مباحث مداپای (شبکه بی سیم)

CWNA-106

به زبان فارسی (۱–۲۳ ساعت)

۱DVD شامل:

• ۱۵ بخش آموزشی با پیش از ۱۴۵ درس به زبان انگلیسی و تشریح فارسی
• ۳۷ لایه ای داده برای توضیح کامل و شفاف مطالب

• تشخیص فناوری های جدید:
  • 802.11n, 802.11ac, MDM, WiMAX

• شامل Utilities

• آزمون بین المللی 106

• Wirless LAN Ebooks, Wireless Tools

• Cisco Wireless Technologies

System Requirements

- Windows XP with SP 2
- 256 MB RAM
- CD-ROM or DVD
- 1024 x 768 High Resolution Video Card & Monitor
CWNA-106 (Certified Wireless Network Administrator)

Chapter-1  Introduction to Wireless LANs

1.1  History of WLANs
1.2  Today’s WLAN Standards
1.3  Applications of WLAN

Chapter-2  Radio Frequency (RF) Fundamentals

2.1  Concepts of RF behavior
2.2  RF Terminology
2.3  VSWR (Voltage Standing Wave Ratio)
2.4  Line of Sight
2.5  Calculating Power

Chapter-3  Spread Spectrum Technology

3.1  Spread Spectrum and its applications
3.2  Spread Spectrum Technology: FHSS
3.3  Spread Spectrum Technology: DSSS
3.4  Comparing FHSS vs. DSSS

Chapter-4  Wireless LAN Infrastructure Devices

4.1  Wireless LAN Infrastructure devices
4.2  Access Point Options
4.3  Configuration & Management
4.4  Wireless Bridge
4.5  Wireless Workgroup Bridge
4.6  Wireless LAN client devices
4.7  Wireless LAN gateway devices
Chapter-5  Antennas and Accessories

5.1 RF Antenna Types
5.2 RF Antenna Concepts
5.3 RF Antenna Installation
5.4 PoE Devices
5.5 WLAN Accessories: Amplifiers
5.6 WLAN Accessories: Attenuators
5.7 WLAN Accessories: Lightening Arrestors
5.8 WLAN Accessories: RF Splitters
5.9 WLAN Accessories: RF Connectors
5.10 WLAN Accessories: RF Cables
5.11 WLAN Accessories: RF Pigtail Adapter Cable
5.12 WLAN Accessories: Frequency Convertors
5.13 WLAN Accessories: Bandwidth Control Units
5.14 WLAN Accessories: Test Kits

Chapter-6  Wireless LAN Organizations and Standards

6.1 FCC, ISM & UNII Bands
6.2 Power Output Rules & WLAN Standards
6.3 WLAN Organizations

Chapter-7  802.11 Network Architecture

7.1 Locating a Wireless LAN
7.2 SSIDs
7.3 Beacons
7.4 WLAN Scanning
7.5 Authentication & Association
7.6 WLAN Authentication Methods
7.7 Emerging Wireless Security Solutions
7.8 Service Sets
7.9 Roaming
7.10 VPN Solutions

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Chapter-8  MAC & Physical Layers

8.1 Wireless LAN Frames vs. Ethernet Frames
8.2 Collision Handling
8.3 Fragmentation
8.4 Dynamic Rate Shifting
8.5 Distributed Coordination Function
8.6 Inter-Frame Spacing
8.7 Slot Time
8.8 Communication Process
8.9 RTS / CTS
8.10 Configuring RTS / CTS
8.11 Modulation

Chapter-9  Troubleshooting Wireless LAN Installations

9.1 Multipath
9.2 Troubleshooting Multipath
9.3 Solutions for Multipath
9.4 Hidden Node
  • Solutions to Hidden Node Problem
9.5 Near / Far
9.6 System throughput
  • Co-location
9.7 Types of Interference / Narrow band Interference
  • All band interference
  • RF Signal Degradation & Interference
  • Adjacent Channel & Co-Channel Interference
9.8 Range Considerations
Chapter-10  WLANSecurity

10.1 WLAN Security
10.2 WEP (Wired Equivalent Privacy)
10.3 Solutions to WEP Weakness
   • WEP Keys
   • Static WEP Keys
   • Centralized Key Server
10.4 AES (Advanced Encryption Standard)
10.5 Filtering
   • By SSID
   • By MAC Address
   • By Protocol
10.6 Attacks on WLANs
   • Passive
   • Active
   • Jamming
   • Man in the Middle
10.7 Emerging Security Solutions
   • WEP Key Management
   • Wireless VPNs
   • TKIP
   • AES Based Solutions
   • Wireless Gateways
   • 802.1x & EAP
10.8 Corporate Security Policy
10.9 Security Recommendations

Chapter-11 Site Survey Fundamentals

11.1 What is a Site Survey?
11.2 Preparing for a Site Survey
11.3 Site Survey Equipment
11.4 Conducting a Site Survey
11.5 Site Survey Reporting
802.11 Key Topics

- WiFi Generations
- 802.11 Standards
- Future U-NII Bands
- Wireless LAN Security
- Wireless Intrusion Prevention System
- Captive Portals
- Wireless LAN Vendors

CWNA-106 Exam

- Questions and Answers
- FlashCards

Appendix-A Today's Standards

- 802.11n Standard
- 802.11ac Standard
- Mobile Device Management
- Wimax Standard

Appendix-B1 (Bonus) - Cisco Wireless Networking

Cisco Wireless Technologies

- Wireless Networking Overview
- 802.11 Standards
- Cisco Unified Wireless Solutions
- Split-MAC, Mesh, LWAPP, AWPP
- Wireless Security
  - Cisco Unified Wireless Security

Integrating Cisco Wireless LANs

- Wireless QoS
- Wireless LAN Security Issues
- Cisco Unified Wireless Networks
• Cisco Wireless Control Systems
• Configuring Switch Ports for Wireless LAN Use

Appendix-B2 (Bonus) - Windows Wireless and Review

• Windows Wireless Networking
  o Wireless Networking
  o Wireless Attacks
  o Lab: Configuring Wireless LANs

• Wireless Networking Review
  o Wireless Architecture
  o Wireless Infrastructure
  o Wireless Standards
  o Infrared & Bluetooth
  o Wireless Security
  o Wireless Configuration

Appendix-C - Wireless Vendors

• Cisco Wireless Products
• DLink Wireless Products
• Mikrotik Wireless Products

CWNA Wireless LAN Labs

• Today’s WLAN Standards
• Concepts of RF behavior
• Comparing FHSS vs. DSSS
• Access Point Options
• Wireless Bridge
• Wireless Workgroup Bridge
• Wireless LAN client devices
• Wireless LAN gateway devices
• RF Antenna Types
• PoE Devices
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• WLAN Organizations
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• Emerging Wireless Security Solutions
• VPN Solutions
• Power Management Features
• Dynamic Rate Shifting
• RTS / CTS
• Modulation
• Multipath
• Hidden Node
• WEP
• Passive Attacks on Wireless LANs
• WEP Key Management
• Site Survey Equipment

Utilities Folder

• Wireless LAN Articles
• CWNA Labs
• CWNA-106 Exam (Questions / Answers)
• Wireless E-Books
• Wireless Tools