

**Ex. No.:**

**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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# [https://www.arin.net/resources/registry/whois/inaccuracy\\_reporting/](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
Password:
[root@localhost student]# systemctl start firewalld
[root@localhost student]# systemctl restart firewalld
[root@localhost student]# systemctl stop firewalld
[root@localhost student]# iptables -I -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
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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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
```

```
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: 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
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#
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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 -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]#

student: bash
```

Result: