

UNIT-5: Introduction to Network, Distributed and Multiprocessor Operating Systems + Case Studies

★★★★★ IMPORTANT UNIT FOR RGPV

Unit-5 me total 5 major topics hain:

Unit-5 Topics List

- 1. Network Operating System (NOS)**
 - 2. Distributed Operating System (DOS)**
 - 3. Multiprocessor Operating System (MPOS)**
 - 4. UNIX/Linux Operating System**
 - 5. Windows and Contemporary Operating Systems**
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1. Network Operating System (NOS)

★★★★★ Important

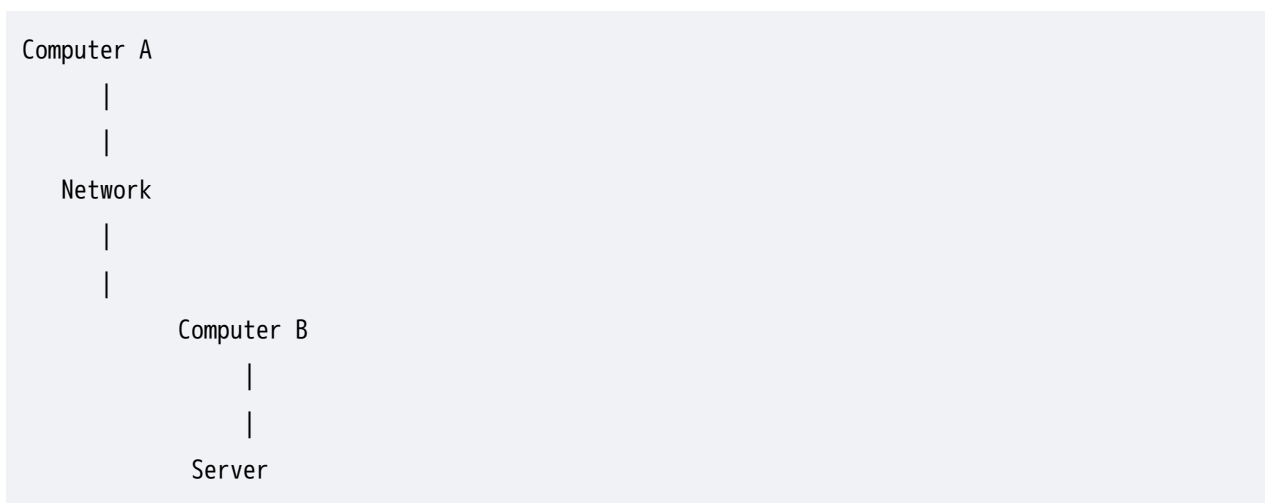
Definition

Network Operating System (NOS) ek aisa OS hai jo network ke through connected computers aur resources ko manage karta hai.

Features

- ✓ File Sharing
 - ✓ Printer Sharing
 - ✓ User Management
 - ✓ Network Security
 - ✓ Remote Access
-

Diagram



Examples

- Windows Server
 - Linux Server
 - Novell NetWare
-

Advantages

- ✓ Resource Sharing
 - ✓ Centralized Management
 - ✓ Better Security
-

Disadvantages

- ✗ Server Failure affects network
 - ✗ High Cost
-

2. Distributed Operating System

★★★★★ MOST IMPORTANT

Definition

Distributed OS multiple computers ko ek single system ki tarah manage karta hai.

User ko lagta hai ki wo ek hi computer use kar raha hai.

Diagram

★★★★★ EXAM DIAGRAM

Computer 1

|

Computer 2

|

Computer 3

|

Distributed OS

|

Single System View

Features

- ✓ Resource Sharing
- ✓ Load Balancing
- ✓ Fault Tolerance
- ✓ Transparency

Advantages

- ✓ High Reliability
- ✓ Better Performance
- ✓ Scalability

Disadvantages

- ✗ Complex Design
- ✗ Network Dependency

Examples

- Amoeba
- LOCUS
- Plan 9

3. Multiprocessor Operating System

★★★★★ MOST IMPORTANT

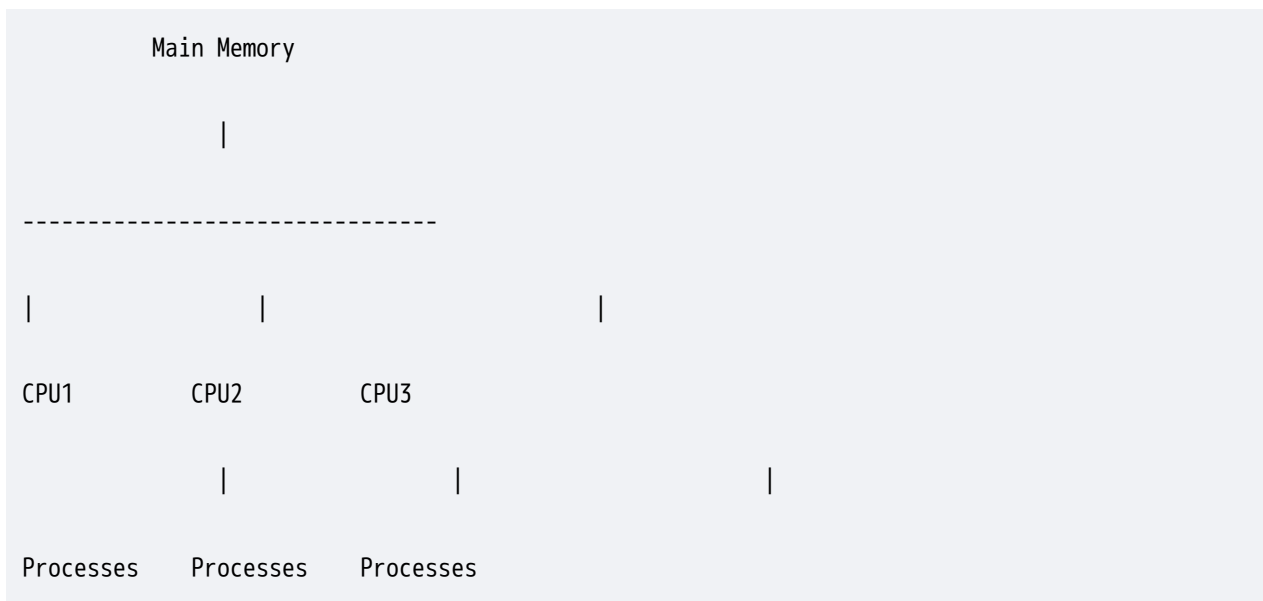
Definition

Multiprocessor OS ek se adhik CPUs ko manage karta hai.

Multiple processors parallel processing karte hain.

Diagram

★★★★★ EXAM DIAGRAM



Features

- ✓ Parallel Processing

✔ High Throughput

✔ Load Sharing

✔ Reliability

Advantages

✔ Fast Execution

✔ Better CPU Utilization

✔ High Performance

Disadvantages

✘ Expensive Hardware

✘ Synchronization Problems

Comparison: NOS vs DOS vs MPOS

★★★★★ EXAM FAVOURITE

Feature	NOS	DOS	MPOS
Multiple Computers	Yes	Yes	No
Multiple CPUs	No	No	Yes
Resource Sharing	Yes	Yes	Yes
Transparency	Low	High	Medium
Processing	Network Based	Distributed	Parallel

4. UNIX / Linux Operating System

| ★★★★★ MOST IMPORTANT CASE STUDY

UNIX

Developed by:

Bell Labs
1970

Creators:

Dennis Ritchie
Ken Thompson

Features of UNIX

- Multiuser
- Multitasking
- Portable
- Secure
- Hierarchical File System

UNIX Structure

★★★★★ EXAM DIAGRAM

Users

|

Shell

|

Kernel

|

Hardware

Linux

Linux UNIX based Open Source Operating System hai.

Created by:

Linus Torvalds

1991

Linux Features

Open Source

Multiuser

Multitasking

Secure

Portable

Linux Examples

- Ubuntu
- Fedora

- Debian
 - Red Hat
-

UNIX vs Linux

UNIX	Linux
Mostly Commercial	Open Source
Expensive	Free
Proprietary	Community Developed
Older	Modern

5. Windows Operating System

| ★★★★★ IMPORTANT CASE STUDY

Definition

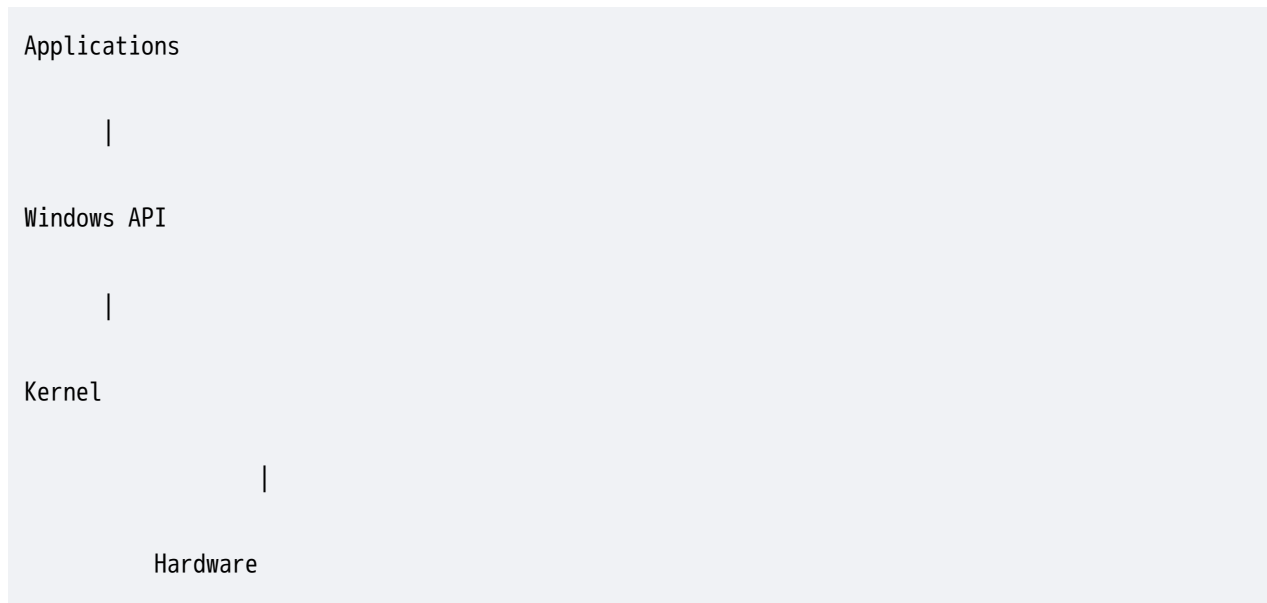
Windows Microsoft द्वारा develop kiya gaya GUI-based Operating System hai.

Features

- ✓ Graphical User Interface
 - ✓ Plug and Play
 - ✓ Multitasking
 - ✓ Networking Support
 - ✓ Security Features
-

Windows Architecture

★★★★★ EXAM DIAGRAM



Versions

- Windows XP
- Windows 7
- Windows 10
- Windows 11

Contemporary Operating Systems

Modern Operating Systems ko Contemporary OS kehte hain.

Examples

Android

Mobile OS by Google

iOS

Mobile OS by Apple

Chrome OS

Cloud-based OS

macOS

Apple Desktop OS

Comparison: Windows vs Linux

★★★★★★ EXAM TABLE

Windows	Linux
Proprietary	Open Source
Paid	Mostly Free
User Friendly	Developer Friendly
More Virus Attacks	More Secure
Microsoft	Community

Frequently Asked RGPV Questions

7 Marks

1. Compare NOS, DOS and MPOS.

2. Explain UNIX Operating System.
 3. Explain Linux Features.
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14 Marks







Q. Explain Network, Distributed and Multiprocessor Operating Systems.

Q. Explain UNIX/Linux Operating System with architecture.

Q. Explain Windows Operating System and its features.

Q. Compare Network OS, Distributed OS and Multiprocessor OS.

PYQ Focus (Highest Probability)

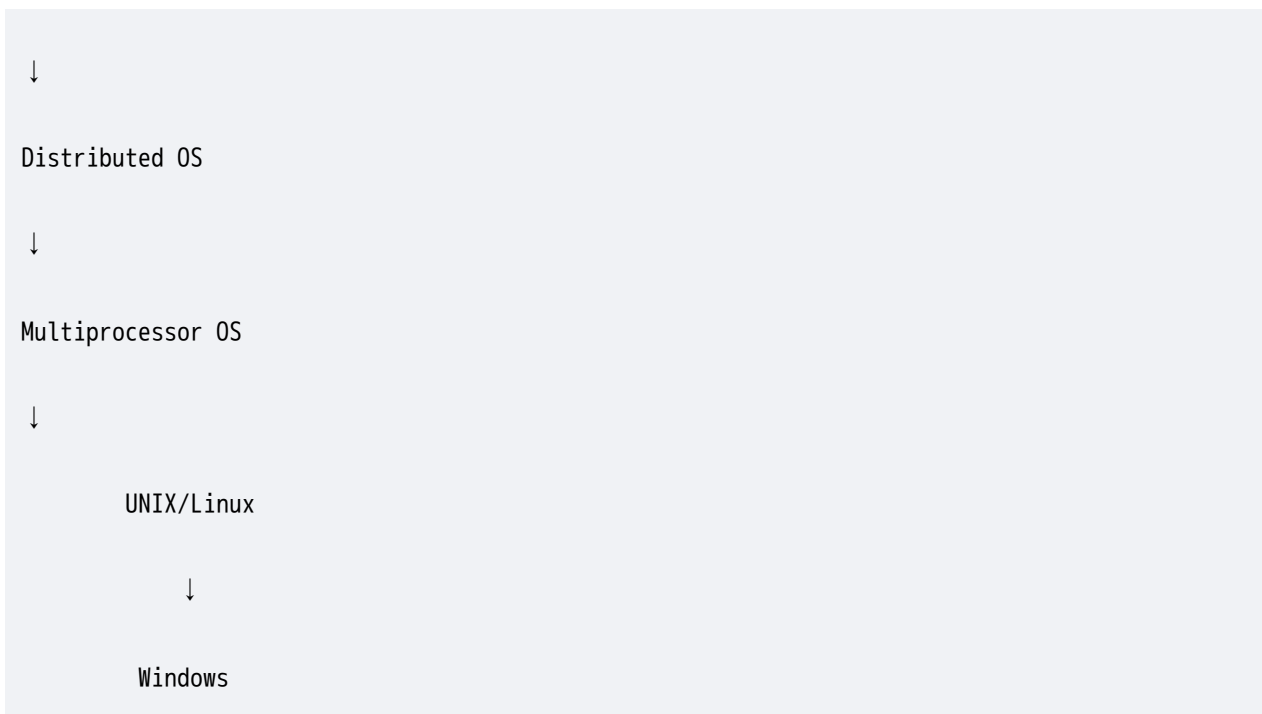
-  Distributed Operating System
 -  Multiprocessor Operating System
 -  UNIX Architecture
 -  Linux Features
 -  Windows Features
 -  NOS vs DOS vs MPOS Comparison
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One-Minute Revision

UNIT-5



Network OS



Memory Trick: NDMUW


N → Network OS

D → Distributed OS

M → Multiprocessor OS

U → UNIX/Linux

W → Windows

 **Exam Tip:** Unit-5 me sabse important questions:

1. **Distributed OS**
2. **Multiprocessor OS**
3. **UNIX/Linux Architecture**
4. **NOS vs DOS vs MPOS Comparison**

Ye 4 topics prepare kar loge to Unit-5 ke 70–80% marks cover ho jayenge. 