



Australian Government

Department of Education, Employment and Workplace Relations

ICTSUS5187A Implement server virtualisation for a sustainable ICT system

Release: 1

ICTSUS5187A Implement server virtualisation for a sustainable ICT system

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	<p>This unit describes the performance outcomes, skills and knowledge required to install and integrate a virtual server in a network to replace multiple physical servers. This is done to reduce power requirements of individual servers.</p> <p>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.</p>
------------------------	--

Application of the Unit

Application of the unit	<p>This unit applies to ICT technical staff who install server networks with energy and cost-efficient systems to meet sustainability targets.</p>
--------------------------------	--

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units	

Employability Skills Information

Employability skills	This unit contains employability skills.
-----------------------------	--

Elements and Performance Criteria Pre-Content

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

ELEMENT	PERFORMANCE CRITERIA
1. Plan to implement server virtualisation	1.1. Assess extent of virtualisation to be implemented using feasibility report and organisational guidelines 1.2. Analyse existing server infrastructure utilisation 1.3. Research and analyse alternative virtualisation scenarios including a risk analysis and relative comparisons of each consideration 1.4. Provide a brief report of proposed preferred plan and describe resources required 1.5. Liaise with appropriate person to obtain approval for the plans with any recommendations
2. Design virtual server specification	2.1. Confirm network operating system, server applications and server design with customer 2.2. Determine product and vendor architecture and equipment specifications 2.3. Determine technology and resources within business requirements and budget
3. Install virtual server	3.1. Follow occupational health and safety (OHS) and environmental requirements according to plan and manufacturer's specifications 3.2. Notify customer for site access 3.3. Create a detailed task list specifying stages and sequence of work required 3.4. Review hardware and software to ensure compatibility 3.5. Install the required operating system, additional tools or third-party software as specified in design 3.6. Patch the operating system and applications to ensure maximum security and reliability
4. Integrate and test virtual server	4.1. Determine tests to ensure virtual server integration 4.2. Develop the test plan referring to resources and network impact 4.3. Run the system tests according to test plan and record outcomes 4.4. Analyse the error report and make changes as required 4.5. Test required changes or additions 4.6. Validate changes or additions against specifications
5. Complete work and document activities	5.1. Document the installation and integration process according to organisational guidelines 5.2. Provide user documentation 5.3. Notify customer and obtain sign off

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- communication skills to liaise with internal and external personnel on technical, operational and business related matters
- literacy skills to:
 - interpret technical installation manuals
 - process and present written information to a diverse range of people
 - write reports, design solutions and recommendations in required formats
- planning and organisational skills to plan, prioritise and monitor own work
- problem solving skills to resolve installation issues
- research skills to interrogate vendor databases and website to identify different solutions to meet client business specifications
- technical skills to evaluate virtual servers and methodologies

Required knowledge

- business processes
- client business domain, business function and organisation
- compatibility issues and resolution procedures
- configuration of internet protocol (IP) networks
- current industry-accepted products
- customer and business liaison
- documenting technical specifications
- linkage between processes
- systems diagnostic features
- technologies:
 - power supply requirements and management
 - registered random access memory (RAM)
 - server design and network architecture
 - set-up and configuration procedures
 - single and multiple processors
 - vendor specifications and requirements for software installation
 - virtual server functionality

Evidence Guide

EVIDENCE GUIDE	
<p>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.</p>	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>Evidence of the ability to:</p> <ul style="list-style-type: none"> • determine and meet client requirements for installation and testing of virtual server • install, integrate and test virtualisation components according to vendor and technical specifications.
Context of and specific resources for assessment	<p>Assessment must ensure:</p> <ul style="list-style-type: none"> • site and equipment on which servers can be virtualised • server virtualisation currently used in industry • relevant documentation, feasibility studies, equipment manuals and other site-related documentation.
Method of assessment	<p>A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:</p> <ul style="list-style-type: none"> • direct observation of the candidate carrying out installation, integration and testing of virtual server • review of plans completed by the candidate for different sites outlining design and resources required • oral or written questioning to assess knowledge of methodologies used.
Guidance information for assessment	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example:</p> <ul style="list-style-type: none"> • ICTSUS4183A Install and test renewable energy system for ICT networks • ICTSUS4184A Install and test power management software • ICTSUS4185A Install and test power saving hardware • ICTSUS4186A Install thin client applications for Power over Ethernet.

EVIDENCE GUIDE

	<p>Aboriginal people and other people from a non-English speaking background may have second language issues.</p> <p>Access must be provided to appropriate learning and assessment support when required.</p> <p>Assessment processes and techniques must be culturally appropriate, and appropriate to the oral communication skill level, and language and literacy capacity of the candidate and the work being performed.</p> <p>In all cases where practical assessment is used it will be combined with targeted questioning to assess required knowledge. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.</p> <p>Where applicable, physical resources should include equipment modified for people with special needs.</p>
--	---

Range Statement**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>Organisational guidelines</i> may include:	<ul style="list-style-type: none"> • budget allocations • operational costs • organisational cost • projected growth • security.
<i>Appropriate person</i> may include:	<ul style="list-style-type: none"> • IT consultant • IT specialist • network administrator • network manager.
<i>Server applications</i> may include:	<ul style="list-style-type: none"> • database and data warehousing • directory services

RANGE STATEMENT	
	<ul style="list-style-type: none"> • file sharing • line of business applications • management • messaging • network and remote access • printer sharing • server virtualisation • terminal services • web services.
Customer may include:	<ul style="list-style-type: none"> • company representative • government department • private organisation.
Equipment may include:	<ul style="list-style-type: none"> • digital subscriber line (DSL) modems • hard drives • hubs • modems and other connectivity devices • monitors • peripheral devices • personal computer • personal digital assistant (PDA) • printers • switches • workstations.
Business requirements may relate to:	<ul style="list-style-type: none"> • application • network • people • system.
Task may include:	<ul style="list-style-type: none"> • activities • function • job • work.
Software may include:	<ul style="list-style-type: none"> • customised • in-house • open source software applications • organisation-specific software • packaged software.
Integration may involve:	<ul style="list-style-type: none"> • power supply requirements and management • registered RAM • requirements for software installation

RANGE STATEMENT

	<ul style="list-style-type: none">• server design and network architecture• set-up and configuration procedures• single and multiple processors• vendor specifications.
--	--

Unit Sector(s)

Unit sector	Telecommunications
--------------------	--------------------

Co-requisite units

Co-requisite units	

Competency field

Competency field	Sustainability
-------------------------	----------------