



Australian Government

Department of Education, Employment and Workplace Relations

ICASAS303A Care for computer hardware

Release: 1

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Modification History

Release	Comments
Release 1	This Unit first released with <i>ICAI1 Information and Communications Technology Training Package version 1.0</i>

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to manage the maintenance and location of hardware.

Application of the Unit

This unit applies to frontline technical support personnel who are required to manage organisational hardware assets, maintaining both them and their records.

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

<p>1. Establish safe work practices</p>	<p>1.1 Determine, record and apply relevant legal requirements and <i>OHS standards</i> to the installation and maintenance of computer <i>hardware</i></p> <p>1.2 Determine, record and apply requirements specified by hardware manufacturers</p> <p>1.3 Determine, record and apply <i>safe work practices</i>, taking into account legal and manufacturer requirements</p>
<p>2. Establish location requirements for hardware and peripherals</p>	<p>2.1 Determine and apply suitable <i>environmental conditions</i> for hardware and peripherals</p> <p>2.2 Determine and apply <i>system protection devices</i> where appropriate</p> <p>2.3 Determine and apply requirements when moving hardware</p> <p>2.4 Determine and apply suitable storage principles for hardware and associated <i>peripherals</i> and media</p>
<p>3. Establish maintenance practices</p>	<p>3.1 Determine maintenance requirements specified by the <i>equipment</i> manufacturer</p> <p>3.2 Produce <i>maintenance</i> schedules</p> <p>3.3 Perform diagnostic functions, including replacing suspect <i>components</i> with other serviceable components and reloading associated <i>software</i></p> <p>3.4 Determine whether unserviceable components are replaceable through warranty, replacement or upgrade</p> <p>3.5 Perform diagnostic functions using the <i>operating system</i> (OS) and third-party diagnostic tools</p>
<p>4. Determine appropriate hardware quality standards</p>	<p>4.1 Consider and apply <i>business requirements</i> in respect of hardware matters</p> <p>4.2 Determine and apply quality standards to the selection of appropriate hardware and associated peripherals</p>

Required Skills and Knowledge

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

Required skills

- communication skills to provide advice and guidance to others
- literacy skills to:
 - comprehend basic workplace documents and technical information
 - determine whether unserviceable components are replaceable through warranty, replacement or upgrade
 - interpret user manuals and help functions
- problem-solving skills to address common operational problems with computer hardware
- safety-awareness skills to work safely in regard to the specific hardware
- technical skills to:
 - diagnose hardware problems
 - reload software
 - replace suspect components
 - reload associated software
 - select appropriate hardware for a given situation
 - set up and maintain hardware
 - undertake diagnostic procedures using OS and third-party diagnostic tools.

Required knowledge

- range of quality levels in current common hardware
- importance of maintenance
- OHS principles specific to mains-powered equipment
- potential environmental effects of common types of hardware
- security issues:
 - viruses
 - worms
- software related to hardware operations
- system hardware and associated peripherals' functions.

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.

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"> • perform diagnostic functions by replacing components, reloading software and by using operating system and other diagnostic tools • establish siting requirements for system hardware and associated peripheral devices • implement safe work practices • determine maintenance requirements and establish maintenance schedule • apply appropriate quality standards to computer hardware and peripherals.
Context of and specific resources for assessment	<p>Assessment must ensure access to:</p> <ul style="list-style-type: none"> • computer hardware • software and diagnostic tools • warranty records and reports, maintenance schedules, vendor documentation and safe work practices • appropriate learning and assessment support when required • modified equipment for people with special needs.
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"> • direct observation of candidate performing a range of diagnostic tasks • review of maintenance schedule documentation completed by candidate • verbal or written questioning to assess candidate's knowledge of: <ul style="list-style-type: none"> • quality standards applied to computer hardware and peripherals • safe work practices.
Guidance information for assessment	<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</p>

	<p>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 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.*

<p><i>OHS standards</i> may include:</p>	<ul style="list-style-type: none"> • electrical safety • ergonomics in the workplace: <ul style="list-style-type: none"> • correct posture • style and adjustments of chair • type of desk • type of monitor • working position • length of time in front of computer • lighting level • placement of light fittings • repetitive strain injury (RSI) prevention • safe lifting methods • ventilation.
<p><i>Hardware</i> may include:</p>	<ul style="list-style-type: none"> • communications equipment: <ul style="list-style-type: none"> • modems or other connectivity devices, including digital subscriber line (DSL) modems • wireless access points • network equipment: <ul style="list-style-type: none"> • cables • hubs • racks • routers • servers • switches • personal computers (PCs) • remote sites • servers • workstations.
<p><i>Safe work practices</i> may include:</p>	<ul style="list-style-type: none"> • codes of practice • hazards and hazardous material • manual handling • physical separation of data cables and mains cables • reporting and following OHS procedures

	<ul style="list-style-type: none"> • testing and tagging electrical mains cables.
Environmental conditions may include:	<ul style="list-style-type: none"> • air circulation • dust • extreme cold • heat • moisture • temperature stability.
System protection devices may include:	<ul style="list-style-type: none"> • line conditioning • surge protection • uninterruptible power supplies (UPS).
Peripherals may include:	<ul style="list-style-type: none"> • Bluetooth device • Firewire (IEEE 1394) device • keyboard • laptop • mobile phone • modem • mouse • multimedia kit • pen • personal digital assistant (PDA), such as palmtop • printer • scanner • speaker • tape cartridge • touch pad • universal serial bus (USB) device • wi-fi router.
Equipment may include:	<ul style="list-style-type: none"> • DSL modems • hard drives • hubs • modems or other connectivity devices • monitors • other peripheral devices • PCs • PDA • printers • switches • workstations.
Maintenance may include:	<ul style="list-style-type: none"> • faulty components returned to depot • on-site response • planned maintenance:

	<ul style="list-style-type: none"> • dust and grease removal from filters and components • lubrication of fan and blower bearings • remote diagnostics.
Components may include:	<ul style="list-style-type: none"> • CD and DVD drives • central processing unit (CPU) • complementary metal oxide semiconductor (CMOS) battery • fax or modem cards • interface cards • motherboards • power supply • random access memory (RAM).
Software may include:	<ul style="list-style-type: none"> • application: <ul style="list-style-type: none"> • database • internet browser • spreadsheet • word-processing • commercial • customised • in-house • programming: <ul style="list-style-type: none"> • assembler • compiler • development tools • system: <ul style="list-style-type: none"> • computer security software • device drivers • OS.
Operating systems may include:	<ul style="list-style-type: none"> • GNU and Linux • Mac OS X • Microsoft Windows • Unix-like operating systems: <ul style="list-style-type: none"> • HP-UX • IBM AIX • Silicon Graphics IRIX • Sun Solaris.
Business requirements may include:	<ul style="list-style-type: none"> • capability for further system upgrades • cost and quality • existing facilities • industry standard components • installation:

	<ul style="list-style-type: none">• ease• lead time• licensing issues• reliability• robustness• service level agreements (SLAs)• technical support required:<ul style="list-style-type: none">• in-house• vendor.
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Unit Sector(s)

Systems administration and support