CVOICE Exam Topics
Cisco Voice over IP Exam #642-432
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From the Cisco CVOICE 642-432 Exam Topics

Voice over IP Technologies
- Describe the similarities and differences between PSTN and VoIP including call transport, call signaling, and bandwidth requirements
- Describe the technologies used in Voice over IP and how they differ from PSTN technologies
- Identify PSTN characteristics, transport
- Explain TDM and statistical MUX as it relates to telephony
- Identify VoIP characteristics, transport
- Compare operation of PSTN call signaling to VoIP call signaling

Voice over IP Configuration
- Configure a router so that a basic IP telephony call can be completed
- Configure dial-peer settings for VoIP or POTs
- Configure POTs ports (FXS and FXO)
- Configure E&M
- Explain default dial-peer
- Explain matching inbound/outbound dial peers
- Configure hunt groups
- Explain digit collection, consumptions, and manipulations
- Configure gateway/gatekeeper
- Configure call signaling

Integrating Voice over IP into Existing PBX networks
- Integrate a basic IP telephony network into an existing PBX network
- Explain port requirements for connection to a PBX
- Explain signaling requirements for connection to a PBX
- Choose correct connection type between PBX and VoIP networks

Call Operation and Components in Voice over IP
- Describe the basic operation and components involved in an IP telephony call
- Explain RTP, RTCP, CRTP
- Explain H323
- Explain MGCP
- Explain SIP
- Explain E&M
- Describe the process of analog to digital conversion
- Describe the process of compounding and compressing
- Explain the process of packetization (frames, codec types)
- Choose the appropriate codec for a given situation

- Explain the function, operation, and purpose of call-legs
- Explain voice quality considerations
- Explain QoS

Integrating Voice over IP into the PSTN
- Successfully connect a basic Voice over IP network into the PSTN
- Describe digit manipulation
- Explain E164 addressing

Voice over IP Technologies
- Describe the similarities and differences between PSTN and VoIP including call transport, call signaling, and bandwidth requirements
  Voice over IP (Supplement), Voice over IP Call Operations
  Voice over X
  Cisco Voice Systems
  Introduction to Telephony

- Describe the technologies used in Voice over IP and how they differ from PSTN technologies
  Voice over IP (Supplement)
  Voice over X
  Cisco Voice Systems
  Introduction to Telephony

- Identify PSTN characteristics, transport
  Voice over IP (Supplement)
  Voice over X
  Cisco Voice Systems
  Introduction to Telephony
  How to Study Virtual Private Networks

- Explain TDM and statistical MUX as it relates to telephony
  Voice over X
  Introduction to Telephony
  Switched WAN Technologies

- Identify VoIP characteristics, transport
  Voice over X
  Voice over IP (Supplement)
  Introduction to Telephony
  Cisco Voice Systems

- Compare operation of PSTN call signaling to VoIP call signaling
  Voice over IP (Supplement)

Introduction to Telephony
Voice over X
Cisco Voice Systems

Voice over IP Configuration

- Configure a router so that a basic IP telephony call can be completed
  Voice over IP (Supplement), *Configuring Voice over IP*
  Voice over X, *Configuring Voice over IP*

- Configure dial-peer settings for VoIP or POTs
  Voice over IP (Supplement), *Configuring Voice over IP*
  Voice over X, *Configuring Voice over IP*
  Cisco Voice Systems, *Dial Plan Considerations and Configuration*

- Configure POTs ports (FXS and FXO)
  Voice over X, *Configuring Voice over IP*
  Cisco Voice Systems, *The VoIP Gateway*
  Voice over IP (Supplement)

- Configure E&M
  Voice over X, *Configuring Voice over IP*

- Explain default dial-peer
  Voice over IP (Supplement), *Dial Peers*
  Voice over X, *Configuring Dial Peers*
  Cisco Voice Systems, *The Dial Peer*

- Explain matching inbound/outbound dial peers
  Voice over IP (Supplement), *Dial Peers*
  Voice over X, *Configuring Dial Peers*
  Cisco Voice Systems, *The Dial Peer*

- Configure hunt groups
  Voice over IP (Supplement), *Advanced IP Telephony Call Configuration*

- Explain digit collection, consumptions, and manipulations
  Voice over IP (Supplement), *Advanced IP Telephony Call Configuration*
  Voice over X, *Configuring Digit Manipulation*
  Cisco Voice Systems, *Route Patterns*

- Configure gateway/gatekeeper
  Voice over IP (Supplement)
  Voice over X
  Cisco Voice Systems, *The VoIP Gateway*

- Configure call signaling

Voice over IP (Supplement), *Configuring Voice over IP*
Voice over X

Integrating Voice over IP into Existing PBX networks

- Integrate a basic IP telephony network into an existing PBX network
  Voice over IP (Supplement)
  Voice over X
  Cisco Voice Systems

- Explain port requirements for connection to a PBX
  Voice over IP (Supplement)
  Voice over X
  Cisco Voice Systems

- Explain signaling requirements for connection to a PBX
  Voice over IP (Supplement)
  Voice over X
  Cisco Voice Systems
  Introduction to Telephony

- Choose correct connection type between PBX and VoIP networks
  Voice over IP (Supplement)
  Voice over X
  Cisco Voice Systems

Call Operation and Components in Voice over IP

- Describe the basic operation and components involved in an IP telephony call
  Cisco Voice Systems
  Voice over IP (Supplement), *Voice over IP Call Operations*
  Voice over X

- Explain RTP, RTCP, CRTP
  Voice over X
  Cisco Voice Systems
  Quality of Service III
  Managing Performance and QoS I: General Principles and Ingress Handling

- Explain H323
  Voice over X, *Signaling and Transport*
  Cisco Voice Systems, *H.323*
  Voice over IP (Supplement)

- Explain MGCP
  Voice over X, *Media Gateway Control Protocol*
  Cisco Voice Systems, *MGCP*

- Explain SIP
  Voice over X, *Session Initiation Protocol*
  Cisco Voice Systems, *What is SIP?*

- Explain E&M
  Voice over IP (Supplement), *Dial Peers*
  Voice over X
  Introduction to Telephony, *Telephone Networks*
  Cisco Voice Systems, *E&M*

- Describe the process of analog to digital conversion
  Voice over X
  Introduction to Telephony
  Voice over IP (Supplement)

- Describe the process of compounding and compressing
  Voice over X
  Cisco Voice Systems
  Introduction to Telephony, *Compression*

- Explain the process of packetization (frames, codec types)
  Voice over IP (Supplement), *VoIP and POTS Dial Peer*
  Voice over X
  Cisco Voice Systems, *Packetization*
  Introduction to Telephony, *Packetizing Voice –a quick look*

- Choose the appropriate codec for a given situation
  Voice over IP (Supplement), *VoIP and POTS Dial Peer*
  Voice over X, *Codecs*
  Cisco Voice Systems, *Codecs*

- Explain the function, operation, and purpose of call-legs
  Voice over IP (Supplement), *Call Legs*
  Voice over X, *Configuring Dial Peers*
  Cisco Voice Systems, *The Dial Peer*

- Explain voice quality considerations
  Voice over X
  Cisco Voice Systems
  Introduction to Telephony, *How to Measure Call Quality: MOS*

- Explain QoS
  Voice over X, *The Role of QoS*
  Cisco Voice Systems, *Why QoS*
  Managing Performance and QoS I: General Principles and Ingress Handling

Managing Performance and QoS II: Other Means of IP QoS Control
Quality of Service III

Integrating Voice over IP into the PSTN

- Successfully connect a basic Voice over IP network into the PSTN
  Voice over IP (Supplement)
  Voice over X
  Cisco Voice Systems

- Describe digit manipulation
  Voice over IP (Supplement), *Advanced IP Telephony Call Configuration*
  Voice over X, *Configuring Digit Manipulation*
  Cisco Voice Systems, *Route Patterns*

- Explain E164 addressing
  Voice over IP (Supplement)
  ISIS I: Routing in Single Areas, *Addressing*
  ATM I: Basics, *SVC Connection Establishment and ATM Addressing*