

# Notes 1: Bash Shell

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**Commands cover in lecture:** Some, if not all, of these commands need the `sudo` command to elevate the rights of the user since we may be updating critical system components or accessing restricted areas of the operating system.

## Echo

Definition:

Display a line of text

Usage

`echo + option + string`

Examples:

- Display a line of text without the new line
  - `echo -n "hello world"`
- Display a line of text that includes a horizontal tab
  - `echo -e "\thello world"`
- Display 2 lines of text in a single echo command
  - `echo -e "Line 1\nLine2"`
- Display 2 lines of text in a single echo command, with the second line starting with a tab
  - `echo -e "Line 1\n\tLine 2"`
- Display 2 lines of text in a single echo command that starts with a tab
  - `echo -e "\tLine 1\tLine 2"`

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## date

Definition

Print or set the system date and time

Usage

`data + option`

Examples

- Display current date
  - `date`
- Display current date in rfc 5322 format
  - `date -R`
- Sets the time described by the string
  - `date -s`

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## free

### Definition

Displays memory statistics of your linux system

### Usage

`free + option`

### Examples

- Displays the amount of memory in bytes
  - `free -b`
- Displays the amount of memory in kilobytes
  - `free -k`
- - Displays the amount of memory in megabytes
  - `free -m`
- Displays all output fields automatically in human readable format and scaled to two or three digits
  - `free -h`

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## uname

### Definition

Displays standard output about your system

### Usage

`uname + option`

### Examples

- Displays all information about the system
  - `uname -a`
- Displays the kernel name
  - `uname -s`
- Prints the network node hostname
  - `uname -n`
- Displays the CPU architecture
  - `uname -p`

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## history

### Definition

Displays shell command history

## Usage

`history + option`

## Examples

- Clears the command history
    - `history -c`
  - Starts a history substitution, except when followed by a blank
    - `!`
  - Removes a trailing file name components, only leaving the head
    - `h`
  - Displays a limited number of commands in history (5)
    - `5`
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## man

### Definition

A reference to the system reference manuals

### Usage

`man + man option + section page`

## Examples

- Displays the manual for the program or command
    - `man -ls`
  - Displays the manual page for package man
    - `man -man.7`
  - Displays all of the intro manual pages
    - `man -a intro`
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## apt

### Definition

Provides access to a high-level package management system

### Usage

`apt + command + option`

## Examples

- Installs a package
  - `apt install nmap`
- Removes a package

- `apt remove nmap`
  - Updates all packages
    - `apt update`
  - Upgrades all packages
    - `apt upgrade`
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## snap

### Definition

A Self-contained package that includes all of the dependencies and libraries that an application needs to run.

### Usage

`snap + options`

### Examples

- Lists all install snaps
    - `snap list`
  - See more information about a snap(nmap)
    - `snap info nmap`
  - Update a snap (nmap)
    - `snap refresh nmap`
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## flatpak

### Definition

A next generation technology for packaging, distributing, and managing software in Linux

### Usage

`sudo` (When needed) + `flatpak` + `action` + `package id`

### Example

- Shows help options and exit
  - `flatpak -h`
- Shows debug information during command processing
  - `flatpak -v`
- Shows OSTree debug information during command processing
  - `flatpak --ostree-verbose`