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