

Day 4

SAP Advanced Event Mesh – SEMP API

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Day 4

Exercise: Use APIs

- Understand the different APIs of Advanced Event Mesh
- Work with an Postman collection: Create and Delete a new Development Broker Service
- Publish a "Rest"-Event via Postman
- Create a new Queue via SEMP API
- Check Queues with SEMP API

Prerequisites

- You access and use the same broker you setup previously

Day 4 Solution 1

Solution 1: Use APIs

Exercise 1

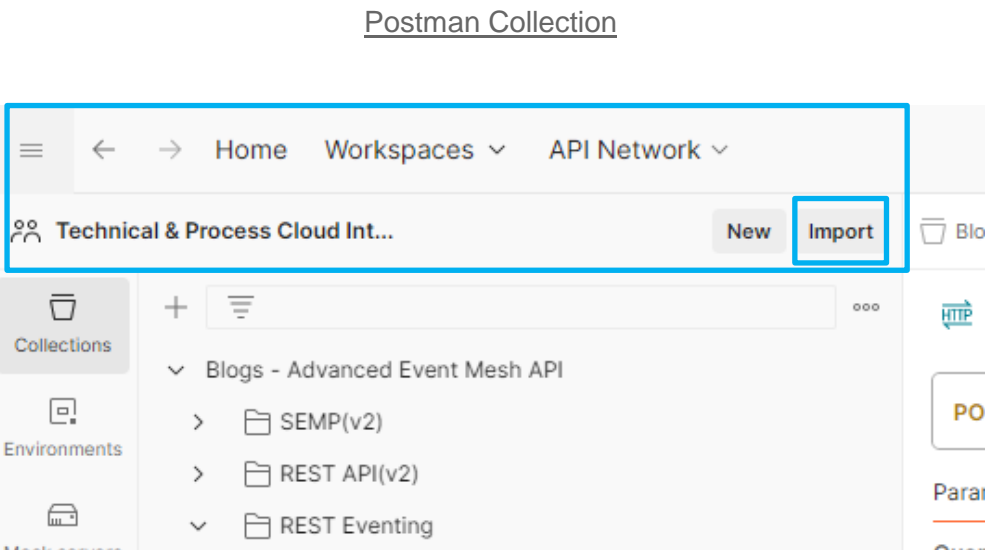
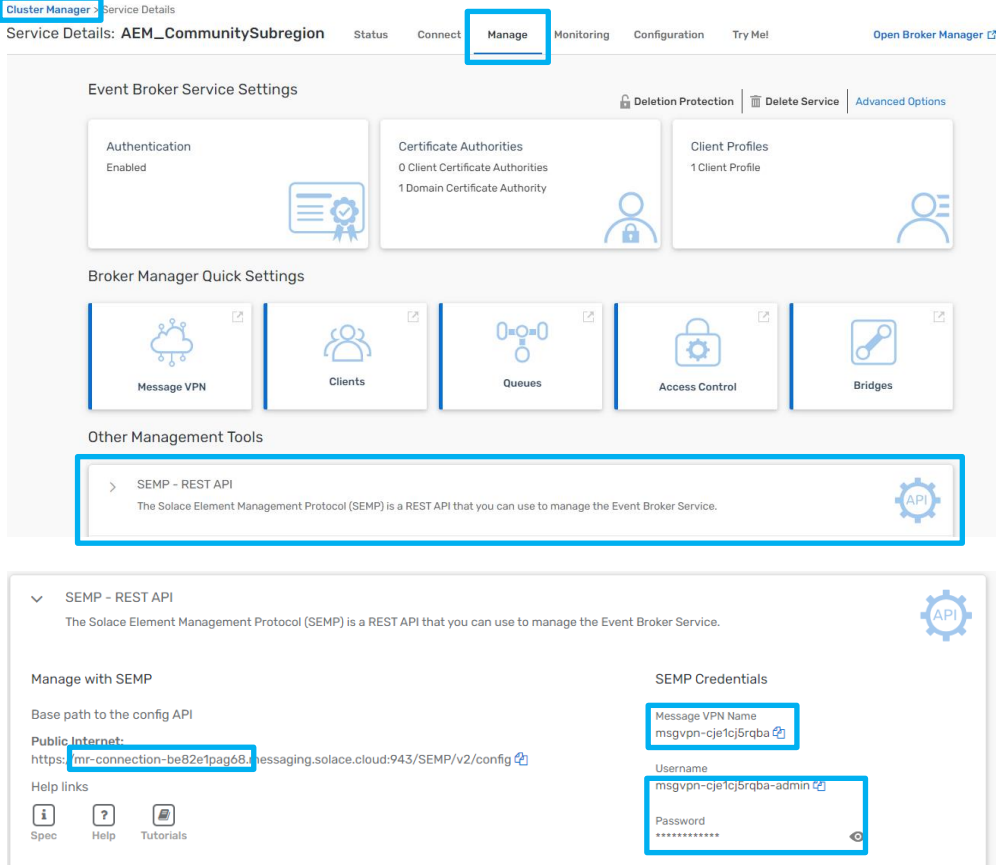
- Create Token for Mission Control
- Download PostMan – Collection
- Identify REST API(v2) Cloud URL
- Use the Mission Control Folder in PostMan
 - Get list of all Datacenters
 - Get list of all Event Broker Service in your Landscape
 - Delete 1 of the Event Broker via specific ID (delete your demo Event Broker)
 - Create 1 new Event Broker with Development Attributes

Exercise 2

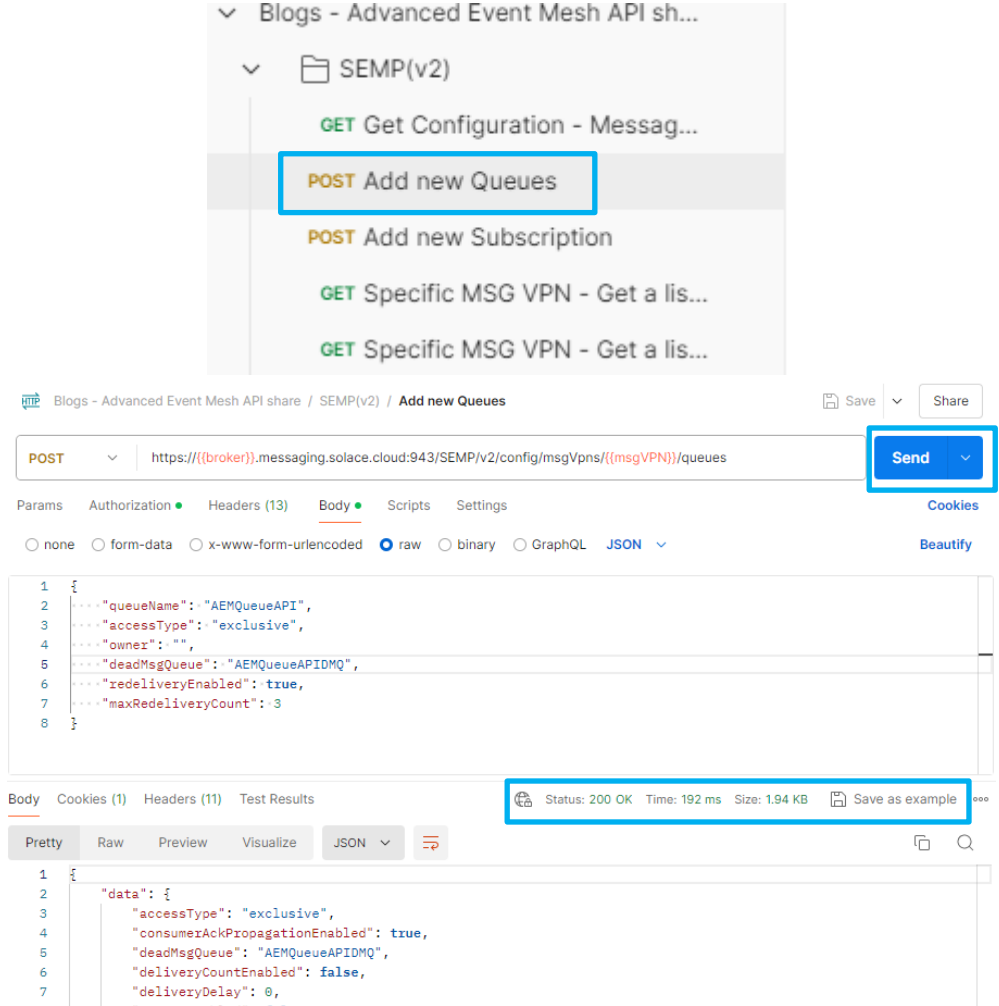
- Create a new Queue in your Event Broker Service
- Create a new Topic subscription in your Event Broker Service
- Publish a new Message in a specific Queue / Topic subscription

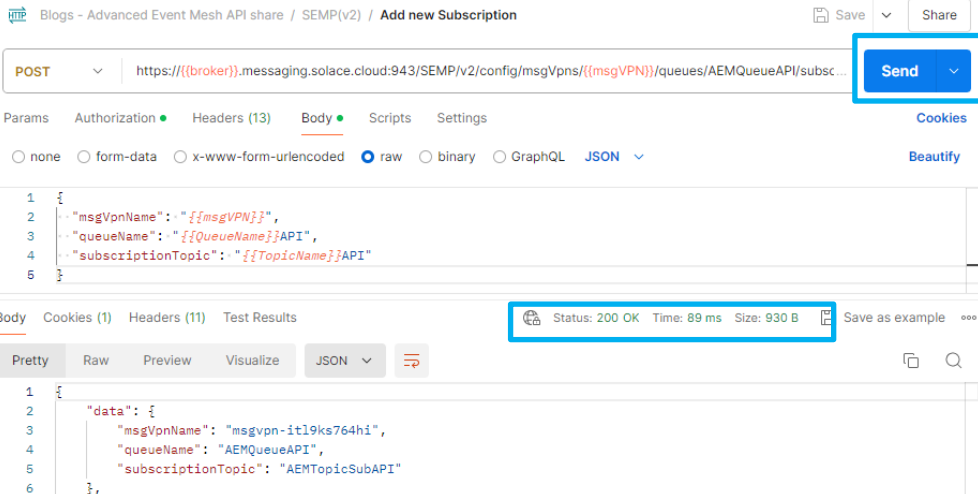
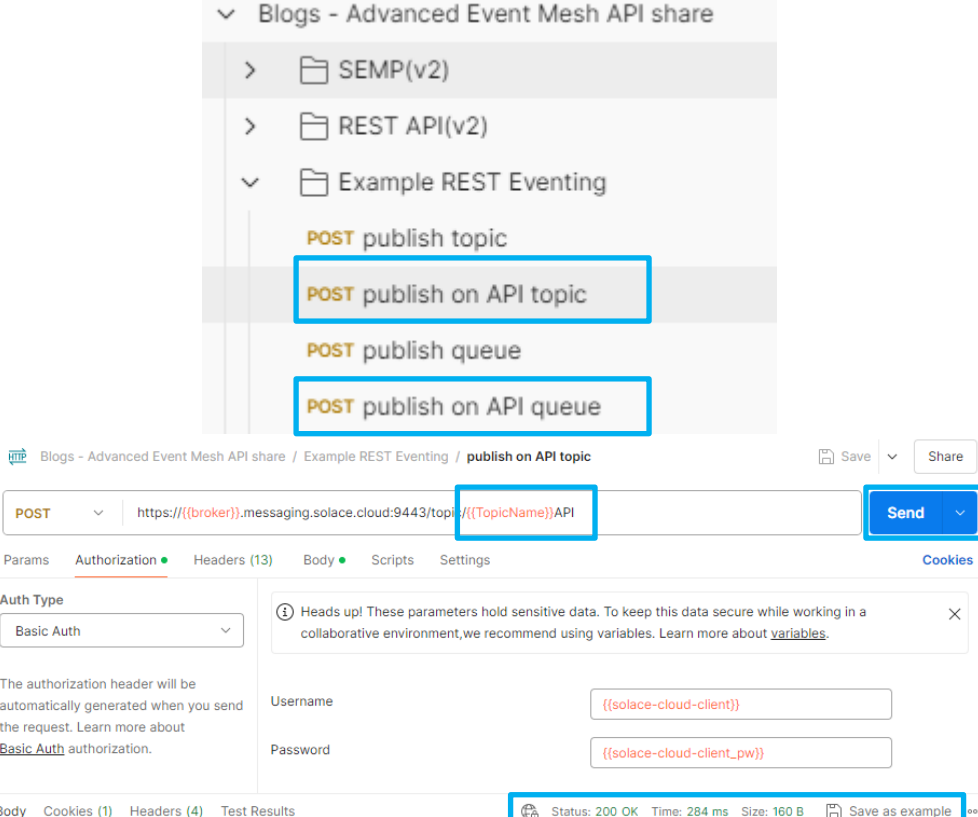
Exercise 3

- Leverage the SEMP – API
 - Create a new Queue by Payload and Publish an other Rest Message
 - Identify your published message in a specific Queue

Explanation	Screenshot
<p>If you don't have it.</p> <p>Download the Postman collection with some basic apis and import this collection in your postman</p>	 <p>The screenshot shows the Postman web interface. At the top, there's a navigation bar with 'Home', 'Workspaces', and 'API Network'. Below this, a collection named 'Technical & Process Cloud Int...' is displayed. The 'Import' button is highlighted with a blue box. The collection contains several folders, including 'Blogs - Advanced Event Mesh API', 'SEMP(v2)', 'REST API(v2)', and 'REST Eventing'.</p>
<p>Identify the relevant information for setting up the SEMP connection in Postman.</p> <p>Go To: Cluster Manager → Event Broker Service → Manage → SEMP – REST API</p>	 <p>The screenshot shows the SAP Event Broker Service 'Manage' page. The 'Cluster Manager' tab is selected. Under 'Service Details: AEM_CommunitySubregion', the 'Manage' tab is active. The page displays 'Event Broker Service Settings' including Authentication (Enabled), Certificate Authorities (0 Client, 1 Domain), and Client Profiles (1 Client Profile). Below this are 'Broker Manager Quick Settings' for Message VPN, Clients, Queues, Access Control, and Bridges. The 'Other Management Tools' section highlights 'SEMP - REST API'. The expanded view shows the 'SEMP - REST API' details, including the base path to the config API and the SEMP Credentials (Message VPN Name, Username, Password).</p>

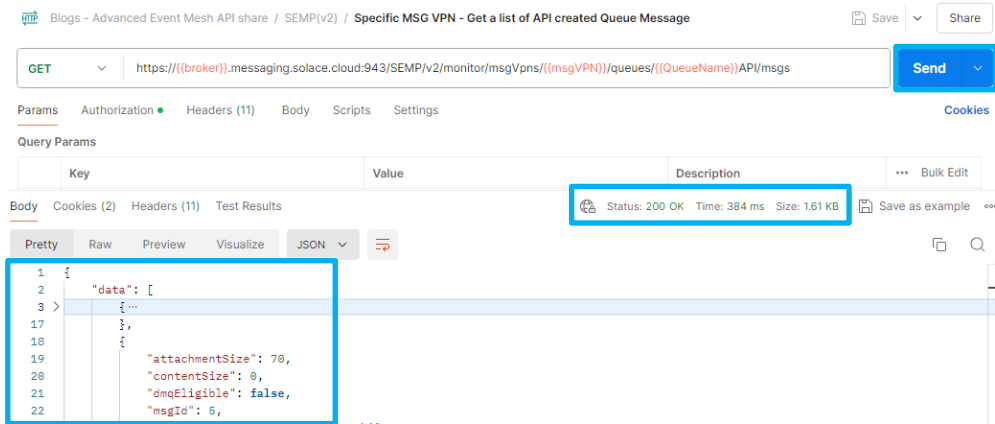
Explanation	Screenshot																																								
<p>Update and cross check variables in Postman Collection</p> <p>SEMPv2User = SEMP Credentials UserName</p> <p>SEMPv2Password = SEMP Credentials Password</p> <p>Check msgVPN = SEMP Credentials Message VPN Name</p> <p>Broker = Public Internet between: <code>https://{broker}.messaging.solace.cloud:9443</code></p>	<div><div><div>Blogs - Advanced Event Mesh API share</div><div>OverviewAuthorizationScriptsVariablesRuns</div><div>These variables are specific to this collection and its requests. Learn more about collection variables</div><div><div>Filter variables</div><table><thead><tr><th></th><th>Variable</th><th>Initial value</th><th>Current value</th></tr></thead><tbody><tr><td><input checked="" type="checkbox"/></td><td>datacenterId</td><td>aks-francecentral</td><td>aks-francecentral</td></tr><tr><td><input checked="" type="checkbox"/></td><td>serviceClassId</td><td>DEVELOPER</td><td>DEVELOPER</td></tr><tr><td><input checked="" type="checkbox"/></td><td>serviceTypeId</td><td>DEVELOPER</td><td>DEVELOPER</td></tr><tr><td><input checked="" type="checkbox"/></td><td>region</td><td>eu10</td><td>eu10</td></tr><tr><td><input checked="" type="checkbox"/></td><td>MissionControlToken</td><td>eyJhbGciOiJIJSUzI1NiIsImtpZ...</td><td>eyJhbGciOiJIJSUzI1NiIsImtpZCI6Im1hY</td></tr><tr><td><input checked="" type="checkbox"/></td><td>SEMPv2User</td><td>admin</td><td>jba-admin</td></tr><tr><td><input checked="" type="checkbox"/></td><td>SEMPv2Password</td><td>!bed9...</td><td>!329e</td></tr><tr><td><input checked="" type="checkbox"/></td><td>msgVPN</td><td>msgvpn-cje1c</td><td>msgvpn-cje1c</td></tr><tr><td><input checked="" type="checkbox"/></td><td>broker</td><td>mr-connection-</td><td>mr-connection-be</td></tr></tbody></table></div></div></div>		Variable	Initial value	Current value	<input checked="" type="checkbox"/>	datacenterId	aks-francecentral	aks-francecentral	<input checked="" type="checkbox"/>	serviceClassId	DEVELOPER	DEVELOPER	<input checked="" type="checkbox"/>	serviceTypeId	DEVELOPER	DEVELOPER	<input checked="" type="checkbox"/>	region	eu10	eu10	<input checked="" type="checkbox"/>	MissionControlToken	eyJhbGciOiJIJSUzI1NiIsImtpZ...	eyJhbGciOiJIJSUzI1NiIsImtpZCI6Im1hY	<input checked="" type="checkbox"/>	SEMPv2User	admin	jba-admin	<input checked="" type="checkbox"/>	SEMPv2Password	!bed9...	!329e	<input checked="" type="checkbox"/>	msgVPN	msgvpn-cje1c	msgvpn-cje1c	<input checked="" type="checkbox"/>	broker	mr-connection-	mr-connection-be
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<input checked="" type="checkbox"/>	SEMPv2User	admin	jba-admin																																						
<input checked="" type="checkbox"/>	SEMPv2Password	!bed9...	!329e																																						
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<p>Check Message VPN API</p>	<div><div><div><div>> Blogs - Advanced Event Mesh API</div><div>> Blogs - Advanced Event Mesh API sh...</div><div>> SEMP(v2)</div><div>GET Get Configuration - Messag...</div><div>POST Add new Queues</div><div>POST Add new Subscription</div><div>GET Specific MSG VPN - Get a lis...</div></div></div><div><div><div>Blogs - Advanced Event Mesh API share / SEMP(v2) / Get Configuration - Message VPN</div><div>SaveShare</div></div><div><div>GEThttps://{broker}.messaging.solace.cloud:943/SEMP/v2/config/msgVpns</div><div>Send</div></div><div><div>ParamsAuthorizationHeaders (11)BodyScriptsSettingsCookies</div><div><div>Auth Type</div><div>Basic Auth</div><div>The authorization header will be automatically generated when you send the request. Learn more about Basic Auth authorization.</div><div><div>Username</div><div>{{SEMPv2User}}</div><div>Password</div><div>{{SEMPv2Password}}</div></div></div><div><div>BodyCookies (1)Headers (11)Test Results</div><div><div>Status: 200 OKTime: 595 msSize: 9.7 KBSave as example</div><div><div>PrettyRawPreviewVisualizeJSON</div><div><pre>1 { 2 "data": [3 { 4 "alias": "", 5 "authenticationBasicEnabled": true, 6 "authenticationBasicProfileName": "", 7 "authenticationBasicRadiusDomain": ""</pre></div></div></div></div></div></div></div>																																								

Explanation	Screenshot
Add a new queue via API	 <p>The screenshot shows the SAP API Explorer interface. The breadcrumb path is 'Blogs - Advanced Event Mesh API share' > 'SEMP(v2)'. The endpoint 'POST Add new Queues' is selected and highlighted with a blue box. Below the endpoint, the URL is shown as <code>https://{(broker)}.messaging.solace.cloud:943/SEMP/v2/config/msgVpns/{(msgVPN)}/queues</code>. The 'Send' button is also highlighted with a blue box. The request body is displayed in JSON format:</p> <pre> 1 { 2 "queueName": "AEMQueueAPI", 3 "accessType": "exclusive", 4 "owner": "", 5 "deadMsgQueue": "AEMQueueAPIDMQ", 6 "redeliveryEnabled": true, 7 "maxRedeliveryCount": 3 8 } </pre> <p>The response status is '200 OK' with a time of '192 ms' and a size of '1.94 KB'. The response body is shown in JSON format:</p> <pre> 1 { 2 "data": { 3 "accessType": "exclusive", 4 "consumerAckPropagationEnabled": true, 5 "deadMsgQueue": "AEMQueueAPIDMQ", 6 "deliveryCountEnabled": false, 7 "deliveryDelay": 0, </pre>
Add a new topic subscription via API	 <p>The screenshot shows the SAP API Explorer interface. The breadcrumb path is 'Blogs - Advanced Event Mesh API share' > 'SEMP(v2)'. The endpoint 'POST Add new Subscription' is selected and highlighted with a blue box. Other endpoints visible include 'GET Get Configuration - Message VPN', 'POST Add new Queues', 'GET Specific MSG VPN - Get a list of Queue objects', and 'GET Specific MSG VPN - Get a list of Queue Message objects'.</p>

Explanation	Screenshot
	 <p>Blogs - Advanced Event Mesh API share / SEMP(v2) / Add new Subscription</p> <p>POST https://((broker)).messaging.solace.cloud:943/SEMP/v2/config/msgVpns/((msgVPN))/queues/AEMQueueAPI/subsc...</p> <p>Params Authorization Headers (13) Body Scripts Settings</p> <p>none form-data x-www-form-urlencoded raw binary GraphQL JSON</p> <pre>1 { 2 "msgVpnName": "((msgVPN))", 3 "queueName": "((QueueName))API", 4 "subscriptionTopic": "((TopicName))API" 5 }</pre> <p>Body Cookies (1) Headers (11) Test Results</p> <p>Status: 200 OK Time: 89 ms Size: 930 B Save as example</p> <p>Pretty Raw Preview Visualize JSON<pre>1 { 2 "data": { 3 "msgVpnName": "msgvpn-itl9ks764hi", 4 "queueName": "AEMQueueAPI", 5 "subscriptionTopic": "AEMTopicSubAPI" 6 }, 7 }</pre></p>
Publish via REST API on API Topic and on API Queue	 <p>Blogs - Advanced Event Mesh API share</p> <ul style="list-style-type: none">SEMP(v2)REST API(v2)Example REST Eventing<ul style="list-style-type: none">POST publish topicPOST publish on API topicPOST publish queuePOST publish on API queue <p>Blogs - Advanced Event Mesh API share / Example REST Eventing / publish on API topic</p> <p>POST https://((broker)).messaging.solace.cloud:9443/topic/((TopicName))API</p> <p>Params Authorization Headers (13) Body Scripts Settings</p> <p>Auth Type Basic Auth</p> <p>Heads up! These parameters hold sensitive data. To keep this data secure while working in a collaborative environment, we recommend using variables. Learn more about variables.</p> <p>The authorization header will be automatically generated when you send the request. Learn more about Basic Auth authorization.</p> <p>Username ((solace-cloud-client))</p> <p>Password ((solace-cloud-client_pw))</p> <p>Body Cookies (1) Headers (4) Test Results</p> <p>Status: 200 OK Time: 284 ms Size: 160 B Save as example</p>

Explanation	Screenshot																												
	<p>Blogs - Advanced Event Mesh API share / Example REST Eventing / publish on API queue</p> <p>POST <code>https://((broker)).messaging.solace.cloud:9443/queue/((QueueName))API</code> Send</p> <p>Params Authorization Headers (13) Body Scripts Settings Cookies</p> <p>Query Params</p> <table><thead><tr><th>Key</th><th>Value</th><th>Description</th><th>...</th><th>Bulk Edit</th></tr></thead><tbody><tr><td>Key</td><td>Value</td><td>Description</td><td></td><td></td></tr></tbody></table> <p>Body Cookies (1) Headers (4) Test Results Status: 200 OK Time: 46 ms Size: 160 B Save as example</p>	Key	Value	Description	...	Bulk Edit	Key	Value	Description																				
Key	Value	Description	...	Bulk Edit																									
Key	Value	Description																											
Crosscheck in UI	<p>Queues Topic Endpoints Templates</p> <p>Search by name</p> <table><thead><tr><th>Queue Name</th><th>Incoming</th><th>Outgoing</th><th>Access Type</th><th>Partition Count</th><th>Messages Queued (%)</th><th>Messages Queued (msgs)</th></tr></thead><tbody><tr><td>#cluster:d8407a405a0a000a6e9346bb00000000</td><td>On</td><td>On</td><td>Exclusive</td><td>0</td><td>0</td><td>0</td></tr><tr><td>AEHQueue</td><td>On</td><td>On</td><td>Exclusive</td><td>0</td><td>2</td><td>2</td></tr><tr><td>AEHQueueAPI</td><td>On</td><td>On</td><td>Exclusive</td><td>0</td><td>2</td><td>2</td></tr></tbody></table>	Queue Name	Incoming	Outgoing	Access Type	Partition Count	Messages Queued (%)	Messages Queued (msgs)	#cluster:d8407a405a0a000a6e9346bb00000000	On	On	Exclusive	0	0	0	AEHQueue	On	On	Exclusive	0	2	2	AEHQueueAPI	On	On	Exclusive	0	2	2
Queue Name	Incoming	Outgoing	Access Type	Partition Count	Messages Queued (%)	Messages Queued (msgs)																							
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AEHQueueAPI	On	On	Exclusive	0	2	2																							
List all Queues with SEMP API	<p>Blogs - Advanced Event Mesh API share</p> <p>SEMP(v2)</p> <p>GET Get Configuration - Message VPN</p> <p>POST Add new Queues</p> <p>POST Add new Subscription</p> <p>GET Specific MSG VPN - Get a list of Queue objects</p> <p>GET Specific MSG VPN - Get a list of Queue Message</p> <p>GET Specific MSG VPN - Get a list of API created Queue Message</p> <p>Blogs - Advanced Event Mesh API share / SEMP(v2) / Specific MSG VPN - Get a list of Queue objects</p> <p>GET <code>https://((broker)).messaging.solace.cloud:943/SEMP/v2/monitor/msgVpns/((msgVPN))/queues</code> Send</p> <p>Params Authorization Headers (11) Body Scripts Settings Cookies</p> <p>Auth Type Basic Auth</p> <p>Heads up! These parameters hold sensitive data. To keep this data secure while working in a collaborative environment, we recommend using variables. Learn more about variables.</p> <p>Body Cookies (2) Headers (11) Test Results Status: 200 OK Time: 191 ms Size: 11.84 KB Save as example</p> <p>Pretty Raw Preview Visualize JSON</p> <pre>1 { 2 "data": [3 ... 110], 111 ... 220], 221 ... 330]</pre>																												

Explanation	Screenshot
<p>List all messages in manuel created Queue</p> <p>Result: 2 message objects</p>	<p>The screenshot shows the API Explorer interface for the 'Blogs - Advanced Event Mesh API share' project. The 'SEMP(v2)' folder is expanded, and the 'GET Specific MSG VPN - Get a list of Queue Message' endpoint is selected. The URL is <code>https://(broker).messaging.solace.cloud:943/SEMP/v2/monitor/msgVpns/((msgVPN))/queues/((QueueName))/msgs</code>. The 'Send' button is visible. The response is shown in the 'Pretty' view, displaying a JSON array with 2 objects. The first object is highlighted, showing details like <code>"attachmentSize": 70</code>, <code>"contentSize": 0</code>, <code>"dmqEligible": false</code>, <code>"msgId": 2</code>, <code>"msgVpnName": "msgvpn-itl9ks764hi"</code>, and <code>"partitionKey": ""</code>.</p>
<p>List all messages in API created Queue</p> <p>Result: 2 message objects</p>	<p>The screenshot shows the API Explorer interface for the 'Blogs - Advanced Event Mesh API share' project. The 'SEMP(v2)' folder is expanded, and the 'GET Specific MSG VPN - Get a list of API created Queue Message' endpoint is selected. This endpoint is highlighted with a blue box.</p>

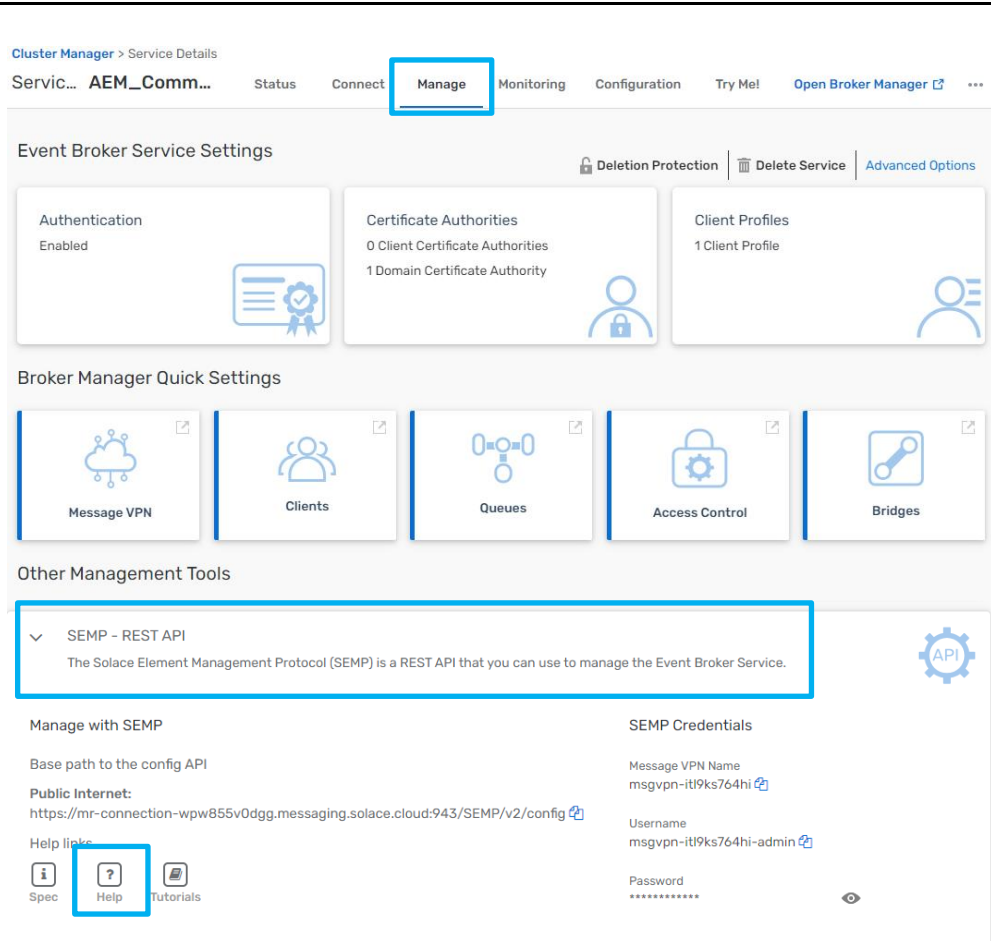
Explanation	Screenshot
	 <p>Blogs - Advanced Event Mesh API share / SEMP(v2) / Specific MSG VPN - Get a list of API created Queue Message</p> <p>GET https://((broker)).messaging.solace.cloud:943/SEMP/v2/monitor/msgVpns/((msgVPN))/queues/((QueueName))/API/msgs</p> <p>Status: 200 OK Time: 384 ms Size: 1.61 KB</p> <pre> 1 { 2 "data": [3 { 17 }, 18 { 19 "attachmentSize": 70, 20 "contentSize": 0, 21 "dmqEligible": false, 22 "msgId": 5, </pre>

Congratulations! You successfully completed the Exercise

Bonus:

Get SEMP API Description

Cluster Manager
Event Broker
Service → Manage
→ Other
Management Tools
→ SEMP – REST
API → HELP



Cluster Manager > Service Details

Service... AEM_Comm... Status Connect **Manage** Monitoring Configuration Try Me! Open Broker Manager

Event Broker Service Settings

Authentication Enabled

Certificate Authorities
0 Client Certificate Authorities
1 Domain Certificate Authority

Client Profiles
1 Client Profile

Broker Manager Quick Settings

Message VPN Clients Queues Access Control Bridges

Other Management Tools

SEMP - REST API
The Solace Element Management Protocol (SEMP) is a REST API that you can use to manage the Event Broker Service.

Manage with SEMP

Base path to the config API

Public Internet:
https://mr-connection-wpw855v0dgg.messaging.solace.cloud:943/SEMP/v2/config

Help links
Spec ? Help Tutorials

SEMP Credentials

Message VPN Name
msgvpn-itl9ks764hi

Username
msgvpn-itl9ks764hi-admin

Password

Explanation	Screenshot										
<p>Consider other Basepath for API Description</p> <p>Change the Path in URL (blue boxes)</p>	<p>The screenshot displays the Solace SEMP (Solace Element Management Protocol) documentation. It features the Solace logo and the title 'SEMP (Solace Element Management Protocol)'. Below the title, a paragraph states: 'SEMP (starting in v2) is a RESTful API for configuring, monitoring, and managing Solace products.' A table lists the API endpoints:</p> <table><thead><tr><th>API</th><th>Base Path</th></tr></thead><tbody><tr><td>Configuration</td><td>/SEMP/v2/config</td></tr></tbody></table> <p>The following APIs are also available:</p> <table><thead><tr><th>API</th><th>Base Path</th></tr></thead><tbody><tr><td>Action</td><td>/SEMP/v2/action</td></tr><tr><td>Monitoring</td><td>/SEMP/v2/monitor</td></tr></tbody></table> <p>Below the table, a browser window shows the URL 'j.messaging.solace.cloud:943/SEMP/v2/config/help/#'. The browser's address bar and the URL path are highlighted with blue boxes. The browser's tab bar shows several tabs: 'General', 'Systemlandschaft', 'Team', 'Corporate Search', 'DeepL Übersetzer...', 'Google', 'Consulting', and 'BTP Sales'.</p>	API	Base Path	Configuration	/SEMP/v2/config	API	Base Path	Action	/SEMP/v2/action	Monitoring	/SEMP/v2/monitor
API	Base Path										
Configuration	/SEMP/v2/config										
API	Base Path										
Action	/SEMP/v2/action										
Monitoring	/SEMP/v2/monitor										