



Australian Government

ICTNWK506 Configure, verify and troubleshoot WAN links and IP services in a medium enterprise network

Release: 1

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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 use appropriate tools, equipment, software and protocols to install, operate, and troubleshoot medium enterprise switches.

It applies to individuals with excellent communication skills who are working as help desk technicians and network support technicians.

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. Prepare to install medium enterprise WAN links	1.1 Prepare for given work according to legislation, work health and safety (WHS) codes, regulations and standards 1.2 Arrange access to the site according to required procedure 1.3 Review existing network design documentation to ensure it is current and complete 1.4 Select network elements required to be installed to meet technical requirements 1.5 Contact vendors and service suppliers to obtain specifications and availability of identified components 1.6 Develop plans, with prioritised tasks and contingency

ELEMENT	PERFORMANCE CRITERIA
	arrangements, for installation of components with minimum disruption to client 1.7 Liaise with appropriate person to obtain approval for the plans, including security clearance and timing
2. Configure WAN links	2.1 Determine different methods for connecting to a wide area network (WAN) 2.2 Configure and verify a basic serial WAN configuration 2.3 Configure and verify at least two WAN protocols 2.4 Determine virtual private network (VPN) technology 2.5 Configure and verify a site-to-site VPN 2.6 Determine asymmetric digital subscriber line (ADSL) technology 2.7 Configure and verify an ADSL connection
3. Configure and verify IP services on a router	3.1 Determine the operation and benefits of using dynamic host configuration protocol (DHCP) 3.2 Configure and verify DHCP operation on a router 3.3 Implement static and dynamic addressing services for hosts in a local area network (LAN) environment 3.4 Determine the basic operation of network address translation (NAT) 3.5 Configure NAT for given network requirements 3.6 Implement and verify NAT in a medium sized enterprise branch office network 3.7 Describe the basic operation and configuration of internet protocol version 6 (IPv6)
4. Secure a network using router services	4.1 Determine the purpose and types of access control lists (ACLs) 4.2 Configure and apply ACLs based on network filtering requirements 4.3 Configure and apply ACLs to provide secure access to the router
5. Troubleshoot medium enterprise WAN links	5.1 Troubleshoot WAN implementation issues 5.2 Rectify WAN problems 5.3 Document solutions

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	Gathers, interprets and analyses technical information to determine requirements according to client needs
Writing	1.5, 1.6, 2.1, 4.1, 5.3	Prepares workplace documentation which incorporates an evaluation of technical information and specialised and cohesive language in a format and style appropriate for a specific audience
Oral Communication	1.5, 1.7, 2.1, 2.4, 2.6, 3.1, 3.4, 3.7, 4.1	- Uses specific and relevant language to clearly describe and explain a range of technical, operational and business related matters with internal and external personnel - Uses listening and questioning skills to confirm understanding for requirements, participates in a verbal exchange of ideas/solutions and uses appropriate, detailed and clear language to address key personnel and to disseminate information
Numeracy	2.2, 2.3, 2.5, 2.7, 3.2, 3.5, 4.2, 4.3	Analyses numerical information to take measurements, interpret results and evaluate performance and interoperability of network
Navigate the world of work	1.1	Appreciates the implications of legal and regulatory responsibilities related to own work
Get the work done	1.1, 1.2, 1.4, 1.6, 2.2, 2.3, 2.5, 2.7, 3.2, 3.3, 3.5, 3.6, 4.2, 4.3, 5.1, 5.2	- Reflects on the ways in which digital systems and tools are used or could be used to achieve work goals, and begins to recognise strategic and operational applications - Uses digital technologies and systems safely and securely when implementing and monitoring a system, with a growing awareness of the permanence and transparency of all activities - Uses a combination of formal, logical planning processes and an increasingly intuitive understanding of context to plan, prioritise and

		- monitor own work - Makes decisions in relatively complex situations, taking a range of factors into consideration - When dealing with complex issues, may use intuition to identify the general problem area, switching to analytical processes to clarify goals and key issues, and lateral thinking processes to generate possible solutions
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Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTNWK506 Configure, verify and troubleshoot WAN links and IP services in a medium enterprise network	ICANWK506A Configure, verify and troubleshoot WAN links and IP services in a medium enterprise 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 ICTNWK506 Configure, verify and troubleshoot WAN links and IP services in a medium enterprise network

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Performance Evidence

Evidence of the ability to:

- plan and prepare for the wide area network (WAN) link installation task
- install and configure WAN links
- configure and troubleshoot the following internet protocol (IP) services:
 - network address translation (NAT)
 - dynamic host configuration protocol (DHCP)
 - access control lists (ACLs)
 - configure and troubleshoot ADSL links
 - configure and troubleshoot VPNs
- document solutions.

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 the basic operation and configuration of internet protocol version 6 (IPv6)
- identify and describe typical router setup and operations, including:
 - ACLs
 - router calling line identification (CLI) configuration
 - router debug commands
- explain typical problems and solutions with WAN link installations.

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:

- a site where network installation may be conducted
- hardware and software
- organisational guidelines
- computers
- WAN service point of presence.

Assessors must satisfy NVR/AQTF assessor requirements.

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