



Australian Government

ICTTITU7106B Manage automated ICT system applications using unix

Release 1

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Modification History

Release	Comments
Release 2	This version first released with <i>ICT10 Integrated Telecommunications Training Package Version 3.0</i>. References to other units updated. Outcomes deemed equivalent.
Release 1	This version first released with <i>ICT10 Integrated Telecommunications Training Package Version 1.0</i>.

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to apply the Unix operating system to system automation in a distributed computing environment as used in telecommunications applications.

Application of the Unit

Telecommunication engineers apply the skills and knowledge in this unit to manage a range of automated systems within a telecommunications network.

This includes responsibility for managing databases, files systems and user administration.

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. Operate a Unix based system	1.1 Modify boot options by operating a Unix system 1.2 Shutdown a Unix system using system commands with qualifiers 1.3 Manage files using file management commands and wildcards and creating disk partitions and other media file systems 1.4 Mount and unmount file systems using system commands 1.5 Verify the integrity of file systems using system utilities 1.6 Configure telecommunication applications by using system commands with special permission modes 1.7 Analyse, evaluate and apply Unix features to a given telecommunications multi-user application using distributed computing
2. Apply system functions	2.1 Use the command line interface to interact with shells and commands to the telecommunications application on distributed computing 2.2 Manage files by applying regular expressions with system functions 2.3 Send text files and output streams through text utilities using commands 2.4 Evaluate and apply Unix system functions to a telecommunications application on distributed computing to create menu options
3. Manage user login environment and customisation	3.1 Manage user and group accounts to the telecommunications application on distributed computing 3.2 Change user and group profiles to allowed security access level using commands 3.3 Scan log files for activity using commands 3.4 Configure the user environment for setting user and global profiles 3.5 Record the configuration settings
4. Manage system level functions	4.1 Automate scheduling using the system 'cron' command 4.2 Analyse the need for backup strategy in a telecommunications network application 4.3 Plan a backup strategy to maintain redundancy of the system

	4.4 Configure the system to perform scheduled backing up the file system to various media 4.5 Verify integrity of backup operations by restoring system using backup files 4.6 Configure system log files for administration and security needs 4.7 Manage a print server and print files to provide customer service 4.8 Document the configuration backup schedules and system logs
5. Complete evaluation and configuration documentation	5.1 Produce a project evaluation report on the application of Unix features to a given telecommunications multi-user application using distributed computing with recommendations on improvements to the system 5.2 Produce a report on the management and configuration of user applications and system level functions

Required Skills and Knowledge

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

Required skills

- communication skills to:
 - present technical information
 - liaise with customers and internal team members
- literacy skills to prepare reports
- planning and organising skills to direct and manage own work
- problem solving skills to address operational issues
- research skills to gather data and information from ICT systems
- technical skills to use automated systems in distributed computing.
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Required knowledge

- automated systems
- communication systems
- distributed computing
- encoding and programming techniques
- network security
- networking of infrastructure
- realisation of software simulation
- Unix commands.

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: • use Unix operating system to manage ICT system functions • analyse system functions based on data • produce a report on the system with recommendations for improvement.
Context of and specific resources for assessment	Assessment must ensure: • a telecommunications operations site with Unix based system to manage automated functions.
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: • oral or written questioning to assess required knowledge • review of evaluation and configuration reports • direct observation of the candidate performing operational procedures on a Unix based system to manage telecommunications network functions.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • ICTPMG7145B Undertake a telecommunications project • ICTPMG8143B Manage a telecommunications project. Aboriginal people and other people from a non-English speaking background may have second language issues. Access must be provided to appropriate learning and assessment support when required.

	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. 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. Where applicable, physical resources should include equipment modified for people with special needs.
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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.

Qualifiers may refer to:	• current applications • notifications to users on future applications.
System utilities may include:	• df • du • fsck.
Telecommunication applications may include:	• directories and network files • network mountable file systems • set permissions on files.
Permission modes may include:	• sticky bit • suid.
Regular expressions may include:	• grep • sed.
Text utilities may include:	• cut • expand • fmt • head • join • nl • paste • pr • sed • sort • split.
Profiles may include:	• addresses • level of user login • passwords • type of user login.

Unit Sector(s)

Telecommunications - IT use