Linux CentOS Commands Cheat Sheet

This document contains a comprehensive list of Linux CentOS commands categorized for easier understanding.

Basic Commands

- pwd – Print working directory.
- ls – List directory contents.
  - ls -l – Long listing format.
  - ls -a – Show hidden files.
- cd [directory] – Change directory.
- mkdir [directory] – Create a new directory.
- rmdir [directory] – Remove an empty directory.
- rm [file] – Delete a file.
  - rm -r [directory] – Delete a directory and its contents.
- touch [file] – Create an empty file.
- cp [source] [destination] – Copy files or directories.
  - cp -r [source_directory] [destination] – Copy directories recursively.
- mv [source] [destination] – Move or rename files and directories.
- cat [file] – Display file contents.
- more [file] – View file contents one page at a time.
- less [file] – Similar to more, but allows backward navigation.
- head -n [number] [file] – Display the first n lines of a file.
- tail -n [number] [file] – Display the last n lines of a file.

File Permissions and Ownership

- chmod [permissions] [file] – Change file permissions.
  - Example: chmod 755 [file].
- chown [user]:[group] [file] – Change file ownership.
- ls -l – View file permissions.

Permission Rules

File permissions in Linux are represented by three sets of characters:

1. **Owner (User)**
2. **Group**
3. **Others**

Each set has three types of permissions:

- **r**: Read (4) – Allows viewing the file or listing the directory.

- **w**: Write (2) – Allows modifying the file or directory.
- **x**: Execute (1) – Allows running the file as a program or accessing a directory.

Permission Syntax

- The permissions are displayed as -rwxr-xr--:
  - The first character indicates the type of file (- for a regular file, d for a directory).
  - The next three characters (e.g., rwx) are the owner's permissions.
  - The following three characters (e.g., r-x) are the group's permissions.
  - The final three characters (e.g., r--) are the permissions for others.

Changing Permissions

Use numeric values to assign permissions:

- **Read (r) = 4**, **Write (w) = 2**, **Execute (x) = 1**.
- Add the values for each group to calculate the permission number.
  - Example: chmod 754 [file]
    - Owner: 7 (4+2+1 = rwx).
    - Group: 5 (4+0+1 = r-x).
    - Others: 4 (4+0+0 = r--).

Package Management (YUM/DNF)

- yum install [package] – Install a package.
- yum remove [package] – Remove a package.
- yum update – Update all packages.
- yum list installed – List installed packages.
- dnf install [package] – Install a package using DNF.
- dnf remove [package] – Remove a package using DNF.

Disk Usage and Space

- df -h – Show disk usage in human-readable format.
- du -sh [directory] – Show directory size.
- mount – Display mounted file systems.
- umount [directory] – Unmount a file system.
- fdisk -l – Display disk partitions.

User Management

- adduser [username] – Add a new user.

- passwd [username] – Change user password.
- deluser [username] – Remove a user.
- usermod -aG [group] [username] – Add a user to a group.
- id [username] – Display user ID and group ID.

Process Management

- ps – Display running processes.
  - ps aux – Detailed process view.
- top – Show real-time process monitoring.
- kill [PID] – Terminate a process by PID.
- killall [process_name] – Terminate all processes by name.
- jobs – List background jobs.
- fg [job_number] – Bring a background job to the foreground.
- bg [job_number] – Resume a background job.

Networking

- ifconfig – Display network interfaces (deprecated, use ip).
- ip addr – Show IP addresses.
- ping [host] – Test network connectivity.
- netstat -tuln – Display open ports.
- curl [URL] – Fetch content from a URL.
- wget [URL] – Download files from a URL.

System Information

- uname -a – Show system information.
- hostname – Display the system hostname.
- uptime – Show system uptime.
- whoami – Show current username.
- dmesg – Display system boot messages.
- free -h – Show memory usage.

Archiving and Compression

- tar -cvf [archive.tar] [files] – Create a tar archive.
- tar -xvf [archive.tar] – Extract a tar archive.
- gzip [file] – Compress a file with gzip.
- gunzip [file.gz] – Decompress a gzip file.

- zip [archive.zip] [files] – Create a zip archive.
- unzip [archive.zip] – Extract a zip archive.

Search and Find

- find [directory] -name [file_name] – Search for files.
- grep [pattern] [file] – Search for a pattern in a file.
- grep -r [pattern] [directory] – Recursive search for a pattern.
- locate [file_name] – Find a file by name (requires mlocate package).

System Monitoring and Logs

- journalctl – View system logs.
- tail -f [log_file] – Continuously monitor log files.
- vmstat – Show system performance statistics.
- iostat – Display CPU and I/O statistics.

Advanced Commands

- crontab -e – Edit cron jobs for scheduled tasks.
- ssh [user]@[host] – Connect to a remote server via SSH.
- scp [source] [user]@[host]:[destination] – Securely copy files between systems.
- rsync -av [source] [destination] – Synchronize files/directories.
- systemctl [command] [service] – Manage services.
    - Example: systemctl restart nginx.

File System Commands

- fsck – File system check and repair.
- e2fsck [device] – Check ext2/ext3/ext4 file systems.
- mkfs -t [type] [device] – Format a partition with a file system.
- mount [device] [mount_point] – Mount a device.
- umount [mount_point] – Unmount a device.

Help and Documentation

- man [command] – Show manual for a command.

- [command] --help – Display help for a command.

This cheat sheet provides a starting point for using Linux CentOS effectively. For detailed usage and advanced options, refer to the respective command's manual pages using the man command.