

Steps to design event driven architecture components using Event Portal

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Vision

Envisioning Event-Driven Architecture Through a Design-First Approach

By exploring AEM Event Portal and its design-first methodology, it becomes possible to:

1. Design the ideal business process before writing any code
2. Model events as business capabilities rather than technical artifacts
3. Establish a shared vocabulary across teams
4. Visualize the entire ecosystem before implementation

Goals

Event Portal Designer lets you design applications with event flows and runtime parameters, then promote them to operational event brokers by automatically generating and deploying the required broker configurations (queues, ACLs, client profiles) with governance approval.

Therefore, the goal of the workshop is to achieve the following:

Step1: Import the pre-designed application domain and enable Event Model Mesh.

Step2: Generate/Configure the required broker configurations like queue, access controls and client profiles

Step3: Promote the configurations to the operational AEM broker.

Prerequisite

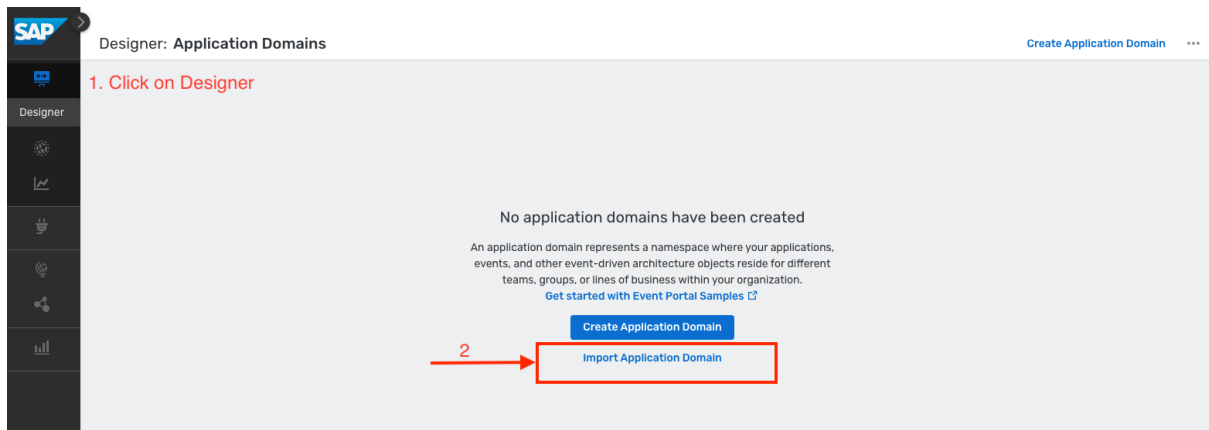
- We will use the same AEM Broker you created initially for this workshop.

Step1: Initial AEM Event Portal Setup

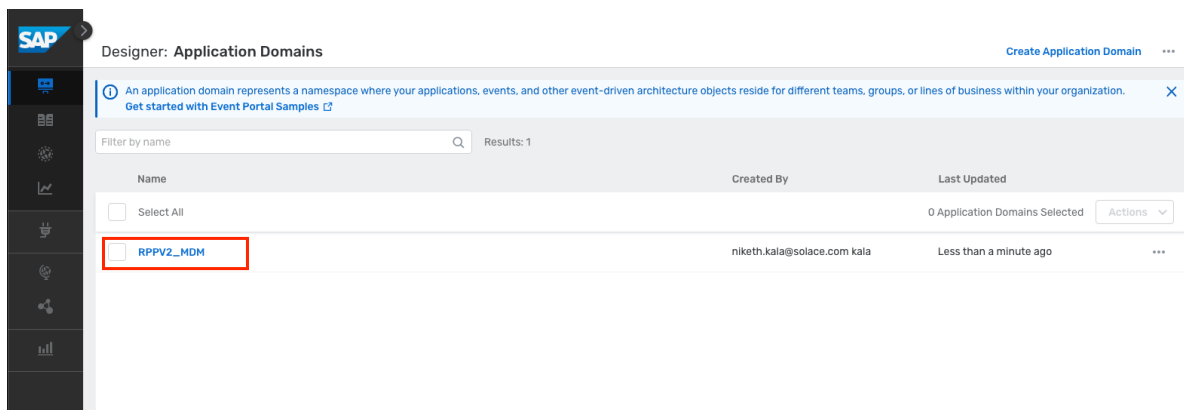
Importing Application Domain

Download the application from [aem-sap-integration](https://github.com/SolaceLabs/aem-sap-integration) GitHub repository - https://github.com/SolaceLabs/aem-sap-integration/blob/main/deployables/ep-design/RPPV2_MDM.json The file name to import is RPPV2_MDM.json

- Download the file
- Import the application domain json file

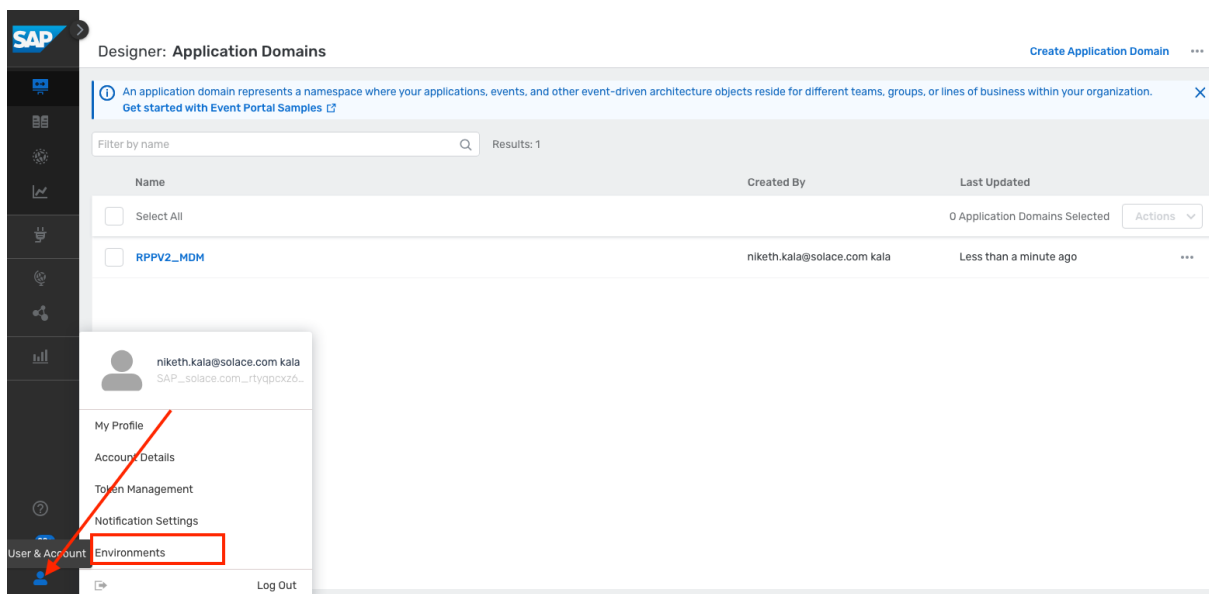


Once added, the application domain should look like below

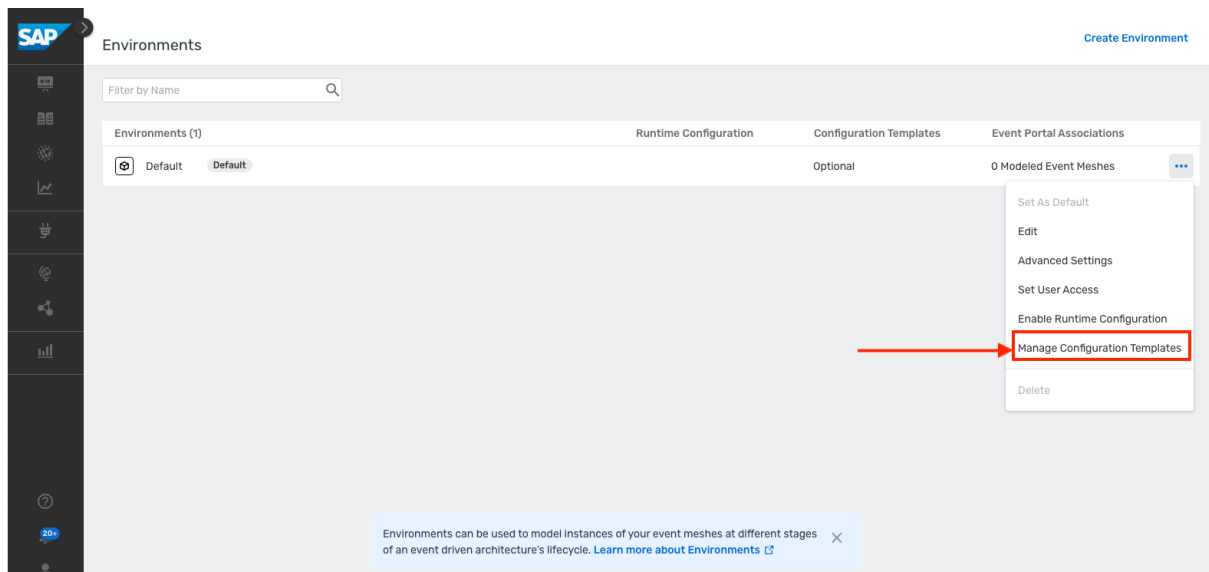


Enable Model Mesh – Runtime Event Manager

In bottom left corner, click User & Account and select option Environments

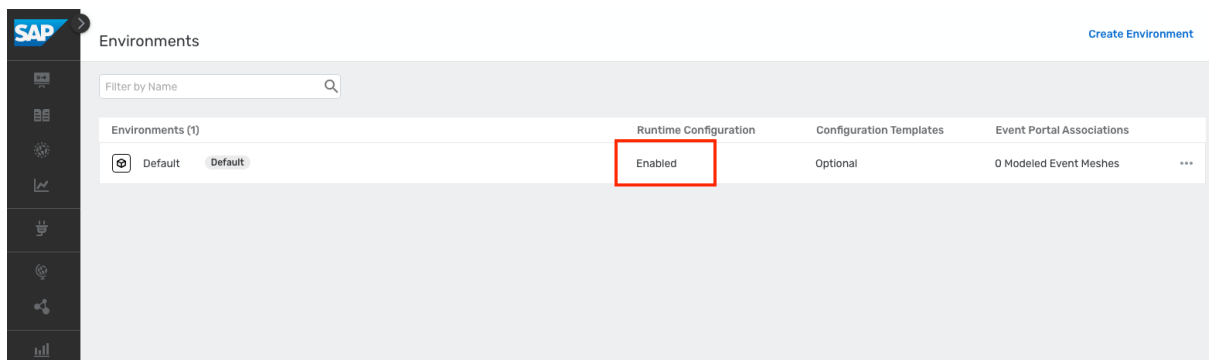


Make sure to enable Runtime Configuration.



The screenshot shows the SAP Environments page. A table lists the environment 'Default' with a 'Runtime Configuration' status of 'Optional'. A dropdown menu is open for the 'Default' environment, and the 'Manage Configuration Templates' option is highlighted with a red box and a red arrow pointing to it. Other options in the menu include 'Set As Default', 'Edit', 'Advanced Settings', 'Set User Access', 'Enable Runtime Configuration', and 'Delete'.

Environments (1)	Runtime Configuration	Configuration Templates	Event Portal Associations
Default	Optional	Optional	0 Modeled Event Meshes

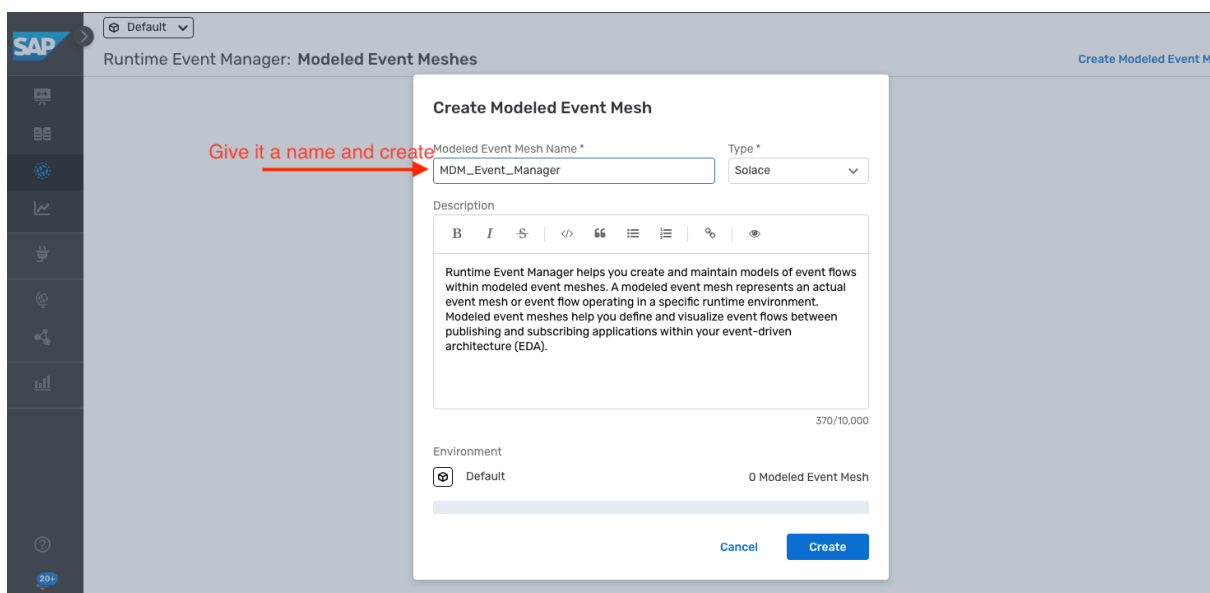
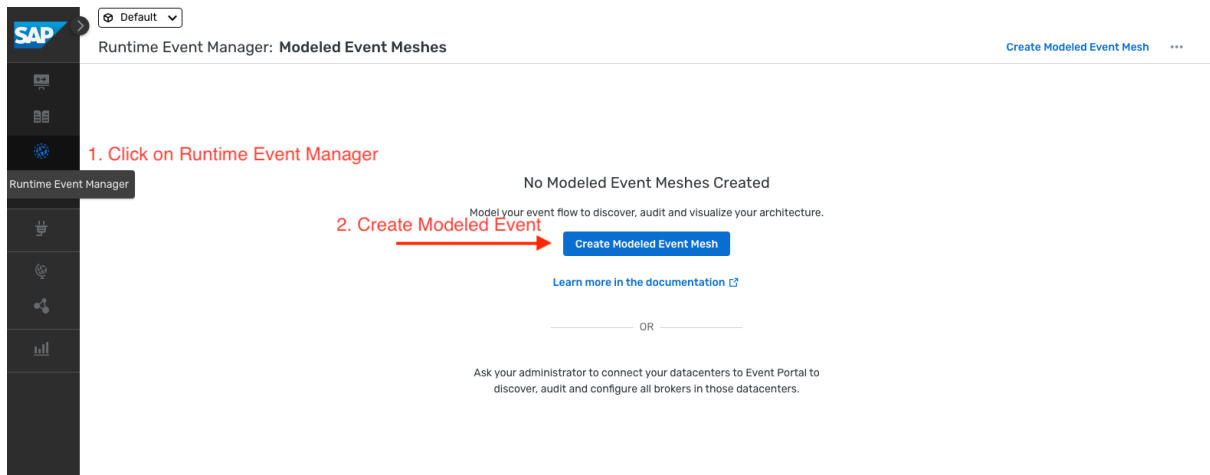


The screenshot shows the SAP Environments page after the configuration change. The 'Runtime Configuration' status for the 'Default' environment is now 'Enabled', which is highlighted with a red box.

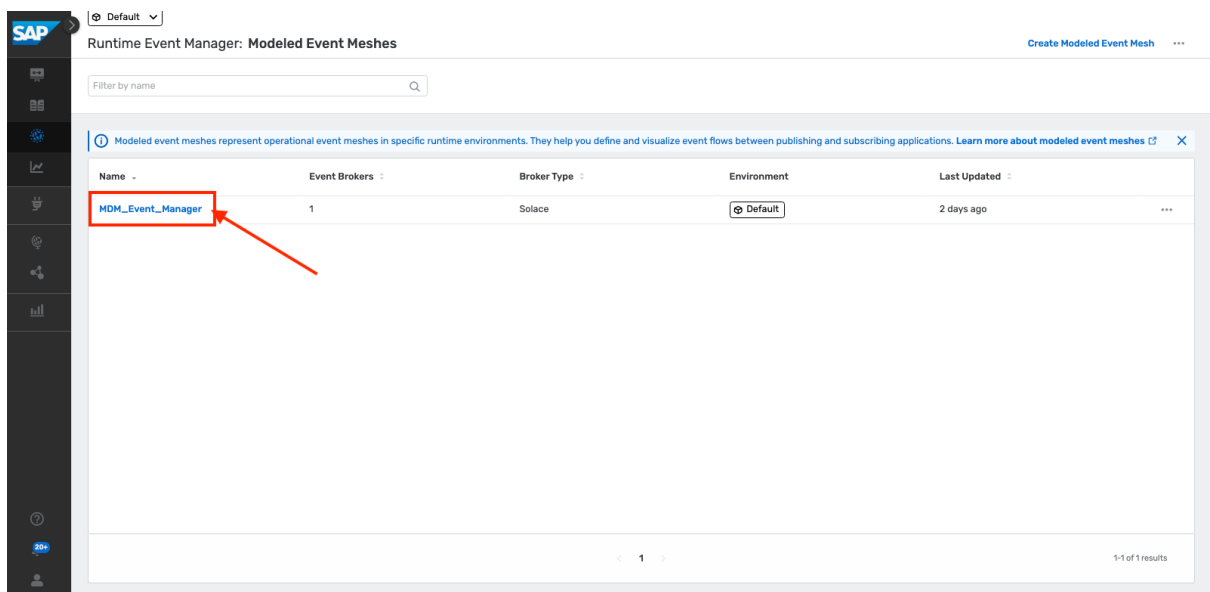
Environments (1)	Runtime Configuration	Configuration Templates	Event Portal Associations
Default	Enabled	Optional	0 Modeled Event Meshes

Create Modeled event Mesh

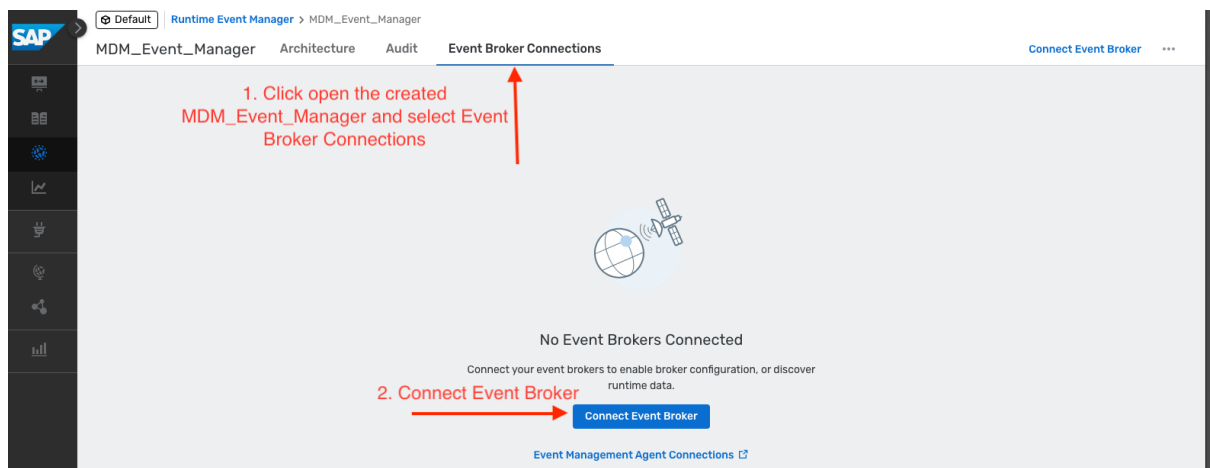
Click on Runtime Event manager and create a Modeled Event Mesh with a name – **MDM_Event_Manager**



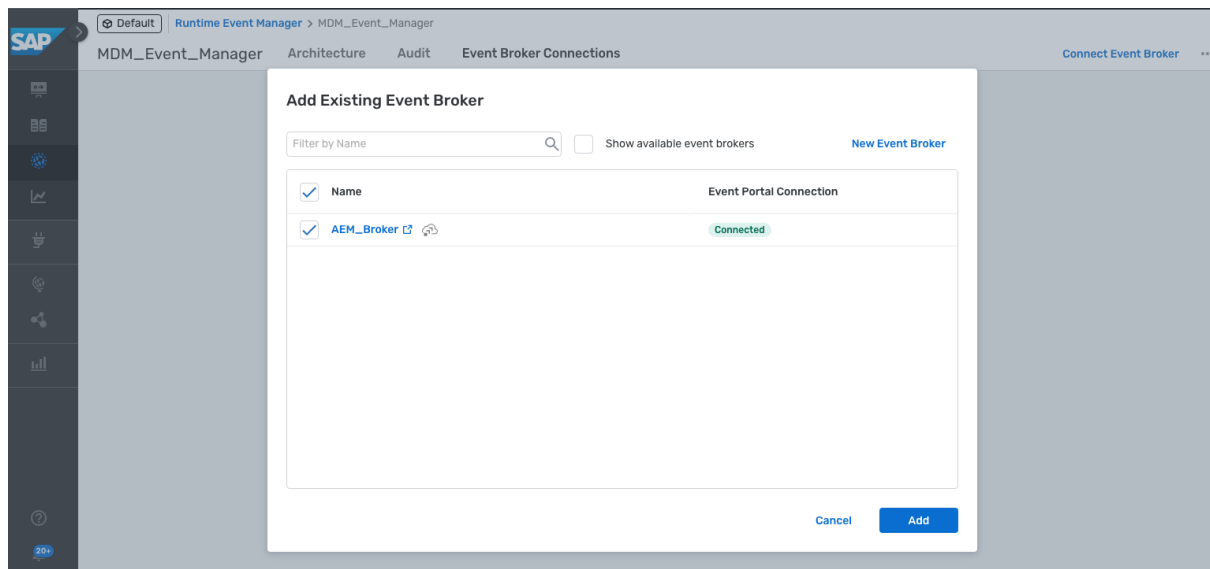
1. Open the MDM_Event_Manager and select Event Broker Connections



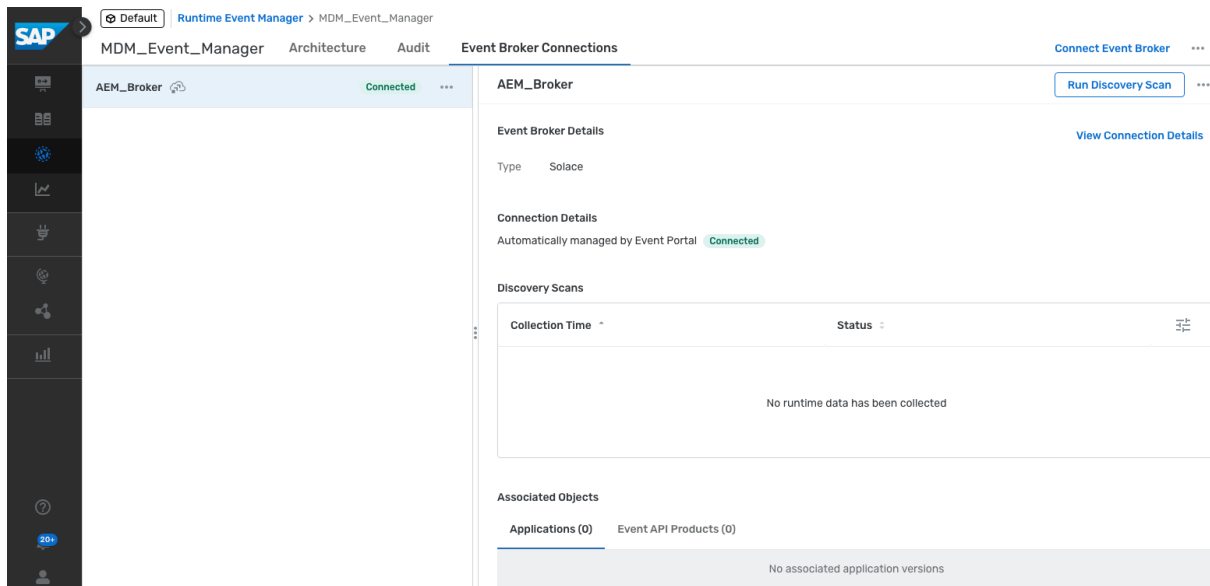
2. Connect the Event Broker created earlier.



Add the selected Event Broker



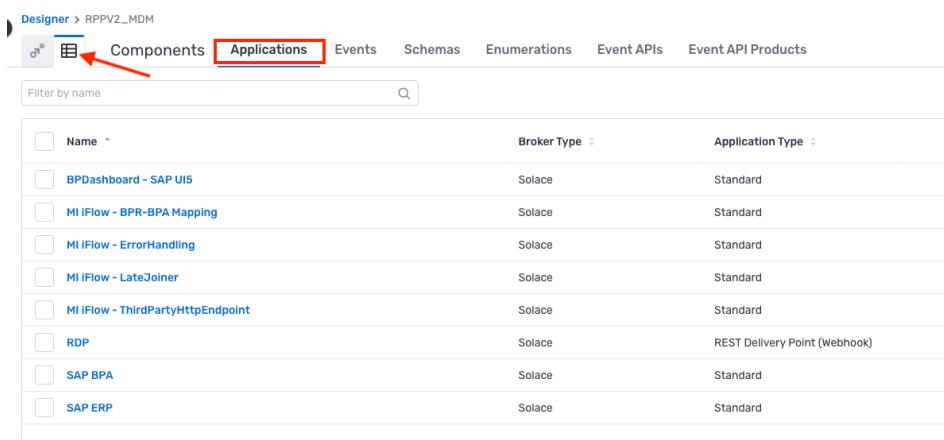
After adding the AEM Broker to the model mesh, it will look like the below picture.



At this point we have completed our Initial setup and have imported **the Application Domain, Enabled Runtime Configuration** and created the **Runtime Event Manager**

Quick tour of Components

Applications: Client applications that connect to event brokers to publish or consume events, including standard apps and REST Delivery Points for webhook integrations.



Events: Objects that define event types with topic addresses for routing and optional schemas, enabling message flow between publishing and subscribing applications.

Designer > RPPV2_MDM

Components Applications **Events** Schemas Enumerations Event APIs Event API Products [Create Event](#) ...

Filter by name

0 Selected [Actions](#)

<input type="checkbox"/>	Name ^	Broker Type	Shared	Access Approval	# of Versions	
<input type="checkbox"/>	BP created Latest sap / businesspartner / created / V1 / (businessPartnerType) / (country) / (city)	Solace	Not Shared	Auto-Approved	1	...
<input type="checkbox"/>	BP CreationApproved Latest sap / businesspartner / creationApproved / V1 / (businessPartnerType) / (country) / (city)	Solace	Not Shared	Auto-Approved	1	...
<input type="checkbox"/>	BP CreationRejected Latest sap / businesspartner / creationRejected / V1 / (businessPartnerType) / (country) / (city)	Solace	Not Shared	Auto-Approved	1	...
<input type="checkbox"/>	BP CreationRequested Latest sap / businesspartner / creationRequested / V1 / (businessPartnerType) / (country) / (city)	Solace	Not Shared	Auto-Approved	1	...
<input type="checkbox"/>	BP CreationRequestMapped Latest sap / businesspartner / creationRequestMapped / V1 / (businessPartnerType) / (country) / (city)	Solace	Not Shared	Auto-Approved	1	...

Schema: Components that define the data structure and semantics of event payloads and ensuring consistent data understanding across publishers and subscribers

Designer > RPPV2_MDM

Components Applications Events **Schemas** Enumerations Event APIs Event API Products [Create Schema](#) ...

Filter by name

0 Selected [Actions](#)

<input type="checkbox"/>	Name ^	Shared	# of Versions	Schema Type	
<input type="checkbox"/>	BusinessPartnerApproved	Not Shared	1	JSON Schema	...
<input type="checkbox"/>	BusinessPartnerCreationRequested	Not Shared	1	JSON Schema	...
<input type="checkbox"/>	BusinessProcessAutomation	Not Shared	1	JSON Schema	...

Event APIs and Event API Products can be used to expose and manage AsyncAPI interfaces within organizations, or with external partners through your APIM vendor.

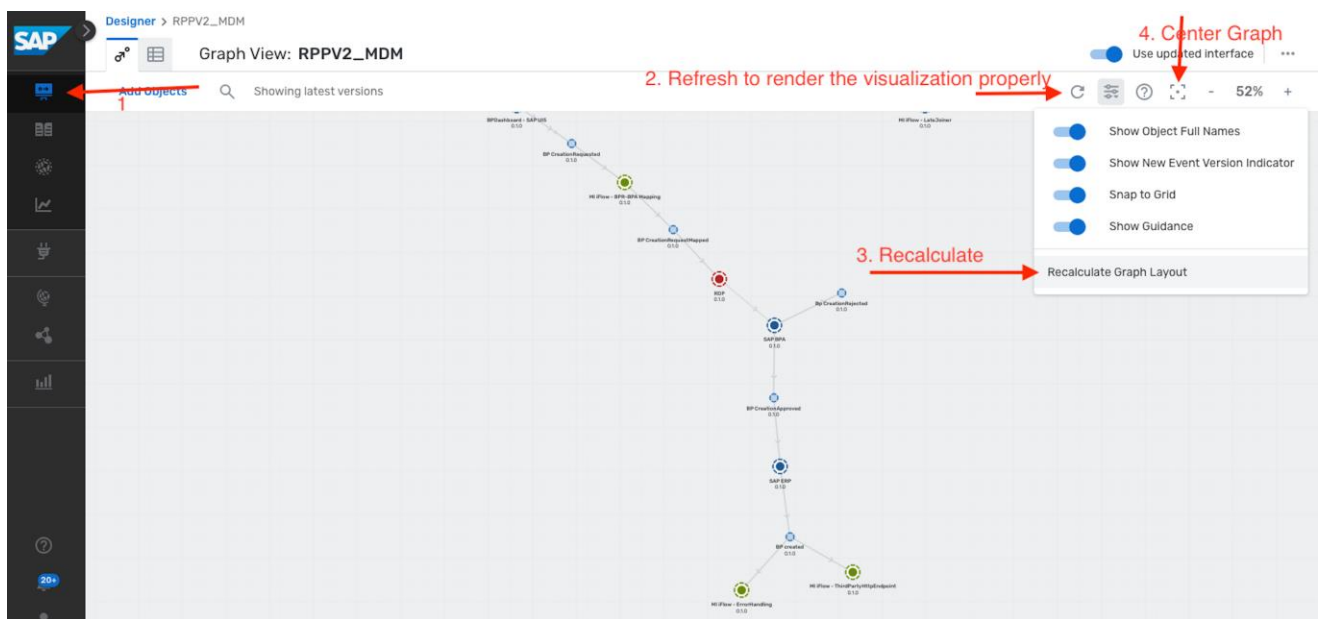
Note that Event APIs and Event API Products are advanced topics that will not be covered by this demonstration design.

Step 2: Configuring and Promoting Applications

EP Design Graph view

Open the imported Application Domain and visualize the ecosystem of this use case before implementation. The steps in the below screenshot are to get familiarize with the options you can adjust the rendering according to your needs.

Note: Rendering of visualization can be different





Applications, QueueNames and Client Profile Details

Each application's queue names and client credentials (username and password) are detailed in the table below, and the configuration must follow the order indicated in the diagram.

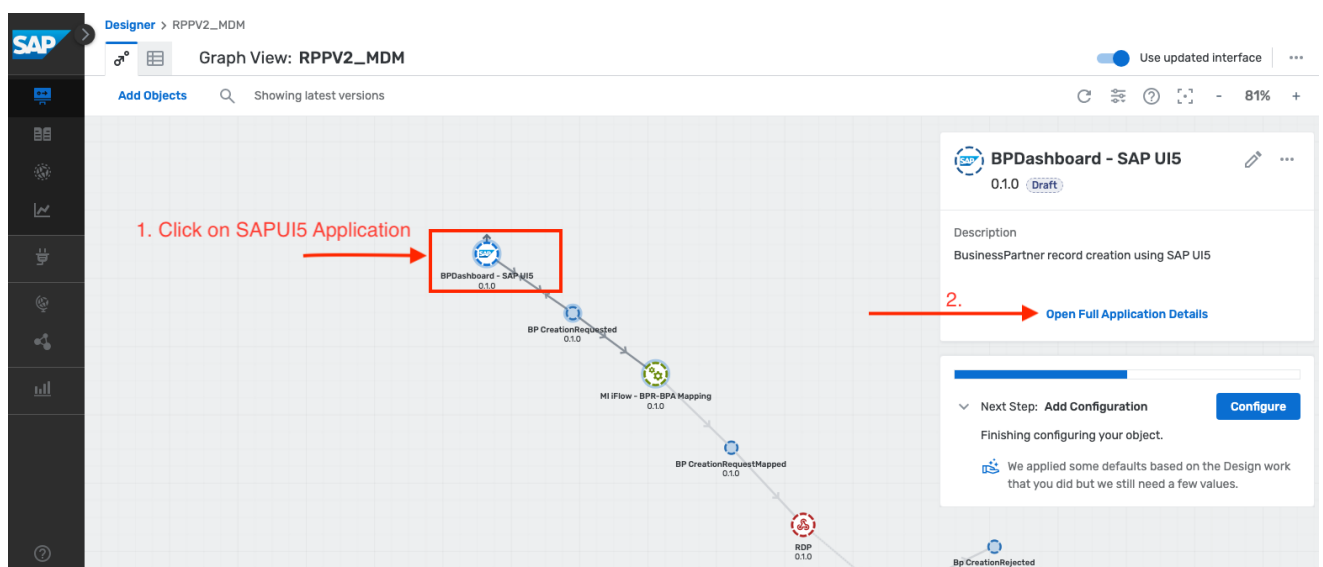
	Application	QueueName	ClientUsername	Pwd
1	BPCreate-SAP UI5		user1	user123\$
2	MI iFlow BPA-BPA Mapping	bpr_bpa_mapping.bp_creation_request	user2	user123\$
3	RDP	rdp.bp_mapped_creation_request	user3	user123\$
4	SAP BPA		user4	user123\$
5	SAP ERP	erp.bp_creation_approved	user5	user123\$
6	3rdParty HttpEndpoint	http_endpoint.bp_created	user6	user123\$
7	Error Handling	error_handling.bp_created error_handling.bp_created_dmq error_handling.bp_created_business_error	user7	user123\$
8	LateJoiner	late_joiner.bp_created	user8	user123\$

For each application, the following steps need to be carried out:

- Review the design details, including events, consumers, and subscriptions - that were generated after importing the application domain.
- Define access controls and assign queue names, if required.
- Promote the finalized configuration to the AEM broker.

BPCreate-SAP UI5

a) Open BP Create SAP UI5 Application by one click



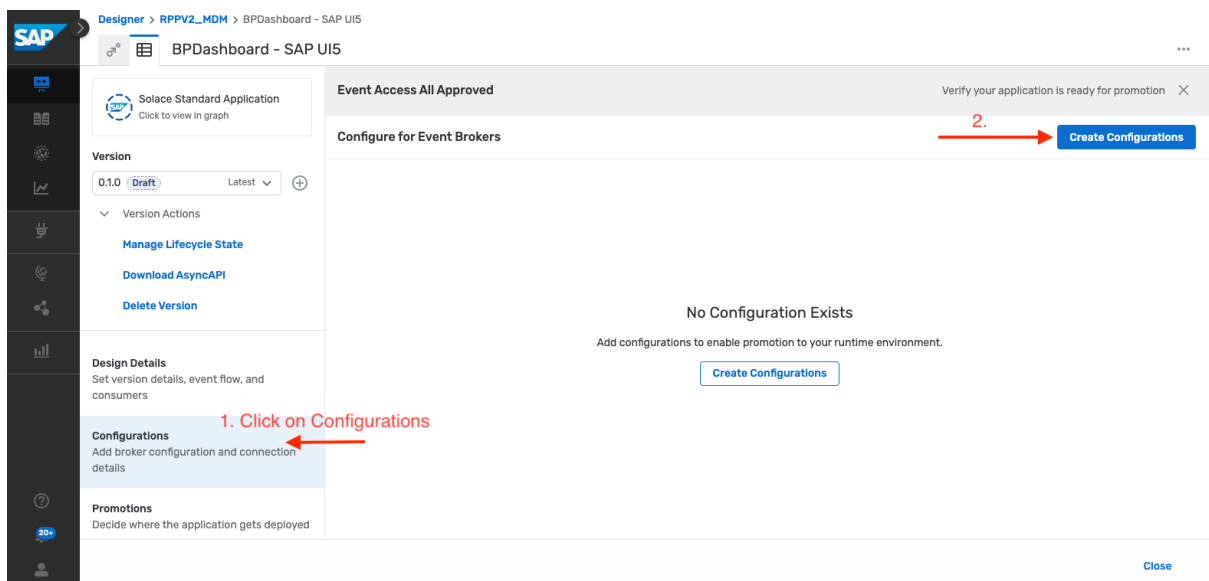
You can see some information is automatically populated based on the application domain which we imported.

The screenshot shows the 'Design Details' for the 'BPDashboard - SAP UI5' application. The 'Design Details' tab is selected, and the 'Events' section is highlighted with a red box. A red arrow points to the 'Events' section with the label 'Pub/Sub Events automatically listed based on design'.

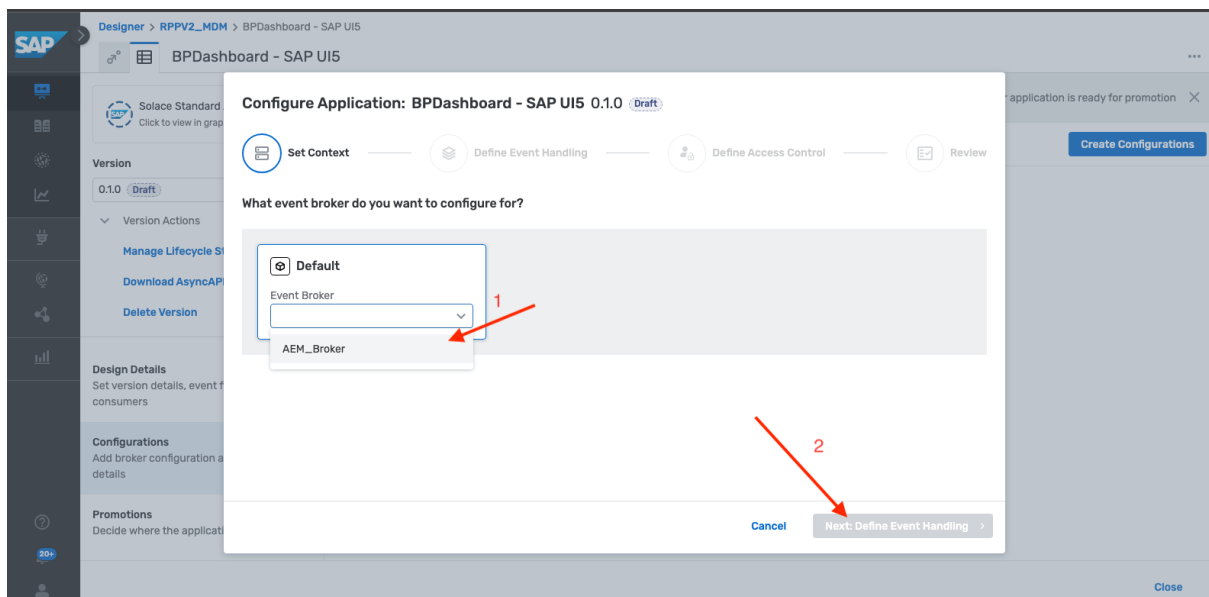
Version	Version Name	State	Description
0.1.0 (Draft)	None	Draft	BusinessPartner record creation using SAP UI5

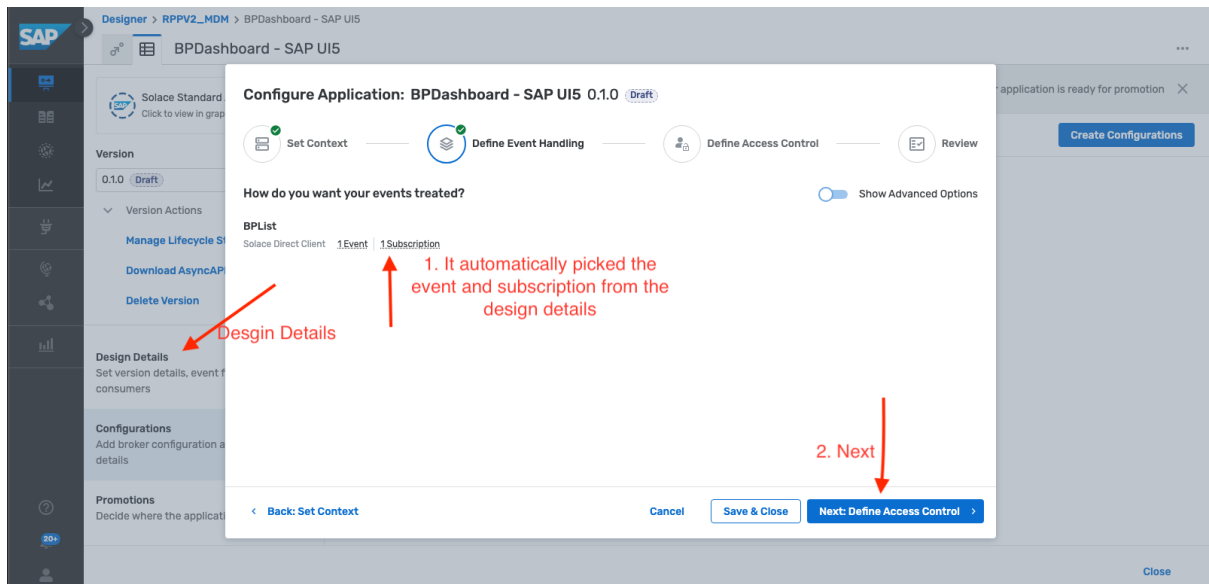
Event	Version	State	Description
BP CreationRequested	0.1.0	Draft	sap / businesspartner / creationRequested / V1 / (businessPartnerType) / (country) / (city)

b) Configure the access controls

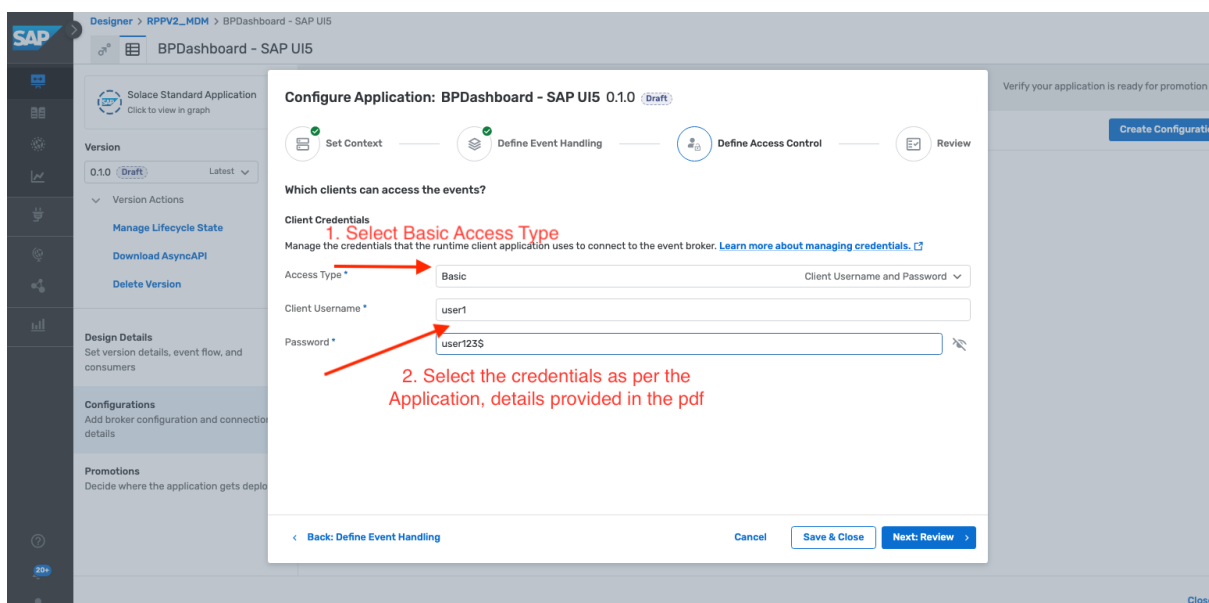


c) Select the AEM Broker to which we want to push the configuration

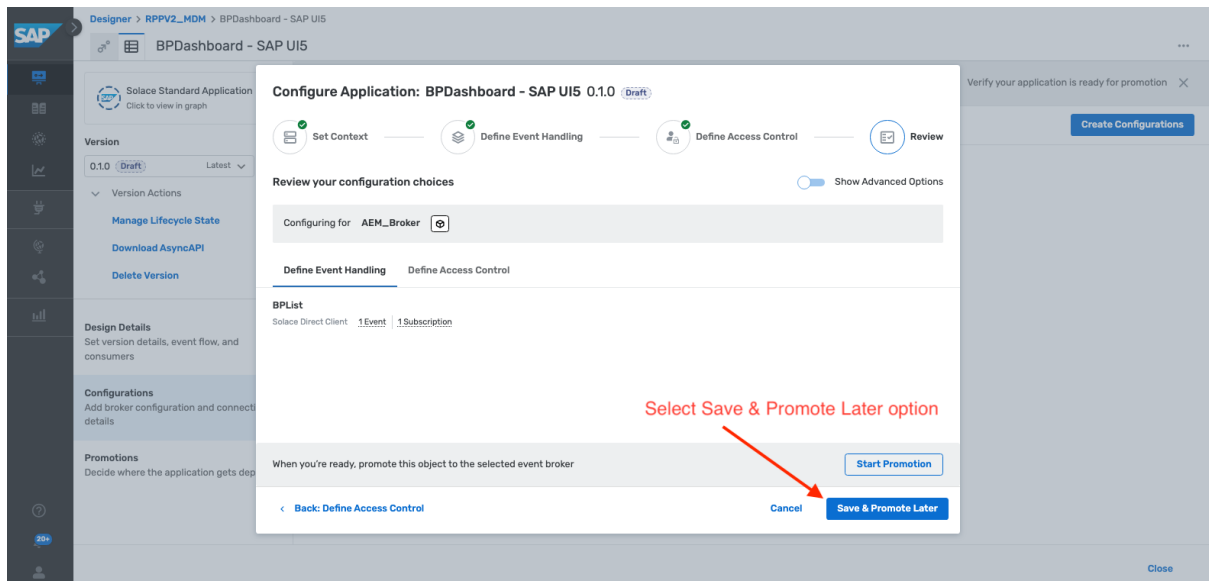




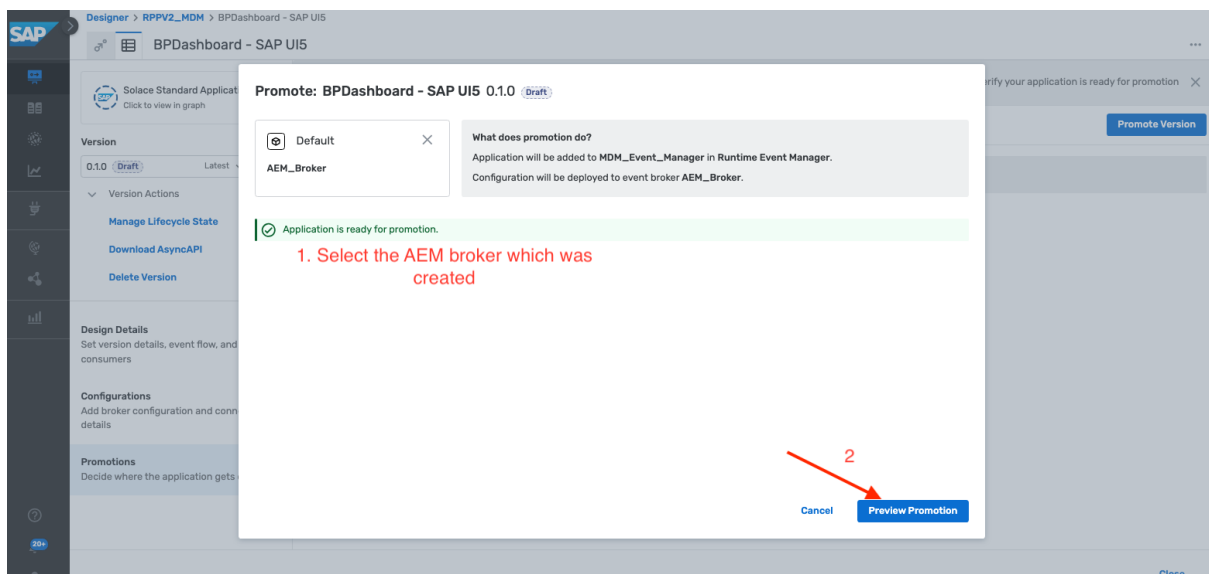
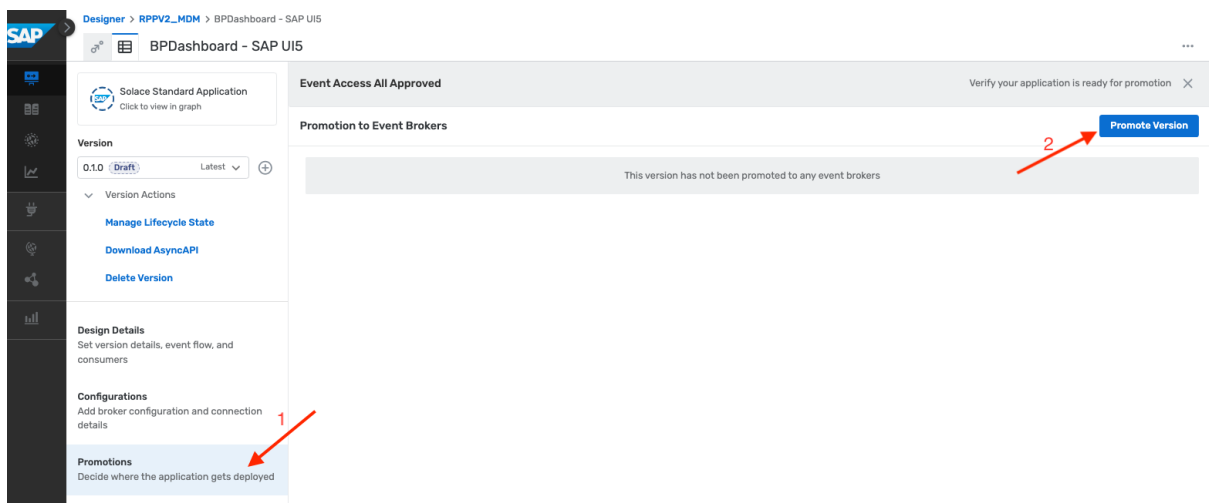
d) Enter the client username and password as per the details mentioned here for this particular application - [Applications, QueueNames and Client Profile Details](#)



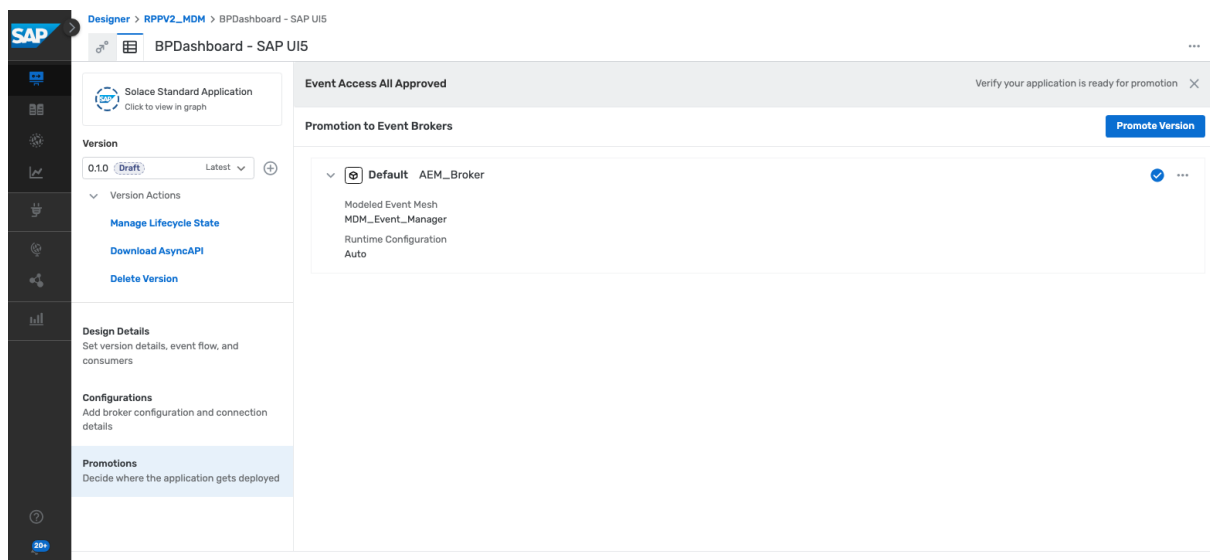
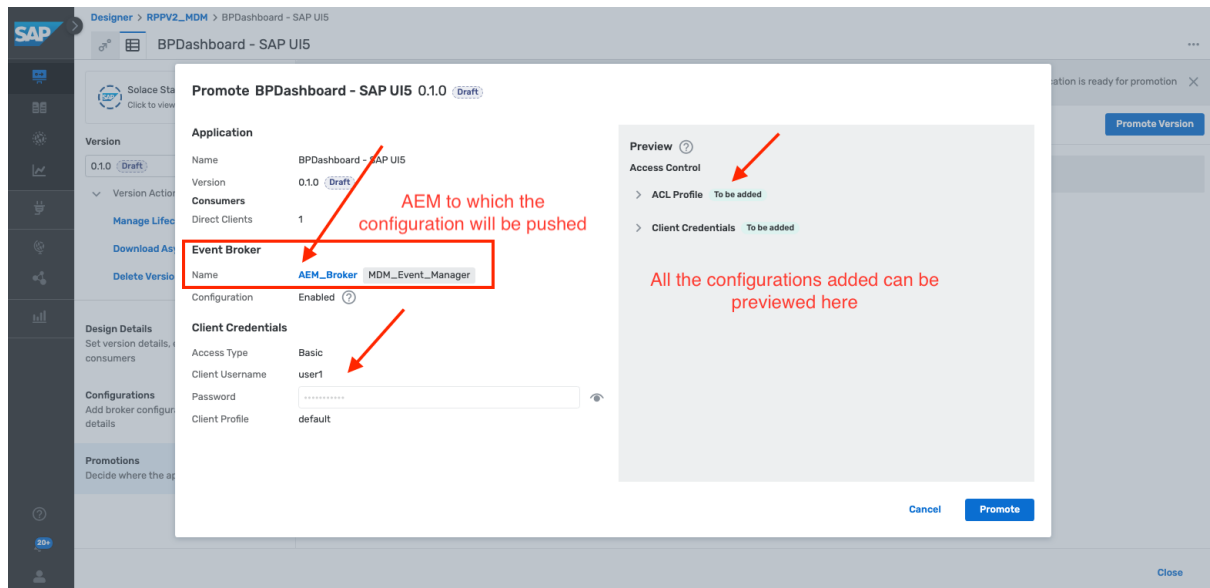
e) select Save & Promote Later option



f) Go to Promotions, validation and preview the changes made before you push the configuration to the selected broker.



- g) Click on Promote. Note: All the configurations which will be promoted can be previewed here before it gets pushed to the AEM broker.



Congratulations, you have successfully promoted Application – BPCreate – SAPUI5 which can now publish events to the AEM Broker.

SAP Ui5 Dashboard Test

SAP Ui5 Integration cards present a new means to expose application content to the end user in a unified way. Depending on the use cases, cards can be easily embedded in a host environment, such as an application, SAP Build, dashboards, or any HTML page. A variety of card types can be configured by a simple JSON configuration (schema) without the need to write code for UI rendering. In this way, even users without programming skills are enabled to create new cards according to their specific needs.

Cards are composite controls that follow a predefined structure and offer content in a specific context. Cards contain the most important information for a given object (usually a task or a list of business entities). You can use cards for presenting information, which can be displayed in flexible layouts that work well across a variety of screens and window sizes.

With the use of cards, you can group information, link to details, or present a summary. As a result, your users get direct insights without the need to leave the current screen and choose further navigation options.

For more information on SAP Ui5 Integration cards, you can refer to the link: [UI Integration cards](#)

To showcase the simplicity of using SAP integration cards to visualize the power of the SAP Advanced Event Mesh, we have created a dashboard using HTML5 for the Business Partner Create scenario. We also made it easy to use. All you need to do is enter your broker details, click "Connect," and watch the business case come to life as events flow in. Each integration card that is displayed in the dashboard represents another tool at your fingertips to visualize your data. The cards are each subscribed to the various Topics in which you will send your events from your SAP System. Follow the steps below to set up your dashboard and get started.

1: Open the Business Partner Create Dashboard

Here is a dashboard that has 3 cards that we will use throughout the week. Here you will also find additional documentation and helpful videos to get started with.

- [Business Partner DashBoard](#)

2: Connect with Your Broker Details

To connect with your broker details:

- Open your broker and select the "connect" tab at the top.

Hostname	Cluster Name	Cluster Password
mn-connection-qlgk3f2ezp.messaging.sapcloud	cluster-eks-ca-central-1a-b69k2g5207	*****

- Then, under the "Javascript - web-messaging" section, you will find the 4 inputs you need to connect your broker to the dashboard.

- The hostname and message vpn can be copied from here.

- The Client Username and password should come from Applications, QueueNames and Ex: In this case, the Username is **user1** not solace-cloud-client.

The screenshot shows the SAP AEM Broker Service Details page for 'AEM_Broker'. The 'Connect' tab is active, displaying various client libraries. A red box highlights the 'Connect with JavaScript' section, which includes a table of connection options:

Technology	Library	Protocol	Action
solace	Solace JavaScript API	web-messaging	Get Started
solace	Solace REST Messaging API	rest	Get Started
paho	Eclipse Paho JavaScript Client	mqtt	Get Started

To the right, a 'Solace JavaScript API' dialog box is open, showing connection details:

- Username: solace-cloud-client
- Password: [Redacted]
- Message VPN: scott-s-demo
- Host URIs: wss://mc-connection-zzdg8xd3fa9.messaging.solace.cloud:443

A 'Get Started' button is visible at the bottom of the dialog.

- Now, you can copy and paste each input into the fields at the top of the dashboard and then finally click "Connect".

The screenshot shows the 'Simple Master Data Entry - Business Partner Create' dashboard. At the top, there is a header bar with the SAP logo and a menu icon. Below the header, there is a section for 'Simple Business Partner Creation' with a 'Please fill in all fields' note. The form includes fields for:

- BP Type (Dropdown)
- First Name (Text)
- Last Name (Text)
- City (Dropdown)
- Postal Code (Dropdown)
- Street (Text)
- House Number (Text)
- Country (Dropdown)

A 'Submit' button is located at the bottom right of the form. To the right of the form, there are two panels:

- Business Partners**: Real Time Business Partner Created. It shows a dropdown menu set to 'All' and a message 'No items available' with a magnifying glass icon.
- Queue Browser**: List of messages queued for late joiner use case on queue 'late_joiner.bp_created'. It also shows a message 'No items available' with a magnifying glass icon.

At the top of the dashboard, there is a red-bordered box containing the following fields: 'Web Messaging Uri', 'VPN Name', 'Username', and 'Password', followed by a 'Connect' button.

- If your credentials are entered correctly, you will get a "Success" message that will verify that you are connected properly to the dashboard. If you do not see a "Success" message, then try again and make sure your details are correct for each input.

3: Using the Dashboard

The dashboard contains 3 cards:

- BPCreate: A card to enter new business partners
- BPList: A card that is listening on the topic that the first card publishes to and that lists all business partner create requests that you enter in card 1 in real-time.
- Late Joiner QBrowser: A card to browse messages on one of the queues we'll be creating and populating later this week.

Troubleshooting

Here are some troubleshooting tips:

- Use the latest version of Chrome, and you can try opening the dashboard in "incognito" mode if you have issues with caching.
- If you do not see the "Success" message at the top, then you are not connected. In case you entered your credentials correctly and still don't see the message, try to refresh your browser to prompt the application to try your credentials again. You may need to refresh a couple of times to get the "Success" message.
- If messages are being sent and the cards are not updating, right-click anywhere on the dashboard and click "inspect". Then select the "console" tab and look at the logs. It may be the case that the payload format is off, or possibly that the events are flowing to the wrong topic. Error messages here should help.

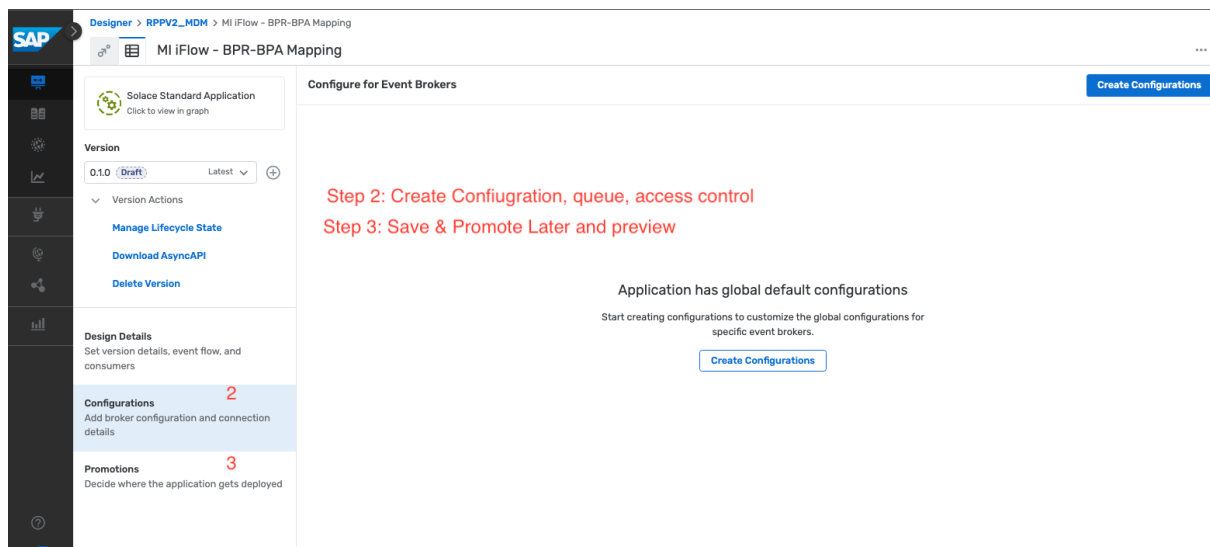
MI iFlow – BPR-BPA Mapping

BPR- BPA stands for Business Partner Requested – Business Partner Approved Mapping

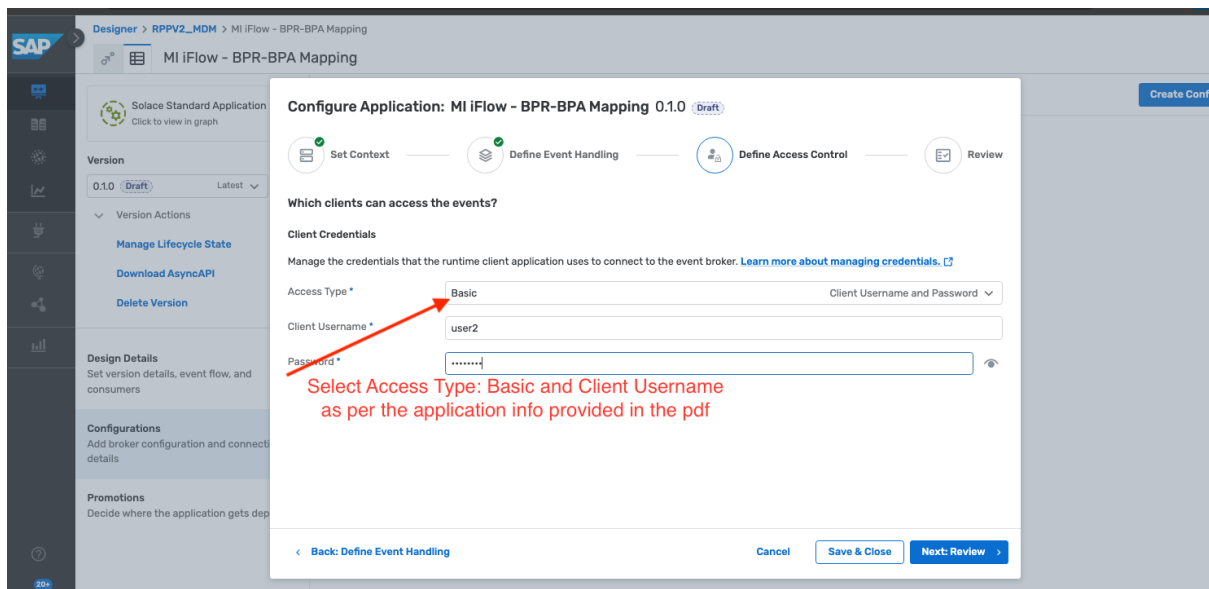
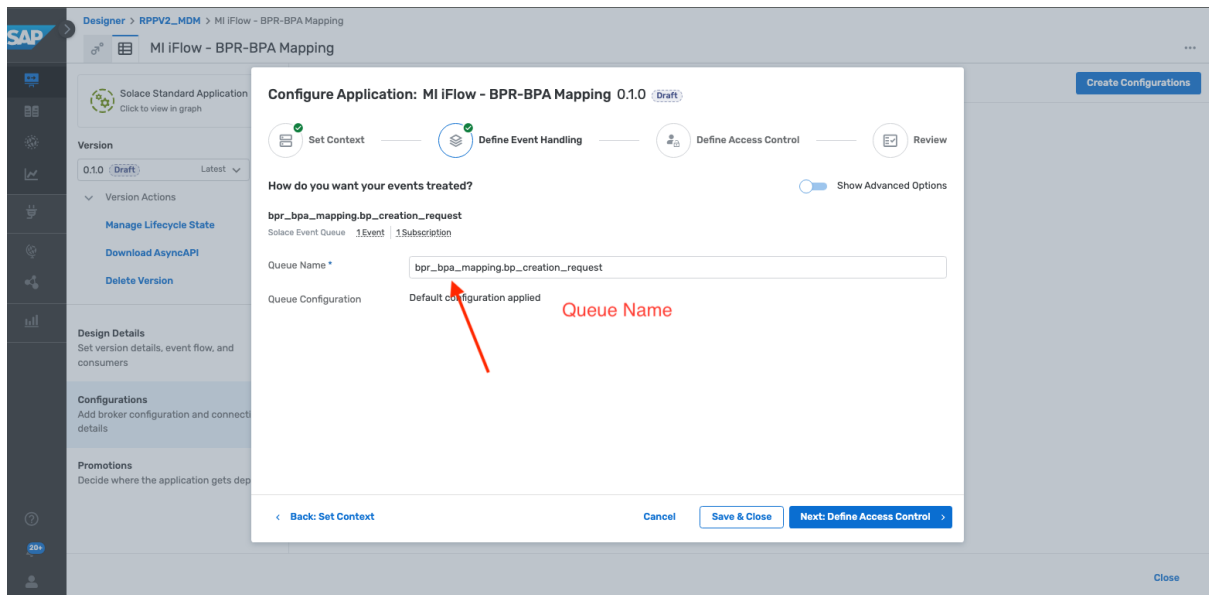
- a) Click and open the MI iFlow – BPR-BPA Mapping application from the Graph view.



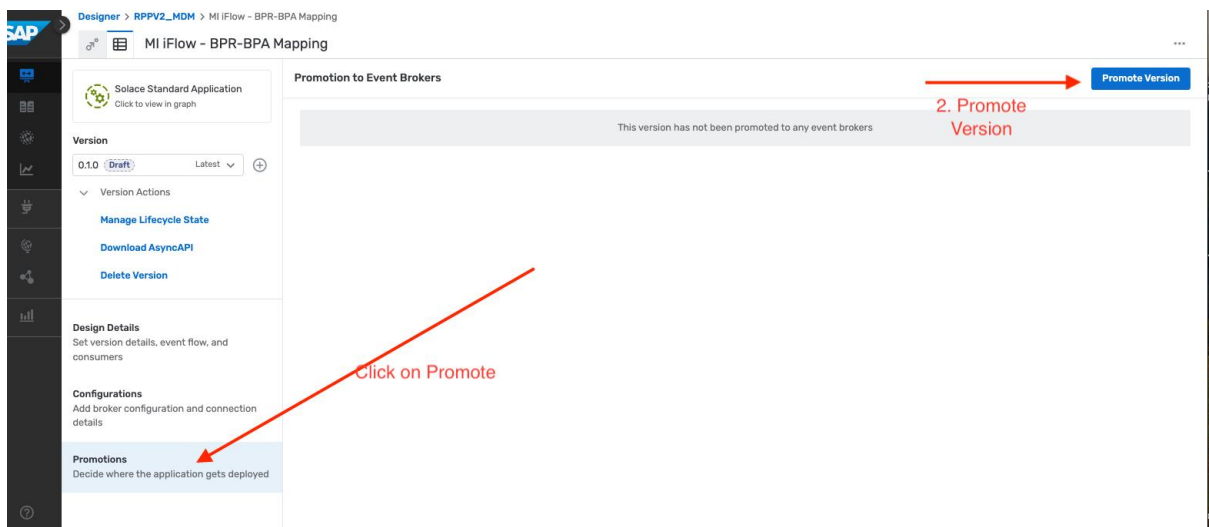
b) Follow the same steps of configuring and promoting this application.



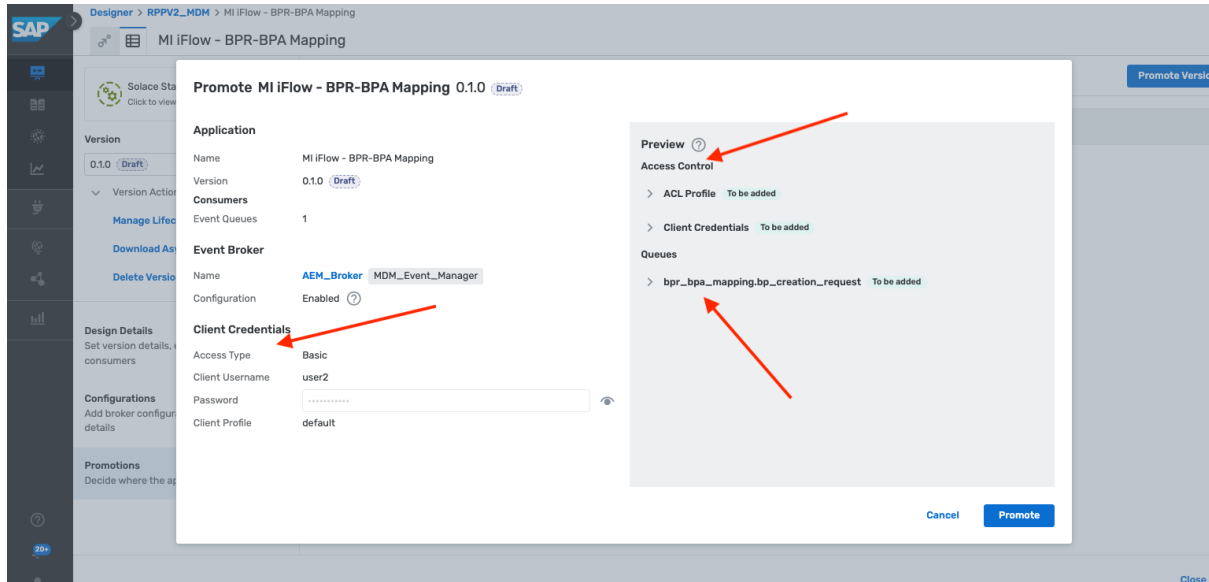
- c) As this is a consumer application, it is also creating a queue based on the Imported Application Domain mapping.
- d) Fill the Queue Name and Access Control as provided here for this application - [Applications, QueueNames and Client Profile Details](#)



e) Save & Promote Later



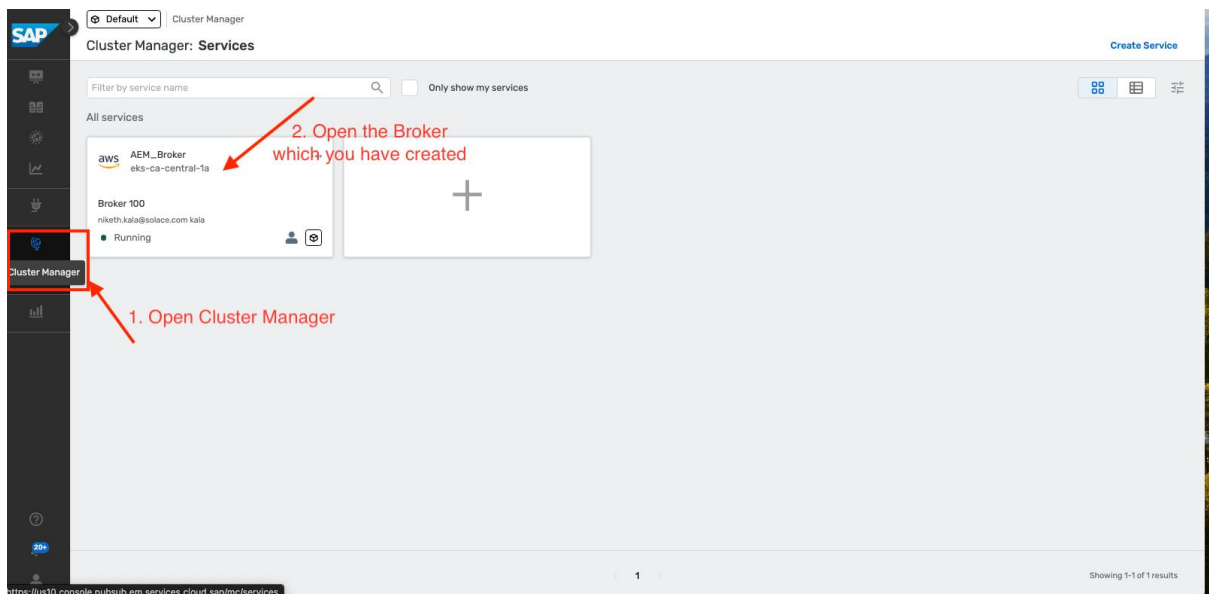
- f) Select the broker where we want to promote and Preview Promotion
- g) As this application is a consumer events from the publisher – BPCreate- SAPUI5, notice it also has a queue name for guaranteed/persistent messaging.
- h) Promote the application to the AEM Broker



Validation

Let's validate the configurations which we have promoted on the AEM broker. The below screenshot is specifically showing the configurations of Application **MI iFlow – BPA-BPA Mapping**

Open the AEM Broker from the Cluster manager



Open Broker Manager

Service Details: AEM_Broker

Active Connections: 18.0%

Guaranteed Messaging Endpoints: 8.0%

Queue Usage: 0.0%

Availability and Versioning

- Service State: Running
- Event Broker Service Version: 10.25.0.74-13
- Service ID: t105fmonxez
- High Availability: Single Node
- Created By: niketh.kala@solace.com
- Service Creation Time: 26/09/2025, 11:30:54
- Meta-Link Encryption: Disabled

DMR Cluster

- Hostname: mr-connection-zzd8x3fa9.messaging.solace.cloud
- Cluster Name: cluster-eks-ca-central-1a-5858ichtmqd
- Cluster Password: *****
- Message VPN: scott-s-demo
- Primary Router Name: t105fmonxezprimary

Management Access

- Basic Authentication
- LDAP Authentication
- SSO Authentication

Open broker web console

Open Broker Manager

Queues | bpr_bpa_mapping.bp_creation_request

Summary Settings Subscriptions Consumers Messages Queued Stats

1 Subscriptions

Search by topic

Topic

sap/businesspartner/creationRequested/V1/>

Queue is subscribed to topic

Queues Topic Endpoints Templates

Search by name

Queue Name Incoming Outgoing Access Type Partition Count Messages Queued (%) Messages Queued (msgs) Messages Queued (MB) Messages Queued Quota Consumers Replay State Durable

Transformer_Source On On Exclusive 0 0 0 5,000 1 N/A Yes

bpr_bpa_mapping.bp_creation_request On On Exclusive 0 0 0 5,000 1 N/A Yes

erp.bp_creation_approved On On Exclusive 0 0 0 5,000 1 N/A Yes

error_handling.bp_created On On Exclusive 0 0 0 5,000 2 N/A Yes

error_handling.bp_created_b... On On Exclusive 0 1 0.0005 5,000 0 N/A Yes

error_handling.bp_created_d... On On Exclusive 0 1 0.0004 5,000 0 N/A Yes

http_endpoint.bp_created On On Exclusive 0 0 0 5,000 2 N/A Yes

rdp.bp_mapped_creation_re... On On Exclusive 0 1 0.0004 5,000 1 N/A Yes

Click on Queues

created queue

The Client Username and ACL Profiles created for the application MI iFlow BPA-BPA Mapping has been created.

The image consists of two screenshots from the SAP AEM_Broker interface, showing the configuration of ACL Profiles and Client Usernames.

Top Screenshot: ACL Profiles

The top screenshot shows the 'ACL Profiles' tab. The left sidebar has 'Access Control' highlighted. The main table lists ACL Profiles with columns: ACL Profile, Action, Client Connect Default, Publish Default Action, Subscribe Default Action, and Subscribe Share Name Default Action. The profile 'app-gonmdp5ncsd' is highlighted with a red box. A red arrow points to the 'Access Control' menu item with the text '1. Open Access Control'. Another red arrow points to the 'app-gonmdp5ncsd' profile with the text '2. Open ACL Profile'. A red arrow points to the 'app-gonmdp5ncsd' profile with the text 'Client Username - user2 has its ACL created'.

ACL Profile	Action	Client Connect Default	Publish Default Action	Subscribe Default Action	Subscribe Share Name Default Action
#acl-profile	Allow	Allow	Allow	Allow	Allow
app-335c4annm52	Allow	Disallow	Disallow	Allow	Allow
app-4d6dof0184c	Allow	Disallow	Disallow	Allow	Allow
app-cvt8c3yxbea	Allow	Disallow	Disallow	Allow	Allow
app-fvyqgrcu9g	Allow	Disallow	Disallow	Allow	Allow
app-gonmdp5ncsd	Allow	Disallow	Disallow	Allow	Allow
app-uswbgp306og	Allow	Disallow	Disallow	Allow	Allow
default	Allow	Allow	Allow	Allow	Allow

Bottom Screenshot: Client Usernames

The bottom screenshot shows the 'Client Usernames' tab. The left sidebar has 'Access Control' highlighted. The main table lists Client Usernames with columns: Client Username, Client Profile, ACL Profile, Enable, Subscription Manager, and Dynamic. The user 'user2' is highlighted with a red box. A red arrow points to the 'Client Usernames' tab with the text 'open ClientUsernames'. A red arrow points to the 'user2' row with the text 'Applicatoin MI iFlow - BPR-BPA Mapping's Client username - user2 created'.

Client Username	Client Profile	ACL Profile	Enable	Subscription Manager	Dynamic
#client-username	#client-profile	#acl-profile	Yes	No	No
#rdp/RDP	default	#acl-profile	Yes	No	No
default	default	default	No	No	No
solace-cloud-client	default	default	Yes	No	No
user1	default	app-4d6dof0184c	Yes	No	No
user2	default	app-gonmdp5ncsd	Yes	No	No
user3	default	app-335c4annm52	Yes	No	No
user5	default	app-fvyqgrcu9g	Yes	No	No
user6	default	app-cvt8c3yxbea	Yes	No	No
user7	default	app-uswbgp306og	Yes	No	No

Appendix

Check Runtime Event Manager

Check the runtime manager to see review which Application configurations are currently pushed into the local AEM broker

SAP Default

Runtime Event Manager: Modeled Event Meshes

Create Modeled Event Mesh ...

Filter by name

Open Runtime Event Manager

Modeled event meshes represent operational event meshes in specific runtime environments. They help you define and visualize event flows between publishing and subscribing applications. [Learn more about modeled event meshes](#)

Name	Event Brokers	Broker Type	Environment	Last Updated
MDM_Event_Manager	1	Solace	Default	3 days ago

1 of 1 results

SAP Default Runtime Event Manager > MDM_Event_Manager

MDM_Event_Manager Architecture Audit Event Broker Connections

Applications (7) Events (6)

Filter by name

Application	Version	Status	Event Broker
BPDashboard - SAP UIS	0.1.0	Draft	RPPV2_MDM
MI iFlow - BPR-BPA Mapping	0.1.0	Draft	RPPV2_MDM
MI iFlow - ErrorHandling	0.1.0	Draft	RPPV2_MDM
MI iFlow - ThirdPartyHttpE...	0.1.0	Draft	RPPV2_MDM
RDP	0.1.0	Draft	RPPV2_MDM
SAP BPA	0.1.0	Draft	RPPV2_MDM
SAP ERP	0.1.0	Draft	RPPV2_MDM

1 of 7 results

Showing All Event Flows

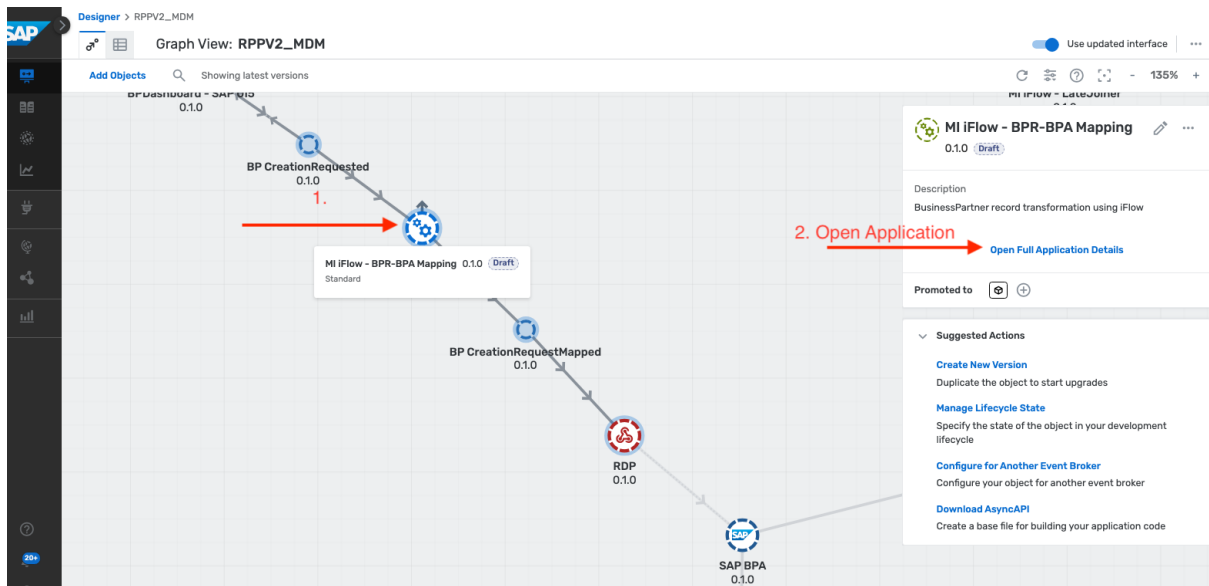
This is the view when of all application which are configured on broke

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graph LR
    BPDashboard[SAP UIS 0.1.0] --> MI_iFlow_BPR_BPA[MI iFlow - BPR-BPA Mapping 0.1.0]
    MI_iFlow_BPR_BPA --> RDP[RDP 0.1.0]
    RDP --> BP_CreationRequested[BP CreationRequested 0.1.0]
    BP_CreationRequested --> BP_CreationRejected[BP CreationRejected 0.1.0]
    BP_CreationRejected --> BusinessError[Business Error 0.1.0]
    BP_CreationRejected --> SAP_BPA[SAP BPA 0.1.0]
    SAP_BPA --> MI_iFlow_ErrorHandling[MI iFlow - ErrorHandling 0.1.0]
    MI_iFlow_ErrorHandling --> BP_CreationApproved[BP CreationApproved 0.1.0]
    BP_CreationApproved --> SAP_ERP[SAP ERP 0.1.0]
    SAP_ERP --> MI_iFlow_ThirdPartyHttpEndpoint[MI iFlow - ThirdPartyHttpEndpoint 0.1.0]
    MI_iFlow_ThirdPartyHttpEndpoint --> BP_created[BP created 0.1.0]
    BP_created --> SAP_ERP
  
```

Removing a Promoted Application from the Broker

This is just for reference; you do not have to remove a promoted Application if you have promoted previously.



Designer > RPPV2_MDM > MI iFlow - BPR-BPA Mapping

MI iFlow - BPR-BPA Mapping

Promotion to Event Brokers

Promote Version

Version: 0.1.0 Draft Latest

Version Actions

- Manage Lifecycle State
- Download AsyncAPI
- Delete Version

Design Details
Set version details, event flow, and consumers

Configurations
Add broker configuration and connection details

Promotions
Decide where the application gets deployed

1

2. This deletes the configuration which was promoted earlier from the local AEM broker

Remove Application

Close