



Australian Government

ICTNWK613 Develop plans to manage structured troubleshooting process of enterprise networks

Release: 1

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Modification History

Release	Comments
Release 1	This version first released with ICT Information and Communications Technology Training Package Version 1.0.

Application

This unit describes the skills and knowledge required to manage the maintenance of a complex integrated enterprise network to ensure availability and performance standard.

It applies to individuals with advanced information and communications technology (ICT) skills who are working in a wide range of roles including network specialists, network engineers, network infrastructure engineers, senior network administrators, network and systems managers, ICT security specialists, security engineers, communications engineers and communications managers.

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. Plan the strategies for structured troubleshooting and monitoring of enterprise networks	1.1 Develop strategies to monitor and manage an enterprise network to ensure availability and performance standard 1.2 Conduct equipment and skills audits as required 1.3 Evaluate the business value of service level agreements (SLAs), formal maintenance plans and monitoring procedures against best practices for maintenance and fault procedures 1.4 Assign functional responsibilities to stakeholders according to the maintenance plan

ELEMENT	PERFORMANCE CRITERIA
	1.5 Select and use appropriate network fault management tools and monitor and improve network performance
2. Manage and monitor structured troubleshooting strategies for complex enterprise networks	2.1 Implement structured network maintenance management processes and procedures in line with enterprise design plans and policies for ensuring high network reliability 2.2 Undertake risk assessment evaluation and rank threats for minimal impact 2.3 Develop and implement disaster recovery strategies for reliable contingencies and business continuity in a complex routing environment 2.4 Measure and analyse performance against an agreed baseline
3. Conduct structured network troubleshooting strategies	3.1 Analyse and troubleshoot layer 2 and 3 switch configuration to ensure the availability and resilience of a switched environment 3.2 Implement effective control of broadcast and multicast traffic in a switched environment 3.3 Analyse and troubleshoot scalable network layer connectivity with routing data structures and routing functions 3.4 Analyse and troubleshoot enterprise intra and internetwork routing protocols, architectures and processes 3.5 Analyse and troubleshoot route redistribution operations in inter-autonomous system routing architectures and processes 3.6 Test and manage internet protocol version 6 (IPv6) and version 4 (IPv4) addressing schema and verify internal and external internet protocol (IP) address translation standards 3.7 Analyse and troubleshoot communication filtering techniques, automated address allocation systems and IPv6 operational issues in the context of enterprise routing protocols 3.8 Analyse and troubleshoot wireless network configuration issues 3.9 Analyse and resolve network performance issues in an integrated voice or video network

Foundation Skills

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

Skill	Performance Criteria	Description
Reading	1.3, 1.4, 2.1	Identifies, analyses and evaluates complex text to determine all technical, regulatory and business requirements
Writing	1.1, 2.2, 2.3	Develops a broad range of operational material for a specific audience, using clear and detailed language to convey explicit information, requirements and recommendations
Oral Communication	1.4	Initiates and contributes to a range of complex conversations about technical concepts and issues relevant to personnel, responding, clarifying, explaining and expanding on information as required
Numeracy	1.2, 1.3, 2.4	Interprets numerical data when testing plans for advanced network solutions, including taking measurements to evaluate performance and interoperability of network
Navigate the world of work	2.1	Recognises protocols and policies that must be respected and maintained
Get the work done	1.1, 1.3-1.5, 2.1-2.4, 3.1-3.9	- Recognises the critical importance of clarifying, focussing and aligning goals and expectations, and may use the process to build ownership of and broad commitment to achieving outcomes - Demonstrates a sophisticated understanding of principles, concepts, language and practices associated with the digital world and uses these to troubleshoot and understand the uses and potential of new technology - Is acutely aware of the importance of understanding, monitoring and controlling access to digitally stored and transmitted information - When dealing with complex issues, may use intuition to identify the general problem area, switching to analytical processes to generate possible solutions, depending on differing operational contingencies, risk situations and environments

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
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Code and title current version	Code and title previous version	Comments	Equivalence status
ICTNWK613 Develop plans to manage structured troubleshooting process of enterprise networks	ICANWK613A Develop plans to manage structured troubleshooting process of enterprise networks	Updated to meet Standards for Training Packages.	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for ICTNWK613 Develop plans to manage structured troubleshooting process of enterprise networks

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Performance Evidence

Evidence of the ability to:

- analyse, document and troubleshoot a given complex network using industry methodologies and resources
- develop monitoring and management plans
- use networking and network fault management tools
- evaluate risk assessments and minimise threats on enterprise networks.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- outline benefits of a formal or structured approach to network management
- explain disaster recovery strategies
- summarise emerging viable business and social technologies
- outline enterprise network technologies, design plans and policies
- summarise enterprise network topologies, architectures and elements
- outline external developments or factors that affect network design
- explain internet protocol version 4 (IPv4) and internet protocol version 6 (IPv6) addressing configurations
- outline maintenance and fault procedures
- explain maintenance and management tools and practices suitable for complex networks
- outline networking standards and protocols
- summarise risk management strategies and practices suitable for a complex network environment
- clarify routing and routed protocols
- outline routing and switching technologies for an enterprise environment

- summarise security for enterprise networks
- outline security standards and technologies for network environments
- explain service level agreements (SLAs)
- describe the value and process of conducting a skills audit
- explain troubleshooting and threat mitigation strategies.

Assessment Conditions

Gather evidence to demonstrate consistent performance in conditions that are safe and replicate the workplace. Noise levels, production flow, interruptions and time variances must be typical of those experienced in the networking industry, and include access to:

- a location where the network configuration can be implemented
- routers and switches with appropriate operating systems
- computers
- suitable testing and analysis tools.

Assessors must satisfy NVR/AQTF assessor requirements.

Links

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