# Implementing Cisco QOS

**Cursusduur: 5 Dagen**    **Cursuscode: QOS**    **Version: 3.0**    **Trainingsmethode: Class Connect**

## Beschrijving:

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

Case studies and lab exercises included in the course help learners to apply the concepts from the individual modules to real-life scenarios.Learners are provided with design and usage rules for advanced QoS features, giving them the opportunity to design and implement efficient, optimal, and trouble-free multiservice networks. This version of the course also includes QoS for modern wireless networks and Software-defined networks.

**This course is worth 40 Credits on the Continuing Education Program**

Class Connect™

Met Class Connect worden klaslokalen virtueel met elkaar verbonden. Class Connect biedt u de mogelijkheid om een training klassikaal op afstand bij te wonen in een Global Knowledge locatie bij u in de buurt. Een hoge kwaliteitsverbinding (HD audio en video) tussen de klaslokalen garandeert de cursisten een maximale interactie met de docent en met elkaar. Samen met uw medecursisten ziet u de docent en de andere cursisten op een groot scherm alsof u er zelf bijzit.

## Doelgroep:

This course is aimed at pre-and post-sales technical engineers responsible for designing, implementing, or troubleshooting networks, as well as network architects responsible for designing multiservice networks to carry voice, video and data traffic in enterprise or service provider environments.

## Doelstelling:

■ **After you complete this course you will 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 queing 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 quality of service (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 quality of service (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.

## Vereiste kennis en vaardigheden:

**Attendees should meet the following prerequisites:**

## Examens en certificering

**Recommended preparation for exam(s):**

## Cursusinhoud:

### Introduction to QoS

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

### Implement and Monitor QoS

■ MQC Introduction
■ Monitor QoS
■ Define Campus AutoQoS
■ Define WAN AutoQoS

### Classification

■ Classification Overview
■ MQC for Classification
■ NBAR for Classification
■ Use of QoS Preclassify

### Marking

■ Marking Overview
■ MQC for Marking
■ Campus Trust Boundaries

### Congestion Management

■ Queuing Introduction
■ Configure WFQ
■ Configure CBWFQ and LLQ
■ Configure Campus Congestion Management

### Congestion Avoidance

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

### Traffic Policing and Shaping

■ Traffic Policing and Shaping Overview
■ Configure 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

### Link Efficiency Mechanisms

■ Link Efficiency Mechanisms Overview
■ Configure Class-Based Header Compression
■ Configure LFI

### Introducing QoS for Modern Wireless Networks

■ Introducing Enhanced Distributed Channel Access
■ Designing Wi-Fi 6 QoS
■ Describing Unified Wired and Wireless QoS

### Introducing QoS for Software-Defined Networks

■ QoS for Cisco SD-Access
■ QoS for SD-Data Center
■ QoS for Cisco SD-WAN

### Deploying End-to-End QoS

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

### Labs

■ 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

## Nadere informatie:

Neem voor nadere informatie of boekingen contact op met onze Customer Service Desk  030 - 60 89 444

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