

Course Description: Cisco Voice over IP (CVOICE) v6.0 provides an understanding of converged voice and data networks and also the challenges faced by the various network technologies. The course also provides network administrators and network engineers with the knowledge and skills required to integrate gateways and gatekeepers into an enterprise VoIP network. This course is one of several courses in the Cisco CCVP™ track that addresses design, planning, and deployment practices and provides comprehensive hands-on experience in configuration and deployment of VoIP networks.

Who Should Attend: The course is for students completing the CCVP certification track and Network engineers, architects, and support staff.

Prerequisites: The knowledge and skills that a learner must have before attending this course are as follows: * 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, and * Knowledge of traditional public switched telephone network (PSTN) operations and technologies.

Benefits of Attendance: Upon completion of this course, students will be able to:

- Describe VoIP, voice gateways, special requirements for VoIP calls, codecs and codec complexity, and how DSPs are used as media resources on a voice gateway
- Configure gateway interconnections to support VoIP and PSTN calls and to integrate with a PSTN and PBX
- Describe the basic signaling protocols that are used on voice gateways and configure a gateway to support calls using the various signaling protocols
- Define a dial plan, describe the purpose of each dial plan component, and implement a dial plan on a voice gateway
- Implement gatekeepers and directory gatekeepers, and identify redundancy options for gatekeepers
- Implement a Cisco UBE gateway to connect to an Internet telephony service provider

Course Outline:*** Course Introduction**

Overview
Course Goal and Objectives
Course Flow
Additional References
Your Training Curriculum

Lab 5-1: Configuring Basic Gatekeeper Functionality
Lab 5-2: Implementing Gatekeeper-Based CAC

Module 6: ITSP Connectivity

Understanding Special Requirements for External VoIP Connections
Implementing a CiscUBE
Lab 6-1: Configuring a CiscUBE

Module 1: Introduction to VoIP

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

Module 2: Voice Port Configuration

Understanding Call Types
Configuring Analog Voice Ports
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

Module 3: VoIP Gateway Implementation

Implementing H.323 Gateways
Implementing MGCP Gateways
Implementing SIP Gateways
Lab 3-1: Implementing H.323 Gateways
Lab 3-2: Implementing SIP Gateways

Module 4: Dial Plan Implementation on Voice Gateways

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

Module 5: H.323 Gatekeepers

Introducing Gatekeepers
Configuring Basic Gatekeeper Functionality
Implementing Gatekeeper-Based CAC