firefly

Demystify Technology

UF-IP

GLOBAL LEARNING PARTNER OF THE YEAR **2012** CISCO

Length:
5 Days

Format:
Lecture/Lab

Course Version:
5.1

Product Version:
Nexus 5000 5.1(3) and 7000 6.1(3)

Exam:
642-997

Why Firefly

This enhanced course includes all of the content provided in Cisco's DCUFI, ensuring success for those looking to pass the CCNP DCUFI certification exam, 642-997. To keep current with the latest Cisco Nexus products and features, the following Firefly enhancements have been added:

- Nexus 3000 series, including Nexus 3548 and product positioning
- Nexus 6000 series specification, features, and product placement
- 40GE Transceivers and Cables
- Nexus 2248TP-E, 2248PQ, and B22 Fabric Extenders
- Nexus 7004 chassis, Enhanced F2-series modules, and 24-port 10GE M2 Series modules
- Power-On Auto Provisioning (POAP)
- Python Scripting
- IPSLA
- Sampled NetFlow
- Introduction to Cisco's onePK

Course Description

This Firefly offering covers all topics in the Cisco DCUFI v5 course, along with unique content on new UCS hardware and software.

This five-day hands-on course is a Firefly Enhanced version of Cisco's DCUFI, designed for systems and field engineers, consulting systems engineers, technical solutions architects, and Cisco integrators and partners who install and implement the Cisco Nexus 7000, 6000, and 5000 Switches, Cisco MDS, and the Cisco Nexus 2000 Fabric Extender. The course covers the key components and procedures needed to install, configure, manage, and troubleshoot the Cisco Nexus 7000 and 5000 Switches in the network and SAN environment.

Prerequisites

- Good understanding of networking protocols— Recommended CCNA Certification
- Good understanding of the Fibre Channel protocol and the SAN environment— Recommended attendance of a Fibre Channel protocol class or equivalent experience
- Recommended attendance of the Implementing Cisco Storage Network Solutions (ICSNS) class or equivalent experience.

Who Should Attend

This course is designed for experienced Network Field Engineers who are already capable of implementing Layer 2 and Layer 3 services using Cisco IOS and the Cisco Catalyst switching platform.

Learning Objectives

- Identify the Cisco Nexus product family, specifically the Cisco Nexus 7000 Switch chassis and components; the Cisco Nexus 6000, 5000, and 5500 Switches; and the Cisco Nexus 2000 Fabric Extender
- Describe how to configure the features of Cisco Nexus switches
- Describe how to configure Cisco Nexus Switch advanced features such as Overlay Transport Virtualization (OTV), security, and quality of service
- Identify the management tools that are available for the Cisco Nexus Series Switches and how to configure the relevant tools to support the given design
- Explain the Fibre Channel Protocol, the Fibre Channel over Ethernet (FCoE) Protocol, and the Data Center Bridging enhancements
- Describe how to configure Fibre Channel over Ethernet
- Describe how to troubleshoot Cisco Nexus Switches

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Module 1: Cisco Nexus Product Overview

Lesson 1: Describing the Cisco Data Center Network Architecture
Cisco Unified Fabric Fundamentals
Structured Layers: Core, Aggregation, Access
Product Placement
Positioning of Product Families in the Architecture

Lesson 2: Identifying Cisco Nexus Products
The Cisco Nexus Family of Products
Important Features of Cisco Nexus I/O Modules
Important Features of Cisco NX-OS

Module 2: Cisco Nexus Switch Feature Configuration

Lesson 1: Understanding High Availability and Redundancy
Network-Level High Availability
System-Level High Availability
Cisco IOS In-Service Software Upgrade (ISSU)

Lesson 2: Configuring Virtual Device Contexts
Using VDCs in Data Centers
Virtual Device Contexts (VDCs)
Resource Allocation
New VDC Features in Cisco NX-OS 6.1
Configuring VDCs
Management Settings
Storage VDCs

Lesson 3: Configuring Layer 2 Switching Features
Basic Interface Parameters
Port Profiles
Fabric Extenders
Cisco Nexus 7000 and Cisco Nexus 5000 Series Switch Feature Comparison
Private VLANS
VLAN Configuration
Spanning Tree Protocol Extensions

Lesson 4: Configuring PortChannels
Using PortChannels and Virtual PortChannels
Configuring PortChannels
vPC Architecture
Configuring a vPC
Configuring the FEX
Configuring Enhanced vPCs

Lesson 5: Implementing Cisco FabricPath
Implement Cisco FabricPath
Verify Cisco FabricPath

Lesson 6: Configuring Layer 3 Switching Features
Routing Protocols
First Hop Redundancy Protocols
Bidirectional Forwarding Detection
Layer 3 Virtualization
Unicast RIB and FIB
Route Policy Manager
Policy-Based Routing (PBR)
IPv6

Lesson 7: Configuring IP Multicast
IP Multicast
Configuring IGMP and MLD
Configuring PIM
Configuring IGMP Snooping
Configuring MSDP

Module 3: Cisco Nexus Switch Advanced Feature Configuration

Lesson 1: Lesson 1: Describing Cisco OTV
Cisco OTV
Basic Cisco OTV Configuration
Advanced Cisco OTV Configuration

Lesson 2: Configuring MPLS
Multiprotocol Label Switching
Multiprotocol Label Switching VPNs

Lesson 3: Configuring LISP
Locator/ID Separation Protocol
Configuring LISP

Lesson 4: Configuring QoS
QoS on the Cisco Nexus Family of Switches
Modular QoS CLI
Marking
Mutation Mapping
Policing
Queuing and Scheduling
Monitoring QoS

Lesson 5: Configuring Security Features
DHCP Snooping
Dynamic ARP Inspection
IP Source Guard
Unicast Reverse Path Forwarding
Traffic Storm Control
Port Security
Control Plane Policing
Cisco TrustSec

Module 4: Cisco Nexus Storage Features

Lesson 1: Lesson 1: Describing Fibre Channel Protocol
SCSI Protocol
Fibre Channel
Fibre Channel Login and Communication
Fibre Channel Addressing Schemes
VSANs and IVR
FSPF Protocol
Zoning
N-Port ID Virtualization
N-Port Virtualization

Lesson 2: Describing FCoE Protocol
FCoE Essentials
FCoE Architecture
FCoE Initialization Protocol
Supported FCoE Topologies
FCoE Hardware

Lesson 3: Identifying DCB Enhancements
Data Center Bridging
Priority Flow Control
Enhanced Transmission Selection
DCBX Protocol

Lesson 4: Configuring FCoE
FCoE Configuration
FCoE VLANs and Virtual Interfaces
FCoE with Enhanced vPC and Cisco Adapter FEX

Lesson 5: Configuring SAN Switching Features
FCoE on the Cisco MDS
Fibre Channel Interfaces
Domain Parameters
VSAN Management
VSAN Trunking
SAN Port Channels
FLOGI and FCNS Databases
Cisco Fabric Services on Cisco MDS

Lesson 6: Configuring NPV Mode
N-Port ID Virtualization
N-Port ID Configuration
NPV Mode
NPV Configuration
FCoE NPV Feature
FCoE NPV Configuration

Lesson 7: Using SAN Management Tools
Cisco Prime DCNM for SAN
Cisco Device Manager

Module 5: Cisco Nexus Switch Management

Lesson 1: Using the CMP
Connectivity Management Processor
Configuring the CMP
Verifying the CMP
Upgrading the CMP
Using the CMP

Lesson 2: Configuring User Management
User Management Features
Authentication, Authorization, and Accounting
Secure Shell
User Accounts and Roles

Lesson 3: Describing System Management

    System Management Features
    Configuring Cisco Fabric Services
    Configuring NTP and PTP
    Configuring EEM
    Configuring NetFlow
    Configuring Smart Call Home
    Configuring Scheduler
    Configuring SPAN and ERSPAN
    Configuring SNMP
    Using XML Interface
    Implementing Cisco Prime DCNM for LAN
    Integrating vCenter Manager
    Licensing
    Upgrading the Firmware and EPLDs

Module 6: Firefly Exclusive Supplement

    Nexus 3000 Series Update
    Nexus 6000 Series and Features
    Data Center Architecture Designs
    Nexus 7000 Series Module Update
    Nexus 2000 Series Update
    POAP
    Python
    IP SLA
    Sampled NetFlow
    onePK

Lab 1: Cisco Nexus 7000 Labs

Lab 2: Lab 1: Cisco Nexus 7010 Configuration Baseline

Lab 3: Lab 2: Cisco Nexus 7000 Hardware Platform

Lab 4: Lab 3: Managing System Configuration

Lab 5: Lab 4: Configuring FabricPath

Lab 6: Lab 5: Configuring vPC

Lab 7: Lab 6: Configuring Routing Protocols

Lab 8: Lab 7: Configuring OTV

Lab 9: Lab 8: Security

Lab 10: Lab 9: QoS on the Cisco Nexus 7000

Lab 11: Lab 10: Troubleshooting the Nexus Control Plane

Lab 12: Cisco Nexus 5000 Labs

Lab 13: Lab 1: Configuring the Switch for Administrative Access

Lab 14: Lab 2: Configuring the Cisco Nexus 5000 Switch for FCoE Connectivity

Lab 15: Lab 3: Configuring the Cisco Nexus 5000 in NPV Mode

Lab 16: Lab 4: Traffic Engineering

Lab 17: Lab 5: Configuring the Nexus 2000 as a Remote Line Card

Lab 18: Lab 6: Configuring Nexus 2000 with vPC