

Implementing Cisco Quality of Service (QoS)

**WHERE GREAT TRAINING
HAPPENS EVERYDAY!**



Implementing Cisco Quality of Service (QoS)

Course Duration

5 Days

Course Price

\$4,295.00
43 CLCs

Methods of Delivery

In-Person ILT
Virtual ILT
Onsite ILT

About this Class

The Implementing Cisco Quality of Service (QoS) training provides you with in-depth knowledge of QoS requirements, conceptual models such as best effort, IntServ, and DiffServ, and the implementation of QoS on Cisco platforms. The training covers the theory of QoS, design issues, and configuration of various QoS mechanisms to facilitate the creation of effective administrative policies providing QoS.

The training also gives you design and usage rules for advanced QoS features. This gives you the opportunity to design and implement efficient, optimal, and trouble-free multiservice networks. The new version of the training also includes QoS for modern wireless networks and software-defined networks.

This training earns you 40 Continuing Education (CE) credits toward recertification.



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How you will benefit

This class will help you:

- Gain the skills to identify, describe, and correctly implement the appropriate QoS mechanisms that are required to create an effective administrative policy providing QoS
- Get the knowledge for designs and usage rules for advanced QoS features
- Earn 40 CE credits toward recertification

Why Attend with Current Technologies CLC

- Our Instructors are the top 10% rated by Cisco
- Our Lab has a dedicated 1 Gig Fiber Connection for our Labs
- Our Labs run up to Date Code for all our courses

Who Should Attend

The job roles best suited to the material in this course are:

- Pre-and post-sales technical engineers responsible for designing, implementing, or troubleshooting networks
- Network architects responsible for designing multiservice networks to carry voice, video, and data traffic in an enterprise or service provider environment

Prerequisites

- Cisco Certified Networking Associate v2.0 certification

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Objectives

After taking this course, you should be able to:

- Explain the need for QoS, describe the fundamentals of QoS policy, and identify and describe the different models that are used for ensuring QoS in a network
- Explain the use of MQC and AutoQoS to implement QoS on the network and describe some of the mechanisms used to monitor QoS implementations
- Given a converged network and a policy defining QoS on the network and describe some of the mechanisms used to monitor QoS implementations
- Use Cisco QoS queuing mechanisms to manage network congestion
- Use Cisco QoS congestion avoidance mechanisms to reduce the effects of congestion on the network
- Describe how link efficiency mechanisms can be used collectively to improve bandwidth efficiency and reduce delay
- Describe the need for wireless QoS in WLANs due to the expansion of high-bandwidth data applications and time-sensitive multimedia applications in vertical and enterprise environments, and the need for a unified approach to support multi-vendor time-sensitive applications and accelerate the adoption rate of QoS
- Describe the need for QoS in modern Software-Defined Networks (SDN) for ensuring reliable performance of crucial applications and services
- Describe the steps and best practices for optimally deploying QoS and understand the network elements involved in an enterprise end-to-end QoS deployment, as well as the importance of QoS interaction between the enterprise and service provider networks

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Course Outline

Module 1: Introduction to QoS

- Review Converged Networks
- Understand QoS
- Describe Best-Effort and Integrated Services Models
- Describe the Differentiated Services Model

Module 2: Implement and Monitor QoS

- MQC Introduction
- Monitor QoS
- Define Campus AutoQos
- Define WAN AutoQoS

Module 3: Classification

- Classification and Marking Overview
- Using MQC for Classification and Marketing
- NBAR for Classification
- Use of QoS Preclassify
- Classification and Marking

Module 4: Marking

Module 5: Congestion Management

- Queuing Introduction
- Configure WFQ
- Configure CBWFQ and LLQ
- Configuring Congestion Management

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Course Outline

Module 6: Congestion Avoidance

- Congestion Avoidance Introduction
- Configure Class-Based WRED
- Configure ECN
- Describe Campus-Based Congestion Avoidance

Module 7: Traffic Policing and Shaping

- Traffic Policing and Shaping Overview
- Configuring Class-Based Policing
- Campus Policing
- Configure Class-Based Shaping
- Configure Class-Based Shaping on Frame Relay Interfaces
- Configure Frame Relay Voice-Adaptive Traffic Shaping and Fragmentation

Module 8: Link Efficiency Mechanisms

- Link Efficiency Mechanisms Overview
- Configuring Class-Based Header Compression
- Configuring LFI

Module 9: Introducing QoS for Modern Wireless Networks

Module 10: Introducing QoS for Software-Defined Networks

Module 11: Deploying End-to-End QoS

- Apply Best Practices for QoS Policy Design
- End-to-End QoS Deployments

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Lab Outline

- Case Study 1-1: QoS Mechanisms
- Lab 2-1: IP SLA Setup and QoS Baseline Measurement
- Lab 2-2: Configuring QoS with Cisco AutoQoS
- Case Study 3-1: Classification and Marking
- Lab 3-2: Classification and Marking Using MQC
- Lab 3-3: Using NBAR for Classification
- Lab 3-4: Configuring QoS Preclassify
- Lab 3-5: Campus Classification and Marking Using MQC
- Lab 4-1: Configuring Fair Queuing
- Lab 4-2: Configuring LLQ-CBWFQ
- Lab 4-3: Configuring Campus-Based Queuing Mechanisms
- Case Study 5-1: WRED Traffic Profiles
- Lab 5-2: Configuring DSCP-Based WRED
- Lab 5-3: Configuring WTD Thresholds
- Lab 6-1: Configuring Class-Based Policing
- Lab 6-2: Configuring Class-Based Shaping
- Lab 7-1: Configuring Class-Based Header Compression
- Lab 7-2: Configuring LFI