

Domain	NETWORKING	UNIT ID: 2297
Title:	Demonstrate an understanding of Transmission Control Protocol/Internet Protocol (TCP/IP) fundamentals	
Level: 3		Credits:5

Purpose

This unit standard is intended for those who demonstrate an understanding of Transmission Control Protocol/Internet Protocol (TCP/IP) Fundamentals. People credited with this unit standard are able to recognize different protocols within TCP/IP stack and define their purpose and functions, demonstrate an understanding of TCP/IP according to application layer, demonstrate an understanding of TCP/IP according to transport layer, demonstrate an understanding of TCP/IP according to internet layer, demonstrate an understanding of TCP/IP according to network layer.

This unit standard is intended for those who work in the networking environment.

Special Notes

1. Entry information:

Prerequisite:

- None

2. Assessment evidence may be collected from a real or a simulated workplace in which networking operations are carried out.

3. Tools and equipment may include but are not limited to computer, external devices, storage devices and basic computer applications.

4. Glossary of terms:

- *TCP/IP - stands for Transmission Control Protocol/Internet Protocol, which is a set of networking protocols that allows two or more computers to communicate.*
- *Operating System - the low-level software that supports a computer's basic functions, such as scheduling tasks and controlling peripherals.*
- *Network Devices – Networking hardware may also be known as network equipment, computer networking devices. Units which are the last receiver or generate data are called hosts or data terminal equipment. All these terms refer to devices facilitating the use of a computer network.*
- *Input and output devices –is the communication between information processing system(such as a computer) and the outside world, possibly a human or another information processing system.Inputsare the signals or data received by the system, andoutputsare the signals or data sent from it.*

5. Performance of all elements in this unit standard must comply with industry standards.
6. Regulations and legislation relevant to this unit standard include the following:
 - Labour Act 2007(Act No 11, 2007).
 - Regulations relating to the health & Safety of employees at work under Schedule 1 (2) of the Labour Act No.11 of 2007 and all subsequent amendments.

Quality Assurance Requirements

This unit standard and others within this sub-field may be awarded by institutions which meet the accreditation requirements set by the Namibia Qualifications Authority and the Namibia Training Authority and which comply with the national assessment and moderation requirements. Details of specific accreditation requirements and the national assessment arrangements are available from the Namibia Qualifications Authority on www.namqa.org and the Namibia Training Authority on www.nta.com.na

Elements and Performance Criteria

Element 1: Recognize different protocols within TCP/IP stack and define their purpose and functions

Range

TCP/IP Protocols may include but not limited to TCP, SMTP, IP, NNTP, HTTP , RIP, UDP, IPv4, IPv6 , ICMP, ARP, Telnet , DNS, SSH and FTP.

TCP/IP Protocols functions may include but not limited to protocol transport, file access, file transfer, and mail server.

Performance Criteria

- 1.1 Concept of TCP/IP is explained
- 1.2 TCP/IP protocols are identified, classified and explained in relation to TCP/IP and OSI model.
- 1.3 TCP/IP Protocols functions are explained.

Element 2: Demonstrate an understanding of TCP/IP according to Application Layer

Performance Criteria

- 2.1 Application layer is explained.
- 2.2 Application layer protocols are identified and explained.
- 2.3 Functions of application layer protocols are identified and explained.

2.4 Application layer ports associated to protocols are identified and explained.

Element 3: Demonstrate an understanding of TCP/IP according to Transport Layer

Performance Criteria

3.1 Transport layer is explained.

3.2 Transport layer protocols are identified and explained.

3.3 Functions of Transport layer protocols are identified and explained.

3.4 Transport layer ports associated to protocols are identified and explained.

Element 4: Demonstrate an understanding of TCP/IP according to Internet Layer

Performance Criteria

4.1 Internet layer is explained.

4.2 Internet layer protocols are identified and explained.

4.3 Functions of Internet layer protocols are identified and explained.

4.4 Internet layer ports associated to protocols are identified and explained.

Element 5: Demonstrate an understanding of TCP/IP according to Network Layer

Performance Criteria

5.1 Network layer is explained.

5.2 Network layer protocols are identified and explained.

5.3 Functions of network layer protocols are identified and explained.

5.4 Network layer ports associated to protocols are identified and explained.

Registration Data

Subfield:	Information and Communication Technology
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