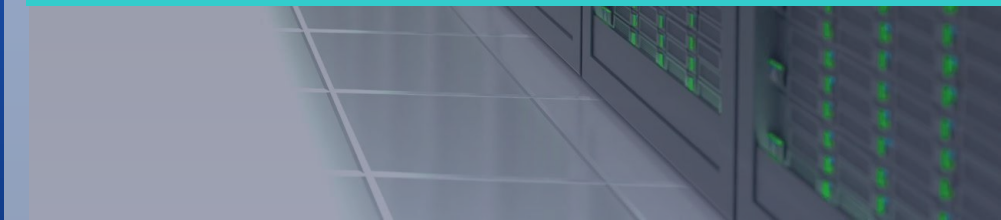




Servers





What is a Server?

Networking and functionality

These are only **intercontinental** cables. There are probably over 100 million servers today!

A Server is...

- a program or device that provides **functionality** to other programs or devices, called **clients**.
- provides “**services**” which range from file sharing to computation.
- found in a **client-server** architecture.

(source: Wikipedia)

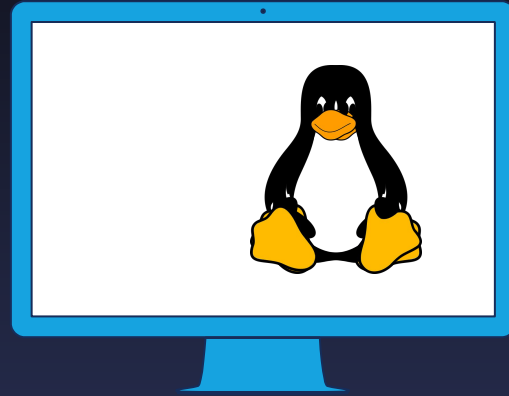


Typical Server Types

- File servers
- Database servers
- Mail servers
- Print servers
- Web servers
- Game servers
- Application servers
- Communication servers
- Authentication servers
- Management servers
- Computational servers

Most servers are Linux. Why?

- Free and open source
- Stable, reliable, and flexible
- **Typically** more secure



As such, it is easier to own and manage Linux servers.

Windows is typically designed for easy setup and usage.

But for “in company” application, Windows wins

- Active Directory
- GPOs
- Easier backups
- Better roles and features management
- Better virtualization out of the box

Of course, if Windows wasn't common then Linux may be a better choice.

That's how Windows works.



Servers you will commonly see...

→ Windows

- SMB
- FTP
- IIS
- DNS
- AD

File
File
Web
Communication
Management

→ Linux

- SSH
- Samba
- FTP
- LAMP
- SQL

Communication
File
File
Web
Database

Nationals may include:

Mail

SMTP

POP3

IMAP

Web-based Email

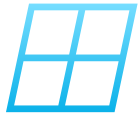
ubuntu 



Linux



Microsoft



Windows Servers

Easy to set up but complicated in reality

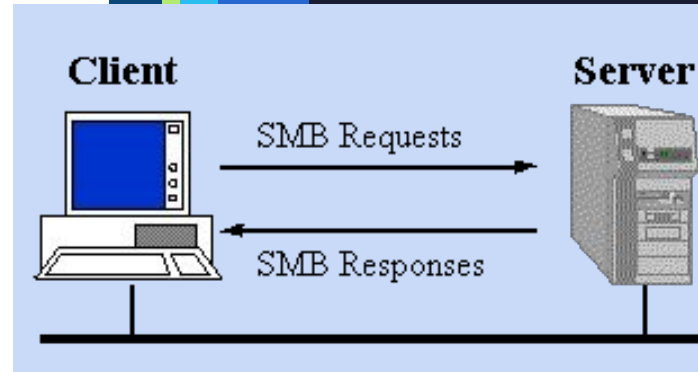
SMB

Server Message Block

Common usage: internal file server

When you share a folder, your computer essentially becomes an SMB server to other systems in the same network.

SMB is built into all commonly used Windows versions.





FTP

File Transfer Protocol

Common usage: external file server

Faster speed but less functionality than SMB.

FTP is an additional feature that can be installed; third party programs can also accomplish.

IIS

Internet Information Services

Common usage: extensive web related stuff

Includes FTP, WWW (HTTP/S), and SMTP services.

Windows file structure corresponds to website structure.



DNS

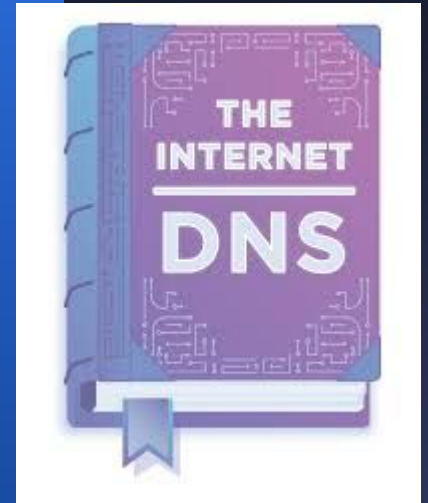
Domain Name System

Common usage: domain name and IP translations

Translates FQDNs and IPs.

- Forward DNS lookup: dns.google → 8.8.4.4
- Reverse DNS lookup: 8.8.4.4 → dns.google

DNS records are stored in zone files as plaintext.



AD

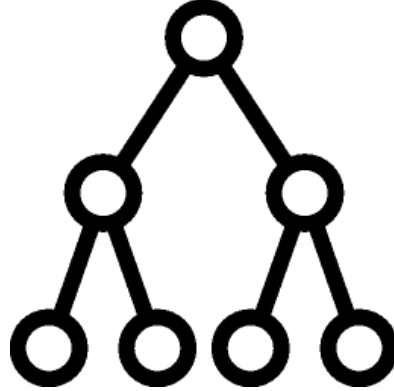
Active Directory

Common usage: centralized management

Acts as an authentication server and management server.

Includes domain users functionality, domain controllers

Requires DNS server on the same computer to function





Dependence

Servers sometimes depend on other servers to function

Server Dependencies Example

