

Лабораторная работа №13

Презентация

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Информация

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Элементы презентации

Цели и задачи

Целью данной лабораторной работы является получение навыков настройки пакетного фильтра в Linux.

Выполнение лабораторной работы

Управление брандмауэром с помощью firewall-cmd

```
[ermimash@ermimash ~]$ su -
Password:
[root@ermimash ~]# firewall-cmd --get-default-zone
public
[root@ermimash ~]# firewall-cmd --get-zones
block dmz drop external home internal nm-shared public trusted work
[root@ermimash ~]# firewall-cmd --get-services
RH-Satellite-6 RH-Satellite-6-capsule afp amanda-client amanda-k5-client amqp amqps apcupsd audit ausweisapp2 bacula
acula-client bareos-director bareos-filedaemon bareos-storage bb bgp bitcoin bitcoin-rpc bitcoin-testnet bitcoin-test
et-rpc bittorrent-lsd ceph ceph-exporter ceph-mon cfengine checkmk-agent cockpit collectd condor-collector cratedb ct
b dds dds-multicast dds-unicast dhcp dhcpcv6 dhcpcv6-client distcc dns dns-over-tls docker-registry docker-swarm dropbo
-lansync elasticsearch etcd-client etcd-server finger foreman foreman-proxy freeipa-4 freeipa-ldap freeipa-ldaps free
ipa-replication freeipa-trust ftp galera ganglia-client ganglia-master git gpgsql grafana gre high-availability http htt
p https ident imap imaps ipfs ipp ipp-client ipsec irc ircs iscsi-target iisns jenkins kademain kdeconnect kerberos kiba
a klogin kpasswd kprop kshell kube-api kube-apiserver kube-control-plane kube-control-plane-secure kube-controller-ma
ger kube-controller-manager-secure kube-nodeport-services kube-scheduler-secure kube-worker kubelet k
belet-readonly kubelet-worker ldap ldaps libvirt libvirt-tls lightning-network llmnr llmnr-client llmnr-tcp llmnr-udp
managesieve matrix mdns memcache minidlna mosh mountn mqtt mqtt-tls ms-wbt mssql murmur mysql nbd nebula netb
os=ns netdata=dashboard nfs nfs3 nmea=0183 nrpe ntp nut opentelemetry openvpn ovirt-imageio ovirt-storageconsole ovir
t-vmconsole plex pmcd pmproxy pmwebapi pmwebapis pop3 pop3s postgresql privoxy prometheus prometheus-node-exporter pro
xy-dhcp ps2link ps3netsrv ptp pulseaudio puppetmaster quassel radius rdp redis redis-sentinel rootd rpc-bind rquotad r
h rsyncd rtsp salt-master samba samba-client samba-dc sane sip sips slp smtp smtp-submission smtps snmp snmpf1s snmpf
s-trap snmptrap spiderok-lansync spotify-sync squid ssdp ssh steam-streaming svdrp svn syncthing syncthing-gui sync
ting-relay synergy syslog syslog-tls telnet tentacle tftp tile38 tor-socks transmission-client upnp-client vdsn v
c-server warpinator wbem=http wbem=https wireguard ws-discovery ws-discovery-client ws-discovery=tcp ws-discovery=udp
wsman wsmans xdmcp xmpp-bosh xmpp-client xmpp-local xmpp-server zabbix-agent zabbix-server zerotier
[root@ermimash ~]# firewall-cmd --list-services
cockpit dhcpcv6-client ssh
[root@ermimash ~]# firewall-cmd --list-all
public (active)
    target: default
    icmp-block-inversion: no
    interfaces: enp0s3
    sources:
    services: cockpit dhcpcv6-client ssh
    ports:
    protocols:
    forward: yes
    masquerade: no
    forward-ports:
    source-ports:
```

Добавление VNC

```
[root@ermimash ~]# firewall-cmd --list-all --zone=public
public (active)
  target: default
  icmp-block-inversion: no
  interfaces: enp0s3
  sources:
  services: cockpit dhcpcv6-client ssh
  ports:
  protocols:
  forward: yes
  masquerade: no
  forward-ports:
  source-ports:
  icmp-blocks:
  rich rules:
[root@ermimash ~]# firewall-cmd --add-service=vnc-server
success
[root@ermimash ~]# firewall-cmd --list-all
public (active)
  target: default
  icmp-block-inversion: no
  interfaces: enp0s3
  sources:
  services: cockpit dhcpcv6-client ssh vnc-server
  ports:
  protocols:
  forward: yes
  masquerade: no
  forward-ports:
  source-ports:
  icmp-blocks:
  rich rules:
[root@ermimash ~]# systemctl restart firewalld
[root@ermimash ~]# firewall-cmd --list-all
public (active)
  target: default
  icmp-block-inversion: no
  interfaces: enp0s3
  sources:
  services: cockpit dhcpcv6-client ssh
  ports:
  protocols:
  forward: yes
  masquerade: no
  forward-ports:
  source-ports:
```

Добавление конфигураций

```
public (active)
  target: default
  icmp-block-inversion: no
  interfaces: enp0s3
  sources:
  services: cockpit dhcpcv6-client ssh
  ports:
  protocols:
    forward: yes
    masquerade: no
  forward-ports:
  source-ports:
  icmp-blocks:
  rich rules:
[root@ermimash ~]# firewall-cmd --reload
success
[root@ermimash ~]# firewall-cmd --list-all
public (active)
  target: default
  icmp-block-inversion: no
  interfaces: enp0s3
  sources:
  services: cockpit dhcpcv6-client ssh vnc-server
  ports:
  protocols:
    forward: yes
    masquerade: no
  forward-ports:
  source-ports:
  icmp-blocks:
  rich rules:
[root@ermimash ~]# firewall-cmd --add-port=2022/tcp --permanent
success
[root@ermimash ~]# firewall-cmd --reload
success
[root@ermimash ~]# firewall-cmd --list-all
public (active)
  target: default
  icmp-block-inversion: no
  interfaces: enp0s3
  sources:
  services: cockpit dhcpcv6-client ssh vnc-server
  ports: 2022/tcp
  protocols:
    forward: yes
    masquerade: no
  forward-ports:
```

Настройки брандмауэра

Firewall Configuration

File Options View Help

Active Bindings

Configuration: Runtime

Connections

- lo (lo)
Default Zone: public
- enp0s3 (enp0s3)
Default Zone: public

Interfaces

Sources

Zones Services IPSets

A firewalld zone defines the level of trust for network connections, interfaces and source addresses bound to the zone. The zone combines services, ports, protocols, masquerading, port/packet forwarding, icmp filters and rich rules. The zone can be bound to interfaces and source addresses.

block
dmz
drop
external
home
internal
nm-shared
public
trusted
work

Services Ports Protocols Source Ports

Here you can define which services are trusted in the zone. Trusted services are accessible from all hosts and networks that can reach the machine from connections, interfaces and sources bound to this zone.

Service
<input type="checkbox"/> afp
<input type="checkbox"/> amanda-client
<input type="checkbox"/> amanda-k5-client
<input type="checkbox"/> amcp
<input type="checkbox"/> amcps
<input type="checkbox"/> apcupsd
<input type="checkbox"/> audit
<input type="checkbox"/> ausweisapp2
<input type="checkbox"/> bacula
<input type="checkbox"/> bacula-client
<input type="checkbox"/> baresos-director
<input type="checkbox"/> baresos-filedaemon
<input type="checkbox"/> baresos-storage
<input type="checkbox"/> bb

Change Zone

Connection to firewalld established.

Управление брандмауэром с помощью firewall-config

```
* Waiting in queue...
* Loading list of packages...
The following packages have to be installed:
dbus-x11-1:1.12.20-8.el9.x86_64           X11-requiring add-ons for D-BUS
firewall-config-1.3.4-15.el9.noarch Firewall configuration application
Proceed with changes? [N/y] y

* Waiting in queue...
* Waiting for authentication...

* Waiting in queue...
* Downloading packages...
* Requesting data...
* Testing changes...
* Installing packages...

[ermimash@ermimash ~]$ [ermimash@ermimash ~]$ firewall-cmd --list-all
public (active)
  target: default
  icmp-block-inversion: no
  interfaces: enp0s3
  sources:
  services: cockpit dhcpcv6-client ssh vnc-server
  ports: 2022/tcp
  protocols:
  forward: yes
  masquerade: no
  forward-ports:
  source-ports:
  icmp-blocks:
  rich rules:
[ermimash@ermimash ~]$ firewall-cmd --reload
success
[ermimash@ermimash ~]$ firewall-cmd --list-all
public (active)
  target: default
  icmp-block-inversion: no
  interfaces: enp0s3
  sources:
  services: cockpit dhcpcv6-client ftp http https ssh vnc-server
  ports: 2022/tcp 2022/udp
  protocols:
  forward: yes
  masquerade: no
  forward-ports:
```

Самостоятельная работа

```
[ermimash@ermimash ~]$ firewall-cmd --reload
success
[ermimash@ermimash ~]$ firewall-cmd --list-all
public (active)
  target: default
  icmp-block-inversion: no
  interfaces: enp0s3
  sources:
    services: cockpit dhcpcv6-client ftp http https ssh vnc-server
    ports: 2022/tcp 2022/udp
    protocols:
      forward: yes
      masquerade: no
      forward-ports:
      source-ports:
  icmp-blocks:
  rich rules:
[ermimash@ermimash ~]$ su -
Password:
[root@ermimash ~]# firewall-cmd --add-service=telnet --permanent
success
[root@ermimash ~]# firewall-config
[root@ermimash ~]# firewall-cmd --reload
success
[root@ermimash ~]# firewall-cmd --list-all
public (active)
  target: default
  icmp-block-inversion: no
  interfaces: enp0s3
  sources:
    services: cockpit dhcpcv6-client ftp http https imap pop3 smtp ssh telnet vnc-server
    ports: 2022/tcp 2022/udp
    protocols:
      forward: yes
      masquerade: no
      forward-ports:
      source-ports:
```

Рис. 6: Самостоятельная работа

Результаты

Получены навыки настройки пакетного фильтра в Linux.