CCIEC: Cisco CCIE Collaboration Advanced Workshop

1. Quality of Service

- Describe QoS requirements based on codecs, protocols, and other relevant parameters
- Describe CBWFQ and PQ for voice and video, and how to use them
- Explain link efficiency technologies and when and how to use them
- Describe Cisco AutoQoS and how to adapt it for voice and video requirements
- Describe how QoS hardware-related design is implemented on Cisco Catalyst 3750 Series Switches
- Describe how Cisco Catalyst switches process ingress traffic when applying classification and marking
- Describe how policing is done in a Cisco Catalyst switch and how to avoid congestion
- Describe egress queuing and scheduling options in a Cisco Catalyst 3750 Series Switch, including shaping, sharing, and SRR

2. Voice Applications

- Describe the integration of Cisco Unity Connection with call processing, user directory, and mail systems
- Identify and resolve most common Cisco Unity Connection integration errors
- Describe the call flow in Cisco Unity Connection and how to control the flow of incoming calls
- Describe how to network two standalone Cisco Unity Connection servers or clusters
- List the most common voice messaging issues and explain how to troubleshoot them
- Describe the integration of applications and the call and message flows with Cisco Unified IM and Presence
- Describe the Cisco Jabber client modes, dependencies, and user profiles
- Describe the Cisco Unified IM and Presence system troubleshooting tools and how to use them to fix common integration issues
- Describe the federation between two Cisco Unified IM and Presence clusters
- Describe the client troubleshooting capabilities and the Cisco Unified IM and Presence traces
- Describe Cisco Unified CCX integration with the call processing system and call flows
- Describe the options that are available for routing calls based on groups or skills
- Describe how to adapt default scripts to customer requirements
- Describe the troubleshooting tool in Cisco Unified CCX and show how to resolve a script issue

3. Globalized Call Routing

- Provide an overview of globalized call routing and describe its components
- Describe how globalized call routing works and the issues that must be considered when implementing, verifying, and troubleshooting globalized call routing

4. Service Advertisement Framework and Call Control Discovery

- Formulate an overview of SAF and CCD
- Describe the main characteristics of SAF and CCD
- Describe how CCD works
- Describe how to implement SAF and CCD
- Describe the considerations that are necessary when implementing CCD and how to verify and troubleshoot SAF and CCD

5. Enhanced Location CAC

- Provide an overview of Enhanced Location CAC
- Describe how intracluster Enhanced Location CAC works and how it is implemented
- Describe how intercluster Enhanced Location CAC works and how it is implemented
- Describe what needs to be considered when implementing Enhanced Location CAC and list
- Enhanced Location CAC-related monitoring and troubleshooting tools

6. Media Resources and Codec Preferences

- Describe conference bridges
- Describe the MTPs
- Describe transcoders
- Describe MOH and multicast MOH
- Describe the RSVP agents
- Describe codec preferences

7. SIP URI Dialing and Advanced SIP Deployments

- Prepare an overview of URI dialing and describe its components
- Describe URI dialing operation, considerations, monitoring, and troubleshooting
- Describe what must be considered in multivendor SIP deployments

8. Intercluster Lookup Service

- Describe the purpose of ILS and the services it provides
- Describe the components of ILS networking and their functions
- Describe how URI syncing works and how it interacts with URI routing

- Describe what needs to be considered when implementing ILS
- Configure URI routing and synchronization in an ILS network
- Describe ILS-related Cisco Unified Communications Manager alarms and CLI commands

9. Call-Routing Priorities

- Describe the two Cisco Unified Communications Manager call-routing tables
- Describe the Cisco Unified Communications Manager call-routing process and its priorities

10. Cisco EMCC

- Describe Cisco EMCC and explain how EMCC mitigates the challenges that are associated with cross cluster Cisco Extension Mobility logins
- Describe the Cisco EMCC login process, including Cisco EMCC components and their functions
- Describe the Cisco EMCC RSVP agent and PSTN access Describe how Cisco EMCC is implemented, verified, and what needs to be considered when implementing Cisco EMCC

Labs:

1. QoS in a Collaboration Environment
- Verify the QoS settings and DiffServ parameters in the Cisco Unified Communications Manager and on the gateways
- Configure LLQ
- Configure QoS on Cisco Catalyst 3750 Series Switch

2. Implement and Troubleshoot Voice Messaging
- Integrate Cisco Unity Connection with Unified CM
- Test call routing behavior
- Integrate Cisco Unity Connection in different locations via intersite links
- Trace MWI issues

3. Implement and Troubleshoot IM and Presence
- Integrate Cisco Unified Communications IM and Presence with Unified CM
- Configure presence for both users and register Cisco Jabber
- Trace Cisco Unified Communications IM and Presence communication flows

4. Implement and Troubleshoot Customer Care

- Integrate Cisco Unified CCX
- Debug an ICD script
- Implement skill-based routing

5. **Verify Globalized Call Routing**
- Analyze globalized call-routing calls and examine the call flow and digit manipulation

6. **Implement Call Control Discovery**
- Configure a SAF forwarder on the HQ and BR1 routers
- Configure a SAF client on the HQ and BR1 Cisco Unified Communications Manager clusters

7. **Implement Enhanced Location CAC**
- Implement intracluster Enhanced Location CAC
- Implement intercluster Enhanced Location CAC

8. **Troubleshoot Media Resources**
- Troubleshoot media resources

9. **Implement SIP URI Dialing and SIP Connectivity to Third-Party SIP Call Control Domains**
- Implement URI dialing
- Connect to third-party SIP call control domains

10. **Implement Intercluster Lookup Service**
- Implement ILS

11. **Verify Call Routing**
- Verify the call-routing process

12. **Implement Cisco EMCC**
- Implement Cisco Extension Mobility
- Implement Cisco EMCC