



Australian Government

Department of Education, Employment and Workplace Relations

ICAICT411A Select and employ software and hardware testing tools

Release: 1

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Modification History

Release	Comments
Release 1	This Unit first released with <i>ICA11 Information and Communications Technology Training Package version 1.0</i>

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to select and use software and hardware diagnostic and testing tools.

Application of the Unit

This unit applies to individuals in a wide range of information and communications technology (ICT) areas who are required to test software and hardware.

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. Establish process operational requirements	1.1 Identify process requirements ensuring they are accurate, complete, prioritised, and have functionality, and reference appropriate method or media types 1.2 Identify conflicting or overlapping requirements 1.3 Document and validate functional requirements of the client 1.4 Identify and validate available resources and budget
2. Select hardware and software for processing function	2.1 Identify and evaluate relevant hardware and software tools with reference to functional requirements 2.2 Identify and analyse relevant products and equipment interdependencies with reference to functional requirements and system architecture 2.3 Identify and document appropriate tools, including their limitations for the required use and industry standards 2.4 Select and acquire tools according to purchasing policies
3. Configure and test hardware and software	3.1 Install and configure appropriate hardware and software tools according to vendor guidelines with reference to system architecture and client functionality requirements 3.2 Configure system architecture for optimal usage 3.3 Prepare, schedule and execute tests and record outcomes 3.4 Track errors, and interpret and correct them 3.5 Make changes to the tested hardware or software based on test results 3.6 Document the hardware and software configuration according to requirements
4. Use and validate software and hardware	4.1 Provide appropriate training of client with reference to guides, instructions and vendor materials 4.2 Use hardware and software according to vendor guidelines 4.3 Validate hardware and software performance with reference to client functional requirements

Required Skills and Knowledge

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

Required skills

- analytical skills to analyse:
 - customisation requirements
 - hardware and software functional requirements
- communication skills to:
 - communicate with vendors
 - convey and clarify complex information
 - seek assistance and expert advice
- literacy skills to:
 - accurately summarise and document information
 - interpret technical documentation, equipment manuals and specifications
- planning and organisational skills to:
 - organise and assess importance and relevance of product information
 - prioritise and monitor own work
- problem-solving skills to solve operational problems as they arise
- safety awareness skills to work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- research skills to locate key sources of information
- technical skills to:
 - analyse and interpret technical aspects of implementation
 - develop creative solutions and demonstrate automating process capability
 - identify the conflicts and integration capabilities between diverse equipment
 - integrate multiple items of data and reconcile conflicting information
 - predict outcomes and results of selection of tools.

Required knowledge

- batch scripting of nominated automating software routines
- broad general knowledge of the client business domain
- broad knowledge of vendor product directions
- current industry-accepted hardware and software products, and their features and capabilities
- functions and features of:
 - development tools, including animation development tools
 - development package automating options
 - third-party tools for automating a range of software applications
 - media management tools
 - technologies
- interaction between relevant hardware and software products
- basic design principles of each media type as required.

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: • evaluate hardware and software that meet functional requirements • select and use the correct automating tools • develop an automating process that produces an outcome that is measurable and meets specified requirements • install, configure and document hardware and software according to vendor guidelines • validate hardware and software performance against client requirements.
Context of and specific resources for assessment	Assessment must ensure access to: • site where automated processing may be carried out • hardware and software currently used in industry • a range of automating vendor products currently used in industry • client requirements documentation • organisational requirements. Where applicable, physical resources should include equipment modified 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: • verbal or written questioning to assess candidate's knowledge of: • client domain • hardware and software to be tested • automated processes • direct observation of candidate installing, configuring and testing hardware and software tools according to vendor guidelines • review of documentation prepared by candidate outlining: • hardware and software configuration • tests to be carried out • evaluation of test results.

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.
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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.

Requirements may be related to:	• application • business • network • people in the organisation • system.
Client may include:	• employees • external organisations • individuals • internal departments.
Hardware may include:	• modems and other connectivity devices, such as digital subscriber line (DSL) modems • networks • personal computers • remote sites • servers • workstations.
Software may include:	• commercial applications • customised • in-house • organisation-specific • packaged.
Equipment may include:	• other peripherals or stand-alone units • personal computers • workstations.
System architecture may include:	• configuration: • large memory model • requests per second • small memory model • database software: • DB2 • Informix • Ingres • Microsoft Structured Query Language Server (SQLS)

	• Mini SQL (mSQL) • MySQL • Oracle • Postgre Structured Query Language (Postgre SQL) • Sybase • operating systems: • Linux • Mac • multi-user ability • Novell NetWare • Windows.
Standards may include:	• International Organization for Standardization (ISO), International Electrotechnical Commission (IEC) and Australian Standards (AS) standards • organisational standards • project standards.

Unit Sector(s)

General ICT