



**Australian Government**

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

# **ICANWK410A Install hardware to a network**

**Release: 1**

## ICANWK410A Install hardware to a network

### Modification History

Release	Comments
Release 1	This Unit first released with <i>ICALL Information and Communications Technology Training Package version 1.0</i>

### Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to plan, manage and install new hardware components in a network.

### Application of the Unit

This unit applies to those employed in technical information technology (IT) support roles, such as network administrators, who are required to install and support network hardware in a peer-to-peer or client-server networked environment.

### Licensing/Regulatory Information

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.

### Pre-Requisites

Not applicable.

### Employability Skills Information

This unit contains employability skills.

## Elements and Performance Criteria Pre-Content

Element	Performance Criteria
<i>Elements describe the essential outcomes of a unit of competency.</i>	<i>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.</i>

## Elements and Performance Criteria

1. Determine network hardware requirements	<p>1.1 Assess client <b>network hardware</b> and cabling requirements, considering compatibility with existing <b>application software</b> and <b>operating system</b></p> <p>1.2 Analyse requirements against local area network (LAN), wide area network (WAN), wireless networks, and mobile equipment access design limitations and <b>organisational guidelines</b></p> <p>1.3 Evaluate <b>client</b> requirements according to organisational guidelines, corporate purchasing procedures, licensing arrangements and budget</p>
2. Obtain network hardware	<p>2.1 Contact vendors and obtain technical specifications</p> <p>2.2 Evaluate or test hardware according to client requirements and organisational guidelines</p> <p>2.3 Document recommendations and provide copies to <b>appropriate person</b></p> <p>2.4 Determine and document licensing requirements and security issues</p> <p>2.5 Acquire hardware according to recommendations and organisational procedures</p> <p>2.6 Organise cabling infrastructure where required</p>
3. Install network hardware	<p>3.1 Conduct installation with minimal disruption to clients</p> <p>3.2 Install hardware according to appropriate installation procedures</p> <p>3.3 Configure and test the installation to ensure that it meets client needs</p>
4. Provide instruction and support for installed products	<p>4.1 Determine and document client instructions and needs</p> <p>4.2 Provide one-to-one or group instruction to client and users, as required</p> <p>4.3 Obtain client evaluation and feedback, to ensure that client requirements have been met</p>

## Required Skills and Knowledge

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

### Required skills

- analytical skills to assess current client hardware and future requirements
- communication skills to:
  - discuss client requirements and specifications
  - interpret client budget requirements
  - interpret technical and hardware installation manuals
  - provide client instruction
- literacy skills to write technical notes and reports
- numeracy skills to plan, prioritise and organise work
- planning and organisational skills to maintain the continuity of network operations and business functions during network installation tasks
- research skills to document licensing requirements and security issues
- technical skills to:
  - evaluate client equipment for requirements
  - use application and diagnostic software.

### Required knowledge

- overview knowledge of:
  - current industry, data and voice networking, security products, devices and procedures
  - current industry-accepted network protocols
  - organisational contracting procedures and responsibilities
  - system diagnostic software
- current industry-accepted network hardware and software products
- hardware and software installation procedures
- LAN capabilities and characteristics, such as network type, IP addressing, switch or hub operation
- network connections, including types of cables and cabling distance limitations and wireless connections
- operating systems sufficient to enable basic installation
- set-up and configuration procedures
- software packages supported by the organisation.

## Evidence Guide

*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.*

<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>• evaluate client user requirements and hardware installation</li> <li>• install a range of network hardware by planning, managing and supporting the installation of new components in a network, according to organisational policies and procedures.</li> </ul>
<b>Context of and specific resources for assessment</b>	<p>Assessment must ensure access to:</p> <ul style="list-style-type: none"> <li>• vendor hardware and software components</li> <li>• application software and operating system</li> <li>• hardware maintenance tools</li> <li>• live network</li> <li>• networked computers</li> <li>• organisational guidelines</li> <li>• technical documentation and installation manuals</li> <li>• appropriate learning and assessment support when required.</li> </ul> <p>Where applicable, physical resources should include equipment modified for people with special needs.</p>
<b>Method 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>• verbal or written questioning to assess candidate's underpinning knowledge</li> <li>• direct observation of candidate installing network devices</li> <li>• review of instructional guides for client or group presentation prepared by candidate</li> <li>• evaluation of performance test results prepared by candidate.</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, where appropriate.</p> <p>Assessment processes and techniques must be culturally appropriate, and suitable to the communication skill level, language, literacy and numeracy capacity of the candidate and the work being performed.</p> <p>Indigenous people and other people from a non-English speaking</p>

	<p>background may need additional support.</p> <p>In cases where practical assessment is used it should be combined with targeted questioning to assess required knowledge.</p>
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## 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.*

<b><i>Network hardware</i></b> may include:	<ul style="list-style-type: none"> <li>• access points</li> <li>• firewalls</li> <li>• gateways</li> <li>• hubs</li> <li>• IP cameras</li> <li>• mobile phones</li> <li>• modems</li> <li>• network bridges</li> <li>• network interface cards</li> <li>• network printers</li> <li>• network scanners or multifunction devices</li> <li>• network-attached storage (NAS)</li> <li>• personal digital assistants (PDAs)</li> <li>• print servers</li> <li>• routers</li> <li>• switches.</li> </ul>
<b><i>Application software</i></b> may include:	<ul style="list-style-type: none"> <li>• database programs to handle data and voice functionality</li> <li>• email programs</li> <li>• internet browsers</li> <li>• spreadsheets</li> <li>• system browsers</li> <li>• word processing.</li> </ul>
<b><i>Operating system</i></b> may include:	<ul style="list-style-type: none"> <li>• Linux</li> <li>• Mac</li> <li>• Windows.</li> </ul>
<b><i>Organisational guidelines</i></b> may include:	<ul style="list-style-type: none"> <li>• communication methods</li> <li>• content of emails</li> <li>• dispute resolution</li> <li>• document procedures and templates</li> <li>• downloading information and accessing particular websites</li> <li>• financial control mechanisms</li> <li>• opening mail with attachments</li> <li>• personal use of emails and internet access</li> <li>• virus risk.</li> </ul>



<b><i>Client</i></b> may include:	<ul style="list-style-type: none"><li>• clubs</li><li>• external organisations</li><li>• individuals</li><li>• internal departments</li><li>• internal employees.</li></ul>
<b><i>Appropriate person</i></b> may include:	<ul style="list-style-type: none"><li>• authorised business representative</li><li>• client</li><li>• supervisor.</li></ul>

## Unit Sector(s)

Networking