

# Отчёт по лабораторной работе №13

Фильтр пакетов

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## Цель работы

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Получить навыки настройки пакетного фильтра и управления брандмауэром в Linux.

## Выполнение лабораторной работы


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# Получение привилегий

```
root@localhost:~ -- -bash
~/net-adminka/net-admin

root@localhost:/home/spborisenkova/net-adminka/net-admin# su -
Last login: Sat Nov 22 19:48:14 MSK 2025 on pts/0
root@localhost:~# firewall-cmd --get-default-zone
public
root@localhost:~# firewall-cmd --get-zones
block dmz drop external home internal nm-shared public trusted work
root@localhost:~# firewall-cmd --get-services
@-AD RH-Satellite-6 RH-Satellite-6-capsule afp alvr amanda-client amanda-k5-client amqp amqps anno-1602 anno-1800 apcupsd aseqnet audit ausweisapp2 bacula ba
cula-client bareos-director bareos-filedaemon bareos-storage bb bgp bitcoin bitcoin-rpc bitcoin-testnet bitcoin-testnet-rpc bittorrent-lsd ceph ceph-exporter
ceph-mon cfengine checkmk-agent civilization-iv civilization-v cockpit collectd condor-collector cratedb ctdb dds dds-multicast dds-unicast dhcp dhcpcv6 dhcp
v6-client distcc dns dns-over-https dns-over-tls docker-registry docker-swarm dropbox-lansync elasticsearch etcd-client etcd-server factorio finger foreman fo
remans-proxy freeipa-4 freeipa-ldap freeipa-ldaps freeipa-replication freeipa-trust ftp galera ganglia-client ganglia-master git gpsd grafana gre high-availab
ility http http3 https ident imap inaps iperf2 iperf3 ipfs ipp ipp-client ipsec irc ircs iscsi-target isns jenkins kadmin kdeconnect kerberos kibana klogind k
passwd kproxd kshell kube-api kube-apiserver kube-control-plane kube-control-plane-secure kube-controller-manager kube-controller-manager-secure kube-nodeport
-services kube-scheduler kube-scheduler-secure kube-worker kubelet kubelet-readonly kubelet-worker ldap ldaps libvirt libvirt-tls lightning-network llmnr llm
nr-client llmnr-tcp llmnr-udp managelive matrix mdns memcached minecraft minidna mndp mongodb mosh mountd mpd mqtt mqtt-tls ms-wbt mssql murmur mysql nbd ne
bula need-for-speed-most-wanted netbios-ns netdata-dashboard nfs nfs3 nmap nmap-0183 nripe ntp nut opentelemetry openvpn ovirt-imago ovirt-storageconsole ovirt-v
mconsole plex pncd pnp-proxy pmwebapi pmwebapi3 pop3 pop3s postgresql privoxy prometheus prometheus-node-exporter proxy-dhcp ps2link ps3netsrv ptp pulseaudio p
upptmaster quassel radius radsec rdp redis redis-sentinel rootd rpc-bind rquotad rsh rsyncd rtsp salt-master samba samba-client samba-dc sane settlers-histo
ry-collection sip sips slimevr slp smtp smtp-submission smtps snmp snmp-tls snmp-trap snmptrap spideroak-lansync spotify-sync squid sssd ssh statssrv steam-
lan-transfer steam-streaming stellaris stronghold-crusader stun stuns submission supertuxkart svdrp svn syncthing syncthing-gui syncthing-relay synergy sysco
mlan syslog syslog-tls telnet tentacle terraria tftp tile38 tinc tor-socks transmission-client turn turns upnp-client vds vnc-server vrrp waipinator wben-h
tp wben-https wireguard ws-discovery ws-discovery-client ws-discovery-host ws-discovery-tcp ws-discovery-udp wsd wsd-http wsmn wsmns xdmcp xmp-bash xmp
-client xmp-local xmp-server zabbix-agent zabbix-java-gateway zabbix-server zabbix-trapper zabbix-web-service zero-k zerotier
root@localhost:~#
```

Рис. 1: Определение зоны и служб



```
root@localhost:~ -- -bash
~/net-adminka/net-admin

root@localhost:~# firewall-cmd --list-services
cockpit dhcpv6-client ssh
root@localhost:~# firewall-cmd --list-all
public (default, active)
  target: default
  ingress-priority: 0
  egress-priority: 0
  icmp-block-inversion: no
  interfaces: enp0s3
  sources:
  services: cockpit dhcpv6-client ssh
  ports:
  protocols:
  forward: yes
  masquerade: no
  forward-ports:
  source-ports:
  icmp-blocks:
  rich rules:
root@localhost:~# firewall-cmd --list-all --zone=public
public (default, active)
  target: default
  ingress-priority: 0
  egress-priority: 0
  icmp-block-inversion: no
  interfaces: enp0s3
  sources:
  services: cockpit dhcpv6-client ssh
  ports:
  protocols:
  forward: yes
  masquerade: no
  forward-ports:
  source-ports:
  icmp-blocks:
  rich rules:
root@localhost:~#
```

Рис. 2: Просмотр конфигурации зоны

# Добавление службы vnc-server

```
root@localhost:~# --bash
~/net-admin/~/net-admin

root@localhost:~# firewall-cmd --add-service=vnc-server
success
root@localhost:~# firewall-cmd --list-all
public (default, active)
  target: default
  ingress-priority: 0
  egress-priority: 0
  icmp-block-inversion: no
  interfaces: enp0s3
  sources:
  services: cockpit dhcpv6-client ssh vnc-server
  ports:
  protocols:
  forward: yes
  masquerade: no
  forward-ports:
  source-ports:
  icmp-blocks:
  rich rules:
root@localhost:~# systemctl restart firewalld
root@localhost:~# firewall-cmd --list-all
public (default, active)
  target: default
  ingress-priority: 0
  egress-priority: 0
  icmp-block-inversion: no
  interfaces: enp0s3
  sources:
  services: cockpit dhcpv6-client ssh
  ports:
  protocols:
  forward: yes
  masquerade: no
  forward-ports:
  source-ports:
  icmp-blocks:
  rich rules:
```

Рис. 3: Добавление vnc-server

## Добавление порта 2022/tcp

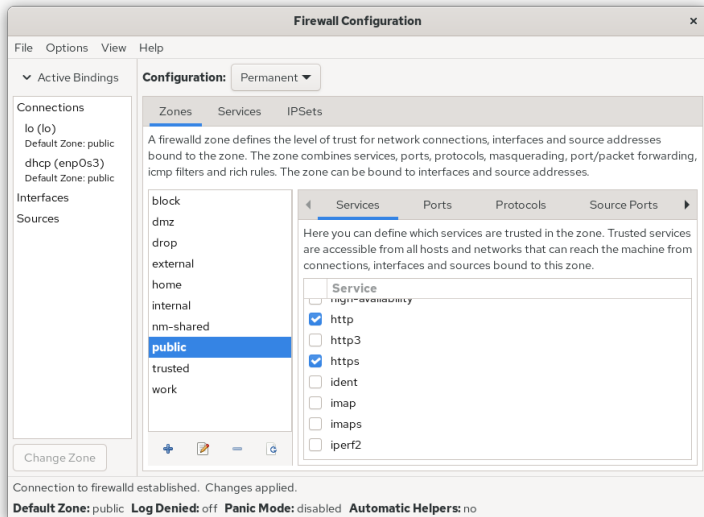


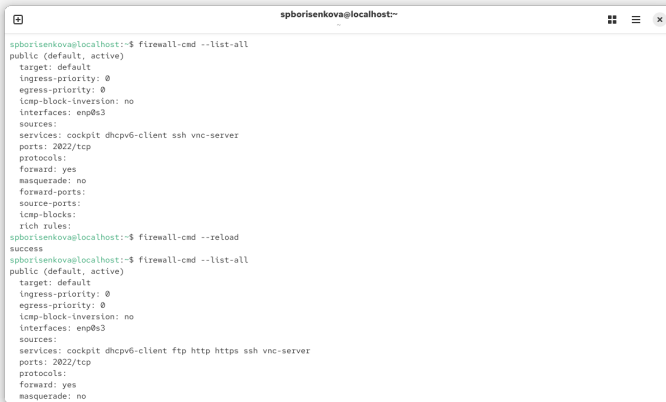
```
root@localhost:~ -- -bash
~/net-adminka/net-admin

root@localhost:~# firewall-cmd --add-port=2022/tcp --permanent
success
root@localhost:~# firewall-cmd --reload
success
root@localhost:~# firewall-cmd --list-all
public (default, active)
  target: default
  ingress-priority: 0
  egress-priority: 0
  icmp-block-inversion: no
  interfaces: enp0s3
  sources:
  services: cockpit dhcpv6-client ssh vnc-server
  ports: 2022/tcp
  protocols:
  forward: yes
  masquerade: no
  forward-ports:
  source-ports:
  icmp-blocks:
  rich rules:
root@localhost:~#
```

Рис. 4: Добавление порта 2022/tcp



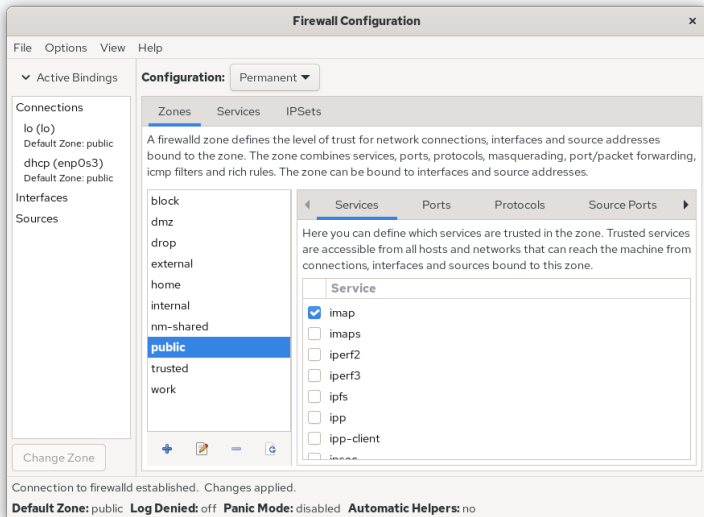


A terminal window titled 'spborisenkova@localhost:~' with standard window controls. It shows the execution of 'firewall-cmd' commands to list and reload the firewall configuration. The output shows the current firewall settings, including target, priorities, interfaces, services, ports, protocols, and rules.

```
spborisenkova@localhost:~$ firewall-cmd --list-all
public (default, active)
  target: default
  ingress-priority: 0
  egress-priority: 0
  icmp-block-inversion: no
  interfaces: enp0s3
  sources:
  services: cockpit dhcpv6-client ssh vnc-server
  ports: 2022/tcp
  protocols:
  forward: yes
  masquerade: no
  forward-ports:
  source-ports:
  icmp-blocks:
  rich rules:
spborisenkova@localhost:~$ firewall-cmd --reload
success
spborisenkova@localhost:~$ firewall-cmd --list-all
public (default, active)
  target: default
  ingress-priority: 0
  egress-priority: 0
  icmp-block-inversion: no
  interfaces: enp0s3
  sources:
  services: cockpit dhcpv6-client ftp http https ssh vnc-server
  ports: 2022/tcp
  protocols:
  forward: yes
  masquerade: no
```

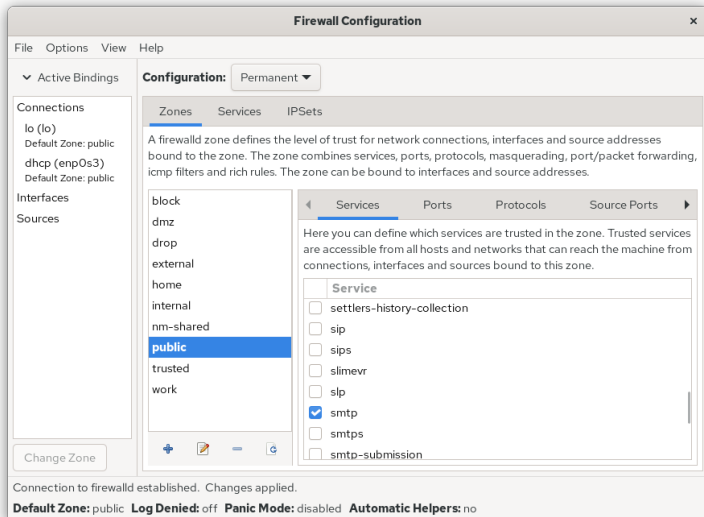
Рис. 6: Применение настроек firewall-config

# Включение imap



## Включение pop3

# Включение smtp



## Итоги работы

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- Изучены механизмы управления firewall через firewall-cmd
- Получены навыки работы с временной и постоянной конфигурацией.
- Освоено добавление служб и портов.
- Применены команды и GUI-инструменты
- Понято различие между runtime и permanent конфигурациями.