Vendor: VMware

> Exam Code: 5V0-23.20

- > Exam Name: VMware vSphere with Tanzu Specialist
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QUESTION 21

An administrator working in a vSphere with Tanzu environment wants to ensure that all persistent volumes configured by developers within a namespace are placed on a defined subset of datastores.

The administrator has applied tags to the required datastores in the vSphere Client. Which action should the administrator take next to meet the requirement?

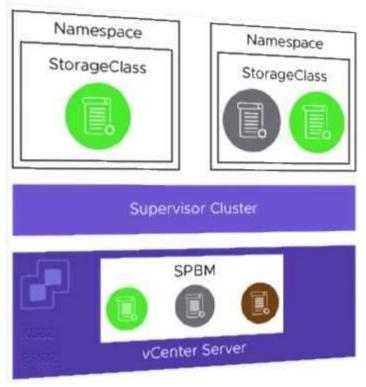
- A. Create a storage policy containing the tagged datastores, and apply it to the vSphere Namespace.
- B. Create a storage class containing the tagged datastores, and apply it to the Supervisor Cluster.
- C. Create a persistent volume claim containing the tagged datastores, and apply it to the vSphere Namespace.
- D. Create a storage Policy containing the tagged datastores, and apply it to the Supervisor Cluster.

Answer: A Explanation:

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The vSphere administrator defines and assigns VM storage policies to a namespace:

- VM storage policies are translated into Kubernetes storage classes. · Developers can access all assigned VM storage policies in the form of storage classes.
- Developers cannot manage storage classes.

Storage class names are created in the following way:

- Spaces in VM Storage Policy names are replaced with hyphens (-).
- Special characters are replaced with a digit. A VM Storage Policy called My Gold Policy \$ is called my-gold-policy-0 as a storage class.

QUESTION 22

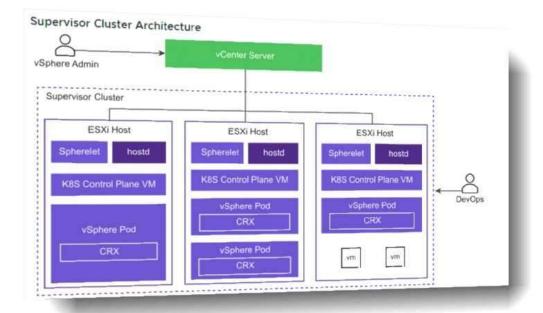
Which three roles does the Spherelet perform? (Choose three)

- A. Determines placement of vSphere pods
- B. Manages node configuration
- C. Starts vSphere pods
- D. Provides a key-value store for pod configuration
- E. Communicates with Kubernetes API
- F. Provisions Tanzu Kubernetes clusters

Answer: BCE Explanation:

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Spherelet is a kubelet that is ported natively to ESXi. It allows the ESXi host to become part of a Kubernetes cluster. Spherelet performs the following functions:

- Communicates with the control plane VMs
- Manages node configuration
- Starts vSphere Pods
- Monitors vSphere Pods

QUESTION 23

Why would developers choose to deploy an application as a vSphere Pod instead of a Tanzu Kubernetes cluster?

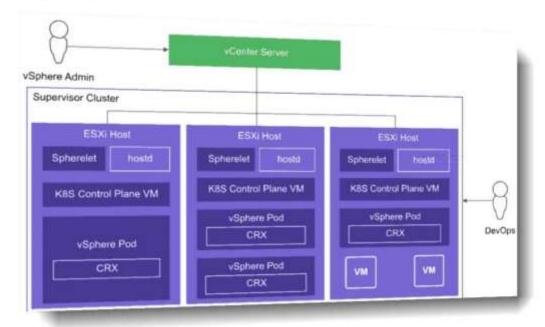
- A. They need the application to run as privileged pods.
- B. The application works with sensitive customer data, and they want strong resource and security isolation.
- C. They want to have root level access to the control plane and worker nodes in the Kubernetes cluster.
- D. The application requires a version of Kubernetes that is above the version running on the supervisor cluster.

Answer: B Explanation:

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A vSphere Pod is a VM with a small footprint that runs one or more Linux containers. With vSphere Pods, workloads have the following capabilities:

- Strong isolation from a Linux kernel based on Photon OS Resource management using DRS
- Same level of resource isolation as VMs
- Open Container Initiative (OCI) compatible
- Equivalent to a Kubernetes Container Host

vSphere Pods are not compatible with vSphere vMotion. When an ESXi host is placed into maintenance mode, running vSphere Pods are drained and redeployed on another ESXi host, but only if the vSphere Pod is part of a ReplicaSet.

QUESTION 24

A company needs to provide global visibility and consistent policy management across multiple Tanzu Kubernetes Clusters, namespaces, and clouds. Which VMvare solution will meet these requirements'?

- A. vSphere with Tanzu Supervisor Cluster
- B. vCenter Server
- C. Tanzu Mission Control
- D. Tanzu Kubernetes Grid Service

Answer: C Explanation:

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VMware Tanzu Mission ControlTM is a centralized management platform for consistently operating and securing your Kubernetes infrastructure and modern applications across multiple teams and clouds.

QUESTION 25

A developer is connecting to a Tanzu Kubernetes Cluster using the kubectl vsphere login command.

Which information must be specified, in addition to both the name of the cluster and the Supervisor Cluster Control Wane IP?

- A. The path to the existing kubeconfig file and the SSO Username
- B. The path to the existing kubeconfig file and the Token D for the SSO credentials
- C. The name of the Supervisor Namespace and the Token ID for the SSO credentials
- D. The name of the Supervisor Namespace and the SSO Username

Answer: D Explanation:

To connect to the Supervisor Cluster, run the following command. kubectl vsphere login -server=SUPERVISOR-CLUSTER-CONTROL-PLANE-IP --tanzu-kubernetes-cluster-name
TANZU-KUBERNETES-CLUSTER-NAME --tanzu-kubernetes-cluster-namespace
SUPERVISOR-NAMESPACE-WHERE-THE-CLUSTER-IS- DEPLOYED

--vsphere-username VCENTER-SSO-USER-NAME

For example:

kubectl vsphere login --server=10.92.42.137

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- --tanzu-kubernetes-cluster-name tanzu-kubernetes-cluster-01
- --tanzu-kubernetes-cluster-namespace tanzu-ns-1
- --vsphere-username administrator@example.com

QUESTION 26

Which value must be increased or decreased to horizontally scale a Tanzu Kubernetes cluster?

- A. Namespaces
- B. etcd instance
- C. Worker node count
- D. ReplicaSets

Answer: C Explanation:

Scale a Cluster Horizontally With the Tanzu CLI

To horizontally scale a Tanzu Kubernetes cluster, use the tanzu cluster scale command. You change the number of control plane nodes by specifying the --controlplane-machine-count option. You change the number of worker nodes by specifying the --worker-machine-count option.

QUESTION 27

The application development team is pushing a Kubernetes application into production. I consists of an application server and a database.

The team wants to ensure that only the production application server can access the production database.

Can the development team meet this requirement using Kubernetes Network Policy?

- A. Yes, by using kubect1 to create a Network Policy that only allows pods on the same network segment to talk to each other.
- B. Yes. by logging in to NSX Manager and creating a firewall rules to only allow the production application server pod to talk to the database
- C. Yes, by using kubect1 to create a policy that disables pod to pod communication in the Namespace
- D. No, Kubernetes Network Policy does not support this action.

Answer: A Explanation:

If you want to control traffic flow at the IP address or port level (OSI layer 3 or 4), then you might consider using Kubernetes NetworkPolicies for particular applications in your cluster. NetworkPolicies are an application-centric construct which allow you to specify how a pod is allowed to communicate with various network "entities" (we use the word "entity" here to avoid overloading the more common terms such as "endpoints" and "services", which have specific Kubernetes connotations) over the network. NetworkPolicies apply to a connection with a pod on one or both ends, and are not relevant to other connections.

QUESTION 28

Which type of service is created by default when publishing a Kubernetes service?

- A. Cluster IP
- B. Node Port

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C. LoadBalancerD. ExternalName

Answer: A Explanation:

For some parts of your application (for example, frontends) you may want to expose a Service onto an external IP address, that's outside of your cluster. Kubernetes ServiceTypes allow you to specify what kind of Service you want. The default is ClusterIP.

QUESTION 29

Which kubectl command should be used to change the active vSphere namespace to namespace-01?

- A. kubectl config use-context namespace-01
- B. kubectl describe ns namespace-01
- C. kubectl get ns namespace-01
- D. kubectl config change-context namespace-01

Answer: A Explanation:

A context element in a kubeconfig file is used to group access parameters under a convenient name. Each context has three parameters: cluster, namespace, and user. By default, the kubectl command- line tool uses parameters from the current context to communicate with the cluster. To choose the current context: kubectl config use-context ctx001

QUESTION 30

Which two items must be provided before a vSphere with Tanzu Supervisor Namespace can be created? (Choose two.)

- A. vSphere with Tanzu Enabled Cluster
- B. DNS-compliant Name
- C. Permissions
- D. Storage Policy
- E. Resource Limits

Answer: AD **Explanation:** Prerequisites

Configure a cluster with vSphere with Tanzu.

Create users or groups for all DevOps engineers who will access the namespace. Create storage policies for persistent storage. Storage policies can define different types and classes of storage, for example, gold, silver, and bronze.

Create VM classes and content libraries for stand-alone VMs. Create a content library for Tanzu Kubernetes releases for use with Tanzu Kubernetes clusters. See Creating and Managing Content Libraries for Tanzu Kubernetes releases.

Required privileges:

Namespaces.Modify cluster-wide configuration Namespaces.Modify namespace configuration

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QUESTION 31

Why would an organization set up private image registries?

- A. Role-based access control can be assigned by integrating the image registry with user identity management.
- B. DevOps engineers are able to store virtual machine images in a central location.
- C. Open source registry server projects enable organizations to modify them as necessary.
- D. Public image registries lack enterprise support.

Answer: A Explanation:



VMware created Harbor in 2014. Harbor was shared with the community through an open-source license in 2016 and donated to the Cloud Native Computing Foundation (CNCF) in 2018. Harbor is integrated into VMware products: vSphere Integrated Containers, Tanzu Kubernetes Grid Integrated Edition, and vSphere with Tanzu. The embedded Harbor for vSphere with Tanzu includes the following features:

- Identity integration and role-based access control
- Graphical user interface
- Auditing of operations
- Management with labels

QUESTION 32

The network topology for a Supervisor Cluster deployed using the vSphere networking stack, and a HAProxy load balancer is being planned.

In addition to the control plane management IP range and services IP range, how many nonoverlapping IP address ranges are needed?

- A. 3
- B. 1
- C. 4
- D. 2

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Answer: B Explanation:

A dedicated IP range for virtual IPs. The HAProxy VM must be the only owner of this virtual IP range. The range must not overlap with any IP range assigned to any Workload Network owned by any Supervisor Cluster.

QUESTION 33

Where is a storage policy applied to enable Persistent Volumes?

- A. Namespace
- B. Datastore
- C. Virtual Machine
- D. Cluster

Answer: A Explanation:

The vSphere administrator defines and assigns VM storage policies to a namespace:

- VM storage policies are translated into Kubernetes storage classes.
- Developers can access all assigned VM storage policies in the form of storage classes.
- Developers cannot manage storage classes.

Developers can list the available storage classes in their namespace by running the kubectl describe ns <namespace-name> command.

QUESTION 34

The virtualization team supports many development teams on a Supervisor cluster. For a specific development team, they would like to limit persistent volumes that can be created on Tanzu Kubernetes clusters to only an NFS based storage array. Which action should be taken to accomplish this goal?

- A. Use kubectl to create a storage class in the Supervisor cluster.
- B. Set a resource quota limiting the number of PVCs for that development team.
- C. Add a storage policy to that development team's Supervisor Namespace containing only the NFS datastore
- D. Disconnect non-NFS datastores from the ESXi hosts that make up the Supervisor cluster.

Answer: C **Explanation:**

The storage policy would become a storage class in Kubernetes.

QUESTION 35

Which command displays the storage limits that have been set together with the amount of resources consumed?

- A. kubect1 get resourcequotas
- B. kubect1 config get-resourcequotas limits
- C. kubect1 list resourcequotas
- D. kubect1 describe resourcequotas

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Answer: A Explanation:

Create the ResourceQuota:

kubectl apply -f https://k8s.io/examples/admin/resource/quota-mem-cpu.yaml --

namespace=quota- mem-cpu-example

View detailed information about the ResourceQuota:

kubectl get resourcequota mem-cpu-demo --namespace=quota-mem-cpu-example --output=yaml

QUESTION 36

Which is a valid version change for a Tanzu Kubernetes cluster running Kubernetes version 1.16.7?

- A. Upgrade one major version (e.g., 2.0.1)
- B. Upgrade two minor versions (e.g., 1.18.0)
- C. Downgrade one patch version (e.g., 1.16.5)
- D. Upgrade one minor version (e.g., 1.17.0)

Answer: D Explanation:

Be aware of the following constraints when upgrading your cluster. You can upgrade a cluster up to one minor version of Kubernetes from its current version. If necessary, you can perform subsequent upgrades to move the version forward. Upgrading your version of Kubernetes is a one-way operation. You cannot subsequently downgrade the Kubernetes version, or undo an upgrade.

QUESTION 37

What is the minimum number of portgroups needed, in addition to the management portgroup to provide connectivity for external services on a Supervisor Cluster?

- A. 1
- B. 4
- C. 3
- D. 2

Answer: A

QUESTION 38

A developer is trying to deploy a Kubernetes Application into a namespace within a Supervisor Cluster.

The deployment must utilize the latest assets that have been pushed into the Registry Service. What should the developer add to the YAML file to ensure that the deployment is successful?

- A. image: /<namespace>/<image name>:latest
- B. template: <image registry url>/<namespace name>/<image name> : latest
- C. image: <image registry url>/<namespace name>/<image name>:latest
- D. template: /<namespace name>/<image name>:latest

Answer: C Explanation:

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Create an example pod spec with the details about the private registry.

apiVersion: v1 kind: Pod metadata:

name: <workload-name>

namespace: <kubernetes-namespace>

spec: containers:

- name: private-reg-container

image: <Registry-IP-Address>/<vsphere-namespace>/<image-name>:<version>

imagePullSecrets:

- name: <registry-secret-name>

Replace <workload-name> with the name of the pod workload. Replace <kubernetes-namespace> with the Kubernetes namespace in the cluster where the pod will be created. This must be the same Kubernetes namespace where the Registry Service image pull secret is stored in the Tanzu Kubernetes cluster (such as the default namespace). Replace <Registry-IP-Address> with the IP address for the embedded Harbor Registry instance running on the Supervisor Cluster.

Replace <vsphere-namespace> with the vSphere Namespace where the target Tanzu Kubernetes is provisioned.

Replace <image-name> with an image name of your choice. Replace <version> with an appropriate version of the image, such as "latest". Replace <registry-secret-name> with the name of the Registry Service image pull secret that you created previously.

QUESTION 39

How does Kubernetes implement the vSphere storage policy in vSphere with Tanzu?

- A. Storage class
- B. Paravirtual CSI
- C. Static Persistent Volume
- D. Persistent Volume

Answer: A Explanation:

When vSphere with Tanzu converts storage policies that you assign to namespaces into Kubernetes storage classes, it changes all upper case letters into lower case and replaces spaces with dashes (-). To avoid confusion, use lower case and no spaces in the VM storage policy names. Storage Policy Based Management is a vCenter Server service that supports provisioning of persistent volumes and their backing virtual disks according to storage requirements described in a storage policy.

QUESTION 40

Which two functions are provided by the NSX Container Rug-in (NCP)? (Choose two.)

- A. Implements Kubernetes Ingress with an NSX-T layer 7 load balancer
- B. Integrates with container-based PaaS such as Docker
- C. Creates an NSX-T logical topology for a Kubernetes cluster and a separate logical network for each Kubernetes namespace
- D. Configures Overlay Transport Zones

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E. Implements Kubernetes Ingress with an NSX-T layer 4 load balancer

Answer: AC **Explanation:**

NCP provides the following functionalities:

Automatically creates an NSX-T Data Center logical topology for a Kubernetes cluster, and creates a separate logical network for each Kubernetes namespace. Implements Kubernetes Ingress with NSX-T layer 7 load balancer Connects Kubernetes pods to the logical network, and allocates IP and MAC addresses. Supports network address translation (NAT) and allocates a separate SNAT IP for each Kubernetes namespace.Note:When configuring NAT, the total number of translated IPs cannot exceed 1000. Implements Kubernetes network policies with NSX-T Data Center distributed firewall. Implements Kubernetes service of type ClusterIP and service of type LoadBalancer.

QUESTION 41

How do Tanzu Kubemetes clusters communicate with Storage Policy Based Management to request PersistentVolumes?

- A. Through a proxy VM
- B. Directly with vCenter Server and the underlying ESXi hosts
- C. Through the Supervisor Cluster
- D. Directly with the vCenter Server

Answer: D Explanation:

The Cloud Native Storage for vSphere with Tanzu workflow is as follows:

- 1. A developer deploys a pod using the kubectl CLI.
- 2. The vSphere with Tanzu Cloud Native Storage-Container Storage Interface (CNS-CSI) reads this request from the control plane API server.
- 3. CNS-CSI informs the vCenter Server CNS of the need for a disk with storage class Gold.
- 4. CNS interfaces with SPBM for a suitable datastore that satisfies the Gold storage class (storage policy).
- 5. SPBM decides on a suitable datastore and interfaces with DRS for a suitable ESXi host.
- 6. Hostd on the ESXi host creates a First Class Disk (VMDK) on the datastore.
- 7. Spherelet on the ESXi host takes the created VMDK.
- 8. Spherelet mounts the VMDK to the vSphere Pod.
- 9. Spherelet reports the mount as a successful event to the control plane API server.

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