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OS

1.Scenario analysis

A user's PC slows dramatically during video editing sessions, with freezes every 10 minutes and 100% disk usage. Open Task Manager (Ctrl+Shift+Esc): Processes tab shows Chrome at 40% CPU, antivirus scan spiking memory to 95%. Performance tab reveals disk at 100%—likely fragmentation. Right-click high-CPU processes > End task for quick relief.

Run three Command Prompt commands (admin mode):

1. tasklist /v lists processes with CPU/memory—identifies svchost.exe hogs.
2. sfc /scannow repairs corrupted system files causing I/O thrash.
3. chkdsk C: /f /r schedules disk error fix on reboot, defragging implicitly.

Post-reboot, disk drops to 20%; startup apps disabled via Task Manager > Startup. Malware scan confirms clean. Root cause: outdated drivers + fragmented HDD. Upgrade to SSD yields 5x speed. Regular maintenance prevents recurrence.

2.Command Research: taskkill

taskkill terminates processes/services forcefully or gracefully on Windows, vital for troubleshooting hangs without reboots. Syntax: taskkill [/s system] [/im imagename | /pid processid] [/f] [/t]. /f forces kill (ignores child prompts); /im targets exe name (e.g., taskkill /f /im chrome.exe); /pid uses ID from tasklist; /t tree-kills children. Example: taskkill /f /pid 1234 ends PID 1234 instantly. Safer than Task Manager for scripts/batch; errors if not admin. Logs to Event Viewer. Alternatives: kill (Linux). Use sparingly—prevents crashes but risks data loss.

3.Linux Practice

In VirtualBox, downloaded Ubuntu 24.04 ISO, created VM (4GB RAM, 50GB disk), installed via live USB simulation—chose "Try Ubuntu" then installer. Booted: ls ~ listed initial files (no output fresh). mkdir Projects created dir; ls confirmed. ps aux showed processes: systemd (PID1), bash, confirming kernel/user space.

Summary: Seamless setup (10 mins); ls/mkdir basic filesystem ops intuitive vs Windows dir. ps revealed lightweight init vs tasklist verbosity. Firewall auto-enabled; apt update ran smooth.

Next: aliases in .bashrc. VirtualBox guest additions smoothed graphics/mounts. Ideal for safe experimentation—snapshots rollback mistakes instantly.[from prior]

4.Process Monitoring

Opened Task Manager on idle PC: CPU 5% (system idle process), Memory 55% (committed 12GB/32GB), Disk 10%. Stressed with Chrome+editing app: CPU spiked to 80% (renderer threads), Memory 85%, Disk 100% during exports. top in Ubuntu VM: top showed firefox at 20% CPU, mem 1.2GB; killed via k.

Findings: Browsers leak memory—close tabs key. Antivirus real-time scan hogs disk; schedule off-peak. Linux top sorts dynamically (Shift+P CPU); Windows lacks per-core easy. Baseline idle <10% everywhere healthy; peaks >90% signal issues. Monitor weekly via perfmon for trends.