



To register for this course, go to www.giga-wave.com, or call 210-375-0085

Cisco Advanced Wireless Bridging Lab v4.0

Keyword: CAWBL

4 Days – List Price \$2795

Course Description

The ultimate hands-on bridging experience. Learn to design, configure, and deploy long distance wireless bridge links using the Cisco 1230, 1242, 1310 and 1400 wireless bridges. In this four-day course, you will focus on the basics of WLAN bridging, topologies supported, regulations (FCC, ETSI, and FAA), calculation tools, path considerations, antenna selection and alignment, mounting considerations, NEMA enclosures, lightning protection, and towers. You will learn to perform path analysis and design bridge links using a compass, GPS, and topographic (TOPO) maps. During the CAWBL class you will install several bridge links and align antennas using the GigaWave state-of-the-art 35-foot bridging tower. With this in mind, dress comfortably.

Laptops are provided to participate in the hands-on labs. If you desire to use your own laptop, please bring a laptop computer with an available 32-bit CardBus slot and an Ethernet port as well as an internal wireless NIC, 802.11a/b/g. The laptop's operating systems must be either MS Windows 2000 (SP4) or XP. The laptop should also have a 9-pin serial port or USB to serial adapter. IN ADDITION, you will need administrator rights to the laptop to install drivers for the wireless client used in class.

You Learn...

After completing this course, the student should be able to:

- State the impact of regulatory bodies on bridge installations
- Configure a bridge for point-to-point, point-to-multipoint and repeater bridge topologies
- Conduct a path analysis using available software tools
- Select antennas for maximum optimization
- Configure Cisco bridge with Spanning Tree Protocol
- Determine mounting requirements for rooftops and towers
- Identify steps to enable security on a wireless bridge link
- State path analysis methodologies
- Design a wireless path with compass, GPS receivers, TOPO maps and TOPO software
- Align antennas with TOPO map and compass
- Install antennas and seal antenna connections properly
- Install bridge equipment, NEMA boxes, lightning protection and proper grounding
- Test links for efficiency

Who Would Benefit

The Cisco Advanced Wireless Bridging Lab course is targeted to technical engineers, network integrators and technical sales personnel, who need to know how to sell, design, install and support wireless bridge links.

Prerequisite

- Cisco Aironet Wireless LAN Fundamentals & Site Survey (AWFSS) or Cisco Wireless LAN Fundamentals (CWLF)

Follow-On Courses

- Cisco Wireless LAN Security (CWLS)
- Cisco Unified Wireless Networking (CUWN)
- Cisco Wireless Mesh Networking (CWMN)
- Cisco Wireless LAN Advanced Topics (CWLAT)
- Cisco Wireless Networking Site Survey (CWNSS)
- Cisco Voice over Wireless LAN (VoWLAN)

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Course Content

Module 1 – Introduction

- Bridging Defined
- Alternatives
- ROI

Module 2 – The Basics

- Role in Radio Network
- Topologies Supported

Module 3 – Regulatory Bodies

- Definitions
- Effective Isotropic Radiated Power (EIRP)
- FCC Rules
- ETSI Rules
- FCC Tower Regulations
- FAA Concerns
- FCC Safety Rules

Module 4 – Path Considerations

- Distance
- Path Loss
- Path Obstructions
- Line of Site
- Fresnel Zone
- Antenna Heights
- Asymmetrical Antenna Heights
- When to Use Different Antennas
- Antenna Selection and Mounting

Lab 1 – Antenna Selection

Module 6 – Installation Considerations

- Cables and Associated Losses
- Connectors and Associated Losses
- Lightning Protection
- Roof Access/Rights
- Mounting Considerations
- Towers
- NEMA Enclosures
- Testing for Interference Carrier Detect
- 1400 Series Bridge Antenna Alignment Features
- 1300 Series Bridge Antenna Alignment Features

Module 7 – Cisco Aironet 1232 and 1240 Series Bridge Configuration

- Factory Default Settings
- Hyper Terminal Settings
- Configure Security Settings
- Configure the Network Interfaces Page
- Verify Association and Run a Link Test

Lab 2 – Cisco Aironet AIR-AP 1230 Series Bridge Configuration

Module 9 – Cisco Aironet 1300 & 1400 Series Bridge Configuration

- Connecting and Powering up the Bridge
- Summary Status of the Bridge
- Security Services
- Encryption Manager
- Network Interfaces
- Services Options
- System Software
- Event Log

Module 10 – Spanning Tree Protocol

- What is Spanning Tree?
- Customizing Spanning Tree Defaults
- Configuring Spanning Tree Protocol

Module 11 - Security

- Levels of Security
- 802.1X Authentication
- EAP-Cisco Wireless (LEAP)
- EAP-FAST
- Wi-Fi and 802.11i Encryption Improvements
- Best Practices for Securing Bridge Links

Lab 3 – Antenna Alignment for the 1310 Bridge

Module 13 – Explanation of a Path Analysis

- Goals of Conducting a Path Analysis
- Path Analysis Methodologies

Module 14 – Topology Map and Compass

- Obtaining a Topographical Maps
- Reading a Topographical Map
- Using a Map and a Compass

Lab 4 – Design Link Using TOPO Map and Compass

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Course Content Continued

Module 16 – Global Positioning Systems and TOPO Software

- What is the Global Positioning System?
- What is a GPS Receiver?
- GPS Receiver General Setup
- Initializing the GPS Receiver
- GPS Receiver Status
- Using GPS Receivers and Compass with TOPO Map
- Downloading GPS Coordinates Into TOPO Map Software
- Navigating the TOPO Map And Measuring Distance
- Plotting Markers And Waypoints
- Outdoor Bridge Range Calculation Utility

Lab 5 - Design Link Using GPS and TOPO Map Software

Lab 6 – Align Antennas with TOPO Map and Compass

Lab 7 – Installation Cisco Aironet 1232 and 1300 Series Bridge Equipment

Lab 8 – Installation and Antenna Alignment of Cisco Aironet 1400 Series Bridge Equipment