Basic of networking

The computer in a network must use the same procedures for sending and receiving data we call these communication protocol

Data must be delivered uncorrupted if it corrupted it is useless there is computer is networking

Computer in a network must be capable of determining the origin and destination of a piece of information its Lp and mac address

Types of computer networks

* Personal area network [PAN]
* Local area network [LAN]
* Wireless local area network [WLAN]
* Campus area network [CAN]
* Metropolitan area network [MAN]
* Wide area network [WAN]

What is protocols

* Computers communication with each other with network protocols
* Protocols are rules governing how machines exchange data and enable effective communication

Types of protocols

* Physical protocols=: describe the medium [wiring]the connections[R]-45port] and signal
* Logical protocols= software controlling how and when data is send and received to computer
* Wired if topology
* Bus
* Ring
* Star
* Mesh
* Bus topology

All devices are connected in circular fashion

Each computer is connected to two or more computer

Data travels form node in the ring regenerates

* Star topology

All devices are connected to a central connecting device which is usually a switch devices

vices send to the switch which forwards it to destination

* Ring topology

Each device node in the ring regenerates the signal acting as are repeater failure of the take down the entire network

* Mesh topology

Each device is connected to every others device by separate cabling highly redundant and fault -tolerance

Expensive to install

Commonly used in enterprise networks & wan

* What is firewalls
* Firewalls are the foundation of defense in depth network security strategy they protect your network form malicious activity on the internet prevent unwanted network traffic on different networks form accessing your
* Firewalls do this by filtering data packets the go them
* They can be a standalone network device or software on a computer system meaning
* Network based [ ]or host based [software]

Types of firewalls

* Packet filtering firewalls
* 1st generation &most basic
* Basic filtering rules
* Circuit-level firewalls
* 2nd generation
* Monitors valid /invalid TCP sessions
* Application layer 7[NGFW] firewalls
* 3rd generations
* Much more advanced ;covered later in course
* What is footprinting

Footprinting is an ethical hacking technique used first together as mush data as possible about a specific targeted computer system an and networks to indentify opportunities to penetrate them

* Types of footprinting
* Passive foot===passive footpriting attacker collect information

without knowing target passive footprinting attacker collecting information form different active like google search IP address DNS lookup

* Active footprinting

Active footprinting attacker knows about the target and collect the information by mirroring web site E mail tracing pinging

TCP/UDP

* Welcome to this presentation exp-fundamental component of network communication TCP/UDP headers we will delve into their structure function and differences to understand how they shape the reliable and efficient transfer of data across network
* Tcp

Transmission control protocols

Provides a reliable order and connection -oriented method for data transfer ensuring data integrity and data

* What is enumeration
* As port if the scanning phase of information gathering you will perform what
* Which is a process of connection to and interrrogather