Connect and Protect : Network and Network Security

Module 1

We will Learn
- Structure of network
- Network operation
- Network attack
- Security hardening

Introduction to Network

We will learn
- Structure of a network
- Standard networking tools
- Cloud networks
- TCP/IP model

Networks

Group of connected devices

Local Area Network (LAN): A network that spans a small area like an office building, a school or a home

Wide Area Network (WAN): A network that spans a large geographic area like a city, state or country

(device is define can be anything)

devices in network communication can be wired or wireless

Addresses or Identifiers like IP address or MAC address is used for communication

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Network tools

Hub
- A network device that broadcast information to every device on the network

Switch
A device that makes connection between specific devices on a network by sending and receiving data between them

Router
A network device that connect multiple network together

Modem
A device that connects your ~~asset~~ router to the internet and brings internet access to the LAN

Virtualization tools
Pieces of software that perform network operations

Cloud Network

The practice of using remote servers application and network services that are hosted on the internet instead ~~to~~ of on local physical device
- Collection of server or computers that stores resource and data in remote data centers that can be accessed via the inter

Provides
- On demand storage
- Processing power
- Analytics

Network communication

Libre

Data Packet : A basic unit of information that travel from one device to another within a network

Bandwidth : The amount of data a device receive every second

Packet sniffing : The practice of capturing and inspecting data packet across a network

TCP/IP Model :

TCP : Transmission control Protocol an internet communication protocol that allow two devices to form a connection and stream data

IP : Internet Protocol as set of standard used for routing and addressing data packet as they travel between devices on a network

Port : A software based on location that organize the sending and recieving of data between device on a network

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The four layered TCP/IP Model

TCP/IP model : Framework used to visualize how data is organized and transmitted across the network

Layers
1) Network access
2) Internet
3) Transport
4) Application

Local and Wide Communication Network

IP addresses and network Communication

IP address : A unique string of characters that identifies the location of a device on internet

Types : · IPV4 (V = version) ⇒ 19.117.63.126
· IPV6 ⇒ 684D:1111:222:3333:4444:5555:6:7

MAC addresses :
A unique alphanumeric identifiers that is assigned to each physical devices on a network