Australian Government

Assessment Requirements for ICTCLD502 Design and implement highly-available cloud 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.

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 implement at least one fault tolerant cloud infrastructure on a cloud platform resilient to networking, compute, storage, database and data centre failures
- design and deploy automated infrastructure scaling for at least one business need
- simulate failures of at least one component and demonstrate is fault tolerant.

In the course of the above, the candidate must:

- use cloud management console, software development kits or command line tools
- define, monitor and record resource availability in cloud environment, including:
  - reliability
  - recoverability
  - service levels
  - scalability.

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
- current industry standard hardware and software products, their general features, capabilities and application, including storage technology
- different cloud cost models as they relate to scalability of cloud infrastructure
- definitions, functions, features and uses of different cloud infrastructure resources as they apply in cloud architecture to high availability, including:
  - fault tolerance and single points of failure

  - reliability as defined by mean time to failure (MTTF), to repair (MTTR) and between failures (MTBF)
  - recoverability as measured by recovery time (RTO) and recovery point (RPO) objectives
  - service level agreements (SLAs)
  - vertical and horizontal scalability
- testing and debugging techniques, including techniques to avoid single point failures
- tools and techniques to measure availability impact
- features of cloud services, including differences between built-in fault tolerance and infrastructure designed for fault tolerance
- purpose and features of load balancing and autoscaling as related to improve availability within cloud environment
- techniques, methods and industry standard metrics 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
- information and data sources required to design and implement cloud infrastructure
- 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
- 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

Companion Volume Implementation Guide is found on VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2