



Australian Government

ICTNWK537 Implement secure encryption technologies

Release: 1

ICTNWK537 Implement secure encryption technologies

Modification History

Release	Comments
Release 1	This version first released with ICT Information and Communications Technology Training Package Version 6.0.

Application

This unit describes the skills and knowledge required to select, implement and monitor secure file encryption technologies on a computer network or local environment.

It applies to individuals working as network engineers, security analysts, application and software developers as well as systems support administrations in in any size enterprise.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Networking

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Determine encryption methods	1.1 Identify enterprise data security needs according to computer network and organisational needs 1.2 Obtain and review available range of encryption technologies and determine options according to computer network and organisational needs 1.3 Plan and document proposed encryption implementation strategy and submit to required personnel 1.4 Seek and respond to proposed encryption plan feedback from required personnel according to organisational needs
2. Carry out encryption	2.1 Implement encryption technology to enterprise system according to vendor specifications 2.2 Analyse and document effect of encryption technologies on required user roles and responsibilities

ELEMENT	PERFORMANCE CRITERIA
	2.3 Submit encryption technologies analysis report and inform user impact to required users and organisational personnel
3. Finalise encryption technologies	3.1 Evaluate implementation of encryption technologies according to encryption analysis report 3.2 Determine function and performance of encryption technologies 3.3 Seek user feedback on function and performance of encryption technologies 3.4 Document encryption issues and compromises and submit to organisational help desk support

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

SKILL	DESCRIPTION
Reading	- Interprets and analyses technical data to determine security requirements - Identifies and interprets technical compromises from help desk records
Writing	Prepares workplace documentation that incorporates an evaluation of technical information using specialised and cohesive language
Teamwork	Determines the required form, channel and mode of communication for a specific purpose, according to own role
Problem solving	- Uses a combination of formal, logical planning processes and an increasingly intuitive knowledge of context to determine data security threats, risks and countermeasures - Initiates standard procedures when responding to familiar problems to troubleshoot, debug and correct connectivity and security issues
Self-management	- Follows explicit and implicit protocols and meets expectations associated with own role - Demonstrates knowledge of the purposes, specific functions and key features of industry standard digital systems and tools - Operates industry standard digital systems and tools effectively to complete routine tasks
Technology	- Manages and maintains data securely and actively monitors technology, notifying others if security becomes compromised - Operates industry standard digital systems and tools effectively to complete routine tasks

Unit Mapping Information

Supersedes and is equivalent to ICTNWK502 Implement secure encryption technologies.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2>

Assessment Requirements for ICTNWK537 Implement secure encryption technologies

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Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- create and document a security plan for the encryption of at least two applications or solutions.

In the course of the above, the candidate must:

- carry out and evaluate encryption of applications or solutions
- analyse enterprise data security requirements
- determine encryption methods.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- industry standard certificate related infrastructure including certificate authorities, registration authorities, repository services
- industry standard symmetric key algorithms and their usage, including:
 - advanced encryption standard (AES), data encryption standard (DES), triple data encryption algorithm (triple DES)
 - Blowfish
- industry standard encryption types, including:
 - public key, secret key, hash key
 - encryption strength
- functions and features of:
 - access control permissions
 - digital signatures and timestamps
 - symmetric encryption, asymmetric encryption and one-way encryption

- one-way message digests including:
 - message digest algorithm 5 (MD5)
 - secure hash algorithm (SHA)
- public key infrastructure (PKI), pretty good privacy (PGP) and GNU Privacy Guard (GnuPG)
- replay security processes and how to prevent them
- transmission control protocol and internet protocol (TCP/IP) protocols and applications
- wired equivalent privacy (WEP), Wi-Fi protected access (WPA) and Wi-Fi protected access 2 (WPA2).

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- a site where encryption installation may be conducted
- a live network
- servers
- industry standard encryption software
- industry standard encryption tools
- organisational security and encryption deliverables.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

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