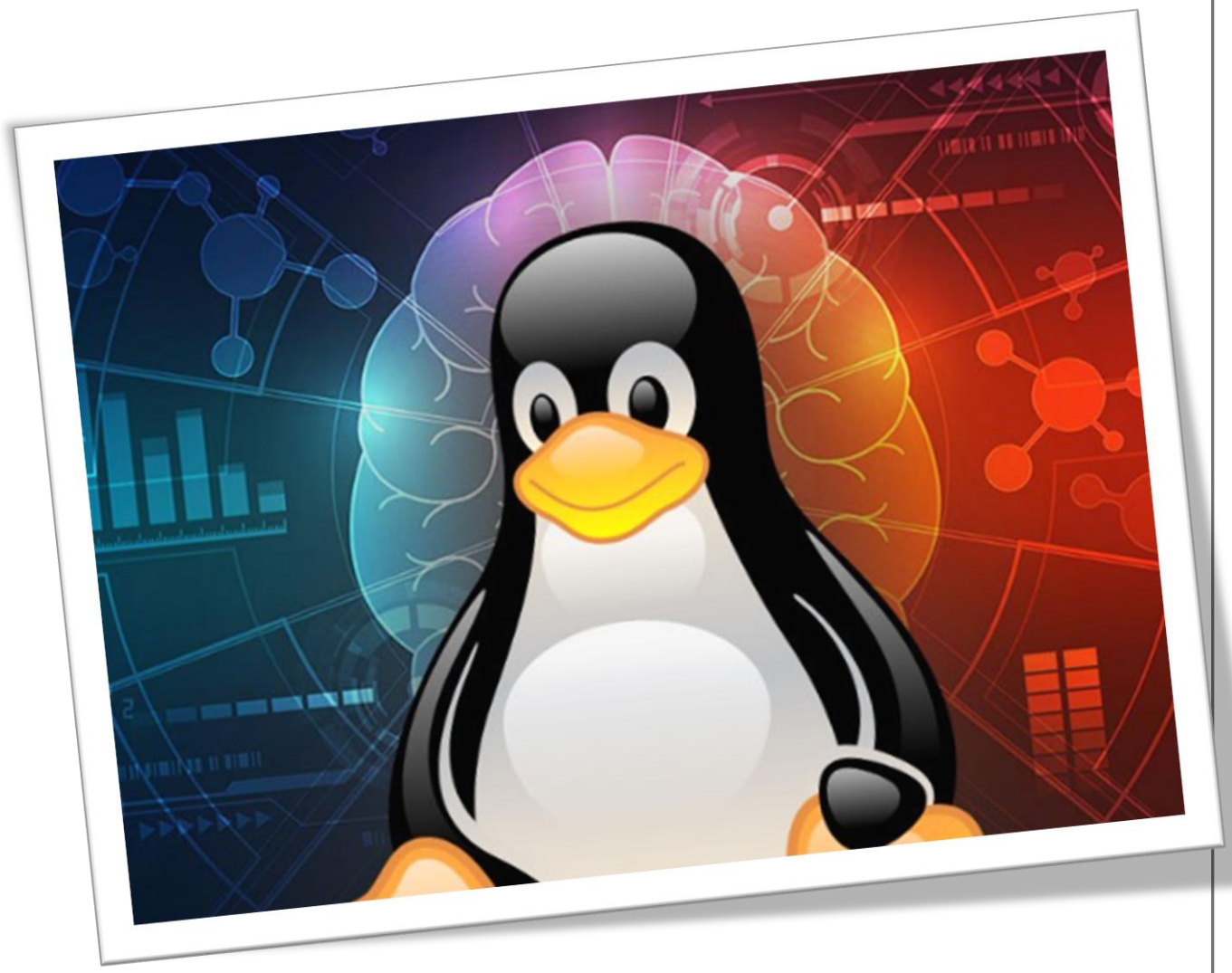
DevOps Diaries

Comprehensive list of **Linux commands** used for **process management**, categorized by their purpose:



Viewing Processes

These commands are used to display information about running processes.

Command	Description
ps	Displays information about active processes.
top	Provides a real-time, dynamic view of system processes and resource usage.
htop	An interactive process viewer (enhanced version of top).
pstree	Displays processes in a tree format, showing parent-child relationships.

Command	Description
pgrep	Searches for processes by name and returns their PIDs.
pidof	Finds the PID of a running process by its name.

Managing Processes

These commands are used to control and manipulate processes.

Command	Description
kill	Sends a signal to a process (default: SIGTERM) to terminate it.
pkill	Kills processes by name or other attributes.
killall	Kills all processes with a specific name.
nice	Starts a process with a specified priority (niceness).
renice	Changes the priority (niceness) of an already running process.
timeout	Runs a command with a time limit, killing it if it exceeds the limit.
nohup	Runs a command immune to hangups, allowing it to continue after logout.

Background and Foreground Processes

These commands are used to manage processes in the background or foreground.

Command	Description
&	Runs a command in the background.
Ctrl+Z	Suspends the current foreground process and moves it to the background.
fg	Brings a background process to the foreground.
bg	Resumes a suspended process in the background.
jobs	Lists all background jobs for the current shell session.

Process Monitoring and Analysis

These commands are used to monitor and analyze process behavior and resource usage.

Command	Description
vmstat	Reports system resource usage, including processes, memory, and CPU.
uptime	Displays system uptime and load average.
lsof	Lists open files and the processes using them.
strace	Traces system calls and signals made by a process.
netstat	Displays network connections, routing tables, and process-related info.
ss	A modern replacement for netstat, showing socket statistics.

System Resource Management

These commands are used to monitor and manage system resources related to processes.

Command	Description
free	Displays memory usage (RAM and swap).
df	Shows disk space usage.
du	Displays disk usage of files and directories.
sar	Collects and reports system activity (CPU, memory, I/O, etc.).
iotop	Displays I/O usage by processes.
mpstat	Reports CPU statistics.

Process Scheduling

These commands are used to manage process scheduling and priorities.

Command	Description
cron	Schedules tasks to run at specific times (via crontab).
at	Schedules a one-time task to run at a specific time.
chrt	Changes the real-time scheduling attributes of a process.
taskset	Binds a process to specific CPU cores.

Miscellaneous Process Management Commands

These commands are useful for specific process-related tasks.

Command	Description
screen	Allows you to run multiple terminal sessions and detach/reattach processes.
tmux	A terminal multiplexer for managing multiple terminal sessions.
watch	Executes a command repeatedly and displays the output in real-time.
systemctl	Manages system services (start, stop, restart, enable, disable).
service	Legacy command for managing system services.

Signals for Process Management

Signals are used with commands like kill to control processes. Common signals include:

Signal	Value	Description
SIGHUP	1	Hang up (often used to reload configurations).
SIGINT	2	Interrupt (e.g., Ctrl+C).
SIGKILL	9	Forcefully terminate a process (cannot be ignored).
SIGTERM	15	Gracefully terminate a process (default for kill).
SIGSTOP	19	Pause a process (cannot be ignored).
SIGCONT	18	Resume a paused process.