CCIE Data Center Lab Exam Topics (19-03-2012)

The CCIE Data Center lab exam topics provided are general guidelines for the content likely to be included on the lab exam. However, other related topics may also appear on any specific delivery of the exam. In order to better reflect the contents of the exam and for clarity purposes, the guidelines below may change at any time without notice.

Cisco Data Center Infrastructure - NXOS

- Implement NXOS L2 functionality Implement VLANs and PVLANs Implement Spanning-Tree Protocols Implement Port-Channels Implement Unidirectional Link Detection (UDLD) Implement Fabric Extension via the Nexus family
- Implement NXOS L3 functionality Implement Basic EIGRP in Data Center Environment Implement Basic OSPF in Data Center Environment Implement BFD for Dynamic Routing protocols Implement ECMP Implement FabricPath
- Implement Basic NXOS Security Features Implement AAA Services Implement SNMPv3 Configure IP ACLs, MAC ACLs and VLAN ACLs Configure Port Security Configure DHCP Snooping Configure Dynamic ARP Inspection Configure IP Source Guard Configure Cisco TrustSec
- Implement NXOS High Availability Features Implement First-Hop Routing Protocols Implement Graceful Restart Implement nonstop forwarding Implement Port-channels Implement vPC and VPC+ Implement Overlay Transport Protocol (OTV)
- Implement NXOS Management Implement SPAN and ERSPAN Implement NetFlow Implement Smart Call Home Manage System Files Implement NTP, PTP Configure and Verify DCNM Functionality

• NXOS Troubleshooting

Utilize SPAN, ERSPAN and EthAnalyzer to troubleshoot a Cisco Nexus problem Utilize NetFlow to troubleshoot a Cisco Nexus problem Given an OTV problem, identify the problem and potential fix Given a VDC problem, identify the problem and potential fix Given a vPC problem, identify the problem and potential fix Given an Layer 2 problem, identify the problem and potential fix Given an Layer 3 problem, identify the problem and potential fix Given a multicast problem, identify the problem and potential fix Given a FabricPath problem, identify the problem and potential fix Given a Unified Fabric problem, identify the problem and potential fix

Cisco Storage Networking

- Implement Fiber Channel Protocols Features Implement Port Channel, ISL and Trunking Implement VSANs
 Implement Basic and Enhanced Zoning Implement FC Domain Parameters
 Implement Fiber Channel Security Features
 Implement Proper Oversubscription in an FC environment
- Implement IP Storage Based Solution Implement IP Features including high availability Implement iSCSI including advanced features Implement SAN Extension tuner Implement FCIP and Security Features Implement iSCSI security features Validate proper configuration of IP Storage based solutions
- Implement NXOS Unified Fabric Features
 Implement basic FC in NXOS environment
 Implement Fiber channel over Ethernet (FCoE)
 Implement NPV and NPIV features
 Implement Unified Fabric Switch different modes of operation
 Implement QoS Features
 Implement FCoE NPV features
 Implement multihop FCoE
 Validate Configurations and Troubleshoot problems and failures using Command Line, show and debug commands.

Cisco Data Center Virtualization

 Manage Data Center Virtualization with Nexus1000v Implement QoS, Traffic Flow and IGMP Snooping Implement Network monitoring on Nexus 1000v Implement n1kv portchannels Troubleshoot Nexus 1000V in a virtual environment Configure VLANs Configure PortProfiles Implement Nexus1000v Security Features DHCP Snooping Dynamic ARP Inspection IP Source Guard Port Security Access Control Lists Private VLANs Configuring Private VLANs

Cisco Unified Computing

- Implement LAN Connectivity in a Unified Computing Environment Configure different Port types Implement Ethernet end Host Mode Implement VLANs and Port Channels. Implement Pinning and PIN Groups Implement Disjoint Layer 2
- Implement SAN Connectivity in a Unified Computing Environment Implement FC ports for SAN Connectivity Implement VSANs Implement FC Port Channels Implement FC Trunking and SAN pinning
- Implement Unified Computing Server Resources Create and Implement Service Profiles Create and Implement Policies Create and Implement Server Resource Pools Implement Updating and Initial Templates Implement Boot From remote storage Implement Fabric Failover
- Implement UCS Management tasks
 Implement Unified Computing Management Hierarchy using ORG and RBAC Configure RBAC Groups
 Configure Remote RBAC Configuration
 Configure Roles and Privileges
 Create and Configure Users
 Implement Backup and restore procedures in a unified computing environment
 Implement system wide policies
- Unified Computing Troubleshooting and Maintenance Manage High Availability in a Unified Computing environment Configure Monitoring and analysis of system events Implement External Management Protocols Collect Statistical Information Firmware management Collect TAC specific information Implement Server recovery tasks

Cisco Application Networking Services – ANS

 Implement Data Center application high availability and load balancing Implement standard ACE features for load balancing Configuring Server Load Balancing Algorithm Configure different SLB deployment modes Implement Health Monitoring Configure Sticky Connections Implement Server load balancing in HA mode