

USEFUL PHONE NUMBERS

Consulting Center - Mudd 103 (software questions).....x4983
 Operations - Mudd Lobby (hardware problems)x4989

LAB PHONE NUMBERS

Computing Room - Mudd 101.....x4982
 RAVL - 218 Andersonx5153
 Ryon - 102.....x2293
 Mechanical Engineering - 241x3615
 Abercrombie Lab - A121x2613
 Abercrombie Lab - B223x3379
 Physics Lab- 221x2517

ANATOMY OF A UNIX COMMAND

command-name -**option(s)** *filename(s)* or *arguments*

Example: **wc -l** *sample*

The first word of the command line is usually the command name. This is followed by the options, if any, then the filenames, directory name/names, or other arguments, if any, and then a RETURN. Options are usually preceded by a dash and you may use more than one option per command.

The examples on this reference card use **bold** case for command names and options and *italics* for arguments and filenames.

Important Note about UNIX Commands

UNIX commands are case sensitive. Type commands exactly as shown; most UNIX commands are lower case. File and directory names can be lower, upper, or mixed case but must be typed exactly as listed.

ON-LINE DOCUMENTATION

whatis *command* - display a one-line summary about *command*
man *command* - display on-line manual pages about *command*

MAKE (OR CREATE) DIRECTORY

mkdir *directory-name* - create a directory called *directory-name*

LOOK AT A FILE

more *filename* - display the file contents one screen at a time
head *filename* - display first few lines of a file
tail *filename* - display last few lines of a file

PRINT A FILE

setenv **PRINTER** *printer* - set the default printer
lpr *option filename* - print file
lpq *option* - check status of print queue
lprm *option* - remove jobs from printer queue
fpr *option filename* - print Fortran file
 options: **-Pprinter** - specify a printer other than the default

LIST FILES AND DIRECTORIES

ls *directory-name* - list contents of directory

options:
-a list all files including invisible files
-l long list - shows ownership, permission, and links
-t list files chronologically
-f append "*" to executable file name, "/" to directory name
-d list directories
-u list files using time of last access instead of time of last modification
-F mark directories with forward slash, mark executables with an @-sign.
-g lists ownership of each file or directory

pwd -display the name of present working directory

CHANGE WORKING DIRECTORY

cd to change to your home directory
cd *directory-name* to change to another directory

examples:
cd ~ change to home directory
cd test change to directory test

DIRECTORY ABBREVIATION

~	home directory (tilde)
~ <i>username</i>	another user's home directory
.	current or working directory
..	parent of working directory

MOVE (OR RENAME) FILES AND DIRECTORIES

mv *present-filename new-filename* to rename a file
mv *source-filename destination-directory* to move a file into another directory
 options: **-i** interactive mode. Must confirm file overwrites.

COPY FILES

cp *source-filename destination-filename* to copy a file into another filename
cp *source-filename destination-directory* to copy a file into another directory
 options: **-i** interactive mode. Must confirm overwrites.

REMOVE (OR DELETE) FILE

rm *filename* to remove a file
rmdir *directory-name* to remove an empty directory
 options: **-i** interactive mode. Prompt for confirmation.

CHANGE FILE ACCESS PERMISSIONS

chmod [*who op permission*] *filename*
who can be any combination of:

- u** (user)
- g** (group)
- o** (other)
- a** (all) (i.e. **ugo**)

op adds or takes away permission, and can be:
 + (add permission),
 - (remove permission), or
 = (set to exactly this permission).

permission can be any combination of

- r** (read)
- w** (write)
- x** (execute)

Example: **chmod a+x filename** - makes *filename* executable by everyone

SHELL TOOLS

Wild Cards

single character wild card
arbitrary number of characters

HISTORY: COMMAND REPETITION

history display list of most recent commands
! repeat the entire last command line at any point in the current command line
\$ repeat the last word of previous command line at any point in current command line
: n repeat the *n*th argument from previous line at any point in current command line
^ repeat first argument from previous command line at any point in the current command line
n repeat command line *n*
!:p display previous command
string command beginning with *string*
***** repeat all arguments to previous command

COMMAND I/O

> command output redirection (create new)
>> command output redirection (append)
< command input redirection (from file)
<< command input (from script or standard input)

ALIAS

alias *alias-string command-string*

alias abbreviates a command string with an alias string. For multi-command strings, enclose commands in quotes.

Example: **alias** shut chmod go-rwx

To use the new aliased command shut on a file, and turn off read, write, and executable permissions for all users except yourself, type shut *filename*.

WINDOWING ENVIRONMENTS

openwin enter the Open Windows window environment (not available on X terminals)
tartx enter the X window environment (not required on X terminals)
tartx -m enter the Motif window environment (to enter Motif from the login window of an X terminal, type your userid, RETURN, your password and then F4)

PROCESS CONTROL

PROCESS STATUS

ps - display the status of the current processes
options:

- a include information about processes owned by other users
- g display all processes
- u display user-oriented processes
- x include processes with no controlling terminals
- gx display all of your local processes

kill *id-number* - terminate a process owned by you
id-number (PID-Process ID) can be found by first using the ps command.

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, append an & to the end of a command string. Then, you can type more commands to the command prompt, or even run more commands in the background for simultaneous command execution.

Control-Z stop (interrupt) foreground job
jobs list of background jobs
bg run a stopped job in the background
fg resume stopped job in the background

FILE OPERATIONS

SEARCH FOR PATTERNS IN FILES

grep *search-string filename [filename...]* to find and type out lines containing the string in a file

options: -v type out lines that don't contain the string (invert the search)

COUNTING WORDS IN A FILE

wc *filename(s)* counts the number of words, lines, and characters in a file

COMPARE FILES

diff *filename1 filename2* compares contents of *filename1* and *filename2* on a line-by-line basis

FILE TRANSFER

mail *address* sends mail to user at address
address format is *user@host.domain*

ftp *host.domain* use file transfer protocol to connect to remote host computer
Type ? for commands

COMPRESS FILES

compress *filename* compress file and rename it *filename.Z*

PROGRAM COMPILATION

f77 *filename.f* FORTRAN compiler
cc *filename.c* C compiler
pc *filename.p* Pascal compiler
options:
-o *filename* direct output of program to filename
-l *library* include *library* in program compilation

USER INFORMATION AND HELPFUL COMMANDS

env lists your environment settings
who lists users on the local system
finger *username@host.domain* looks up information on another user

whois *username* display real name of user
clear clears screen
leave reminds you when you have to leave
ntalk *username@host.domain* talk to another user
lprloc shows names and locations of printers
stty sane resets terminal characteristics to a usable set

stty display terminal characteristics
date displays current time and date
cal *year* for yearly calendar
cal *month-year* for monthly calendar
tn3270 *ricevml* full-screen remote login to mainframe
tn3270 *library* full-screen remote login to Fondren Library Card Catalog. At the VM/SP screen, press the RETURN key, and then enter **dial libris** after the screen clears. Hit RETURN again. To exit the LIBR system, enter CONTROL-] (Hold down the CONTROL key, and type the close bracket character), and then enter close at the TN3270 prompt.

rlogin *host.domain* log into remote host computer

telnet *host.domain* user interface to a remote system

whereis *command* locate a command; display its pathnames

spell *filename* report spelling errors
ispell *filename* interactive spell-checker
echo *\$path* inspect your search path
pacinfo displays your current printing charges (IS systems only)

bc basic calculator
(Control-D to exit)

du display the number of disk blocks used per directory or file

du -s display your total disk usage

quota -v display your disk quota and usage