

Cisco Voice Over IP (CVOICE)

Prerequisites: Working knowledge of fundamental terms and concepts of computer networking to include LANs, WANs, and IP switching and routing. - Basic internetworking skills taught in Interconnecting Cisco Network Devices (ICND), or equivalent knowledge. - Ability to configure and operate Cisco routers and switches and to enable VLANs and DHCP. - Knowledge of traditional public switched telephone network (PSTN) operations and technologies.

Length: 5 days

Summary: This course provides an understanding of converged voice and data networks and the challenges faced by the various network technologies. Students receive knowledge and skills required to integrate gateways and gatekeepers into an enterprise VoIP network.

After completing this course, the student should be able to: - Configure gateway interconnections to support VoIP and PSTN calls. - Define a dial plan, describing the purpose of each dial plan component, and implement a dial plan on a voice gateway. - Describe gatekeeper functions, protocols, and operation and implement an H.323 gatekeeper to provide dial plan resolution and call admission control. - Implement a Cisco Unified Border Element gateway to connect to an Internet Telephony Service Provider. - Implement an effective method of transporting fax and modem traffic over a Voice over IP network given the standard implementations of fax and the methods used to transport modem traffic. Technical Features of this course include: - Components of a VoIP network, VoIP protocols, special requirements for VoIP calls, and Codecs. - Voice port configuration - Signaling protocols used on voice gateways and configure a gateway to support calls using the various signaling protocols. - Dial plans - Voice compression schemes Associated Certification: CCNA Voice.

COURSE CONTENT

INTRODUCTION TO VOIP

Introducing VoIP
Introducing Voice Gateways
Specifying Requirements for VoIP Calls
Understanding Codecs, Codec Complexity, and DSP Functionality

VOICE PART CONFIGURATION

Understanding Call Types
Configuring Analog Voice Ports
Implementing H.323 Gateways
Implementing MGCP Gateways
Implementing SIP Gateways
Lab 3-1: Implementing H.323 Gateways
Lab 3-2: Implementing SIP Gateways

DIAL PLAN IMPLEMENTATION ON VOICE GATEWAYS

Understanding Dial Peers
Configuring Digital Voice Ports
Understanding QSIG
Lab 2-1: Configuring Analog Voice Ports
Lab 2-2: Configuring POTS Dial Peers
Lab 2-3: Configuring VoIP Dial Peers
Lab 2-4: Configuring Digital Voice Ports

VOIP GATEWAY IMPLEMENTATION

Understanding Dial Plans
Implementing Numbering Plans
Configuring Digit Manipulation
Configuring Path Selection Implementing Calling Privileges on Cisco IOS Gateways
Lab 4-1: Implementing Numbering Plans
Lab 4-2: Implementing PSTN Dial Plans on Cisco IOS Gateways
Lab 4-3: Configuring Path Selection

Lab 4-4: Implementing Calling Privileges on
Cisco IOS Gateways

H.323 GATEKEEPERS

Introducing Gatekeepers

Configuring Basic Gatekeeper Functionality

Implementing Gatekeeper- Based CAC

Lab 5-1: Configuring Basic Gatekeeper
Functionality

Lab 5-2: Implementing Gatekeeper-Based CAC

ITSP CONNECTIVITY

Understanding Special Requirements for

External VoIP Connections

Implementing a Cisco UBE