**Compare and Contrast Process Management Utilities of Linux OS with Windows OS**

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CSC507: Ethical Leadership in Software Development

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12/22/2024

**Task 1: View Running Processes**

**Linux**:  
Command used: ps aux  
The ps aux command in Linux lists all running processes on the system, displaying details such as user, process ID (PID), CPU usage, memory usage, and the command used to start the process.

**Windows**:  
Tool used: Task Manager

The Processes tab in Task Manager provides a graphical interface that shows running processes, their CPU and memory usage, and other performance metrics.

**Summary**:  
Both systems allow users to view running processes effectively. Linux’s ps aux is command-line based, providing detailed and customizable outputs. Windows Task Manager offers a user-friendly graphical interface but may require additional commands (tasklist) for advanced filtering in a terminal. In my opinion task manager is much more readable, appealing, and easy to navigate.

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Windows:

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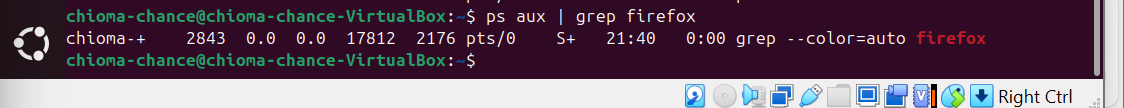
**Task 2: Filter and Display Specific Processes**

**Linux**:  
Command used: ps aux | grep <process\_name>  
This command filters running processes for a specific keyword. For example, ps aux | grep firefox shows only processes related to Firefox.

**Windows**:  
Command used: tasklist | findstr <process\_name>  
In Command Prompt, this command searches for a specific process by name. For example, tasklist | findstr edge displays processes containing "edge."

**Summary**:  
Both systems provide effective ways to filter processes. Linux’s pipeline and grep make searching straightforward. Windows’ findstr achieves the same result but requires familiarity with Command Prompt.

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*Windows:*

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**Task 3: Kill a Process**

**Linux**:  
Command used: kill -9 <PID>  
This command terminates a process forcefully using its PID, which can be found using ps aux.

**Windows**:  
Command used: taskkill /PID <PID> or through Task Manager  
In Windows, the process can be killed using its PID in Command Prompt or through Task Manager's interface.

**Summary**:  
Linux’s kill command is straightforward but requires knowing the PID beforehand. Windows Task Manager is more intuitive for graphical users, while taskkill in Command Prompt offers similar functionality. Windows is more user friendly, offering multiple ways to use the kill task. It took me a little while before I got to kill the Linux program correctly.

*Windows:*

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*Linux:*

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**Task 4: Monitor Real-Time System Performance**

**Linux**:  
Command used: top or htop  
The top command provides real-time monitoring of processes, including CPU, memory usage, and system load. htop is a more user-friendly alternative with interactive controls.

**Windows**:  
Tool used: Task Manager (Performance Tab)  
Task Manager’s Performance tab provides real-time graphs and stats for CPU, memory, disk, and network usage.

**Summary**:  
Linux’s top is powerful for real-time monitoring in a terminal, while htop enhances usability. Windows Task Manager offers an intuitive graphical interface with visual graphs, ideal for quick assessments.

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*Windows.*

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**Task 5: Change Process Priority**

**Linux**:  
Command used: renice <priority> -p <PID>  
The renice command changes the priority of a running process. Priorities range from -20 (highest) to 19 (lowest).

**Windows**:  
Tool used: Task Manager  
In Task Manager, right-clicking a process and selecting "Set Priority" allows adjustment of the priority level.

**Summary**:  
Both systems allow process priority changes. Linux’s renice offers precision via command-line, while Windows Task Manager simplifies the process with its graphical interface.

*Linux:*

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*Windows:*

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**References**

1. Silberschatz, A., Galvin, P. B., & Gagne, G. (2018). *Operating System Concepts* (10th ed.). Wiley.
2. Stallings, W. (2018). *Operating Systems: Internals and Design Principles* (9th ed.). Pearson.
3. Microsoft Docs. (n.d.). Task Manager. Retrieved from <https://learn.microsoft.com>