

NETLOGIC TRAINING CENTER

Course Training

Cisco CCDP - ARCH - Designing Cisco Network Service Architectures (300-320) version 3.0

Course Content

Designing Cisco Network Service Architectures (ARCH) v3.0 course enable students to perform the conceptual, intermediate, and detailed design of a network infrastructure that supports desired network solutions over intelligent network services, to achieve effective performance, scalability, and availability. ARCH enables learners, applying solid Cisco network solution models and recommended design practices, to provide viable, stable enterprise internetworking solutions. The course presents concepts and examples necessary to design converged enterprise networks. New in v3.0 is the addition of a content addressing software defined networks (SDN). Building on the Designing for Cisco Internetwork Solutions (DESGN) v3.0 course, in the ARCH course the students will learn additional aspects of modular campus design, advanced addressing and routing designs, WAN service designs, enterprise data center, and security design

Course Objective

Upon completing this course, students will be able to:

- Design internal routing for enterprise network
- Design BGP routing for enterprise network
- Design enterprise WAN connectivity
- Design enterprise data center integration
- Design security services in an enterprise network
- Design QoS for optimized user experience
- Design enterprise transition to IPv6
- Design enterprise multicast network

Course Prerequisite

Before taking the ARCH course, learners should be familiar with:

- Internetworking technologies, Cisco products, and Cisco IOS features
- Cisco Certified Network Associate (CCNA®) level-of-knowledge
- Designing for Cisco Internetwork Solutions (DESGN) level-of-knowledge
- Implementing Cisco IP Switched Networks (SWITCH) level-of-knowledge
- Implementing Cisco IP Routing (ROUTE) level-of-knowledge

Course Pre-Test

Recommend pre-test before training

Course Details

Day 1

Item	Subject	Details	Personal Lab	Workgroup Lab
1	Advanced Addressing and Routing Solutions for Enterprise Networks	<ul style="list-style-type: none">• Create structured addressing designs to facilitate summarization<ul style="list-style-type: none">a Hierarchyb Efficiencyc Scalabilityd NAT• Create stable, secure, and scalable routing designs for IS-IS• Create stable, secure, and scalable routing designs for EIGRP• Create stable, secure, and scalable routing designs for OSPF	Lecture	None
Break				
		<ul style="list-style-type: none">• Create stable, secure, and scalable routing designs for BGP<ul style="list-style-type: none">a Transit preventionb Basic route filteringc Authenticationd Communitiese Basic traffic engineering (load distribution, creating path symmetry)f Route reflectors• Determine IPv6 migration strategies<ul style="list-style-type: none">a Overlay (tunneling)b Native (dual-stacking)c Boundaries (IPv4/IPv6 translations)	Lecture	None

Day 2

Item	Subject	Details	Personal Lab	Workgroup Lab
2	Advanced Enterprise Campus Networks	<ul style="list-style-type: none">• Design for high availability<ul style="list-style-type: none">a First Hop Redundancy Protocolsb Device virtualization• Design campus Layer 2 infrastructures<ul style="list-style-type: none">a STP scalabilityb Fast convergencec Loop-free technologies• Design multi-campus Layer 3 infrastructures<ul style="list-style-type: none">a Convergenceb Load sharingc Route summarizationd Route filteringe VRFsf Optimal topologies• Design a network to support network programmability<ul style="list-style-type: none">a Describe Application Centric Infrastructures (ACI)b Select appropriate controller to meet requirementsc Identify and address key security issues with network programmability	Lecture	None
Break				
3	WANs for Enterprise Networks	<ul style="list-style-type: none">• Compare and contrast WAN connectivity options<ul style="list-style-type: none">a Dynamic Multipoint VPN (DMVPN)b Layer 2 VPNc MPLS Layer 3 VPNd IPsece Generic Routing Encapsulation (GRE)f Private lines• Design site-to-site VPNs<ul style="list-style-type: none">a DMVPNb Layer 2 VPNc MPLS Layer 3 VPNd IPsece Group Encrypted Transport VPN (GETVPN)	Lecture	None

Day 3

Item	Subject	Details	Personal Lab	Workgroup Lab
3	WANs for Enterprise Networks	<ul style="list-style-type: none">• Design for a resilient WAN strategy<ul style="list-style-type: none">a Single-homedb Multi-homedc Backup connectivityd Failover• Design Extranet connectivity<ul style="list-style-type: none">a VPNb Private linesc Multitenant segmentation• Design Internet edge connectivity<ul style="list-style-type: none">a DMZb NATc Proxy functionalityd Resiliencye Basic traffic engineering techniques (outbound inbound load distribution active/failover, symmetric outbound traffic flows)	Lecture	None
Break				
4	Enterprise Data Center Integration	<ul style="list-style-type: none">• Describe a modular and scalable data center network<ul style="list-style-type: none">a Top-of-rackb End-of-rowc Multitenant environmentsd Multitier topologies• Describe network virtualization technologies for the data center<ul style="list-style-type: none">a VPCb VSSc VDCsd VRFse Multichassis EtherChannelf VXLANg TRILL / Fabric Path	Lecture	None

Day 4

Item	Subject	Details	Personal Lab	Workgroup Lab
5	Security Services	<ul style="list-style-type: none">• Describe high availability in a data center network<ul style="list-style-type: none">a VPCb VSSc Multichassis EtherChannel• Design data center interconnectivity<ul style="list-style-type: none">a OTVb Private Linec L2 vs. L3d VPLSe A-VPLS• Design data center and network integration<ul style="list-style-type: none">a Traffic flowb Bandwidthc Securityd Resiliency	Lecture	None
Break				
		<ul style="list-style-type: none">• Design firewall and IPS solutions<ul style="list-style-type: none">a Modes of operationb Clusteringc High availability techniquesd IPS functionality and placemente Multiple contexts• Design network access control solutions<ul style="list-style-type: none">a 802.1xb TrustSecc EAPd Authentication servicese RBACf Basic denial of service mitigation techniques• Design infrastructure protection<ul style="list-style-type: none">a Infra structure ACLsb CoPPc Layer 2 / Layer 3 security considerations	Lecture	None

Day 5

Item	Subject	Details	Personal Lab	Workgroup Lab
6	Network Services	<ul style="list-style-type: none">• Select appropriate QoS strategies to meet customer requirements<ul style="list-style-type: none">a DiffServb IntServ• Design end-to-end QoS policies<ul style="list-style-type: none">a Classification and markingb Shapingc Policingd Queuing	Lecture	None
Break				
		<ul style="list-style-type: none">• Describe network management techniques<ul style="list-style-type: none">a In-band vs. out-of-bandb Segmented management networksc Prioritizing network management traffic• Describe multicast routing concepts<ul style="list-style-type: none">a Source trees, shared treesb RPFc Rendezvous points• Design multicast services<ul style="list-style-type: none">a SSMb PIM bidirectionalc MSDP	Lecture	None

Course Post-Test

Recommend post-test after training

Course Materials

Not include in this class training (but you can requested from sale team)

Course Devices Training

None

