

Vertex Tax Links for S/4HANA Cloud – Configuration Guide

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PURPOSE

The purpose of this document is to describe the general configuration steps required to manually set up the integration for SAP S/4HANA Cloud with Vertex. It also covers how to configure logging and view log files.

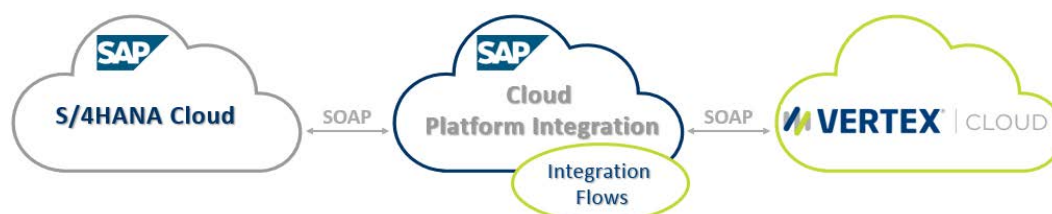
This document supplements the SAP S/4HANA Integration Guide which covers the steps needed to import the Vertex package as well as configure your S/4HANA Cloud system to call the Vertex Tax Integration Flows.

OVERVIEW

The Vertex integration flows are designed to integrate SAP S/4HANA Cloud with Vertex solutions for tax calculation, posting and jurisdiction determination.

This package runs on the SAP Cloud Platform Integration tenant.

Transactions flow from SAP S/4HANA Cloud through the Vertex integration flows to the Vertex tax solutions using the SOAP protocol.




PREREQUISITES

Before configuring the Vertex Tax Integration Flows, please make sure the following prerequisites have been met:

1. The SAP HANA Cloud Platform Integration has been delivered.
 - a. SAP HANA Cloud Platform Integration -
<https://www.sap.com/products/hana-cloud-integration.html>
<https://cloudplatform.sap.com/index.html>
2. A Vertex tax solution has been acquired.
 - a. Vertex Cloud –
<https://www.vertexinc.com/vertex-cloud>
 - b. Vertex Indirect Tax –
<https://www.vertexinc.com/solutions/indirect-tax-solutions/sales-tax>

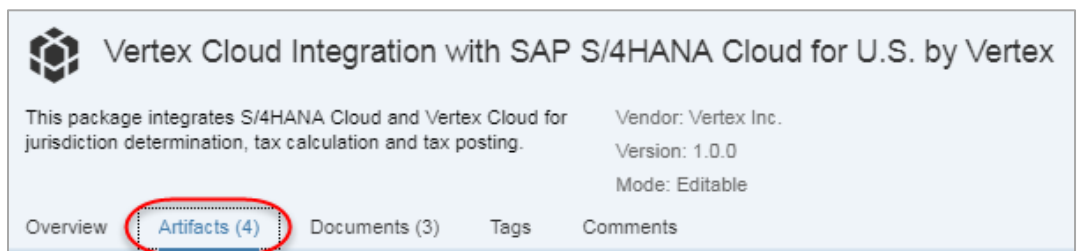
INTEGRATION FLOW CONFIGURATION


The following steps cover how to configure the integration flows to connect with the Vertex tax solutions:

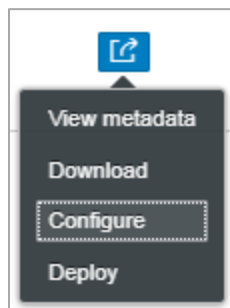
1. Refer to the SAP integration guide to import the Vertex package and configure SAP.
2. Access the WEB UI URL on your SAP Cloud Platform Integration tenant:
 - It should be in the format
https://<HCI_Tenant>.hci.us1.hana.ondemancd.com/itspaces
3. Access the Design tab (content packages)  on the left side in the navigation bar.
4. Click on the Vertex Cloud Integration with SAP S/4HANA Cloud Package.



- https://<HCI_Tenant>.hci.us1.hana.ondemancd.com/itspaces/shell/design/contentpackage/VertexTaxIntegrationFlows
5. Click on the ARTIFACTS link.



- https://<HCI_Tenant>.hci.us1.hana.ondemancd.com/itspaces/shell/design/contentpackage/VertexTaxIntegrationFlows?section=ARTIFACTS
6. Next to each iFlow, click the Actions icon  and select Configure. This will need to be done on all iFlows.




7. Under the Receiver tab, enter the web service addresses below.

Sender	Receiver
Receiver:	Vertex
Adapter Type:	SOAP
Address:	https://s4hanaconnect.vertexsmb.com/vertex-ws/services/CalculateTax70
Timeout (in ms):	60000

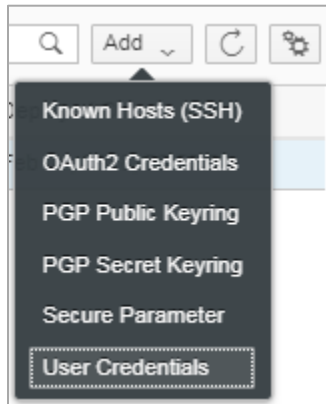
- Vertex - Calculate Taxes, Vertex - Post SAP Calculated Taxes, Vertex - Post Vertex Calculated taxes -
<https://s4hanaconnect.vertexsmb.com/vertex-ws/services/CalculateTax70>
- Vertex - Determine Jurisdiction Code -
<https://s4hanaconnect.vertexsmb.com/vertex-ws/services/LookupTaxAreas70>

8. Create a credential artifact

1. Access the Monitor tab (Operations view)  on the left side in the navigation bar.
2. Access the Security Material tile under the Manage Security heading.



3. Select Add (Security Material) on the top right of the screen and select User Credentials in the list.



4. Add the following and click Deploy when finished:

Name	vertexinc_qa (or vertex_prd, depending on iFlow)
Description	Vertex Web Service Credentials
User	Vertex Cloud trusted id, provided by Vertex
Password	(leave blank)
Repeat password	(leave blank)
SuccessFactors	Leave unchecked

The screenshot shows a dialog box titled "Add User Credentials". It contains the following fields and controls:

- *Name: vertexinc_qa
- Description: Vertex Web Service Credentials
- *User: (empty)
- Password: (empty)
- Repeat Password: (empty)
- SuccessFactors
- Buttons: Deploy, Cancel

NOTE: The name vertexinc_* must be in lower case**

You are now ready to test the integration

INTEGRATION ENDPOINTS

There are 8 Vertex iFlows supplied, 4 for QA/Test and 4 for PROD. These will need to be entered during the SAP S/4HANA configuration steps for the communication arrangement outlined in SAP Note 2598888:

Outbound Services	
▼ Determine Tax Jurisdiction Codes	Download WSDL Check Connection
Service Status: <input checked="" type="checkbox"/> Active	Path: <input type="text" value="/cxf/VertexDetermineJurisdictionQA"/>
Application Protocol: SOAP	Service URL: <input type="text" value="https://[REDACTED]-ffimap.hcisbt.us1.hana.ondemar"/>
Port: <input type="text" value="443"/>	
<hr/>	
▼ Calculate Taxes	Download WSDL Check Connection
Service Status: <input checked="" type="checkbox"/> Active	Path: <input type="text" value="/cxf/VertexCalculateTaxQA"/>
Application Protocol: SOAP	Service URL: <input type="text" value="https://[REDACTED]-ffimap.hcisbt.us1.hana.ondemar"/>
Port: <input type="text" value="443"/>	
<hr/>	
▼ Update Tax Documents	Download WSDL Check Connection
Service Status: <input checked="" type="checkbox"/> Active	Path: <input type="text" value="/cxf/VertexUpdateTaxQA"/>
Application Protocol: SOAP	Service URL: <input type="text" value="https://[REDACTED]-ffimap.hcisbt.us1.hana.ondemar"/>
Port: <input type="text" value="443"/>	
<hr/>	
▼ Force Update Tax Documents	Download WSDL Check Connection
Service Status: <input checked="" type="checkbox"/> Active	Path: <input type="text" value="/cxf/VertexForceTaxQA"/>
Application Protocol: SOAP	Service URL: <input type="text" value="https://[REDACTED]-ffimap.hcisbt.us1.hana.ondemar"/>
Port: <input type="text" value="443"/>	


The example above shows the configuration for the QA system. The Production system would have PRD at the end of each path.

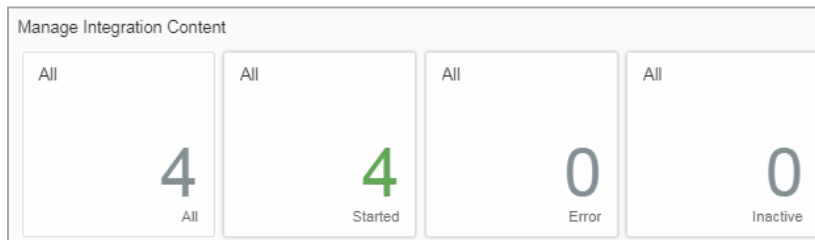
CHANGING LOGGING LEVEL FOR MORE LOG DETAIL

The default Log Level for integrations flows is set to Info. This will give the least detail but provide the fastest performance.

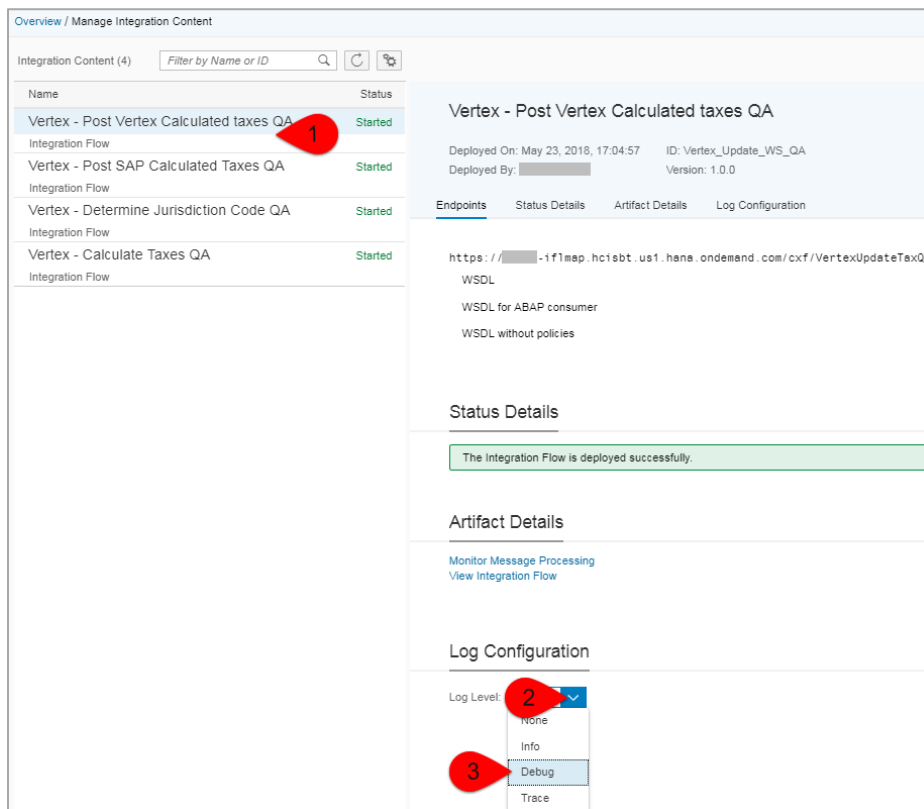
If more detail is required Vertex recommends setting the Log Level to Debug. This will allow the Message Processing Log (MPL) to capture more information from the Vertex iFlows. Processing steps, error locations and other logging tasks are not visible until the Debug level is chosen. This aids in troubleshooting failed or erroring requests and provides Vertex Support more information to help determine where the issue may be located.

The following steps detail how to change the Log Level for the Vertex iFlows to Debug:

1. Access the WEB UI URL on your SAP Cloud Platform Integration tenant:
 - It should be in the format https://<HCI_Tenant>.hci.us1.hana.ondemand.com/itspaces
2. Access the Monitor tab (Operations view)  on the left side in the navigation bar.
3. Select the 1st "All Integration Flows" tile under Manage Integration Content:



4. Select each of the 4 or 8 integrations and change the Log Level to Debug:



Overview / Manage Integration Content

Integration Content (4)

Name	Status
Vertex - Post Vertex Calculated taxes QA Integration Flow	Started
Vertex - Post SAP Calculated Taxes QA Integration Flow	Started
Vertex - Determine Jurisdiction Code QA Integration Flow	Started
Vertex - Calculate Taxes QA Integration Flow	Started

Vertex - Post Vertex Calculated taxes QA

Deployed On: May 23, 2018, 17:04:57 ID: Vertex_Update_WS_QA
Deployed By: [redacted] Version: 1.0.0

Endpoints Status Details Artifact Details Log Configuration

https://[redacted]-1f1map.hci1sbt.us1.hana.ondemand.com/cxf/VertexUpdateTaxQA
WSDL
WSDL for ABAP consumer
WSDL without policies

Status Details

The Integration Flow is deployed successfully.

Artifact Details


Monitor Message Processing
[View Integration Flow](#)

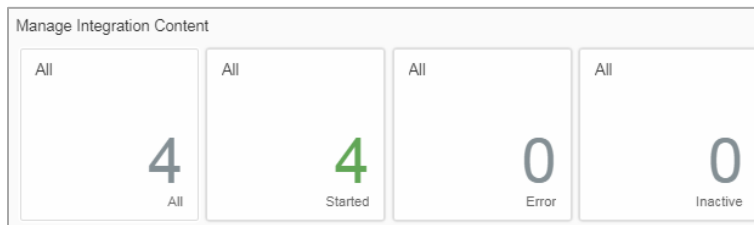
Log Configuration

Log Level: 2
None
Info
3 Debug
Trace

If the information contained in the debug logs is not enough, there is still one more log level to use, Trace. This level gets every detail about a transaction including the payload throughout the call. Trace will only be enabled for 10 minutes and should not be set in a production system unless absolutely required. Processing times and tenant log storage will be affected by this log level.

THE FOLLOWING STEPS DETAIL HOW TO CHANGE THE LOG LEVEL FOR THE VERTEX IFLOWS TO TRACE:

1. Access the WEB UI URL on your SAP Cloud Platform Integration tenant:
 - It should be in the format https://<HCI_Tenant>.hci.us1.hana.ondemand.com/itspaces
2. Access the Monitor tab (Operations view)  on the left side in the navigation bar.
3. Select the 1st "All" tile under Manage Integration Content:



4. Select the integration required and set the log level to Trace:

The screenshot displays the 'Manage Integration Content' page for 'Vertex - Post Vertex Calculated taxes QA'. The page includes a table of integration flows, a search bar, and a detailed view of the selected integration. The log level is set to 'Trace'.

Name	Status
Vertex - Post Vertex Calculated taxes QA	Started
Vertex - Post SAP Calculated Taxes QA	Started
Vertex - Determine Jurisdiction Code QA	Started
Vertex - Calculate Taxes QA	Started

Vertex - Post Vertex Calculated taxes QA

Deployed On: May 23, 2018, 17:04:57 ID: Vertex_Update_WS_QA
 Deployed By: [Redacted] Version: 1.0.0

Endpoints

[https://\[Redacted\]-if1map.hcisbt.us1.hana.ondemand.com/cxf/VertexUpdateTaxQA](https://[Redacted]-if1map.hcisbt.us1.hana.ondemand.com/cxf/VertexUpdateTaxQA)

WSDL
 WSDL for ABAP consumer
 WSDL without policies

Status Details

The Integration Flow is deployed successfully.

Artifact Details

[Monitor Message Processing](#)
[View Integration Flow](#)


Log Configuration

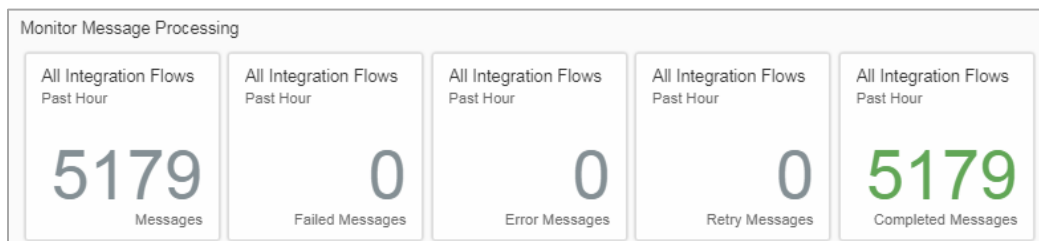
Log Level: **Trace**

VIEWING LOG FILES

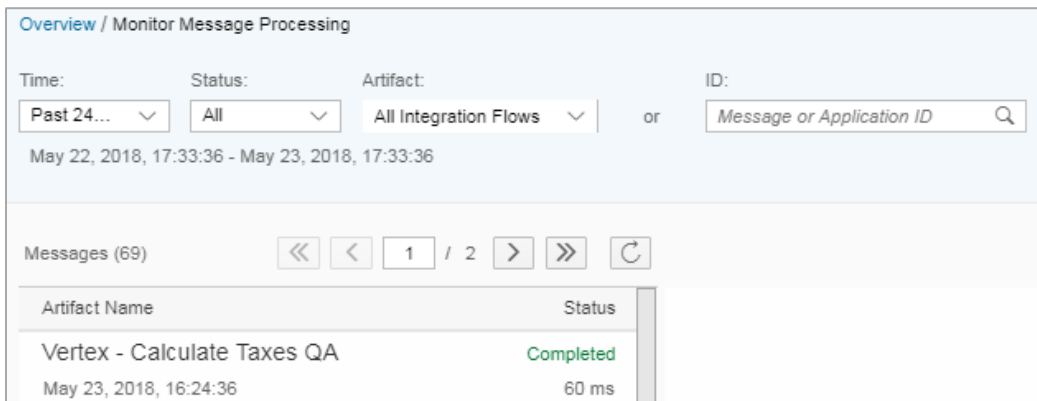
The vertex iFlows are configured with standard and enhanced logging. Standard logging includes information about the transaction as it flows through the iFlow process. Enhanced logging is available in the Message Processing Log and can only be seen when the Log Level has been set to Debug.

In order to view the Vertex Tax Links for S/4HANA Cloud logs, follow the steps below:

1. Access the WEB UI URL on your SAP Cloud Platform Integration tenant:
 - It should be in the format
https://<HCI_Tenant>.hci.us1.hana.ondemand.com/itspaces
2. Access the Monitor tab (Operations view)  on the left side in the navigation bar.
3. Select one of the tiles below (your numbers will vary):



4. Use one, or all, of the filters above to produce the transactions you want to view. Those transactions will appear on the left side.



Overview / Monitor Message Processing

Time: Status: Artifact: or ID:

May 22, 2018, 17:33:36 - May 23, 2018, 17:33:36

Messages (69) / 2

Artifact Name	Status
Vertex - Calculate Taxes QA	Completed
May 23, 2018, 16:24:36	60 ms

- Option 1:** Select one of the transactions on the left and go to the LOGS section to view the Message Processing Log (MPL). Click [Open Text View](#) on the right to view the log:

Vertex - Calculate Taxes QA Last Updated at: May 23, 2018, 16:24:36

Status
Properties
Logs

Message processing completed successfully.

Processing Time: 60 ms

Properties

Message ID: AFsFzgTzf6pxx3X0qeckr0MVRn8I
 Sender: SAP_Request_From_SAP
 Receiver: Vertex_Vertex_Request_And_Response

Artifact Name: [Vertex - Calculate Taxes QA](#)
 Artifact ID: Vertex_Calc_WS_QA
 Artifact Type: Integration Flow

Logs

[Open Text View](#)

Log Level: [Debug](#)

- If support is needed, please download the log file and have it ready to be sent. To download the log file, click the Download link in the top right of the log page:

Overview / Monitor Message Processing / Message Processing Log Attachments

[Download](#)

Artifact Name: Vertex - Calculate Taxes

Status: Completed

Processing Time: 57 ms

Last Updated at: Mar 27, 2018, 11:38:46

Log Level: Debug

Log

```

Message Processing Log:
StartTime      = Tue Mar 27 15:38:46.558 UTC 2018
StopTime       = Tue Mar 27 15:38:46.612 UTC 2018
OverallStatus  = COMPLETED
MessageGuid    = AFq62Ya9eeeRpyYYJe30EPdjtckv1
ChildCount     = 0
          
```

- Option 2:** Select one of the transactions on the left and go to the LOGS section to view the Message Processing Log (MPL). Click the Log Level ([Debug/Trace](#)) to access an interactive log. This will show execution times as well as individual tasks.

Vertex - Calculate Taxes Last Updated at: Mar 27, 2018, 11:55:22

Started At	Duration	Model Step ID	Activity	Branch ID	Actions
Mar 27, 2018, 11:55:22:356			processEvent[GetResponse]	A\Fglw\Wspgyp\Plu\12-Kq4h4000	[Icons]
Mar 27, 2018, 11:55:22:355			processEvent[ExchangeRoute]	A\Fglw\Wspgyp\Plu\12-Kq4h4000	[Icons]
Mar 27, 2018, 11:55:22:355		CallGateway_11	processEvent[ExchangeComplete]	A\Fglw\Wspgyp\Plu\12-Kq4h4000	[Icons]
Mar 27, 2018, 11:55:22:355		EndEvent_55	setProperty[SAP_MarkMessageAsFailed]	A\Fglw\Wspgyp\Plu\12-Kq4h4000	[Icons]
Mar 27, 2018, 11:55:22:353	2 ms	CallActivity_30	bean[ref:scriptprocessor method:process]	A\Fglw\Wspgyp\Plu\12-Kq4h4000	[Icons]
Mar 27, 2018, 11:55:22:353		CallActivity_30	setHeader[scriptfileType]	A\Fglw\Wspgyp\Plu\12-Kq4h4000	[Icons]
Mar 27, 2018, 11:55:22:352	1 ms	CallActivity_30	setHeader[scriptfile]	A\Fglw\Wspgyp\Plu\12-Kq4h4000	[Icons]
Mar 27, 2018, 11:55:22:351			log[set]	A\Fglw\Wspgyp\Plu\12-Kq4h4000	[Icons]
Mar 27, 2018, 11:55:22:351			processEvent[ReceivedResponse]	A\Fglw\Wspgyp\Plu\12-Kq4h4000	[Icons]
Mar 27, 2018, 11:55:22:321			processEvent[GetMessage]	A\Fglw\Wspgyp\Plu\12-Kq4h4000	[Icons]
Mar 27, 2018, 11:55:22:320	31 ms	ServiceTest_1	curl[bean:Vertex_Verfer_Request_Amt_Response]	A\Fglw\Wspgyp\Plu\12-Kq4h4000	[Icons]

- To view an individual task, click on the View step details icon on the right.
- From here you can view the properties and message content:

Overview / Monitor Message Processing / [Message Processing Run](#) / Step

Vertex - Calculate Taxes - CallActivity_3 Started At Mar 27, 2018, 11:55:22.308

Properties Configuration

Step Id: bean1060
Started At: Mar 27, 2018, 11:55:22.308
Duration: 2 ms

Key	Value
Description	Processing exchange ID-vsa3781131-40705-1521290012600-90-51 in bean[ref:scriptprocessor method:process]
VtxLog5_Line2_A	Item #: 000002
VtxLog5_Line2_B	Ship-To: CO00000000
VtxLog7	Return Message
VtxLog5_Line2_E	Gross Amt: 90000
VtxLog5_Line2_F	Freight Amt: 0
VtxLog5_Line1_G	-----

- The Key and Value columns show what headers and properties were set during this step

- If viewing the message content, you can also download the payload by using the Download link on the right

Overview / Monitor Message Processing / Message Processing Run / Step

Vertex - Calculate Taxes - CallActivity_34 Started At Mar 27, 2018, 11:31:19.872

Properties **Message Content (Before)** Configuration

Header

Name	Value
connection	keep-alive
Content-Type	text/xml;charset=UTF-8
Date	Tue, 27 Mar 2018 15:31:19 GMT
org.apache.cxf.headers.Header list	[]
ResponseContext	{org.apache.cxf.interceptor.DocLiteralInInterceptor.DocLiteralInInterceptor keep-parameters-wrapper=true, javax.xml.ws.wsdl.port={http://xi.com/orange}MessageFlow_2, org.apache.cxf.service.model.MessageInfo=[MessageInfo OUTPUT: {http://camel.apache.org/cxfjaxws/dispatch}invokeResponse], org.apache.cxf.client=true, schema-validation-enabled=NONE, org.apache.cxf.message.inbound=true, org.apache.cxf.message.Message.PROTOCOL_HEADERS={connection=[keep-alive], Content-Length=[11662], content-type=[text/xml;charset=UTF-8], Date=[Tue, 27 Mar 2018 15:31:19 GMT], Server=[], SOAPAction=[]}, Vary=[Accept-Encoding]}, soap.body.ns.context=[soapenv=http://schemas.xmlsoap.org/soap/envelope/], javax.xml.ws.wsdl.service={http://camel.apache.org/cxfjaxws/dispatch}DefaultSEIService, org.apache.cxf.ws.policy.AssertionInfoMap={}, org.apache.cxf.binding.soap.SoapVersion=org.apache.cxf.binding.soap.Soap11@761904e5, org.apache.cxf.message.Message.ENCODING=UTF-8, javax.xml.ws.wsdl.interface={http://camel.apa... (Header value was trimmed off. Max. value size is: 1000)}
SAP_MessageProcessingLogID	AFq6Y8emY0A4bEU9TuwC0mrCZ8a_
scriptFile	logger.groovy
scriptFileType	groovy
Server	
Vary	Accept-Encoding

Payload

[Download](#)

```
<VertexEnvelope xmlns="urn:vertexinc:o-series:tps:7.0" xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-ir
<Password/>
</Login>
<QuotationResponse documentDate="2018-08-01" returnGeneratedLineItemsIndicator="true" transactionType="SALE"><Currency isoCurrencyCodeAlpha="USD" isoCu
<Seller><Company>test</Company>
</Seller>
```

- The Header section contains the headers during that particular step.
- The Payload section will contain the message payload, or in our case above, the XML request to Vertex.