# 2V0-71.23Q&As

VMware Tanzu for Kubernetes Operations Professional

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**QUESTION 1**

Which is a prerequisite for cert-manager installation?

A. Download the latest Tanzu Kubernetes Grid OVAs for the OS and Kubernetes version

B. Obtain the admin credentials of the target workload cluster

C. Run the canzu login command tosee an interactive list of management clusters

D. After importing the cert-manager OVA, a conversion into virtual machine template must be performed

Correct Answer: B

A prerequisite for cert-manager installation is to obtain the admin credentials of the target workload cluster. Cert-manager is a tool that automates the management and issuance of TLS certificates within Kubernetes clusters3. To install cert-manager, users need to have access to the cluster where they want to deploy it, and have the necessary permissions to create resources such as namespaces, custom resource definitions, deployments, services, and secrets3. Users can obtain the admin credentials of the target workload cluster by using the tanzu cluster kubeconfig get command with the --admin option4. This command generates a kubeconfig file that contains the admin credentials for the cluster, which can be used to authenticate with the cluster and perform cert-manager installation4. References: Installation - cert-manager Documentation, Deploy Workload Clusters - VMware Docs

**QUESTION 2**

An administrator has a VMware Tanzu Kubernetes Grid management cluster named tanzu- mc0l which needs to be upgraded.

Which command can be used to upgrade this cluster?

A. kubectl management-cluster upgrade

B. tanzu mc upgrade

C. tanzu config use-context tanzu-mc01-admin@tanzu-mc01

D. kubectl tanzu-mc01 upgrade

Correct Answer: B

The tanzu mc upgrade command is used to upgrade a management cluster to a newer version of Tanzu Kubernetes Grid. The command requires the name of the management cluster as an argument, and optionally the version to upgrade to.

For example, toupgrade the management cluster named tanzu-mc01 to version v1.4.0, the command would be:

tanzu mc upgrade tanzu-mc01 --version v1.4.0

The other options are incorrect because:

kubectl management-cluster upgrade is not a valid command. The kubectl command is used to interact with Kubernetes clusters, not to upgrade them.

tanzu config use-context tanzu-mc01-admin@tanzu-mc01 is a command to switch the current context to the admin context of the management cluster named tanzu- mc01. It does not upgrade the cluster.

kubectl tanzu-mc01 upgrade is not a valid command. The kubectl command does not accept a cluster name as an argument, and there is no upgrade subcommand. References: VMware Tanzu for Kubernetes Operations Getting Started,

Upgrading Management Clusters

**QUESTION 3**

Which two statements about the NSX Advanced Load Balancer are correct? (Choose two.)

A. It can only be used if Antrea CNI is installed on the workload cluster.

B. It can be configured as the VIP endpoint for the management cluster on vSphere.

C. It only supports the service type LoadBalancer.

D. It is natively integrated with Tanzu Kubernetes Grid Amazon Web Services EC2 deployments.

E. It can be configured as a load balancer for workloads in the clusters that are deployed on vSphere.

Correct Answer: BE

Two statements about the NSX Advanced Load Balancer are correct: It can be configured as the VIP endpoint for the management cluster on vSphere. The VIP endpoint is the IP address that clients use to access the Kubernetes API server on the management cluster. By default, this IP address is assigned by DHCP, but it can also be configured manually or by using a load balancer. Using a load balancer provides high availability and scalability for the VIP endpoint. NSX Advanced Load Balancer can be used as the load balancer provider for the VIP endpoint by creating a virtual service that points to the control plane nodes of the management cluster5. It can be configured as a load balancer for workloads in the clusters that are deployed on vSphere. Workload clusters are Kubernetes clusters that run user workloads on vSphere with Tanzu. Workload clusters require a load balancer to expose services of type LoadBalancer to external clients. NSX Advanced Load Balancer can be used as the load balancer provider for workload clusters by deploying an Avi Kubernetes Service (AKS) pod on each cluster node. The AKS pod acts as an ingress controller that communicates with the NSX Advanced Load Balancer Controller and creates virtual services for each service of type LoadBalancer6. The other options are incorrect because: It can only be used if Antrea CNI is installed on the workload cluster is false. Antrea is one of the supported Container Network Interface (CNI) plugins for workload clusters on vSphere with Tanzu, but it is not mandatory to use it with NSX Advanced Load Balancer. Other CNI plugins, such as Calico or Flannel, can also work with NSX Advanced Load Balancer7. It only supports the service type LoadBalancer is false. NSX Advanced Load Balancer supports other service types as well, such as ClusterIP and NodePort. These service types can be used to expose services within or across clusters without requiring an external load balancer8. It is natively integrated with Tanzu Kubernetes Grid Amazon Web Services EC2 deployments is false. NSX Advanced Load Balancer is not natively integrated with Tanzu Kubernetes Grid Amazon Web Services EC2 deployments. Tanzu Kubernetes Grid on AWS uses the AWS Elastic Load Balancing service as the default load balancer provider for both management and workload clusters9. References: Configure the VIP Endpoint for the Management Cluster, Deploy and Configure NSX Advanced Load Balancer as a Load Balancer for Workload Clusters, Supported CNI Plugins, Service Types, Load Balancing on AWS

**QUESTION 4**

Which two Kubernetes Service types are fulfilled natively by Kubernetes without requiring external integrations? (Choose two.)

A. ExternalName

B. Ingress

C. LoadBalancer

D. NodePort

E. ClusterIP

Correct Answer: DE

ClusterIP and NodePort are two Kubernetes Service types that are fulfilled natively by Kubernetes without requiring external integrations. ClusterIP exposes a service on a cluster-internal IP address that can only be accessed from within the cluster. NodePort exposes a service on a static port on each node\\'s IP address, and forwards the traffic to the corresponding ClusterIP service. Both ClusterIP and NodePort services are created by Kubernetes using iptables rules on the nodes, and do not depend on any external load balancers or DNS providers. References: Kubernetes Service Types Overview, Service | Kubernetes

**QUESTION 5**

Which statement is true about Tanzu package CLI plugin?

A. It cannotbe used to add additional package repositories apart from tanzu-standard.

B. It can be used to manage packages in public repositories.

C. It is intended only for CLI-managed packages.

D. It can be used to install auto-managed packages.

Correct Answer: C

The Tanzu package CLI plugin is a tool that allows users to install and manage Tanzu packages on their clusters. Tanzu packages are Kubernetes resources that encapsulate the deployment and configuration of software components, such as Contour, Prometheus, Grafana, and more1. The Tanzu package CLI plugin is intended only for CLI- managed packages, which are packages that users can install and update manually using the Tanzu CLI commands2. The Tanzu package CLI plugin cannot be used to install or manage auto-managed packages, which are packages that are automatically installed and updated by Tanzu Kubernetes Grid as part of the cluster lifecycle2. The other options are incorrect because: It cannot be used to add additional package repositories apart from tanzu-standard is false. The Tanzu package CLI plugin can be used to add, list, update, or delete package repositories, which are sources of Tanzu packages3. Users can add custom package repositories or use the default tanzu-standard repository that comes with Tanzu Kubernetes Grid4. It can be used to manage packages in public repositories is false. The Tanzu package CLI plugin can only be used to manage packages in the repositories that are added to the target cluster3. Users cannot use the Tanzu package CLI plugin to manage packages in public repositories that are not added to the cluster. It can be used to install auto-managed packages is false. As mentioned above, the Tanzu package CLI plugin cannot be used to install or manage auto-managed packages. References: Tanzu Packages, Tanzu Package Types, tanzu package repository, Add a Package Repository

**QUESTION 6**

What is the key benefit of Tanzu Service Mesh Autoscaler feature?

A. Autoscale microservices

B. Autoscale persistant volumes

C. Autoscale Supervisor control plane VMs

D. Autoscale Tanzu Kubernetes Grid cluster

Correct Answer: A

The key benefit of Tanzu Service Mesh Autoscaler feature is to autoscale microservices that meet changing levels of demand based on metrics, such as CPU or memory usage. These metrics are available to Tanzu Service Mesh without needing additional code changes or metrics plugins1. Tanzu Service Mesh Autoscaler supports configuring an autoscaling policy for services inside a global namespace through the UI or API, or using a Kubernetes custom resource definition (CRD) for services directly in cluster namespaces2. Tanzu Service Mesh Autoscaler also supports two modes: performance mode, where services are scaled up but not down, and efficiency mode, where services are scaled up and down to optimize resource utilization2. References: VMware Aria Operations for Applications, Tanzu Service Mesh Service Autoscaling Overview - VMware Docs

**QUESTION 7**

Which statement describes a Global Namespace in VMware Tanzu Service Mesh?

A. Apply a single policy to multiple namespaces across multiple clusters.

B. Automatic placement of the workload to any global cluster based on traffic demand.

C. Define an application boundary and provides consistent traffic routing, connectivity, resiliency, and security for applications across multiple clusters.

D. Provide distributed ingress and egress services to support multiple namespaces across multiple clusters.

Correct Answer: C

The statement that correctly describes a global namespace in VMware Tanzu Service Mesh is that it defines an application boundary and provides consistent traffic routing, connectivity, resiliency, and security for applications across multiple clusters. A global namespace is a logical abstraction of an application from the underlying infrastructure that spans across multiple clusters and clouds4. A global namespace connects the resources and workloads that make up the application into one virtual unit and manages their identity, discovery, connectivity, security, and observability4. A global namespace also enables automatic service discovery and cross-cluster communication within the application boundary4. References: Global Namespaces - VMware Docs

**QUESTION 8**

Which statement describes how VMware Tanzu Mission Control and VMware Aria Operations for Applications integrate?

A. An administrator can enable VMware Aria Operations for Applications usingthe integrations tab in VMware Tanzu Mission Control.

B. VMware Aria Operations for Applications is enabled by default in VMware Tanzu Mission Control. No integration is required.

C. An administrator can login to VMware Aria Operations for Applications and enable VMware Tanzu Mission Control integration from the administration menu.

D. An administrator can download and install the VMware Aria Operations Observations agent from Tanzu CLI.

Correct Answer: A

VMware Aria Operations for Applications is a SaaS solution that provides observability for modern applications across multiple clouds and platforms. It collects and analyzes traces, metrics, and logs from various sources, including Tanzu

Kubernetes Grid clusters managed by Tanzu Mission Control. To enable the integration between VMware Aria Operations for Applications and Tanzu Mission Control, an administrator can use the integrations tab in Tanzu Mission Control UI

and follow the steps to configure the connection.

The other options are incorrect because:

VMware Aria Operations for Applications is not enabled by default in Tanzu Mission Control. An administrator has to explicitly enable the integration and provide the required credentials and settings.

An administrator cannot login to VMware Aria Operations for Applications and enable Tanzu Mission Control integration from the administration menu. The integration has to be initiated from Tanzu Mission Control UI. An administrator cannot

download and install the VMware Aria Operations Observations agent from Tanzu CLI. The Observations agent is automatically installed on the clusters managed by Tanzu Mission Control once the integration is enabled.

References: Configure Integration with Tanzu Mission Control, Introducing the Tanzu Mission Control Integration for VMware Aria Automation

**QUESTION 9**

Which two are valid options for obtaining kubectl config file in Tanzu Kubernetes environment? (Choose two.)

A. Use the command tubeccl vsphere login

B. Download from vSphere UI

C. Download on the Supervisor Cluster Webpage

D. Access from vCenter Server Appliance Management Interface

E. Access from VMware Tanzu Mission Control

Correct Answer: BE

Two valid options for obtaining kubectl config file in Tanzu Kubernetes environment are:

Download from vSphere UI: For Tanzu Kubernetes clusters that are deployed on vSphere with Tanzu, you can download the kubeconfig file from the vSphere UI by selecting the cluster and clicking on the Download kubeconfig button1. This

file contains the credentials and connection information for the cluster, which you can use to access it with kubectl1.

Access from VMware Tanzu Mission Control: For Tanzu Kubernetes clusters that are attached or provisioned by VMware Tanzu Mission Control, you can access the kubeconfig file from the Tanzu Mission Control console by selecting the

cluster and clicking on the Access this cluster button2. This will generate a YAML file that you can download and use to connect to the cluster with kubectl2. References: Download a Kubeconfig File for a Tanzu Kubernetes Cluster - VMware Docs, Connect to a Managed Cluster with kubectl - VMware Docs

**QUESTION 10**

Which two statements describe Kubernetes observability characteristics? (Choose two.)

A. It provides network insight and detailed Kubernetes network topology view

B. Provides visibility into Kubernetes clusters for troubleshooting and impact assessment

C. It observes the code of the applications running in Kubernetes environment

D. Collects real-time metrics from all layers of Kubernetes

E. Automatically heals Kubernetes workloads after an issue has been observed

Correct Answer: BD

Kubernetes observability is the ability to monitor and analyze the performance, health, and behavior of Kubernetes clusters and applications. It provides visibility into Kubernetes clusters for troubleshooting and impact assessment, by collecting logs, events, traces, and alerts from various sources. It also collects real-time metrics from all layers of Kubernetes, such as nodes, pods, containers, services, and network policies, and displays them in dashboards and charts. Kubernetes observability helps administrators and developers to identify and resolve issues, optimize resource utilization, and ensure service quality and reliability. References: VMware Tanzu Observability Documentation, What is Kubernetes Observability?

**QUESTION 11**

What are four policy types supported by VMware Tanzu Mission Control? (Choose four.)

A. Security policy

B. Pod security policy

C. Access policy

D. Cluster group policy

E. Network policy

F. Custom policy

G. Workspace policy

Correct Answer: ACEF

Four policy types that are supported by VMware Tanzu Mission Control are:

Security policy: Security policies allow you to manage the security context in which deployed pods operate in your clusters by imposing constraints on your clusters that define what pods can do and which resources they have access to6.

Access policy: Access policies allow you to use predefined roles to specify which identities (individuals and groups) have what level of access to a given resource7. Network policy: Network policies allow you to use preconfigured templates to

define how pods communicate with each other and other network endpoints8. Custom policy: Custom policies allow you to implement additional business rules, using templates that you define, to enforce policies that are not already

addressed using the other built-in policy types9.

References: Policy-Driven Cluster Management - VMware Docs

**QUESTION 12**

What are two possible counts of control plane nodes in a Tanzu Kubernetes Grid Workload Cluster? (Choose two.)

A. 3

B. 5

C. 2

D. 0

E. 1

Correct Answer: AE

The control plane nodes are the nodes that run the Kubernetes control plane components, such as the API server, the scheduler, the controller manager, and etcd. The control plane nodes are responsible for managing the cluster state and orchestrating workload operations. The possible counts of control plane nodes in a Tanzu Kubernetes Grid workload cluster are 1 or 3. The control plane must have an odd number of nodes to ensure quorum and high availability. A single control plane node is suitable for development or testing purposes, while three control plane nodes are recommended for production clusters23. References: Deploy Workload Clusters - VMware Docs, Concepts and References - VMware Docs

**QUESTION 13**

An administrator set the following value:ENABLE_AUDIT_LOGGING=trueduring a cluster deployment. What was the purpose of this setting?

A. Log metadata about all requests made to the Kubernetes API server.

B. Enable log redirection to external logging server by Fluent Bit.

C. Run scripts that collect Kubernetes API output,node logs, and node command-line output.

D. Activate the kubectl describe command for CustomResourceDefinitions (CRDs) introduced byCluster API.

Correct Answer: A

The purpose of setting ENABLE_AUDIT_LOGGING=true during a cluster deployment is to log metadata about all requests made to the Kubernetes API server. This enables auditing of the cluster activities and helps with security and compliance. The audit logs are stored in /var/log/kubernetes/audit.log on the control plane node and can be accessed by the cluster administrator. The audit logs are generated based on an audit policy file that defines what events should be recorded and what data they should include12 References: 1: https://docs.vmware.com/en/VMware-Tanzu-Kubernetes-Grid/1.6/vmware- tanzu-kubernetes-grid-16/GUID-troubleshooting-tkg-audit-logging.html 2: https://kubernetes.io/docs/tasks/debug/debug-cluster/audit/

**QUESTION 14**

Which statement describes a Container Storage Interface (CSI) in VMware Tanzu Kubernetes Grid?

A. It is a plug-in that onlyworks with vSphere object storage.

B. It is a plug-in that is only used for clusters which require cloud native storage.

C. It is a plug-in that allows providers to expose storage as persistent storage.

D. It is a plug-in that is required for ephemeral storage.

Correct Answer: C

A Container Storage Interface (CSI) in VMware Tanzu Kubernetes Grid is a plug-in that allows providers to expose storage as persistent storage for Kubernetes clusters. CSI is a standard interface that defines an abstraction layer for container orchestrators to work with storageproviders3. VMware Tanzu Kubernetes Grid supports StorageClass objects for different storage types, provisioned by Kubernetes internal ("in- tree") or external ("out-of-tree") plug-ins. Two of the supported storage types are vSphere Cloud Native Storage (CNS) and Amazon EBS, which use the vSphere CSI driver and the AWS EBS CSI driver respectively4. References: Tanzu Kubernetes Storage Class Example - VMware Docs, Deploying and Managing Cloud Native Storage (CNS) on vSphere - VMware Docs

**QUESTION 15**

An administrator was requested to create a pod with two interfaces to separate the application and management traffic for security reasons.

Which two packages have to be installed in VMware Tanzu Kubernetes Grid cluster to satisfy the requirement? (Choose two.)

A. multus

B. external-dns

C. cert-manager

D. qrafana

E. contour

Correct Answer: AE

Multus is an open-source container network interface plugin for Kubernetes that enables attaching multiple network interfaces to pods. Contour is an open-source Kubernetes ingress controller that provides dynamic configuration updates and makes use of the Envoy proxy as a data plane. By installing these two packages in a VMware Tanzu

Kubernetes Grid cluster, an administrator can create a pod with two interfaces and use Contour to route the application and management traffic to different networks. The other options are incorrect because: external-dns is a package that synchronizes exposed Kubernetes services and ingresses with DNS providers. It does not provide multiple interfaces for pods. cert-manager is a package that automates the management and issuance of TLS certificates from various sources. It does not provide multiple interfaces for pods. qrafana is not a valid package name. The correct spelling is Grafana, which is a package that provides visualization and analytics for metrics collected by Prometheus. It does not provide multiple interfaces for pods. References: Install Multus and Whereabouts for Container Networking, Install Contour for Ingress