Command line environment

ABC CSE Winter School

Topics to be covered

- Job control
- Terminal multiplexers
- Dot files
- Remote machines

Job Control

Signal is an event that can alter how certain process works, e.g. it may stop the process, quit process etc.

man signal to see the manual

Ctrl+C - SIGINT //The default action is to terminate the process

Ctrl+\ - SIGQUIT //Similar to SIGINT, produces a core dump when it terminates the process

Ctrl+Z - SIGTSTP //The default action for this signal is to stop the process

Job Control

You can add & at the end of your command to run in the background (process won’t take over your shell)

nohup - use this before your command if you don’t want a job to stop when you close the terminal (more)

kill SIGNAL PROCESS - to sent a signal SIGNAL to a job/process PROCESS (though intuitively it seems like it stops the process)

bg - to run the last process on the background (can specify process)

fg - to bring the last process to the “foreground” (can specify process)

tmux

tmux is just a way of combining multiple terminal windows into one, convenient, organized way.

Composed of 3 elements:

Sessions ∋ windows ∋ panes

tmux cheetsheet

Aliases

You can add aliases to your terminal

Aliases are kind of shortcuts for some long commands you frequently execute

Syntax:

alias sl=”ls -a -l” // now whenever you type sl, it will be substituted by ls -a -l

Dotfiles

Hidden files

One of the most common files are configuration files such as: .bashrc, .vimrc etc.

We can also create a hidden directory, just let the name start with dot

Symlink

ln is a command-line utility for creating links between files. By default, the ln command creates hard links. To create a symbolic link, use the -s (--symbolic) option.

Hard link - copy of the file
Soft link - actual link to the file

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ln -s source_file symbolic_link
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ssh

The Secure Shell Protocol is a cryptographic network protocol for operating network services securely over an unsecured network. (or simply a way to connect to a remote server)

`ssh USER@ADDRESS` // you can also specify port and other information

In terminal, it opens up the server we’re connected to

We can also execute commands through ssh

ssh

scp file user@address:location_at_server // allows you to copy local file to the server

rsync is also analogous to scp, same usage, differences

ssh-keygen

ssh-keygen -t ed25519 // to generate ssh key using ed25519 algorithm (safest)

It will create a public and private key for you

ssh-add private_key // to add your private key as one of the “keys” when ssh connection occurs

cat public_key | ssh user@address tee .ssh/authorized_keys // to add your public key as a way to log in

tee