2V0-71.23Q&As

VMware Tanzu for Kubernetes Operations Professional

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QUESTION 1

What are three VMware products that VMware Tanzu Kubernetes Grid natively integrates with? (Choose three.)

A. NSX Advanced Load Balancer

B. NSX-T Data Center

C. BOSH

D. vSphere with VMware Tanzu

E. vRealize Network Insight

F. Tanzu Mission Control

Correct Answer: ABD

VMware Tanzu Kubernetes Grid is an enterprise-ready Kubernetes runtime that streamlines operations across multi-cloud infrastructure1. Tanzu Kubernetes Grid natively integrates with the following VMware products: NSX Advanced Load Balancer: A solution that provides L4 and L7 load balancing and ingress control for Kubernetes clusters. NSX Advanced Load Balancer can be used as the default load balancer provider for both management and workload clusters on vSphere, AWS, Azure, and other platforms2. NSX-T Data Center: A network virtualization and security platform that provides consistent networking and security for applications running across private and public clouds. NSX-T Data Center can be used as the default network plugin for both management and workload clusters on vSphere, AWS, Azure, and other platforms3. vSphere with VMware Tanzu: A solution that enables you to run Kubernetes workloads natively on a vSphere cluster, and to provision and manage Kubernetes clusters using the vSphere Client. vSphere with VMware Tanzu can be used as the platform to deploy Tanzu Kubernetes Grid management clusters and workload clusters4. The other options are incorrect because: BOSH is an open-source tool that provides release engineering, deployment, lifecycle management, and monitoring of distributed systems. BOSH is not a VMware product, nor does it natively integrate with Tanzu Kubernetes Grid5. vRealize Network Insight is a solution that delivers intelligent operations for software-defined networking and security. It helps optimize network performance and availability with visibility and analytics across virtual and physical networks. vRealize Network Insight is not natively integrated with Tanzu Kubernetes Grid6. Tanzu Mission Control is a centralized management platform for consistently operating and securing your Kubernetes infrastructure and modern applications across multiple teams and clouds. Tanzu Mission Control is not natively integrated with Tanzu Kubernetes Grid, but rather works with it as a separate product7. References: VMware Tanzu Kubernetes Grid Overview, NSX Advanced Load Balancer, NSX-T Data Center, vSphere with VMware Tanzu, BOSH, vRealize Network Insight, Tanzu Mission Control Overview

QUESTION 2

What are the three Cluster API providers being used in VMware Tanzu Kubernetes Grid? (Choose three.)

A. CAPI

B. CAPz

C. CAPM

D. CAP

E. CAPV

F. CAPA

Correct Answer: BEF

Cluster API is a Kubernetes project that provides declarative APIs for cluster creation, configuration, and management. Cluster API uses a set of custom resource definitions (CRDs) to represent clusters, machines, and other objects. Cluster API also relies on providers to implement the logic for interacting with different infrastructure platforms. VMware Tanzu Kubernetes Grid uses Cluster API to deploy and manage Kubernetes clusters on various platforms. The three Cluster API providers being used in VMware Tanzu Kubernetes Grid are: CAPZ: Cluster API Provider for Azure. This provider enables Cluster API to create Kubernetes clusters on Microsoft Azure4. CAPV: Cluster API Provider for vSphere. This provider enables Cluster API to create Kubernetes clusters on vSphere 6.7 or later5. CAPA: Cluster API Provider for AWS. This provider enables Cluster API to create Kubernetes clusters on Amazon Web Services5. References: VMware Tanzu Kubernetes Grid Documentation, Taking Kubernetes to the People: How Cluster API Promotes Self ... - VMware

QUESTION 3

Which kinds of objects does the Kubernetes RBAC API declare?

A. CloudPolicyObject

B. Role, ClusterRole, RoleBinding and ClusterRoleBinding

C. Container type and Container object

D. ClusterObject and ClusterNode

Correct Answer: B

The Kubernetes RBAC API declares four kinds of Kubernetes object: Role, ClusterRole, RoleBinding and ClusterRoleBinding. These objects are used to define permissions and assign them to users or groups within a cluster. A Role or ClusterRole contains rulesthat represent a set of permissions on resources or non-resource endpoints. A RoleBinding or ClusterRoleBinding grants the permissions defined in a Role or ClusterRole to a set of subjects (users, groups, or service accounts). A RoleBinding applies only within a specific namespace, while a ClusterRoleBinding applies cluster-wide. The other options are incorrect because: CloudPolicyObject is not a valid Kubernetes object type. It might be confused with NetworkPolicy, which is an object type that defines how pods are allowed to communicate with each other and other network endpoints. Container type and Container object are not valid Kubernetes object types. They might be confused with Pod, which is an object type that represents a group of one or more containers running on a node. ClusterObject and ClusterNode are not valid Kubernetes object types. They might be confused with Cluster and Node, which are concepts that describe the logical and physical components of a Kubernetes cluster. References: Using RBAC Authorization, Kubernetes RBAC: Concepts, Examples and Top Misconfigurations

QUESTION 4

What are three capabilities of VMware Aria Operations for Applications (formerly known as Tanzu Observability)? (Choose three.)

A. Create Alerts

B. Set Application Container security policy

C. Set Service Level Objectives

D. Create Kubernetes Clusters

E. Create Charts and Dashboards

F. Create Queries

Correct Answer: AEF

VMware Aria Operations for Applications (formerly known as Tanzu Observability) is a unified observability platform that provides full-stack visibility using metrics, traces, and logs across distributed applications, application services, container services, and multi-cloud environments. Some of the capabilities of VMware Aria Operations for Applications are: Create alerts: Users can monitor for certain behaviors and get smart notifications based on query conditions. Users can create alerts independently or directly from charts, and use advanced and accurate alerting powered by AI/analytics and query language1. Create charts and dashboards: Users can visualize their data based on query results in various chart types (such as line plot, point plot, table, pie chart, etc.) and organize them in dashboards. Users can also interact with charts and dashboards in real time, such as zoom in, zoom out, change the time window, change the focus, and so on1. Create queries: Users can use the Wavefront Query Language (WQL) to extract the information they need from their data. Users can use the Chart Builder for easy query creation or the Query Editor for advanced query editing. Users can also use functions, operators, variables, macros, and expressions to manipulate their data1. References: VMware Aria Operations for Applications Documentation, Unified Observability Platform by VMware Aria Operations for Applications

QUESTION 5

What is the purpose of a service mesh?

A. Provides dynamic application load balancing and autoscaling across multiple clusters and multiple sites.

B. Provides a centralized, global routing table to simplify and optimize traffic management.

C. Provides service discovery across multiple clusters.

D. Provides an infrastructure layer that makes communication between applications possible, structured, and observable.

Correct Answer: D

A service mesh is a dedicated infrastructure layer that you can add to your applications to provide capabilities like observability, traffic management, and security, without adding them to your own code. A service mesh consists of network proxies paired with each service in an application and a set of management processes. The proxies are called the data plane and the management processes are called the control plane. The data plane intercepts calls between different services and processes them; the control plane is the brain of the mesh that configures and monitors the data plane1. A service mesh makes communication between applications possible, structured, and observable by providing features such as load balancing, service discovery, encryption, authentication, authorization, routing, retries, timeouts, fault injection, metrics, logs, and traces2. The other options are incorrect because: Provides dynamic application load balancing and autoscaling across multiple clusters and multiple sites is a description of VMware Tanzu Service Mesh Global Namespaces feature3, which is built on top of a service mesh. It is not the purpose of a service mesh in general. Provides a centralized, global routing table to simplify and optimize traffic management is a description of VMware Tanzu Service Mesh Global Mesh Network feature4, which is also built on top of a service mesh. It is not the purpose of a service mesh in general. Provides service discovery across multiple clusters is a partial description of a service mesh, but it does not capture the full scope of its purpose. Service discovery is one of the features that a service mesh provides, but it is not the only one. References: What\\'s a service mesh?, The Istio service mesh, Service mesh - Wikipedia

QUESTION 6

What is the role of the Tanzu Kubernetes Grid Service?

A. It provides declarative, Kubernetes-style APIs for cluster creation, configuration, and management.

B. It provides a declarative, Kubernetes-style API for management of VMs and associated vSphere resources.

C. It provisions an extension inside the Kubernetes cluster to validate user authentication tokens.

D. It provisions Kubernetes clusters that integrate with the underlying vSphere Namespace resources and Supervisor Services.

Correct Answer: D

The role of the Tanzu Kubernetes Grid Service is to provision Kubernetes clusters that integrate with the underlying vSphere Namespace resources and Supervisor Services. The Tanzu Kubernetes Grid Service is a component of vSphere with Tanzu that provides self-service lifecycle management of Tanzu Kubernetes clusters3. A Tanzu Kubernetes cluster is an opinionated installation of Kubernetes that runs on top of the Supervisor Cluster and inherits its capabilities, such as storage integration, pod networking, load balancing, authentication, and authorization4. The Tanzu Kubernetes Grid Service exposes three layers of controllers to manage the lifecycle of a Tanzu Kubernetes cluster: Cluster API, Virtual Machine Service, and Tanzu Kubernetes Release Service3. References: Tanzu Kubernetes Grid Service Architecture - VMware Docs, What Is a Tanzu Kubernetes Cluster? - VMware Docs

QUESTION 7

A Tanzu Mission Control administrator would like to enforce the following container controls:

1.

Only allows container images that match the specified names or tags.

2.

Ensure that the container image is not tampered with.

Which type of policy can be used?

A. Access

B. Security

C. Image Security

D. Image Registry

E. Network

Correct Answer: C

The type of policy that can be used to enforce the container controls is image security. Image security policies allow users to define rules for validating container images before they are deployed on clusters. Users can specify image names, tags, signatures, or digests to whitelist or blacklist images based on their source and integrity. Users can also enable or disable image scanning for vulnerabilities and configure the severity threshold for admission decisions. References: Image Security Policy - VMware Docs, Image Policy - VMware Docs

QUESTION 8

What is the correct procedure to attach a management cluster using the Tanzu Mission Control web console?

A. On the Clusters page, select the "Management Clusters" tab. Click "Register Management Cluster", and select the type of management cluster to register.

B. On the Clusters page, select "Attach Cluster" and then select the "Management Cluster" option, complete the form, and click the "Connect" button.

C. On the Administration page, select "Attach Cluster" and then select the "Management Cluster" option, complete the form, and click the "Connect" button.

D. On the Administration page, select the "Management Clusters" tab. Click "Register Management Cluster", and select the type of management cluster to register.

Correct Answer: D

The correct procedure to attach a management cluster using the Tanzu Mission Control web console is to go to the Administration page, select the Management Clusters tab, click Register Management Cluster, and select the type of management cluster to register. A management cluster is a Kubernetes cluster that runs the Cluster API components and can be used to create and manage workload clusters3. VMware Tanzu Mission Control supports registering two types of management clusters: Tanzu Kubernetes Grid management clusters and vSphere with Tanzu Supervisor Clusters4. By registering a management cluster with Tanzu Mission Control, you can enable lifecycle management of its workload clusters, assign them to cluster groups, apply policies, and monitor their health and performance4. References: Register a Management Cluster with Tanzu Mission Control - VMware Docs, Management Clusters - The Cluster API Book

QUESTION 9

What are two services that require Transport Layer Security (TLS) certificates to provide encryption in VMware Tanzu Service Mesh? (Choose two.)

A. Internal Service

B. Proxy Service

C. Certificate Authority (CA) Service D Public Service

D. External Service

Correct Answer: CD

Two services that require Transport Layer Security (TLS) certificates to provide encryption in VMware Tanzu Service Mesh are:

Certificate Authority (CA) Service: A service that issues certificates to services in the service mesh to enable mutual TLS (mTLS) communication between them. The CA service uses a root certificate to sign the certificates for the services,

and verifies the identity of the services using the certificates. The CA service also rotates the certificates periodically to ensure security8. Public Service: A service that exposes an internal service in the service mesh to external clients over

HTTPS. The public service uses a TLS certificate to encrypt the traffic between the external clients and the internal service, and to authenticate itself to the clients. The TLS certificate must match the domain name of the public service9.

The other options are incorrect because:

Internal Service: A service that runs inside the service mesh and communicates with other services using mTLS. The internal service does not require a TLS certificate, but rather uses a certificate issued by the CA service to enable mTLS10.

Proxy Service: A service that acts as an intermediary between an internal service and an external service, such as a database or an API. The proxy service does not require a TLS certificate, but rather uses a certificate issued by the CA

service to enable mTLS with the internal service. The proxy service also uses the external service\\'s certificate to verify its identity11.

External Service: A service that runs outside the service mesh and communicates with an internal service over HTTPS or TCP. The external service does not require a TLS certificate from Tanzu Service Mesh, but rather uses its own

certificate to encrypt the traffic with the internal service, and to authenticate itself to the internal service.

References: Certificate Authority (CA) Service, Public Services, Internal Services, Proxy Services,

QUESTION 10

Which two package management tools can be used to configure and install applications on Kubernetes? (Choose two.)

A. Grafana

B. Fluent bit

C. Carvel

D. Helm

E. Multus

Correct Answer: CD

Two package management tools that can be used to configure and install applications on Kubernetes are: Carvel. Carvel is a set of tools that provides a simple, composable, and flexible way to manage Kubernetes configuration, packaging, and deployment. Carvel includes tools such as kapp, which applies and tracks Kubernetes resources in a cluster; ytt, which allows templating YAML files; kbld, which builds and pushes images to registries; kpack, which automates image builds from source code; and vendir, which syncs files from different sources into a single directory. Carvel is integrated with VMware Tanzu Kubernetes Grid and can be used to deploy and manage applications on Tanzu clusters. Helm. Helm is a tool that helps users define, install, and upgrade complex Kubernetes applications using charts. Charts are packages of pre-configured Kubernetes resources that can be customized with values. Helm uses a client- server architecture with a command line tool called helm and an in-cluster component called Tiller. Helm can be used to deploy applications from the official Helm charts repository or from custom charts created by users or vendors. Helm is also integrated with VMware Tanzu Kubernetes Grid and can be used to deploy and manage applications on Tanzu clusters. References: : https://carvel.dev/ : https://docs.vmware.com/en/VMware-Tanzu-Kubernetes-Grid/1.6/vmware-tanzu-kubernetes-grid-16/GUID-tkg-carvel.html : https://helm.sh/ : https://docs.vmware.com/en/VMware-Tanzu-Kubernetes-Grid/1.6/vmware-tanzu- kubernetes-grid-16/GUID-tkg-helm.html

QUESTION 11

What is the object in Kubernetes used to grant permissions to a cluster wide resource?

A. ClusterRoleBinding

B. RoleBinding

C. RoleReference

D. ClusterRoleAccess

Correct Answer: A

The object in Kubernetes used to grant permissions to a cluster-wide resource is ClusterRoleBinding. A ClusterRoleBinding is a cluster-scoped object that grants permissions defined in a ClusterRole to one or more subjects, such as users, groups, or service accounts5. A ClusterRole is a cluster-scoped object that defines a set of permissions on cluster-scoped resources (like nodes) or namespaced resources (like pods) across all namespaces5. For example, a ClusterRoleBinding can be used to allow a particular user to run kubectl get pods --all-namespaces by granting them the permissions defined in a ClusterRole that allows listing pods in any namespace6. References: Using RBAC Authorization | Kubernetes, Cluster Roles and Cluster Roles Binding in Kubernetes | ANOTE.DEV

QUESTION 12

Which two StorageClass objects are supported by the VMware Tanzu Kubernetes Grid? (Choose two.)

A. Azure Glacier

B. vSphere Cloud Native Storage (CNS)

C. Linux Remote File Services

D. Samba

E. Amazon EBS

Correct Answer: BE

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. vSphere Cloud Native Storage (CNS) is a vSphere feature that provides persistent storage for Kubernetes clusters running on vSphere 6.7 or later. CNS integrates with the vSphere Container Storage Interface (CSI) driver to dynamically provision persistent volumes backed by First Class Disks on a datastore1. Amazon EBS is a block storage service that provides persistent storage for Amazon EC2 instances. EBS volumes can be attached to EC2 instances as block devices, and can be used to create persistent volumes for Kubernetes clusters running on AWS2. Both CNS and EBS support dynamic provisioning of persistent volumes using StorageClass objects with the provisioner field set to csi.vsphere.vmware.com and kubernetes.io/aws-ebs respectively12. References: Back Up and Restore Cluster Workloads - VMware Docs, Amazon Elastic Block Store (EBS) - Amazon Web Services

QUESTION 13

Which steps are required to create a vSphere Namespace?

A. In the vSghere web client, select Supervisor, select Namespaces tab. and click Create Namespace

B. Create the Namespace usinq the Tanzu CLI

C. In the vSphere web client, select Workload Management, select Namespaces tab. and click Create Namespace

D. In the vSghere web client, select Supervisor, select Workload, select Namespaces tab.and click Create Namespace

Correct Answer: C

To create a vSphere Namespace, the correct steps are to use the vSphere web client, select Workload Management, select Namespaces tab, and click Create Namespace. A vSphere Namespace is a logical grouping of Kubernetes resources that can be used to isolate and manage workloads on a Supervisor Cluster1. To create a vSphere Namespace, a user needs to have the vSphere Client and the required privileges to access the Workload Management menu and the Namespaces tab2. From there, the user can select the Supervisor Cluster where to place the namespace, enter a name for the namespace, configure the network settings, set the resource limits, assign permissions, and enable services for the namespace2. References: Create and Configure a vSphere Namespace - VMware Docs, vSphere with Tanzu Concepts - VMware Docs

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

Where can an administrator register the vSphere management cluster in VMware Tanzu Mission Control?

A. In the VMware Tanzu Mission Control web console or CLI

B. In the vSphere Management Cluster with Jcubeccl

C. In the vSphere Client - Workload Cluster settings

D. In the vSphere Namespace with Jcubeccl

Correct Answer: A

To register the vSphere management cluster in VMware Tanzu Mission Control, an administrator can use either the web console or the CLI of VMware Tanzu Mission Control. The web console provides a graphical user interface to perform the registration, while the CLI provides a command-line interface to run a script that automates the registration process. Both methods require the administrator to have access to the vSphere management cluster and to provide some information such as the cluster name, context, and namespace. The registration process creates a service account and a secret in the vSphere management cluster, and generates a kubeconfig file that is used by VMware Tanzu Mission Control to connect to the cluster. References: VMware Tanzu Mission Control Documentation, Registering a vSphere Management Cluster