



Australian Government

Department of Education, Employment and Workplace Relations

ICAICT302A Install and optimise operating system software

Release: 1

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Modification History

Version	Comments
ICAICT302A	This version first released with <i>ICA11 Information and Communications Technology Training Package version 1.0</i>

Unit Descriptor

This unit defines the performance outcomes, skills and knowledge required to install operating system (OS) software and to make adjustments as a means of optimising the system to accommodate business and client needs.

Application of the Unit

This unit applies to individuals in a technical support role who are required to identify the most suitable OS to meet organisational requirements. The unit develops the ability to install, configure and optimise the OS to identified vendor specifications.

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 function of operating system	1.1 Identify and demonstrate understanding of the purposes of operating system 1.2 Distinguish between batch system, real-time system, multi-tasking system 1.3 Compare and contrast different operating systems and their features 1.4 Identify and demonstrate knowledge of the basic functions of operating system, including file system, memory management, process scheduling 1.5 Identify and demonstrate management of virtual memory
2. Obtain operating system	2.1 Contact operating system vendors to obtain technical specifications and system requirements 2.2 Identify the process and steps required to install and configure the operating system using installation components 2.3 Document adjustment recommendations and provide to appropriate person 2.4 Determine and apply knowledge of licensing, hardware and security requirements
3. Install, configure and optimise operating system	3.1 Install, configure and test operating system using installation components and boot-utility options 3.2 Use the relevant operating system user interface to correctly configure the installation 3.3 Optimise the system to meet organisational requirements 3.4 Document the system according to organisational requirements 3.5 Install the operating system with minimal disruption to client or users
4. Provide instruction to meet new software requirements	4.1 Provide one-to-one instruction about changes to the client or users as required 4.2 Obtain client evaluation about new system to ensure requirements are met, using appropriate feedback mechanism

Required Skills and Knowledge

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

Required skills

- communication skills to:
 - liaise with people working across different levels and in different contexts, such as operating system vendors and clients
- literacy skills to:
 - interpret technical computer installation manuals
 - obtain written and verbal feedback from clients
 - present information, such as the use of diagnostic tools
 - provide verbal instructions to client
- technical skills to:
 - install and configure operating system software
 - write instructions for clients.

Required knowledge

- current industry-accepted hardware and software products
- functions and features of operating systems used by the organisation
- installation and configuration of systems software
- architecture of current technical systems
- deployment of current organisational systems
- organisational requirements for operating system software
- prerequisites for system software installation
- set-up and configuration procedures
- software packages supported by the organisation
- system's current functionality
- system's diagnostic software
- vendor specifications and requirements for installation.

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	Evidence of the ability to: install, configure and test an operating system to improve system performance with minimum disruption to clients.
Context of and specific resources for assessment	Assessment must ensure access to: - personal computer where installation may be performed - OS software and technical documentation - organisational documentation - appropriate learning and assessment support when required - modified equipment for people with special needs.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: - direct observation of candidate: - questioning team members, supervisors and clients - installing and testing an operating system - review of candidate's practical assignments and reports.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, where appropriate. 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. Indigenous people and other people from a non-English speaking background may need additional support. In cases where practical assessment is used it should be combined with targeted questioning to assess required knowledge.

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.

<i>Operating system</i> may include:	• Linux: • Debian • Fedora • Google Chrome OS • Kubuntu • Linux Mint • Red Hat • Ubuntu • Mac OS X • Microsoft Windows: • Windows 2000 • Windows XP (32 bit versus 64 bit) • Windows Vista (32 bit versus 64 bit) • Windows 7 (32 bit versus 64 bit) • mobile operating systems: • Android • Blackberry • iPhone • Palm • Symbian • Windows Phone 7 series.
<i>Installation components</i> may include:	• configure power management: • hibernate • sleep timers • standby • suspend • wake on local area network (LAN) • demonstrate safe removal of peripherals • device manager: • driver signing • install and update devices drivers • verify

	• directory structures: • create folders • navigate directory structures • disk preparation order: • format drive • partition • start installation • files: • attributes • creation • extensions • permissions • file systems, such as FAT32 versus new technology file system (NTFS) • installation methods: • boot media, such as DVD, CD, floppy or universal serial bus (USB) • factory recovery partition • install from image • network installation • recover CD • operating system installation options: • file system type • network configuration • repair install • user data migration - user state migration tool (USMT) • verification of hardware compatibility and minimum requirements • virtual memory.
Appropriate person may include:	• authorised business representative • client • supervisor.
Boot-utility options may include:	• automated system recovery (ASR) • boot options • boot to restore point • disk boot order or device priority • emergency repair disk (ERD) • recovery console • recovery options • safe mode • types of boot devices (disk, network, USB).

Operating system user interface may include:	• Windows-adopting interface to undertake similar tasks with chosen operating system: • administrative tools, such as performance monitor, event viewer, services and computer management • command prompt utilities, such as ipconfig, Ping and Telnet • control panel • location of basic network settings between OS versions • MMC • my computer • my network places or home group • run line utilities: • cmd • direct diagnostics (DXdiag) • msconfig • MSINFO32 • REGEDIT • start menu • task bar or systray • task manager • Windows Explorer - Libraries in Windows 7.
Organisational requirements may include:	• availability of system to be optimised • client support documentation • in-house or vendor • contracting arrangements relating to IT purchasing • IT policy and procedures relating to service levels and installation • level of complexity of technical manuals.
Client may include:	• department within the organisation • person with special needs • person within a department • third party.
Feedback mechanism may include:	• interview • meeting • questionnaire • survey.

Unit Sector(s)

General ICT