

# my Unix/Gnu Linux cheat sheat

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## 1 Links

1. sed useful commands <http://www.catonmat.net/blog/wp-content/uploads/2008/09/sed1line.txt>
2. apt and dpkg cheat sheet <http://www.cyberciti.biz/tips/linux-debian-package-management-cheat-sheet.html>
3. scripting tutorial <http://linuxconfig.org/bash-scripting-tutorial>
4. <http://www.cyberciti.biz/faq/linux-unix-bsd-xargs-construct-argument-lists-utility/> has good commands to learn from, on xargs
5. good hints on writing robust scripts <http://www.davidpashley.com/articles/writing-robust-shell-scripts/>

## 2 To use rsync for backup from 2 drives on windows from mounted shared folder using VBOX

Assuming /media/G and /media/E are 2 different shared folders mounted already and you are now inside Linux in VBox then do

```
rsync -av --delete /media/G /media/E
```

## 3 How to remove colors from terminal

```
alias ls='ls --color=never'
```

## 4 How to convert files in current folder from png to eps

```
#!/bin/bash
for file in *.png; do
    filename=${file%.*}
    convert "$filename.png" "$filename.eps"
done
```

## 5 How to change extension of files in current folder

To change extension from .PNG to lowe case .png

```
#!/bin/bash
for file in *.PNG; do
    f=${file%.*}
    mv "$f.PNG" "$f.png"
done
```

## 6 recursive tree search for string in files

```
grep -H -r "string I am searching for" *
```

This should also work

```
grep -H -r 'string I am searching for' *
```

also this

```
find . -type f -exec grep -l 'string' {} \;
```

## 7 recursive tree search for string in files with specific extension

```
find . -name "*.txt" -print0 | xargs -0 egrep 'string'
```

## 8 recursive tree search for string in files, where the string is at start of a line

```
find . -name "*.txt" -exec egrep -l '^string' {} \;
```

## 9 recursive tree search for string in files, print file name and the line with match

```
find . -type f -print0 | xargs -0 grep -H 'documentclass'
```

## 10 recursive tree search for string in files, print file name only where match found

```
find . -type f -name *.tex -print0 | xargs -0 grep -l 'documentclass'
```

## 11 How to resize images in current folder based on width only

This example looks for all png files in current folder and will make thumbnails (shrink) any image that has a width larger than say 200 pixels. The height of the image is adjusted so that aspect ratio remain the same as originally was.

Edit as needed

```
#!/bin/bash
shopt -s nullglob
FILES=*.png
for file in $FILES
do
    f=${file%.*}
    echo "file is $file and f is $f"
    convert "$f.png[200x>]" "$f"_thumb.png
done
```

This example is as above except that the resizing is limited to enlarging the images to say 200 pixels. Edit as needed

```
#!/bin/bash
shopt -s nullglob
FILES=*.png
for file in $FILES
do
    f=${file%.*}
    echo "file is $file and f is $f"
    convert "$f.png[200x<]" "$f"_thumb.png
done
```

Reference:

1. <http://askubuntu.com/questions/135477/how-can-i-scale-all-images-in-a-folder-to-the-same-width>
2. <http://www.cyberciti.biz/faq/bash-loop-over-file/>

## 12 How to find image width and height?

Can use the file command. But the output has to be parsed. easier to use `imageinfo`

```
>sudo apt-get install imageinfo #install if needed
>w=`imageinfo --width foo.png`
>echo $w
81

>h=`imageinfo --height foo.png`
>echo $h
24
```

Reference:

1. <http://stackoverflow.com/questions/4670013/fast-way-to-get-image-dimensions-not-file-size>

## 13 How to resize animated gif file without losing the animation?

Useful trick to know

```
convert big.gif -coalesce coalesce.gif
convert -size 200x100 coalesce.gif -resize 200x10 small.gif
```

reference: <http://stackoverflow.com/questions/718491/resize-animated-gif-file-without-destroying-animation>

## 14 How to batch convert all .png files to .jpg?

Thanks to <http://www.turnkeylinux.org/blog/png-vs-jpg>

```

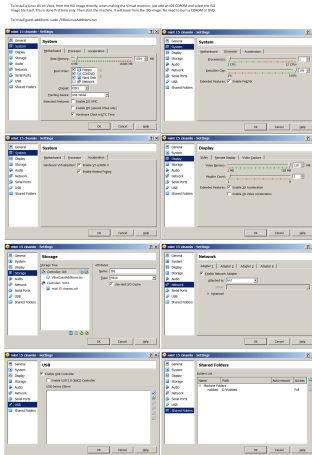
apt-get install imagemagick

#one file
convert -flatten -background white file.png file.jpg

#batch
for f in *.png; do
    n=$(echo $f|sed 's/\.png/\.jpg/');
    convert -flatten -background white $f $n
done

```

## 15 How to install Linux on VBox



## 16 to use shared folders on a VBOX with Linux guest to windows

Make sure first the windows folder is added to shared folder in VBox settings for the VM. Then boot the VM. Now inside Linux create a mount point where to mount the shared folder to

```

>sudo mkdir /media/nabbasi
>ls -l /media
drwxr-xr-x  2 root root 4096 Jun 22 17:02 nabbasi

>cd /media
>sudo chown -hR me:me nabbasi
>ls -l
drwxr-xr-x  2 me  me  4096 Jun 22 17:02 nabbasi

```

Now mount the shared folder, making sure it is owned by me

```

>sudo ./win_mount.sh
>cat win_mount.sh
mount -t vboxsf -o uid=1000,gid=1000 nabbasi /media/nabbasi

```

## 17 join AVI files to one

Thanks to <http://www.torrent-invites.com/showthread.php?t=194756>

```
sudo apt-get install mencoder mplayer
cat *.avi > movie.avi
mencoder -forceidx -oac copy -ovc copy movie.avi -o movie_final.avi
```

## 18 How to change premissions recursive?

This will change all permissions on all files and folder

```
chmod -R 0755 folder_name
```

## 19 How to delete lines from file that starts with #?

This will change the file, backup is made to INPUT.txt.bak

```
sed -i.bak '/^#/d' INPUT.txt
```

## 20 How to search all tree and find file with specific name and then delete lines from this file that starts with #?

the -I {} is the marker, which says the file name is {}

```
find . -type f -name INPUT.txt -print0 | xargs -0 -I {} sed -i.bak '/^#/d' {}
```

The above could also be done like this

```
find . -type f -name INPUT.txt -print0 | xargs -0 sed -i.bak '/^#/d'
```

But I found using explicit marker for the argument more clear. This is useful. If using a command that needs more than one argument, the marker is needed anyway, so might as well get used to using it. Marker can be anything. So this works also

```
find . -type f -name INPUT.txt -print0 | xargs -0 -I file sed -i.bak '/^#/d' file
```

## 21 tree command

tree -n -L 1 --charset nwidner prints one level only and this tree -n -i -L 1 -d . does not print indentation lines

## 22 How copy selected files in one tree to another keeping same tree structure?

see <http://unix.stackexchange.com/questions/83593/copy-specific-file-type-keeping-the-folder-structure>

## 23 How to increase file handles limit for a process?

`ulimit -n` to find the limit, and to increase it to say 2048, type `ulimit -S -n 2048`

## 24 How to unzip a file using PHP on server?

Put this in a file `foo.php` and put it in the folder to unzip the file on the server and type the URL to this file

```
<?php
    //phpinfo();
    //echo exec('whoami');

    $command = "unzip file.zip > /dev/null 2>/dev/null &";
    $output = shell_exec($command);
    echo "<pre>Done !</pre>";
?>
```

## 25 How to increase open file limit?

type `unlimt -a` to see all limits. To change open file limit, edit the file `/etc/security/limits.conf` as root and add these lines

```
* soft nofile 4096
* hard nofile 4096
```

I rebooted after this just in case (may be reboot is not needed). Now it works. When I do

```
>ulimit -n
4096
```

Reference: thanks to lornix answer

## 26 How to run sudo command without getting command not found error?

Use `sudo -E env "PATH=$PATH" command`. Reference <http://superuser.com/questions/709515/command-not-found-when-using-sudo>

## 27 How to replace spaces in file names and folder with underscore?

```
find /tmp/ -depth -name "* *" -execdir rename 's/ /_/g' "{}" \;
```

Above is thanks to Dennis Williamson from <http://stackoverflow.com/questions/2709458/bash-script-to-replace-spaces-in-file-names>

Seems to work well.



## 28 How to convert DOS file to Unix?

```
tr -d '\015' < file.txt > new_file.txt
```

Just make sure not to use the same file above, else it will be wiped out.

<http://stackoverflow.com/questions/2613800/how-to-convert-dos-windows-newline-crlf-to-unix-newline-n-in-bash-script>

or just do `sudo apt-get install dos2unix` and type `dos2unix foo.txt` it will overwrite the file ok.

## 29 bulk file renaming in bash, to remove name with spaces, leaving trailing digits

Thanks to Avinash Raj, use this command `rename 's/.*\s//' *.pdf` see <http://stackoverflow.com/questions/34469075/bulk-file-renaming-in-bash-to-remove-name-with-spaces-leaving-trailing-digits>

## 30 How to convert djvu files to pdf?

Install `sudo apt-get install djvulibre-bin`. To convert multiple files, I wrote this small script

```
#!/bin/bash
#dj2pdf.sh      script to convert djvu files to pdf
set -x
for file in $1; do
    filename=${file%. *}
    ddjvu -format=pdf -quality=100 "$filename.djvu" "$filename.pdf"
done
```

To convert one file, type `dj2pdf file.djvu` and to convert multiple files, type `dj2pdf *.djvu`

## 31 How to test the C compiler quickly?

```
echo "void main(){printf(\"hello world\n\");}" |gcc -x c - -o /tmp/hello;/tmp/hello
```

## 32 How to delete files with some extension inside specific folder over tree?

thanks to Anderson M. Gomes <http://unix.stackexchange.com/questions/270071/how-to-delete-all-files-with-specific-extension-in-specific-named-folders-in-lar>

Here is the code

```
#to check
$ find /path/to/source -type d -name 'rules' -exec find '{}' -mindepth 1 -maxdepth 1 -type f -iname '*.pdf' -print ';'

#to delete
$ find /path/to/source -type d -name 'rules' -exec find '{}' -mindepth 1 -maxdepth 1 -type f -iname '*.pdf' -print -delete ';'

```

## 33 How to download a web page using wget?

An example,

```
wget --recursive --no-clobber --page-requisites --html-extension --convert-links
--restrict-file-names=windows --domains the_domain_name.com --no-parent http://blabla_blabla
```

### 34 How to delete folders inside tree with only specific name?

Answers thanks to <https://stackoverflow.com/questions/13032701/how-to-remove-folders-with-a-certain-name>

```
cd top_level
rm -rf `find . -type d -name folder_name_to_remove`
```

Or

```
cd top_level
find . -type d -name foo -a -prune -exec rm -rf {} \;
```

### 35 How to delete files with specific names inside tree?

```
cd top_level
find . -name "file_name" -print
find . -name "file_name" -delete
```

### 36 How to sort files in tree by date changed?

This will list all files in tree, showing date file changed with latest changed at bottom of listing shown.

```
find . -type f -printf '%TY-%Tm-%Td %TT %p\n' | sort
```

Thanks to <https://stackoverflow.com/questions/5566310/how-to-recursively-find-and-list-the-latest-modified-files-in-a-directory-with-s>

### 37 How print longest line in file?

```
awk '{ if ( length > x ) { x = length; y = $0 } }END{ print y }' ./file.tex
```

Thanks to Keith Thompson at <https://unix.stackexchange.com/questions/24509/how-to-print-the-longest-line-in-a-file>

### 38 How to change all spaces to underscore in folder names in tree?

Use

```
sudo apt install detox
detox -n --dry-run * #dry run, to test, does nothing.
detox *
```

This will change all folder names below where it is issued and changes any space in the name to underscore.