# File & Directory

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Create a File | | | | | | | | | | | | | |
| **cat** > *file* | | | | - | | | | Enter text and end with ctrl-D | | | | | |
| **vi** *file* | | | | - | | | | Enter text and end with :wq! | | | | | |
| Make a Directory | | | | | | | | | | | | | |
| **mkdir** | | | | | | | - | | directory-name | | | | |
| Display File Contents | | | | | | | | | | | | | |
| **cat** *file* | | - | | | | display contents of *file* | | | | | | | |
| **more** *file* | | - | | | | page through contents of *file* | | | | | | | |
| **less** *file* | | - | | | | scroll through contents of *file* | | | | | | | |
| Comparing Files | | | | | | | | | | | | | |
| **diff** *file1 file2* | | | | | | | - | | line by line comparison | | | | |
| **cmp** *file1 file2* | | | | | | | - | | byte by byte comparison | | | | |
| Changing Access Modes | | | | | | | | | | | | | |
| **chmod** mode file1 file2 ... | | | | | | | | | | | | - | Mode Settings:  u user (owner)  g group  o other (world)  + add permission  - remove permission  r read  w write  x execute |
| **Chmod –R mode dir**  (changes ALL files in dir) | | | | | | | | | | | |
| List Files and Directories | | | | | | | | | | | | | |
| **ls** | - | | list contents of directory | | | | | | | | | | |
| **ls .a** | - | | include files with "." | | | | | | | | | | |
| **ls .l** | - | | list contents in long format | | | | | | | | | | |
| Move (or Rename) Files and Directories | | | | | | | | | | | | | |
| **mv** src-file dest-file | | | | | | | | | | - | Moves a file (rename) | | |
| **mv** src-file dest-dir | | | | | | | | | | - | Move a file to a new directory | | |
| **mv** src-dir dest-dir | | | | | | | | | | - | Moves a directory (rename) | | |
| Copy Files | | | | | | | | | | | | | |
| **cp** src-file dest-file | | | | | | | | | | - | Copies a file. | | |
| **cp** src-file dest-dir | | | | | | | | | | - | Copies a file to a directory | | |
| **cp -R** src-dir dest-dir | | | | | | | | | | - | Copies a directory to new directory | | |
| Remove Files | | | | | | | | | | | | | |
| **rm** *file* | | - | | | remove a file | | | | | | | | |
| **rmdir** *dir* | | - | | | remove an empty directory | | | | | | | | |
| rm -r *dir* | | - | | | remove a directory and its contents | | | | | | | | |
| Change Working Directory | | | | | | | | | | | | | |
| **cd** | - | | | return to your login (home) directory | | | | | | | | | |
| **cd *dir*** | - | | | change to directory *dir* | | | | | | | | | |
| **pwd** | - | | | display absolute path of working directory | | | | | | | | | |
| Pathnames | | | | | | | | | | | | | |
| **simple:** | | - | | | One filename or directory name for accessing local file or directory. Example: foo.c | | | | | | | | |
| **absolute:** | | - | | | List of directory names from root directory to desired file or directory name, each separated by /. Example: /src/shared | | | | | | | | |
| **relative:** | | - | | | List of directory names from working directory to desired file or directory name, each separated by /.  Example: Mail/inbox/23 | | | | | | | | |
| Directory Abbreviations | | | | | | | | | | | | | |
| ~ | | | | - | | | | Your home (login) directory | | | | | |
| ~username | | | | - | | | | Another user's home directory | | | | | |
| . | | | | - | | | | Working (current) directory | | | | | |
| .. | | | | - | | | | Parent of working directory | | | | | |
| ../.. | | | | - | | | | Parent of parent directory | | | | | |

# Shell

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Commands | | | | | | | | | | | | | |
| **history** | | - | | show previously-run commands | | | | | | | | | |
| **alias** | | - | | Command to abbreviate command to strings | | | | | | | | | |
| Wild Cards | | | | | | | | | | | | | |
| **?** | - | | single character wild card | | | | | | | | | | |
| **\*** | - | | Arbitrary number of characters | | | | | | | | | | |
| **[abc]** | - | | single .a. , .b. or .c. | | | | | | | | | | |
| **[m-n]** | - | | single character from the .m. to .n. interval | | | | | | | | | | |
| Redirection | | | | | | | | | | | | | |
| ***command > file*** | | | | | | | | | | - | direct output of *command* to *file* instead of standard output (screen), replacing current contents of *file* | | |
| ***command >> file*** | | | | | | | | | | - | as above, except output is appended to the current contents of *file* | | |
| ***command < file command*** | | | | | | | | | | | | - | receives input from *file* instead of standard input (keyboard) |
| Pipe | | | | | | | | | | | | | |
| ***cmd1 | cmd2*** | | | | | | - | | "pipe" output of *cmd1* to input of cmd2 | | | | | |
| Command substitution | | | | | | | | | | | | | |
| *cmd1* `*cmd2*` | | | | | | - | | The output from *cmd2* is used an argument for *cmd1*. | | | | | |
| Command lists | | | | | | | | | | | | | |
| Command list is a sequence of programs. | | | | | | | | | | | | | |
| ***cmd1* ; *cmd2*** | | | | | | | - | | Executes the *cmd1*, then the *cmd2* | | | | |
| ***cmd1* && *cmd2*** | | | | | | | - | | *cmd2* is executed if, and only if, *cmd1* returns an exit status of zero. | | | | |
| ***cmd1* || *cmd2*** | | | | | | | - | | *cmd2* is executed if and only if,  *cmd1* returns a non-zero exit status. | | | | |
| Regular Expressions | | | | | | | | | | | | | |
| **$** | | | - | | end of line | | | | | | | | |
| **(r)** | | | - | | Regular expression r (egrep) | | | | | | | | |
| **.** | | | - | | any single character | | | | | | | | |
| **[^abc]** | | | - | | any character except a, b, or c | | | | | | | | |
| **[^a-c]** | | | - | | any character except characters in a–c | | | | | | | | |
| **[abc]** | | | - | | any character a, b, or c | | | | | | | | |
| **[a-c]** | | | - | | any character in range a through c | | | | | | | | |
| **\(r\)** | | | - | | tagged regular expression r (grep) | | | | | | | | |
| **\c** | | | - | | special character c | | | | | | | | |
| **\n** | | | - | | nth \(...\) match (grep only) | | | | | | | | |
| **^** | | | - | | beginning of line | | | | | | | | |
| **c** | | | - | | non-special character c | | | | | | | | |
| **r\*** | | | - | | zero or more occurrences of r | | | | | | | | |
| **r?** | | | - | | zero or one occurrence of r exp | | | | | | | | |
| **r+** | | | - | | one or more occurrences of r exp | | | | | | | | |
| **r1 | r2** | | | - | | regular expressions r1 or r2 | | | | | | | | |

# Search / FIND

|  |  |  |
| --- | --- | --- |
| **find p*ath.expression*** | - | recursively descends the directory hierarchy for seeking files that match with the expression |
| **grep *string filelist*** | - | show lines containing string in any file in filelist |
| **grep -v *string filelis*** | - | show lines not containing *string* |
| **grep -i *string filelist*** | - | show lines containing *string*, ignore |

# Processes

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ps** | | | - | Shows users running jobs on system. |
| **ps –fu <userid>** | | | - | userid show jobs running as userid |
| **bg (fg)** | | | - | put a stopped job into the background (foreground) jobs show user’s running and suspended jobs |
| **nohup** command & | | | - | run command in the background; it will not stop when you logout. (applies to ksh only) |
| **kill -***SIGNUM PID* | | | - | Send signal *SIGNUM* to process ID *PID*, or kill (terminate) process with process ID number. |
| **fg** | - | restart a suspended command | | |
| **jobs** | - | display suspended commands | | |
| **^C** | - | interrupt currently running process | | |
| **^Z** | - | suspend currently running process | | |
| **^S** | - | stop output on screen | | |
| **^Q** | - | continue output on screen | | |

# Manipulating data

|  |  |  |
| --- | --- | --- |
| **awk** | - | pattern scanning and processing language |
| **cmp** | - | compare the contents of two files |
| **cut** | - | cut out selected fields of each line of a file |
| **diff** | - | differential file comparator |
| **gawk** | - | pattern scanning and processing language |
| **sed** | - | stream text editor |
| **sort** | - | sort file data |
| **tr** | - | translate characters |
| **uniq** | - | report repeated lines in a file |
| **wc** | - | count words, lines, and characters |

# Compressed files

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **compress** | - | compress files | | |
| **uncompress** | - | uncompress files | | |
| **zcat** | - | cat a compressed file | | |
| **zcmp zdiff** | - | Compare compressed files | | |
| **gzip** | - | GNU alternative compression method | | |
| **gunzip** | - | uncompress gzipped files | | |
| **tar** *options* **-f**  *archivename filename(s)* | | | - | work with “tar” archive of files:  tar -cvf archive files(s) create archive  tar -xvf archive extract files  tar -tvf archive list files |

# Networking

|  |  |  |
| --- | --- | --- |
| **ftp** | - | file transfer program |
| **rcp** | - | remote file copy |
| **rlogin** | - | remote login to a UNIX host |
| **rsh** | - | remote shell |
| **tftp** | - | trivial file transfer program |
| **telnet** | - | make connection to a host |
| **ssh** | - | secure shell terminal or command connection |
| **scp** | - | secure shell remote file copy |
| **sftp** | - | secure shell file transfer program |

# Print / PRIN TER

|  |  |  |  |
| --- | --- | --- | --- |
| **lp** | - | print a file (HP-UX, Solaris 2.x) | |
| **lpq** | - | query printer queue of the default printer. If If printername is given, will query printer printername. (BSD, SunOS, Linux) | |
| **lpr** | - | filename print filename (send filename to the default printer). If printername is given, will send to filename to printername. (BSD, SunOS, Linux) | |
| **lpstat** | | - | check printer status (AIX, Solaris, HPUX) |
| **lpq** | | - | Check printer status (Linux) |
| **cancel** | | - | Cancel print jobs |

# Miscellaneous

|  |  |  |
| --- | --- | --- |
| **history** | - | show command history |
| **quota –v** | - | display disk usage and limits |
| **ftp** |  | file transfer program |
| **reset** | - | reset terminal mode |
| **script** | - | keep script of terminal session |
| **stty** | - | set terminal options |
| **time** | - | time a command |
| **tset** | - | set terminal mode |
| **tty** | - | print current terminal name |
| **uptime** | - | display system status |

# Useful Weblinks

## General UNIX Reference:

<http://www.unixguide.net/cgi-bin/unixguide.cgi>

<http://bhami.com/rosetta.html>

## IBM AIX:

<http://www.rootvg.net/>

<http://publib16.boulder.ibm.com/pseries/en_US/infocenter/base/resources.htm>

## SUN Solaris:

<http://www.sun.com/bigadmin/home/index.html>



**UNIX FUNdamentals**

UNIX Command Crib Sheet

Revision 1.2