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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 pstree -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 deveopers 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.

- 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 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/smaps, /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.

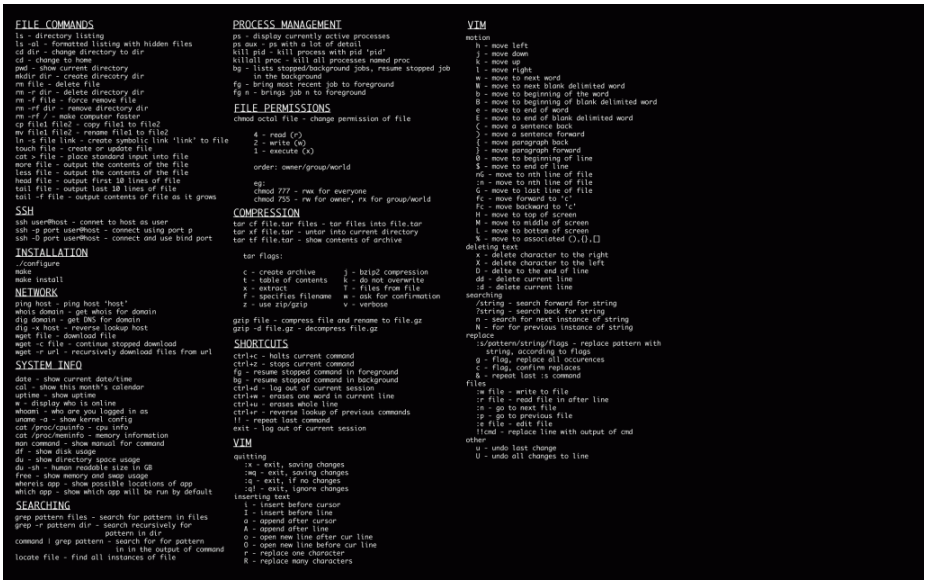
PS: I think I have missed some tips because they didn't come in my mind at the moment. If you know some good command line tips then please share them in the comment. Thank you :)

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.



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

Reply

Robert V
May 9, 2012 at 5:40 PM

In which paralelle 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/

Reply

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