

Customizing bash

ME 4953/5013 - Introduction to High-Performance Computing



Variable	Significance
HOME	Home directory
PATH	List of directories searched by shell to locate command
LOGNAME	Login name of user
USER	Login name of user
TERM	Type of terminal
PWD	Absolute pathname of current directory
PS1	Primary prompt string
PS2	Secondary prompt string
SHELL	User's login shell

- To add new entries to the existing PATH use the notation:
 - `PATH=/my/new/path:$PATH`
 - Adds `/my/new/path` to front of existing PATH.
 - Or: `PATH=$PATH:/my/new/path` adds to back of PATH.
 - Adds `/my/new/path` behind existing PATH.

- Assigns shorthand names for common commands

Useful aliases

Definition	Significance
<code>alias ls='ls -F'</code>	Marks directories, executables, and symlinks
<code>alias l.='ls -d .*'</code>	Lists all files beginning with a dot
<code>alias ..='cd ..'</code>	Moves up one directory
<code>alias ...='cd ../..'</code>	Moves up two directories
<code>alias cx='chmod a+x'</code>	Assigns execute permissions to all
<code>alias h='history 20'</code>	Lists last 20 commands
<code>alias cls='tput clear'</code>	Clears the screen
<code>alias path='echo \$PATH'</code>	Displays the current path
<code>alias lm='ls -t head -n 1'</code>	Displays last modified filename

- Bash provides vi-like (and emacs) capabilities for editing the command line
 - `set -o vi`
 - `set -o emacs`

Other set options

Operator	Meaning
<code>noclobber</code>	Prevents overwriting with redirects
<code>ignoreeof</code>	Prevents termination of login shell with [Ctrl-d]
<code>notify</code>	Notifies completion of background jobs immediately rather than at the next prompt
<code>noglob</code>	Disables wild-card expansion

We can set or change the default behavior of the environment variables, aliases, and `set` options to persist from login-to-login or when a new sub-shell is launched. We do this with two files,

- A *login script* (also called a *profile*) which is executed only once.
- One of these three files:
 - `~/.bash_profile`
 - `~/.profile`
 - `~/.bash_login`
- A *run command* script, which is executed every time an interactive sub-shell is launched.
 - `~/.bashrc`

In your login script:

- Environment variable changes or additions
- Custom shell variables
- Startup messages
- `source` the run command script
 - `source ~/.bashrc`
 - `. ~/.bashrc`
- If you make changes to this file, you will have to **source** it from the current shell or logout and login
 - e.g. `source ~/.bash_profile`

In your run command script:

- Aliases
- `set` commands
- Startup messages
- Shell variables you want reset every sub-shell