Implementing Cisco Quality of Service (QOSv2.5)

Course Objectives

- 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
- Use Cisco QoS traffic policing and traffic shaping mechanisms to effectively limit the rate of network traffic
- Given a low speed WAN link, use Cisco link efficiency mechanisms to improve the bandwidth efficiency of the link
- Describe the recommended best practices and methods used for end-to-end QoS deployment in the enterprise

Prerequisites

The knowledge and skills you must have before attending this course are as follows:

This sections lists the skills and knowledge that learners must possess to benefit fully from the course. It includes recommended Cisco learning offerings that the learner may complete to benefit fully from this course. The knowledge and skills that a learner must have before attending this course are as follows:

- Interconnecting Cisco Network Devices Part 1, Version 2.0 (ICND1)
- Interconnecting Cisco Network Devices Part 2, Version 2.0 (ICND2)

Course Outline

Module 1 Introduction of 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

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- Define Campus AutoQoS
- Define WAN AutoQoS

Module 3 Classification and Marking

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

Module 4 Congestion Management

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

Module 5 Congestion Avoidance

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

Module 6 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

Module 7 Link Efficiency Mechanisms

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

Module 8 Deploying End-to-End QoS

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

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