

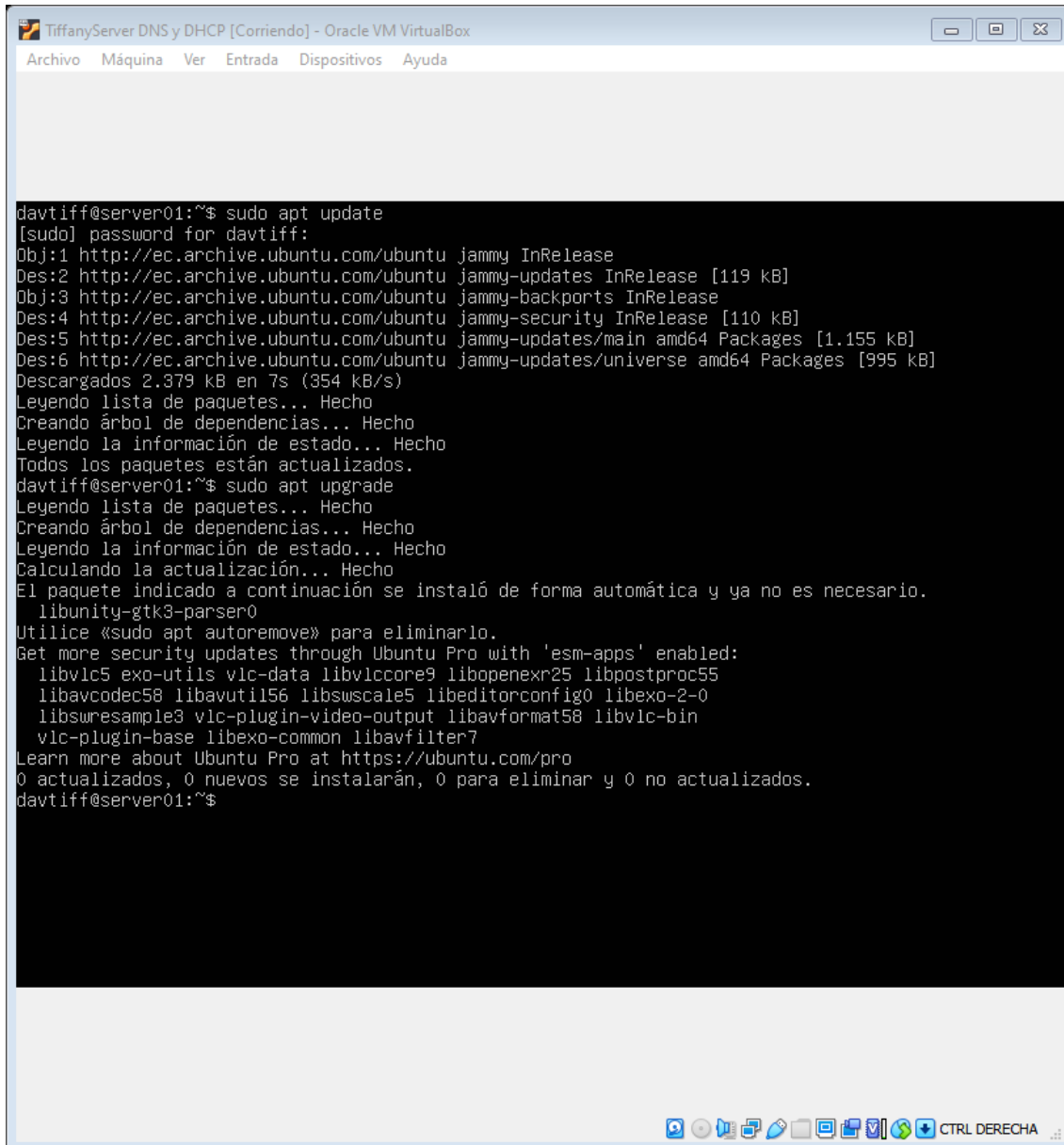
Nombre: Tiffany Andrea Jordán Uquillas

## Taller: Servidor DNS y DHCP

- Previamente se debe configurar al server como un router server, para poder hacer la configuración del DNS.

### Configuración DHCP

- Actualizamos el server con *sudo apt-get update* y *sudo apt-get upgrade*.

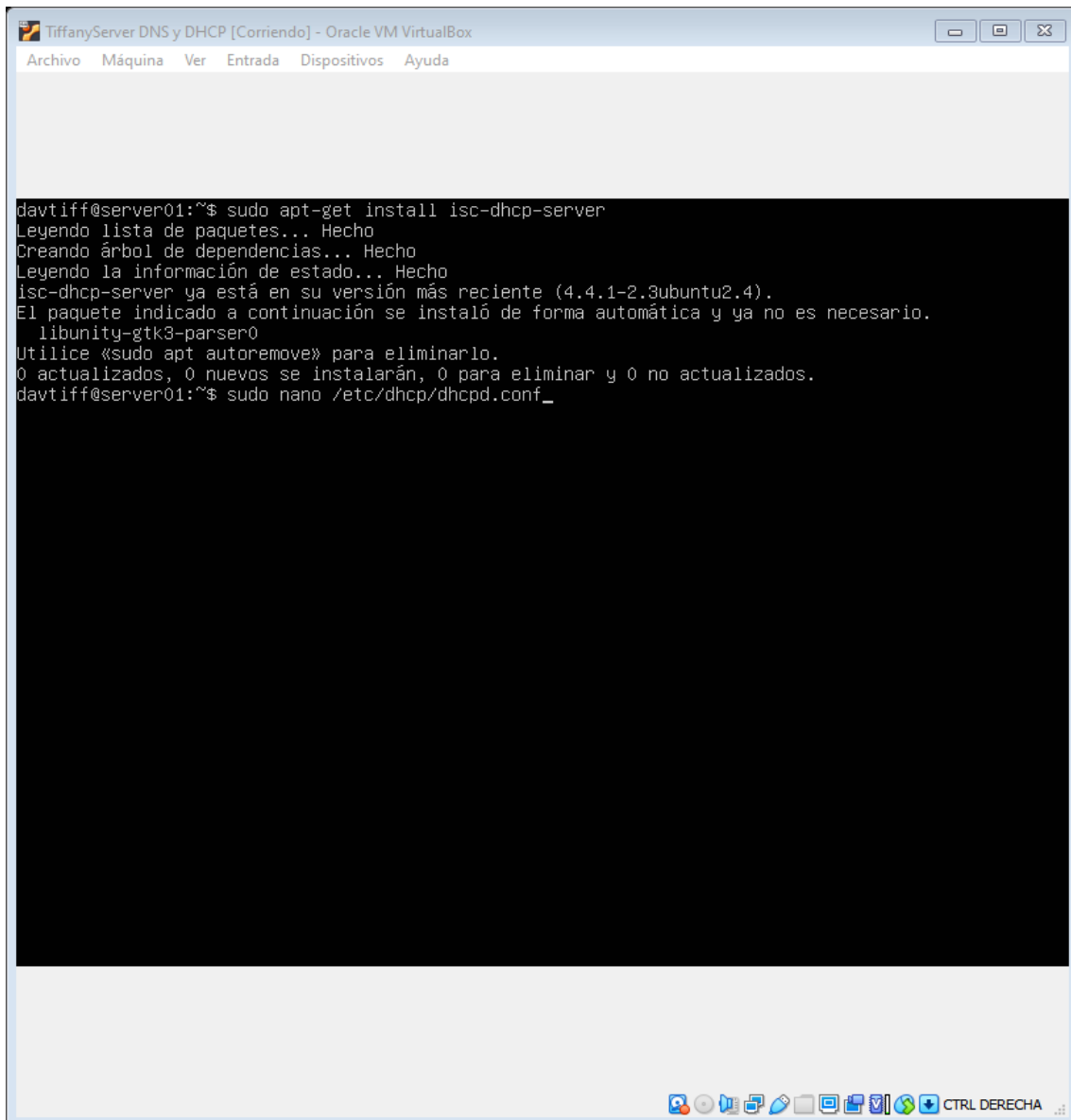


```
TiffanyServer DNS y DHCP [Corriendo] - Oracle VM VirtualBox
Archivo  Máquina  Ver  Entrada  Dispositivos  Ayuda

davtiff@server01:~$ sudo apt update
[sudo] password for davtiff:
Obj:1 http://ec.archive.ubuntu.com/ubuntu jammy InRelease
Des:2 http://ec.archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
Obj:3 http://ec.archive.ubuntu.com/ubuntu jammy-backports InRelease
Des:4 http://ec.archive.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Des:5 http://ec.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [1.155 kB]
Des:6 http://ec.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [995 kB]
Descargados 2.379 kB en 7s (354 kB/s)
Leyendo lista de paquetes... Hecho
Creando árbol de dependencias... Hecho
Leyendo la información de estado... Hecho
Todos los paquetes están actualizados.
davtiff@server01:~$ sudo apt upgrade
Leyendo lista de paquetes... Hecho
Creando árbol de dependencias... Hecho
Leyendo la información de estado... Hecho
Calculando la actualización... Hecho
El paquete indicado a continuación se instaló de forma automática y ya no es necesario.
  libunity-gtk3-parser0
Utilice «sudo apt autoremove» para eliminarlo.
Get more security updates through Ubuntu Pro with 'esm-apps' enabled:
  libvlc5 exo-utils vlc-data libvlccore9 libopenexr25 libpostproc55
  libavcodec58 libavutil56 libswscale5 libeditorconfig0 libexo-2-0
  libswresample3 vlc-plugin-video-output libavformat58 libvlc-bin
  vlc-plugin-base libexo-common libavfilter7
Learn more about Ubuntu Pro at https://ubuntu.com/pro
0 actualizados, 0 nuevos se instalarán, 0 para eliminar y 0 no actualizados.
davtiff@server01:~$
```

- Instalamos las opciones de dhcp para servidor, mediante *sudo apt-get install isc-dhcp-server*.
- Después, debemos modificar el archivo que se encuentra en */etc/dhcp/dhcpd.conf*

**Nombre:** Tiffany Andrea Jordán Uquillas

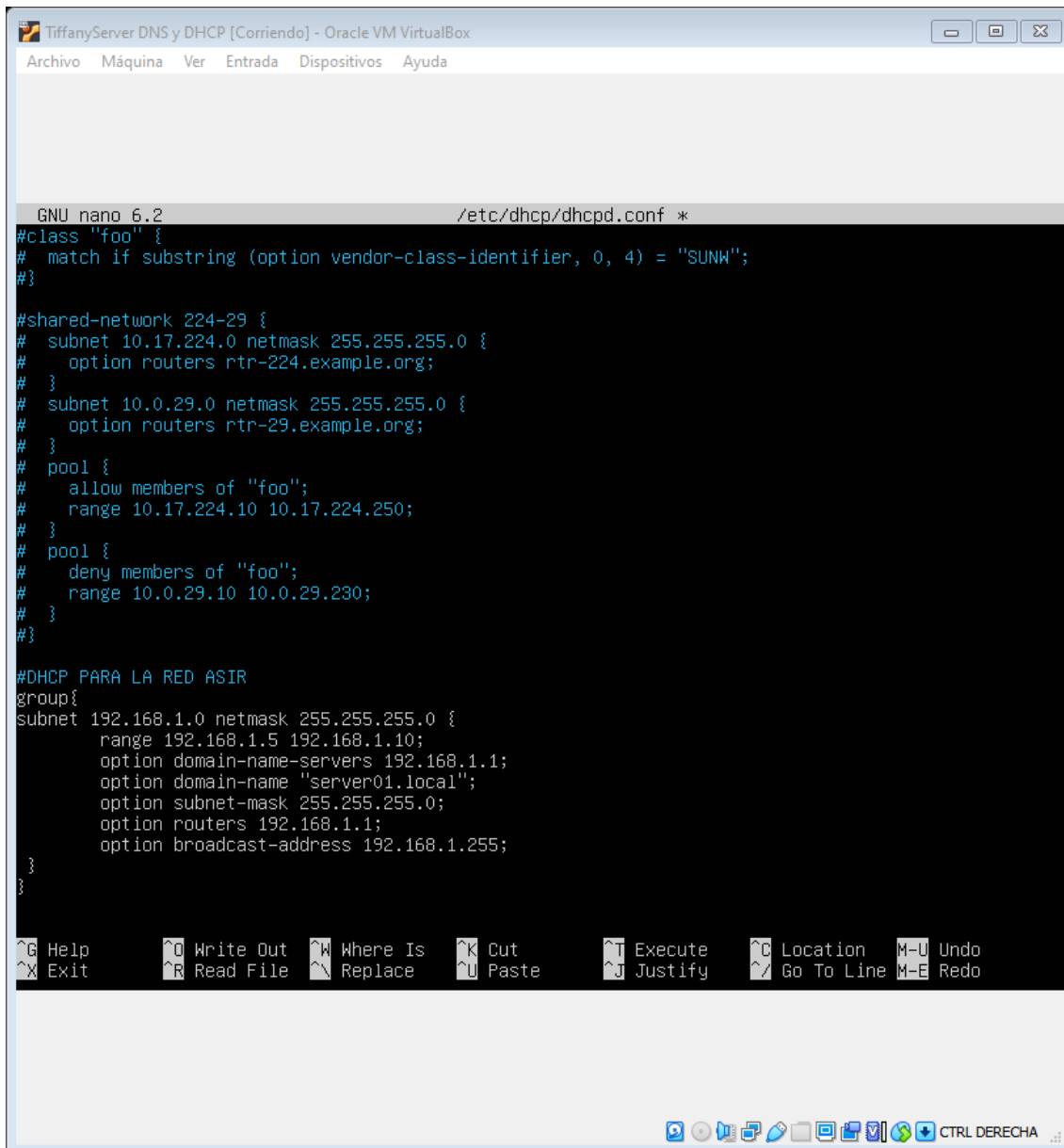


The screenshot shows a terminal window titled "TiffanyServer DNS y DHCP [Corriendo] - Oracle VM VirtualBox". The terminal output is as follows:

```
davtiff@server01:~$ sudo apt-get install isc-dhcp-server
Leyendo lista de paquetes... Hecho
Creando árbol de dependencias... Hecho
Leyendo la información de estado... Hecho
isc-dhcp-server ya está en su versión más reciente (4.4.1-2.3ubuntu2.4).
El paquete indicado a continuación se instaló de forma automática y ya no es necesario.
  libunity-gtk3-parser0
Utilice «sudo apt autoremove» para eliminarlo.
0 actualizados, 0 nuevos se instalarán, 0 para eliminar y 0 no actualizados.
davtiff@server01:~$ sudo nano /etc/dhcp/dhcpd.conf_
```

- Escribimos tal cual el texto de color blanco descrito en la imagen, sin embargo, cabe resaltar que los valores en range varían dependiendo de lo que se requiera el máximo es .255, las máscaras de subred se mantienen, pero la ip del servidor se elige de acuerdo a la que se tiene.

**Nombre:** Tiffany Andrea Jordán Uquillas



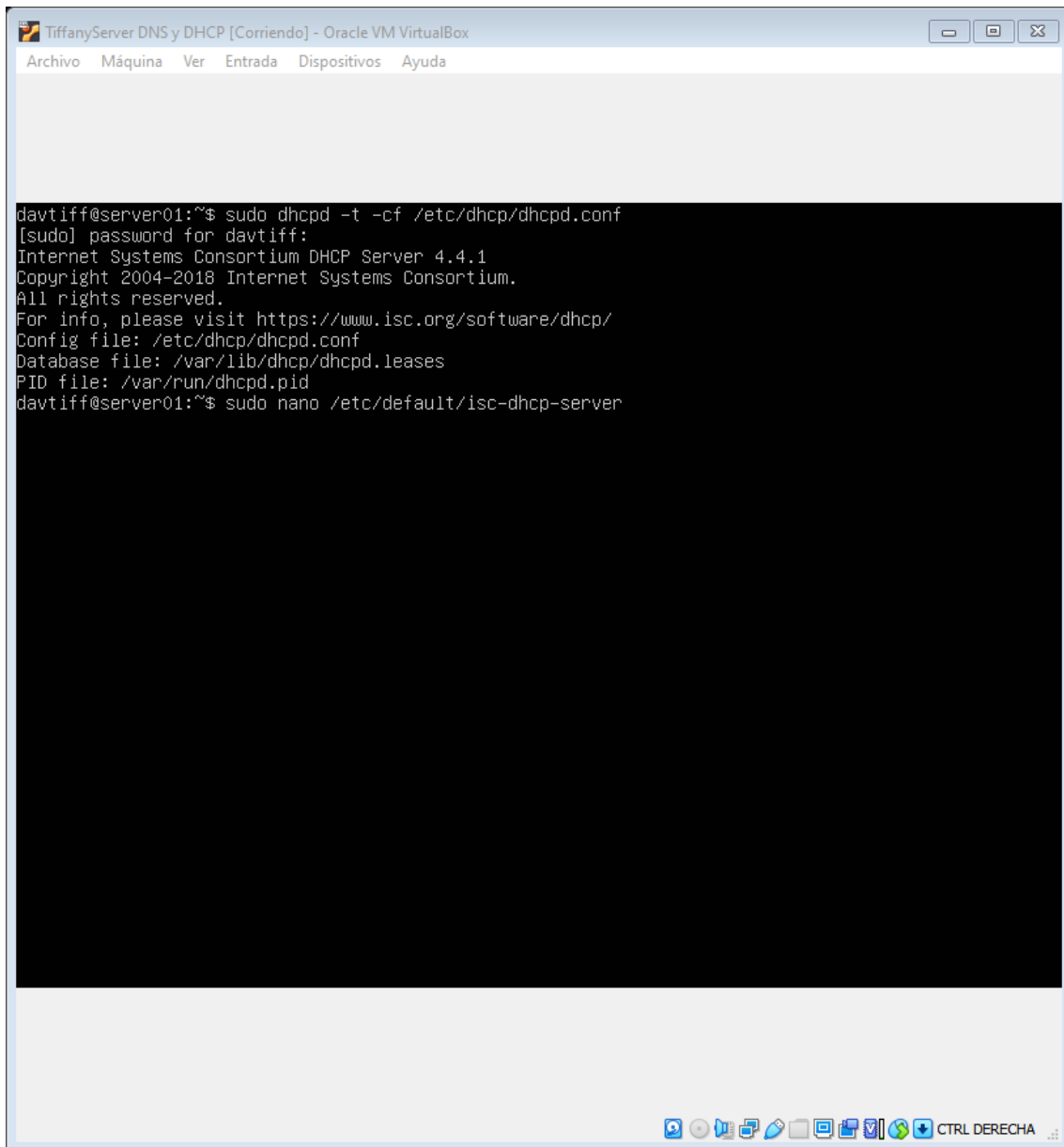
```
GNU nano 6.2 /etc/dhcp/dhcpd.conf *
#class "foo" {
#  match if substring (option vendor-class-identifier, 0, 4) = "SUNW";
#}

#shared-network 224-29 {
#  subnet 10.17.224.0 netmask 255.255.255.0 {
#    option routers rtr-224.example.org;
#  }
#  subnet 10.0.29.0 netmask 255.255.255.0 {
#    option routers rtr-29.example.org;
#  }
#  pool {
#    allow members of "foo";
#    range 10.17.224.10 10.17.224.250;
#  }
#  pool {
#    deny members of "foo";
#    range 10.0.29.10 10.0.29.230;
#  }
#}

#DHCP PARA LA RED ASIR
group{
subnet 192.168.1.0 netmask 255.255.255.0 {
    range 192.168.1.5 192.168.1.10;
    option domain-name-servers 192.168.1.1;
    option domain-name "server01.local";
    option subnet-mask 255.255.255.0;
    option routers 192.168.1.1;
    option broadcast-address 192.168.1.255;
}
}
```

- Guardamos el archivo, y aplicamos los cambios con el comando ***sudo dhcpd -t -cf /etc/dhcp/dhcpd.conf***
- Ahora, editamos el archivo que se encuentra en ***/etc/default/isc-dhcp-server***

**Nombre:** Tiffany Andrea Jordán Uquillas



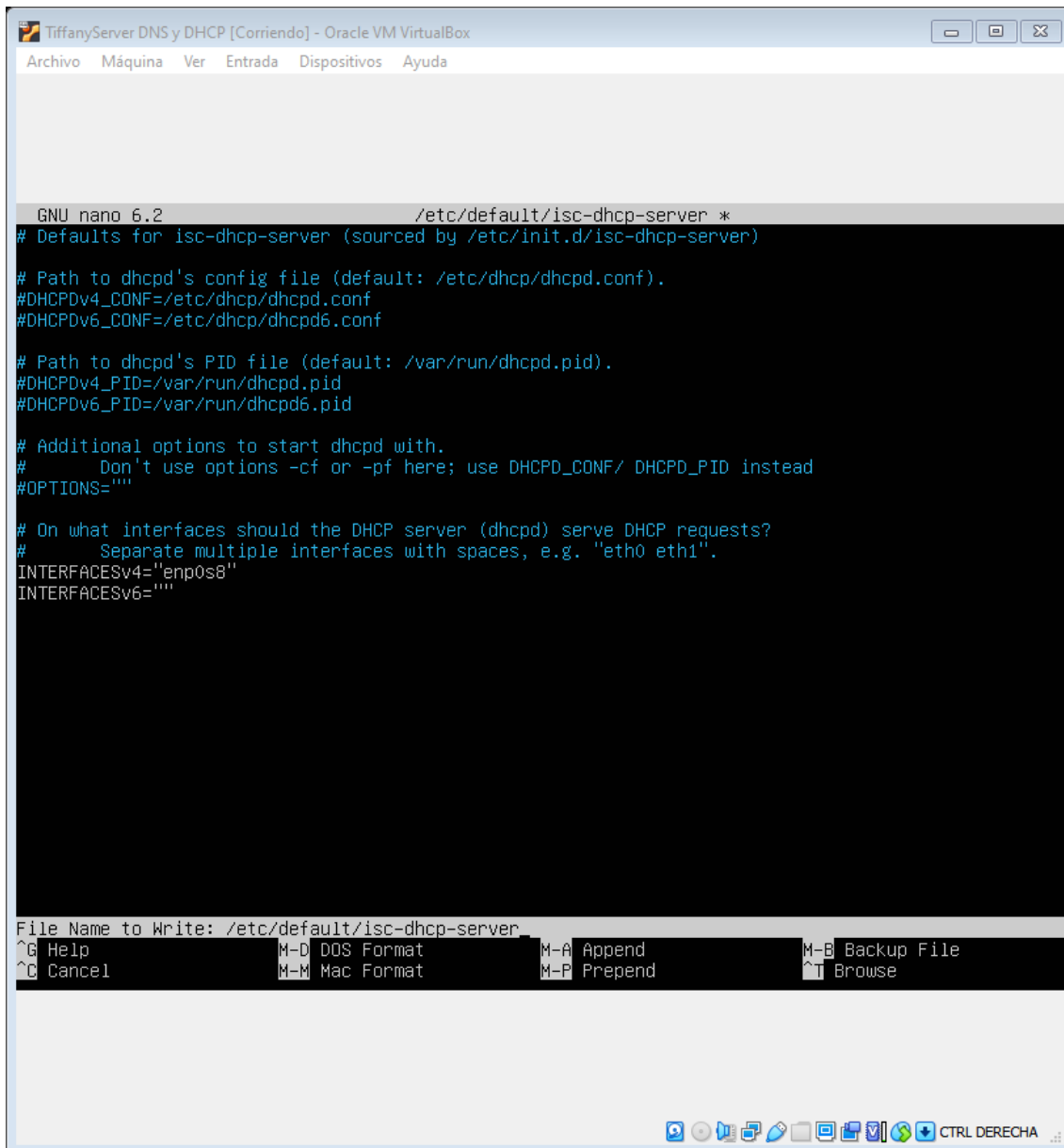
The screenshot shows a terminal window titled "TiffanyServer DNS y DHCP [Corriendo] - Oracle VM VirtualBox". The terminal output is as follows:

```
davtiff@server01:~$ sudo dhcpd -t -cf /etc/dhcp/dhcpd.conf
[sudo] password for davtiff:
Internet Systems Consortium DHCP Server 4.4.1
Copyright 2004-2018 Internet Systems Consortium.
All rights reserved.
For info, please visit https://www.isc.org/software/dhcp/
Config file: /etc/dhcp/dhcpd.conf
Database file: /var/lib/dhcp/dhcpd.leases
PID file: /var/run/dhcpd.pid
davtiff@server01:~$ sudo nano /etc/default/isc-dhcp-server
```

The terminal window has a menu bar with "Archivo", "Máquina", "Ver", "Entrada", "Dispositivos", and "Ayuda". At the bottom, there is a taskbar with various icons and the text "CTRL DERECHA".

- Escribimos `enp0s8`, teniendo en cuenta que nuestra máquina virtual tiene dos adaptadores de red, `enp0s3` es con la que se tiene acceso directo a internet, y `enp0s8` es el que proveerá de internet al resto de máquinas conectadas a este servidor.

**Nombre:** Tiffany Andrea Jordán Uquillas



```
GNU nano 6.2 /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

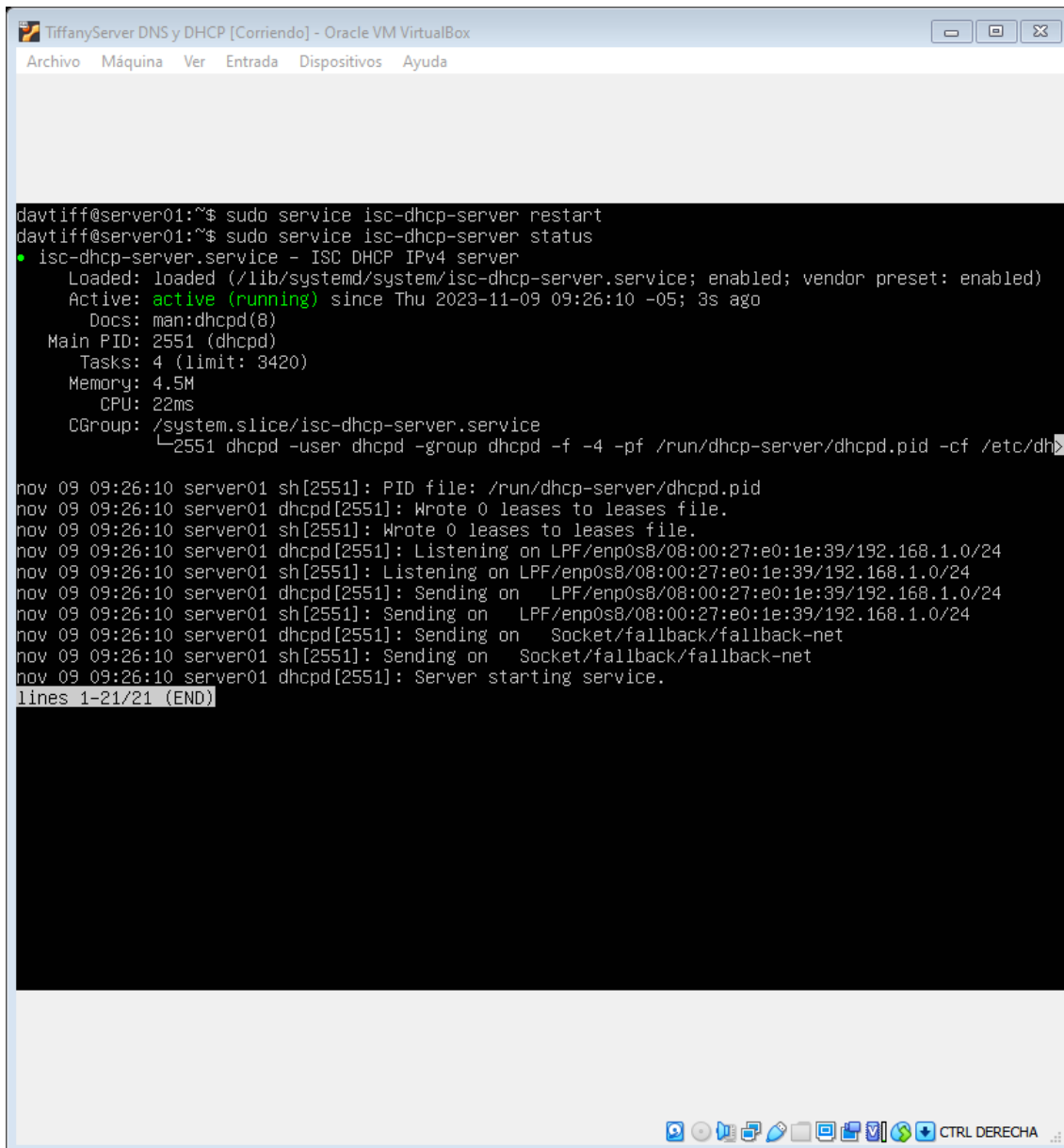
# Additional options to start dhcpd with.
# Don't use options -cf or -pf here; use DHCPD_CONF/ DHCPD_PID instead
#OPTIONS=""

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

File Name to Write: /etc/default/isc-dhcp-server
^G Help      M-D DOS Format  M-A Append     M-B Backup File
^C Cancel    M-M Mac Format  M-P Prepend    ^T Browse
CTRL DERECHA
```

- Reiniciamos el servicio de isc-dhcp-server y comprobamos que su estado sea activo.

**Nombre:** Tiffany Andrea Jordán Uquillas



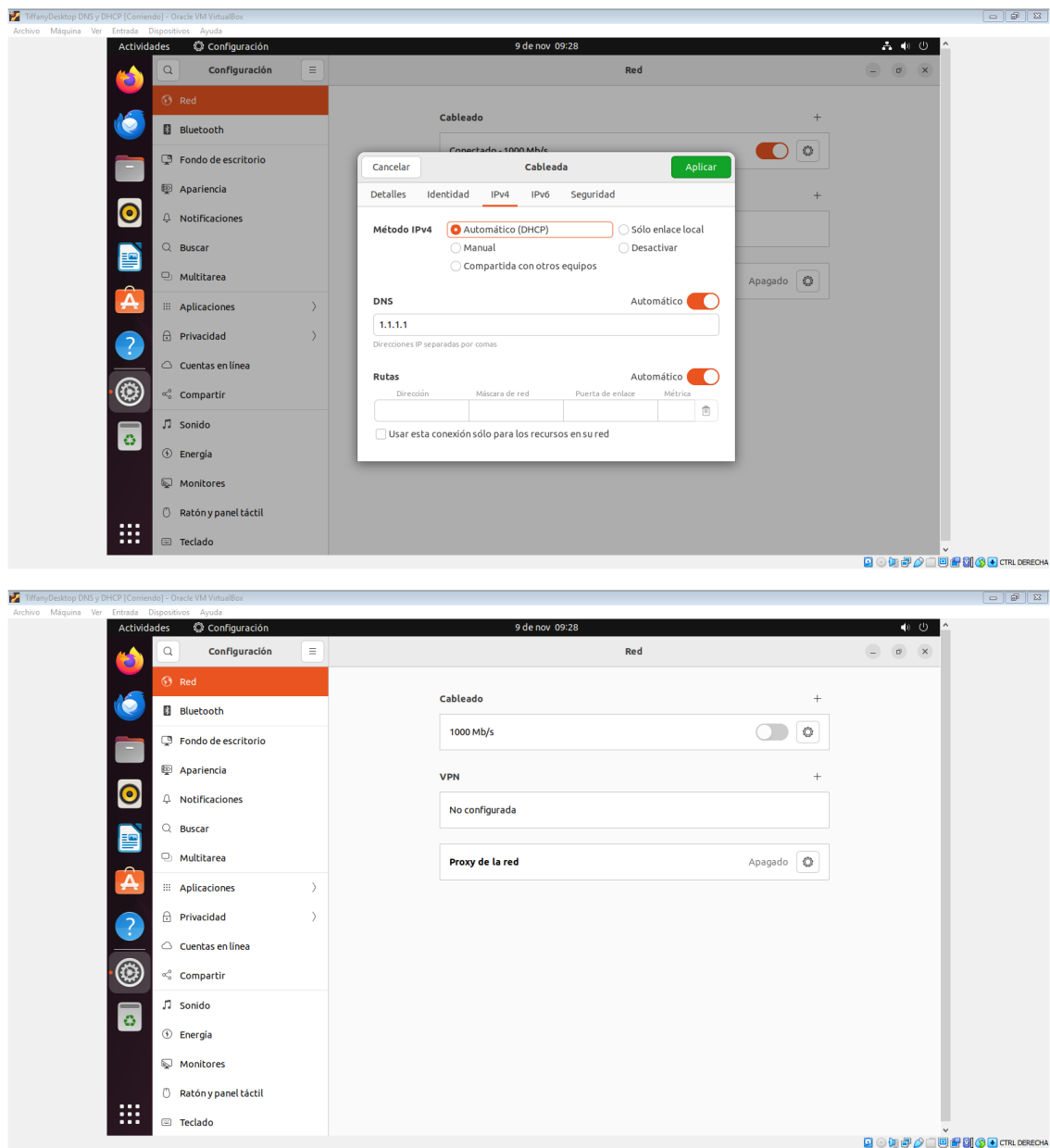
```
TiffanyServer DNS y DHCP [Corriendo] - Oracle VM VirtualBox
Archivo  Máquina  Ver  Entrada  Dispositivos  Ayuda

davtiff@server01:~$ sudo service isc-dhcp-server restart
davtiff@server01:~$ sudo service isc-dhcp-server status
• isc-dhcp-server.service - ISC DHCP IPv4 server
   Loaded: loaded (/lib/systemd/system/isc-dhcp-server.service; enabled; vendor preset: enabled)
   Active: active (running) since Thu 2023-11-09 09:26:10 -05; 3s ago
     Docs: man:dhcpcd(8)
   Main PID: 2551 (dhcpcd)
      Tasks: 4 (limit: 3420)
     Memory: 4.5M
        CPU: 22ms
    CGroup: /system.slice/isc-dhcp-server.service
            └─2551 dhcpcd -user dhcpcd -group dhcpcd -f -4 -pf /run/dhcp-server/dhcpcd.pid -cf /etc/dh

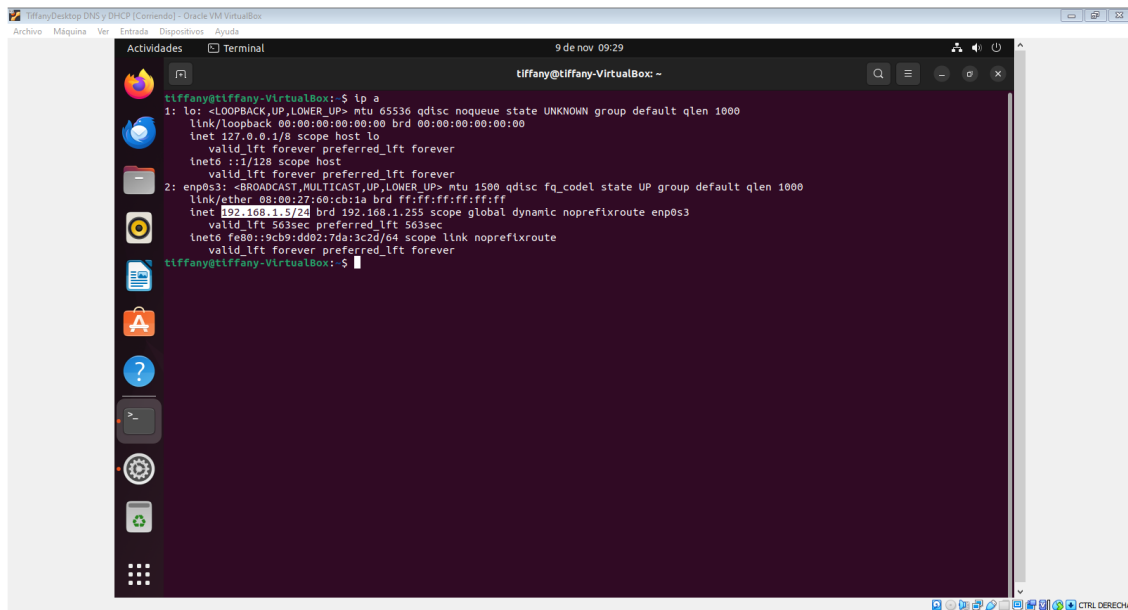
nov 09 09:26:10 server01 sh[2551]: PID file: /run/dhcp-server/dhcpcd.pid
nov 09 09:26:10 server01 dhcpcd[2551]: Wrote 0 leases to leases file.
nov 09 09:26:10 server01 sh[2551]: Wrote 0 leases to leases file.
nov 09 09:26:10 server01 dhcpcd[2551]: Listening on LPF/enp0s8/08:00:27:e0:1e:39/192.168.1.0/24
nov 09 09:26:10 server01 sh[2551]: Listening on LPF/enp0s8/08:00:27:e0:1e:39/192.168.1.0/24
nov 09 09:26:10 server01 dhcpcd[2551]: Sending on LPF/enp0s8/08:00:27:e0:1e:39/192.168.1.0/24
nov 09 09:26:10 server01 sh[2551]: Sending on LPF/enp0s8/08:00:27:e0:1e:39/192.168.1.0/24
nov 09 09:26:10 server01 dhcpcd[2551]: Sending on Socket/fallback/fallback-net
nov 09 09:26:10 server01 sh[2551]: Sending on Socket/fallback/fallback-net
nov 09 09:26:10 server01 dhcpcd[2551]: Server starting service.
lines 1-21/21 (END)
```

- Para poder comprobar que está funcionando el servidor dhcp, en el desktop de manual lo cambiamos a automático, allí se debería reflejar con la dirección ip de nuestro rango, y para reflejar los cambios debemos reiniciar la red del desktop.

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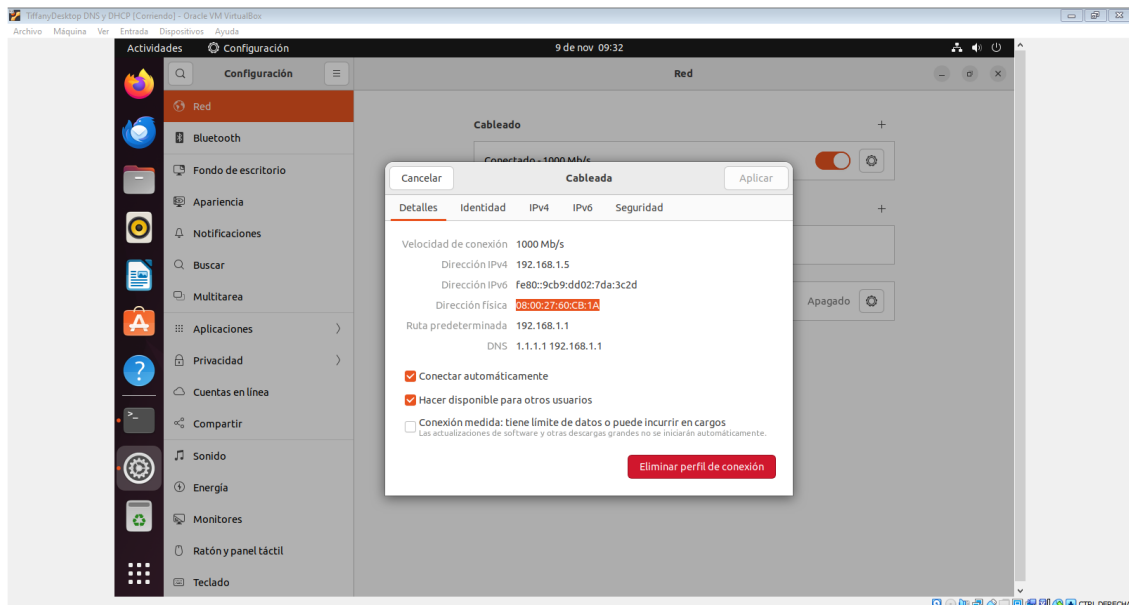
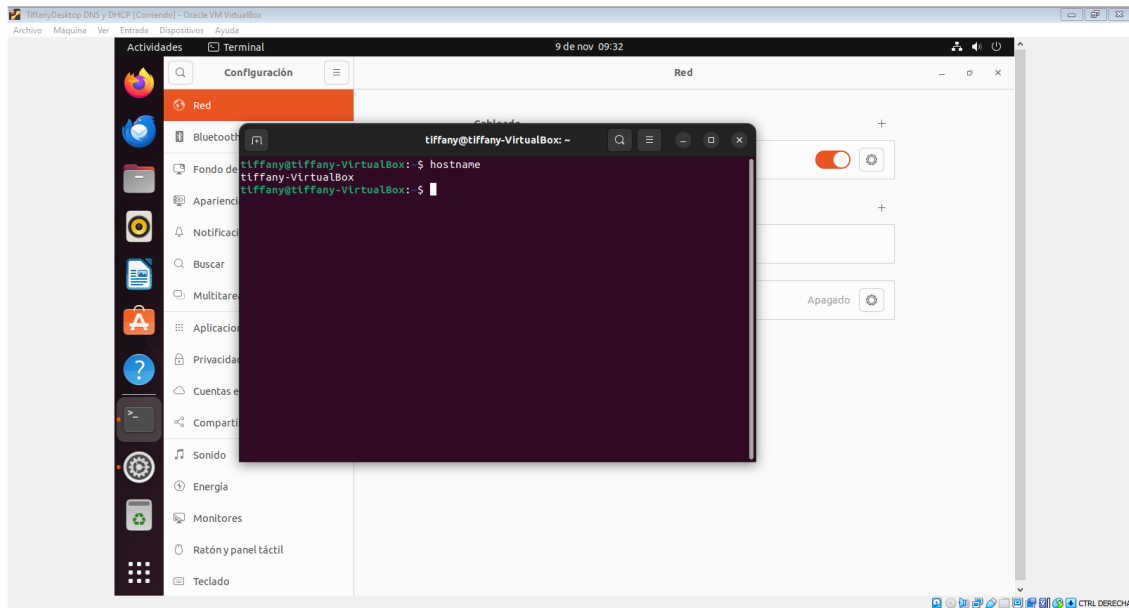
```
tiffany@tiffany-VirtualBox: $ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:60:cb:1a brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.5/24 brd 192.168.1.255 scope global dynamic noprefixroute enp0s3
        valid_lft 563sec preferred_lft 563sec
    inet6 fe80::9cb9:dd02:7da:3c2d/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
tiffany@tiffany-VirtualBox: $
```

**Reservar una dirección IP para un host de manera estática**

- En el desktop escribimos hostname para saber cómo se llama nuestra maquina cliente, además debemos buscar su dirección MAC.

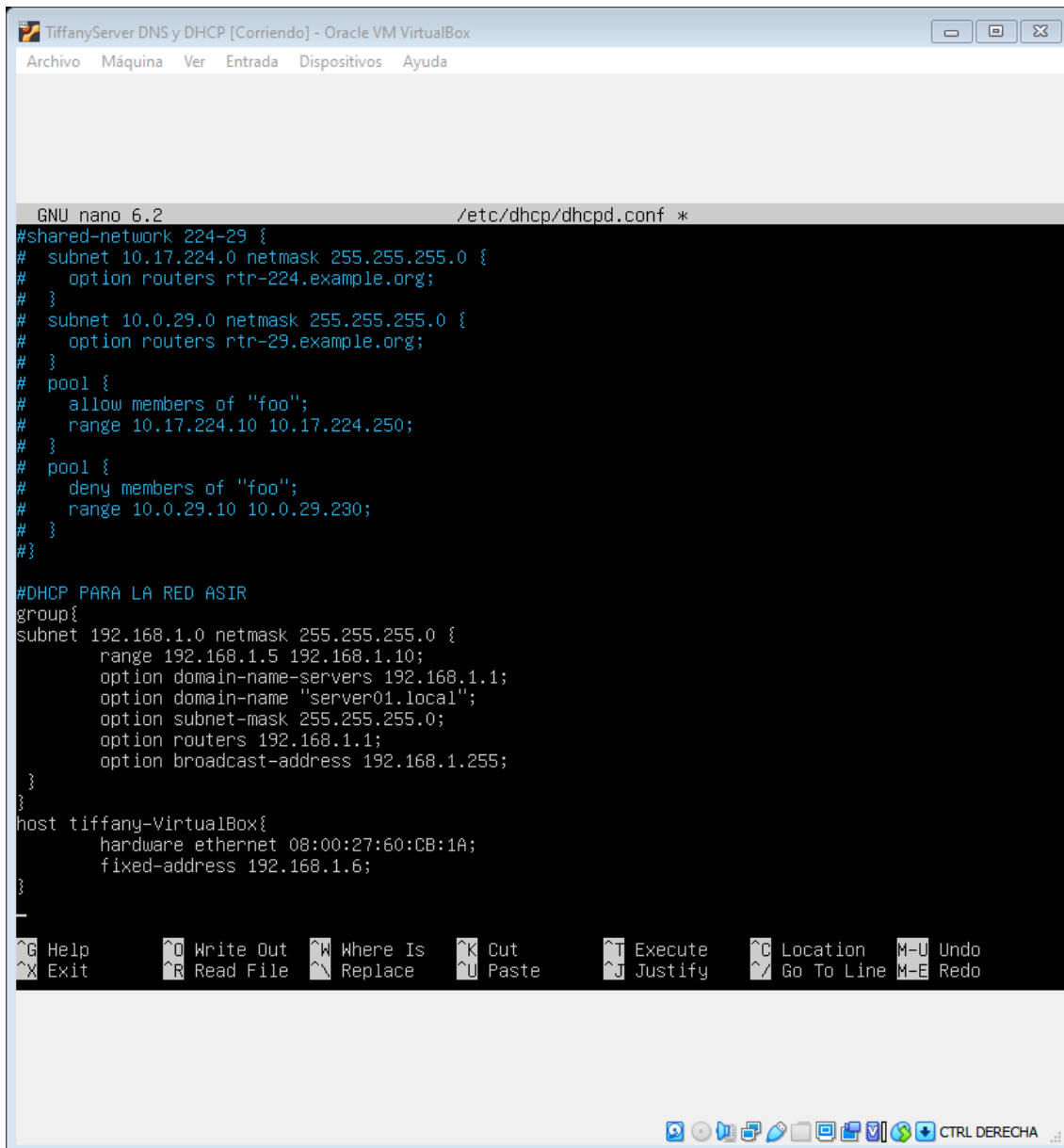


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- Editamos el archivo que se encuentra en */etc/dhcp/dhcpd.conf* y copiamos la sintaxis de la última función cambiando los valores de acuerdo a los nuestros.

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```
GNU nano 6.2 /etc/dhcp/dhcpd.conf *
#shared-network 224-29 {
#  subnet 10.17.224.0 netmask 255.255.255.0 {
#    option routers rtr-224.example.org;
#  }
#  subnet 10.0.29.0 netmask 255.255.255.0 {
#    option routers rtr-29.example.org;
#  }
#  pool {
#    allow members of "foo";
#    range 10.17.224.10 10.17.224.250;
#  }
#  pool {
#    deny members of "foo";
#    range 10.0.29.10 10.0.29.230;
#  }
#}

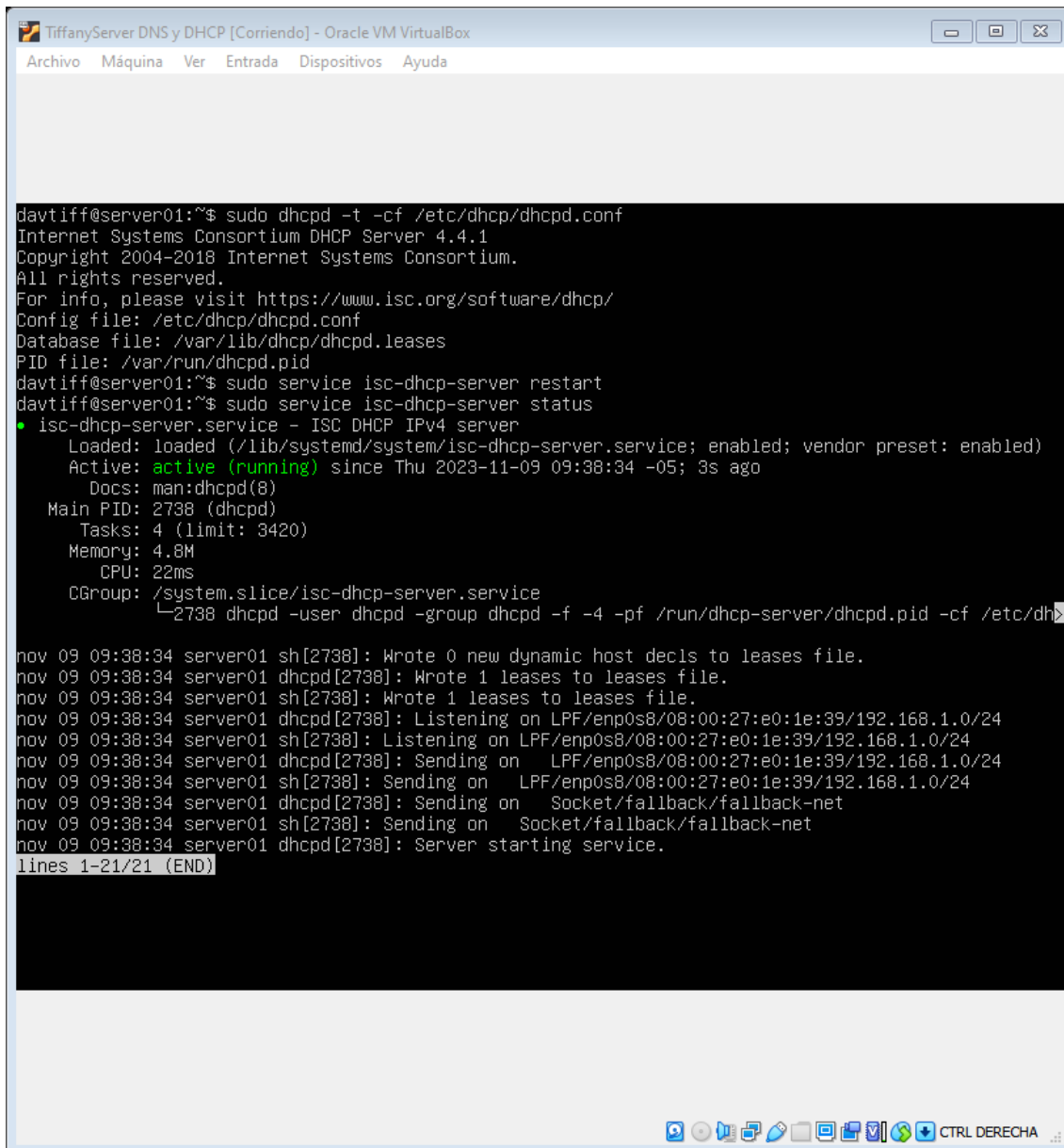
#DHCP PARA LA RED ASIR
group{
  subnet 192.168.1.0 netmask 255.255.255.0 {
    range 192.168.1.5 192.168.1.10;
    option domain-name-servers 192.168.1.1;
    option domain-name "server01.local";
    option subnet-mask 255.255.255.0;
    option routers 192.168.1.1;
    option broadcast-address 192.168.1.255;
  }
}
host tiffany-VirtualBox{
  hardware ethernet 08:00:27:60:CB:1A;
  fixed-address 192.168.1.6;
}

^G Help      ^O Write Out ^W Where Is  ^K Cut       ^T Execute  ^G Location  M-U Undo
^X Exit      ^R Read File ^N Replace   ^U Paste     ^J Justify  ^_/ Go To Line M-E Redo

CTRL DERECHA
```

- Aplicamos nuevamente los cambios con el comando y adicionalmente reiniciamos el servicio.

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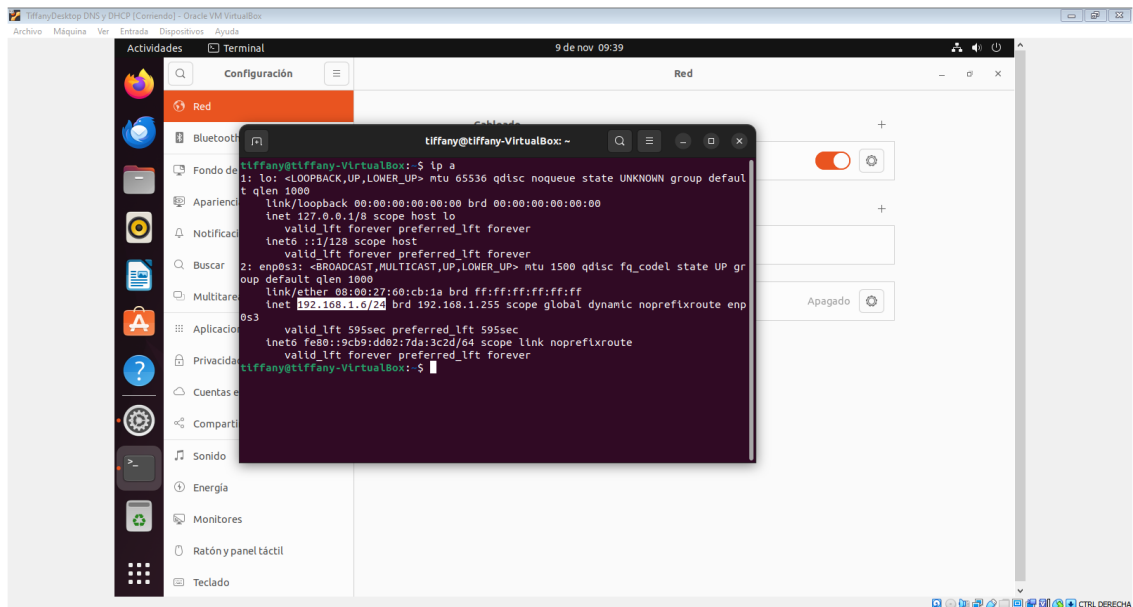
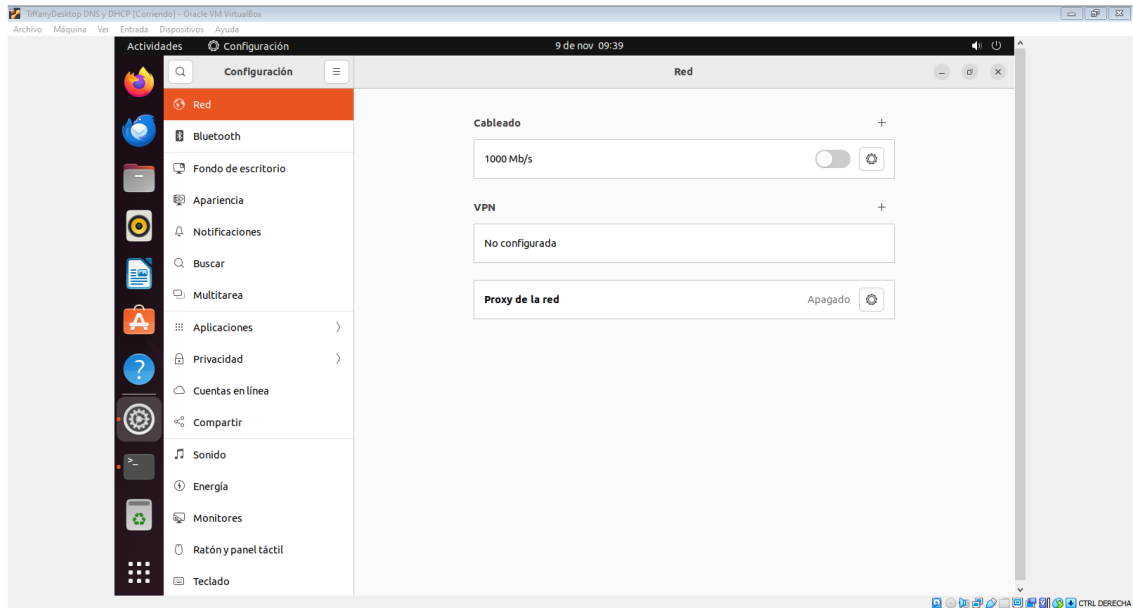
```
TiffanyServer DNS y DHCP [Corriendo] - Oracle VM VirtualBox
Archivo  Máquina  Ver  Entrada  Dispositivos  Ayuda

davtiff@server01:~$ sudo dhcpd -t -cf /etc/dhcp/dhcpd.conf
Internet Systems Consortium DHCP Server 4.4.1
Copyright 2004-2018 Internet Systems Consortium.
All rights reserved.
For info, please visit https://www.isc.org/software/dhcp/
Config file: /etc/dhcp/dhcpd.conf
Database file: /var/lib/dhcp/dhcpd.leases
PID file: /var/run/dhcpd.pid
davtiff@server01:~$ sudo service isc-dhcp-server restart
davtiff@server01:~$ sudo service isc-dhcp-server status
• isc-dhcp-server.service - ISC DHCP IPv4 server
   Loaded: loaded (/lib/systemd/system/isc-dhcp-server.service; enabled; vendor preset: enabled)
   Active: active (running) since Thu 2023-11-09 09:38:34 -05; 3s ago
     Docs: man:dhcpd(8)
    Main PID: 2738 (dhcpd)
      Tasks: 4 (limit: 3420)
     Memory: 4.8M
        CPU: 22ms
    CGroup: /system.slice/isc-dhcp-server.service
            └─2738 dhcpd -user dhcpd -group dhcpd -f -4 -pf /run/dhcp-server/dhcpd.pid -cf /etc/dh

nov 09 09:38:34 server01 sh[2738]: Wrote 0 new dynamic host decls to leases file.
nov 09 09:38:34 server01 dhcpd[2738]: Wrote 1 leases to leases file.
nov 09 09:38:34 server01 sh[2738]: Wrote 1 leases to leases file.
nov 09 09:38:34 server01 dhcpd[2738]: Listening on LPF/enp0s8/08:00:27:e0:1e:39/192.168.1.0/24
nov 09 09:38:34 server01 sh[2738]: Listening on LPF/enp0s8/08:00:27:e0:1e:39/192.168.1.0/24
nov 09 09:38:34 server01 dhcpd[2738]: Sending on  LPF/enp0s8/08:00:27:e0:1e:39/192.168.1.0/24
nov 09 09:38:34 server01 sh[2738]: Sending on  LPF/enp0s8/08:00:27:e0:1e:39/192.168.1.0/24
nov 09 09:38:34 server01 dhcpd[2738]: Sending on  Socket/fallback/fallback-net
nov 09 09:38:34 server01 sh[2738]: Sending on  Socket/fallback/fallback-net
nov 09 09:38:34 server01 dhcpd[2738]: Server starting service.
lines 1-21/21 (END)
```

- Reiniciamos la red, para reflejar los cambios.

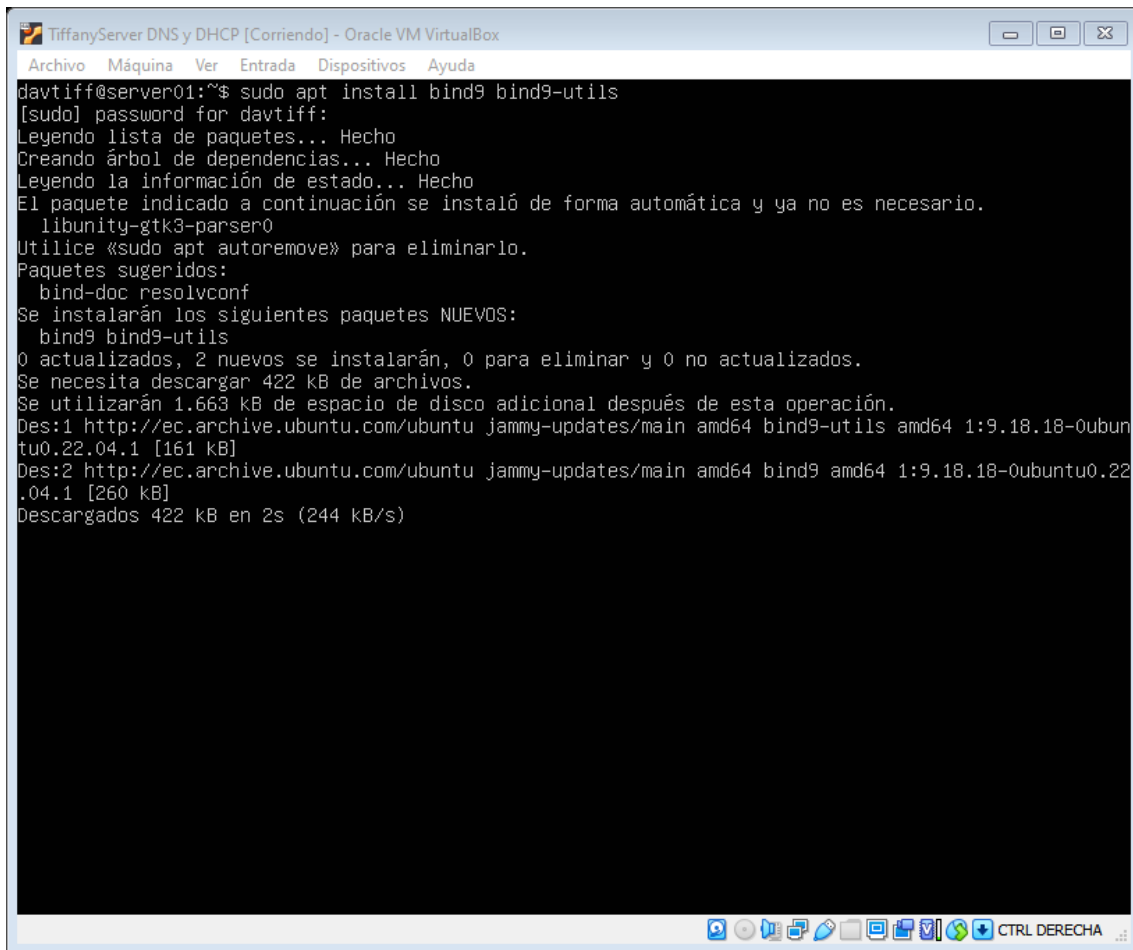
Nombre: Tiffany Andrea Jordán Uquillas



## DNS con BIND

- Descargamos bind con el comando *sudo apt install bind9 bind9-utils*

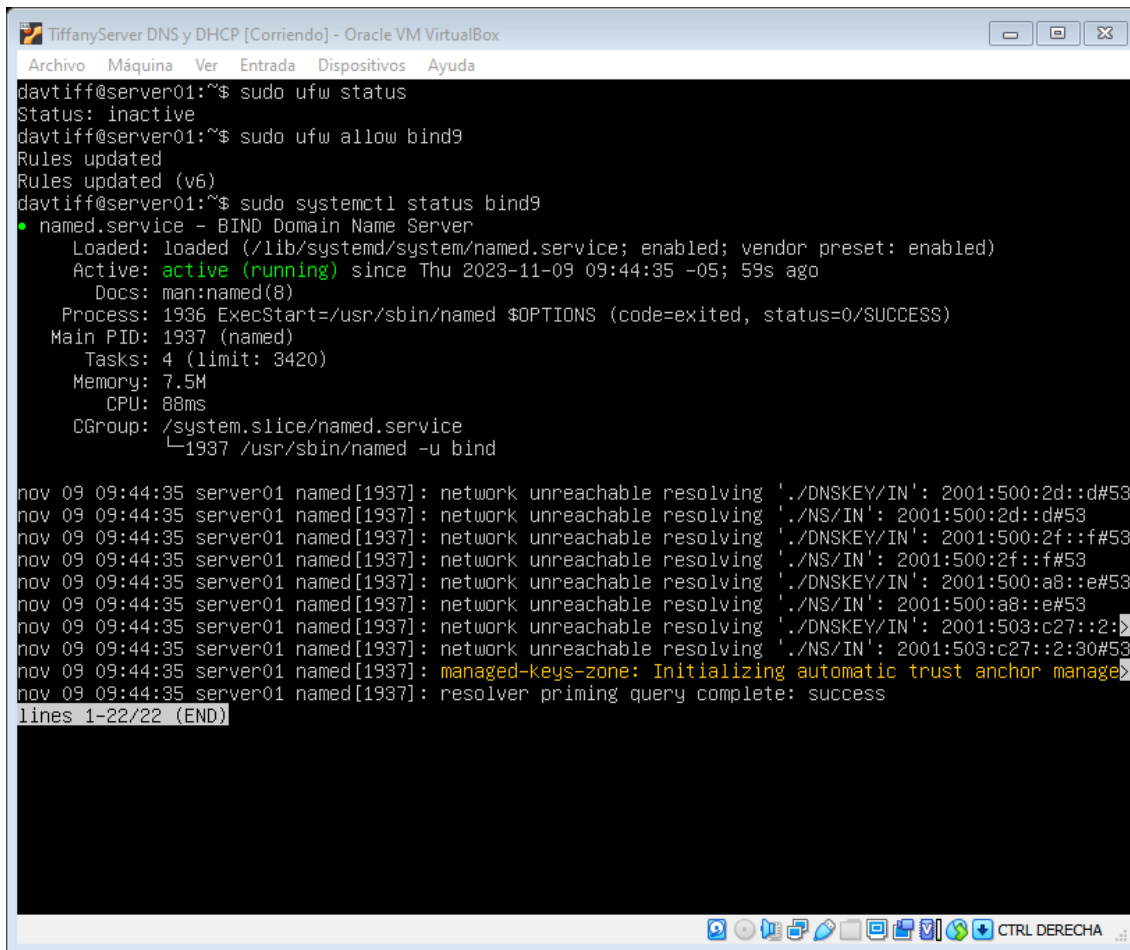
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```
TiffanyServer DNS y DHCP [Corriendo] - Oracle VM VirtualBox
Archivo  Máquina  Ver  Entrada  Dispositivos  Ayuda
davtiff@server01:~$ sudo apt install bind9 bind9-utils
[sudo] password for davtiff:
Leyendo lista de paquetes... Hecho
Creando árbol de dependencias... Hecho
Leyendo la información de estado... Hecho
El paquete indicado a continuación se instaló de forma automática y ya no es necesario.
  libunity-gtk3-parser0
Utilice «sudo apt autoremove» para eliminarlo.
Paquetes sugeridos:
  bind-doc resolvconf
Se instalarán los siguientes paquetes NUEVOS:
  bind9 bind9-utils
0 actualizados, 2 nuevos se instalarán, 0 para eliminar y 0 no actualizados.
Se necesita descargar 422 kB de archivos.
Se utilizarán 1.663 kB de espacio de disco adicional después de esta operación.
Des:1 http://ec.archive.ubuntu.com/ubuntu jammy-updates/main amd64 bind9-utils amd64 1:9.18.18-0ubuntu0.22.04.1 [161 kB]
Des:2 http://ec.archive.ubuntu.com/ubuntu jammy-updates/main amd64 bind9 amd64 1:9.18.18-0ubuntu0.22.04.1 [260 kB]
Descargados 422 kB en 2s (244 kB/s)
```

- Configuramos los firewalls para habilitar el puerto donde se enviara la información, mediante `sudo ufw status` (para ver si esta activo) y `sudo ufw allow bind9` para permitir el paso, además verificamos que esta activo el servicio de bind9.

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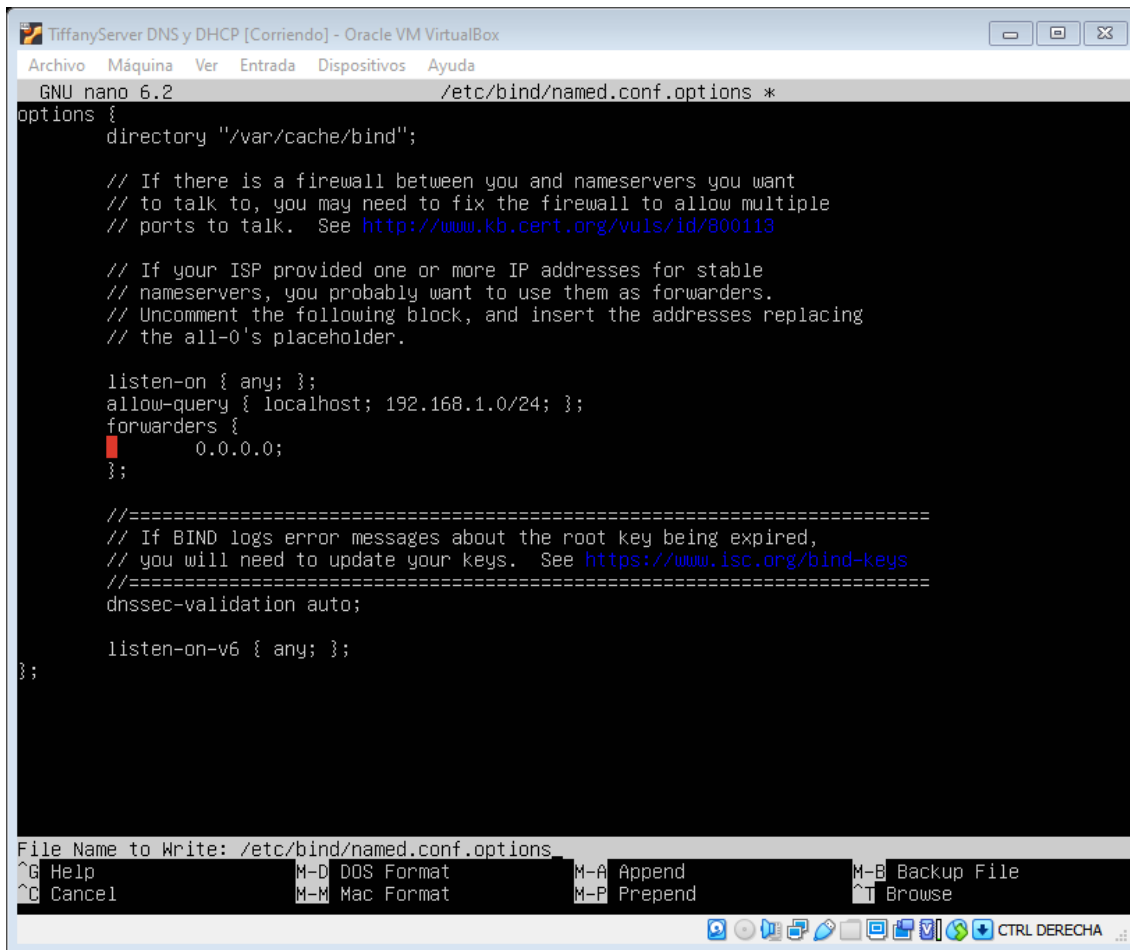


```
TiffanyServer DNS y DHCP [Corriendo] - Oracle VM VirtualBox
Archivo  Máquina  Ver  Entrada  Dispositivos  Ayuda
davtiff@server01:~$ sudo ufw status
Status: inactive
davtiff@server01:~$ sudo ufw allow bind9
Rules updated
Rules updated (v6)
davtiff@server01:~$ sudo systemctl status bind9
• named.service - BIND Domain Name Server
   Loaded: loaded (/lib/systemd/system/named.service; enabled; vendor preset: enabled)
   Active: active (running) since Thu 2023-11-09 09:44:35 -05; 59s ago
     Docs: man:named(8)
   Process: 1936 ExecStart=/usr/sbin/named $OPTIONS (code=exited, status=0/SUCCESS)
   Main PID: 1937 (named)
    Tasks: 4 (limit: 3420)
   Memory: 7.5M
      CPU: 88ms
   CGroup: /system.slice/named.service
           └─1937 /usr/sbin/named -u bind

nov 09 09:44:35 server01 named[1937]: network unreachable resolving './DNSKEY/IN': 2001:500:2d::d#53
nov 09 09:44:35 server01 named[1937]: network unreachable resolving './NS/IN': 2001:500:2d::d#53
nov 09 09:44:35 server01 named[1937]: network unreachable resolving './DNSKEY/IN': 2001:500:2f::f#53
nov 09 09:44:35 server01 named[1937]: network unreachable resolving './NS/IN': 2001:500:2f::f#53
nov 09 09:44:35 server01 named[1937]: network unreachable resolving './DNSKEY/IN': 2001:500:a8::e#53
nov 09 09:44:35 server01 named[1937]: network unreachable resolving './NS/IN': 2001:500:a8::e#53
nov 09 09:44:35 server01 named[1937]: network unreachable resolving './DNSKEY/IN': 2001:503:c27::2:2:2
nov 09 09:44:35 server01 named[1937]: network unreachable resolving './NS/IN': 2001:503:c27::2:2:2
nov 09 09:44:35 server01 named[1937]: managed-keys-zone: Initializing automatic trust anchor manage
nov 09 09:44:35 server01 named[1937]: resolver priming query complete: success
lines 1-22/22 (END)
```

- Editamos el archivo que se encuentra en /etc/bind/named.conf.options, como se ve en la imagen.
-

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The screenshot shows a virtual machine window titled "TiffanyServer DNS y DHCP [Corriendo] - Oracle VM VirtualBox". Inside, the GNU nano 6.2 text editor is open, editing the file /etc/bind/named.conf.options. The editor's content is as follows:

```
options {
    directory "/var/cache/bind";

    // If there is a firewall between you and nameservers you want
    // to talk to, you may need to fix the firewall to allow multiple
    // ports to talk. See http://www.kb.cert.org/vuls/id/800113

    // If your ISP provided one or more IP addresses for stable
    // nameservers, you probably want to use them as forwarders.
    // Uncomment the following block, and insert the addresses replacing
    // the all-0's placeholder.

    listen-on { any; };
    allow-query { localhost; 192.168.1.0/24; };
    forwarders {
        0.0.0.0;
    };

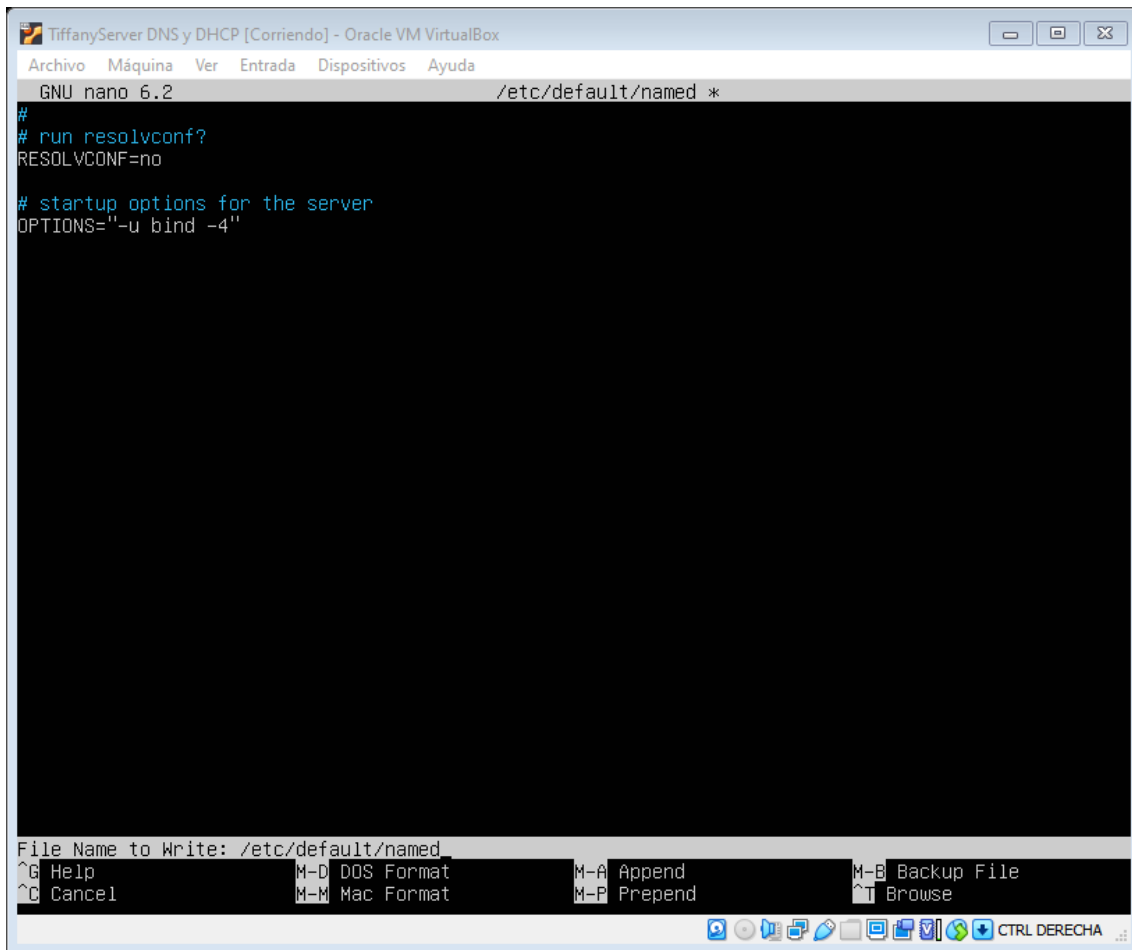
    //=====
    // If BIND logs error messages about the root key being expired,
    // you will need to update your keys. See https://www.isc.org/bind-keys
    //=====
    dnssec-validation auto;

    listen-on-v6 { any; };
};
```

At the bottom of the editor, a status bar shows "File Name to Write: /etc/bind/named.conf.options". Below this, a menu bar lists several actions: ^G Help, ^C Cancel, M-D DOS Format, M-M Mac Format, M-A Append, M-P Prepend, M-B Backup File, and ^T Browse. The bottom of the window features a standard Linux desktop taskbar with various application icons and a system tray on the right containing a "CTRL DERECHA" button.

- Editamos el archivo de /etc/default/named, añadiéndole el -4.

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The screenshot shows a VirtualBox window titled "TiffanyServer DNS y DHCP [Corriendo] - Oracle VM VirtualBox". Inside, a terminal window runs GNU nano 6.2, editing the file /etc/default/named. The file content is as follows:

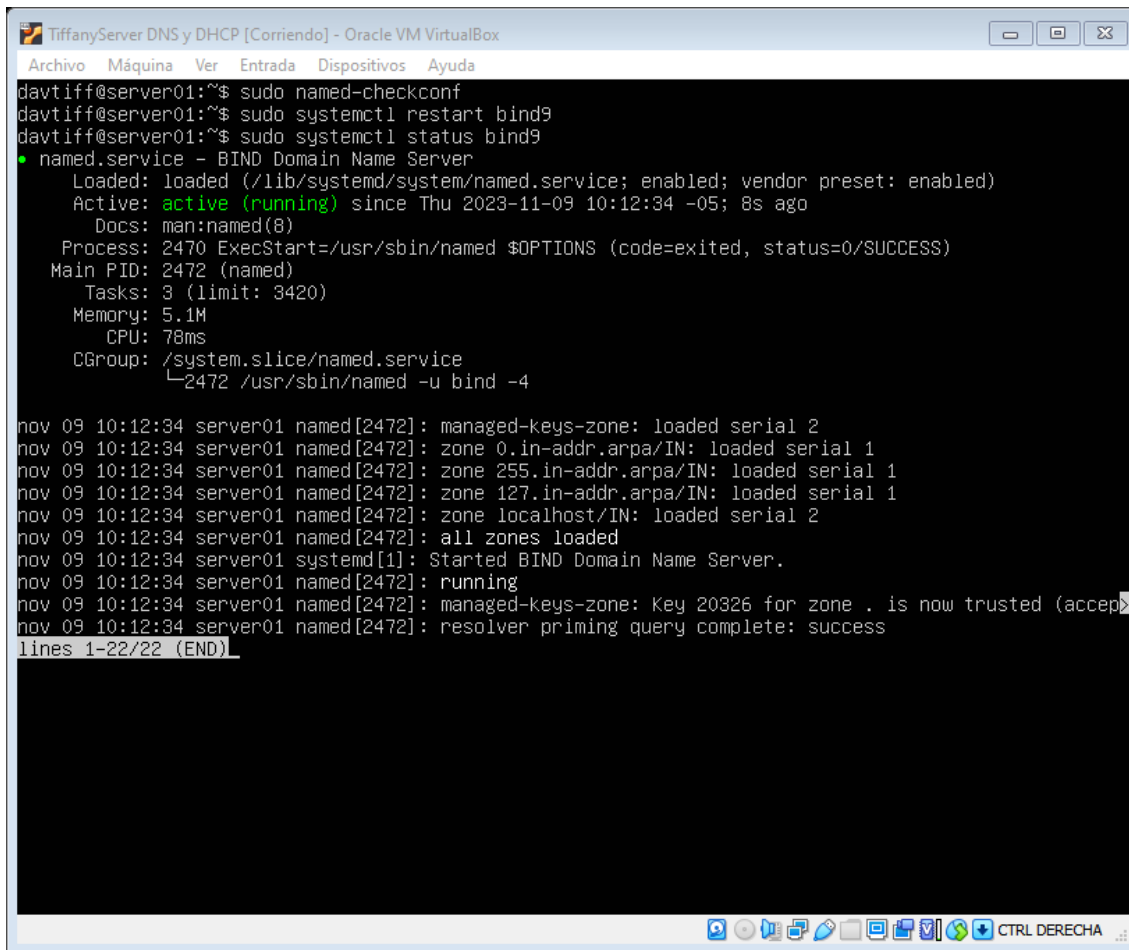
```
#  
# run resolvconf?  
RESOLVCONF=no  
  
# startup options for the server  
OPTIONS="-u bind -4"
```

The bottom of the nano editor shows the "File Name to Write: /etc/default/named" and a menu with options: ^G Help, ^C Cancel, M-D DOS Format, M-M Mac Format, M-A Append, M-P Prepend, M-B Backup File, and ^T Browse. The bottom status bar includes icons for file operations and the text "CTRL DERECHA".

- Aplicamos los cambios con `sudo named-checkconf`, y reiniciamos el servicio de bind9.



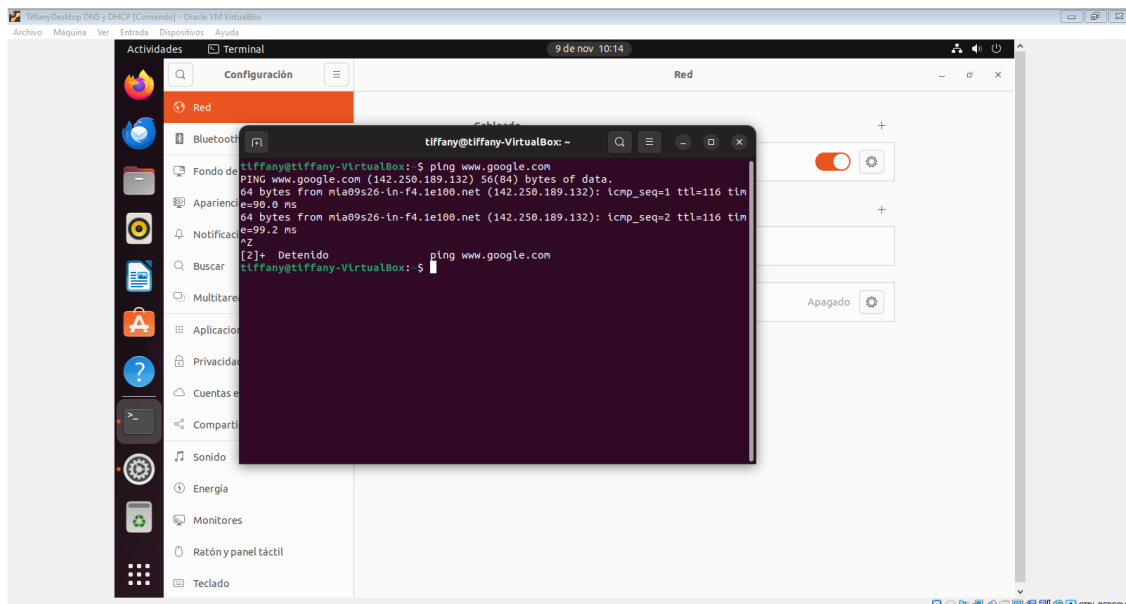
**Nombre:** Tiffany Andrea Jordán Uquillas



```
TiffanyServer DNS y DHCP [Corriendo] - Oracle VM VirtualBox
Archivo  Máquina  Ver  Entrada  Dispositivos  Ayuda
davtiff@server01:~$ sudo named-checkconf
davtiff@server01:~$ sudo systemctl restart bind9
davtiff@server01:~$ sudo systemctl status bind9
• named.service - BIND Domain Name Server
   Loaded: loaded (/lib/systemd/system/named.service; enabled; vendor preset: enabled)
   Active: active (running) since Thu 2023-11-09 10:12:34 -05; 8s ago
     Docs: man:named(8)
  Process: 2470 ExecStart=/usr/sbin/named $OPTIONS (code=exited, status=0/SUCCESS)
 Main PID: 2472 (named)
    Tasks: 3 (limit: 3420)
   Memory: 5.1M
      CPU: 78ms
   CGroup: /system.slice/named.service
           └─2472 /usr/sbin/named -u bind -4

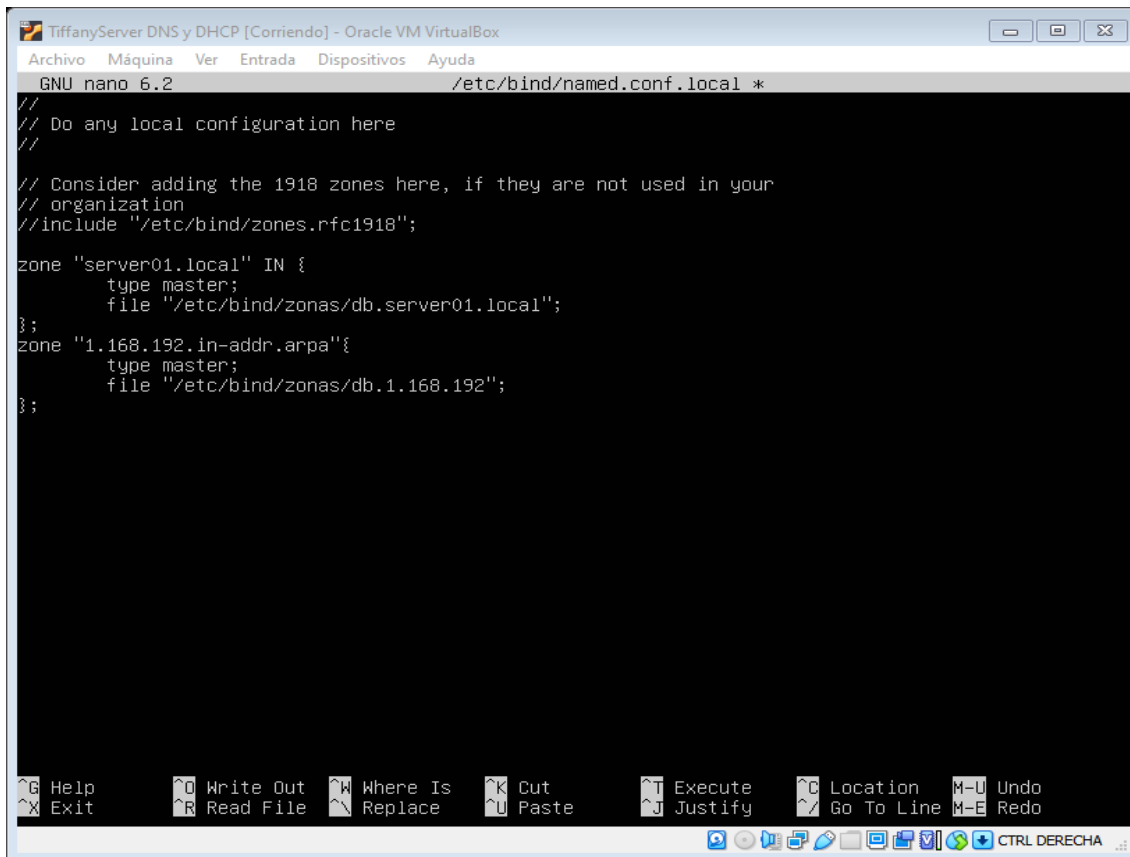
nov 09 10:12:34 server01 named[2472]: managed-keys-zone: loaded serial 2
nov 09 10:12:34 server01 named[2472]: zone 0.in-addr.arpa/IN: loaded serial 1
nov 09 10:12:34 server01 named[2472]: zone 255.in-addr.arpa/IN: loaded serial 1
nov 09 10:12:34 server01 named[2472]: zone 127.in-addr.arpa/IN: loaded serial 1
nov 09 10:12:34 server01 named[2472]: zone localhost/IN: loaded serial 2
nov 09 10:12:34 server01 named[2472]: all zones loaded
nov 09 10:12:34 server01 systemd[1]: Started BIND Domain Name Server.
nov 09 10:12:34 server01 named[2472]: running
nov 09 10:12:34 server01 named[2472]: managed-keys-zone: Key 20326 for zone . is now trusted (accept)
nov 09 10:12:34 server01 named[2472]: resolver priming query complete: success
lines 1-22/22 (END)
```

- Hasta lo configurado se debería poder tener acceso a internet en el desktop.



- Modificamos el archivo /etc/bind/named.conf.local

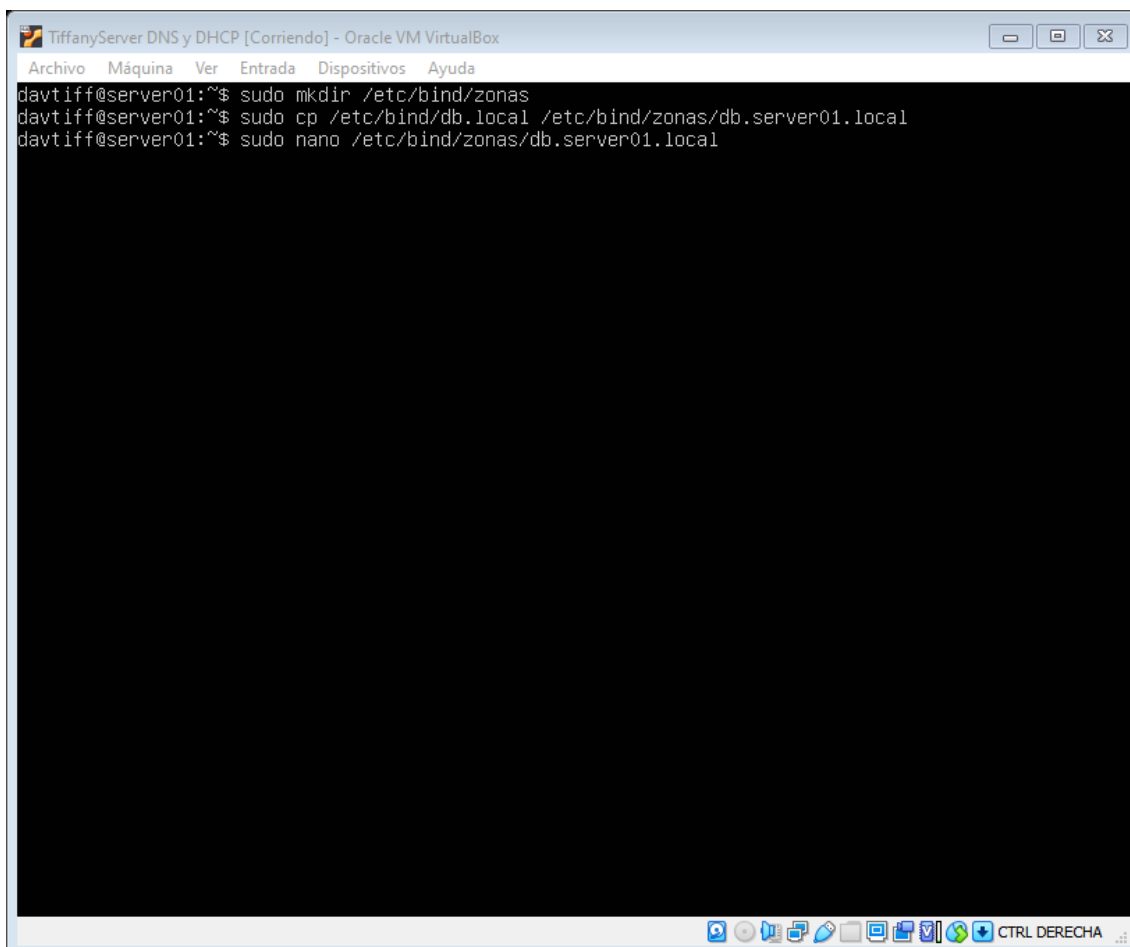
**Nombre:** Tiffany Andrea Jordán Uquillas



The screenshot shows a terminal window titled "TiffanyServer DNS y DHCP [Corriendo] - Oracle VM VirtualBox". Inside, the GNU nano 6.2 text editor is open, editing the file /etc/bind/named.conf.local. The editor's interface includes a menu bar at the top with options: Archivo, Máquina, Ver, Entrada, Dispositivos, and Ayuda. The main editing area contains the following configuration text:

```
//  
// Do any local configuration here  
//  
  
// Consider adding the 1918 zones here, if they are not used in your  
// organization  
//include "/etc/bind/zones.rfc1918";  
  
zone "server01.local" IN {  
    type master;  
    file "/etc/bind/zonas/db.server01.local";  
};  
zone "1.168.192.in-addr.arpa"{  
    type master;  
    file "/etc/bind/zonas/db.1.168.192";  
};
```

At the bottom of the editor, there is a toolbar with various keyboard shortcuts: ^G Help, ^X Exit, ^O Write Out, ^R Read File, ^W Where Is, ^N Replace, ^K Cut, ^U Paste, ^T Execute, ^J Justify, ^C Location, ^\_ Go To Line, M-U Undo, and M-E Redo. The bottom status bar shows icons for file operations and the text "CTRL DERECHA".

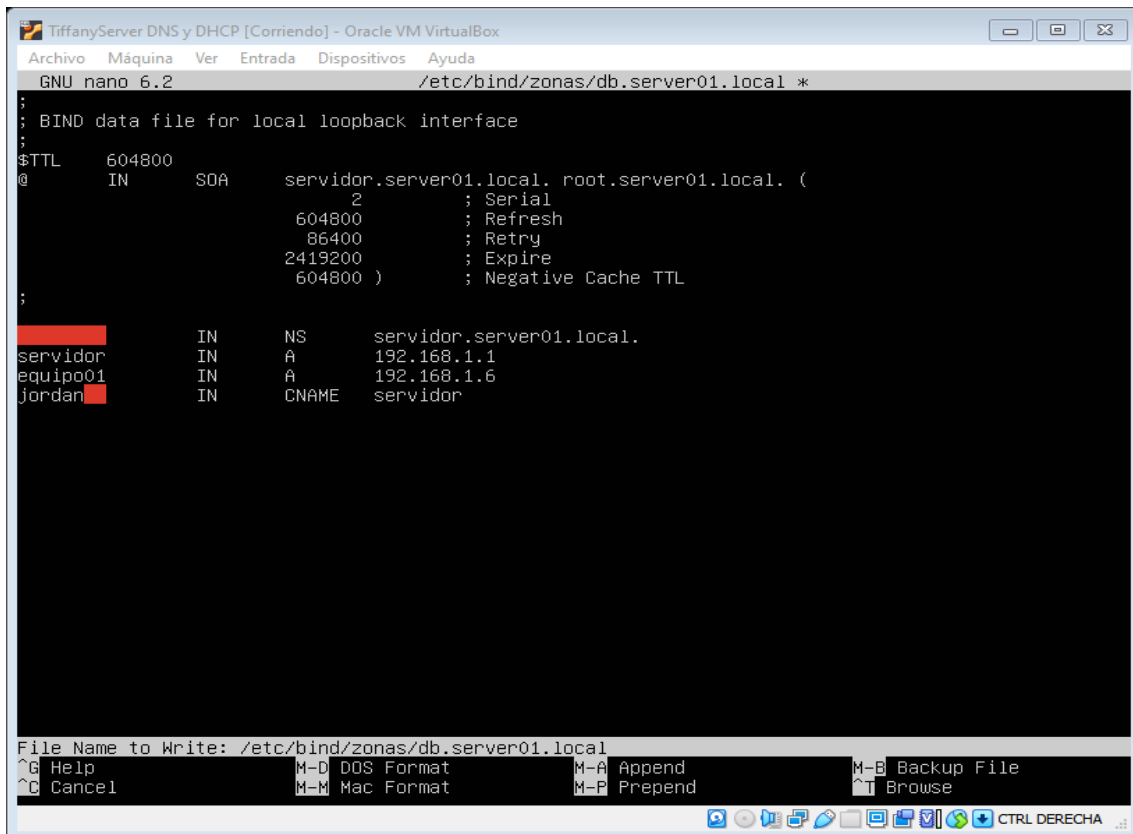


The screenshot shows a terminal window titled "TiffanyServer DNS y DHCP [Corriendo] - Oracle VM VirtualBox". The prompt is davtiff@server01:~\$. The following commands have been executed:

```
davtiff@server01:~$ sudo mkdir /etc/bind/zonas  
davtiff@server01:~$ sudo cp /etc/bind/db.local /etc/bind/zonas/db.server01.local  
davtiff@server01:~$ sudo nano /etc/bind/zonas/db.server01.local
```

The terminal window has a menu bar with Archivo, Máquina, Ver, Entrada, Dispositivos, and Ayuda. The bottom status bar shows icons for file operations and the text "CTRL DERECHA".

**Nombre:** Tiffany Andrea Jordán Uquillas

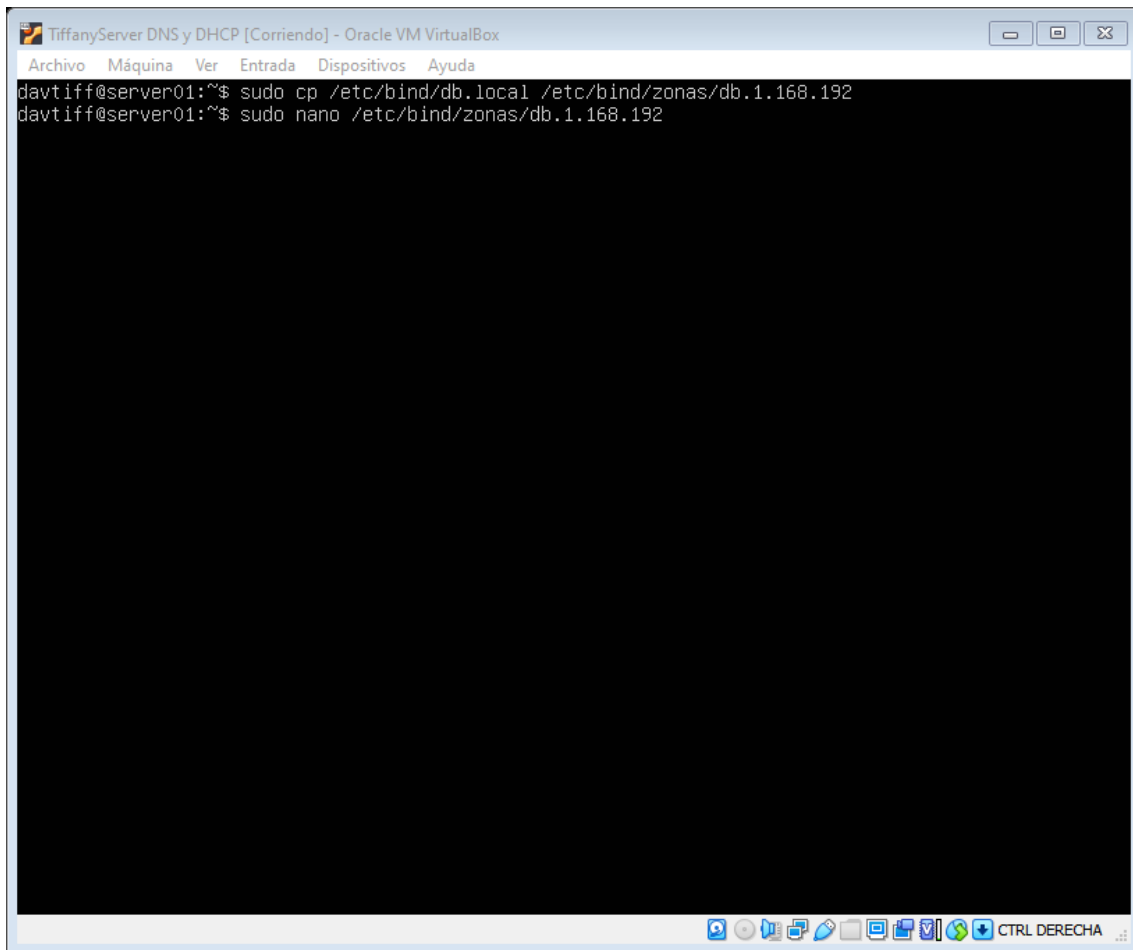


The screenshot shows a virtual machine window titled "TiffanyServer DNS y DHCP [Corriendo] - Oracle VM VirtualBox". Inside, a terminal window runs the GNU nano 6.2 editor, editing the file `/etc/bind/zonas/db.server01.local`. The file content is as follows:

```
;  
; BIND data file for local loopback interface  
;  
$TTL      604800  
@          IN      SOA      servidor.server01.local. root.server01.local. (  
                                2          ; Serial  
                                604800     ; Refresh  
                                86400      ; Retry  
                                2419200    ; Expire  
                                604800 )   ; Negative Cache TTL  
;  
servidor    IN      NS       servidor.server01.local.  
servidor    IN      A        192.168.1.1  
equipo01    IN      A        192.168.1.6  
jordan      IN      CNAME    servidor
```

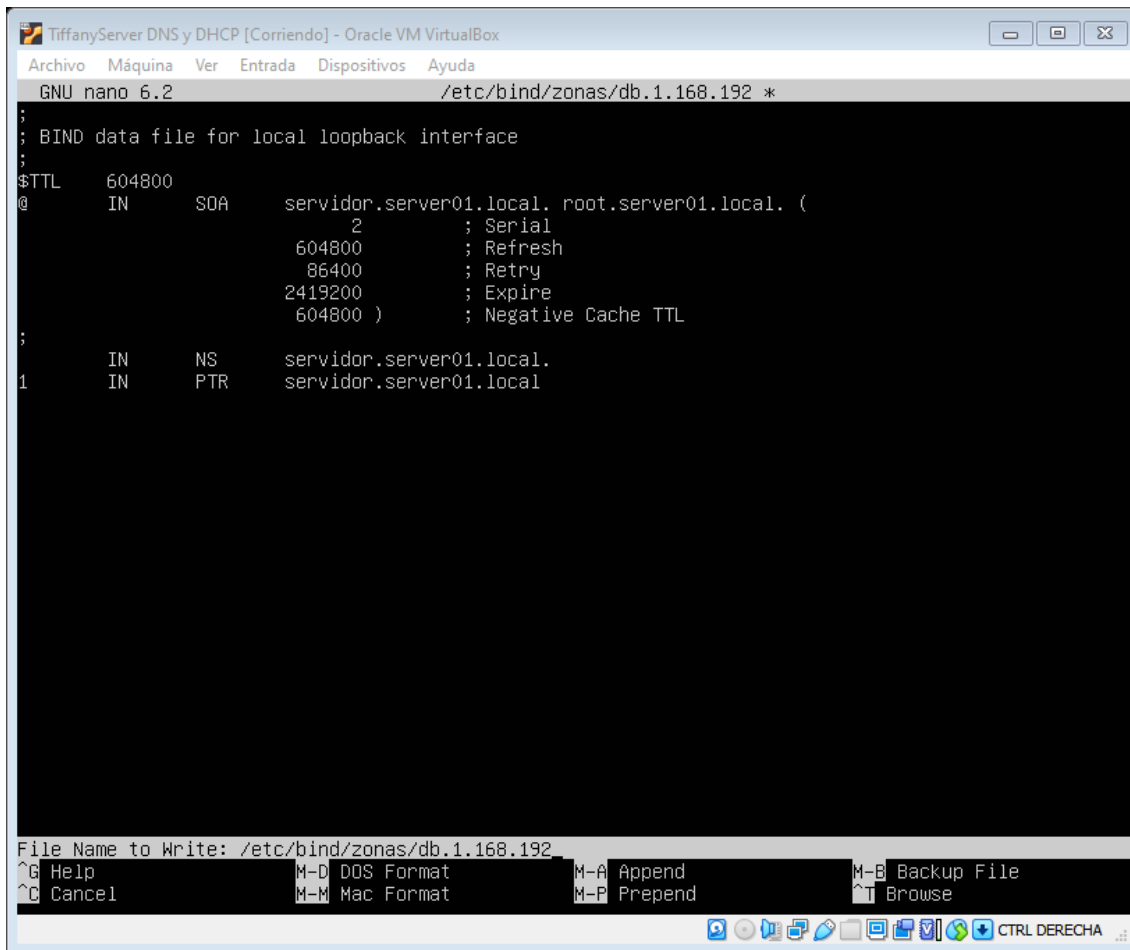
At the bottom of the nano editor, the "File Name to Write: /etc/bind/zonas/db.server01.local" is displayed. The bottom status bar shows various keyboard shortcuts: ^G Help, ^C Cancel, M-D DOS Format, M-M Mac Format, M-A Append, M-P Prepend, M-B Backup File, and ^T Browse. The system tray at the bottom right includes icons for network, volume, and other utilities, along with the text "CTRL DERECHA".

**Nombre:** Tiffany Andrea Jordán Uquillas



```
TiffanyServer DNS y DHCP [Corriendo] - Oracle VM VirtualBox
Archivo  Máquina  Ver  Entrada  Dispositivos  Ayuda
davtiff@server01:~$ sudo cp /etc/bind/db.local /etc/bind/zonas/db.1.168.192
davtiff@server01:~$ sudo nano /etc/bind/zonas/db.1.168.192
```

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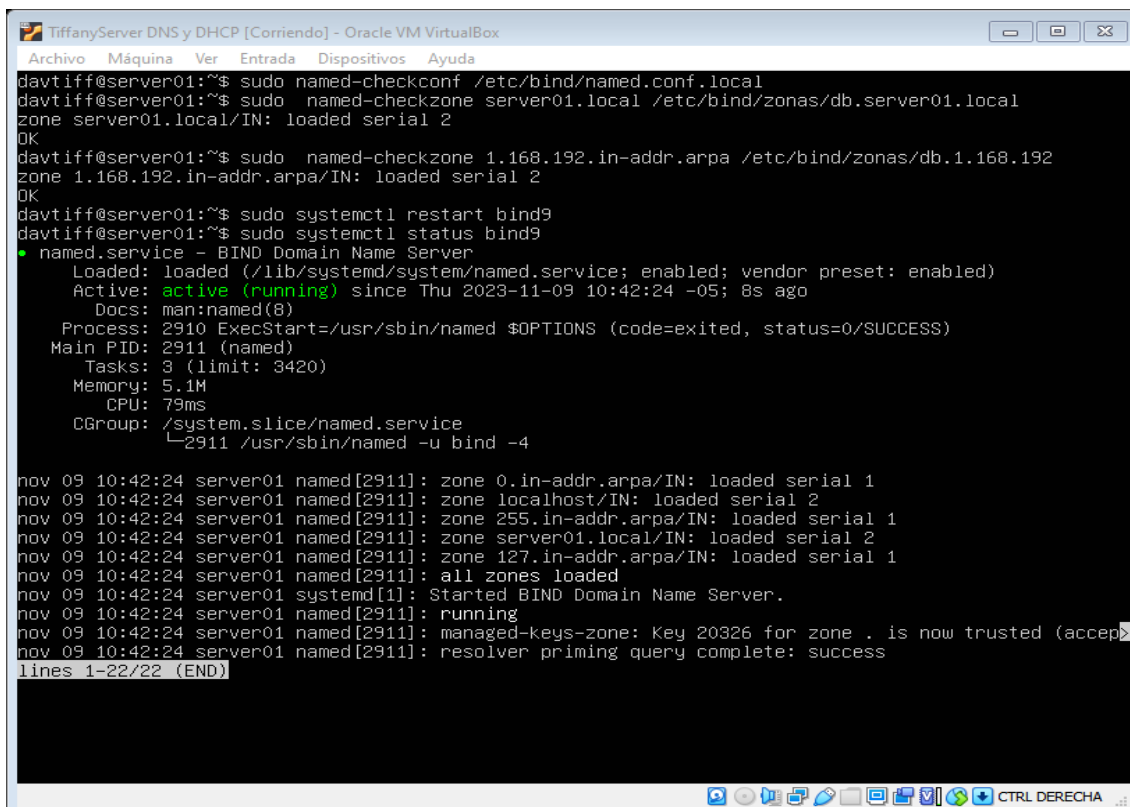


The screenshot shows a terminal window titled "TiffanyServer DNS y DHCP [Corriendo] - Oracle VM VirtualBox". The terminal is running GNU nano 6.2, editing the file /etc/bind/zonas/db.1.168.192 \*. The content of the file is as follows:

```
;
; BIND data file for local loopback interface
;
$TTL      604800
@          IN      SOA      servidor.server01.local. root.server01.local. (
                        2      ; Serial
                        604800   ; Refresh
                        86400    ; Retry
                        2419200  ; Expire
                        604800 ) ; Negative Cache TTL
;
1          IN      NS       servidor.server01.local.
1          IN      PTR      servidor.server01.local
```

At the bottom of the terminal, there is a prompt "File Name to Write: /etc/bind/zonas/db.1.168.192" and a menu with options: ^G Help, ^C Cancel, M-D DOS Format, M-M Mac Format, M-A Append, M-P Prepend, M-B Backup File, and ^T Browse. The bottom status bar shows "CTRL DERECHA".

Se z



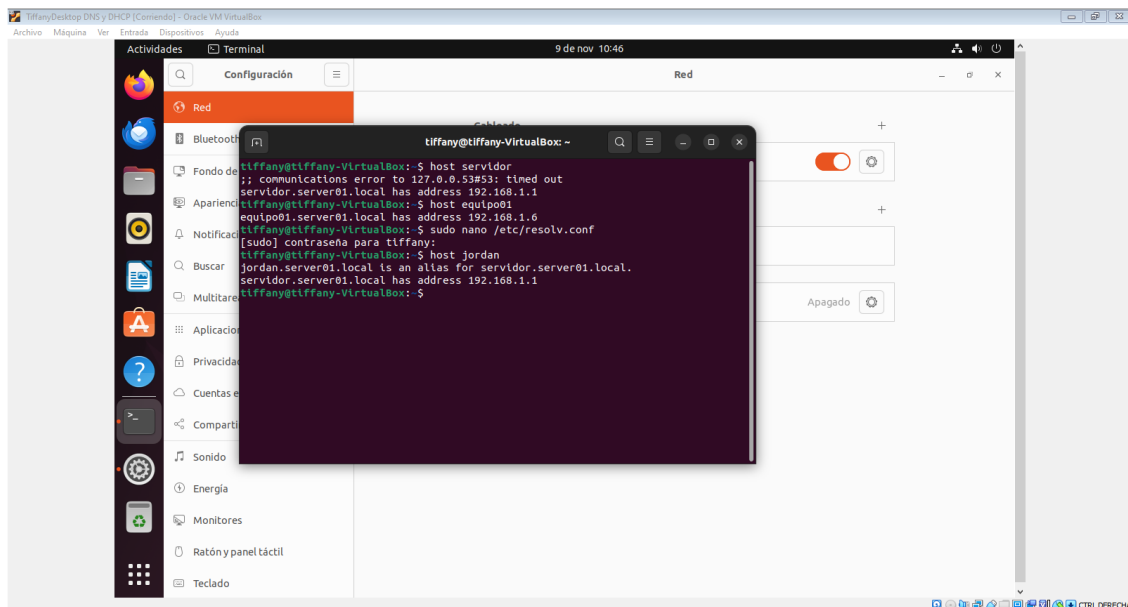
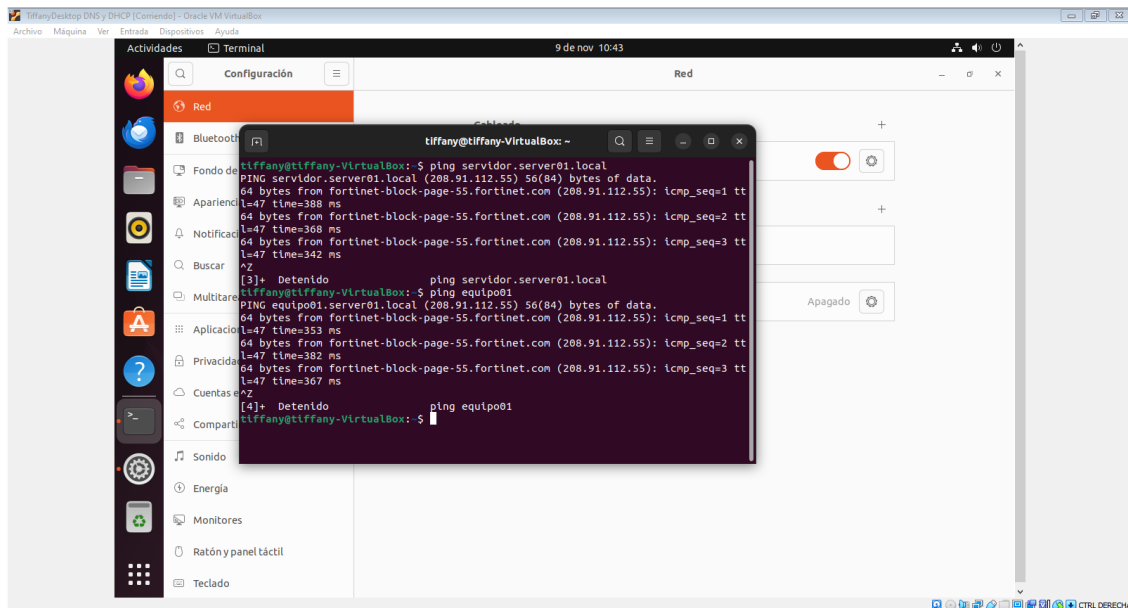
The screenshot shows a terminal window titled "TiffanyServer DNS y DHCP [Corriendo] - Oracle VM VirtualBox". The terminal is running a series of commands to install and configure BIND. The output is as follows:

```
davtiff@server01:~$ sudo named-checkconf /etc/bind/named.conf.local
davtiff@server01:~$ sudo named-checkzone server01.local /etc/bind/zonas/db.server01.local
zone server01.local/IN: loaded serial 2
OK
davtiff@server01:~$ sudo named-checkzone 1.168.192.in-addr.arpa /etc/bind/zonas/db.1.168.192
zone 1.168.192.in-addr.arpa/IN: loaded serial 2
OK
davtiff@server01:~$ sudo systemctl restart bind9
davtiff@server01:~$ sudo systemctl status bind9
● named.service - BIND Domain Name Server
   Loaded: loaded (/lib/systemd/system/named.service; enabled; vendor preset: enabled)
   Active: active (running) since Thu 2023-11-09 10:42:24 -05; 8s ago
     Docs: man:named(8)
   Process: 2910 ExecStart=/usr/sbin/named $OPTIONS (code=exited, status=0/SUCCESS)
  Main PID: 2911 (named)
    Tasks: 3 (limit: 3420)
   Memory: 5.1M
      CPU: 79ms
   CGroup: /system.slice/named.service
           └─2911 /usr/sbin/named -u bind -4

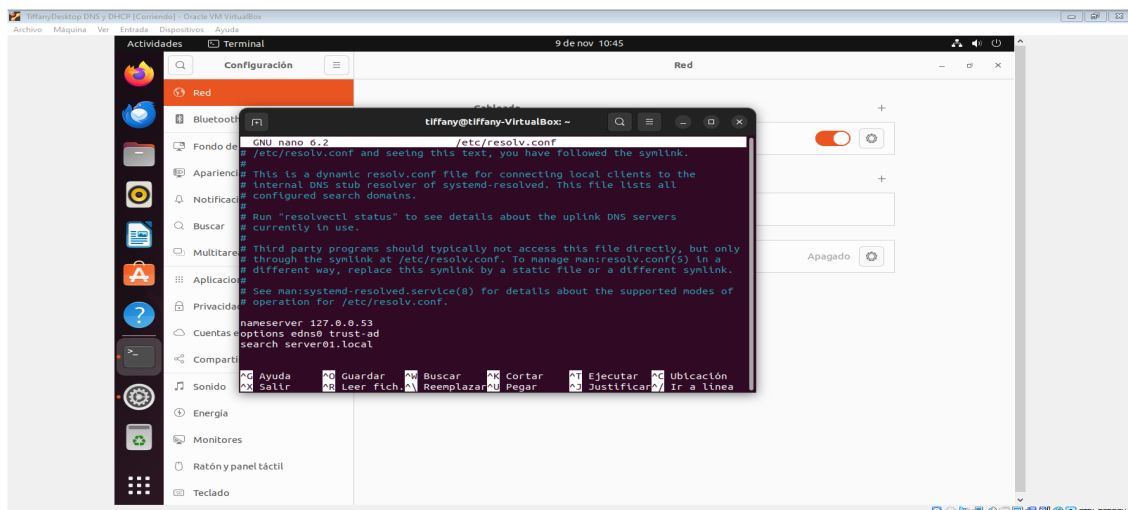
nov 09 10:42:24 server01 named[2911]: zone 0.in-addr.arpa/IN: loaded serial 1
nov 09 10:42:24 server01 named[2911]: zone localhost/IN: loaded serial 2
nov 09 10:42:24 server01 named[2911]: zone 255.in-addr.arpa/IN: loaded serial 1
nov 09 10:42:24 server01 named[2911]: zone server01.local/IN: loaded serial 2
nov 09 10:42:24 server01 named[2911]: zone 127.in-addr.arpa/IN: loaded serial 1
nov 09 10:42:24 server01 named[2911]: all zones loaded
nov 09 10:42:24 server01 systemd[1]: Started BIND Domain Name Server.
nov 09 10:42:24 server01 named[2911]: running
nov 09 10:42:24 server01 named[2911]: managed-keys-zone: Key 20326 for zone . is now trusted (accept)
nov 09 10:42:24 server01 named[2911]: resolver priming query complete: success
lines 1-22/22 (END)
```

The bottom status bar shows "CTRL DERECHA".

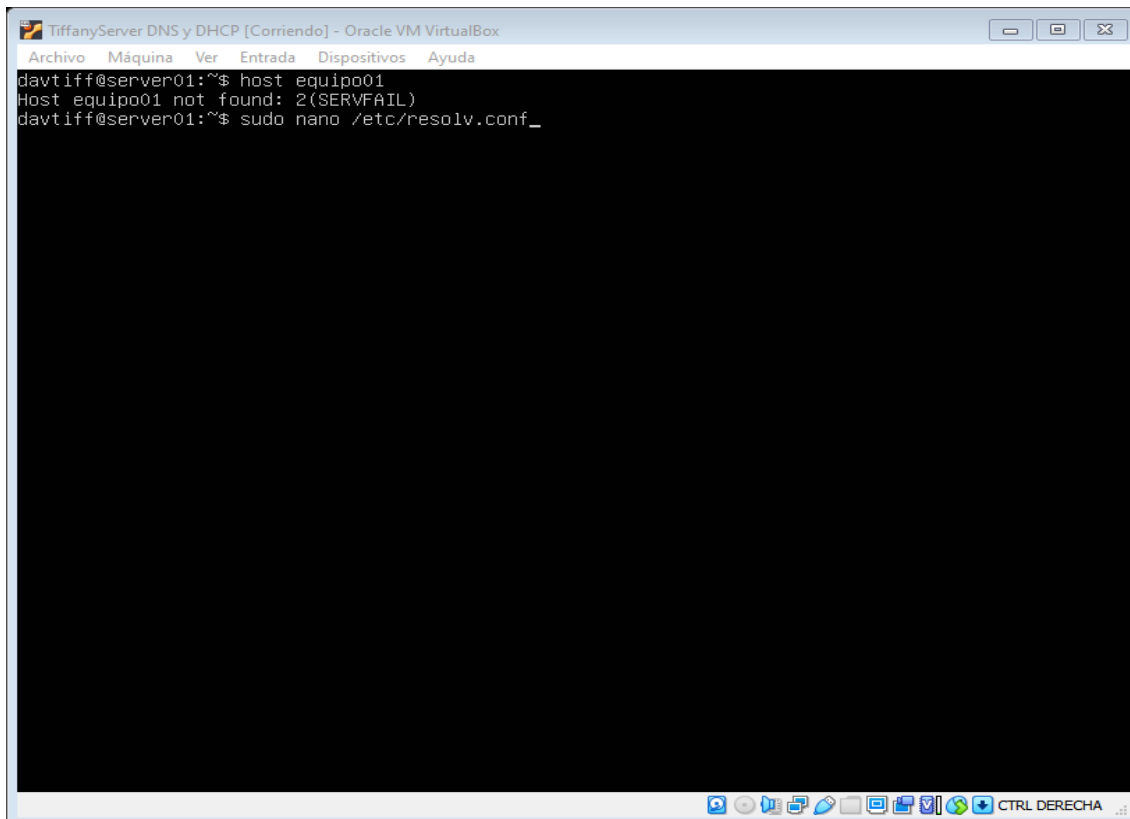
Nombre: Tiffany Andrea Jordán Uquillas



Se observa que se vinculó con server01.local

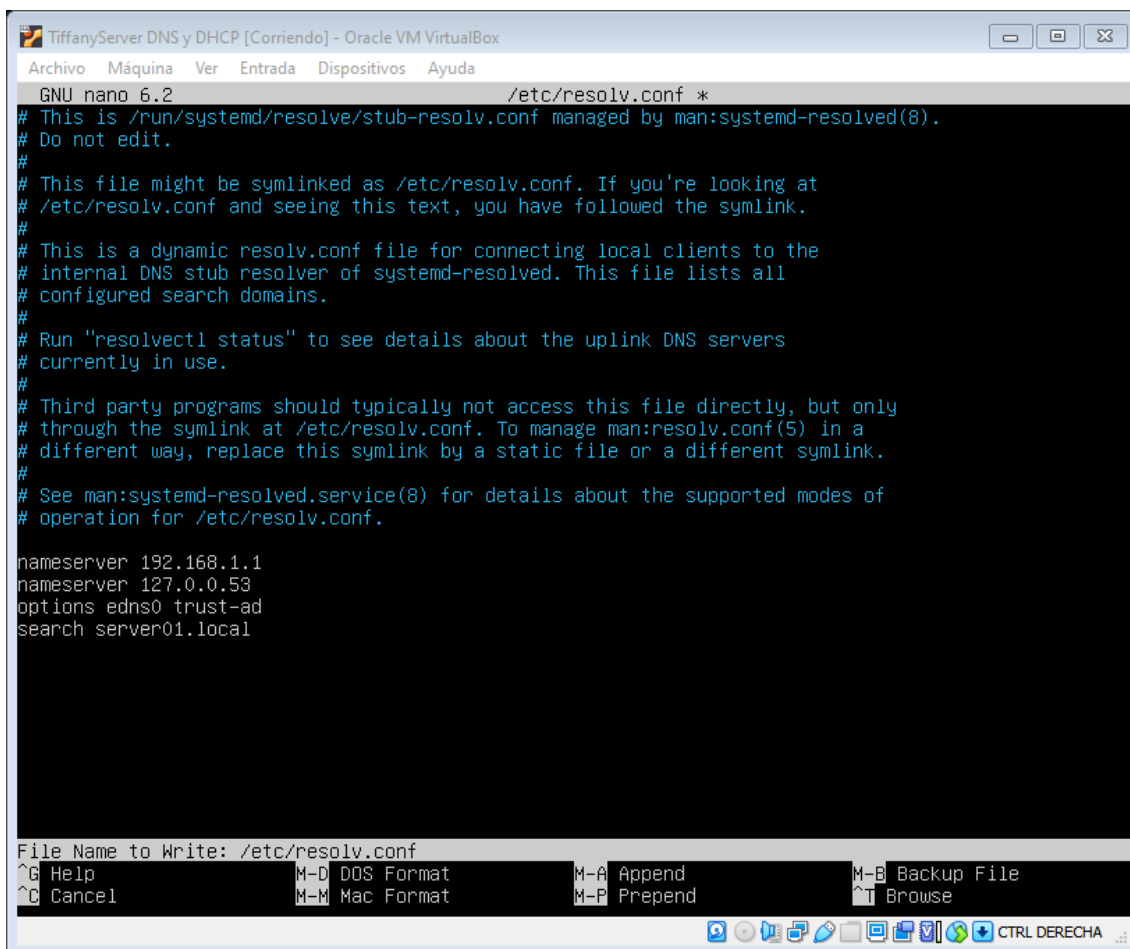


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A terminal window titled "TiffanyServer DNS y DHCP [Corriendo] - Oracle VM VirtualBox". The window has a menu bar with "Archivo", "Máquina", "Ver", "Entrada", "Dispositivos", and "Ayuda". The terminal output shows a user prompt "davtiff@server01:~\$" followed by the command "host equipo01". The output is "Host equipo01 not found: 2(SERVFAIL)". The user then enters "sudo nano /etc/resolv.conf\_". The terminal background is black with white text. At the bottom, there is a toolbar with various icons and the text "CTRL DERECHA".

```
TiffanyServer DNS y DHCP [Corriendo] - Oracle VM VirtualBox
Archivo  Máquina  Ver  Entrada  Dispositivos  Ayuda
davtiff@server01:~$ host equipo01
Host equipo01 not found: 2(SERVFAIL)
davtiff@server01:~$ sudo nano /etc/resolv.conf_
```



A terminal window titled "TiffanyServer DNS y DHCP [Corriendo] - Oracle VM VirtualBox". The window has a menu bar with "Archivo", "Máquina", "Ver", "Entrada", "Dispositivos", and "Ayuda". The terminal shows the "GNU nano 6.2" editor editing the file "/etc/resolv.conf \*". The content of the file is displayed in blue text on a black background. The file contains several comments and configuration lines. At the bottom, a status bar shows "File Name to Write: /etc/resolv.conf" and a menu with options like "Help", "Cancel", "DOS Format", "Mac Format", "Append", "Prepend", "Backup File", and "Browse". The terminal background is black with white text. At the bottom, there is a toolbar with various icons and the text "CTRL DERECHA".

```
TiffanyServer DNS y DHCP [Corriendo] - Oracle VM VirtualBox
Archivo  Máquina  Ver  Entrada  Dispositivos  Ayuda
GNU nano 6.2 /etc/resolv.conf *
# This is /run/systemd/resolve/stub-resolv.conf managed by man:systemd-resolved(8).
# Do not edit.
#
# This file might be symlinked as /etc/resolv.conf. If you're looking at
# /etc/resolv.conf and seeing this text, you have followed the symlink.
#
# This is a dynamic resolv.conf file for connecting local clients to the
# internal DNS stub resolver of systemd-resolved. This file lists all
# configured search domains.
#
# Run "resolvectl status" to see details about the uplink DNS servers
# currently in use.
#
# Third party programs should typically not access this file directly, but only
# through the symlink at /etc/resolv.conf. To manage man:resolv.conf(5) in a
# different way, replace this symlink by a static file or a different symlink.
#
# See man:systemd-resolved.service(8) for details about the supported modes of
# operation for /etc/resolv.conf.

nameserver 192.168.1.1
nameserver 127.0.0.53
options edns0 trust-ad
search server01.local

File Name to Write: /etc/resolv.conf
^G Help          M-D DOS Format   M-A Append       M-B Backup File
^C Cancel        M-M Mac Format   M-P Prepend      ^T Browse
CTRL DERECHA
```

**Nombre:** Tiffany Andrea Jordán Uquillas

```
TiffanyServer DNS y DHCP [Corriendo] - Oracle VM VirtualBox
Archivo  Máquina  Ver  Entrada  Dispositivos  Ayuda
davtiff@server01:~$ host equipo01
equipo01.server01.local has address 192.168.1.6
davtiff@server01:~$ host servidor
servidor.server01.local has address 192.168.1.1
davtiff@server01:~$ sudo cp /etc/resolv.conf /etc/resolv.conf.bak
davtiff@server01:~$ sudo chattrr +i /etc/resolv.conf.bak
sudo: chattrr: command not found
davtiff@server01:~$ sudo chattr +i /etc/resolv.conf.bak
davtiff@server01:~$ sudo rm /etc/resolv.conf
davtiff@server01:~$ sudo cp /etc/resolv.conf.bak /etc/resolv.conf
davtiff@server01:~$ sudo nano /etc/resolv.conf_
```

```
TiffanyServer DNS y DHCP [Corriendo] - Oracle VM VirtualBox
Archivo  Máquina  Ver  Entrada  Dispositivos  Ayuda
GNU nano 6.2 /etc/resolv.conf
# This is /run/systemd/resolve/stub-resolv.conf managed by man:systemd-resolved(8).
# Do not edit.
#
# This file might be symlinked as /etc/resolv.conf. If you're looking at
# /etc/resolv.conf and seeing this text, you have followed the symlink.
#
# This is a dynamic resolv.conf file for connecting local clients to the
# internal DNS stub resolver of systemd-resolved. This file lists all
# configured search domains.
#
# Run "resolvectl status" to see details about the uplink DNS servers
# currently in use.
#
# Third party programs should typically not access this file directly, but only
# through the symlink at /etc/resolv.conf. To manage man:resolv.conf(5) in a
# different way, replace this symlink by a static file or a different symlink.
#
# See man:systemd-resolved.service(8) for details about the supported modes of
# operation for /etc/resolv.conf.

nameserver 192.168.1.1
nameserver 127.0.0.53
options edns0 trust-ad
search server01.local

[ Read 24 lines ]
^G Help      ^O Write Out  ^W Where Is   ^K Cut        ^T Execute    ^C Location   M-U Undo
^X Exit      ^R Read File  ^_ Replace    ^U Paste      ^J Justify    ^_ Go To Line  M-E Redo
CTRL DERECHA
```