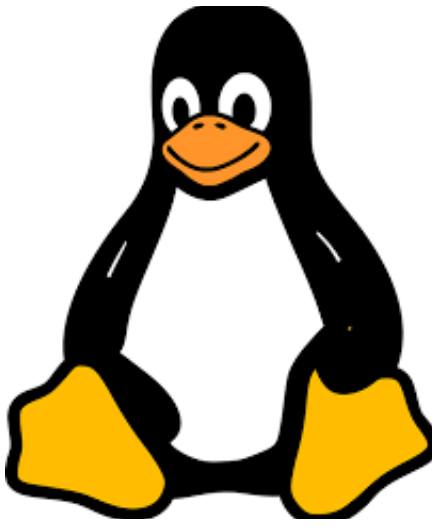

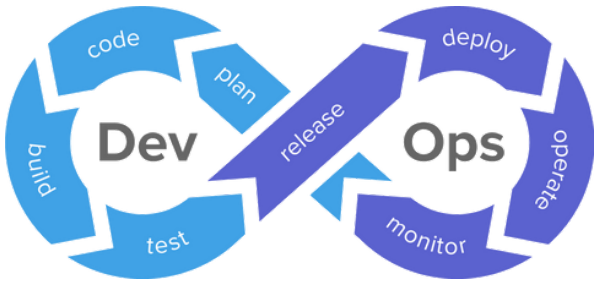


# Linux Commands Every DevOps Engineer Should Know

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# System Monitoring & Performance

## CPU Usage:

**top** – Real-time process and resource usage.

**htop** – Enhanced process viewer.

**sar** – Historical resource usage.

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## Memory Usage:

**free -h** – Memory usage overview.

**Disk Usage:**

**df -h** – Disk usage by filesystem.

**du -sh <path>** – Directory size.

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**Memory Usage:**

**free -h** – Memory usage overview.

**Disk Usage:**

**df -h –** Disk usage by filesystem**.**

**du -sh <path> –** Directory size.

**Network Usage:**

**netstat -tuln** or **ss -tuln** – Active connections.

**iftop** – Real-time bandwidth usage.

**ping <IP/hostname>** – Connectivity check. (**icmp**)

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# File and Directory Management

## File Management:

**ls -lh** – List files with details.
**cat, less, more** – View file content.
**find /path -name "*.log"** – Search files.

## Permissions:

**chmod 755 <file>** – Change file permissions.
**chown user:group <file>** – Change ownership.

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# User and Group Management

**Users:**

**id <username>** – User details.

**adduser <username>** – Add a user.

**passwd <username>** – Change user password.

**Groups:**

**groups <username>** – User groups.

**usermod -aG <group> <username>** – Add user to a group.

**Logged**-In Users

**who** – List logged-in users.

**last** – Login history.

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# Process Management

## View Processes:

**ps aux** – List processes.
**pgrep <name>** – Search for a process.

## Manage Processes:

**kill -9 <PID>** – Kill a process by ID.
**pkill <name>** – Kill a process by name.

## Logs:

**journalctl** – View system logs.
**dmesg** – Kernel messages.
**tail -f /var/log/<file>** – Monitor logs in real-time.

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# Networking

## Connectivity:

**curl -I <url>** – Test HTTP connection.

**ping <IP/hostname>** – Test network.

**traceroute <hostname>** – Trace network route.

## Debugging:

**telnet <host> <port>** – Test open ports.
**dig <hostname>** – DNS lookup.

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# Disk and Filesystem Management

## Filesystem:

**fsck /dev/sda1** – Check filesystem.
**mount and umount** – Mount/unmount filesystems.

## Disk Partitioning:

**fdisk -l** – Partition details.
**lsblk** – List block devices.

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# Package Management

**RHEL/CentOS:**

**yum/dnf update –** Update packages.
**yum/dnf install <package> –** Install a package.
**yum/dnf remove <package>** – remove a package.

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# Backup and Archive

**Backup:**

**rsync -av /source/ /destination/** – Sync files/directories.

**Archiving:**

**tar -cvf archive.tar /path** – Archive files.

**gzip archive.tar** – Compress the archive.

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## General Troubleshooting Commands

**uptime** – System uptime.

**uname -a** – Kernel and OS details.

**tcpdump** – Network packet capture.

## End-to-End Troubleshooting Example:

**1. Identify the Issue:**

Use top, df -h, or ping to gather insights.

**2. Narrow Down Root Cause:**

Use ps aux, netstat,trace the issue.

**3. Apply Fixes:**

Restart services or update packages.

**4. Monitor Post-Fix:**

Continuously monitor with journalctl or tail.

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