Windows Server Operating System

Operating system

1. Server OS - which SERVES - ex: o windows server NT o windows server 2003 o windows server 2008/2008R2 o windows server 2012/2012R2 o windows server 2016 o windows server 2019 o windows server 2022 o windows server 2025	2. Client OS - sends requests - ex: o Windows XP o Windows Vista o Windows 7 o Windows 8 o Windows 8.1 o Windows 10 o Windows 11

Active Directory

- It's a directory service that stores user's information.
- AD performs 2 "A"
  - Authentication
  - Authorization

DHCP

- Dynamic Host Configuration Protocol
- The job is to provide IP address to client dynamically.

DNS

- Domain Name System
- The job of DNS is to resolve names to IP.

Group Policy

- Allow you to manage the users and computers within an organization.

Domain → for companies

- It is a logical administrative boundary of an organization.
- You (admin) can control anything and everything within this boundary.
- If any server/client/computer is domain-joined, then this system is totally controlled by the domain admin.
  - Changing the wallpapers.
  - Disabling the USB ports.
  - Disabling the control panel
  - Enabling/forcing the firewall.

Workgroup → individual users

- It is a standalone machine (its not part of any domain)
- It can be managed by the local admins

After the installation of a new windows server OS: - "**Post Installation Configuration**"

- ✓ Set the IP address.
  - Dynamically using "DHCP server". OR
  - Manually → "ncpa.cpl"
- ✓ Change the date and time zone
- ✓ Disable the firewall (req. in testing environment). Never do this in production.
  - Public Firewall
  - Private firewall
  - Domain firewall (only after the domain joining of the computer).
- ✓ Change the computer/system name → Reboot your computer.

Note – *These settings must be updated on DC, Node01 and Node02 machines.*

For DC machine:

- IP address: 192.168.10.10
- Subnet Mask: 255.255.255.0
- Default gateway: 192.168.10.10
- DNS: 192.168.10.10
- Hostname: DC
- Firewall: OFF

For Node01 machine:

- IP address: 192.168.10.11
- Subnet Mask: 255.255.255.0
- Default gateway: 192.168.10.10
- DNS: 192.168.10.10
- Hostname: Node01
- Firewall: OFF

For Node02 machine:

- IP address: 192.168.10.12
- Subnet Mask: 255.255.255.0
- Default gateway: 192.168.10.10
- DNS: 192.168.10.10
- Hostname: Node02
- Firewall: OFF

Ping using IP/Name

- DC ←→ Node01
- Node01 ←→ Node02
- Node02 ←→ DC

Adding disk(s) on → DC machine

- Add a new disk using VMWare workstation
- Go to disk management console
    - Right-click on Windows icon and select Disk management.
    - Run → “diskmgmt.msc”
- Right-click on the new added disk, select “Online” option.
- Again right-click on this disk and select “Initialize Disk”.
- Right-click on the disk and create a new simple volume.
- Go to this PC and verify.

MBR	GPT
• Master Boot Record • Old way to create partitions on an HDD. • Primary partitions: 4 • Supports HDD capacity up to: 2TB	• GUID (Globally Unique Identifier) Partition Table • New way to create partitions on an HDD. • Primary partitions: 128 • Supports HDD capacity up to: 18Exabytes

Tasks

- Create a total of 3 VMs
    - Domain controller (DC)
    - Nodes (Node01 and Node02)
- Perform the post installation on all the 3 VMs.
- Ping all the 3 VMs using IP address.
- Add 2 disks, each of 10GB and ensure that the disks are in GPT format on domain controller (DC) machine.