

Linux Commands Cheat Sheet

File Management

- **mv:** Move or rename files
 - **Syntax:** `mv [file] [destination]`
- **head/tail:** Display the beginning or end of a file
 - **Options:**
 - **-n N:** Display the first or last `N` lines of the file
- **>>:** Append content to a file
- **>:** Overwrite content in a file

Text Processing

- **paste:** Combine files side by side
- **cut:** Extract sections of lines from a file
 - **Options:**
 - **-c:** Select a number of characters per line
- **sort:** Sort lines in a file alphabetically
 - **Options:**
 - **-r:** Reverse the sort order
- **join:** Combine lines from two sorted files
 - **Syntax:** `join [options] file1 file2`
- **uniq:** Remove duplicate lines from a sorted file
 - **Options:**
 - **-c:** Count repeated lines
 - **-d:** Show duplicate lines
 - **-u:** Show unique lines
- **wc:** Count words, lines, and characters
 - **Options:**
 - **-l:** Count lines
 - **-w:** Count words
 - **-m:** Count characters
- **grep:** Search for patterns within files
 - **Syntax:** `grep [options] pattern [file]`
 - **Options:**
 - **-i:** Ignore case
 - **-r:** Search recursively
 - **-l:** List filenames containing the pattern
 - **-n:** Show line numbers for matches
 - **-o:** Display only matching text
- **tr:** Translate or delete characters
 - **Syntax:** `tr [options] set1 [set2]`
 - **Options:**
 - **-d:** Delete specified characters
 - **-c:** Replace specified characters
- **sed:** Perform basic text transformations

User Management

- **useradd:** Add a new user
 - **Options:**
 - **-m:** Create a home directory
 - **-s:** Specify the login shell
- **passwd:** Set or change a user's password
- **usermod:** Modify user accounts
 - **Options:**
 - **-p:** Change password
 - **-u:** Change user ID
 - **-G:** Add user to a group
 - **-aG:** Append user to a group
- **userdel:** Delete a user
 - **Options:**
 - **-r:** Remove user's home directory
- **groupadd:** Create a new group
- **gpasswd:** Manage group memberships
 - **Options:**
 - **-a:** Add user to a group
 - **-d:** Remove user from a group

System Monitoring and Management

- **chmod:** Change file permissions
 - **Syntax:** `chmod [permissions] [file]`
- **top/htop:** Display active processes
- **df:** Display disk space usage
- **cat:** View file contents
- **uname:** Display system information
 - **Options:**
 - **-a:** Show all system details

Networking

- **ifconfig:** Display or configure network interfaces
- **ping:** Check network connectivity
- **nmcli:** Manage network connections
 - **Options:**
 - **connection show:** List all connections
 - **device status:** Show device statuses

Scripting and Variables

- **Declaring variables:** Assign values using `variable=value`
- **Printing variables:** Use `$variable` within commands
- **Conditional statements:**
 - **if:** Execute commands based on conditions
 - **Syntax:** `if [condition]; then ... fi`
 - **Comparison operators:**
 - **-eq:** Equal to
 - **-ne:** Not equal to
 - **-gt:** Greater than
 - **-ge:** Greater than or equal

- **-lt**: Less than
 - **-le**: Less than or equal
- **String comparison:**
 - **=**: Strings are equal
 - **!=**: Strings are not equal
 - **-z**: String is null
 - **-n**: String is not null
- **Loops:**
 - **For**: Iterate over a range or list
 - **While**: Execute commands while a condition is true
 - **Case**: Match a variable against patterns

Services

- **systemctl**: Manage system services
 - **Options:**
 - **start**: Start a service
 - **stop**: Stop a service
 - **restart**: Restart a service
 - **enable**: Enable a service at boot
 - **disable**: Disable a service
 - **status**: Check service status

Cron Jobs

- **crontab**: Schedule tasks
 - **Options:**
 - **-l**: List scheduled tasks
 - **-e**: Edit cron jobs
 - **Time fields**: Minute, Hour, Day of Month, Month, Day of Week

Syntax:

```
awk [options] 'pattern {action}'  
[file]
```

Options:

- **-F**: Specify a field separator.
- **-v**: Assign values to variables before execution.

Built-in Variables:

- **\$1, \$2, ...**: Represent fields in the current record.
- **\$0**: The entire current record (line).
- **NR**: Line number being processed.
- **NF**: Number of fields in the current record.
- **FS**: Input field separator (default: space/tab).
- **OFS**: Output field separator.

```
While loop  
while [ condition ]  
do  
          #command  
done  
Case logic  
case $variable in  
  pattern1)  
          # Commands to execute if $variable matches  
  pattern1  
          ;;  
  pattern2)  
          # Commands to execute if $variable matches  
  pattern2  
          ;;  
  *)  
          # Default case if no patterns match  
          ;;  
esac  
For loop:  
for variable in {[initialvalue]..[maxvalue]..[increment]}  
do  
          #commands  
done  
If statement  
If [ condition ]; then  
then  
          Commands  
else  
          Commands  
fi  
Select command  
PS3="String" (Prompt string)  
select variable_name in list  
do  
          commands  
done  
Adding color to text:  
echo "${COLOR}....${NC}"  
read: user input  
    -p: replaces echo  
which: shows address of a command
```

```
Mathematical operations  
let  
expr      let result=result+var1+var2  
          result=$(expr 5 + 3)  
          Use \ for *
```