Questionnaire: Deploying in a Customer-Controlled Region with Oracle Kubernetes Engine

This questionnaire is specific to deployments of Solace Cloud in Customer-Controlled Regions using Oracle Kubernetes Engine. For questions related to deployments for Dedicated Regions, see Questionnaire: Deploying in a Dedicated Region.

Deploying Solace Cloud 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 Solace 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
- Azure Kubernetes Service Questions
- Google Kubernetes Engine Questions
- Oracle Kubernetes Engine 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 Solace Uses This Information	Links to Related Documentation
Do you have an existing cluster (or a defined specification for a new	I have an existing cluster (or clusters) or intend to create new clusters based on	The Solace 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 Solace Cloud. If you have an existing cluster, you	Support for nodeSelector, Taints, and Tolerations Resource Requirements for Kubernetes

Question	Possible Answers	How Solace Uses This Information	Links to Related Documentation
cluster), or do you require an architecture example to start from?	existing specification. **or** I would like a best practice architecture example to start from.	can use our best practices documentation to understand how to modify your cluster, and how to provide Solace with the node selectors and tolerations we need to deploy event broker services in your cluster. Solace provides reference Terraform projects 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 Solace Cloud. 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 our GitHub repository: https://github.com/SolaceLabs/customer-controlled-region-reference-architectures Beware that all sample scripts, Ter-	

Question	Possible Answers	How Solace Uses This Information	Links to Related Documentation
		raform 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 Solace Cloud or will it be shared with other applications or workloads?	Exclusive **or** Shared	Providing this information allows Solace to understand the architecture of your cluster so we can better suggest changes that may help the operation of Solace Cloud in your cluster.	Deployment Architecture for Kubernetes Resource Requirements for Kubernetes
Is the Kubernetes version of your cluster supported by Solace Cloud?	Yes **or** No	Only supported Kubernetes versions are tested and guaranteed to work with Solace Cloud. If you use a different implementation of Kubernetes, contact Solace to find out how we can support your deployment.	Supported Kubernetes Versions
What is the cluster domain for		This is typically `cluster.local`, but your Kubernetes administrator can configure it to be something	DNS for Services and Pods in the Kubernetes doc-

Question	Possible Answers	How Solace Uses This Information	Links to Related Documentation
your Kubernetes cluster?		else. Solace requires this information to properly configure the Mission Control Agent.	umentation
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, Solace 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		Solace 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

Question	Possible Answers	How Solace Uses This Information	Links to Related Documentation
broker service pods? If so, what are they?			
What geographic locations 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.		Solace Cloud produces diagnostic logs that are pushed to an AWS S3 bucket for use by Solace. We use S3 buckets that are geographically close to the deployment to optimize retrieval.	S3 Bucket Names for Gathered Diagnostics
Does your cluster have any Pod Security Policies?		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.	Support for nodeSelector, Taints, and Tolerations Connectivity

Question	Possible Answers	How Solace Uses This Information	Links to Related Documentation
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 Solace Cloud in your cluster?		In most cases, Solace Cloud can be configured to meet these requirements.	Model for Kubernetes Deployments
Does your cluster enforce resource quotas? Have these quotas been updated to		Your cluster must have sufficient resource to successfully create event broker service.	Resource Requirements for Kubernetes

Question	Possible Answers	How Solace Uses This Information	Links to Related Documentation
support the number of event broker services you expect to create in your cluster?			
Will your cluster use dedicated nodes for your event broker services? If so, will you size those nodes for only a single event broker service?		The resource requirements outlined by Solace assume you are deploying a single event broker service per node in your cluster. If you intend to deploy more than one event broker service, or other applications in the same node you must work with Solace to ensure your nodes provide sufficient resources to your event broker service.	Resource Requirements for Kubernetes
Will the same cluster be used for Micro-Integ-	Yes or No	Your Kubernetes cluster must be at least a 1k-prod size for Micro-Integrations. In addition, there are memory and RAM requirements for each pod used by a Micro-Integ-	Micro-Integration Pod Requirements

Question	Possible Answers	How Solace Uses This Information	Links to Related Documentation
rations?		ration that differ from those for event broker services.	

Operational Connectivity

You must answer the following questions about yourOperational Connectivity.

Question	Possible Answers	How Solace 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	Solace Cloud container images are provided in a private registry that can either be accessed directly or a using a registry mirror. For registry mirroring, Solace only supports *pull-through cache* mirrors, such as using Nexus, Artifactory, or Artifact cache	Connectivity Model for Kubernetes Deployments

Question	Possible Answers	How Solace Uses This Information	Links to Related Documentation
		In Azure Container Registry. Solace Cloud cannot push images to a private 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`.	Solace 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		The Mission Control Agent	Downloading the Registry Cre-

Question	Possible Answers	How Solace Uses This Information	Links to Related Documentation
registry, what is the name of the image pull secret used to authenticate with it?		and event broker service may require a secret in the namespace they're deployed in so they can pull images from the registry.	dentials for the Solace Container Registry
Do you restrict outbound internet access? Is your environment configured to allow all outbound communication required for proper operation of Solace Cloud?	Restricted **or** Not restricted	If you restrict outbound access then you must read the documentation for details about how to allow access for Solace Cloud.	Connectivity Model for Kubernetes Deployments

If you have an HTTP/HTTPS proxy that is required for outbound communication, what	For example:
	`https://proxy-host`
	or
	`http://proxy-host`
		Solace needs this information to configure the Mission Control Agent to use your proxy.	Using HTTP/HTTPS Proxies

Question	Possible Answers	How Solace Uses This Information	Links to Related Documentation
is its URL? Does it require credentials? If yes, we will contact you to securely provide them.			

Messaging Connectivity

You must answer the following questions about yourMessaging Connectivity.

Question	Possible Answers	How Solace 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	Solace 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 Solace Uses This Information	Links to Related Documentation
Do you intend to use MQTT Retain on any of your event broker services?	Yes **or** No	Solace 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	Solace needs this information to configure the Mission Control Agent to use your custom server certificates.	
Will you be using more than one environment? If so, which environment do you want your initial datacenter created in?	Yes, and the environment name **or** No	Solace uses this information to put your datacenter in the environment you specify. If you won't be using more than one environment, or don't specify the environment, the datacenter will be placed in your organization's default environment. You can create environments, change your default environment, and move datacenters to different environments at a later time.	Creating and Managing Environments

Contact Information

You must provide a point of contact for each entry in the table below. Solace 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.	

Oracle Kubernetes Engine (OKE) Questions

After answering the common questions, you must answer the following questions related to your Huawei Cloud Container Engine (CCE) deployment.

- Cluster Questions
- Messaging Connectivity Questions
- Storage Questions

OKE Cluster

You must answer the following questions about your Huawei CCE cluster.

Question	Possible Answers	How Solace Uses This Information	Links to Related Documentation
Is your cluster's net-	Yes	The number of event	IPv4 CIDR Blocks

Question	Possible Answers	How Solace Uses This Information	Links to Related Documentation
work properly sized to support the number of event broker services you would like to create?		broker services that can be created in a cluster is limited by the available IP addresses in the VPC/VNET. Consider the size of your cluster's network carefully, as it is not possible to change its size after creation.	and Kubernetes Engine (OKE) in the Oracle Cloud Infrastructure documentation Virtual Cloud Networking and Networking Requirements in Installing in Oracle Kubernetes Engine documentation
Have you configured the cluster's node pools to use autoscaling?	Yes **or** No	Solace 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.	Using the Kubernetes Cluster Autoscaler in the Oracle Cloud Infrastructure documentation

OKE Messaging Connectivity

Question	Possible Answers	How Solace Uses This Information	Links to Related Documentation
Are there any additional annotations required in your	Yes **or**	Solace requires the extra service	LoadBalancer Configuration and

Question	Possible Answers	How Solace Uses This Information	Links to Related Documentation
environment (beyond the standard ones) that must be used on the LoadBalancer service for proper operation?	No	annotations to configure the Mission Control Agent so it can create event broker services.	Annotiations in Installing in Oracle Kubernetes Engine documentation

OKE Storage

You must answer the following questions about your OKE storage.

Question	Possible Answers	How Solace 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.	Storage in Installing in Oracle Kubernetes Engine documentation
What is the name of the storage class?		Solace requires the name to properly configure the Mission Control Agent so it can create event broker services.	Storage in Installing in Oracle Kubernetes Engine documentation