

# Services & Processes

Understanding How Applications and  
the Operating System Work

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# Lesson Objective

01

Explain how operating systems manage applications and processes

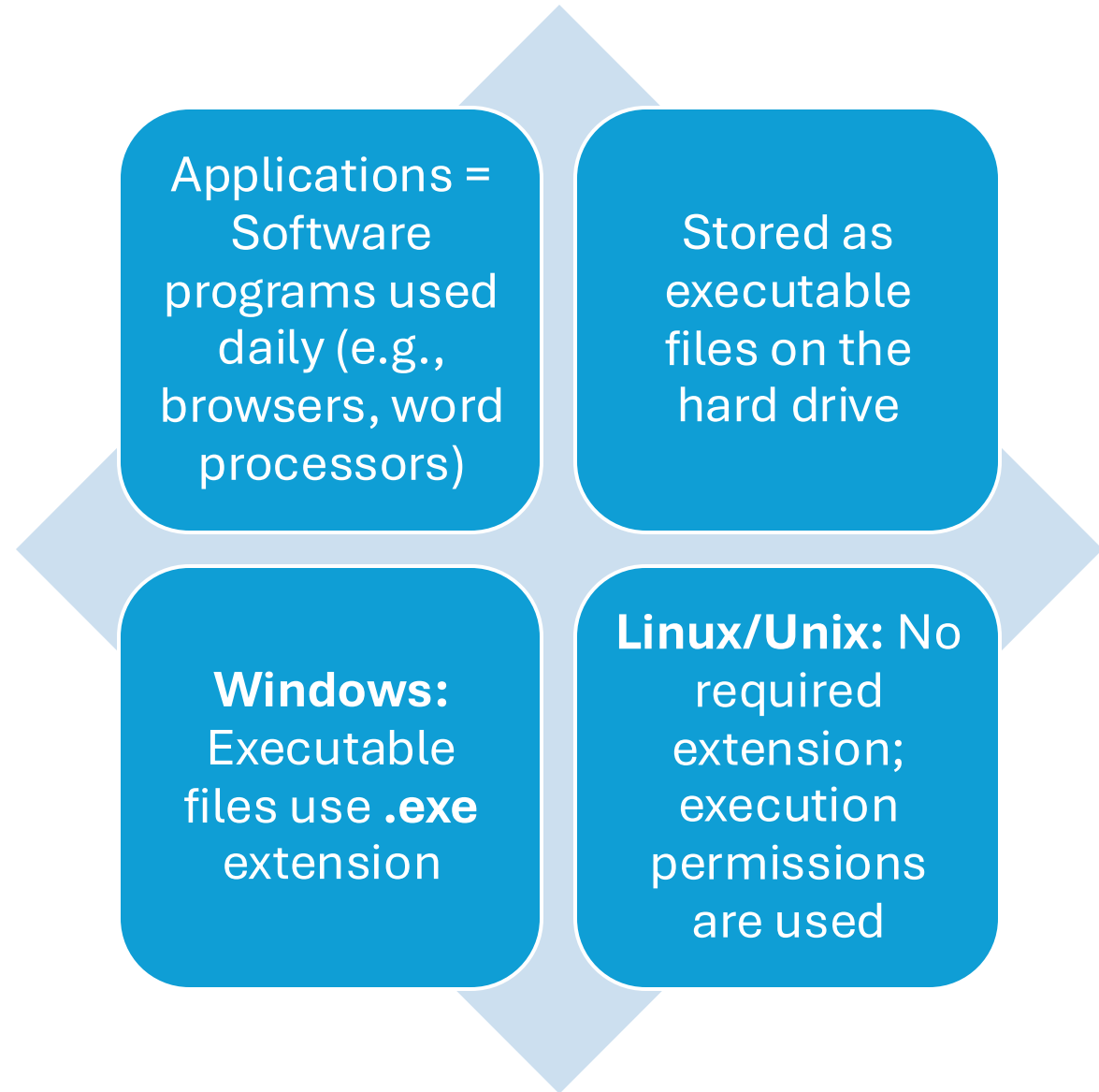
02

Define services and their role in system functionality

03

Understand how to monitor and troubleshoot processes

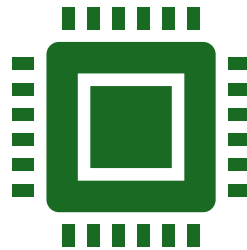
# Applications Overview



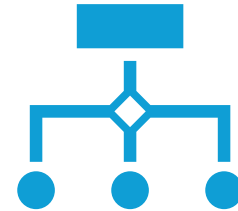
# What is a Process?



**Definition:** An instance of an application running on the system



Stored in memory and uses system resources (CPU, RAM, etc.)



Some applications use **multiple processes** for efficiency (e.g., browsers use a separate process for each tab)

# Monitoring Processes

Operating systems provide utilities to monitor active processes

Examples:

- **Windows:** Task Manager
- **Mac:** Activity Monitor
- **Linux:** top / htop commands

Helps troubleshoot performance issues and kill unresponsive processes



# Services Overview

Services = Special background processes that run automatically

Manage networking, disk access, memory, and other OS functions

Mostly invisible to users but essential for system operation

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# Viewing & Managing Services

Services appear in system monitoring tools



Can be manually started, stopped, or restarted when troubleshooting



**Example Tools:**

**Windows:** Services.msc

**Mac:** Activity Monitor > Background Processes

**Linux:** systemctl, service command

# Key Differences Between Processes & Services

Feature	Feature	Feature
Runs in Foreground/Background?	Foreground (user applications)	Background (OS tasks)
Started by?	User	OS automatically
Example	Web browser, Word processor	Network service, Print spooler
Can be manually stopped?	Yes	Yes, but may affect system stability



# Why Understanding Processes & Services Matters



Helps troubleshoot system slowdowns



Allows for effective resource management



Essential for IT professionals and system administrators

# Conclusion

Applications run as processes, which consume system resources

Some processes act as services, running in the background

System utilities help monitor and manage both efficiently



*Questions?*

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