



Australian Government

ICTNPL603 Undertake network performance analysis

Release: 1

ICTNPL603 Undertake network performance analysis

Modification History

Release	Comments
Release 1	This version first released with ICT Information and Communications Technology Training Package Version 2.0.

Application

This unit describes the skills and knowledge required to undertake and manage monitoring, analysis and improvement of network performance, and involves analysing problems and organising repairs as well as coordinating software and hardware upgrades.

It applies to individuals with a high level of specialist technical skills and knowledge in optical telecommunications and IT networks using internet protocol (IP) systems.

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

Unit Sector

Telecommunications – Network planning

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. Analyse network performance to determine service levels	1.1 Establish network type and quality of service (QoS) standard levels required, in conjunction with equipment suppliers and customer opinion, to determine the benchmark for network performance standards 1.2 Analyse trend analysis data and statistical data to assess level and type of network degradation 1.3 Conduct performance tests according to established performance checklist to systematically evaluate QoS levels using appropriate performance analysis tools

	1.4 Analyse test results and determine QoS levels and network problems 1.5 Establish restoration times in the event of service breakdown 1.6 Determine, organise and allocate resources necessary to monitor service levels
2. Monitor integrity of the network	2.1 Monitor alarm panels and verify message retrieval system on an ongoing basis to maintain network integrity 2.2 Undertake real time analysis of data from all sources to determine network health
3. Manage delivery of quality service	3.1 Conduct monitoring activities to maintain QoS levels and network integrity 3.2 Analyse trouble reports and performance data including customer feedback on a regular basis as an indicator of network performance 3.3 Analyse drive test data as an input to performance and optimise the network to improve network level of service
4. Analyse problems and organise repair	4.1 Analyse performance results regularly and initiate investigations when performance levels are below specified standards and recommend network changes 4.2 Analyse causes of problems by testing specific network components 4.3 Isolate problems where possible and escalate repair according to enterprise policy 4.4 Undertake evaluation testing after repair to ensure the problem has been rectified
5. Coordinate upgrade of software and hardware	5.1 Develop strategies to affect changes according to recommendations and produce a plan to coordinate activities 5.2 Produce a cost estimate of proposed change and submit a cost-benefit study for approval 5.3 Confirm shortcomings in hardware and software and negotiate with planners for network modifications 5.4 Evaluate modifications to ensure network compatibility and use of appropriate protocols providing QoS in the network 5.5 Produce a plan for software and hardware changes to be initiated with minimum network downtime and customer impact 5.6 Undertake tests following upgrade to ensure the level of performance planned as a result of the upgrade has been achieved 5.7 Produce documentation including configuration details and tests results and submit to network planner

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	1.1-1.3, 1.6, 2.2, 3.1-3.3, 4.1	- Analyses and evaluates complex written and numerical text in specialised documentation to determine key information and specific requirements - Evaluates complex text to determine a plan to meet current and future needs
Writing	1.1, 1.6, 4.1, 5.1-5.3, 5.5, 5.7	- Develops complex material for a specific audience using clear and detailed language and visuals while employing expected forms and conventions - Prepares reports which incorporate evaluation of information, recommendations and specialised and cohesive language
Oral Communication	1.1, 1.6, 3.2, 4.1, 5.3	Elicits views and opinions of others and obtains information by listening and questioning
Numeracy	1.2-1.5, 2.2, 3.2, 4.1, 5.2	- Interprets numerical information and applies appropriate mathematical formulas to calculate different future possibilities - Analyses data to measure present and predicted usage and assess different scenarios
Navigate the world of work	1.3, 4.3	- Develops and implements strategies that ensure organisational policies, procedures and regulatory requirements are being met - Ensures knowledge of legislative requirements and products is kept up-to-date to provide accurate information
Interact with others	1.1, 1.6, 3.2, 4.1, 5.3, 5.7	- Selects, implements and manipulates communications systems, processes and practices for maximum impact - Uses a variety of relevant communication tools and strategies in building and maintaining effective working relationships - Influences and fosters a collaborative culture facilitating a sense of commitment and workplace cohesion
Get the work	1.1-1.6, 2.1, 2.2, 3.1-3.3,	Plans strategic priorities and outcomes within a flexible, efficient and effective

done	4.1-4.4, 5.1, 5.3, 5.4, 5.6	context in a diverse environment exposed to competing demands • Gathers and analyses data and seeks feedback to improve plans and processes • Makes high-impact decisions in a complex and diverse environment, using input from a range of sources • Addresses complex problems involving multiple variables, using formal analytical, lateral thinking techniques experience and knowledge to focus in on the root cause • Uses digital technologies to manage business operations and actively investigates new technologies for strategic and operational purposes
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Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTNPL603 Undertake network performance analysis	ICTNPL6046A Undertake network performance analysis	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 ICTNPL603 Undertake network performance analysis

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Performance Evidence

Evidence of ability to:

- interpret current network performance data accurately
- monitor integrity of the network
- manage delivery of quality service efficiently
- conduct accurate performance tests using appropriate performance analysis tools
- analyse problems and organise repair applying escalation procedures, if required, within service assurance guidelines
- coordinate upgrade of software and hardware efficiently.

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:

- explain the process for cost estimation
- outline the following aspects of customer interaction:
 - customer policies
 - expectancies
 - service level agreements
- explain the following features of the network:
 - alarms
 - compatibility and interoperability
 - operations
 - performance analysis methodologies
 - performance analysis tools

- performance tests
- planning and design principles
- explain protocols providing QoS
- describe QoS standard levels
- describe software and hardware upgrades
- outline the following technologies and architectures:
 - switching network
 - transmission network
- describe technologies for the customer network.

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 Telecommunications – Network Planning field of work and include access to:

- a site where network performance analysis may be conducted
- data from organisations involved in planning initiatives
- a range of current software
- relevant regulations
- specifications that impact service measures
- forecasting activities.

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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