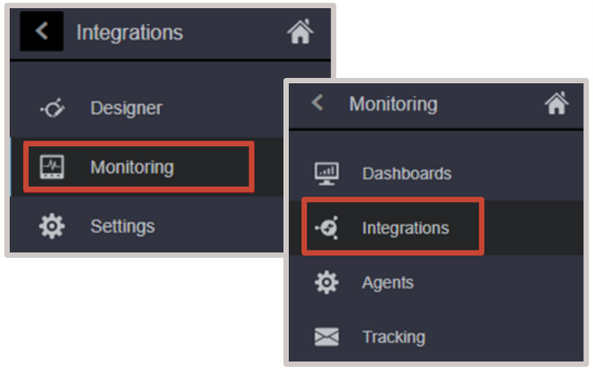
Testing a SOAP Interface Trigger Connection

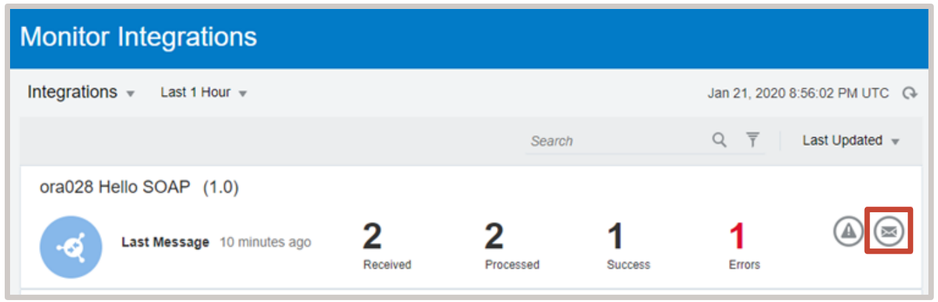
4. Send the request and view the response.

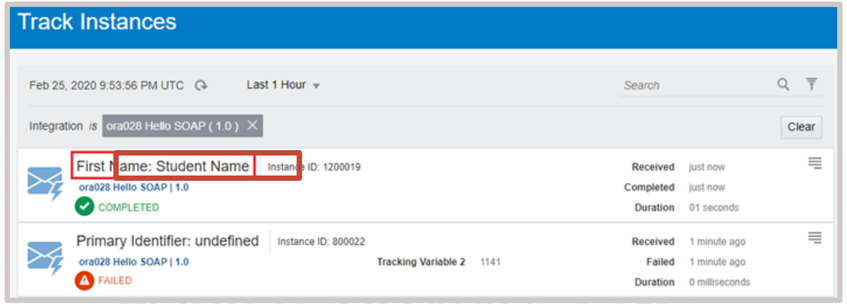


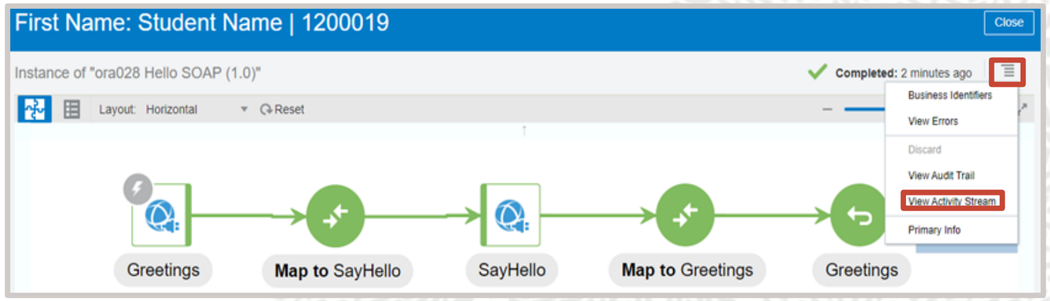
- View the HTTP response header values

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









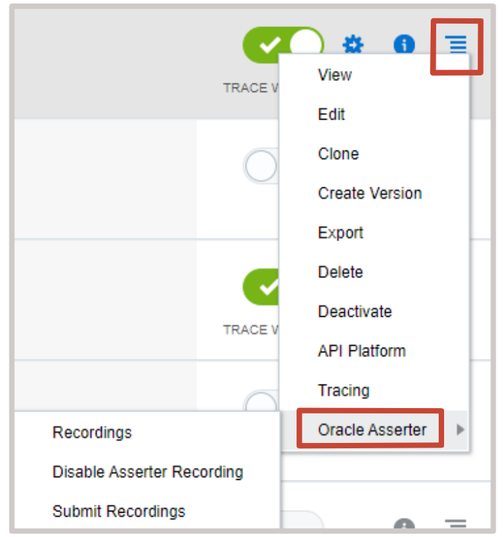
Oracle Asserter

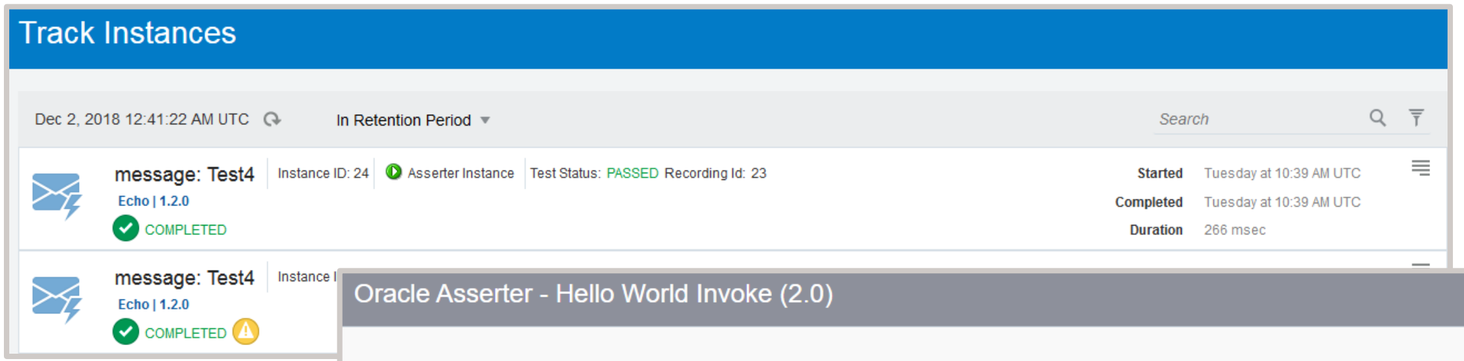
When activating, you also have the option to enable the Oracle Asserter.

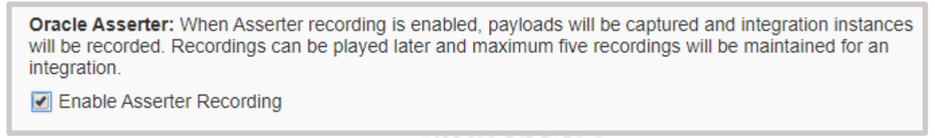
- You can enable or disable the asserter later via the Action menu.

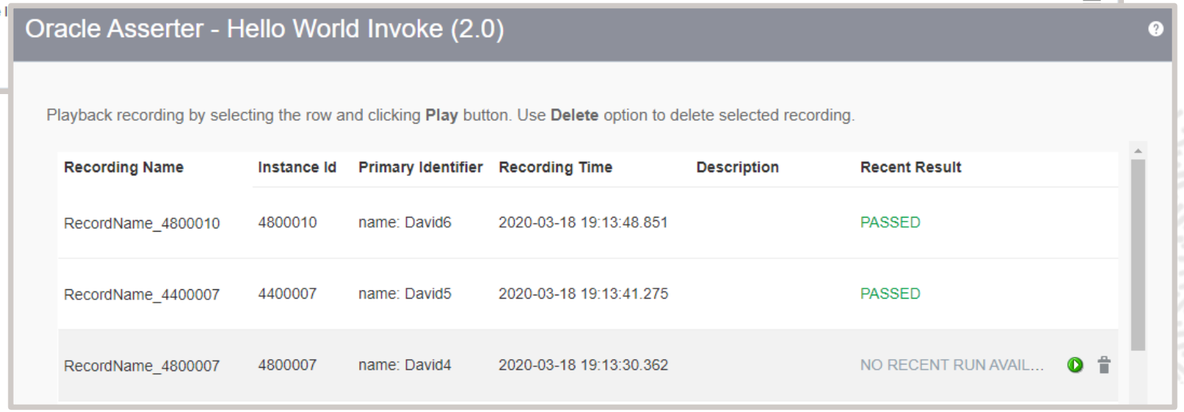
Click the green **Play** icon to run an instance.

- The asserter will re-run the instance and report a PASS/FAIL result.









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

You can also export the integration with the asserter recordings.

Summary

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