



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **ICTTEN2208A Install and configure a small to medium business network**

**Release: 1**

## ICTTEN2208A Install and configure a small to medium business network

### Modification History

Not Applicable

### Unit Descriptor

<p><b>Unit descriptor</b></p>	<p>This unit describes the performance outcomes, skills and knowledge required to establish and support a small to medium business network capable of providing wide area network (WAN) connectivity and common web internet services.</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><b>Application of the unit</b></p>	<p>The unit applies to small and medium size businesses requiring the use of wired network connectivity. It also applies to networks that employ subnet addressing and provide internet service provider (ISP) services over a secure network.</p> <p>Relevant job roles include subject matter expert (SME) internet protocol (IP) network installer, network technician, SME network support and SME network administrator.</p>
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### Licensing/Regulatory Information

Refer to Unit Descriptor

## Pre-Requisites

<b>Prerequisite units</b>		

## Employability Skills Information

<b>Employability skills</b>	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
<p>1. Prepare for the installation of a small to medium enterprise network</p>	<p>1.1. Prepare for given work confirming site specific occupational health and safety (<b>OHS</b>) and <b>environmental requirements</b> with <b>appropriate personnel</b></p> <p>1.2. Identify safety hazards and implement risk control measures in consultation with appropriate personnel</p> <p>1.3. Determine nature and scope of the business network and <b>network resources</b> from job briefs or appropriate personnel</p> <p>1.4. Select and obtain computer system and <b>network device</b> requirements according to <b>enterprise procedures</b></p> <p>1.5. Obtain operating instructions, manuals, hardware and software testing methodologies</p> <p>1.6. Consult appropriate personnel to ensure the task is coordinated effectively with others involved at the work site</p>
<p>2. Install and configure a small to medium enterprise network</p>	<p>2.1. Set up <b>wired infrastructure</b> according to manufacturer's specifications and enterprise procedures</p> <p>2.2. Set up and configure resource sharing on a network server</p> <p>2.3. Install WAN connection and ISP services and configure according to enterprise procedures</p> <p>2.4. Troubleshoot network and internet connectivity according to manufacturer's specifications and enterprise procedures</p> <p>2.5. Implement data backup and disaster recovery measures according to enterprise procedures</p>
<p>3. Complete and document network installation</p>	<p>3.1. Restore worksite to safe condition according to established safety procedures</p> <p>3.2. Record and store <b>essential installation information</b> according to enterprise procedures</p> <p>3.3. Notify appropriate personnel about the completion of the task according to enterprise procedures</p> <p>3.4. Notify customer and obtain sign off</p>

## 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 customers and peers to achieve outcomes
- literacy skills to:
  - develop network documentation and maintain network records
  - read and interpret enterprise procedures, manuals and specifications
- numeracy skills to interpret technical data
- planning and organisational skills to plan and prioritise own work
- problem solving skills to:
  - deal with unexpected situations on the basis of safety and specified work outcomes
  - troubleshoot common network problems according to help desk procedures
- safety awareness skills to:
  - apply precautions and required action to minimise, control or eliminate hazards that may exist during work activities
  - follow enterprise OHS procedures
  - work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- technical skills to:
  - determine business needs of a small ISP
  - identify customer requirements and provide help desk support
  - implement WAN services to the internet
  - install, configure and troubleshoot networking devices
  - instigate data backup and disaster recovery procedures
  - modify and translate network and port addresses to establish connectivity
  - plan wired network infrastructure
  - use router testing methodologies to verify a given configuration

#### Required knowledge

- correct usage of tools and equipment
- data backup services and procedures
- enterprise OHS procedures
- ISP services
- network device configuration
- network models and topologies
- subnet addressing
- troubleshooting procedures

<b>REQUIRED SKILLS AND KNOWLEDGE</b>
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|---|
| <ul style="list-style-type: none"><li>• WAN services and ISP responsibilities</li></ul> |
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## Evidence Guide

<b>EVIDENCE GUIDE</b>	
<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>	
<b>Overview of assessment</b>	
<b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b>	<p>Evidence of the ability to:</p> <ul style="list-style-type: none"> <li>• implement OHS workplace procedures and practices</li> <li>• plan the installation of a network that uses subnet addressing and provides ISP services</li> <li>• set up and configure wired infrastructure</li> <li>• troubleshoot local network and WAN connectivity and services</li> <li>• configure resource sharing on a network server</li> <li>• provide network data backup and disaster recovery.</li> </ul>
<b>Context of, and specific resources for assessment</b>	<p>Assessment must ensure:</p> <ul style="list-style-type: none"> <li>• a site where installation of a small to medium business network may be conducted</li> <li>• use of tools, equipment and materials currently used in industry</li> <li>• relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.</li> </ul>
<b>Methods of assessment</b>	<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"> <li>• direct observation of the candidate installing and configuring a small to medium business network</li> <li>• direct observation of the candidate providing network data backup and disaster recovery</li> <li>• oral or written questioning to assess required knowledge.</li> </ul>
<b>Guidance information for assessment</b>	<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"> <li>• ICTTEN2207A Install and configure a home or small office network.</li> </ul>

**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.

***OHS*** may include:

- awards provisions
- hazardous substances and dangerous goods code
- legislation
- local safe operation procedures
- material safety management systems
- protective equipment.



<b>RANGE STATEMENT</b>	
<b><i>Environmental requirements</i></b> may include:	<ul style="list-style-type: none"> <li>• dust</li> <li>• excessive energy and water use</li> <li>• excessive noise</li> <li>• fume</li> <li>• gas</li> <li>• liquid waste</li> <li>• smoke emissions</li> <li>• solid waste</li> <li>• vapour.</li> </ul>
<b><i>Appropriate personnel</i></b> may include:	<ul style="list-style-type: none"> <li>• client</li> <li>• customer</li> <li>• manager</li> <li>• network manager</li> <li>• site engineer</li> <li>• supervisor.</li> </ul>
<b><i>Network resources</i></b> may include:	<ul style="list-style-type: none"> <li>• dynamic host configuration protocol (DHCP) server</li> <li>• domain name system (DNS) server</li> <li>• files</li> <li>• software</li> <li>• web browser.</li> </ul>
<b><i>Network device</i></b> may include:	<ul style="list-style-type: none"> <li>• router</li> <li>• server</li> <li>• switch</li> <li>• wired infrastructure for a small to medium size business.</li> </ul>
<b><i>Enterprise procedures</i></b> may include:	<ul style="list-style-type: none"> <li>• instructions: <ul style="list-style-type: none"> <li>• designs</li> <li>• drawings</li> <li>• job sheets</li> <li>• plans</li> </ul> </li> <li>• manufacturer's specifications</li> <li>• operational procedures</li> <li>• reporting and communication</li> <li>• use of tools and equipment.</li> </ul>
<b><i>Wired infrastructure</i></b> may include:	<ul style="list-style-type: none"> <li>• connectors and cabling</li> <li>• copper cables</li> <li>• distribution frames</li> <li>• fibre cables.</li> </ul>

**RANGE STATEMENT**

<b><i>Essential installation information</i></b> may include:	<ul style="list-style-type: none"> <li>• installation software</li> <li>• IP addressing schemes</li> <li>• logical and physical diagrams</li> <li>• network administrator codes</li> <li>• passwords</li> <li>• security access codes.</li> </ul>
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**Unit Sector(s)**

<b>Unit sector</b>	Telecommunications
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**Co-requisite units**

<b>Co-requisite units</b>	

**Competency field**

<b>Competency field</b>	Telecommunications networks engineering
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