

PUBLIC

## Leverage SAP Cloud Platform Integration Suite in Your SAP S/4HANA Journey DT268

Exercises / Solutions  
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## INTRODUCTION

This hands-on has been divided into two parts.

In the first part, aimed to bring you familiarity on how SAP S/4HANA Cloud supports integration and extension. You will go through the steps required to explore the SAP API Business Hub with the whitelisted APIs for the SAP solutions. You will activate and expose the API(s) in SAP S/4HANA Cloud and consume them in a 3<sup>rd</sup> party tool, in this case Microsoft Excel. Participants will work with the Purchase Order OData API.

In the second part, is meant to help you understand how SAP Cloud Platform Integration Suite supports in accelerating your integration journey. We have provided you with exercises to explore the integration suite capabilities of SAP Cloud Platform. This enterprise-grade integration platform on cloud from SAP helps you to connect the applications in your IT landscapes. It helps you in creating rich, and contextualized experiences for your employees, customers and partners.

Learn more: [Product Overview Video](#) and [Solution Brief](#)

## PREREQUISITES

1. [Get an SAP Account and get access to Free Trial Account on SAP Cloud Platform](#)

You will need an SAP account to access the SAP API Business Hub which is used across exercises in this hands-on.

2. You will need Microsoft Excel for the exercise 4 of this hands-on.

3. Enable your SAP Cloud Platform Integration Suite trial account as you get started. This will save time as you move to exercise 5 to explore the integration capabilities that accelerate your vision to provide connected experience.

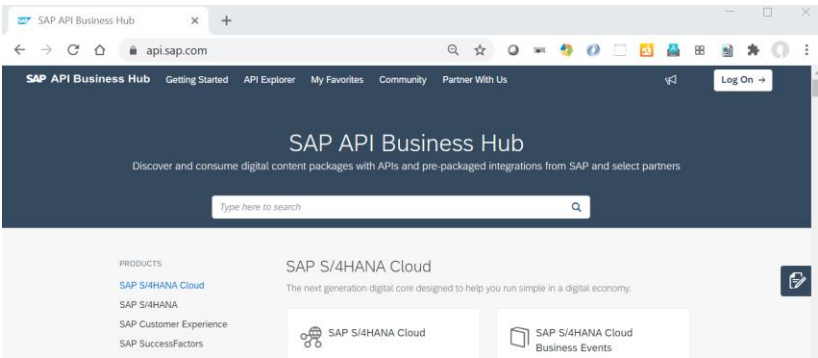

Follow the steps provided in this tutorial: [Set Up Integration Suite Trial](#)

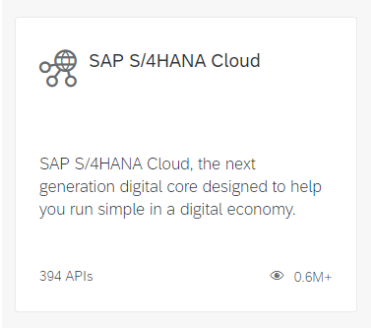
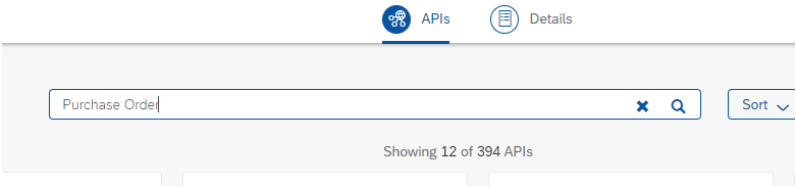
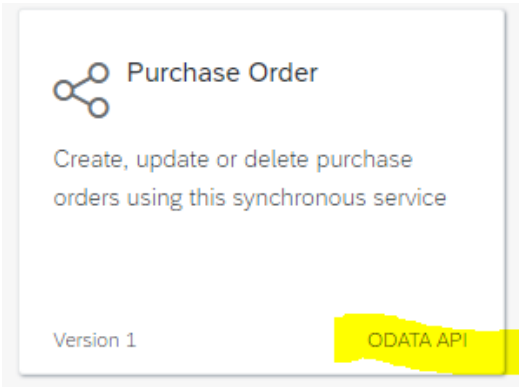
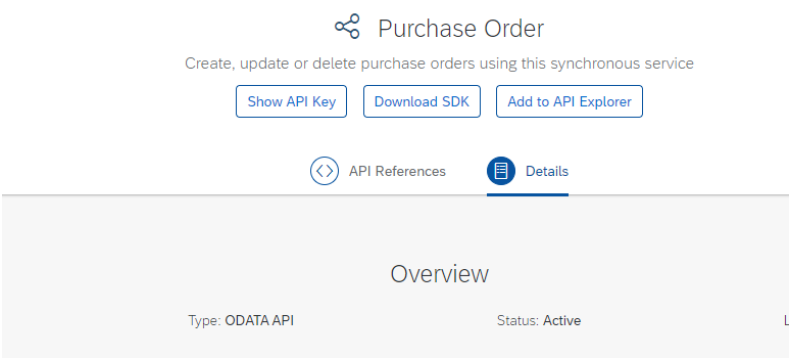
PART 1: INTEGRATE AND EXTEND SAP S/4HANA CLOUD

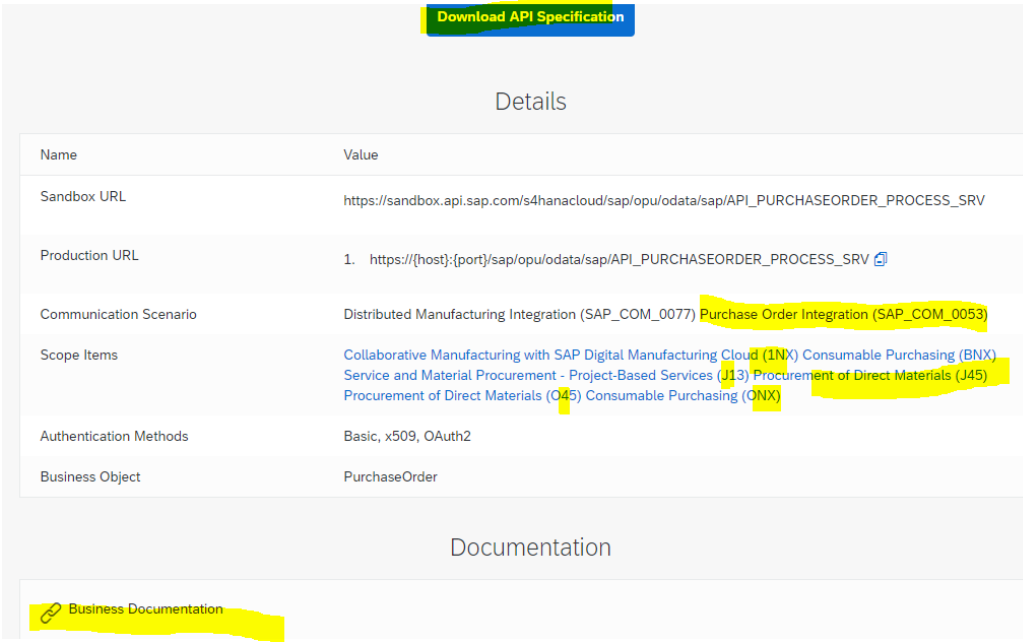
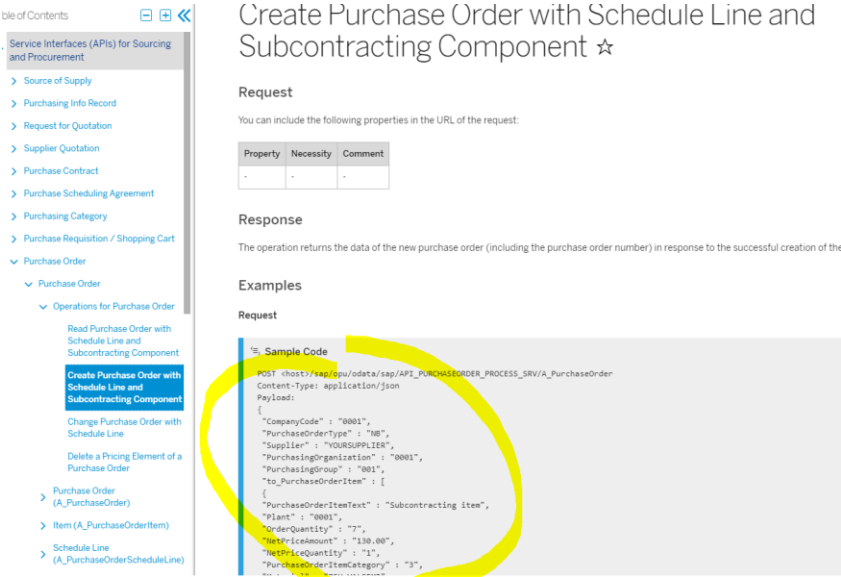
EXERCISE 1: USING SAP API HUB TO TEST APIS WITH SAP SANDBOX SYSTEM

SAP API Business Hub is the catalog to explore, learn about, and consume the ever increasing number of integration content from SAP and selected partner. The repository of content governed and by SAP, it is always up to date.

The API Hub accelerates productivity and easy consumption of APIs by offering a comprehensive and environment for application and integration developers.

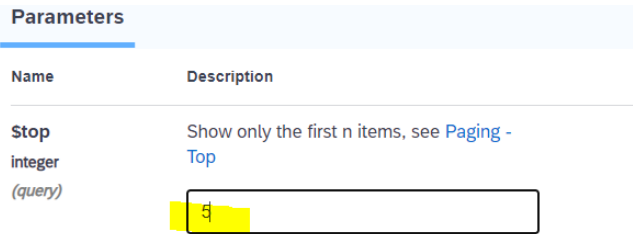
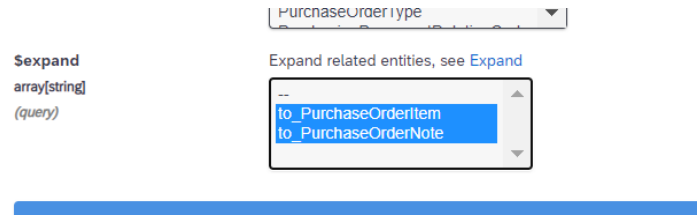

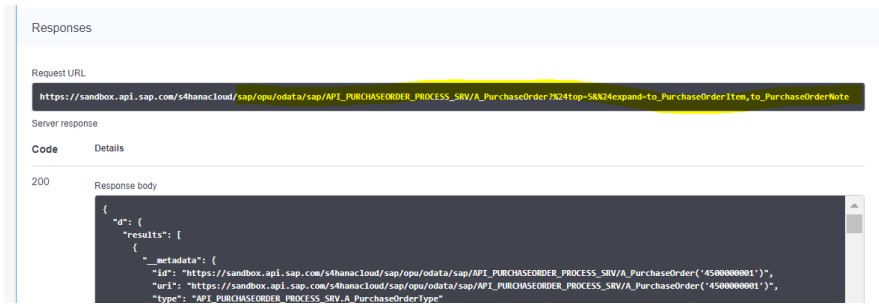

Explanation	Screenshot
1. Launch Google Chrome and open SAP API hub: https://api.sap.com	
2. Click <b>Log On</b> button in the upper right	

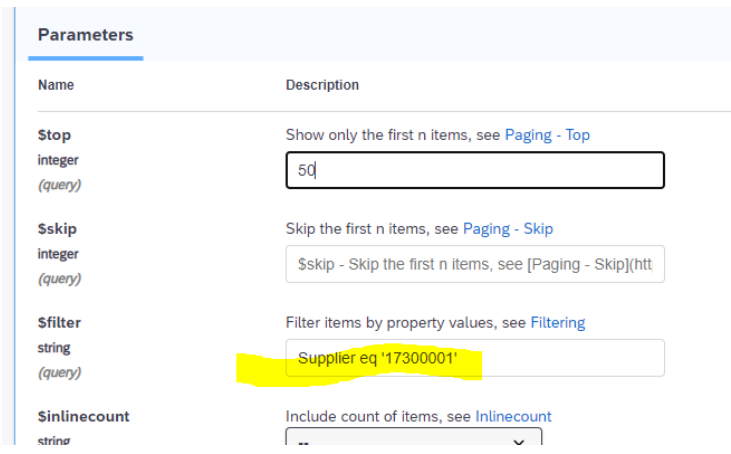
Explanation	Screenshot
3. Click on the <b>SAP S/4HANA Cloud</b> tile (or on the link from the Solutions list on the left hand side)	
4. Enter <b>Purchase Order</b> in the search and press Enter	
5. Click on the tile for <b>"Purchase Order"</b> that is the ODATA API	
6. Click on the <b>Details</b> tab	

Explanation	Screenshot
<p>7. Notice the Communication Scenario(s) required for this API, the scope items that have the API and also a link to the Business Documentation. <b>Click on the Business Documentation link.</b> You can also download JSON or EMDX metadata via "Download API Specification" button.</p>	
<p>8. Here on help.sap.com you can find details on each field in addition to sample payloads for operations such as creating and reading purchase orders. <b>Take some time to explore the Entities section and sample payloads.</b> Click on Purchase Order (A_PurchaseOrder) to view field descriptions.</p>	

Explanation	Screenshot
9. Go back to the original tab and click on the <b>API References</b> tab	
10. Click on the <b>Header Data</b> link on the left.	
11. Click on the <b>Try out</b> button under the /A_PurchaseOrder GET entity.	



Explanation	Screenshot				
12. Enter <b>5</b> in the \$top input box	 <p><b>Parameters</b></p> <table border="1"> <thead> <tr> <th>Name</th><th>Description</th></tr> </thead> <tbody> <tr> <td><b>\$top</b> integer (query)</td><td>Show only the first n items, see <a href="#">Paging - Top</a></td></tr> </tbody> </table> <p>5</p>	Name	Description	<b>\$top</b> integer (query)	Show only the first n items, see <a href="#">Paging - Top</a>
Name	Description				
<b>\$top</b> integer (query)	Show only the first n items, see <a href="#">Paging - Top</a>				
13. Hold down the CTRL key and <b>select all 2 options</b> in the \$expand input box	 <p><b>\$expand</b> array[string] (query)</p> <p>PurchaseOrder type</p> <p>Expand related entities, see <a href="#">Expand</a></p> <p>to_PurchaseOrderItem to_PurchaseOrderNote</p>				
14. Click on <b>Execute</b>	 <p><b>Execute</b></p>				
15. In the Responses section, notice the Request URL. This is useful for you to form you're the URLs for your own integrations.	 <p><b>Responses</b></p> <p>Request URL</p> <p><code>https://sandbox.api.sap.com/s4hanacloud/sap/opu/odata/sap/API_PURCHASEORDER_PROCESS_SRV/A_PurchaseOrder?%24top=5&amp;%24expand=to_PurchaseOrderItem,to_PurchaseOrderNote</code></p> <p>Server response</p> <table border="1"> <thead> <tr> <th>Code</th><th>Details</th></tr> </thead> <tbody> <tr> <td>200</td><td> <p>Response body</p> <pre>{   "d": {     "results": [       {         "_metadata": {           "id": "https://sandbox.api.sap.com/s4hanacloud/sap/opu/odata/sap/API_PURCHASEORDER_PROCESS_SRV/A_PurchaseOrder('4500000001')",           "url": "https://sandbox.api.sap.com/s4hanacloud/sap/opu/odata/sap/API_PURCHASEORDER_PROCESS_SRV/A_PurchaseOrder('4500000001')",           "type": "API_PURCHASEORDER_PROCESS_SRV.A_PurchaseOrderType"         }       }     ]   } }</pre> </td></tr> </tbody> </table>	Code	Details	200	<p>Response body</p> <pre>{   "d": {     "results": [       {         "_metadata": {           "id": "https://sandbox.api.sap.com/s4hanacloud/sap/opu/odata/sap/API_PURCHASEORDER_PROCESS_SRV/A_PurchaseOrder('4500000001')",           "url": "https://sandbox.api.sap.com/s4hanacloud/sap/opu/odata/sap/API_PURCHASEORDER_PROCESS_SRV/A_PurchaseOrder('4500000001')",           "type": "API_PURCHASEORDER_PROCESS_SRV.A_PurchaseOrderType"         }       }     ]   } }</pre>
Code	Details				
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16. In the Response body section, you can find the purchase order data from the sandbox system. If you click on the Download link you can open the JSON payload in Chrome browser.	 <p>Server response</p> <table border="1"> <thead> <tr> <th>Code</th><th>Details</th></tr> </thead> <tbody> <tr> <td>200</td><td> <p>Response body</p> <pre>{   "Supplier": "173000001",   "PurchaseOrderSubtype": "",   "Language": "EN",   "PaymentTerms": "0000",   "CashDiscount1Days": "0",   "CashDiscount2Days": "0",   "NetPaymentDays": "0",   "CashDiscount1Percent": "0.000",   "CashDiscount2Percent": "0.000",   "PurchasingOrganization": "1718",   "PurchasingDocumentId": "0",   "PurchasingGroup": "001",   "PurchaseOrderDate": "Date(1470168000000)/",   "DocumentCurrency": "USD",   "ExchangeRate": "1.00000",   "ExchangeRateIsFixed": false,   "ValidityStartDate": null,   "ValidityEndDate": null,   "SupplierQuotationExternalID": "",   "SupplierSalespersonName": "",   "SupplierPhoneNumber": "",   "SupplyingSupplier": "",   "SupplyingPlant": "" }</pre> <p><a href="#">Download</a></p> </td></tr> </tbody> </table>	Code	Details	200	<p>Response body</p> <pre>{   "Supplier": "173000001",   "PurchaseOrderSubtype": "",   "Language": "EN",   "PaymentTerms": "0000",   "CashDiscount1Days": "0",   "CashDiscount2Days": "0",   "NetPaymentDays": "0",   "CashDiscount1Percent": "0.000",   "CashDiscount2Percent": "0.000",   "PurchasingOrganization": "1718",   "PurchasingDocumentId": "0",   "PurchasingGroup": "001",   "PurchaseOrderDate": "Date(1470168000000)/",   "DocumentCurrency": "USD",   "ExchangeRate": "1.00000",   "ExchangeRateIsFixed": false,   "ValidityStartDate": null,   "ValidityEndDate": null,   "SupplierQuotationExternalID": "",   "SupplierSalespersonName": "",   "SupplierPhoneNumber": "",   "SupplyingSupplier": "",   "SupplyingPlant": "" }</pre> <p><a href="#">Download</a></p>
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Explanation	Screenshot
17. Explore the payload data included the expanded entities	<pre> type : "SAP_PURCHASING_PROCESS_SRV_A" character type }, "PurchaseOrder": "4500000001", "CompanyCode": "1710", "PurchaseOrderType": "NB", "PurchasingDocumentDeletionCode": "", "PurchasingProcessingStatus": "02", "CreatedByUser": "CB9980000026", "CreationDate": "/Date(1470268800000)/", "LastChangeDateTime": null, "Supplier": "17300001", "PurchaseOrderSubtype": "", "Language": "EN", "PaymentTerms": "0004", "CashDiscount1Days": "0", "CashDiscount2Days": "0", "NetPaymentDays": "0", "CashDiscount1Percent": "0.000", "CashDiscount2Percent": "0.000", "PurchasingOrganization": "1710", "PurchasingDocumentOrigin": "9", "PurchasingGroup": "001", "PurchaseOrderDate": "/Date(1470268800000)/", "DocumentCurrency": "USD", "ExchangeRate": "1.00000", "ExchangeRateIsFixed": false, "ValidityStartDate": null, </pre>
18. If you want to filter by certain properties, you can use \$filter for the properties. For example, you can pull the top 50 orders for Supplier 17300001.	 <p>The screenshot shows the 'Parameters' section of a REST client. It contains a table with columns 'Name' and 'Description'. The parameters are:</p> <ul style="list-style-type: none"> <li><b>Stop</b> (integer, query): Description: Show only the first n items, see <a href="#">Paging - Top</a>. Value: 50.</li> <li><b>\$skip</b> (integer, query): Description: Skip the first n items, see <a href="#">Paging - Skip</a>. Value: \$skip - Skip the first n items, see [Paging - Skip](htt</li> <li><b>\$filter</b> (string, query): Description: Filter items by property values, see <a href="#">Filtering</a>. Value: Supplier eq '17300001'.</li> <li><b>\$inlinecount</b> (string): Description: Include count of items, see <a href="#">Inlinecount</a>. Value: ..</li> </ul>

## EXERCISE 2: EXPOSING APIS IN SAP S/4HANA CLOUD

In S/4HANA Cloud system, Communication Scenarios are the basis for all inbound and outbound communication. You can transfer data between S/4HANA Cloud system and any other systems. The following needs to be done to setup communication between two systems.

**Communication Users**

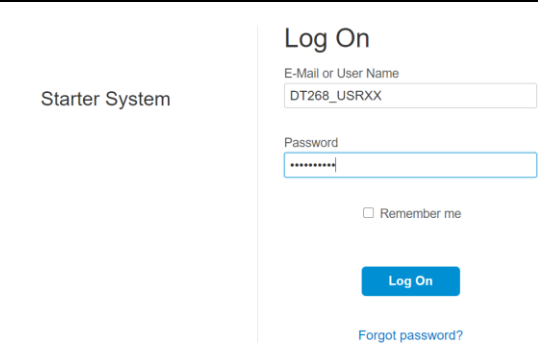
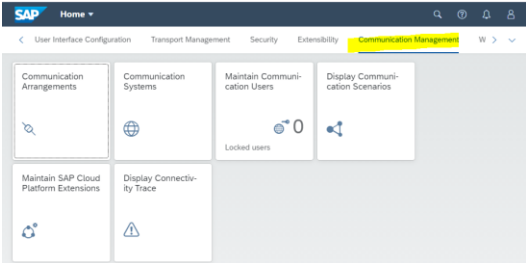
A communication user is a special type of technical user corresponds to a remote system or part, thereof that connects to the own system. Communication users are created within the app, “Maintain Communication Users”, assigned to Communication Systems, and used within Communication Arrangements to process inbound communication services.

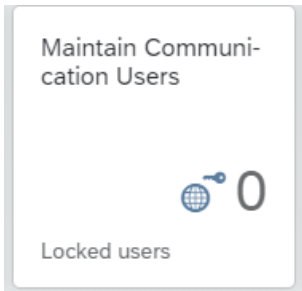
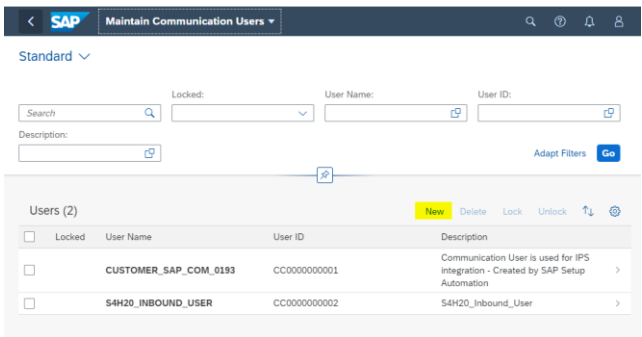
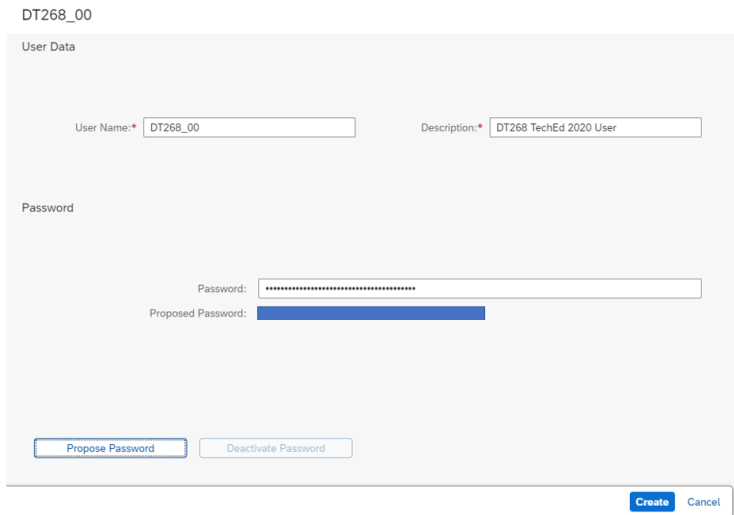
**Communication Systems**

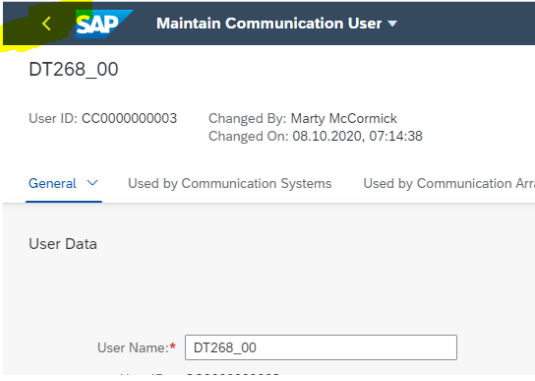
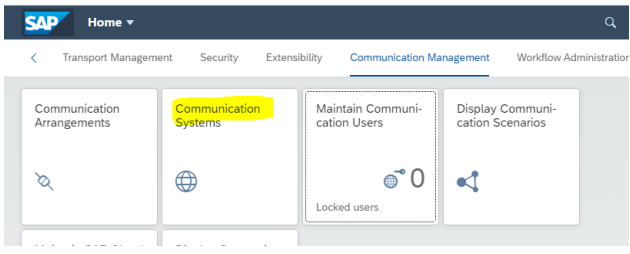
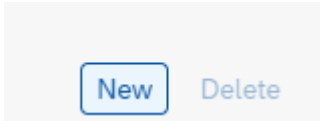
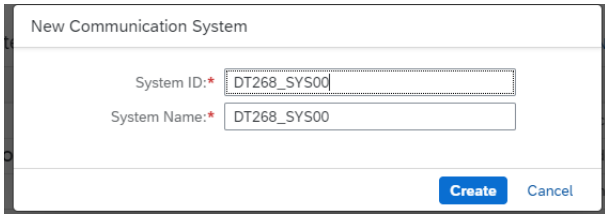
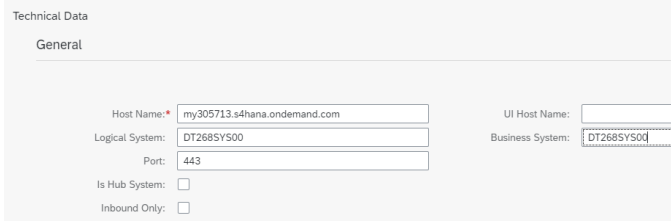
A communication system is a specification of a system that represents a communication partner and all the necessary technical information needed for the communication, like hostname/IP-Address, identity, user information, certificates, etc. In S/4HANA Cloud systems, customers do not have access to the admin transactions for defining logical systems or business systems. However, these entities are required for external communication. The “Communication System” app enables you to define these settings in Cloud.

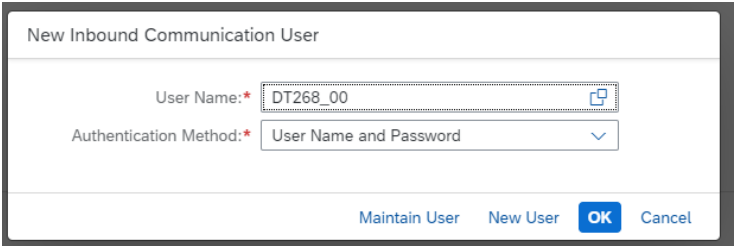
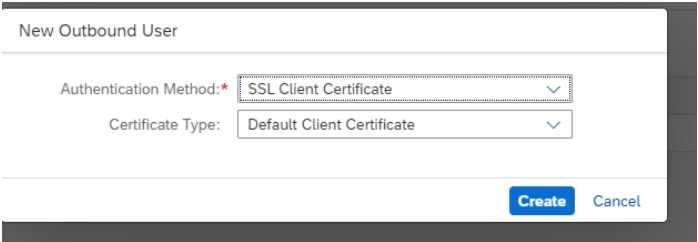
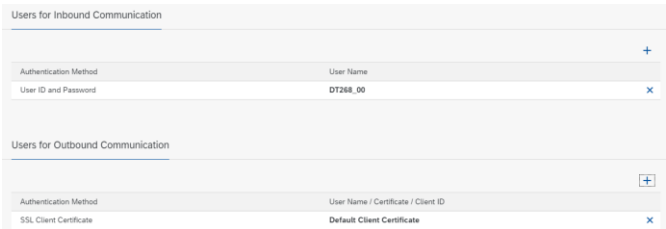
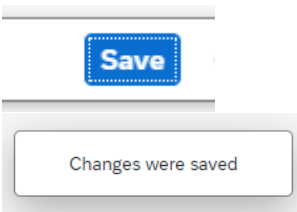
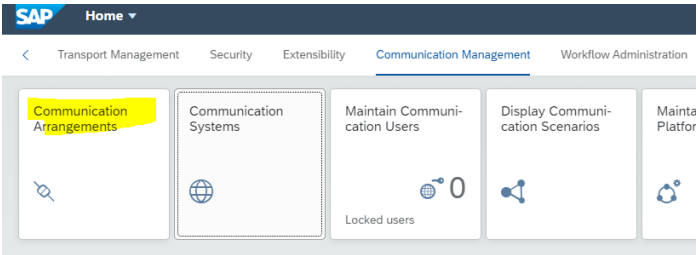
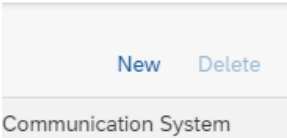
**Communication Arrangements**

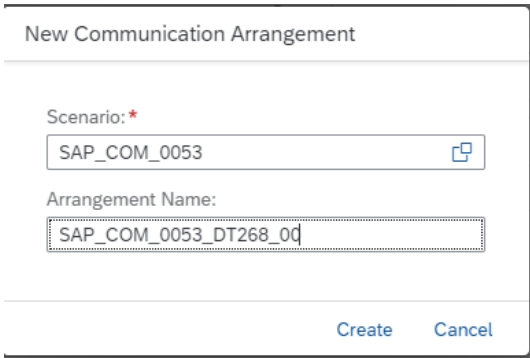
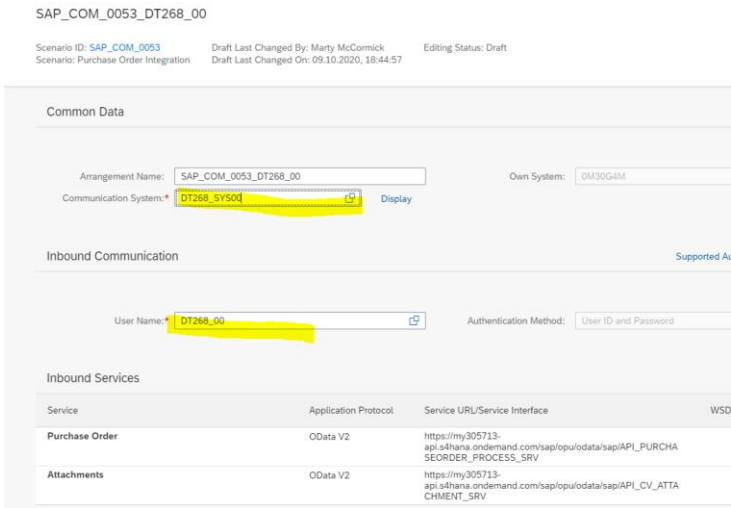
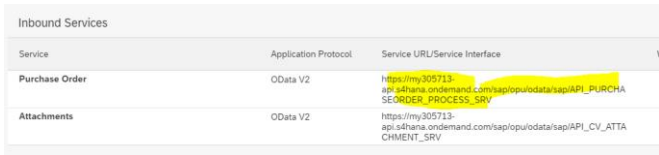
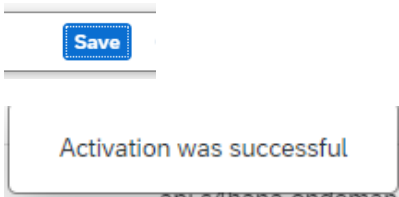
A Communication Arrangement (CA) describes a communication scenario with a remote system during configuration. It provides necessary metadata for the service configurations like credentials, outbound ports, destinations, and URLs. It consists of several service specifications, which contains the technical data to enable inbound and outbound communication. Activation of a CA populates the required configuration tables of the web service and/or IDOC runtimes, such as logical ports and RFC destinations, for the communication users.

Explanation	Screenshot
<div>1. In Chrome, open the S/4HANA Cloud system and Log On with the credentials provided by the session instructors:</div> <div>URL: https://my305713.s4hana.ondemand.com/ui</div>	
<div>2. Navigate to the <b>Communication Management</b> group</div>	

Explanation	Screenshot
3. Click on the <b>Maintain Communication Users</b> tile	
4. Click on <b>New</b> button in order to create a new communication user	
5. Complete the user information with the following details: Username: <b>DT268_##</b> (number will be provided by session instructor) Enter a <b>description</b> Select <b>Propose Password</b>  <b>**NOTE**</b> Copy and paste the password into a notepad file on your computer  <b>Click Create</b>	

Explanation	Screenshot
<p>6. Click the back arrow in the Fiori app to go back to the Communication Management group</p>	
<p>7. Select the <b>Communication Systems</b> app</p>	
<p>8. Click on the <b>New</b> button to create a new Communication System</p>	
<p>9. Enter a system ID and use the same for System Name. Using <b>DT268_SYS##</b> (number to be provided by instructor). Click <b>Create</b></p>	
<p>10. In the <b>General</b> section, enter the Host Name of the system. Here you can use the hostname of the S/4HANA system (my305713.s4hana.ondemand.com). For Logical System, use DT268SYS## and Business System use DT268SYS##</p>	

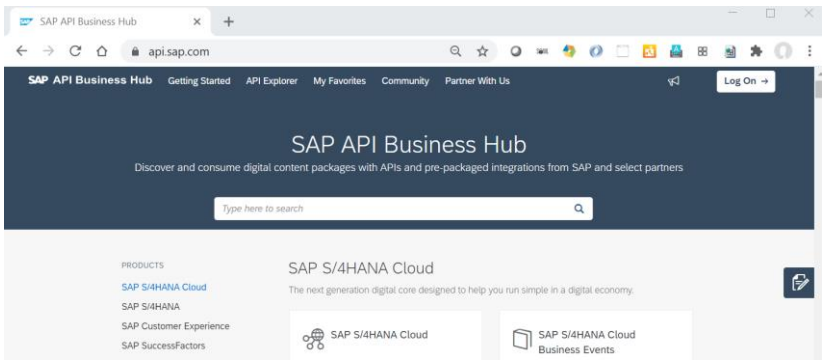
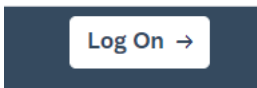
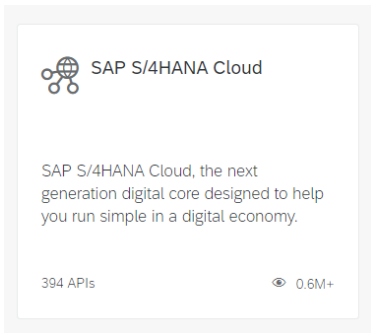
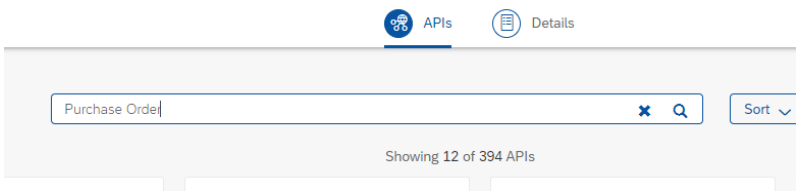
Explanation	Screenshot
11. In the Users for Inbound Communication section, <b>click the +</b> and <b>select your communication user</b> created in the previous step. Click OK.	
12. In the Users for Outbound Communication section, <b>click the +</b> and select <b>SSL Client Certificate</b> in the Authentication and click <b>Create</b> .	
13. Your users section should now look like this.	
14. Click <b>Save</b> to save the communication system.	
15. Navigate back to the <b>Communication Management</b> group and click on the <b>Communication Arrangements</b> tile.	
16. Click on <b>New</b> button to create a new Communication Arrangement.	

Explanation	Screenshot												
17. Select scenario <b>SAP_COM_0053</b> and for the Arrangement Name, append <b>DT268_##</b> . Click the <b>Create</b> button.													
18. Select the pick list next for the <b>Communication System</b> input field. Select your communication system created in the previous step. The User name should auto populate when you select the system.	 <table><tr><th>Service</th><th>Application Protocol</th><th>Service URL/Service Interface</th><th>WSD</th></tr><tr><td>Purchase Order</td><td>OData V2</td><td>https://my305713-api.s4hana.ondemand.com/sap/opu/odata/sapi/PI_PURCHASE_ORDER_PROCESS_SRV</td><td></td></tr><tr><td>Attachments</td><td>OData V2</td><td>https://my305713-api.s4hana.ondemand.com/sap/opu/odata/sapi/PI_ATTACHMENT_SRV</td><td></td></tr></table>	Service	Application Protocol	Service URL/Service Interface	WSD	Purchase Order	OData V2	https://my305713-api.s4hana.ondemand.com/sap/opu/odata/sapi/PI_PURCHASE_ORDER_PROCESS_SRV		Attachments	OData V2	https://my305713-api.s4hana.ondemand.com/sap/opu/odata/sapi/PI_ATTACHMENT_SRV	
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Purchase Order	OData V2	https://my305713-api.s4hana.ondemand.com/sap/opu/odata/sapi/PI_PURCHASE_ORDER_PROCESS_SRV											
Attachments	OData V2	https://my305713-api.s4hana.ondemand.com/sap/opu/odata/sapi/PI_ATTACHMENT_SRV											
19. Under Inbound Services, <b>copy</b> the OData URL to a notepad document on your computer for use later	 <table><tr><th>Service</th><th>Application Protocol</th><th>Service URL/Service Interface</th><th>WSD</th></tr><tr><td>Purchase Order</td><td>OData V2</td><td>https://my305713-api.s4hana.ondemand.com/sap/opu/odata/sapi/PI_PURCHASE_ORDER_PROCESS_SRV</td><td></td></tr><tr><td>Attachments</td><td>OData V2</td><td>https://my305713-api.s4hana.ondemand.com/sap/opu/odata/sapi/PI_ATTACHMENT_SRV</td><td></td></tr></table>	Service	Application Protocol	Service URL/Service Interface	WSD	Purchase Order	OData V2	https://my305713-api.s4hana.ondemand.com/sap/opu/odata/sapi/PI_PURCHASE_ORDER_PROCESS_SRV		Attachments	OData V2	https://my305713-api.s4hana.ondemand.com/sap/opu/odata/sapi/PI_ATTACHMENT_SRV	
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Purchase Order	OData V2	https://my305713-api.s4hana.ondemand.com/sap/opu/odata/sapi/PI_PURCHASE_ORDER_PROCESS_SRV											
Attachments	OData V2	https://my305713-api.s4hana.ondemand.com/sap/opu/odata/sapi/PI_ATTACHMENT_SRV											
20. Click <b>Save</b>													

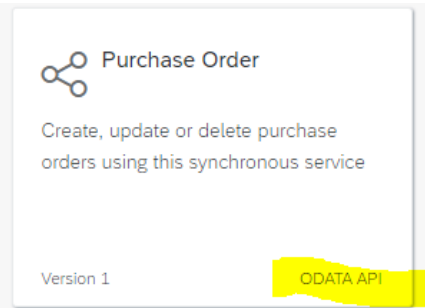
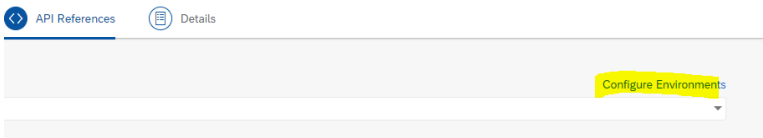
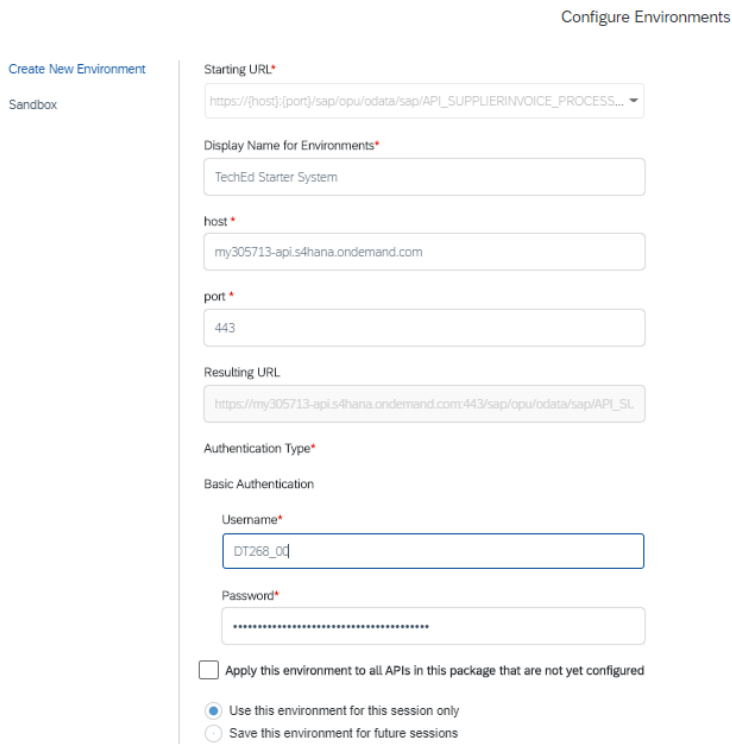
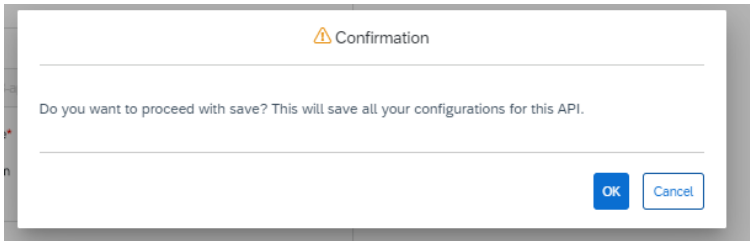
### EXERCISE 3: USING SAP API HUB WITH YOUR OWN S/4HANA CLOUD SYSTEM

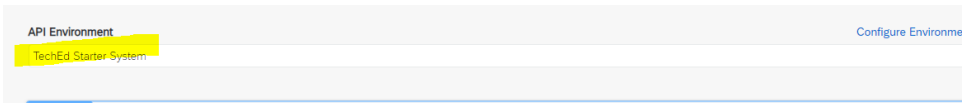
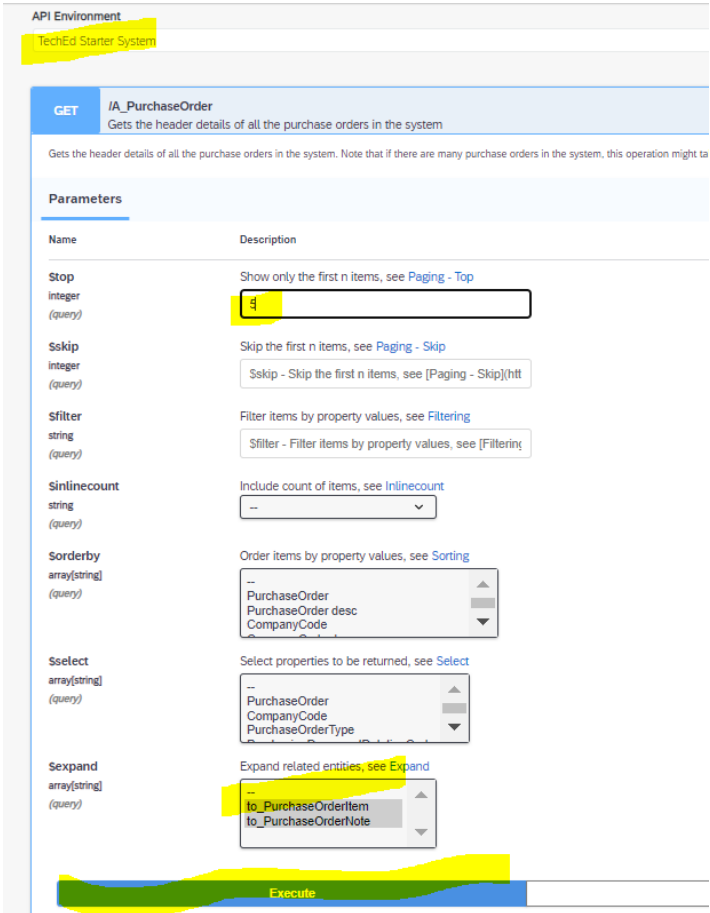
SAP API Business Hub is not only a place to explore and discover relevant content for your integration needs, it also provides features to experience the APIs.

SAP has provided you with a sandbox application with limited test data that can be used for experiencing the APIs. Alternatively, the API Hub also supports you in configuring your own productive system and experiencing the APIs.

Explanation	Screenshot
1. Launch Google Chrome and open SAP API hub: <a href="https://api.sap.com">https://api.sap.com</a>	
2. Click <b>Log On</b> button in the upper right	
3. Click on the <b>SAP S/4HANA Cloud</b> tile (or on the link from the Solutions list on the left hand side)	
4. Enter <b>Purchase Order</b> in the search and press Enter	



Explanation	Screenshot
<p>5. Click on the tile for <b>"Purchase Order"</b> that is the ODATA API</p>	
<p>6. Click on <b>API References</b> tab and click <b>Configure Environments</b></p>	
<p>7. Enter the following information:</p> <p>Display Name: TechEd Starter System</p> <p>Hostname: my305713-api.s4hana.ondemand.com</p> <p>Port: 443</p> <p>Username: DT268_## Password: &lt;&lt;saved password from previous section&gt;&gt;</p> <p>Click <b>Save</b></p>	
<p>8. Confirm that you want to proceed by clicking <b>OK</b></p>	

Explanation	Screenshot
9. Now you can do any operations with the TechEd system, including creating (POST) new purchase orders	 The screenshot shows the 'API Environment' section of a web application. Under the 'API Environment' header, 'TechEd Starter System' is selected and highlighted in yellow. A 'Configure Environment' link is visible in the top right corner.
10. Make sure the system is selected in TechEd Starter System, select \$top5 and select your expand entities. Click <b>Execute</b>	 The screenshot shows the configuration page for the GET /IA_PurchaseOrder endpoint. The endpoint description is 'Gets the header details of all the purchase orders in the system'. The 'Parameters' section is expanded, showing a table of query parameters. The 'Stop' parameter is set to 5, 'Sskip' is empty, 'Filter' is empty, 'Inlinecount' is set to '--', 'Sorderby' is set to 'PurchaseOrder', 'Sselect' is set to 'PurchaseOrder, CompanyCode, PurchaseOrderType', and 'Sexpand' is set to 'to_PurchaseOrderItem, to_PurchaseOrderNote'. The 'Execute' button is highlighted in yellow at the bottom.
11.	The purchase orders from the TechEd system are now displayed.

Explanation	Screenshot
	<div><div>Responses</div><div><div>Request URL</div><div>https://my305713-api.s4hana.ondemand.com:443/sap/opu/odata/sap/API_PURCHASEORDER_PROCESS_SRV/A_PurchaseOrder?%24top=5&amp;%24expand-to_PurchaseOrderItem,to_PurchaseOrderNote</div></div><div><div>Server response</div><div><div>Code</div><div>Details</div></div><div>200</div><div><div>Response body</div><div><pre>{   "PurchaseOrder": "4500000000",   "CompanyCode": "1010",   "PurchaseOrderType": "NB",   "PurchasingDocumentItemCode": "",   "PurchasingProcessingStatus": "05",   "CreatedByUser": "(B998000000)",   "CreationDate": "/Date(1602028800000)/",   "LastChangeDateTime": "/Date(160207641420-0000)/",   "Supplier": "10000000",   "PurchaseOrderSubtype": "",   "Language": "DE",   "PaymentTerms": "",   "CashDiscount1Days": "0",   "CashDiscount2Days": "0",   "NetPaymentDays": "0",   "CashDiscount1Percent": "0.000",   "CashDiscount2Percent": "0.000",   "PurchasingOrganization": "1010",   "PurchasingDocumentOrigin": "0",   "PurchasingGroup": "001",   "PurchaseOrderDate": "/Date(1602028800000)/",   "DocumentCurrency": "EUR",   "ExchangeRate": 1.00000 }</pre></div></div></div></div>

Summary

You have completed the exercise!

You have been able to try-out the API and response from the S/4HANA Cloud system which has been set up for this hands-on exercise.

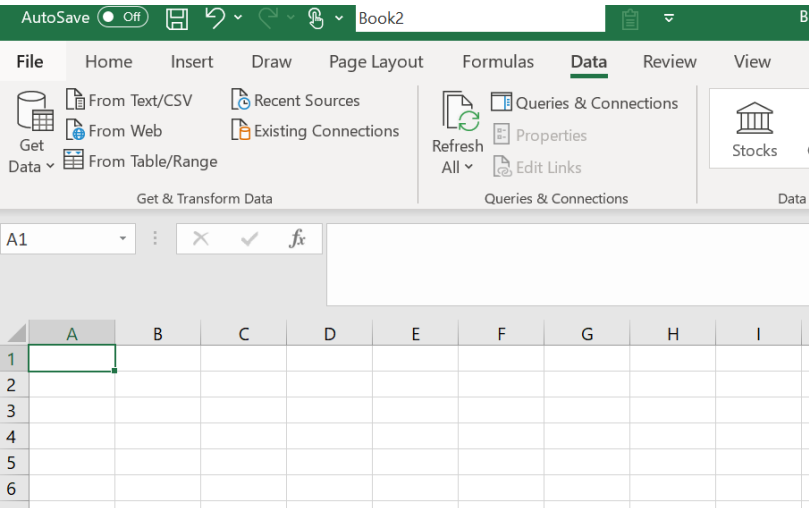
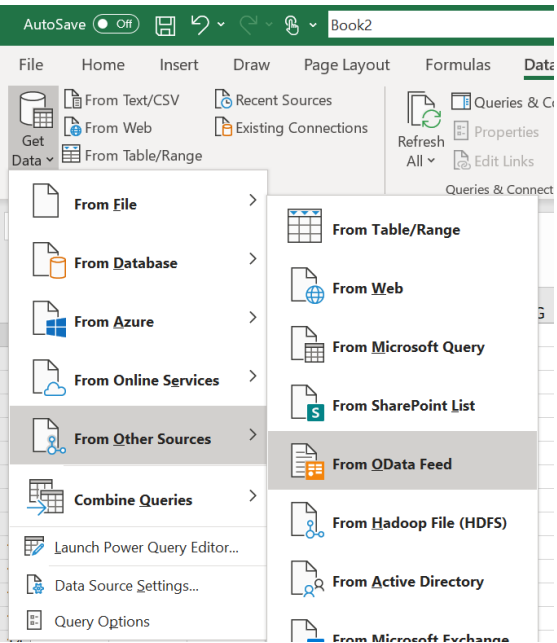
You can similarly configure and understand the API experience for your organization's S/4HANA Cloud system using SAP API Business Hub.

## EXERCISE 4: CONSUMING API IN MICROSOFT EXCEL

**NOTE:** For Excel versions 2010 and 2013 you need to use PowerQuery add-in for Excel to do this exercise.

<https://www.microsoft.com/en-us/download/details.aspx?id=39379>

Instead of a "Data" tab, you will have a power query tab: <https://support.office.microsoft.com/en-us/article/connect-to-an-odata-feed-power-query-4441a94d-9392-488a-a6a9-739b6d2ad500>

Explanation	Screenshot
1. Launch a new spreadsheet in Microsoft Excel and navigate to the <b>Data</b> tab	
2. Select <b>Get Data -&gt; From Other Sources -&gt; From OData Feed</b>	

Explanation	Screenshot																																				
3. Paste in the URL to the A_PurchaseOrder entity	<div><div><div><div><div></div><div>OData feed</div><div></div></div><div><div><div><div><div></div><div>Basic</div><div>Advanced</div></div><div>URL</div><div>com:443/sap/opu/odata/sap/API_PURCHASEORDER_PROCESS_SRV/A_PurchaseOrder</div><div><div>OK</div><div>Cancel</div></div></div></div></div></div><div><a href="https://my305713-api.s4hana.ondemand.com:443/sap/opu/odata/sap/API_PURCHASEORDER_PROCESS_SRV/A_PurchaseOrder">https://my305713-api.s4hana.ondemand.com:443/sap/opu/odata/sap/API_PURCHASEORDER_PROCESS_SRV/A_PurchaseOrder</a></div></div></div>																																				
4. In the authentication popup, select Basic and enter the username and password for your communication scenario.	<div><div><div><div><div>Anonymous</div><div>Windows</div><div>Basic</div><div>Web API</div><div>Organizational account</div></div><div><div>OData feed</div><div><div><div><div><div></div><div>https://my305713-api.s4hana.ondemand.com/sap/...</div><div></div></div><div><div>User name</div><div>DT268_00</div></div><div><div>Password</div><div>.....</div></div><div><div>Select which level to apply these settings to</div><div>https://my305713-api.s4hana.ondemand.com/</div></div><div><div>Back</div><div>Connect</div><div>Cancel</div></div></div></div></div></div></div></div></div>																																				
5. Select the Purchase Order Entity. You will now have a preview of the data	<div><div><div><div><div>Navigator</div><div><div><div><div></div><div>Select multiple items</div><div>Display Options</div></div><div><div><div><div><div>https://my305713-api.s4hana.ondemand.com/...</div><div>A_PurchaseOrderComponent</div><div>A_PurchaseOrder</div><div>A_PurchaseOrderItem</div><div>A_PurchaseOrderItemNote</div><div>A_PurchaseOrderNote</div><div>A_PurchaseOrderScheduleLine</div><div>A_PurOrdAccountAssignment</div><div>A_PurOrdPricingElement</div></div></div></div></div></div><div><div><div>A_PurchaseOrder</div><div><table><tr><th>PurchaseOrder</th><th>CompanyCode</th><th>PurchaseOrderType</th><th>PurchasingDocumentDeletionCo</th></tr><tr><td>4500000000</td><td>1010</td><td>NB</td><td></td></tr><tr><td>4500000001</td><td>1010</td><td>NB</td><td></td></tr><tr><td>4500000002</td><td>1010</td><td>NB</td><td></td></tr><tr><td>4500000003</td><td>1010</td><td>NB</td><td></td></tr><tr><td>4500000004</td><td>1010</td><td>NB</td><td></td></tr><tr><td>4500000005</td><td>1010</td><td>NB</td><td></td></tr><tr><td>4500000006</td><td>1010</td><td>NB</td><td></td></tr><tr><td>4500000007</td><td>1010</td><td>NB</td><td></td></tr></table></div></div></div></div></div></div></div></div>	PurchaseOrder	CompanyCode	PurchaseOrderType	PurchasingDocumentDeletionCo	4500000000	1010	NB		4500000001	1010	NB		4500000002	1010	NB		4500000003	1010	NB		4500000004	1010	NB		4500000005	1010	NB		4500000006	1010	NB		4500000007	1010	NB	
PurchaseOrder	CompanyCode	PurchaseOrderType	PurchasingDocumentDeletionCo																																		
4500000000	1010	NB																																			
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4500000004	1010	NB																																			
4500000005	1010	NB																																			
4500000006	1010	NB																																			
4500000007	1010	NB																																			

Explanation

Screenshot

6. Click **Load**

https://my305713-api.s4hana.ondemand.com:443/sap/opu/odata/sap/API\_PURCHASEORDER\_P...

PurchaseOrder	CompanyCode	PurchaseOrderType	PurchasingDocumentDeletionCode	PurchasingProcessingStatus	CreatedByUser	Cr
4500000000	1010	NB		05	CB9980000002	10/7/2020 04:00:00
4500000001	1010	NB		05	CB9980000002	10/7/2020 04:00:00
4500000002	1010	NB		05	CB9980000002	10/7/2020 04:00:00
4500000003	1010	NB		05	CB9980000002	10/7/2020 04:00:00
4500000004	1010	NB		05	CB9980000002	10/7/2020 04:00:00
4500000005	1010	NB		05	CB9980000002	10/8/2020 04:00:00
4500000006	1010	NB		05	CB9980000002	10/8/2020 04:00:00
4500000007	1010	NB		05	CB9980000002	10/8/2020 04:00:00

<

>

Load

Transform Data

Cancel

7. PO Data is loaded into Excel.

A	B	C	D	E	F	G
1	PurchaseOrder	CompanyCode	PurchaseOrderType	PurchasingDocumentDeletionCode	PurchasingProcessingStatus	CreatedByUser
2	4500000000	1010	NB		05	CB9980000002
3	4500000001	1010	NB		05	CB9980000002
4	4500000002	1010	NB		05	CB9980000002
5	4500000003	1010	NB		05	CB9980000002
6	4500000004	1010	NB		05	CB9980000002
7	4500000005	1010	NB		05	CB9980000002
8	4500000006	1010	NB		05	CB9980000002
9	4500000007	1010	NB		05	CB9980000002
10						
11						
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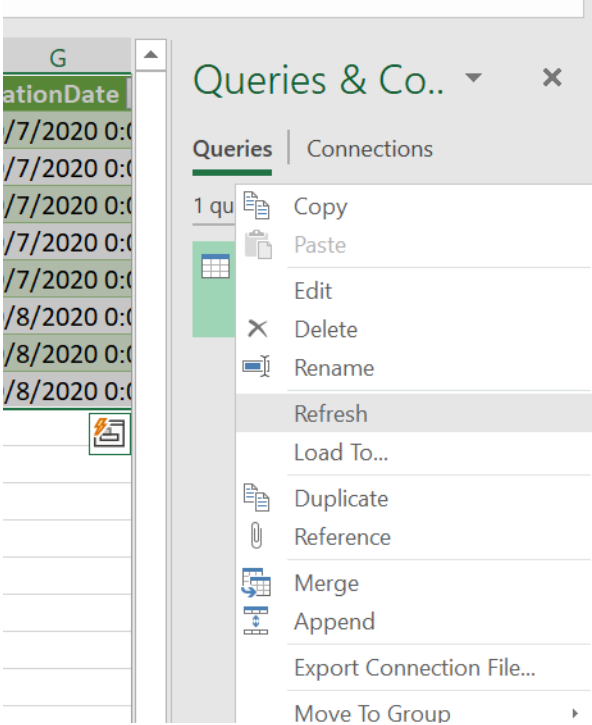
Sheet2 Sheet1

Queries & Connections

1 query

Query1

8 rows loaded.

Explanation	Screenshot
8. In the future, if you needed to refresh the data, you can right click on the Query and click <b>Refresh</b>	 The screenshot shows the 'Queries & Connections' pane in SQL Server Enterprise Manager. The 'Queries' tab is active, displaying a list of queries. A right-click context menu is open over the first query, showing options such as Copy, Paste, Edit, Delete, Rename, Refresh, Load To..., Duplicate, Reference, Merge, Append, Export Connection File..., and Move To Group. The 'Refresh' option is highlighted.

Summary

You have completed the exercise!

You have now successfully been able to consume the API to fetch data in a 3rd party application.

## PART 2: ACCELERATED INTEGRATION WITH SAP CLOUD PLATFORM INTEGRATION SUITE

NOTE: Please refer to the prerequisites section.

You are recommended to complete the prerequisites and enable the SAP Cloud Platform integration suite trial at the start of this workshop, so as to save time.

Before getting started, here is some information to help you understand the significance of APIs and how organizations are using APIs as building blocks to collaborate and co-innovate with their partners & application developers.

We consider a fictitious company BestRun AG. This company is a global player with several subsidiaries and locations world-wide selling its products through direct distribution channels. BestRun AG has a heterogenous landscape with data stored in SAP S/4HANA Cloud, non-SAP CRM, custom integration flows and microservices built by their line of businesses and IT team. They are using SAP S/4HANA Cloud to store the information about their products, sales orders, purchase orders. Their sales and marketing team are using a non-SAP CRM system to maintain information about their customers, customer address, phone numbers and opportunities. BestRun AG want to open their business processes and data from their business systems with their partners and suppliers in secured and controlled manner. They would like to make it easier for their new partners to on-board themselves, try out their APIs in a self-service manner and use these APIs to integrate the partner data with BestRun AG.

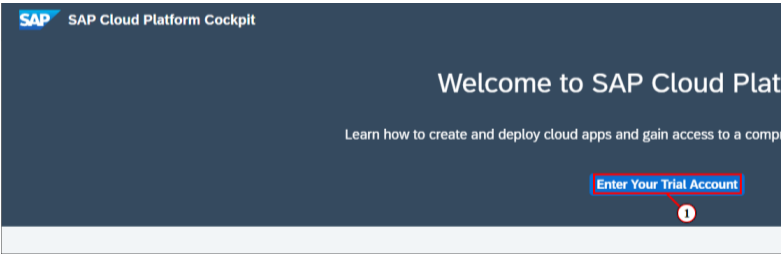
They also would like to foster an API program for their internal employees to discover, explore and consume their APIs to build modern digital applications like chatbots, mobile applications and custom analytics dashboard combining data from their SAP and non-SAP sources. To achieve this, BestRun AG needs to decouple the complexity of their backend system, from their developers, who will be using these APIs to develop their applications.

The solution is to use SAP Cloud Platform Integration Suite(will be referred further as integration suite) to govern the APIs being used, authorize the right people to access the right data, connect multiple backend systems to enrich data and provide contextual information through the evolving digital ecosystem.

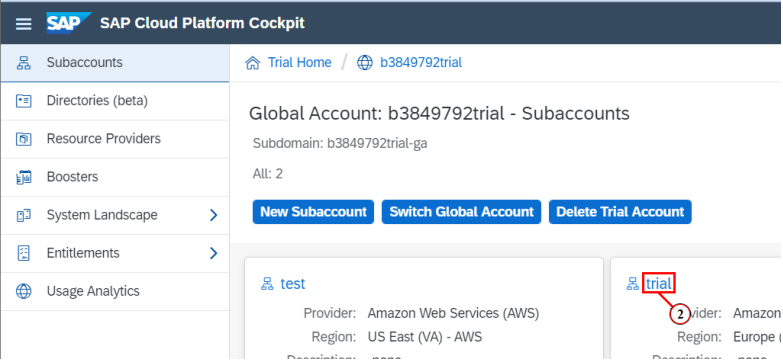
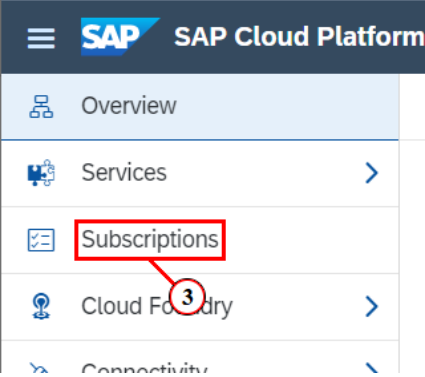
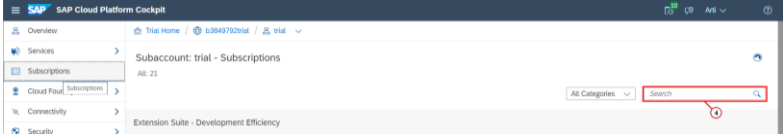
### EXERCISE 5: CREATE SECURITY ARTIFACT ON CLOUD INTEGRATION

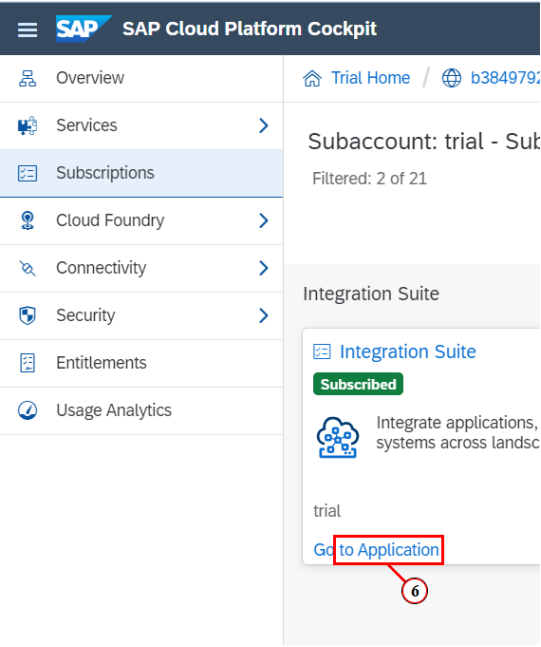
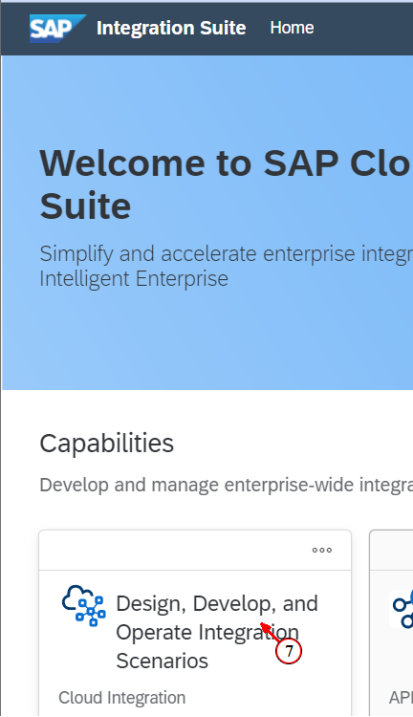
The cloud integration capability of the Integration Suite provides you with holistic capabilities for your end-to-end process integration needs.

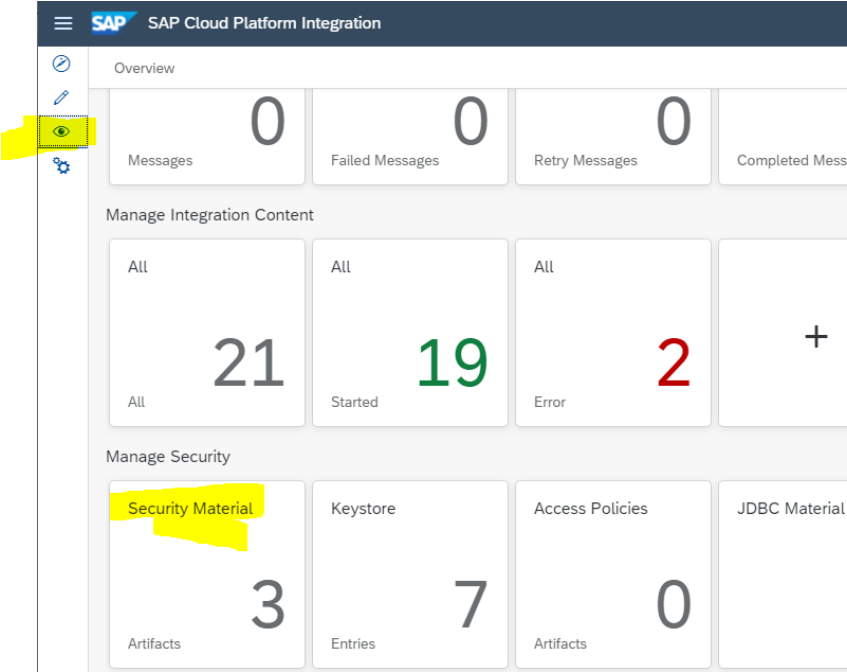
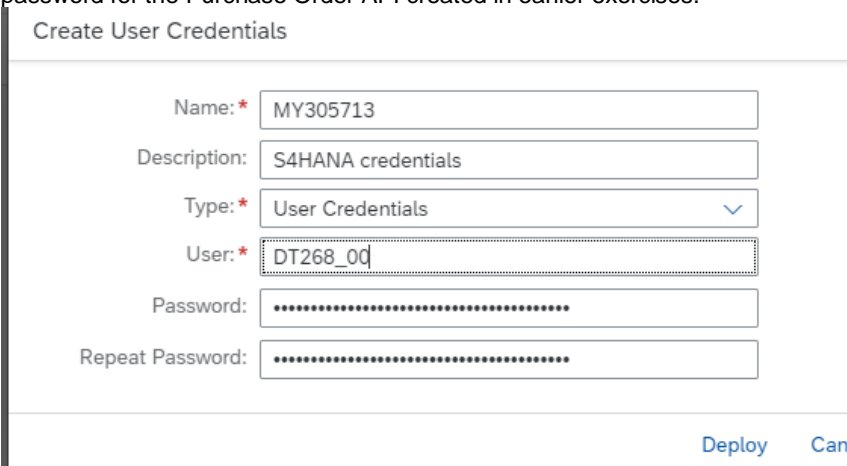
As part of the messages being shared across systems, security is an important topic. The cloud integration capability provides you an area to manage security related artifacts which can be deployed into your tenant and used across various integration flows. So, this will be your first step as part of the integration journey.

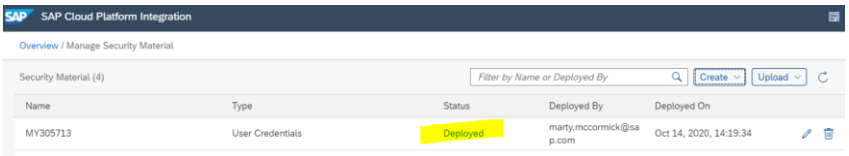
Explanation	Screenshot
9. Access the SAP Cloud Platform Cockpit 1. Click <b>Enter Your Trial Account</b>	



Explanation	Screenshot
<div>10. If you have more than one subaccount, click to open the subaccount planned to be used for this hands-on.</div> <div>11. Else, open the trial subaccount provisioned to you.</div>	 <p>The screenshot shows the 'Subaccounts' page in the SAP Cloud Platform Cockpit. The left sidebar contains a menu with 'Subaccounts' selected, and other options like 'Directories (beta)', 'Resource Providers', 'Boosters', 'System Landscape', 'Entitlements', and 'Usage Analytics'. The main content area displays 'Global Account: b3849792trial - Subaccounts' with a subdomain of 'b3849792trial-ga' and 'All: 2'. There are three buttons: 'New Subaccount', 'Switch Global Account', and 'Delete Trial Account'. Below, two subaccounts are listed: 'test' (Provider: Amazon Web Services (AWS), Region: US East (VA) - AWS) and 'trial' (Provider: Amazon, Region: Europe). The 'trial' subaccount is highlighted with a red box and a circled '2'.</p>
<div>2. Click to view Subscriptions.</div>	 <p>The screenshot shows the 'Overview' page in the SAP Cloud Platform Cockpit. The left sidebar has a menu with 'Overview' selected, and other options like 'Services', 'Subscriptions', 'Cloud Foundry', and 'Connectivity'. The 'Subscriptions' option is highlighted with a red box and a circled '3'.</p>
<div>3. Click &amp; Search for integration suite subscription in your trial account.</div>	 <p>The screenshot shows the 'Subscriptions' page in the SAP Cloud Platform Cockpit. The left sidebar has a menu with 'Subscriptions' selected, and other options like 'Overview', 'Services', 'Cloud Foundry', 'Connectivity', and 'Security'. The main content area displays 'Subaccount: trial - Subscriptions' with 'All: 21'. There is a search bar with a red box and a circled '1'.</p>

Explanation	Screenshot
4. Click to go to the Integration Suite launchpad application.	 <p>The screenshot shows the SAP Cloud Platform Cockpit interface. On the left is a navigation menu with options: Overview, Services, Subscriptions (selected), Cloud Foundry, Connectivity, Security, Entitlements, and Usage Analytics. The main area displays 'Subaccount: trial - Sub' and 'Filtered: 2 of 21'. Under the 'Integration Suite' section, the 'Integration Suite' application is listed with a 'Subscribed' status. Below the application name, there is a 'Go to Application' link, which is circled in red. A red circle with the number '6' is placed next to the link.</p>
12. You will find the list of all integration suite capabilities here. Click to open Cloud Integration.	 <p>The screenshot shows the SAP Integration Suite Home page. The header includes the SAP logo and 'Integration Suite Home'. The main content area has a blue banner with the text 'Welcome to SAP Cloud Integration Suite' and 'Simplify and accelerate enterprise integration with SAP Intelligent Enterprise'. Below this is a 'Capabilities' section with the subtitle 'Develop and manage enterprise-wide integrations'. A card titled 'Design, Develop, and Operate Integration Scenarios' is highlighted, with a red circle and the number '7' next to it. The card also mentions 'Cloud Integration'.</p>

Explanation	Screenshot
13. Sign into your CPI tenant and navigate to the Operations View. Click on <b>Security Material</b>	 <p>The screenshot shows the SAP Cloud Platform Integration Operations View. The 'Overview' section displays four cards: Messages (0), Failed Messages (0), Retry Messages (0), and Completed Messages (0). The 'Manage Integration Content' section shows four cards: All (21), Started (19), Error (2), and a plus sign (+). The 'Manage Security' section shows four cards: Security Material (3), Keystore (7), Access Policies (0), and JDBC Material (0). The 'Security Material' card is highlighted with a yellow box.</p>
14. Click on Create->User Credentials	<p>Enter a name, MY305713 and then enter the communication user and password for the Purchase Order API created in earlier exercises.</p>  <p>The screenshot shows the 'Create User Credentials' form. The 'Name' field is filled with 'MY305713', 'Description' with 'S4HANA credentials', 'Type' with 'User Credentials', 'User' with 'DT268_00', and 'Password' and 'Repeat Password' fields are masked with dots. The 'Deploy' and 'Cancel' buttons are visible at the bottom right.</p>

Explanation	Screenshot										
15. Click <b>Deploy</b>	 <p>The screenshot shows the 'SAP Cloud Platform Integration' interface for managing security material. The breadcrumb is 'Overview / Manage Security Material'. Below the header, there is a search bar with the text 'Filter by Name or Deployed By' and buttons for 'Create', 'Upload', and a refresh icon. A table titled 'Security Material (4)' contains one entry:</p> <table><tr><th>Name</th><th>Type</th><th>Status</th><th>Deployed By</th><th>Deployed On</th></tr><tr><td>MY305713</td><td>User Credentials</td><td>Deployed</td><td>marty.mccormick@sap.com</td><td>Oct 14, 2020, 14:19:34</td></tr></table>	Name	Type	Status	Deployed By	Deployed On	MY305713	User Credentials	Deployed	marty.mccormick@sap.com	Oct 14, 2020, 14:19:34
Name	Type	Status	Deployed By	Deployed On							
MY305713	User Credentials	Deployed	marty.mccormick@sap.com	Oct 14, 2020, 14:19:34							

## Summary

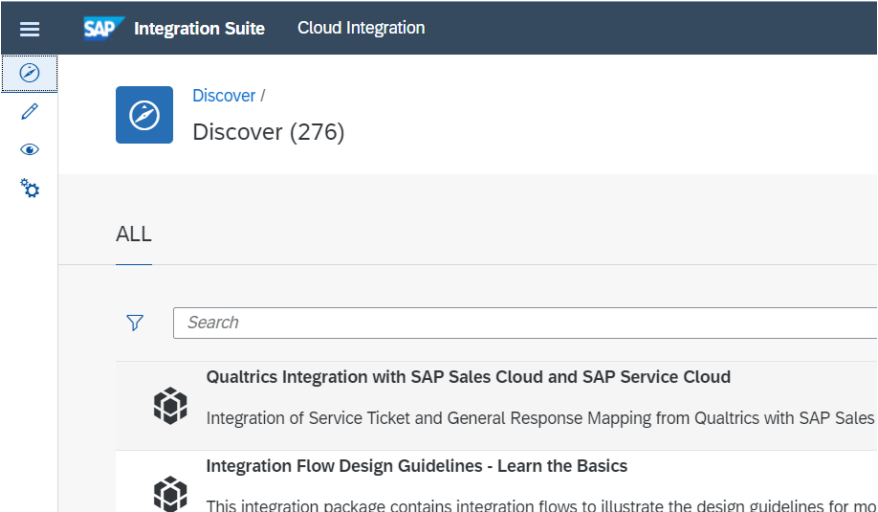
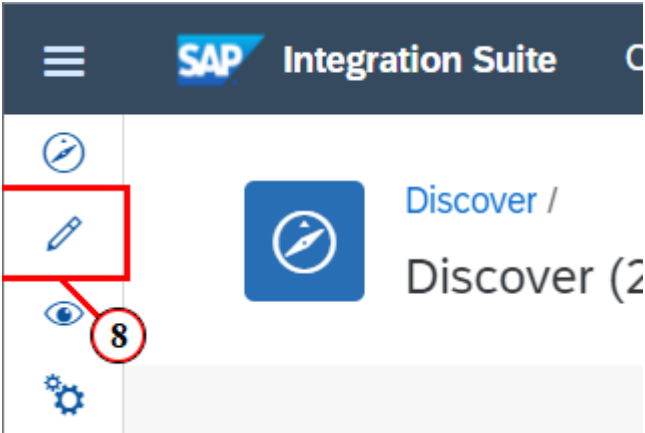
### You have completed the exercise!


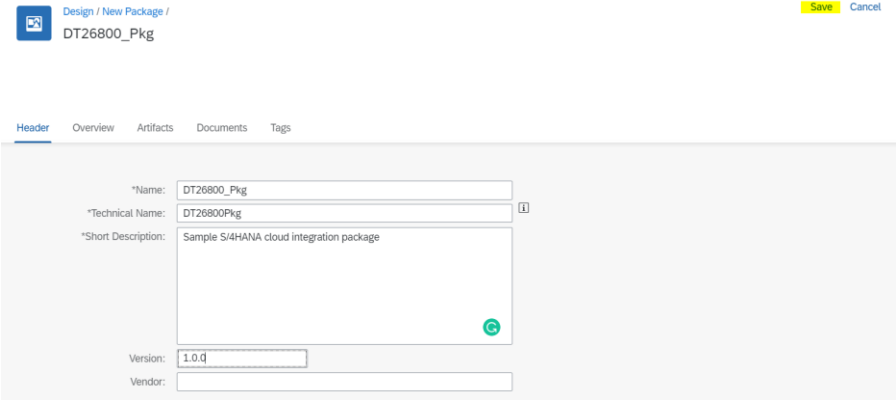
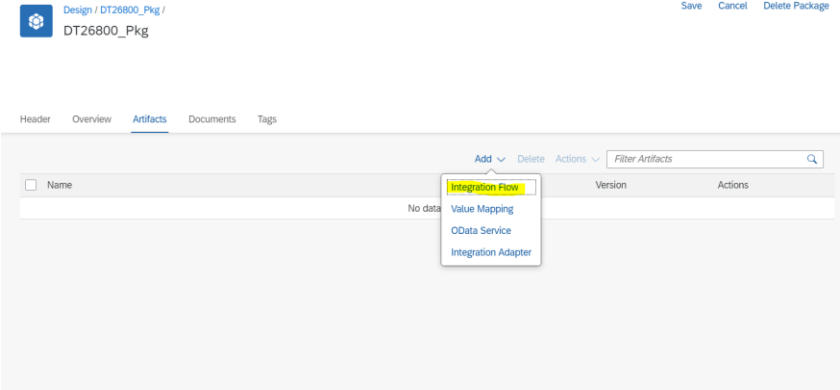
You have now deployed the required security artifact to connect with SAP S/4HANA system via the communication users configured.

EXERCISE 6: DEVELOPING AN INTEGRATION FLOW USING CLOUD INTEGRATION CAPABILITY

In the context of cloud integration capability, you can define how a message is being processed. This logic is applied through what we call as an integration flow.

The integration suite toolset provides you with a easy low-code approach through a graphical editor to support you in modelling the message processing steps.


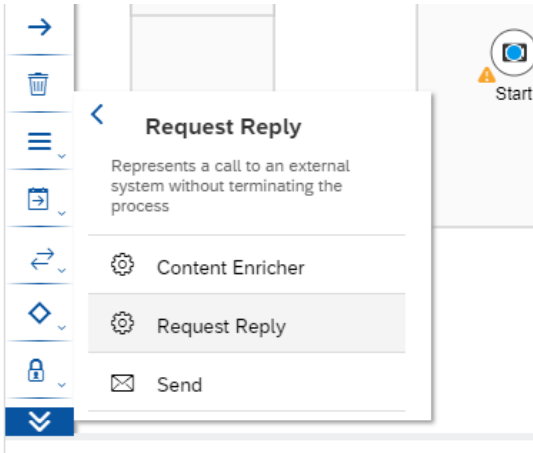

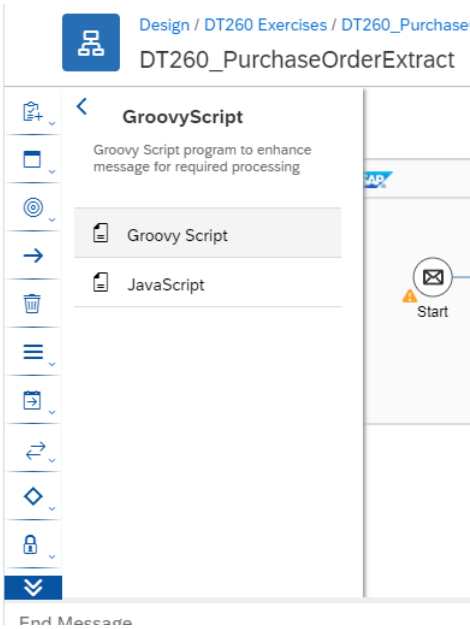
Explanation	Screenshot
<div>1. Sign into your Cloud integration tenant.</div> <div>2. You will be in the Discover view. Here, you will find all the integration packages being delivered by SAP through API Business Hub.</div>	 A screenshot of the SAP Integration Suite 'Discover' view. The top navigation bar shows 'SAP Integration Suite' and 'Cloud Integration'. On the left, there is a sidebar with icons for Discover (selected), Design, Monitor, and Settings. The main area displays 'Discover (276)' and a list of integration packages under the 'ALL' filter. The first package is 'Qualtrics Integration with SAP Sales Cloud and SAP Service Cloud', described as 'Integration of Service Ticket and General Response Mapping from Qualtrics with SAP Sales'. Below it is 'Integration Flow Design Guidelines - Learn the Basics', described as 'This integration package contains integration flows to illustrate the design guidelines for mo'.
<div>3. Click on Design to navigate to your integration tenant space or your work area.</div>	 A screenshot of the SAP Integration Suite 'Design' view. The top navigation bar shows 'SAP Integration Suite' and 'C'. The left sidebar has icons for Discover, Design (selected and highlighted with a red box), Monitor, and Settings. A red circle with the number '8' is placed over the Design icon. The main area shows 'Discover / Discover (2'.

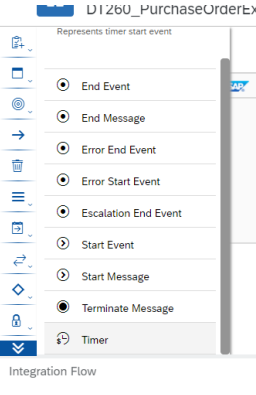
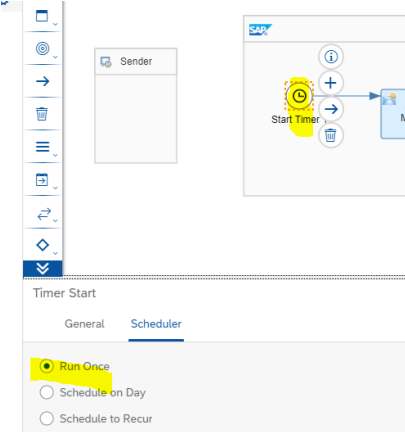
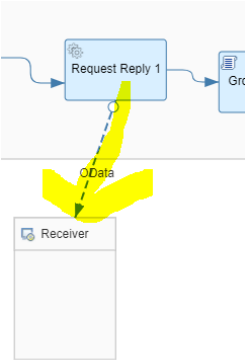
Explanation	Screenshot
<div>4. Click to create a new package</div> <div>5. Enter Name: „DT26800_Pkg“ Short Description : „Sample S/4HANA cloud integration package“ Version: 1.0.0</div>	 <p>The screenshot shows the SAP Integration Suite Cloud Integration Design view. The breadcrumb navigation at the top indicates 'Design / Design'. On the right side of the header, there are 'Create' and 'Import' buttons. The main area is currently empty.</p>
<div>6. Click to Save the package. Once the package is created, you can now start creating the integration artifacts.</div>	 <p>The screenshot shows the 'Design / New Package / DT26800_Pkg' view. At the top right, there are 'Save' and 'Cancel' buttons. Below the header, there are tabs for 'Header', 'Overview', 'Artifacts', 'Documents', and 'Tags'. The 'Header' tab is active, showing a form with the following fields: '*Name:' (DT26800_Pkg), '*Technical Name:' (DT26800Pkg), '*Short Description:' (Sample S/4HANA cloud integration package), 'Version:' (1.0.0), and 'Vendor:' (empty). A green checkmark icon is visible next to the short description field.</p>
<div>7. Navigate to Artifacts tab and click to add an integration flow.</div>	 <p>The screenshot shows the 'Design / DT26800_Pkg / DT26800_Pkg' view. At the top right, there are 'Save', 'Cancel', and 'Delete Package' buttons. Below the header, there are tabs for 'Header', 'Overview', 'Artifacts', 'Documents', and 'Tags'. The 'Artifacts' tab is active, showing a table with columns 'Name', 'Version', and 'Actions'. The table is currently empty, with 'No data' displayed. A dropdown menu is open, showing options: 'Integration Flow', 'Value Mapping', 'OData Service', and 'Integration Adapter'. The 'Integration Flow' option is highlighted.</p>

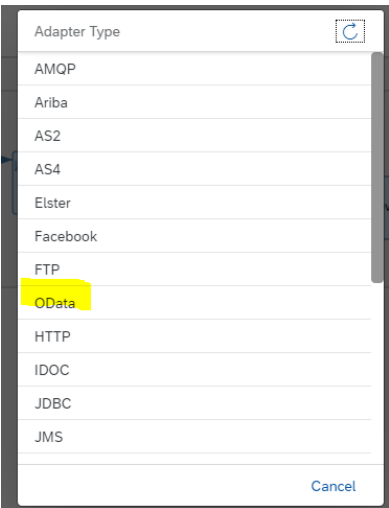
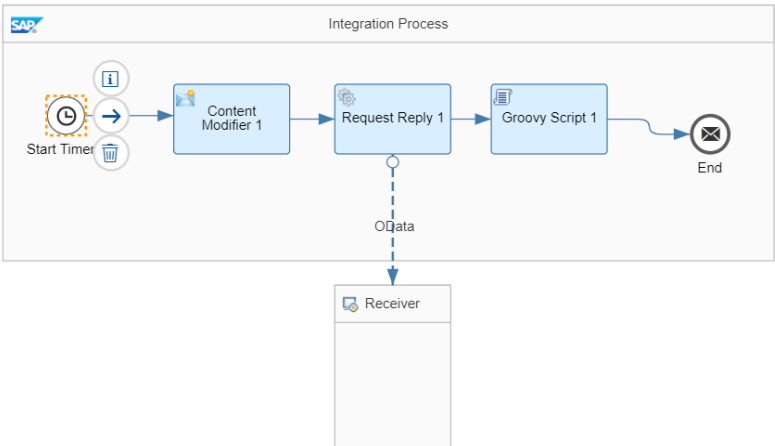
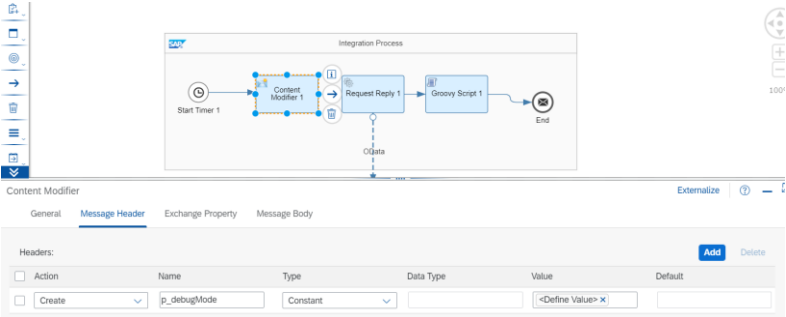
Explanation	Screenshot
<div>1. To create integration flow Name: DT286XX_PurchaseOrderExtract. Description: sample integration flow to extract purchase order.  Click on OK.</div>	<div><div>Add integration flow artifact</div><div><div><div>Create</div><div>Upload</div></div><div><div>Name: *</div><div>DT26800_PurchaseOrderExtract</div></div><div><div>ID: *</div><div>DT26800_PurchaseOrderExtract</div></div><div><div>Product Profile:</div><div>SAP Cloud Platform Integration</div></div><div><div>Description:</div><div>sample integration flow to extract purchase order</div></div><div><div>Sender:</div><div>Sender</div><div>Receiver:</div><div>Receiver</div></div><div><div>OK</div><div>Cancel</div></div></div></div>
<div>2. Click to open the newly created integration flow.</div>	<div><div>Design / DT26800_Pkg / DT26800_Pkg</div><div><div>Header</div><div>Overview</div><div>Artifacts (1)</div><div>Documents</div><div>Tags</div></div><div><div><div><div>DT26800_PurchaseOrderExtract</div><div>sample integration flow to extract purchase order</div><div>Created</div></div><div>Integration Flow</div><div>1.0.0</div><div></div></div></div></div>
<div>3. Click on <b>Edit</b> to begin developing the iFlow.</div>	<div><div>Design / DT26800_Pkg / DT26800_PurchaseOrderExtract / DT26800_PurchaseOrderExtract</div><div><div>Integration Process</div><div><div>Sender</div><div>Receiver</div></div><div><div>Start</div><div>End</div></div></div><div><div>Integration Flow</div><div><div>General</div><div>Runtime Configuration</div><div>Error Configuration</div><div>Resources</div><div>Externalized Parameters</div><div>Problems</div></div><div><div>Name:</div><div>DT26800_PurchaseOrderExtract</div><div>ID:</div><div>DT26800_PurchaseOrderExtract</div><div>Description:</div><div></div></div></div></div>

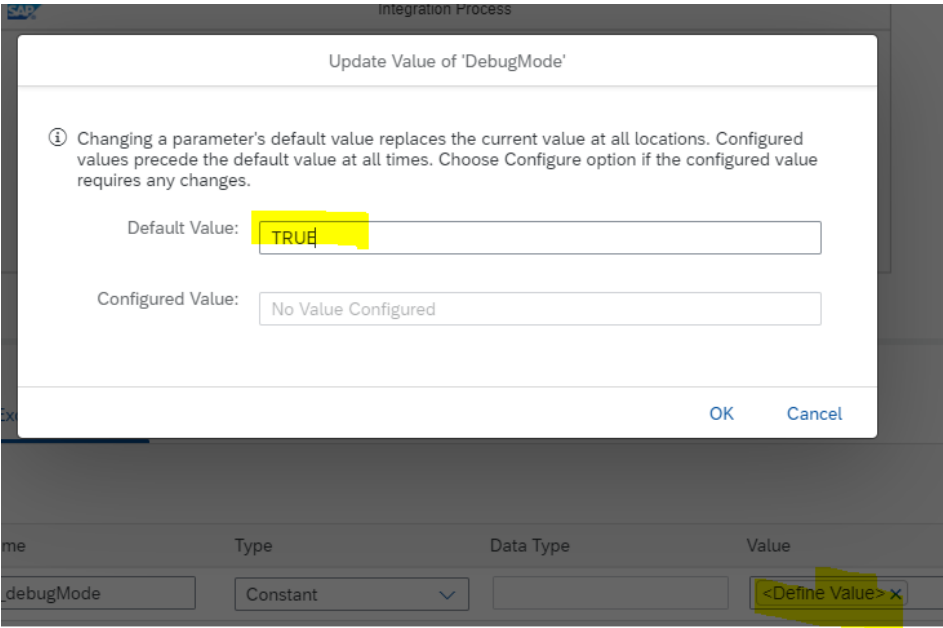
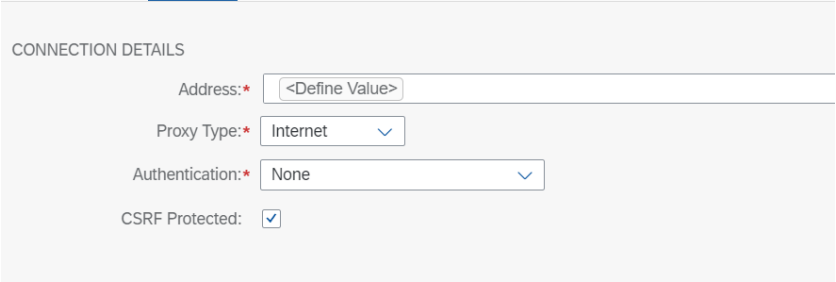
Explanation	Screenshot
<div>4. Now the graphical editor is available for you to start building the custom integration flow. And adding in the message processing logic as required.</div> <div><b>Tips:</b><ul style="list-style-type: none"><li>• We will be selecting and dropping the logical steps from the palette available into the integration flow to define the logic.</li><li>• You can scroll up and down this palette by using the arrows.</li><li>• You can reposition the different panels in the graphical space.</li></ul></div>	<p>The screenshot shows the 'Integration Process' graphical editor. On the left is a palette with various icons. The main workspace contains a flow starting from a 'Start' node (a circle with a triangle) and ending at an 'End' node (a circle with a square). The flow is represented by a horizontal line with arrows. Below the workspace, there are tabs for 'General', 'Runtime Configuration', 'Error Configuration', 'Resources', 'Externalized Parameters', and 'Problems'. The 'General' tab is active, showing fields for 'Name' (DT26800_PurchaseOrderExtract), 'ID' (DT26800_PurchaseOrderExtract), and 'Description'.</p>
<div>5. Hover over the palette to see the title. Under <b>Message Transformers</b></div> <div><p>-&gt; select <b>Content Modifier</b> step and drop it on the Integration Flow beyond the start step.</p></div>	<p>The screenshot shows the 'Integration Process' graphical editor with a 'Content Modifier' step added to the flow. The flow starts at a 'Start' node, goes to a 'Content Modifier 1' step (a rectangle with a lightning bolt icon), and then ends at an 'End' node. The 'Content Modifier' step is highlighted in the palette on the left. The palette also shows other steps like 'Converter', 'Decoder', 'EDI Extractor', and 'Encoder'. The 'General' tab is active in the bottom panel.</p>

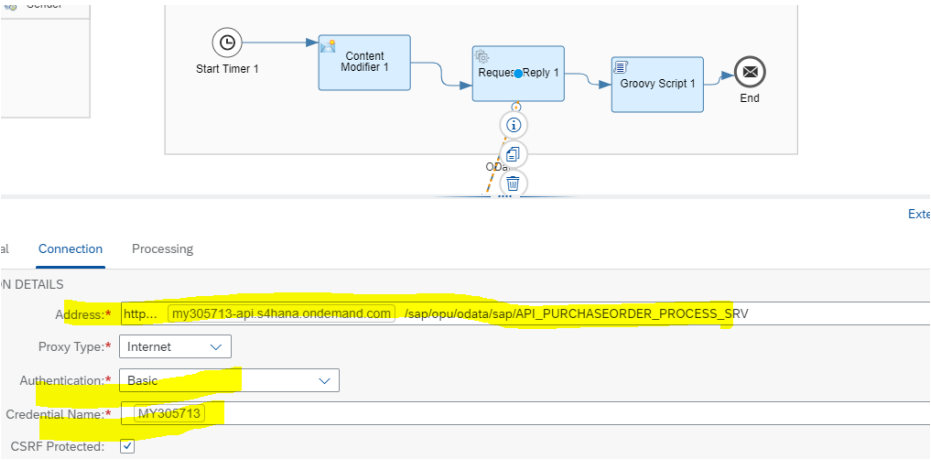


Explanation	Screenshot
<div>6. Similarly, under <b>Call</b>  -&gt;<b>External Call</b> -&gt; add a <b>Request Reply</b> to the Integration Flow.</div>	
<div>7. Under <b>Message Transformers</b>  -&gt;<b>Script</b> -&gt; select and drop the <b>Groovy Script</b> step to the Integration Flow.</div>	

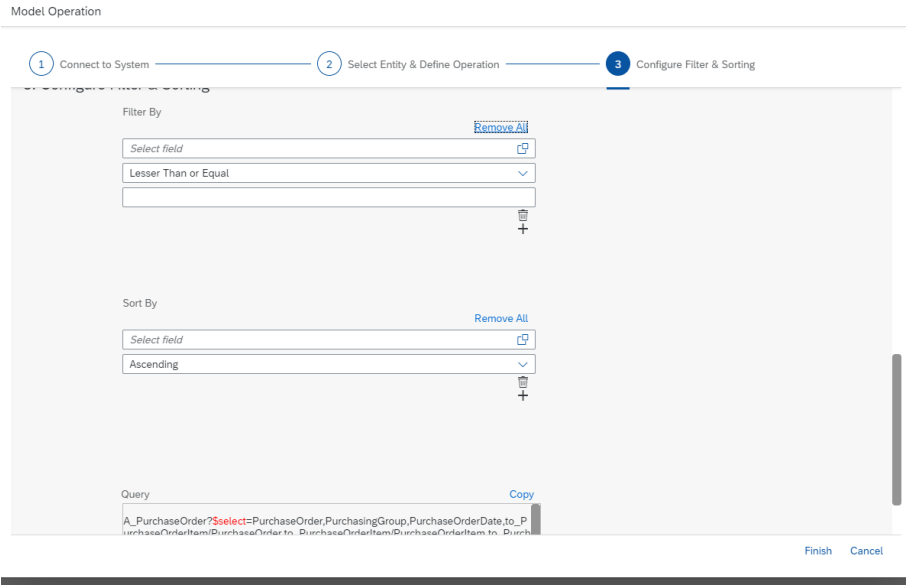
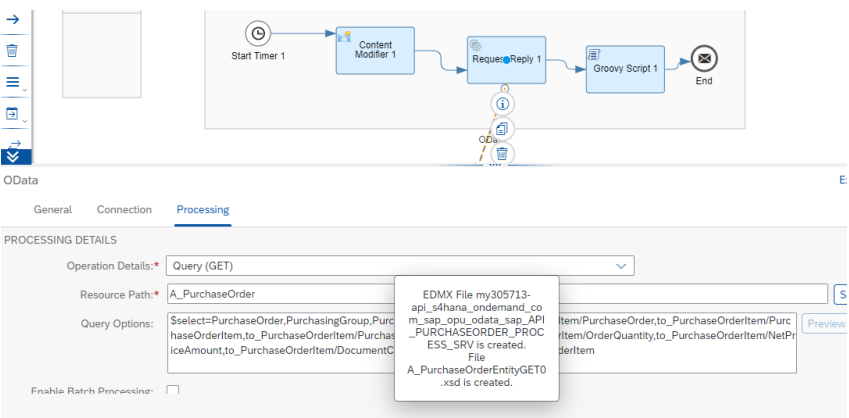
Explanation	Screenshot
<div>8. <b>Delete</b> the start message and under <b>Events</b> add <b>Timer</b> to the integration flow. Join the newly added start event of type timer to the content modifier step of your integration flow.</div> <div>This will allow the integration flow to execute 1 time upon deployment.</div> <div>9. You can delete the Sender system. This is not required as we have selected the timer-based event to trigger the integration flow.</div>	<div>The screenshot shows the SAP Integration Suite Event Catalog. A list of event types is displayed, with 'Timer' selected at the bottom. The title bar indicates 'U1260_PurchaseOrderE&gt;'. Below the list, the text 'Represents timer start event' is visible.</div> <div>The screenshot shows the SAP Integration Suite Designer. On the left, a 'Sender' system is shown. In the center, a 'Start Timer' event is connected to a 'Content Modifier' step. Below the main canvas, the 'Timer Start' configuration panel is open, showing the 'Scheduler' tab with 'Run Once' selected.</div>
<div>10. Drag a line from the <b>Request Reply</b> to the <b>Receiver</b>. A popup window will ask you for the adapter type. Select <b>OData</b> and then <b>OData V2</b>. Note: you can reposition these flow steps to make the integration flow look elegant</div>	<div>The screenshot shows the SAP Integration Suite Designer. A 'Request Reply 1' step is connected to a 'Receiver' system. A yellow arrow points from the 'Request Reply 1' step to the 'Receiver' system, indicating the connection being made.</div>

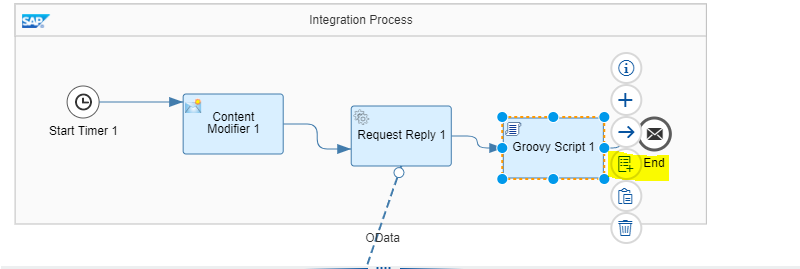

Explanation	Screenshot
	
11. Your integration flow should look like this:	
Now, the integration flow is structurally ready, let us start editing the flow steps. 12. Select <b>Content Modifier</b> . Click <b>Add</b> to add a new property. Add a property <code>p_debugMode</code> 13. For the value, enter <code>{{DebugMode}}</code>	<p>By entering a value in <code>{{ }}</code>, this sets the property to be externally configurable on the iFlow itself.</p> 

Explanation	Screenshot
14. Select "Define value". and enter the default value as TRUE	
15. Next select the OData line. (receiver channel) 16. On the connections tab:	<p>In the address field, enter {{S4Hostname}} and click on enter.</p>  <p>After you enter this, you will be able to click on this define value and enter the s/4hana cloud hostname <b>my305713-api.s4hana.ondemand.com</b></p> <p>Then put <b>https://</b> and <b>/sap/opu/odata/sap/API_PURCHASEORDER_PROCESS_SRV/</b> before and after the URL.</p> <p>Select Basic authentication and in the credential name, type {{S4CredName}} . After typing this, click the box and enter the security credential name you created in prior section, MY305713</p> <p>NOTE: By creating these values as external properties, you will be able to update these values via configuration when the iFlow is transported and not have to edit the iFlow itself.</p>

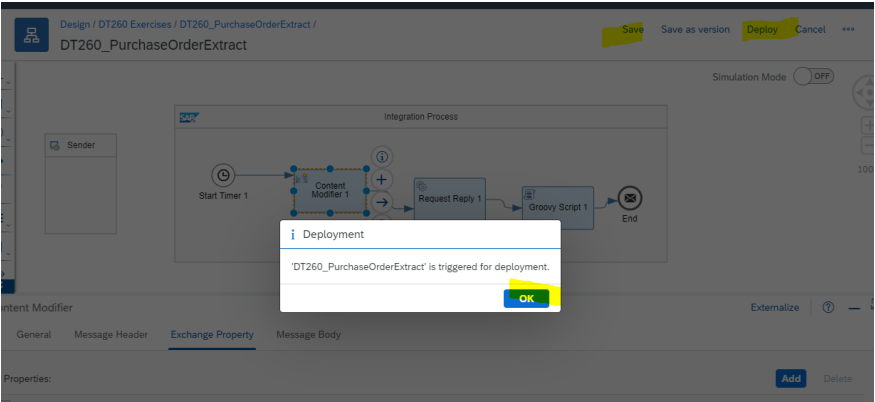
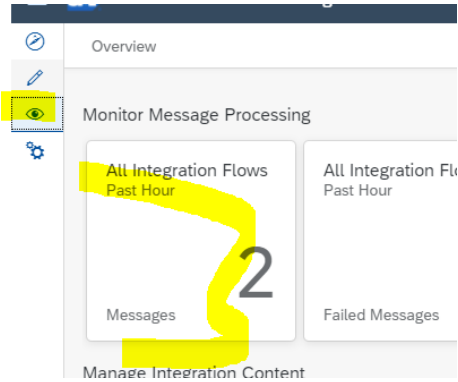
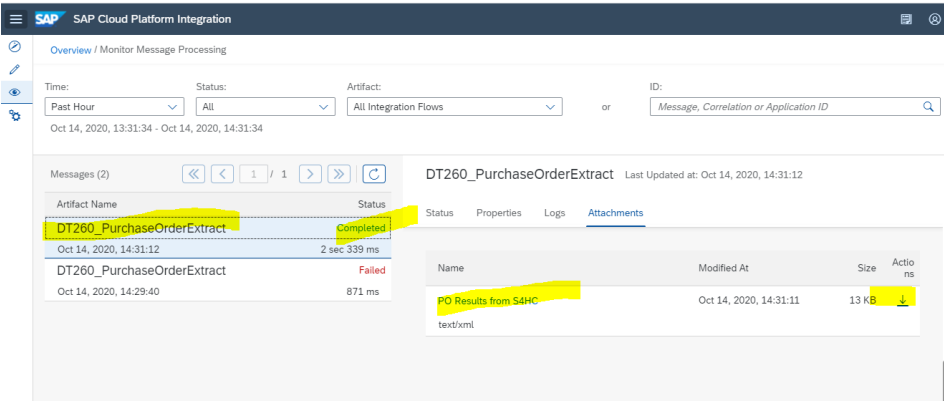
Explanation	Screenshot
	<div><p>The screenshot displays a workflow diagram at the top and a 'Connection' configuration window below it. The workflow consists of the following steps: 'Start Timer 1' (clock icon), 'Content Modifier 1' (document icon), 'Request/Reply 1' (gears icon), 'Groovy Script 1' (code icon), and 'End' (stop icon). The 'Connection' window is titled 'Connection' and 'Processing'. It shows the following details:</p><ul style="list-style-type: none"><li>Address: <code>http://my305713-api.s4hana.ondemand.com/sap/opu/odata/sap/API_PURCHASEORDER_PROCESS_SRV</code></li><li>Proxy Type: <code>Internet</code></li><li>Authentication: <code>Basic</code></li><li>Credential Name: <code>MY305713</code></li><li>CSRF Protected: <input checked="" type="checkbox"/></li></ul></div>
17. Click on the <b>Processing</b> tab and press the <b>Select</b> button for the Resource Path.	<p>Operation is <b>GET</b></p> <p>Set the Sub Levels to 1 in order to expand and fetch purchase order line details</p> <p>Select Entity A_PurchaseOrder and then select some fields at the root level. Eg:</p> <p>PurchaseOrder, PurchaseOrderType,CreatedByUser,CreationDate,Supplier,ExchangeRate,DocumentCurrency,ValidityStartDate,ValidityEndDate</p>

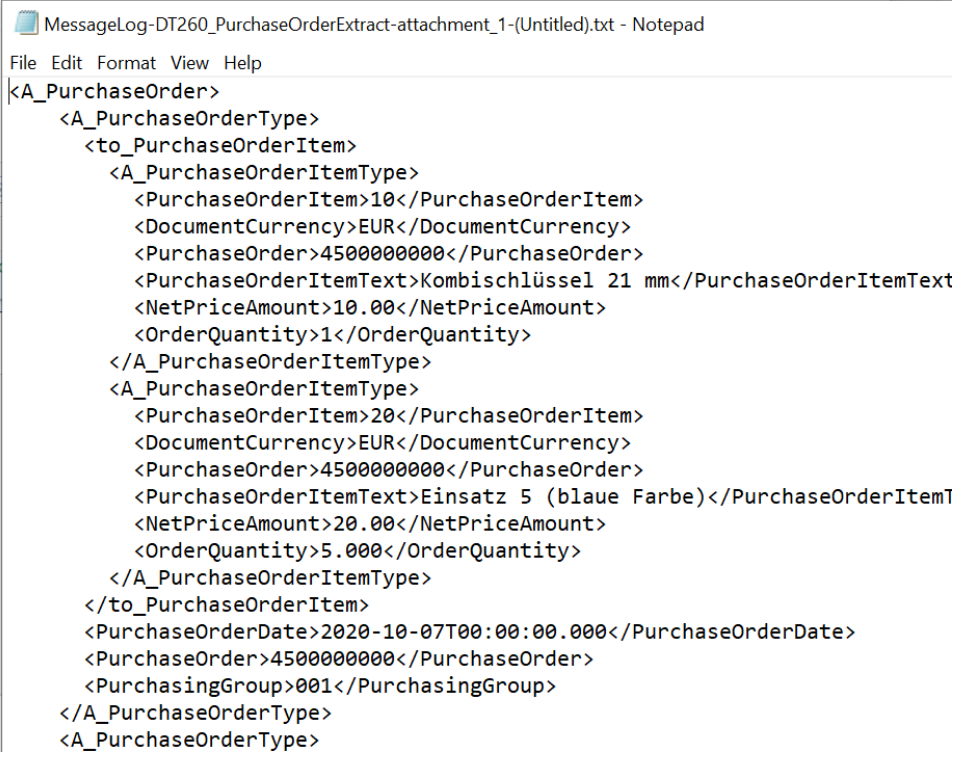
Explanation	Screenshot
	<div>Do the same for the line item. Select some fields. Eg: PurchaseOrder,PurchaseOrderItem,PurchaseOrderItemText Model Operation</div> <div><div><div>1</div><div>Connect to System</div></div><div><div>2</div><div>Select Entity &amp; Define Op</div></div></div> <div><div><div><div><div><input checked="" type="checkbox"/> Use Credential Name</div><div>Credential Na... * MY305713</div></div></div><div><div>2. Select Entity &amp; Define Operation</div><div>Operation : * Query (GET) Sub Levels : 1</div><div>Select Entity : * A_PurchaseOrder</div><div><input type="checkbox"/> Select All Fields</div><div><div>Fields</div><div><div><input type="checkbox"/> OrderPriceUnit</div><div><input type="checkbox"/> OrderPriceUnitToOrderUnitNmtr</div><div><input type="checkbox"/> OrdPriceUnitToOrderUnitDnmtr</div><div><input checked="" type="checkbox"/> DocumentCurrency</div><div><input checked="" type="checkbox"/> NetPriceAmount</div><div><input type="checkbox"/> NetPriceQuantity</div><div><input type="checkbox"/> TaxCode</div><div><input type="checkbox"/> TaxDeterminationDate</div><div><input type="checkbox"/> TaxCountry</div></div></div></div><div><div><div><div><input type="checkbox"/> AddressCorrespondenceLanguage</div><div><div><div><input checked="" type="checkbox"/> to_PurchaseOrderItem</div><div><div><input checked="" type="checkbox"/> PurchaseOrder</div><div><input checked="" type="checkbox"/> PurchaseOrderItem</div><div><input type="checkbox"/> PurchasingDocumentDeletionCode</div><div><input checked="" type="checkbox"/> PurchaseOrderItemText</div><div><input type="checkbox"/> Plant</div><div><input type="checkbox"/> StorageLocation</div></div></div></div></div><div>op : Skip :</div><div><input type="checkbox"/> Batch Processing</div><div><div>Query<div>A_PurchaseOrder?\$select=PurchaseOrder,PurchasingGroup,PurchaseOrderDate,to_PurchaseOrderItem,PurchaseOrder,to_PurchaseOrderItem,PurchaseOrderItem,to_PurchaseOrderItem/PurchaseOrderItemText,to_PurchaseOrderItem/OrderQuantity,to_PurchaseOrderItem/NetPriceAmount,to_PurchaseOrderItem/DocumentCurrency&amp;\$expand=to_PurchaseOrderItem</div></div></div></div></div></div></div>

Explanation	Screenshot
18. Go to Step 3. You can further define parameters.	
19. Click <b>Finish</b>	

Explanation	Screenshot
<p>20. Next we are going to log the results from S4. We will use our “debug mode” property to see if we should log the payloads. Click on the <b>Script</b> and select the + to add a new script to the integration flow</p>	
<p>21. Since we only have 1 script in this integration flow, we can use the processData method which is the default. Replace the code with the provided example. The code checks the property and if it's true, logs the current message body.</p>	<div><div> Design / DT260 Exercises / DT260_PurchaseOrderExtract / script1.groovy / script1.groovy</div><pre>1  /* 2  2 The integration developer needs to create the method processData 3  3 This method takes Message object of package com.sap.gateway.ip.core.customdev.util 4  4 which includes helper methods useful for the content developer: 5  5 The methods available are: 6  6 public java.lang.Object getBody() 7  7 public void setBody(java.lang.Object exchangeBody) 8  8 public java.util.Map&lt;java.lang.String,java.lang.Object&gt; getHeaders() 9  9 public void setHeaders(java.util.Map&lt;java.lang.String,java.lang.Object&gt; exchangeHeaders) 10 10 public void setHeader(java.lang.String name, java.lang.Object value) 11 11 public java.util.Map&lt;java.lang.String,java.lang.Object&gt; getProperties() 12 12 public void setProperties(java.util.Map&lt;java.lang.String,java.lang.Object&gt; exchangeProperties) 13 13 public void setProperty(java.lang.String name, java.lang.Object value) 14 14 public java.util.List&lt;com.sap.gateway.ip.core.customdev.util.SoapHeader&gt; getSoapHeaders() 15 15 public void setSoapHeaders(java.util.List&lt;com.sap.gateway.ip.core.customdev.util.SoapHeader&gt; soapHeaders) 16 16 public void clearSoapHeaders() 17 17 */ 18 import com.sap.gateway.ip.core.customdev.util.Message; 19 import java.util.HashMap; 20 def Message processData(Message message) { 21 //Body 22 def body = message.getBody(java.lang.String) as String; 23 def messageLog = messageLogFactory.getMessageLog(message); 24 def pMap = message.getProperties(); 25 26 27 if(pMap.get("p_debugMode").toUpperCase()=="TRUE" &amp;&amp; messageLog != null) { 28 messageLog.setStringProperty("ResponsePayload", "Printing Payload As Attachment") 29 messageLog.addAttachmentAsString("PO Results from S4HC", body, "text/xml"); 30 } 31 32 return message; 33 } 34</pre></div> <div><pre>import com.sap.gateway.ip.core.customdev.util.Message; import java.util.HashMap; def Message processData(Message message) { //Body def body = message.getBody(java.lang.String) as String; def messageLog = messageLogFactory.getMessageLog(message); def pMap = message.getProperties();  if(pMap.get("p_debugMode").toUpperCase()=="TRUE" &amp;&amp; messageLog != null) { messageLog.setStringProperty("ResponsePayload", "Printing Payload As Attachment") messageLog.addAttachmentAsString("PO Results from S4HC", body, "text/xml"); }  return message; }</pre></div>



Explanation	Screenshot
22. Now click on <b>Save</b> and then click on <b>Deploy</b>	
23. Navigate to <b>Operations View</b> and select the tile <b>All Integration Flows</b> in the last hour	
24. Here you can see the results of your iFlow. If you click on the download icon under Actions you can open up the XML payload.	

Explanation	Screenshot
25. XML Payload from S4	 <pre> MessageLog-DT260_PurchaseOrderExtract-attachment_1-(Untitled).txt - Notepad File Edit Format View Help &lt;A_PurchaseOrder&gt;   &lt;A_PurchaseOrderType&gt;     &lt;to_PurchaseOrderItem&gt;       &lt;A_PurchaseOrderItemType&gt;         &lt;PurchaseOrderItem&gt;10&lt;/PurchaseOrderItem&gt;         &lt;DocumentCurrency&gt;EUR&lt;/DocumentCurrency&gt;         &lt;PurchaseOrder&gt;4500000000&lt;/PurchaseOrder&gt;         &lt;PurchaseOrderItemText&gt;Kombischlüssel 21 mm&lt;/PurchaseOrderItemText&gt;         &lt;NetPriceAmount&gt;10.00&lt;/NetPriceAmount&gt;         &lt;OrderQuantity&gt;1&lt;/OrderQuantity&gt;       &lt;/A_PurchaseOrderItemType&gt;       &lt;A_PurchaseOrderItemType&gt;         &lt;PurchaseOrderItem&gt;20&lt;/PurchaseOrderItem&gt;         &lt;DocumentCurrency&gt;EUR&lt;/DocumentCurrency&gt;         &lt;PurchaseOrder&gt;4500000000&lt;/PurchaseOrder&gt;         &lt;PurchaseOrderItemText&gt;Einsatz 5 (blaue Farbe)&lt;/PurchaseOrderItemText&gt;         &lt;NetPriceAmount&gt;20.00&lt;/NetPriceAmount&gt;         &lt;OrderQuantity&gt;5.000&lt;/OrderQuantity&gt;       &lt;/A_PurchaseOrderItemType&gt;     &lt;/to_PurchaseOrderItem&gt;     &lt;PurchaseOrderDate&gt;2020-10-07T00:00:00.000&lt;/PurchaseOrderDate&gt;     &lt;PurchaseOrder&gt;4500000000&lt;/PurchaseOrder&gt;     &lt;PurchasingGroup&gt;001&lt;/PurchasingGroup&gt;   &lt;/A_PurchaseOrderType&gt; &lt;/A_PurchaseOrderType&gt; </pre>
26.	<p>As a next step, you would typically have a message mapping step where you transform this XML payload into your target format. For example, you may want to convert this payload into a csv file to send to a 3<sup>rd</sup> party system for further processing.</p>

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