



SERVER SYSTEMS IN UNITED NATIONS DPKO

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Learning Objectives

- By the End of this Theory session, You are going to be able to:
 - Define a Server.
 - Explain the Main Role of a Server.
 - Define what an OS is and its role.
 - Define what a Windows Domain is.
 - Explain the different Types of Servers used in UN-DPKO.

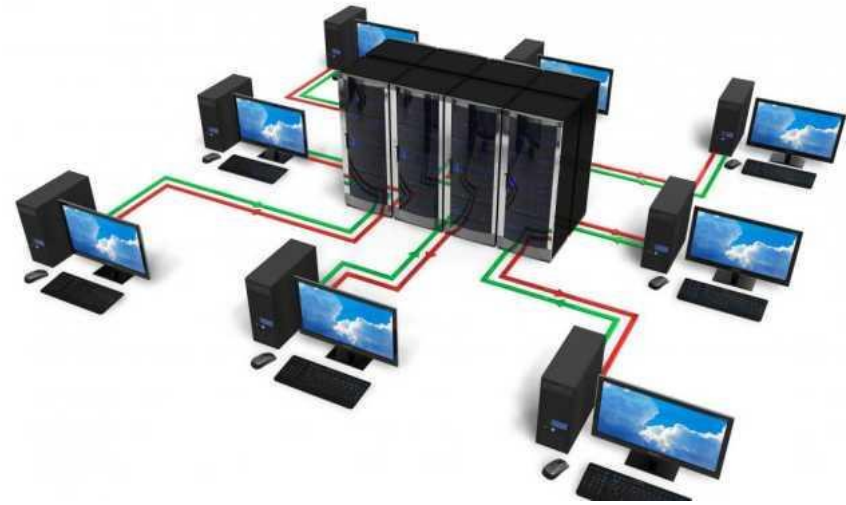
Servers

Physical Servers currently used in UN-DPKO Data Centers



What Is A Server?

- A **Server** is a Computer Program or a Physical Machine that accepts and responds to requests generated by another program or machine called a '**Client**'.



- The server performs some tasks on behalf of its Clients.
- Examples of Servers you know: Programs & Machines

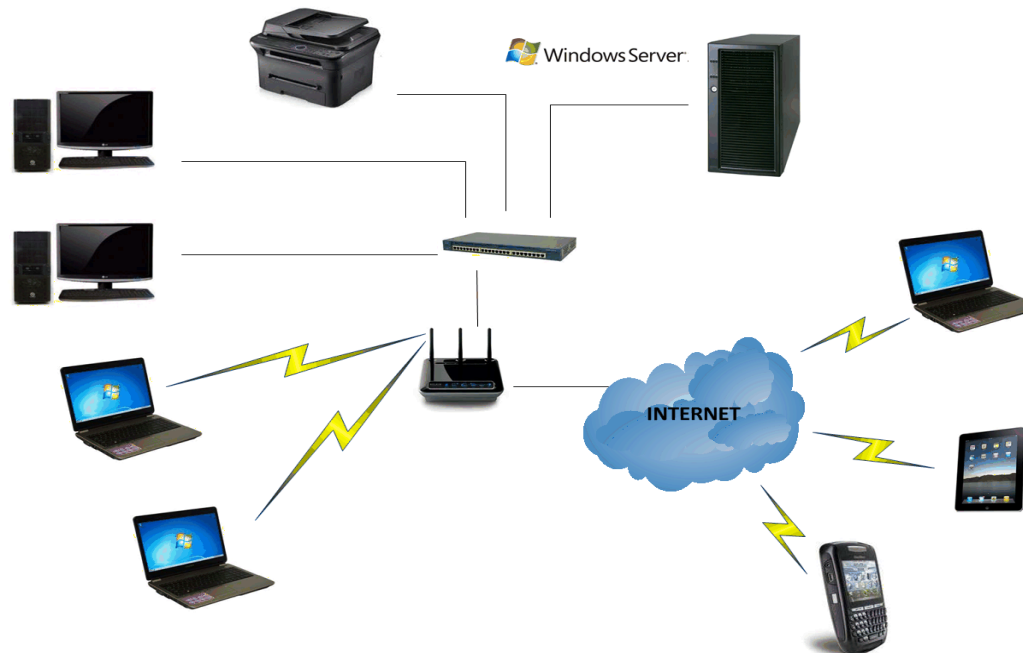
Main Role Of A Server

- **Main role:** Serves the requests of other devices and/or other programs, known as “clients”.
- Performs centralized or shared tasks. As such, servers normally have many resources. i.e. CPU, RAM, Storage, network, power, cooling etc.



A Server Operates In A Network

- The clients (other computers Or devices) are connected to the server(s) through a **network**.



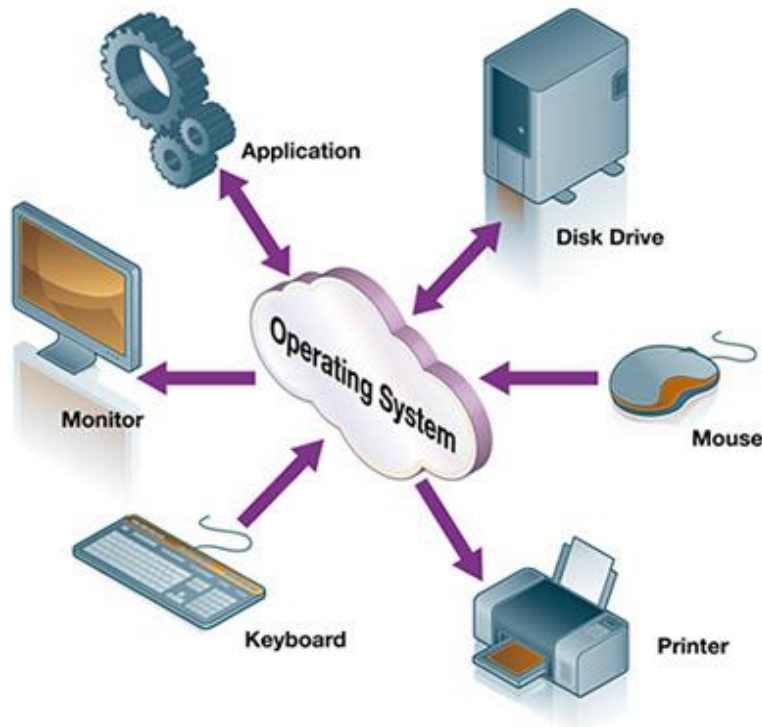
- Essential services across networks, either to service users' requests inside a private organization, or public users via Internet.

Any QUESTIONS?

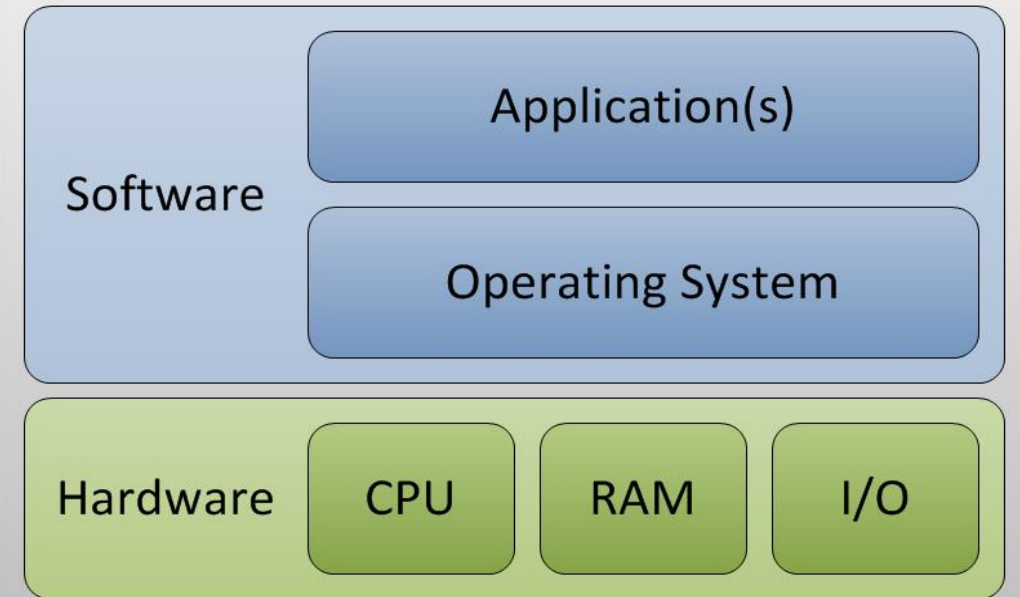


Operating System

- An **O**perating **S**ystem (**OS**) is a set of programs which manage the computer hardware resources and also provides common services for other application software.

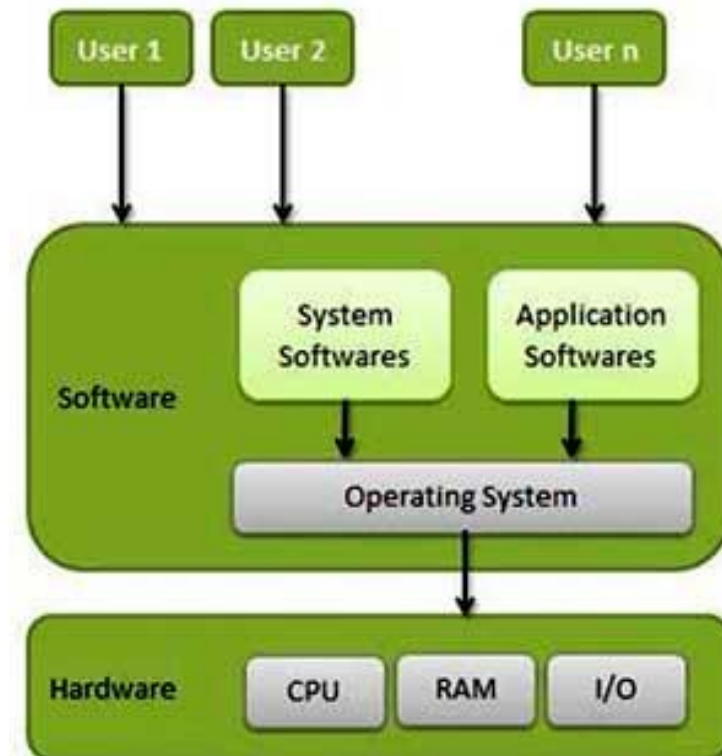


The Standard OS Model



Operating System

- The most important Software;
- A user cannot run any application/program without an OS, unless it is self booting.
- **Server Operating Systems**
- In UN DPKO, we mostly use:
- Windows Server OS.
- **Questions:**
 - a) Do mobile devices, e.g. phones, have an OS?
 - b) Which Operating Systems do you know?



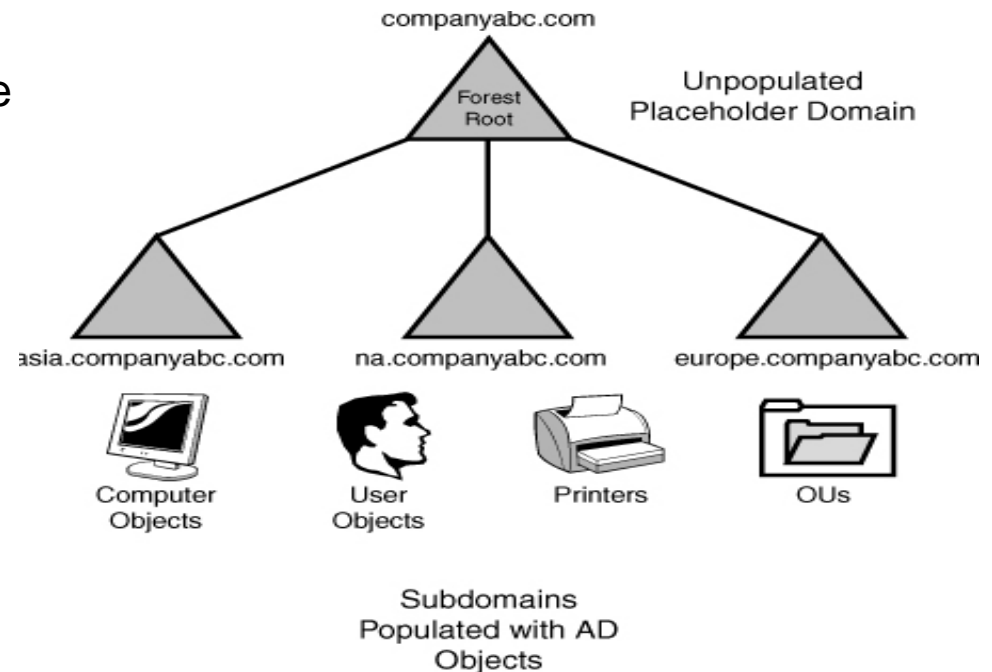


EXAMPLES of Windows Server OS

- Windows Server 2003, a good example of a well known Server OS, produced by Microsoft, introduced in April 2003.
- An updated version Windows Server 2003 R2, was released in December 2005,
- Successors:
 - Windows Server 2008 was released in Feb, 2008
 - Windows Server 2008 R2 released in July, 2009
 - Windows Server 2012 released in August, 2012
 - Windows Server 2012 R2 released in October, 2013
 - Latest Windows Server 2016 released to manufacturing last year September 26th, 2016, Generally available October 12th, 2016.

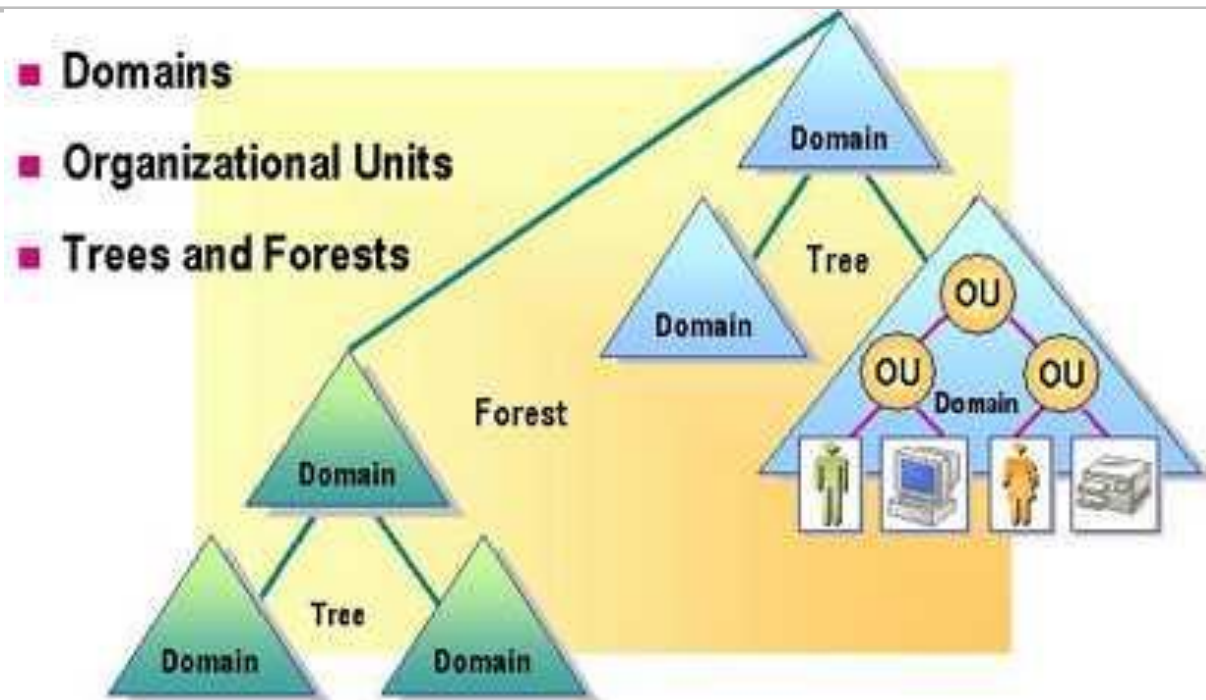
WINDOWS Domain

- A **Windows domain** is a hierarchical collection of security principals /accounts;
- (computers, users, printers etc.)
- that share a central directory Database
- known as Active Directory
- or simply **AD**.



- Contains all the users' accounts and
- All security information for other resources in that domain.
- Each user in a domain, receives his or her own unique account. It is this account which is assigned access to resources within the domain using a single username and password.
(Single-Sign-On)

WINDOWS Domain Illustration



- In each domain, the **AD** resides on computer(s)/server(s) that have previously been configured as “**Domain Controllers**.”
- AD objects can be assigned to OUs according to location, roles, organization structure etc.

Any QUESTIONS?

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Types Of Servers Based On Roles.

- In the most common use, a **server** is a physical computer (a hardware system, collection of resources) dedicated to running one or more services.
- Depending on the computing service that it offers, a Server may also be categorized as: a Webmail server, a File server, a Domain Controller, a DNS server, a DHCP server, a Print server or any other (depending on the role).
- The role of the server and size of organization determines how much resources.



UN-DPKO Servers:1.Domain Controller

- On Windows Servers, a **domain controller (DC)** is a server which responds to **security authentication requests** (**requests for authorization**) such as: logging in, checking permissions, delegation etc. within a Windows Server Domain.
- It is a server that manages all security-related aspects between security principals(e.g. users) and domain interactions, centralizing security and administration.
- This allows security principals to access a number of services on a network using **one single sign-on**.
- Assigning permissions to Groups vs individual objects.



2. WSUS Server

- Windows Server Update Services (WSUS), previously known as Software Update Services (SUS).
- Developed by Microsoft, enables administrators to manage the distribution of software updates and hotfixes released for Microsoft products to computers in a corporate environment.
- Downloads updates from the Microsoft Update website and redistributes them to computers on a network.
- Runs on a Windows Server and is **free** to licensed Microsoft customers.
- The individual computer-clients do not have to connect to an external server themselves, but are connected to their central WSUS server and get all the necessary updates automatically.



3. SEP Server

- Symantec Endpoint Protection, developed by Symantec Corporation.
- An Antivirus and personal firewall product for individual & centrally managed corporate environments for servers and workstations.
- It incorporates specific technologies designed to:
 1. Facilitate detection of all known viruses plus unknown malware.
 2. Enables intrusion detection and prevention.
 3. Enables a rules-based firewall by which an administrator can create and enforce rules on the client computers, etc.



4. DNS Server

- **DNS** is short for **D**omain **N**ame **S**ystem (or Service or Server).
- Mainly translates Domain names to IP addresses.
- Domain names are alphabetic, much easier to remember.
- However, the Internet is really based on IP addresses.
- Your DNS service must translate domain names into the corresponding IP address. E.g; [nslookup milsignal.org](#)
- At the same time DNS resolves IPs to their respective domain names. E.g; [172.16.10.16](#).
- The DNS system is, in fact, a network for itself, If one DNS server cannot translate a particular domain name, it'll forward the request to the near-by DNS, and so on, until the correct IP address is returned.



5. DHCP Server

- Dynamic Host Configuration Protocol is a standardized network protocol, controlled by a DHCP server.
- Used for dynamically distributing network configuration parameters such as IP addresses, default gateways, subnets, DNS resolvers etc....
- Computing devices on any IP network must FIRST be configured before they can communicate with other hosts.
- Reduces the need for a network administrator or user to configure these settings manually.



Learning Objectives

- Today we have learnt to:
 - Define a Server.
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 - Define what a Windows Domain is.
 - Explain the different Types of Servers used in United Nations DPKO.

End Of Session



Any QUESTIONS?

TIPS:

- Ask, Ask, Ask!!
- But before you Ask,
- Google, Google, Google!!

