Questionnaire: Deploying in a Customer-Controlled Region with Azure Kubernetes Service

This questionnaire is specific to deployments of SAP Integration Suite, advanced event mesh in Customer-Controlled Regions using Azure Kubernetes Service. For questions related to deployments for Dedicated Regions, see Questionnaire: Deploying in a Dedicated Region.

Deploying advanced event mesh for SAP Integration Suite can require planning and coordination across different teams. It's important that you plan and design your deployment to ensure the long-term success of your system. The following questions are designed to uncover the configuration information needed to create your event broker services properly. To help make your deployment go quickly and smoothly, carefully research and plan your decisions around these questions.

To begin your planning, we have produced a questionnaire to help identify critical information required for a successful deployment, including:

- questions common to deployments in all Kubernetes implementations, including queries about your cluster, Operational Connectivity, Messaging Connectivity, and feature requirements.
- questions specific to the implementation of Kubernetes you have chosen for your Customer-Controlled Region, including queries about your cluster, Messaging Connectivity, and storage.

The answers to these questions help SAP determine how to configure the Mission Control Agent to create event broker services in your cluster.

After you have finished the common questions, you must answer the questions that are specific to your Kubernetes implementation. If you intend to use multiple implementations, you must complete a questionnaire for each Kubernetes implementation:

- Amazon Elastic Kubernetes Service Questions
- Google Kubernetes Engine Questions
- Azure Kubernetes Service Questions
- Alibaba Cloud Container Service for Kubernetes Questions

- Huawei Cloud Container Engine Questions
- On-Premises Questions

Common Deployment Questions

This section contains questions about the following common deployment factors:

- Cluster
- Operational Connectivity
- Messaging Connectivity
- Features
- Contact Information

Cluster

You must answer the following questions about your cluster.

Question	Possible Answers	How SAP Uses This Information	Links to Related Documentation
Do you have an existing cluster (or a defined specification for a new cluster), or do you require an architecture example to start from?	I have an existing cluster (or clusters) or intend to create new clusters based on existing specification. **or** I would like a best practice architecture example to start from.	SAP's best practices documentation provides descriptions of how best to label and taint worker nodes with the correct resource requirements for the service classes that are supported in advanced event mesh. If you have an existing cluster, you can use our best practices documentation to understand how to modify your cluster, and how to provide SAP with the node selectors and tolerations we need to deploy event broker services in your cluster. We provide reference Terraform projects	Support for nodeSelector, Taints, and Tolerations Resource Requirements for Kubernetes

Question	Possible Answers	How SAP Uses This Information	Links to Related Documentation
		for deploying a Kubernetes cluster to AKS, EKS, and GKE. These Terraform projects have the recommended configuration settings, such as worker node sizes, resource configurations, taints, and labels optimized to install advanced event mesh. For other cloud providers or on-premises deployments, we can provide documentation that describes our best practices. You can download the reference Terraform projects from the following GitHub repository: https://github.com/SolaceLabs/customer-controlled-region-reference-architectures Beware that all sample scripts, Terraform modules, and examples are provided as-is. You can modify the files as required and are responsible for maintaining the modified files for your Kubernetes cluster.	
Will the cluster be used exclusively for advanced event mesh or will it be shared with other applications or workloads?	Exclusive **or** Shared	Providing this information allows SAP to understand the architecture of your cluster so we can better suggest changes that may help the operation of advanced event mesh in your cluster.	Deployment Architecture for Kubernetes Resource Requirements for Kubernetes
Is the Kubernetes version of your cluster supported by	Yes **or** No	Only supported Kubernetes versions are tested and guaranteed to work with advanced event mesh.	Supported Kubernetes Versions

Question	Possible Answers	How SAP Uses This Information	Links to Related Documentation
advanced event mesh?		If you use a different implementation of Kubernetes, contact SAP to find out how we can support your deployment.	
What is the cluster domain for your Kubernetes cluster?		This is typically `cluster.local`, but your Kubernetes administrator can configure it to be something else. SAP requires this information to properly configure the Mission Control Agent.	DNS for Services and Pods in the Kubernetes documentation
Are there any custom node selectors or tolerations required to successfully schedule the Mission Control Agent or event broker service pods? If so, what are they?		If it varies from our best practices, SAP requires this information to ensure that the event broker service pods are scheduled successfully.	Support for nodeSelector, Taints, and Tolerations
Are there any custom labels that must be applied to the Mission Control Agent or event broker service pods? If so, what are they?		SAP supports only fixed labels that can be applied to the Mission Control Agent or event broker services. We don't support dynamic labels.	Support for nodeSelector, Taints, and Tolerations
What geographic loc-		Advanced event mesh produces diagnostic logs that are pushed to an	S3 Bucket Names for Gathered Dia-

Question	Possible Answers	How SAP Uses This Information	Links to Related Documentation
ations will the clusters reside in? For clusters in the cloud, provide a list of regions. For on-premises clusters provide a list of countries or regions.		AWS S3 bucket for use by SAP. We use S3 buckets that are geographically close to the deployment to optimize retrieval.	gnostics
Does your cluster have any Pod Security Policies? Do you use a Policy Controller (for example, Gatekeeper) to enforce security in your cluster? If so, do any of these policies affect the operation of advanced event mesh in your cluster?		Policy controllers like Gatekeeper can enforce security policies in a cluster, such as required labels, a restricted set of container registry images, and so on. In most cases, advanced event mesh can be configured to meet these requirements.	Support for nodeSelector, Taints, and Tolerations Connectivity Model for Kubernetes Deployments
Does your		Your cluster must have sufficient resource to successfully create event broker ser-	Resource Requirements for Kuber-

Question	Possible Answers	How SAP Uses This Information	Links to Related Documentation
cluster enforce resource quotas? Have these quotas been updated to support the number of event broker services you expect to create in your cluster?		vice.	netes

Operational Connectivity

You must answer the following questions about your Operational Connectivity.

Question	Possible Answers	How SAP Uses This Information	Links to Related Documentation
Will you use access the Solace Container Registry directly or will you use a mirror?	Direct **or** Mirror	Advanced event mesh container images are provided in a private registry that can either be accessed directly or mirrored (for example using Nexus or Artifactory). Advanced event mesh cannot push images to a private	Connectivity Model for Kubernetes Deployments

Question	Possible Answers	How SAP Uses This Information	Links to Related Documentation
		registry due to the frequency with which we publish and perform upgrades with new container images for our Mission Control Agent.	
If you are using a mirror container registry, what is its path?	For example, for container image `quay.io/example/nginx` the container registry portion is `quay.io/example`.	SAP requires this information to configure the Mission Control Agent to create event broker services using the correct container image name.	Connectivity Model for Kubernetes Deployments
If you are using a mirror container registry, what is the name of the image pull secret used to authenticate with it?		The Mission Control Agent and event broker service may require a secret in the namespace they're deployed in so they can pull images from the registry.	Downloading the Registry Credentials for Solace's Container Registry
Do you restrict outbound internet access? Is your environment configured to allow all outbound communication required for proper operation of advanced event	Restricted **or** Not restricted	If you restrict outbound access then you must read the documentation for details about how to allow access for advanced event mesh.	Connectivity Model for Kubernetes Deployments

Question	Possible Answers	How SAP Uses This Information	Links to Related Documentation
mesh?			

If you have an HTTP/HTTPS proxy that is required for outbound communication, what is its URL? Does it require credentials? If yes, we will contact you to securely provide them.	For example:
	`https://proxy-host`
	or
	`http://proxy-host`
		SAP needs this information to configure the Mission Control Agent to use your proxy.	Using HTTP/HTTPS Proxies

Messaging Connectivity

You must answer the following questions about your Messaging Connectivity.

Question	Possible Answers	How SAP Uses This Information	Links to Related Documentation
Do you intend to create event broker services that are accessed via the public internet, private networking, or both?	Public **or** Private **or** Both	SAP needs this information to configure the Mission Control Agent to create event broker services that match your requirements.	Exposing Event Broker Services to External Traffic

Feature Requirements

You must answer the following questions about your plans to use certain features that require special configuration.

Question	Possible Answers	How SAP Uses This Information	Links to Related Documentation
Do you intend to use MQTT Retain on any of your event broker services?	Yes **or** No	SAP may need to allocate more memory to the event broker service's pod for it to support MQTT Retain.	
Do you intend to provide a custom server certificate for your event broker services?	Yes **or** No	SAP needs this information to configure the Mission Control Agent to use your custom server certificates.	

Contact Information

You must provide a point of contact for each entry in the table below. SAP prefers a distribution list as the point of contact, though you can choose to provide individual contact details.

Contact Type	Distribution List or Contact Details
Event broker service incidents or issues.	
Event broker service upgrade notifications and scheduling.	
Release and maintenance notifications.	

Azure Kubernetes Service (AKS) Questions

After answering the common questions, you must answer the following questions related to your Azure Kubernetes Service (AKS) deployment.

- Cluster Questions
- Messaging Connectivity Questions
- Storage Questions

AKS Cluster

You must answer the following questions about yourAzure AKS cluster.

Question	Possible Answers	How SAP Uses This Information	Links to Related Documentation
Are your cluster's VNet and Subnets properly sized to support the number of event broker services you'd like to create?	Yes	The number of event broker services that can be created in a cluster is limited by the available IPs in the VNET and its Subnet(s). Additionally, those chosen networking option (Kubenet or Azure CNI) changes how IPs from the VNET are utilized which affects how many event broker services can be created. Consider the size of your cluster's network carefully, as it is not possible to change its size after creation.	IP Range in Installing in Azure Kubernetes Service (AKS)
Have you configured the cluster's node pools to use autoscaling?	Yes **or** No	SAP recommends using the cluster autoscaler to ensure that there is sufficient capacity in the cluster to create event broker services with a minimum waste of resources.	Autoscaling in Installing in Azure Kubernetes Service (AKS)

AKS Messaging Connectivity

Question	Possible Answers	How SAP Uses This Information	Links to Related Documentation
Are there any additional annotations required in your environment	Yes **or**	SAP requires the extra service annotations to	Load Balancer in Installing in Azure

Question	Possible Answers	How SAP Uses This Information	Links to Related Documentation
(beyond the standard ones) that must be used on the LoadBalancer service for proper operation?	No	configure the Mission Control Agent so it can create event broker services.	Kubernetes Service (EKS)

AKS Storage

You must answer the following questions about your Azure AKS storage.

Question	Possible Answers	How SAP Uses This Information	Links to Related Documentation
Have you created a storage class based on our best practices?	Yes	Some storage class parameters need to be set to properly support the creation of event broker services as well as other features.	Azure Kubernetes Service Deployment Details
Which underlying disk type does your storage class use?	Premium LRS	SAP supports the deployment of event broker services only to Premium LRS.	Storage in Installing in Azure Kubernetes Service (AKS)
What is the name of the storage class?		SAP requires the name to properly configure the Mission Control Agent so it can create event broker services.	Storage in Installing in Azure Kubernetes Service (AKS)