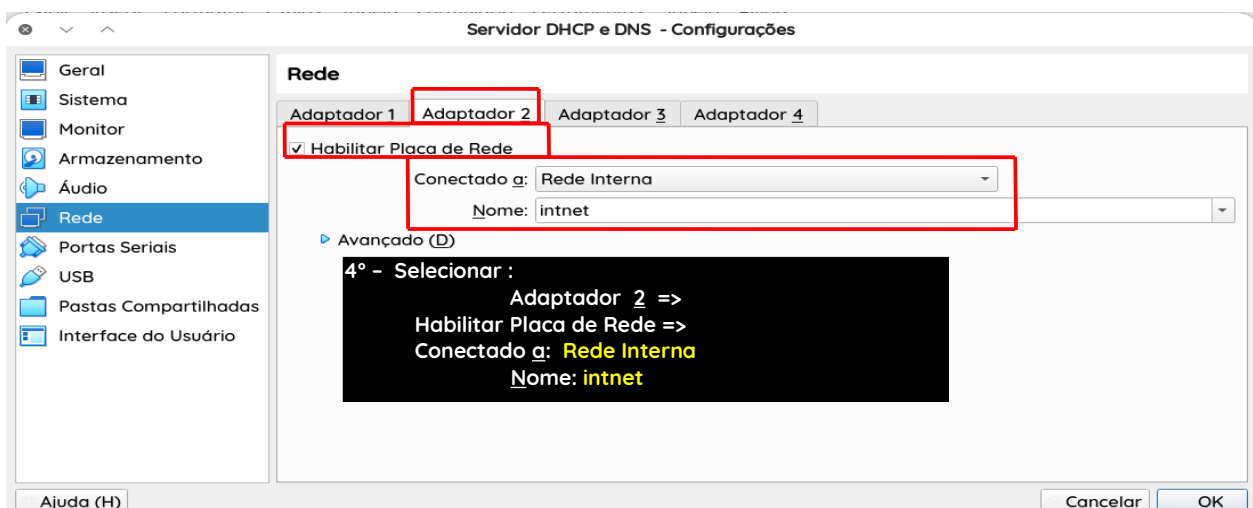
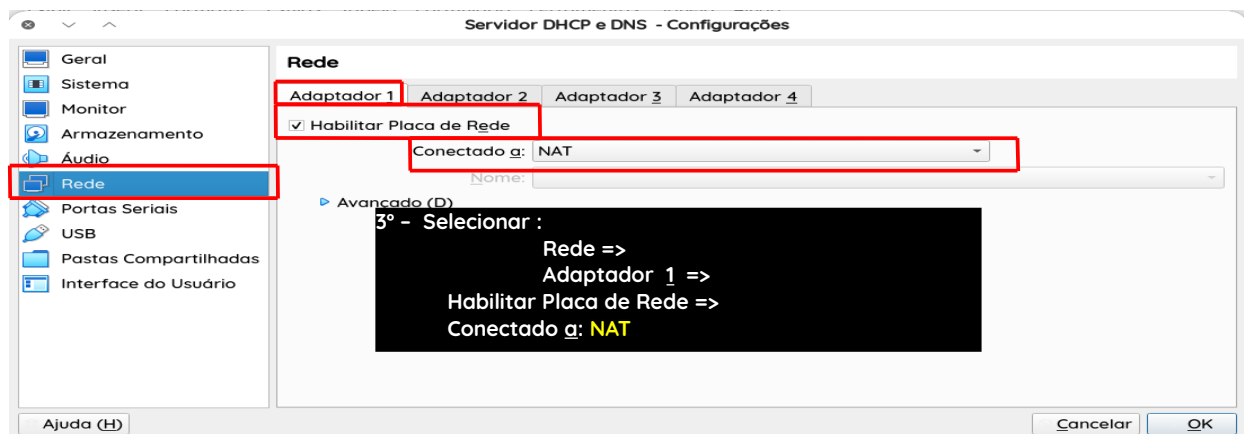


Instalação e Configuração do Servidor DHCP

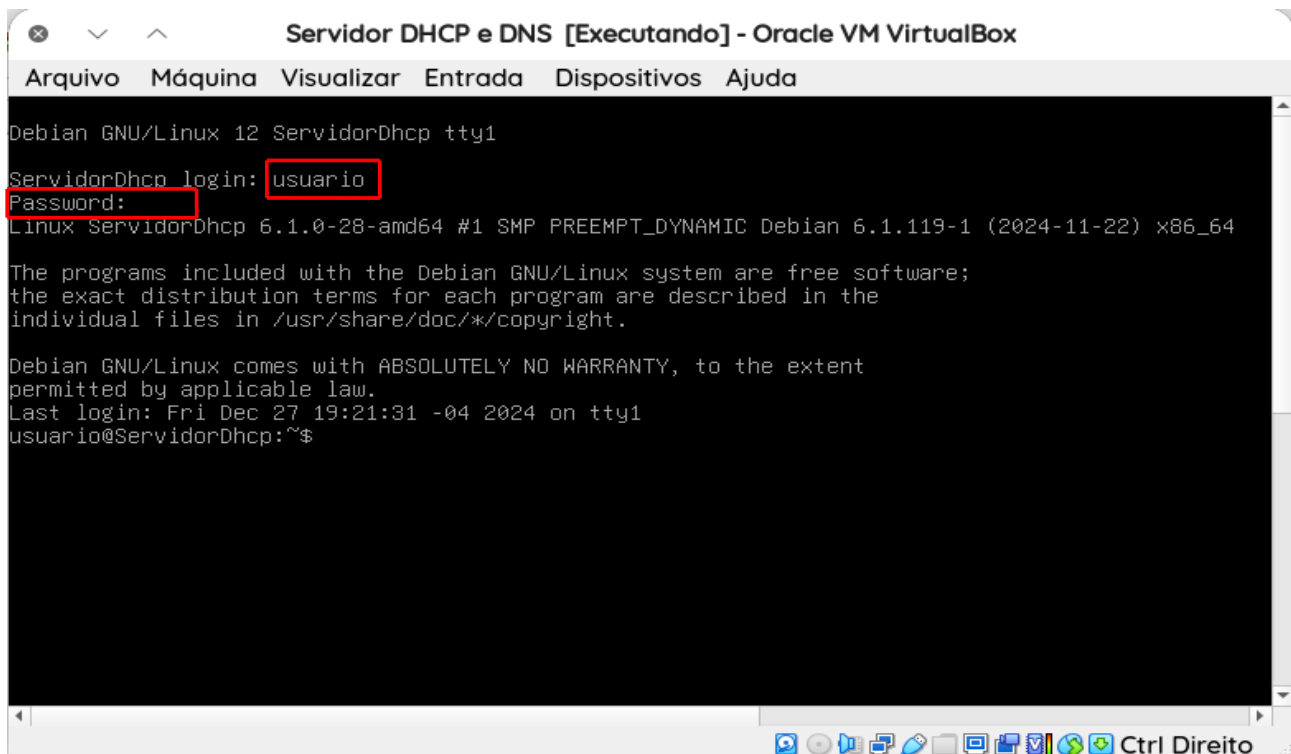
1º ETAPA: Configurar as interfaces de rede no VirtualBox. Serão definidas duas interfaces de rede, uma com **NAT** que servirá para se comunicar com a **internet**, a outra como **Rede Interna** que servirá para comunicar os dispositivos com a **rede interna(local)**.



2 ° ETAPA: Vamos se logar no Sistema Operacional com o usuário e sua respectiva senha.

Usuário: usuario

Senha: 123456

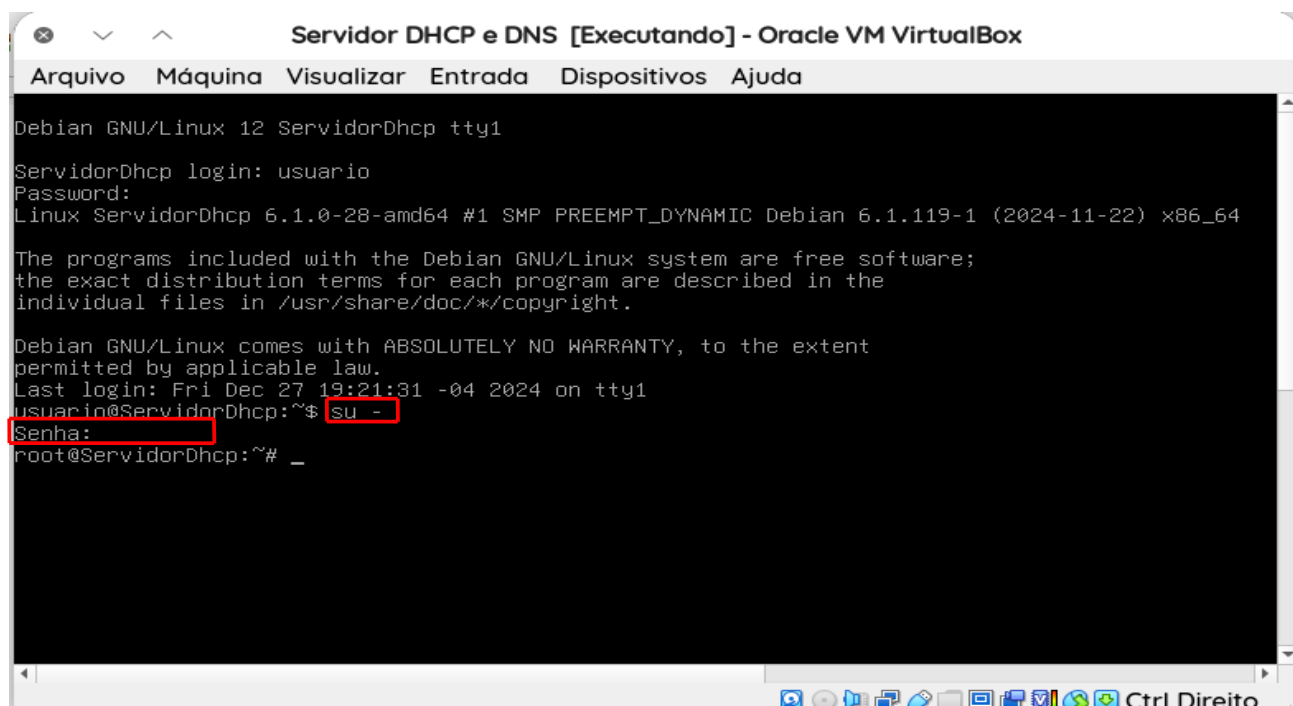


```
Debian GNU/Linux 12 ServidorDhcp tty1
ServidorDhcp login: usuario
Password:
Linux ServidorDhcp 6.1.0-28-amd64 #1 SMP PREEMPT_DYNAMIC Debian 6.1.119-1 (2024-11-22) x86_64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Fri Dec 27 19:21:31 -04 2024 on tty1
usuario@ServidorDhcp:~$
```

3° ETAPA: Logar com o usuário **root (super-usuário)** para instalar o pacote do servidor dhcp, com o seguinte comando: **su -** pressionar a tecla **Enter** e em seguida informar a senha **root** que é **123456** e pressionar **Enter**.

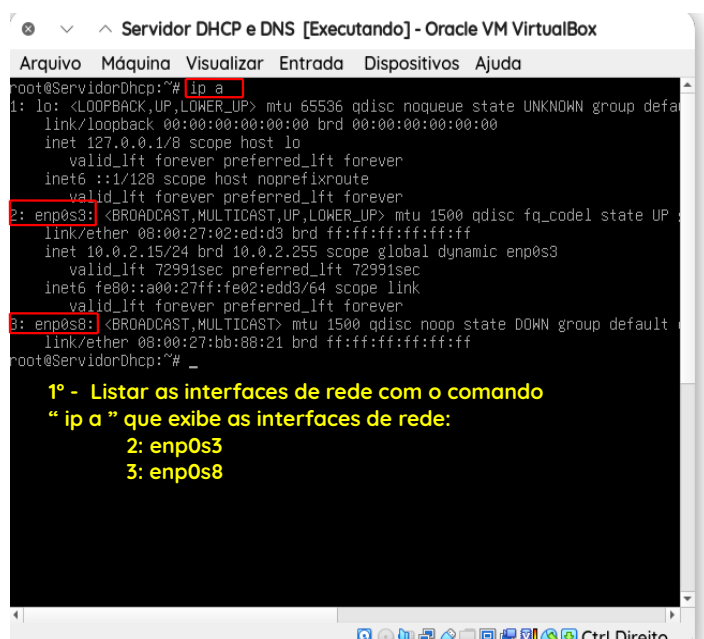


```
Debian GNU/Linux 12 ServidorDhcp tty1
ServidorDhcp login: usuario
Password:
Linux ServidorDhcp 6.1.0-28-amd64 #1 SMP PREEMPT_DYNAMIC Debian 6.1.119-1 (2024-11-22) x86_64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

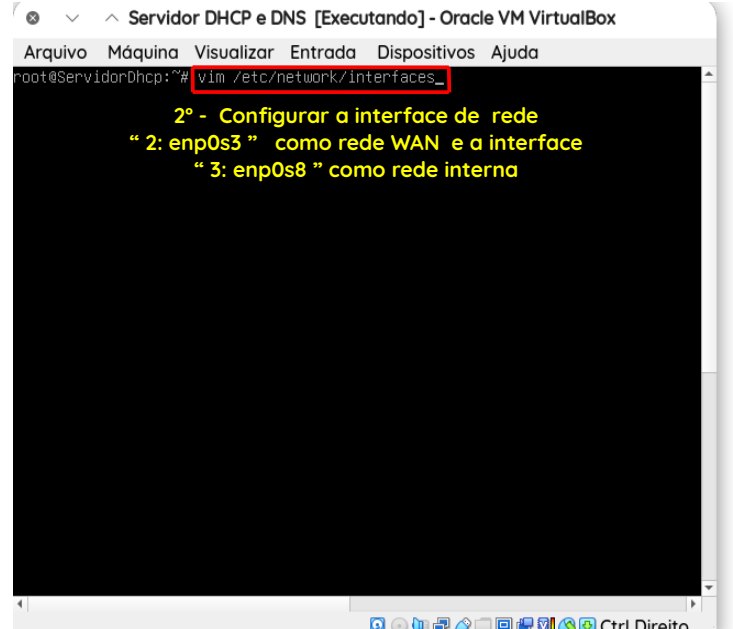
Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Fri Dec 27 19:21:31 -04 2024 on tty1
usuario@ServidorDhcp:~$ su -
Senha:
root@ServidorDhcp:~# _
```

4º ETAPA: Listar as interfaces de rede que o servidor possui com o comando **ip a**. E logo depois configurar as interfaces de rede que fica no arquivo **interfaces** que fica no diretório **/etc/network/interfaces**. Será utilizado o editor de texto **vim** para realizar a configuração.



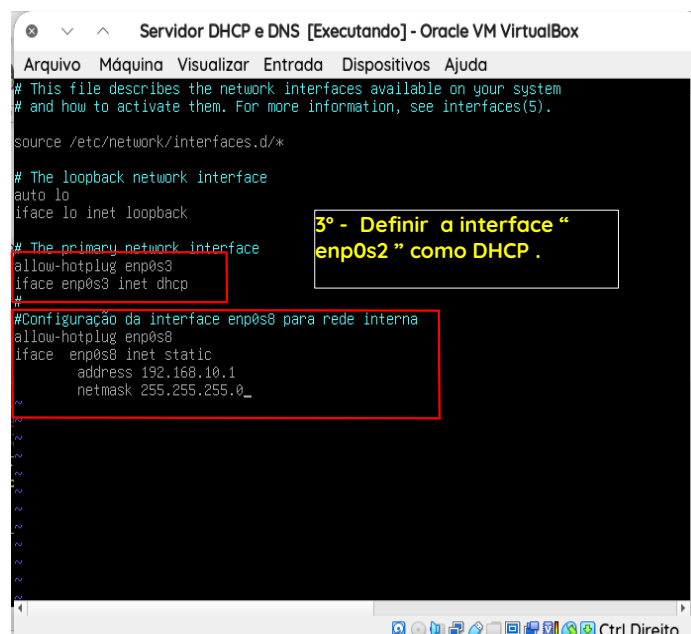
```
root@ServidorDhcp:~# ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP
    link/ether 08:00:27:02:ed:d3 brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic enp0s3
        valid_lft 72991sec preferred_lft 72991sec
    inet6 fe80::a00:27ff:fe02:edd3/64 scope link
        valid_lft forever preferred_lft forever
3: enp0s8: <BROADCAST,MULTICAST> mtu 1500 qdisc noop state DOWN group default
    link/ether 08:00:27:bb:88:21 brd ff:ff:ff:ff:ff:ff
root@ServidorDhcp:~#
```

1º - Listar as interfaces de rede com o comando "ip a" que exibe as interfaces de rede:
2: enp0s3
3: enp0s8



```
root@ServidorDhcp:~# vim /etc/network/interfaces_
```

2º - Configurar a interface de rede "2: enp0s3" como rede WAN e a interface "3: enp0s8" como rede interna



```
# This file describes the network interfaces available on your system
# and how to activate them. For more information, see interfaces(5).

source /etc/network/interfaces.d/*

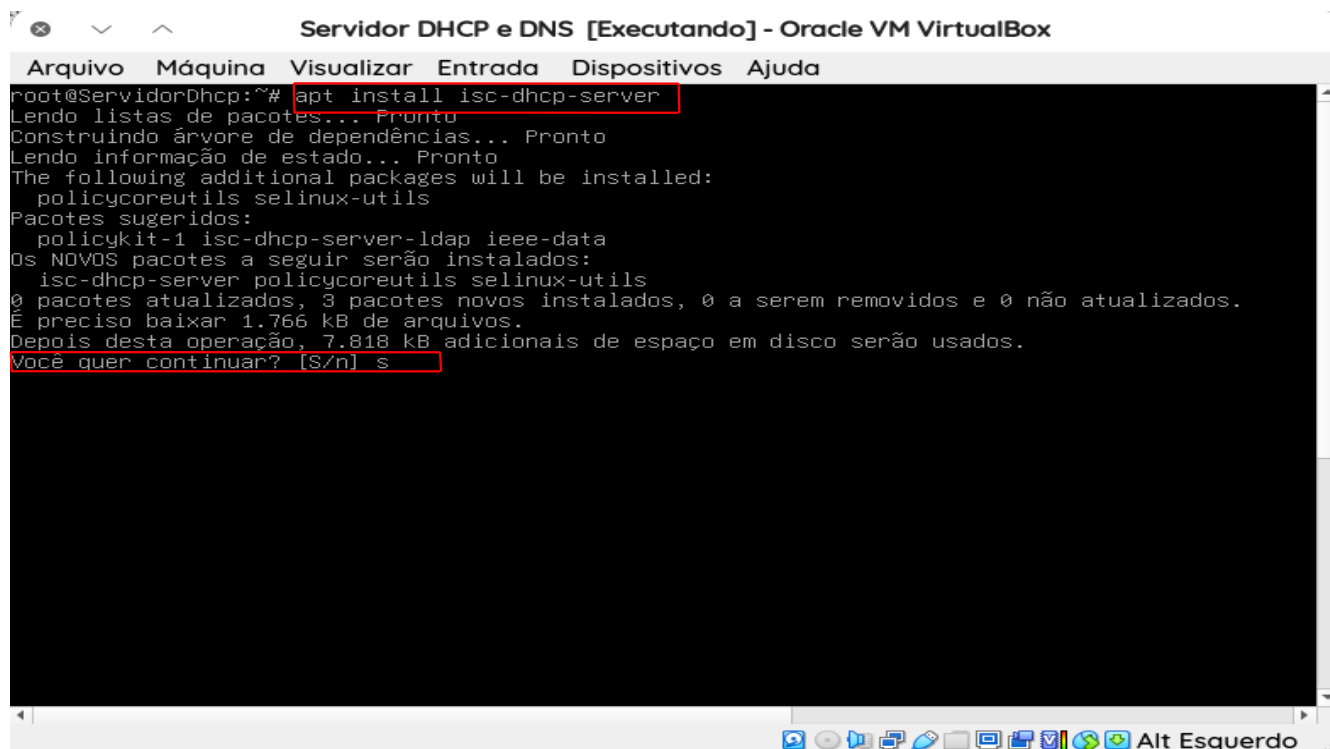
# The loopback network interface
auto lo
iface lo inet loopback

# The primary network interface
allow-hotplug enp0s3
iface enp0s3 inet dhcp

#Configuração da interface enp0s8 para rede interna
allow-hotplug enp0s8
iface enp0s8 inet static
    address 192.168.10.1
    netmask 255.255.255.0
```

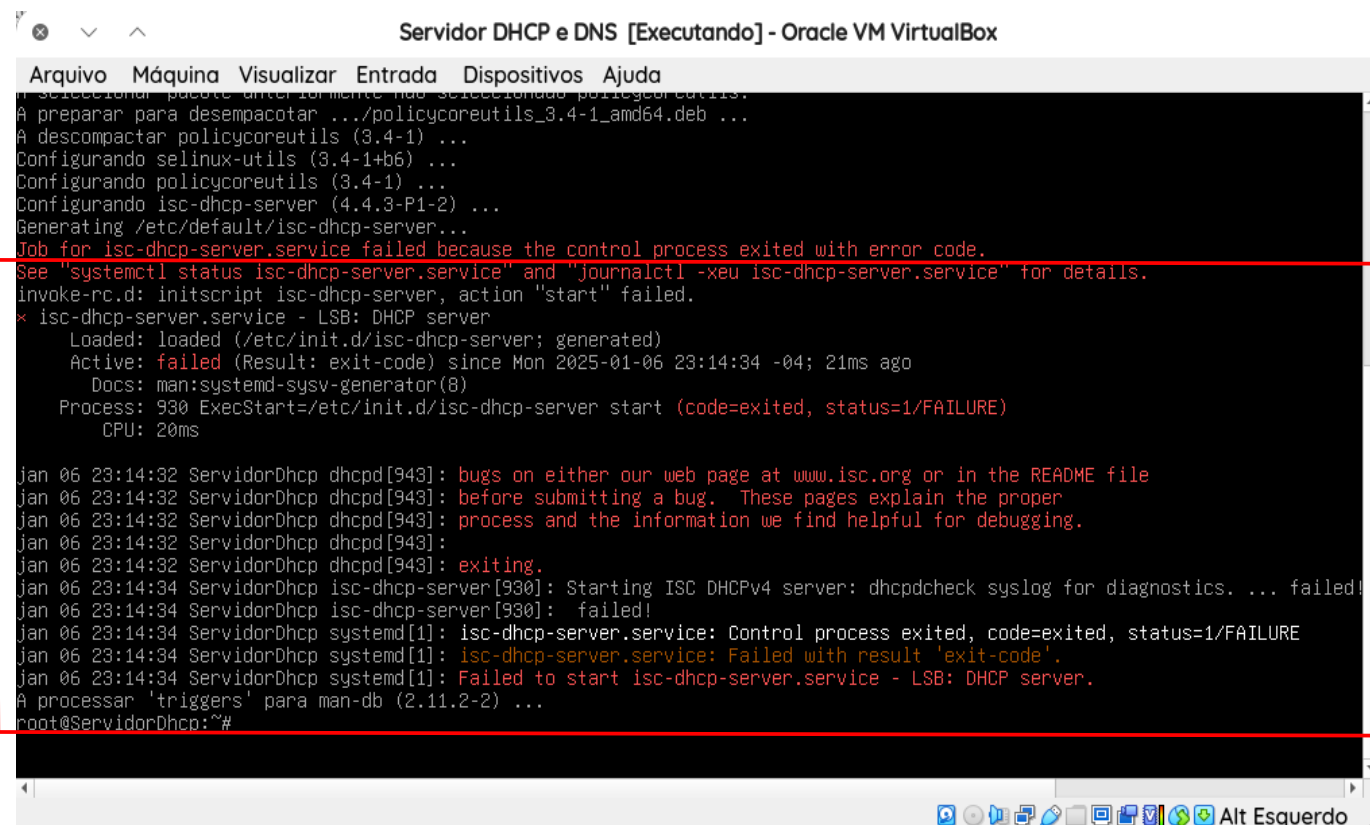
3º - Definir a interface "enp0s2" como DHCP .

5º ETAPA: Instalação e configuração do Servidor DHCP. A instalação será realizada com o comando: **apt install isc-dhcp-server**, digitar **s** e pressionar **enter**. Lembrando que para a realização do pacote, temos que está logado no servidor como usuário **root**.



```
root@ServidorDhcp:~# apt install isc-dhcp-server
Lendo listas de pacotes... Pronto
Construindo árvore de dependências... Pronto
Lendo informação de estado... Pronto
The following additional packages will be installed:
  policycoreutils selinux-utils
Pacotes sugeridos:
  policykit-1 isc-dhcp-server-ldap ieee-data
Os NOVOS pacotes a seguir serão instalados:
  isc-dhcp-server policycoreutils selinux-utils
0 pacotes atualizados, 3 pacotes novos instalados, 0 a serem removidos e 0 não atualizados.
É preciso baixar 1.766 kB de arquivos.
Depois desta operação, 7.818 kB adicionais de espaço em disco serão usados.
Você quer continuar? [S/n] s
```

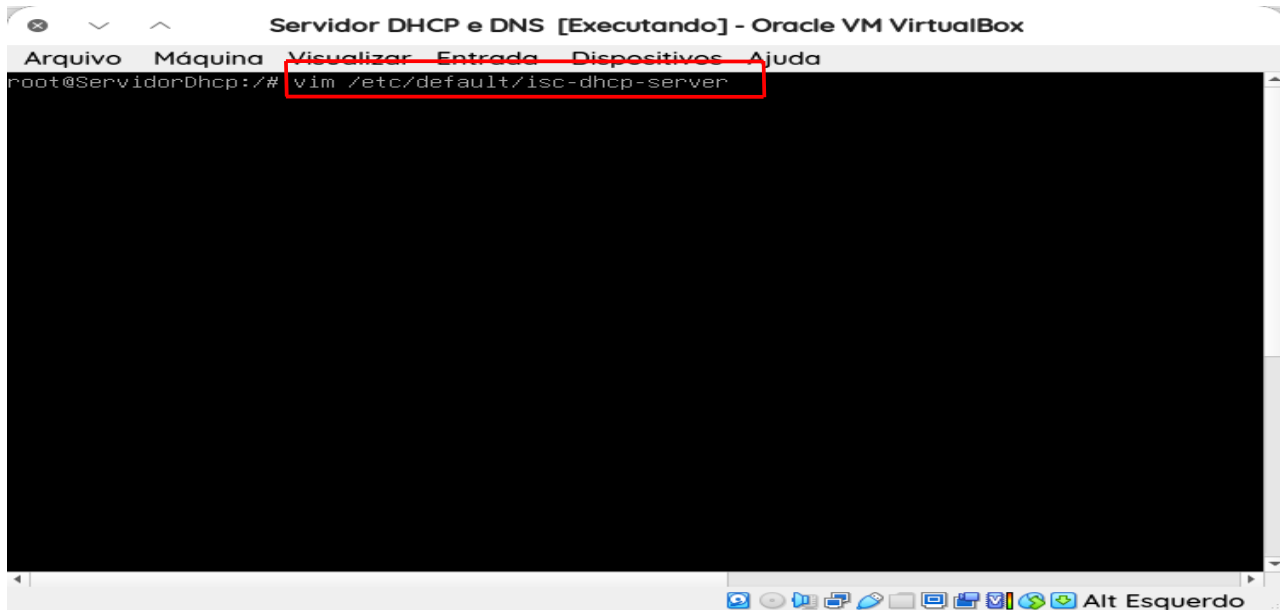
Após a instalação será apresentado um **ERRO** como mostra a imagem abaixo. Iremos realizar a correção na **6ª etapa**.



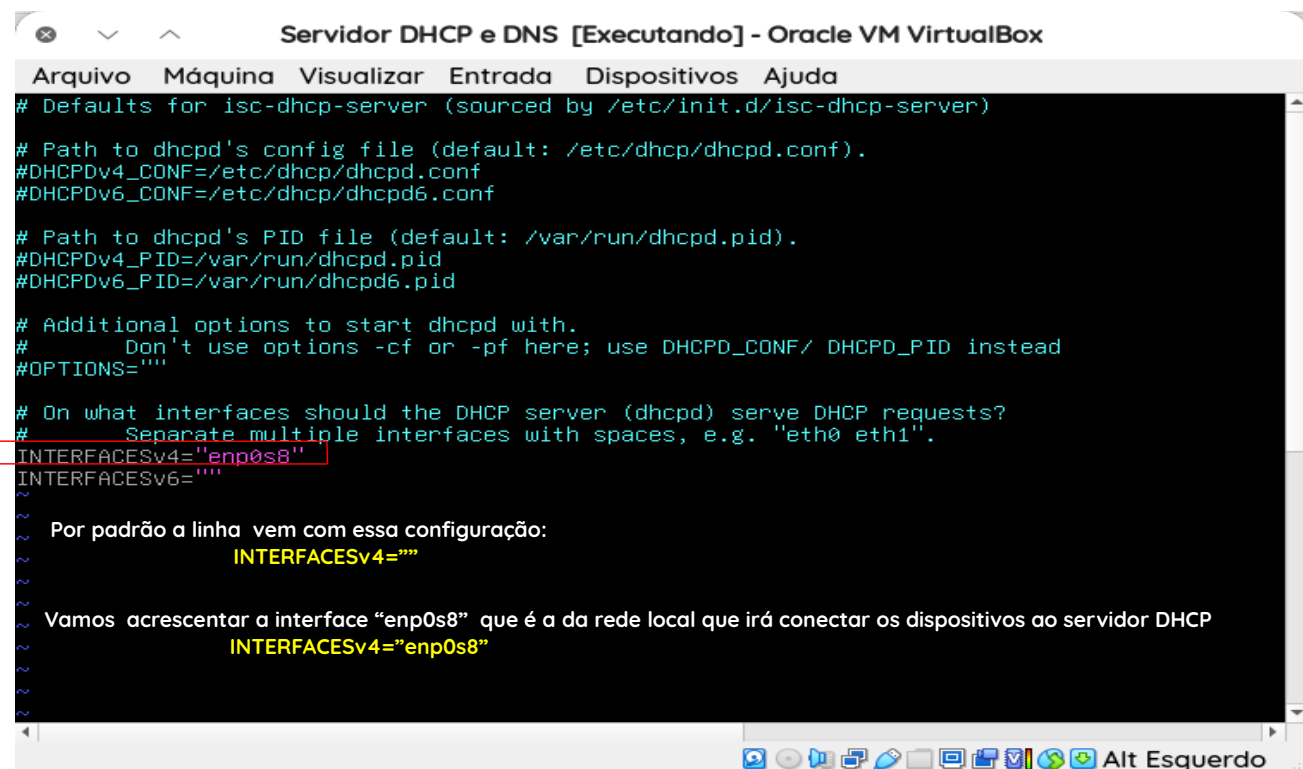
```
Selecionando pacote anteriormente não selecionado policycoreutils.
A preparar para desempacotar .../policycoreutils_3.4-1_amd64.deb ...
A descompactar policycoreutils (3.4-1) ...
Configurando selinux-utils (3.4-1+b6) ...
Configurando policycoreutils (3.4-1) ...
Configurando isc-dhcp-server (4.4.3-P1-2) ...
Generating /etc/default/isc-dhcp-server...
Job for isc-dhcp-server.service failed because the control process exited with error code.
See "systemctl status isc-dhcp-server.service" and "journalctl -xeu isc-dhcp-server.service" for details.
invoke-rc.d: initscript isc-dhcp-server, action "start" failed.
* isc-dhcp-server.service - LSB: DHCP server
   Loaded: loaded (/etc/init.d/isc-dhcp-server; generated)
   Active: failed (Result: exit-code) since Mon 2025-01-06 23:14:34 -04; 21ms ago
     Docs: man:systemd-sysv-generator(8)
  Process: 930 ExecStart=/etc/init.d/isc-dhcp-server start (code=exited, status=1/FAILURE)
    CPU: 20ms

Jan 06 23:14:32 ServidorDhcp dhcpd[943]: bugs on either our web page at www.isc.org or in the README file
Jan 06 23:14:32 ServidorDhcp dhcpd[943]: before submitting a bug. These pages explain the proper
Jan 06 23:14:32 ServidorDhcp dhcpd[943]: process and the information we find helpful for debugging.
Jan 06 23:14:32 ServidorDhcp dhcpd[943]: exiting.
Jan 06 23:14:34 ServidorDhcp isc-dhcp-server[930]: Starting ISC DHCPv4 server: dhcpdcheck syslog for diagnostics. ... failed!
Jan 06 23:14:34 ServidorDhcp isc-dhcp-server[930]: failed!
Jan 06 23:14:34 ServidorDhcp systemd[1]: isc-dhcp-server.service: Control process exited, code=exited, status=1/FAILURE
Jan 06 23:14:34 ServidorDhcp systemd[1]: isc-dhcp-server.service: Failed with result 'exit-code'.
Jan 06 23:14:34 ServidorDhcp systemd[1]: Failed to start isc-dhcp-server.service - LSB: DHCP server.
A processar 'triggers' para man-db (2.11.2-2) ...
root@ServidorDhcp:~#
```

6º ETAPA: Acessar o diretório `/etc/default/isc-dhcp-server` e realizar a seguinte alteração no arquivo:



```
root@ServidorDhcp:/# vim /etc/default/isc-dhcp-server
```



```
# Defaults for isc-dhcp-server (sourced by /etc/init.d/isc-dhcp-server)

# Path to dhcpd's config file (default: /etc/dhcp/dhcpd.conf).
#DHCPDv4_CONF=/etc/dhcp/dhcpd.conf
#DHCPDv6_CONF=/etc/dhcp/dhcpd6.conf

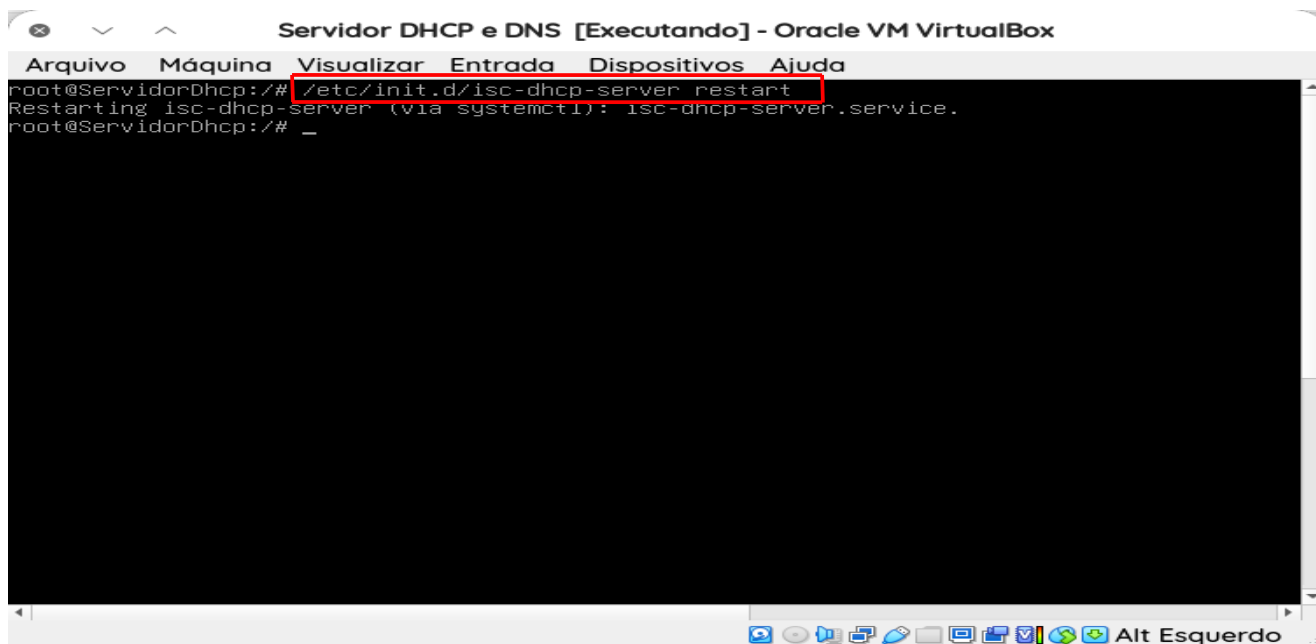
# Path to dhcpd's PID file (default: /var/run/dhcpd.pid).
#DHCPDv4_PID=/var/run/dhcpd.pid
#DHCPDv6_PID=/var/run/dhcpd6.pid

# Additional options to start dhcpd with.
# Don't use options -cf or -pf here; use DHCPD_CONF/ DHCPD_PID instead
#OPTIONS=""

# On what interfaces should the DHCP server (dhcpd) serve DHCP requests?
# Separate multiple interfaces with spaces, e.g. "eth0 eth1".
INTERFACESv4="enp0s8"
INTERFACESv6=""

~
~ Por padrão a linha vem com essa configuração:
~ INTERFACESv4=""
~
~ Vamos acrescentar a interface "enp0s8" que é a da rede local que irá conectar os dispositivos ao servidor DHCP
~ INTERFACESv4="enp0s8"
~
~
```

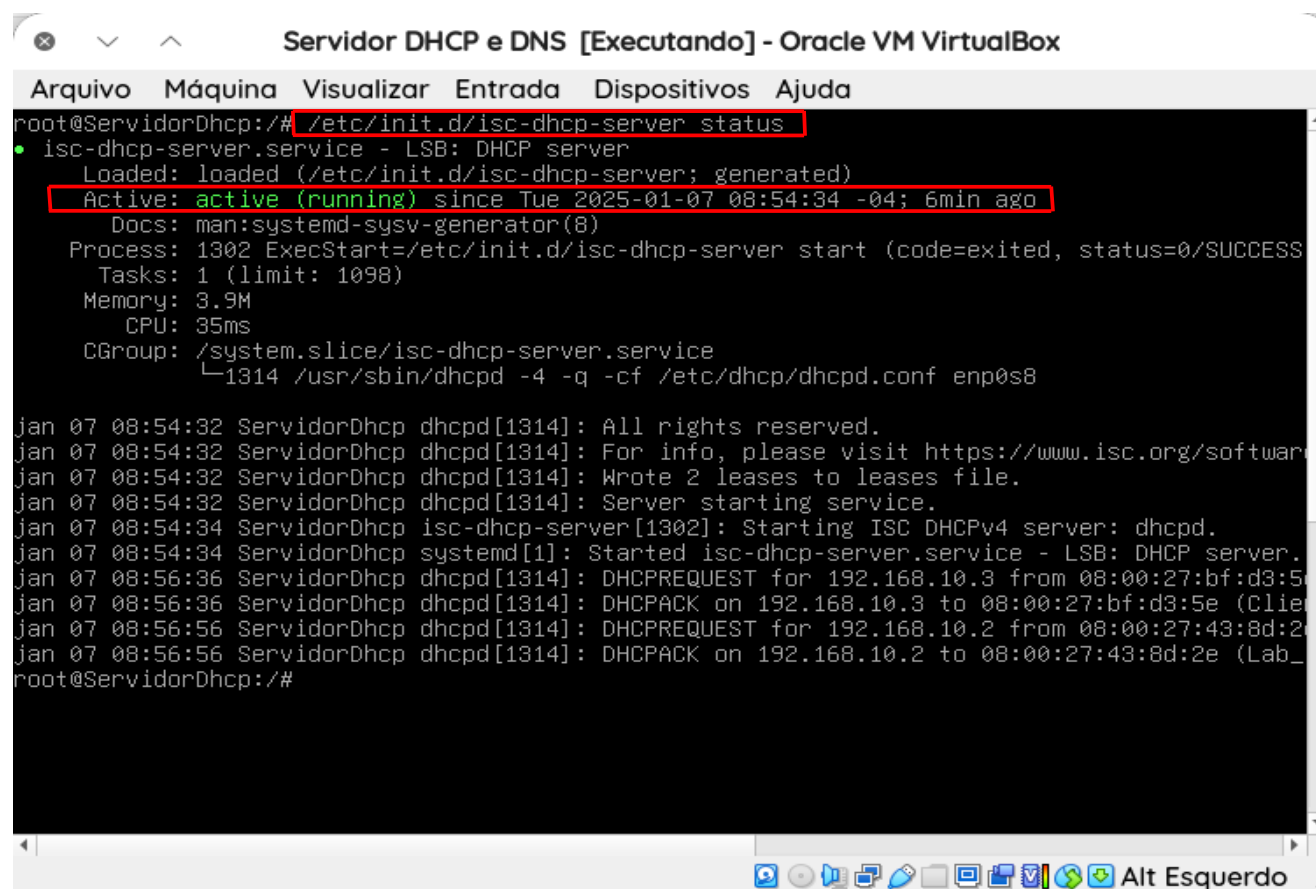
8ª ETAPA: Reiniciar o serviço do servidor DHCP com o comando `/etc/init.d/isc-dhcp-server restart`.



The screenshot shows a terminal window titled "Servidor DHCP e DNS [Executando] - Oracle VM VirtualBox". The terminal prompt is `root@ServidorDhcp:/#`. The command `/etc/init.d/isc-dhcp-server restart` has been entered and is highlighted with a red box. The output shows the service being restarted via systemctl.

```
root@ServidorDhcp:/# /etc/init.d/isc-dhcp-server restart
Restarting isc-dhcp-server (via systemctl): isc-dhcp-server.service.
root@ServidorDhcp:/# _
```

E em seguida verificar o status do serviço com o comando `/etc/init.d/isc-dhcp-server status`. E pronto, o serviço do servidor DHCP está ativo.

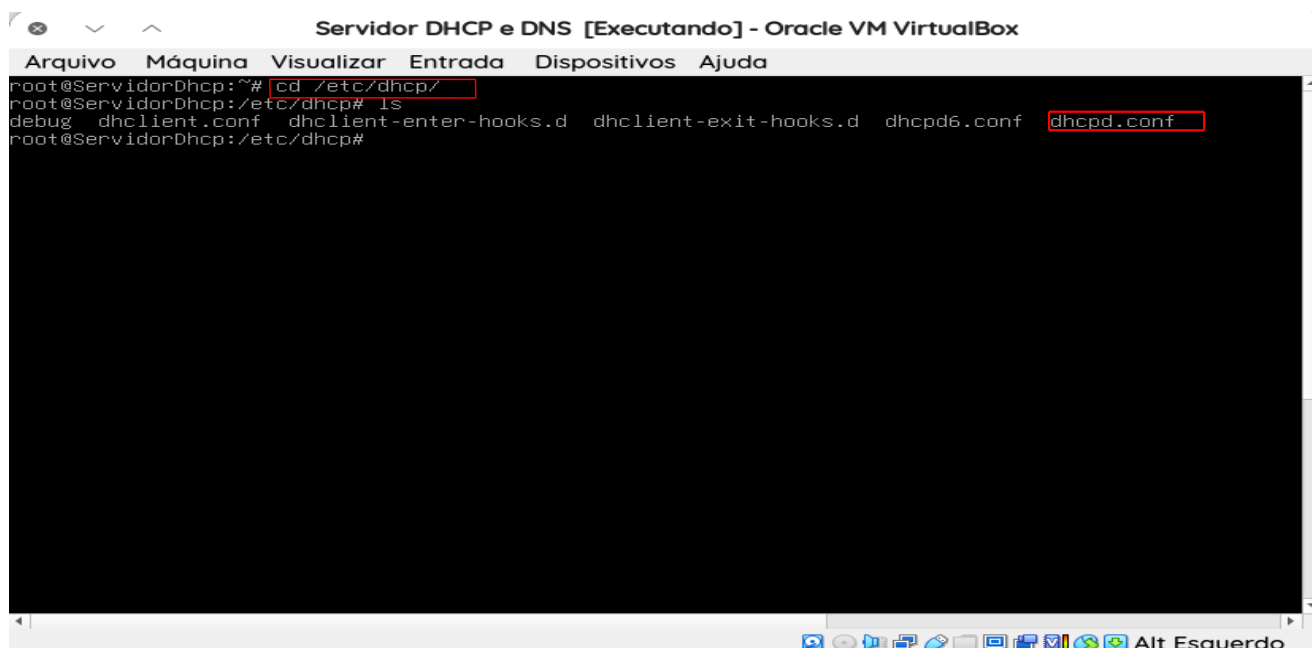


The screenshot shows the same terminal window with the command `/etc/init.d/isc-dhcp-server status` entered and highlighted with a red box. The output displays the service status as "active (running)" and provides detailed information about the service, including its configuration and recent log messages. The "Active" status is also highlighted with a red box.

```
root@ServidorDhcp:/# /etc/init.d/isc-dhcp-server status
• isc-dhcp-server.service - LSB: DHCP server
  Loaded: loaded (/etc/init.d/isc-dhcp-server; generated)
  Active: active (running) since Tue 2025-01-07 08:54:34 -04; 6min ago
    Docs: man:systemd-sysv-generator(8)
  Process: 1302 ExecStart=/etc/init.d/isc-dhcp-server start (code=exited, status=0/SUCCESS)
   Tasks: 1 (limit: 1098)
  Memory: 3.9M
    CPU: 35ms
  CGroup: /system.slice/isc-dhcp-server.service
          └─1314 /usr/sbin/dhcpd -4 -q -cf /etc/dhcp/dhcpd.conf enp0s8

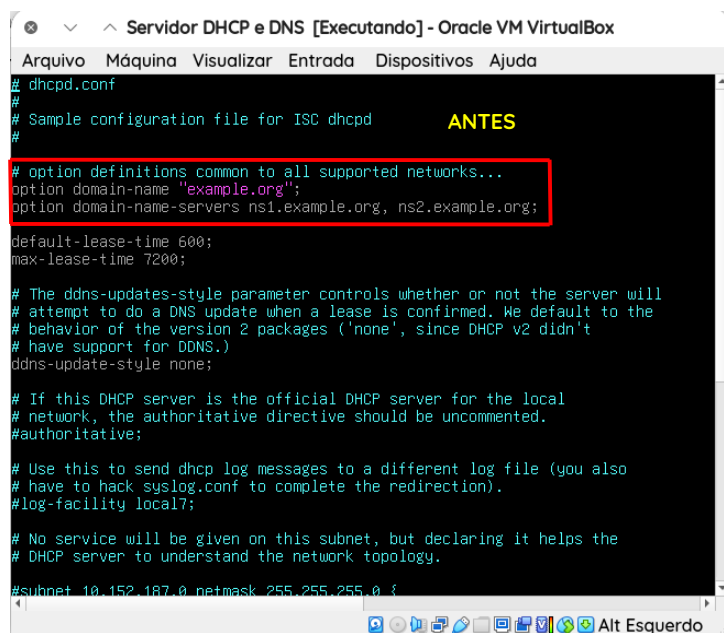
Jan 07 08:54:32 ServidorDhcp dhcpd[1314]: All rights reserved.
Jan 07 08:54:32 ServidorDhcp dhcpd[1314]: For info, please visit https://www.isc.org/software
Jan 07 08:54:32 ServidorDhcp dhcpd[1314]: Wrote 2 leases to leases file.
Jan 07 08:54:32 ServidorDhcp dhcpd[1314]: Server starting service.
Jan 07 08:54:34 ServidorDhcp isc-dhcp-server[1302]: Starting ISC DHCPv4 server: dhcpd.
Jan 07 08:54:34 ServidorDhcp systemd[1]: Started isc-dhcp-server.service - LSB: DHCP server.
Jan 07 08:56:36 ServidorDhcp dhcpd[1314]: DHCPREQUEST for 192.168.10.3 from 08:00:27:bf:d3:5e (Clie
Jan 07 08:56:36 ServidorDhcp dhcpd[1314]: DHCPACK on 192.168.10.3 to 08:00:27:bf:d3:5e (Clie
Jan 07 08:56:56 ServidorDhcp dhcpd[1314]: DHCPREQUEST for 192.168.10.2 from 08:00:27:43:8d:2e
Jan 07 08:56:56 ServidorDhcp dhcpd[1314]: DHCPACK on 192.168.10.2 to 08:00:27:43:8d:2e (Lab_
root@ServidorDhcp:/#
```

9º ETAPA: Entrar no diretório de arquivos do Servidor DHCP com o comando: **cd /etc/dhcp/** e realizar a configuração no arquivo **dhcpd.conf**.



```
Server DHCP e DNS [Executando] - Oracle VM VirtualBox
Arquivo  Máquina  Visualizar  Entrada  Dispositivos  Ajuda
root@ServidorDhcp:~# cd /etc/dhcp/
root@ServidorDhcp:/etc/dhcp# ls
debug  dhclient.conf  dhclient-enter-hooks.d  dhclient-exit-hooks.d  dhcpd6.conf  dhcpd.conf
root@ServidorDhcp:/etc/dhcp#
```

10º ETAPA: Editar o arquivo **dhcpd.conf** utilizando o editor de sua preferência, para esta configuração, utilizamos o vim. Realizar as seguintes alterações como mostra a figura abaixo.



```
Server DHCP e DNS [Executando] - Oracle VM VirtualBox
Arquivo  Máquina  Visualizar  Entrada  Dispositivos  Ajuda
# dhcpd.conf
#
# Sample configuration file for ISC dhcpd
#
# option definitions common to all supported networks...
option domain-name "example.org";
option domain-name-servers ns1.example.org, ns2.example.org;

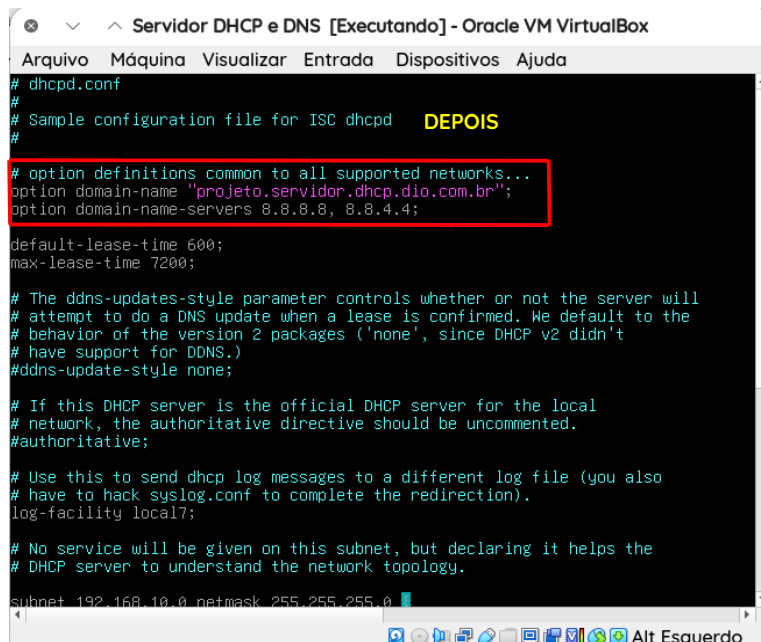
default-lease-time 600;
max-lease-time 7200;

# The ddns-updates-style parameter controls whether or not the server will
# attempt to do a DNS update when a lease is confirmed. We default to the
# behavior of the version 2 packages ('none', since DHCP v2 didn't
# have support for DDNS.)
ddns-update-style none;

# If this DHCP server is the official DHCP server for the local
# network, the authoritative directive should be uncommented.
#authoritative;

# Use this to send dhcp log messages to a different log file (you also
# have to hack syslog.conf to complete the redirection).
log-facility local7;

# No service will be given on this subnet, but declaring it helps the
# DHCP server to understand the network topology.
#subnet 10.152.187.0 netmask 255.255.255.0 {
```



```
Server DHCP e DNS [Executando] - Oracle VM VirtualBox
Arquivo  Máquina  Visualizar  Entrada  Dispositivos  Ajuda
# dhcpd.conf
#
# Sample configuration file for ISC dhcpd
#
# option definitions common to all supported networks...
option domain-name "projeto.servidor.dhcp.dio.com.br";
option domain-name-servers 8.8.8.8, 8.8.4.4;

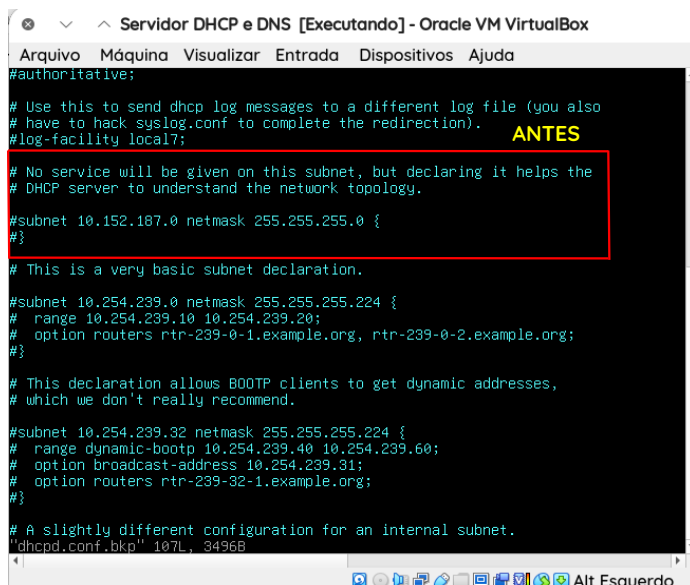
default-lease-time 600;
max-lease-time 7200;

# The ddns-updates-style parameter controls whether or not the server will
# attempt to do a DNS update when a lease is confirmed. We default to the
# behavior of the version 2 packages ('none', since DHCP v2 didn't
# have support for DDNS.)
ddns-update-style none;

# If this DHCP server is the official DHCP server for the local
# network, the authoritative directive should be uncommented.
#authoritative;

# Use this to send dhcp log messages to a different log file (you also
# have to hack syslog.conf to complete the redirection).
log-facility local7;

# No service will be given on this subnet, but declaring it helps the
# DHCP server to understand the network topology.
subnet 192.168.10.0 netmask 255.255.255.0 {
```



```
#authoritative;

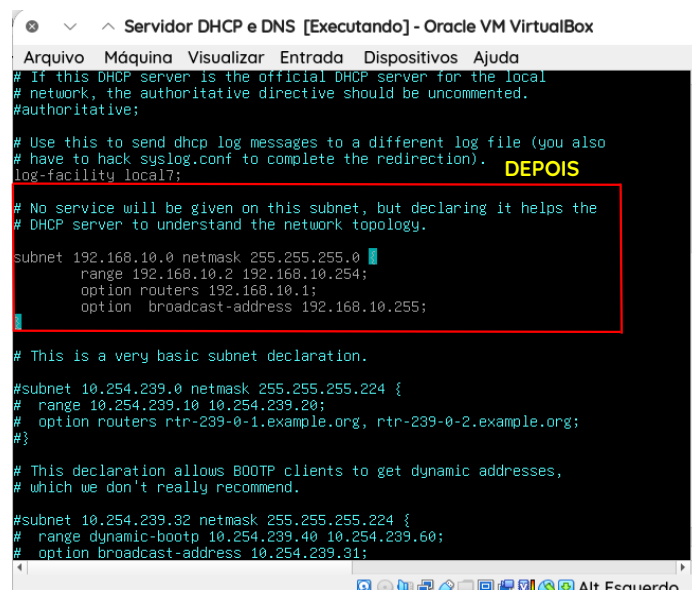
# Use this to send dhcp log messages to a different log file (you also
# have to hack syslog.conf to complete the redirection).
#log-facility local7;

# No service will be given on this subnet, but declaring it helps the
# DHCP server to understand the network topology.
#
# This is a very basic subnet declaration.
#
#subnet 10.152.187.0 netmask 255.255.255.0 {
#}

# This declaration allows BOOTP clients to get dynamic addresses,
# which we don't really recommend.
#
#subnet 10.254.239.0 netmask 255.255.255.224 {
# range 10.254.239.10 10.254.239.20;
# option routers rtr-239-0-1.example.org, rtr-239-0-2.example.org;
#}

# This declaration allows BOOTP clients to get dynamic addresses,
# which we don't really recommend.
#
#subnet 10.254.239.32 netmask 255.255.255.224 {
# range dynamic-bootp 10.254.239.40 10.254.239.60;
# option broadcast-address 10.254.239.31;
# option routers rtr-239-32-1.example.org;
#}

# A slightly different configuration for an internal subnet.
"dhcpd.conf.bkp" 107L, 3496B
```



```
# If this DHCP server is the official DHCP server for the local
# network, the authoritative directive should be uncommented.
#authoritative;

# Use this to send dhcp log messages to a different log file (you also
# have to hack syslog.conf to complete the redirection).
#log-facility local7;

# No service will be given on this subnet, but declaring it helps the
# DHCP server to understand the network topology.
#
# This is a very basic subnet declaration.
#
# If this DHCP server is the official DHCP server for the local
# network, the authoritative directive should be uncommented.
#authoritative;

# Use this to send dhcp log messages to a different log file (you also
# have to hack syslog.conf to complete the redirection).
#log-facility local7;

# No service will be given on this subnet, but declaring it helps the
# DHCP server to understand the network topology.
#
# This is a very basic subnet declaration.
#
#subnet 10.254.239.0 netmask 255.255.255.224 {
# range 10.254.239.10 10.254.239.20;
# option routers rtr-239-0-1.example.org, rtr-239-0-2.example.org;
#}

# This declaration allows BOOTP clients to get dynamic addresses,
# which we don't really recommend.
#
#subnet 10.254.239.32 netmask 255.255.255.224 {
# range dynamic-bootp 10.254.239.40 10.254.239.60;
# option broadcast-address 10.254.239.31;
# option routers rtr-239-32-1.example.org;
#}

# A slightly different configuration for an internal subnet.
"dhcpd.conf.bkp" 107L, 3496B
```

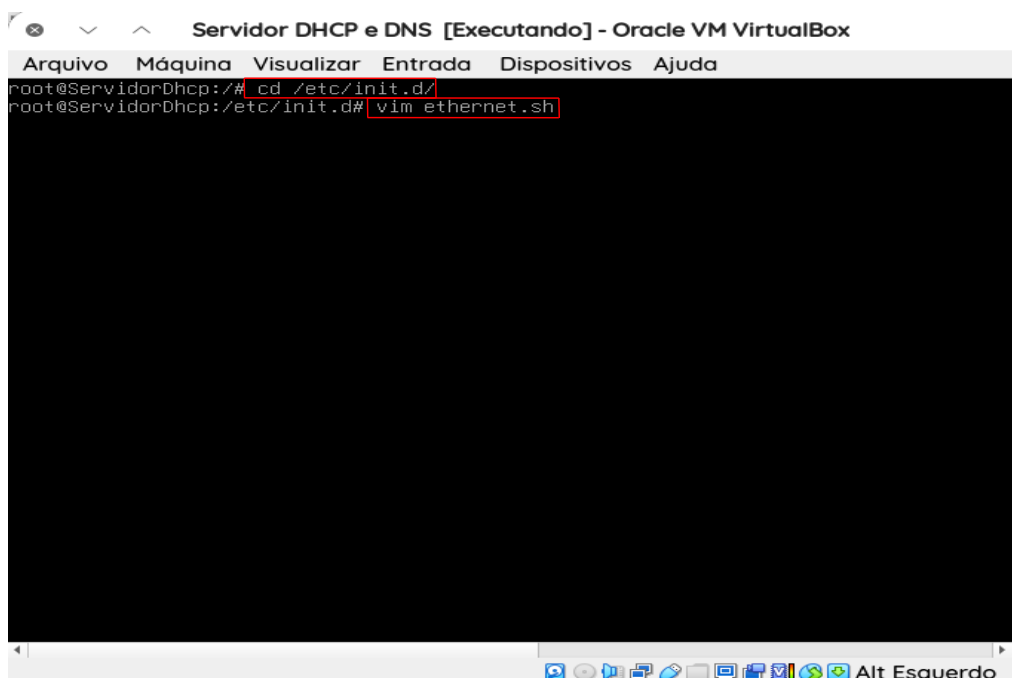
Após realizar a configuração, **salva** e **sair** e logo em seguida reiniciar o serviço do servidor DHCP com o comando **/etc/init.d/isc-dhcp-server restart**.

11ª ETAPA - : Desenvolver um script simples para ativar o serviço de encaminhamento de pacote para que todos os dispositivos conectados ao servidor DHCP tenha acesso a internet.

O script irá iniciar de forma automática junto com a inicialização do sistema operacional.

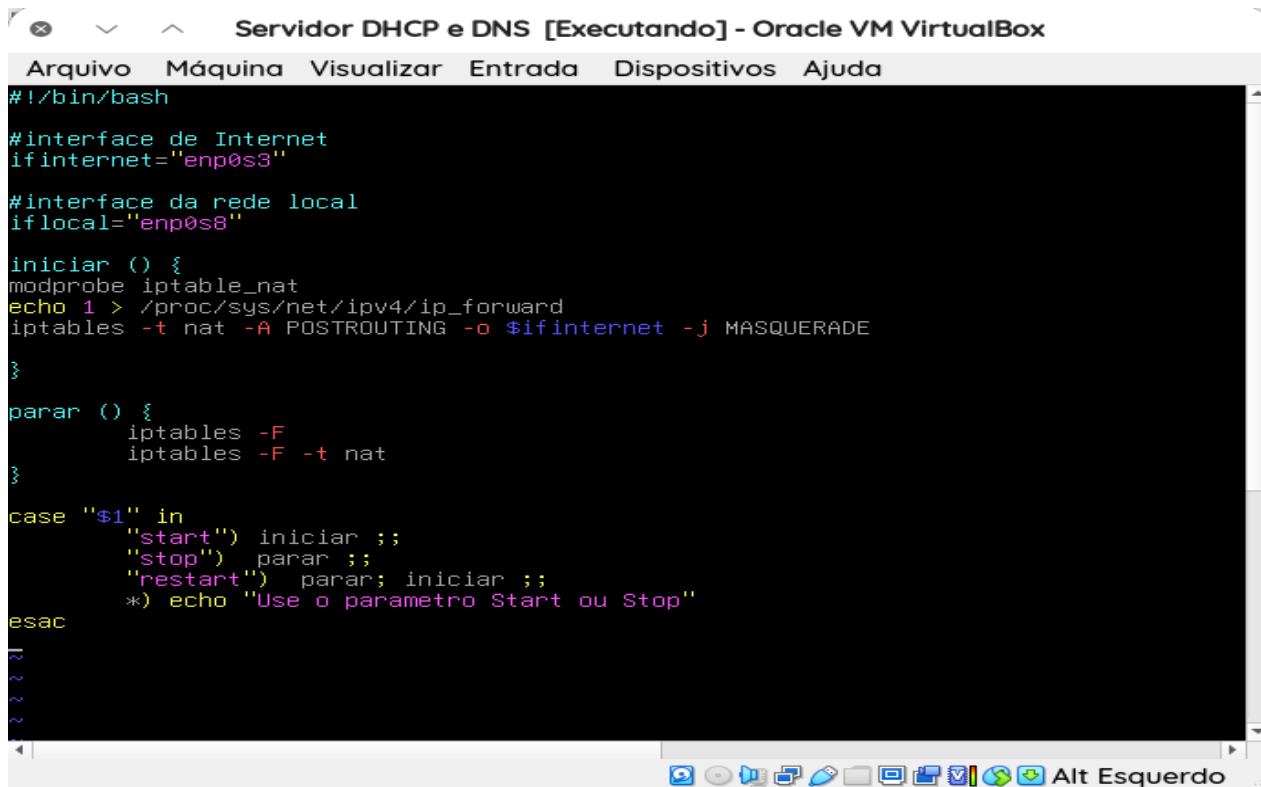
1º - Entra no diretório: **/etc/init.d/**

2º - Criar o script **ethernet.sh** com o editor de texto vim.



```
root@ServidorDhcp:~# cd /etc/init.d/
root@ServidorDhcp:/etc/init.d# vim ethernet.sh
```


3º - Desenvolver o script como mostra a figura abaixo, **salvar** e **sair**.



```
#!/bin/bash

#interface de Internet
ifinternet="enp0s3"

#interface da rede local
iflocal="enp0s8"

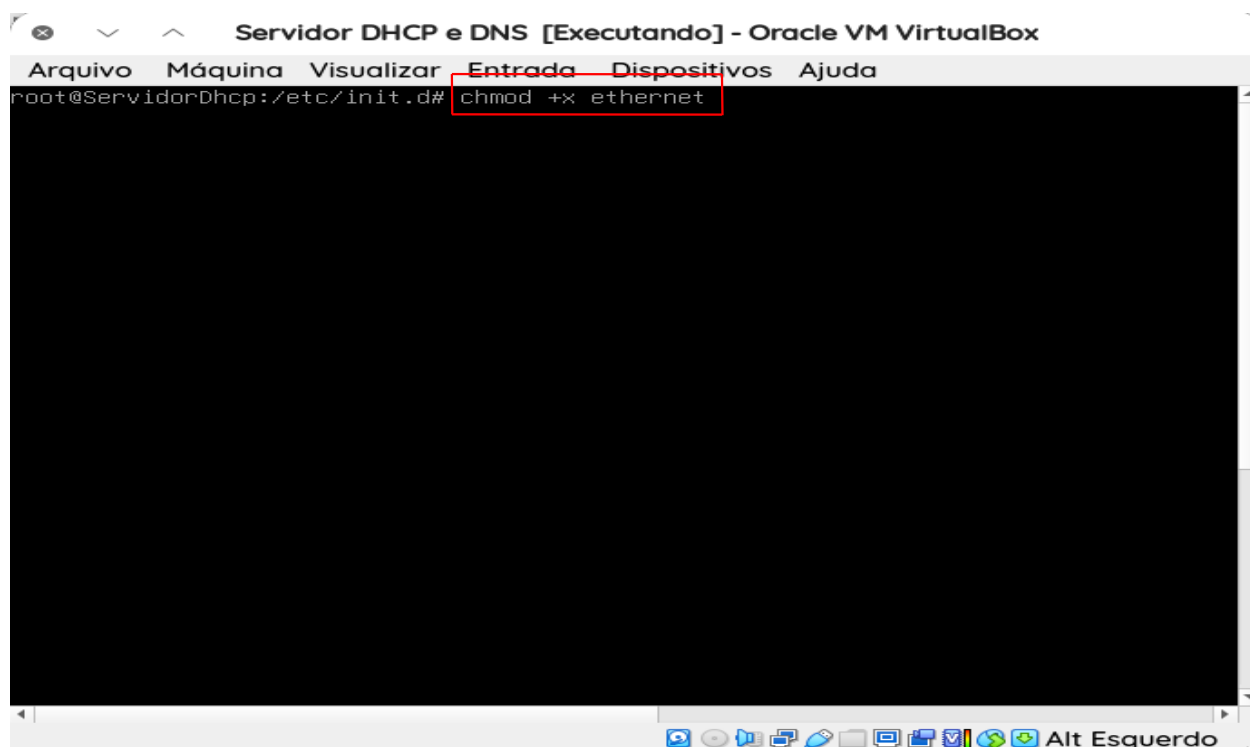
iniciar () {
modprobe iptable_nat
echo 1 > /proc/sys/net/ipv4/ip_forward
iptables -t nat -A POSTROUTING -o $ifinternet -j MASQUERADE
}

parar () {
iptables -F
iptables -F -t nat
}

case "$1" in
"start") iniciar ;;
"stop") parar ;;
"restart") parar; iniciar ;;
*) echo "Use o parametro Start ou Stop"
esac

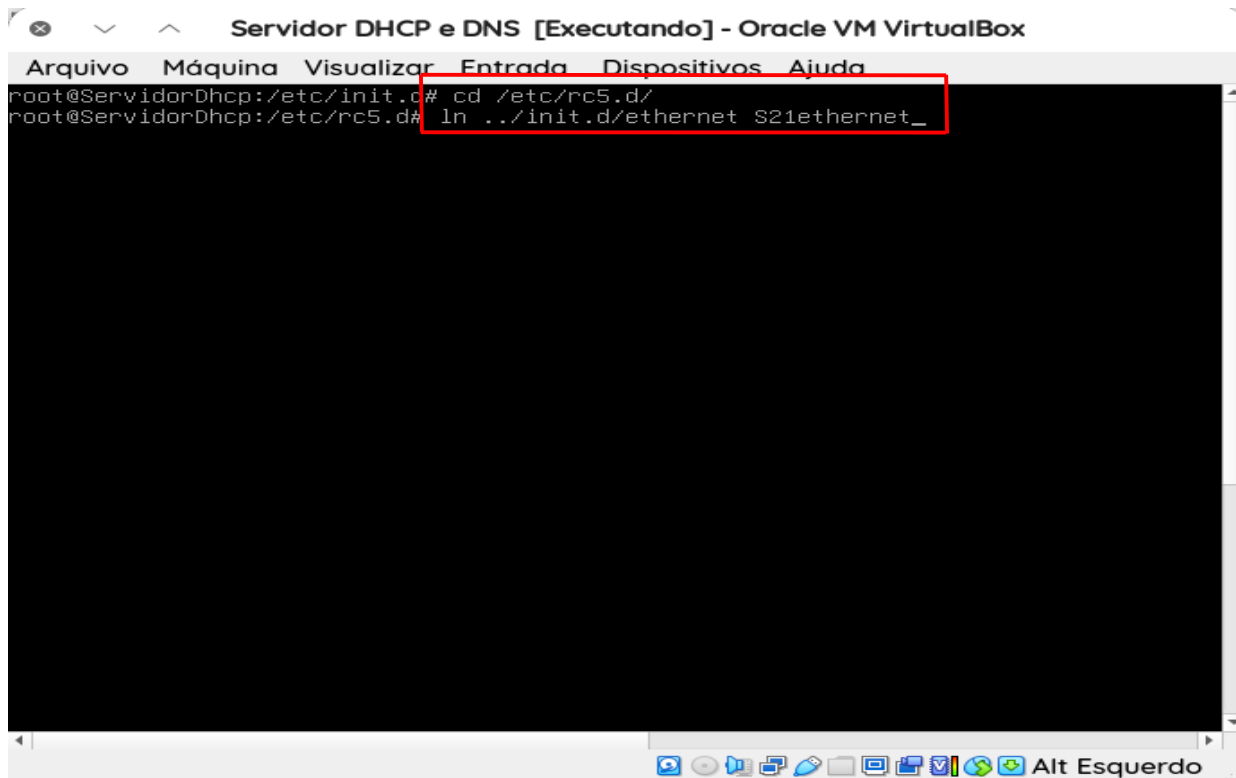
~
~
~
```

4º - Dar permissão de execução para o script com o comando: **chmod +x ethernet.sh**



```
Servidor DHCP e DNS [Executando] - Oracle VM VirtualBox
Arquivo  Máquina  Visualizar  Entrada  Dispositivos  Ajuda
root@ServidorDhcp:/etc/init.d# chmod +x ethernet.sh
```

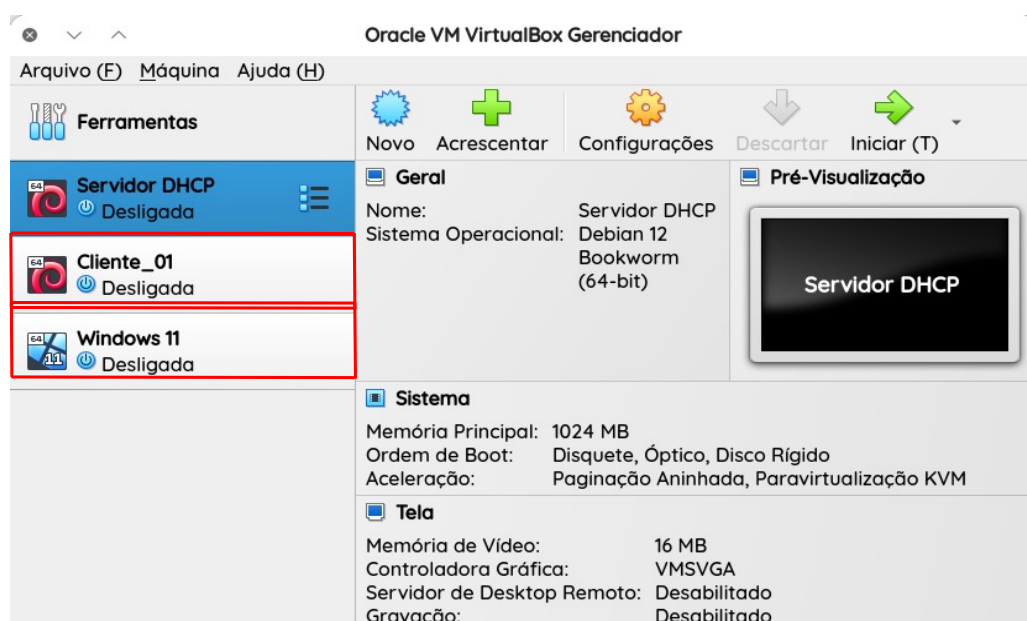
5º - Entrar no diretório **/etc/rc5.d** para criar um link simbólico do script para iniciar automaticamente na inicialização do sistema operacional. Para criar o link simbólico vamos digitar o comando: **ln -s ../init.d/ethernet S21ethernet** e logo após reiniciar o servidor.

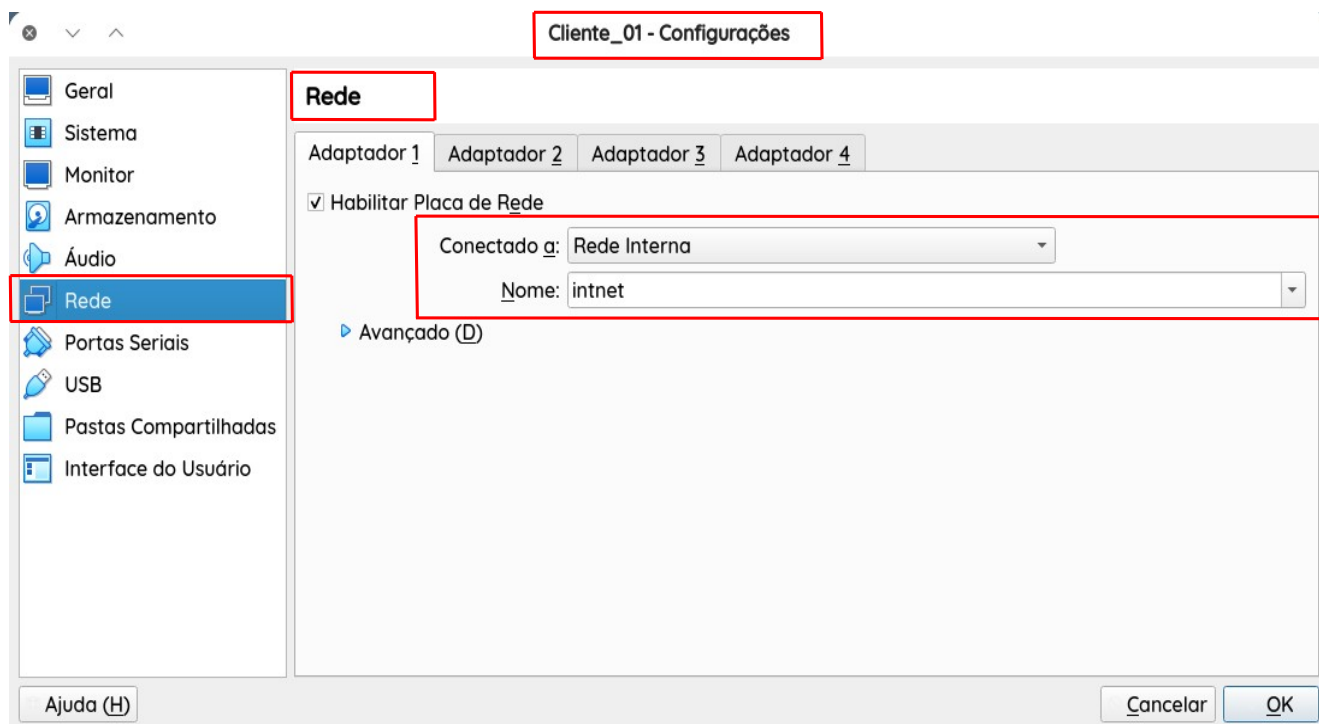


```
root@ServidorDhcp:/etc/init.d# cd /etc/rc5.d/
root@ServidorDhcp:/etc/rc5.d# ln -s ../init.d/ethernet S21ethernet_
```

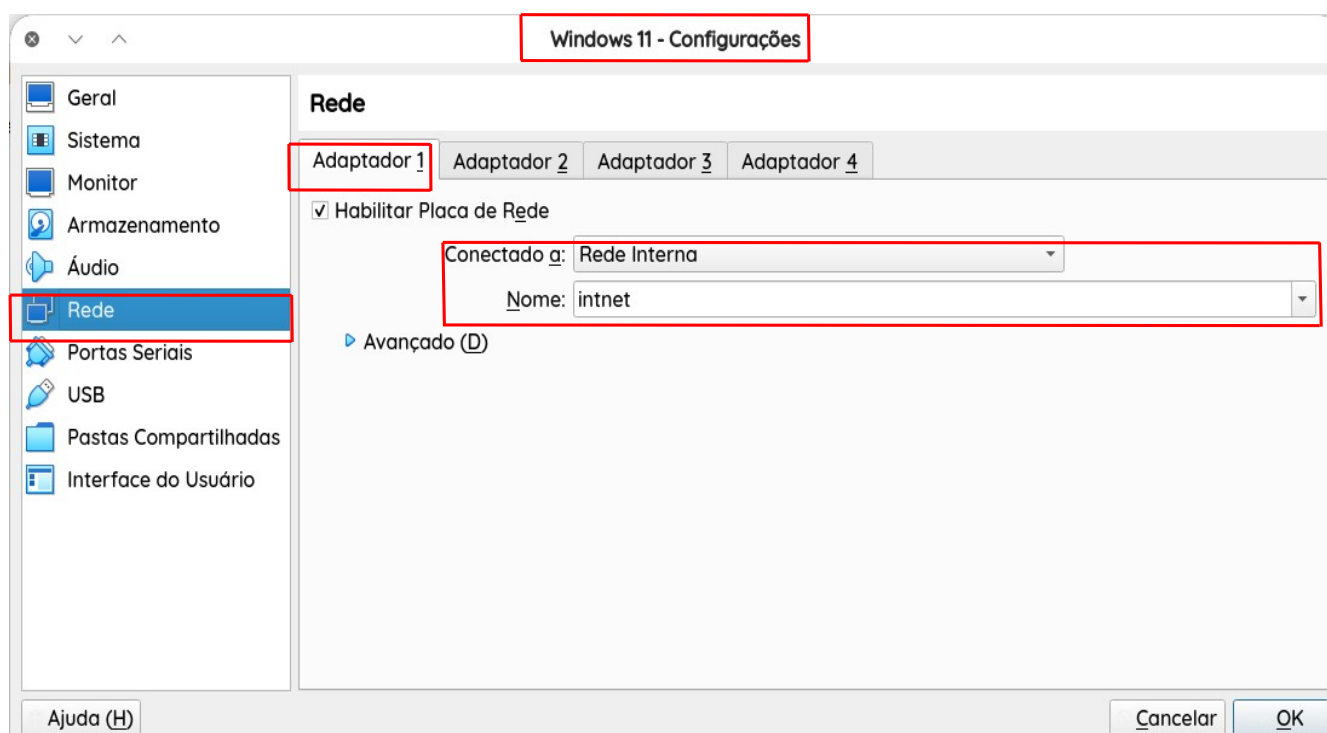
11º ETAPA - FINAL: Realizar o teste do servidor DHCP utilizando dois dispositivos que irão se conectar com a rede interna do servidor.

1º - Selecionar os dois dispositivos que irão se conectar ao servidor, um com o sistema operacional **Windows 11** e outro **Cliente_01** com o Debian 12 (modo texto).



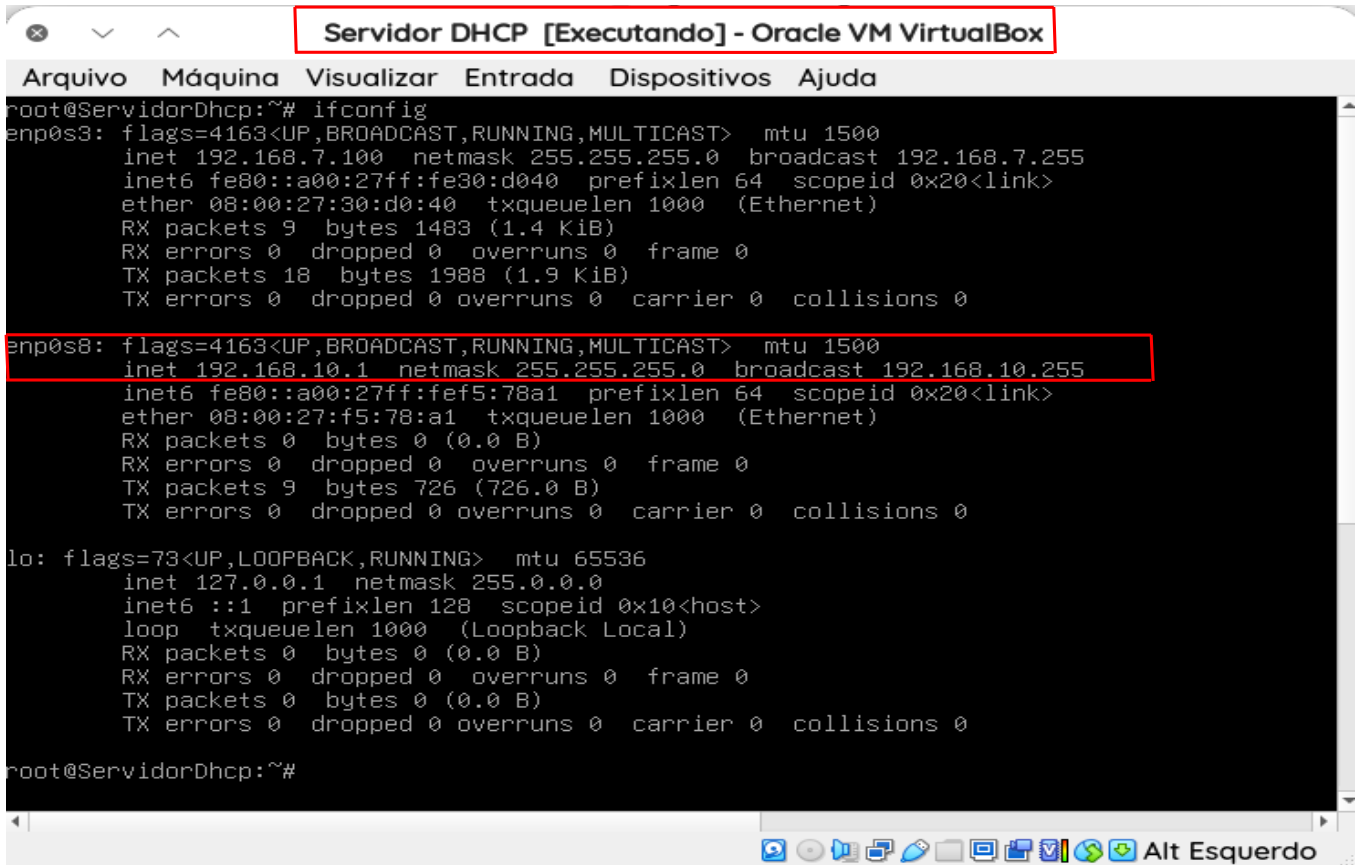


2º - Configurar a interface de rede para **rede interna** dos dois dispositivos para se conectar ao servidor.



3º - Ligar o Servidor **DHCP**, **Cliente_01** e o **Windows11** e exibir que todos estão conectados ao servidor e com internet disponível.

Servidor Ligado, e como mostra a figura, a rede interna está com o **IP: 192.168.10.1** que é o gateway do servidor dhcp.



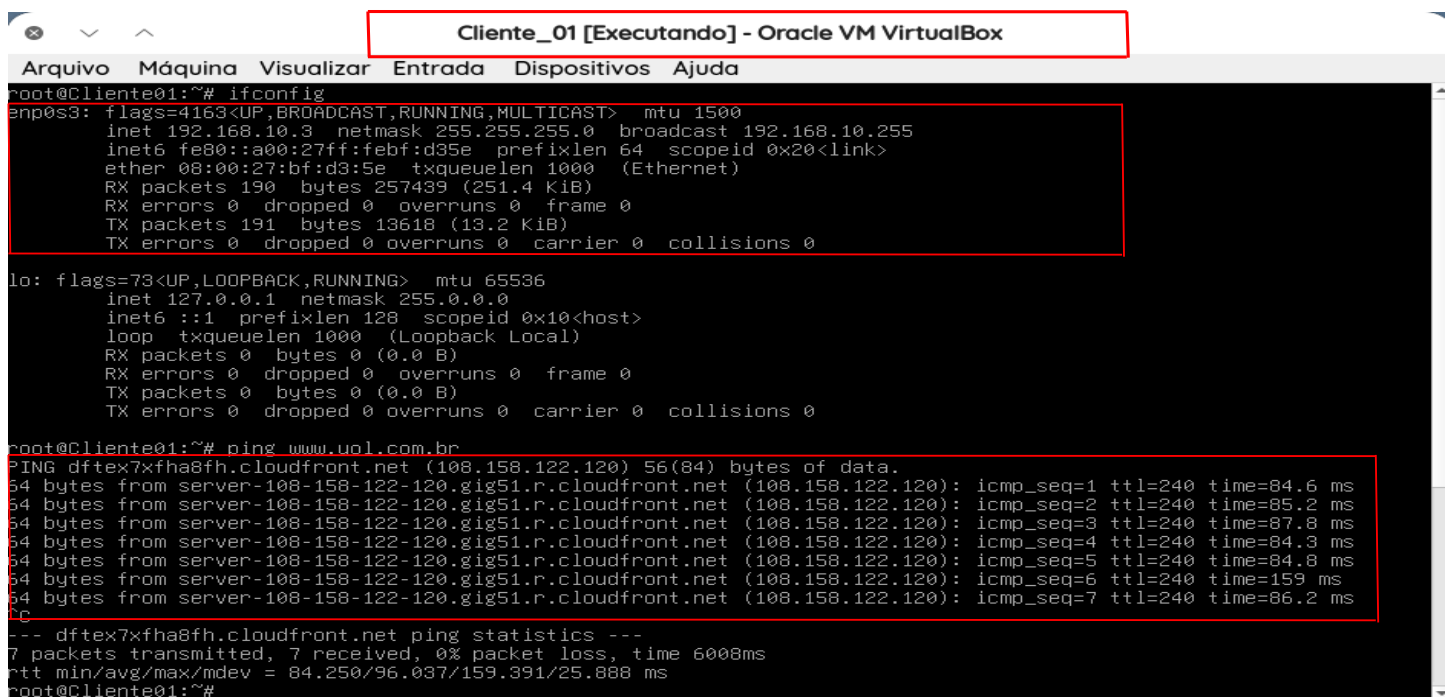
```
root@ServidorDhcp:~# ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.7.100 netmask 255.255.255.0 broadcast 192.168.7.255
    inet6 fe80::a00:27ff:fe30:d040 prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:30:d0:40 txqueuelen 1000 (Ethernet)
    RX packets 9 bytes 1483 (1.4 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 18 bytes 1988 (1.9 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

enp0s8: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.10.1 netmask 255.255.255.0 broadcast 192.168.10.255
    inet6 fe80::a00:27ff:fe5:78a1 prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:f5:78:a1 txqueuelen 1000 (Ethernet)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 9 bytes 726 (726.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Loopback Local)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

root@ServidorDhcp:~#
```

Cliente_01 Ligado, e como mostra a figura, recebendo o **IP: 192.168.10.3** do servidor DHCP e com acesso a internet.

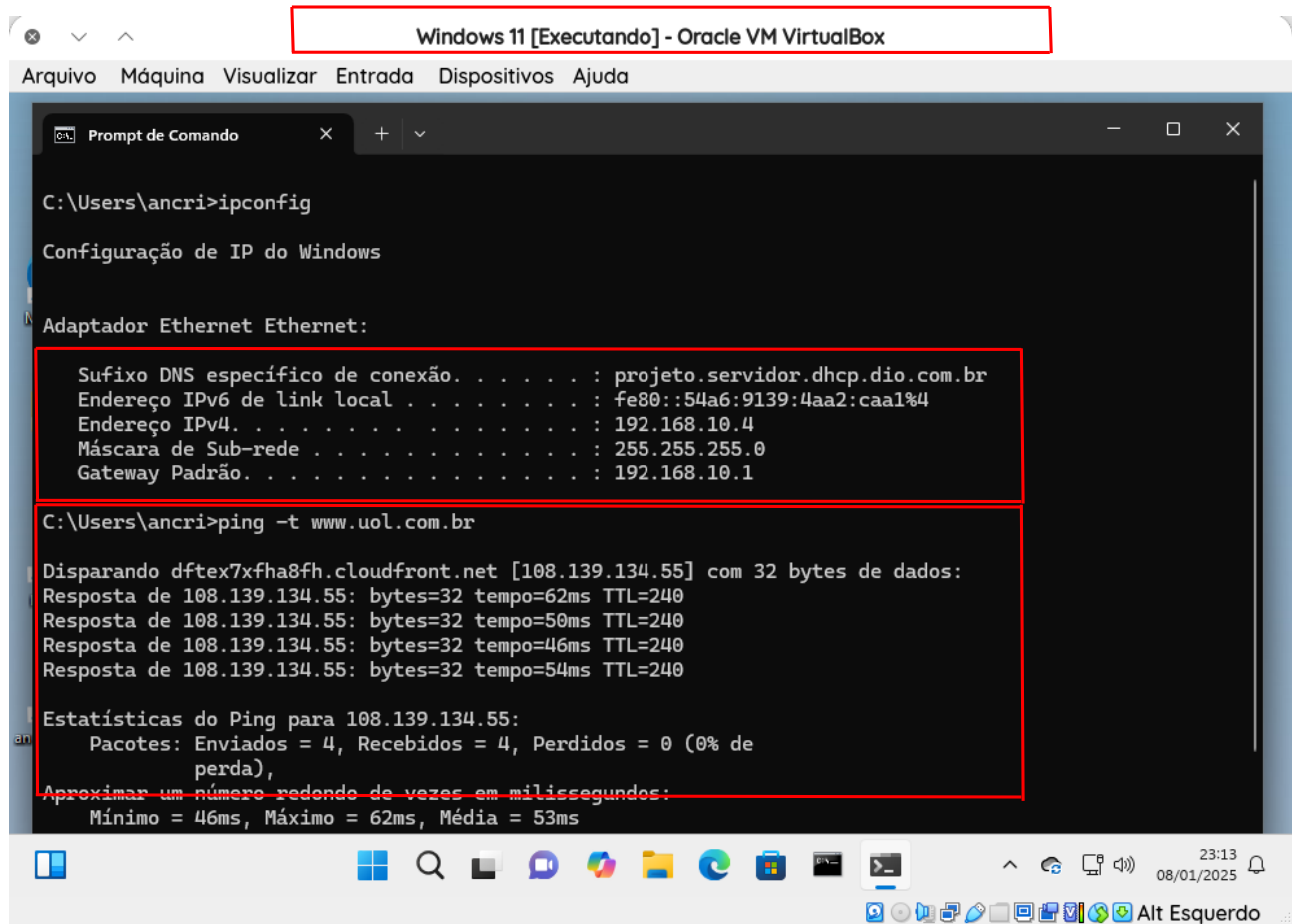


```
root@Cliente01:~# ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.10.3 netmask 255.255.255.0 broadcast 192.168.10.255
    inet6 fe80::a00:27ff:febf:d35e prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:bf:d3:5e txqueuelen 1000 (Ethernet)
    RX packets 190 bytes 257439 (251.4 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 191 bytes 13618 (13.2 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Loopback Local)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

root@Cliente01:~# ping www.uol.com.br
PING dftex7xfha8fh.cloudfront.net (108.158.122.120) 56(84) bytes of data.
64 bytes from server-108-158-122-120.gig51.r.cloudfront.net (108.158.122.120): icmp_seq=1 ttl=240 time=84.6 ms
64 bytes from server-108-158-122-120.gig51.r.cloudfront.net (108.158.122.120): icmp_seq=2 ttl=240 time=85.2 ms
64 bytes from server-108-158-122-120.gig51.r.cloudfront.net (108.158.122.120): icmp_seq=3 ttl=240 time=87.8 ms
64 bytes from server-108-158-122-120.gig51.r.cloudfront.net (108.158.122.120): icmp_seq=4 ttl=240 time=84.3 ms
64 bytes from server-108-158-122-120.gig51.r.cloudfront.net (108.158.122.120): icmp_seq=5 ttl=240 time=84.8 ms
64 bytes from server-108-158-122-120.gig51.r.cloudfront.net (108.158.122.120): icmp_seq=6 ttl=240 time=159 ms
64 bytes from server-108-158-122-120.gig51.r.cloudfront.net (108.158.122.120): icmp_seq=7 ttl=240 time=86.2 ms
^C
--- dftex7xfha8fh.cloudfront.net ping statistics ---
7 packets transmitted, 7 received, 0% packet loss, time 6008ms
rtt min/avg/max/mdev = 84.250/96.037/159.391/25.888 ms
root@Cliente01:~#
```

Windows 11 Ligado, e como mostra a figura, recebendo o **IP: 192.168.10.4** do servidor DHCP e com acesso a internet.



```
C:\Users\ancri>ipconfig

Configuração de IP do Windows

Adaptador Ethernet Ethernet:

    Sufixo DNS específico de conexão. . . . . : projeto.servidor.dhcp.dio.com.br
    Endereço IPv6 de link local . . . . . : fe80::54a6:9139:4aa2:caal%4
    Endereço IPv4. . . . . : 192.168.10.4
    Máscara de Sub-rede . . . . . : 255.255.255.0
    Gateway Padrão. . . . . : 192.168.10.1

C:\Users\ancri>ping -t www.uol.com.br

Disparando dftex7xfha8fh.cloudfront.net [108.139.134.55] com 32 bytes de dados:
Resposta de 108.139.134.55: bytes=32 tempo=62ms TTL=240
Resposta de 108.139.134.55: bytes=32 tempo=50ms TTL=240
Resposta de 108.139.134.55: bytes=32 tempo=46ms TTL=240
Resposta de 108.139.134.55: bytes=32 tempo=54ms TTL=240

Estatísticas do Ping para 108.139.134.55:
    Pacotes: Enviados = 4, Recebidos = 4, Perdidos = 0 (0% de perda),
    Aproximar um número redondo de vezes em milissegundos:
    Mínimo = 46ms, Máximo = 62ms, Média = 53ms
```