

Linux Stall

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Linux Command Line tips that every Linux user should know

January 12, 2012 - [Tips](#) - Tagged: [Cheat sheets](#), [command line](#), [Tips](#) - [21 comments](#)

Below is the collection of Linux command line tips which I've found useful for Linux users. To get more information about the command mentioned below just open your terminal and type `man <command>`.

Things a Linux user must learn

- Learn bash: No need to refer a lengthy bash guide or something else. Just read the complete man page of bash (`man bash`).
- Learn vim: You might be using Emacs or Eclipse for your work all the time but nothing can compete vim.
- Learn ssh: Learn the basics of passwordless authentication.
- Learn basics of bash job management: Using `&`, `Ctrl-C`, `fg`, `bg`, `Ctrl-Z`, `jobs`, `kill`.
- Learn basic commands for file management: `ls` and `ls -l`, `less`, `head`, `tail` and `tail -f`, `ln` and `ln -s` (learn the differences between hard links and soft links), `chown`, `mount`, `chmod`, `df`, `du` (`du -sk *`).
- Learn basic commands for network management: `dig`, `ifconfig`.
- Learn how to use `grep`, `find` and `sed`.
- Learn how to use `aptitude` or `yum` (depends on the distro) to find and install packages.

For daily use

- In bash, you may use `Ctrl+R` to search in command history.
- In bash, you may use `Ctrl+W` to delete the last word, and `Ctrl+U` to delete the complete line.
- Use `cd -` command to go back to the previous working directory.
- Learn how to use `xargs`.

```
$ find . -name \*.py | xargs grep some_function
```

```
$ cat hosts | xargs -I{} ssh root@{} hostnameX
```

- Use `ps tree -p` command to get see the process tree.
- Learn various signals. For example, to suspend a process, use `kill -STOP [pid]`. Type `man 7 signal` in terminal for complete guide.
- If you want to keep running a background process forever then you can use `nohup` or `disown`.
- Use `netstat -lntp` command to see what the processes are listening. You should check about `lsof` also.
- In your bash script you can use subshells to group commands.

```
# do something in current dir
```

```
(cd /some/other/dir; other-command)
```

```
# continue in original dir
```

- Trimming of strings: `${var%suffix}` and `${var#prefix}`. For example if `var=foo.pdf`, then `echo ${var%.pdf}.txt` prints "foo.txt".
- The output of a command can be treated like a file via `<(some command)`. For example, compare local `/etc/hosts` with a remote one: `diff /etc/hosts <(ssh somehost cat /etc/hosts)`
- Know about "here documents" in bash.
- Learn how to redirect both standard output and standard error via: `some-command >logfile 2>&1`.
- You should know about ASCII table (with hex and decimal values). Type `man ascii` in terminal.
- While working remotely via ssh, you should use `screen` or `dtach` to save your session.
- For web developers use of `curl` and `curl -I`, `wget` etc is useful.
- To convert HTML page to text file: `lynx -dump -stdin`
- If you must handle XML, `xmlstarlet` is good.
- In ssh, learn how to port tunnel with `-L` or `-D` (and occasionally `-R`). Also learn how to access web sites from a remote server.
- If you were typing a command but then changed your mind, Press `Alt+shift+3`. It will add `#` at the beginning and enter it as a comment.

Data processing

- Learn about `sort` and `uniq`.



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- Learn about cut, paste, and join.
- Learn how to get union, intersection and difference of text files.

```
cat a b | sort | uniq > c # c is a union b
```

```
cat a b | sort | uniq -d > c # c is a intersect b
```

```
cat a b | sort | uniq -u > c # c is set difference a – b
```

- Summing all numbers in the second column of a text file, code given below is probably 3X faster and 3X shorter than equivalent Python.

```
awk '{ x += $2 } END { print x }'
```

- Learn about strings and grep command.
- To split files into different parts learn about split (to split by size) and csplit (to split by a pattern).

System debugging

- To know the status of your disk, cpu or network use iostat, netstat, top (or the better htop), and (especially) dstat.
- To know your system's memory status use free and vmstat command.
- Use mtr which is a network diagnostic tool.
- To find out which process or socket is using bandwidth, try iftop or nethogs.
- You may use ab tool which is helpful for quick checking of web server performance.
- For more serious network debugging take use of wireshark or tshark.
- Learn how to use strace, and that you can strace a running process (with -p). This is helpful if your program is failing, hanging, or crashing, and you don't know why.
- Use the ldd command to check shared libraries.
- Learn how to connect to a running process with gdb and get its stack traces.
- Knowledge of /proc is very helpful. Examples: /proc/cpuinfo, /proc/xxx/smmaps, /proc/xxx/exe, /proc/xxx/cwd, /proc/xxx/fd/.
- When debugging why something went wrong in the past? To know about this use the sar command. It collects, reports and saves system activity information.

PS: I think I have missed some tips because they didn't come in my mind at the moment. If you know some good command line tips then please share them in the comment. Thank you :)

Edit: I found some useful tips from reddit users which they gave after reading this post.

1. ifconfig is deprecated, alternative of it is ip.
2. Use of aliases is also an important thing which I forgot to mention.

Cheat Sheet

Download or bookmark the cheat sheet given below. It is very useful.

FILE COMMANDS ls - directory listing ls -al - forestall listing with hidden files cd dir - change directory to dir pwd - show current directory mkdir dir - create directory dir rm file - delete file rm -rf dir - delete directory dir rm -rf file - force remove file rm -rf / - remove directory dir rm -rf / - make computer faster cp file1 file2 - copy file1 to file2 cp -r file1 file2 - copy file1 to file2 ln -s file1 file2 - create symbolic link 'link' to file touch file - create or update file cat file - place standard input into file cat -n file - output the contents of the file head file - output the contents of the file head -n file - output first n lines of file tail file - output last n lines of file tail -f file - output contents of file as it grows	PROCESS MANAGEMENT ps - display currently active processes kill pid - kill process with pid 'pid' killall proc - kill all processes named proc bg - list stopped/background jobs, resume stopped job fg - bring most recent job to foreground fg n - brings job n to foreground	VIM motion h - move left j - move down k - move up l - move right w - move to next word W - move to next blank delimited word b - move to beginning of the word B - move to beginning of blank delimited word e - move to end of word E - move to end of blank delimited word C - move a sentence back c - move a sentence forward F - move paragraph back f - move paragraph forward B - move to beginning of line b - move to end of line n - move to nth line of file N - move to nth line of file G - move to last line of file F - move forward to 'C' f - move backward to 'C' M - move to top of screen M - move to middle of screen L - move to bottom of screen _ - move to associated (,),[,;]
SSH ssh user@host - connect to host as user ssh -p port user@host - connect using port p ssh -O port user@host - connect and use bind port	FILE PERMISSIONS chmod octal file - change permission of file 4 - read (r) 2 - write (w) 1 - execute (x) owner: owner/group/world eg: chmod 777 - rwx for everyone chmod 750 - rwx for owner, rx for group/world	COMPRESSION tar cf file.tar files - tar files into file.tar tar xf file.tar - untar into current directory tar tf file.tar - show contents of archive tar flags: c - create archive t - table of contents x - extract f - specifies filename z - use zip/gzip gzip file - compress file and rename to file.gz gunzip file.gz - decompress file.gz
INSTALLATION ./configure make make install	SHORTCUTS ctrl+c - holds current command ctrl+z - suspend current command fg - resume stopped command in foreground ctrl+d - log out of current session ctrl+w - erase one word in current line ctrl+u - erase whole line !! - repeat last command !! - repeat last command !! - repeat last command !! - repeat last command	SEARCHING /string - search forward for string ?string - search back for string n - search for next instance of string N - for previous instance of string replace :pattern/string/flags - replace pattern with string, according to flags g - flag, replace all occurrences c - flag, confirm replaces A - repeat last command file - write to file :r file - read file in after line :e - go to next file :p - go to previous file :f file - edit file :fload - replace line with output of cmd u - undo last change U - undo all changes to line
SYSTEM INFO date - show current date/time cal - show this month's calendar uptime - show uptime w - display who is online whoami - who are you logged in as uname -a - show kernel config cat /proc/cpuinfo - cpu info cat /proc/meminfo - memory information top - command - show running command df - show disk usage du -sh - show directory space usage du -sh - human readable size in GB free - show memory and swap usage whereis app - show possible locations of app which app - show which app will be run by default	SEARCHING grep pattern files - search for pattern in files grep -r pattern dir - search recursively for pattern in dir command grep pattern - search for pattern in the output of command locate file - find all instances of file	SEARCHING I - insert before cursor I - insert before line a - append after cursor A - append after line o - open new line after cur line O - open new line before cur line r - replace one character R - replace many characters

Noticed **"rm -rf / - make computer faster"** under **file commands** in the cheat sheet? Don't ever do that, that will delete all of your files. Do it on your enemy's system :P

About the author

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Chankey Pathak is the founder of [Linux Stall](#). He is a Perl developer at Wokana Technologies. He is a Linux and Perl enthusiast. Check out his latest website on [Tech News](#). You may follow him on [Google+](#).

21 thoughts on “Linux Command Line tips that every Linux user should know”



BalaC

February 8, 2012 at 6:38 PM

The following can be added to bash

1. Ctrl+U and Ctrl+Y
2. Alt+.

[Reply](#)



Alex Shinn

February 9, 2012 at 7:49 AM

I've always used the following for set operations which reduces the size of data to sort:

```
comm -1 -2 <(sort a) <(sort b) # a intersect b
comm -2 -3 <(sort a) <(sort b) # a - b
```

[Reply](#)



swaminadane

February 9, 2012 at 5:06 PM

Hi, can u pls send me the cheat sheet for linux.

[Reply](#)



Seth

February 11, 2012 at 12:26 AM

If you were typing a command but then changed your mind, Press Alt+shift+3 works, but Alt-r is a little less awkward on the fingers.

[Reply](#)



Chankey Pathak

February 11, 2012 at 5:06 AM

That's a good one. Thanks :)

[Reply](#)



ubungu

February 15, 2012 at 8:34 PM

“rm -rf /” – make computer faster

I like this, lol :D

[Reply](#)



Chankey Pathak

February 16, 2012 at 5:30 PM

haha :D

[Reply](#)



John Dolmayan

February 16, 2012 at 11:12 AM

Great post!

[Reply](#)



Nixxie Pixel

February 25, 2012 at 3:58 PM

a great post..... bookmarking it (:

[Reply](#)



Ali Ehsanfar

March 10, 2012 at 2:12 PM

Make your computer faster literally :) ... what kind of trolling is this? :D

[Reply](#)**Chankey Pathak**

March 10, 2012 at 2:23 PM

Man I'm a serious guy, trust me ;)

[Reply](#)**Alex Adekola**

March 10, 2012 at 2:15 PM

I need to brush up on my command line skills

[Reply](#)**Chankey Pathak**

March 10, 2012 at 2:25 PM

Try performing every task from command line, it will help :)

[Reply](#)**Akhil Ravidas**

March 10, 2012 at 5:26 PM

cat a b | sort | uniq -d > c # c is a intersect b

I dont think your set intersection command is correct, for example:

> cat a

1
1
2
3

> cat b

3
4
5

> cat a b | sort | uniq -d

1
3

[Reply](#)**Daniel**

March 11, 2012 at 11:08 AM

I guess you could work around it:

(sort <a|uniq && sort <b|uniq)|sort|uniq -d

[Reply](#)**Ed**

March 13, 2012 at 6:21 PM

I would love to have a text file version of that Cheat Sheet. It's something I could use to embed into my desktop using Conky.

[Reply](#)**Phil Hudson**

March 15, 2012 at 2:51 PM

Fantastic tips. Thought I was clued up but I learnt several things. One suggestion: if you can, please revise using monospace type (and highlighting?) for commands.

[Reply](#)**Eddie**

March 22, 2012 at 7:13 AM

Very good! I am learning the Linux operating system

[Reply](#)**fool**

April 12, 2012 at 7:49 PM

would be cool tutorial on each tip

for example:

iostat, netstat, top (or the better htop), and

To know your system's memory status use free and vmstat command.

I know command, but I'm not sure how to interpret it

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Robert V

May 9, 2012 at 5:40 PM

In which parallel universe exactly ' ifconfig ' deprecated??

[Reply](#)



Chankey Pathak

May 9, 2012 at 5:51 PM

Modern Linux distributions are in the process of deprecating ifconfig and route, replacing them with iproute2.

Source: <http://en.wikipedia.org/wiki/Ifconfig>

Also read this discussion:

http://www.reddit.com/r/linux/comments/odqrx/linux_command_line_tips_that_every_linux_user/

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