Cisco SIP, Cisco Unified Border Element, and Gateways

Duration: 5 Days **Course Code: CSCGW** **Version: 2.0**

Overview:

Unlock the full power of Cisco Unified Border Element and SIP in this hands-on, expert-led course.
You'll begin by mastering the foundational elements of Cisco Unified Communications networks, including gateway call routing, voice port configuration, and DSP functionality and then diving deep into technologies at the heart of modern voice solutions: SIP and Cisco Unified Border Element. You'll master SIP call flows, SIP normalization, and Cisco Unified Border Element dial-peer strategies and implementations. Then explore the Cisco Unified Border Element's advanced capabilities. From secure and seamless SIP trunk integrations to hybrid cloud calling and call recording, you'll see how Cisco Unified Border Element serves as a core component in modern voice deployments.

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Target Audience:

Network engineers, architects, and support staff who:
- Maintain and configure voice and data network devices
- Are considering various methodologies to implement VoIP
- Require a fundamental understanding of the issues and solutions related to implementation
- Require a fundamental understanding of packet telephony technologies that are common for both enterprise and service provider applications

Objectives:

- In this course, you will:
- Gain Insight into the Cisco Collaboration Solutions Architecture
- Develop Knowledge of Cisco Voice Gateways
- Become Familiar with Gateway Protocols
- Describe a Basic Dial Plan
- Explore Cisco Unified Communications Manager Media Resources
- Configure Gateway Voice Ports
- Recognize the Role of DSPs
- Comprehend Call Signaling Over IP Networks
- Explore Codecs
- Identify Key Requirements for VoIP Call Legs
- Apply Configuration Techniques to VoIP Call Legs
- Summarize Dial Peers
- Clarify the Relationship between Call Legs and Dial Peers
- Utilize Digit Manipulation Features on Cisco IOS Gateways
- Control Calling Privileges
- Work with MGCP Gateways
- Review the Fundamentals of H.323
- Explore Signaling and Media Protocols
- Describing Call Signaling for Call Setup and Teardown
- Introduce Yourself to Cisco Unified Border Element
- Explore Advanced Cisco Unified Border Element Dial-Peer Features
- Break Down SIP Signaling Protocol
- Assess Cisco Unified Border Element capabilities
- Review Signaling and Media Bindings, Toll Fraud Prevention
- Support Multiple Trunks Using Tenants
- Bridge Cloud Calling with Hybrid Local Gateway
- Monitor and Record Calls Effectively

Prerequisites:

- CCNA level skills or similar networking experience.

Content:

Module 1: Introduction to VGW

- L1: Understanding Cisco Unified Communications Networks and the Role of Gateways.
- L2: Gateway Call Routing and Call Legs
- L3: Configuring Gateway Voice Ports
- L4: Understanding DSP Functionality, Codecs, and Codec Complexity

Module 2: VoIP Call Legs

- L1: Examining VoIP Call Leg Characteristics and VoIP Media Transmission
- L2: Describing Requirements for VoIP Call Legs ; Configuring VoIP Call Legs

Module 3: Dial Plan Implementation

- L1: Describing Digit Manipulation
- L2: Configuring Path Selection
- L3: Configuring Calling Privileges

Module 4: VoIP Signaling Protocols

- L1: MGCP
- L2: H323
- L3: SIP (SIP Overview, SIP Messages, SIP Servers, SDP and Media negotiation, SIP Call Setup Types)

Module 5: Cisco Unified Border Element

- L1: Examining Cisco Unified Border Element
- L2: Explore Advanced Cisco Unified Border Element Dial-Peer Features
- L3: Using SIP Normalization with Cisco Unified Border Element
- L4: Cisco Unified Border Element Signaling and Media Bindings, Toll Fraud Prevention
- L5: Multiple Trunks Using Tenants

Module 6: Cisco Unified Border Element applications

- L1: Cloud Calling Hybrid Local Gateway
- L2: Cisco Unified Border Element Call Recording and Monitoring

LABS

- Use Certificates
- Configure IP Network Protocols
- Create a Basic Dial Plan
- Explore Partitions and Call Search Spaces
- Configure VoIP Dial Peers
- Configure and Troubleshoot Collaboration Endpoints
- Troubleshoot Calling Issues
- Configure Regions and Locations
- Configuring VoIP Call Legs
- Configure and Troubleshoot ISDN PRI
- Examine Cisco IOS Gateway Inbound and Outbound Dial-Peer Functions
- Implement and Troubleshoot Digit Manipulation on a Cisco IOS Gateway
- Implement PSTN Calling Using MGCP Gateways
- Analyze SIP, H.323, and Media Protocols
- Troubleshoot SIP and Media Protocols
- Implement Cisco Unified Border Element
- Implementing Cisco Unified Border Element
- Troubleshoot Cisco Unified Border Element
- Implement Call Recording and Monitoring Using a SPANBased Solution

Additional Information:

This course can be purchased with Cisco Learning Credits (CLCs).

Further Information:

For More information, or to book your course, please call us on Head Office 01189 123456 / Northern Office 0113 242 5931

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