

Ex. No.: 11

Date:

INSTALL AND CONFIGURE IPTABLES FIREWALL

Aim:

To install iptables and configure it for variety of options.

Common Configurations & outputs:

- **Start/stop/restart firewalls**

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

- **Check all existing IPtables Firewall**

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

- **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 ~]#

- **Block specific port on IPtables Firewall**

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

- **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 ~]#
```

- **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:// HYPERLINK
"http://www.arin.net/resources/registry/whois/tou/"www.arin.net/
resources/registry/whois/tou/ #
# If you see inaccuracies in the results, please report at
# https:// HYPERLINK
"http://www.arin.net/resources/registry/whois/inaccuracy\_reporting/"
www.arin.net/resources/registry/whois/inaccuracy\_reporting/ #
# Copyright 1997-2019, American Registry for Internet Numbers, Ltd.
#
```

```
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>

#

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Use # available at: [https:// HYPERLINK](https://HYPERLINK)

["http://www.arin.net/resources/registry/whois/tou/"www.arin.net/](http://www.arin.net/resources/registry/whois/tou/)
<resources/registry/whois/tou/>

#

If you see inaccuracies in the results, please report at

[https:// HYPERLINK](https://HYPERLINK)

["http://www.arin.net/resources/registry/whois/inaccuracy_reporting/"](http://www.arin.net/resources/registry/whois/inaccuracy_reporting/)
www.arin.net/resources/registry/whois/inaccuracy_reporting/ #

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[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 ~]#

- **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 ~]#

- **Save IPtables rules to a file**

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

- **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 --connlimit-above 3 -j
REJECT

- **Disable outgoing mails through IPTables**

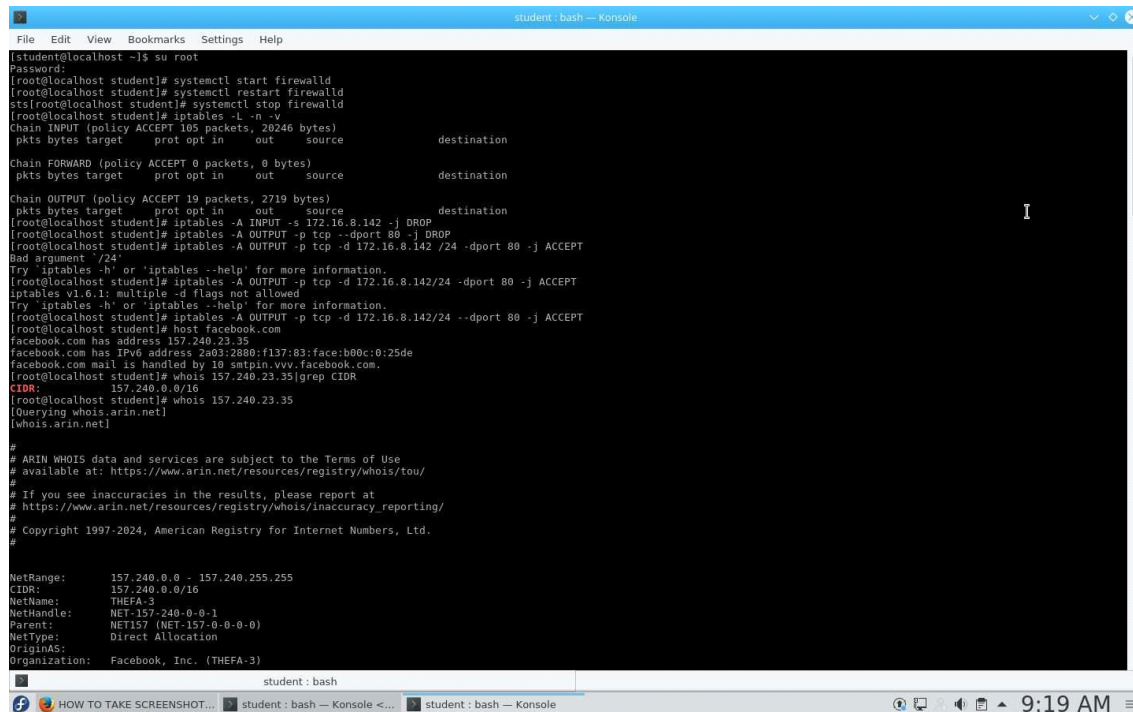
```
[root@localhost ~]# iptables -A OUTPUT -p tcp --dport 25 -j REJECT
```

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

- **Flush IPTables Firewall chains or**

rules [root@localhost ~]# iptables -F

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



```
student - bash -- Konsole
File Edit View Bookmarks Settings Help
[student@localhost ~]$ su root
Password:
[root@localhost student]# systemctl start firewallld
[root@localhost student]# systemctl restart firewallld
sts[root@localhost student]# systemctl stop firewallld
[root@localhost student]# iptables -L -n -v
Chain INPUT (policy ACCEPT 105 packets, 20246 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 19 packets, 2719 bytes)
  pkts bytes target     prot opt in     out     source               destination
[root@localhost student]# iptables -A INPUT -s 172.16.8.142 -j DROP
[root@localhost student]# iptables -A OUTPUT -p tcp --dport 80 -j DROP
[root@localhost student]# iptables -A OUTPUT -p tcp -d 172.16.8.142 /24 -dport 80 -j ACCEPT
Bad argument '/24'
Try 'iptables -h' or 'iptables --help' for more information.
[root@localhost student]# iptables -A OUTPUT -p tcp -d 172.16.8.142/24 -dport 80 -j ACCEPT
iptables v1.6.1: multiple -d flags not allowed
Try 'iptables -h' or 'iptables --help' for more information.
[root@localhost student]# iptables -A OUTPUT -p tcp -d 172.16.8.142/24 --dport 80 -j ACCEPT
[root@localhost student]# host facebook.com
facebook.com has address 157.240.23.35
facebook.com has IPv6 address 2a03:2080:f137:83:face:b00c:0:25de
facebook.com mail is handled by 10 smtpin.vvv.facebook.com.
[root@localhost student]# whois 157.240.23.35|grep CIDR
CIDR:        157.240.0.0/16
[root@localhost student]# whois 157.240.23.35
(Querying whois.arin.net)
[whois.arin.net]

#
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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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#

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)
```

```
student : bash — Konsole
File Edit View Bookmarks Settings Help
Country: US
ReqDate: 2004-08-11
Updated: 2024-02-14
Ref: https://rdap.arin.net/registry/entity/THEFA-3

OrgTechHandle: OPERAB2-ARIN
OrgTechName: Operations
OrgTechPhone: +1-650-543-4800
OrgTechEmail: noc@fb.com
OrgTechRef: https://rdap.arin.net/registry/entity/OPERAB2-ARIN

OrgAbuseHandle: OPERAB2-ARIN
OrgAbuseName: Operations
OrgAbusePhone: +1-650-543-4800
OrgAbuseEmail: noc@fb.com
OrgAbuseRef: https://rdap.arin.net/registry/entity/OPERAB2-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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#

[root@localhost student]# iptables -A OUTPUT -P TCP -D 157.240.0.0/16 -j DROP
iptables v1.6.1: Cannot use -P with -A

Try 'iptables -h' or 'iptables --help' for more information.
[root@localhost student]# iptables -A OUTPUT -p tcp -d 157.240.0.0/16 -j DROP
[root@localhost student]# iptables -D OUTPUT -p tcp -d 157.240.0.0/16 -j DROP
[root@localhost student]# iptables -A OUTPUT -p tcp -d 157.240.0.0/16 -j DROP
[root@localhost student]# iptables -D OUTPUT -p tcp -d 157.240.0.0/16 -j DROP
[root@localhost student]# iptables -A INPUT -m mac --mac-source 0F:22:1E:00:02:30 -j DROP
[root@localhost student]# vi iptables.rules
[root@localhost student]# iptables -A INPUT -p tcp --syn --dport 80 -m connlimit --conlimit-above 3 -j
iptables v1.6.1: unknown option "--conlimit-above"
Try 'iptables -h' or 'iptables --help' for more information.
[root@localhost student]# iptables -A INPUT -p tcp --syn --dport 80 -m connlimit --conlimit-above 3 -j REJECT
iptables v1.6.1: unknown option "--conlimit-above"
Try 'iptables -h' or 'iptables --help' for more information.
[root@localhost student]# iptables -A INPUT -p tcp --syn --dport 80 -m connlimit --conlimit-above 3 -j REJECT
[root@localhost student]# iptables -A OUTPUT -p tcp --dport 80 -j REJECT
[root@localhost student]# iptables -F
[root@localhost student]#
```

Result: