

# Linux Basics for Hackers - Notes

## Binaries

Located in -> /usr/bin and/or /usr/sbin

## Linux File System

```
'/' -> The actual root system. The top most.
```

Inside it ->

/boot - Kernel image

/home - user dir

/proc - view of internal kernel data

/dev - special device files

/sbin - binaries

/root - SuperUser's Home Dir (different from '/')

/etc - Sys config

/mnt - GenPurpose Mount point

/sys - Kernel's view of HW

/bin - also binaries

/lib - libraries

/usr -> /sbin, /bin, /lib (more of the same stuff) /media - for ejectable media

## cd Command

use '..' to move up 1 level

'.. ..' for 2 levels & '.. .. .' for 3 levels and so on

## Search-based commands

\$ locate 'find\_this' -> finds all occurrences

\$ whereis 'module\_name' -> finds all BINARIES of the target (usually with man pages)

\$ which aircrack-ng -> finds the binary file located in the PATH variable of the system

\$ find -directory -option -targetExp -> finds literally everything [Eg: find /etc -type f -name apache2] -- altho apache2.\* will find all file extensions but first name as apache2

Lastly, grep to filter

\$ ps aux | grep apache2 -> will filter from all auxilliary processes containing apache2

## 'cat' is versatile remember

\$ cat file\_name -> will spill the file contents.

\$ cat > file\_name -> will let you write in it BUT WILL REPLACE ALL EXISTING DATA.

\$ cat >> file\_name -> will actually let you append the text you enter.

## Renaming doesn't exist in Linux

So we use

\$ mv newfile newfile2 -> to essentially rename the file

## Removing a Dir

Only the directory : \$ rmdir

When that fails : \$ rm -r (recursively delete everything in it)

## Text Manipulation

head and tail ->

\$ head file\_name -> first 10 lines

\$ head -n file\_name -> n number of lines from the start

\$ tail -> for bottom lines (+ specialized with a count)

\$ nl path\_to\_file\_or\_file\_name -> will number all the lines. // cat can and should be clubbed with grep as and when needed. Eg: cat snort.conf | grep output

**Sed command** - for find and replace ->

\$ sed s/search\_term/replace\_term/g path\_to\_filename > newfile\_name

-> 's/' will find the term, '/g' is for replacing globally. Rest is elementary.

-> Removing the '/g' will only replace the first occurrence.

Adding a number there can limit the number of occurrences to be changed. '/3' will only replace the first 3.

Eg: sed s/mysql/MySQL/g /etc/snort/snort.conf > snort2.conf

\$ more file\_name -> offers a scroll-able page if the file is to big.

\$ less file\_name -> "less is more" -- offers a filter to search for the term should you need to -- use the '/' key. Still scroll-able but with better functionality.

## Networking

'loopback' addr -- same as 'localhost' = 127.0.0.1

iwconfig - check for wireless adapter info -- good for getting power, the mode [monitor,

managed, promiscuous] etc.

Changing info -> MAC or IP Addr :

```
$ ifconfig eth0 192.168.181.155
```

-> modifies what your router sees to redirect packets

### **Changing Netmask +/- Broadcast :**

```
$ ifconfig eth0 192.168.181.155 netmask 255.255.0.0 broadcast 192.168.1.255
```

-> Netmask is the subnet mask -- determines the portion of the IP Addr to the NW and which refers to the host. Here, first 2 octets (16 bits) represent the network and last 2 show the hosts within that network.

-> Broadcast is the addr used to send packets to all hosts on the same network segment. Default (bcz of subnet) would become 192.168.255.255 but here overridden to 192.169.1.155 -- Basically packets sent to this will be broad-casted on that specific sub-network.

### **MAC Spoofing :**

Take down the interface, change the Addr, restart

```
$ ifconfig eth0 down > ifconfig eth0 hw ether 00:11:22:33:44:55 > ifconfig eth0 up
```

### **Assigning new IP via DHCP Server :**

Server runs of '*dhcpcd*' - the daemon. Requested via '*dhclient*'. Requires a DHCP assigned IP addr. (Note : '*dhclient*' is for Debian, different for all other distros.)

```
$ dhclient eth0
```

->DHCPDISCOVER req is sent by this command and then receives an offer from the DHCP i.e DHCPOFFER. Now, ifconfig will show a diff IP addr as given by the DHCP Server.

### **Manipulating DNS :**

Use 'dig' :

Directly pass-on the domain and add the 'ns' tag to make the domain as the nameserver itself. 'mx' will fetch the mail-exchange server.

```
$ dig hackerarise.com ns OR $ dig hackerarise.com mx
```

-- Some Linux servers use BIND (Berkeley Internet Name Domain) which is just a fancy name for DNS.

### **Changing your DNS Server :**

Edit a file stored in '/etc/resolv.conf'. There you will see the domain, search & nameserver fields. Swap the values here to switch your DNS server.

Other method to do the same (although this cleanly overwrites the file's content) ->

```
$ echo "nameserver 8.8.8.8" > /etc/resolv.conf
```

## Mapping your own IP Addr :

'hosts' file located in /etc/hosts. Useful for hijacking a TCP connection on your LAN to direct traffic to a malicious webserver by using a tool like *'dnsspoof'*

Usually this file has a mapping for your localhost only BUT you can map any website to any IP Address. Eg : "192.168.181.131 bankofamerica.com". Decent for local network attacks.

[dnsspoof & Ettercap can be used]

## Handling SW Packages

### Search for package in local repo:

\$ apt-cache search *'keyword'*

-> Eg: \$ apt-cache search snort

### Install, Remove, Purge, Update, Upgrade :

\$ apt-get install --name--

\$ apt-get remove --name--

\$ sudo apt-get update

\$ sudo apt-get upgrade

\$ apt-get purge --name--

(purge removes the config as well)

or use a package manager like *'synaptic'* or *'gdebi'* like a normie.

### Adding Repos to Sources.list file :

\$ mousepad /etc/apt/sources.list -> will open the list

Categories : main (OSS), universe (community maintained OSS), multiverse (SW restricted by copyright), restricted (proprietary device drivers), backports (packages from later releases)

Format : "deb http:// ----- --package\_name-- main non-free contrib" etc.

## File Directories & Permission