

UNIX Reference Card

Warnings!!

When a file has been **DELETED** it can only be restored from a backup. The original is gone!

When a file is **OVERWRITTEN** it has been changed forever! It can only be restored from a backup.

Directory Abbreviations

~ home directory (tilde)
 ~username another user's home directory
 . current working directory
 .. parent of current working directory

Communication

ssh [options] hostname
 Ssh (Secure Shell) a program for logging into a remote host.
 Replaces telnet, rlogin, and rsh
 options:
 -l login_name specifies the user to log in on the remote machine

scp [options] user@host1:file1 user@host2:file2
 Secure copy files between hosts on a network; uses ssh for data transfer.
 options:
 -p preserve modification times
 -r recursively copy entire directories

Comparison

diff [options] file1 file2
 Compare two text files.
 options:
 -a treat all files as text files
 -b ignore repeating blanks and end-of-line blanks; treat successive blanks as one
 -i ignore case in text comparison
 -q output only whether files differ

File Management

cat [options] [files]
 Read one or more files and print them on standard output. Use the > operator to combine several files into a new file; use >> to append files to an existing file.
 options:
 -n print the number of the output line to the line's left
 -s squeeze out extra blank lines

cd [dir]
 Change working directory to dir; default is the users home directory.

chgrp newgroup files
 Change the group of one or more files to newgroup. newgroup is either a group ID number of a group name. Only the owner can change the group.
 options:
 -c print information about those files that are affected
 -R recursively apply changes to subdirectories

chmod [options] mode files
 Change the access mode (permissions) of one or more files. Only the owner of a file or a privileged user may change its mode.
 options:
 -c print information about affected files
 -R recursively apply changes to subdirectories
 mode:
 can be numeric
 4 read
 2 write
 1 execute
 or an expression of the form who opcode permission. who is optional (if missing, default is a)
 who
 u user
 g group
 o other
 a all (default)
 opcode
 + add permission
 - remove permission
 = assign permission
 permission
 r read
 w write
 x execute
 X set execution permission only if executable by user

cp [options] file1 file2
cp [options] files directory
 Copy file1 to file2, or copy one or more files to the same names under directory.
 options:
 -a preserves attributes of original files
 -f remove existing files in the destination
 -i prompt before overwriting destination files
 -r recursively copy directories
 -s make symbolic links instead of copying

file [options] files
 Classify the named files according to the type of data they contain.

less [options] [filename]
 A program for browsing or paging through files or other output. Can use arrow keys for scrolling forward or backward.
 options:
 see man pages for options (type: man less)

ln [options] sourcename [destname]
ln [options] sourcenames destdirectory
 Create links for files, allowing them to be accessed by different names.
 options:
 -b backup files before removing originals
 -i prompt for permission before removing files
 -s create a symbolic link. This lets you see the name of the link when you run **ls -l** (otherwise there is now way to know the name that a file is linked to).

ls [options] [names]
 List the contents of a directory. If no names are given, the files in the current directory are listed.
 options:
 -a list all files, including hidden files
 -c list files by status change time
 -l long format listing (permissions, owner, size, modification time)

mkdir [options] directories
 Create one or more directories.
 options:
 -m mode set the access mode for new directories. See **chmod** for mode formats.
 -p create intervening parent directories if they don't exist

more [options] [files]
 Display the content of the named files one screen at a time. See less for an alternative.
 options:
 see man pages for options (type: man more)

pwd
 Print the full pathname of the current working directory.

scp [options] user@host1:file1 user@host2:file2
 Secure copy files between hosts on a network; uses ssh for data transfer.
 options:
 -p preserve modification times
 -r recursively copy entire directories

mv [options] sources target
 Move or rename files and directories. The source and target determine the result.

source	target	result
file	name	rename file as name
file	existing	overwrite existing file
	file	with source file
directory	name	rename directory as name
directory	existing	move directory to be a
directory	subdirectory of	
existing directory		

options:
 -b back up files before moving
 -f force the move
 -i query user before removing files

rm [options] files

Delete one or more *files*. *Once a file or directory has been removed it can only be retrieved from a backup!*

options:

- d remove directories, even if they are not empty
- f remove files without prompting
- i prompt for file removal
- r recursively remove an entire directory and its contents, including subdirectories. *Be very careful with this option.*

Miscellaneous

! Repeat the last command

!string Repeat the last command beginning with *string*.

cal [-jy] [[month] year]

Print a 12-month calendar for the given *year* or a one-month calendar of the given *month* and year. No arguments, print a calendar for the current month.

options:

- j display Julian dates
- y display entire current year

clear

Clear the terminal display

history

Display list of most recently executed commands

kill [option] IDs

Send a signal to terminate one or more process *IDs*.

options:

- l list all signals
- signal the signal number (from **ps -f**) or name (from **kill -l**). You can kill just about any process with a signal number of 9.

man command

Display information from the online reference manuals.

jobs [options] job_id

Display status of jobs in the current session. Simply specifying jobs returns the status of all stopped jobs, running background jobs, and all suspended jobs.

options:

- l provide more information about each job listed
- p display only the process IDs for the process group leaders of the selected jobs

whereis command

Locate a *command*; display the full pathname for the *command*.

which [commands]

List which files would be executed if the named *commands* had been run.

Searching

egrep [options] [regex] [files]

grep [options] [regex] [files]

Search one or more *files* for lines that match a regular expression *regex*. To include characters such as +, ?, |, (), blank spaces, etc. enclose these expressions in quotes. See **man** pages for the differences between **egrep**, **fgrep**, and **grep**.

options:

- c print only a count of matched lines
- i ignore case
- l list filenames but not matched lines
- n print lines and their line numbers
- v print all lines that do not match *regex*

find [pathnames] [conditions]

Useful for finding particular files. **find** descends the directory tree beginning at each *pathname* and locates files that meet the specified *conditions*.

options:

- name *pattern* find files whose name matches *pattern*
- print print the matching files and directories using their full pathnames

see **man** pages for options (type: **man find**)

Storage

compress [options] [files] – compress file

uncompress [options] [files] – uncompress compressed file

compress reduces the size of the named *files*. When possible the resulting compressed file will have the file extension **.Z**. Compressed files can be restored using **uncompress**.

options:

- d uncompress file, same as **uncompress**
- v prints the percentage reduction
- V prints the version of compress

gzip [options] [files] – compress file

gunzip [options] [files] – uncompress gzipped file

GNU compression utility. Renames compressed files *filename.gz*. Uncompress with **gunzip**.

options:

- d uncompress file, same as **gunzip**
- r recursively compress or decompress files within a directory
- v print name and percent size reduction for each file

tar [options] [tarfile] [other-files]

Copy *files* to or restore *files* from an archive. If any files are directories, **tar** acts on the entire subtree.

options:

- c create a new archive
- d compare the files stored in tarfile with other-files
- r append other-files to the end of an existing archive
- t print the names of files in archive
- v verbose, print filenames as they are added or extracted
- x extract *other-files* from archive, or extract all files if *other-files* not specified

System Status

Control-C

Stop (interrupt) job running in the foreground

Control-Z

Suspend job running in the foreground

date [options] [+format] [date]

Print the current date and time. You may specify a display *format*.

options:

see **man** pages for options (type: **man date**)

df [options] [name]

Report the amount of free disk space available on all mounted file systems or on a given *name*.

options:

- k print sizes in kilobytes

du [options] [directories]

Print disk used by each named directory and its subdirectories.

options:

- k print sizes in kilobytes
- s print only the grand total for each directory

env [option] [variable=value ...] [command]

Display the current environment or, if an environment *variable* is specified, set it to a new *value* and display the modified environment.

option:

- u unset the specified *variable*

ps [options]

Report on active processes.

options:

- a list all processes except processes not associated with the terminal
- e list all processes
- l produce long format listing
- u *list* list for usernames in *list*

quota [option]

Display disk usage and limits

option:

- v report quotas even if they haven't been exceeded

Contact Information

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http://www.msi.umn.edu/user_support