



Australian Government

ICTNPL407 Plan the deployment of core network

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 2.0.

Application

This unit describes the skills and knowledge required to plan deployment of core network for a telecommunications service provider, including use and consideration of core network deployment data, technology, equipment, capacity management and network management information sources. Core networks use convergent internet protocol (IP) based technologies with conventional technologies.

It applies to individuals with a range of telecommunications skills and extensive knowledge of core and access network capabilities of the service provider. It prepares individuals for entry into planning and design for network additions and implementations to accommodate network growth and new technologies within the industry.

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. Scope the project	1.1 Prepare for work according to site-specific safety requirements and enterprise work health and safety (WHS) processes and procedures 1.2 Determine the type of core network by accessing and using network information sources 1.3 Produce a brief showing how core network architecture components relate to the larger network and their impact on the work

	1.4 Evaluate equipment type and technologies to be considered to determine availability and compatibility with existing network equipment 1.5 Obtain resources and equipment needed for the work according to enterprise procedures and check for correct operation and safety 1.6 Assess capacity limitation of platforms in context of the work to ensure maximum network performance 1.7 Determine product capability and calculate allowable capacity of the core network to allow for network growth
2. Produce deployment plan for a core network	2.1 Assess demand for the core network using key geographic, demographic, forecast and bandwidth data 2.2 Identify key parameters of the core network to be measured for capacity management 2.3 Produce a preliminary deployment plan for the core network using architectural principles and assessed demand to maintain integrity of the core network 2.4 Assess additional planning requirements for voice over internet protocol (VoIP) and wireless voice networks from voice networks, and for hosting and content distribution networks from media and content networks 2.5 Create a financial business case for deployment of the core network based on assessed demand to justify a return on investment (RoI) and operational costs 2.6 Discuss unexpected situations with appropriate personnel, with consideration to job specifications, safety and enterprise procedures to establish a solution
3. Complete work and report its impact on network performance	3.1 Produce final deployment plan including recommendations agreed with customer 3.2 Provide a report on network monitoring techniques used to manage the network to ensure the network is performing at optimum level

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, 1.5, 2.1-2.4	Analyses and evaluates complex written and visual text in specialised workplace documentation to determine key information and specific requirements

Writing	1.3, 2.6, 3.1, 3.2	Develops material for a specific audience using clear and detailed language and visuals employing expected forms and conventions
Oral Communication	2.6, 3.1, 3.2	- Articulates technical information using an appropriate tone and vocabulary for the intended audience - Listens and responds to different viewpoints and elicits opinions of others through considered questioning
Numeracy	1.6, 1.7, 2.1, 2.3, 2.4	Employs mathematical calculations to interpret capabilities and limitations of different systems and future configurations
Navigate the world of work	1.1, 1.5, 2.6	Takes personal responsibility for following explicit and implicit policies, procedures and legislative requirements
Interact with others	2.6	- Uses a range of strategies to establish a sense of connection and build rapport with clients and co-workers - Selects and uses appropriate conventions and protocols when communicating with clients and co-workers in a range of work contexts
Get the work done	1.1, 1.3-1.7, 2.1, 2.2, 2.4, 2.5	- Takes responsibility for planning, sequencing and prioritising tasks and own workload for efficiency and effective outcomes - Makes routine decisions and implements standard procedures for routine tasks, using formal decision-making processes for more complex and non-routine situations - Addresses less predictable problems and initiates standard procedures in response, applying problem solving processes in determining a solution

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTNPL407 Plan the deployment of core network	ICTNPL4113A Plan the deployment of core network	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 ICTNPL407 Plan the deployment of core network

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Performance Evidence

Evidence of ability to:

- gather data from information sources efficiently and evaluate how the data relates to the core network
- source major equipment and technologies accurately to be used in a core network and detail their compatibilities
- prepare a business case for deployment of a core network
- produce a deployment plan for a core network including monitoring techniques and recommendations for the customer.

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:

- identify multiprotocol label switching (MPLS) and internet protocol (IP) architectures across a core network environment
- outline different protocols such as routing information protocol (RIP), enhanced interior gateway routing protocol (EIGRP), open shortest path first (OSPF), and border gateway protocol (BGP) operations
- identify virtual local area networks (VLAN) and virtual private network (VPN) tunnels and explain how they are implemented in an ethernet and MPLS environment
- outline the following features of core network architectures:
 - client business domain, business function and organisation
 - current industry-accepted hardware and software products
 - networking technologies incorporating substantial depth in some areas
 - transmission technologies and protocols

- theoretical concepts of three or more current industry network development and design methodologies.

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:

- network design documentation
- other site-related documentation
- equipment specifications
- live network or training facilities
- organisational guidelines
- networked computers
- networked telecommunications components.

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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