Australian Government

ICANWK525B Configure an enterprise virtual computing environment

Release 1

INDUSTRY
SKILLS
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ICANWK525B Configure an enterprise virtual computing environment

Modification History

Release	Comments
Release 2	This version first released with ICA11 Information and Communications Technology Version 2. Revised elements 1 and 2. Added to range statement. A range of minor editorial changes. Outcomes deemed equivalent.
Release 1	This version first released with ICA11 Information and Communications Technology Version 1.

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to develop and implement virtualisation technologies 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. Prepare to configure virtual environment	1.1. Obtain technical specifications and *system requirements* from *virtualisation software vendors*
	1.2. Review *environmental requirements* for installing *virtualisation software*
2. Install and configure support services	2.1. Install and configure *required services* and ports according to virtualisation software vendors
	2.2. Install and configure virtualisation client and server *management software* according to *enterprise requirements*
	2.3. Install, configure and manage environmental requirements to ensure virtual machines function
	2.4. Configure virtual machines using *remote client management software*
3. Design and configure virtual network	3.1. Plan and design virtual network according to client needs
	3.2. Install and configure *virtual networks*
	3.3. Verify *functionality* of virtualisation network according to enterprise requirements

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   - available tools and software applications required to manage virtual machines   - configuration of software applications required to manage virtual machines   - configuration required to integrate virtual machines into existing network design   - structure, function and business organisation of client

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: • install, configure and test virtual machines • manage environmental requirements • install and use software tools.
Context of and specific resources for assessment	Assessment must ensure access to: • site or prototype where virtual machine environments may be implemented • network technical requirements • industry-relevant virtualisation 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 to assess candidate's knowledge of emerging policies relating to:
	  • current recommendations on sustainability options in ICT design
	  • benefits of virtualisation
	  • installation and configuration of virtualisation software
	  • installation and configuration of virtual machines
	  • configuration of virtual machines into network design
	• direct observation of candidate demonstrating:
	  • installation and configuration of virtualisation software
	  • installation and configuration of virtual machines
	  • configuration of virtual machines into network design
	• review of documentation prepared by candidate to:
	  • record the configuration of virtual machines
	  • record the process of configuration of virtual machines.

Guidance information	Holistic assessment with other units relevant to the industry

for assessment	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.

System requirements may include:	• hard disk capacity and speed • internet small computer systems interface (iSCSI) • minimum random access memory (RAM) • motherboard architecture • number of cores in central processing unit (CPU) • number of network interface cards • number of physical CPUs • redundant array of inexpensive or independent disks (RAID) • serial advanced technology attachment (SATA) • small computer system interface (SCSI) • speed of CPU • statistical analysis system (SAS) • storage and hard disk interface requirements: • virtualisation technology at the central processing unit level (VT(x)) support.
Virtualisation software vendors may include:	• Citrix • KVM • Microsoft • Oracle • Parallels • VMware.
Environmental requirements may include:	• available memory (RAM) • available storage (hard disks) • CPU loads • physical environmental factors, such as ventilation and cooling • power requirements.
Virtualisation software may include:	• Citrix XenServer • KVM • Microsoft Hyper-V Server • Microsoft Virtual PC • Microsoft Virtual Server • Oracle VM VirtualBox • Parallels Desktop for Mac • Parallels Server for Mac

	• VMware ESX Server • VMware ESXi Server • VMware Player • VMware Server • VMware VSphere • VMware Workstation • Windows Virtual PC.
Required services may include:	• database server • DNS • Microsoft.net • Windows installers.
Management software may include:	• Citrix Essentials for Hyper-V • Citrix XenServer Management Console • Microsoft Hyper-V • Microsoft Systems Center Virtual Machine Manager • Parallels H-Sphere • VMware Infrastructure Client • VMware vCenter Lab Manager • VMware vSphere Client • vSphere client and host update utility.
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.
Remote client management software may include:	• Microsoft Hyper-V • Microsoft Systems Center Virtual Machine Manager • VMware Infrastructure Client • VMware vCenter Lab Manager • VMware vSphere Client.
Virtual networks may include:	• bridged networks • host only networks • private virtual local area network (VLANs) • those using network address translation (NAT).
Functionality may include:	• connectivity to a physical network • connectivity to a specific VLAN on a physical network • connectivity within a local host-only network • local area network (LAN) and wide area network (WAN) connectivity.

Unit Sector(s)

Networking