



Implementing Cisco Unified Communications Voice over IP and QoS Version 8.0 (642-437)

Exam Description: The Implementing Cisco Unified Communications Voice over IP and QoS (CVOICE) version 8.0 (642-437) exam is a 90-minute test with 60–70 questions that are associated with the Cisco CCNP® Voice certification. This exam tests a candidate's knowledge of how to implement and operate gateways, gatekeepers, Cisco Unified Border Element, Cisco Unified Communications Manager Express, and QoS in voice network architecture. Candidates can prepare for this exam by taking the Implementing Cisco Unified Communications Voice over IP and QoS (CVOICE) version 8.0 course. The exam is closed book and no outside reference materials are allowed.

The following topics are general guidelines for the content likely to be included on the exam. However, other related topics may also appear on any specific delivery of the exam. In order to better reflect the contents of the exam and for clarity purposes, the guidelines below may change at any time without notice.

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| 13% | 1.0 | Describe a Dial Plan |
| | 1.1 | Describe a numbering plan |
| | 1.2 | Describe digit manipulation |
| | 1.3 | Describe path selection |
| | 1.4 | Describe calling privileges |
| 16% | 2.0 | Describe the Basic Operation and Components Involved in a VoIP Call |
| | 2.1 | Describe VoIP call flows |
| | 2.2 | Describe RTP, RTCP, cRTP, and sRTP |
| | 2.3 | Describe H.323 |
| | 2.4 | Describe MGCP |
| | 2.5 | Describe skinny call control protocol |
| | 2.6 | Describe SIP |
| | 2.7 | Identify the appropriate gateway signaling protocol for a given scenario |
| | 2.8 | Choose the appropriate codec for a given scenario |
| | 2.9 | Describe and configure VLANs |
| 11% | 3.0 | Implement Cisco Unified Communications Manager Express to Support Endpoints using CLI |
| | 3.1 | Describe the appropriate software components needed to support endpoints |
| | 3.2 | Configure DHCP, NTP and TFTP |
| | 3.3 | Describe the differences between the different types of ephones and ephone-dns |
| | 3.4 | Configure Cisco unified communications manager express endpoints |
| 9% | 4.0 | Describe the Components of a Gateway |
| | 4.1 | Describe the function of gateways |
| | 4.2 | Describe DSP functionality |

- 4.3 Describe the different types of voice ports and their usage
- 4.4 Describe dial peers and the gateway call routing process
- 4.5 Describe codecs and codec complexity

- 13% 5.0 Implement a gGateway**
 - 5.1 Configure analog voice ports
 - 5.2 Configure digital voice ports
 - 5.3 Configure dial peers
 - 5.4 Configure digit manipulation
 - 5.5 Configure calling privileges
 - 5.6 Verify dial-plan implementation
 - 5.7 Implement fax support on a gateway

- 9% 6.0 Implement Cisco Unified Border Element**
 - 6.1 Describe the Cisco unified border element features and functionality
 - 6.2 Configure Cisco unified border element to provide address hiding
 - 6.3 Configure Cisco unified border element to provide protocol and media interworking
 - 6.4 Configure Cisco unified border element to provide call admission control
 - 6.5 Verify Cisco unified border element configuration and operation

- 11% 7.0 Describe the Need to Implement QoS for Voice and Video**
 - 7.1 Describe causes of voice and video quality issues
 - 7.2 Describe how to resolve voice and video quality issues
 - 7.3 Describe QoS requirements for voice and video traffic

- 18% 8.0 Describe and Configure the DiffServ QoS Model**
 - 8.1 Describe the DiffServ QoS model
 - 8.2 Describe marking based on CoS, DSCP, and IP Precedence
 - 8.3 Configure layer 2 to layer 3 QoS mapping
 - 8.4 Describe trust boundaries
 - 8.5 Configure trust boundary on Cisco switches
 - 8.6 Describe the operations of the QoS classifications and marking mechanisms
 - 8.7 Describe low latency queuing
 - 8.8 Describe the operations of the QoS WAN Link Efficiency mechanisms
 - 8.9 Enable QoS mechanisms on switches using auto QoS
 - 8.10 Configure ilow Latency queuing