



Australian Government

ICTTEN417 Install, configure and test a router

Release: 1

ICTTEN417 Install, configure and test a router

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 undertake router installation and configuration, as part of an upgrade in an existing network or the implementation of a new network.

It applies to individuals who carry out installation, maintenance and upgrade of information and communication technologies (ICT) networks.

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 to install router	1.1 Prepare for given work according to relevant legislation, work health and safety (WHS) regulations, codes and standards 1.2 Arrange site access according to required procedure 1.3 Ascertain network topology from technical requirements 1.4 Determine the internet protocol (IP) addressing scheme for the network topology 1.5 Evaluate network management and security requirements, with reference to current and future requirements 1.6 Select a router with appropriate features according to technical requirements

ELEMENT	PERFORMANCE CRITERIA
	1.7 Choose cables, wireless application protocol (WAP), wide area network (WAN) connectors and other peripherals according to network and router specification, and WAN protocols
2. Install and configure router	2.1 Assemble router and peripherals according to manufacturer's requirements, enterprise guidelines and protocols 2.2 Connect communications cables and WAN connectors to the router and network 2.3 Configure router according to manufacturer's instructions and technical requirements, taking into account interoperability requirements with network components
3. Test router and reconfigure network	3.1 Test the router for connectivity across the network and for routing protocol functions 3.2 Adapt or modify predetermined router configuration, depending on outcome of tests 3.3 Review router in line with organisational requirements 3.4 Test router and peripherals according to manufacturer's instructions and technical requirements 3.5 Test hardware and router to ensure full functionality and interoperability 3.6 Reconfigure additional hardware as required 3.7 Make adjustments to network depending on test results
4. Complete documentation and clean worksite	4.1 Tabulate test results and complete all user reports 4.2 Complete report and notify client of network status 4.3 Clean up and restore worksite to client's satisfaction 4.4 Secure sign-off from appropriate person

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, 2.1, 2.3, 3.2, 3.3	Recognises and interprets technical, legislative and operational documentation to determine job

		requirements
Writing	3.4, 4.1, 4.2	Uses clear, specific and industry-related terminology to produce and update workplace documentation in predetermined formats
Oral Communication	4.2	- Clearly liaises with internal and external personnel on technical, operational and business related matters - Uses listening and questioning skills to confirm understanding for requirements
Numeracy	2.3, 3.1, 3.2, 3.4-3.7	Undertakes test measurements, interprets results and evaluates performance and interoperability of network
Navigate the world of work	1.1, 4.3	- Takes personal responsibility for adherence to legal and regulatory responsibilities relevant to own work - Recognises and follows explicit and implicit protocols and meets expectations associated with own role
Interact with others	4.4	Cooperates with others as part of familiar routine activities and contributes to specific activities requiring joint responsibility and accountability
Get the work done	1.2-1.7, 2.1-2.3, 3.1-3.7	- Understands key principles and concepts underpinning design and operation of digital systems and tools, and applies these as required - Takes responsibility for own workload, negotiating some key aspects with others - 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 familiar problems, their symptoms and causes, depending on differing operational contingencies, risk situations and environments

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTTEN417 Install,	ICTTEN4199A Install,	Updated to meet	Equivalent unit

Code and title current version	Code and title previous version	Comments	Equivalence status
configure and test a router	configure and test a router	Standards for Training Packages	

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 ICTTEN417 Install, configure and test a router

Modification History

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

Performance Evidence

Evidence of ability to:

- plan and prepare for router installation task
- select router to meet client's business specifications
- install and test the router ensuring interoperability within the network, and applying router principles and technologies
- report on status of completed installation and seek sign-off and customer satisfaction
- use routers
- apply solutions to defined routing problems.

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 outline codes of practice for computing
- explain the effect of a router on delimiting broadcast traffic and on conserving bandwidth
- explain how dynamic routing algorithms or protocols create and maintain routing tables
- explain how to provide the network with redundant paths for reliability, and the way routers manage these paths
- summarise the following aspects of routers including:
 - basic router commands
 - configuration
 - clock rate
 - password protection of router
 - routing protocol
 - dynamic routing
 - firewalls

- functions
- routing protocols and how they operate
- tables
- describe router-based network architectures
- explain the use of routing tables in intelligent packet routing and switching.

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 router installation may be conducted
- field measurement equipment currently used in industry
- relevant router specifications
- technical requirements for a network
- router
- cabling
- networked (LAN) computers
- wide area network (WAN) service point of presence
- relevant equipment and organisational documentation.

Assessors must satisfy NVR/AQTF assessor requirements.

Links

Companion Volume implementation guides are found in VETNet -

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