

Ex. No.: 11**Date:****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 existing 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 specific 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]
```

#

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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 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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```
#  
# 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 ~]# 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 --connlimit-above 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 ~]#
```

```

student: bash — Konsole
File Edit View Bookmarks Settings Help
[student@localhost ~]$ su root
[root@localhost student]# systemctl start firewallld
[root@localhost student]# systemctl restart firewallld
[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 2a03:2880: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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# 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
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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#
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# 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]# iptables-save >~/iptables.rules
[root@localhost student]# vi iptables.rules
[root@localhost student]# iptables -A INPUT -p tcp --syn --dport 80 -m connlimit --connlimit-above 3 -j
iptables v1.6.1: unknown option "--connlimit-above"
Try 'iptables -h' or 'iptables --help' for more information.
[root@localhost student]# iptables -A INPUT -p tcp --syn --dport 80 -m connlimit --connlimit-above 3 -j REJECT
iptables v1.6.1: unknown option "--connlimit-above"
Try 'iptables -h' or 'iptables --help' for more information.
[root@localhost student]# iptables -A INPUT -p tcp --syn --dport 80 -m connlimit --connlimit-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: