# Configuring Trigger Connections

Objectives

After completing this lesson, you should be able to:

- Understand the usage of the four message exchange patterns

- Use the Adapter Endpoint Configuration Wizard for Trigger Connections

- Define SaaS application interfaces based on business objects or events

- Create synchronous or asynchronous interfaces

- Leverage generic technology adapters for defining SOAP or REST interfaces

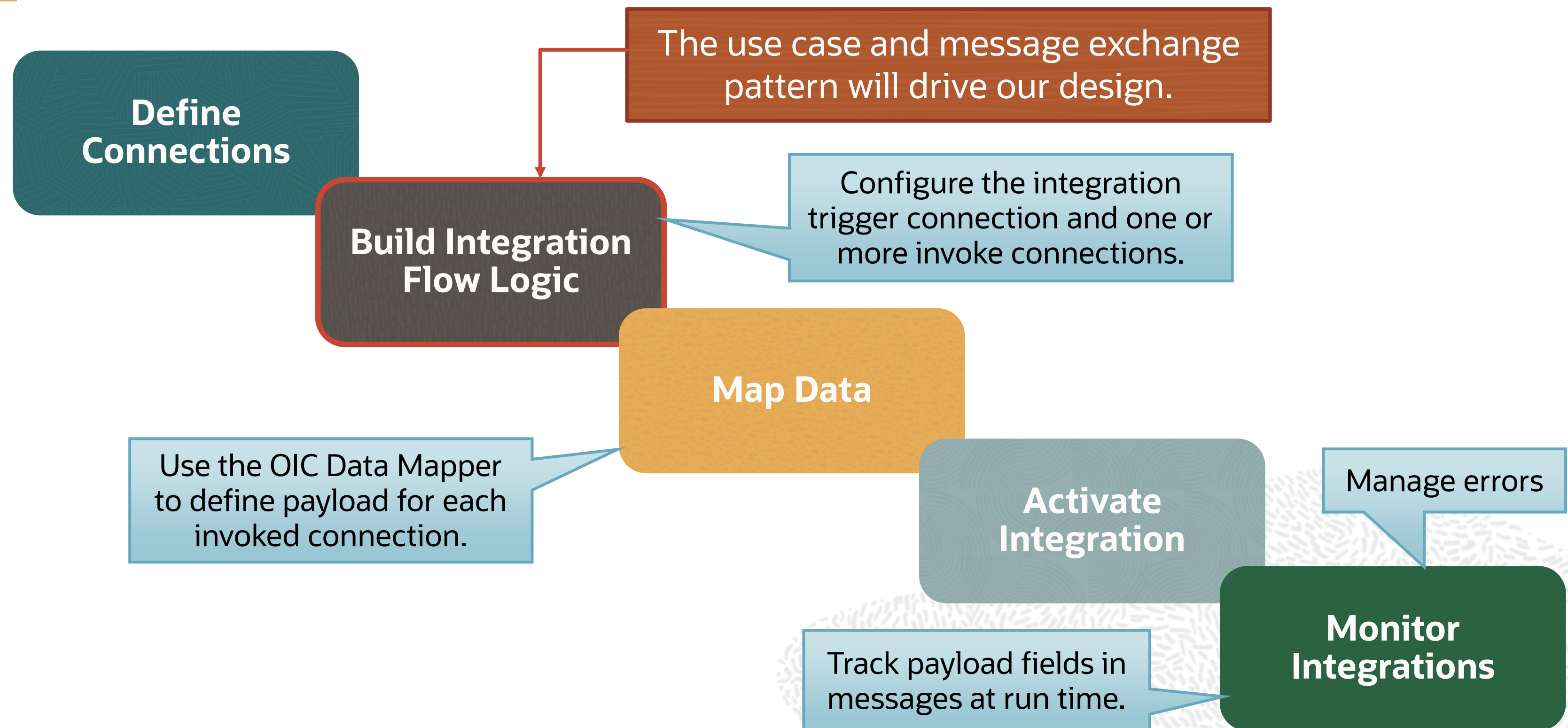- Understand options for polling-based adapters
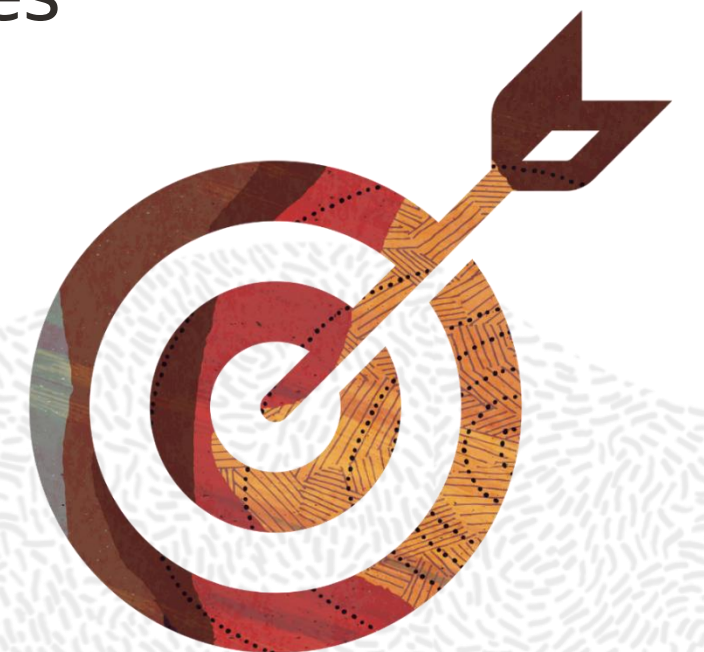
Agenda

- Understanding Message Exchange Patterns

- Using the Adapter Endpoint Configuration Wizard

- Next Steps

Integration Development (Review)

Define Connections

The use case and message exchange pattern will drive our design.

Build Integration Flow Logic

Configure the integration trigger connection and one or more invoke connections.

Map Data

Use the OIC Data Mapper to define payload for each invoked connection.

Activate Integration

Manage errors

Monitor Integrations

Track payload fields in messages at run time.

Message Exchange Patterns

Synchronous request/response

- Real-time response or error feedback
- Client blocks for the response
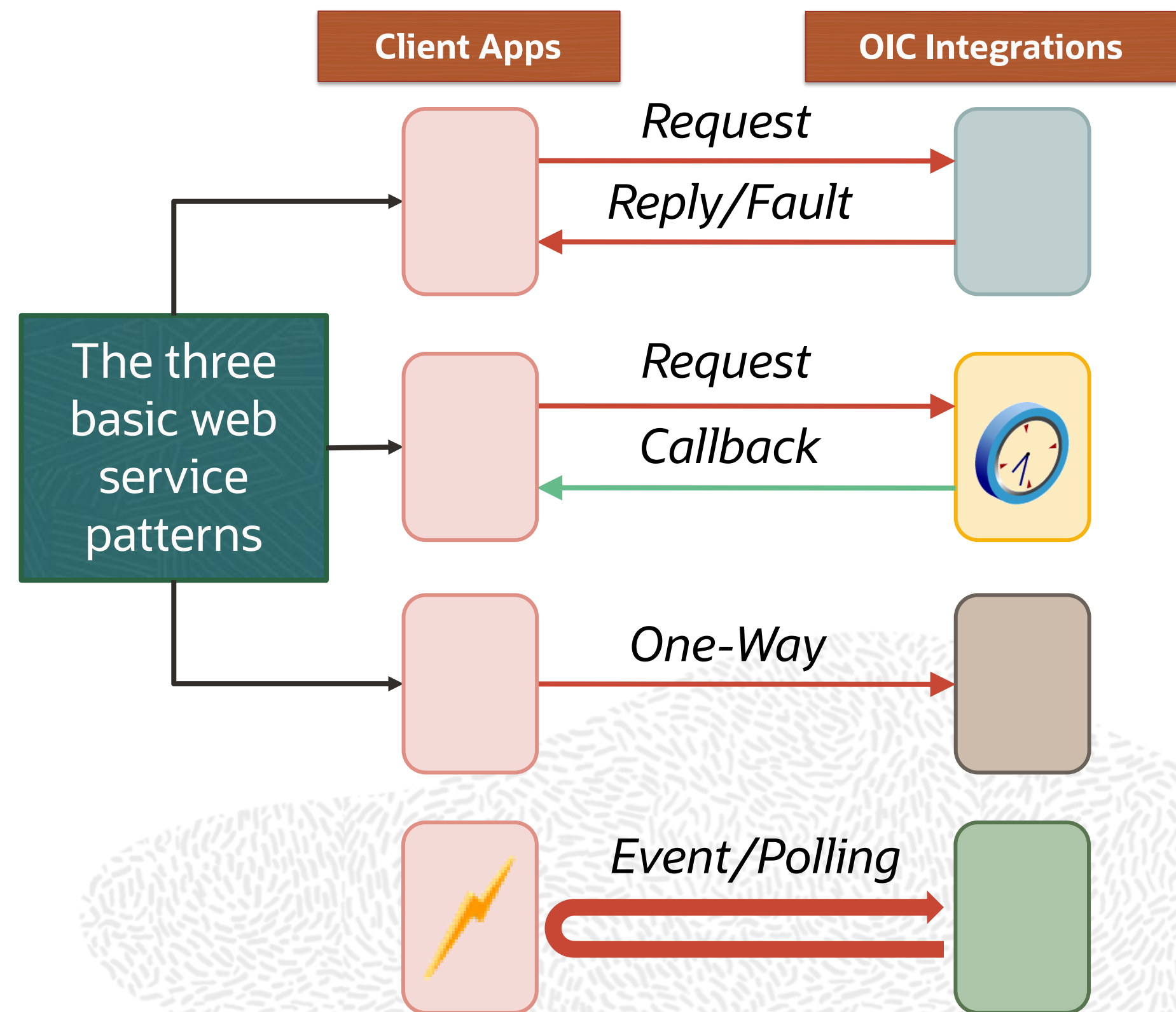
Asynchronous request/callback

- Client free after submission and *ACK*
- Separate service invocation for response

Asynchronous request (one-way)

- Also known as "fire and forget"
- No response message (*ACK* only)

Event based

- Server receives a message-based event
- Usually implemented with polling

Client Apps

OIC Integrations

Request

Reply/Fault

The three basic web service patterns

Request

Callback

One-Way

Event/Polling

5

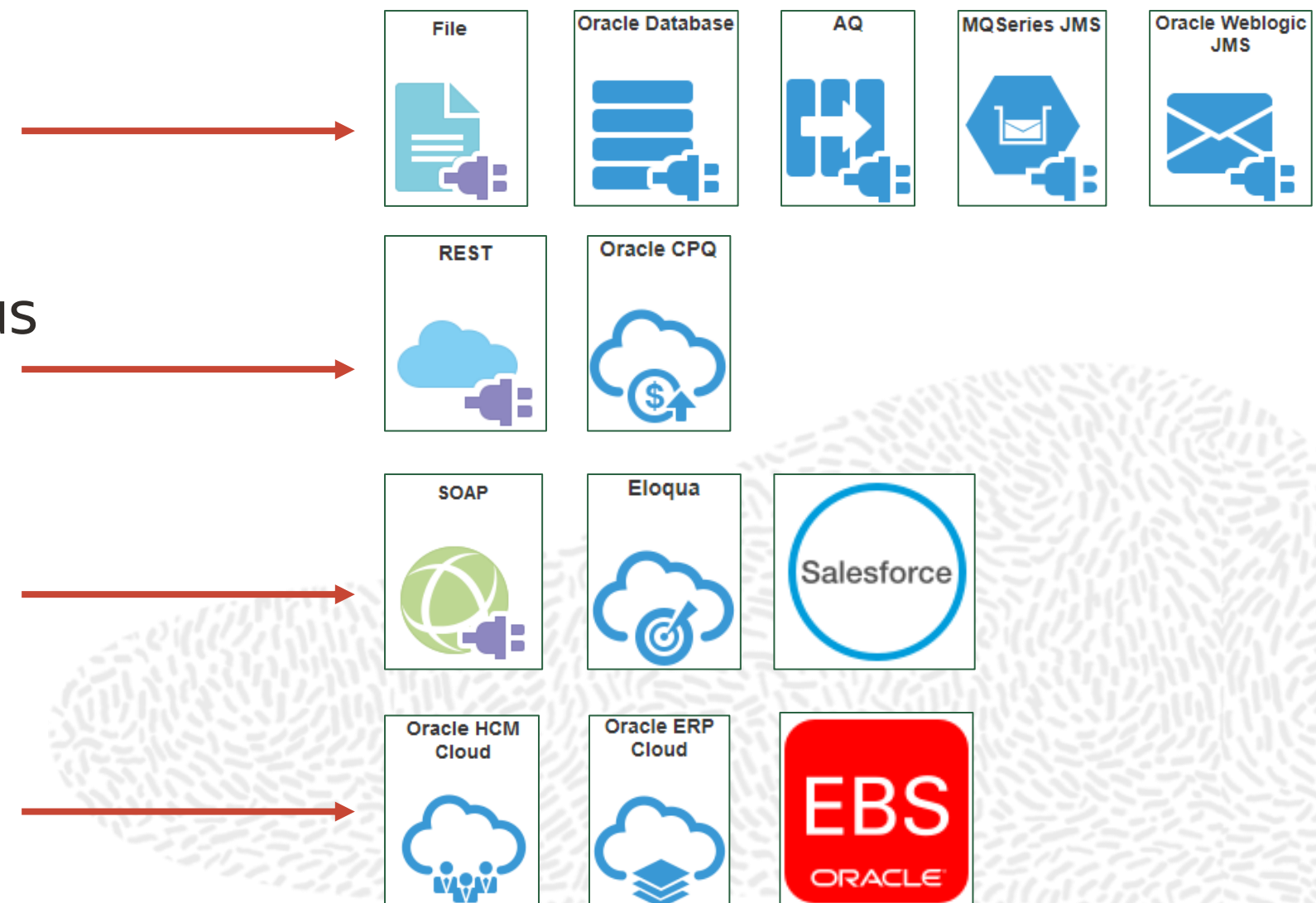# Implementing the Message Exchange Pattern

The Integration's message exchange pattern will be determined based on:

1. Which adapter you use for the Trigger connection
2. How you decide to configure the Trigger

Certain adapters in the trigger role will support:

This lesson provides examples of configuration options based on various adapter types.

- Only event-based [polling]
  - *(i.e., File, JMS, and DB adapters)*

- Only synchronous and one-way asynchronous
  - *(i.e., REST and some SaaS adapters)*

- All three basic web service patterns
  - *(i.e., SOAP and many SaaS adapters)*

- All four interaction patterns
  - *(i.e., some Oracle SaaS adapters and others)*

Agenda

- Understanding Message Exchange Patterns

- Using the Adapter Endpoint Configuration Wizard

- Next Steps

Using the Adapter Endpoint Configuration Wizard

These 27 adapters can be used in the trigger role for an integration flow.

- Capabilities and details for leveraging the configuration wizard are provided for each of these separately in the OIC online documentation.
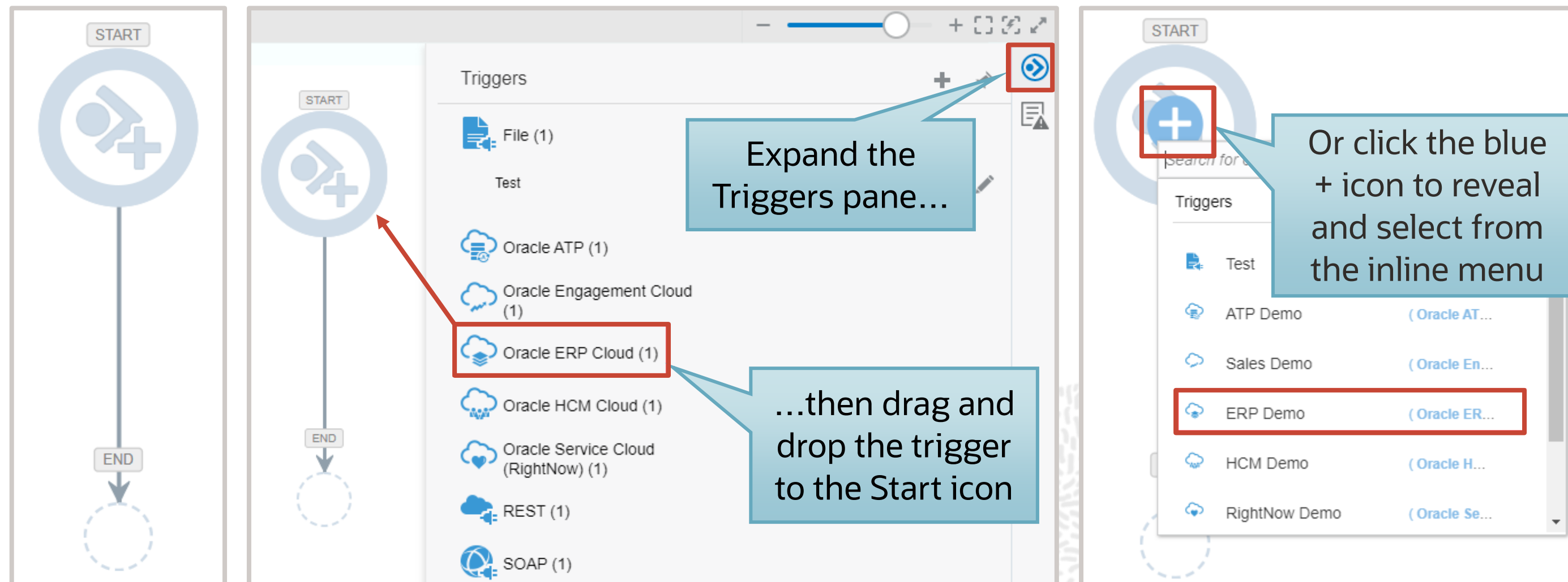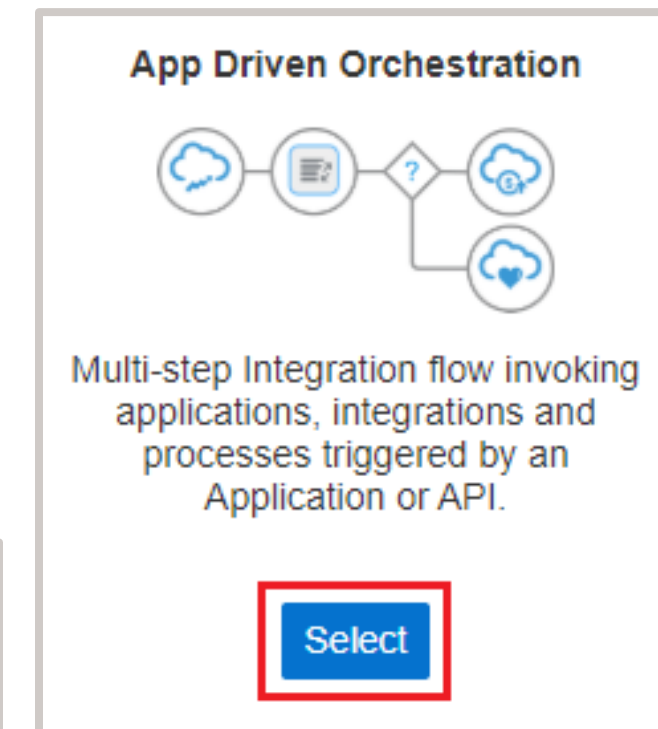
File Adapter	**Oracle Database Adapter**	**Oracle Monetization Cloud Adapter**
FTP Adapter	**Oracle E-Business Suite Adapter**	**Oracle Service Cloud (RightNow) Adapter**
IBM DB2 Adapter	**Oracle Eloqua Cloud Adapter**	**Oracle Siebel Adapter**
IBM MQ Series JMS Adapter	**Oracle Engagement Cloud Adapter**	**Oracle Utilities Adapter**
Microsoft SQL Server Adapter	**Oracle ERP Cloud Adapter**	**REST Adapter**
MySQL Adapter	**Oracle HCM Cloud Adapter**	**Salesforce Adapter**
Oracle Advanced Queuing (AQ) Adapter	**Oracle JD Edwards EnterpriseOne Adapter**	**SAP Adapter**
Oracle Commerce Cloud Adapter	**Oracle Logistics Adapter**	**ServiceNow Adapter**
Oracle CPQ Cloud Adapter	**Oracle Messaging Cloud Service Adapter**	**SOAP Adapter**

Getting Started – Trigger Connections (Review)

- Create a new integration using the App Driven Orchestration style.

- An empty Orchestration Design canvas is displayed:

  - Requires you to first select and then define the Trigger Connection.

App Driven Orchestration

Multi-step Integration flow invoking applications, integrations and processes triggered by an Application or API.

Select

Expand the Triggers pane…

…then drag and drop the trigger to the Start icon

Or click the blue + icon to reveal and select from the inline menu

Basic Info Page

The first page of the wizard is the same for most adapters.

- Just provide a meaningful name and description.

Configure Oracle Service Cloud (RightNow) Endpoint

Help ▼ | < Back | Next > | Cancel | Don

Welcome to the Oracle Service Cloud (RightNow) Endpoint Configuration Wizard
This wizard helps you configure an endpoint using the Oracle Service Cloud connection. You will be asked to specify configuration parameters for performing a business task in Oracle Service Cloud.

- Basic Info
- Request
- Response
- Summary

* What do you want to call your endpoint?

For example, GetListOfOpportunitiesForCustomer

What does this endpoint do?

Describe the endpoint's purpose and detail

- Required
- No blank spaces or special characters
- Name must be unique within this integration

Optional

Let's now look at six different adapter examples…

Agenda

- Understanding Message Exchange Patterns

- Using the Adapter Endpoint Configuration Wizard
    1. **Oracle Service Cloud (RightNow) Trigger**
    2. Oracle Engagement Cloud Trigger
    3. Oracle ERP Cloud Trigger
    4. SOAP Trigger
    5. REST Trigger
    6. File Trigger

- Next Steps

1. Oracle Service Cloud (RightNow) Adapter

Oracle Service Cloud (RightNow) applications enable organizations to combine web, social network, and contact center customer experiences into a unified, cross-channel service solution in Oracle Cloud.

Trigger connections can be configured to define one of the following patterns:

- **Business object request** *(using Service Cloud business objects)*
  - Synchronous (request/response)
  - Asynchronous (one-way)
  - Asynchronous w/ callbacks
- **Event document request** *(a Service Cloud subscription for a particular event)*
  - Asynchronous (one-way)
  - Asynchronous w/ callbacks

Request

Reply/Fault

Request

Callback

One-Way
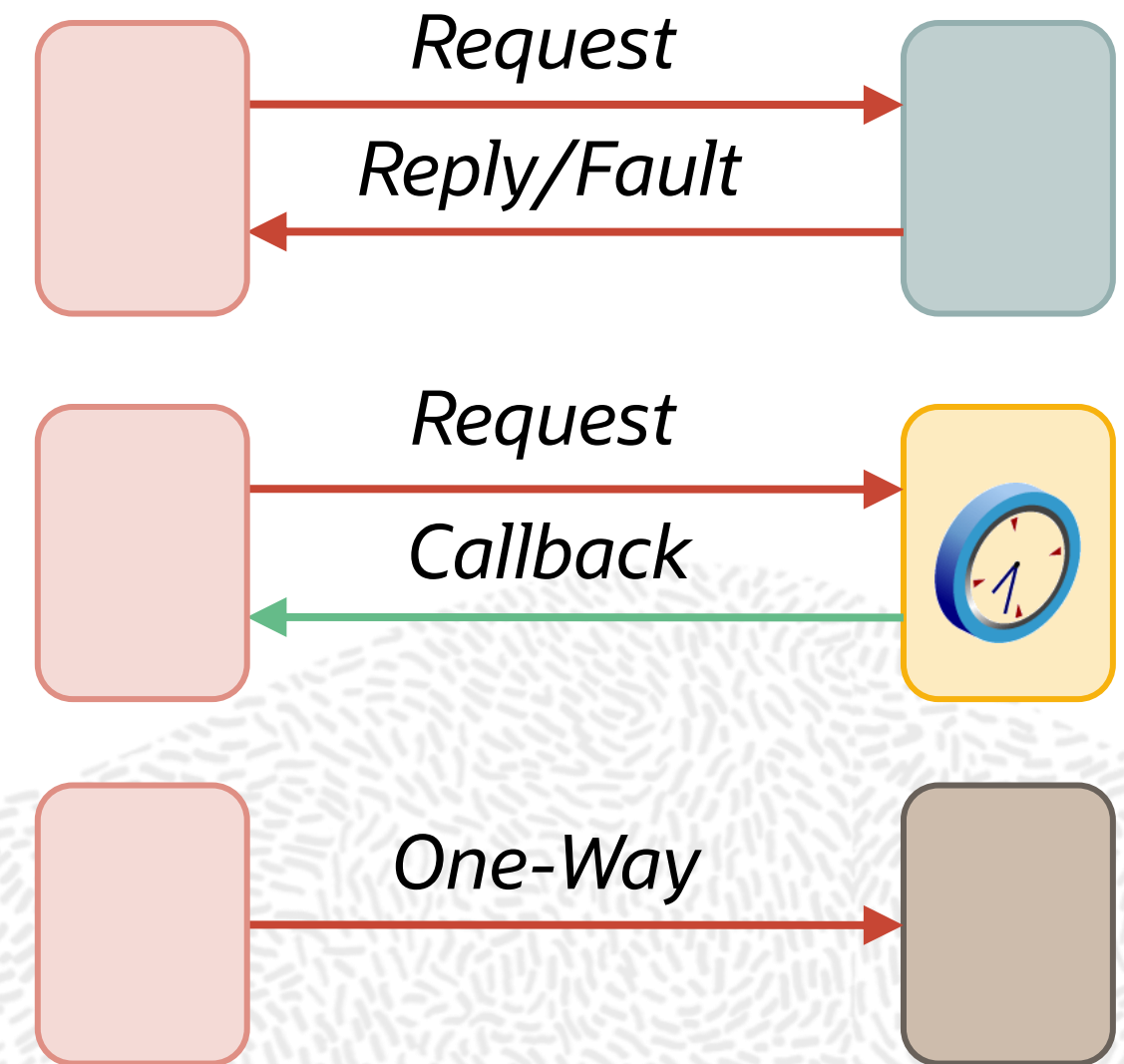
Request Page

Either option will essentially begin the process of building a WSDL that defines an interface that can be used by the Service Cloud application to invoke this integration

- **Business Object:** Choose a standard or custom business object to be the SOAP request payload.

- **Event Subscription:** Choose which event (*and corresponding event document*) is to be sent.

Response Page

For the *Response*, choose one of the following options:

- **Immediate:** Defines a synchronous response sending the selected business object.

- **Delayed:** Defines a success and/or failure callback that invokes a CRUD operation on one or more selected business objects.

- **None:** Defines a one-way asynchronous interface only.

If the Request was Event Subscription, the Immediate option is not available.

Agenda

- Understanding Message Exchange Patterns

- Using the Adapter Endpoint Configuration Wizard
    1. Oracle Service Cloud (RightNow) Trigger
    2. **Oracle Engagement Cloud Trigger**
    3. Oracle ERP Cloud Trigger
    4. SOAP Trigger
    5. REST Trigger
    6. File Trigger

- Next Steps

2. Oracle Engagement Cloud Adapter

Oracle Engagement Cloud includes a set of features for creating and tracking sales campaigns, developing leads into business opportunities, and pursuing opportunities to generate revenue. Sales accounts, leads, and opportunities can be assigned to territories and sales teams.

Trigger connections can be configured to define one of the following patterns:

- **With Business Object** *(using Engagement Cloud business objects)*
  - Synchronous (request/response)
  - Asynchronous (one-way)
  - Asynchronous w/ callbacks
- **With Business Event** *(a subscription for a particular business event)*
  - Asynchronous (one-way)
  - Asynchronous w/ callbacks

Request

Reply/Fault

Request

Callback

One-Way

Request Page

Very similar to the Oracle Service Cloud (RightNow) adapter configuration options, specify a business object or event that will serve as the SOAP request payload.

The primary difference is with event subscriptions:

- Significantly more events available *(over 65 events).*

- Events can handle all related child events.

- You can also specify an event condition filter expression.

  – Allows you to specify that the contents (payload and headers) must have a particular value (such as a customer ID) in order to be processed

Response Page

For the *Response,* the primary difference is when configuring the **Delayed** option:

- First specify the business object *(and available service if applicable).*

- Then choose the operation to invoke for that callback to the Engagement Cloud.

Configure Oracle Engagement Cloud Endpoint

Help ▼

Configure the Response Type to Send to the Oracle Engagement Cloud A
Select the business object to send as a response document from the integration application. The immediate response option provides a request and response option provides an asynchronous response message exchange.

✔ Basic Info
✔ Request
Response
Summary

Response Type   ○ Immediate   ● Delayed   ○ None

Select the operation and business objects to configure for a suc configure a callback response for a failed integration flow.

Successful Response   Failed Response

Select a Business Object for a Successful Response

Filter by business object na

Account : AccountService
Account : AddressService
Account : CustomerClassificationService
Account : RelationshipService
AccountPlan

Select the Operation to Perform on the Business Object

updateAccount ▼

createAccount
deleteAccount
findAccount
getAccount
getDfltObjAttrHints
getEntityList
getServiceLastUpdateTime
mergeAccount
processAccount
updateAccount

ity Model : Account
Service creates, updates, finds and deletes
rganization accounts contain the following

Agenda

- Understanding Message Exchange Patterns

- Using the Adapter Endpoint Configuration Wizard
    1. Oracle Service Cloud (RightNow) Trigger
    2. Oracle Engagement Cloud Trigger
    3. **Oracle ERP Cloud Trigger**
    4. SOAP Trigger
    5. REST Trigger
    6. File Trigger

- Next Steps

3. Oracle ERP Cloud Adapter

The Oracle ERP Cloud Adapter enables you to create an integration with Oracle Enterprise Resource Planning (ERP) applications.

Trigger connections can be configured to define one of the following use cases and patterns:

- **Receive Business Events** *(raised within ERP Cloud)*
  - Asynchronous (one-way)
  - Asynchronous w/ callbacks
- **Receive Callback** *(from FBDI bulk Import Job)*
  - Asynchronous (one-way)
- **Receive Requests** *(ERP business objects)*
  - Synchronous (request/response)
  - Asynchronous (one-way)
  - Asynchronous w/ callbacks

Request

Reply/Fault

Request

Callback

One-Way
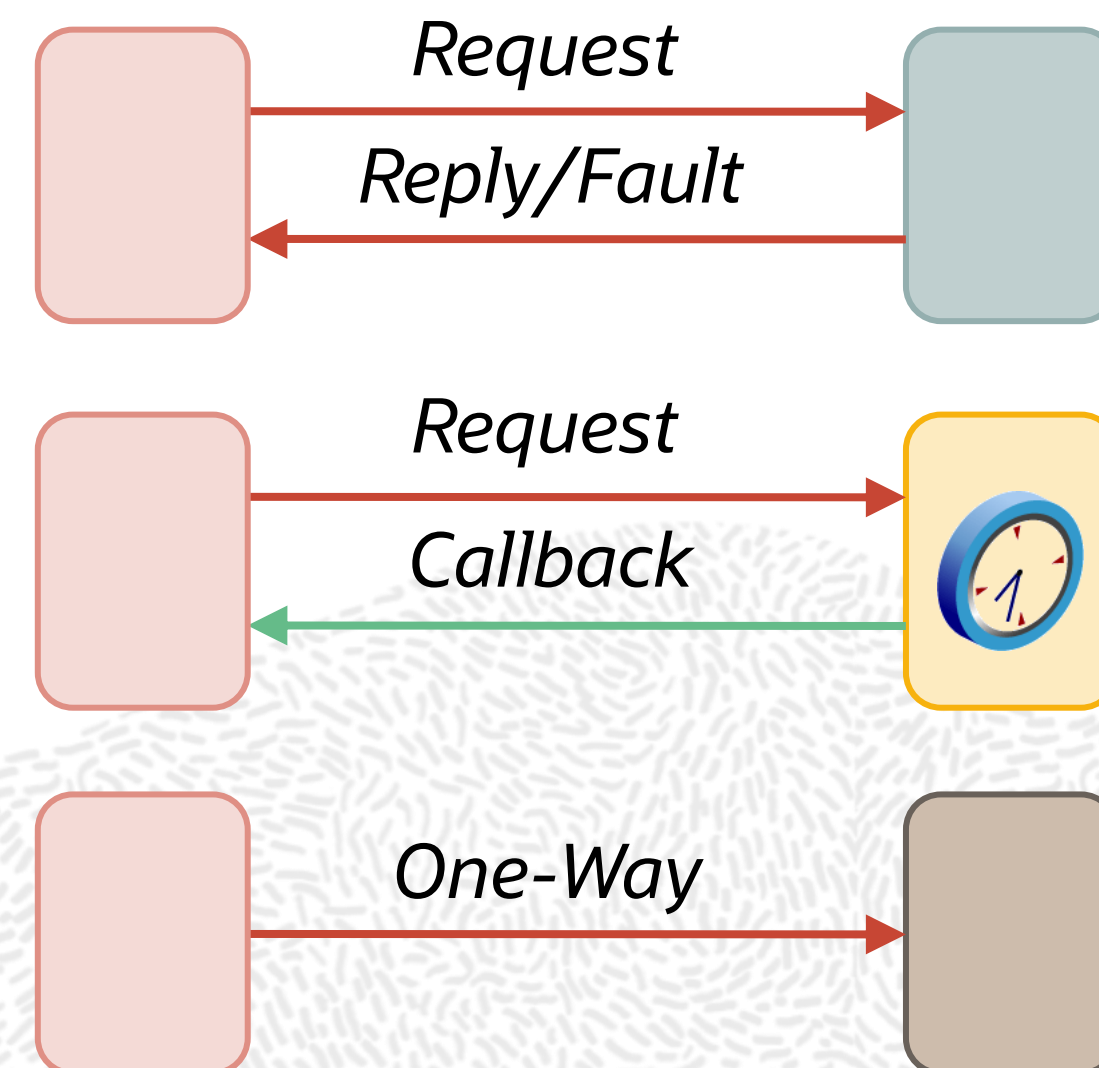
Request and Response Pages: Business Events

Select to receive an event subscription raised by the Oracle ERP Cloud application as a request from Oracle ERP Cloud. This selection invokes the integration.

- Select the business event and define a filter expression as required.

- Select the business object and related operation for the success and/or failure callback.

Over 190 ERP business events

Or select None if no callback operation is required.

Request Page: FBDI Callback

Select to configure a callback notification response to send upon completion of the FBDI data import from another integration into the Oracle ERP Cloud application.

- Select the bulk import job process that was initiated by another integration.

- Specify preference for downloading logs.

No Response page – *this is a one-way asynchronous message from ERP*

Over 125 bulk data import processes

Request and Response Pages: Business Objects

Select to receive a business object as a request from the Oracle ERP Cloud application. This selection invokes the integration.

Over 755 Business Objects

For the *Response,* choose one of the following options:

- **Immediate**: Define a synchronous response sending the selected business object.
- **Delayed**: Define a success and/or failure callback that invokes the selected operation on a business object.
- **None**: Defines a one-way asynchronous message only.

Agenda

- Understanding Message Exchange Patterns

- Using the Adapter Endpoint Configuration Wizard
  1. Oracle Service Cloud (RightNow) Trigger
  2. Oracle Engagement Cloud Trigger
  3. Oracle ERP Cloud Trigger
  4. **SOAP Trigger**
  5. REST Trigger
  6. File Trigger

- Next Steps

4. (Generic) SOAP Adapter

The SOAP Adapter can expose inbound SOAP endpoints for accepting SOAP requests that are addressed to a specific URI. The request body is passed to the next activity present in the integration as the message payload, along with the SOAP and HTTP headers.

Trigger connections leverage one of the following patterns *(based on the defined abstract WSDL)*:

- Synchronous (request/response)
- Asynchronous (one-way)
- Asynchronous w/ callbacks

Request

Reply/Fault

Request

Callback

One-Way

Configuring the SOAP Connection Trigger

To configure the trigger use case for an integration:

1. Select the port type (interface)

2. Select the operation

> *The interface operation options and request/response objects are all defined in the abstract WSDL used with this SOAP Connection's definition.*

3. Optionally, disable SoapAction validation

4. Optionally, configure Headers

   – Standard or Custom HTTP headers

   – Custom SOAP headers

Agenda

- Understanding Message Exchange Patterns

- Using the Adapter Endpoint Configuration Wizard
  1. Oracle Service Cloud (RightNow) Trigger
  2. Oracle Engagement Cloud Trigger
  3. Oracle ERP Cloud Trigger
  4. SOAP Trigger
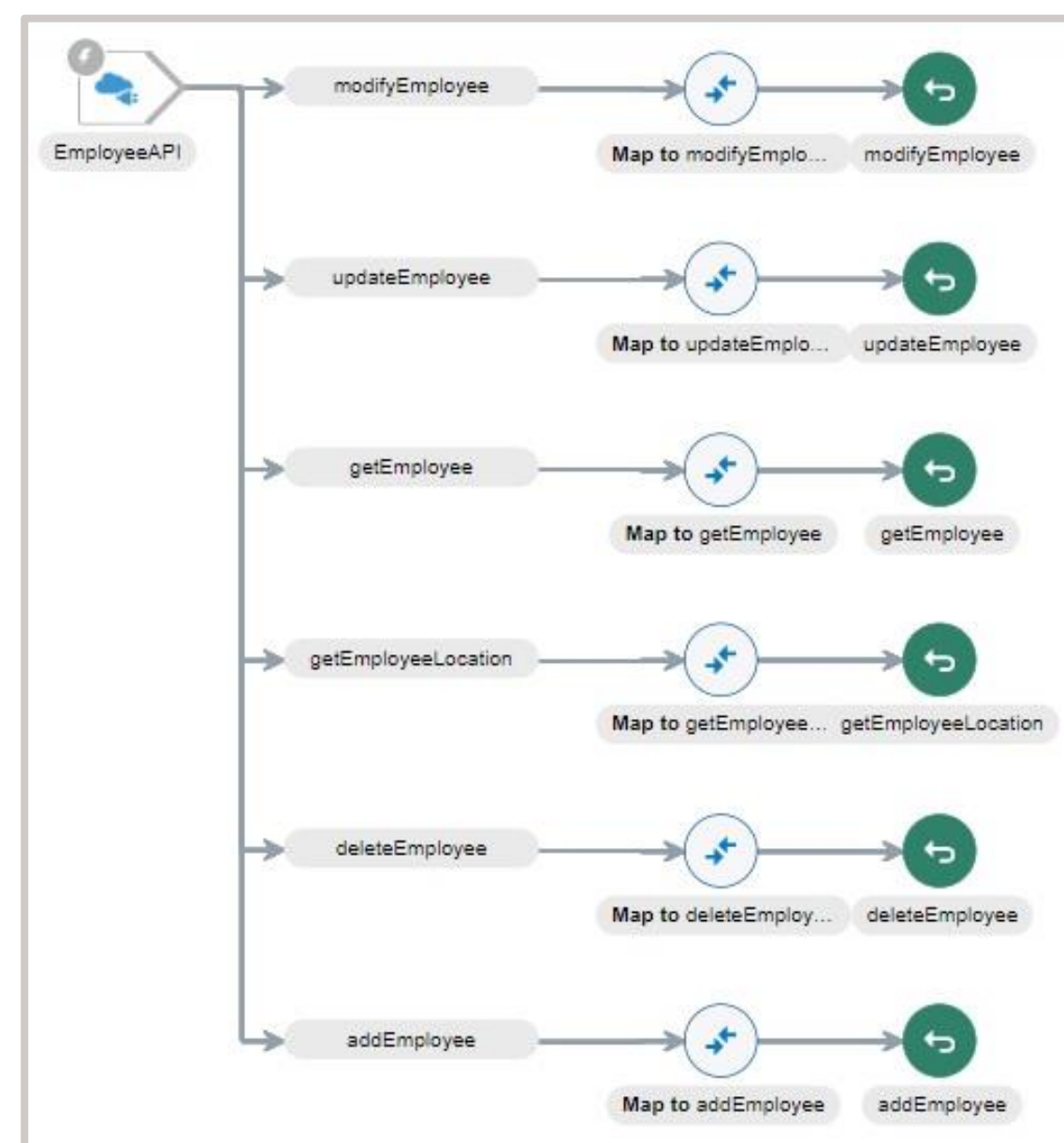 5. REST Trigger
  6. File Trigger

- Next Steps

5. (Generic) REST Adapter

The REST Adapter can expose integrations as REST APIs by configuring a REST Adapter connection as a trigger.

Your integration trigger configuration can be a single HTTP method and URI—or it can be configured to support multiple HTTP methods and verbs.

Trigger connections leverage one of the following patterns (based on your design):

- Synchronous (request/response)
- Asynchronous (one-way)

Request

Reply

One-Way
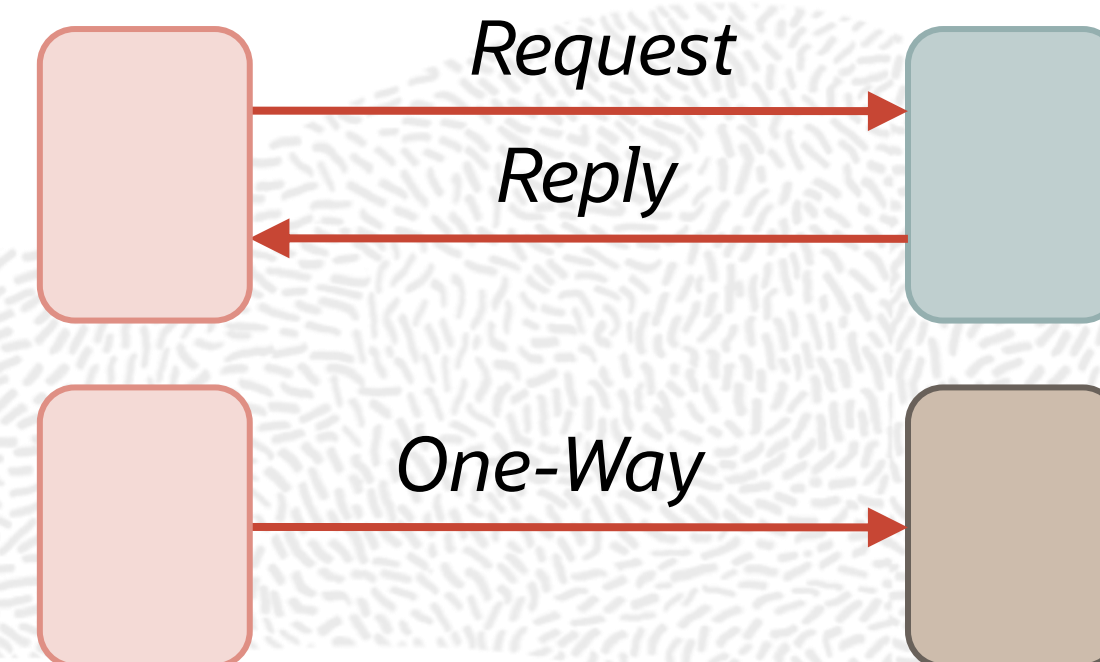
Configuring the REST Connection Trigger

When you drag the REST Adapter into the integration canvas as a trigger connection, the Adapter Endpoint Configuration Wizard is invoked.

Based on your selections in the wizard, the following pages can be displayed:

- Basic Information Page
- Resource Configuration Page
- Request Parameters Page
- Request Page
- Request Header Page
- CORS Configuration Page
- Response Page
- Response Header Page
- Operations Page
- Operation Selection Page

Welcome to the REST Endpoint Configuration Wizard
This wizard helps you configure an endpoint using the REST adapter

Basic Info
Resource Configuration
Request Parameters
Request
Request Headers
CORS Configuration
Response
Response Headers
Operations
Summary

* What do you want to call your endpoint?

MyInterface

What does this endpoint do?

Example configuration

Select to configure multiple resources or verbs. (maximum 11)

Used to define more than one entry point.

Trigger Resource Configuration Page

1. Specify an operation name

2. Define the relative resource URI

   (optionally, define template parameters)

3. Select an appropriate HTTP method

4. Optionally, select to define request and/or response payloads

5. Optionally, select to configure request and/or response HTTP headers

6. Optionally, select to configure CORS

Additional Request Options

- Query Parameters can be added to define additional optional data.

- Template Parameters are carried forward from the previous page.

  - Define the data type if needed

- For POST, PUT, or PATCH methods, choose the payload type and format.

  - Or select the attachment type.

Response Options

Similar options are provided for defining the **Response** payload.

Configuring Additional Operations

From the **Operations** page, choose to edit existing configured operations or add another.

- Either way, you will cycle back to the **Resource Configuration** page to continue editing.

Once the trigger connection configuration is complete, you will then have the opportunity to define orchestration logic for each operation "path" within your integration.
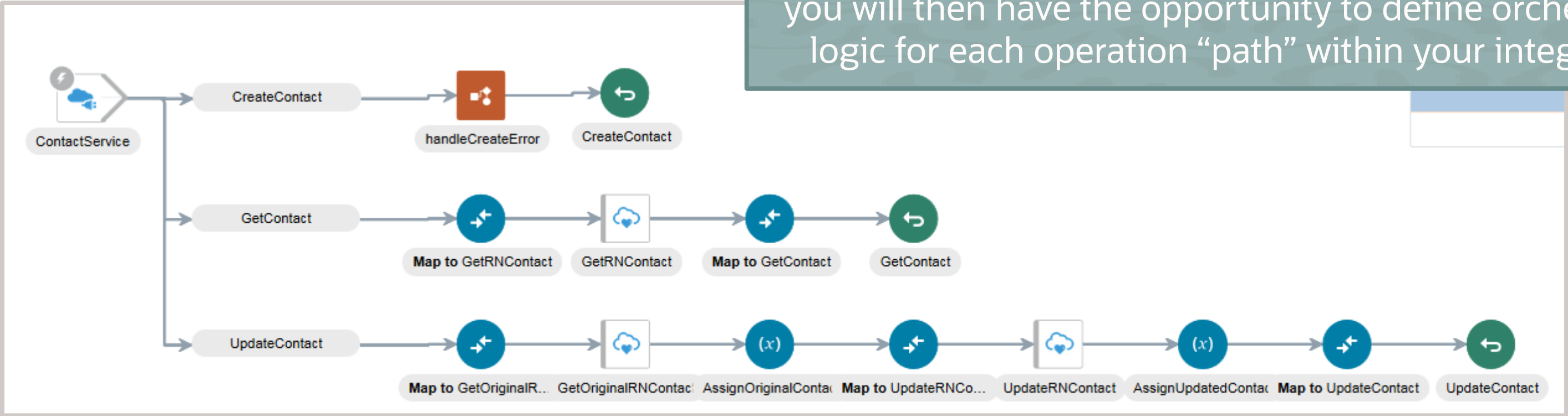
Agenda

- Understanding Message Exchange Patterns

- Using the Adapter Endpoint Configuration Wizard
  1. Oracle Service Cloud (RightNow) Trigger
  2. Oracle Engagement Cloud Trigger
  3. Oracle ERP Cloud Trigger
  4. SOAP Trigger
  5. REST Trigger
  6. File Trigger

- Next Steps

6. File Adapter

Use a File Adapter trigger in an integration to poll for files from local or remote systems reachable via an OIC connectivity agent.

- The **Basic Info** page provides the choice to specify the file structure.
  - Choose Yes and then the example file type
  - To be later defined on the **File Contents – Definition** page

File trigger connections use the Polling message exchange pattern.

Event/Polling
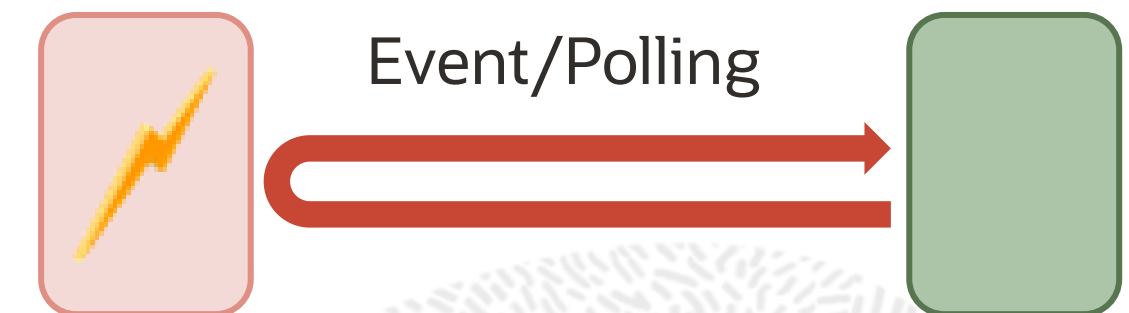
NOTE: *The **FTP Adapter** is most often used instead as an **Invoke** to download and/or read files.*

More info provided in the **lesson titled** "Configuring Invoke Connections."

Configure the File Read Operation

On the Configure File Read page:

- Indicate the parent directory from which to read one or more files
- Specify a File Name pattern
- Optionally, specify a directory to place rejected files
- Define the file read operation parameters
  - Choose to read all files in all subdirectories
  - Define the maximum files per integration instance
  - Polling frequency from last "empty" poll
  - Read delay from last integration instance processing
  - Option to delete files after successful read

Configure the File Operation Parameters for the Source Endpoint
Define the parameters for File Read operation.

✔ Basic Info
Configure File Read
File Contents - Definition
Summary

Specify the following parameters for the File Read operation

❓ * Specify an Input Directory   /oracle/myfiles

❓ * Specify a File Name Pattern   *.csv

❓ Specify the Rejection Directory   Rejection Directory eg. /Oracle/rejected

Specify how the processing of operation is handled.

❓ ☑ Read Files Recursively

* Maximum Files   25

* Polling Frequency   60   seconds

* Processing Delay   5   seconds

☑ Delete Files After Successful Reading

Configure the File Contents Definition

On the **File Contents – Definition** page:

- If providing a sample CSV file, a new schema is created based on the file structure.
- If providing a sample JSON or XML file, select the schema element to be used.
- If providing an XSD file, select the schema element.
  - Can be used for processing JSON or XML files.
  - If a native schema (.nxsd) is provided, it can be used for processing CSV or any other native file formats (such as fixed length and complex types).

Define the structure
Specify the structure o
Providing the appropri
actions such as Switch

✔ Basic Info

✔ Configure File Read

File Contents - Definition

Summary

Provide a sample JSON document from the file system

Select a New File — Choose File — No file chosen

Selected File Name — ExternalCountryResponse.json

Select the Schema Element — request-wrapper ▾

Create a New Schema from a CSV file

Select a New Delimited Data File — Choose File — No file chosen

Selected File Name — newEmployeeFile.csv

* Enter the Record Name — For example, Address

* Enter the Recordset Name — For example, AddressBook

Select the Field Delimiter — Comma (,) ▾

Character Set — UTF8 ▾

Optionally Enclosed By — " ▾

Terminated By — ${eol} ▾

Detach   Use First Row as Column Headers ☐   Mark All As Optional ☐

C1	C2	C3	C4	C5
String ▾	String ▾	String ▾	String ▾	String
Mandatory ▾	Mandatory ▾	Mandatory ▾	Mandatory ▾	Mandato
Salutation	FirstName	LastName	CorrespondenceL...	PersonNu

Provide a sample XML document from the file system.

XML document should contain no namespace or only single namespace.

❓ Select a New File — Choose File — No file chosen

Selected File Name — persons.xml

Select the Schema Element — allpersons ▾

Select an existing XML schema or schema archive from the file system.

Schema archive can have a single top level schema with nested imports and includes containing absolute or relative paths.

Select a New File — Choose File — No file chosen

Selected File Name — eIWO_target.nxsd

Select the Schema Element — ElectronicIncomeWithholdingOrders ▾

More information on native file formats in the lesson titled "File Handling Concepts & Options."

Agenda

- Understanding Message Exchange Patterns

- Using the Adapter Endpoint Configuration Wizard
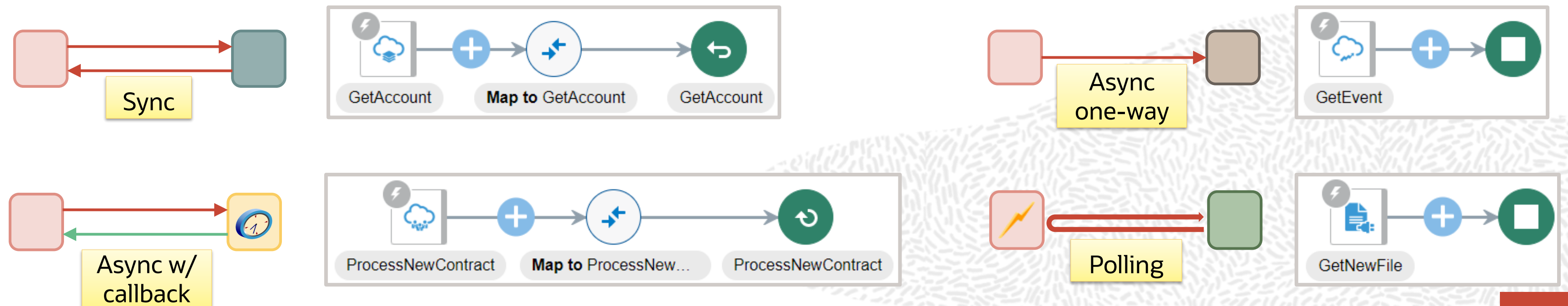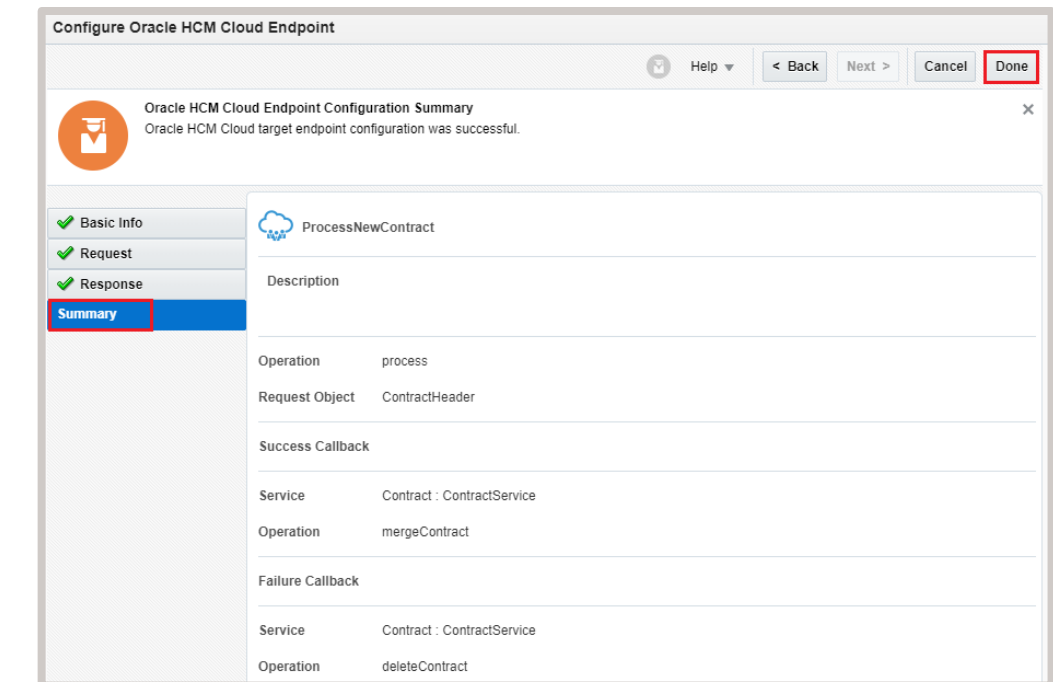
- Next Steps

Wrapping Up: Completing the Configuration

The last page of the wizard provides a summary of the endpoint configuration.

Once completed, the Orchestration Design Canvas will include:

- The ability to add one or more actions (*highlighted with a blue* **+** *icon*)

- The **End** action appropriate for the message exchange pattern defined by the trigger connection

- A **Map** action (*if applicable*) to be used for defining the response or callback message to the client

Sync

Async w/ callback

GetAccount — **Map to** GetAccount — GetAccount

ProcessNewContract — **Map to** ProcessNew... — ProcessNewContract

Async one-way

Polling

GetEvent

GetNewFile

Summary

In this lesson, you should have learned how to:

- Understand the usage of the four message exchange patterns

- Use the Adapter Endpoint Configuration Wizard for Trigger Connections

- Define SaaS application interfaces based on business object or events

- Create synchronous or asynchronous interfaces

- Leverage generic technology adapters for defining SOAP or REST interfaces

- Understand options for polling-based adapters

Practice 6-1: Creating a SaaS-to-SaaS Integration Flow

This practice includes the following topics:

- PART 1 – Creating a New Integration Flow

    - Configuring the Trigger and Invoke SaaS Connections

- PART 2 – Mapping Data

- PART 3 – Activate and Test the Integration Flow

- PART 4 – Monitor Your Integration Instance from the OIC Monitoring Portal