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Ex. No.: 9 **Date: 25.10.24**

INSTALL AND CONFIGURE IPTABLES FIREWALL

Aim:

To install iptables and configure it for variety of options.

Common Configurations & outputs:

1. **Start/stop/restart firewalls**

```
[root@localhost ~]# systemctl start firewalld
[root@localhost ~]# systemctl restart firewalld
[root@localhost ~]# systemctl stop firewalld
[root@localhost ~]#
```

2. **Check all exitsting IPtables Firewall Rules**

```
[root@localhost ~]# iptables -L -n -v
[root@localhost ~]#
```

3. **Block specific IP Address(eg. 172.16.8.10) in IPtables Firewall**

```
[root@localhost ~]# iptables -A INPUT -s 172.16.8.10 -j DROP
[root@localhost ~]#
```

4. **Block specifig port on IPtables Firewall**

```
[root@localhost ~]# iptables -A OUTPUT -p tcp --dport xxx -j DROP
[root@localhost ~]#
```

5**. Allow specific network range on particular port on iptables**

```
[root@localhost ~]# iptables -A OUTPUT -p tcp -d 172.16.8.0/24 --dport xxx -j ACCEPT
[root@localhost ~]#
```

6. **Block Facebook on IPTables** [root@localhost

```
~]# host facebook.com facebook.com has address
157.240.24.35
facebook.com has IPv6 address 2a03:2880:f10c:283:face:b00c:0:25de facebook.com
mail is handled by 10 smtpin.vvv.facebook.com.

[root@localhost ~]# whois 157.240.24.35 | grep CIDR
CIDR:        157.240.0.0/16
[root@localhost ~]#

[root@localhost ~]# whois 157.240.24.35
```

```
[Querying whois.arin.net]
[whois.arin.net]

#
# ARIN WHOIS data and services are subject to the Terms of Use
# available at: https://www.arin.net/resources/registry/whois/tou/
#
# If you see inaccuracies in the results, please report at
# https://www.arin.net/resources/registry/whois/inaccuracy_reporting/
#
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#


NetRange:       157.240.0.0 - 157.240.255.255
CIDR:           157.240.0.0/16
NetName:        THEFA-3
NetHandle:      NET-157-240-0-0-1
Parent:         NET157 (NET-157-0-0-0-0)
NetType:                Direct  Assignment
OriginAS:
Organization:   Facebook, Inc. (THEFA-3)
RegDate:        2015-05-14
Updated:        2015-05-14
Ref:            https://rdap.arin.net/registry/ip/157.240.0.0



OrgName:        Facebook, Inc.
OrgId:          THEFA-3 Address:
1601 Willow Rd.
City:           Menlo Park
StateProv:      CA
PostalCode:     94025
Country:        US
RegDate:        2004-08-11
Updated:        2012-04-17
Ref:            https://rdap.arin.net/registry/entity/THEFA-3


OrgTechHandle: OPERA82-ARIN
OrgTechName:   Operations
OrgTechPhone:  +1-650-543-4800
OrgTechEmail:  domain@facebook.com
OrgTechRef:    https://rdap.arin.net/registry/entity/OPERA82-ARIN

OrgAbuseHandle: OPERA82-ARIN
```

```
OrgAbuseName:   Operations
OrgAbusePhone:  +1-650-543-4800
OrgAbuseEmail:  domain@facebook.com
OrgAbuseRef:    https://rdap.arin.net/registry/entity/OPERA82-ARIN #
# ARIN WHOIS data and services are subject to the Terms of Use
# available at: https://www.arin.net/resources/registry/whois/tou/ #
# If you see inaccuracies in the results, please report at
# https://www.arin.net/resources/registry/whois/inaccuracy_reporting/ #
# Copyright 1997-2019, American Registry for Internet Numbers, Ltd. #
```

```
[root@localhost ~]# iptables -A OUTPUT -p tcp -d 157.240.0.0/16 -j DROP
```

Open browser and check whether http://facebook.com is accessible

To allow facebook use -D instead of -A option

```
[root@localhost ~]# iptables -D OUTPUT -p tcp -d 157.240.0.0/16 -j DROP
[root@localhost ~]#
```

6. **Block Access to your system from specific MAC Address(say 0F:22:1E:00:02:30)**

```
[root@localhost ~]# iptables -A INPUT -m mac --mac-source 0F:22:1E:00:02:30 -j DROP
[root@localhost ~]#
```

7.**Save IPtables rules to a file**

```
[root@localhost ~]# iptables-save > ~/iptables.rules
[root@localhost ~]# vi iptables.rules
[root@localhost ~]#
```

8.**Restrict number of concurrent connections to a Server(Here restrict to 3 connections only)**

```
[root@localhost ~]# iptables -A INPUT -p tcp --syn --dport 22 -m connlimit --connlimitabove 3 -j REJECT
```

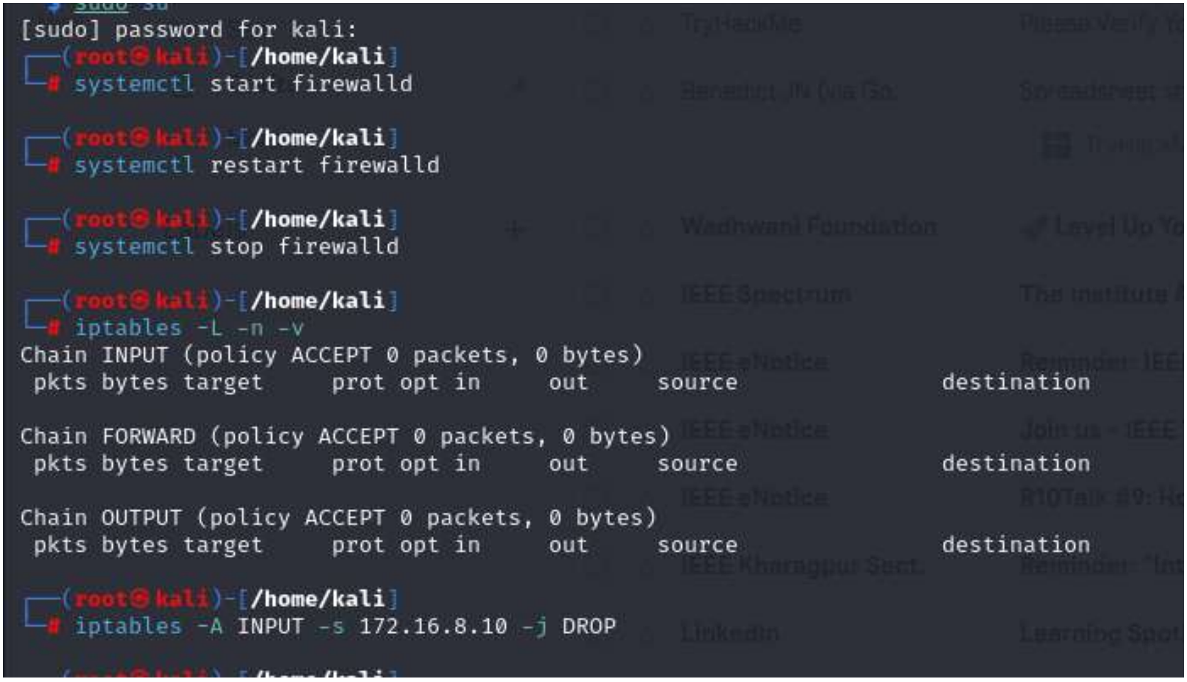
9. **Disable outgoing mails through IPtables**

```
[root@localhost ~]# iptables -A OUTPUT -p tcp --dport 25 -j REJECT
[root@localhost ~]#
```

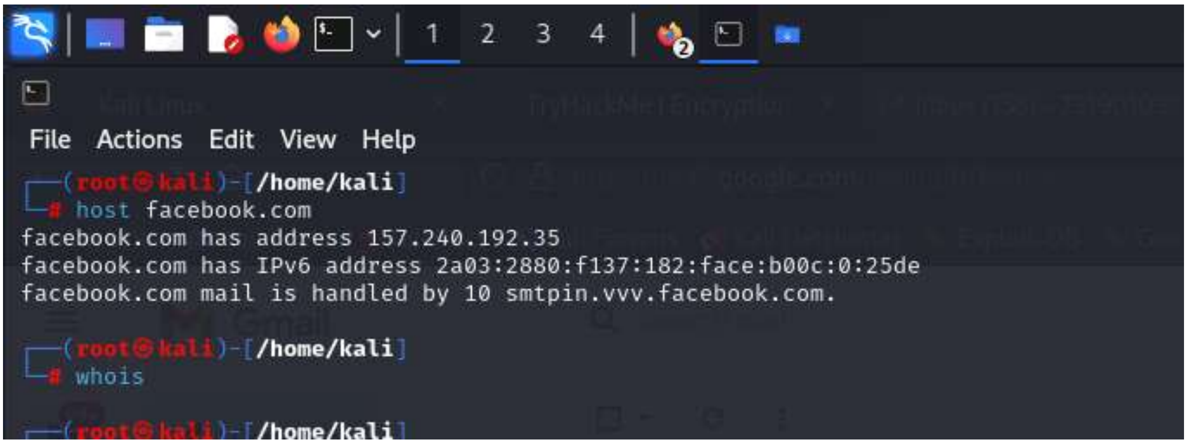
10. **Flush IPtables Firewall chains or rules**

```
[root@localhost ~]# iptables -F
[root@localhost ~]#
```

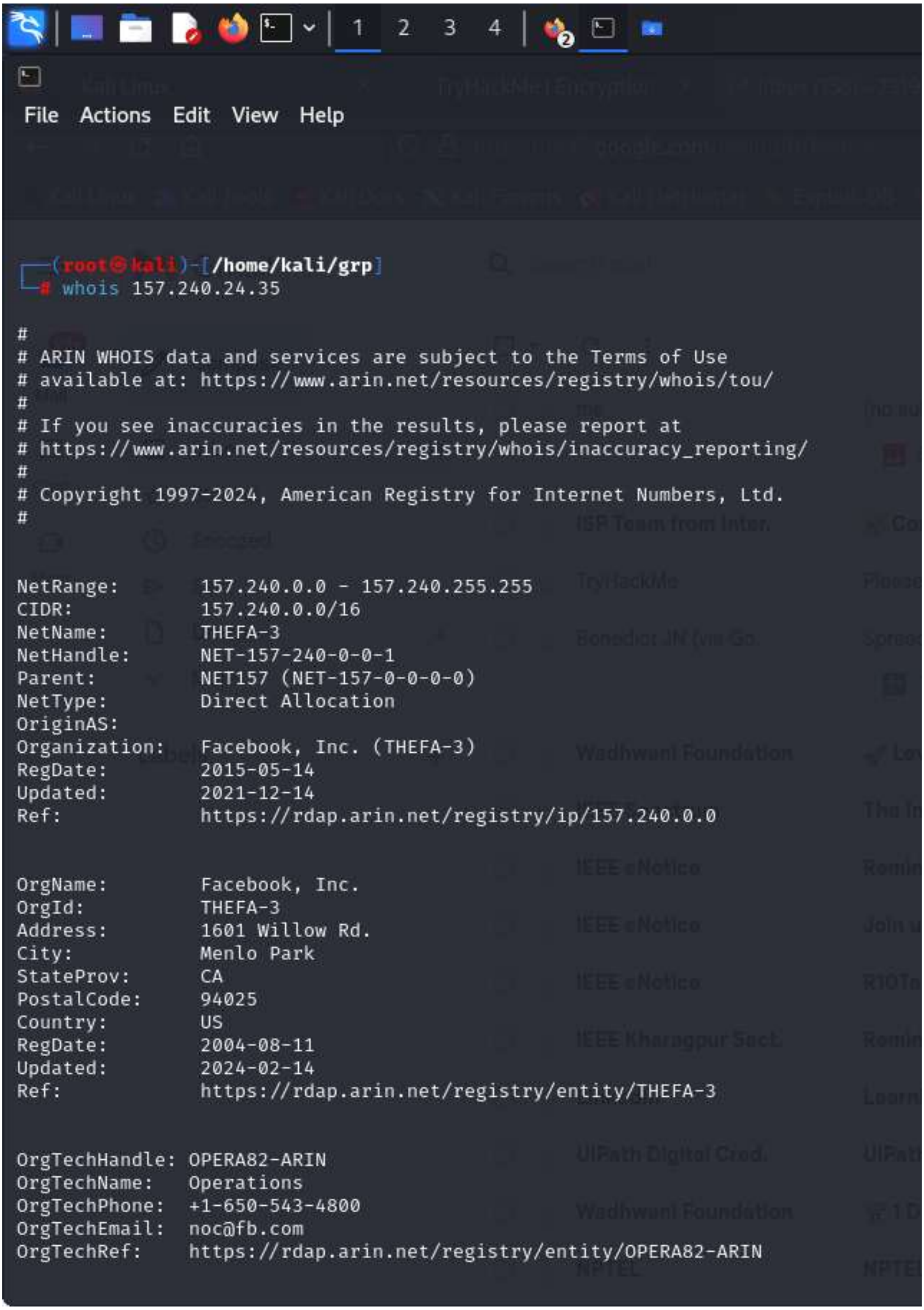
Output:



```
[sudo] password for kali:
┌──(root㉿kali)-[/home/kali]
└─# systemctl start firewalld

┌──(root㉿kali)-[/home/kali]
└─# systemctl restart firewalld

┌──(root㉿kali)-[/home/kali]
└─# systemctl stop firewalld

┌──(root㉿kali)-[/home/kali]
└─# iptables -L -n -v
Chain INPUT (policy ACCEPT 0 packets, 0 bytes)
 pkts bytes target     prot opt in     out     source               destination

Chain FORWARD (policy ACCEPT 0 packets, 0 bytes)
 pkts bytes target     prot opt in     out     source               destination

Chain OUTPUT (policy ACCEPT 0 packets, 0 bytes)
 pkts bytes target     prot opt in     out     source               destination

┌──(root㉿kali)-[/home/kali]
└─# iptables -A INPUT -s 172.16.8.10 -j DROP
```



```
┌──(root㉿kali)-[/home/kali]
└─# host facebook.com
facebook.com has address 157.240.192.35
facebook.com has IPv6 address 2a03:2880:f137:182:face:b00c:0:25de
facebook.com mail is handled by 10 smtpin.vvv.facebook.com.

┌──(root㉿kali)-[/home/kali]
└─# whois

┌──(root㉿kali)-[/home/kali]
```



```
┌──(root㉿kali)-[/home/kali/grp]
└─# whois 157.240.24.35

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#
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# https://www.arin.net/resources/registry/whois/inaccuracy_reporting/
#
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#


NetRange:       157.240.0.0 - 157.240.255.255
CIDR:           157.240.0.0/16
NetName:        THEFA-3
NetHandle:      NET-157-240-0-0-1
Parent:         NET157 (NET-157-0-0-0-0)
NetType:        Direct Allocation
OriginAS:
Organization:   Facebook, Inc. (THEFA-3)
RegDate:        2015-05-14
Updated:        2021-12-14
Ref:            https://rdap.arin.net/registry/ip/157.240.0.0


OrgName:        Facebook, Inc.
OrgId:          THEFA-3
Address:        1601 Willow Rd.
City:           Menlo Park
StateProv:      CA
PostalCode:     94025
Country:        US
RegDate:        2004-08-11
Updated:        2024-02-14
Ref:            https://rdap.arin.net/registry/entity/THEFA-3


OrgTechHandle: OPERA82-ARIN
OrgTechName:   Operations
OrgTechPhone:  +1-650-543-4800
OrgTechEmail:  noc@fb.com
OrgTechRef:    https://rdap.arin.net/registry/entity/OPERA82-ARIN
```

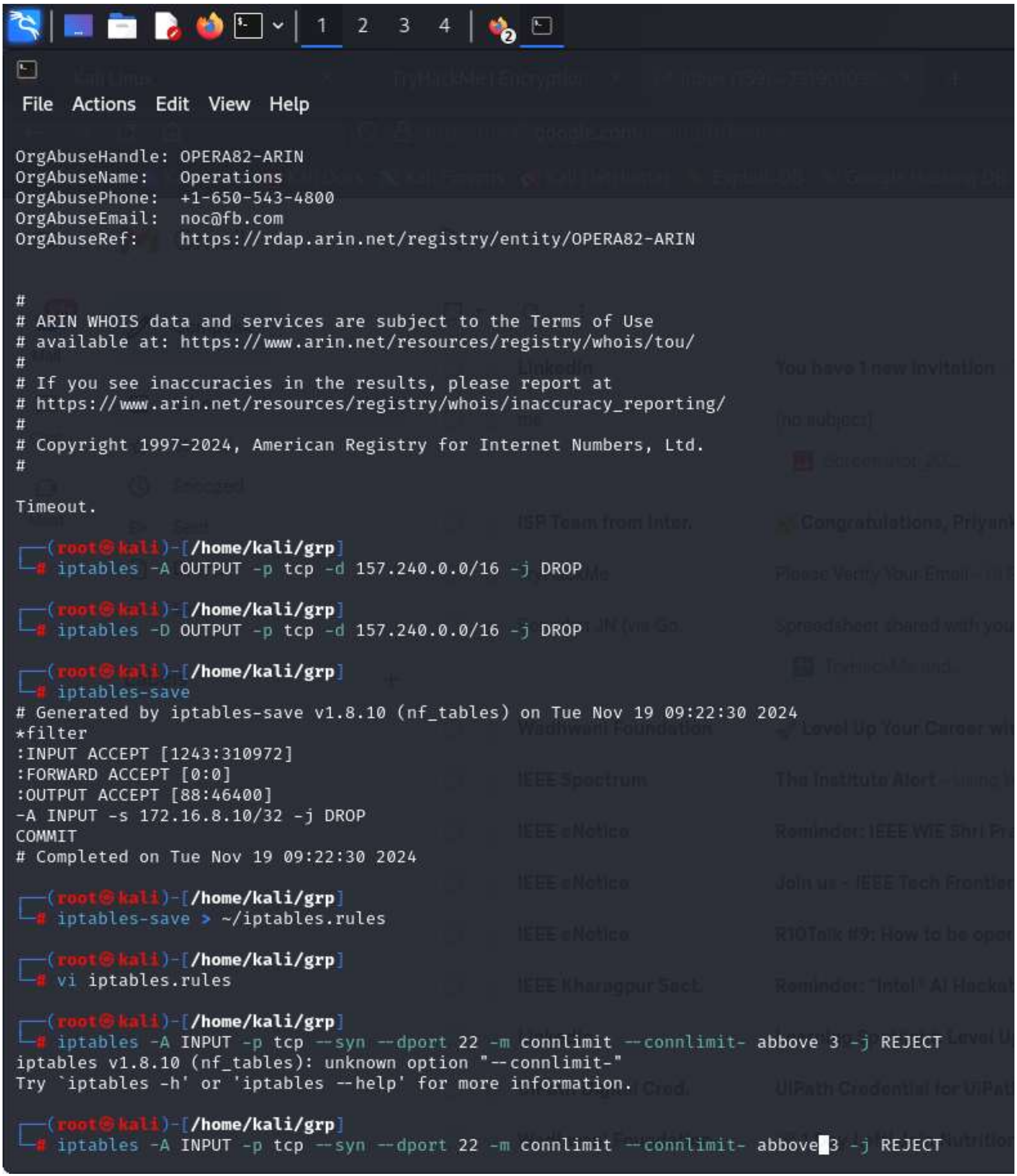

```
OrgAbuseHandle: OPERA82-ARIN
OrgAbuseName:   Operations
OrgAbusePhone:  +1-650-543-4800
OrgAbuseEmail:  noc@fb.com
OrgAbuseRef:    https://rdap.arin.net/registry/entity/OPERA82-ARIN


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# If you see inaccuracies in the results, please report at
# https://www.arin.net/resources/registry/whois/inaccuracy_reporting/
#
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#

Timeout.

┌──(root㉿kali)-[/home/kali/grp]
└─# iptables -A OUTPUT -p tcp -d 157.240.0.0/16 -j DROP

┌──(root㉿kali)-[/home/kali/grp]
└─# iptables -D OUTPUT -p tcp -d 157.240.0.0/16 -j DROP

┌──(root㉿kali)-[/home/kali/grp]
└─# iptables-save
# Generated by iptables-save v1.8.10 (nf_tables) on Tue Nov 19 09:22:30 2024
*filter
:INPUT ACCEPT [1243:310972]
:FORWARD ACCEPT [0:0]
:OUTPUT ACCEPT [88:46400]
-A INPUT -s 172.16.8.10/32 -j DROP
COMMIT
# Completed on Tue Nov 19 09:22:30 2024

┌──(root㉿kali)-[/home/kali/grp]
└─# iptables-save > ~/iptables.rules

┌──(root㉿kali)-[/home/kali/grp]
└─# vi iptables.rules

┌──(root㉿kali)-[/home/kali/grp]
└─# iptables -A INPUT -p tcp --syn --dport 22 -m conlimit --conlimit- abbove 3 -j REJECT
iptables v1.8.10 (nf_tables): unknown option "--conlimit-"
Try `iptables -h' or 'iptables --help' for more information.

┌──(root㉿kali)-[/home/kali/grp]
└─# iptables -A INPUT -p tcp --syn --dport 22 -m connlimit --connlimit- abbove 3 -j REJECT
```

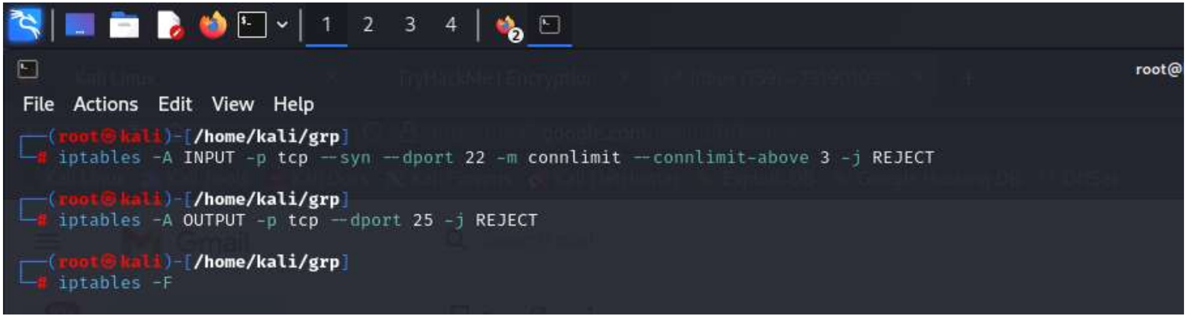

```
┌──(root㉿kali)-[/home/kali/grp]
└─# iptables -A INPUT -p tcp --syn --dport 22 -m connlimit --connlimit-above 3 -j REJECT

┌──(root㉿kali)-[/home/kali/grp]
└─# iptables -A OUTPUT -p tcp --dport 25 -j REJECT

┌──(root㉿kali)-[/home/kali/grp]
└─# iptables -F
```

Result: Thus, the iptables has been installed successfully and it has been configured for variety of options.