CWNA

Certified Wireless Network Administrator

40 horas | CWNA | CWNP

INTRODUÇÃO

The Enterprise Wireless LAN Administration 7.1 course (which prepares students for the CWNA-106 exam), provides the networking professional a complete foundation of knowledge for entering into or advancing in the wireless networking industry. From basic RF theory to 802.11 frame exchange processes, this course delivers hands-on training that will benefit the novice as well as the experienced network professional.

The CWNA certification is a foundational level wireless LAN certification for the CWNP Program. To earn a CWNA certification, you must take the CWNA exam at a Pearson Vue Testing Center and pass with a 70% or higher. Instructors must pass with a 80% or higher. However you choose to prepare for the CWNA exam, you should start with the exam objectives, which cover the full list of skills tested on the exam.

The CWNA certification is valid for three (3) years. To recertify, pass one of the professional level certifications exams (CWSP,CWDP, CWAP) BEFORE your CWNA expires. By doing so, the CWNA will be renewed for another three (3) years. Or retake the current version of the CWNA exam

OBJETIVO DO CURSO

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

PÚBLICO-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.

PRÉ-REQUISITOS

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

CONTEÚDO PROGRAMÁTICO

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