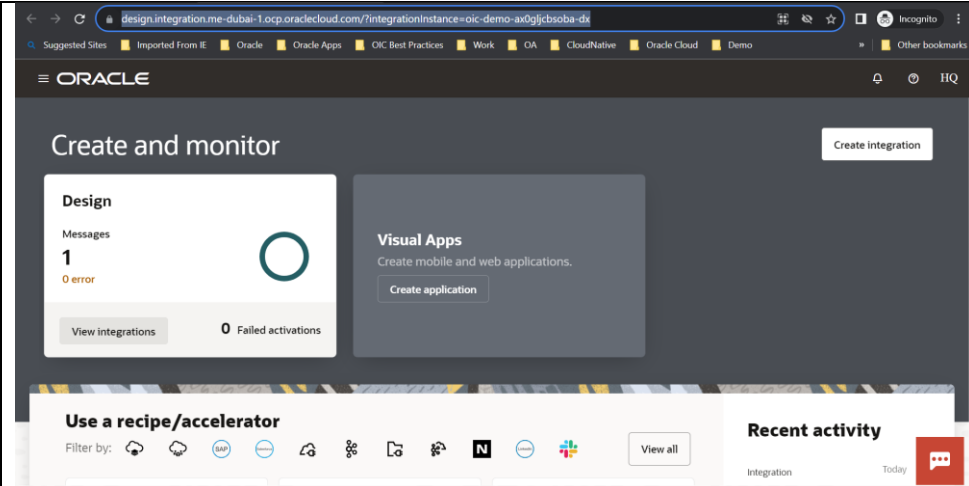


Hands on Lab

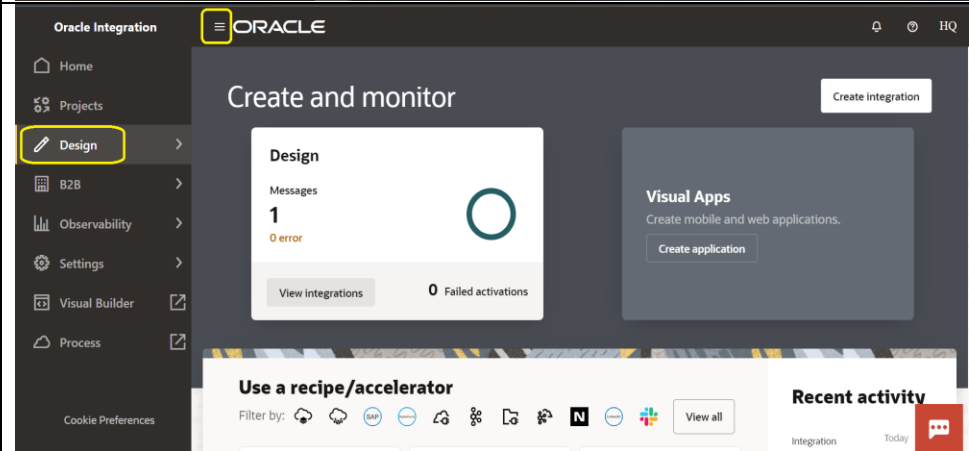
Oracle Integration Cloud Service

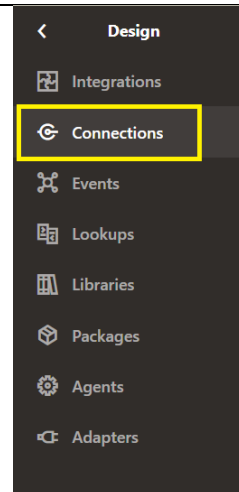
Harris Qureshi
ORACLE CORPORATION

This is your OIC Home Page



Click on 3 Lines Burger Menu and **Design**.
And inside **Design** -- > **Connections**





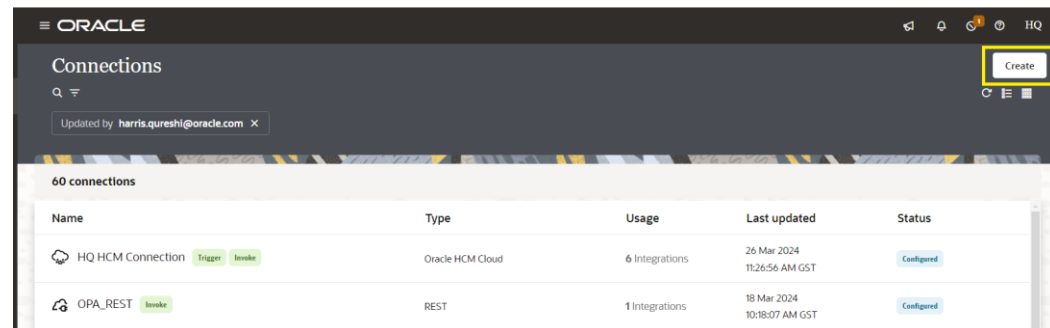
We need to create two Connections. For HCM Connection.

Click **Create** then

Search for **HCM** and select **Oracle HCM Cloud**

In the name field provide a *unique name* and in Role select **Invoke**

And click **Create**



ORACLE

Connections

Updated by harris.queshi@oracle.com

60 connections

Name	Type	Usage
HQ HCM Connection Trigger Invoke	Oracle HCM Cloud	6 Integrations
OPA_REST Invoke	REST	1 Integrations

Create connection

Select the adapter to use for this connection

Oracle recommends creating integrations in a project for better manageability and easier observability.

hcm

Oracle HCM Cloud

Create connection

Oracle HCM Cloud adapter

Name

HCM Connection

Identifier

HCM_CONNECTION

Role

Invoke

Keywords

Description

<

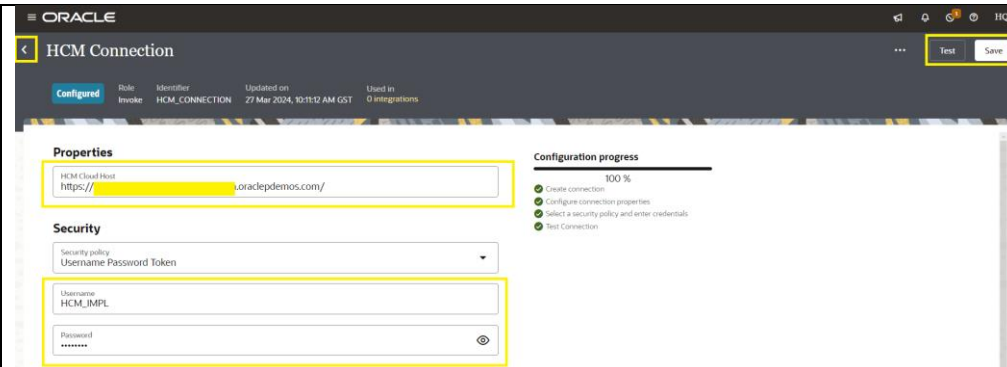
Create

Provide your HCM Cloud Host Name, Username and Password.

Click **Test** and once its 100% successfully tested click **Save**.

Finally click **Back Arrow** button to go back to Connections page.

Check the [documentation](#) for more details on HCM Adapter



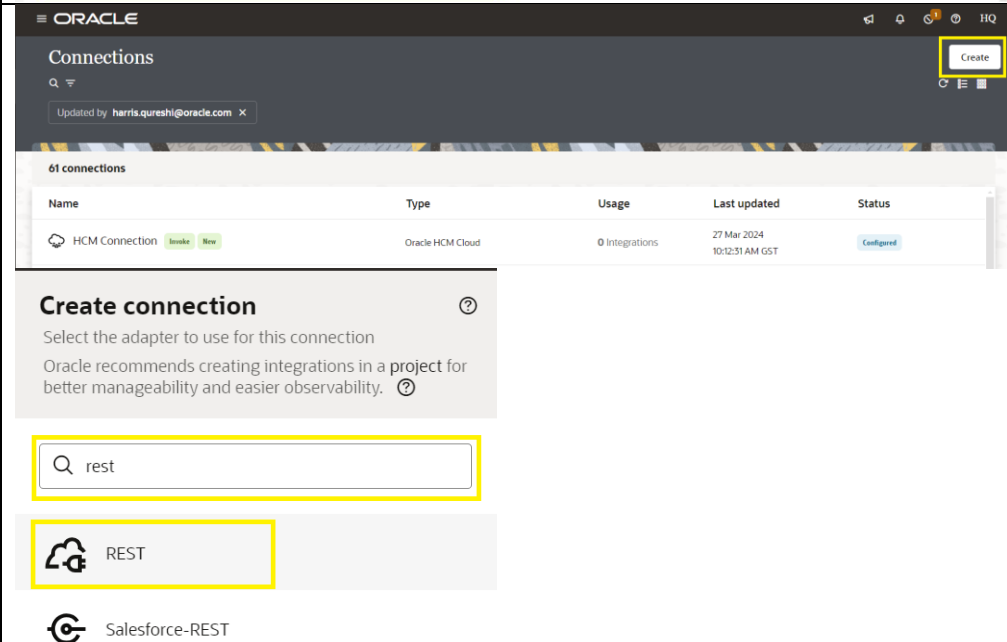
Now we shall create a Rest Connection.

Click **Create** then

Search for **Rest** and select **REST**

In the name field provide a *unique name* and in Role select **Trigger**

And click **Create**



Name	Type	Usage	Last updated	Status
HCM Connection	Oracle HCM Cloud	0 Integrations	27 Mar 2024 10:12:31 AM GST	Configured

Create connection

Select the adapter to use for this connection

Oracle recommends creating integrations in a project for better manageability and easier observability.

Search: rest

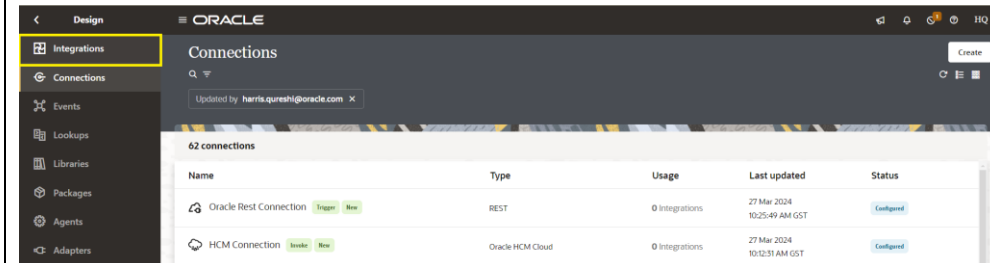
REST

Salesforce-REST

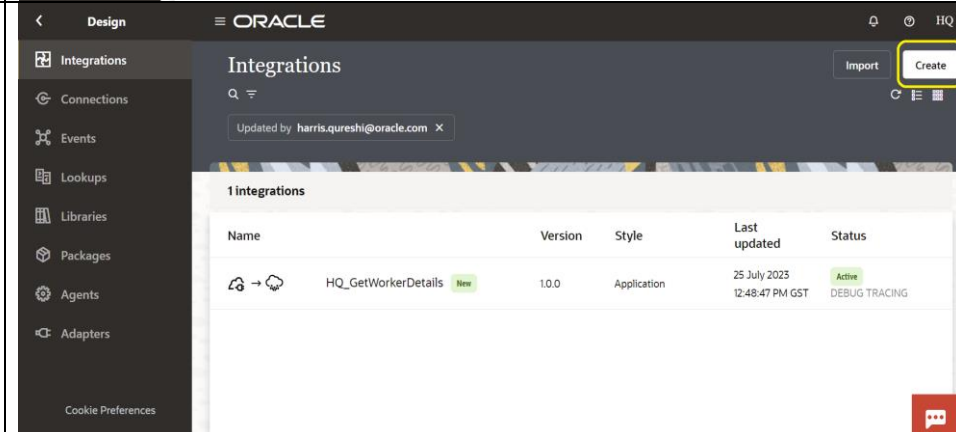
	<div><div>Create connection</div><div> REST adapter</div><div><div>Name</div><div>Oracle Rest Connection</div></div><div><div>Identifier</div><div>ORACLE_REST_CONNECTION</div></div><div><div>Role</div><div>Trigger</div></div><div><div>Keywords</div></div><div><div>Description</div></div><div><div><</div><div>Create</div></div></div>	
<p>In Security Policy select OAuth 2.0 or Basic Authentication</p> <p>Click Test and once its 100% successfully tested click Save.</p> <p>Finally click Back Arrow button to go back to Connections page.</p> <p>Check the documentation for more details on REST Adapter</p>	<div><div><</div><div>Oracle Rest Connection</div><div>...</div><div>Test</div><div>Save</div></div> <div><div>Configured</div><div>Role</div><div>Identifier</div><div>Updated on</div><div>Used in</div></div> <div><div>Trigger</div><div>ORACLE_REST_CONNECTION</div><div>27 Mar 2024, 10:25:54 AM GST</div><div>0 integrations</div></div> <div><div>Security</div><div>Security policy</div><div>OAuth 2.0 Or Basic Authentication</div></div> <div><div>Access type</div><div><input checked="" type="radio"/> Public gateway</div><div>Connect to endpoints using the internet.</div><div><input type="radio"/> Private endpoint</div><div>Connect to endpoints using your private network.</div></div> <div><div>Configuration progress</div><div>100 %</div><div><div>✔ Create connection</div><div>✔ Configure connection properties</div><div>✔ Select a security policy and enter credentials</div><div>✔ Test Connection</div></div></div>	

Now that connections been created. We will move to Integration Menu

Click on **Integrations** on the left menu.




To create your integration Click **Create** and then Applications



Create integration

Choose how to start

Oracle recommends creating integrations in a **project** for better manageability and easier observability. 



Application

Starts running when it receives an event from an application.



Schedule

Runs at specific dates and times defined in a schedule. Use for bulk integrations or file processing.



Event

Starts running when an event is published.

Cancel

Enter Name

XX_GetWorkerDetails, where XX is your name Initials

And click **Create**

Create integration ?

Starts with application

Oracle recommends creating integrations in a project for better manageability and easier observability. ?

Name

XX_GetWorkerDetails

Identifier

XX_GETWORKERDETAILS

Version

01.00.0000



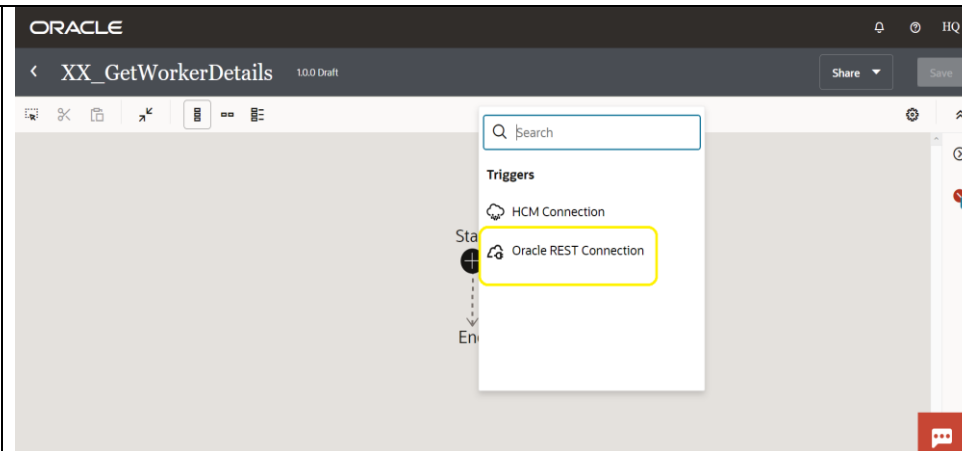
Cancel

Create

We are creating an application driven integration that starts with a Rest Trigger.

We need to configure the trigger at the start, for this select **Oracle Rest Connection**

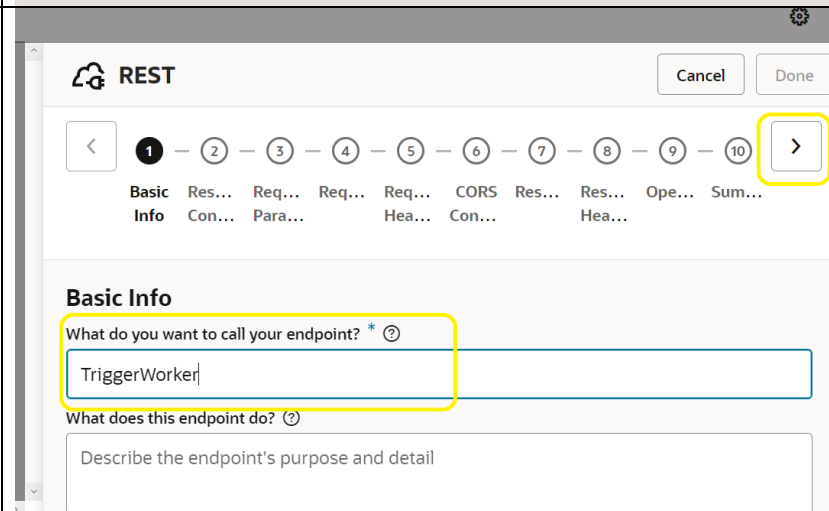
<Lab assumes you have created a connection Oracle Rest Connection of type Trigger for help refer to [documentation](#)>



Now we will configure the Rest Trigger using the wizard

For “What do you want to call your endpoint?” Enter **TriggerWorker**

and click **Next** arrow



For “What is the endpoint’s relative resource URI?” enter **/worker**

For “What action do you want to perform on the endpoint?” leave it default i.e. **GET**

For parameter selection, select

Add and review parameters for the endpoint

And

Configure this endpoint to receive the response.

and click **Next** arrow

The screenshot shows a REST client configuration window titled "REST". At the top right are "Cancel" and "Done" buttons. Below the title is a progress bar with 10 steps, where step 2 is highlighted. Below the progress bar is a tabbed interface with tabs: "Basic Info", "Res... Con...", "Req... Para...", "Req... Hea...", "Req... Con...", "CORS", "Res...", "Res... Hea...", "Ope...", and "Sum...". The "Res... Con..." tab is selected. The main content area has two text input fields: "What is the endpoint's relative resource URI? * ?" with the value "/worker" entered, and "What action do you want to perform on the endpoint? * ?" with "GET" selected in a dropdown menu. At the bottom, there is a section titled "Based on your selections, you can add parameters or configure a request and/or response for this endpoint. Select any options that you want to configure:" with three checkboxes: "Add and review parameters for this endpoint" (checked), "Configure a request payload for this endpoint" (unchecked), and "Configure this endpoint to receive the response" (checked). The "Next" arrow (a right-pointing chevron) in the progress bar is highlighted with a yellow box.

In *Specify Query Parameters*

Click **Add** and create a request parameter with
Name : **PersonNumber**
Data Type : **integer**

and click **Next** arrow

REST

CancelDone

<

1

2

3

4

5

6

7

8

9

10

>

Basic Res... Req... Req... Req... CORS Res... Res... Ope... Sum...
Info Con... Para... Hea... Con... Hea...

HTTP Method:
GET

Specify Query Parameters

AddRemove

<input type="checkbox"/>	Name	Data Type
<input checked="" type="checkbox"/>	PersonNumber	integer

* Double click to edit table cells and hit Enter/Return key to commit changes

In "Select the response payload format" select **JSON Sample**

And click on <<<inline>>>

and provide following json sample for response payload and click Ok and Next

```
{
  "Status" : "Success/Failure",
  "WorkerDetails" : {
    "personNumber" : "333",
    "displayName" : "Wim Vos",
    "phoneNumber" : "310206367970",
    "assignmentNumber" : "E333",
    "businessTitle" : "VP",
    "businessUnit" : "Netherlands Business Unit",
    "department" : "HCM NL"
  }
}
```

The screenshot shows the REST client interface with a sequence of steps (1-10) at the top. Step 7 is highlighted. Below the steps, there are tabs for 'Basic Info', 'Response Content', 'Request Parameters', 'Request Headers', 'CORS Configuration', 'Response Headers', 'Response Body', 'OpenAPI', and 'Summary'. The 'Response Body' tab is selected. A yellow box highlights the 'Select the response payload format' section, which contains a dropdown menu with 'JSON Sample' selected. Below this is a 'Sample Location' section with a 'Drag and Drop' area and a link to 'OR enter sample JSON'. The '<<<inline>>>' link is highlighted with a yellow box. At the bottom, there is a section 'What is the media-type of Response Body? (Accept Header)' with radio buttons for 'XML' (selected) and 'JSON (default)'.

REST

Cancel

Done




Enter Sample JSON

```
{
  "Status": "Success/Failure",
  "WorkerDetails": {
    "personNumber": "333",
    "displayName": "Wim Vos",
    "phoneNumber": "310206367970",
    "assignmentNumber": "E333",
    "businessTitle": "VP",
    "businessUnit": "Netherlands Business Unit",
    "department": "HCM NL"
  }
}
```

Cancel

OK

Final step, look at the Endpoint Summary and Click **Done**

 **REST**

Cancel

Done

<

1

2

3

4

5

6

7

8

9

10

>

Basic Info

Res... Con...

Req... Para...

Req... Hea...

Req... Hea...

CORS Con...

Res...

Res... Hea...

Ope...

Sum...

Summary

REST endpoint summary
TriggerWorker
Description

▼

Endpoint Summary

REST Service URI:
/worker

Method:
GET

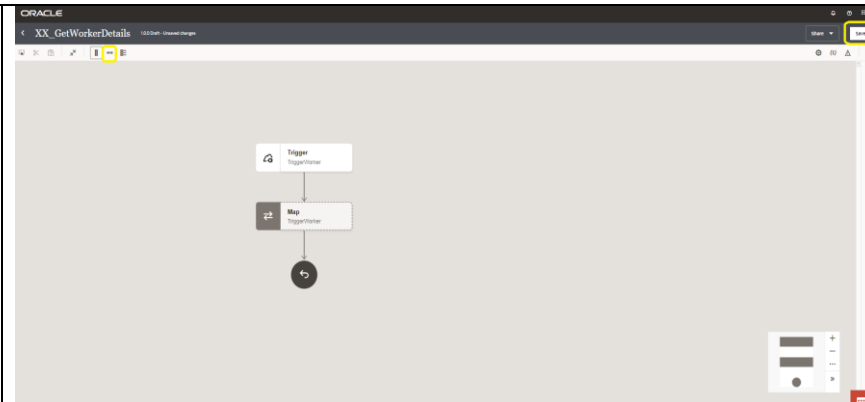
Query Params:
PersonNumber

Response Media Type:
JSON

Your integration should look like this now. The Rest trigger has been setup.

You can change the orientation by click on the two lines at top.

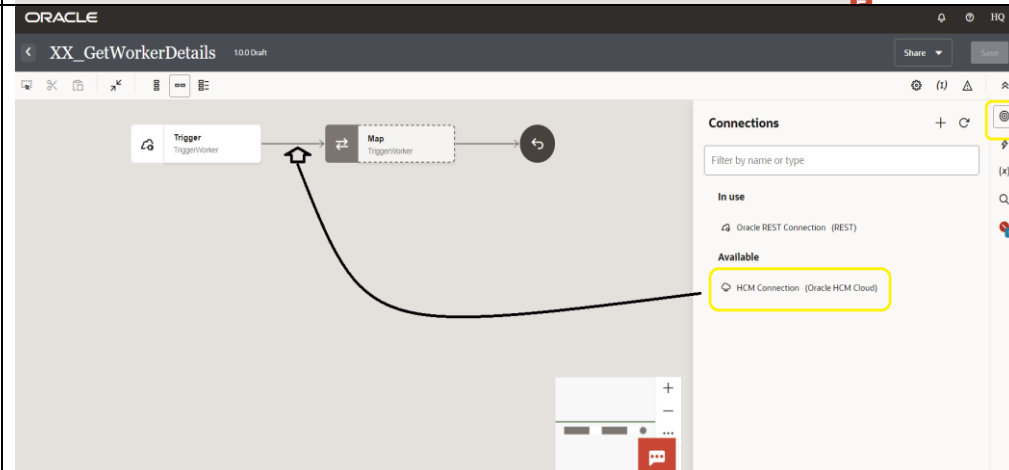
As a best practice you shall Click Save regularly.



Next we will add HCM Connection after Trigger.

For this click on Connections icon on left menu and drag **HCM Connection** after Trigger

<Lab assumes you have created a connection Oracle HCM Cloud of type *Invoke* for help refer to [documentation](#)>



Now we will configure HCM Adapter via wizard

For “What do you want to call your endpoint?” enter
GetWorker

and click **Next** arrow

The screenshot shows the Oracle HCM Cloud wizard interface. At the top, the title is "Oracle HCM Cloud" with "Cancel" and "Done" buttons. Below the title is a progress bar with six steps: 1. Basic Info, 2. Actions, 3. Operations, 4. Child Resources, 5. Descriptive and Extensible Flexfields, and 6. Summary. The "Basic Info" step is currently selected and highlighted. To the right of the progress bar is a yellow box containing a right-pointing arrow. Below the progress bar, the "Basic Info" section is titled. It contains a text input field with the label "What do you want to call your endpoint? * ⓘ" and the text "GetWorker" entered. Below this is a larger text area with the label "What does this endpoint do? ⓘ" and the placeholder text "Describe the endpoint's purpose and detail".

In Actions select

Query, Create, Update or Delete Information

and click **Next** arrow

The screenshot shows the Oracle HCM Cloud wizard interface, now at Step 2: Actions. The progress bar at the top shows six steps: 1. Basic Info, 2. Actions, 3. Operations, 4. Child Resources, 5. Descriptive and Extensible Flexfields, and 6. Summary. The "Actions" step is currently selected and highlighted. To the right of the progress bar is a yellow box containing a right-pointing arrow. Below the progress bar, the "Actions" section is titled. It contains a text input field with the label "What would you like to do with Oracle HCM Cloud Adapter? *". Below this is a list of five radio button options: "Query, Create, Update or Delete Information", "Subscribe to Updates (via ATOM Feed)", "Import Bulk Data using HCM Data Loader (HDL)", "Receive Files from HCM Cloud", and "Send Files to HCM Cloud". The first option, "Query, Create, Update or Delete Information", is selected and highlighted with a yellow box.

In Operations,

Select **Business (Rest) Resources** in Browse By

Select **hcmRestApp** in Service Application

Search and Select **Workers** in Business Resource

and **getAll** at the bottom

and click **Next** arrow

Oracle HCM Cloud

Cancel Done

< 1 2 3 4 5 6 >

Basic Info Actions **Operations** Child Resources Descriptive and Extensible Flexfields Summary

Operations

Browse by

Business (REST) Resources

Select a Service Application ⓘ

hcmRestApp

Select a Business Resource * ⓘ

Workers

PublicWorkers

Workers

Workers

Select the operation to perform on the selected resource

OR

Browse and configure a child resource

getAll

In Child Resources add

names
phones
workRelationships

you can use the filter by object name to easily find these child resources

and click **Next** arrow

Oracle HCM Cloud

Cancel Done

< 1 2 3 4 5 6 >

Basic Info Actions Operations **Child Resources** Descriptive and Extensible Flexfields Summary

Child Resources

Filter by object name

Select Child Resource(s)

- addresses
- citizenships
- disabilities
- driverLicenses
- emails
- ethnicities
- externalIdentifiers

Your Selected Child Resource(s)

- names
- phones
- workRelationships

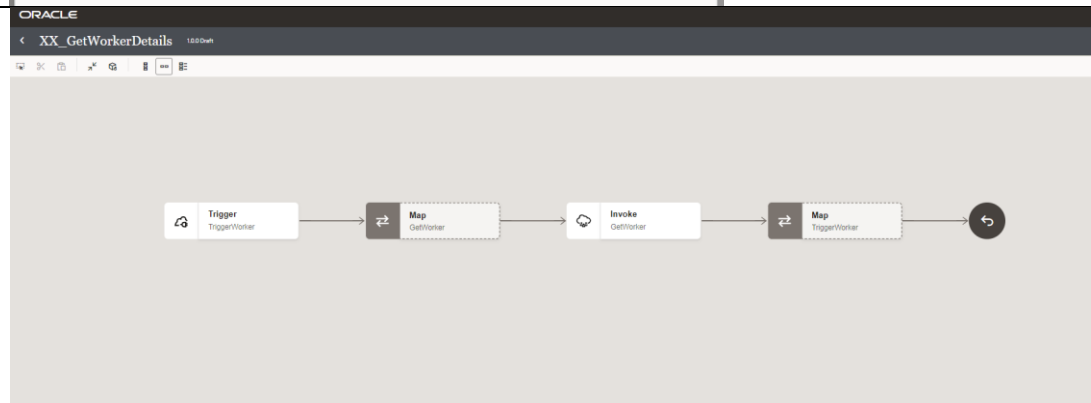
NOTE:

It is highly recommended that you minimize the number of child resource selections. Do not select child resources that are not required for this integration to invoke the external API or for the response message received from the external API.

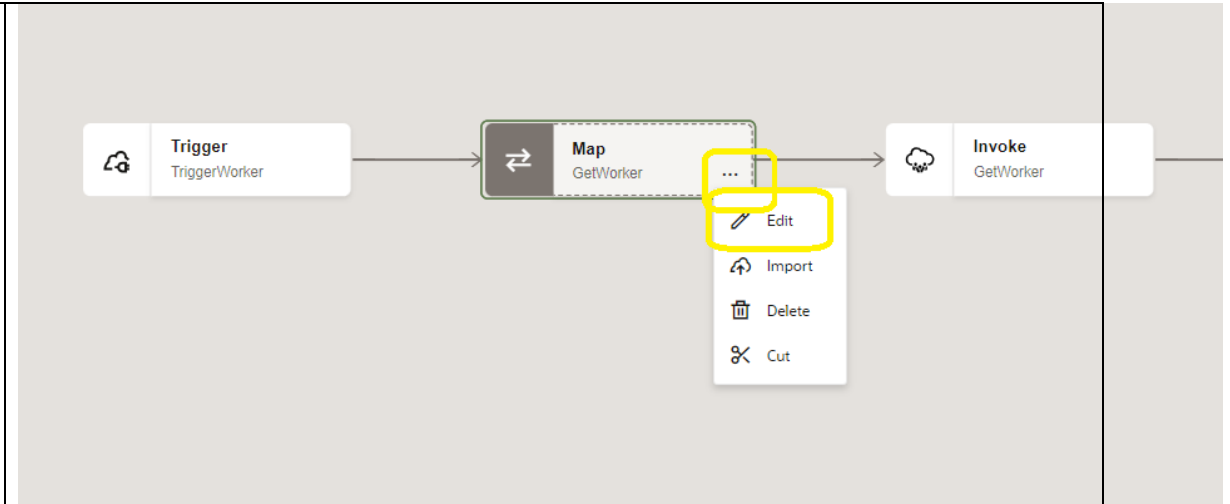
Nothing to select in Descriptive and Extensible Flexfields, click **Next** and check Summary and click **Done**.

The screenshot shows the Oracle HCM Cloud configuration wizard. At the top, there's a header with the Oracle HCM Cloud logo and a 'Cancel' button. A 'Done' button is highlighted with a yellow box. Below the header is a progress bar with six steps: 1. Basic Info, 2. Actions, 3. Operations, 4. Child Resources, 5. Descriptive and Extensible Flexfields, and 6. Summary. The 'Summary' step is currently selected and highlighted. Below the progress bar, the 'Summary' section is displayed, showing 'GetWorker Description' with a help icon, 'Business Object' as 'Workers', 'Operation' as 'getAll', and a 'getAll' button.

Your integration should look like this at this stage. A mapper has been added between Trigger and Invoke

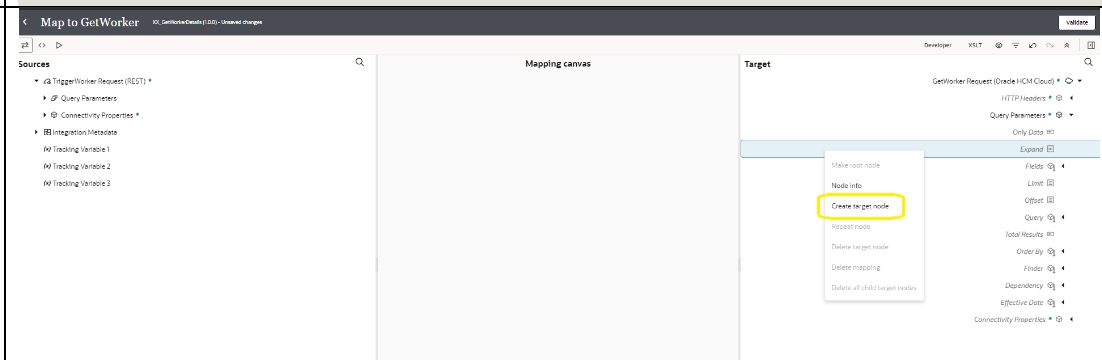


We need to perform mapping so click Edit on Map Get Worker



In the mapper we need to perform the few mappings. For any element that we need to map, we first right click and click **“Create Target Node”**

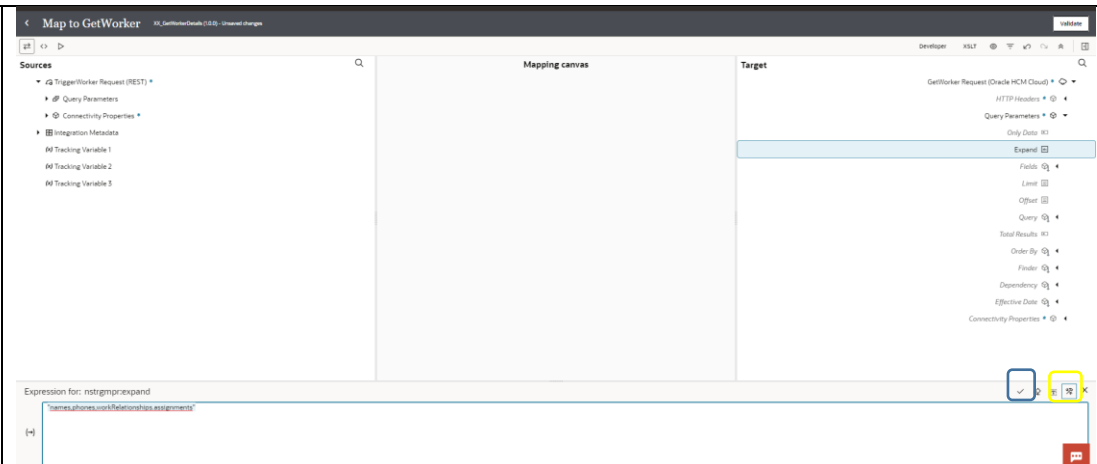
For example we need to perform mapping for Expand element in Query Nodes, right click Expand and click **“Create Target Node”**



For **Expand** enter including double quotes

"names,phones,workRelationships.assignments"

Please note you will have to click **Design** view first before entering and after that **Confirm** button

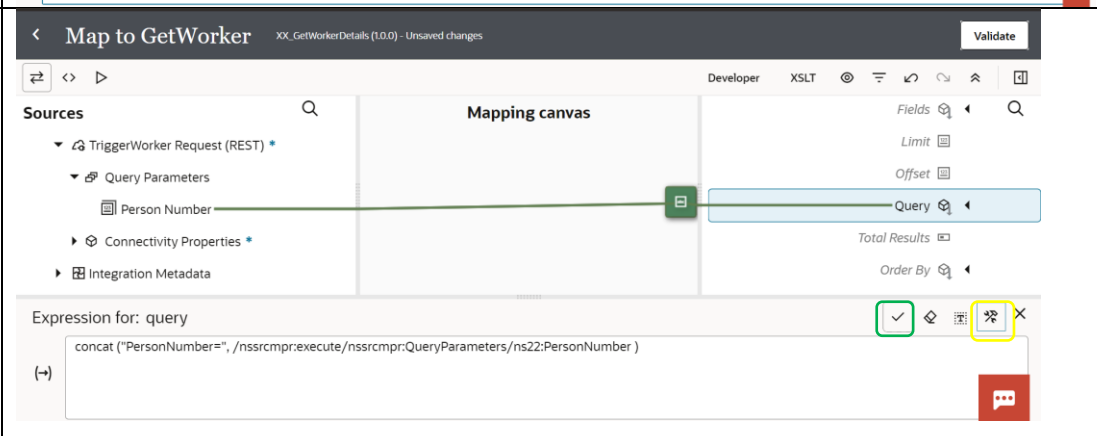


For Query

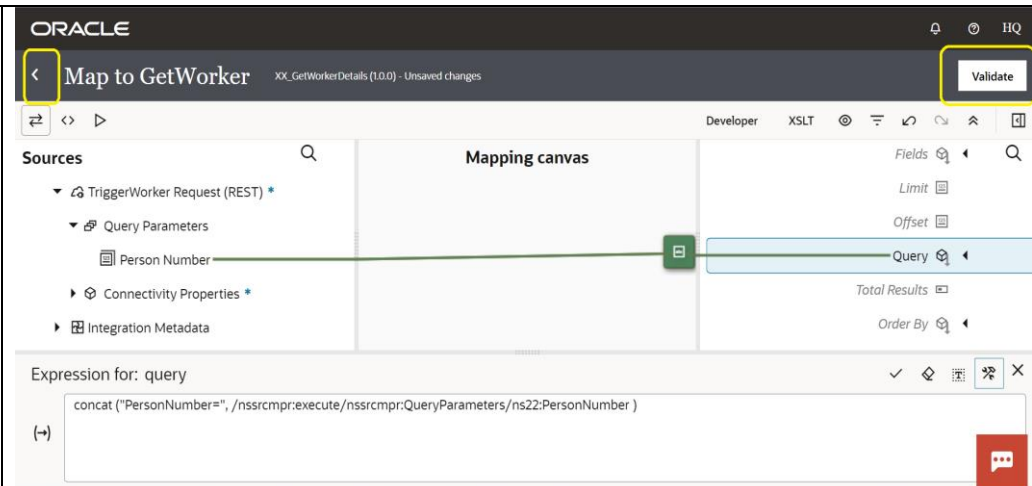
concat ("PersonNumber=",
/nssrcmpr:execute/nssrcmpr:QueryParameters/ns21:Person
Number)

Note : take PersonNumber from QueryParamters in request and drop that in the Expression as your namespace can be different then above.

Please note you will have to click **Design** view first before entering and after that **Confirm** button

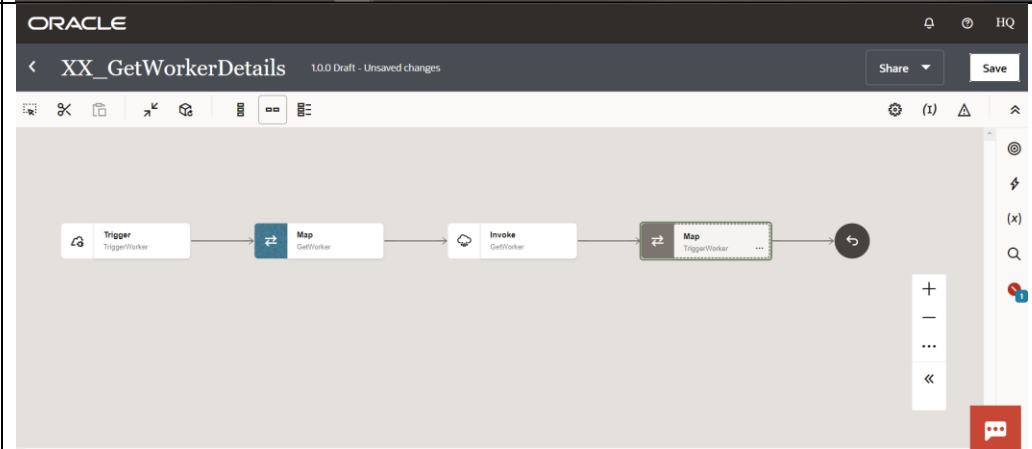


Once both mapping are done, click **Validate** on top right and after that click Back button

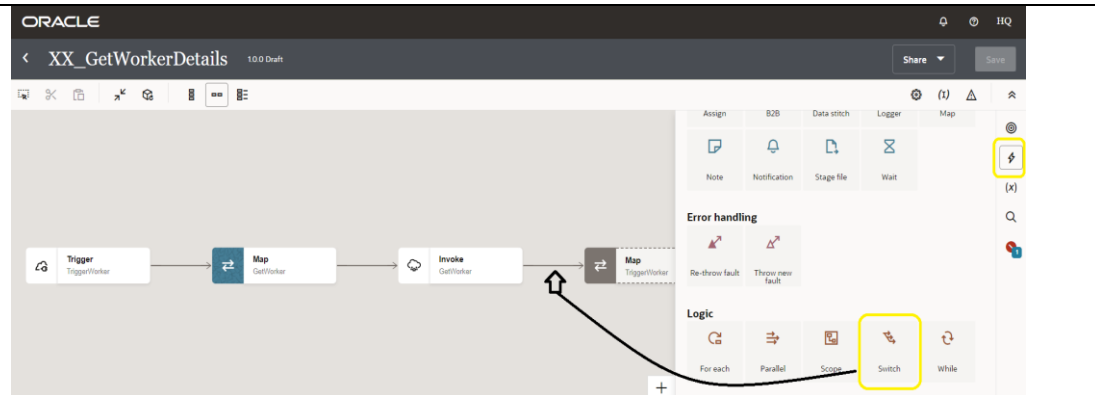


Your Integration should look like this now.

Next we need add a switch statement i.e. if PersonNumber is valid we will map the response else we will provide a message that “Invalid PersonNumber, provide a valid Number”



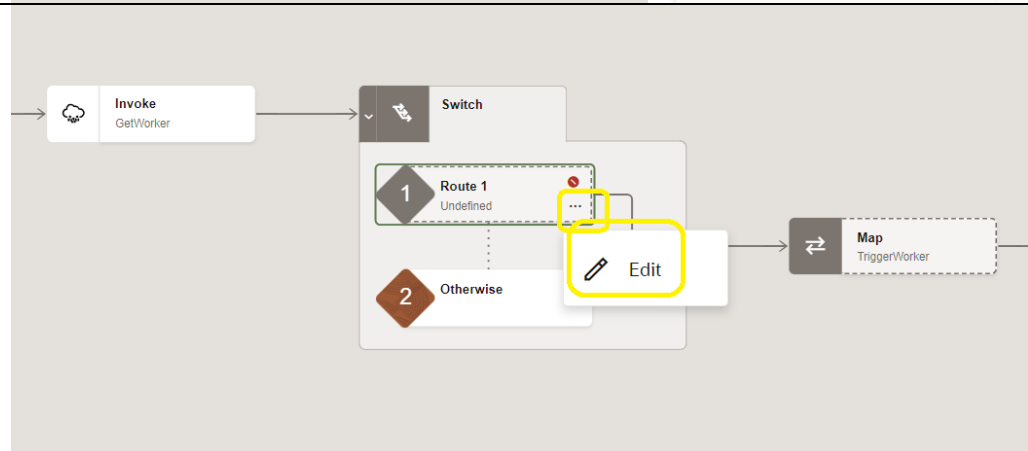
Click on **Actions** button on the left menu, select **Switch** Action in Logic section and drag it after Invoke GetWorker

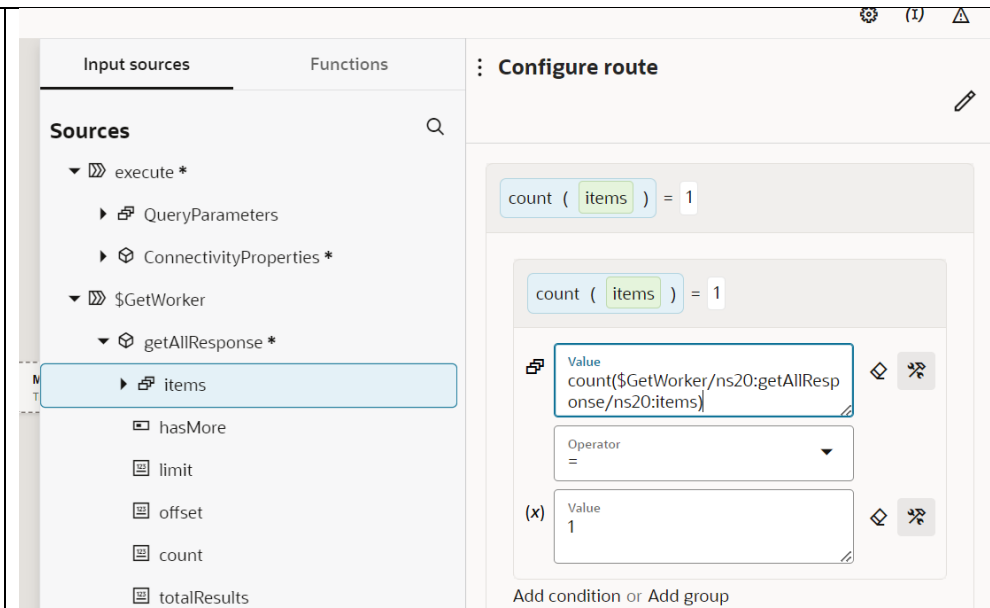


Switch creates two routes, click Edit on Rount1 and enter the condition

Count(items) = 1

Note: Take Items from GetWorker->getAllResonse->Items



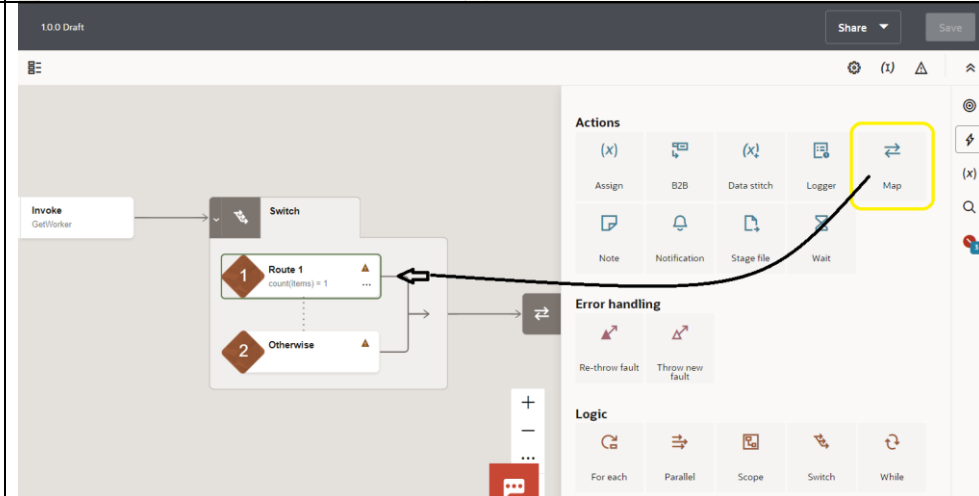



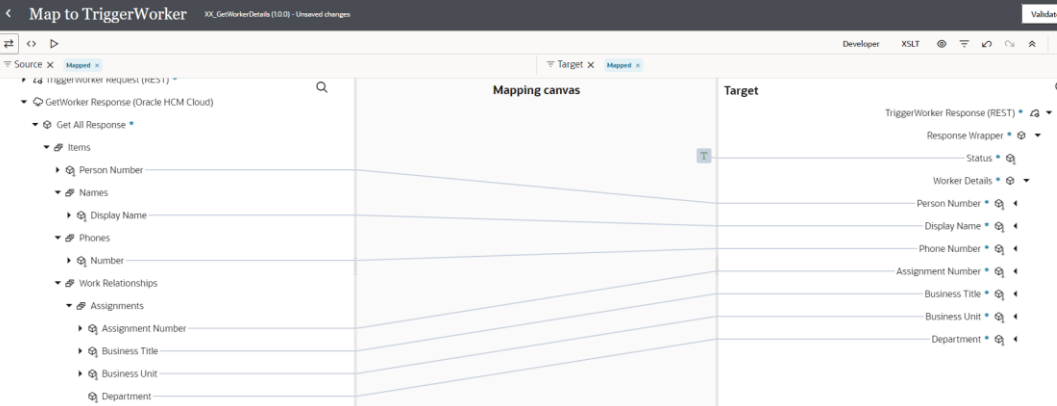
Now we will add a mapper in front of Route 1.

Route 1 is our success path.

Select Actions button from left Menu, select **Map** Actions and drag it in front of Route1.

It will give you an option, click **Create**.

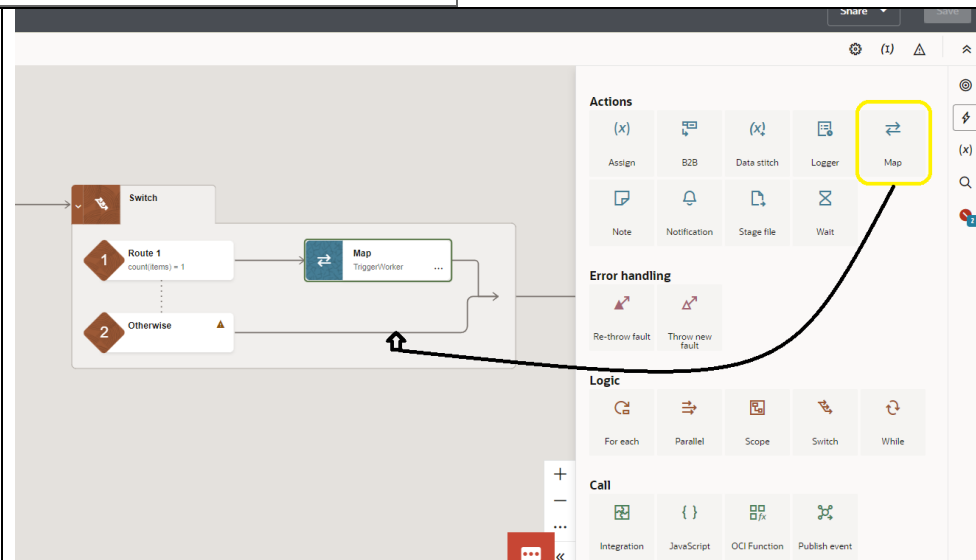


	<div data-bbox="974 199 1892 678"> <h3>Add Map</h3> <div> Cancel Create </div> <p>Select the endpoint to map data to.</p> <div>  <div> TriggerWorker - Oracle REST Connection Input: executeResponse Output: execute </div> </div> </div>								
<p>Perform the mapping as per the image, ensure you are taking values from the correct node inside GetWorkerResponse->GetAllResponse->Items</p> <p>Once done, click Validate and Back button</p>									
<table border="1"> <thead> <tr> <th>Source</th><th>Target</th></tr> </thead> <tbody> <tr> <td>"Person Number is Valid"</td><td>Status</td></tr> <tr> <td>GetWorker Response -> Get All Response -> Items -> Person Number</td><td>Person Number</td></tr> <tr> <td>GetWorker Response -> Get All Response -> Items -> Names -> Display Name</td><td>Display Name</td></tr> </tbody> </table>	Source	Target	"Person Number is Valid"	Status	GetWorker Response -> Get All Response -> Items -> Person Number	Person Number	GetWorker Response -> Get All Response -> Items -> Names -> Display Name	Display Name	
Source	Target								
"Person Number is Valid"	Status								
GetWorker Response -> Get All Response -> Items -> Person Number	Person Number								
GetWorker Response -> Get All Response -> Items -> Names -> Display Name	Display Name								

GetWorker Response -> Get All Response -> Items -> Phones -> Number	Phone Number
GetWorker Response -> Get All Response -> Items -> Work Relationships -> Assignments -> Assignment Number	Assignment Number
GetWorker Response -> Get All Response -> Items -> Work Relationships -> Assignments -> Business Title	Business Title
GetWorker Response -> Get All Response -> Items -> Work Relationships -> Assignments -> Business Unit	Business Unit
GetWorker Response -> Get All Response -> Items -> Work Relationships -> Assignments -> Department	Department

Next we will add a mapper to the Otherwise Route.

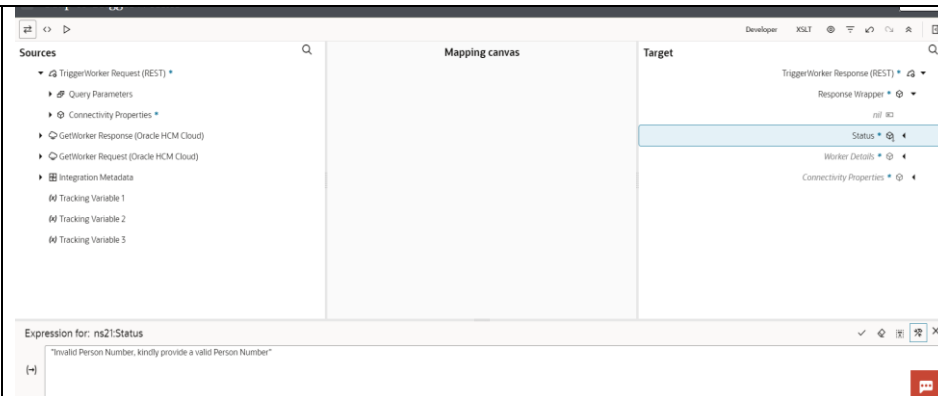
Click on Actions button on right menu, select Map and drop it in front of Otherwise and click Create



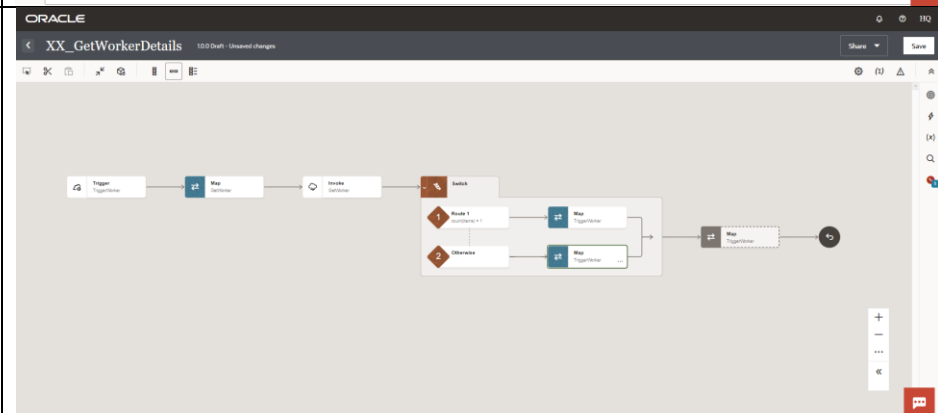
This is our unsuccessful path where the entered person Number is invalid, we will only map Status and provide this statement

"Invalid Person Number, kindly provide a valid Person Number"

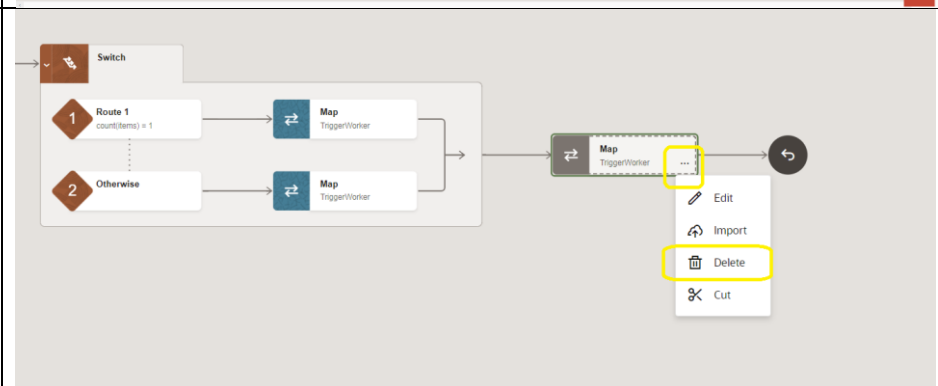
Perform this mapping, click **Validate** and back button



Your integration shall look like this now

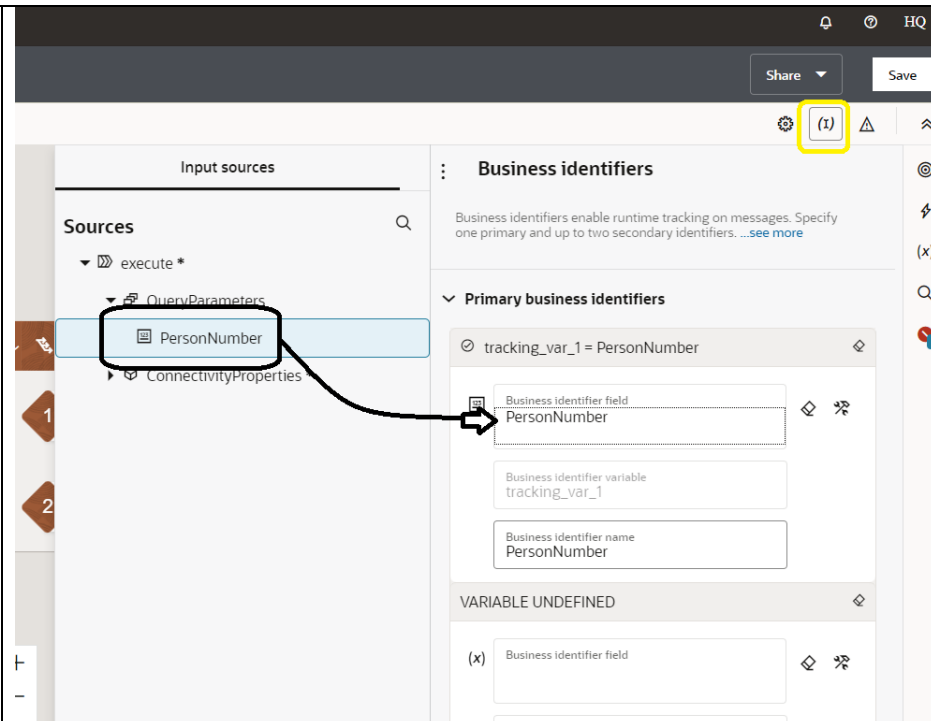


The last mapper, we do not need so Delete this mapper

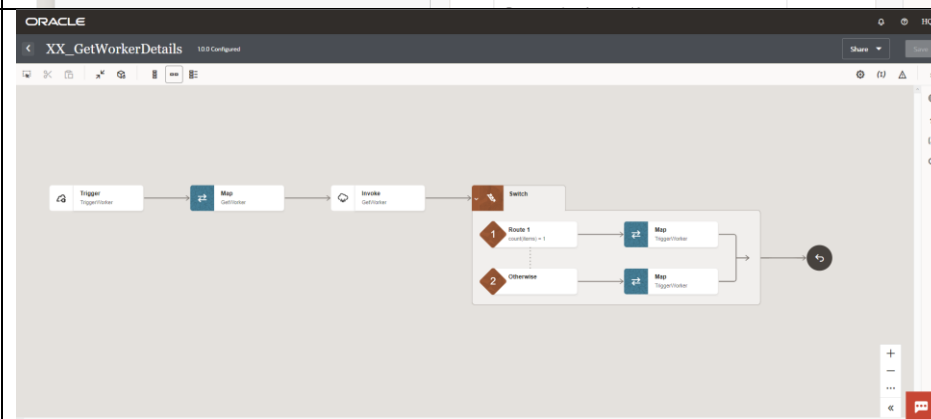


Now we need to set business identifier, this helps in monitoring.

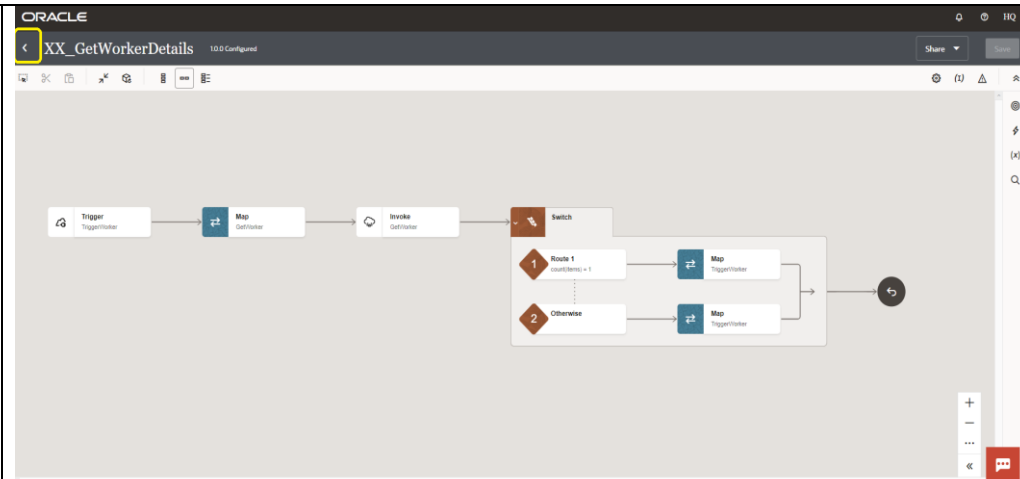
Click on **Business Identifier icon** at top right menu, and select **Person Number** from QueryParameters and drag and drop it to tracking_var_1 and click **Save**



Your final integration looks like this



Click on **Back** button



Next we will Activate the integration

Take the mouse and hover over your integration next to Configure and click on **Activate** button

Name	Version	Style	Last updated	Status
XX_GetWorkerDetails	1.0.0	Application	25 July 2023 04:08:52 PM GST	Configured
HQ_GetWorkerDetails	1.0.0	Application	25 July 2023 03:37:29 PM GST	Active

In next menu, select Tracing Level as **Debug** and click on **Activate**

Activate integration

XX_GetWorkerDetails (1.0)

Select a tracing level below

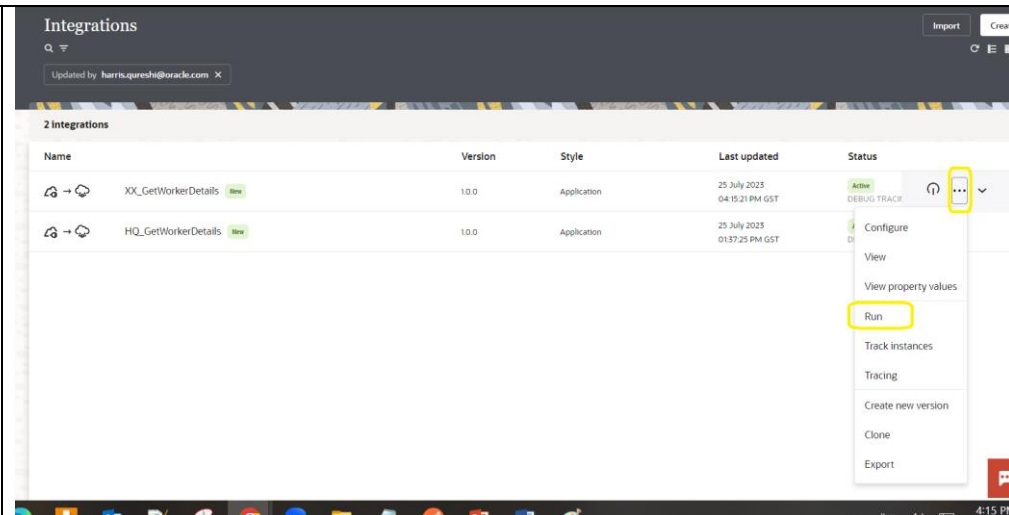
☐ Production

☐ Audit

☒ **Debug (Not recommended)**

⚠️ Additionally all payloads and all activities inside loops (up to a 1000 iterations) are shown in the activity stream and this data is retained for a period of 24 hours. It may slowdown your system and also pose a security risk as sensitive information from payload will be logged.

Now we will test this integration. After the integration is Activated. Click on the ... menu and click **Run**



Here you can provide the PersonNumber in URI Parameters and click Run

Here are some sample Person Numbers for you to test

Person Numbers Exist

Person Number : 333

Person Number : 10

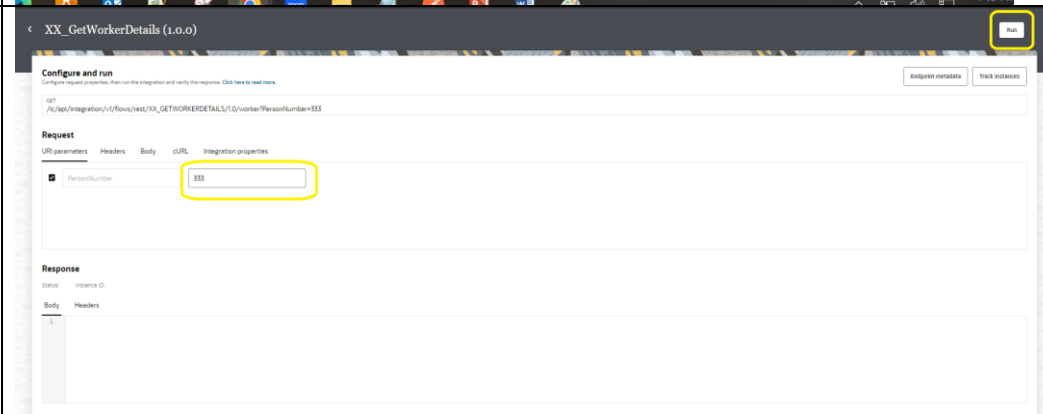
Person Number : 1010

Person Number : 4467

Person Number Do Not Exist

Person Number : 4459

Person Number : 5000



For Monitoring and checking the Flow you can click on the Instance Id

ORACLE

XX_GetWorkerDetails (1.0.0) Run

GET /ic/api/integration/v1/flows/rest/XX_GETWORKERDETAILS/1.0/worker?PersonNumber=333

Request

URI parameters Headers Body cURL Integration properties

PersonNumber 333

Response

Status: 200 OK

Instance ID: Fj5WsCrnEe6hAwsgZUuYQO

Body

Headers

1-10

1 "Status": "Person Number is valid",

2 "WorkerDetails": {

3 "personNumber": "333",

4 "displayName": "John Doe",

5 "phoneNumber": "6367978",

6 "assignmentNumber": "1333",

7 "businessTitle": "Vice President of HR",

8 "businessUnit": "Netherlands Business Unit",

9 "department": "HR",

10 }

Activity stream

Instance ID: Fj5WsCrnEe6hAwsgZUuYQO

Tracing level: Debug

10:34:30:48306 PM GMT+02:00

Wire Message received by Trigger TriggerWorker

10:34:30:48306 PM GMT+02:00

Message started processing

10:34:30:48306 PM GMT+02:00

Message received by Data Mapper

10:34:30:48306 PM GMT+02:00

Data Mapping completed with Message

10:34:30:48306 PM GMT+02:00

Invoke GetWorker

10:34:30:48306 PM GMT+02:00

Message entered Switch

10:34:30:48306 PM GMT+02:00

Message routed through Switch Route with condition count(items) = 1

10:34:30:48306 PM GMT+02:00

Message received by Data Mapper

10:34:30:48306 PM GMT+02:00

Data Mapping completed with Message

10:34:30:48306 PM GMT+02:00

Message exited Switch

Observe the Flow that the integration took as well as the activity stream data

ORACLE

PersonNumber: 333 | Fj5WsCrnEe6hAwsgZUuYQO View only

Instance of: XX_GetWorkerDetails (01.00.0000) Tracing level: Debug

Flow diagram:

Trigger -> Map -> Invoke -> Switch -> Map

Activity stream

Tracing level: Debug

10:34:30:48306 PM GMT+02:00

Wire Message received by Trigger TriggerWorker

10:34:30:48306 PM GMT+02:00

Message started processing

10:34:30:48306 PM GMT+02:00

Message received by Data Mapper

10:34:30:48306 PM GMT+02:00

Data Mapping completed with Message

10:34:30:48306 PM GMT+02:00

Invoke GetWorker

10:34:30:48306 PM GMT+02:00

Message entered Switch

10:34:30:48306 PM GMT+02:00

Message routed through Switch Route with condition count(items) = 1

10:34:30:48306 PM GMT+02:00

Message received by Data Mapper



ORACLE

PersonNumber: 5000 | ZIuoRCrnEe6hAwsgZUuYOQ View only

Instance of XX_GetWorkerDetails (0100.0000) Tracing level: Debug

Activity stream

Tracing level: Debug

- Wire Message received by Trigger TriggerWorker
- Message started processing
- Message received by Data Mapper
- Data Mapping completed with Message
- Invoke GetWorker
- Message entered Switch
- Message routed through Switch Route with condition Otherwise
- Message received by Data Mapper

You can see all integration instances in Oracle Integration
Left Menu parent node - > **Observability**

Oracle Integration

Home Projects Design 828 **Observability** Settings Visual Builder Process

Create and monitor

Design

Messages 13 0 error

View integrations 0 Failed activations

Visual Apps

Create mobile and web applications.

Create application

Use a recipe/accelerator

Filter by: [Icons]

View all

Recent activity

Integration XX_GetWorkerDetails Today Active

Integration LP_FullStackProfile Today

Click on Instances

Observability

Dashboards

Integrations

Agents

Instances

Errors

Future runs

B2B tracking

Fusion Applications

Cookie Preferences

ORACLE

Instances

25 July 2023, 04:35:48 PM GST

Time window: Last 1 hour

Display instances: Retained

Sort by: Last updated time

10 instances

Primary Identifier	Instance Id	Status	Business Identifiers	Duration
PersonNumber: 5000 XX_GetWorkerDetails 1.0.0	ZhuoRnEe6...	Succeeded		Received Succeeded Duration 5 minutes ago 3 minutes ago 799 milliseconds
PersonNumber: 333 XX_GetWorkerDetails 1.0.0	F5W5CnEe6...	Succeeded		Received Succeeded Duration 6 minutes ago 6 minutes ago 984 milliseconds
PersonNumber: 5000 XX_GetWorkerDetails 1.0.0	MIZWZmEe...	Succeeded		Received Succeeded Duration 12 minutes ago 12 minutes ago 1.60 seconds
PersonNumber: 4459 XX_GetWorkerDetails 1.0.0	9J73nEe6v...	Succeeded		Received Succeeded Duration 14 minutes ago 14 minutes ago 778 milliseconds
PersonNumber: 4467 XX_GetWorkerDetails 1.0.0	7hAK3nEe6...	Succeeded		Received Succeeded Duration 14 minutes ago 14 minutes ago 2.55 seconds
PersonNumber: 1010 XX_GetWorkerDetails 1.0.0	2b8cmEe6L...	Succeeded		Received Succeeded Duration 15 minutes ago 15 minutes ago 1.6 seconds
PersonNumber: 10 XX_GetWorkerDetails 1.0.0	9hGfE6Ee6...	Succeeded		Received Succeeded Duration 15 minutes ago 15 minutes ago