Презентация по лабораторной работе №7

Дисциплина:Администрирование сетевых подсистем

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Цель работы

Получить навыки настройки межсетевого экрана в Linux в части переадресации портов и настройки Masquearading

Задание

Настройте межсетевой экран виртуальной машины server длz доступа к серверу по протоколу SSH не через 22-й порт, а через порт 2022.

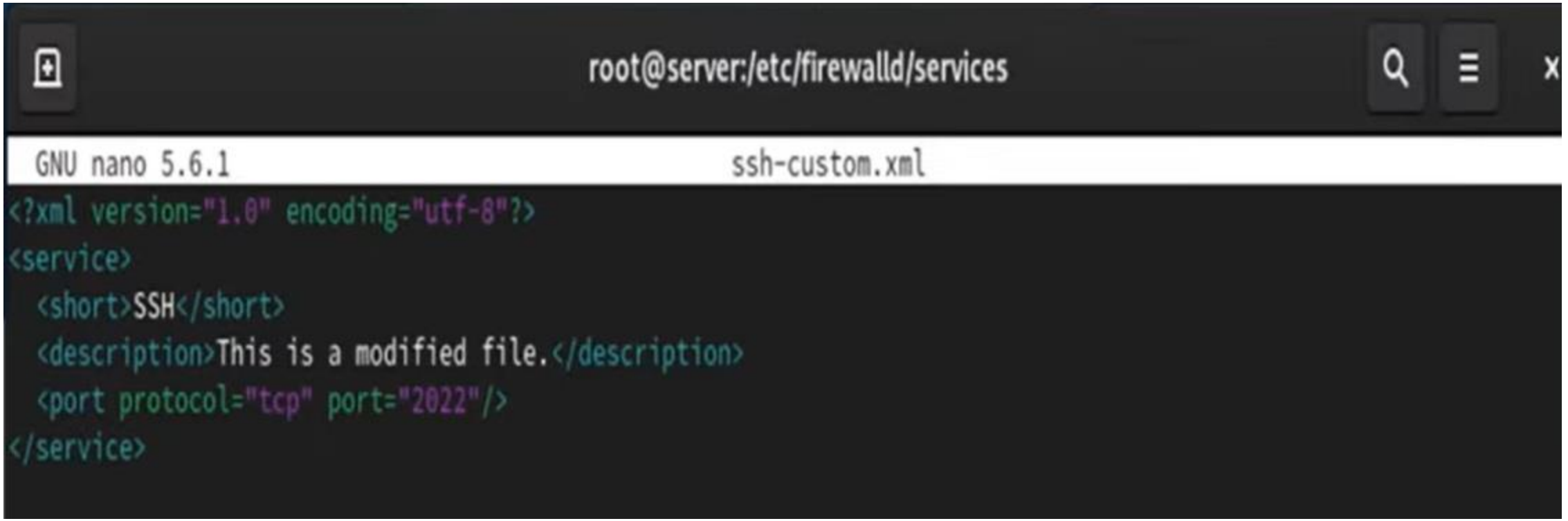
Настройте Port Forwarding на виртуальной машине server.

Настройте маскарадинг на виртуальной машине server для организации доступа клиента к сети Интернет.
Напишите скрипт для Vagrant, фиксирующий действия по расширенной настройке межсетевого экрана.
Соответствующим образом внести изменения в Vagrantfile

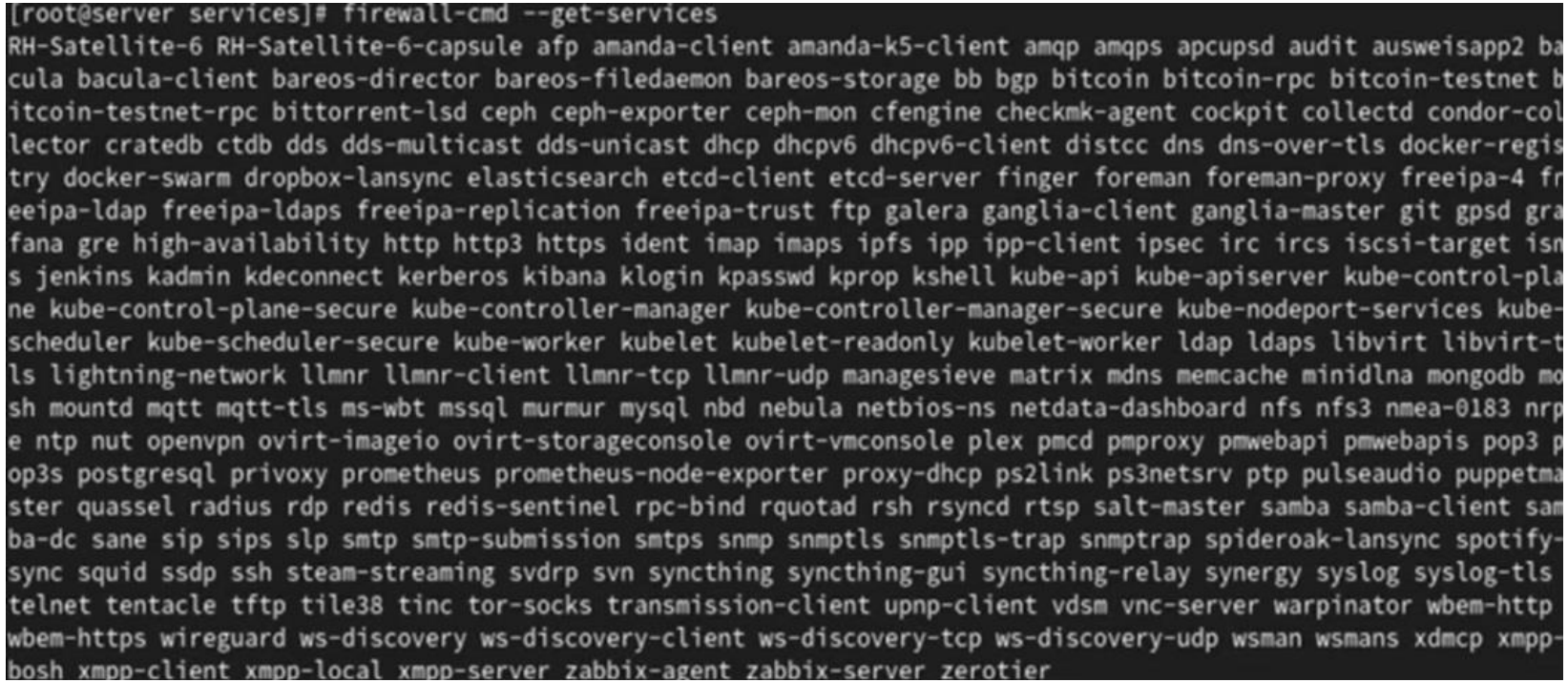
Выполнение работы

```
[root@server ~]# cp /usr/lib/firewalld/services/ssh.xml /etc/fire
firefox/   firewalld/
[root@server ~]# cp /usr/lib/firewalld/services/ssh.xml /etc/firewalld/services/ssh-custom.xml
[root@server ~]# cd /etc/firewalld/services/ssh-custom.xml
-bash: cd: /etc/firewalld/services/ssh-custom.xml: Not a directory
[root@server ~]# cd /etc/firewalld/services/
[root@server services]# cat /etc/firewalld/services/ssh-custom.xml
<?xml version="1.0" encoding="utf-8"?>
<service>
  <short>SSH</short>
  <description>Secure Shell (SSH) is a protocol for logging into and executing commands on remote machines. It p
rovides secure encrypted communications. If you plan on accessing your machine remotely via SSH over a firewalle
d interface, enable this option. You need the openssh-server package installed for this option to be useful.</de
scription>
  <port protocol="tcp" port="22"/>
</service>
```

Выполнение работы



Выполнение работы



Выполнение работы

- Добавление новой службы и ее активация

```
bosh xmpp-client xmpp-local xmpp-server zabbix-agent zabbix-server zerotier
[root@server services]# firewall-cmd --reload
success
[root@server services]# firewall-cmd --get-services
RH-Satellite-6 RH-Satellite-6-capsule afp amanda-client amanda-k5-client amqp amqps apcupsd audit ausweisapp2 ba
cula bacula-client bareos-director bareos-filedaemon bareos-storage bb bgp bitcoin bitcoin-rpc bitcoin-testnet b
itcoin-testnet-rpc bittorrent-lsd ceph ceph-exporter ceph-mon cfengine checkmk-agent cockpit collectd condor-col
lector cratedb ctdb dds dds-multicast dds-unicast dhcp dhcpv6 dhcpv6-client distcc dns dns-over-tls docker-regis
try docker-swarm dropbox-lansync elasticsearch etcd-client etcd-server finger foreman foreman-proxy freeipa-4 fr
eeipa-ldap freeipa-ldaps freeipa-replication freeipa-trust ftp galera ganglia-client ganglia-master git gpsd gra
fana gre high-availability http http3 https ident imap imaps ipfs ipp ipp-client ipsec irc ircs iscsi-target isn
s jenkins kadmin kdeconnect kerberos kibana klogin kpasswd kprop kshell kube-api kube-apiserver kube-control-pla
ne 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-t
ls lightning-network llmnr llmnr-client llmnr-tcp llmnr-udp managesieve matrix mdns memcache minidlna mongodb mo
sh mountd mqtt mqtt-tls ms-wbt mssql murmur mysql nbd nebula netbios-ns netdata-dashboard nfs nfs3 nmea-0183 nrp
e ntp nut openvpn ovirt-imageio ovirt-storageconsole ovirt-vmconsole plex pmcd pmproxy pmwebapi pmwebapis pop3 p
op3s postgresql privoxy prometheus prometheus-node-exporter proxy-dhcp ps2link ps3netsrv ptp pulseaudio puppetma
ster quassel radius rdp redis redis-sentinel rpc-bind rquotad rsh rsyncd rtsp salt-master samba samba-client sam
ba-dc sane sip sips slp smtp smtp-submission smtps snmp snmptls snmptls-trap snmptrap spideroak-lansync spotify-
sync squid ssdp ssh ssh-custom steam-streaming svdrp svn syncthing syncthing-gui syncthing-relay synergy syslog
syslog-tls telnet tentacle tftp tile38 tinc tor-socks transmission-client upnp-client vdsm vnc-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@server services]# firewall-cmd --list-services
cockpit dhcp dhcpv6-client dns http https ssh
[root@server services]# firewall-cmd --add-service=ssh-custom --permanent
success
[root@server services]# firewall-cmd --reload
success
[root@server services]# firewall-cmd --list-services
cockpit dhcp dhcpv6-client dns http https ssh ssh-custom
```

Выполенение работы

Организуем на сервере переадресацию с порта 2022 на порт 22 с помощью команды:
firewall-cmd --add-forward-port=port=2022 :proto=tcp: toport=22

Выполнение работы

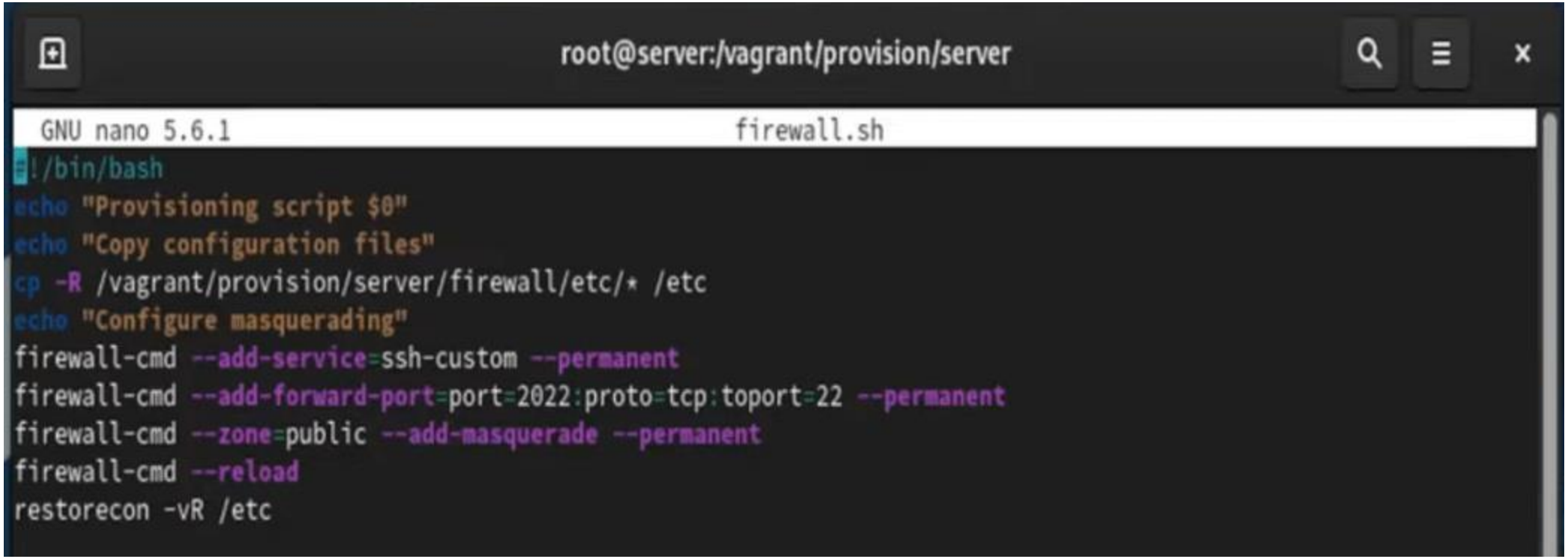
```
[root@server services]# firewall-cmd --list-services
cockpit dhcp dhcpv6-client dns http https ssh ssh-custom
[root@server services]# firewall-cmd --add-forward-port=port=2022:proto=tcp:toport=22
success
[root@server services]# sysctl -a | grep forward
net.ipv4.conf.all.bc_forwarding = 0
net.ipv4.conf.all.forwarding = 0
net.ipv4.conf.all.mc_forwarding = 0
net.ipv4.conf.default.bc_forwarding = 0
net.ipv4.conf.default.forwarding = 0
net.ipv4.conf.default.mc_forwarding = 0
net.ipv4.conf.eth0.bc_forwarding = 0
net.ipv4.conf.eth0.forwarding = 0
net.ipv4.conf.eth0.mc_forwarding = 0
net.ipv4.conf.eth1.bc_forwarding = 0
net.ipv4.conf.eth1.forwarding = 0
net.ipv4.conf.eth1.mc_forwarding = 0
net.ipv4.conf.lo.bc_forwarding = 0
net.ipv4.conf.lo.forwarding = 0
net.ipv4.conf.lo.mc_forwarding = 0
net.ipv4.ip_forward = 0
net.ipv4.ip_forward_update_priority = 1
net.ipv4.ip_forward_use_pmtu = 0
net.ipv6.conf.all.forwarding = 0
net.ipv6.conf.all.mc_forwarding = 0
net.ipv6.conf.default.forwarding = 0
net.ipv6.conf.default.mc_forwarding = 0
net.ipv6.conf.eth0.forwarding = 0
net.ipv6.conf.eth0.mc_forwarding = 0
net.ipv6.conf.eth1.forwarding = 0
net.ipv6.conf.eth1.mc_forwarding = 0
net.ipv6.conf.lo.forwarding = 0
net.ipv6.conf.lo.mc_forwarding = 0
[root@server services]# echo "net.ipv4.ip_forward = 1" > /etc/sysctl.d/90-forward.conf
[root@server services]# sysctl -p /etc/sysctl.d/90-forward.conf
net.ipv4.ip_forward = 1
[root@server services]# firewall-cmd --zone=public --add-masquerade --permanent
success
[root@server services]# firewall-cmd --reload
success
```

Выполнение работы

- Создание окружения для внесения изменений в настройки окружающей среды

```
[root@server services]# cd /vagrant/provision/server
[root@server server]# mkdir -p /vagrant/provision/server/firewall/etc/firewalld/services
[root@server server]# mkdir -p /vagrant/provision/server/firewall/etc/sysctl.d
[root@server server]# cp -r /etc/firewalld/services/ssh-custom.xml /vagrant/provision/server/firewall/etc/firew
lld/services/
[root@server server]# cp -r /etc/sysctl.d/90-forward.conf /vagrant/provision/server/firewall/etc/sysctl.d/
[root@server server]# cd /vagrant/provision/server
[root@server server]# touch firewall.sh
[root@server server]# chmod +x firewall.sh
[root@server server]# nano firewall.sh
```

Выполнение работы



Выполнение работы

```
  server.vm.network :private_network,
                    ip: "192.168.1.1",
                    virtualbox__intnet: true

  server.vm.provision "server dummy",
                      type: "shell",
                      preserve_order: true,
                      path: "provision/server/01-dummy.sh"

  server.vm.provision "server dns",
                      type: "shell",
                      preserve_order: true,
                      path: "provision/server/dns.sh"

  server.vm.provision "server dhcp",
                      type: "shell",
                      preserve_order: true,
                      path: "provision/server/dhcp.sh"

 server.vm.provision "server http",
                      type: "shell",
                      preserve_order: true,
                      path: "provision/server/http.sh"

 server.vm.provision "server mysql",
                      type: "shell",
                      preserve_order: true,
                      path: "provision/server/mysql.sh"

server.vm.provision "server firewall",
                      type: "shell",
                      preserve_order: true,
                      path: "provision/server/firewall.sh"
```

Вывод

В результате выполнения данной работы были приобретены практической настройки межсетевого экрана в Linux в части переадресации портов и настройки Masquerading