Red Hat Certified Specialist in OpenShift Virtualization (EX316)

Course code: EX316

The Red Hat Certified Specialist in OpenShift Virtualization exam (EX316) tests the knowledge, skills, and ability to plan, deploy and manage virtual machines using the Red Hat OpenShift Virtualization operator in a Red Hat OpenShift Container Platform environment.By passing this exam, you become a Red Hat Certified Specialist in OpenShift Virtualization that also counts towards earning a Red Hat Certified Architect (RHCA®).Objectives listed for this exam are based on the most recent Red Hat product version available. Click "Get started" to view all versions of this exam available for purchase.

Who is the exam for

TSite reliability engineers (SREs), cluster engineers, systems administrators, cloud administrators, or cloud engineers focused on planning, designing, and implementing production-grade virtual machines under OpenShift clusters and at the same time ensuring these virtual machines remain in compliance with corporate standards

Required skills

- Red Hat Certified System Administrator Rapid Track Course (RH200) or equivalent experience
- Red Hat OpenShift Administration II: Operating a Production Kubernetes Cluster (DO280) or equivalent experience
- Managing Virtual Machines with Red Hat OpenShift Virtualization (DO316) or equivalent experience

Teaching methods

Professional explanation with practical samples and examples.

Study points for the exam

To help you prepare, the exam objectives highlight the task areas you can expect to see covered in the exam. Red Hat reserves the right to add, modify, and remove exam objectives. Such changes will be made public in advance.
Candidates for this exam should be able to perform the following tasks:

- Deploy OpenShift Virtualization Operator
- Understand how Red Hat OpenShift Virtualization components work
- Deploy Red Hat OpenShift Virtualization Operator using Red Hat OpenShift Container Platform Operator
- Lifecycle Management
- Run and access virtual machines
- Understand how to provision virtual machines using the Red Hat OpenShift Virtualization operator
- Manage virtual machines from the web interface or the command line interface
- Allow different users to access different virtual machine resources
- Configure Kubernetes networking for virtual machines
- Understand virtual machine communication on the Kubernetes SDN
- Create ClusterIP services and network policies for virtual machines
- Configure external access for virtual machines
- Connect virtual machines to external networks
- Understand the Multus CNI plug-in and use cases
- Configure multihomed nodes and virtual machines using the NMstate operator and Multus
- Configure Kubernetes storage for virtual machines
- Configure appropriate services for persistent virtual machine storage
- Attach disks to a virtual machine
- Detach disks from a virtual machine
- Connect virtual machines to external storage using Multus
- Manage virtual machine templates
- Use and modify preconfigured templates to provision virtual machines.
- Generate custom templates to provision virtual machines

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- Manage cloud-init in templates adding access credentials, repositories and running arbitrary commands
- Manage virtual machine snapshots
- Understand how to create and manage virtual machine snapshots.
- Create a snapshot of a VM
- Restore a VM from a snapshot
- Clone virtual machines
- Prepare virtual machines for cloning
- Clone virtual machines using OpenShift web console
- Clone virtual machines' disks using data volumes
- Perform virtual machine live migrations
- Understand limitations of virtual machine live migration
- Configure virtual machines to have affinity for certain nodes
- Understand how to start, monitor and cancel virtual machine migrations
- Perform node maintenance and OpenShift Virtualization updates
- Configure node maintenance resources
- Prepare nodes for maintenance using the CLI
- Drain the nodes correctly in order to be set in maintenance mode
- Manage virtual machine load balancing with Kubernetes networking resources
- Configure virtual machine load balancing with Kubernetes networking resources
- Create and configure NodePort type services
- Create customized routes to expose generic services
- Configure health probes for virtual machines
- Configure and update the run strategy parameters
- Configure health probes and watchdog devices to monitor health and responsiveness of a virtual machine and its services
- Prepare virtual machines for node failure
- Determine the eviction strategies used to survive cluster node loss
- Understand how to use node selectors, affinity, anti-affinity, tolerations and taints.
- Use watchdog monitoring and health checks for virtual machine applications and nodes.

What you need to know

Preparation

Red Hat encourages you to consider taking Managing Virtual Machines with Red Hat OpenShift Virtualization (DO316) to help prepare for this exam.

Exam format

This exam consists of a single section lasting four hours. The exam is a performance based evaluation of candidates' abilities to implement Red Hat OpenShift Virtualization operator and virtual machines in an OpenShift Container Platform cluster. Candidates perform a number of routine tasks similar to those they would be expected to perform in a large-scale environment and are evaluated on whether those tasks meet specific objective criteria. Internet access is not provided during the exam, and you will not be permitted to bring any hard copy or electronic documentation into the exam. This prohibition includes notes, books, or any other materials. For most exams, the documentation that ships with the product is available during the exam.

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