Getting Started With UNIX: Quick Reference

This quick reference lists the commands presented in this manual concisely by function. Each listing includes a syntax diagram, and a brief description of the command.

1. Work Session

1.1. Log In
Type username to system login prompt.
Type password to password prompt.

1.2. Change Password
Type passwd, followed by old password, and repeat new password.

1.3. Log Out
Type logout or (CTRL-D) depending upon system setup.

2. File System

2.1. Create File
Type cat > filename, then text ending with (CTRL-D), or see Editing Files.

2.2. Make (or Create) Directory
Type mkdir directory-name.

2.3. Look at File
Type cat filename
or more filename.

2.4. Print File
Type lpr filename.

2.5. List Files and Directories
Type ls
for listing of current directory
ls directory-name
for listing of another directory
ls filename
for listing of a single file
ls -t or
ls -t filename or
ls -t directory-name
to get a listing reverse sorted by time of last modification
ls -F or
ls -F directory-name
to get a listing that marks directory names by appending a / character to them.

2.6. Move (or Rename) Files and Directories
Type
mv source-filename destination-filename
to rename a file
mv source-filename destination-directory
to move a file into another directory
mv source-directory-name destination-directory-name
to rename a directory, or move it into another directory.

2.7. Copy Files
Type
cp source-filename destination-filename
to copy a file into another filename
cp source-filename destination-directory
to copy a file into another directory

2.8. Remove (or Delete) File
Type
rm filename
to remove a file
rm directory-name
to remove an empty directory
rm -r directory-name
to remove a directory and its contents.

2.9. Change Working Directory
Type
cd to change directories to your home directory
cd directory-name
to change directories to another directory.

2.10. Find Name of Current Directory
Type pwd.

2.11. Pathnames

simple: One filename or directory name to access local file or directory.

absolute: List of directory names from root directory (first /) to desired filename or directory name, each name separated by /.

relative: List of directory names from current position to desired filename or directory name, each name separated by ./.

2.12. Directory Abbreviation

- Home directory.
username Another user’s home directory.
. Working directory.
.. Parent of working directory.

3. Commands

3.1. Date and Time
Type date. For universal time (Greenwich Mean Time), type date -u.
3.2. Calendar

Type

`cal year`
for yearly calendar

`cal month-number year`
for monthly calendar

3.3. Wild Cards

? Single character wild card.

* Arbitrary number of characters.

3.4. Redirecting Output

System types output of command to file rather than screen, replacing current contents of file, if any. Type `command-name > filename`.

System types output of command to file rather than screen, appending to current contents of file, if any. Type `command-name >> filename`.

3.5. Basic Calculator

Type `bc` to enter interactive program. Type arithmetic expressions, using `+`, `-`, `*`, and `/` symbols, followed by [RETURN]. To change number of decimal places, type `scale = number`.

4. Editing Files

Type `vi` to enter text editor, then any of following commands (in command mode, unless preceded by a `:`):

- `a` to add text
- `cc` to substitute a line with a string (enters insert mode)
- `cw` to substitute, or change, a word with a string (enters insert mode)
- `dd` to delete the entire line the cursor is on
- `dw` to delete the word, or portion of word, under and after the cursor

5. Formatting Files

Construct source file to run through `nroff` formatter, including any of the following commands:

- `.LP` to left-justify a paragraph
- `.IP` to create an `itemized` paragraph (like this one)
- `.ce` to center text on the page
- `.ul` to underline portions of text
- `.sp` to create a blank line space
- `.br` to force the end of a line, a line break

To format the source file, type `nroff -ms source-filename`. You will probably want to redirect the output of `nroff` into a `destination-filename`, so you can print it out afterward.

6. Search Files

Type

`grep search-string filename`
to type out lines containing the string in a specific file

`grep search-string filename(s)`
to type out lines containing the string in more than one file

`grep -v search-string filename(s)`
to type out lines that don't contain the string

7. Timesavers

7.1. Aliases

To "alias," or abbreviate a command string with an alias string, type `alias alias-string command-string`.

8. History: Command Repetition

`!!` Repeat the entire last command line at any point in the current command line.

`!$` Repeat the last word of the last command line at any point in the current command line.

9. Run Command in Background: Job Control

To run a command in the background, as opposed to the more common method of running commands in the foreground, type `a &` after the command line. Then, you can type more commands to the command prompt, or even run more commands in the background for simultaneous command execution.

10. Online Documentation

To see online Man Pages, type `man command-name`. 
Doing More With UNIX: Quick Reference

This quick reference lists commands presented in this manual, including a syntax diagram and brief description.

1. Files

1.1. Filename Substitution

Wild Cards
- * ..
Character Class
- [c...] [c-c]
  c is any single character.
String Class
- \{str[, str] \}
  str is a combination of characters, wild cards, embedded character classes and embedded string classes.
Home Directory
- .
Home Directory of Another User
- -user
List Hidden Files
ls -[1]a

1.2. File Properties

Seeing Permissions
ls -l 

Changing Permissions
chmod nnn filename
chmod c=p...[(c=p...)] filename
n, a digit from 0 to 7, sets the access level for the user (owner), group, and others (public), respectively. c is one of: u = user, g = group, o = others, or a = all. p is one of: r = read access, w = write access, or x = execute access.
Setting Default Permissions
umask ugo
ugo is a (3-digit) number. Each digit restricts the default permissions for the user, group and others, respectively.

Changing Modification Time
ln oldname newname
Making Links
ln -s oldname newname
Seeing File Types
ls -F

1.3. Encrypting Files

Source Files
crypt < source > encrypted
Editing
vi -x encrypted
Decrypting Files
crypt < encrypted | more


crypt asks for the encryption key.

1.4. Searching with more
Run
more 

more filename
RETURN
Next Line
Next 11 Lines
Next Page
Search for Pattern
Next Occurrence
Next File

1.5. The Directory Stack
Change Directory, Push
pushd directory
Change to Top Directory, Pop
popd
Show Stack
dirs

2. Commands

2.1. Command-Line Special Characters
Quotes and Escape
Join Words
Suppress Filename, Variable Substitutions
Escape Character

2.2. I/O Redirection and Pipes
Standard Output
Standard Input
Standard Error and Output
Standard Error Separately
Pipes/Pipelines
Duplicating Displayed Output

Filters
Word/Line Count
First n Lines
Last n Lines
Skip to Line n
Show Nonprinting Characters
Sort lines
Reverse Paragraphs
Multicolumn Output
List Spelling Errors
Substitutions in Output Stream
Report-Generation

2.3. Searching with grep
grep Command
grep "pattern" filename

- see Using UNIX Text Utilities
grep Search Patterns

beginning of line
end of line $
any single character .
single character in list or range [...] character not in list or range [^...]
zero or more of preceding character *
zero or more of any character .*
escapes special meaning \n
3. C-Shell Features

3.1. History Substitution

The History List
Set Up History List set history=n
See History List history [-h]

Event Designators
Repeat Previous Command !!
Display Previous Command !! :p
Command Line n !n
n Commands Back !-n
Command Beginning with str !str
Command Containing str !?str[?]
All Arguments to Prev. Command !*
Last Argument to Prev. Command !$
First Argument to Prev. Command !^ n't Argument !:n

Word Designators
All Arguments :*
Last Argument :$
First Argument :^ n't Argument :n
Arguments x Through y :x-y
Modifiers
Print Command Line :p
Substitute Command Line :[g]s/l/r/

3.2. Aliases
alias Command alias name 'definition'
definition can contain escaped history substitution event and word designators as placeholders for command-line arguments.

3.3. Variable Substitution
Creating a Variable set var
Assigning a Value set var = value
Expressing a Value $var
Displaying a Value echo $var

value is a single word, an expression in quotes, or an expression that results in a single word after variable, filename and command substitution takes place.

Assigning a List set var = (list)
list is a space-separated list of words, or an expression that results in a space-separated list.

Selecting the n'th Item $var [n]
Selecting all Items $var
Selecting a Range $var [x-y]

3.4. foreach Lists
Start foreach Loop foreach var (list)
foreach prompts for commands to repeat for each item in list (with >), until you type end. Within the loop, $var stands for the current item in list.

3.5. Command Substitution
Replace Command with its Output on the Command Line ...

3.6. Job Control
Run Command in the Background &
Stop Foreground Job CTRL-z
List of Background Jobs jobs
Bring Job Forward %n
Resume Job in Background %n

4. Processes

Listing ps [-aux]
Terminating kill [-9] PID
timing time command
Scheduling at time[ap] script
time is a number up to 4 digits. script is the name of a file containing the command line(s) to perform.

5. Users

Seeing Who Is Logged In who
Changing Identities su [username]
Seeing Your User Name whoami
who is this

6. Managing Files

6.1. Looking Up Files
Standard Commands whereis file
Aliases and Commands which command
Describe Command whatis filename
Searching Out Files find dir -name name -print
dir is a directory name within which to search.
name is a filename to search for.
6.2. Tracking Changes

Comparing Files  
diff leftfile rightfile

   diff prefixes a left angle-bracket (<) to
   selected lines from leftfile and a right angle
   bracket (>) to lines from rightfile.

Auditing Changes

Putting Files Under sccs  
   mkdir SCSS
   chmod 775 SCSS
   sccs create filename...
   rm , *

Checking Files Out  
   sccs edit filename...

Checking Files In  
   sccs delget filename...

Backing Files Out  
   sccs unedit filename...

Recovering Current Versions  
   sccs get SCSS

Reviewing Pending Changes  
   sccs diffs filename...

6.3. Automating Tasks

Create a Makefile  
   vi Makefile

   A makefile consists of macro definitions and
targets.

Test Makefile  
   make -n [target]

Run make  
   make [target]

6.4. Managing Disk Usage

Seeing Disk Usage  
   df
   du -s
   du | sort -r -n
   ls -l

Making A Tape Archive  
   tar -cv[f drive]file...

Extracting Archived Files  
   tar -xvf drive]file...

7. Printing

7.1. The Printer Queue

List the Queue  
   lpq

Removing a Printer Job  
   lprm job

Removing Your Printer Jobs  
   lprm -

Selecting a Printer  
   lpr -Pprinter
   lpq -Pprinter
   lprm -Pprinter job

7.2. Printing troff Output and Screen Dumps

troff Output  
   lpr -t

Screen Dumps  
   screendump [ | rastrepl] | lpr -v

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3 See Chapter 6 for details.