



## Optimizing Converged Cisco Networks (ONT) v1.0

**Associated Certifications** : CCDP / CCNP  
**Duration** : 5 days, Classroom

### Prerequisites

Students must be able to:

- Explain the fundamentals of Ethernet including CSMA / CD, port speed, port duplex, and 10Mbps to 1Gbps
- Complete the initial configuration of a switch.
- Basic Spanning Tree Protocol configuration
- Configure a switch with VLANs.
- Create basic interswitch connections.
- Troubleshoot a VLAN and VTP to the CCNA level
- Complete the initial configuration of a router.
- Fundamental security knowledge including the presence of hackers, viruses and other security threats
- Fundamental knowledge of IP Addressing including the format of IPv4 addresses, the concept of subnetting, and VLSM and CIDR as well as static and default routing
- Basic NAT / PAT
- Standard and Extended Access Lists
- Use client utilities including Telnet, IPCONFIG, Trace Route, Ping, FTP, TFTP, and Hyperterminal
- Basic IOS familiarity, including accessing the CLI on a Cisco device and specifically implementing the debug and show commands

### Course Content

Training for skills in optimizing and providing effective QoS techniques in converged networks operating voice, wireless and security applications.

### Course Objectives

After completing this course the student should be able to:

- Explain the Cisco hierarchical network model as it pertains to an end-to-end enterprise network
- Describe specific requirements for implementing a VOIP network
- Describe the need to implement QoS and the methods for implementing QoS on a converged network using Cisco's routers and Catalyst Switches
- Explain the key IP QoS mechanisms used to implement the DiffServ QoS model
- Configure Auto QoS for Enterprise
- Describe and configure wireless security and basic wireless management

### Course Outline

- Describe Network Requirements
- Describing Cisco VoIP Implementations
- Introduction to IP QoS
- Implementing the DiffServ QoS Model
- Implementing AutoQoS
- Wireless Security

### Who Should Attend

- Channel Partner / Reseller
- Customer
- Employee



## 642-845 ONT: Optimizing Converged Cisco Networks

<b>Exam Number</b>	: 642-845
<b>Associated Certifications</b>	: <a href="#">CCNP</a>
<b>Duration</b>	: 90 minutes
<b>Available Languages</b>	: English
<b>Register for Exam</b>	: <a href="#">Pearson VUE</a>

### Exam Description

The Optimizing Converged Cisco Networks (642-845 ONT) is a qualifying exam for the Cisco Certified Network Professional CCNP®. The ONT 642-845 exam will certify that the successful candidate has important knowledge and skills in optimizing and providing effective QoS techniques for converged networks. The exam topics include implementing a VOIP network, implementing QoS on converged networks, specific IP QoS mechanisms for implementing the DiffServ QoS model, AutoQoS, wireless security and basic wireless management.

### Exam Topics

The following information provides general guidelines for the content likely to be included on the exam. However, other related topics may also appear on any specific delivery of the exam. In order to better reflect the contents of the exam and for clarity purposes the guidelines below may change at any time without notice.

#### Describe Cisco VoIP implementations

- Describe the functions and operations of a VoIP network (e.g., packetization, bandwidth considerations, CAC, etc.).
- Describe and identify basic voice components in an enterprise network (e.g. Gatekeepers, Gateways, etc.)

#### Describe QoS considerations

- Explain the necessity of QoS in converged networks (e.g., bandwidth, delay, loss, etc.).
- Describe strategies for QoS implementations (e.g. QoS Policy, QoS Models, etc.).

#### Describe DiffServ QoS implementations

- Describe classification and marking (e.g., CoS, ToS, IP Precedence, DSCP, etc.).
- Describe and configure NBAR for classification.
- Explain congestion management and avoidance mechanisms (e.g., FIFO, PQ, WRR, WRED, etc.).
- Describe traffic policing and traffic shaping (i.e., traffic conditioners).
- Describe Control Plane Policing.
- Describe WAN link efficiency mechanisms (e.g., Payload/Header Compression, MLP with interleaving, etc.).
- Describe and configure QoS Pre-Classify.

#### Implement AutoQoS

- Explain the functions and operations of AutoQoS.
- Describe the SDM QoS Wizard.
- Configure, verify, and troubleshoot AutoQoS implementations (i.e., MQC).

#### Implement WLAN security and management

- Describe and Configure wireless security on Cisco Clients and APs (e.g., SSID, WEP, LEAP, etc.).
- Describe basic wireless management (e.g., WLSE and WCS). Configure and verify basic WCS configuration (i.e., login, add/review controller/AP status, security, and import/review maps).
- Describe and configure WLAN QoS.