



Course Content

Course Description:

This Configuring the Cisco Nexus 1000V Training (DCNX1K) course is designed for systems and field engineers who install and implement the Cisco Nexus 1000V Switch. The Configuring the Cisco Nexus 1000V Training (DCNX1K) course covers the key components and procedures you need to know to install, configure, manage, and troubleshoot the Cisco Nexus 1000V Switch.

The highlights of emerging features of the Cisco Nexus 1000V are also discussed. Version 2.0 of this course is an update that covers the feature differences between version 4.2(1) SV1(4a) and version 4.2(1) SV1 (5.1).

Course Objectives:

Upon successful completion of this course, the student will be able to:

- Install the Cisco Nexus 9000 Series switch in ACI Mode
- Review the Cisco Nexus 9000 Series Hardware
- Deploy the ACI Fabric
- Configure the ACI Controller (APIC)
- Understand the Differences between Cisco ACI Code Versions
- Configure ACI L4-L7 Service Integration
- Integrate Virtual and Physical Workloads in a Multi-hypervisor Fabric
- Deploy Security and Management Capabilities of the ACI Network
- Connect Cisco ACI to Outside Networks
- Extend and Interconnect Cisco ACI Fabric
- Migrate from a traditional Data Center to Cisco ACI with a Common, Policy-Enforced Approach.
- Manage Cisco ACI
- Program and Orchestrate the ACI Network
- Troubleshoot Cisco ACI

Target Audience:

The primary audience for this course is as follows:

- Network, systems, and consulting systems engineers, as well as server administrators
- Network designers, administrators, and managers



Prerequisites:

Attendees should meet the following prerequisites:

- Cisco Certified Network Associate Routing and Switching (CCNA) knowledge level

Topics:

Cisco Nexus 1000V Series Switch and Virtual Networking Architecture

Reviewing the Virtual Infrastructure

- Explain the concept of server virtualization, and identify the differences between multiple virtualization approaches
- Describe the characteristics of VMs
- Explain the benefits of VMs
- Explain the VMware management environment and tools
- Describe how to position vSphere
- Describe the ESX and ESXi architectures
- Describe VMware vShield Edge devices and their management
- Explain the concept of VDI

Networking in the VMware Infrastructure

- Explain how a VMware vSwitch works
- Describe how to set up a VM firewall
- Describe different network connection types in an ESX server
- Explain how to map physical network ports to virtual ones
- Describe how to configure policies on port groups
- Describe how to configure VLANs on port groups
- Describe how to configure security policies for networking
- Explain load balancing in VMware
- Explain the importance of Fibre Channel in a VMware environment
- Explain the role of the VMFS datastore and describe SDRS
- Explain the role of NAS and NFS datastores
- Describe the Cisco virtual networking difference

- Explain how vCloud Director creates networks for vApps in a vCloud environment

Configuring VMware Switching

- Installing a VMware vSwitch
- New DVS Features
- Installing a DVS
- Configuring Network Adapters on a DVS
- Configuring Port Groups on a DVS
- Configuring Trunking on a DVS

Reviewing the Cisco Nexus 1000V Series Switch

- Identify the Cisco Nexus 1000V Series components
- Describe the Cisco Nexus 1000V Series virtual chassis
- Discuss the benefits of single chassis management
- Explain the scalability capabilities of the Cisco Nexus 1000V Series
- Describe the components that are required for communication on the Cisco Nexus 1000V Series
- Explain high availability in the Cisco Nexus 1000V Series
- Describe how to troubleshoot high availability on the Cisco Nexus 1000V Series
- Explain the importance of the domain ID in the Cisco Nexus 1000V Series
- Explain the licensing requirements in Cisco Nexus 1000V Series
- Explain how the Cisco Nexus 1000V Series fits into in the Cisco data center architecture
- Explain how the Cisco Nexus 1000V Series integrates with vCloud Director



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Reviewing the Cisco Nexus 1010 Virtual Services Appliance and Virtual Services Blades

- Explain the function of the Cisco Nexus 1010 in the data center virtual infrastructure
- Describe the function of the Cisco Prime NAM VSB in the data center virtual infrastructure
- Describe the function of the Cisco VSG in the data center virtual infrastructure
- Describe the function of Cisco vWAAS

Installing and Upgrading the Virtual Supervisor and VEMs

- Describe how to install and upgrade the VSM, and perform the initial configuration
- Describe how to create the VSM VM, and perform the initial configuration
- Describe how to install the VEM on the ESX host
- Describe the Cisco Nexus 1000V Series Installation Management Center
- Describe how to troubleshoot a module that is not coming up on the VSM
- Describe how to troubleshoot VSMs that have not been brought into service as expected
- Describe how to delete a DVS from the vCenter Server when there is no connectivity to the VSMs

Cisco Nexus 1000V Series Switch Feature Configuration

Configuring Port Profiles

- Describe how port profiles are used on the ESX host
- Describe how VLANs are used in port profiles
- Describe how PVLANS are used in port profiles
- Describe VXLANs, and explain how they are used and configured with port profiles in

virtual infrastructure design

- Describe how to use port profiles and port groups in virtual infrastructure design
- Describe how to configure port profiles on the Cisco Nexus 1000V Series
- Describe how to troubleshoot port profiles on the Cisco Nexus 1000V Series
- Describe how to configure support for redundant routing protocols in VMs
- Describe how to configure support for Microsoft NLB
- Describe how to configure system port profiles on the Cisco Nexus 1000V Series
- Describe how to configure uplink port profiles on the Cisco Nexus 1000V Series
- Describe how to configure a port channel in the uplink port profile
- Explain how to configure and use vPC-HM on the Cisco Nexus 1000V Series
- Explain how to troubleshoot problematic ports

Configuring Security Features

- Describe the security features available on the Cisco Nexus 1000V Series
- Describe how to configure ACLs on the Cisco Nexus 1000V Series
- Describe how to use and configure port security on the Cisco Nexus 1000V Series
- Describe how to troubleshoot port security issues on the Cisco Nexus 1000V Series
- Explain the concept of DHCP snooping, and describe how it can be applied on a Cisco Nexus 1000V Series
- Explain the purpose of DAI, and describe how to configure it on the Cisco Nexus 1000V Series
- Explain the IP Source Guard feature, and describe how to configure it on the Cisco Nexus 1000V Series

Configuring Quality of Service



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- Explain the purpose of QoS on the Cisco Nexus 1000V Series
- Explain how QoS is implemented and used on the Cisco Nexus 1000V Series
- Describe how to configure QoS classification on the Cisco Nexus 1000V Series
- Explain the statistics monitoring process on the Cisco Nexus 1000V Series
- Explain the use of CBWFQ policies on the Cisco Nexus 1000V Series

Configuring Management Features

- Describe the management features of the Cisco Nexus 1000V Series
- Discuss how to configure Secure Shell (SSH) connectivity on the Cisco Nexus 1000V Series Switch
- Explain how AAA functionality of the Cisco Nexus 1000V Series can be configured
- Explain the benefits of role-based access control (RBAC) and how it can be applied on the Cisco Nexus 1000V Series
- Explain the configuration process for the Cisco Nexus 1000V Network Segmentation Manager
- Introduce the Cisco Data Center Network Manager
- Explain the use and configuration of Virtual Service Domains

Configuring System Management Features

- Identify the system management features available on the Cisco Nexus 1000V Series
- Describe how to configure VSM backup and recovery on the Cisco Nexus 1000V Series Switch
- Describe how to configure the Cisco Discovery Protocol so that neighboring switches can be discovered
- Describe how the configuration files can be managed on the Cisco Nexus 1000V Series Switch

- Describe how to configure Simple Network Management Protocol
- Describe how to configure NetFlow for traffic monitoring on a Cisco Nexus 1000V Series Switch

Using Basic Troubleshooting Tools

- Use CLI commands to help identify the location of a problem
- Describe how to configure and use the syslog feature on a Cisco Nexus 1000V Series Switch
- Describe how to configure and use local Switch Port Analyzer (SPAN) on the Cisco Nexus 1000V Series Switch to monitor local – virtual machine (VM) traffic
- Describe how to configure and use Encapsulated Remote SPAN (ERSPAN) to capture VM traffic to a remote device