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CCDA

Designing for Cisco Internetwork Solutions

(Exam Code : 200-310 DESGN)

Course Objective:

Cisco Certified Design Associate (CCDA) validates knowledge required to design a Cisco converged network. With a CCDA certification, a network professional demonstrates the skills required to design routed and switched network infrastructures and services involving LAN, WAN, and broadband access for businesses and organizations.

Prerequisite:

A valid CCENT or a valid CCNA Routing and Switching or any CCIE certification can act as a prerequisite.

Certificate Of Attendance :

Certificate Of Attendance will be awarded to participants completing the course achieving minimum 75% attendance.

Training Duration:

Full-Time : 5 Days
Time : 9.30am – 5.30pm

Course Fee :

Course fee : S\$2,500
Regn fee : S\$50
All fees subject to GST 7%. Course fee excludes Cisco Exam.

Cisco Certification exams

This course will help the participants to prepare for the CCDA Exam 200-310 (DESGN).

DETAILED COURSE OUTLINE

1. Design Methodologies

- 1.1 Describe the Cisco Design lifecycle – PBM (plan, build, manage)
- 1.2 Describe the information required to characterize an existing network as part of the planning for a design change
- 1.3 Describe the use cases and benefits of network characterization tools (SNMP, NBAR, NetFlow)
- 1.4 Compare and contrast the top-down and bottom-up design approaches

2. Design Objectives

- 2.1 Describe the importance and application of modularity in a network
- 2.2 Describe the importance and application of hierarchy in a network
- 2.3 Describe the importance and application of scalability in a network
- 2.4 Describe the importance and application of resiliency in a network
- 2.5 Describe the importance and application of concept of fault domains in a network

3. Addressing and Routing Protocols in an Existing Network

- 3.1 Describe the concept of scalable addressing
 - 3.1.a Hierarchy
 - 3.1.b Summarization
 - 3.1.c Efficiency
- 3.2 Design an effective IP addressing scheme
 - 3.2.a Subnetting
 - 3.2.b Summarization
 - 3.2.c Scalability
 - 3.2.d NAT
- 3.3 Identify routing protocol scalability considerations
 - 3.3.a Number of peers
 - 3.3.b Convergence requirements
 - 3.3.c Summarization boundaries and techniques
 - 3.3.d Number of routing entries
 - 3.3.e Impact of routing table of performance
 - 3.3.f Size of the flooding domain
 - 3.3.g Topology
- 3.4 Design a routing protocol expansion
 - 3.4.a IGP protocols (EIGRP, OSPF, ISIS)
 - 3.4.b BGP (eBGP peering, iBGP peering)

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4. Enterprise Network Design

- 4.1 Design a basic campus
 - 4.1.a Layer 2/Layer 3 demarcation
 - 4.1.b Spanning tree
 - 4.1.c Ether channels
 - 4.1.d First Hop Redundancy Protocols (FHRP)
 - 4.1.e Chassis virtualization
- 4.2 Design a basic enterprise network
 - 4.2.a Layer 3 protocols and redistribution
 - 4.2.b WAN connectivity
 - 4.2.b(i) Topologies (hub and spoke, spoke to spoke, point to point, full/partial mesh)
 - 4.2.b(ii) Connectivity methods (DMVPN, get VPN, MPLS Layer 3 VPN, Layer 2 VPN, static IPsec, GRE,VTI)
 - 4.2.b(iii) Resiliency (SLAs, backup links, QoS)
 - 4.2.c Connections to the data center
 - 4.2.d Edge connectivity
 - 4.2.d(i) Internet connectivity
 - 4.2.d(ii) ACLs and firewall placements
 - 4.2.d(iii) NAT placement
- 4.3 Design a basic branch network
 - 4.3.a Redundancy
 - 4.3.a(i) Connectivity
 - 4.3.a(ii) Hardware
 - 4.3.a(iii) Service provider
 - 4.3.b Link capacity
 - 4.3.b(i) Bandwidth
 - 4.3.b(ii) Delay

5. Considerations for Expanding an Existing Network

- 5.1 Describe design considerations for wireless network architectures
 - 5.1.a Physical and virtual controllers
 - 5.1.b Centralized and decentralized designs
- 5.2 Identify integration considerations and requirements for controller-based wireless networks
 - 5.2.a Traffic flows
 - 5.2.b Bandwidth consumption
 - 5.2.c AP and controller connectivity
 - 5.2.d QoS
- 5.3 Describe security controls integration considerations
 - 5.3.a Traffic filtering and inspection
 - 5.3.b Firewall and IPS placement and functionality
- 5.4 Identify traffic flow implications as a result of security controls
 - 5.4.a Client access methods
 - 5.4.b Network access control
- 5.5 Identify high-level considerations for collaboration (voice, streaming video, interactive video) applications
 - 5.5.a QoS (shaping vs. policing, trust boundaries, jitter, delay, loss)
 - 5.5.b Capacity
 - 5.5.c Convergence time
 - 5.5.d Service placement
- 5.6 Describe the concepts of virtualization within a network design
- 5.7 Identify network elements that can be virtualized
 - 5.7.a Physical elements (chassis, VSS, VDC, contexts)
 - 5.7.b Logical elements (routing elements, tunneling, VRFs, VLANs)
- 5.8 Describe the concepts of network programmability within a network design
 - 5.8.a APIs
 - 5.8.b Controllers
 - 5.8.c Application Centric Infrastructure (ACI)
- 5.9 Describe data center components
 - 5.9.a Server load balancing basics
 - 5.9.b Blocking vs. non-blocking Layer 2
 - 5.9.c Layer 2 extension



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