

Sistem Terdistribusi
“Install dan Konfigurasi DNS Server”



Disusun oleh :

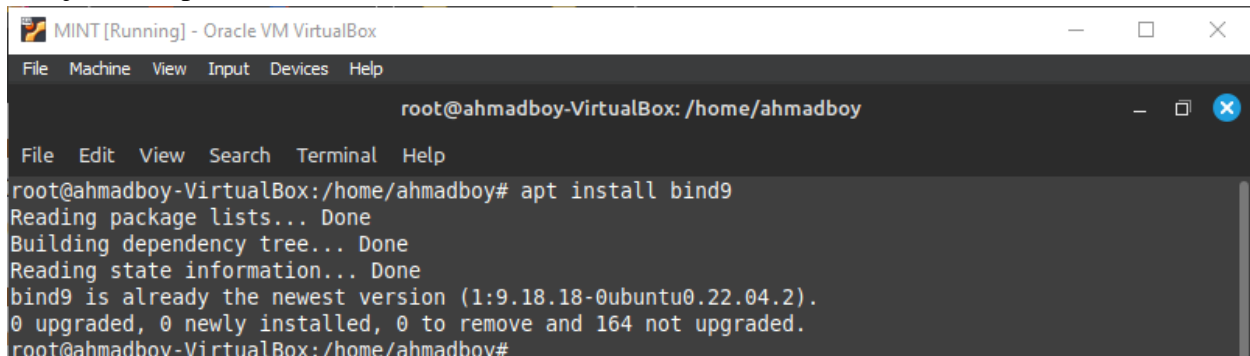
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PROGRAM STUDI SISTEM KOMPUTER
FAKULTAS ILMU KOMPUTER
UNIVERSITAS SRIWIJAYA
PALEMBANG
2023/2024

Pada tugas Install dan Konfigurasi DNS Server kali ini saya menggunakan BIND, BIND adalah singkatan dari Berkeley Internet Name Domain adalah aplikasi DNS yang paling umum digunakan di internet, khususnya pada sistem operasi bertipe Unix. Dan sebagai contoh untuk nama domain yang saya gunakan adalah baboooyganteng.com dan akan saya terjemahkan ke alamat IP Server yaitu 192.168.100.87.

1. Installasi DNS Server

Menjalankan perintah berikut untuk install bind9



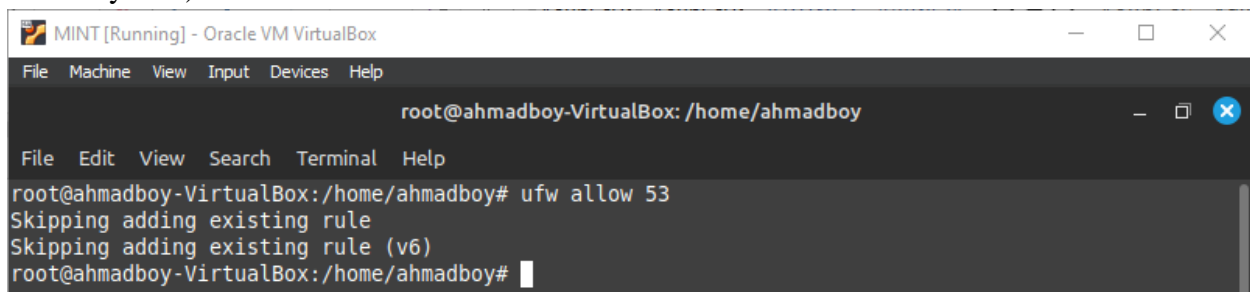
```
MINT [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

root@ahmadboy-VirtualBox: /home/ahmadboy

File Edit View Search Terminal Help

root@ahmadboy-VirtualBox:/home/ahmadboy# apt install bind9
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
bind9 is already the newest version (1:9.18.18-0ubuntu0.22.04.2).
0 upgraded, 0 newly installed, 0 to remove and 164 not upgraded.
root@ahmadboy-VirtualBox:/home/ahmadboy#
```

Mengizinkan lalu lintas pada port 53 melalui firewall yang dikelola oleh ufw (Uncomplicated Firewall) di sistem Anda. Port 53 adalah port standar yang digunakan untuk layanan DNS (Domain Name System).



```
MINT [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

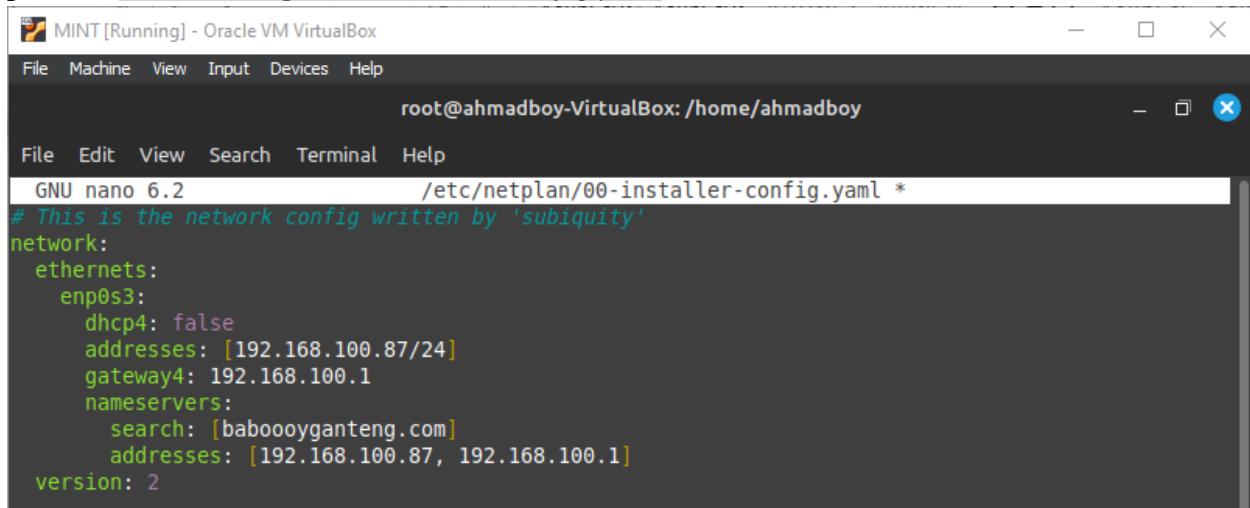
root@ahmadboy-VirtualBox: /home/ahmadboy

File Edit View Search Terminal Help

root@ahmadboy-VirtualBox:/home/ahmadboy# ufw allow 53
Skipping adding existing rule
Skipping adding existing rule (v6)
root@ahmadboy-VirtualBox:/home/ahmadboy#
```

2. Konfigurasi Network Interface

Mengkonfigurasi IP Address secara Static, Resolv.conf dan hosts seperti dibawah ini. Dengan perintah `nano /etc/netplan/00-installer-config.yaml`

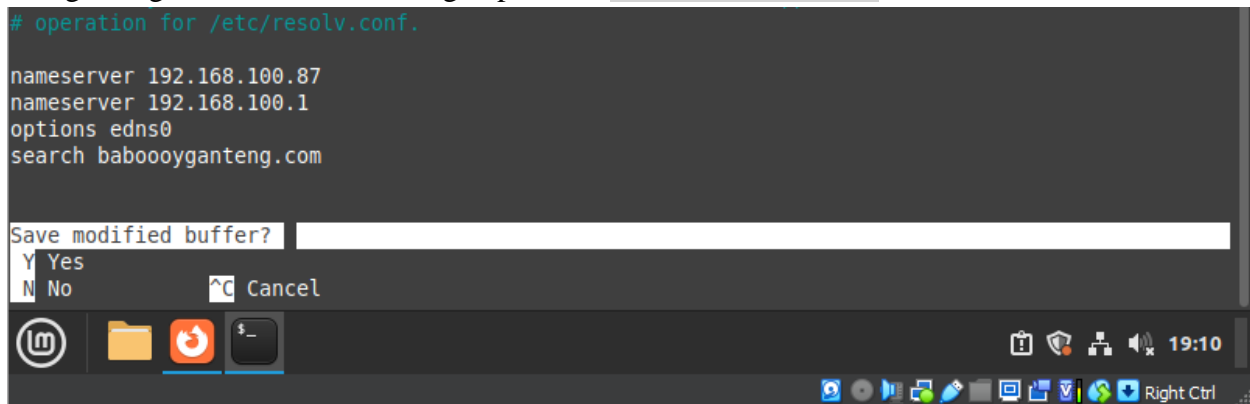


```
MINT [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

root@ahmadboy-VirtualBox: /home/ahmadboy

File Edit View Search Terminal Help
GNU nano 6.2 /etc/netplan/00-installer-config.yaml *
# This is the network config written by 'subiquity'
network:
  ethernets:
    enp0s3:
      dhcp4: false
      addresses: [192.168.100.87/24]
      gateway4: 192.168.100.1
      nameservers:
        search: [baboooyganteng.com]
        addresses: [192.168.100.87, 192.168.100.1]
  version: 2
```

Mengkonfigurasi Resolv.conf dengan perintah `nano /etc/resolv.conf`

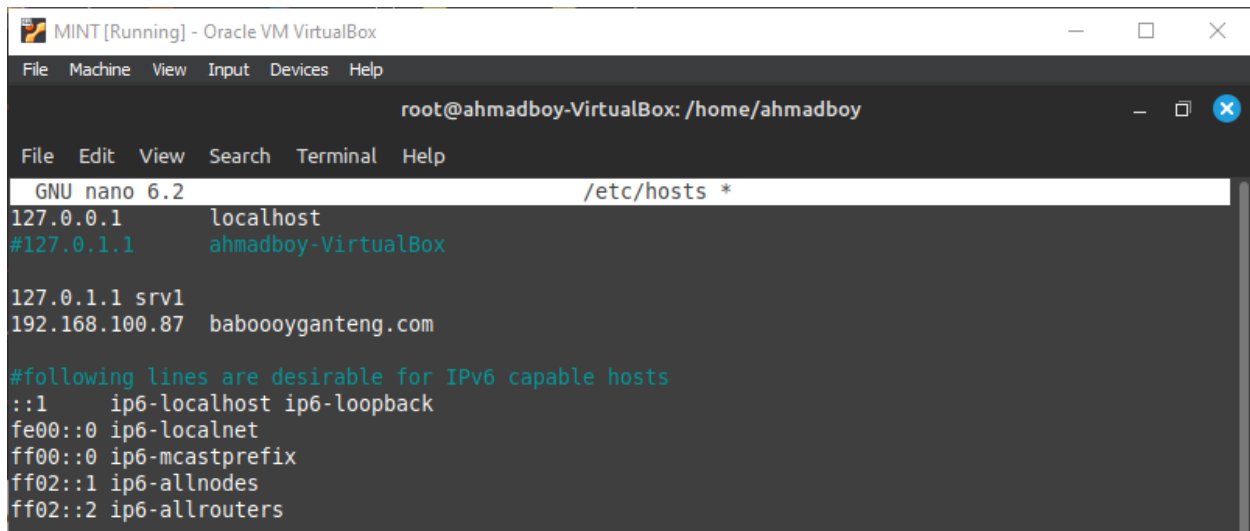


```
# operation for /etc/resolv.conf.

nameserver 192.168.100.87
nameserver 192.168.100.1
options edns0
search baboooyganteng.com

Save modified buffer?
Y Yes
N No ^C Cancel
```

Mengkonfigurasi Hosts dengan perintah `nano /etc/hosts`



The screenshot shows a terminal window titled "MINT [Running] - Oracle VM VirtualBox". The prompt is "root@ahmadboy-VirtualBox: /home/ahmadboy". The terminal is running the nano text editor on the file "/etc/hosts". The content of the file is as follows:

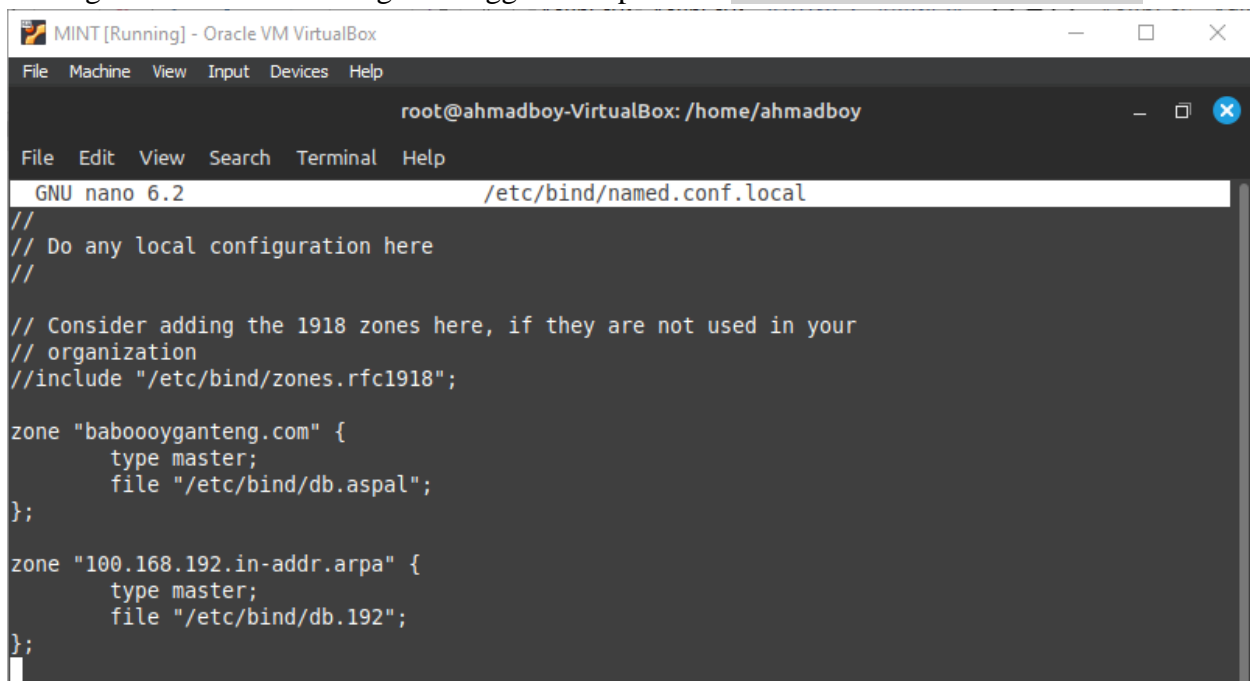
```
GNU nano 6.2 /etc/hosts *
127.0.0.1    localhost
#127.0.1.1  ahmadboy-VirtualBox

127.0.1.1 srv1
192.168.100.87 baboooyganteng.com

#following lines are desirable for IPv6 capable hosts
::1        ip6-localhost ip6-loopback
fe00::0    ip6-localnet
ff00::0    ip6-mcastprefix
ff02::1    ip6-allnodes
ff02::2    ip6-allrouters
```

3. Konfigurasi DNS Server

Menentukan konfigurasi zona (zone configuration) khusus untuk domain atau subdomain yang di-hosting oleh server DNS dengan menggunakan perintah `nano /etc/bind/named.conf.local`



The screenshot shows a terminal window titled "MINT [Running] - Oracle VM VirtualBox". The prompt is "root@ahmadboy-VirtualBox: /home/ahmadboy". The terminal is running the nano text editor on the file "/etc/bind/named.conf.local". The content of the file is as follows:

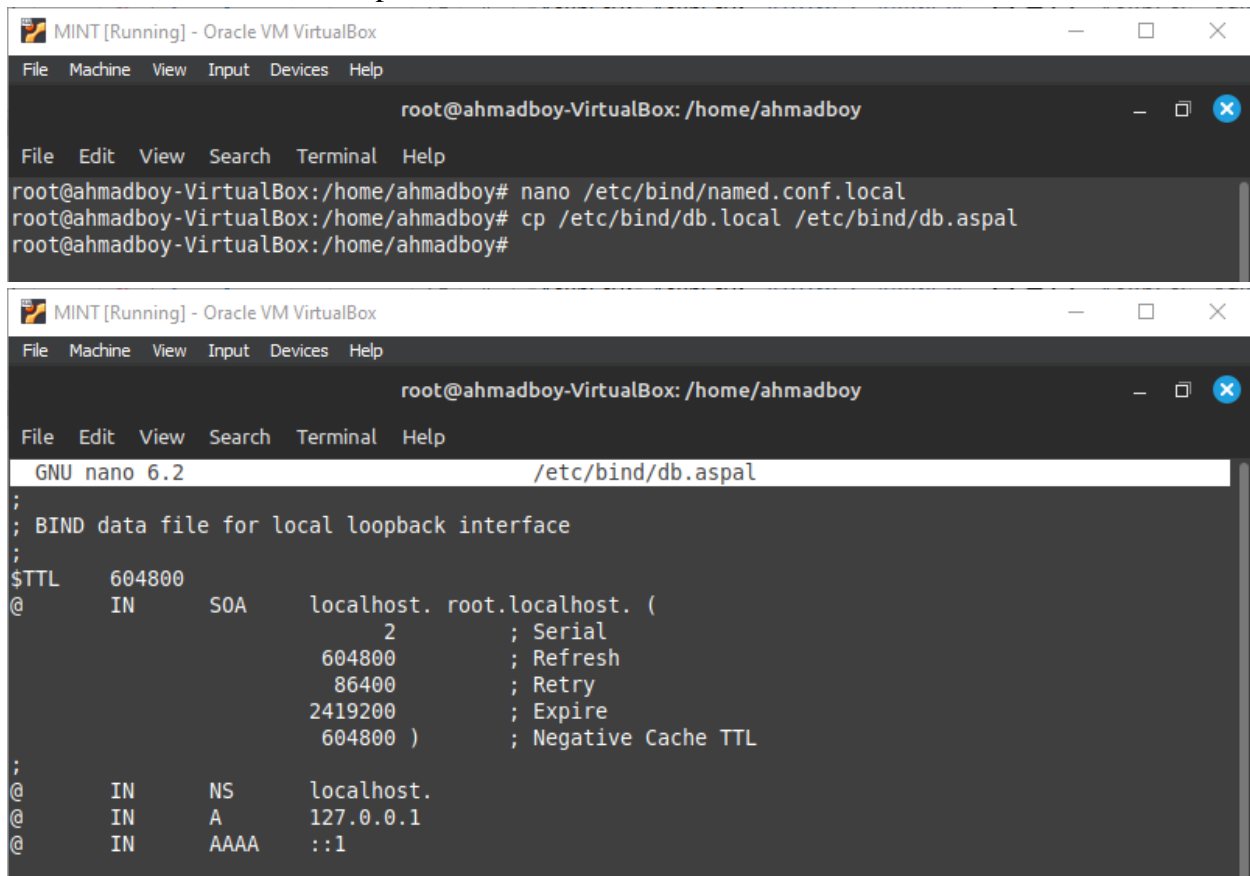
```
GNU nano 6.2 /etc/bind/named.conf.local
//
// Do any local configuration here
//

// Consider adding the 1918 zones here, if they are not used in your
// organization
//include "/etc/bind/zones.rfc1918";

zone "baboooyganteng.com" {
    type master;
    file "/etc/bind/db.aspal";
};

zone "100.168.192.in-addr.arpa" {
    type master;
    file "/etc/bind/db.192";
};
```

Membuat file /etc/bind/db.aspal



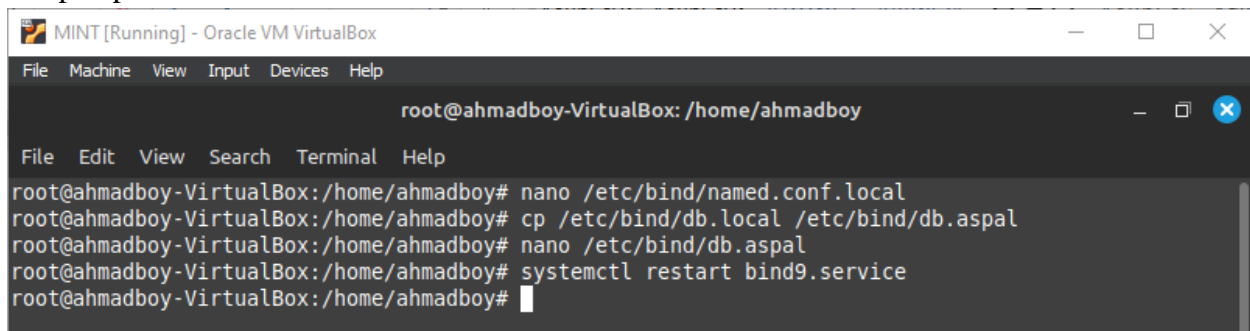
The screenshot shows a terminal window titled "MINT [Running] - Oracle VM VirtualBox". The prompt is "root@ahmadboy-VirtualBox: /home/ahmadboy". The user enters the command "nano /etc/bind/named.conf.local". The prompt changes to "root@ahmadboy-VirtualBox:/home/ahmadboy#". The user enters the command "cp /etc/bind/db.local /etc/bind/db.aspal". The prompt returns to "root@ahmadboy-VirtualBox:/home/ahmadboy#". Below this, the same terminal window is shown with the "nano" editor open at "/etc/bind/db.aspal". The editor shows the content of the file, which is a BIND data file for the local loopback interface. The content includes a SOA record for localhost, an NS record for localhost, an A record for 127.0.0.1, and an AAAA record for ::1.

```
root@ahmadboy-VirtualBox: /home/ahmadboy
File Edit View Search Terminal Help

root@ahmadboy-VirtualBox:/home/ahmadboy# nano /etc/bind/named.conf.local
root@ahmadboy-VirtualBox:/home/ahmadboy# cp /etc/bind/db.local /etc/bind/db.aspal
root@ahmadboy-VirtualBox:/home/ahmadboy#

GNU nano 6.2 /etc/bind/db.aspal
;
; BIND data file for local loopback interface
;
$TTL      604800
@         IN      SOA      localhost. root.localhost. (
                        2      ; Serial
                        604800 ; Refresh
                        86400  ; Retry
                        2419200 ; Expire
                        604800 ) ; Negative Cache TTL
;
@         IN      NS       localhost.
@         IN      A        127.0.0.1
@         IN      AAAA     ::1
```

Simpan perubahan lalu restart service BIND9



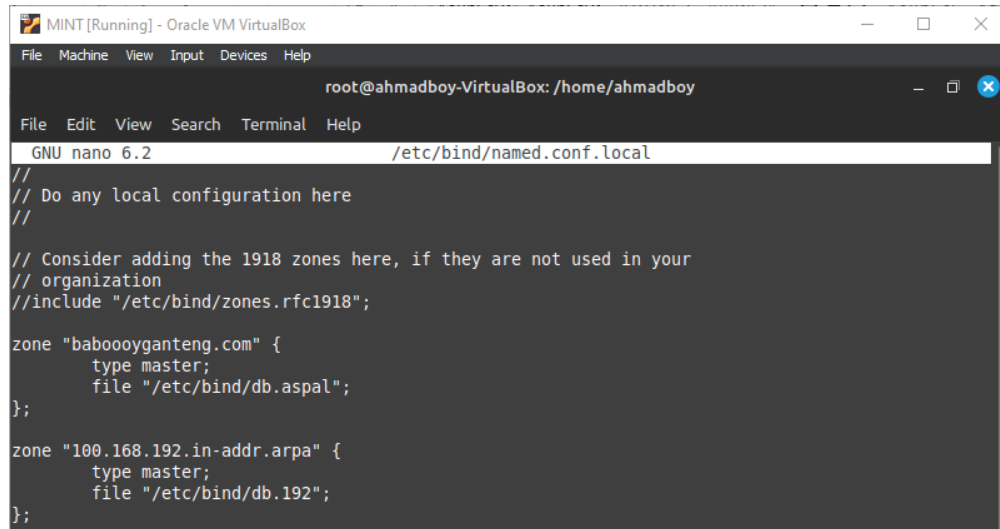
The screenshot shows a terminal window titled "MINT [Running] - Oracle VM VirtualBox". The prompt is "root@ahmadboy-VirtualBox: /home/ahmadboy". The user enters the command "nano /etc/bind/named.conf.local". The prompt changes to "root@ahmadboy-VirtualBox:/home/ahmadboy#". The user enters the command "cp /etc/bind/db.local /etc/bind/db.aspal". The prompt returns to "root@ahmadboy-VirtualBox:/home/ahmadboy#". The user enters the command "nano /etc/bind/db.aspal". The prompt returns to "root@ahmadboy-VirtualBox:/home/ahmadboy#". The user enters the command "systemctl restart bind9.service". The prompt returns to "root@ahmadboy-VirtualBox:/home/ahmadboy#".

```
root@ahmadboy-VirtualBox: /home/ahmadboy
File Edit View Search Terminal Help

root@ahmadboy-VirtualBox:/home/ahmadboy# nano /etc/bind/named.conf.local
root@ahmadboy-VirtualBox:/home/ahmadboy# cp /etc/bind/db.local /etc/bind/db.aspal
root@ahmadboy-VirtualBox:/home/ahmadboy# nano /etc/bind/db.aspal
root@ahmadboy-VirtualBox:/home/ahmadboy# systemctl restart bind9.service
root@ahmadboy-VirtualBox:/home/ahmadboy#
```

Membuat Reverse zone file. Reverse zone perlu ditambahkan untuk memungkinkan DNS untuk me resolv dari IP Address ke nama domain.

Edit file `/etc/bind/named.conf.local` lalu Tambahkan script dibawah ini.

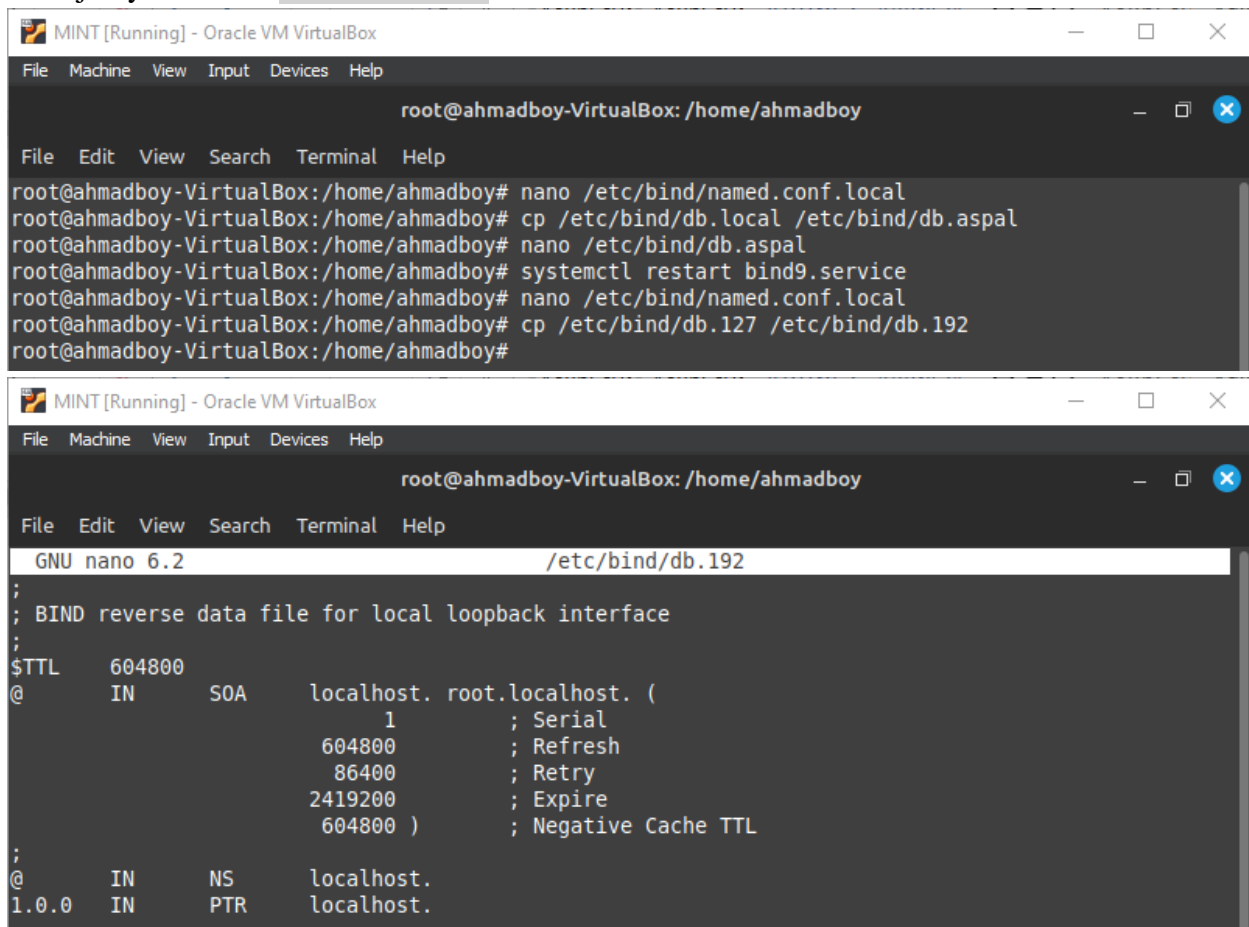


```
MINT [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
root@ahmadboy-VirtualBox: /home/ahmadboy
File Edit View Search Terminal Help
GNU nano 6.2 /etc/bind/named.conf.local
//
// Do any local configuration here
//
// Consider adding the 1918 zones here, if they are not used in your
// organization
//include "/etc/bind/zones.rfc1918";

zone "baboooyganteng.com" {
    type master;
    file "/etc/bind/db.aspal";
};

zone "100.168.192.in-addr.arpa" {
    type master;
    file "/etc/bind/db.192";
};
```

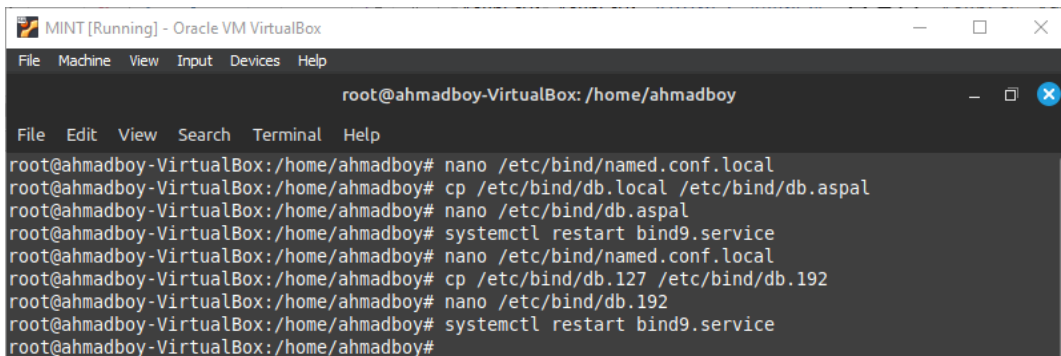
Selanjutnya buat file `/etc/bind/db.192`



```
MINT [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
root@ahmadboy-VirtualBox: /home/ahmadboy
File Edit View Search Terminal Help
root@ahmadboy-VirtualBox:/home/ahmadboy# nano /etc/bind/named.conf.local
root@ahmadboy-VirtualBox:/home/ahmadboy# cp /etc/bind/db.local /etc/bind/db.aspal
root@ahmadboy-VirtualBox:/home/ahmadboy# nano /etc/bind/db.aspal
root@ahmadboy-VirtualBox:/home/ahmadboy# systemctl restart bind9.service
root@ahmadboy-VirtualBox:/home/ahmadboy# nano /etc/bind/named.conf.local
root@ahmadboy-VirtualBox:/home/ahmadboy# cp /etc/bind/db.127 /etc/bind/db.192
root@ahmadboy-VirtualBox:/home/ahmadboy#

MINT [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
root@ahmadboy-VirtualBox: /home/ahmadboy
File Edit View Search Terminal Help
GNU nano 6.2 /etc/bind/db.192
;
; BIND reverse data file for local loopback interface
;
$TTL      604800
@         IN      SOA      localhost. root.localhost. (
                        1      ; Serial
                        604800 ; Refresh
                        86400  ; Retry
                        2419200; Expire
                        604800 ) ; Negative Cache TTL
;
@         IN      NS       localhost.
1.0.0     IN      PTR      localhost.
```

systemctl restart bind9.service

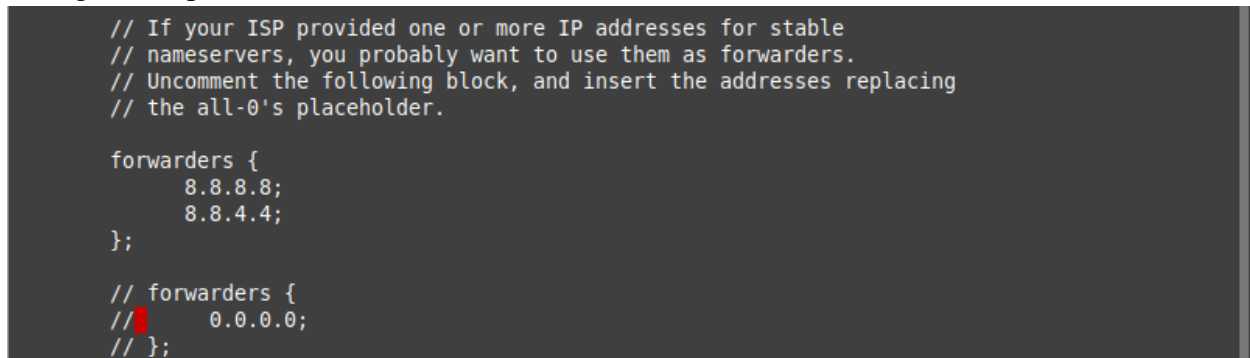


```
MINT [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

root@ahmadboy-VirtualBox: /home/ahmadboy

File Edit View Search Terminal Help
root@ahmadboy-VirtualBox:/home/ahmadboy# nano /etc/bind/named.conf.local
root@ahmadboy-VirtualBox:/home/ahmadboy# cp /etc/bind/db.local /etc/bind/db.aspal
root@ahmadboy-VirtualBox:/home/ahmadboy# nano /etc/bind/db.aspal
root@ahmadboy-VirtualBox:/home/ahmadboy# systemctl restart bind9.service
root@ahmadboy-VirtualBox:/home/ahmadboy# nano /etc/bind/named.conf.local
root@ahmadboy-VirtualBox:/home/ahmadboy# cp /etc/bind/db.127 /etc/bind/db.192
root@ahmadboy-VirtualBox:/home/ahmadboy# nano /etc/bind/db.192
root@ahmadboy-VirtualBox:/home/ahmadboy# systemctl restart bind9.service
root@ahmadboy-VirtualBox:/home/ahmadboy#
```

Mengganti dengan IP DNS dari ISP atau menggunakan IP DNS public disini saya mencoba menggunakan DNS public 8.8.8.8 dan 8.8.4.4 Edit file `/etc/bind/named.conf.options` lalu konfigurasi seperti dibawah ini.

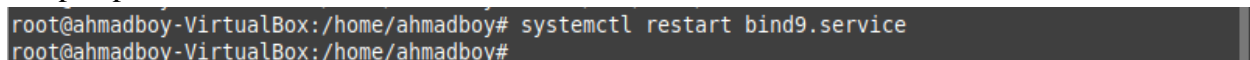


```
// If your ISP provided one or more IP addresses for stable
// nameservers, you probably want to use them as forwarders.
// Uncomment the following block, and insert the addresses replacing
// the all-0's placeholder.

forwarders {
    8.8.8.8;
    8.8.4.4;
};

// forwarders {
//    0.0.0.0;
// };
```

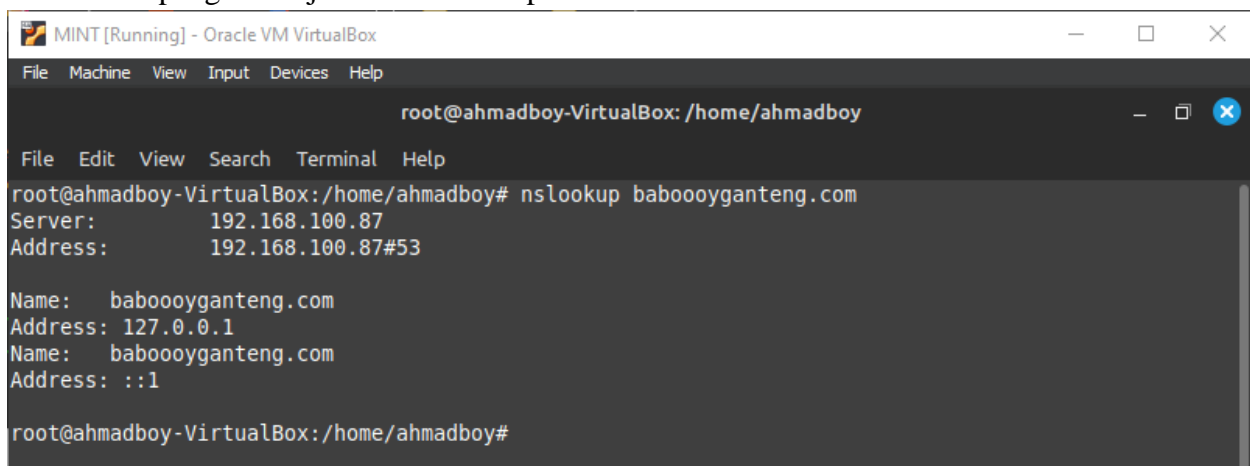
Simpan perubahan lalu restart service BIND9



```
root@ahmadboy-VirtualBox:/home/ahmadboy# systemctl restart bind9.service
root@ahmadboy-VirtualBox:/home/ahmadboy#
```

4. Pengetesan

Melakukan pengetesan jalankan nslookup nama domain.



```
MINT [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

root@ahmadboy-VirtualBox: /home/ahmadboy

File Edit View Search Terminal Help
root@ahmadboy-VirtualBox:/home/ahmadboy# nslookup baboooyganteng.com
Server:          192.168.100.87
Address:         192.168.100.87#53

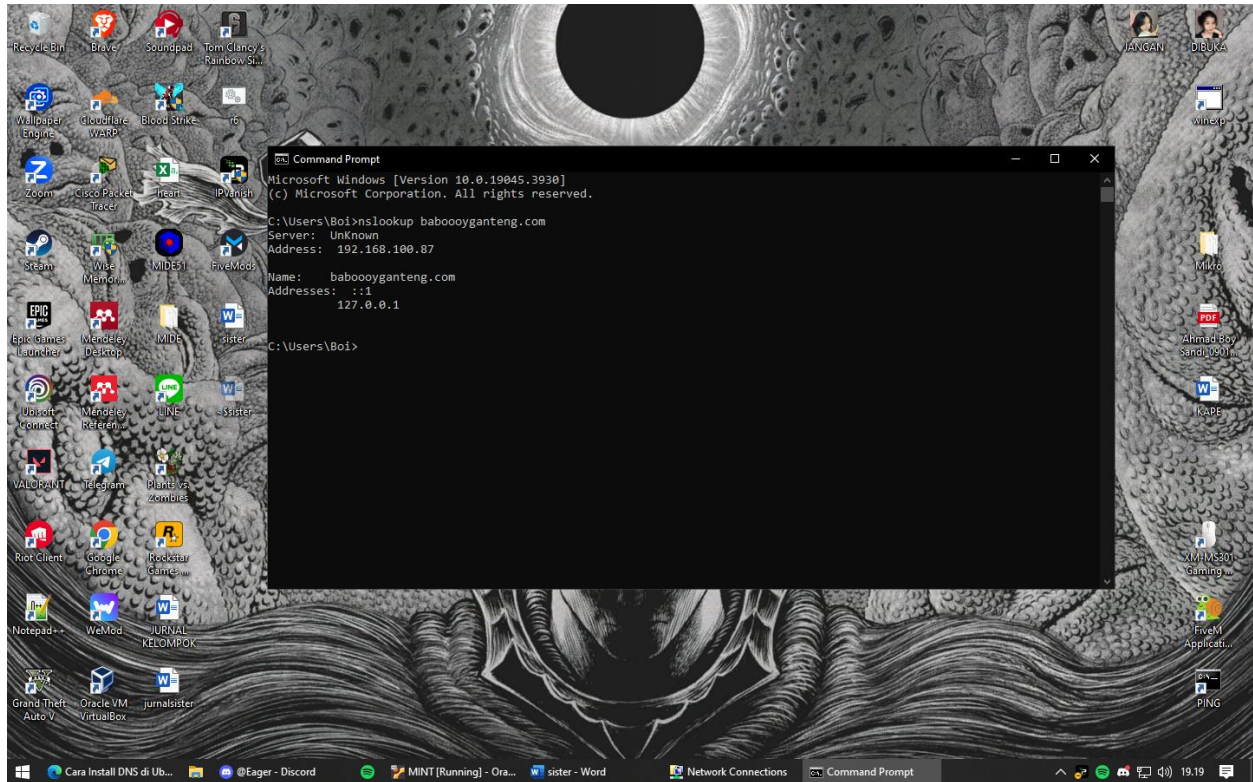
Name:   baboooyganteng.com
Address: 127.0.0.1
Name:   baboooyganteng.com
Address: ::1

root@ahmadboy-VirtualBox:/home/ahmadboy#
```

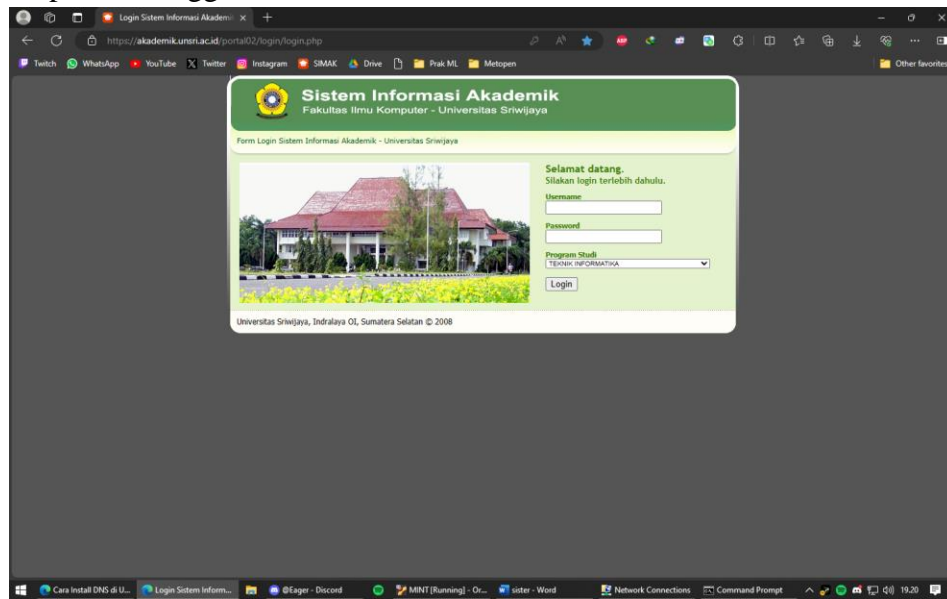

Melakukan pengetesan ping ke domain.

```
root@ahmadboy-VirtualBox:/home/ahmadboy# ping baboooyganteng.com
PING baboooyganteng.com (192.168.100.87) 56(84) bytes of data:
64 bytes from baboooyganteng.com (192.168.100.87): icmp_seq=1 ttl=64 time=0.024 ms
64 bytes from baboooyganteng.com (192.168.100.87): icmp_seq=2 ttl=64 time=0.041 ms
64 bytes from baboooyganteng.com (192.168.100.87): icmp_seq=3 ttl=64 time=0.095 ms
64 bytes from baboooyganteng.com (192.168.100.87): icmp_seq=4 ttl=64 time=0.055 ms
64 bytes from baboooyganteng.com (192.168.100.87): icmp_seq=5 ttl=64 time=0.056 ms
64 bytes from baboooyganteng.com (192.168.100.87): icmp_seq=6 ttl=64 time=0.107 ms
64 bytes from baboooyganteng.com (192.168.100.87): icmp_seq=7 ttl=64 time=0.045 ms
```

Pengetesan dari sisi PC Client



PC Client Tetap bisa menggunakan Internet



PC Client Linuxmint

