Implementing Cisco Enterprise Wireless Networks 2.0

Course Content

The Implementing Cisco Enterprise Wireless Networks (ENWLSI) training helps you implement network settings to provide a secure wireless network infrastructure and troubleshoot any related issues. This training will prepare you to use Cisco Identity Service Engine (ISE), Cisco Prime Infrastructure (PI), Cisco DNA Center, Cisco Spaces, and Cisco Connected Mobile Experiences (CMX) to monitor and troubleshoot network issues. The associated labs will reinforce concepts including deploying Cisco Catalyst 9800 Wireless Controller Release IOS XE Bengaluru 17.6.3, Cisco Digital Network Architecture (DNA) Center Release 2.3.3, Cisco PI Release 3.5, Cisco Spaces, Cisco CMX Release 10.5, features, and Cisco ISE Release 3.0.

This training prepares you for the Implementing Cisco Wireless Advanced Solutions (300-120 WLSI) v1.2 exam. If passed, you earn the Cisco Certified Specialist - Wireless Advanced Solutions certification and satisfy the concentration exam requirement for the Cisco Certified Network Professional (CCNP) Wireless certification. This training also earns you 40 Continuing Education (CE) credits toward recertification.

Course Objectives

- Explain how to secure, monitor, troubleshoot, and implement features of the wireless network infrastructure
- Explain device administration
- Describe security best practices and configuration for administrative access to Cisco Wireless LAN Controller (WLC) and TACACS+
- Explain role-based access control and enhanced client information in Cisco ISE and Cisco CMX
- Explain how to configure access points (APs), WLAN, and wireless clients for the 802.1X authentication process
- Describe AP joint issue troubleshooting
- Describe the tools for control and provisioning of wireless access point (CAPWAP) AP discovery and Datagram Transport Layer Security (DTLS)
- Capture a successful AP authentication
- Describe how to monitor and manage the network for, add devices to, monitor radio frequency (RF) interferers of rogue devices and RF on Cisco WLC, Cisco Prime Infrastructure, and Cisco DNA Center
- Describe how to implement, add devices to, and use the reporting functions and network monitoring of Cisco PI and Cisco DNA Center
- Describe how to add APs to maps and monitor wireless clients
- Explain how to troubleshoot AP and WLC issues with Cisco DNA Center Assurance
- Explain enhanced network insights with Cisco AI Network Analytics
- Explain how to implement and configure authentication, authorization, and accounting (AAA)-based wireless security and AAA override on Cisco WLC and Cisco ISE
- Configure, understand, and perform FlexConnect authentication, identity-based networking, split tunneling, and AAA services on Cisco WLC
- Explain how to upgrade FlexConnect APs
- Describe how to configure OfficeExtend
- Explain how to implement central web authentication
- Describe how to configure Cisco WLC and Cisco ISE for centralized web authentication

- Show Cisco WLC configuration for Guest Services
- Explain the basics, onboarding process, and configuration of Bring Your Own Device (BYOD)
- Describe how to monitor and troubleshoot client connectivity on Cisco WLC and authentication issues
- Show how to capture successful client authentication by using Radioactive Trace and Cisco ISE
- Describe the issues that affect client performance
- Explain wireless coverage and capacity, how to enhance client performance, and troubleshoot client throughput and data rate issues
- Describe the marking, traffic classifications, configuration, and troubleshooting of QoS in wireless networks
- Explain congestions in the wireless world
- Describe IEEE 802.11 QoS fundamentals and how to configure Cisco WLC to support voice traffic
- Describe how to optimize wireless utilization with Cisco Aire Time Fairness, QoS profiles, and Cisco Fastlane
- Implement and configure multicast services, forwarding, and Cisco Application Visibility and Control (AVC) in wireless networks and on Cisco WLC
- Implement multicast services
- Explain how to configure mDNS and Cisco Media Stream
- Describe Cisco DNA Center Service for Bonjour and Cisco Media Stream
- Describe how to use AVC to identify issues
- Describe how to verify and troubleshoot mDNS and media stream on Cisco WLC
- Explain how to deploy Cisco Spaces and Cisco CMX
- Describe how to implement location-based services and the provided functionalities
- Describe how to design for location services, deploy Cisco Spaces and Cisco CMX, and integrate Cisco Spaces and Cisco XMC with Cisco DNA Center, and Cisco CMS with Cisco PI
- Describe how to deploy and configure Cisco Hyperlocation
- Describe how to implement detect and locate services in Cisco Spaces
- Describe how to prepare maps for location services in Cisco DNA Center, implement, detect, and locate services on Cisco CMX, analytics services in Cisco Spaces, and on Cisco CMX
- Describe how to implement presence services on Cisco CMX
- Describe how to implement and configure guest services, monitor, detect, and run analytics on wireless clients, rouge devices, and interferers in Cisco Spaces and with Facebook on Cisco CMX
- Describe how to troubleshoot location accuracy

Prerequisites

There are no prerequisites for this training. However, the knowledge and skills you are recommended to have before attending this training are:

- General knowledge of networks
- General knowledge of wireless networks
- General knowledge of monitoring and troubleshooting

These skills can be found in the following Cisco Learning Offerings:

- Implementing and Administering Cisco Solutions (CCNA)
- Implementing and Operating Cisco Enterprise Network Core Technologies (ENCOR)
- Understanding Cisco Wireless Foundations (WLFNDU)

Course Outline

- Secure the Wireless Network Infrastructure
- Monitor and Troubleshoot Wireless Network
- Monitor Wireless Networks with Cisco Prime Infrastructure
- Monitor Wireless Network with Cisco DNA Center
- Implementing 802.1X Authentication
- Configure Cisco FlexConnect
- Implement Guest Access

- Monitor and Troubleshoot Client Connectivity
- Implement QoS in Wireless Network
- Implement Cisco AVC in Wireless Networks
- Implement Multicast Services
- Troubleshoot QoS
- Deploy Cisco Spaces and Cisco CMX
- Implement Location Services
- Monitor Wireless Network with Cisco Spaces and Cisco CMX

Lab Outline

- Lab Familiarization (Base Learning Lab)
- Configure Secure Management Access for WLCs and APs
- Capture a Successful AP Authentication
- Network Monitoring with Cisco Prime Infrastructure
- Add Network Devices to Cisco DNA Center
- Integrate Cisco DNA Center with External Resources
- Use Cisco DNA Center for Network Monitoring
- Use Cisco DNA Center Reports
- Configure Cisco WLC for AAA Services
- Configure Cisco ISE for AAA Services
- Configure AAA Services for Cisco FlexConnect
- Configure Cisco WLC for Guest Services
- Configure Cisco ISE for Guest Services
- Configure BYOD in the Wireless Network
- Capture Successful Client Authentication Using Radioactive Trace
- Capture Successful Client Authentication Using Cisco ISE
- Configure QoS in the Wireless Network for Voice and Video Services
- Configure Cisco AVC in the Wireless Network

Who Should Attend?

- Wireless Network Engineers
- Security Network Engineers
- Sales Engineers
- Wireless Network Technicians
- Test Engineers
- Network Designers
- Network Administrators
- Network Managers
- Mid-level Wireless Support Engineers
- Project Managers

Associated Certifications

- CCNP® Wireless Certification
- Cisco Certified Specialist - Wireless Advanced Solutions certification

Course duration

5 Days