

# CWLAT

## Cisco Wireless LAN Advanced Topics



The course at hand imparts a thorough understanding of the Cisco Unified Wireless Network (previously known as Cisco Structured Wireless Aware Network, in brief SWAN). The contents refer to the high-end WLAN design and the integration of the WLAN components into the cabled LAN infrastructure. Management components, such as the Wireless Control System (WCS) and the Wireless Solution Engine (WLSE), are indispensable aids for the implementation of large-scale WLANs. As a matter of fact, security will also appropriately be dealt with in the course: central security, security in autonomous access points, and the connection to Cisco Secure ACS, Network Access Controller and WLSE Intrusion Detection Systems. Finally, troubleshooting is another point on the agenda. In connection with the CWLF course, the seminar treats the topics relevant for the examinations as Cisco Advanced WLAN Field Specialist (642-631 AWLANFE) and as Cisco Advanced WLAN Design Specialist (642-681 AWLANSE).

### Course Contents

- Cisco SWAN Framework Concepts
- Cisco Unified Wireless Network
- Wireless LAN Solution Engine
- Lightweight Access Point
- Wireless Control System (WCS)
- Implementing the Cisco SWAN Framework
- Advanced WLAN Security
- Layer 3 Roaming
- Wireless Network Management
- Radio Management
- Public Access
- Troubleshooting

In this course, each student will receive the original Cisco Systems course documentation in English language.

### Target Group

This technically-oriented course focuses on the advanced aspects of a Cisco Aironet-based WLAN. Because of that, it is tailor-made for administrators, product specialists from the sales sector, and systems engineers.

### Knowledge Prerequisites

Basic WLAN know-how is mandatory. Optimum preparation is provided in the CWLF - Cisco Wireless LAN Fundamentals course. Students are also expected to have general TCP/IP know-how.



### Reservation and Registration

We will be glad to make a free and non-binding course reservation for you for the duration of two weeks. On [www.expertech-training.com](http://www.expertech-training.com) under *Registration*, you can conveniently make course reservations, registrations, and hotel reservations. Alternatively, call us under +49 6074 4868-0.

For closed groups of participants, we can modify the course contents according to your requirements. Do not hesitate to contact us!



CWLAT

4 days €2,490 exclusive of V.A.T.

### Course date (mm/dd/yy)/Location

02/27-03/01/12	Frankfurt	11/19-11/22/12	Frankfurt
04/10-04/13/12	Frankfurt	02/18-02/21/13	Frankfurt
09/03-09/06/12	Frankfurt		

Up-to-date information: [www.expertech-training.com](http://www.expertech-training.com) CWLA



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## CWLAT – Cisco Wireless LAN Advanced Topics

### Module 1: Cisco Unified Wireless Network Concepts

Describing Cisco Aironet Autonomous Access Points

- Features and Components
- Cisco Integrated Services Routers

Describing the Cisco Unified Wireless Network

- Dynamic RF Management
  - Security and VLANs
  - Link Aggregation
  - Guest Tunnel and Anchor Mobility
  - Dynamic Frequency Selection
  - QoS
  - Multicast
  - WiSM
  - Cisco Wireless LAN Controller Module
  - Cisco Enhanced Security Module
  - Mesh Support
- Describing WLAN Controller and Lightweight Access Point Architecture
- Additional References
- Lightweight Access Point Protocol
  - WLAN Controlling Hunting, Discovery, and Join Process
  - Implementation Basics
  - Advanced Deployment Concepts
  - Controller Placement Strategies

### Module 2: Implementing the WLAN with Cisco WCS

Installing the Cisco WLAN Controller

- Controller Initial Setup Using the Console Port
- Controller Initial Setup Using the Service Port

Installing the Cisco Wireless Control System

- Installing the Cisco WCS
- Cisco WCS Browser Overview
- Administer the Cisco WCS
- Populate the Cisco WCS Database
- Adding Maps to the Cisco WCS
- Viewing Maps
- Editing Maps on the Cisco WCS
- Configure the WLAN

### Module 3: The Cisco Core Feature Set

Introducing the Cisco Core Feature Set Based on Autonomous Access Points

- Configure the CiscoWorks WLSE Network Information
- Switch and Router Setup
- AAA Server Setup
- Connecting to the Device
- Login with Setup
- Enter Setup Prompts
- Enter SSL Certification Configuration Information

- Verify Configuration
  - Configure Fast Secure Roaming for Voice
- Implementing Radio Management for Cisco Autonomous Access Points
- RM Theory of Operation
  - CiscoWorks WLSE RM Operation
  - Self-Healing
  - Ad-Hoc Network Detection
  - Location Manager and Assisted Site Survey
  - Antenna Support
  - WDS Radio Management Verifier

### Module 4: WLAN Management

Managing the WLAN from the WLAN Controller

- Sniffer AP Mode
- Logging Options
- Aggressive Load Balancing
- Statistics

Managing the Cisco Unified Wireless Network Using Cisco WCS

- Monitor Tab
  - Location Tracking
  - Calibration
  - Cisco WCS Upgrade
- Managing the Cisco WLAN Controller
- Managing Devices
  - Duplicate IP Address
  - Device Description
  - Faults
  - Reports
  - Configurations
  - Upgrading CiscoWorks WLSE Software
  - CiscoWorks WLSE Redundancy

### Module 5: Wireless Network Troubleshooting

Troubleshooting the Cisco Advanced Feature Set Wireless Network

- Troubleshooting Methods
  - Troubleshooting the Wireless Client
  - Troubleshooting Link Aggregation (4402/4404)
  - Troubleshooting Mobility Anchors
  - Troubleshooting Dynamic Frequency Selection
  - Troubleshooting the Enhanced Security Mode
- Troubleshooting the CiscoWorks Wireless LAN Solution Engine
- Inventory
  - Faults
  - Configuration and Firmware
  - System Level Diagnostics

### Module 6: Cisco WLAN Security

Describing Cisco WLAN Security Standards

- Reasons for WLAN Security
  - WLAN Security Standards
- Describing WLAN Security Threats and Mitigations
- WLAN Security Vulnerabilities and Threats
  - WLAN Security Best Practices
- Describing Authentication and Encryption
- 802.1X Overview
  - EAP-Cisco Wireless (LEAP)
  - EAP-Fast
  - EAP-TLS
  - EAP-PEAP
  - WPA and 802.1i Encryption
  - WPA2/802.1i
- Securing the WLAN
- RADIUS Server Scalability and Availability
  - CiscoWorks WLSE Wireless IDS
  - Wireless Protection Policies on the WLAN Controller
  - Rogue AP and Ad-Hoc Clients
  - Intrusion Detection Management
  - Client Exclusion Policies



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