



Australian Government

ICTTEN423 Install and maintain a wide area network

Release: 1

ICTTEN423 Install and maintain a wide area network

Modification History

Release	Comments
Release 1	This version first released with ICT Information and Communications Technology Training Package Version 2.0.

Application

This unit describes the skills and knowledge required to use appropriate tools, equipment, software and protocols to connect and support a wide area network (WAN).

It applies to individuals who work cooperatively with others, interpret technical information accurately and work proficiently with information communication technology (ICT). Installers of internet protocol (IP) networks, IP network technicians, network administrators and network support personnel complete this type of work.

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

Unit Sector

Telecommunications – Telecommunications Networks Engineering

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. Prepare for installation and maintenance of network with WAN access	1.1 Prepare for given work according to work health and safety (WHS) and environmental requirements with appropriate personnel 1.2 Identify safety hazards and implement risk control measures in consultation with appropriate personnel 1.3 Determine network nature and scope from job briefs or appropriate personnel 1.4 Select and obtain network hardware, software, WAN protocol and technology requirements according to enterprise procedures 1.5 Obtain operating instructions, manuals, installation procedures,

ELEMENT	PERFORMANCE CRITERIA
	hardware and software testing methodologies and testing resources 1.6 Consult appropriate personnel to ensure task is coordinated effectively with others involved at the worksite
2. Install and maintain WAN accessible network	2.1 Determine network addressing scheme for network connectivity, and confirm using calculations 2.2 Identify security threats and initiate control measures according to enterprise procedures 2.3 Set up and configure network to provide WAN access according to manufacturer's specifications and enterprise procedures 2.4 Use hardware and software analysis and diagnostic methodologies to test network connectivity
3. Complete and document WAN network installation	3.1 Restore worksite to safe condition according to established safety procedures 3.2 Record and store essential installation information according to enterprise procedures 3.3 Notify appropriate personnel of completion of the task according to enterprise procedures

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	1.1, 1.3, 1.4, 2.2, 2.3, 3.2, 3.3	Recognises and interprets enterprise procedures, manuals and specifications to determine job requirements
Writing	1.2, 3.2, 3.3	- Uses clear, specific and industry-related terminology to develop network documentation and maintain network records - Writes concisely when communicating with relevant personnel
Oral Communication	1.2, 1.3, 1.6, 3.3	- Liaises and negotiates with others to achieve outcomes - Uses listening and questioning skills to confirm understanding for requirements

Numeracy	2.1	Interprets technical data and performs calculations to verify information
Navigate the world of work	1.1, 1.2, 1.4, 2.2, 2.3, 3.1-3.3	- Takes personal responsibility for adherence to legal and regulatory responsibilities relevant to own work, and draws attention to any issues that may affect self or others - Recognises and follows organisational procedures and protocols and meets expectations associated with own role
Interact with others	1.6	Collaborates with others to achieve joint outcomes, playing an active role in facilitating effective group interaction
Get the work done	1.4, 1.5, 2.1-2.4, 3.2, 3.3	- Understands key principles and concepts underpinning design and operation of digital systems and tools, and applies these as required including using industry-standard troubleshooting - Takes responsibility for planning and organising own workload, identifying ways of sequencing and combining elements for greater efficiency - Implements actions according to a predetermined plan, making adjustments if necessary - Makes decisions quickly and intuitively in familiar situations requiring immediate attention, drawing on past experience to identify key variables and determine the best course of action - Recognises and anticipates an increasing range of unexpected problems, their symptoms and causes, on the basis of safety and specified work outcomes

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTTEN423 Install and maintain a wide area network	ICTTEN4214A Install and maintain a wide area 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 ICTTEN423 Install and maintain a wide area network

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Performance Evidence

Evidence of ability to:

- plan installation of a wide area network (WAN) accessible network
- select and apply WAN link protocols
- configure internet protocol (IP) addressing across WAN
- troubleshoot WAN communication issues
- install WAN access security measures.

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:

- outline enterprise work health and safety (WHS) procedures
- explain IP addressing services and network scaling
- summarise methods of securing network services including access control lists
- explain Open Systems Interconnection (OSI) layered communication model
- outline requirements to provide teleworker network services
- describe correct usage of relevant tools and equipment
- outline WAN link protocols including:
 - frame relay
 - high-level data link control (HDLC)
 - link access procedure, balanced (LAPB)
 - point-to-point protocol (PPP)
- summarise WAN troubleshooting methodologies and analysis and diagnostic tools.

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 should be typical of those experienced in the telecommunications networks engineering field of work and include access to:

- a site where installation and maintenance of a WAN may be conducted
- tools, equipment and materials currently used in industry
- relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

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