



Australian Government

ICTCLD506 Implement virtual network in cloud environments

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 design and configure a virtual network according to networking requirements for a multi-tiered application on a cloud platform.

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 to support 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 design and configure virtual networks	1.1 Gather multi-tier application networking requirements according to business needs 1.2 Identify business and industry requirements for virtual network in cloud environment 1.3 Research and identify available security options for virtual network
2. Design and configure virtual networks	2.1 Design virtual network according to networking and business requirements for a multi-tier application 2.2 Allocate virtual network and subnets for documented IP ranges 2.3 Enable network gateways and its service as required

ELEMENTS	PERFORMANCE CRITERIA
	2.4 Configure route tables and routing targets as required 2.5 Configure security controls to support test environment 2.6 Check expected network traffic is permitted into, through and out of virtual network 2.7 Collect and monitor network traffic logs and metrics 2.8 Test external connectivity to a resource within virtual network and demonstrate only permitted traffic reaches the resource 2.9 Troubleshoot and fix errors as required
3. Configure virtual network peering	3.1 Establish peering connection between two virtual networks 3.2 Adjust routing tables to direct traffic between both networks 3.3 Demonstrate network connectivity between hosts in each network 3.4 Test and troubleshoot network peering configuration
4. Document virtual networks	4.1 Document work, including a network diagram, and submit to required personnel as required 4.2 Obtain final task sign off from required personnel as required

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
Reading	Interprets complex technical and operational documentation to determine and confirm job requirements
Writing	Prepares user documentation detailing work 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 ICTCLD506 Implement virtual network in cloud environments

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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:

- design and deploy virtual network to support a multi-tier application in a cloud environment
- modify at least one network configuration to peer with another virtual network.

In the course of the above, the candidate must:

- enable security controls and confirm that controls accurately affect network traffic as required
- 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
- roles and principles of virtual networks in cloud environments
- uses and purpose of routing, routing targets, subnets, networking security controls, virtual private network (VPN) and IP address ranges
- uses of technology to connect to resources within a virtual network, including secure shell (SSH), virtual private network (VPN) and peering
- uses and differences between:
 - public and private subnets
 - networking gateways
 - routing targets

- network security controls
- testing and debugging techniques
- methodology and techniques to collect and analyse network traffic metrics and traffic logs.

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
- information and data sources required to design and implement cloud infrastructure
- 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
- data to gather information from to determine output and user requirements, including user access and business protocols.

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

Links

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