

NOSS Recap Discussion

A space for students to review and discuss key concepts from previous lectures.

IP Addressing

↻ **Every device on a network has its own IP address**

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↻ **Two types of IP**

IPv4 => Decimal IPs / 32-bits

IPv6 => Hexadecimal IPs / 128-bits

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↻ **Several IP address**

IPv6 : hexadecimal

IPv4: set of 4 number with a full-stop
to separate them, it goes from 0-255

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↻ IP addressing is a method of
identifying a device on a network.

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↻ Host have IP addresses
Nodes don't necessarily have IP addresses

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Virtualization

↻ Type 1 (bare metal) and type 2 (hosted) hypervisors
create multiple virtual machines on a single physical
machine, allowing better resource management

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↻ **Virtualization**

It is a way to manage hardware to work
efficiently on different virtual machines.

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↻ It is the process of creating a virtual
version of computer hardware.

Virtualisation

The use of virtual machines that allows administrators and users to perform actions remotely on servers, rather than directly on the physical machine itself.

These are run on either Type 1 'bare metal' (which directly access a physical box) or a Type 2 'host' (which are accessed via a host instead of physical) to run these virtual machines, depending on organisational needs.

2 types of virtualisation

Type 1 and Type 2, Type 1 virtualisation is on a bare metal and type 2 is running on the OS

Active Directory

Active Directory

AD is used to manage users, devices and services within a network

Active Directory (AD)

Active Directory (AD) is a Microsoft service that provides centralized authentication and authorization to network resources.

Has info on users, computers, and permissions

Routing

Static vs Dynamic

Static: fixed route to decide where packets go.
Dynamic: Protocols decide on the quickest or most efficient path.

Static vs Dinamic routing

Static uses a single route for every destination making it more secure and less resource hungry

Dynamic is able to automatically adjust to topology changes, but broadcasts all connections

to neighbouring routers making it less secure	
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↩️ RIP v2	
👤 0 🗑️ 0 📄 0	
↩️ OSPF	
👤 1 🗑️ 0 📄 1	
nkaliyamurthy 4/18/24 8:35AM EIGRP	

DNS

↩️ Domain name service	
Turns IP addresses into names for websites	
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↩️ DNS	
DNS - The Domain Name System	
(DNS) is the phonebook of the Internet	
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↩️ DNS	
Allows for domain names to be translated	
into IP addresses to allow for access	
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↩️ DNS stands for Domain Name System. It	
tranates domain names into IP addresses	
that computers can understand	
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DHCP

↩️ Configures ip addresses to devices	
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↩️ Dynamic Host Configuration Protocol automatically	
assigns IP addresses to devices on a network	
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↩️ Dynamic host configuration protocol	
Dynamically assigns IP addresses	

Using the DORA process

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↩️ **Automatically assigns IP addresses from a predefined pool**

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VPN

↩️ A site to site VPN creates a secure encrypted tunnel to share data between sites in separate geographical locations

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↩️ **VPN**
VPN stands for "Virtual Private Network" to establish a protected network connection when using public networks.

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↩️ VPNs create an encrypted tunnel through public networks to provide secure remote access to remote locations.

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↩️ **VPNs**
A VPN is a tool that encrypts your internet connection, keeping your online activities private and secure. It allows you to access restricted content and browse anonymously by masking your IP address

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↩️ **Creates an encrypted private network over a public connection**

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↩️ **Site-to-site VPN**
Site-to-site VPNs connect networks between them through a another network

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