

Лабораторная работа №13

Настройка межсетевого экрана firewalld

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Цель работы

Цель лабораторной работы

Получить навыки настройки пакетного фильтра в Linux с использованием firewalld и firewall-config.

Ход выполнения

Определение активной зоны

Рис. 1: Информация о зоне и доступных службах

Просмотр конфигурации зоны

```
root@admazurkevich:/home/admazurkevich# firewall-cmd --list-all
public (default, active)
  target: default
  ingress-priority: 0
  egress-priority: 0
  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@admazurkevich:/home/admazurkevich# 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 dhcpcv6-client ssh
    ports:
    protocols:
      forward: yes
      masquerade: no
      forward-ports:
      source-ports:
      icmp-blocks:
      rich rules:
root@admazurkevich:/home/admazurkevich#
root@admazurkevich:/home/admazurkevich#
```

Добавление службы VNC

```
root@admazurkevich:/home/admazurkevich# firewall-cmd --add-service=vnc-server
success
root@admazurkevich:/home/admazurkevich# firewall-cmd --list-all
public (default, active)
  target: default
  ingress-priority: 0
  egress-priority: 0
  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@admazurkevich:/home/admazurkevich# systemctl restart firewalld.service
root@admazurkevich:/home/admazurkevich# firewall-cmd --list-all
public (default, active)
  target: default
  ingress-priority: 0
  egress-priority: 0
  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@admazurkevich:/home/admazurkevich#
```

Добавление VNC permanent + reload

```
root@admazurkevich:/home/admazurkevich# 
root@admazurkevich:/home/admazurkevich# firewall-cmd --add-service=vnc-server --permanent
success
root@admazurkevich:/home/admazurkevich# firewall-cmd --list-all
public (default, active)
    target: default
    ingress-priority: 0
    egress-priority: 0
    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@admazurkevich:/home/admazurkevich# firewall-cmd --reload
success
root@admazurkevich:/home/admazurkevich# firewall-cmd --list-all
public (default, active)
    target: default
    ingress-priority: 0
    egress-priority: 0
    icmp-block-inversion: no
    interfaces: enp0s3
    sources:
        services: cockpit dhcpcv6-client ssh vnc-server
    ports:
    protocols:
        forward: yes
        masquerade: no
    forward-ports:
```

Добавление TCP-порта 2022

```
root@admazurkevich:/home/admazurkevich# 
root@admazurkevich:/home/admazurkevich# firewall-cmd --add-port=2022/tcp --permanent
success
root@admazurkevich:/home/admazurkevich# firewall-cmd --reload
success
root@admazurkevich:/home/admazurkevich# firewall-cmd --list-all
public (default, active)
    target: default
    ingress-priority: 0
    egress-priority: 0
    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:
root@admazurkevich:/home/admazurkevich# █
```

Рис. 5: Добавление порта 2022

Включение служб http/https/ftp

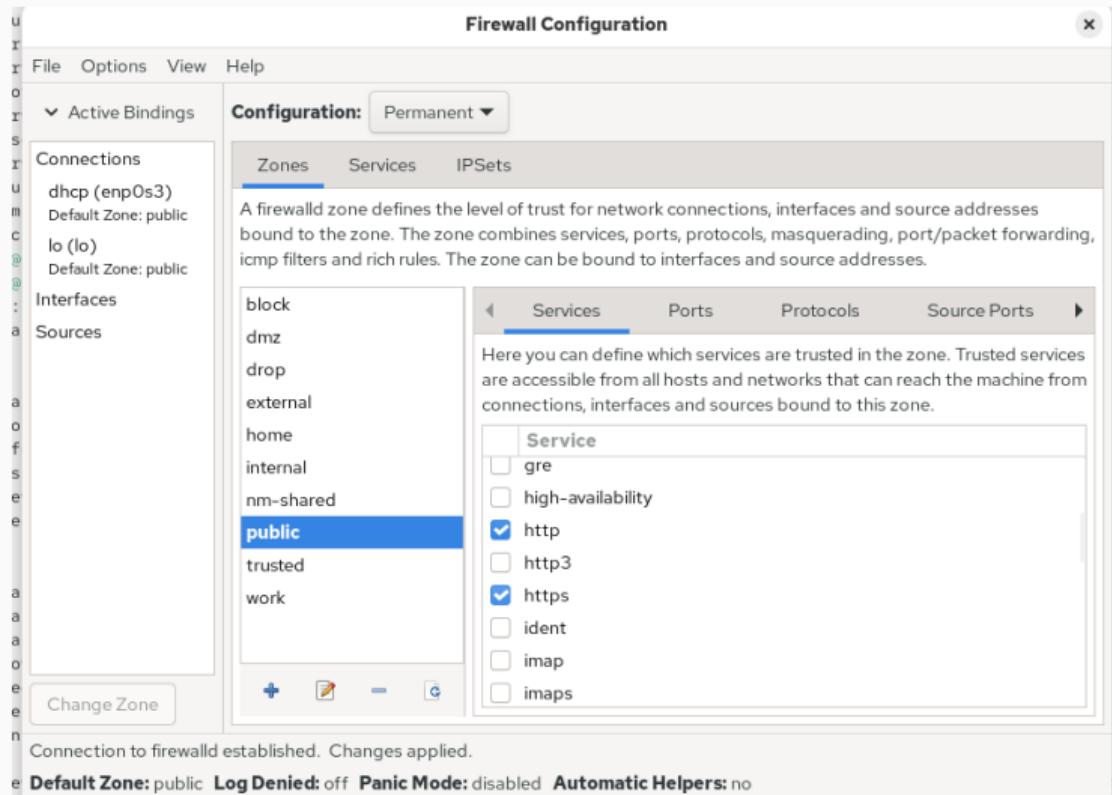


Рис. 6: GUI — включение служб

Добавление порта 2022/udp

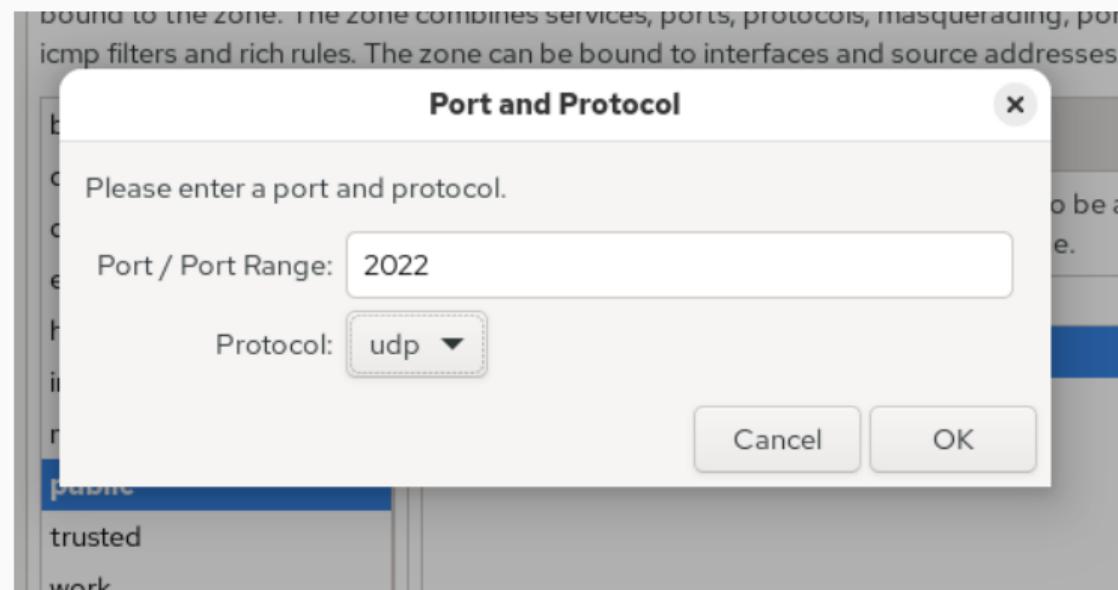


Рис. 7: GUI — добавление порта udp 2022

Применение изменений (reload)

```
root@admazurkevich:/home/admazurkevich# firewall-cmd --list-all
public (default, active)
  target: default
  ingress-priority: 0
  egress-priority: 0
  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:
root@admazurkevich:/home/admazurkevich# firewall-cmd --reload
success
root@admazurkevich:/home/admazurkevich# firewall-cmd --list-all
public (default, active)
  target: default
  ingress-priority: 0
  egress-priority: 0
  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:
root@admazurkevich:/home/admazurkevich#
```

Добавление служб telnet, imap, pop3, smtp

```
root@admazurkevich:/home/admazurkevich#
root@admazurkevich:/home/admazurkevich# firewall-cmd --add-service=telnet --permanent
success
root@admazurkevich:/home/admazurkevich# firewall-cmd --reload
success
root@admazurkevich:/home/admazurkevich# firewall-cmd --list-all
public (default, active)
    target: default
    ingress-priority: 0
    egress-priority: 0
    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:
    icmp-blocks:
    rich rules:
root@admazurkevich:/home/admazurkevich#
```

Рис. 9: Добавленные службы telnet, imap, pop3, smtp

Выводы по проделанной работе

Вывод

В ходе лабораторной работы были изучены возможности firewalld: - управление временными и постоянными правилами; - добавление сервисов и портов; - использование терминала и графического интерфейса firewall-config.

Полученные навыки позволяют контролировать сетевой доступ и обеспечивать безопасность системы в Linux.