

Shell

Definition

Command line interpreter program that functions as the default interface when you connect to a server over a network

bash

Default shell on Ubuntu and OSX. "Bourne-again shell."

Terminal Prompt

`user>@host:path$`

`user` Logged in user name

`host` Machine name

`path` File system position

`$` Symbol (e.g. `$ bash`)

Commands

About

`cmd -help` Full usage for `cmd`

`whatis cmd` One-line explanation of `cmd`

`man cmd` Manual for `cmd` if available

`info cmd` Info about `cmd`; use if `man` is unavailable

`str [2x tab]` List commands with `str` prefix

History

`history n` Show last `n` commands

`!!` Repeat last command

`!str` Repeat last command with `str` prefix

`up arrow` Scroll through history list

Directing Output

`cmd >> file` Append output of `cmd` to `file`

`cmd > file` Overwrite `file` with output of `cmd`

`cmd1 | cmd2 ...` Direct output of `cmd1` to `cmd2`

Example

`$ echo "My new note" >> notes.txt`

`$ cat notes.txt`

`# My new note`

Manuals

`man cmd`

`-k key` search for keyword `key`

Navigate

`h` Help `q` Quit

`u` Up `d` Down

`g` Beginning `G` End

Search

`/pattern` Start `esc-u` Stop

`n` Next `N` Prev

Directory Hierarchy

Absolute Path

Route to desired dir. Always starts w slash or tilde, e.g.

`/home/ joh n/m yfi le.txt`

Relative Path

From working dir. Never starts w slash, e.g.

`john/m yfi le.txt`

Shortcuts

`..` Path of parent dir of current working dir

`.`

`~` Path of home dir, e.g.

`$ echo ~`

`# user@host :/home /user/`

`~user` Another user's home dir

`/` Root

Environmental Variables

`$OLDPWD`

`$PATH` Ordered, colon-delimited list of dirs in search when call is made from working dir

Parsing

Colon-delimited; use `tr` to replace, e.g.

`$ echo $PATH | tr " : " "\n"`



By [birdbysnow](#)

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Directory Hierarchy (cont)

Home Directory

Home dir (e.g. /home/john) is never in path, but its subdirs may be if working dir is a subdir of home.

`$PYTHONPATH`

Useful Commands

- `pwd` Print working dir
- `cd dir` Move working dir to dir
 - To previous wd (i.e. `$OLDPWD`)
- `ls dir` List dir contents
 - l Get a long list - permissions, links count,
 - F Indicate file type
 - * exe
 - / dir
 - b Print special chars, including -
 - | & ' ; () < > space tab
 - a All including hidden files with . prefix
 - l All output in one column
 - R Recursive; include subdirs and contents
 - r Reverse sort order
 - t Sort by most recent modified
 - d Dirs only

`find dir opts` Search dir and its subdirs for file specified by `opts` expression, e.g.

```
$ find . -name 'chap*'
$ find . -mtime -2
$ find . -user john
```

Account

Configuration

Update hidden programs run at login/shell start.

- `.bashrc`
- `.bash_profile` Run at bash login before `.profile`
- `.profile` Run at login by most UNIX shells

Example

Add lib to `$PYTHONPATH` in `~/ .bashrc` with

```
export PYTHONPATH=/home/john/module/lib$PYTHONPATH
```

Useful Commands

- `ssh user@host` connect to host as user
- `whoami` who you are logged in as
- `passwd` set password
- `exit` logout of session and close terminal

Permissions

Useful Commands

`chmod`

Usage

`$ chmod [ugoa] [+ - =] [ rwx ], ..., [path]`

Groups

User owner o Other/system

All

+ Add

- Remove

= Set Explicit

Mode



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Permissions (cont)

r , 4	Read	x , 1	Execute file
w , 2	Write	x , 1	Access dir

Octal

0	---	4	r--
--x	5	r-x	
2	-w-	6	rw-
3	-wx	7	rwx

Examples

Both the following examples grant all permissions to the owner of bin and read + execute permissions to the owner's group and others.

```
$ chmod u=rwx, go=rx /home/ joh n/bin
$ chmod 755 /home/ joh n/bin
```



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