Australian Government

ICANWK533A Configure and manage advanced virtual computing environments

Release 1

INDUSTRY SKILLS COUNCILS
Creating Australia's Future

ICANWK533A Configure and manage advanced virtual computing environments

Modification History

Release	Comments
Release 1	This version first released with ICA11 Information and Communications Technology Version 2.

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to configure and manage advanced virtual computing environments with the goal of providing a more efficient and reliable information and communications technology (ICT) environment.

Application of the Unit

This unit applies to senior networking staff responsible for increasing the sustainability of an enterprise by using virtualisation technologies.

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

ELEMENTS	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. Configure and manage core virtual networks	1.1. Plan and design virtual network according to enterprise ***requirements*** 1.2. Configure virtual local area networks (VLANs) and security, ***virtual switch*** (vSwitch) ports 1.3. Implement security policies, traffic-shaping and NIC teaming 1.4. Manage distributed vSwitch connections, vSwitch physical and vSwitch storage adapter connections 1.5. Configure and manage ***multiple networks***
2. Configure and manage core infrastructure storage and services	2.1. Obtain technical storage specifications and system requirements from ***virtualisation software vendors*** 2.2. Plan and design core infrastructure storage environment 2.3. Create, configure and secure ***virtual storage connection*** 2.4. Manage and secure virtual storage connection 2.5. Install and manage local and ***shared data store, including*** data store clusters and resource pools 2.6. Configure and manage provisioning services and templates
3. Secure virtual environment	3.1 Plan and design ***administrative strategies*** 3.2. Configure user roles to administer virtual environment 3.3. Set up user privileges and permissions according to enterprise environment

Required Skills and Knowledge

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

Required skills
communication skills to: • convey and clarify information • liaise with clients • initiative and enterprise skills to proactively minimise, control or eliminate hazards that may exist during work activities • literacy skills to: • develop and document virtualisation configurations and processes

• record researched information
• planning skills to plan methods for integrating and maintaining a virtualised machine environment
• problem-solving skills to:
  • apply solutions in networks, including virtualised machine environments
  • deploy rapid solutions to problems involving virtualised machine environment
• technical skills to apply current best practice to implementing sustainability options through virtualisation methodologies and technologies

Required knowledge

• overview knowledge of:
  • current government and industry policies and guidelines relating to developing efficient and reliable ICT environments
  • current technologies and processes designed to produce an efficient and reliable ICT environment
  • structure, function and business organisation of client
  • benefits and costs of virtualisation
  • procedures and processes for planning, designing and securing virtual environments
  • design and configuration of available tools and software applications required to manage virtual machines
  • configuration required to integrate virtual machines into existing network design
  • configuration and management of storage infrastructure

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: • plan and design a virtual network using available advanced technologies • configure the virtual network's security and storage requirements • manage and administer the virtual network at an advanced level.
Context of and specific resources for	Assessment must ensure access to: • site or prototype where virtual machine environments may be

assessment	implemented • network technical requirements • range of suitable software • appropriate learning and assessment support when required. Where applicable, physical resources should include equipment modified 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: • verbal or written questioning • direct observation of candidate.
Guidance information for assessment	Holistic assessment with other units relevant 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.*

Enterprise requirements may include:	• preventative maintenance and diagnostic policy • problem solution processes • roles and technical responsibilities in network management • vendor and product service level support agreements • work environment.
Virtual switch may include:	• distributed vSwitch • hyper-V virtual switch • open vSwitch • standard vSwitch.
Multiple networks may include:	• external network • internal network • management network • private network • production network • storage network • VLAN • vMotion network.
Virtualisation software vendors may include:	• Citrix • KVM • Microsoft • Oracle • Parallels • VMware.
Virtual storage connection may include:	• fibre channel • Fibre Channel over Ethernet (FCoE) • Internet Small Computer System Interface (iSCSI) • network file system (NFS).
Shared data store may include:	• iSCS • NFS • storage area network (SAN).
Administrative strategies may include:	• automating frequently repeated processes • centralising automated scripts • managing multiple automated processes • setting up user roles, permissions and security access.

Unit Sector(s)

Networking