

Module 2

Introduction to network protocol

- Network protocols
- Virtual Private Network (VPN)
- Firewall, security zones and proxy server

Network Protocol

A set of rules used to by two or more devices on a network to describe the order of delivery and the structure of the data

Transmission Control Protocol (TCP)

An internet communication protocol that allows two devices to form a connection and stream data.

- Is not limited to two devices

Address Resolution Protocol (ARP):

A network protocol used to determine the MAC address of the next router or device on the path

Hyper text transfer protocol Secure (HTTPS)

A network protocol that provide a secure method of communication between client and website server

Domain Name System (DNS)

A network protocol that transfer translates internet domain name into IP addresses.

Security Protocol

- HTTPS
- SSL / TLS

Wireless Protocols

IEEE 802.11 (Wifi)

A set of standards that define communication for wireless LAN

Wifi Protected Access (WPA)

A wireless security protocol for devices to connect to the internet

System identifications

Firewall and network security

Firewall : A network security device that monitors traffic to and from your network

Port filtering: A firewall function that blocks or allows certain port number to limit unwanted communication

Cloud Based firewall : Software firewall that are hosted by a cloud service provider

Stateful : A class of firewall that keeps track of information passing through it and proactively filters out threats

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Stateless: A class of firewall that operates based on predefined rules and does not keep track of information from data packets.

Benefits of next gen firewalls

- Deep packet inspection
- Intrusion protection
- Threat intelligence

Virtual Private Network (VPN)

VPN: A network security service that changes your public IP address and hides your virtual location so that you can keep your data private when you are using a public network like the internet.

Encapsulation: A process performed by a VPN service that protects your data by wrapping sensitive data in other data packets.

Security Zones

Security Zone: A segment of a network that protects the internal network from the internet.

Network Segmentation: A security technique that divides the network into segments.

Uncontrolled Zone: Any network outside of the organization control.

Controlled Zone : A subnet that protects the internal network from uncontrolled zone

Areas in the controlled zones

- Demilitarized zone (DMZ)
- Internal network
- Restricted zone

Proxy Server : Server that fulfills the request of a client by forwarding them on to other servers

Forward Proxy server : Regulates and restrict a person access to the internet

Reverse Proxy server : Regulates and restrict the internet access to an internal server