



TGH

Making Integrations Simpler



Expose SOAP API That Internally Calls Another SOAP Service in OIC

Author

Sourav Karmakar

Expose SOAP API in OIC

- What is SOAP?

➔ SOAP stands for **Simple Object Access Protocol**.

SOAP is the XML-based message protocol that enables the distributed elements of an application to communicate. SOAP can be carried over various standard protocols, including the web-related Hypertext Transfer Protocol (HTTP).

SOAP is a lightweight protocol used to create web APIs, usually with Extensible Markup Language (XML). It supports a wide range of communication protocols across the internet, HTTP, Simple Mail Transfer Protocol (SMTP), and Transmission Control Protocol.

SOAP building blocks and message structure example

Simple Object Access Protocol, as a specification, defines SOAP messages that are sent to web services and client applications. SOAP messages are XML documents that are comprised of the following three basic building blocks:

1. The SOAP Envelope encapsulates all the data in a message and identifies the XML document as a SOAP message.
2. The Header element contains additional information about the SOAP message. This information could be authentication credentials, for example, which are used by the calling application.
3. The Body element includes the details of the message that must be sent from the web service to the calling application. This data includes call and response information.

The components of a SOAP message



SOAP Specification: Soap API is described by an XML-based document, WSDL.

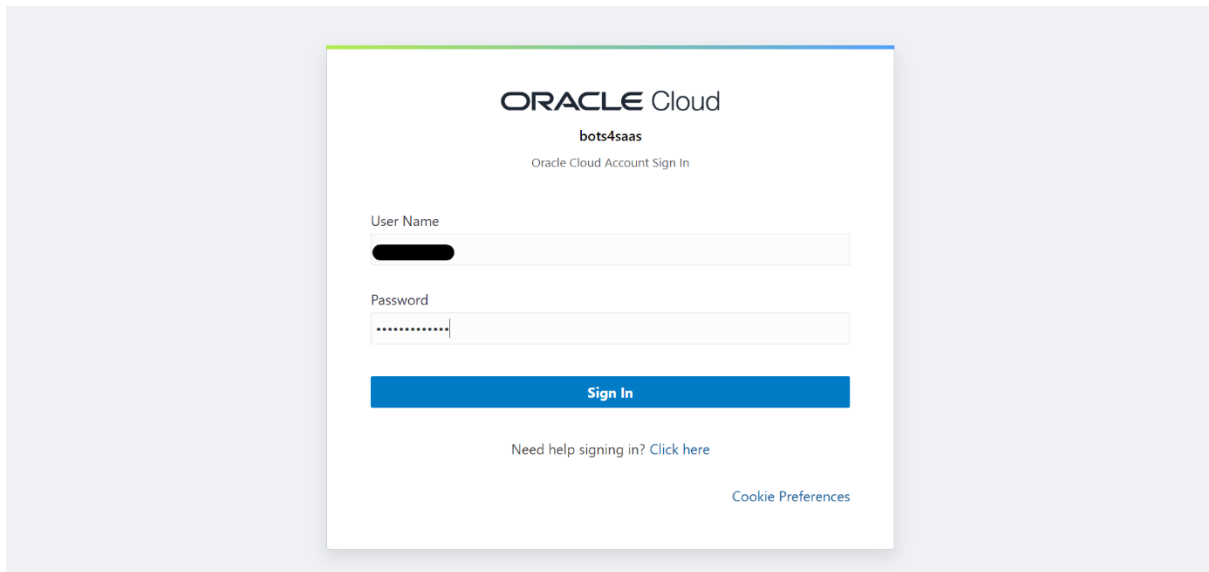
Sample WSDL:

```
<DEFINITIONS xmlns="http://schemas.xmlsoap.org/wsdl/" xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/" xmlns:soap12="http://schemas.xmlsoap.org/wsdl/soap12/"
xmlns:tns="http://www.dataaccess.com/webservicesserver/" name="NUMBERCONVERSION" targetNamespace="http://www.dataaccess.com/webservicesserver/">
  <TYPES>
    <XS:SCHEMA ELEMENTFORMDEFAULT="QUALIFIED" TARGETNAMESPACE="http://www.dataaccess.com/webservicesserver/">
      <XS:ELEMENT NAME="NUMBERWORDS">
        <XS:COMPLEXTYPE>
          <XS:SEQUENCE>
            <XS:ELEMENT NAME="UBINUM" TYPE="XS:UNSIGNEDLONG"/>
          </XS:SEQUENCE>
        </XS:COMPLEXTYPE>
      </XS:ELEMENT>
      <XS:ELEMENT NAME="NUMBERWORDSORRESPONSE">
        <XS:COMPLEXTYPE>
          <XS:SEQUENCE>
            <XS:ELEMENT NAME="NUMBERWORDSORRESULT" TYPE="XS:STRING"/>
          </XS:SEQUENCE>
        </XS:COMPLEXTYPE>
      </XS:ELEMENT>
      <XS:ELEMENT NAME="NUMBERDOLLARS">
        <XS:COMPLEXTYPE>
          <XS:SEQUENCE>
            <XS:ELEMENT NAME="DNUM" TYPE="XS:DECIMAL"/>
          </XS:SEQUENCE>
        </XS:COMPLEXTYPE>
      </XS:ELEMENT>
      <XS:ELEMENT NAME="NUMBERDOLLARSRESPONSE">
        <XS:COMPLEXTYPE>
          <XS:SEQUENCE>
            <XS:ELEMENT NAME="NUMBERDOLLARSRESULT" TYPE="XS:STRING"/>
          </XS:SEQUENCE>
        </XS:COMPLEXTYPE>
      </XS:ELEMENT>
    </XS:SCHEMA>
  </TYPES>
  <MESSAGE NAME="NUMBERWORDSORREQUEST">
    <PART NAME="PARAMETERS" ELEMENT="TNS:NUMBERWORDS"/>
  </MESSAGE>
  <MESSAGE NAME="NUMBERWORDSORRESPONSE">
    <PART NAME="PARAMETERS" ELEMENT="TNS:NUMBERWORDSORRESPONSE"/>
  </MESSAGE>
  <MESSAGE NAME="NUMBERDOLLARSREQUEST">
    <PART NAME="PARAMETERS" ELEMENT="TNS:NUMBERDOLLARS"/>
  </MESSAGE>
  <MESSAGE NAME="NUMBERDOLLARSRESPONSE">
    <PART NAME="PARAMETERS" ELEMENT="TNS:NUMBERDOLLARSRESPONSE"/>
  </MESSAGE>
  <PORTTYPE NAME="NUMBERCONVERSIONSOAPTYPE">
    <PORTTYPE NAME="NUMBERWORDS">
      <OPERATION NAME="NUMBERWORDS">
        <DOCUMENTATION>RETURNS THE WORD CORRESPONDING TO THE POSITIVE NUMBER PASSED AS PARAMETER. LIMITED TO QUADRILLIONS.</DOCUMENTATION>
        <INPUT MESSAGE="TNS:NUMBERWORDSORREQUEST"/>
        <OUTPUT MESSAGE="TNS:NUMBERWORDSORRESPONSE"/>
      </OPERATION>
      <OPERATION NAME="NUMBERDOLLARS">
        <DOCUMENTATION>RETURNS THE NON-ZERO DOLLAR AMOUNT OF THE PASSED NUMBER.</DOCUMENTATION>
        <INPUT MESSAGE="TNS:NUMBERDOLLARSREQUEST"/>
        <OUTPUT MESSAGE="TNS:NUMBERDOLLARSRESPONSE"/>
      </OPERATION>
    </PORTTYPE>
  </PORTTYPE>
  <BINDING NAME="NUMBERCONVERSIONSOAPBINDING" TYPE="TNS:NUMBERCONVERSIONSOAPTYPE">
    <SOAP-BINDING STYLE="DOCUMENT" TRANSPORT="http://schemas.xmlsoap.org/soap/http"/>
    <OPERATION NAME="NUMBERWORDS">
      <SOAP-OPERATION SOAPACTION="" STYLE="DOCUMENT"/>
      <INPUT>
        <SOAP-BODY USE="LITERAL"/>
      </INPUT>
      <OUTPUT>
        <SOAP-BODY USE="LITERAL"/>
      </OUTPUT>
    </OPERATION>
    <OPERATION NAME="NUMBERDOLLARS">
      <SOAP-OPERATION SOAPACTION="" STYLE="DOCUMENT"/>
      <INPUT>
        <SOAP-BODY USE="LITERAL"/>
      </INPUT>
      <OUTPUT>
        <SOAP-BODY USE="LITERAL"/>
      </OUTPUT>
    </OPERATION>
  </BINDING>
  <BINDING NAME="NUMBERCONVERSIONSOAPBINDING12" TYPE="TNS:NUMBERCONVERSIONSOAPTYPE">
    <SOAP12-BINDING STYLE="DOCUMENT" TRANSPORT="http://schemas.xmlsoap.org/soap/http"/>
    <OPERATION NAME="NUMBERWORDS">
      <SOAP12-OPERATION SOAPACTION="" STYLE="DOCUMENT"/>
      <INPUT>
        <SOAP12-BODY USE="LITERAL"/>
      </INPUT>
      <OUTPUT>
        <SOAP12-BODY USE="LITERAL"/>
      </OUTPUT>
    </OPERATION>
    <OPERATION NAME="NUMBERDOLLARS">
      <SOAP12-OPERATION SOAPACTION="" STYLE="DOCUMENT"/>
      <INPUT>
        <SOAP12-BODY USE="LITERAL"/>
      </INPUT>
      <OUTPUT>
        <SOAP12-BODY USE="LITERAL"/>
      </OUTPUT>
    </OPERATION>
  </BINDING>
  <SERVICE NAME="NUMBERCONVERSION">
    <DOCUMENTATION>THE NUMBER CONVERSION WEB SERVICE, IMPLEMENTED WITH VISUAL DATAFLEX, PROVIDES FUNCTIONS THAT CONVERT NUMBERS INTO WORDS OR DOLLAR AMOUNTS.</DOCUMENTATION>
    <PORT NAME="NUMBERCONVERSIONSOAP" BINDING="TNS:NUMBERCONVERSIONSOAPBINDING">
      <SOAP-ADDRESS LOCATION="https://www.dataaccess.com/webservicesserver/NUMBERCONVERSION.WSO?"/>
    </PORT>
    <PORT NAME="NUMBERCONVERSIONSOAP12" BINDING="TNS:NUMBERCONVERSIONSOAPBINDING12">
      <SOAP12-ADDRESS LOCATION="https://www.dataaccess.com/webservicesserver/NUMBERCONVERSION.WSO?"/>
    </PORT>
  </SERVICE>
</DEFINITIONS>
```

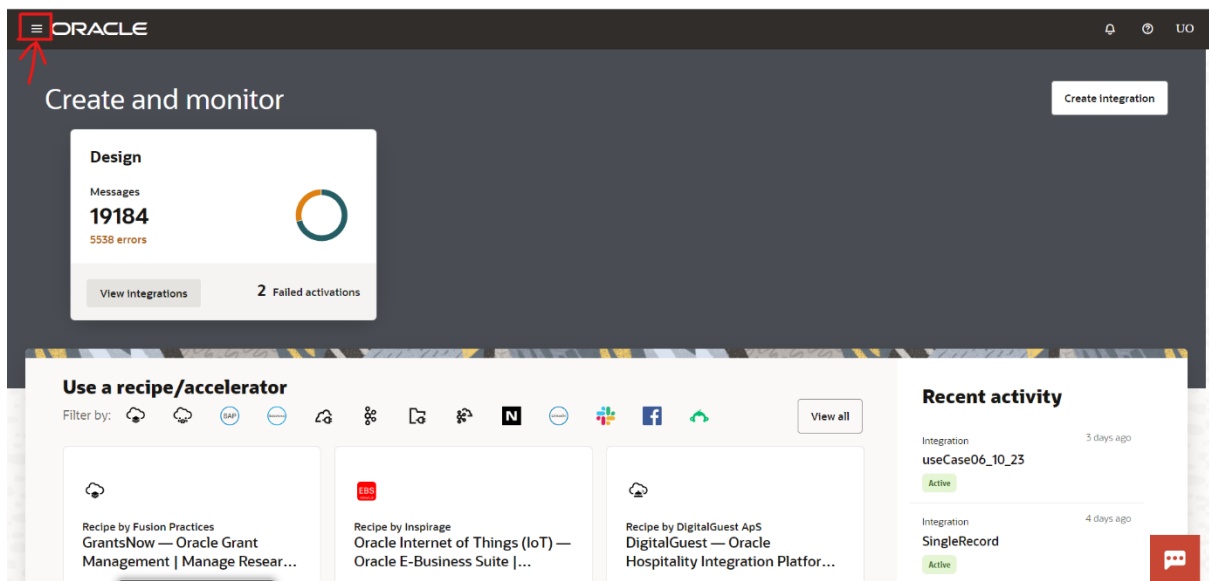
Now go to the OIC Integration Platform to develop a SOAP API

Step 1: Go to the Sign-in page.

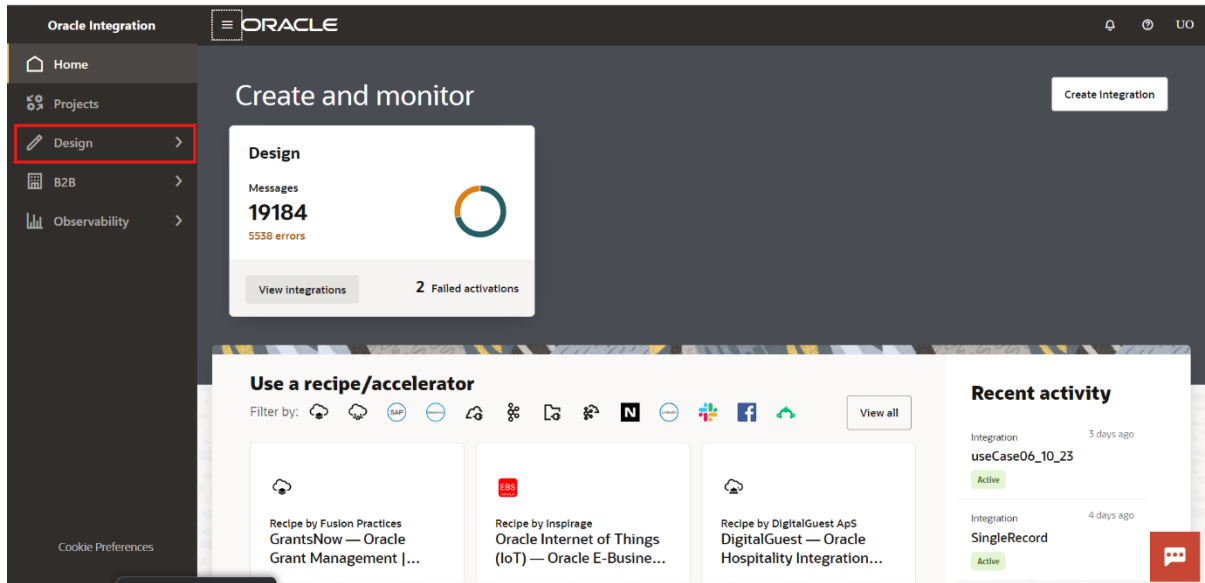
Use Username and Password to log into the OIC Instance.



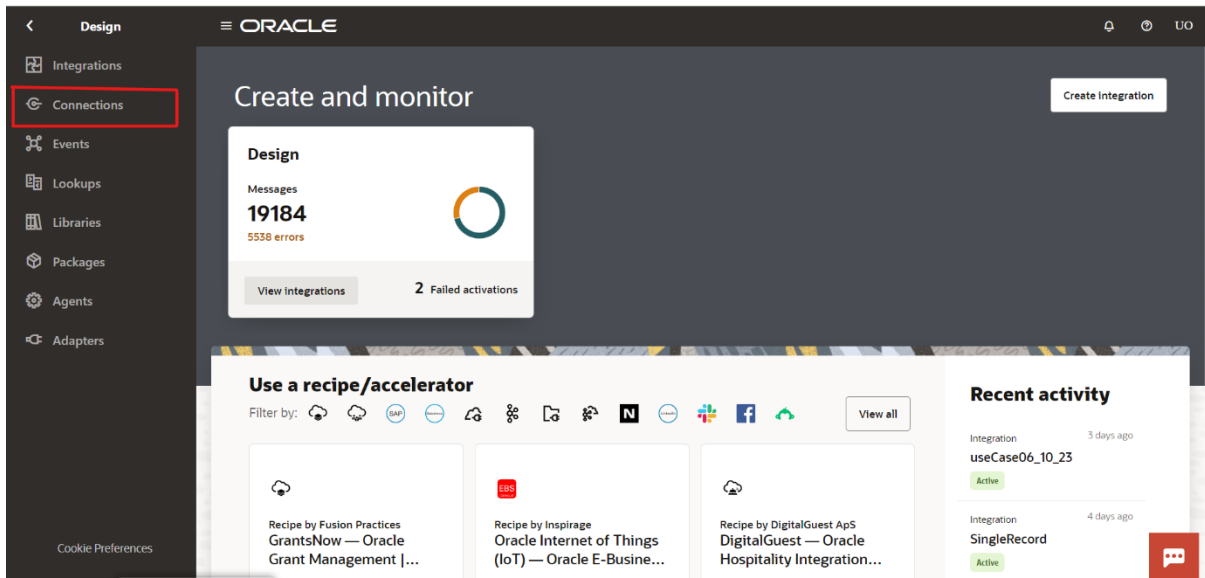
Step 2: Click on the hamburger button.



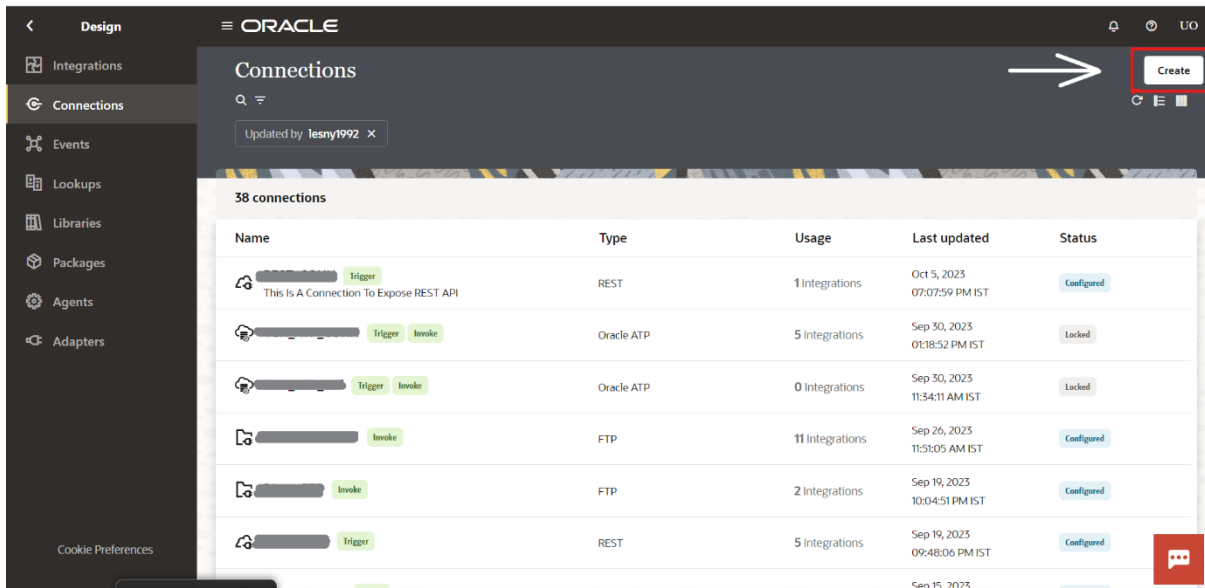
Step 3: Click on the Design tab.



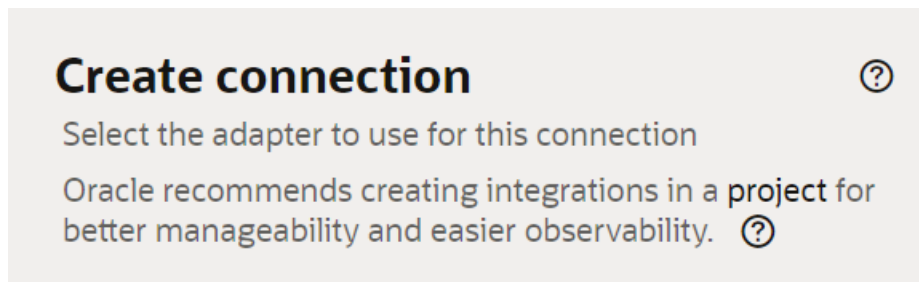
Step 4: Click on the Connections tab to create a SOAP Connector.



Step 5: Click on the Create button to configure a SOAP Connector.




Step 6: Search SOAP in the search box and select the SOAP Adapter.



Step 7: Give a suitable name to the SOAP Connector and the role should be Trigger as it is an inbound Integration and click on the Create button.

Create connection

 SOAP adapter


Name
Sample_SOAP

Identifier
SAMPLE_SOAP

Role
Trigger

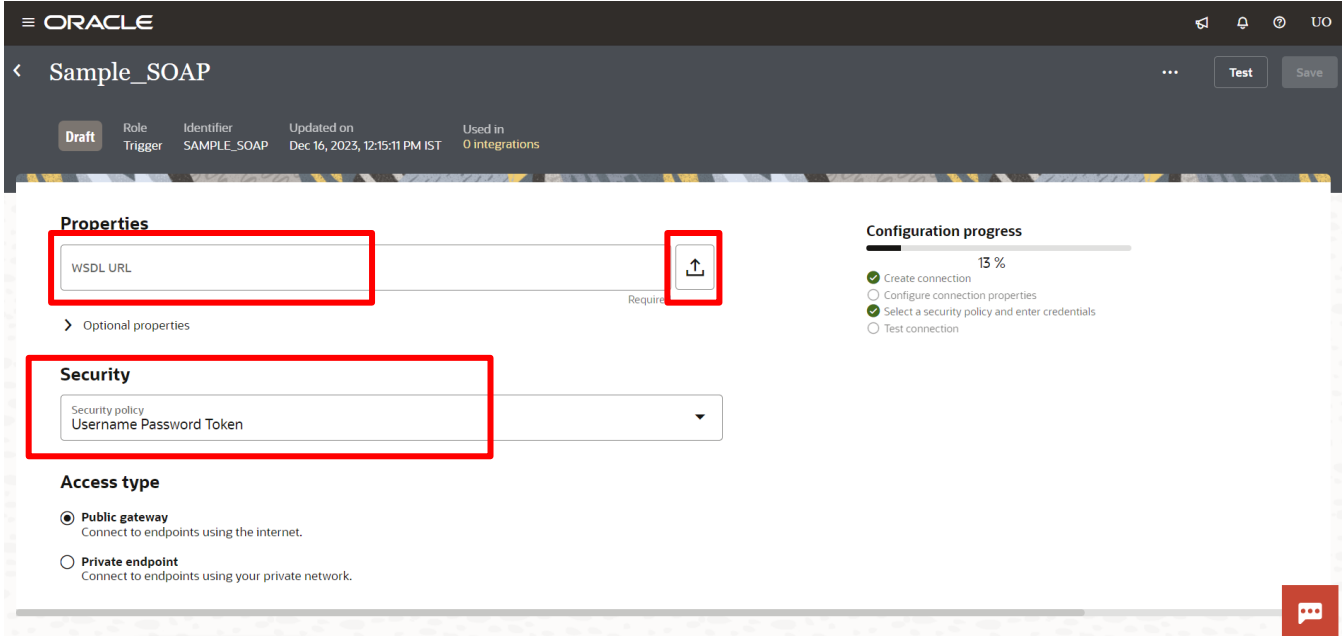
Keywords

Description

 **Create**

NOTE: Identifier should populate automatically but we can change this and need to give any unique name.

Step 8: Fill the required credentials and click on Test.



The screenshot shows the Oracle Integration Cloud configuration interface for a 'Sample_SOAP' integration. The 'Properties' section has a 'WSDL URL' field and an upload icon. The 'Security' section has a dropdown menu set to 'Username Password Token'. The 'Access type' section has 'Public gateway' selected. A 'Configuration progress' bar shows 13% completion. A 'Test' button is located in the top right corner.

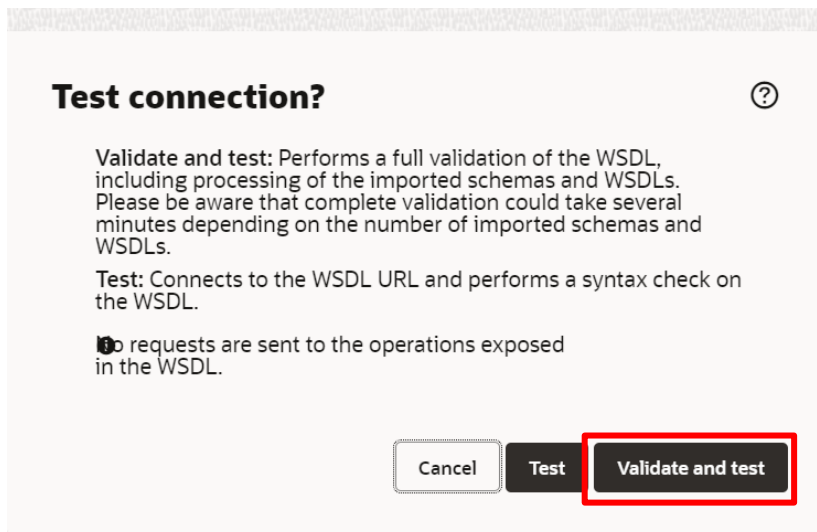
Properties

1. Need to upload a WSDL file

Security

1. Username Password Token
2. OAuth 2.0
3. Security Assertion Markup Language (SAML)
4. Basic Authentication

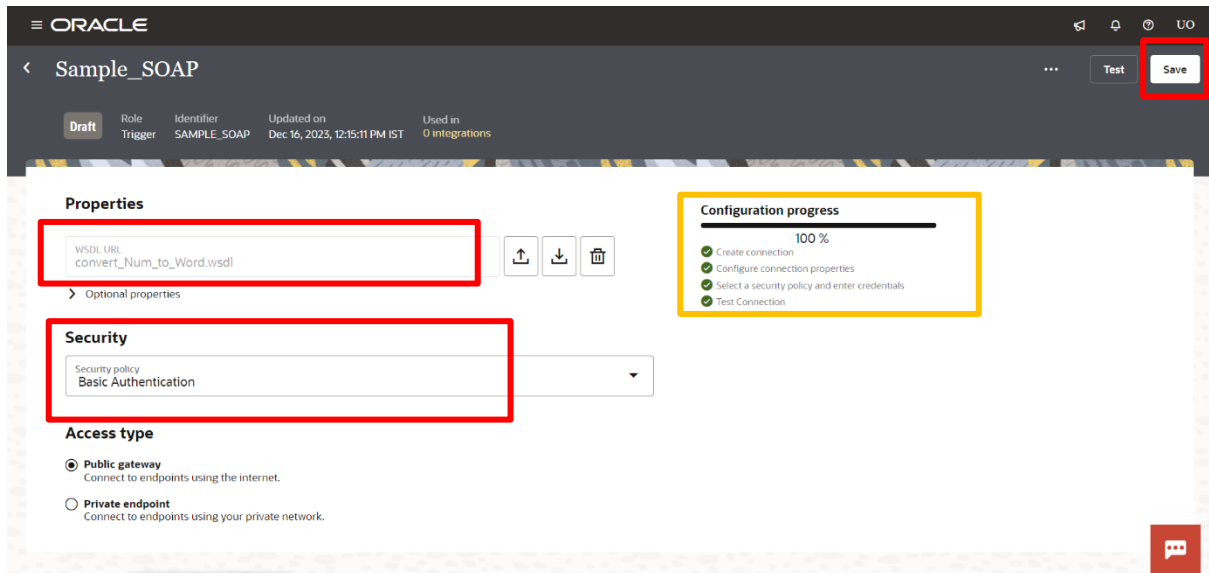
Step 9: Click on Validate and Test.



The 'Test connection?' dialog box provides instructions for two actions: 'Validate and test' (full validation of WSDL) and 'Test' (syntax check on WSDL). It also notes that requests are sent to operations in the WSDL. The 'Validate and test' button is highlighted with a red box.

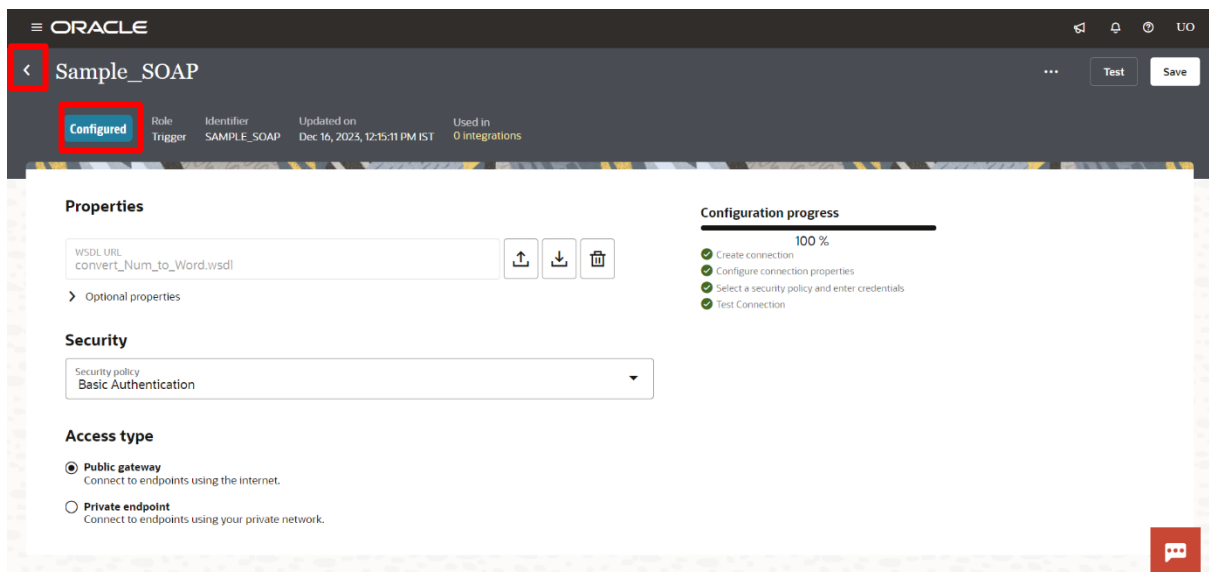
NOTE: The difference between Test and Validate & Test is that Test will just test your connection it will not validate the credentials but Validate & Test will first validate your all credentials and it will test the connectivity.

Step 10: Change the Security to Basic Authentication and Click the Save button after the successful test.

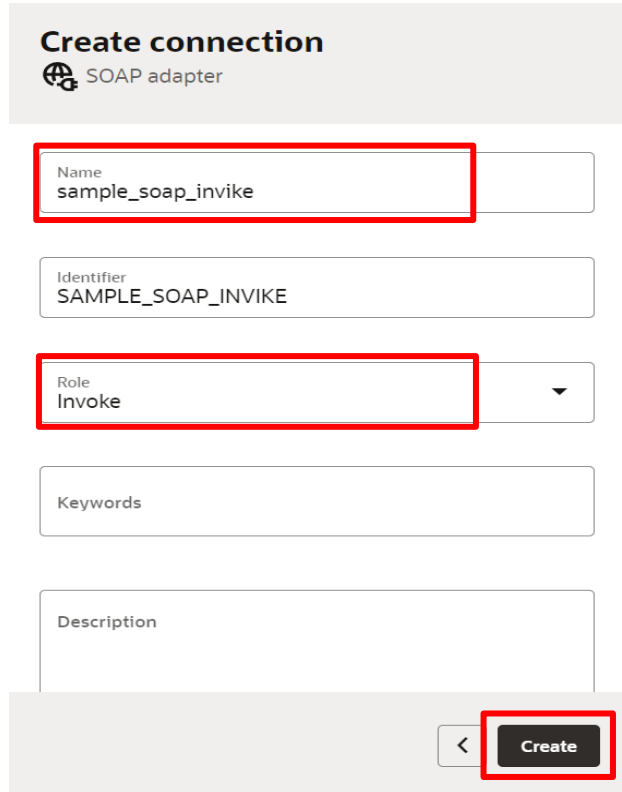


NOTE: Only you can ensure successful connectivity with Salesforce if the Configuration progress bar reaches 100%

Step 11: Click on the left arrow when the connection goes to the Configured stage.



Step 12: Now we need to configure another SOAP Connector with Invoke Role, as it is an Outbound call, that will call an actual soap service.



Create connection
SOAP adapter

Name
sample_soap_invoke

Identifier
SAMPLE_SOAP_INVIKE

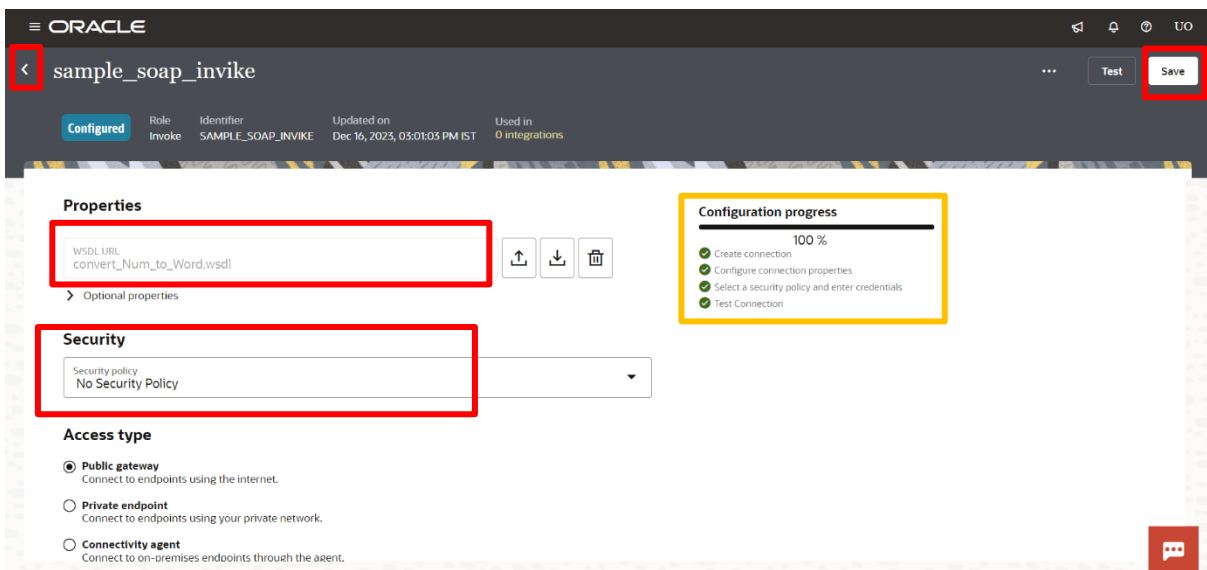
Role
Invoke

Keywords

Description

< Create

Step 13: After that, we need to upload that same WSDL file, set the security No Security Policy, and click on Test, after the test we need to click on Save and at least click the left arrow to go back.



ORACLE

sample_soap_invoke

Test Save

Configured Role Invoke Identifier SAMPLE_SOAP_INVIKE Updated on Dec 16, 2023, 03:01:03 PM IST Used in 0 integrations

Properties

WSDL URL
convert_Num_to_Word.wsdl

Optional properties

Security

Security policy
No Security Policy

Access type

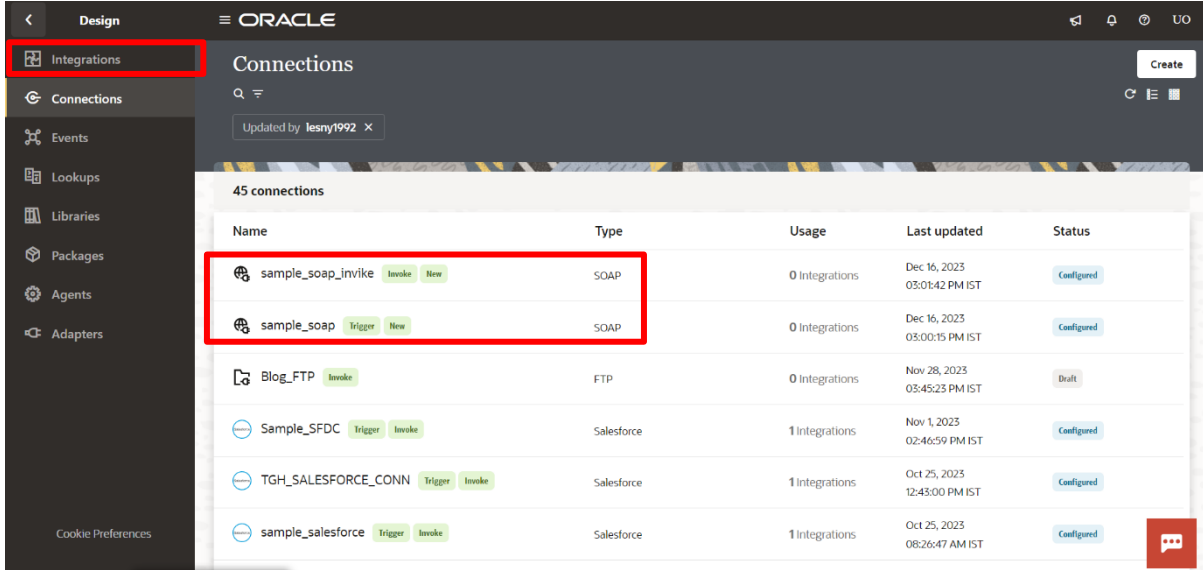
- Public gateway
Connect to endpoints using the internet.
- Private endpoint
Connect to endpoints using your private network.
- Connectivity agent
Connect to on-premises endpoints through the agent.

Configuration progress

100 %

- ✔ Create connection
- ✔ Configure connection properties
- ✔ Select a security policy and enter credentials
- ✔ Test Connection

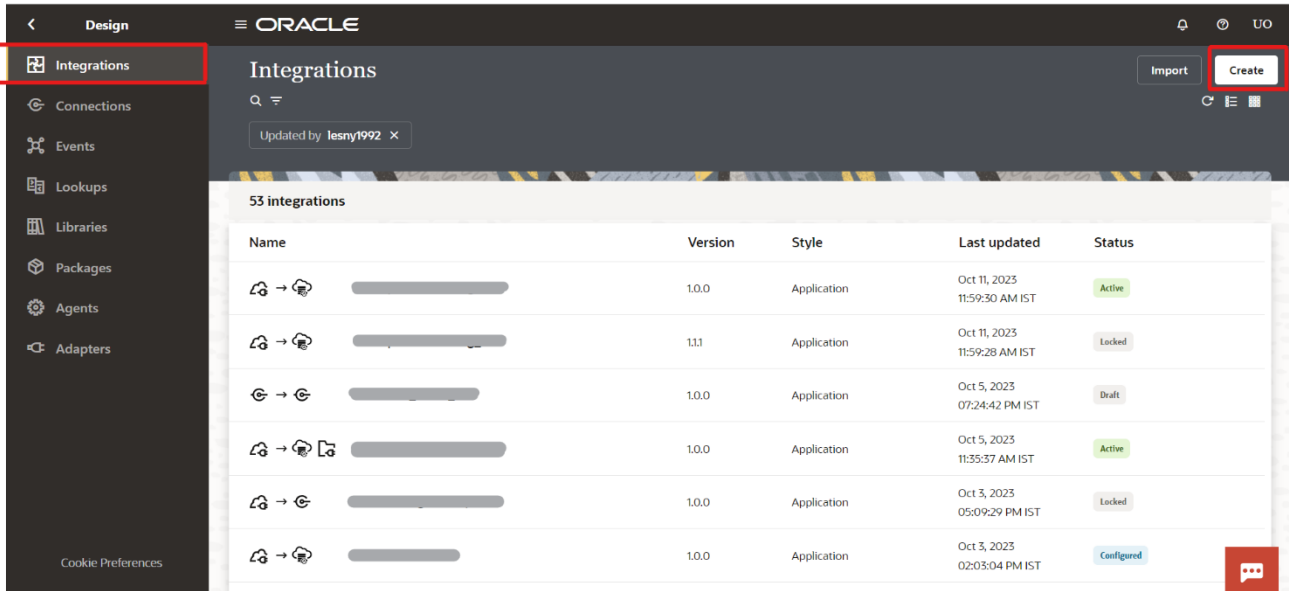
Step 14: These are the two SOAP connections that we need, now we need to go to the Integrations tab.



The screenshot shows the Oracle Integration Cloud interface. The 'Integrations' tab is highlighted in the left sidebar. The main area displays the 'Connections' tab with a table of 45 connections. Two SOAP connections are highlighted with a red box:

Name	Type	Usage	Last updated	Status
sample_soap_invoke	SOAP	0 Integrations	Dec 16, 2023 03:01:42 PM IST	Configured
sample_soap	SOAP	0 Integrations	Dec 16, 2023 03:00:15 PM IST	Configured

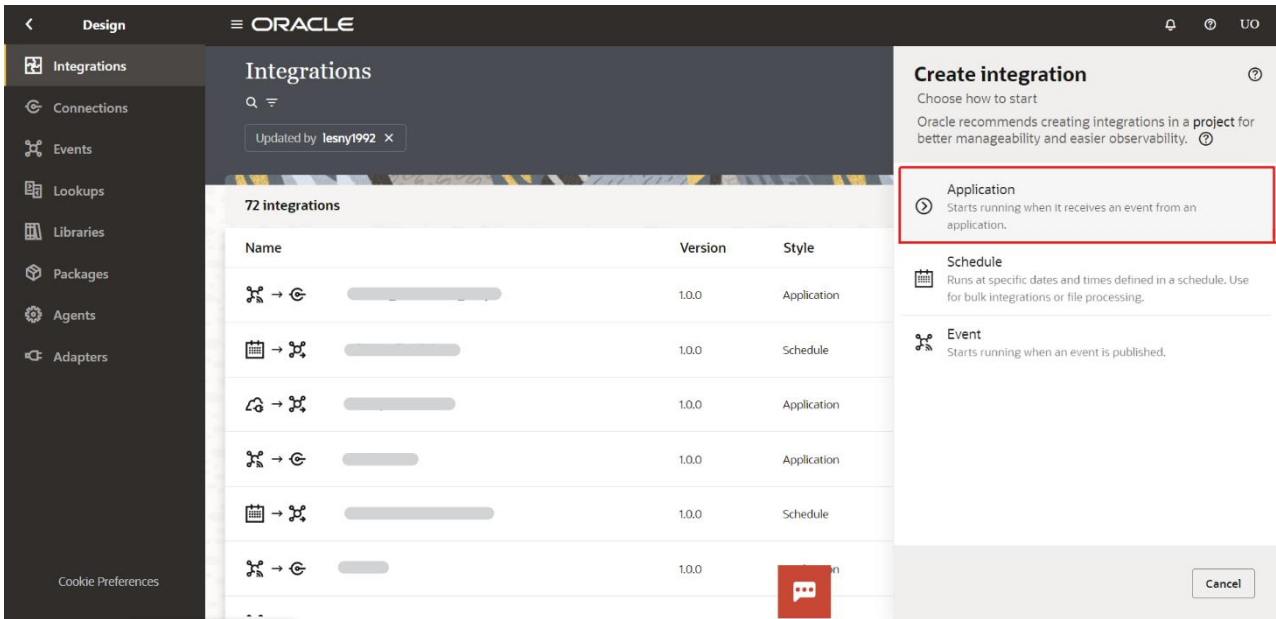
Step 15: Now Click on the Integrations tab and click on the Create button.



The screenshot shows the Oracle Integration Cloud interface. The 'Integrations' tab is highlighted in the left sidebar. The main area displays the 'Integrations' tab with a table of 53 integrations. The 'Create' button is highlighted in the top right corner.

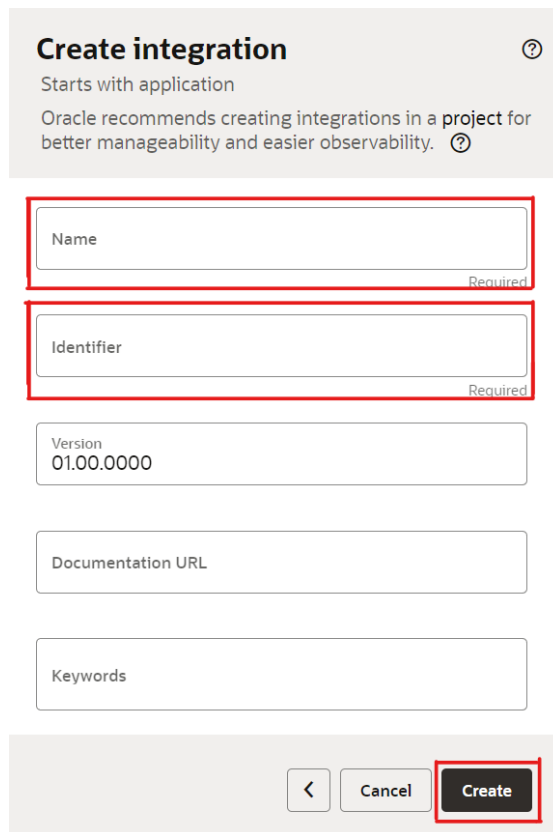
Name	Version	Style	Last updated	Status
[Icon]	1.0.0	Application	Oct 11, 2023 11:59:30 AM IST	Active
[Icon]	1.1.1	Application	Oct 11, 2023 11:59:28 AM IST	Locked
[Icon]	1.0.0	Application	Oct 5, 2023 07:24:42 PM IST	Draft
[Icon]	1.0.0	Application	Oct 5, 2023 11:35:37 AM IST	Active
[Icon]	1.0.0	Application	Oct 3, 2023 05:09:29 PM IST	Locked
[Icon]	1.0.0	Application	Oct 3, 2023 02:03:04 PM IST	Configured

Step 16: Click on the Application tab to create a real-time integration.



The screenshot shows the Oracle Integrations management console. On the left is a navigation menu with options like Integrations, Connections, Events, Lookups, Libraries, Packages, Agents, and Adapters. The main area displays a list of 72 integrations with columns for Name, Version, and Style. On the right, a 'Create integration' dialog is open, showing three options: Application (highlighted with a red box), Schedule, and Event. The 'Application' option is described as 'Starts running when it receives an event from an application.'

Step 17: In this create integration page give any suitable name and unique Identifier name and click on create button.

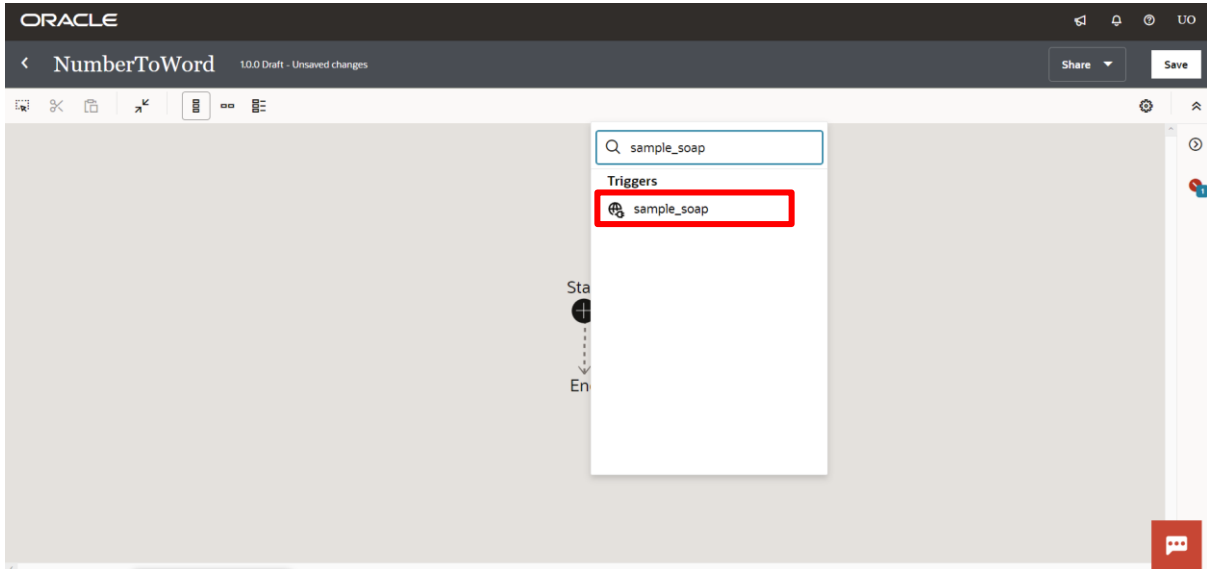


The 'Create integration' form is shown with the following fields:

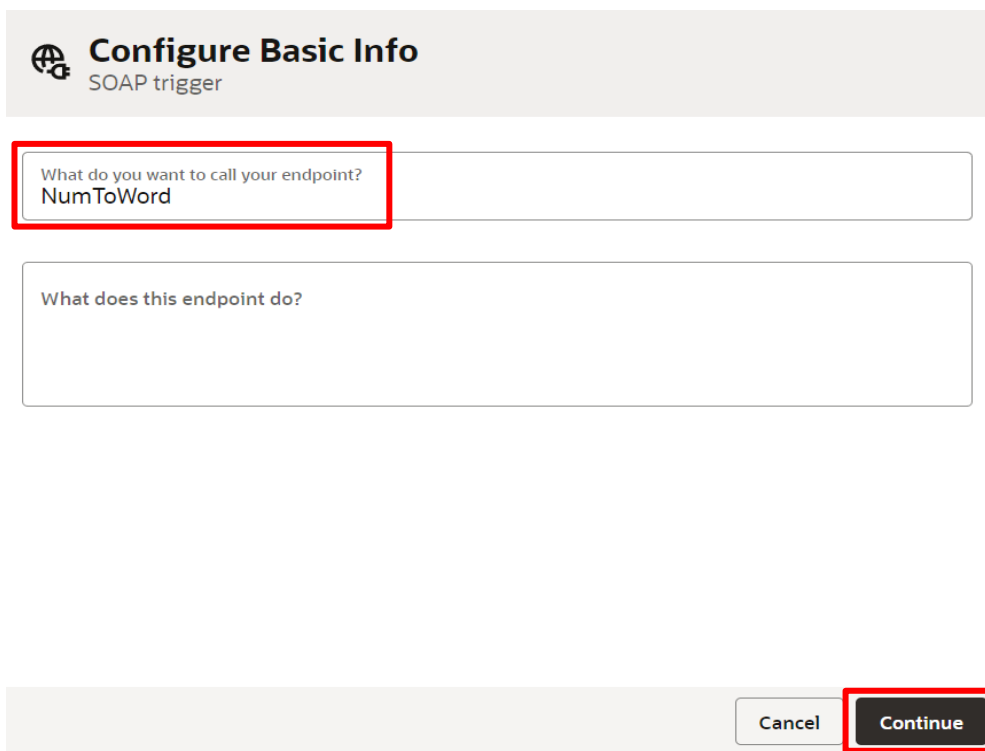
- Name:** A text input field, highlighted with a red box, with a 'Required' label below it.
- Identifier:** A text input field, highlighted with a red box, with a 'Required' label below it.
- Version:** A text input field containing '01.00.0000'.
- Documentation URL:** An empty text input field.
- Keywords:** An empty text input field.

At the bottom of the form, there are three buttons: a back arrow, a 'Cancel' button, and a 'Create' button, which is highlighted with a red box.

Step 18: After clicking the Create button search for the SOAP connector that we configured previously with Trigger Role, and select the connector.



Step 19: After choosing the connector we need to give some name to the required field and click on the Continue button.

A screenshot of the 'Configure Basic Info' form for a SOAP trigger. The form title is 'Configure Basic Info SOAP trigger'. There are two text input fields. The first field is labeled 'What do you want to call your endpoint?' and contains the text 'NumToWord', which is highlighted with a red rectangular box. The second field is labeled 'What does this endpoint do?' and is currently empty. At the bottom right of the form, there are two buttons: 'Cancel' and 'Continue', with the 'Continue' button highlighted by a red rectangular box.

Step 20: Select the Operation “NumberToWords” and click on Continue.

Configure Operations SOAP trigger

Selected Port Type
NumberConversionSoapType

Select the Operation
NumberToWords

Request Object
NumberToWordsSoapRequest

Response Object
NumberToWordsSoapResponse

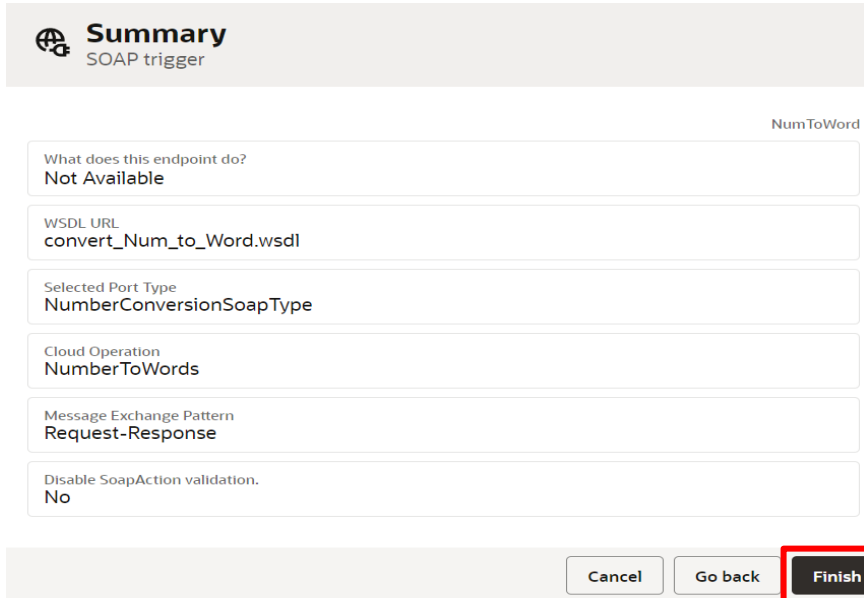
Disable SoapAction validation.
 No Yes

Step 21: After that, we need to click on Continue because we don't need to configure the Headers.

Configure Headers SOAP trigger

Configure Headers
Headers are optional elements that pass extra information about your application requirements. For Example, the Header element can be used to specify digital signature for password protected services.
Do you want to configure headers for this Endpoint?
 No Yes

Step 22: After that, we need to review the summary of the Integration and click on the Finish Button.



Summary
SOAP trigger

NumToWord

What does this endpoint do?
Not Available

WSDL URL
convert_Num_to_Word.wsdl

Selected Port Type
NumberConversionSoapType

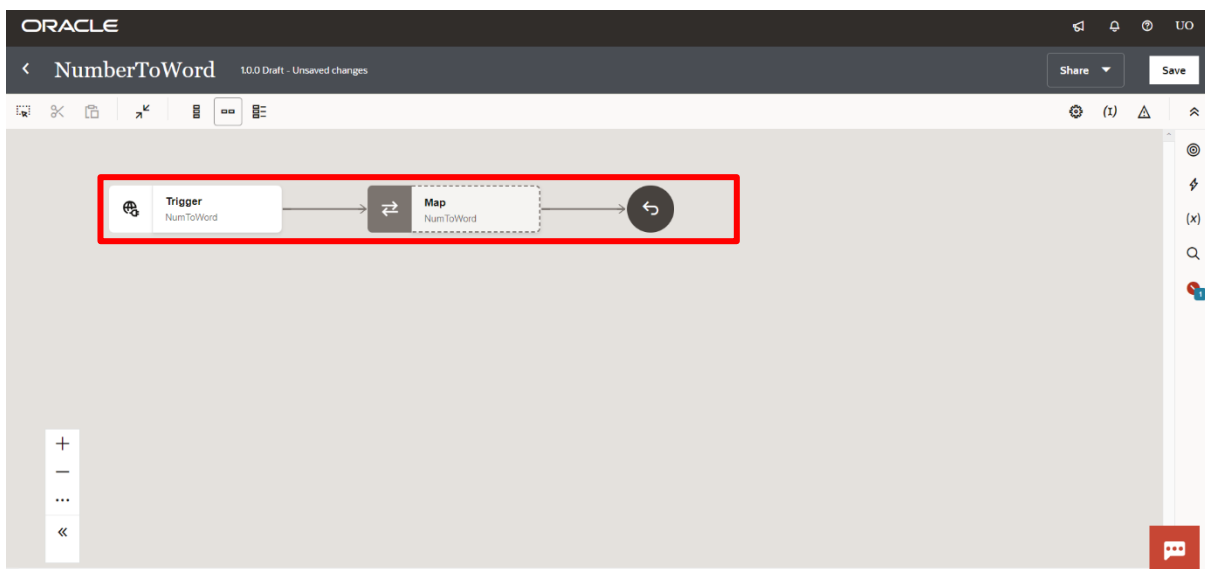
Cloud Operation
NumberToWords

Message Exchange Pattern
Request-Response

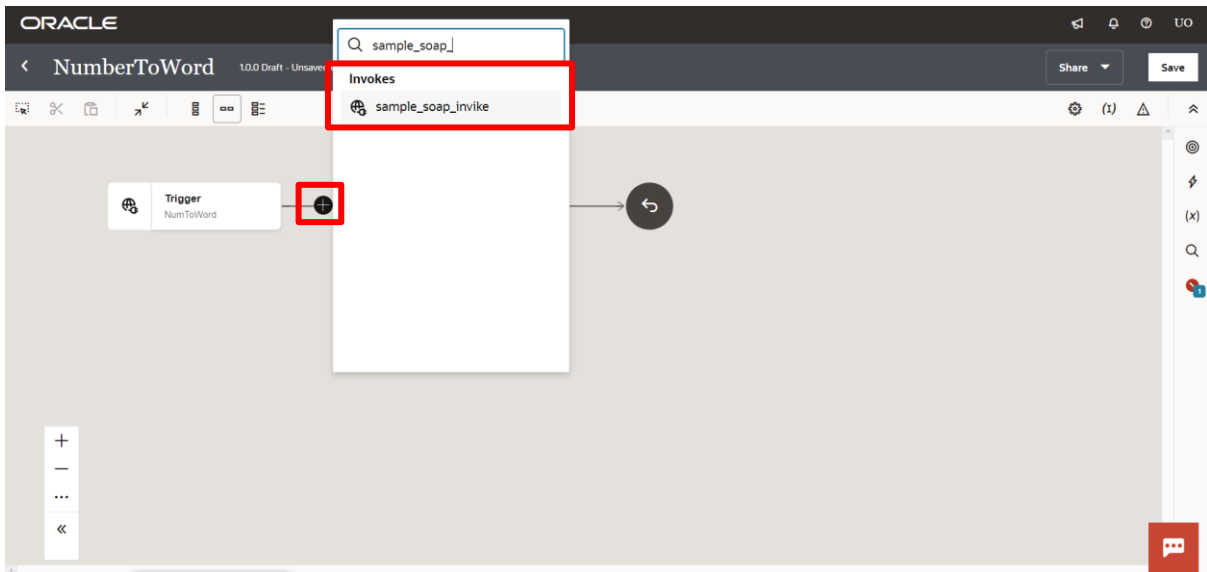
Disable SoapAction validation.
No

Cancel Go back **Finish**


Step 23: After clicking on the finish button one Trigger connector and Map will be created.



Step 24: After that, we need to add the SOAP_Invoke connector in between the SOAP Trigger and the Mapper to invoke external Soap service.



Step 25: After choosing the connector we need to give some name to the required field and click on the Continue button.

 **Configure Basic Info**
SOAP invoke

What do you want to call your endpoint?
InvokeSoap

What does this endpoint do?

Cancel **Continue**

Step 26: After that, we need to Select the Port “NumberConversionSoap” and Select the Operation “NumberToWord” and click on the Continue Button.

Configure Operations

SOAP invoke

Selected Service
NumberConversion

Select the Port
NumberConversionSoap

Select the Operation
NumberToWords

Request Object
NumberToWordsSoapRequest

Response Object
NumberToWordsSoapResponse

Step 27: After that, we need to click on Continue because we don't need to configure the Headers.

Configure Headers

SOAP invoke

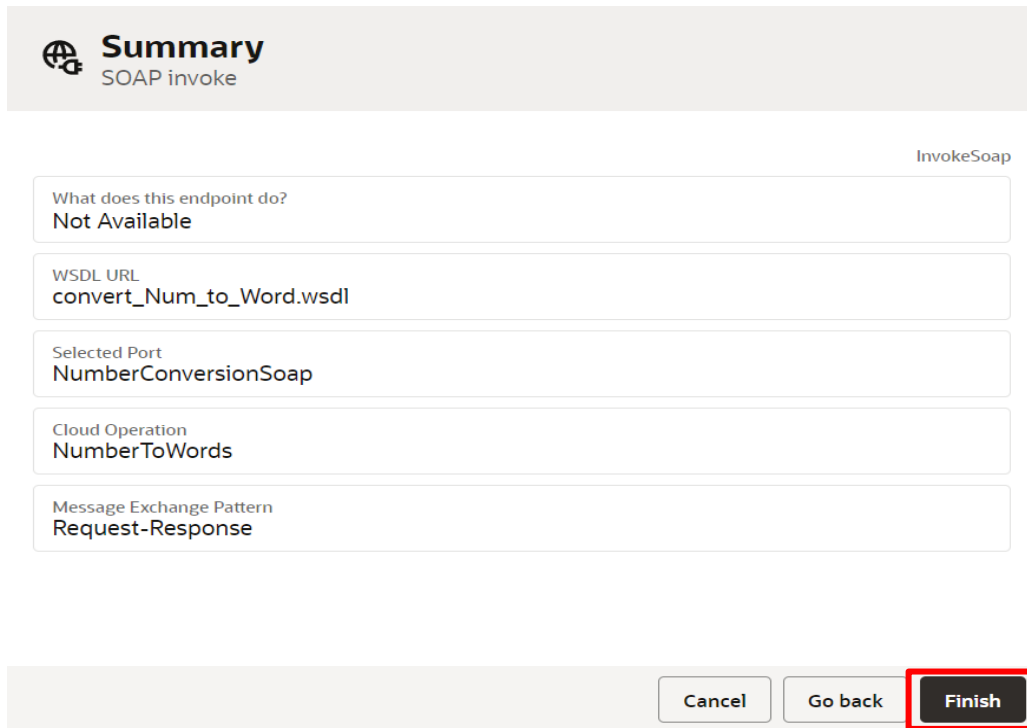
Configure Headers

Headers are optional elements that pass extra information about your application requirements. For Example, the Header element can be used to specify digital signature for password protected services.

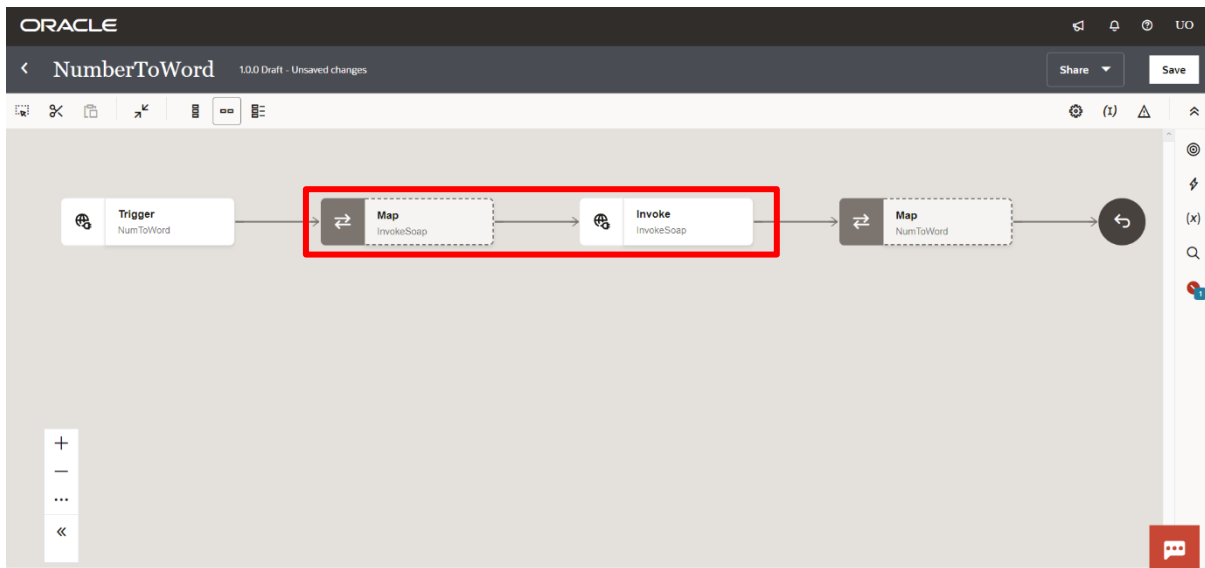
Do you want to configure headers for this Endpoint?

No Yes

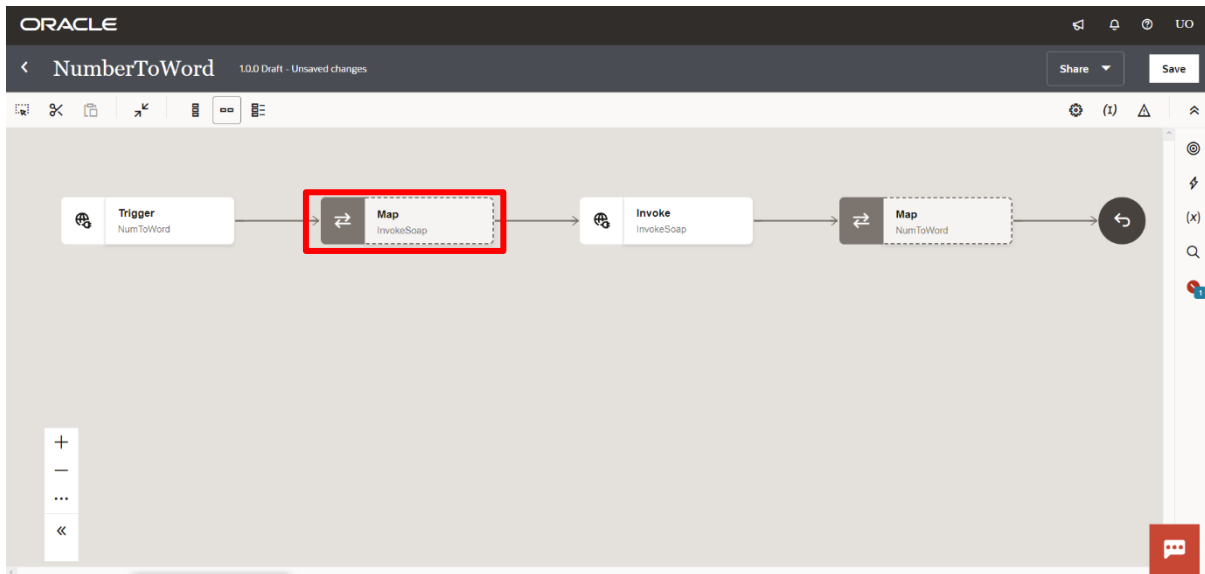
Step 28: After that, we need to review the summary of the Integration and click on the Finish Button.



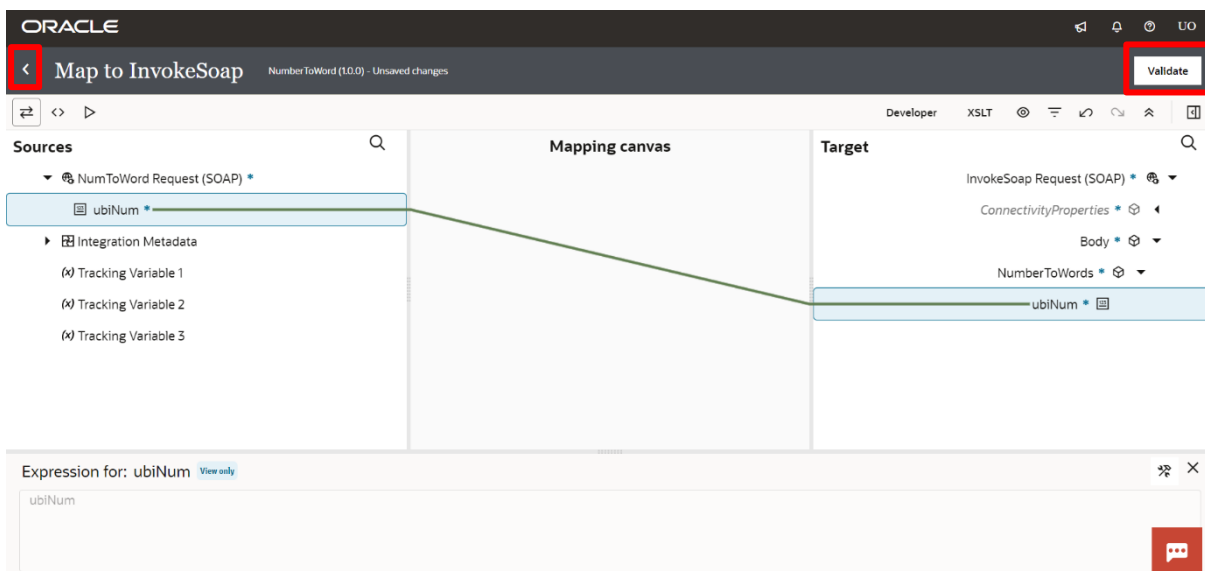
Step 29: After clicking on the finish button, one Invoke connector and Map will be created.



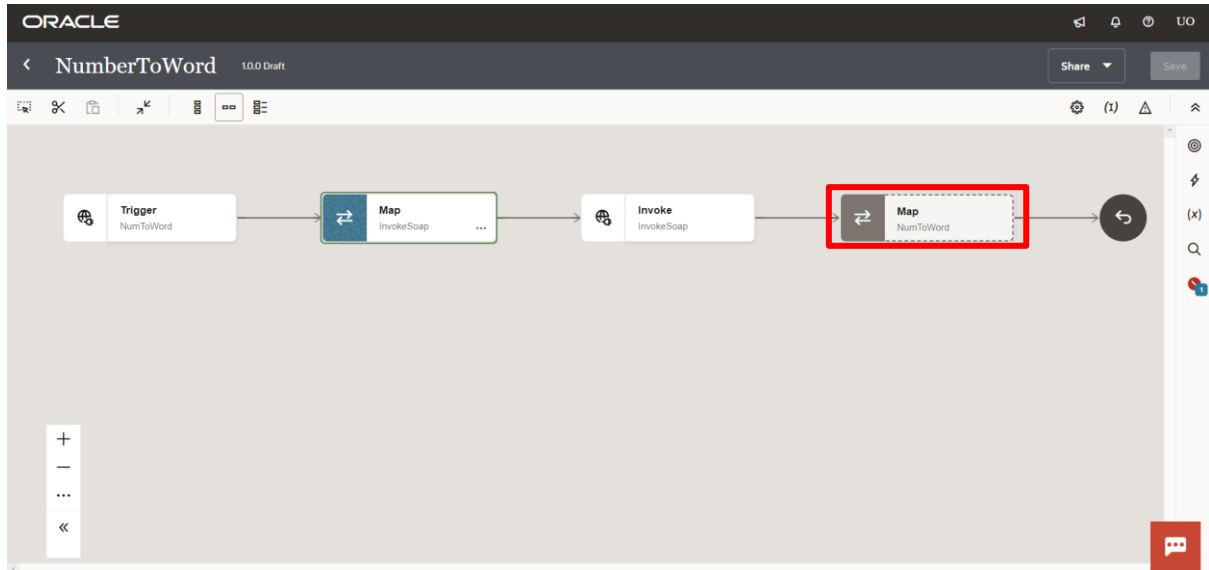
Step 30: Now we need to configure the first map shape, for that we need to double click on the map.



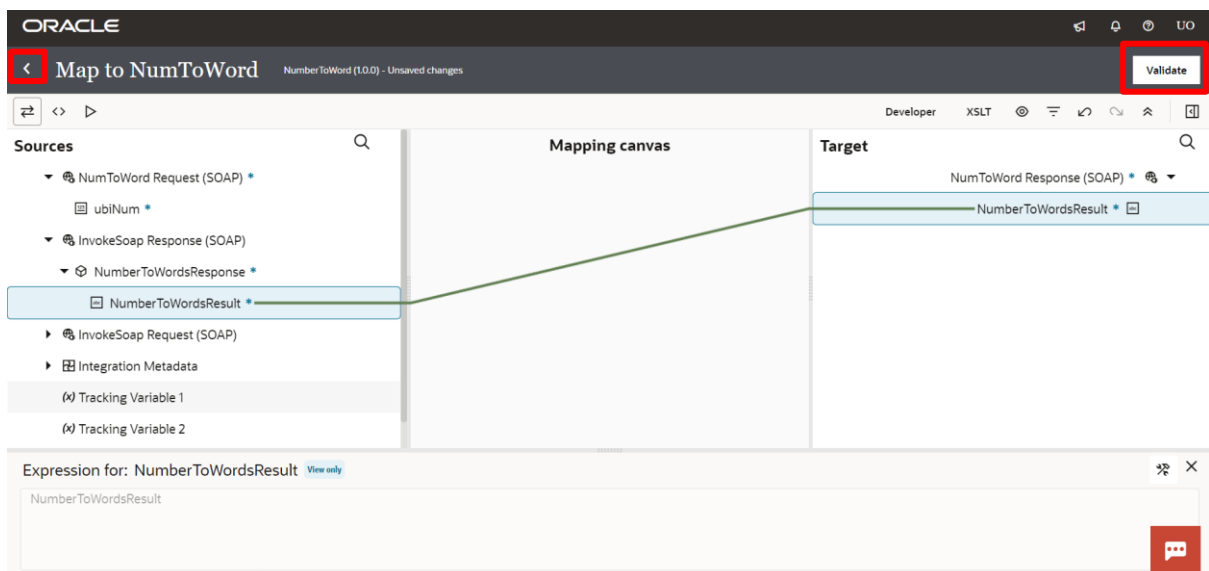
Step 31: After that, we need to map the source “ubiNum” with the target “ubiNum” and click on the Validate button and at last click on the left arrow to close the map.



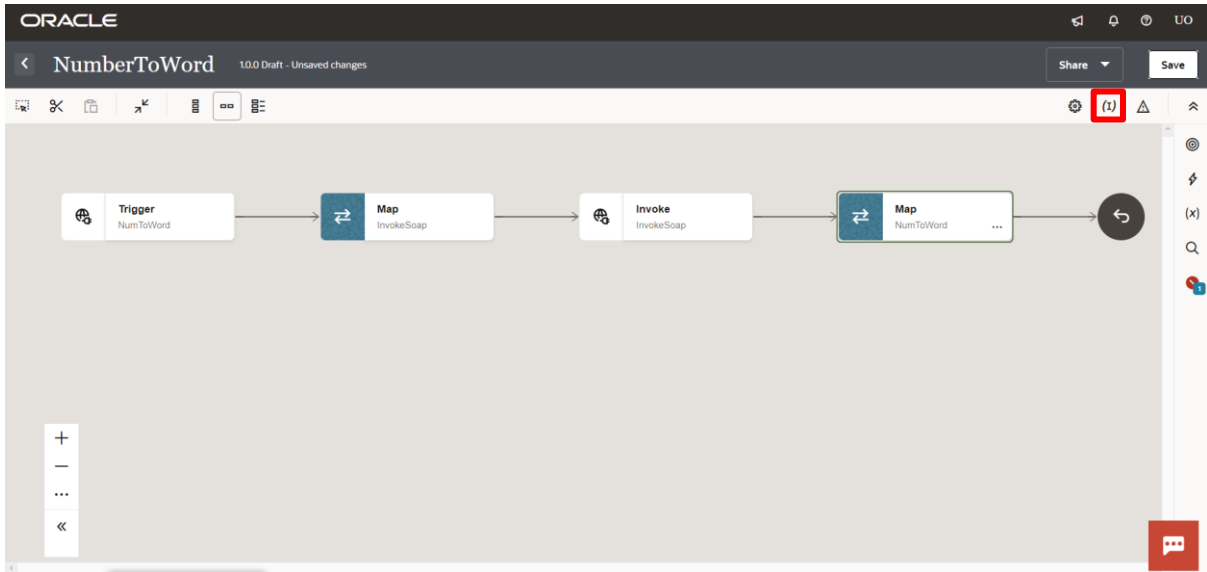
Step 32: After that, we need to configure the second map shape, for that, we need to double-click on the map.



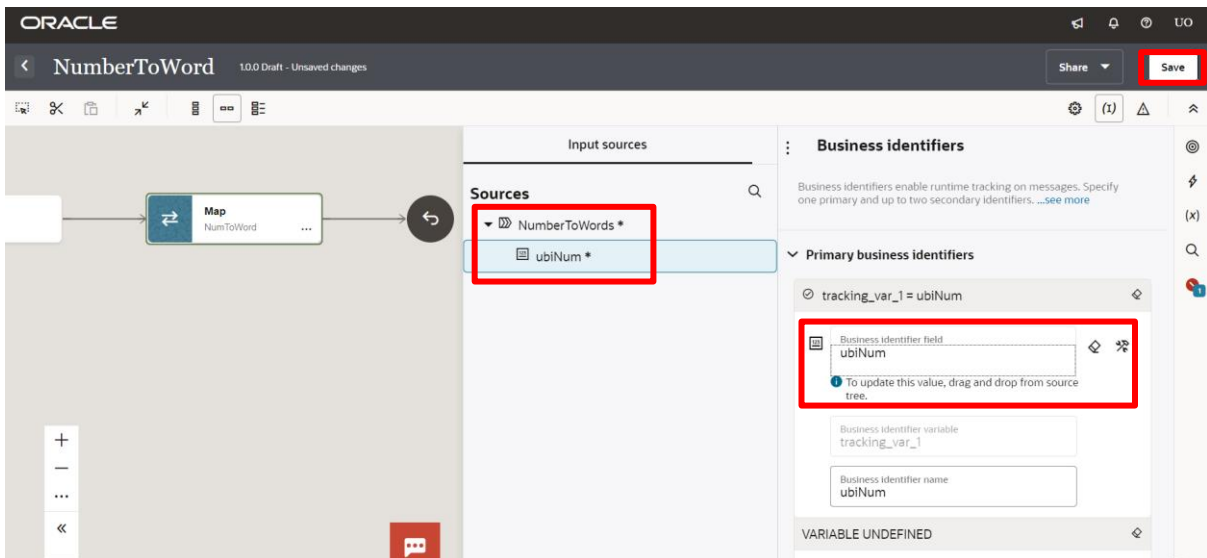
Step 33: After that, we need to map the source Soap Response “NumberToWordsResult” with the target “NumberToWordsResult” and click on the Validate button and at last click on the left arrow to close the map.



Step 34: Our Integration is completed now we need to set the Business Identifier, for that we need to click on the (I) button.



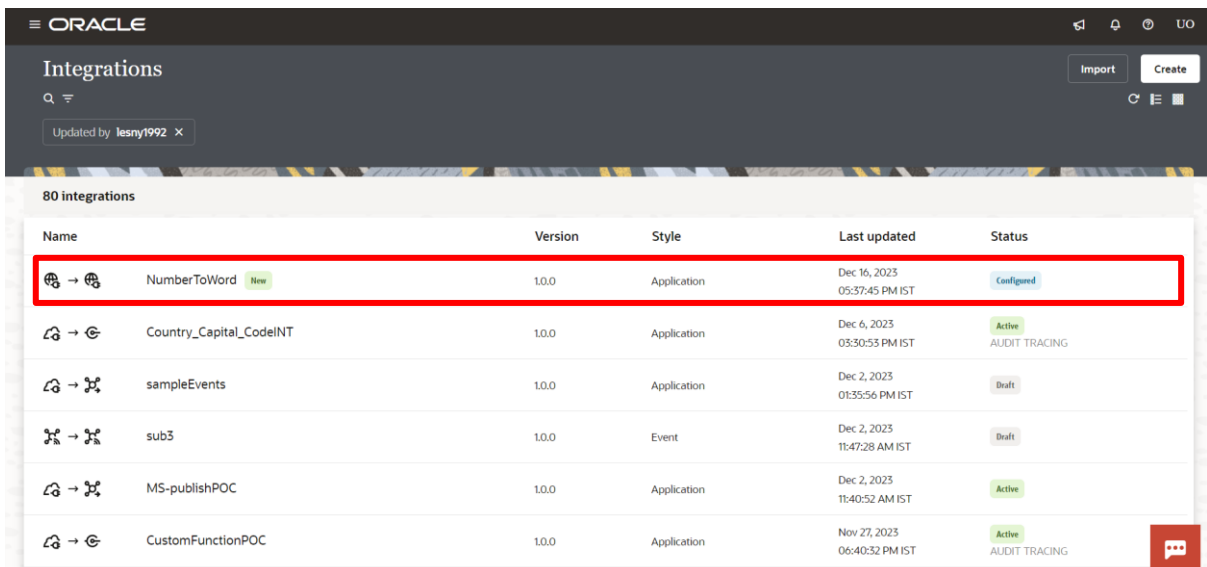
Step 35: After that, we need to drag the “uniNum” from the source side and paste it in the Business Identifier field, and click on the save button.



Step 36: After that, we need to click on the left arrow to close our Integration.



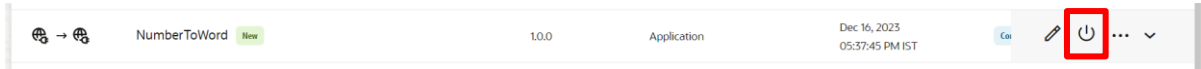
Step 37: Our Integration is in the Configured stage, after that, we need to activate our Integration.



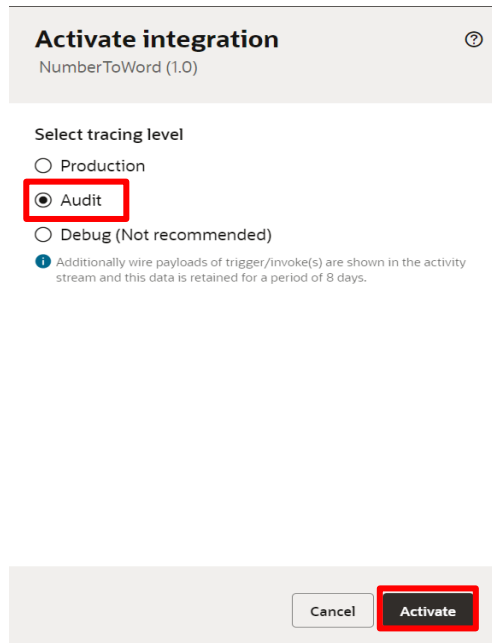
The screenshot shows the Oracle Integrations list. The 'NumberToWord' integration is highlighted with a red box, indicating it is in the 'Configured' status. The table below shows the details of the integrations.

Name	Version	Style	Last updated	Status
NumberToWord New	1.0.0	Application	Dec 16, 2023 05:37:45 PM IST	Configured
Country_Capital_CodelNT	1.0.0	Application	Dec 6, 2023 03:30:53 PM IST	Active AUDIT TRACING
sampleEvents	1.0.0	Application	Dec 2, 2023 01:35:56 PM IST	Draft
sub3	1.0.0	Event	Dec 2, 2023 11:47:28 AM IST	Draft
MS-publishPOC	1.0.0	Application	Dec 2, 2023 11:40:52 AM IST	Active
CustomFunctionPOC	1.0.0	Application	Nov 27, 2023 06:40:32 PM IST	Active AUDIT TRACING

Step 38: To activate our Integration we need to hover over the Integration and click on the power button.



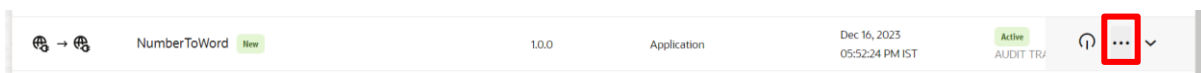
Step 39: In this Activate integration page we need to select the Audit and click on the Activate button.



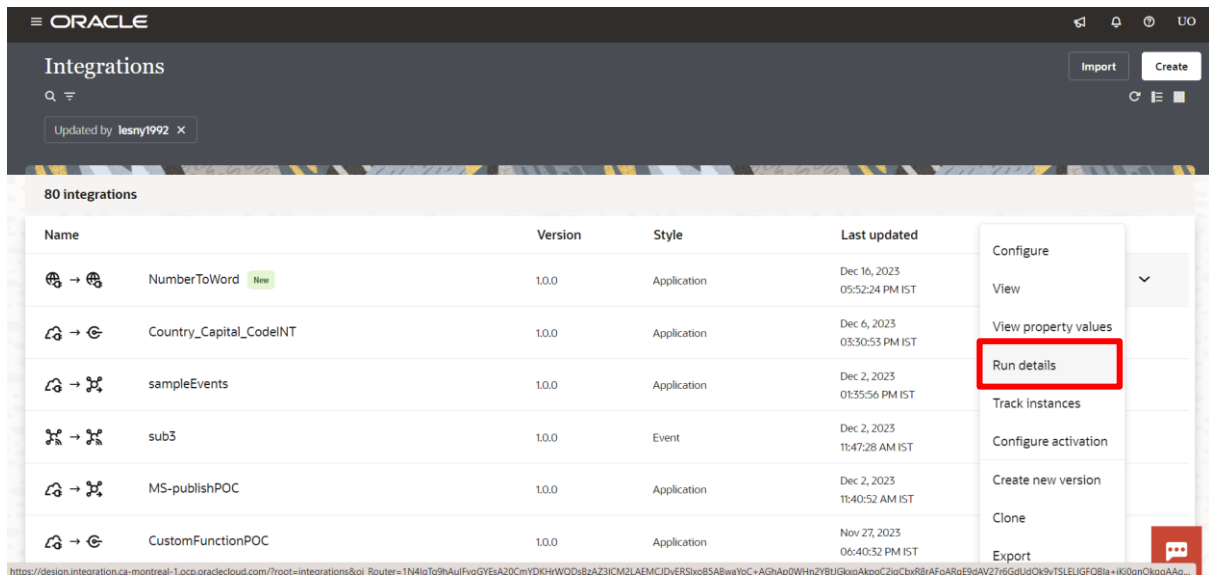
Step 40: After that, we can see our Integration is in the Active stage.



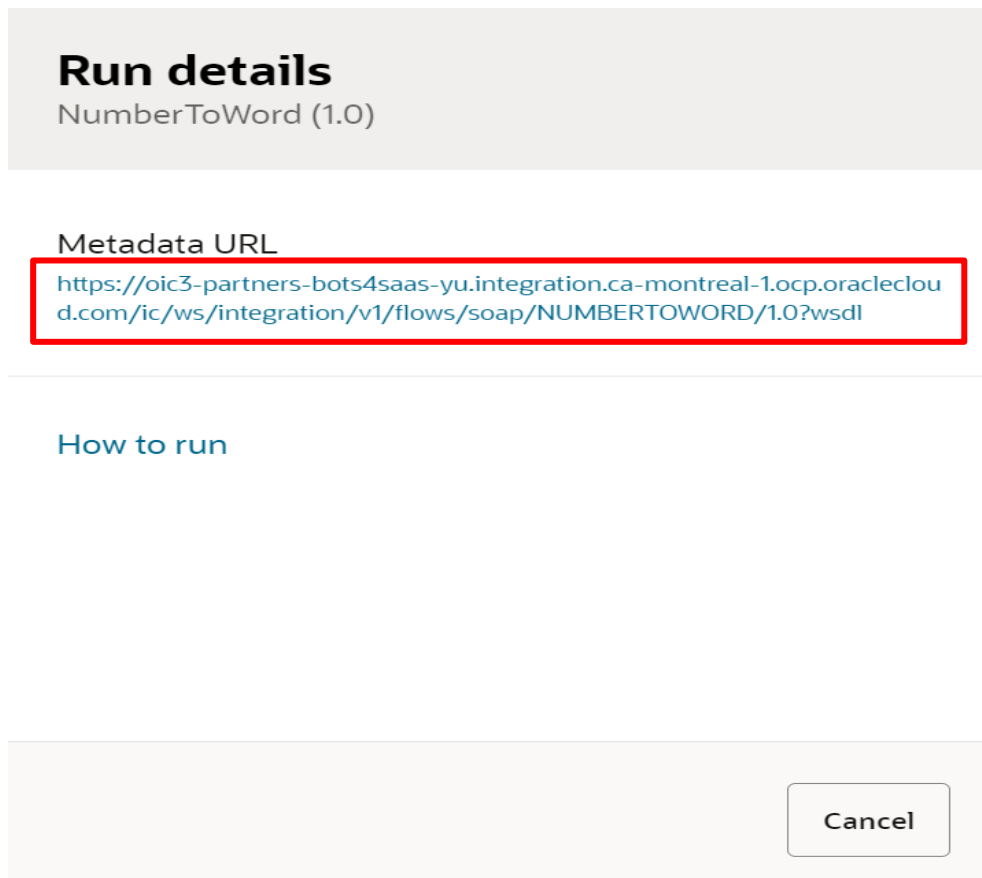
Step 41: After that, we need to hover over the Integration and click on the three dots.



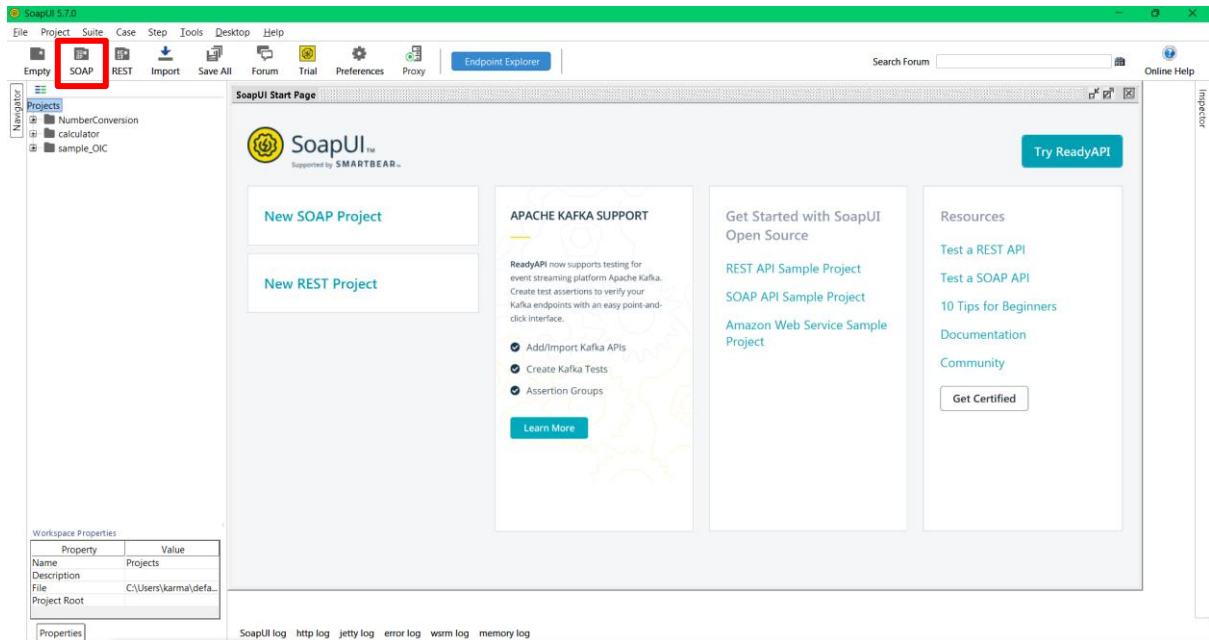
Step 42: After that, we need to click on the “Run details” button.



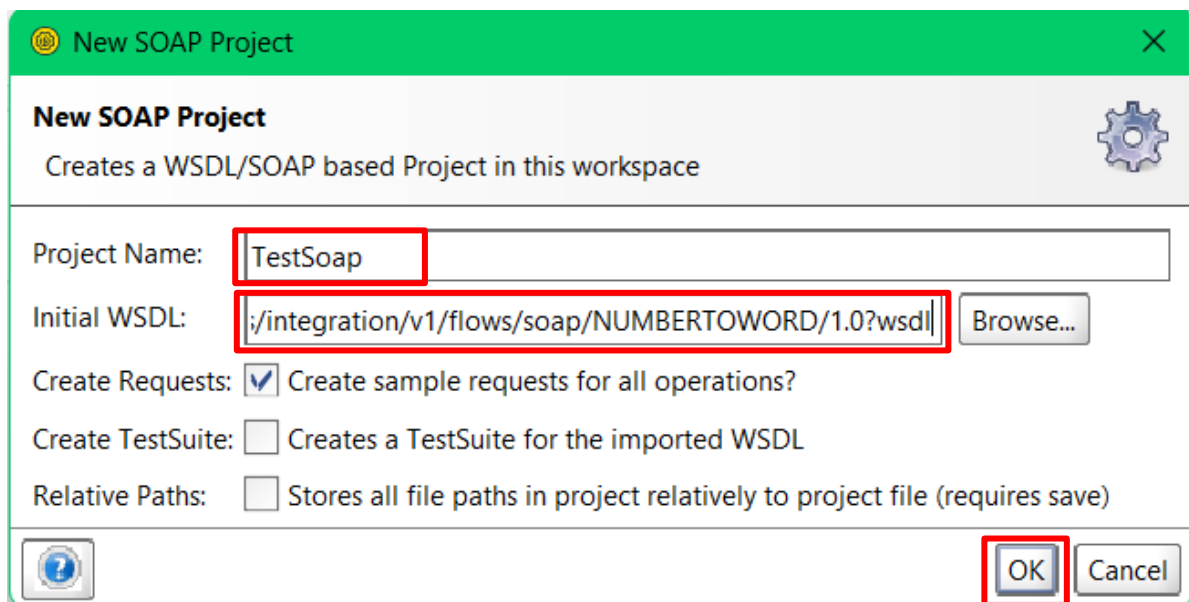
Step 43: In this Run details page we need to copy the Metadata URL.



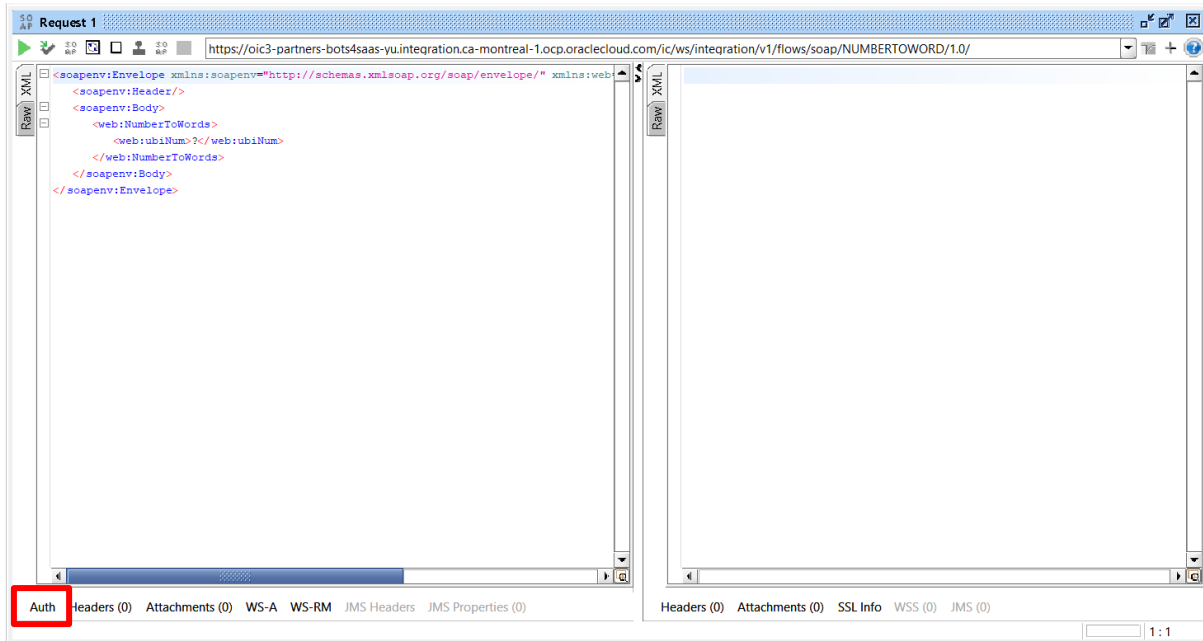
Step 44: Now we need to open the SoapUI application to test our SOAP API. We need to click on the SOAP button.



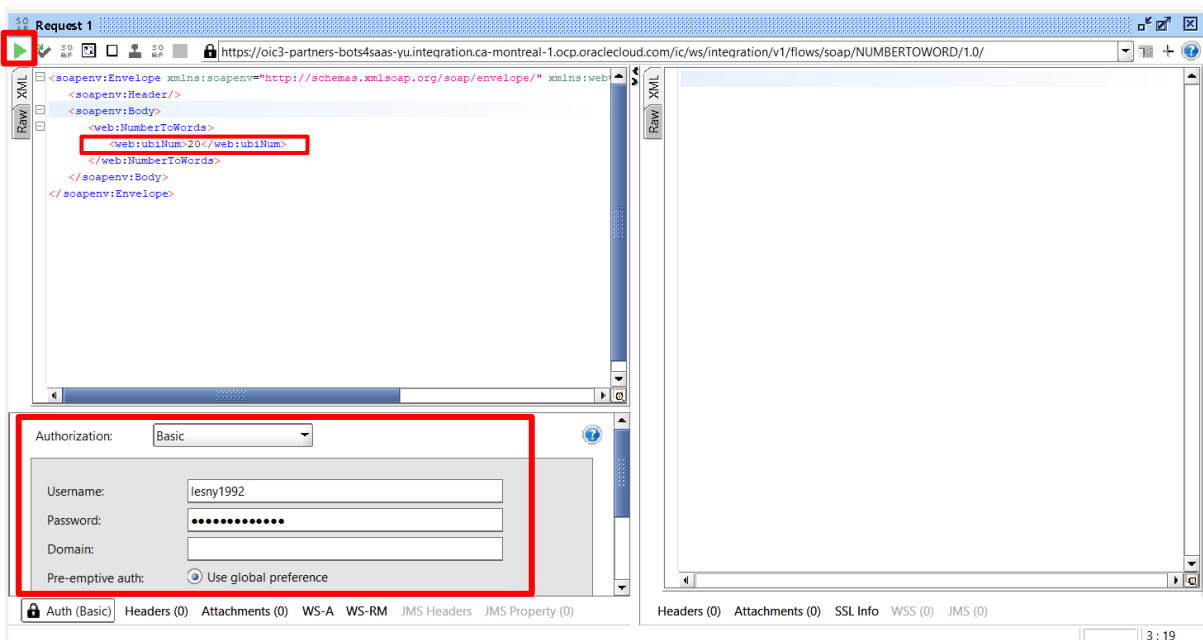
Step 45: Now on this New SOAP Project tab we need to give a Project Name and Initial WSDL (metadata URL that we copied previously) and click on the OK button.



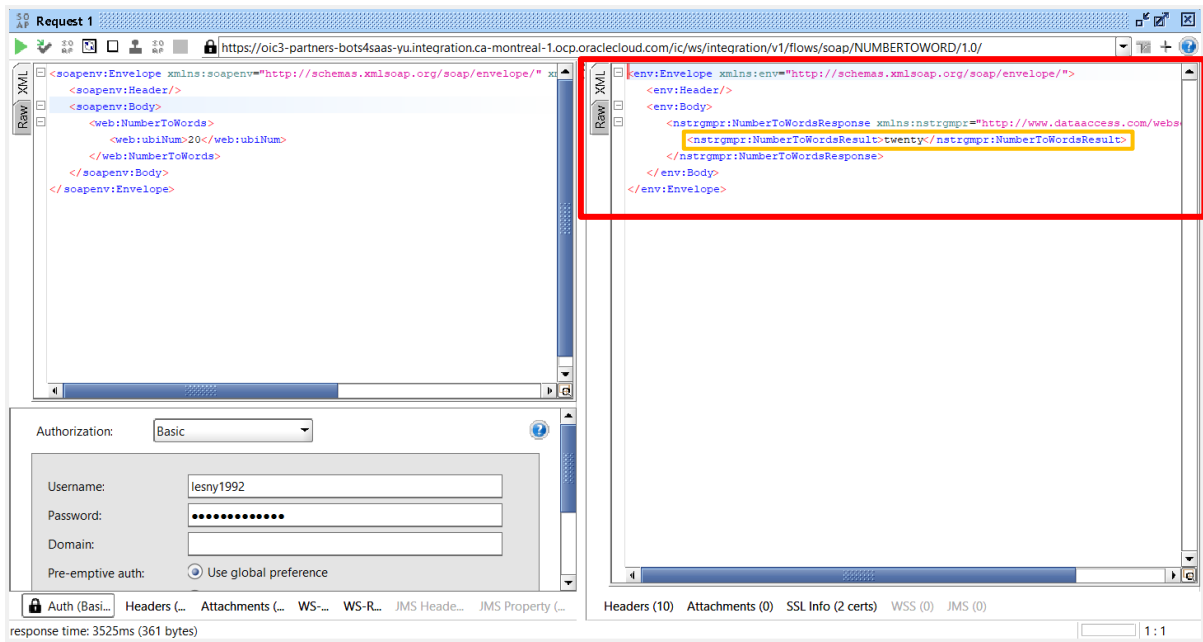
Step 46: After that, we will get a tab like this, now we need to give the Auth details to run our SOAP API.



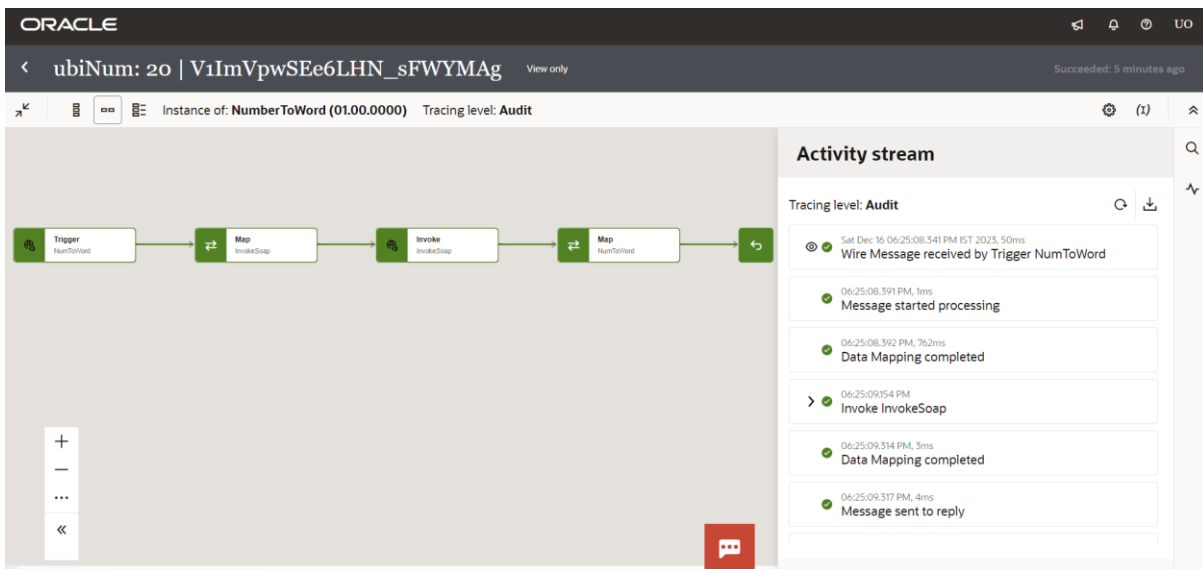
Step 47: Now we need to select the Authorization as Basic, give the Username and Password, and give any number to the SOAP request and click on the Play button.



Step 48: After hitting the Run button we will get the required Response.



Step 49: We can see the Instance also in the OIC console.



Thank You



TGH

Making Integrations Simpler

TGH Software Solutions Pvt. Ltd.

www.techygeekhub.com

At TGH, we specialize in driving digital transformation through seamless Integration Technologies.

Operating as an INTEGRATION FACTORY, we serve as a one-stop shop for all your integration needs. Our expert team is well-versed in enterprise software and legacy system integration, along with leading iPaaS technologies like Boomi, MuleSoft, Workato, OIC, and more.

We're committed to enhancing business processes and solving problems through our integration expertise.



Email address

connect@techygeekhub.com



Phone number

+ 011-40071137
+ 91-8810610395



Our offices

Noida Office

iThum
Plot No -40, Tower A,
Office No: 712,
Sector-62, Noida,
Uttar Pradesh, 201301

Hyderabad Office

Plot no: 6/3, 5th Floor,
Techno Pearl Building,
HUDA Techno Enclave,
HITEC City, Hyderabad,
Telangana 500081

