

Soft-Train



*At Soft-Train
Technology Works*

Designing for Cisco Internetwork Solutions (DESGN) (5 Days) ST21002

COURSE GOAL: To supply the student with the knowledge to design enterprise networks. Students will also be prepped to take Certification Exam 640-864

PREREQUISITES: Understanding of basic network concepts and components

LEARNING OBJECTIVES:

Upon completion of this course the student will be able to:

- Understand network fundamentals
- Design basic networks
- Employ IP addressing
- Select routing protocols
- Understand voice network design considerations
- Understand wireless network design considerations
- Evaluate security solutions

KEY TOPICS:

I. Network Design Methodology

- A. Foundation Topics
- B. Cisco Architectures for the Enterprise
- C. Prepare, Plan, Design, Implement, Operate, and Optimize Phases
- D. Identify Customer Design Requirements
- E. Characterizing the Existing Network

II. Network Structure Models

- A. Hierarchical Network Models
- B. Cisco Enterprise Architecture Model
- C. High Availability Network Services
- D. Link Media Redundancy

III. Enterprise LAN Design

- A. LAN Media
- B. LAN Hardware
- C. Campus LAN Design and Best Practices
- D. IGMP Snooping

IV. Data Center Design

- A. Enterprise DC Architecture
- B. Challenges in the DC
- C. Enterprise DC Infrastructure
- D. Virtualization Overview
- E. Virtualization Technologies
- F. Network Virtualization Design Considerations

V. Wireless LAN Design

- A. Wireless LAN Technologies
- B. Cisco Unified Wireless Network
- C. WLAN Design

- D. Branch Office Controller Options

VI. WAN Technologies

- A. WAN Overview
- B. WAN Transport Technologies
- C. WAN Design Methodology
- D. Traffic Shaping and Policing

VII. WAN Design

- A. Traditional WAN Technologies
- B. Remote-Access Network Design
- C. VPN Network Design
- D. Enterprise VPN vs. Service Provider VPN
- E. WAN Backup Design
- F. Enterprise WAN Architecture

VIII. Internet Protocol Version 4

- A. IPv4 Addressing
- B. IPv4 Address Subnets
- C. Address Assignment and Name Resolution
- D. IP Address Assignments

IX. Internet Protocol Version 4

- A. Introduction to IPv6
- B. IPv6 Address Representation
- C. IPv6 Address Scope Types and Address Allocations
- D. IPv6 Mechanisms
- E. IPv6 Routing Protocols

X. Routing Protocol

Characteristics, RIP, and EIGRP

- A. Routing Protocol Characteristics
- B. Routing Protocol Metrics and Loop Prevention
- C. Maximum Transmission Unit
- D. RIPv2 and RIPng
- E. EIGRP

XI. OSPF, BGP, Route Manipulation, and IP Multicast

- A. OSPFv2
- B. OSPFv3
- C. BGP
- D. Route Manipulation
- E. IP Multicasting Review

XII. Managing Security

- A. Network Security Overview
- B. Security Policy and Process
- C. Trust and Identity Management
- D. Secure Connectivity
- E. Threat Defense

XIII. Security Solutions

- A. Cisco SAFE Architecture
- B. Trust and Identity Technologies
- C. Detecting and Mitigating Threats
- D. Security Management Applications
- E. Integrating Security into Network Devices

XIV. Voice and Video Design

- A. Traditional Voice Architecture
- B. Converged Multiservice Networks
- C. IPT Design
- D. IPT Design Recommendations

XV. Network Management Protocols

- A. Simple Network Management Protocol
- B. SNMP Components
- C. Other Network Management Technologies
- D. RMON
- E. RMON2