Optimizing Converged Cisco Networks (ONT)

خلاصه :

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

مدت دوره: ۴۰ ساعت

پیش نیاز: گذراندن درس CCNA و یا داشتن دانش معادل آن

اهداف دوره: در انتهای این دوره دانشجویان قادر خواهند بود:

- 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

سرفصل دوره:

Part I Voice over IP

- **Cisco VoIP Implementations**
  Introduction to VoIP Networks
  Digitizing and Packetizing Voice
  Encapsulating Voice Packets
  Bandwidth Calculation
  Implementing VoIP Support in an Enterprise Network

Part II Quality of Service

- **IP Quality of Service**
  Introduction to QoS

- **Classification, Marking, and NBAR**
  Classification and Marking
  The DiffServ Model, Differentiated Services Code Point (DSCP), and PHB
  QoS Service Class
  Trust Boundaries
  Network Based Application Recognition (NBAR)
  Cisco IOS Commands to Configure NBAR

- **Congestion Management and Queuing**

Introduction to Congestion Management and Queuing
First-In-First-Out, Priority Queuing, Round-Robin, and Weighted Round-Robin Queuing
Weighted Fair Queuing
Class-Based Weighted Fair Queuing
Low-Latency Queuing

- **Congestion Avoidance, Policing, Shaping, and Link**
  Congestion Avoidance
  Traffic Shaping and Policing
  Link Efficiency Mechanisms

- **Implementing QoS Pre-Classify and Deploying End-to-End QoS**
  Implementing QoS Pre-Classify
  Deploying End-to-End QoS

- **Implementing AutoQoS**
  Introducing AutoQoS
  Implementing and Verifying AutoQoS

Part III Wireless LAN

- **Wireless LAN QoS Implementation**
  The Need for Wireless LAN QoS
  Current Wireless LAN QoS Implementation
  Configuring Wireless LAN QoS

- **Introducing 802.1x and Configuring Encryption and Authentication**
  Overview of WLAN Security
  802.1x and EAP Authentication Protocols
  Configuring Encryption and Authentication on Lightweight Access Points

- **WLAN Management**
  The Need for WLAN Management
  CiscoWorks Wireless LAN Solution Engine
  CiscoWorks WLSE and WLSE Express
  Cisco Wireless Control System