ICASAS516A Perform stress and load tests on integrated platforms

Release: 1

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Modification History

Release	Comments
Release 1	This Unit first released with *ICA11 Information and Communications Technology Training Package version 1.0*

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to plan and perform tests to ensure the ability of a system to cope with expected high levels of data volume.

Application of the Unit

This unit applies to senior staff who are responsible for ensuring that the proposed system can handle anticipated loads.

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
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.*

Elements and Performance Criteria

1. Create test plan	1.1 Determine scope, objectives and specific tests in order to place load on the *system*, including expected results and performance impact
	1.2 Determine and document standards for acceptance and compliance with *client*
	1.3 Determine and document clear responsibilities and contact points with third-party suppliers for support
	1.4 Identify testing resources and tools from a range of available sources
	1.5 Identify and record base-system loads or level of activity against which the test will be measured
	1.6 Identify processes or steps in test, including automated testing
	1.7 Assemble test-plan documentation and distribute to *appropriate person*
2. Undertake test	2.1 Implement test plan according to test plan sequencing
	2.2 Confirm that each technology *component* operates correctly within integrated platform
	2.3 Confirm that integrated platform operates to project and industry standards
	2.4 Undertake documentation of testing outcomes to meet project standards
	2.5 Detect faults
3. Diagnose and resolve faults	3.1 Identify and document faults according to *project plan*
	3.2 Diagnose faults and take corrective action
	3.3 Manage problem-resolution processes according to project procedures
	3.4 Enforce compliance standards with third-party suppliers, as skills required
4. Update documentation	4.1 Update appropriate project and system documentation to record and present test findings to development staff for their attention, if test is unsuccessful

Required Skills and Knowledge

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

Required skills

- analytical skills to analyse, diagnose, and evaluate the development of new criteria, knowledge and procedures
- communication skills to:
    - gain consensus on concepts and clarify responsibilities
    - negotiate with client, third-party suppliers and technical staff
    - present information
- literacy skills to:
    - develop procedures
    - interpret technical specifications, standards documents and related documentation
    - update documentation
- planning and organisational skills to:
    - determine responsibilities and contact points with third-party suppliers for support
    - determine specific tests in order to place load on the system, and determine expected results and performance impact
    - estimate project scope and objectives
- technical skills to:
    - conduct tests
    - diagnose faults.

Required knowledge

- automated test tools, with detailed knowledge of features and processes in some areas
- organisational requirements relating to stress and load testing
- program design and performance
- system or application requirements and performance
- testing techniques, with detailed knowledge of features and processes in some areas.

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: • test the system's ability to cope with expected high levels of data volume while meeting the predetermined performance standards • identify problems and fault-resolution strategies that may occur during stress testing • ensure system operates in the manner expected under expected conditions • ensure supporting material, such as procedures and forms, is accurate and suitable for the purpose intended • determine that stated conditions reflect the upper limits expected by client • ensure there are no unacceptable reductions in service • ensure individual elements and the overall system provide the desired result or functionality • ensure documentation is available and accurate.
Context of and specific resources for assessment	Assessment must ensure access to: • business requirements • project documentation, including templates, standards, specifications and client user and technical manuals • business rules and expected loads • base tools • technical components of system, including software, hardware and network • staffing resources, including development, operations and client user representatives • system or application suitable for testing • 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 preparing for test, and recording and investigating discrepancies and corrections after test

	• verbal or written questioning of skills and knowledge for identifying acceptance criteria and developing test plans • evaluation of candidate's documented record of test results and recommended solutions.
Guidance information for assessment	Holistic assessment with other units 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.

System may include:	• application service provider (ASP) • applications • databases • gateways • internet service provider (ISP) • operating system • servers.
Client may include:	• external organisation • individual • internal department • internal employee.
Appropriate person may include:	• authorised business representative • client • supervisor.
Component may include:	• databases • networks • servers • software integration.
Project plan may include:	• parties and their responsibilities • planning and preparation that begins in the design phase, and runs concurrently with design, code and implementation • project budget • project objectives • project scope • schedule.

Unit Sector(s)

Systems administration and support