



Australian Government

ICTCLD505 Implement cloud infrastructure with code

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 create and implement cloud infrastructure as code using cloud platform templates. This includes creating templates, then using the templates to create and update cloud infrastructure.

The unit applies to cloud engineers, cloud systems administrators and those who work within cloud computing operations to program, implement and maintain 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. Prepare to update cloud infrastructure as code	1.1 Identify and review benefits of infrastructure as code according to business needs 1.2 Determine ways automation leverages cloud platforms according to business needs 1.3 Determine and assess potential issues and errors when implementing infrastructure as code 1.4 Evaluate and select infrastructure as code service compatible with selected cloud platform and business requirements
2. Deploy cloud infrastructure as code templates	2.1 Learn template syntax of selected cloud infrastructure as code service 2.2 Review pre-defined templates and determine what resources

ELEMENTS	PERFORMANCE CRITERIA
	they create and any dependencies 2.3 Utilise the cloud infrastructure as code service tools to deploy, update and delete resources using predefined templates as required 2.4 Confirm deployments of cloud resources and configure resources using cloud platform console or command line tools 2.5 Remove deployed resources using cloud infrastructure as code tools and delete templates as required 2.6 Test and troubleshoot template errors as required
3. Develop and update infrastructure as code templates	3.1 Learn template syntax of selected cloud infrastructure as code service 3.2 Create and deploy template to provision a set of related cloud resources according to business needs 3.3 Update and redeploy template to modify previously deployed resources and add new resources 3.4 Confirm deployment of cloud resources and configure resources using the cloud platform console or command line tools 3.5 Parameterise and deploy template to reuse configuration with a modified resource configuration 3.6 Remove deployed resources using cloud infrastructure as code tools and delete templates as required 3.7 Test and troubleshoot template errors
4. Finalise cloud infrastructure as code	4.1 Create user documentation including cloud infrastructure as code templates 4.2 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 and matters using relevant industry for intended audience
Reading	Interprets complex technical and operational documentation to determine and confirm job requirements

SKILL	DESCRIPTION
Writing	• Prepares user documentation detailing developed cloud infrastructure 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 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 ICTCLD505 Implement cloud infrastructure with code

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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:

- deploy, update and remove cloud infrastructure using cloud platform templates
- create, run and update at least one own template required to deploy and modify cloud infrastructure.

In the course of the above, the candidate must:

- use cloud management console, cloud software development kits or command line tools
- create user documentation.

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, including storage technology
- benefits of deploying infrastructure as code compared to manual provisioning in a console
- different infrastructure as code services that can be used on a cloud platform
- syntax of selected infrastructure as code service templates
- tooling required to execute cloud infrastructure templates
- testing and debugging techniques, including common issues and errors relating to deploying cloud infrastructure as code
- parameterisation of templates to support configuration and code reuse
- industry standard practices to define infrastructure as code
- uses and methods to create, manage, provision and update cloud resources and templates
- techniques, methods and industry standard metrics used to leverage cloud platform capabilities and deploy and manage templates.

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 vendor or 3rd party infrastructure as code service
- specific requirements and industry standards, organisational procedures and legislative requirements, including business and functionality requirements, as required
- information and data sources required to design and implement cloud infrastructure
- integrated development environment (IDE)
- internet and web browser
- secure shell (SSH) or remote desktop protocol (RDP) client to connect to cloud-hosted instances
- cloud management console, cloud software development kit or command line tools.

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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