Linux Command Sheet Cheat Sheet

by Mary F. Smith (boogie) via cheatography.com/86236/cs/20137/

Information

pwd	| print working directory
cat	| print file [on screen]
user head or tail instead of cat	| shows the first few lines at beginning or end
hostname	| display hostname
	-i [displays network address] -I [displays all local IPs]
date	| set/display date & time
whois	
uptime	| display how long the system has been running
cal	| displays calendar
uname -a	| displays Linux system info
uname -r	| displays kernel info
lsb_release -s	

Manage Users

su -	| switch to root user & move to that directory
adduser	| add new user
usermod -aG sudo *username*	| add user to sudo list
groups *username*	| list groups a user belongs too
su mfsmith	| switch to listed user mfsmith
passwd	| change password for current user name
passwd mfsmith	| change password for listed user
passwd -S sysadmin	| displays the status of the users password
	[P] Unlocked
	[L] locked
	[NP] no password

Manage Users (cont)

adduser mfsmith -or- useradd mfsmith	| Creates a new user
usermod mfsmith	| modify username account
deluser mfsmith -or- userdel	| Deletes user
deluser mfsmith --remove--all-files	| Deletes the user and removes all files in directory
getent powerusers | less	| print user groups
usermod -l newusername oldusername	| change user name
sudo chfn mfsmith	| edit basic info i.e. full name, room #, phone #

Process Management

ps	| displays users current processes
ps -ef	| displays all processes
pmap	| displays memory usage
pstree	| display in a tree
ps -ef | grep wa	| display all info reference this process
ps kill 84679	| kill process id 84679
ps killall java	| kill all processes named java
top	| show all running proicesses

Disk/Hardware Mgmt

df -h	| disk usage
ps	| running processes

System Monitoring

whoami	| display user
uptime	| system run time
cat /proc/cpuinfo	|
free -h	| display free memory}
lshw	| print hardware configuration

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System Monitoring (cont)

last reboot	| disaply date & time of last reboot
w	| display currently logged in users

General Maintenance

Shutdown *[OPTIONS] TIME [MESSAGE]*	| sudo shutdown =1 "System scheduled for restart"
Update & Upgrade the Debian OS	
	sudo apt-get update && sudo apt-get upgrade

Package management | OS Maintenance

sudo apt-get update	| check for updates in current version
apt-get updater && apt-get upgrade	
apt-cache search docker	| search for packages with the word "Docker" in the file name
apt-get install docker	| install docker
apt-get remove	| removes a package
apt-get purge	| removes and deletes

Misc Need Organizing

ssh mfsmith@srv-tower	log into machine
scp mfsmith@srv-tower :srv-dc	
scp<username.@<host:[remote sourse] <local.	copies files from the host to the destination

Working with Processes

pstree	| display a tree of processes
systemctl process-sname	| control the systemd init system & service manager

SuperUser

su -	| change to superuser & stay at root directory
sudo -	| execute a command as root
- or -	
sudo -u	| execute a command as a particular user

Installs - Frequently Used

vagrant@debian11:/ **sudo apt-get install nano -y**

Basic Network Mgmt

iwconfig	| wireless interface
ifconfig	| ethernetinterface

```
# The loopback network interface
auto lo
iface lo inet loopback

# The primary network interface
-auto enp0s3
iface enp0s3 inet static
-address 192.168.1.97
-netmask 255.255.255.0
-gateway 192.168.1.1
-dns-domain example.com
-dns-nameservers 1.1.1.1
```

sudo systemctl restart networking

Networking Command/Queries

ip a	| display IP Address, routing, devices and tunnels
netstat	| displays all active TCP connections, ports
-nutlp [displays tcp/udp ports & application running on port]	
-e [includes ethernet stats] -o [includes PIDs] -p [displays protocols] -r [displays routing table]	
ping	| test communication with machines
ping -c 4	| limits the ping response to 4 replies
traceroute srv-dc	print packet route
host	| DNS lookup utililty
hostname	| show or set system name
iptables	|utililty for packet filtering and NAT
mtr	| network diagnostic tool
telnet	| access to the telnet tool

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Networking Command/Queries (cont)

ufw	| application to mange filters and firewalls
mtr	| diagnostic tool
nbtstat	| displays netbios over tcp
arp	| displays caches apr table
pathping	| disaplys info about network latency/loss between hops
tcpdump	

Other Commands

; [semi colon]	| allows a user to stack/insert multiple command on one command line
&& [double ampersand]	| if the command on the left is suceesful then run the command on the right
| | [double pipe]	based on the results of the first command, skip the second command

Directory Structure

/	| root directory of operating system
/etc	| host system config files
/var	| storage for file which grow in size
/bin	| user binary files i.e. cat, grep, etc.
/proc	| system processes
/srv	| system services
/mnt	| ppermenet storage
/home	| home directory for logged in user
/lib	| shared library files and kernel modules
/usr	| user utilities and apps
/dev	| device files i.e. mouse, keyboard, harddrive, etc.
/sbin	| system binary files
/opt	| option software
/media	| temp storage/flash drives

Directory Colors

Blue | Directory	Yellow | Device
Green | Executable	Magenta | Graphic Image
Cyan | symbolic Link	Red | Archive File
	Red & Black | Broken link

**On many Linux distributions, directories may be displayed in blue, executable files may be displayed in green, and symbolic links may be displayed in cyan.

Colored output is not the default behavior for the ls command, but rather the effect of the --color option. The ls seems to perform this coloring automatically because there is an alias for the ls command, so it runs with the --color option.**

sysadmin@localhost:~$ type ls
ls is aliased to `ls --color=auto'

Working with Directories

ls	| list contents of current directory
ls -r	| list files in subdirectories
ls -al	| list files with directories, size, permissions etc.
ls-l	|list files and permissions
	r [read] w[write] x [execute] -= [no permissions
ls -a	| list contents of current directory including hidden files
ls -lart	| long, include hidden, ,
ls -d*/	| list directories
cd ~	| jump to users home
cd..	| jump to last directory
cd /	| jump to root home directory
cd -	| previous working directory
cd ../../	| back up two levels

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Searching

locate [name of file]	| searches system & locates that directory
find . -name [9414811_497-94.pdf]	| search in current directory for file name
find /home -name *.jpg	| search file type in listed directory
Using GREP	| grep searches for patterns in files
grep -r	
command | grep	| searches the output of a command

Searching & Sorting

which i.e. which ls	| which command identifies the stored location of a command
type -a	| displays directory location of command
-t	| sort by time
-r	| sort by reverse order
	Regular Expressions
.	| Any one single character
[ ]	| Any one specified character
[^]	| Not the one specified character
*	| Zero or more of the previous character
^	| If first character in the pattern, then pattern must be at beginning of the line to match, otherwise just a literal ^
$	| If last character in the pattern, then pattern must be at the end of the line to match, otherwise just a literal $
	Extended Expressions

Searching & Sorting (cont)

+	| One or more of the previous pattern
?	| The preceding pattern is optional
{ }	| Specify minimum, maximum or exact matches of the previous pattern
|	| Alternation - a logical "or"
( )	| Used to create groups
	Anchor Characters
'search term'	| single quotes "protects" the word
'^ search term'	| ^ means the first place
'search term $'	| $ means the last place
[ ]	| [ ] match the blocked in character
.	|
*	| within a search, this character acts as a wildcard
?	| in a search, this character indicates other letters/numbers
!	| in a search, this character = does not

```
echo [D-P]*
echo [!D-P]*

echo ?????*s
echo D*s
```

Troubleshooting

Issue:	usermod command not found
Resolution:	use su - instead of su root
Issue:	wget command not found
Resolution:	sudo apt-get install wget
Issue:	cannot access repositories
Resolution:	manually add site via **nano /etc/apt/sources.list**

Firewall

sudo apt-get install ufw	| install firewall application
sudo ufw allow 'Nginx HTTP'	| allow application to pass through firewall
sudo ufw status	| check firewall status
sudo ufw disable	| disable firewall
sudo ufw enable	| enable firewall
sudo ufw allow 22	| allow port number to pass
sudo ufw reset	| reset firewall

Redirection

Redirect the output of a command	| add ">"
i.e.	cat food.txt > newfoodfile.txt
	| use ">>" to overwrite a file

Fucnctions

Functions -

are typically utilized in scripting

are utilized to execute multiple commands

```
function_name ()
{
commands
}
```

Quotation Marks

There are [3] types of quotes	Section [5] Linus Essentials
" " | double quotes	tell the system to ignore special characters
' ' | single quotes	the system does not consider it a variable
` ` | backwards quotes	the system interprests the word in single quotes as an execution

each of these marks tells the system the text inside the quotes are to be handled differently