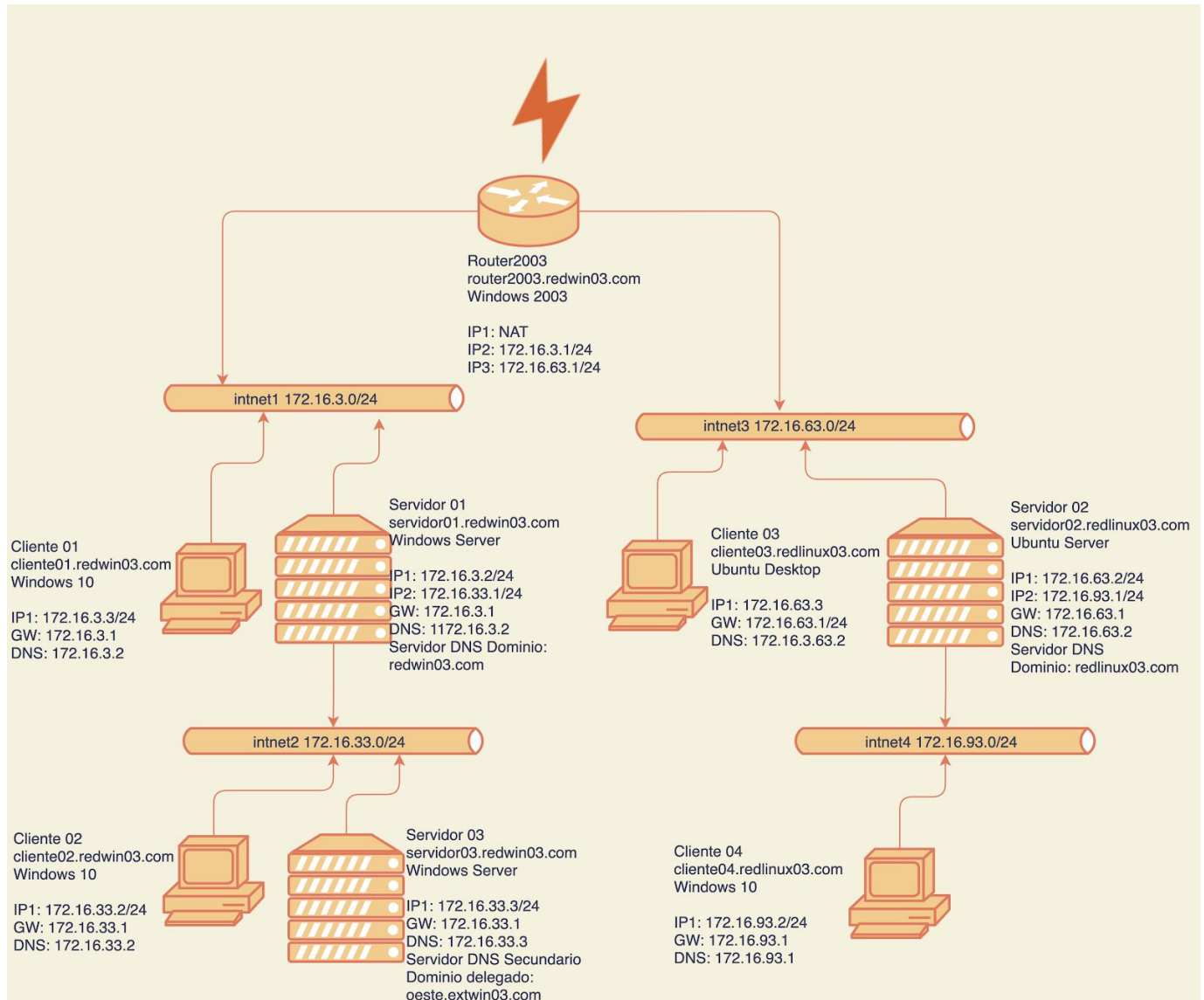
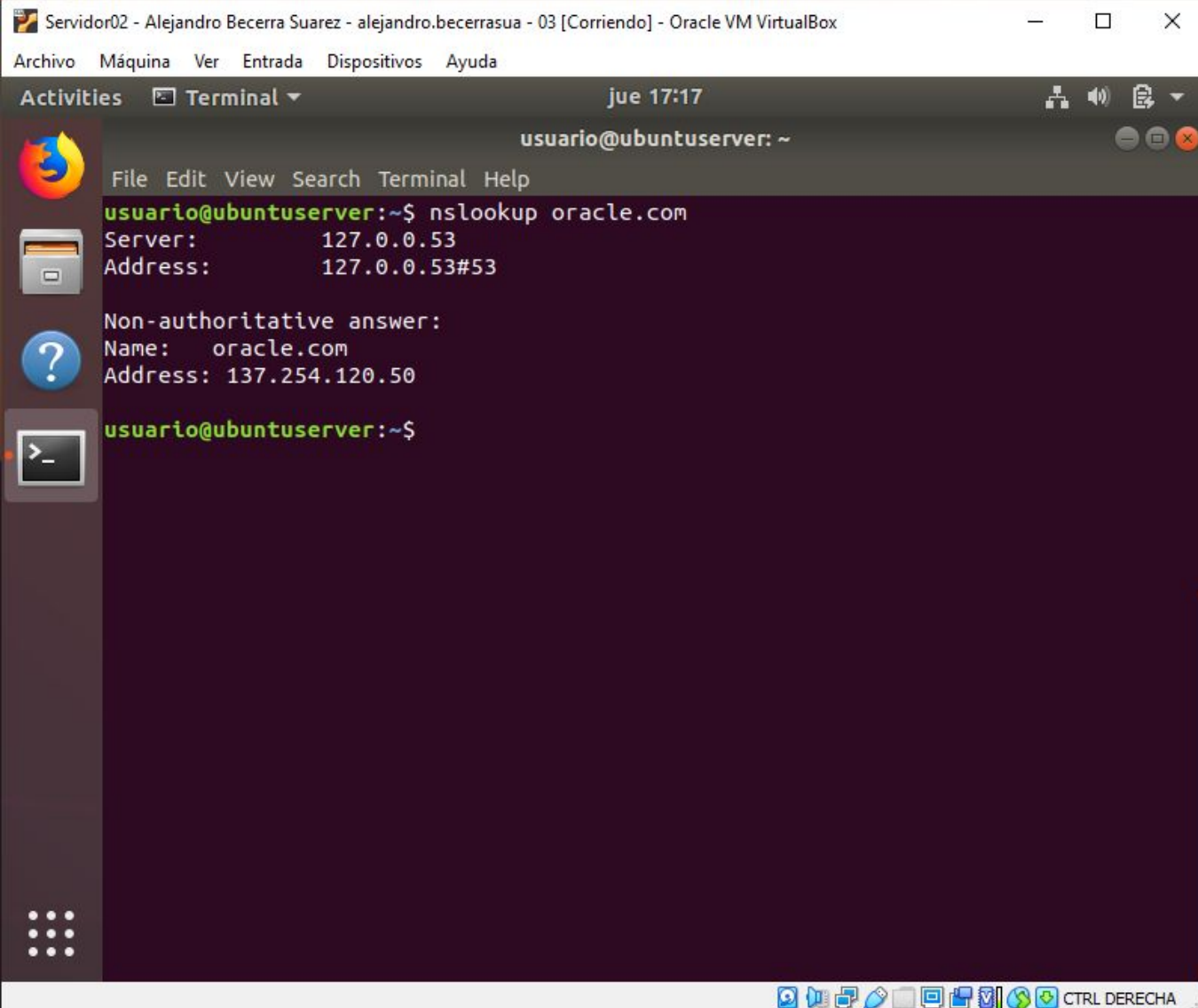


Actividad 6: Instalación del servidor DNS en Linux.

1. Incorporar el diagrama de red.
 - a. El nombre de dominio será **redlinuxXY.com**, XY es el número de lista en el xade.
 - b. Deberá mostrar qué equipo es el servidor DNS. Para cada equipo deberá indicar su nombre FQDN. de dominio totalmente cualificado.



2. En Servidor02, comprobar que la fecha y hora del sistema son correctas.
 - a. Cambiar la zona horaria a Madrid, en caso de que no lo sea.
 - b. En caso de que no fuesen correctas, instalar NTP en Servidor02 y capturar la consola en la que se ejecuta el comando de instalación.
 - c. Capturar el resultado de hacer nslookup a un dominio de Internet.



The screenshot shows a terminal window titled "Servidor02 - Alejandro Becerra Suarez - alejandro.becerrasua - 03 [Corriendo] - Oracle VM VirtualBox". The window has a menu bar with "Archivo", "Máquina", "Ver", "Entrada", "Dispositivos", and "Ayuda". Below the menu bar, there is a status bar showing "Activities", "Terminal", and the date "jue 17:17". The terminal itself has a title bar "usuario@ubuntuserver: ~" and a menu bar with "File", "Edit", "View", "Search", "Terminal", and "Help". The terminal content shows the command "nslookup oracle.com" being executed, with the following output:

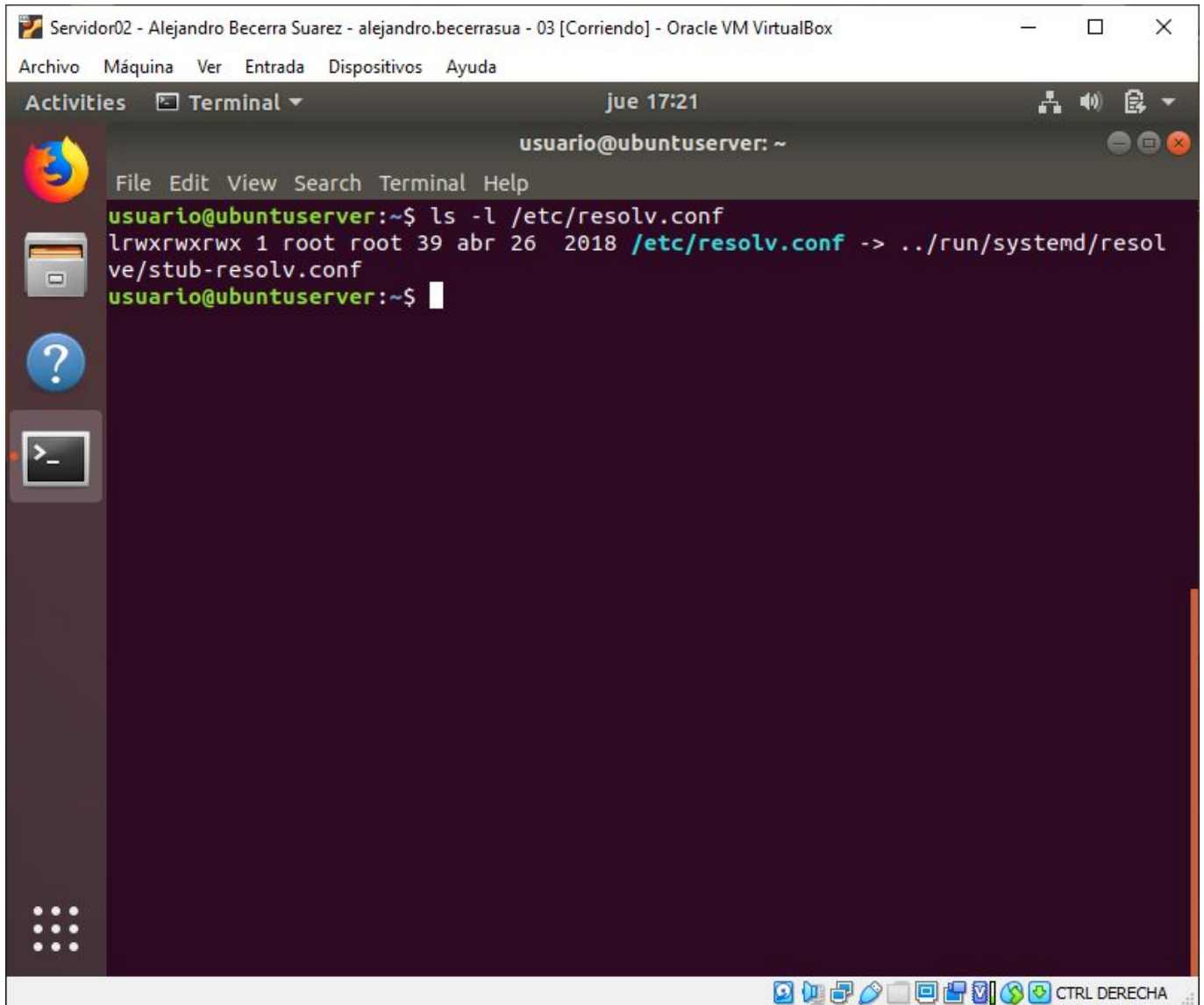
```
usuario@ubuntuserver:~$ nslookup oracle.com
Server:      127.0.0.53
Address:     127.0.0.53#53

Non-authoritative answer:
Name:   oracle.com
Address: 137.254.120.50

usuario@ubuntuserver:~$
```

The terminal window is part of a desktop environment with a sidebar on the left containing icons for Firefox, a file manager, a help icon, and a terminal icon. The bottom of the window shows a taskbar with various application icons and a "CTRL DERECHA" button.

3. En Servidor02, todavía sin modificar el servidor DNS en la configuración de la conexión de red (es decir, seguirá siendo el DNS del instituto), configurar systemd-resolved según se explica en el apartado 9 de la guía. Capturar:
 - a. El resultado de hacer nslookup a un dominio de Internet.
 - b. Consola mostrando el resultado de ejecutar el comando que indica a dónde apunta el link simbólico `/etc/resolv.conf`

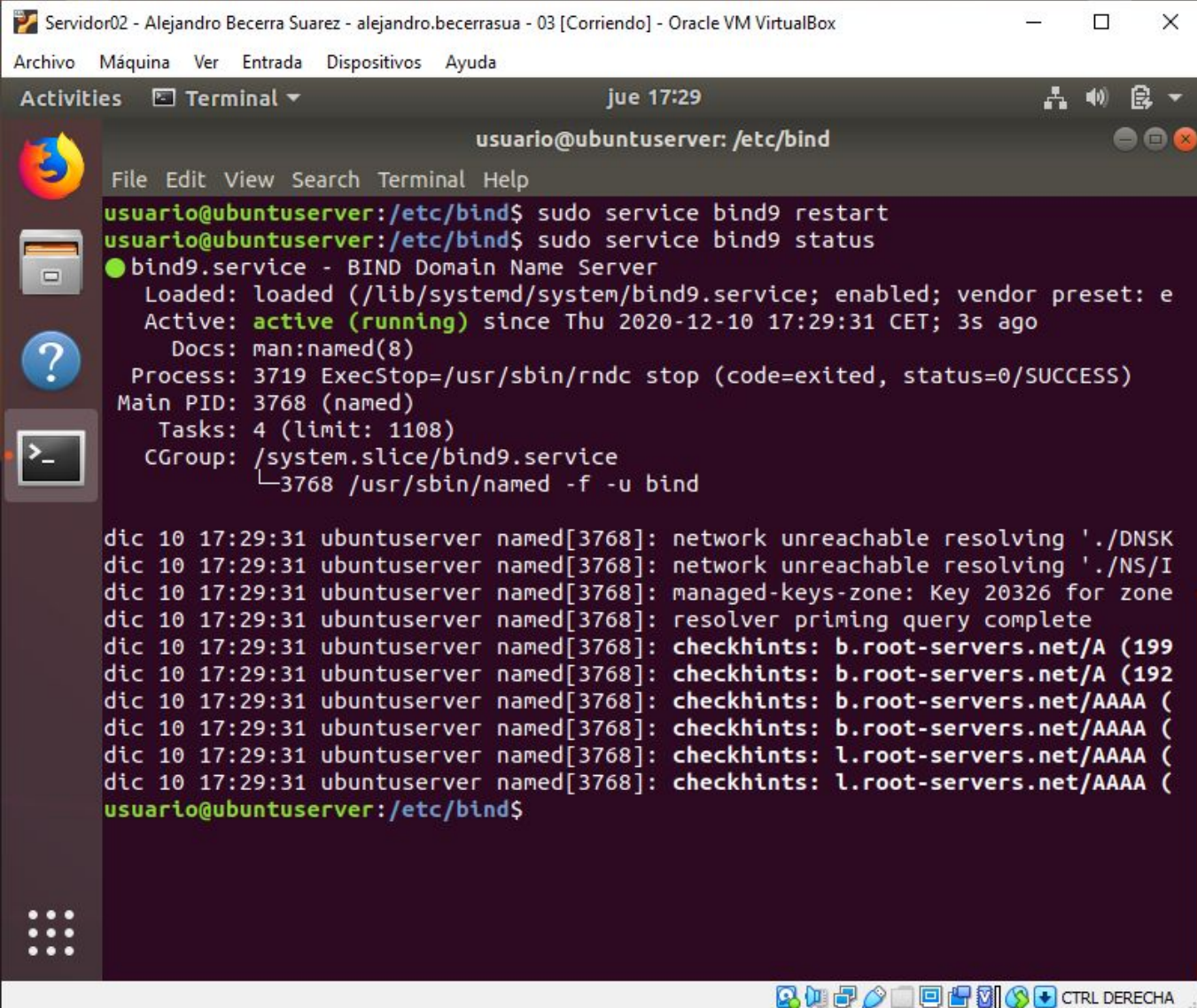


The screenshot shows a terminal window titled "Servidor02 - Alejandro Becerra Suarez - alejandro.becerrasua - 03 [Corriendo] - Oracle VM VirtualBox". The terminal is running on a system with the prompt "usuario@ubuntuserver: ~". The command executed is `ls -l /etc/resolv.conf`, and the output is:

```
lrwxrwxrwx 1 root root 39 abr 26 2018 /etc/resolv.conf -> ../run/systemd/resolve/stub-resolv.conf
```

The terminal window includes a menu bar with "File", "Edit", "View", "Search", "Terminal", and "Help". The status bar at the bottom shows various system icons and the text "CTRL DERECHA".

4. Instalar el servicio DNS en Servidor02.
5. Crear el dominio principal **redlinuxXY.com**. Nota: reiniciar bind9. Capturar *service bind9 status*.



The screenshot shows a terminal window titled "Servidor02 - Alejandro Becerra Suarez - alejandro.becerrasua - 03 [Corriendo] - Oracle VM VirtualBox". The terminal is running as "usuario@ubuntuserver: /etc/bind". The user has executed the following commands:

```
usuario@ubuntuserver:/etc/bind$ sudo service bind9 restart
usuario@ubuntuserver:/etc/bind$ sudo service bind9 status
```

The output of the status command is as follows:

```
● bind9.service - BIND Domain Name Server
   Loaded: loaded (/lib/systemd/system/bind9.service; enabled; vendor preset: e
   Active: active (running) since Thu 2020-12-10 17:29:31 CET; 3s ago
     Docs: man:named(8)
   Process: 3719 ExecStop=/usr/sbin/rndc stop (code=exited, status=0/SUCCESS)
    Main PID: 3768 (named)
      Tasks: 4 (limit: 1108)
    CGroup: /system.slice/bind9.service
            └─3768 /usr/sbin/named -f -u bind
```

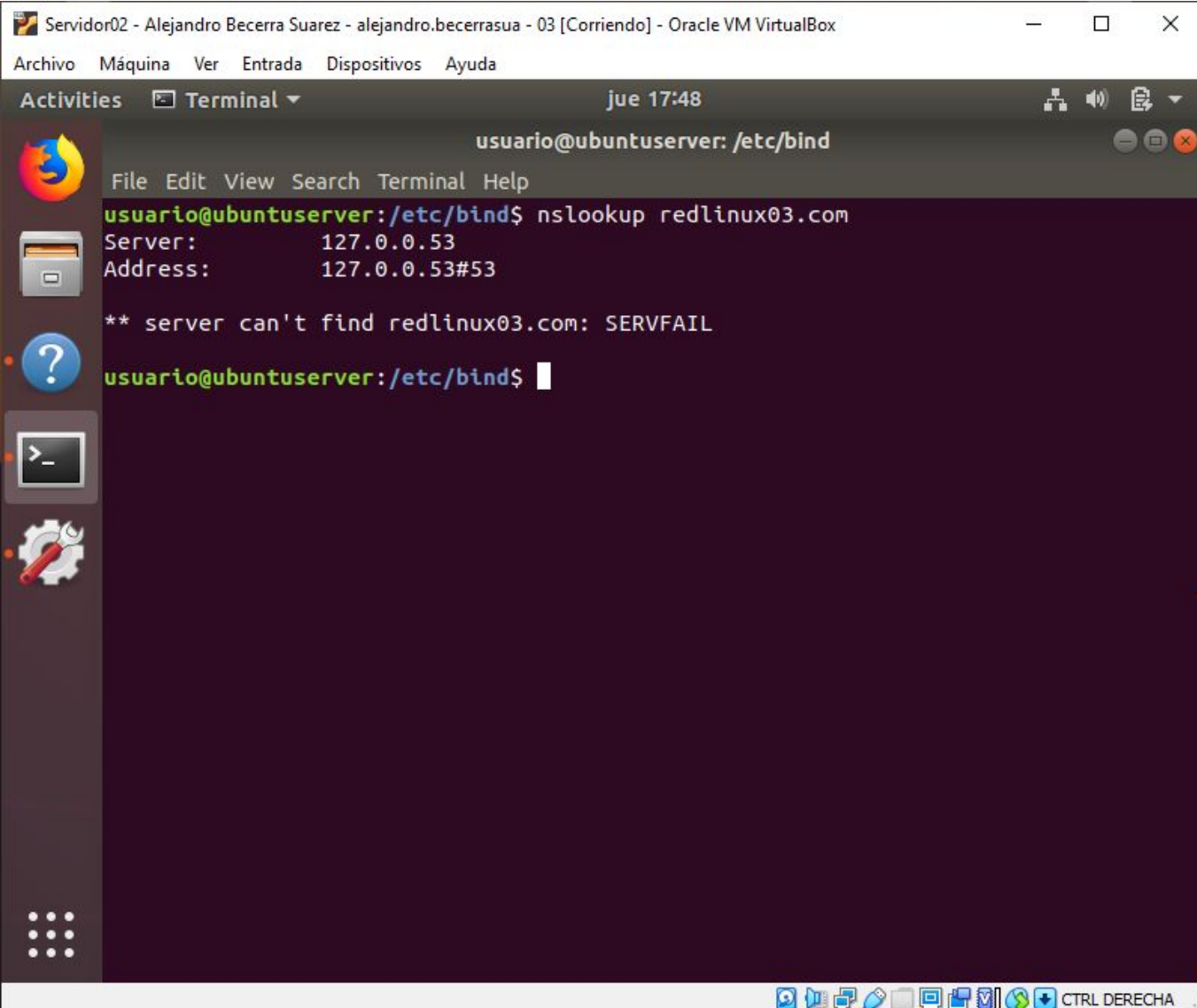
Below the service status, there are several log messages from the named daemon:

```
dic 10 17:29:31 ubuntuserver named[3768]: network unreachable resolving './DNSK
dic 10 17:29:31 ubuntuserver named[3768]: network unreachable resolving './NS/I
dic 10 17:29:31 ubuntuserver named[3768]: managed-keys-zone: Key 20326 for zone
dic 10 17:29:31 ubuntuserver named[3768]: resolver priming query complete
dic 10 17:29:31 ubuntuserver named[3768]: checkhints: b.root-servers.net/A (199
dic 10 17:29:31 ubuntuserver named[3768]: checkhints: b.root-servers.net/A (192
dic 10 17:29:31 ubuntuserver named[3768]: checkhints: b.root-servers.net/AAAA (
dic 10 17:29:31 ubuntuserver named[3768]: checkhints: b.root-servers.net/AAAA (
dic 10 17:29:31 ubuntuserver named[3768]: checkhints: l.root-servers.net/AAAA (
dic 10 17:29:31 ubuntuserver named[3768]: checkhints: l.root-servers.net/AAAA (
usuario@ubuntuserver:/etc/bind$
```

The terminal window includes a sidebar with icons for file manager, help, and a terminal icon. The bottom of the window shows a taskbar with various application icons and the text "CTRL DERECHA".

6. En Servidor02, configurar la conexión de red estableciendo Servidor02 como DNS, en el archivo YAML. Capturar:

a. Resultado de realizar nslookup a **redlinuxXY.com**



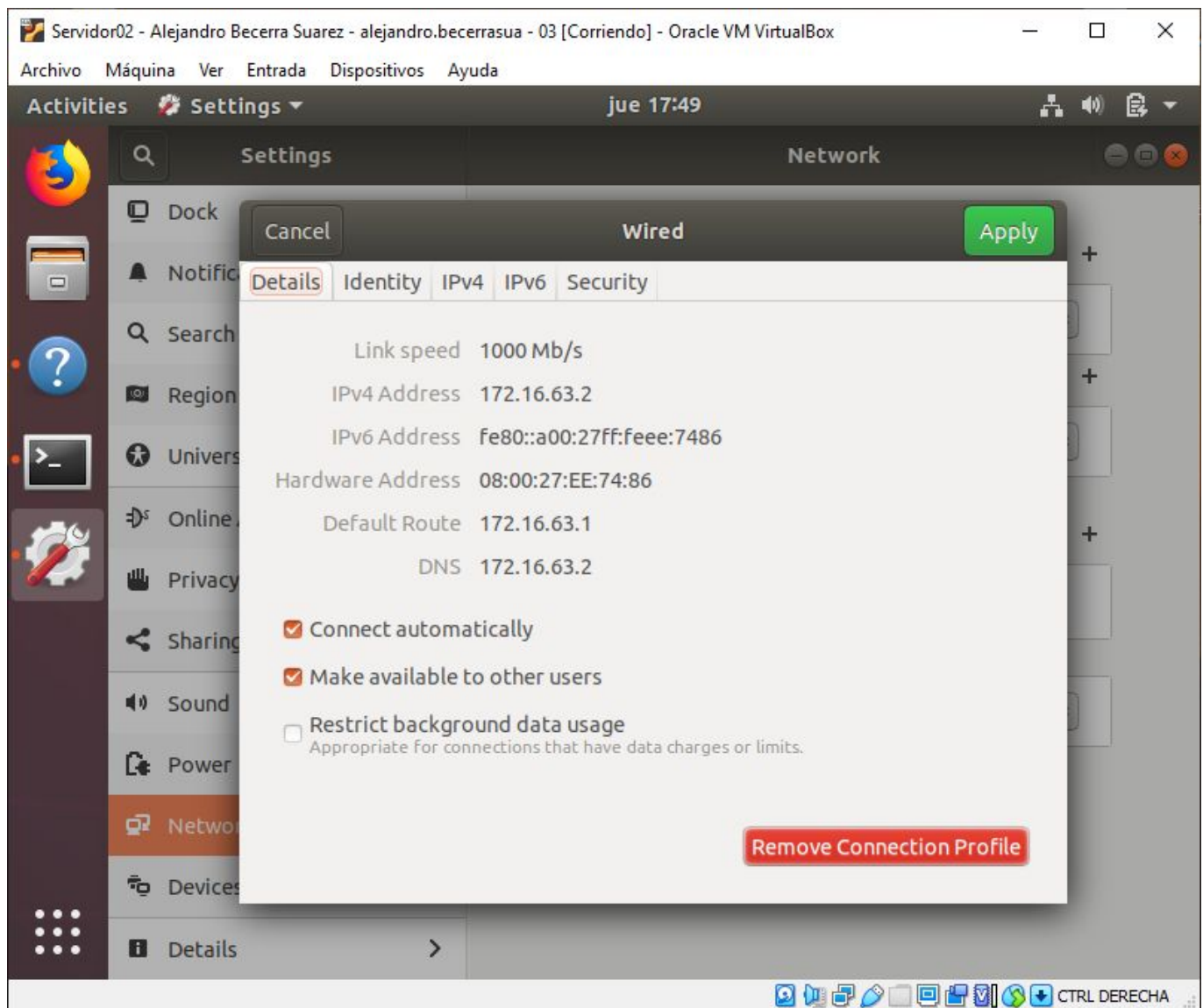
The screenshot shows a terminal window titled "Servidor02 - Alejandro Becerra Suarez - alejandro.becerrasua - 03 [Corriendo] - Oracle VM VirtualBox". The terminal is running on a system with the prompt "usuario@ubuntuserver: /etc/bind". The command "nslookup redlinux03.com" has been executed, resulting in the following output:

```
usuario@ubuntuserver:/etc/bind$ nslookup redlinux03.com
Server:         127.0.0.53
Address:        127.0.0.53#53

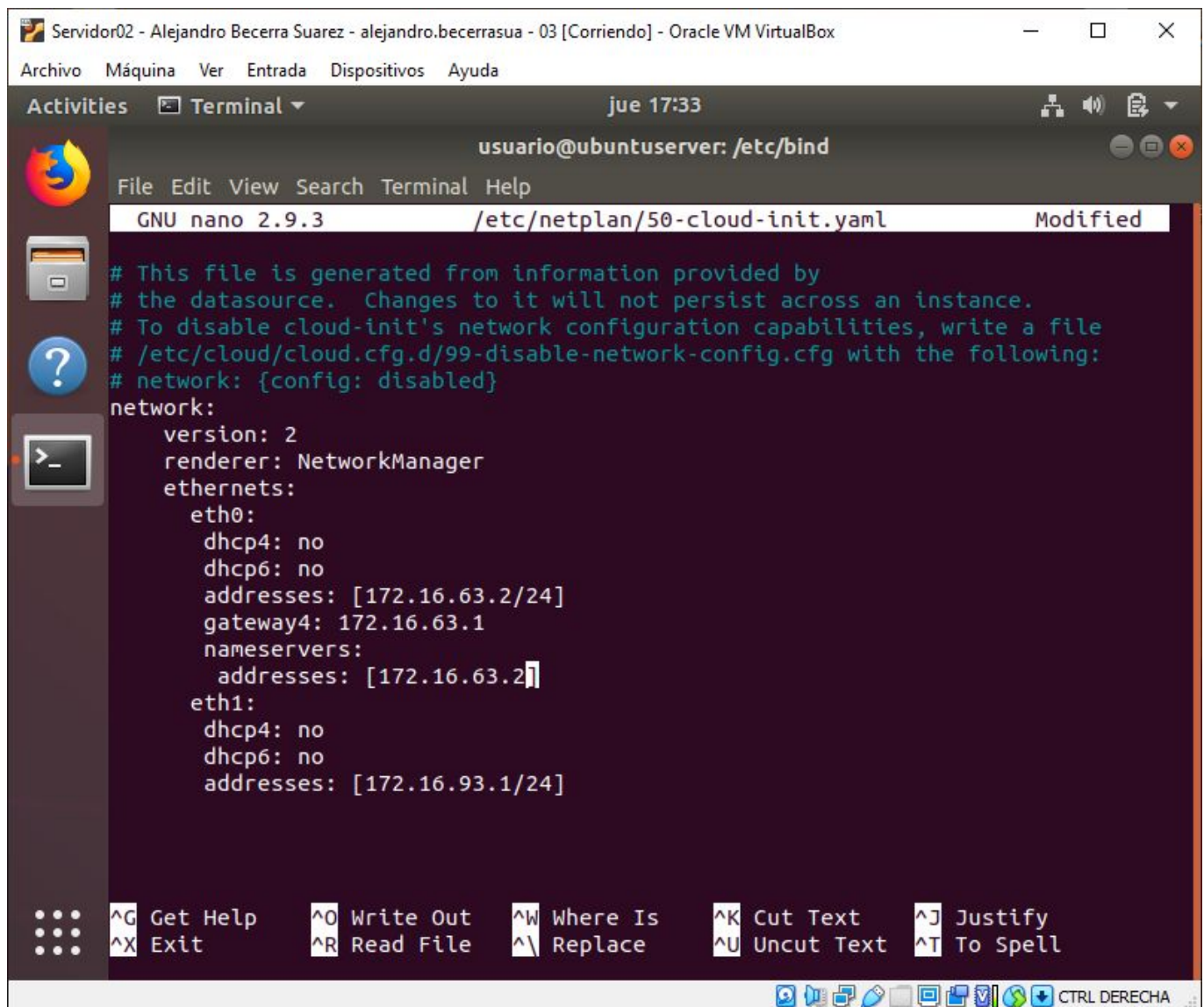
** server can't find redlinux03.com: SERVFAIL
usuario@ubuntuserver:/etc/bind$
```

The terminal window includes a menu bar with "File", "Edit", "View", "Search", "Terminal", and "Help". The status bar at the bottom shows various system icons and the text "CTRL DERECHA".

b. Ventana de información de la conexión para intnet3.



c. Fichero de configuración de la conexión de red.



Servidor02 - Alejandro Becerra Suarez - alejandro.becerrasua - 03 [Corriendo] - Oracle VM VirtualBox

Archivo Máquina Ver Entrada Dispositivos Ayuda

Activities Terminal jue 17:33

usuario@ubuntuserver: /etc/bind

File Edit View Search Terminal Help

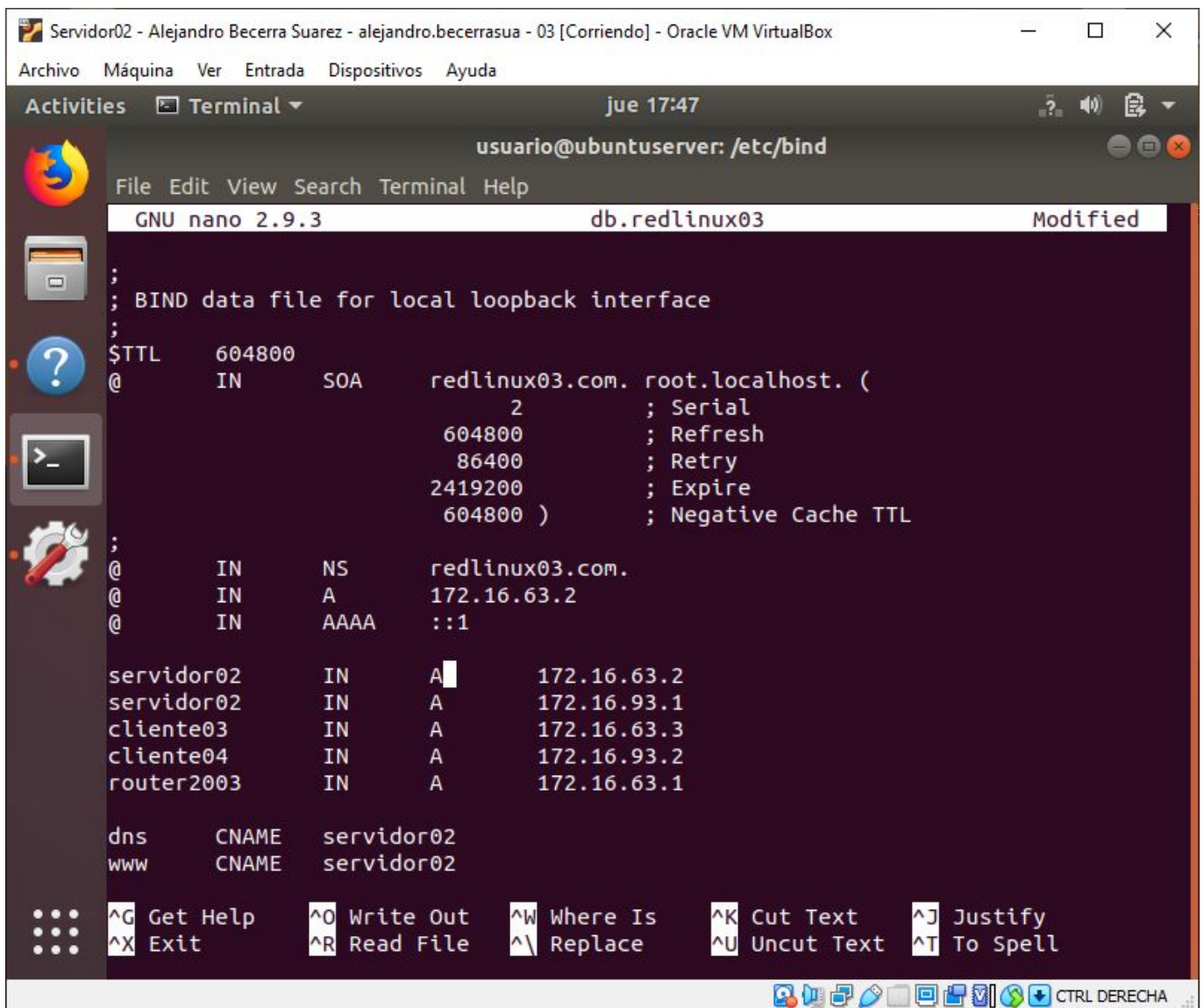
GNU nano 2.9.3 /etc/netplan/50-cloud-init.yaml Modified

```
# This file is generated from information provided by
# the datasource. Changes to it will not persist across an instance.
# To disable cloud-init's network configuration capabilities, write a file
# /etc/cloud/cloud.cfg.d/99-disable-network-config.cfg with the following:
# network: {config: disabled}
network:
  version: 2
  renderer: NetworkManager
  ethernets:
    eth0:
      dhcp4: no
      dhcp6: no
      addresses: [172.16.63.2/24]
      gateway4: 172.16.63.1
      nameservers:
        addresses: [172.16.63.2]
    eth1:
      dhcp4: no
      dhcp6: no
      addresses: [172.16.93.1/24]
```

⋮ ^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify
⋮ ^X Exit ^R Read File ^_ Replace ^U Uncut Text ^T To Spell

CTRL DERECHA

d. Mostrar el contenido de los archivos asociados al dominio y capturar la ventana.



The screenshot shows a terminal window titled "Servidor02 - Alejandro Becerra Suarez - alejandro.becerrasua - 03 [Corriendo] - Oracle VM VirtualBox". The terminal is running the nano text editor, editing the file "db.redlinux03". The editor's status bar indicates "GNU nano 2.9.3" and "db.redlinux03 Modified". The content of the file is a BIND data file for a local loopback interface. It includes a \$TTL directive set to 604800, an SOA record for redlinux03.com, and several A records for hostnames: servidor02, cliente03, cliente04, and router2003. There are also CNAME records for dns and www pointing to servidor02. The bottom of the terminal shows nano editor shortcuts like ^G for Get Help and ^X for Exit.

```
usuario@ubuntuserver: /etc/bind
File Edit View Search Terminal Help
GNU nano 2.9.3 db.redlinux03 Modified
;
; BIND data file for local loopback interface
;
$TTL      604800
@         IN      SOA      redlinux03.com. root.localhost. (
                                2          ; Serial
                                604800     ; Refresh
                                86400      ; Retry
                                2419200    ; Expire
                                604800 )   ; Negative Cache TTL
;
@         IN      NS       redlinux03.com.
@         IN      A        172.16.63.2
@         IN      AAAA     ::1

servidor02      IN      A      172.16.63.2
servidor02      IN      A      172.16.93.1
cliente03       IN      A      172.16.63.3
cliente04       IN      A      172.16.93.2
router2003      IN      A      172.16.63.1

dns             CNAME     servidor02
www             CNAME     servidor02

^G Get Help      ^O Write Out    ^W Where Is     ^K Cut Text     ^J Justify
^X Exit          ^R Read File    ^\ Replace      ^U Uncut Text   ^T To Spell
```


7. Crear los siguientes registros DNS:

a. Hosts (registro de tipo A):

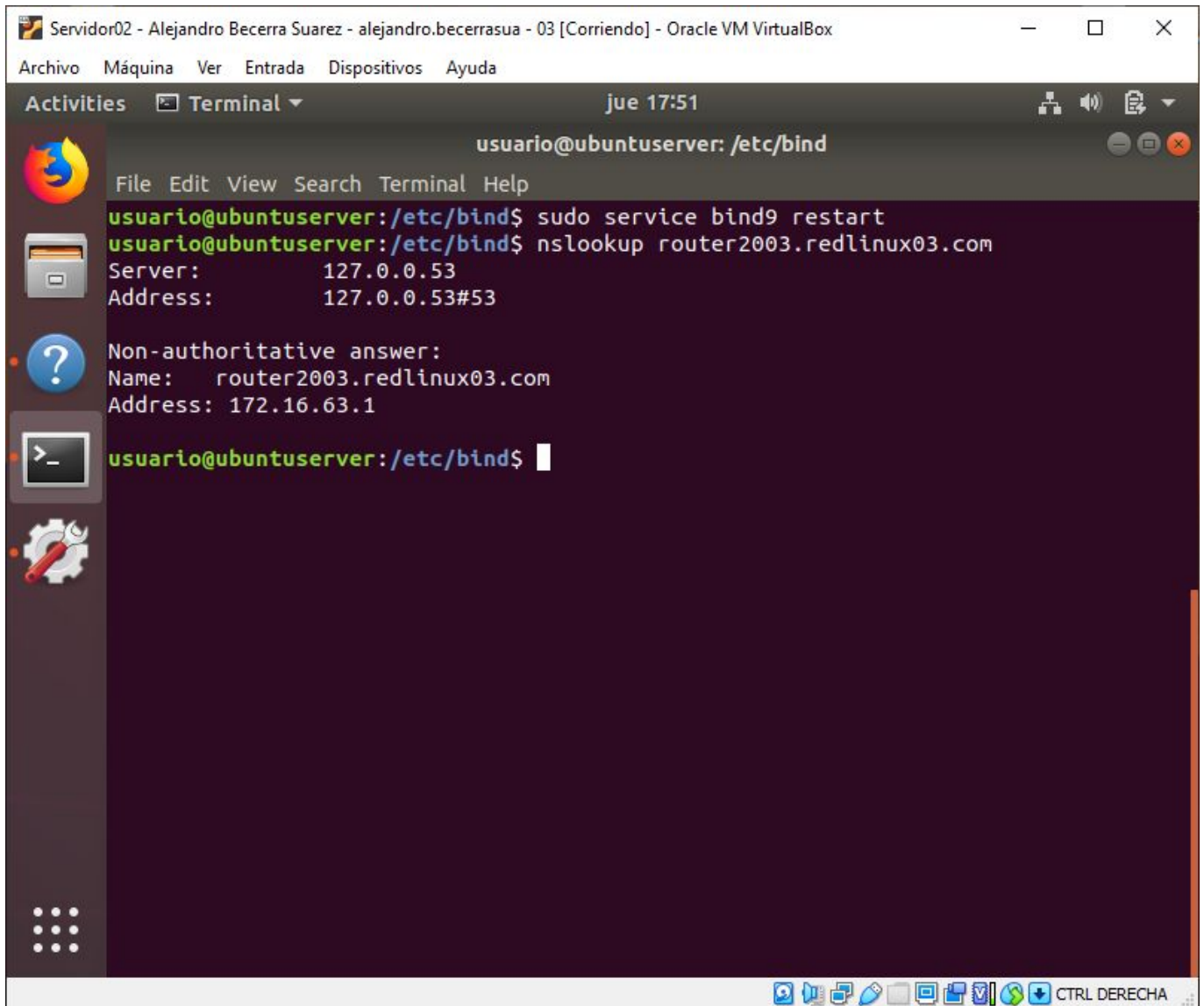
- i. servidor02 (crear dos registros: uno para cada una de las IPs)
- ii. cliente03
- iii. cliente04
- iv. router2003 (sólo para la IP en intnet3)

b. Alias para servidor02:

- i. dns
- ii. www
- iii. ftp

c. HINFO: para cada host del gráfico, indicar su CPU y su SO.

d. Desde Servidor02, capturar el resultado de realizar nslookup a Router2003 haciendo uso del FQDN.



The screenshot shows a terminal window titled "Servidor02 - Alejandro Becerra Suarez - alejandro.becerrasua - 03 [Corriendo] - Oracle VM VirtualBox". The terminal is running commands in the directory `/etc/bind`. The first command is `sudo service bind9 restart`. The second command is `nslookup router2003.redlinux03.com`, which returns the following output:

```
Server:      127.0.0.53
Address:     127.0.0.53#53

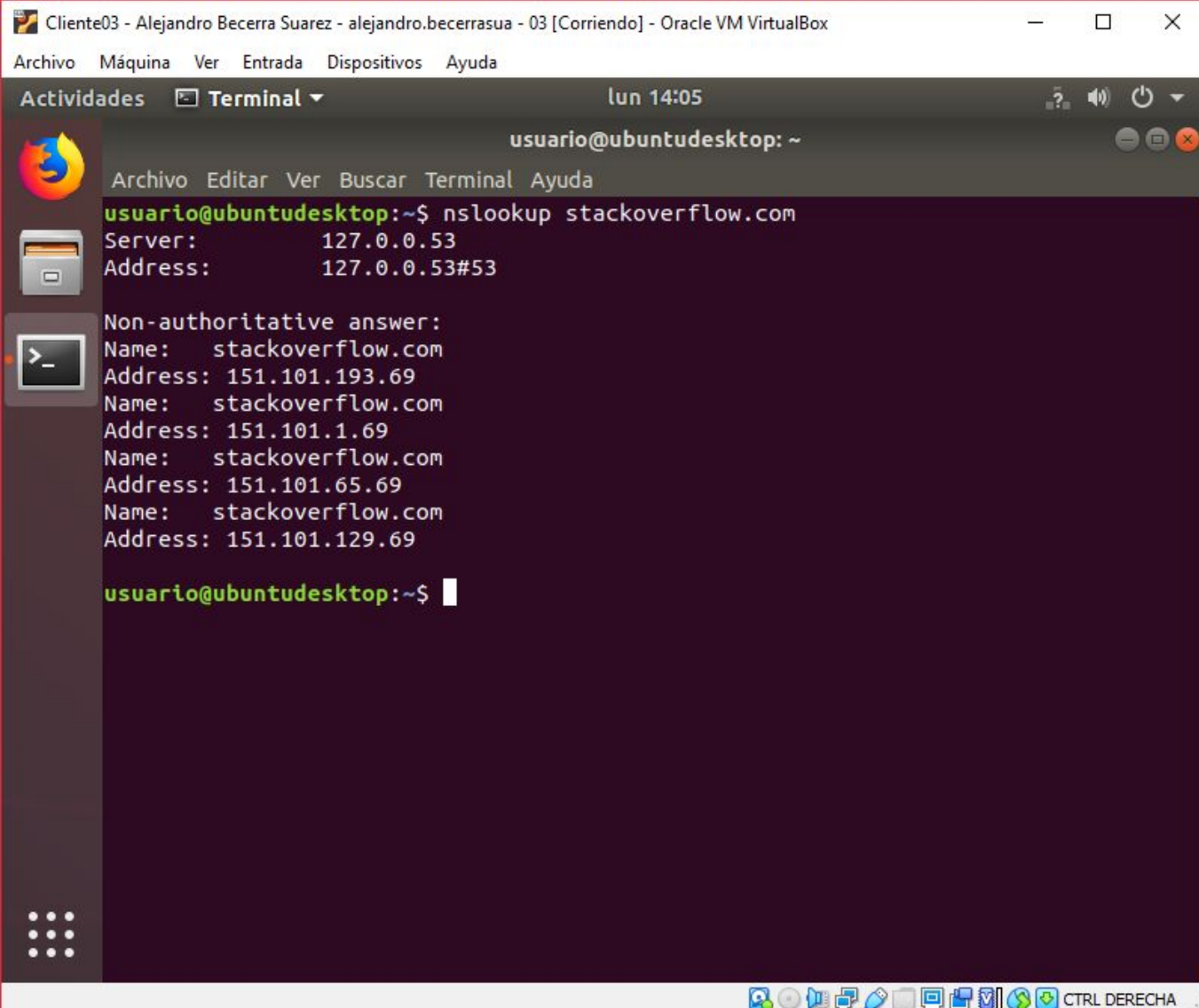
Non-authoritative answer:
Name:   router2003.redlinux03.com
Address: 172.16.63.1

usuario@ubuntuserver:/etc/bind$
```

The terminal window also shows a sidebar with icons for Activities, Terminal, and other system utilities. The bottom of the window displays a taskbar with various application icons and the text "CTRL DERECHA".

8. En Cliente03, todavía sin modificar el servidor DNS en la configuración de la conexión de red (es decir, seguirá siendo el DNS del instituto):

a. Capturar el resultado de hacer nslookup a un dominio de Internet.



The screenshot shows a terminal window titled "Cliente03 - Alejandro Becerra Suarez - alejandro.becerrasua - 03 [Corriendo] - Oracle VM VirtualBox". The terminal is running on a system with the username "usuario@ubuntudesktop: ~". The command "nslookup stackoverflow.com" has been executed, resulting in the following output:

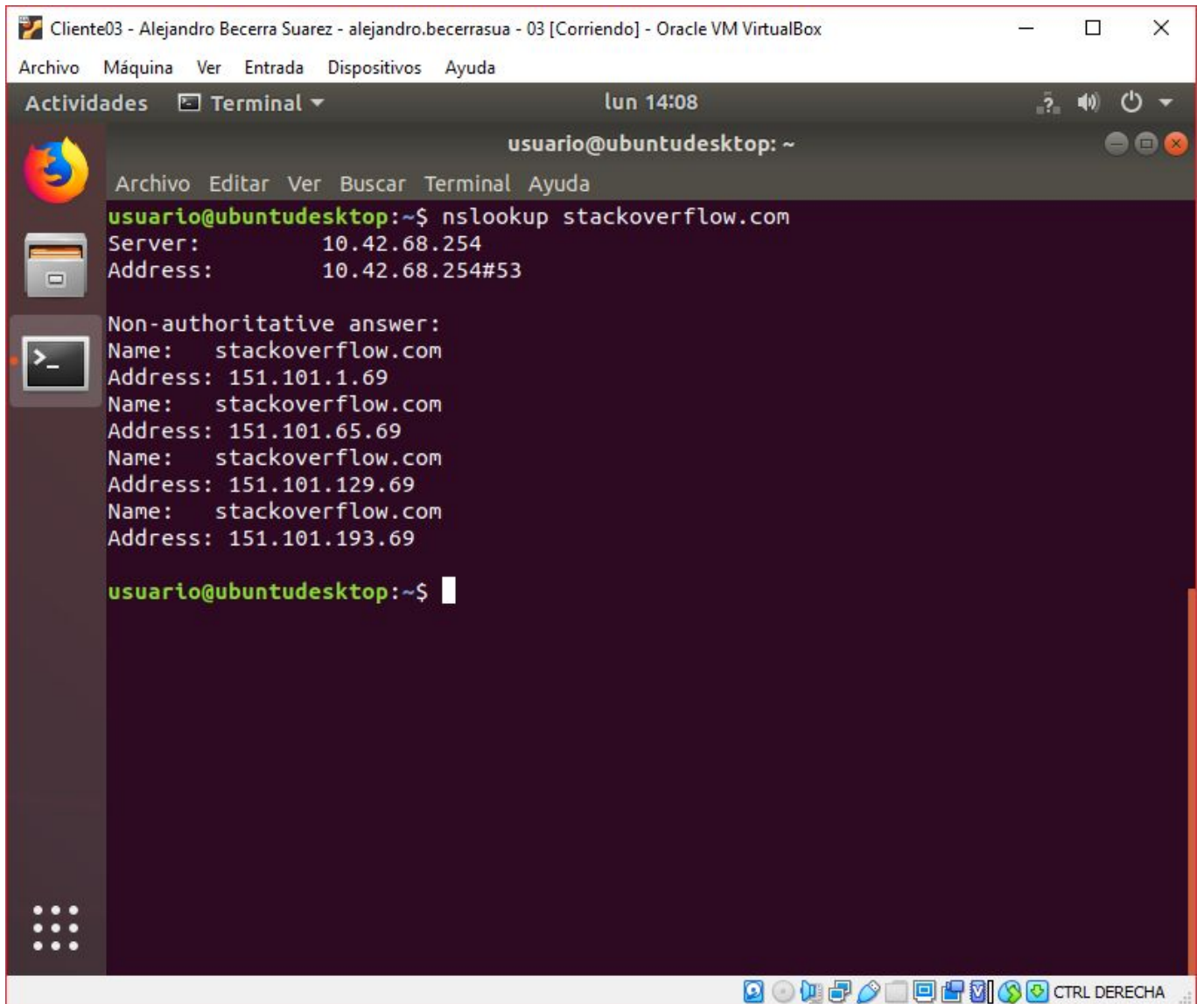
```
usuario@ubuntudesktop:~$ nslookup stackoverflow.com
Server:      127.0.0.53
Address:     127.0.0.53#53

Non-authoritative answer:
Name:   stackoverflow.com
Address: 151.101.193.69
Name:   stackoverflow.com
Address: 151.101.1.69
Name:   stackoverflow.com
Address: 151.101.65.69
Name:   stackoverflow.com
Address: 151.101.129.69

usuario@ubuntudesktop:~$
```

The terminal window includes a sidebar with icons for Activities, Terminal, and a file manager. The bottom of the window shows a taskbar with various application icons and a system tray area with a "CTRL DERECHA" button.

- b. Configurar systemd-resolved según se explica en el apartado 9 de la guía.
- c. Capturar el resultado de hacer nslookup a un dominio de Internet.



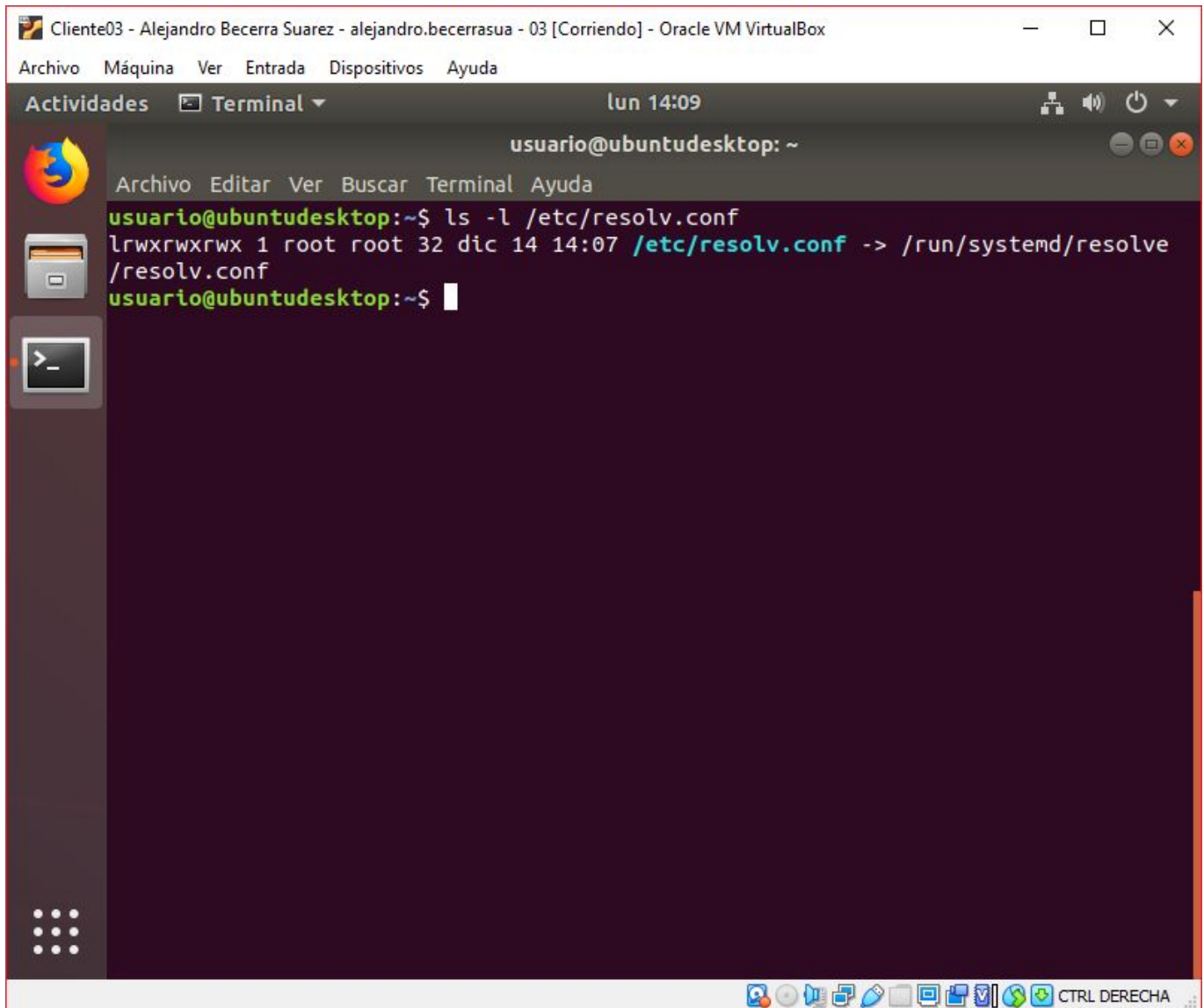
The screenshot shows a terminal window titled 'Cliente03 - Alejandro Becerra Suarez - alejandro.becerrasua - 03 [Corriendo] - Oracle VM VirtualBox'. The terminal is running the command `nslookup stackoverflow.com`. The output shows the server IP as 10.42.68.254 and the address as 10.42.68.254#53. It then displays a 'Non-authoritative answer:' followed by five entries for stackoverflow.com with IP addresses 151.101.1.69, 151.101.65.69, 151.101.129.69, and 151.101.193.69. The terminal prompt is `usuario@ubuntudesktop: ~$`.

```
usuario@ubuntudesktop: ~$ nslookup stackoverflow.com
Server:         10.42.68.254
Address:        10.42.68.254#53

Non-authoritative answer:
Name:   stackoverflow.com
Address: 151.101.1.69
Name:   stackoverflow.com
Address: 151.101.65.69
Name:   stackoverflow.com
Address: 151.101.129.69
Name:   stackoverflow.com
Address: 151.101.193.69

usuario@ubuntudesktop: ~$
```

- d. Capturar la consola mostrando el resultado de ejecutar el comando que indica a dónde apunta el link simbólico `/etc/resolv.conf`



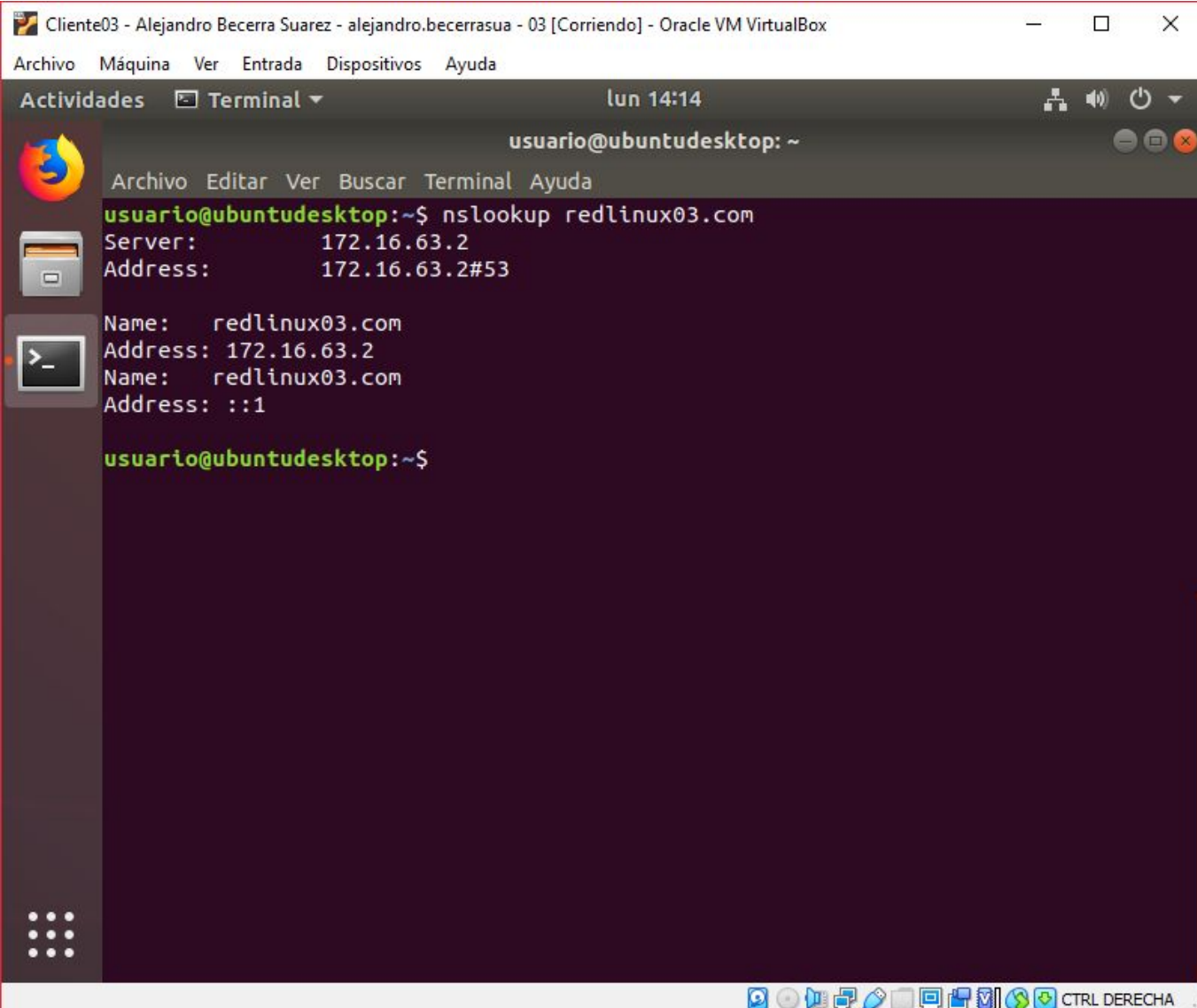
The screenshot shows a terminal window titled "Cliente03 - Alejandro Becerra Suarez - alejandro.becerrasua - 03 [Corriendo] - Oracle VM VirtualBox". The terminal is running on a system named "usuario@ubuntudesktop: ~". The command executed is `ls -l /etc/resolv.conf`, and the output is:

```
lrwxrwxrwx 1 root root 32 dic 14 14:07 /etc/resolv.conf -> /run/systemd/resolve/resolv.conf
```

The terminal window has a menu bar with "Archivo", "Editar", "Ver", "Buscar", "Terminal", and "Ayuda". The status bar at the bottom shows various system icons and the text "CTRL DERECHA".

9. En Cliente03, configurar la conexión de red estableciendo Servidor02 como DNS, en el archivo YAML. Capturar:

- a. Resultado de realizar nslookup a **redlinuxXY.com**



The screenshot shows a terminal window titled "Cliente03 - Alejandro Becerra Suarez - alejandro.becerrasua - 03 [Corriendo] - Oracle VM VirtualBox". The terminal is running on a system with the prompt "usuario@ubuntudesktop: ~". The user has entered the command "nslookup redlinux03.com". The output of the command is as follows:

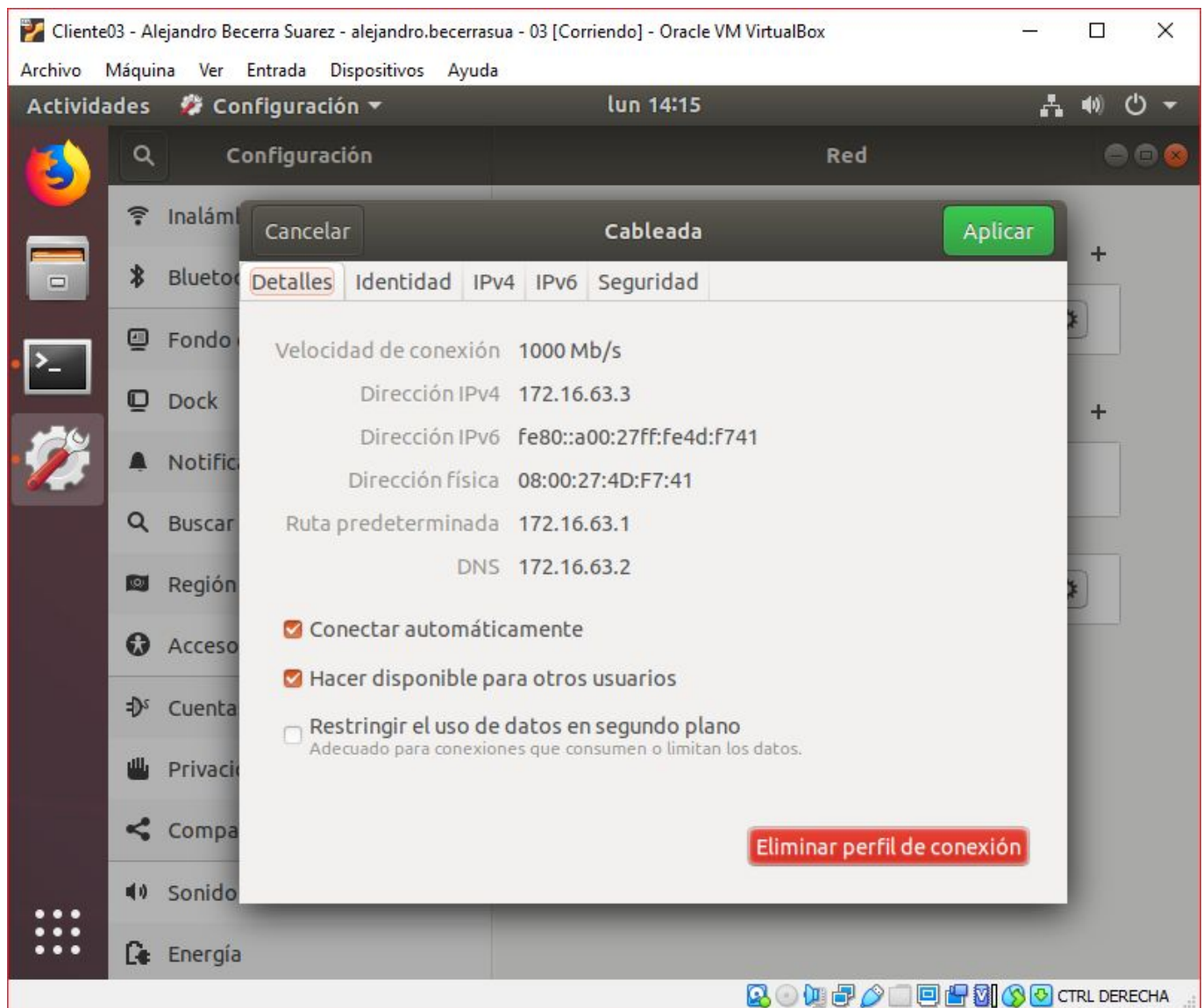
```
usuario@ubuntudesktop:~$ nslookup redlinux03.com
Server:         172.16.63.2
Address:        172.16.63.2#53

Name:   redlinux03.com
Address: 172.16.63.2
Name:   redlinux03.com
Address: ::1

usuario@ubuntudesktop:~$
```

The terminal window includes a sidebar with icons for file manager, terminal, and other applications. The bottom of the window shows a taskbar with various system icons and a "CTRL DERECHA" button.

b. Ventana de información de la conexión.



c. Fichero de configuración de la conexión de red.

The screenshot shows a terminal window titled "Cliente03 - Alejandro Becerra Suarez - alejandro.becerrasua - 03 [Corriendo] - Oracle VM VirtualBox". The terminal is running the GNU nano 2.9.3 editor, editing the file /etc/netplan/01-network-manager-all.yaml. The configuration file content is as follows:

```
# Let NetworkManager manage all devices on this system
network:
  version: 2
  renderer: NetworkManager
  ethernets:
    eth0:
      dhcp4: no
      dhcp6: no
      addresses: [172.16.63.3/24]
      gateway4: 172.16.63.1
      nameservers:
        addresses: [172.16.63.2]
```

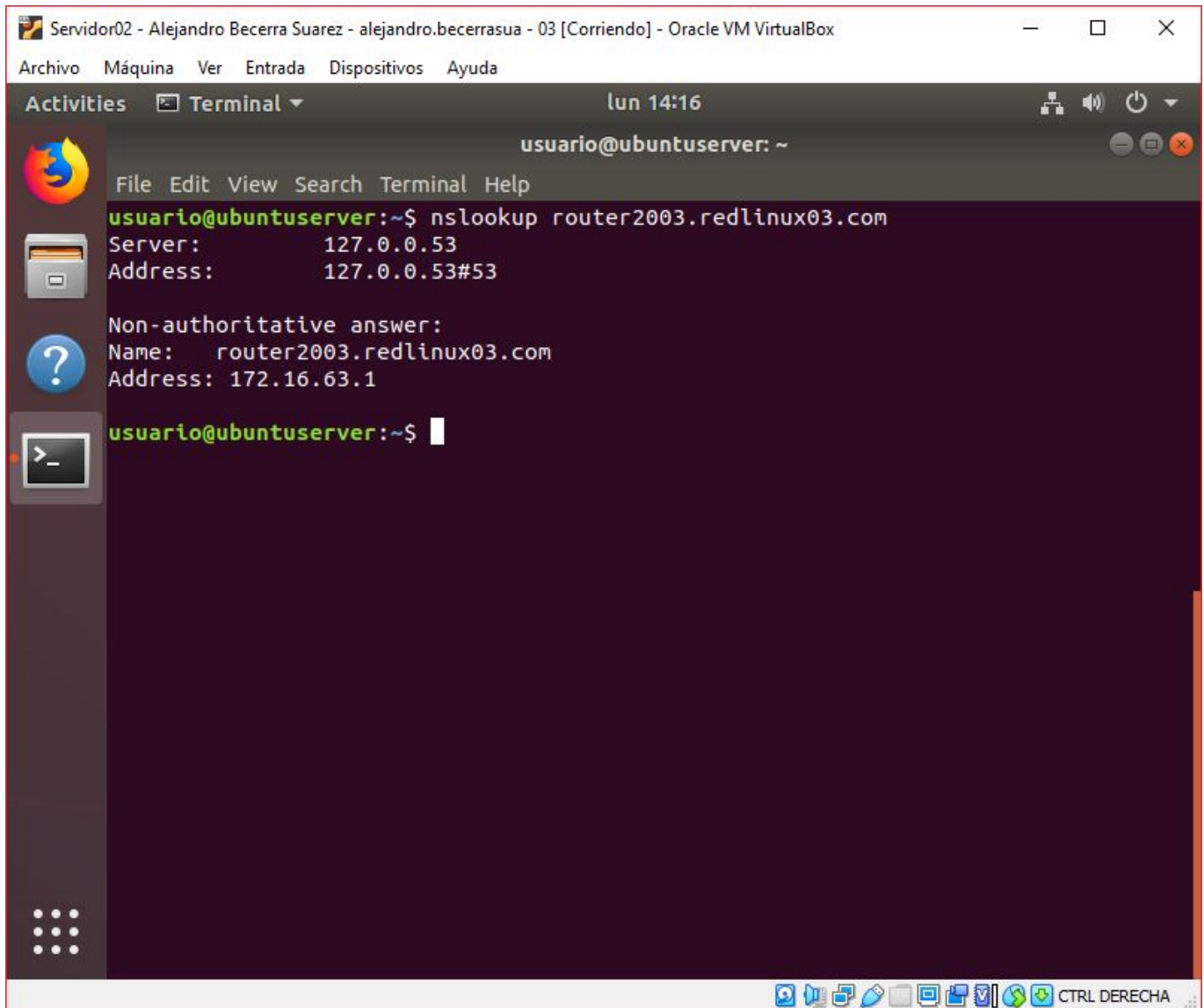
At the bottom of the terminal, there is a status bar showing "12 líneas leídas" and a list of keyboard shortcuts:

^G Ver ayuda	^O Guardar	^W Buscar	^K Cortar Texto	^J Justificar
^X Salir	^R Leer fich.	^_ Reemplazar	^U Pegar txt	^T Ortografía

The terminal window also shows a sidebar with icons for Activities, Terminal, and other applications, and a top menu bar with options like Archivo, Máquina, Ver, Entrada, Dispositivos, and Ayuda.

10. Desde Servidor02 capturar:

a. Resultado de realizar nslookup a Router2003 haciendo uso del FQDN.



The screenshot shows a terminal window titled "Servidor02 - Alejandro Becerra Suarez - alejandro.becerrasua - 03 [Corriendo] - Oracle VM VirtualBox". The terminal is running on a system with the prompt "usuario@ubuntuserver: ~". The user has entered the command "nslookup router2003.redlinux03.com". The output of the command is as follows:

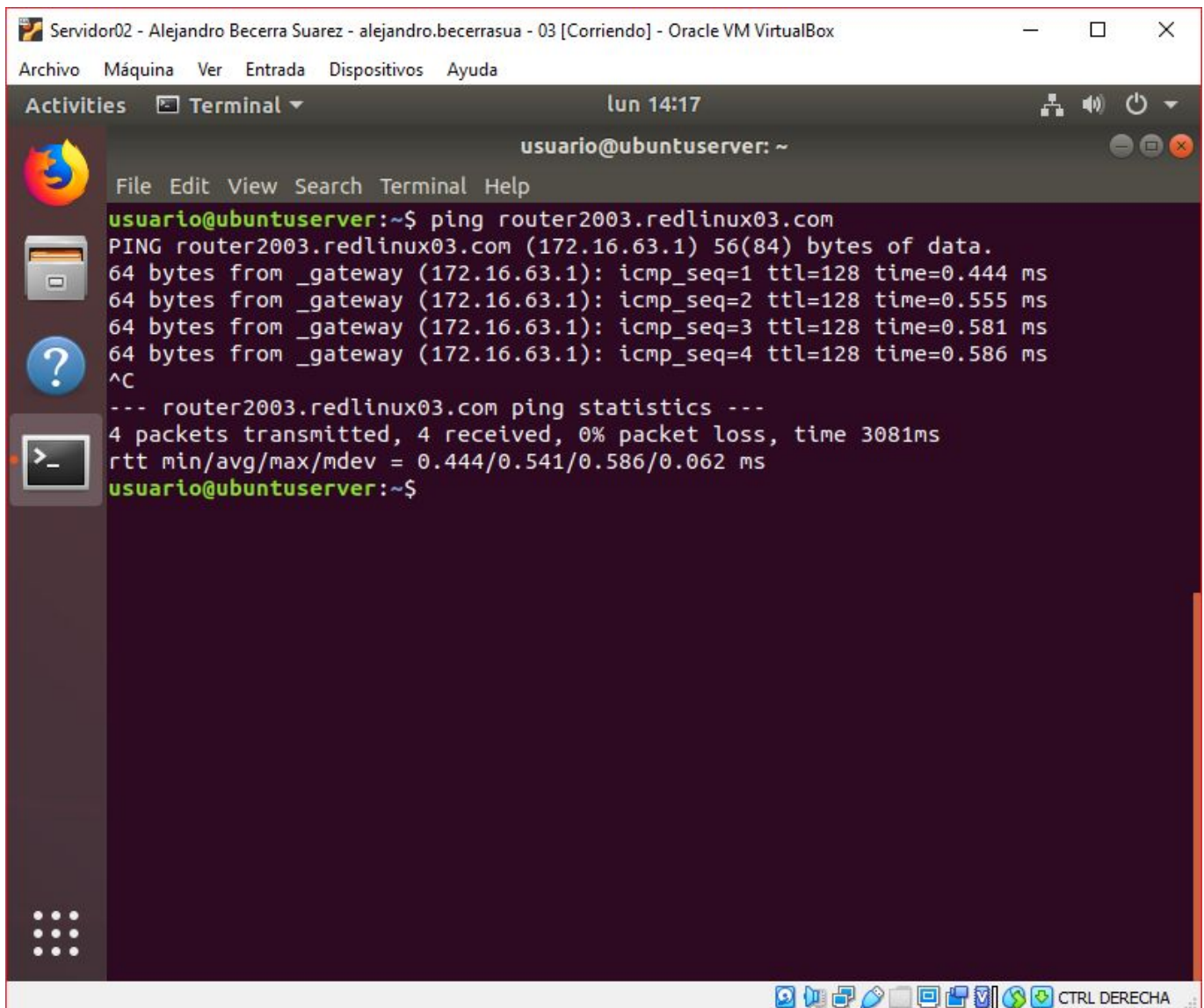
```
usuario@ubuntuserver:~$ nslookup router2003.redlinux03.com
Server:         127.0.0.53
Address:        127.0.0.53#53

Non-authoritative answer:
Name:   router2003.redlinux03.com
Address: 172.16.63.1

usuario@ubuntuserver:~$
```

The terminal window includes a menu bar with "File", "Edit", "View", "Search", "Terminal", and "Help". The left sidebar shows icons for the Dash, Home, and Applications menus. The bottom status bar displays system icons and the text "CTRL DERECHA".

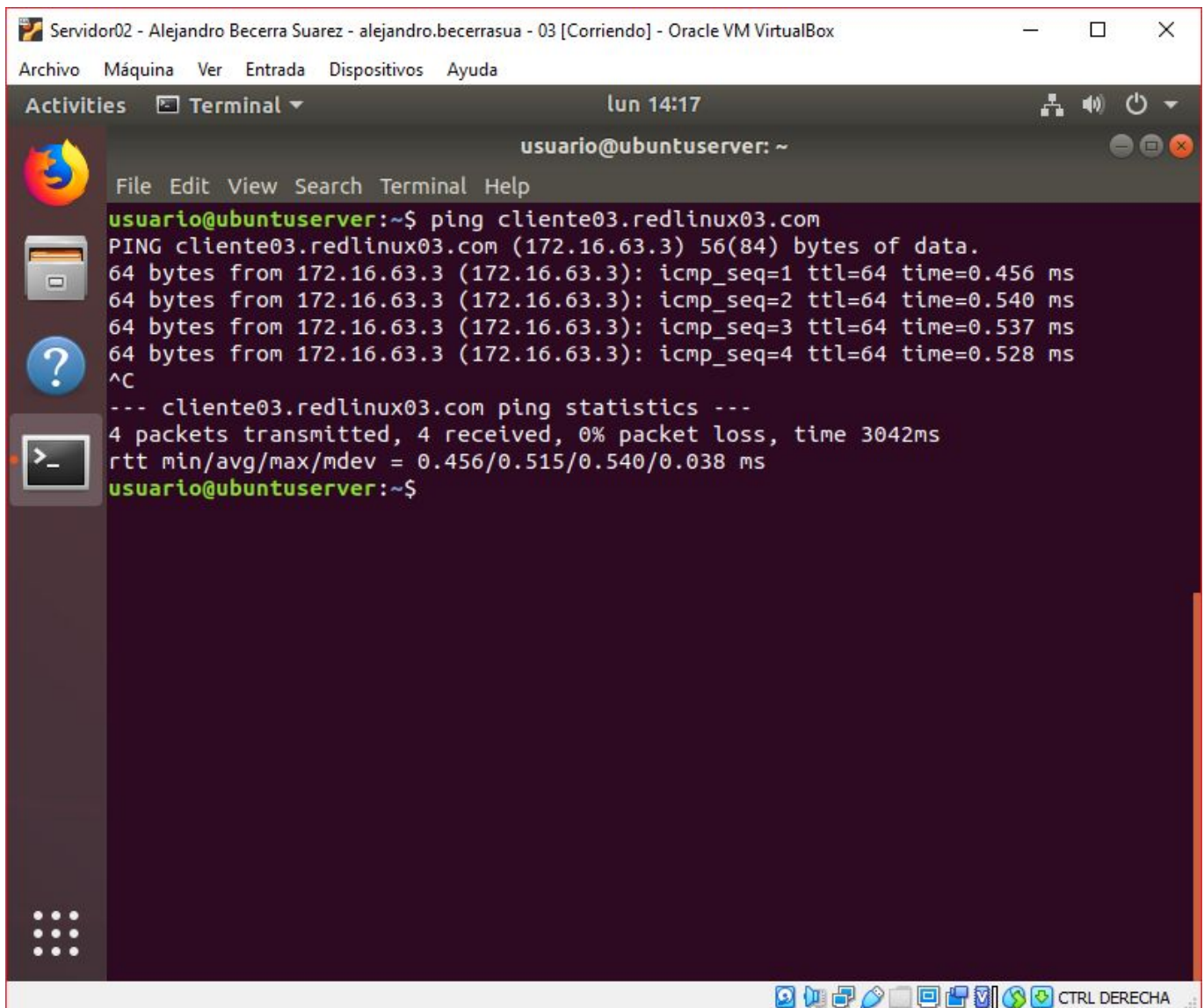
b. ping a Router2003 haciendo uso del FQDN.



The screenshot shows a terminal window titled "Servidor02 - Alejandro Becerra Suarez - alejandro.becerrasua - 03 [Corriendo] - Oracle VM VirtualBox". The terminal is running on a system with the prompt "usuario@ubuntuserver: ~". The user has entered the command "ping router2003.redlinux03.com". The output shows four successful ping requests from the gateway (172.16.63.1) with varying times. The statistics show 4 packets transmitted, 4 received, 0% packet loss, and a total time of 3081ms. The round trip times (rtt) are listed as min/avg/max/mdev = 0.444/0.541/0.586/0.062 ms.

```
usuario@ubuntuserver:~$ ping router2003.redlinux03.com
PING router2003.redlinux03.com (172.16.63.1) 56(84) bytes of data.
64 bytes from _gateway (172.16.63.1): icmp_seq=1 ttl=128 time=0.444 ms
64 bytes from _gateway (172.16.63.1): icmp_seq=2 ttl=128 time=0.555 ms
64 bytes from _gateway (172.16.63.1): icmp_seq=3 ttl=128 time=0.581 ms
64 bytes from _gateway (172.16.63.1): icmp_seq=4 ttl=128 time=0.586 ms
^C
--- router2003.redlinux03.com ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3081ms
rtt min/avg/max/mdev = 0.444/0.541/0.586/0.062 ms
usuario@ubuntuserver:~$
```

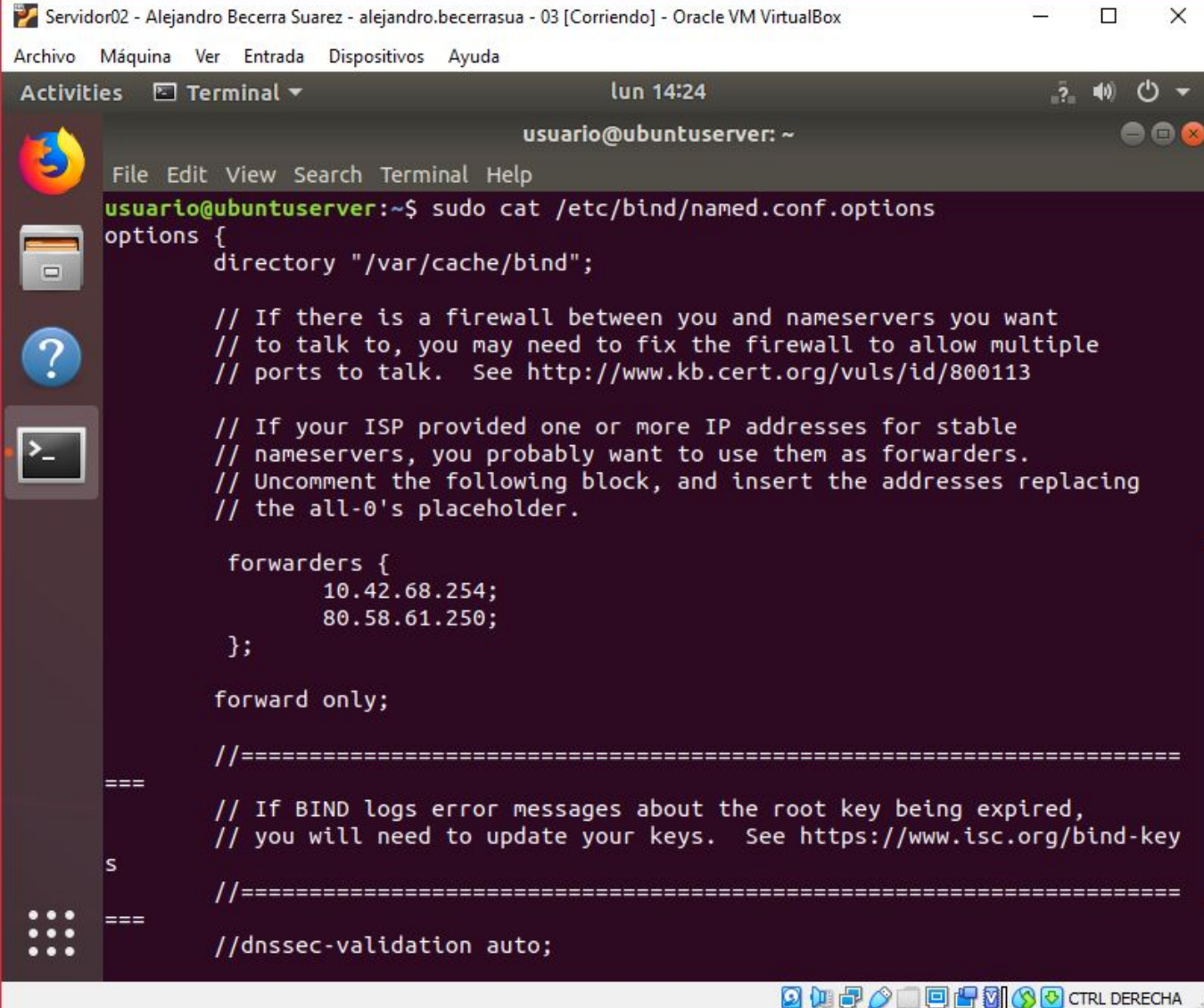
c. ping a Cliente03 haciendo uso del FQDN.



The screenshot shows a terminal window titled "Servidor02 - Alejandro Becerra Suarez - alejandro.becerrasua - 03 [Corriendo] - Oracle VM VirtualBox". The terminal is running on a system with the prompt "usuario@ubuntuserver: ~". The user has entered the command "ping cliente03.redlinux03.com". The output shows four successful ping requests to the IP address 172.16.63.3, with response times ranging from 0.456 ms to 0.540 ms. The terminal also displays ping statistics: 4 packets transmitted, 4 received, 0% packet loss, and a total time of 3042ms. The rtt values are min/avg/max/mdev = 0.456/0.515/0.540/0.038 ms.

```
usuario@ubuntuserver:~$ ping cliente03.redlinux03.com
PING cliente03.redlinux03.com (172.16.63.3) 56(84) bytes of data:
64 bytes from 172.16.63.3 (172.16.63.3): icmp_seq=1 ttl=64 time=0.456 ms
64 bytes from 172.16.63.3 (172.16.63.3): icmp_seq=2 ttl=64 time=0.540 ms
64 bytes from 172.16.63.3 (172.16.63.3): icmp_seq=3 ttl=64 time=0.537 ms
64 bytes from 172.16.63.3 (172.16.63.3): icmp_seq=4 ttl=64 time=0.528 ms
^C
--- cliente03.redlinux03.com ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3042ms
rtt min/avg/max/mdev = 0.456/0.515/0.540/0.038 ms
usuario@ubuntuserver:~$
```


11. Comprobar el/los servidor/es DNS que está utilizando Router2003 en la conexión de red NAT-WAN. Configurar el servicio de reenvío DNS en modo *forward-only* y hacia dichos servidores DNS. Una vez realizada dicha configuración, capturar el contenido del archivo que se ha modificado.



```
Servidor02 - Alejandro Becerra Suarez - alejandro.becerrasua - 03 [Corriendo] - Oracle VM VirtualBox
Archivo  Máquina  Ver  Entrada  Dispositivos  Ayuda
Activities  Terminal  lun 14:24
usuario@ubuntuserver: ~
File Edit View Search Terminal Help
usuario@ubuntuserver:~$ sudo cat /etc/bind/named.conf.options
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

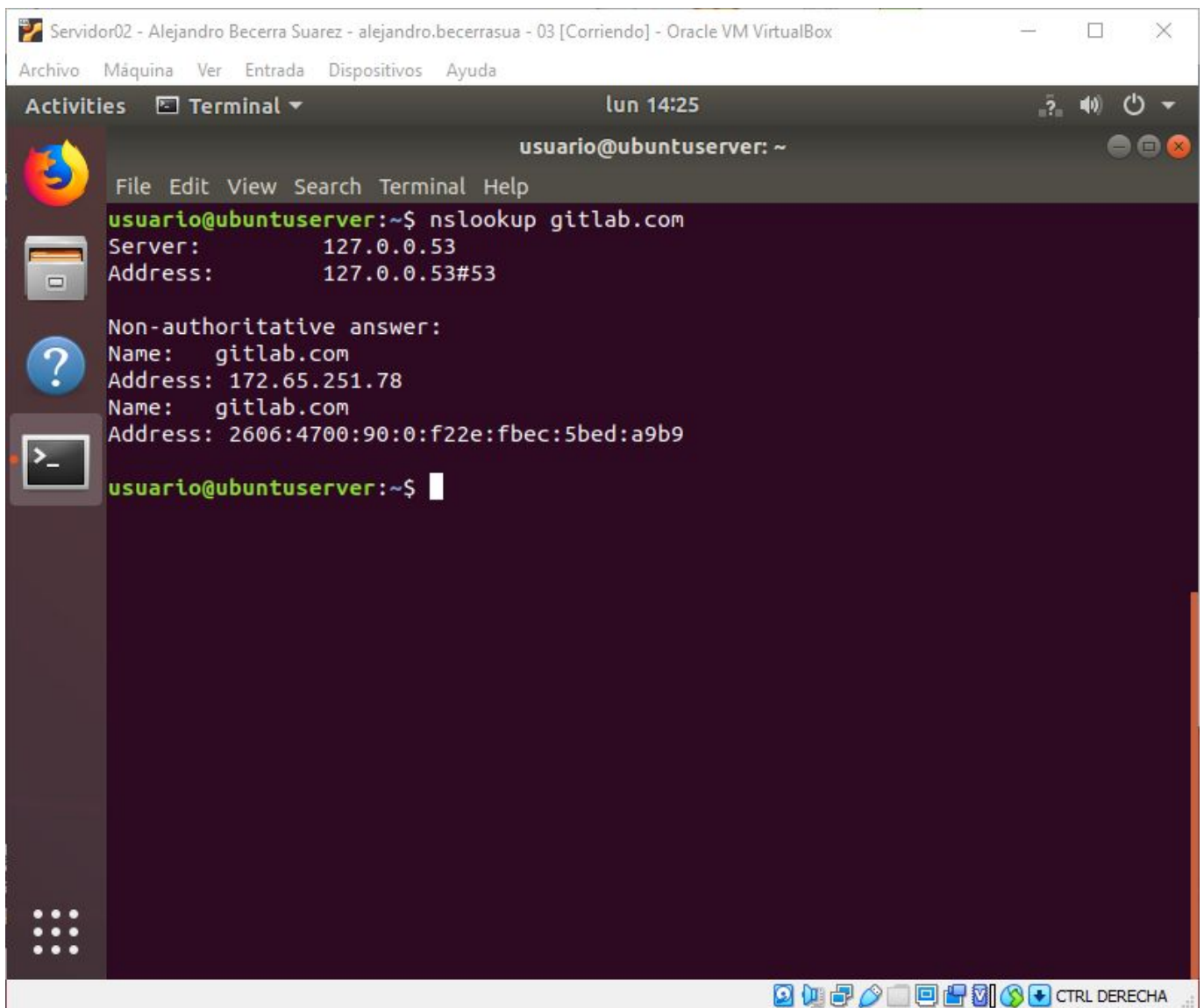
    // If your ISP provided one or more IP addresses for stable
    // nameservers, you probably want to use them as forwarders.
    // Uncomment the following block, and insert the addresses replacing
    // the all-0's placeholder.

    forwarders {
        10.42.68.254;
        80.58.61.250;
    };

    forward only;

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

12. Desde Servidor02, capturar nslookup a un dominio de internet.



The screenshot shows a terminal window titled "Servidor02 - Alejandro Becerra Suarez - alejandro.becerrasua - 03 [Corriendo] - Oracle VM VirtualBox". The terminal is running on a system with the prompt "usuario@ubuntuserver: ~". The user has entered the command "nslookup gitlab.com". The output shows the local server information (127.0.0.53) and a non-authoritative answer for gitlab.com, including its IP address (172.65.251.78) and MAC address (2606:4700:90:0:f22e:fbec:5bed:a9b9).

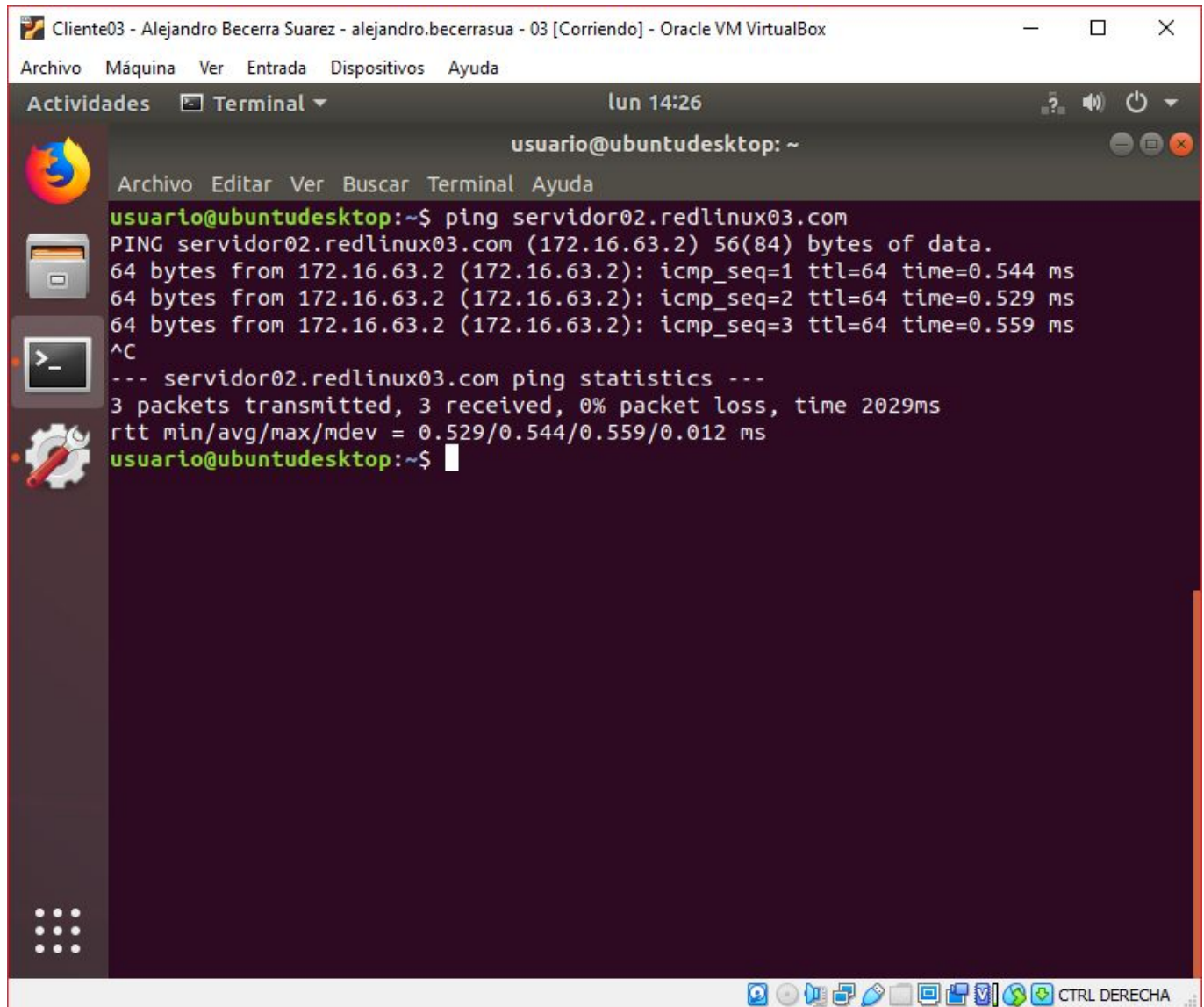
```
usuario@ubuntuserver:~$ nslookup gitlab.com
Server:         127.0.0.53
Address:        127.0.0.53#53

Non-authoritative answer:
Name:   gitlab.com
Address: 172.65.251.78
Name:   gitlab.com
Address: 2606:4700:90:0:f22e:fbec:5bed:a9b9

usuario@ubuntuserver:~$
```

13. Desde Cliente03 capturar:

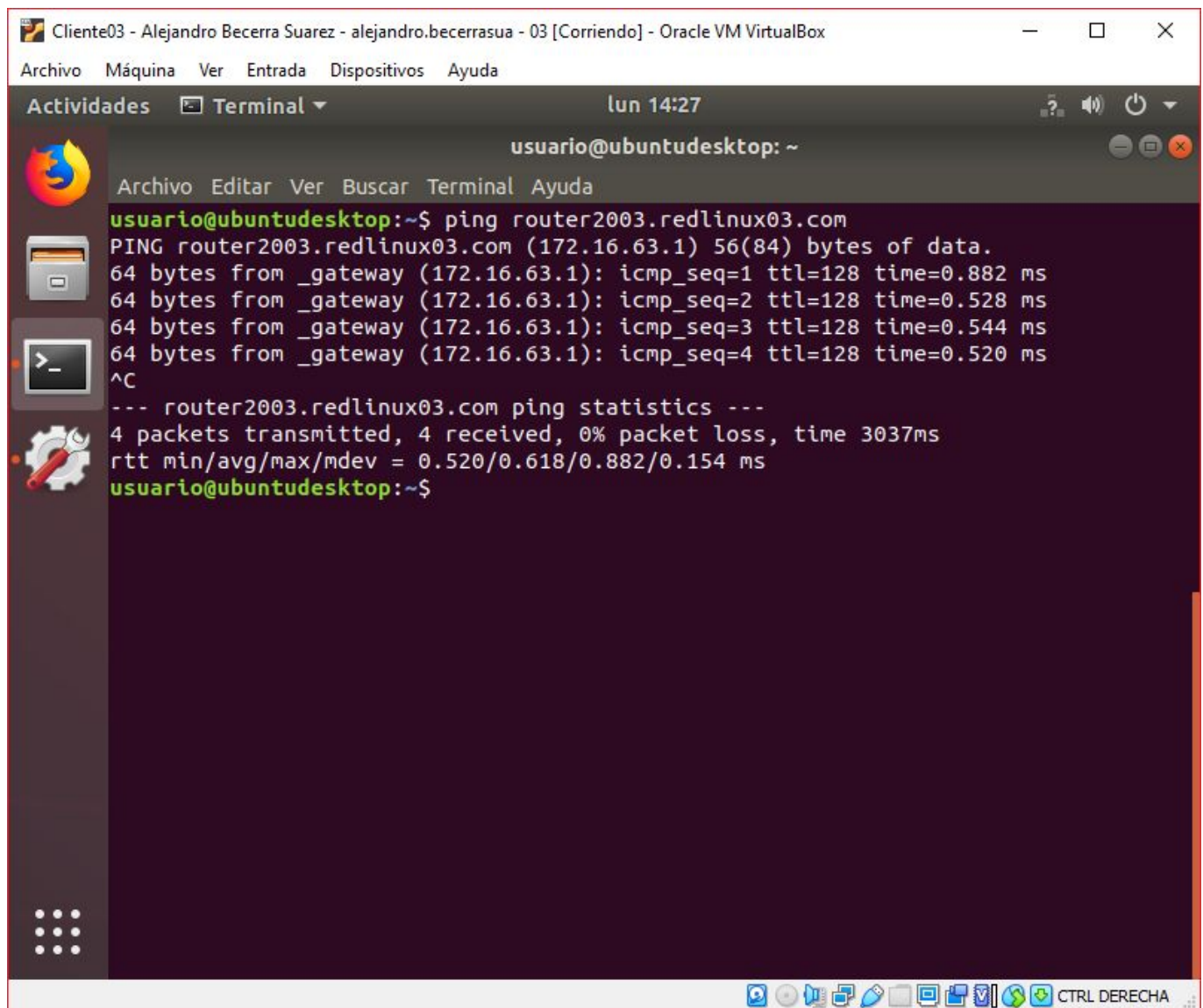
a. ping a Servidor02 haciendo uso de nombre del FQDN.



The screenshot shows a terminal window titled "Cliente03 - Alejandro Becerra Suarez - alejandro.becerrasua - 03 [Corriendo] - Oracle VM VirtualBox". The terminal is running on a system named "usuario@ubuntudesktop: ~". The user has executed the command "ping servidor02.redlinux03.com". The output shows three successful ping requests with varying times (0.544 ms, 0.529 ms, 0.559 ms). The user then pressed Ctrl+C to stop the command, which displayed "--- servidor02.redlinux03.com ping statistics ---". The statistics show 3 packets transmitted, 3 received, 0% packet loss, and a total time of 2029ms. The round-trip times (rtt) are listed as min/avg/max/mdev = 0.529/0.544/0.559/0.012 ms. The terminal window has a menu bar with "Archivo", "Máquina", "Ver", "Entrada", "Dispositivos", and "Ayuda". The status bar at the bottom shows various system icons and the text "CTRL DERECHA".

```
usuario@ubuntudesktop: ~  
usuario@ubuntudesktop:~$ ping servidor02.redlinux03.com  
PING servidor02.redlinux03.com (172.16.63.2) 56(84) bytes of data.  
64 bytes from 172.16.63.2 (172.16.63.2): icmp_seq=1 ttl=64 time=0.544 ms  
64 bytes from 172.16.63.2 (172.16.63.2): icmp_seq=2 ttl=64 time=0.529 ms  
64 bytes from 172.16.63.2 (172.16.63.2): icmp_seq=3 ttl=64 time=0.559 ms  
^C  
--- servidor02.redlinux03.com ping statistics ---  
3 packets transmitted, 3 received, 0% packet loss, time 2029ms  
rtt min/avg/max/mdev = 0.529/0.544/0.559/0.012 ms  
usuario@ubuntudesktop:~$
```

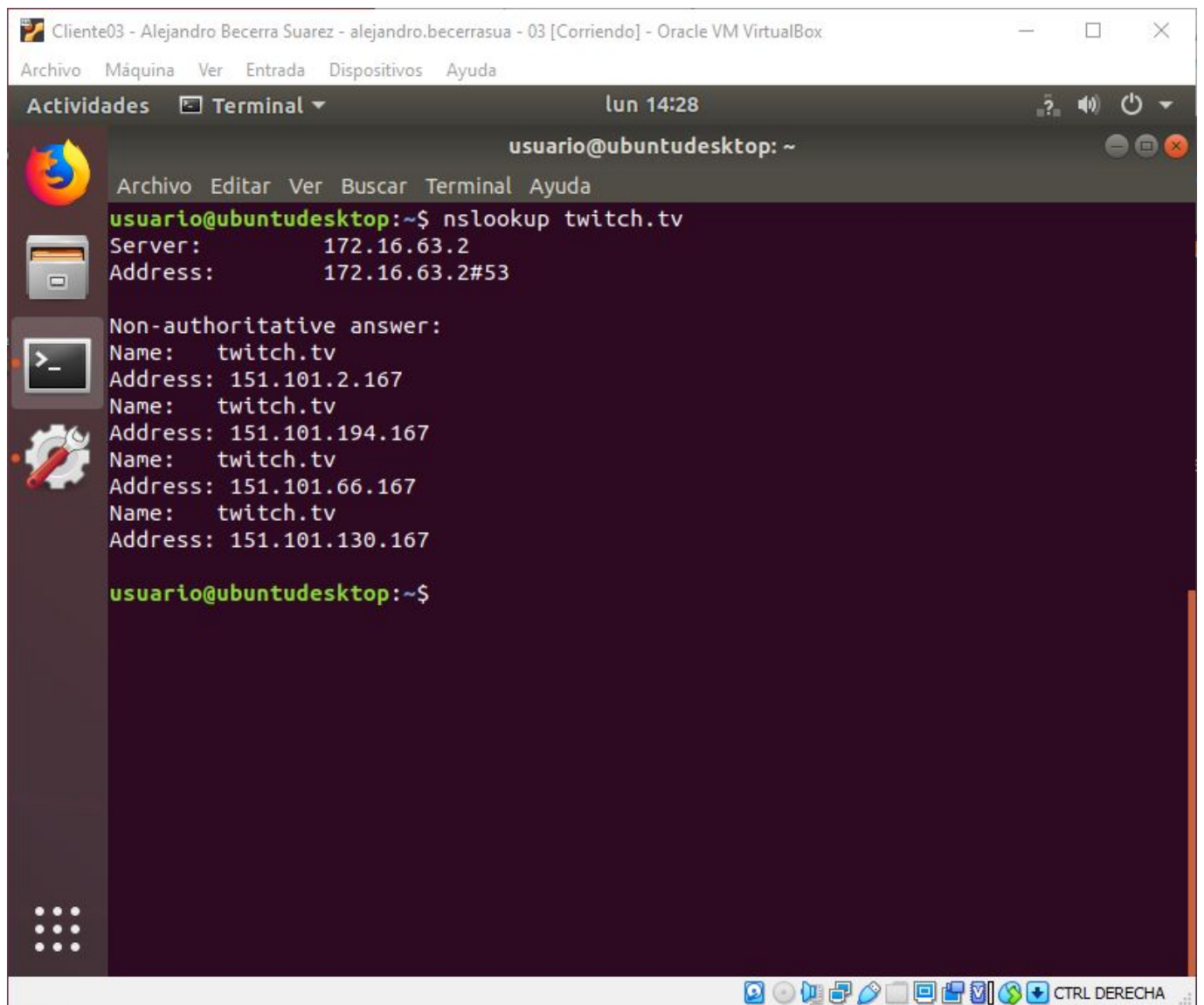
b. ping a Router2003 haciendo uso del FQDN.



The screenshot shows a terminal window titled "Cliente03 - Alejandro Becerra Suarez - alejandro.becerrasua - 03 [Corriendo] - Oracle VM VirtualBox". The terminal is running on a system named "usuario@ubuntudesktop: ~". The user has executed the command "ping router2003.redlinux03.com". The output shows four successful ping requests from the gateway (172.16.63.1) with varying times. After pressing Ctrl-C, the terminal displays the ping statistics: 4 packets transmitted, 4 received, 0% packet loss, and a total time of 3037ms. The round-trip times (rtt) are summarized as min/avg/max/mdev = 0.520/0.618/0.882/0.154 ms.

```
usuario@ubuntudesktop:~$ ping router2003.redlinux03.com
PING router2003.redlinux03.com (172.16.63.1) 56(84) bytes of data.
64 bytes from _gateway (172.16.63.1): icmp_seq=1 ttl=128 time=0.882 ms
64 bytes from _gateway (172.16.63.1): icmp_seq=2 ttl=128 time=0.528 ms
64 bytes from _gateway (172.16.63.1): icmp_seq=3 ttl=128 time=0.544 ms
64 bytes from _gateway (172.16.63.1): icmp_seq=4 ttl=128 time=0.520 ms
^C
--- router2003.redlinux03.com ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3037ms
rtt min/avg/max/mdev = 0.520/0.618/0.882/0.154 ms
usuario@ubuntudesktop:~$
```

c. nslookup a un dominio de internet.



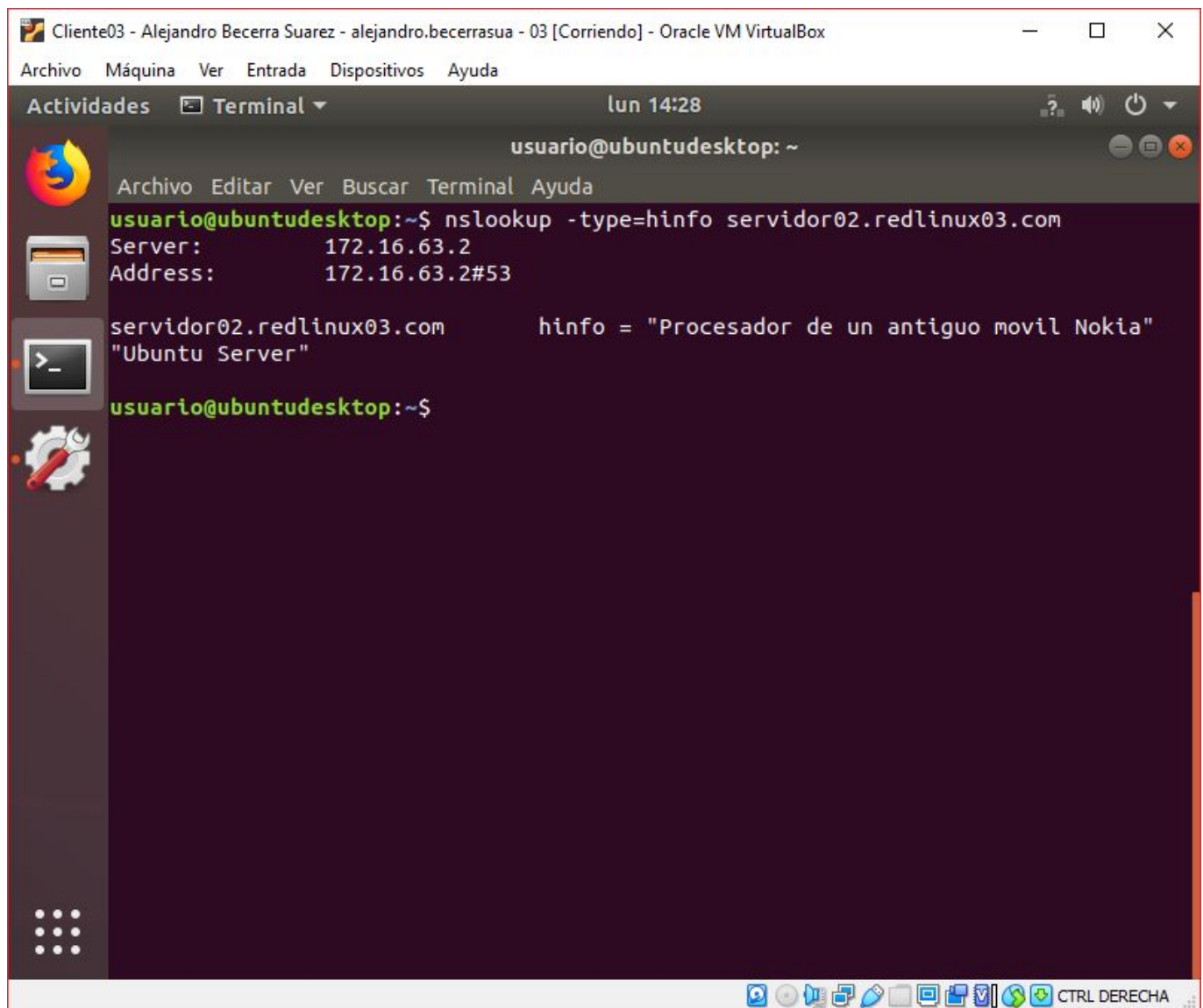
The screenshot shows a terminal window titled "Cliente03 - Alejandro Becerra Suarez - alejandro.becerrasua - 03 [Corriendo] - Oracle VM VirtualBox". The terminal is running the command `nslookup twitch.tv`. The output shows the server address as 172.16.63.2 and the address as 172.16.63.2#53. It then displays a "Non-authoritative answer:" followed by five entries, each showing the name "twitch.tv" and a different IP address: 151.101.2.167, 151.101.194.167, 151.101.66.167, and 151.101.130.167. The terminal prompt is `usuario@ubuntudesktop: ~$`.

```
usuario@ubuntudesktop: ~$ nslookup twitch.tv
Server:         172.16.63.2
Address:        172.16.63.2#53

Non-authoritative answer:
Name:   twitch.tv
Address: 151.101.2.167
Name:   twitch.tv
Address: 151.101.194.167
Name:   twitch.tv
Address: 151.101.66.167
Name:   twitch.tv
Address: 151.101.130.167

usuario@ubuntudesktop: ~$
```

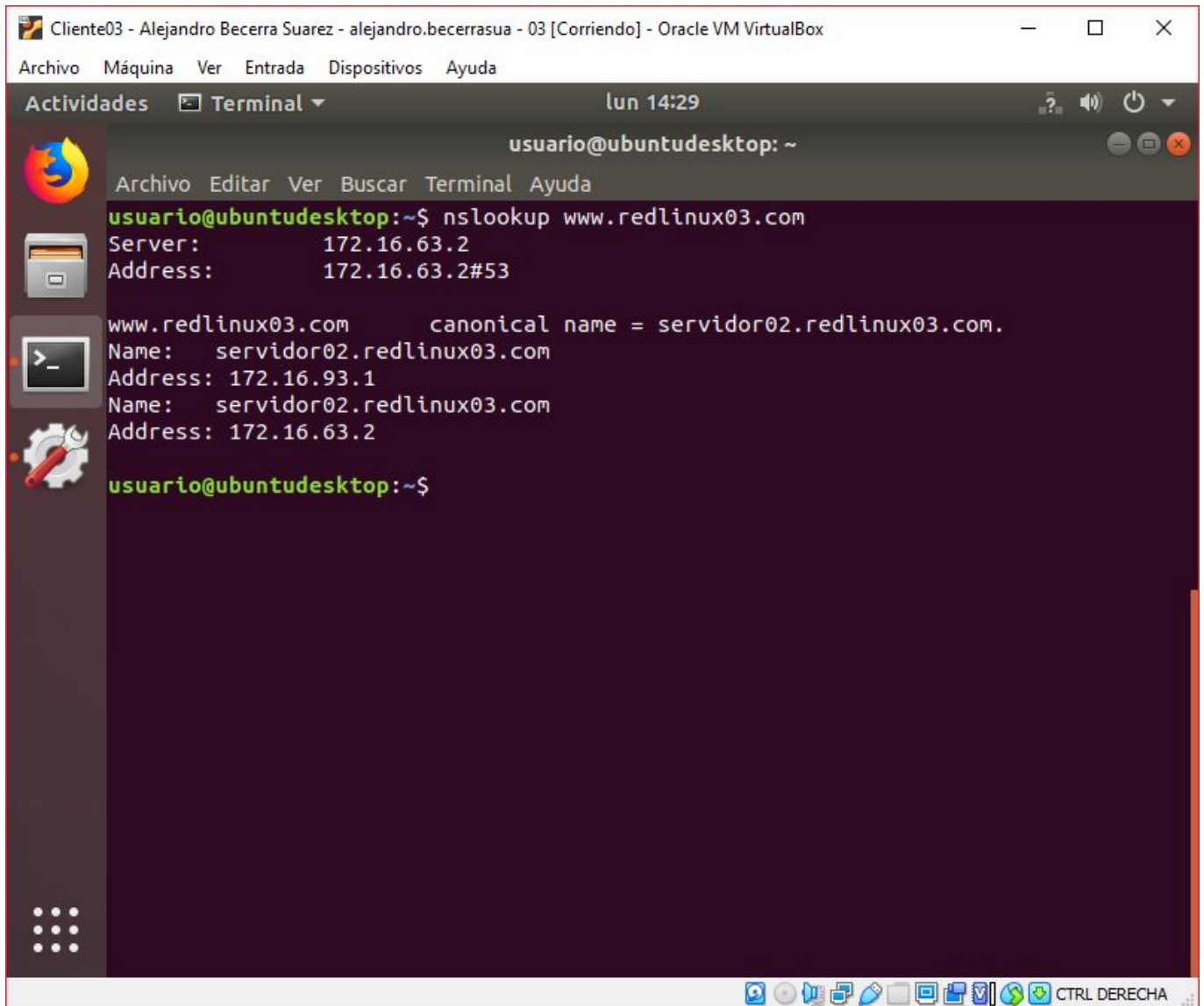

d. nslookup a la descripción del host servidor02 (CPU y SO).



The screenshot shows a terminal window titled "Cliente03 - Alejandro Becerra Suarez - alejandro.becerrasua - 03 [Corriendo] - Oracle VM VirtualBox". The terminal is running on a system with the prompt "usuario@ubuntudesktop: ~". The user has entered the command "nslookup -type=hinfo servidor02.redlinux03.com". The output shows the IP address 172.16.63.2 and a detailed hinfo record for the host "servidor02.redlinux03.com", which identifies it as a "Procesador de un antiguo movil Nokia" running "Ubuntu Server".

```
usuario@ubuntudesktop: ~  
usuario@ubuntudesktop:~$ nslookup -type=hinfo servidor02.redlinux03.com  
Server:                172.16.63.2  
Address:                172.16.63.2#53  
  
servidor02.redlinux03.com      hinfo = "Procesador de un antiguo movil Nokia"  
"Ubuntu Server"  
usuario@ubuntudesktop:~$
```

e. nslookup al alias www.



The screenshot shows a terminal window titled "Cliente03 - Alejandro Becerra Suarez - alejandro.becerrasua - 03 [Corriendo] - Oracle VM VirtualBox". The terminal is running on a system named "usuario@ubuntudesktop: ~". The user has entered the command "nslookup www.redlinux03.com". The output of the command is as follows:

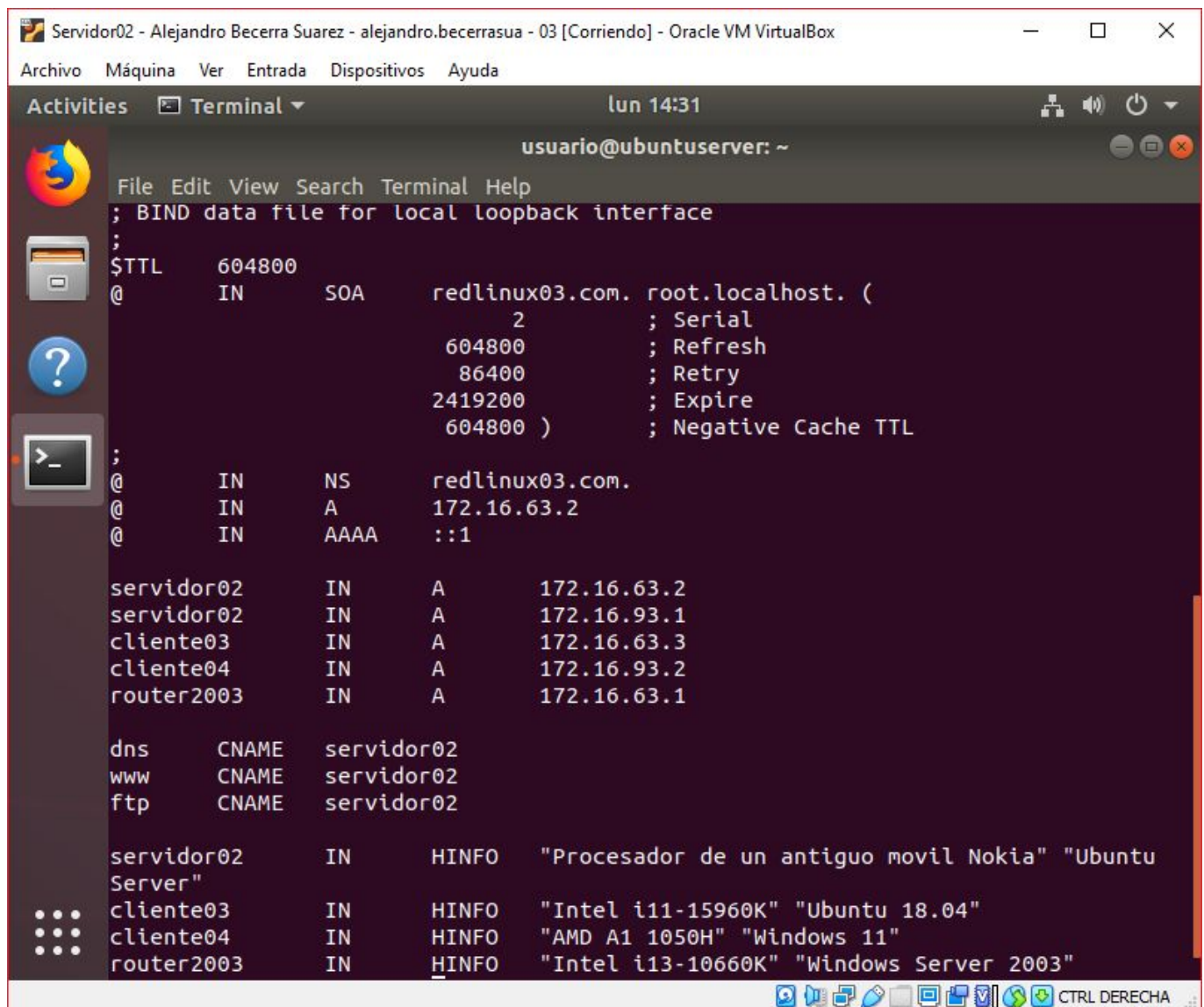
```
usuario@ubuntudesktop:~$ nslookup www.redlinux03.com
Server:         172.16.63.2
Address:        172.16.63.2#53

www.redlinux03.com    canonical name = servidor02.redlinux03.com.
Name:   servidor02.redlinux03.com
Address: 172.16.93.1
Name:   servidor02.redlinux03.com
Address: 172.16.63.2

usuario@ubuntudesktop:~$
```

The terminal window includes a sidebar with icons for file manager, terminal, and settings. The bottom of the window shows a taskbar with various application icons and a "CTRL DERECHA" button.

14. Desde Servidor02, capturar el contenido de los archivos asociados al dominio.



Servidor02 - Alejandro Becerra Suarez - alejandro.becerrasua - 03 [Corriendo] - Oracle VM VirtualBox

Archivo Máquina Ver Entrada Dispositivos Ayuda

Activities Terminal lun 14:31 usuario@ubuntuserver: ~

```
File Edit View Search Terminal Help
; BIND data file for local loopback interface
;
$TTL      604800
@         IN      SOA      redlinux03.com. root.localhost. (
                        2      ; Serial
                        604800  ; Refresh
                        86400   ; Retry
                        2419200 ; Expire
                        604800 ) ; Negative Cache TTL
;
@         IN      NS       redlinux03.com.
@         IN      A        172.16.63.2
@         IN      AAAA     ::1

servidor02      IN      A      172.16.63.2
servidor02      IN      A      172.16.93.1
cliente03       IN      A      172.16.63.3
cliente04       IN      A      172.16.93.2
router2003      IN      A      172.16.63.1

dns             CNAME     servidor02
www             CNAME     servidor02
ftp             CNAME     servidor02

servidor02      IN      HINFO   "Procesador de un antiguo movil Nokia" "Ubuntu
Server"
cliente03       IN      HINFO   "Intel i11-15960K" "Ubuntu 18.04"
cliente04       IN      HINFO   "AMD A1 1050H" "Windows 11"
router2003      IN      HINFO   "Intel i13-10660K" "Windows Server 2003"
```

CTRL DERECHA