Delivering Network Innovation with Fast Lane’s New Courses

**Designing Cisco Network Service Architectures (ARCH)**

**ID CI-ARCH  Price US$ 3,295  Duration 5 days**

**Who should attend**

- Network Designers
- Systems Engineers
- Network professionals seeking the Cisco Certified Design Professional (CCDP) certification

**Prerequisites**

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 v2.0 (SWITCH) level-of-knowledge
- Implementing Cisco IP Routing v2.0 (ROUTE) level-of-knowledge

**Course Objectives**

Upon completing this course, you 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

**Certifications**

This course is part of the following Certifications:

- Cisco Certified Design Professional (CCDP)

**Course Content**

Designing Cisco Network Service Architectures (ARCH) v3.0 will provide you with the important knowledge and skills to perform the conceptual, intermediate and detailed design of a network infrastructure to achieve effective performance, scalability and availability. In this comprehensive course you will learn to apply Cisco network solution models and recommended design practices to design viable and stable enterprise internetworking solutions. You will learn concepts and examples necessary to design converged enterprise networks.

New in v3.0 is the addition of content addressing for software defined networks (SDN). Building on the Designing for Cisco Internetwork Solutions (DESGN) v3.0 course, you will learn additional aspects of modular campus design, advanced addressing and routing designs, WAN service designs, enterprise data center and security designs.
Detailed Course Outline

Module 1: Enterprise Connectivity and High-Availability
- EIGRP design considerations
- Multiple EIGRP Autonomous Systems
- EIGRP hierarchical design basics
- Two- and three-layer hierarchy
- OSPF
- IS-IS
- IS-IS vs. OSPF

Module 2: BGP Design
- IBGP scalability issues and solutions
- Route reflectors
- BGP communities
- Single-homed vs. multi-homed load sharing

Module 3: Wide Area Networks Design
- WAN
- Layer 3 MPLS VPN architecture
- Route distinguishers and targets
- PE-CE routing protocols
- VPLS design vs. VPWS design
- GRE and IPsec
- DMVPN
- FlexVPN architecture and capabilities
- WAN
- IWAN
- Cisco PIR
- SDN challenges, requirements, and solutions
- Design APIC-EM

Module 4: Enterprise Data Center Integration
- Design modular and scalable data center network
- Design multi-tenant data center
- Data center interconnections

Module 5: Design Security Services
- Network security zoning
- Modular network architecture
- Next-generation security
- Network protection
- Routing and switching infrastructure
- Firewall architecture
- IEEE 802.1X
- TrustSec

Module 6: Design QoS for Optimized User Experience
- Mapping QoS marking
- Policing tools
- Queuing tools
- Dropping tools
- Design principles
- QoS strategy
- Campus QoS design
- Data center QoS design
- WAN QoS design
- MPLS and IPsec VPN QoS design

Module 7: Transition to IPv6
- Deploying IPv6 in IPv4 network
- Deployment challenges

Module 8: IP Multicast Design
- IP multicast service model
- Multicast protocols
- PIM-SM protocol
- SSM concepts
- Rendezvous point distribution solutions
- IP multicast security

Labs:
- Design Enterprise Connectivity
- Design Enterprise BGP Network with Internet Connectivity
- Design Resilient Enterprise WAN
- Design Enterprise Data Center Connectivity
- Design Secure Enterprise Network
- Design QoS in Enterprise Network
- Design Enterprise IPv6 Network