CWNA (CERTIFIED WIRELESS NETWORK ADMINISTRATOR) 7.1

Objetivo

â¢ Define and explain the basic concepts of RF behavior; â¢ Understand and apply the basic components of RF mathematics; â¢ Identify RF signal characteristics, the applications of basic RF antenna concepts, and the implementation of solutions that require RF antennas; â¢ Explain the applications of physical RF antenna and antenna system types and identify their basic attributes, purpose, and function; â¢ Describe the proper locations and methods for installing RF antennas; â¢ Identify the use of the following WLAN accessories and explain how to select and install them for optimal performance and regulatory domain compliance; â¢ Identify some of the uses for spread spectrum technologies; â¢ Comprehend the differences between, and explain the different types of spread spectrum technologies; â¢ Identify the underlying concepts of how spread spectrum technology works; â¢ Identify and apply the concepts that make up the functionality of spread spectrum technology; â¢ Identify, explain, and apply the basic frame types and frame exchange sequences covered by the IEEE 802.11-2007 standard; â¢ Identify and apply regulatory domain requirements; â¢ Understand the OSI model layers affected by the 802.11-2007 standard and amendments; â¢ Understand the IEEE standard creation and ratification process and identify IEEE standard naming conventions; â¢ Summarize the processes involved in authentication and association ; â¢ Identify the purpose of the following WLAN infrastructure devices; â¢ Describe how to install, configure, secure, and manage them; â¢ Describe Network Design, Implementation, and Management; â¢ Identify and explain how to solve the following WLAN implementation challenges; â¢ Define, describe, and implement autonomous APs; â¢ Define, describe, and implement WLAN controllers that use centralized and/or distributed forwarding; â¢ Understand WLAN design and deployment considerations for commonly supported WLAN applications and devices; â¢ Describe Network Security Architecture; â¢ Describe Network Site Survey Fundamentals.

PÃºblico Alvo

The primary audience is composed of individuals who are tasked with performing or overseeing network wireless management tasks. The second audience are professionals in preparation for taking CWNA certification exam.

PrÃ©-Requisitos

We recommend but do not require that you have the following knowledge and skills before taking this course: â¢ General knowledge of networks.

Carga HorÃ¡ria

40 horas (5 dias).

ConteÃºdo ProgramÃitico

Course Introduction
Course Outline
Course Goals & Objectives

Introduction to WLAN Standards
Introduction to WLAN industry organizations
Discussion of protocol standards and compliance
Overview of 802.11 standard and amendments
Discussion of additional networking standards
Regulatory domains and their impact

Radio Frequency (RF) Fundamentals
RF propagation
Properties of RF waves
Types of power loss and environmental impact on radio waves
Spread spectrum, modulation, and coding
Channels and bandwidth

Antennas
Antenna fundamentals
Polarization and gain
Types of WLAN antennas
Antenna systems
Antenna implementation and safety
RF cables, connectors, and accessories

RF Math
RF units of measurement
Basic RF math
RF signal measurements
Link budgets

Regulatory Domains
Regulatory domains
Regulatory bodies and frequency bands
Output power rules and examples

WLAN Operation
Basic WLAN hardware
Basic operating modes
WLAN hardware
WLAN connectivity
WLAN architecture
Wireless Network Management Systems (WNMS)

Power over Ethernet (PoE)

PoE device types
Power delivery
Planning for PoE
PoE standards

802.11 Service Sets
Service set types
Authentication and association
Network infrastructure
Roaming within a WLAN
Load-balancing

Basic WLAN Analysis
Protocol analysis
802.11 frame types
Protection mechanisms
Power saving operations
Transmission rates

Coordinating Frame Transmissions
Introducing CSMA/CA
Distributed Coordination Function (DCF)
WLAN QoS

Modern 802.11 PHYs
HT (802.11n) PHY and MAC layer enhancements
MIMO and SISO systems
HT coexistence mechanisms
HT integration and deployment
HT site surveying and analysis
VHT (802.11ac PHY and MAC layer enhancements

Basic Site Surveying
RF site survey defined
Gathering information and resources
Spectrum analysis for site surveys
Site survey types
Survey considerations
Survey deliverables

Basic Security
Importance of WLAN security
Security policy
Legacy WLAN security mechanisms
Modern WLAN security mechanisms
Baseline WLAN security practices

Modern Challenges (BYOD and Guest Access)

Mobile Device Management (MDM)
Bring Your Own Device (BYOD)
Guest access
High density basics

Labs Outline
Exploring 802.11
Viewing activity in a spectrum analyzer
Viewing active networks in a Wi-Fi Finder (inSSIDer)
Viewing RSSI
RSSI values of different adapters at the same location
Configuring an autonomous AP
Configuring a lightweight AP
Configuring CLients
Configuring connection profiles
Configuring security
Verifying Switch PoE
Protocol Analysis
Capturing frames
Analyzing frames
Performance comparisons
802.11n/ac Impact
Spectrum view with an 802.11n/ac AP
Spectrum view with an 802.11a/g AP
Configuring Basic Security
Viewing packets without security
Configuring an AP to use WPA2-Personal
Connecting to the AP with a client
Site Survey Tools
Using tablet- or phone-based site survey software
Using laptop site survey software
Using predictive site survey software