

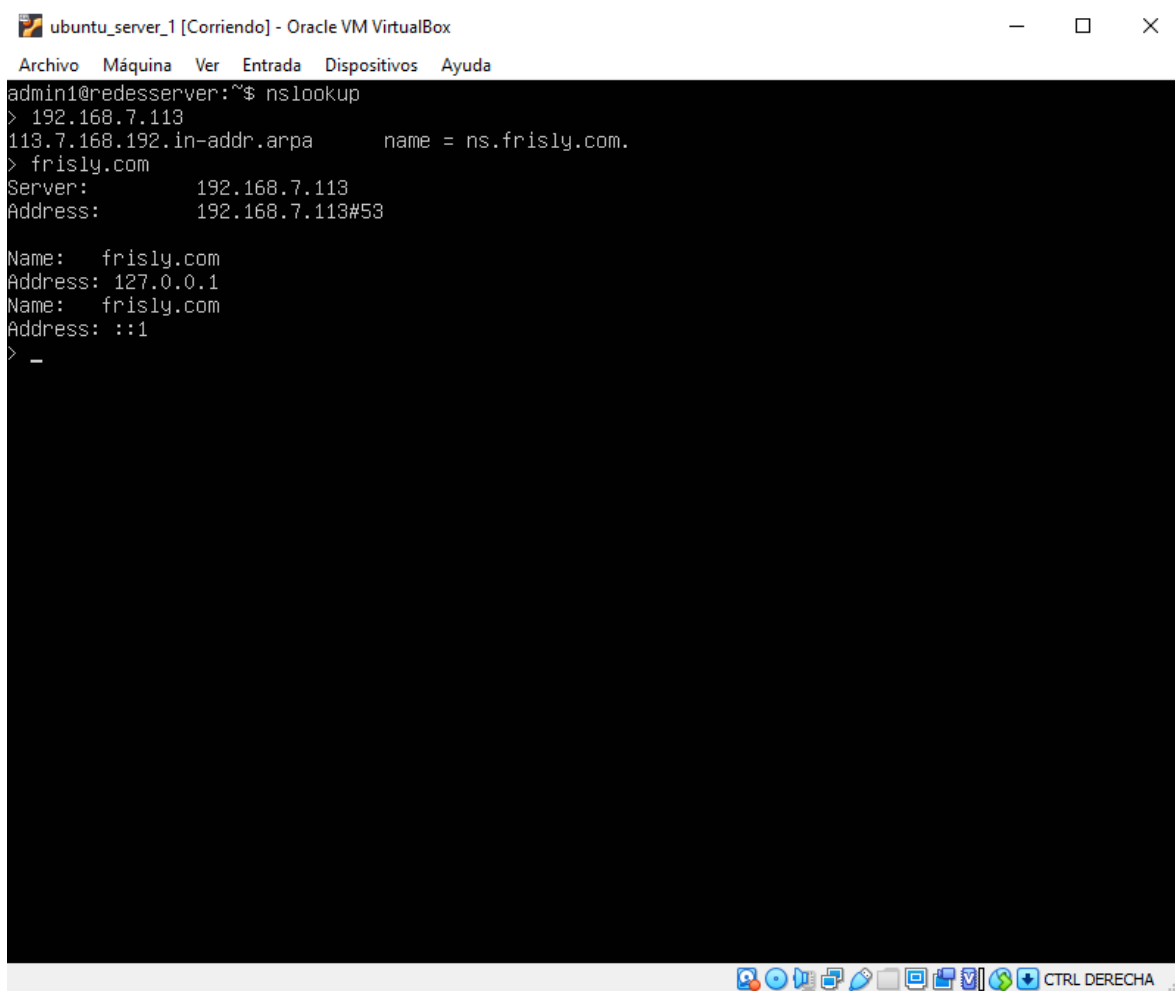
## DNS SERVER

**Nombre:** Wilson Manuel Santos Ajcot

**Carné:** 201907179

## FUNCIONAMIENTO

Sistema Windows 7 (Cliente) cuando el servidor esta apagado.



```
ubuntu_server_1 [Corriendo] - Oracle VM VirtualBox
Archivo  Máquina  Ver  Entrada  Dispositivos  Ayuda
admin1@redesserver:~$ nslookup
> 192.168.7.113
113.7.168.192.in-addr.arpa      name = ns.frislly.com.
> frislly.com
Server:      192.168.7.113
Address:     192.168.7.113#53

Name:   frislly.com
Address: 127.0.0.1
Name:   frislly.com
Address: ::1
> _
```

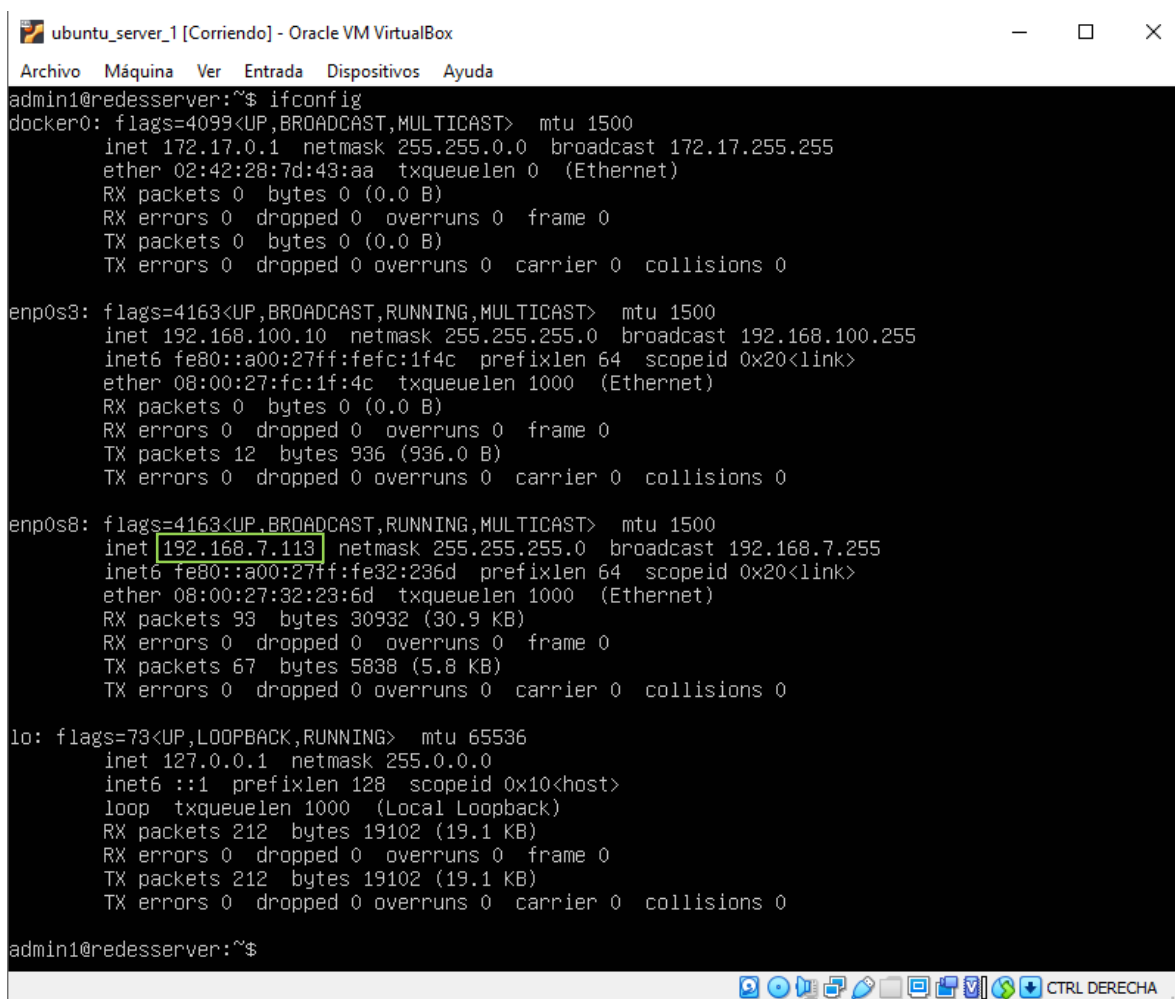
## PROCEDIMIENTO

### COMANDOS

- sudo apt update
- sudo apt upgrade
- sudo apt install net-tools

### OBTENER LA DIRECCIÓN IP DE LA TARJETA DE RED LOCAL (No la dirección IP de la red de DHCP)

- ip addr
- ifconfig



```
ubuntu_server_1 [Corriendo] - Oracle VM VirtualBox
Archivo  Máquina  Ver  Entrada  Dispositivos  Ayuda
admin1@redesserver:~$ ifconfig
docker0: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500
    inet 172.17.0.1 netmask 255.255.0.0 broadcast 172.17.255.255
    ether 02:42:28:7d:43:aa txqueuelen 0 (Ethernet)
    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

enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.100.10 netmask 255.255.255.0 broadcast 192.168.100.255
    inet6 fe80::a00:27ff:fe32:1f4c prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:fc:1f:4c txqueuelen 1000 (Ethernet)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 12 bytes 936 (936.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

enp0s8: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.7.113 netmask 255.255.255.0 broadcast 192.168.7.255
    inet6 fe80::a00:27ff:fe32:236d prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:32:23:6d txqueuelen 1000 (Ethernet)
    RX packets 93 bytes 30932 (30.9 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 67 bytes 5838 (5.8 KB)
    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 (Local Loopback)
    RX packets 212 bytes 19102 (19.1 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 212 bytes 19102 (19.1 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

admin1@redesserver:~$
```

## INSTALAR BIND9 Y HERRAMIENTAS

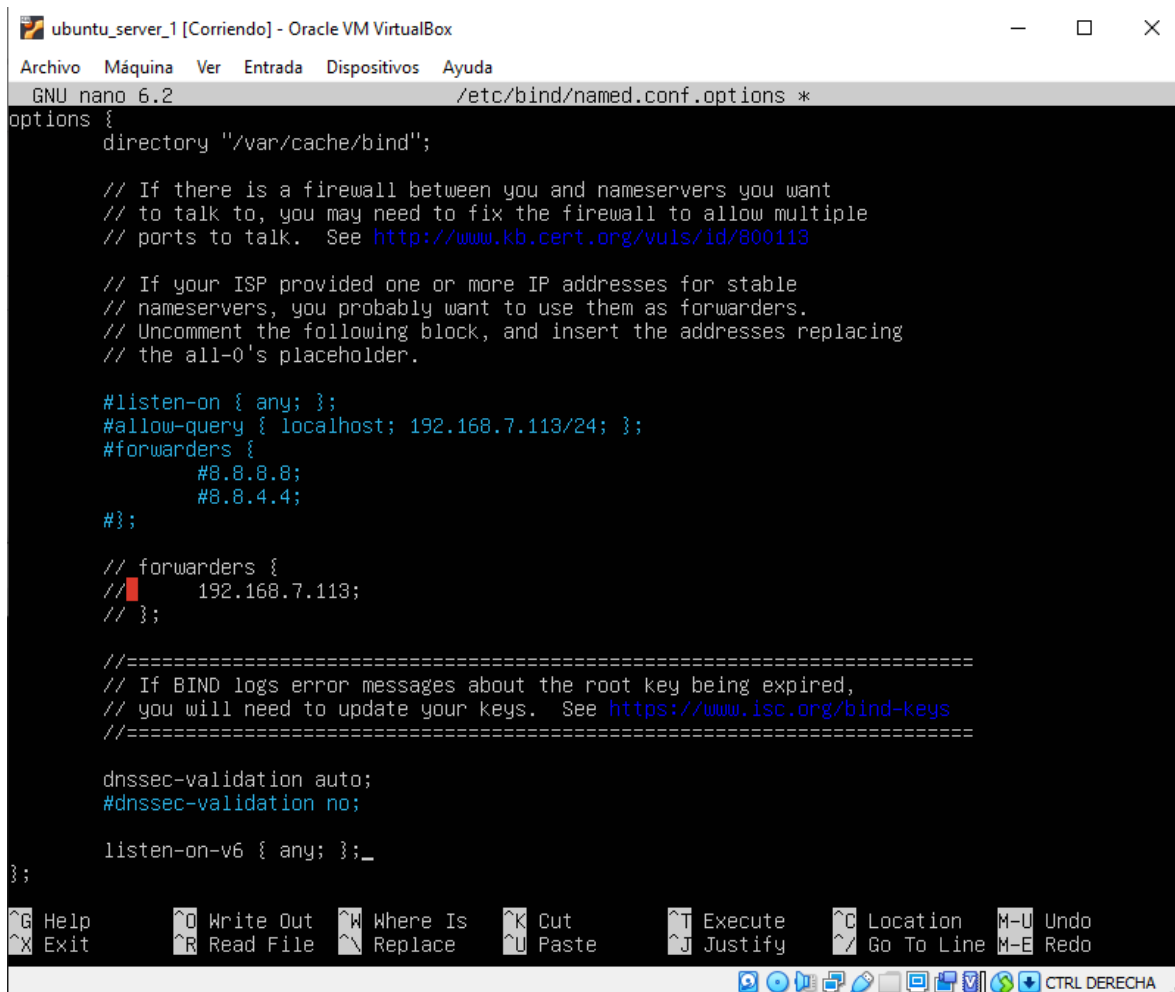
- `sudo apt install bind9 bind9-utils nano`
- `systemctl status bind9` (Verificamos que el servicio esta funcionando)

## CONFIGURACIÓN PREVIA BIND9

- `sudo ufw allow bind9`

## CONFIGURACIÓN "named.conf.options"

- `sudo nano /etc/bind/named.conf.options`



The screenshot shows a terminal window titled "ubuntu\_server\_1 [Corriendo] - Oracle VM VirtualBox". The terminal is running the GNU nano 6.2 editor, editing the file /etc/bind/named.conf.options. The configuration 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; 192.168.7.113/24; };
    #forwarders {
        #8.8.8.8;
        #8.8.4.4;
    };

    // forwarders {
    //     192.168.7.113;
    // };

    //=====
    // 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;
    #dnssec-validation no;

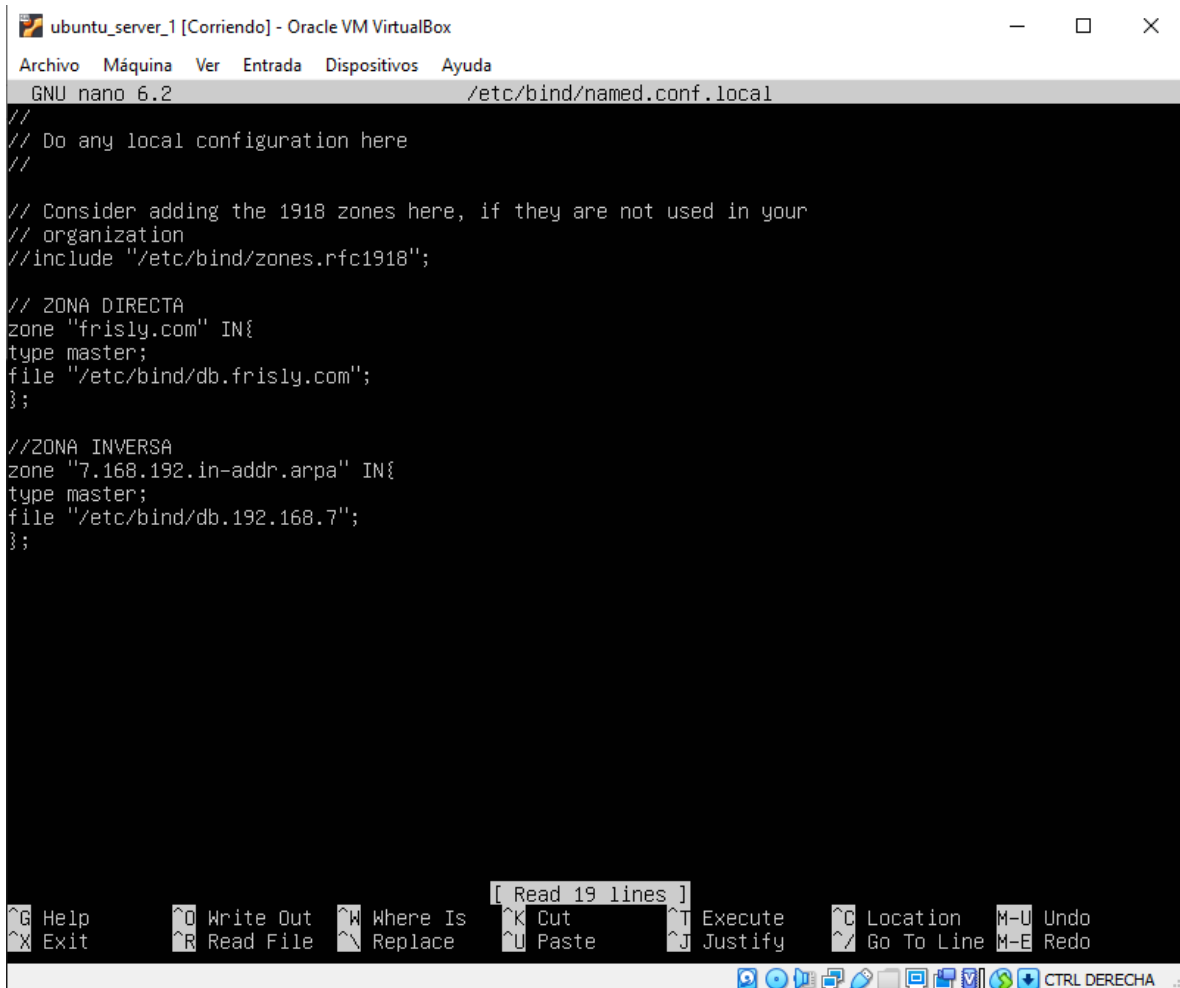
    listen-on-v6 { any; };_
};
```

The terminal window includes a menu bar at the bottom with various shortcuts: Help, Exit, Write Out, Read File, Where Is, Replace, Cut, Paste, Execute, Justify, Location, Go To Line, M-U, Undo, M-E, Redo, and a status bar showing "CTRL DERECHA".

- `sudo named-checkconf` (verificar que la configuración este correcta, si no hay error no se mostrara nada)
- `sudo systemctl restart bind9`
- `systemctl status bind9`

## CONFIGURACIÓN “named.conf.local”

- `sudo nano /etc/bind/named.conf.local`



The screenshot shows a terminal window titled "ubuntu\_server\_1 [Corriendo] - Oracle VM VirtualBox". The window displays the nano 6.2 editor editing the file "/etc/bind/named.conf.local". The content of the file is as follows:

```
//  
// Do any local configuration here  
//  
  
// Consider adding the 1918 zones here, if they are not used in your  
// organization  
//include "/etc/bind/zones.rfc1918";  
  
// ZONA DIRECTA  
zone "frisly.com" IN{  
type master;  
file "/etc/bind/db.frisly.com";  
};  
  
//ZONA INVERSA  
zone "7.168.192.in-addr.arpa" IN{  
type master;  
file "/etc/bind/db.192.168.7";  
};
```

The nano editor's status bar at the bottom shows "Read 19 lines". The bottom of the terminal window displays a series of icons and the text "CTRL DERECHA".

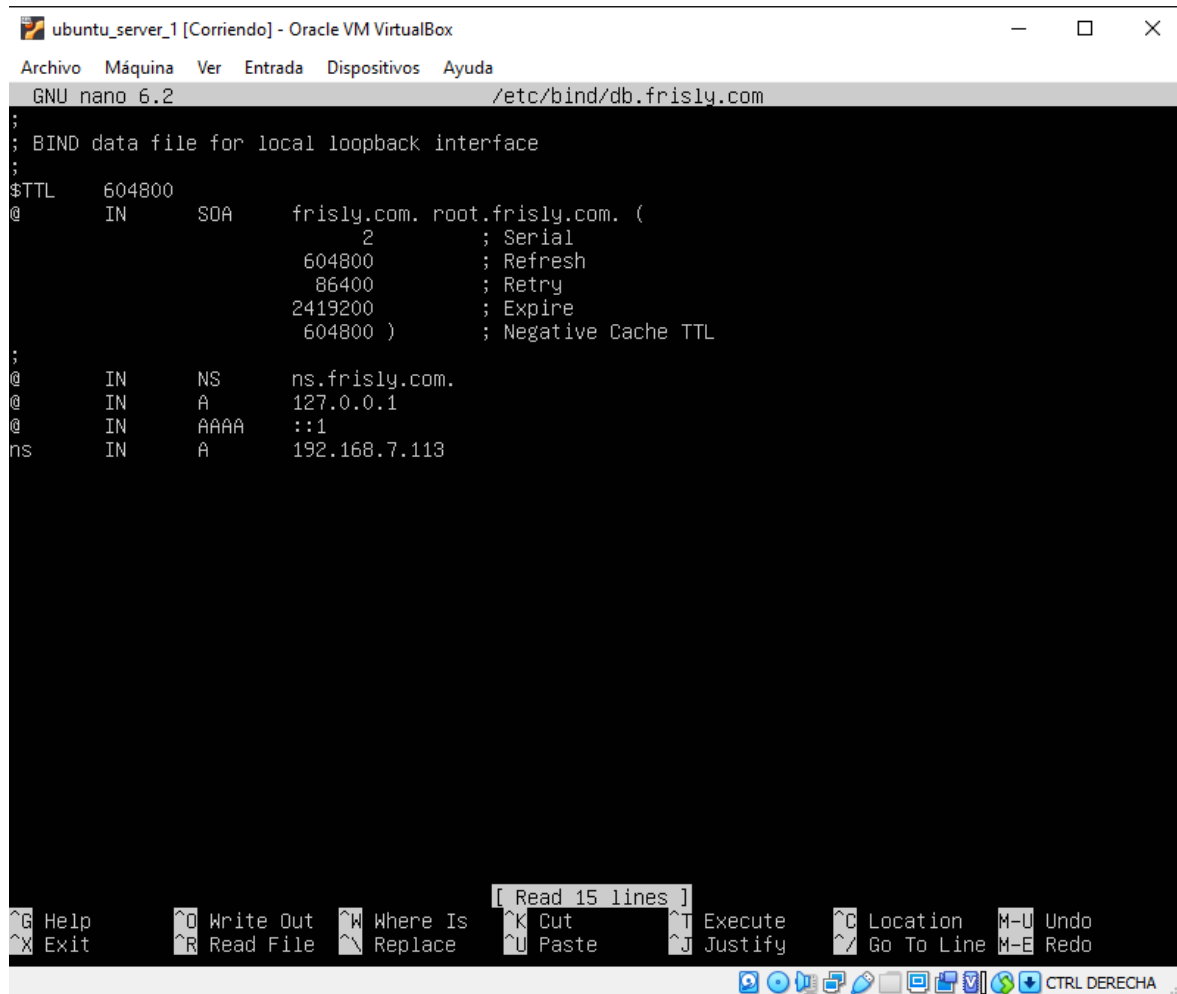
## Creación de los archivos “db.192.168.7” y “db.frisly.com”

- `sudo cp /etc/bind/db.local /etc/bind/db.frisly.com`
- `sudo cp /etc/bind/db.127 /etc/bind/db.192.168.7`

```
admin1@redesserver:~$ cd /etc/bind  
admin1@redesserver:/etc/bind$ ls  
bind.keys  db.192.168.7  db.frisly.com  named.conf.default-zones  rndc.key  
db.0       db.255       db.local      named.conf.local          zonas  
db.127     db.empty     named.conf    named.conf.options        zones.rfc1918  
admin1@redesserver:/etc/bind$ _
```

## CONFIGURACIÓN “db.frisly.com”

- `sudo nano /etc/bind/db.frisly.com`



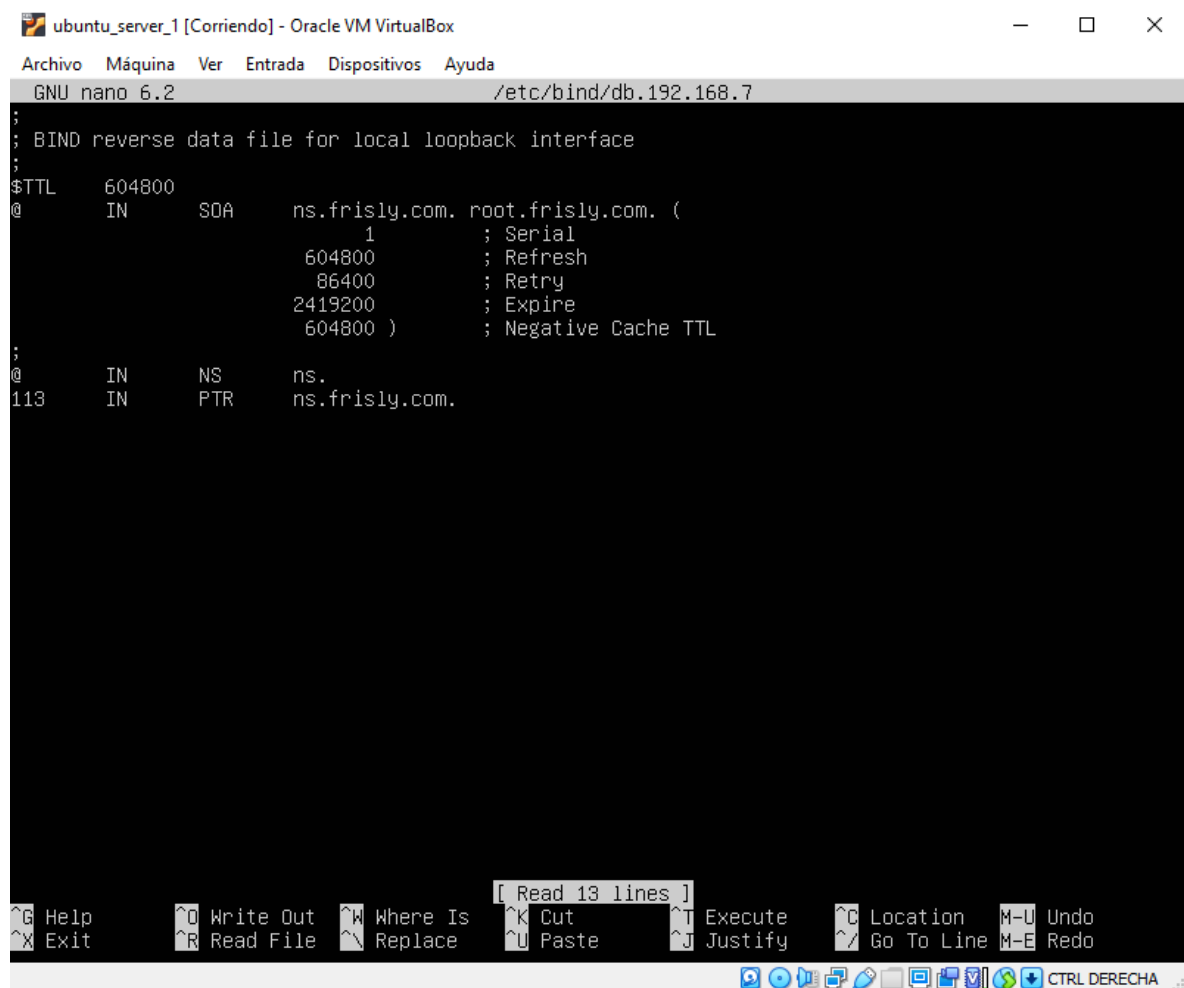
The screenshot shows a terminal window titled "ubuntu\_server\_1 [Corriendo] - Oracle VM VirtualBox". The terminal is running the GNU nano 6.2 editor, editing the file /etc/bind/db.frisly.com. The file contains BIND data for a local loopback interface. The configuration includes a TTL of 604800, a serial number of 2, and various refresh, retry, and expire times. The database entries include a root server, a nameserver, and an AAAA record for the loopback address 127.0.0.1.

```
;
; BIND data file for local loopback interface
;
$TTL      604800
@         IN      SOA      frisly.com. root.frisly.com. (
                        2      ; Serial
                        604800  ; Refresh
                        86400   ; Retry
                        2419200 ; Expire
                        604800 ) ; Negative Cache TTL
;
@         IN      NS       ns.frisly.com.
@         IN      A        127.0.0.1
@         IN      AAAA     ::1
ns        IN      A        192.168.7.113
```

The terminal window also shows a menu bar with options like Archivo, Máquina, Ver, Entrada, Dispositivos, and Ayuda. At the bottom, there is a status bar with various icons and the text "CTRL DERECHA".

## CONFIGURACIÓN “db.192.168.7”

- `sudo nano /etc/bind/db.192.168.7`



The screenshot shows a terminal window titled "ubuntu\_server\_1 [Corriendo] - Oracle VM VirtualBox". The terminal is running the GNU nano 6.2 editor, editing the file /etc/bind/db.192.168.7. The content of the file is as follows:

```
;
; BIND reverse data file for local loopback interface
;
$TTL      604800
@         IN      SOA      ns.frisly.com. root.frisly.com. (
                        1      ; Serial
                        604800  ; Refresh
                        86400   ; Retry
                        2419200 ; Expire
                        604800 ) ; Negative Cache TTL
;
@         IN      NS       ns.
113      IN      PTR      ns.frisly.com.
```

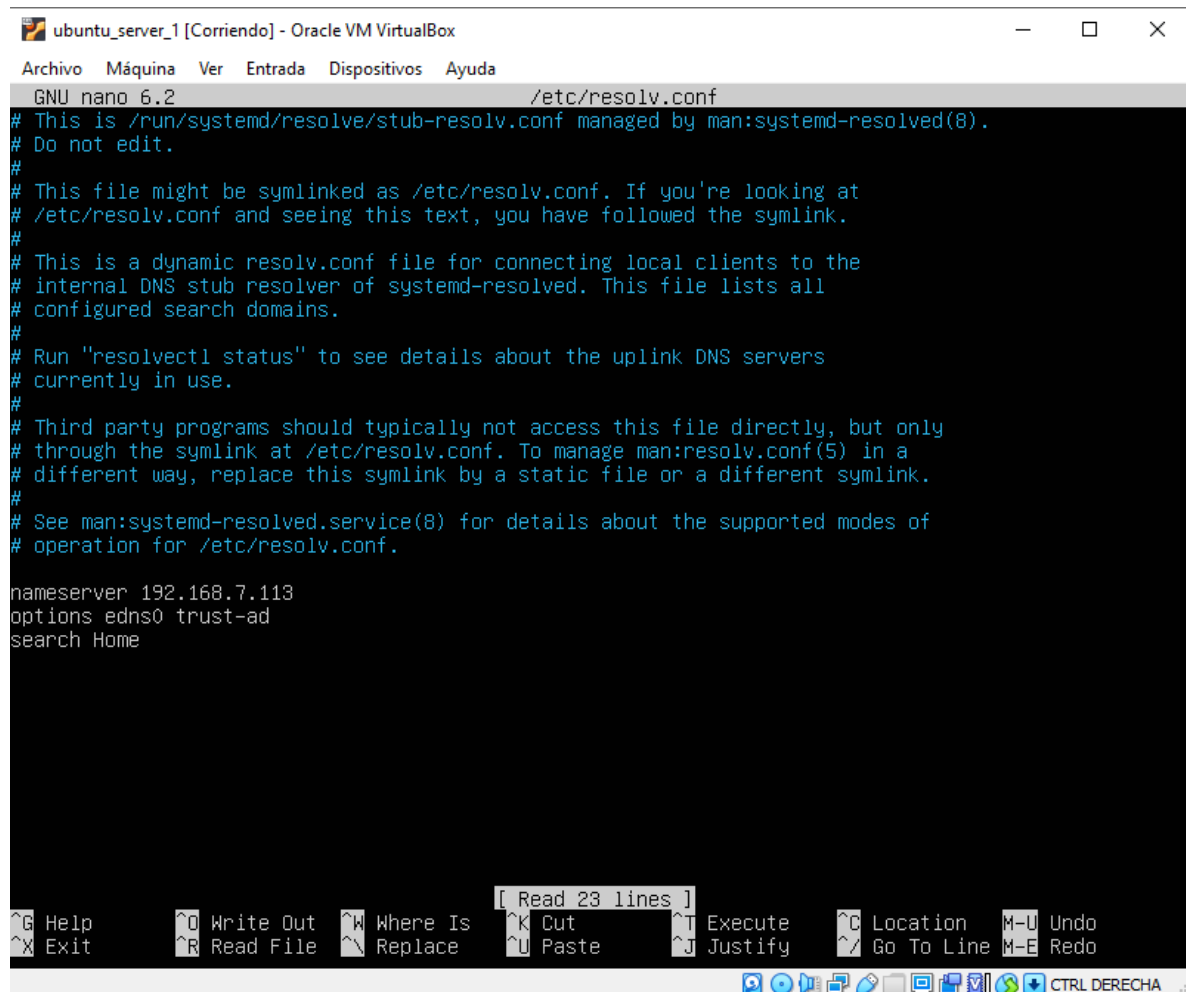
The terminal window has a menu bar with options: Archivo, Máquina, Ver, Entrada, Dispositivos, Ayuda. The status bar at the bottom shows various keyboard shortcuts and a message "[ Read 13 lines ]".

## VERIFICAR QUE TODO ESTE CORRECTO

- `sudo named-checkzone frisly.com /etc/bind/zonas/db.frisly.com`
- `sudo named-checkzone db.192.168.100.in-addr.arpa /etc/bind/zonas/db.192.168.100`

## CONFIGURACIÓN “resolv.conf”

- `sudo nano /etc/resolv.conf`



```
ubuntu_server_1 [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 192.168.7.113
options edns0 trust-ad
search Home

[ Read 23 lines ]
^G Help      ^O Write Out ^W Where Is  ^K Cut       ^T Execute
^X Exit      ^R Read File ^N Replace   ^U Paste      ^J Justify
^C Location  M-U Undo
^_ Go To Line M-E Redo

CTRL DERECHA
```

## REINICIAR EL SISTEMA Y COMPROBAR EL SERVIDOR DNS

- `systemctl restart bind9`
- `systemctl status bind9`
- `nslookup`

```
admin1@redesserver:~$ nslookup
> 192.168.7.113
113.7.168.192.in-addr.arpa      name = ns.frisly.com.
> frisly.com
Server:      192.168.7.113
Address:     192.168.7.113#53

Name:   frisly.com
Address: 127.0.0.1
Name:   frisly.com
Address: ::1
> _
```