CS-QOS

END-TO-END QOS NETWORK DESIGN: QUALITY OF SERVICE FOR RICH-MEDIA & CLOUD NETWORKS

DURATION	LEVEL	TECHNOLOGY	DELIVERY METHOD	TRAINING CREDITS
5 Days	Intermediate	Cisco QoS	Instructor Led	N/A

INTRODUCTION

This five-day course focuses on complex traffic mixes with increased usage of mobile devices, wireless network access, advanced communications, and video. It reflects the growing heterogeneity of video traffic, including passive streaming video, interactive video, and immersive videoconferences. It also addresses shifting bandwidth constraints and congestion points; improved hardware, software, and tools; and emerging QoS applications in network security.

The course introduces QoS technologies in high-to-mid-level technical detail, including protocols, tools, and relevant standards. New QoS demands and requirements are examined, reasons to re-evaluate current QoS designs are identified, and new strategic design recommendations are presented.

In addition, deep technical detail on-campus wired and wireless QoS design; next-generation wiring closets; QoS design for data centers, Internet edge, WAN edge, and branches; QoS for IPsec VPNs, and more are discussed.

AUDIENCE PROFILE

QoS is a comprehensive and complex subject, one that entails a significant amount of fundamental technological concepts as well as platform-specific implementation detail. Therefore, it is often valuable for network administrators to have a single common reference on the subject, such as this course, which overviews all the relevant tools, presents various end-to-end strategies and details platform-specific design recommendations.

This course is intended primarily for:

- Network administrators tasked with deploying QoS technologies.
- IT professionals such as system administrators, audio/video specialists, VoIP specialist and operational staff

PREREQUISITES

The knowledge and skills that a learner must have before attending this course are as follows:

- Fundamental knowledge of IPv6
- Thorough understanding of networking technologies and network design and deployment

The knowledge and skills that a learner must have before attending this course are as follows:

- CCNA. Be Familiar with IP Networking and IOS software commands

COURSE OBJECTIVES

On completion of this course, participants should:

- Master a proven, step-by-step best-practice approach to successful QoS deployment
- Implement Cisco-validated designs related to new and emerging applications
- Apply best practices for classification, marking, policing, shaping, markdown, and congestion management/avoidance
- Leverage the new Cisco Application Visibility and Control feature-set to perform deep-packet inspection to recognize more than 1000 different applications.
- Use Medianet architecture elements specific to QoS configuration, monitoring, and control

- Design wireless networks to support voice and video using a Cisco centralized or converged access WLAN
- Optimize QoS at the enterprise customer edge
- Utilize new industry standards and QoS technologies, including IETF RFC 4594, IEEE 802.1Q-2005, HQF, and NBAR2

COURSE CONTENT

1. Lesson 1: QoS Design Overview
- Introduction and Brief History of QoS
- IOS-Based QoS Architectural Framework and Syntax Structure
- Classification and Marking
- Policing, Shaping, and Markdown Tools
- Congestion Management and Avoidance Tools
- Bandwidth Reservation Tools
- QoS in IPv6 Networks
- Medianet
- Application Visibility Control (AVC)

2. Lesson 2: QoS Design Strategies
- Business and Application QoS Requirements
- QoS Design Principles and Strategies
- Strategic QoS Design Case Study

3. Lesson 3: Campus QoS Design
- Campus QoS Design Considerations and Recommendations
- Campus Access (Cisco Catalyst 3750) QoS Design
- Campus Distribution (Cisco Catalyst 4500) QoS Design
- Campus Core (Cisco Catalyst 6500) QoS Design
- Campus QoS Design Case Study

4. Lesson 4: Wireless LAN QoS Design
- Wireless LAN QoS Considerations and Recommendations
- Centralized (Cisco 5500 Wireless LAN Controller) QoS Design
- Converged Access (Cisco Catalyst 3850 and the Cisco 5760 Wireless LAN Controller) QoS Design
- Converged Access QoS Design Case Study

5. Lesson 5: Data Center QoS Design
- Data Center QoS Design Considerations and Recommendations
- Data Center Virtual Access (Nexus 1000V) QoS Design
- Data Center Access/Aggregation (Nexus 5500/2000) QoS Design
- Data Center Core (Nexus 7000) QoS Design
- Data Center QoS Design Case Study

6. Lesson 6: WAN and Branch QoS Design
- WAN and Branch QoS Design Considerations and Recommendations
- WAN Aggregator (Cisco ASR 1000) QoS Design
- Branch Router QoS Design
- WAN and Branch QoS Design Case Study

7. Lesson 7: MPLS VPN QoS Design
- MPLS VPN QoS Design Considerations and Recommendations
- Enterprise Customer Edge QoS Design
- Service Provider Edge QoS Design
- Service Provider Core QoS Design
- MPLS VPN QoS Design Case Study

8. Lesson 8: IPsec QoS Design
- IPsec VPN QoS Considerations and Recommendations
- DMVPN QoS Design
- GET VPN QoS Design
- Home Office VPN QoS

ASSOCIATED CERTIFICATIONS & EXAM

There is no exam associated with this course.