# Install Snort on Kali (2023)

```
+       (\____/)
+       / @__@ \
+      (  (oo)  )
+       `-.~~.-'
+       /      \
+     @/        \_
+     (/ /     \ \)
+      WW`----'WW
```

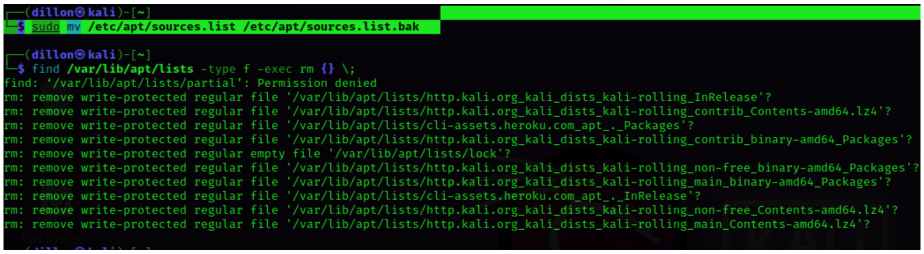
## Issues

! Note: snort is no longer available in Kali repositories ! Here are the steps to install snort on Kali:

### Setting Up

Step 1) -Backup kali's sources.list

```
mv /etc/apt/sources.list /etc/apt/sources.list.bak
```



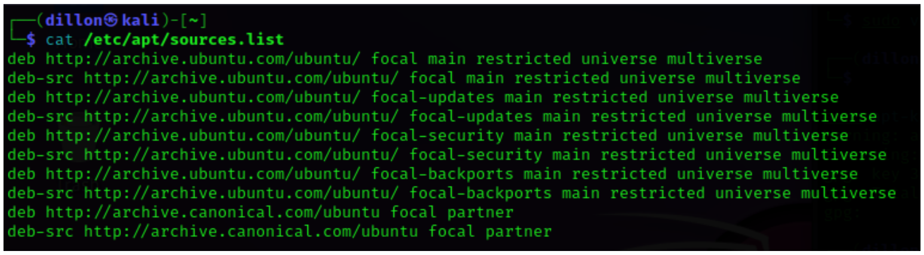
```
┌──(dillon㉿kali)-[~]
└─$ sudo mv /etc/apt/sources.list /etc/apt/sources.list.bak

┌──(dillon㉿kali)-[~]
└─$ find /var/lib/apt/lists -type f -exec rm {} \;
find: '/var/lib/apt/lists/partial': Permission denied
rm: remove write-protected regular file '/var/lib/apt/lists/http.kali.org_kali_dists_kali-rolling_InRelease'?
rm: remove write-protected regular file '/var/lib/apt/lists/http.kali.org_kali_dists_kali-rolling_contrib_Contents-amd64.lz4'?
rm: remove write-protected regular file '/var/lib/apt/lists/cli-assets.heroku.com_apt_._Packages'?
rm: remove write-protected regular file '/var/lib/apt/lists/http.kali.org_kali_dists_kali-rolling_contrib_binary-amd64_Packages'?
rm: remove write-protected regular empty file '/var/lib/apt/lists/lock'?
rm: remove write-protected regular file '/var/lib/apt/lists/http.kali.org_kali_dists_kali-rolling_non-free_binary-amd64_Packages'?
rm: remove write-protected regular file '/var/lib/apt/lists/http.kali.org_kali_dists_kali-rolling_main_binary-amd64_Packages'?
rm: remove write-protected regular file '/var/lib/apt/lists/cli-assets.heroku.com_apt_._InRelease'?
rm: remove write-protected regular file '/var/lib/apt/lists/http.kali.org_kali_dists_kali-rolling_non-free_Contents-amd64.lz4'?
rm: remove write-protected regular file '/var/lib/apt/lists/http.kali.org_kali_dists_kali-rolling_main_Contents-amd64.lz4'?
```

Figure 1: image

Step 2) -Remove updates

```
find /var/lib/apt/lists -type f -exec rm {} \;
```



```
┌──(dillon㉿kali)-[~]
└─$ cat /etc/apt/sources.list
deb http://archive.ubuntu.com/ubuntu/ focal main restricted universe multiverse
deb-src http://archive.ubuntu.com/ubuntu/ focal main restricted universe multiverse
deb http://archive.ubuntu.com/ubuntu/ focal-updates main restricted universe multiverse
deb-src http://archive.ubuntu.com/ubuntu/ focal-updates main restricted universe multiverse
deb http://archive.ubuntu.com/ubuntu/ focal-security main restricted universe multiverse
deb-src http://archive.ubuntu.com/ubuntu/ focal-security main restricted universe multiverse
deb http://archive.ubuntu.com/ubuntu/ focal-backports main restricted universe multiverse
deb-src http://archive.ubuntu.com/ubuntu/ focal-backports main restricted universe multiverse
deb http://archive.canonical.com/ubuntu focal partner
deb-src http://archive.canonical.com/ubuntu focal partner
```

Figure 2: image

Step 3) -Change sources.list content

```
sudo vim /etc/apt/sources.list
```

Step 4) {If Kali is install on your machine}

Paste content given below

```
deb http://archive.ubuntu.com/ubuntu/ focal main restricted universe multiverse
deb-src http://archive.ubuntu.com/ubuntu/ focal main restricted universe multiverse
deb http://archive.ubuntu.com/ubuntu/ focal-updates main restricted universe multiverse
deb-src http://archive.ubuntu.com/ubuntu/ focal-updates main restricted universe multiverse
deb http://archive.ubuntu.com/ubuntu/ focal-security main restricted universe multiverse
deb-src http://archive.ubuntu.com/ubuntu/ focal-security main restricted universe multiverse
deb http://archive.ubuntu.com/ubuntu/ focal-backports main restricted universe multiverse
deb-src http://archive.ubuntu.com/ubuntu/ focal-backports main restricted universe multivers
deb http://archive.canonical.com/ubuntu focal partner
deb-src http://archive.canonical.com/ubuntu focal partner
```

{If you are using a VM and do not have the ARM repositories in your repo}

```
deb [arch=arm64] http://ports.ubuntu.com/ubuntu-ports focal main restricted universe multive
deb [arch=arm64] http://ports.ubuntu.com/ubuntu-ports focal-updates main restricted universe
deb [arch=arm64] http://ports.ubuntu.com/ubuntu-ports focal-security main restricted univers
deb [arch=i386,amd64] http://us.archive.ubuntu.com/ubuntu/ focal main restricted universe mu
deb [arch=i386,amd64] http://us.archive.ubuntu.com/ubuntu/ focal-updates main restricted uni
deb [arch=i386,amd64] http://security.ubuntu.com/ubuntu focal-security main restricted unive
```

Step 5) -Add the specified public keys

```
sudo apt-key adv --keyserver keyserver.ubuntu.com --recv-keys 3B4FE6ACC0B21F32
sudo apt-key adv --keyserver keyserver.ubuntu.com --recv-keys 871920D1991BC93C
```

Step 6) -Update (But, Don't `upgrade`)

```
sudo apt update
```

Step 7) -Finally, Install SNORT

```
sudo apt install snort
```

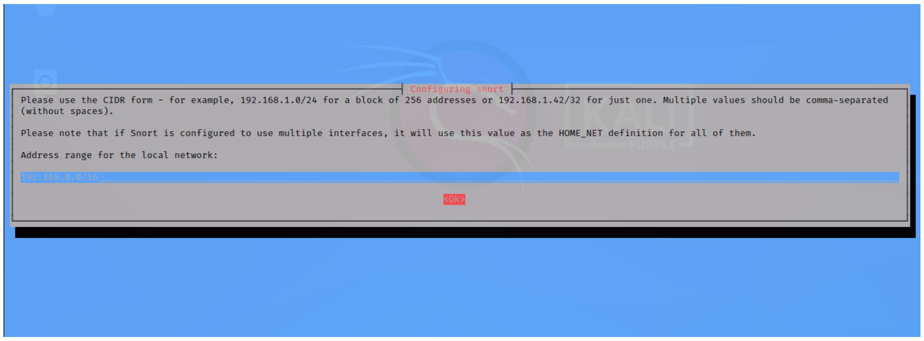
ˆ This might take a bt of time..

### Disclosure

The point in time by which I am typing this, I have yet to revert the 'apt files' and have no idea the reprocutions of these actions.. LoL/KeK

But, to undo the apt list..

```
sudo mv /etc/apt/sources.list.bak /etc/apt/sources.list
```



```
Configuring snort
Please use the CIDR form - for example, 192.168.1.0/24 for a block of 256 addresses or 192.168.1.42/32 for just one. Multiple values should be comma-separated
(without spaces).

Please note that if Snort is configured to use multiple interfaces, it will use this value as the HOME_NET definition for all of them.

Address range for the local network:

192.168.0.0/16
```

Figure 3: image

… I now know, once you put the source list back to normal You can continue to use apt update && apt upgrade :)…

# SSH Server & Client

### Requirements

You will require a second machine, so if like me, you don't.. : –termux on your phone it could probably also work..

## Get Started

Let's install "openssh-server" on the current machine and "openssh-client"

### This Machine

- Install..

```
sudo apt-get install openssh-server
```

- Check Status

```
sudo systemctl status ssh
```

- FireWall Config

```
sudo ufw allow ssh

sudo ufw enable

sudo ufw status
```

- Enable

```
sudo systemctl enable ssh --now
```

- Launch

```
sudo systemctl start ssh
```

**Other Machine**

- Install

```
sudo apt-get install openssh-client
```

- Enable

```
sudo systemctl enable ssh --now
```

- login

```
ssh userName@Your-server-name-IP
    -- or --
ssh ec2-user@ec2-aws-ip-here
```

# Configure Snort

For extra insight on flags: Read the Man's..

```
man snort
```

## Snort Tree

in the `/etc/snort/` dir, you will find

```
 classification.config
 community-sid-msg.map
 gen-msg.map
 reference.config
 rules/
 snort.conf
 snort.debian.conf
 threshold.conf
 unicode.map
```

## snort.conf

Run:

```
sudo vim /etc/snort/snort.conf
```

First great thing to take note of in the snort.conf file, is a given ToDo List:

```
###################################################
```

```
# This file contains a sample snort configuration.
# You should take the following steps to create your own custom configuration:
#
#  1) Set the network variables.
#  2) Configure the decoder
#  3) Configure the base detection engine
#  4) Configure dynamic loaded libraries
#  5) Configure preprocessors
#  6) Configure output plugins
#  7) Customize your rule set
#  8) Customize preprocessor and decoder rule set
#  9) Customize shared object rule set
###################################################
```

Second: It's not a bad idea to make a backup file of `snort.conf`

```
sudo cp /etc/snort/snort.conf /etc/snort/snort_backup.conf
```

ˆ Kinda ike with the apt list file..

## Step 1

### $HOME_NET variable

The `$HOME_NET` variable will be set to `any` by default.. lets change that to our own "ip addr":

Run:

```
ip addr
```

or

```
iwconfig
```

and you should see something like: ( I will be giving fake values on mine.. so that git-guardian doesn't complain)

```
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: eth0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc mq state DOWN group default qlen
    link/ether f8:8a:d3:5a:42:19 brd ff:ff:ff:ff:ff:ff
3: wlan0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen 10
    link/ether 82:5b:f4:02:42:23 brd ff:ff:ff:ff:ff:ff
```

```
   inet 192.168.0.107/24 brd 192.168.0.255 scope global dynamic noprefixroute wlan0
! ! !      ^ this is what you are looking for

       valid_lft 70698sec preferred_lft 70698sec
    inet6 fa81::b1c3:e42f:7b37:83ea/64 scope link noprefixroute
       valid_lft forever preferred_lft forever
```

Now we can set:

```
ipvar HOME_NET 192.168.0.107/24
```

! Note: It's not a good idea to play with the rest of variables..

So, we're going to skip to Step 7.. and start working on the RULES.. Which is where the fun stuff lies..

## Step 7

### Customize Rule Set

From line:570 to line:696 you will find a list of multiple predefined rules.. some are commented out, some are not.. But, Know This: They are ALL outdated.. .. LoL/K3k

## Test Config

We will use `-T` to first test for syntax errors (as we have made changes..)

For 'interface' we use `-i wlan0` (you can use whichever has the connection)

To specify the 'rules-file' we `-c /etc/snort/snort.conf`

Since it's going to be interacting directly with the hardware, we will require `sudo`

```
sudo snort -T -i wlan0 -c /etc/snort/snort.conf
```

It will generate a lot of output.. but if all goes well, you will see an ASCII pig and the last 2 lines:

```
   ,,_     -*> Snort! <*-
  o"  )~   Version 2.9.7.0 GRE (Build 149)
   ''''    By Martin Roesch & The Snort Team: http://www.snort.org/contact#team

    ...
    ...

Snort successfully validated the configuration!
Snort exiting
```

Don't panic when you see all the `Warnings` & `Errors` -We'll deal with that just now..

### Clean Rules

For sanity sake, we are going to comment out all the community/predefined rules…

since I'm lazy.. let's use the vim built-in functions

! First make sure you hit ESC, and :w…

Now:

```
:578,696s/^/#
```

Then those lines should all be commented out..

Now, `:wq` once again, to 'write' the changes and quit vim

Again Run:

```
sudo snort -T -i wlan0 -c /etc/snort/snort.conf
```

And you shall see much cleaner outputs :)

### Rule Syntax

Headers + Options:

```
! Rule Header !

action      : alert
Protocol    : icmp
SrcAddr     : <IP_addr>
SrcPort     : <port_#>
Direction   : -> / <-
DestAddr    : <IP_addr>
DestPort     : <port_#>
```

eg.

```


alert icmp any any -> any any  (msg: "[ICMP]: "; sid: 100004;)

^                           ^  ^                              ^

|_______Rule__Header________|  |________Rule__Options________|
```

## Your Own Custom Rules

First off..

```
sudo vim /etc/snort/rules/local.rules
```

You should find a file containing: well, not much..

```
sudo cat /etc/snort/rules/local.rules
# $Id: local.rules,v 1.11 2004/07/23 20:15:44 bmc Exp $
# ----------------
# LOCAL RULES
# ----------------
# This file intentionally does not come with signatures.  Put your local
# additions here.
```

Here you will write your rules

## Syntax

! Note: Please read prior docs for basic view of Headers+Options

Now let's add:

```
alert icmp any any -> $HOME_NET any (msg: "[ICMP]:[ping detected]: "; sid: 10000014; rev: 1
```

### Headers

alert is our action icmp is the first `any any` is the Src Host & Port.. The `->` is the direction of the traffic.. second `$HOME_NET any` is the Dest Host & Port..

### Options

For `msg: " some kind of flag/indecation ";` You can make the `sid: <iterally-any-number>` ˆ (it works on 'jobs', so bigger is better..) And `rev:1` is our 'revision 1'

## Test New Rule

### -A : Alert Mode

Without the -A flag, the `alert`s in our rules, means nothing..

```
-A console
```

ˆ So it alerts to the console.. not some other random place..

### Logs/

We will need to use:

```
-l /var/log/snort/
```

to save all our logs

### Sshhh

```
sudo snort -q
```

ˆ So we don't get whacked with banners & pigs…

### Interface

```
-i wlan0
```

ˆ For me.. maybe different for you..

## Run This

CleanSnort :

```
sudo snort -q -l /var/log/snort -i wlan0 -A console -c /etc/snort/snort.conf
```

If no output is given, we are on the right track..

though, it may hang.. if

```
Ctrl+C
```

Doesn't work..

Try using

```
Ctrl+Z
```

..

after which, run `jobs`…

You might find something like :

```
$ jobs
[1]  + suspended  sudo snort -q -l /var/log/snort -i wlan0 -A console -c /etc/snort/snort.co
```

ˆ This means It's still running in the background.. so kill it..

```
kill -9 %%
```

Once again, run `jobs`, and you will be pleased to find it gone.. :)

Now Run the $ CleanSnort $ Again.. and just leave it one side.. open a new terminal to the side..

## PING Google :P

In the new terminal, Run:

```
ping 8.8.8.8
```

You should now see your first terminal poping output In sync with you ping output…

```
04/29-07:18:28.282442  [**] [1:10000014:1] [ICMP]:  [**] [Priority: 0] {ICMP} 8.8.8.8 -> 192
04/29-07:18:29.115078  [**] [1:10000014:1] [ICMP]:  [**] [Priority: 0] {ICMP} 8.8.8.8 -> 192
04/29-07:18:29.718609  [**] [1:10000014:1] [ICMP]:  [**] [Priority: 0] {ICMP} 8.8.8.8 -> 192
```

^ Date : ^ Time IKD ^ rev ^: ^ pid msg ^ ^IDK ^U can Read Type^ Src^ Dirc^ Dest^ (Me..)

You can also Ping websites.. however, do not use "http(s)://" or "www."

## More Rules

### ICMP

In /local.rules:

```
# $Id: local.rules,v 1.11 2004/07/23 20:15:44 bmc Exp $
# ----------------
# LOCAL RULES
# ----------------
# This file intentionally does not come with signatures.  Put your local
# additions here.


# Any WebReturn..
alert icmp any any -> $HOME_NET any (msg: "[ANY]:[ICMP]: "; sid: 10000014; rev: 1;)
```

### SSH

Add this to the /etc/snort/rules/local.rules..

```
alert tcp any any -> $HOME_NET 22 (msg: "[SSH-Auth]: ", sid: 1000002; rev: 1;)
```

The file will automatically link the new rules to the config

^ Now to test this, You will need to set up your own ssh, and connect to it via some other machine.. You can read these steps in 'docs/install/install_ssh.md'

If you got it right, (and figured out the ufw) you should have seen something like:

```
04/29-08:13:08.602737  [**] [1:1000002:1] [SSH-Auth]:  [**] [Priority: 0] {TCP} 192.168.0.10
04/29-08:13:09.544379  [**] [1:1000002:1] [SSH-Auth]:  [**] [Priority: 0] {TCP} 192.168.0.10
04/29-08:13:09.662606  [**] [1:1000002:1] [SSH-Auth]:  [**] [Priority: 0] {TCP} 192.168.0.10
04/29-08:13:09.669397  [**] [1:1000002:1] [SSH-Auth]:  [**] [Priority: 0] {TCP} 192.168.0.10
04/29-08:13:09.669767  [**] [1:1000002:1] [SSH-Auth]:  [**] [Priority: 0] {TCP} 192.168.0.10
```

```
04/29-08:13:09.670168  [**] [1:1000002:1] [SSH-Auth]:  [**] [Priority: 0] {TCP} 192.168.0.10
04/29-08:13:09.670547  [**] [1:1000002:1] [SSH-Auth]:  [**] [Priority: 0] {TCP} 192.168.0.10
```

## HTTP

In /local.rules:

```
# $Id: local.rules,v 1.11 2004/07/23 20:15:44 bmc Exp $
# ----------------
# LOCAL RULES
# ----------------
# This file intentionally does not come with signatures.  Put your local
# additions here.


# Any WebReturn..
alert icmp any any -> $HOME_NET any (msg: "[ANY]:[ICMP]: "; sid: 10000014; rev: 1;)

# FTP/SSH Connection Attempt: (Regardless of Success)
alert tcp any any -> $HOME_NET $SSH_PORTS (msg: "[SSH-Auth]: "; sid: 1000002; rev: 1;)

# HTTPS..
# Request:
alert tcp $HOME_NET any -> any $HTTP_PORTS ( msg: "[HTTP_REQUEST]: "; flow: to_server,estab

# Response:
alert tcp $HOME_NET any -> any $HTTP_PORTS (msg: "[HTTP_RESPONSE]: "; flow: to_server, estab
```

ˆ If you have better rules than this.. plz help..

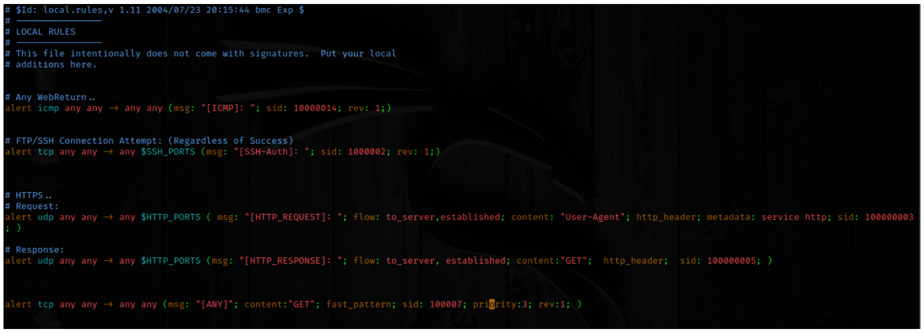
Any way, from here you can run:

```
sudo snort -q -l /var/log/snort -i wlan0 -A console -c /etc/snort/snort.conf
```

And after opening a webpage, you should get something like this:

```
04/29-14:24:47.408912  [**] [1:100000003:0] [HTTP_REQUEST]:  [**] [Priority: 0] {TCP} 192.16
04/29-14:24:50.878577  [**] [1:100000003:0] [HTTP_REQUEST]:  [**] [Priority: 0] {TCP} 192.16
```

### local.rules



```
# $Id: local.rules,v 1.11 2004/07/23 20:15:44 bmc Exp $
# ────────────────
# LOCAL RULES
# ────────────────
# This file intentionally does not come with signatures.  Put your local
# additions here.


# Any WebReturn..
alert icmp any any → any any (msg: "[ICMP]: "; sid: 10000014; rev: 1;)


# FTP/SSH Connection Attempt: (Regardless of Success)
alert tcp any any → any $SSH_PORTS (msg: "[SSH-Auth]: "; sid: 1000002; rev: 1;)


# HTTPS..
# Request:
alert udp any any → any $HTTP_PORTS ( msg: "[HTTP_REQUEST]: "; flow: to_server,established; content: "User-Agent"; http_header; metadata: service http; sid: 100000003
; )

# Response:
alert udp any any → any $HTTP_PORTS (msg: "[HTTP_RESPONSE]: "; flow: to_server, established; content:"GET";  http_header;  sid: 100000005; )



alert tcp any any → any any (msg: "[ANY]"; content:"GET"; fast_pattern; sid: 100007; priority:3; rev:1; )
```

Figure 4: image