Understanding Cisco Wireless Foundations

Duration: 5 Days **Course Code: WLFNDU** **Version: 2.0** **Delivery Method: Company Event**

Overview:

The Understanding Cisco Wireless Foundations (WLFNDU) course provides the knowledge and skills needed to configure, manage, and troubleshoot a Cisco wireless LAN (WLAN) network. Topics include understanding critical aspects of RF technology, industry standards for Wi-Fi and security, how to design, install, and configure a WLAN network of any size, as well as using Cisco DNA Center.

Completing this course will enable you to implement a WLAN network for your organization and give you the foundational knowledge necessary to prepare for the Designing Cisco Enterprise Wireless Networks (ENWLSD) and Implementing Cisco Enterprise Wireless Networks (ENWLSI) courses.

This course is worth 30 Continuing Education (CE) credits towards recertification

Company Events

These events can be delivered exclusively for your company at our locations or yours, specifically for your delegates and your needs. The Company Events can be tailored or standard course deliveries.

Target Audience:

Anyone involved in the configuration and management of a Cisco Wireless LAN network.

Objectives:

- **After completing this course you should be able to:**
- Describe and implement foundational wireless theory
- Describe and implement foundational wireless math and antennas
- Describe and implement foundational wireless operation including Wi-Fi 6
- Describe security and client access in a wireless network
- Implement 802.1X and Extensible Authentication Protocol (EAP)
- Implement wireless guest access and configure wireless security
- Describe Cisco wireless architecture components and deployment options
- Describe Cisco wireless architecture and its deployment modes, the Control and Provisioning of Wireless Access Points (CAPWAP) protocol, and the Cisco WLC and AP line up
- Describe the wired support for implementing wireless networks
- Deploy Cisco centralized wireless networks using Cisco 9800 WLC
- Describe the centralized wireless access model and its configuration
- Describe maintenance and troubleshooting in the centralized WLAN model
- Describe the management and monitoring of Cisco Wireless Networks with Cisco DNA Center

Prerequisites:

Attendees should meet the following prerequisites:

- General knowledge of networks
- General knowledge of wireless networks
- Routing and switching knowledge
- CCNA - Implementing and Administering Cisco Solutions

Testing and Certification

Recommended as preparation for the following exams:

- There is no exam currently aligned to this course.

Follow-on-Courses:

- ENWLSD - Designing Cisco Enterprise Wireless Networks
- ENWLSI - Implementing Cisco Enterprise Wireless Networks

Content:

RF and WLAN Theory

- Indoor Non-Wi-Fi Wireless Technologies
- Outdoor Non-Wi-Fi Wireless Technologie
- Indoor Wi-Fi Wireless Technologies
- Outdoor Wi-Fi Wireless Technologies
- RF Characteristics
- Signal Degradation
- Outdoor Signal Considerations

WLAN Math and Antennas

- RF Mathematics
- Activity 1: Practice RF Math
- Antenna Characteristics
- 4 Port DART Antenna Connector
- 8-Port DART Antenna Connector
- Legacy Antenna Support
- Antenna Accessories
- Activity 2: Antenna Calculations

Wi-Fi Operations

- Spread Spectrum Technology Basics
- Exploring Wi-Fi 6E
- Wireless Media Access
- Wireless Governance
- Wi-Fi Spectrum Performance Enhancements
- Wi-Fi Spectrum Compatibility Features
- IEEE 802.11ax: Wi-Fi 6

Basic WLAN Security

- Wireless Security Components
- Assessing Wi-Fi Vulnerabilities using Common Tools
- IEEE 802.11 Security
- Advanced Wireless Intrusion Prevention System

Advanced WLAN Security

- IEEE 802.1X and EAP Frameworks
- EAP Authentication
- Wi-Fi Alliance WPA, WPA2, and WPA3 Security

Configuring WLAN Security

- Configure Native Operating Systems for WLAN Connectivity
- Configure Smart Handheld Clients

Cisco Wireless Network Architecture

- Cisco Wireless Architecture
- Cisco Wireless Network Deployment Options
- Cisco Wireless Guest Access
- Cisco Wireless Management
- Cisco Policy Control—Cisco ISE
- Cisco Location Services—Cisco Spaces

Implementing Cisco Wireless Network

- Cisco Enterprise Wireless Network
- Cisco Centralized Wireless Architecture
- Cisco FlexConnect
- Cisco Wireless Controllers
- Cisco Access Points

Implementing Cisco Wireless Network Wired Support

- Layer 2 Infrastructure Support
- Configuring the Switch for Wireless
- Power Requirements
- Bandwidth Requirements
- Cisco Catalyst Switches
- Wired Infrastructure Protocols That Support Wireless

Deploying Cisco Centralized Wireless Networks

- Initialize Centralized Cisco WLC
- Getting Familiar with Cisco WLC GUI
- Cisco WLC Ports, Interfaces, and Mapping
- Access Point Discovery Process
- Access Point Join Process
- Cisco WLC Redundancy and High Availability
- Cisco Access Point Failover
- Cisco Access Point Modes of Operation

Configuring Cisco Centralized Wireless Networks

- IPv6 in a Cisco Wireless Environment
- Roaming in a Centralized Architecture
- Layer 2 Roaming
- Layer 3 Roaming
- Mobility Details
- Mobility Groups and Mobility Domains
- Inter-Release Controller Mobility
- Optimizing RF Conditions
- Optimizing Client Performance
- Introducing Cisco CleanAir

Maintaining and Troubleshooting Cisco Wireless Networks

- Managing Licenses on Cisco WLC
- Updating Image on Cisco WLC
- Backup and Restore Process
- Troubleshooting Basics
- WLAN Troubleshooting Techniques
- Common Wireless Issues
- Cisco WLAN Troubleshooting Tools
- Third Party Troubleshooting Tools

Managing and Monitoring Cisco Wireless Networks with Cisco DNA Center

- Introducing Cisco DNA Center
- Cisco DNA Center Workflows
- Cisco DNA Center Automation Overview
- Cisco DNA Center Assurance Overview
- Cisco DNA Center Assurance for Troubleshooting Wireless Networks

Labs

- Discovery 1: Explore the Wi-Fi Environment
- Discovery 2: Analyze Wireless Frames
- Discovery 3: Configure Client Access
- Discovery 4: Deploy Cisco 9800 WLC
- Discovery 5: Configure Cisco 9800 WLC
- Discovery 6: Perform Cisco 9800 WLC Maintenance

Further Information:

For More information, or to book your course, please call us on +1 (800) 268 7737

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