

Cisco VOICE (CVOICE)

3 DAYS of intense hands-on training

Course Description

Voice over IP is rapidly moving from a tactical, cost-saving effort to a more long-term strategy of productivity improvements and reduced cost of network ownership. The ability to service voice communications needs over your existing data networks is now a reality. You can maximize your savings through the critical elements of proper evaluation and design.

This course provides real-world, multi-vendor options for integrating voice and data communication applications. You will analyze cost versus call quality issues and understand the key standards and technologies that make VoIP a reality. You will learn about the theory, standards, and protocols used in packet switched telephony. You build upon this foundation using in-depth real-world hands-on labs, Cisco authorized best practices, and detailed configuration examples. The goal is to learn how to configure Cisco voice-enable switches and VoIP equipment for enterprise and service provider environments.

In our intensive hands-on labs, you will evaluate public Internet calling, bandwidth considerations, echo control, jitter, voice compression, softswitch function, and more. Whether you are considering fully deploying VoIP or implementing IP Telephony in a hybrid approach, this course will help you understand the options you face, the problems you will encounter, and the security and performance issues you'll need to consider

Course Objectives

The attendant will learn about:

- Architecture and components of the PSTN and Packet Switched Networks
- Concepts of digital signaling, encoding, voice interfaces and voice quality
- Configuration and Troubleshooting of the Cisco IOS to create dial plans
- Configuration of advanced features such as hunt groups and dial-peers
- Digit collection/manipulation, Call Control institution, and QoS policies
- Walk out experienced and ready to execute an IP Telephony deployment.

Intended Audience

This technical training course was developed for IT managers, Technicians, Systems Administrators who need to understand Voice over IP, and anyone who will manage a converged network. It doesn't matter what vendor deployment you have - this course will provide you with the skills and knowledge you need to deploy IP Telephony solutions in your organization. This course is a **MUST** for:

- Telecom technicians and managers needing to understand Voice over IP
- Systems administrators who will manage a converged network
- IT Managers
- Technical sales/marketing personnel
- Consultants
- Network designers
- Network engineers
- Product design engineers developing integrated-services products
- Systems Analysts
- Project Managers
- Convergence Engineers
- IT Auditors
- Security Administrators
- Managers needing to understand Voice over IP Systems
- Administrators who will manage a Converged Network

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Outline: CISCO Voice (CVOICE)

Chapter 1 - Introduction to Packet Voice Technologies

- Identify the components, processes, and features of traditional telephony networks
 - CO Switches
 - Private Switching Systems
 - Call Signaling
 - Multiplexing techniques
- Distributed vs. Centralized Call Control
 - Benefits of distributed Call Control
 - Benefits of centralized Call Control
- Components required to provide Integrated voice and data services
 - Campus LAN environments
 - Enterprise environments
 - Service Provider environments

Chapter 2 - Analog and Digital Voice Connections

- Select the appropriate voice connection to a Cisco device
 - Identify wiring schemes used in E&M signaling
 - Describe Wink-Start, immediate-start and delay-start signaling
- Convert between analog/digital signals
 - Utilize compression standards
 - G.729 and G.729A
 - Calculate voice quality measurements

Chapter 3 - Configuring Voice Interfaces

- Configure voice ports
 - FXS
 - FXO
 - E&M
 - Digital Voice
 - ISDN
- Adjust for optimal quality

Chapter 4 - Voice Dial Plans

- Configure call flows
 - Utilize POTS, VoIP, and default dial peers

- Set up voice ports
 - integrate with legacy PBXs & the PSTN
- Assess and implement a scaleable numbering plan in a VoIP network

Chapter 5 - Introduction to VoIP

- Delivery of voice packets
 - Reduce loss, delay, or jitter
 - Transfer voice packets using
 - RTP
 - RTCP
 - CRTP
- Identify gateways
 - Plan bandwidth requirements for a given network
- Security
 - Security concerns
 - Security Risks
 - Implications of implementing security measures in VoIP

Chapter 6 - VoIP Signaling and Call Control

- When to use:
 - Distributed call control
 - Centralized call control
- Configure/monitor/troubleshoot VoIP Protocols
 - H.323
 - SIP
 - MGCP
- Identify benefits & implications of each

Chapter 7 - Improving and Maintaining Voice Quality

- Voice quality control issues
 - QoS mechanisms are available
 - Ensuring effective voice communication in IP Networks