



Australian Government

ICTCLD504 Improve cloud-based infrastructure

Release: 1

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Modification History

Release	Comments
Release 1	This version first released with ICT Information and Communications Technology Training Package Version 6.0.

Application

This unit describes the skills and knowledge required to assess, design, improve and monitor cloud architecture on a cloud platform, including security, reliability, scalability and cost optimisation impacts for a business.

The unit applies to cloud computing architects, cloud developers, cloud engineers and those engaged in gathering requirements, designing and implementing cloud computing solutions for a business.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Cloud computing

Elements and Performance Criteria

ELEMENTS	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Analyse cloud architecture on a cloud platform	1.1 Identify and review business's cloud architecture design 1.2 Evaluate cloud architecture and identify business impact of design decisions 1.3 Identify design patterns and architectural options 1.4 Determine and assess benefits and differences of cloud computing and architectural design against current business model and needs 1.5 Confirm system design decisions according to business needs 1.6 Set business goals as they relate to security, reliability, high-performance and cost efficiencies of cloud architecture according to business requirements and needs

ELEMENTS	PERFORMANCE CRITERIA
2. Design and improve architecture on a cloud platform	2.1 Evaluate and confirm performance metrics for business applications according to business needs 2.2 Select and improve compute, storage, database and network resources according to business needs 2.3 Review and improve architecture required to enhance security, reliability, scalability and cost optimisation 2.4 Document and present proposed architecture for review to required personnel 2.5 Obtain sign off to proceed to deployment with required personnel
3. Deploy, monitor and test architecture on cloud platform	3.1 Deploy approved architecture on cloud platform 3.2 Monitor and measure architecture against performance metrics and business goals 3.3 Test and demonstrate security, reliability, scalability and cost optimisation of deployed resources 3.4 Apply short-term refinements to deployed resources according to test results
4. Finalise improvements on a cloud platform	4.1 Document as-deployed architecture and test results, and highlight changes and improvements from approved design 4.2 Describe long-term improvement strategies and their benefits as applied to deployed resources 4.3 Obtain final sign off from required personnel

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

SKILL	DESCRIPTION
Oral communication	• Uses listening and questioning techniques to confirm requirements and articulate complex concepts • Presents proposed solutions to required personnel using appropriate industry language
Reading	• Interprets complex technical and operational documentation to determine and confirm job requirements
Writing	• Writes and edits code and technical data in a logical manner using required syntax and language
Problem solving	• Uses a mix of intuitive and formal processes to identify key information and issues, evaluates alternative strategies, anticipates

SKILL	DESCRIPTION
	consequences and considers implementation issues and contingencies • Uses knowledge of context to address common problems in cloud computing applications and cloud-based environments
Self-management	• Demonstrates a sophisticated knowledge of principles, concepts, language and practices associated with cloud computing and the digital world and uses them to troubleshoot and understand the uses and potential of new technology

Unit Mapping Information

No equivalent unit. New unit.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2>

Assessment Requirements for ICTCLD504 Improve cloud-based infrastructure

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Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, and to:

- assess, identify and improve cloud architecture on a cloud platform, according to design decisions
- deploy, test and measure at least one architecture design, against architecture principles, metrics and business goals.

In the course of the above, the candidate must:

- determine performance metrics and business goals
- use cloud management consoles, software development kits or command line tools
- create documentation of deployment and testing steps.

Knowledge Evidence

The candidate must demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit. This includes knowledge of:

- industry technology standards used in cloud computing solutions and services
- industry standard hardware and software products, their general features, capabilities and application
- methods and impacts of cloud adoption as they relate to IT system changes
- design principles for cloud applications
- migrating principles for cloud applications
- use of object storage for static web sites
- testing and debugging techniques, including techniques to avoid single point failures
- tools and uses of security layers and security-focused content within cloud services
- features of cloud services, including techniques to improve security, reliability, scalability and costs

- techniques, methods and industry standard metrics and business goals used to monitor performance of cloud resources.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- cloud vendor service provider
- cloud managed database service
- cloud management console, software development kit or command line tools
- integrated development environment (IDE)
- specific requirements and industry standards, organisational procedures and legislative requirements, including business and functionality requirements, as required
- internet and web browser
- secure shell (SSH) or remote desktop protocol (RDP) client to connect to cloud-hosted instances.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

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