Linux Commands Cheat Sheet

Easy to use Linux shortcuts
for developers.

RED HAT DEVELOPERS

ssh [ip or hostname] **"vagrant ssh" in the same** **directory as the Vagrantfile** **to shell into the box/machine** **(assumes you have** **successfully "vagrant up")**	Secure shell, an encrypted network protocol allowing for remote login and command execution On Windows: PuTTY and WinSCP An "ssh.exe" is also available via Cygwin as well as with a Git installation.
pwd	Print Working Directory Displays the full path name
whoami	Displays your logged in user id
cd / **cd target** **cd ~**	Change directory to the root of the filesystem Change directory to "target" directory Change directory to your home directory
ls **ls -l** **ls -la**	Directory listing Long listing, displays file ownership Displays hidden files/directories

```
[vagrant@rhel-cdk /]$ ls
bin   boot  dev   etc   home  lib   lib64   lost+found   media   mnt   opt   pro
[vagrant@rhel-cdk /]$ ls -l
total 62
lrwxrwxrwx.    1 root     root         7 Mar  8 20:36 bin -> usr/bin
dr-xr-xr-x.    4 root     root      1024 Mar 12 19:26 boot
drwxr-xr-x.   18 root     root      3100 Mar 12 19:49 dev
drwxr-xr-x.   85 root     root      4096 Mar 12 19:31 etc
drwxr-xr-x.    3 root     root      4096 Mar  8 20:54 home
lrwxrwxrwx.    1 root     root         7 Mar  8 20:36 lib -> usr/lib
lrwxrwxrwx.    1 root     root         9 Mar  8 20:36 lib64 -> usr/lib64
drwx------.    2 root     root     16384 Mar  8 20:34 lost+found
drwxr-xr-x.    2 root     root      4096 May 25  2015 media
drwxr-xr-x.    2 root     root      4096 May 25  2015 mnt
drwxr-xr-x.    3 root     root      4096 Mar  8 20:50 opt
dr-xr-xr-x. 166 root      root         0 Mar 12 19:26 proc
dr-xr-x---.    3 root     root      4096 Mar 12 19:30 root
drwxr-xr-x.   31 root     root      1000 Mar 12 19:31 run
lrwxrwxrwx.    1 root     root         8 Mar  8 20:36 sbin -> usr/sbin
drwxr-xr-x.    2 root     root      4096 May 25  2015 srv
dr-xr-xr-x.   13 root     root         0 Mar 12 19:26 sys
drwxrwxrwt.    7 root     root      4096 Mar 12 20:31 tmp
drwxr-xr-x.   13 root     root      4096 Mar  8 20:36 usr
drwxr-xr-x.    3 vagrant  vagrant  4096 Mar 12 19:25 vagrant
drwxr-xr-x.   19 root     root      4096 Mar 12 19:26 var
[vagrant@rhel-cdk /]$ []
```

clear	Clear the terminal screen

cat file.txt	Displays the contents of file.txt to standard out
cat /etc/system-release	Displays the contents of the system-release file - what version of RHEL, Centos or Fedora are you running?

```
[vagrant@rhel-cdk etc]$ cat /etc/system-release
Red Hat Enterprise Linux Server release 7.2 (Maipo)
[vagrant@rhel-cdk etc]$ 
```

**cat longfile.txt	more**	Displays the contents of the file with forward paging

```
Count is 0
Count is 1
Count is 2
Count is 3
Count is 4
Count is 5
Count is 6
Count is 7
Count is 8
Count is 9
Count is 10
Count is 11
Count is 12
Count is 13
Count is 14
Count is 15
Count is 16
Count is 17
Count is 18
Count is 19
Count is 20
Count is 21
Count is 22
Count is 23
Count is 24
Count is 25
Count is 26
Count is 27
--More--
```

less longfile.txt	Scroll forward: Ctrl-f Scroll backward: Ctrl-b End of file: G Quit less: q
man cat	Man pages, the user manual. In this case, it will describe the cat command

```
CAT(1)

NAME
       cat - concatenate files and print on the standard output

SYNOPSIS
       cat [OPTION]... [FILE]...

DESCRIPTION
       Concatenate FILE(s), or standard input, to standard output.

       -A, --show-all
              equivalent to -vET

       -b, --number-nonblank
              number nonempty output lines, overrides -n

       -e     equivalent to -vE

       -E, --show-ends
              display $ at end of each line

       -n, --number
              number all output lines

       -s, --squeeze-blank
              suppress repeated empty output lines

       -t     equivalent to -vT

       -T, --show-tabs
              display TAB characters as ^I
 Manual page cat(1) line 1 (press h for help or q to quit)
```

cp source_file.js target_file.js	Copies a specific file
cp -r ~/source_dir ~/target_dir	Copies all files and sub-dirs

mkdir my_directory	Create the directory "my_directory"

```
[vagrant@rhel-cdk ~]$ mkdir my_directory
[vagrant@rhel-cdk ~]$ ls -la
total 32
drwx------. 5 vagrant vagrant 4096 Mar 12 21:39 .
drwxr-xr-x. 3 root    root    4096 Mar  8 20:54 ..
-rw-r--r--. 1 vagrant vagrant   18 Jul  8 2015 .bash_logout
-rw-r--r--. 1 vagrant vagrant  193 Jul  8 2015 .bash_profile
-rw-r--r--. 1 vagrant vagrant  231 Jul  8 2015 .bashrc
drwxr-xr-x. 2 vagrant vagrant 4096 Mar 12 19:26 .docker
drwxrwxr-x. 2 vagrant vagrant 4096 Mar 12 21:39 my_directory
drwx------. 2 vagrant vagrant 4096 Mar 12 19:26 .ssh
[vagrant@rhel-cdk ~]$ []
```

rm myfile.js	Removes a specific file
rm -rf my_directory/	Removes a directory, recursively

mv [source_file] [target_file]	Move file or directory

ps -ef	Displays information about a selection of the active processes

```
[vagrant@rhel-cdk etc]$ ps -ef
UID        PID  PPID  C STIME TTY          TIME CMD
root         1     0  0 19:26 ?        00:00:02 /usr/lib/systemd/systemd
root         2     0  0 19:26 ?        00:00:00 [kthreadd]
root         3     2  0 19:26 ?        00:00:01 [ksoftirqd/0]
root         5     2  0 19:26 ?        00:00:05 [kworker/0:0H]
root         7     2  0 19:26 ?        00:00:00 [migration/0]
root         8     2  0 19:26 ?        00:00:00 [rcu_bh]
root         9     2  0 19:26 ?        00:00:00 [rcuob/0]
root        10     2  0 19:26 ?        00:00:00 [rcuob/1]
root        11     2  0 19:26 ?        00:00:19 [rcu_sched]
root        12     2  0 19:26 ?        00:00:14 [rcuos/0]
root        13     2  0 19:26 ?        00:00:16 [rcuos/1]
root        14     2  0 19:26 ?        00:00:00 [watchdog/0]
root        15     2  0 19:26 ?        00:00:00 [watchdog/1]
root        16     2  0 19:26 ?        00:00:00 [migration/1]
root        17     2  0 19:26 ?        00:00:00 [ksoftirqd/1]
root        19     2  0 19:26 ?        00:00:00 [kworker/1:0H]
root        20     2  0 19:26 ?        00:00:00 [khelper]
root        21     2  0 19:26 ?        00:00:00 [kdevtmpfs]
root        22     2  0 19:26 ?        00:00:00 [netns]
root        23     2  0 19:26 ?        00:00:00 [perf]
root        24     2  0 19:26 ?        00:00:00 [writeback]
root        25     2  0 19:26 ?        00:00:00 [kintegrityd]
root        26     2  0 19:26 ?        00:00:00 [bioset]
root        27     2  0 19:26 ?        00:00:00 [kblockd]
root        28     2  0 19:26 ?        00:00:00 [md]
root        29     2  0 19:26 ?        00:00:02 [kworker/0:1]
root        34     2  0 19:26 ?        00:00:00 [khungtaskd]
root        35     2  0 19:26 ?        00:00:01 [kswapd0]
root        36     2  0 19:26 ?        00:00:00 [ksmd]
```

./runthisthing

Execute a program or shell script in your current working directory (pwd)
Executable items are have an "x" in their long listing (ls -la)

```
[vagrant@rhel-cdk bin]$ pwd
/usr/bin
[vagrant@rhel-cdk bin]$ ls -la | grep cp
-rwxr-xr-x.   1 root root      155136 Nov 25 10:55 cp
-rwxr-xr-x.   1 root root      141632 Jul  8  2015 cpio
-rwxr-xr-x.   1 root root      768592 Jul 15  2015 cpp
-rwxr-xr-x.   1 root root       67928 Jan 23 05:07 cpupower
-rwxr-xr-x.   1 root root       58352 Aug 21  2015 lscpu
-rwxr-xr-x.   1 root root       11400 Sep 15 05:51 rpm2cpio
-rwxr-xr-x.   1 root root       70360 Jan 13 10:22 scp
[vagrant@rhel-cdk bin]$ 
```

```
[vagrant@rhel-cdk ~]$ cd ~
[vagrant@rhel-cdk ~]$ ls -la
total 32
drwx------. 4 vagrant vagrant 4096 Mar 12 21:04 .
drwxr-xr-x. 3 root    root    4096 Mar  8 20:54 ..
-rw-r--r--. 1 vagrant vagrant   18 Jul  8  2015 .bash_logout
-rw-r--r--. 1 vagrant vagrant  193 Jul  8  2015 .bash_profile
-rw-r--r--. 1 vagrant vagrant  231 Jul  8  2015 .bashrc
drwxr-xr-x. 2 vagrant vagrant 4096 Mar 12 19:26 .docker
-rwxrwxr-x. 1 vagrant vagrant  107 Mar 12 21:04 runthisthing
drwx------. 2 vagrant vagrant 4096 Mar 12 19:26 .ssh
[vagrant@rhel-cdk ~]$ 
```

./runthisthing &

Execute a program or shell script as a background task

ps -ef | grep runthisthing

Find a particular process by name. The "|" is a pipe, redirects the output of the left-side command to the standard input of the right-side command

```
[vagrant@rhel-cdk ~]$ ./runthisthing &
[3] 22047
[vagrant@rhel-cdk ~]$ ps -ef | grep runthisthing
vagrant  22047 14771 99 21:11 pts/0    00:00:05 /bin/bash ./runthisthing
vagrant  22060 14771  0 21:11 pts/0    00:00:00 grep --color=auto runthisthing
[vagrant@rhel-cdk ~]$ 
```

kill -9 [pid]

```
[vagrant@rhel-cdk ~]$ ps -ef | grep runthisthing
vagrant  22047 14771 99 21:11 pts/0    00:00:21 /bin/bash ./runthisthing
vagrant  22081 14771  0 21:11 pts/0    00:00:00 grep --color=auto runthisthing
[vagrant@rhel-cdk ~]$ kill -9 22047
[vagrant@rhel-cdk ~]$ ps -ef | grep runthisthing
vagrant  22096 14771  0 21:11 pts/0    00:00:00 grep --color=auto runthisthing
[3]   Killed                  ./runthisthing
[vagrant@rhel-cdk ~]$ 
```

ip -4 a

Shows the IPv4 address for all NICs

top

What is eating your CPU

```
top - 21:17:06 up  1:51,  1 user,  load average: 0.41, 0.67, 0.49
Tasks: 157 total,   4 running, 151 sleeping,   2 stopped,   0 zombie
%Cpu(s): 47.4 us,  3.7 sy,  0.0 ni, 48.5 id,  0.2 wa,  0.0 hi,  0.2 si,  0.0 st
KiB Mem :  1017056 total,   108588 free,   378700 used,   529768 buff/cache
KiB Swap:  1572860 total,  1559232 free,    13628 used.   436384 avail Mem

  PID USER      PR  NI    VIRT    RES    SHR S  %CPU %MEM     TIME+ COMMAND
22526 vagrant   20   0  113116   1184   1008 R 100.0  0.1   0:08.06 runthisthing
13368 root      20   0 1448088 233012  15992 S  10.0 22.9  12:36.47 openshift
13168 root      20   0 1377296  44816  11004 S   1.3  4.4   1:10.37 docker
  453 root      20   0   43588   9560   6892 S   0.3  0.9   0:10.46 systemd-journal
    1 root      20   0   43896   5532   3568 S   0.0  0.5   0:02.06 systemd
    2 root      20   0       0      0      0 S   0.0  0.0   0:00.03 kthreadd
    3 root      20   0       0      0      0 R   0.0  0.0   0:01.45 ksoftirqd/0
    5 root       0 -20       0      0      0 S   0.0  0.0   0:06.25 kworker/0:0H
    7 root      rt   0       0      0      0 S   0.0  0.0   0:00.66 migration/0
    8 root      20   0       0      0      0 S   0.0  0.0   0:00.00 rcu_bh
    9 root      20   0       0      0      0 S   0.0  0.0   0:00.00 rcuob/0
   10 root      20   0       0      0      0 S   0.0  0.0   0:00.00 rcuob/1
   11 root      20   0       0      0      0 S   0.0  0.0   0:24.92 rcu_sched
   12 root      20   0       0      0      0 R   0.0  0.0   0:18.26 rcuos/0
   13 root      20   0       0      0      0 S   0.0  0.0   0:21.08 rcuos/1
   14 root      rt   0       0      0      0 S   0.0  0.0   0:00.19 watchdog/0
   15 root      rt   0       0      0      0 S   0.0  0.0   0:00.20 watchdog/1
   16 root      rt   0       0      0      0 S   0.0  0.0   0:00.72 migration/1
   17 root      20   0       0      0      0 S   0.0  0.0   0:01.08 ksoftirqd/1
   19 root       0 -20       0      0      0 S   0.0  0.0   0:00.00 kworker/1:0H
   20 root       0 -20       0      0      0 S   0.0  0.0   0:00.00 khelper
   21 root      20   0       0      0      0 S   0.0  0.0   0:00.02 kdevtmpfs
   22 root       0 -20       0      0      0 S   0.0  0.0   0:00.00 netns
   23 root       0 -20       0      0      0 S   0.0  0.0   0:00.00 perf
   24 root       0 -20       0      0      0 S   0.0  0.0   0:00.00 writeback
   25 root       0 -20       0      0      0 S   0.0  0.0   0:00.00 kintegrityd
```

which [executable]

Where is the executable located

```
[vagrant@rhel-cdk ~]$ which docker
/usr/bin/docker
[vagrant@rhel-cdk ~]$ which oc
/usr/bin/oc
[vagrant@rhel-cdk ~]$ which top
/usr/bin/top
[vagrant@rhel-cdk ~]$ 
```

echo "Stuff" > target_file.txt **echo "more" >> target_file.txt**	single > redirects the output to the file "target_file.txt" A double >> appends

```
[vagrant@rhel-cdk ~]$ cd ~
[vagrant@rhel-cdk ~]$ ls -la
total 32
drwx------. 4 vagrant vagrant 4096 Mar 12 21:29 .
drwxr-xr-x. 3 root    root    4096 Mar  8 20:54 ..
-rw-r--r--. 1 vagrant vagrant   18 Jul  8  2015 .bash_logout
-rw-r--r--. 1 vagrant vagrant  193 Jul  8  2015 .bash_profile
-rw-r--r--. 1 vagrant vagrant  231 Jul  8  2015 .bashrc
drwxr-xr-x. 2 vagrant vagrant 4096 Mar 12 19:26 .docker
-rwxrwxr-x. 1 vagrant vagrant  114 Mar 12 21:11 runthisthing
drwx------. 2 vagrant vagrant 4096 Mar 12 19:26 .ssh
[vagrant@rhel-cdk ~]$ echo "stuff" > target_file.txt
[vagrant@rhel-cdk ~]$ cat target_file.txt
stuff
[vagrant@rhel-cdk ~]$ echo "more" >> target_file.txt
[vagrant@rhel-cdk ~]$ cat target_file.txt
stuff
more
[vagrant@rhel-cdk ~]$ ls -la
total 36
drwx------. 4 vagrant vagrant 4096 Mar 12 21:29 .
drwxr-xr-x. 3 root    root    4096 Mar  8 20:54 ..
-rw-r--r--. 1 vagrant vagrant   18 Jul  8  2015 .bash_logout
-rw-r--r--. 1 vagrant vagrant  193 Jul  8  2015 .bash_profile
-rw-r--r--. 1 vagrant vagrant  231 Jul  8  2015 .bashrc
drwxr-xr-x. 2 vagrant vagrant 4096 Mar 12 19:26 .docker
-rwxrwxr-x. 1 vagrant vagrant  114 Mar 12 21:11 runthisthing
drwx------. 2 vagrant vagrant 4096 Mar 12 19:26 .ssh
-rw-rw-r--. 1 vagrant vagrant   11 Mar 12 21:29 target_file.txt
[vagrant@rhel-cdk ~]$ 
```

echo $PATH	Displays the $PATH environment variable

```
[vagrant@rhel-cdk ~]$ echo $PATH
/usr/local/bin:/usr/bin:/usr/local/sbin:/usr/sbin:/home/vagrant/.local/bin:/home/vagrant/bin
```

env	Displays all ENV variables
export PATH=$PATH:/anoth-erdir	Adds "anotherdir" to your PATH, just for your current session
sudo find . -name [file]	Find a file or directory by name

```
[vagrant@rhel-cdk /]$ cd /
[vagrant@rhel-cdk /]$ sudo find . -name vagrant
./var/spool/mail/vagrant
./vagrant
./vagrant/src/booker/vagrant
./etc/sudoers.d/vagrant
./home/vagrant
[vagrant@rhel-cdk /]$ 
```

grep -i stuff `find . -name \*.txt -print`	Find the string "stuff" in all the .txt files

```
[vagrant@rhel-cdk /]$ cd ~
[vagrant@rhel-cdk ~]$ echo "Stuff" > target_file.txt
[vagrant@rhel-cdk ~]$ echo "more" >> target_file.txt
[vagrant@rhel-cdk ~]$ ls
my_directory  target_file.txt
[vagrant@rhel-cdk ~]$ grep -i stuff `find . -name \*.txt -print`
"Stuff"
[vagrant@rhel-cdk ~]$ []
```

head [file]	Output the first part of file (first 10 lines)
curl developers.redhat.com	Retrieve the content from developers.redhat.com
source myenvsetting_script.sh	How to add something to the PATH and make it stick By default a new shell is launched to run a script, therefore env changes are not visible to your current shell.

```
[vagrant@rhel-cdk ~]$ ls
myenvsetting_script.sh  mystuff
[vagrant@rhel-cdk ~]$ cat myenvsetting_script.sh
export MY_STUFF=/home/vagrant/mystuff
export PATH=$PATH:$MY_STUFF/bin
[vagrant@rhel-cdk ~]$ source myenvsetting_script.sh
[vagrant@rhel-cdk ~]$ echo $PATH
/usr/local/bin:/usr/bin:/usr/local/sbin:/usr/sbin:/home/vagrant/.local/bin
:/home/vagrant/bin:/home/vagrant/mystuff/bin
[vagrant@rhel-cdk ~]$ []
```

Note: the path uses ":" as a separator vs ";" in the Windows world

sudo yum -y install net-tools	"yum" is the installation tool for Fedora, Centos and RHEL. This command installs "net-tools" which has many handy utilities like netstat

```
[vagrant@rhel-cdk ~]$ sudo yum -y install net-tools
Loaded plugins: product-id, search-disabled-repos, subscription-manager
Resolving Dependencies
--> Running transaction check
---> Package net-tools.x86_64 0:2.0-0.17.20131004git.el7 will be installed
--> Finished Dependency Resolution

Dependencies Resolved

================================================================================
 Package     Arch     Version                       Repository          Size
================================================================================
Installing:
 net-tools x86_64 2.0-0.17.20131004git.el7   rhel-7-server-eus-rpms 304 k

Transaction Summary
================================================================================
Install  1 Package

Total download size: 304 k
Installed size: 917 k
Downloading packages:
net-tools-2.0-0.17.20131004git.el7.x86_64.rpm        | 304 kB   00:00
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : net-tools-2.0-0.17.20131004git.el7.x86_64            1/1
  Verifying  : net-tools-2.0-0.17.20131004git.el7.x86_64            1/1

Installed:
  net-tools.x86_64 0:2.0-0.17.20131004git.el7

Complete!
[vagrant@rhel-cdk ~]$ []
```

sudo netstat -anp | grep tcp | grep LISTEN	Lists the various in-use ports and the process using it

```
[vagrant@rhel-cdk ~]$ sudo netstat -anp | grep tcp | grep LISTEN
tcp        0      0 127.0.0.1:10443         0.0.0.0:*               LISTEN      27967/haproxy
tcp        0      0 127.0.0.1:10444         0.0.0.0:*               LISTEN      27967/haproxy
tcp        0      0 0.0.0.0:80              0.0.0.0:*               LISTEN      27967/haproxy
tcp        0      0 0.0.0.0:1936            0.0.0.0:*               LISTEN      27967/haproxy
tcp        0      0 0.0.0.0:53              0.0.0.0:*               LISTEN      13368/openshift
tcp        0      0 0.0.0.0:22              0.0.0.0:*               LISTEN      907/sshd
tcp        0      0 127.0.0.1:25            0.0.0.0:*               LISTEN      1651/master
tcp        0      0 0.0.0.0:443             0.0.0.0:*               LISTEN      27967/haproxy
tcp        0      0 0.0.0.0:8443            0.0.0.0:*               LISTEN      13368/openshift
tcp6       0      0 :::2376                 :::*                    LISTEN      13168/docker
tcp6       0      0 :::53866                :::*                    LISTEN      13368/openshift
tcp6       0      0 :::10250                :::*                    LISTEN      13368/openshift
tcp6       0      0 :::33900                :::*                    LISTEN      13368/openshift
tcp6       0      0 :::9101                 :::*                    LISTEN      14636/haproxy_expor
tcp6       0      0 :::52944                :::*                    LISTEN      13368/openshift
tcp6       0      0 :::38549                :::*                    LISTEN      13368/openshift
tcp6       0      0 :::22                   :::*                    LISTEN      907/sshd
tcp6       0      0 :::7001                 :::*                    LISTEN      13368/openshift
tcp6       0      0 ::1:25                  :::*                    LISTEN      1651/master
tcp6       0      0 :::4001                 :::*                    LISTEN      13368/openshift
tcp6       0      0 :::32869                :::*                    LISTEN      13368/openshift
[vagrant@rhel-cdk ~]$ 
```

sudo netstat -anp | grep 2376	Lists the process listening on port 2376

```
[vagrant@rhel-cdk ~]$ sudo netstat -anp | grep 2376
tcp6       0      0 :::2376                 :::*                    LISTEN      13168/docker
[vagrant@rhel-cdk ~]$ 
```

This is particularly useful when another process is hanging out on a port you need, like if you started Apache on 80 or Tomcat on 8080.

wget https://someurl.com/ somefile.tar.gz	wget is a useful utility for downloading files from any website. If installation is required, simply sudo yum -y install wget

```
[vagrant@rhel-cdk ~]$ sudo yum -y install wget
Loaded plugins: product-id, search-disabled-repos, subscription-manager
Resolving Dependencies
--> Running transaction check
---> Package wget.x86_64 0:1.14-10.el7_0.1 will be installed
--> Finished Dependency Resolution

Dependencies Resolved

================================================================================
 Package        Arch           Version                Repository          Size
================================================================================
Installing:
 wget           x86_64         1.14-10.el7_0.1        rhel-7-server-eus-rpms    546 k

Transaction Summary
================================================================================
Install  1 Package

Total download size: 546 k
Installed size: 2.0 M
Downloading packages:
wget-1.14-10.el7_0.1.x86_64.rpm                            | 546 kB  00:00:00
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : wget-1.14-10.el7_0.1.x86_64                                 1/1
  Verifying  : wget-1.14-10.el7_0.1.x86_64                                 1/1

Installed:
  wget.x86_64 0:1.14-10.el7_0.1

Complete!
[vagrant@rhel-cdk ~]$ 
```

tar -xf somefile.tar.gz	Extracts/expands (think unzip) into current directory
tar -xf somefile.tar.gz -C ~/so-medir	Expands into the "somedir" directory