



Australian Government

Department of Education, Employment and Workplace Relations

ICTTEN5147A Administer a data communications network

Release: 1

ICTTEN5147A Administer a data communications network

Modification History

Not Applicable

Unit Descriptor

<p>Unit descriptor</p>	<p>This unit describes the performance outcomes, skills and knowledge required to manage and administer a data communications network in a local area network (LAN) or wide area network (WAN).</p> <p>The activity may involve new facilities and applications for an existing network or new infrastructure for convergence to Next Generation Networks (NGN).</p> <p>No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement but users should confirm requirements with the relevant federal, state or territory authority.</p>
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Application of the Unit

<p>Application of the unit</p>	<p>Technical staff who administer a data communications network (LAN or WAN) apply the skills and knowledge in this unit. It may make use of enterprise procedures and flow charts, third party test routines analysing performance and functionality of a live data communications network.</p>
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Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Install and configure a network	1.1. Prepare the physical and logical structure of a LAN design to resolve hardware and software compatibility conflicts 1.2. Prepare file server and install <i>network server software</i> 1.3. Execute workstation boot procedures and verify network and work station functionality 1.4. Document network physical connections and workstation characteristics
2. Set up network facilities	2.1. Configure set-up procedures for a network print server, network printer and a shared file system 2.2. Connect a bridge or router between two networks 2.3. Set up a gateway for a network 2.4. Set up a logical disk or volume structure
3. Administer user accounts	3.1. Create a user account and a user log script 3.2. Produce a document of network users for notification of their access rights and privileges 3.3. Add and delete users to maintain an update user list 3.4. Establish disk quotas for users 3.5. Develop common user security procedures and set up user profiles
4. Install common applications	4.1. Install and configure an <i>application</i> in client-server mode 4.2. Establish security and multiple access to an application 4.3. Set up and configure an email client and a browser for the client
5. Install and configure systems applications	5.1. Configure a <i>backup system</i> for redundancy according to customer policy 5.2. Administer disk fault tolerance and redundancy techniques
6. Maintain system integrity	6.1. Implement system integrity and system monitoring techniques to provide a reliable customer data network 6.2. Use diagnostic software to detect and isolate system faults 6.3. Produce a report to the customer on the network performance and fault occurrence with recommendations for improving the integrity of the

ELEMENT	PERFORMANCE CRITERIA
	data communications network

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- communication skills to liaise with internal and external personnel on technical and operational matters
- literacy skills to interpret technical documentation, such as software and hardware manuals and specifications and relevant enterprise policy and documentation
- numeracy skills to take and analyse measurements
- planning and organisational skills to organise testing and contingency plans
- problem solving skills to solve software, hardware and logistics problems
- safety awareness skills to follow occupational health and safety (OHS) requirements and work practices
- task management skills to work systematically with required attention to detail
- technical skills to:
 - set up data communications network
 - use third party diagnostic programs and equipment and perform fault clearance.

Required knowledge

- features and operating requirements of data communications software and hardware for network systems
- manufacturer's requirements of testing software and equipment
- specific OHS requirements relating to the activity and site conditions
- test methods and performance requirements
- typical issues and challenges that occur when administering a data communications network

Evidence Guide

EVIDENCE GUIDE	
<p>The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.</p>	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>Evidence of the ability to:</p> <ul style="list-style-type: none"> • establish and configure a data communications network • set up and maintain systems, facilities, applications, and software • administer user accounts • diagnose and isolate system faults.
Context of and specific resources for assessment	<p>Assessment must ensure:</p> <ul style="list-style-type: none"> • sites where communications network and systems user accounts can be administered • use of equipment currently used in industry • relevant regulations and company policies that impact on communications network activities.
Method of assessment	<p>A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:</p> <ul style="list-style-type: none"> • review of report prepared by the candidate outlining network performance and fault occurrence with recommendations for improvement • oral or written questioning to assess knowledge of establishment and administration of communications network • direct observation of the candidate performing installation of network (LAN or WAN), applications, and backup, and administering network system testing.
Guidance information for assessment	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example:</p> <ul style="list-style-type: none"> • ICTTEN5200A Install, configure and test a local area network switch • ICTTEN5201A Install, configure and test a server.

EVIDENCE GUIDE

	<p>Aboriginal people and other people from a non-English speaking background may have second language issues.</p> <p>Access must be provided to appropriate learning and assessment support when required.</p> <p>Assessment processes and techniques must be culturally appropriate, and appropriate to the oral communication skill level, and language and literacy capacity of the candidate and the work being performed.</p> <p>In all cases where practical assessment is used it will be combined with targeted questioning to assess required knowledge. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.</p> <p>Where applicable, physical resources should include equipment modified for people with special needs.</p>
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Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Network may include:

- billing network
- computers and communications technology:
 - applications and systems software
 - bridge
 - cabling
 - network printer
 - remote user equipment

RANGE STATEMENT	
	<ul style="list-style-type: none"> • router • servers • switch • workstations • internet protocol (IP) access network • LAN • mesh network • multi protocol label switching (MPLS) network • storage network • WAN.
Software may include:	<ul style="list-style-type: none"> • free downloads • open source • patches • proprietary.
Application may include:	<ul style="list-style-type: none"> • applications in NGN delivering multiple services: <ul style="list-style-type: none"> ◦ broadband access ◦ data transfer ◦ internet protocol TV (IPTV) ◦ mobile data ◦ multimedia • voice over IP (VoIP).
Backup system may be:	<ul style="list-style-type: none"> • local backup • remote backup.

Unit Sector(s)

Unit sector	Telecommunications
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Flow charts

Co-requisite units

Co-requisite units	
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Co-requisite units		

Competency field

Competency field	Telecommunications networks engineering
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