

Certified Wireless Network Administrator

Varighed: 5 Days Kursus Kode: CWNA

Beskrivelse:

The goal of this CWNA course is to add Wi-Fi expertise to a networking professional's skillset, while covering all CWNA exam topics. The course begins with discussion topics and hands-on lab exercises covering the basic operation of 802.11 Wi-Fi technology. Once a base of Wi-Fi knowledge is established, enterprise relevant topics such as Wi-Fi design, security, and troubleshooting are covered. You will use enterprise-class hardware and software tools during live lab exercises, all accessible remotely for any instructor-led or virtual class. Get a head start right out of the gate with a Certified Wireless Network Administrator (CWNA) certification. It is the base certification for Enterprise Wi-Fi within the CWNP family of certifications and a springboard toward earning your security, design, analysis and network expert certifications. Achieving it enhances your networking career profile, providing evidence that you have sought after Wi-Fi knowledge and skills.

Målgruppe:

IT professionals and network engineers responsible for installing or supporting 802.11 (Wi-Fi) Wireless networks IT professionals wanting to progress within the wireless network industry Network planners, designers and support staff IT Security staff, managers and auditors

Agenda:

- After completing this course, you will be able to:
- Understand and apply the essential concepts of Radio Frequency (RF) technology, including RF planning, RF-related calculations and spread spectrum technologies.
- Perform RF Spectrum Analysis for the 2.4GHz and 5GHz bands.
- Describe the rules governing wireless LANs, to comply with local radio regulations for setup and maintenance of WLANs.
- Describe the fundamental operation of wireless LANs, for effective WLAN problem analysis and troubleshooting.
- Understand IEEE 802.11b, 802.11g, 802.11a, 802.11n, 802.11ac and 802.11ax (Wi-Fi 6) standards and amendments; and their practical relevance in depth.
- Correctly install, configure and support Wi-Fi adapters, access points, wireless bridges and WLAN antennas.
- Understand 802.11 / Wi-Fi WLAN Physical and MAC -layer operation in depth.
- Describe and troubleshoot WLAN problems including RF coverage, multipath, hidden nodes and interference problems.
- Understand the essential tools and processes used in WiFi Site Survey.
- Work with sophisticated WLAN diagnostic tools from Ekahau, AirMagnet, MetaGeek, Savvius, Tamosoft and more.
- Describe the insecurities inherent in IEEE 802.11 WLANs.
- Apply best security practices, including WPA2 and WPA3, to secure Wi-Fi networks for small, medium and large organisations.

Forudsætninger:

- Understanding Networking Fundamentals (GK3150)

Test og certificering

This course prepares for the CWNA (Certified Wireless Network Administrator) exam. Selfstudy will be needed before taking the exam. 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.

While the Certified Wireless Specialist (CWS) and Certified Wireless Technician (CWT) certifications are not a required prerequisite to the CWNA certification, it is highly recommended. It will provide a solid learning foundation before continuing to pursue the CWNA.

Indhold:

Introduction to WLAN Standards

- Introduction to WLAN industry organisations
- 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
- Polarisation 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)

WLAN Design and Site Survey

- How should Wi-Fi networks be Engineered?
- The vital need for Specifications
- Planning a WLAN deployment
- Understanding Wi-Fi network Design
- When is on-site RF survey necessary?
- Gathering information
- Heat Mapping Site Surveys
- Site survey types: Active, Passive, Hybrid
- Spectrum analysis for site surveys
- 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

Additional Information:

Global Knowledge is a CWNP Authorized Learning Center.

The official CWNA courseware will be used during the course.

Flere Informationer:

For yderligere informationer eller booking af kursus, kontakt os på tlf.nr.: 44 88 18 00

training@globalknowledge.dk

www.globalknowledge.com/da-dk/

Global Knowledge, Stamholmen 110, 2650 Hvidovre