



Australian Government

Department of Education, Employment and Workplace Relations

ICANWK526A Install an enterprise virtual computing environment

Release: 1

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Modification History

Release	Comments
Release 1	This Unit first released with <i>ICA11 Information and Communications Technology Training Package version 1.0</i>

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to development and implement virtualisation technologies with the goal of providing a more sustainable information and communications technology (ICT) environment.

Application of the Unit

This unit applies to senior networking staff responsible for increasing the sustainability of an organisation 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

Element	Performance Criteria
<i>Elements describe the essential outcomes of a unit of competency.</i>	<i>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.</i>

Elements and Performance Criteria

1. Analyse client needs	1.1 Assess client requirements 1.2 Assess existing client or server systems that may be suitable to be virtualised
2. Analyse virtualisation host software	2.1 Assess and compare suitable virtualisation host software according to organisational requirements 2.2 Document recommendations and provide to appropriate person
3. Evaluate system requirements	3.1 Obtain and document technical specifications and system requirements from virtualisation-software vendors 3.2 Compare the system requirements needed to implement virtualisation according to organisational requirements 3.3 Document recommendations and provide to appropriate person
4. Install virtualisation host software	4.1 Install virtualisation host platform according to organisational requirements 4.2 Validate functionality of the virtualisation host platform according to organisational requirements

Required Skills and Knowledge

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

Required skills

- communication skills to:
 - liaise with clients
 - convey and clarify information
- initiative and enterprise skills to proactively minimise, control or eliminate hazards that may exist during work activities
- literacy skills to:
 - record researched information
 - develop and document virtualisation configurations and processes
- 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 related to developing sustainable ICT environments
 - current technologies and processes designed to produce a sustainable ICT environment
- structure, function and business organisation of client
- 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.

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: analyse, evaluate, recommend and install an enterprise virtual computing environment.
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 - 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: - 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 research of current recommendations on sustainability options in ICT design and the benefits of virtualisation.
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.
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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.

<i>Client</i> may include:	• external organisation • individual • internal department • internal employee.
<i>Systems</i> may include:	• servers • thin client terminals • workstations.
<i>Host software</i> 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.
<i>Appropriate person</i> may include:	• authorised business representative • client • supervisor.
<i>System requirements</i> may include:	• hard disk capacity and speed • minimum random access memory (RAM) • motherboard architecture • number of cores in central processing unit (CPU) • number of network interface cards • number of physical CPUs • speed of CPU • storage and hard disk interface requirements:

	• internet small computer systems interface (ISCSI) • redundant array of inexpensive or independent disks (RAID) • statistical analysis system (SAS) • small computer system interface (SCSI) • serial advanced technology attachment (SATA) • virtualisation technology at the central processing unit level (VT(x)) support.
Virtualisation software vendors may include:	• Citrix • KVM • Microsoft • Oracle • Parallels • VMware.
Organisational requirements may include:	• how and what the organisation wants regarding the work environment • preventative maintenance and diagnostic policy • problem-solving processes • roles and technical responsibilities in network management • vendor and product service level support agreements.
Functionality may include:	• availability of services • virtualised services performing the same as a service running on physical hardware.

Unit Sector(s)

Networking