



Australian Government

ICTNWK629 Configure and manage storage area networks

Release: 1

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Modification History

Release	Comments
Release 1	This version first released with the Information and Communications Technology Training Package Version 8.0. Supersedes and is equivalent to ICTNWK617 Configure and manage a storage area network.

Application

This unit describes the skills and knowledge required to implement secure and scalable storage area networks (SANs) into organisations to enable centrally managed systems.

The unit applies to individuals who may work as senior networkers, network technicians and storage engineers who are independently responsible for maintaining high-speed storage in networking environments.

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. Assemble SAN components	1.1 Confirm work brief and tasks according to organisational policies and procedures 1.2 Assess and compare SAN topology 1.3 Select SAN model according to work brief 1.4 Create SAN implementation plan 1.5 Select and source configuration tools and components
2. Connect SAN components	2.1 Cable SAN hardware according to implementation plan 2.2 Install SAN software according to implementation plan 2.3 Configure management and logical interface to endpoint devices

ELEMENT	PERFORMANCE CRITERIA
	2.4 Test network-attached storage (NAS) and SAN compatibility and rectify any issues 2.5 Update virtual local area network (VLAN) configuration settings 2.6 Take volume snapshot of host operating system and file point-in-time copy under internet small computer systems interface (iSCSI) qualified name
3. Install provisioning services	3.1 Create aggregate using redundant array of independent disk (RAID) levels 3.2 Create logical volumes according to work brief 3.3 Create logical unit numbers (LUN) according to work brief 3.4 Use NAS protocols and create shared folders 3.5 Connect client and server to shared SAN protocols 3.6 Test server interconnection and rectify any issues
4. Monitor disaster recovery	4.1 Compare point-in-time volume with end state host operating system 4.2 Install volume shadow copy service (VSS) hardware provider and confirm automatic copy functionality of host operating system 4.3 Test SAN-based data deduplication and replication operations 4.4 Test SAN-based backup and restore operations and alerts 4.5 Create and document SAN review process and present SAN management plan to enterprise administrators

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Skill	Description
Oral communication	• Uses clear spoken communication in a broad range of contexts • Presents ideas and answers questions using logical processes
Reading	• Uses technical and organisational processes to determine and confirm job requirements
Writing	• Uses clear and detailed language in documentation to convey explicit information and technical requirements
Initiative and enterprise	• Identifies and responds to protocols in complex work contexts and in various situations
Technology	• Actively identifies systems, devices and applications with potential

Skill	Description
	to meet current and/or future needs • Identifies anomalies in a virtualised machine environments

Unit Mapping Information

Supersedes and is equivalent to ICTNWK617 Configure and manage a storage area network.

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 ICTNWK629 Configure and manage storage area networks

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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:

- configure at least one storage area network (SAN) according to organisational storage needs
- confirm the interconnection of at least two different enterprise devices to a SAN.

In the course of the above, the candidate must:

- operate within the storage capacity of digital enterprises
- apply required organisational policies and procedures.

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:

- functions and features of network protocols, including:
 - common internet file system (CIFS)
 - server message block (SMB)
 - network file system (NFS)
 - internet small computer system interface (iSCSI)
 - fibre channel (FC)
 - fibre channel over ethernet (FCOE)
- key features and requirements of SANs, including:
 - volume snapshots and clone copies
 - data deduplication
 - flexible volumes

- hardware and software
- backup and restore settings
- logical unit numbers (LUNs)
- shared folders
- management and logical interfaces
- endpoint devices
- key differences and compatibility requirements between SANs, network-attached storage (NAS), and direct-attached storage (DAS) devices
- types of hard drives, including:
 - serial attached SCSI (SAS)
 - serial advanced technology attachment (SATA)
 - solid state disk (SSD)
- network configuration tools and components
- types of SAN topologies, models, cables, and connectors
- industry-recognised strategies for network management, backup, and security
- methodology for the implementation and configuration of SANs
- methodology for the configuration of virtual local area networks (VLANs)
- functions and features of redundant array of independent disks (RAIDs)
- properties of interconnection testing of storage systems and servers
- types of data storage failures and processes for recovering corrupted data
- organisational formats for documentation
- organisational policies and procedures and legislative requirements relating to work tasks.

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 storage area networks is configured and managed
- required network infrastructure, including tools, hardware, software and configuration components
- organisational policies and procedures required to demonstrate the performance evidence.

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

Links

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