



Australian Government

ICTNWK417 Build an enterprise wireless network

Release: 1

ICTNWK417 Build an enterprise wireless network

Modification History

Release	Comments
Release 1	This version first released with ICT Information and Communications Technology Training Package Version 1.0.

Application

This unit describes the skills and knowledge required to build an enterprise, community or mesh wireless network within and outside buildings.

It applies to individuals with excellent task management, interpersonal and information and communications technology (ICT) skills working in senior design roles in the networking area, who are required to develop complex wireless networks for organisations.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Networking

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Confirm client requirements and network equipment required	1.1 Identify and clarify organisational requirements of the client 1.2 Evaluate client requirements along with business needs in order to translate into technical requirements 1.3 Review existing network design documentation to ensure it is authorised, current and complete 1.4 Identify network topology 1.5 Identify the components required to be installed to meet the technical requirements 1.6 Contact vendors and service suppliers to obtain specifications and availability of identified components

ELEMENT	PERFORMANCE CRITERIA
	1.7 Ensure preliminary work is completed within the required timeframe
2. Prepare for installation	2.1 Ensure client and users are aware of date and time of installation 2.2 Gather, prepare and check installation and safety equipment 2.3 Assess on-site safety arrangements for installers and users
3. Select, install and configure access points and other wireless devices	3.1 Select appropriate hardware based on identified components 3.2 Install and configure hardware to provide wireless access to network 3.3 Ensure connections are secured against intrusion or data access by unauthorised persons, are safe for users, and are protected from the environment 3.4 Configure security, monitoring, logging and quality of service features consistent with standards and protocols 3.5 Ensure test equipment is calibrated 3.6 Test wireless network systems performance and verify that it meets enterprise requirements and is consistent with standards and protocols
4. Select, install and configure antennas	4.1 Select appropriate antennas based on design plan 4.2 Safely install and configure antennas to provide wireless access to network 4.3 Measure and assess signal strength within and outside building 4.4 Resolve and report radio frequency interference issues
5. Select, install and configure antennas	5.1 Identify possible security threats to assets 5.2 Configure client server and helper security devices 5.3 Configure associations and filters
6. Train users	6.1 Provide training for users to establish and manage network connections 6.2 Resolve pairing and log-on difficulties for users 6.3 Inform users of wireless network etiquette and traffic capacity issues 6.4 Advise users of help desk contact details
7. Monitor and administer	7.1 Monitor wireless network performance using diagnostic

ELEMENT	PERFORMANCE CRITERIA
wireless network	tools, including appropriate software 7.2 Debug networking issues to maintain trouble-free wireless connection 7.3 Document current settings and store securely, consistent with commercial and business requirements
8. Finalise build process	8.1 Review network for performance issues, planned maintenance or upgrade requirements 8.2 Report to client with network documentation and recommendations for performance issues 8.3 File documentation according to organisational guidelines

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description
Reading	1.2, 1.3, 1.5, 3.4, 3.6, 4.1, 8.3	Gathers, interprets and analyses information from a range of sources and identifies relevant and key information
Writing	4.4, 7.3	Prepares workplace documentation that incorporates an evaluation of information and specialised language in a format and style appropriate to a specific audience
Oral Communication	1.1, 1.2, 1.6, 2.1, 4.4, 6.1, 6.3, 6.4, 8.2	- Uses active listening and observational and questioning techniques to identify information and confirm, clarify or revise understanding - Articulates requirements and strategies clearly and distinctively, using technical language appropriate to audience and environment
Numeracy	3.5, 4.3	Interprets numerical information to calibrate equipment and measure and assess signal strength
Navigate the world of work	8.3	Complies with explicit organisational policies and procedures

Interact with others	6.1, 6.3, 6.4, 8.2	Recognises and applies the protocols governing what to communicate, with whom and how in a range of different contexts
Get the work done	1.4, 1.5, 1.7, 2.2, 2.3, 3.1-3.6, 4.1, 4.2, 4.4, 5.1-5.3, 6.2, 7.1-7.3, 8.1, 8.3	- Uses a combination of formal, logical planning processes to ensure work is completed according to time constraints and an increasingly intuitive understanding of context to identify relevant information and risks - Understands the importance of secure information in relation to own work and takes personal responsibility for identifying and managing risk - Understands the purposes, specific functions and key features of common digital systems and tools, and operates them effectively to complete routine tasks - Initiates standard procedures when solving a broad range of ICT problems - Uses familiar digital systems and tools to access, organise, analyse and store information

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTNWK417 Build an enterprise wireless network	ICANWK417A Build an enterprise wireless network	Updated to meet Standards for Training Packages	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2>

Assessment Requirements for ICTNWK417 Build an enterprise wireless network

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Performance Evidence

Evidence of the ability to:

- confirm client organisational and business requirements
- determine hardware and software requirements
- prepare for safe installation
- select, install and configure required wireless hardware
- train users
- test, monitor, and administer the installation
- finalise installation and prepare required documents documentation.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- Identify and describe current wireless local area network (WLAN) and wireless area network (WAN) solutions, including:
 - audit and intrusion detection systems
 - auditing and penetration testing techniques
 - bandwidth and quality of service
 - factors affecting signal quality
 - layer 2 and layer 3 design issues
 - suitability for small office home office (SOHO) and enterprise local area networks (LANs)
 - transmission control protocols or internet protocols (TCPs/IPs) and applications
 - wireless topologies
- describe the common features of security threats and how to develop a security strategy, including:

- security protocols
- standards
- data encryption
- identify and describe common network protocols and operating systems.

Assessment Conditions

Gather evidence to demonstrate consistent performance in conditions that are safe and replicate the workplace. Noise levels, production flow, interruptions and time variances must be typical of those experienced in the network industry, and include access to:

- technical requirements
- network infrastructure, including wireless hardware and software.

Assessors must satisfy NVR/AQTF assessor requirements.

Links

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