Red Hat Certified Specialist in OpenShift Networking

Course code: EX282

The Red Hat Certified Specialist in OpenShift Networking exam (EX282) tests the knowledge, skills, and ability to plan, deploy, and manage OpenShift networking components in a Red Hat OpenShift Container Platform environment.By passing this exam, you become a Red Hat Certified Specialist in OpenShift Networking, which also counts towards earning a Red Hat Certified Architect (RHCA®).This exam is based on Red Hat OpenShift Container Platform 4.20.

Who is the course for

- Cluster network engineers responsible for designing, implementing, and maintaining network infrastructure on Red Hat OpenShift Container Platform
- Platform administrators who manage multi-tenant OpenShift environments and need to configure network isolation, ingress, and egress policies
- Site reliability engineers (SREs) who troubleshoot network connectivity issues and implement network observability in OpenShift clusters
- Infrastructure architects who plan and deploy advanced networking solutions, including secondary networks, BGP routing, and NMState node configuration
- DevOps engineers who need to expose applications securely using routes, load balancers, and ingress controller sharding.

What we teach you

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 will be provided with a cluster preinstalled with the following operators and their dependencies:

- Red Hat OpenShift Virtualization
- Red Hat OpenShift Data Foundation
- Kubernetes NMState operator
- Loki operator
- MetalLB operator
- Network observability

Required skills

Course outline

Candidates for this exam should be able to perform the following tasks:

Manage core networking in Red Hat OpenShift Container Platform

- Inspect and interpret the Cluster Network Operator configuration
- Identify the active network plugin and its settings (network CIDRs, MTU, host prefix)
- Configure additional network interfaces using Multus CNI and NetworkAttachmentDefinition resources
- Create secondary networks using macvlan, ipvlan, and bridge CNI plugins
- Configure IP address management (static, host-local, DHCP) for secondary networks

Implement and manage user-defined networks in Red Hat OpenShift Container Platform

- Create UserDefinedNetwork resources for namespace-scoped network isolation
- Create ClusterUserDefinedNetwork resources that span multiple namespaces
- Deploy workloads on user-defined networks and verify isolation from the default cluster network
- Apply NetworkPolicy resources to user-defined networks

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- Troubleshoot connectivity and isolation issues on user-defined networks

Manage DNS in Red Hat OpenShift Container Platform

- Configure DNS forwarding for custom domains using the DNS operator
- Troubleshoot DNS resolution failures for internal services and external domains
- Verify CoreDNS pod health and configuration
- Test name resolution from within pods (service.namespace.svc.cluster.local)

Manage ingress traffic in Red Hat OpenShift Container Platform

- Expose applications using MetalLB LoadBalancer services with IP address pools
- Create secure routes with TLS termination (edge, re-encrypt, passthrough)
- Configure ingress controller sharding using route selectors and labels

Manage egress traffic in Red Hat OpenShift Container Platform

- Create EgressFirewall resources to control outbound traffic from namespaces
- Configure allow and deny rules using CIDR ranges and DNS names
- Assign static source IP addresses to namespaces using EgressIP resources
- Label nodes as egress-assignable for EgressIP failover

Implement native BGP routing in Red Hat OpenShift Container Platform

- Create FRRConfiguration resources to define BGP peering sessions
- Configure BGP neighbors, ASN, and router IDs
- Verify BGP session establishment and route exchange
- Advertise service and pod network prefixes to external BGP peers

Configure node networking for provider integration

- Create NodeNetworkConfigurationPolicy resources to configure node interfaces
- Configure bonded interfaces, VLAN sub-interfaces, and Linux bridges on cluster nodes
- Apply node network configurations to specific nodes using node selectors
- Connect virtual machines to external provider networks using NetworkAttachmentDefinitions referencing NMState-managed bridges

Enable network observability

- Manage network observability configuration
- Configure FlowCollector resources for eBPF-based network flow collection
- Tune FlowCollector parameters (sampling, cache size, features, resource limits)
- Capture and filter network flows by namespace, pod, service, or IP address
- Analyze traffic patterns using the network observability console plugin
- Create custom network metrics and verify their availability in Prometheus
- Troubleshoot flow collection and eBPF agent issues

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