DOMAIN NAME SYSTEM

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FAKULTAS ILMU KOMPUTER

PROGRAM STUDI SISTEM KOMPUTER

UNIVERSITAS SRIWIJAYA

PALEMBANG

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- Installasi DNS Server

Jalankan perintah berikut untuk install bind9

```
root@ferdinand-VirtualBox:/home/ferdinand# apt install bind9
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  bind9-dnsutils bind9-host bind9-libs bind9-utils
Suggested packages:
  bind-doc resolvconf
The following NEW packages will be installed:
  bind9 bind9-utils
The following packages will be upgraded:
  bind9-dnsutils bind9-host bind9-libs
3 upgraded, 2 newly installed, 0 to remove and 159 not upgraded.
Need to get 1.876 kB of archives.
After this operation, 1.668 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 bind9-host amd64 1:9.18.18-0ubuntu0.22.04.2 [52,5 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 bind9-dnsutils amd64 1:9.18.18-0ubuntu0.22.04.2 [157 kB]
Get:3 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 bind9-libs amd64 1:9.18.18-0ubuntu0.22.04.2 [1.245 kB]
Get:4 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 bind9-utils amd64 1:9.18.18-0ubuntu0.22.04.2 [161 kB]
Get:5 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 bind9 amd64 1:9.18.18-0ubuntu0.22.04.2 [260 kB]
Fetched 1.876 kB in 7s (282 kB/s)
(Reading database ... 528780 files and directories currently installed.)
Preparing to unpack .../bind9-host_1%3a9.18.18-0ubuntu0.22.04.2_amd64.deb ...
Unpacking bind9-host (1:9.18.18-0ubuntu0.22.04.2) over (1:9.18.18-0ubuntu0.22.04.1) ...
Preparing to unpack .../bind9-dnsutils_1%3a9.18.18-0ubuntu0.22.04.2_amd64.deb ...
Unpacking bind9-dnsutils (1:9.18.18-0ubuntu0.22.04.2) over (1:9.18.18-0ubuntu0.22.04.1) ...
Preparing to unpack .../bind9-libs_1%3a9.18.18-0ubuntu0.22.04.2_amd64.deb ...
Unpacking bind9-libs:amd64 (1:9.18.18-0ubuntu0.22.04.2) over (1:9.18.18-0ubuntu0.22.04.1) ...
Selecting previously unselected package bind9-utils.
```

Jika status firewall pada server rekan rekan aktif maka silahkan di Allow pada port 53 dengan perintah berikut

```
root@ferdinand-VirtualBox:/home/ferdinand# ufw allow 53
Rules updated
Rules updated (v6)
root@ferdinand-VirtualBox:/home/ferdinand#
```

- Konfigurasi Network Interface

Sebelumnya kita konfigurasi IP Address secara Static, Resolv.conf dan hosts seperti dibawah ini.

1. Konfigurasi interface

```
                                                root@ferdinand-VirtualBox: /home/ferdinand
 File   Edit   View   Search   Terminal   Help
  GNU nano 6.2                                    /etc/netplan/00-installer-config.yaml
network:
  ethernets:
    enp0s3:
      dhcp4: false
      addresses: [192.168.100.91/24]
      gateway4: 192.168.100.1
      nameservers:
        search: [nankece.com]
        addresses: [192.168.100.91, 192.168.100.1]
  version: 2
```

2. Konfigurasi Resolv.conf

```
root@ferdinand-VirtualBox: /home/ferdinand
File  Edit  View  Search  Terminal  Help
  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 192.168.100.91
nameserver 192.168.100.1
options edns0
search nankece.com
```

3. Konfigurasi Hosts

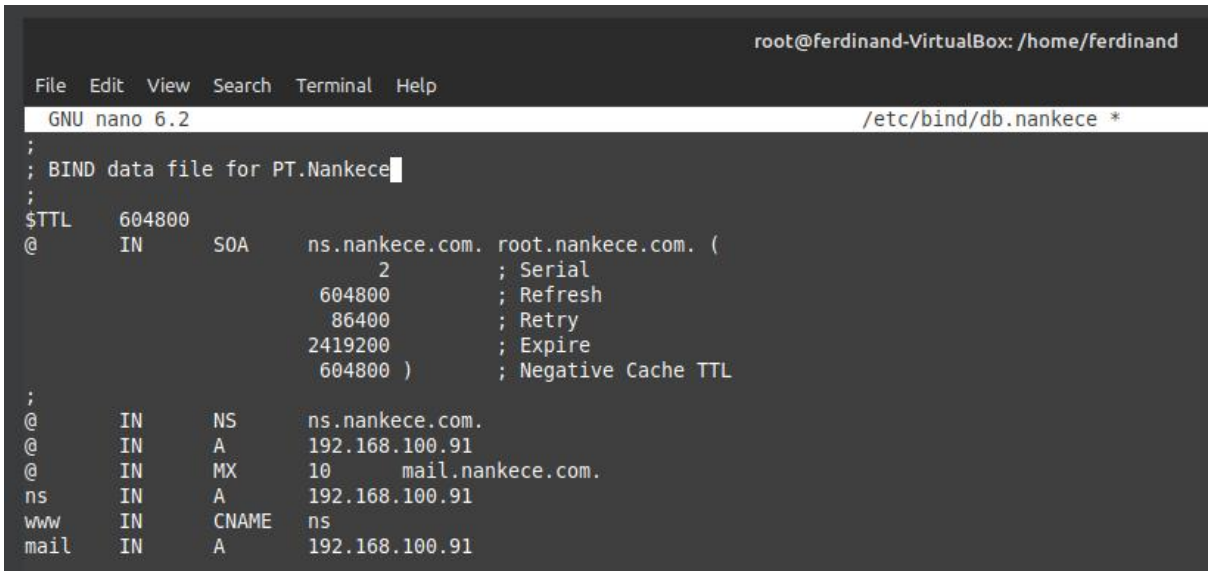
```
root@ferdinand-VirtualBox: /home/ferdinand
File  Edit  View  Search  Terminal  Help
  GNU nano 6.2                                                      /etc/hosts *
127.0.0.1       localhost
127.0.1.1       ferdinand-VirtualBox
192.168.100.91  nankece.com
# The following lines are desirable for IPv6 capable hosts
::1     ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
```

- Konfigurasi DNS Server

Pada bagian ini BIND9 akan dikonfigurasi sebagai server utama dengan nama domain menggunakan nama nankece.com.

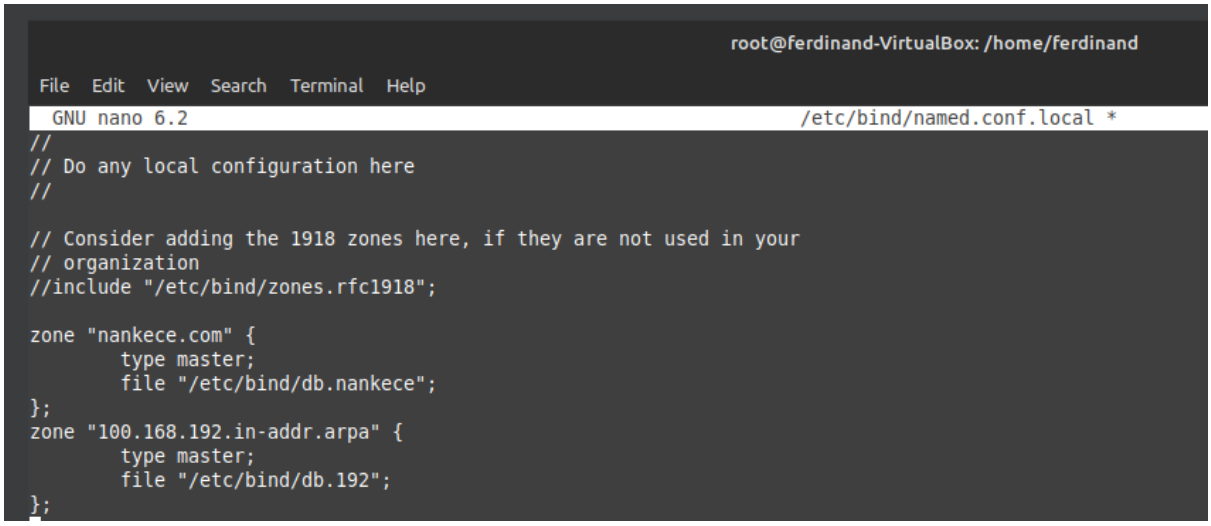
```
root@ferdinand-VirtualBox: /home/ferdinand
File  Edit  View  Search  Terminal  Help
  GNU nano 6.2                                                /etc/bind/named.conf.local *
//
// Do any local configuration here
//

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

zone "nankece.com" {
        type master;
        file "/etc/bind/db.nankece";
};
```

Selanjutnya gunakan file zone yang sudah ada sebagai template untuk membuat file /etc/bind/db.nankece, lalu edit seperti dibawah ini pada nano /etc/bind/db.nankece

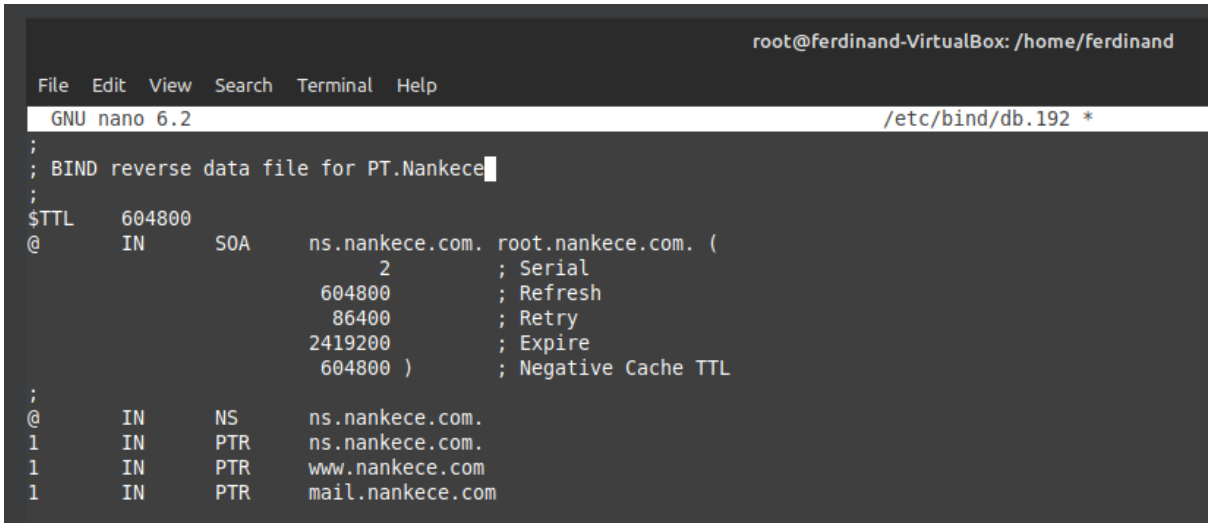


Simpan perubahan lalu restart service BIND9, kemudian buat Reverse zone file. Reverse zone perlu ditambahkan untuk memungkinkan DNS untuk me resolv dari IP Address ke nama domain.

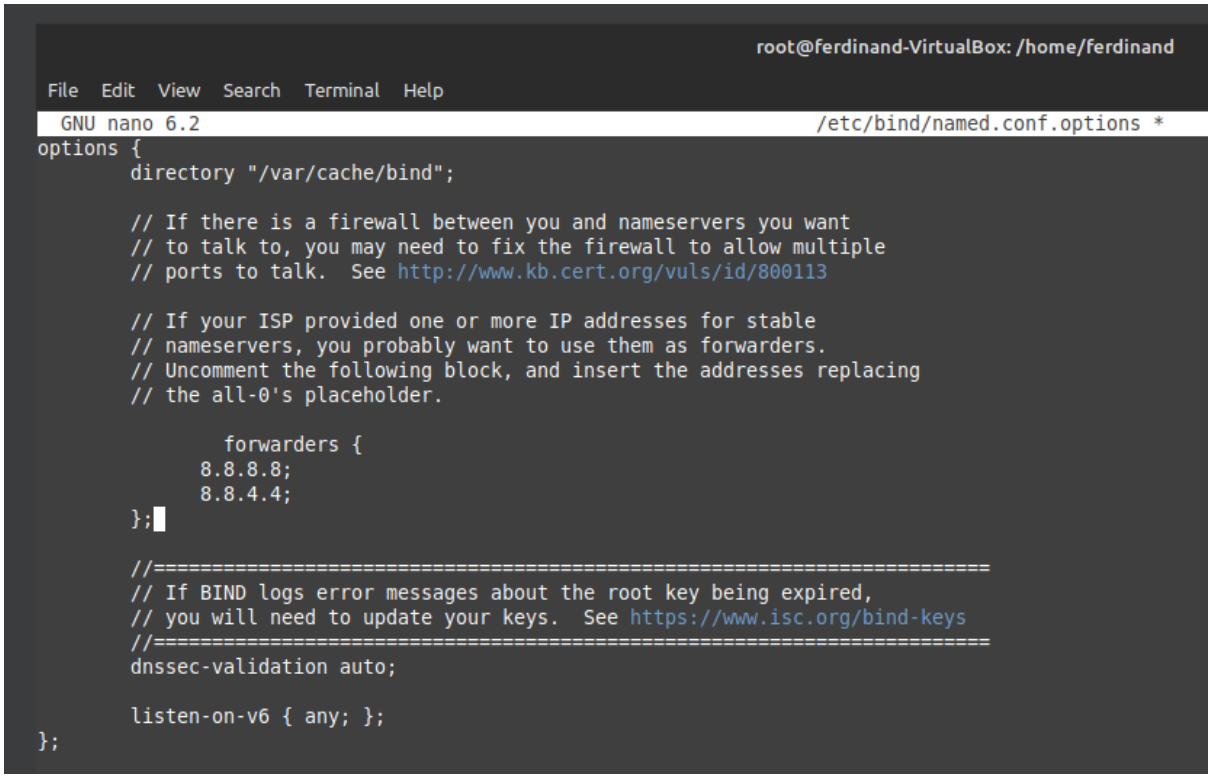
Edit file /etc/bind/named.conf.local lalu Tambahkan script dibawah ini.



Selanjutnya buat file /etc/bind/db.192, kemudian diedit seperti dibawah ini.



Simpan perubahan lalu restart service BIND9. DNS Caching berfungsi jika Client menggunakan DNS Local dan ingin terhubung dengan Internet. jadi PC Client masih bisa terhubung ke Internet meskipun Client menggunakan DNS Local. untuk konfigurasinya dengan uncomment pada bagian forwarders dan mengganti dengan IP DNS dari ISP atau menggunakan IP DNS public disini saya mencoba menngunakan DNS public 8.8.8.8 dan 8.8.4.4 Edit file /etc/bind/named.conf.options lalu konfigurasi seperti dibawah ini.



Simpan perubahan lalu restart service BIND9

- Pengetesan

Untuk pengetesan jalankan nslookup nama domain.

```
root@ferdinand-VirtualBox:/home/ferdinand# nslookup www.nankece.com
Server:         192.168.100.91
Address:        192.168.100.91#53

www.nankece.com canonical name = ns.nankece.com.
Name:   ns.nankece.com
Address: 192.168.100.91
```

Lalu test ping ke domain

```
root@ferdinand-VirtualBox:/home/ferdinand# ping nankece.com
PING nankece.com (192.168.100.91) 56(84) bytes of data.
64 bytes from nankece.com (192.168.100.91): icmp_seq=1 ttl=64 time=0.022 ms
64 bytes from nankece.com (192.168.100.91): icmp_seq=2 ttl=64 time=0.039 ms
64 bytes from nankece.com (192.168.100.91): icmp_seq=3 ttl=64 time=0.054 ms
64 bytes from nankece.com (192.168.100.91): icmp_seq=4 ttl=64 time=0.063 ms
64 bytes from nankece.com (192.168.100.91): icmp_seq=5 ttl=64 time=0.078 ms
64 bytes from nankece.com (192.168.100.91): icmp_seq=6 ttl=64 time=0.036 ms
```

Pengetesan dari sisi PC Client

```
PS C:\Users\User> nslookup nankece.com
Server:  UnKnown
Address:  192.168.100.91

Name:    nankece.com
Address:  192.168.100.91

PS C:\Users\User> ping nankece.com

Pinging nankece.com [192.168.100.91] with 32 bytes of data:
Reply from 192.168.100.91: bytes=32 time<1ms TTL=64
Reply from 192.168.100.91: bytes=32 time<1ms TTL=64
Reply from 192.168.100.91: bytes=32 time<1ms TTL=64
Reply from 192.168.100.91: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.100.91:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```