

SISTEM TERDISTRIBUSI

“Domain Name System”



Disusun oleh :

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PROGRAM STUDI SISTEM KOMPUTER

FAKULTAS ILMU KOMPUTER

UNIVERSITAS SRIWIJAYA

PALEMBANG

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Langkah-langkah Instalasi DNS di Linux Mint :

1. Instalasi DNS Server

Jalankan perintah apt install bind9 untuk install bind9

```
root@zahrn-VirtualBox: /home/zahrn
File Edit View Search Terminal Help
zahrn@zahrn-VirtualBox:~$ apt install bind9
[sudo] password for zahrn:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following package was automatically installed and is no longer required:
  systemd-hwe-hwdb
Use 'sudo apt autoremove' to remove it.
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 559 not upgraded.
Need to get 1.876 kB of archives.
After this operation, 3.443 kB disk space will be freed.
```

Setelah itu menonaktifkan firewall pada Linux

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

2. Konfigurasi Network Interface

Sebelumnya kita mengkonfigurasi IP Address secara Static, Resolv.conf dan hosts seperti gambar dibawah

```
root@zahrn-VirtualBox: /home/zahrn
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: [192.168.1.16/24]
      gateway4: 192.168.1.1
      nameservers:
        search: [zahraneager.com]
        addresses: [192.168.1.16, 192.168.1.1]
  version: 2
```

Konfigurasi pada /etc/ resolv.conf

```
# operation for /etc/resolv.conf.
nameserver 192.168.1.16
nameserver 192.168.1.1
options eds0
search zahraneager.com
```

Konfigurasi pada /etc/hosts

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

192.168.1.16 zahraneager.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
```

3. Konfigurasi DNS Server

Menentukan konfigurasi zona khusus untuk domain atau subdomain yang dihosting oleh server DNS dengan menggunakan perintah nano /etc/bind/named.conf.local

```
root@zahrn-VirtualBox: /home/zahrn
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 "zahraneager.com" {
    type master;
    file "/etc/bind/db.zahrn";
};
```

Selanjutnya menggunakan file zone yang sudah ada sebagai template untuk membuat file /etc/bind/db.aspal

```
root@zahrn-VirtualBox:/home/zahrn# sudo cp /etc/bind/db.local /etc/bind/db.zahrn
```

Lalu edit seperti dibawah ini

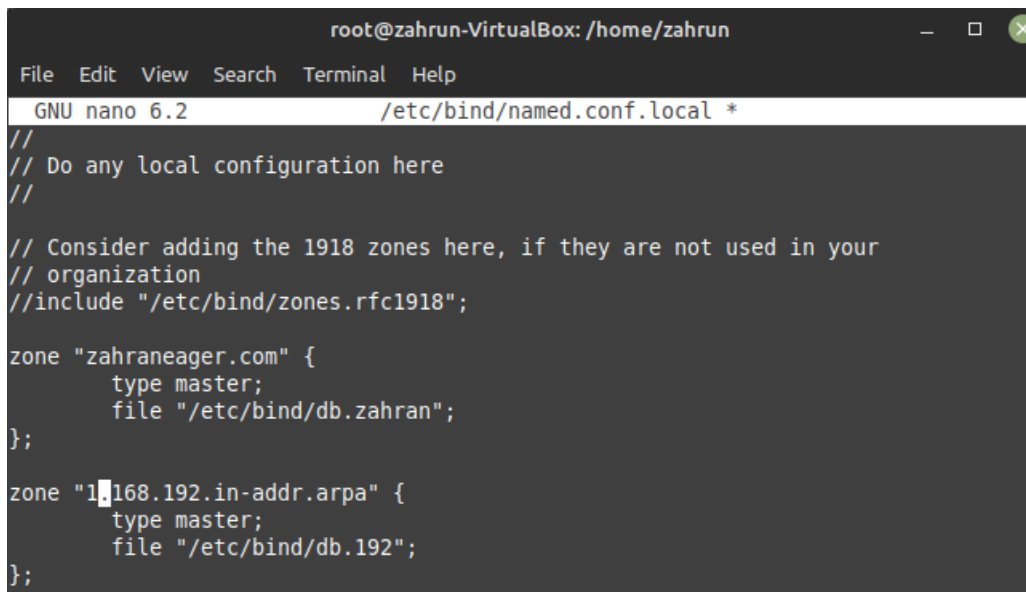
```
root@zahrn-VirtualBox: /home/zahrn
File Edit View Search Terminal Help
GNU nano 6.2 /etc/bind/db.zahrn
;
; BIND data file for PT.Zahraneager
;
$TTL      604800
@         IN      SOA      ns.zahraneager.com. root.zahraneager.com. (
                        2      ; Serial
                        604800 ; Refresh
                        86400  ; Retry
                        2419200 ; Expire
                        604800 ) ; Negative Cache TTL
;
@         IN      NS       ns.zahraneager.com.
@         IN      A        192.168.1.16
@         IN      MX       10      mail.zahraneager.com.
ns        IN      A        192.168.1.16
www       IN      CNAME     ns
mail      IN      A        192.168.1.16
```

Simpan perubahan lalu restart service bind9

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

Selanjutnya kita akan membuat Reverse zone file. Reverse zone ini perlu ditambahkan untuk memungkinkan DNS untuk mengresolv dari IP Address ke nama domain.

Edit file `/etc/bind/named.conf.local` dan Tambahkan script seperti gambar dibawah

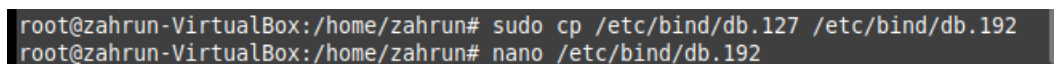


```
root@zahrn-VirtualBox: /home/zahrn
File Edit View Search Terminal Help
GNU nano 6.2 /etc/bind/named.conf.local *
//
// Do any local configuration here
//
// Consider adding the 1918 zones here, if they are not used in your
// organization
//include "/etc/bind/zones.rfc1918";

zone "zahraneager.com" {
    type master;
    file "/etc/bind/db.zahrn";
};

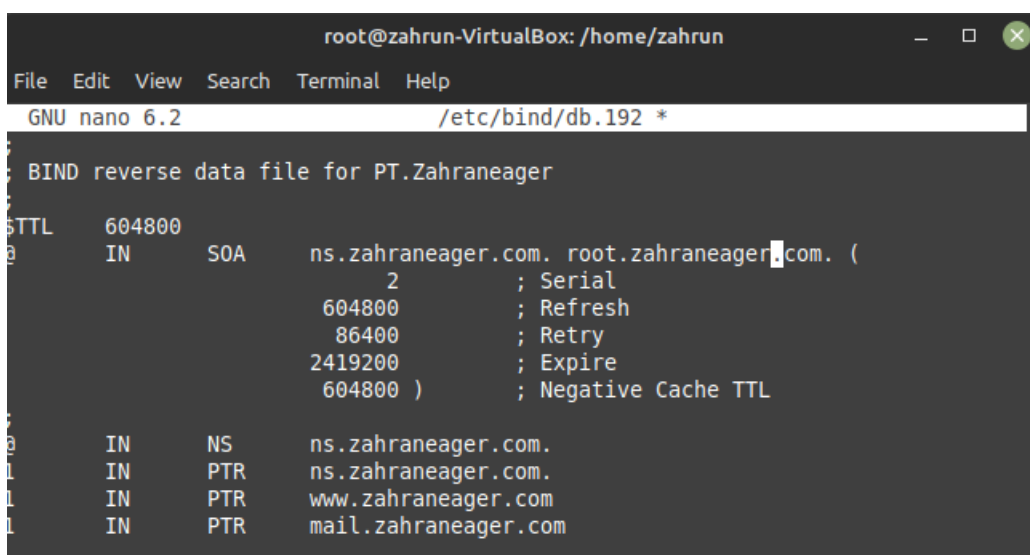
zone "168.192.in-addr.arpa" {
    type master;
    file "/etc/bind/db.192";
};
```

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



```
root@zahrn-VirtualBox:/home/zahrn# sudo cp /etc/bind/db.127 /etc/bind/db.192
root@zahrn-VirtualBox:/home/zahrn# nano /etc/bind/db.192
```

Lalu edit file `/etc/bind/db.192` seperti dibawah ini.



```
root@zahrn-VirtualBox: /home/zahrn
File Edit View Search Terminal Help
GNU nano 6.2 /etc/bind/db.192 *
;
; BIND reverse data file for PT.Zahraneager
;
$TTL      604800
@         IN      SOA      ns.zahraneager.com. root.zahraneager.com. (
                                2           ; Serial
                                604800      ; Refresh
                                86400       ; Retry
                                2419200     ; Expire
                                604800 )    ; Negative Cache TTL
;
@         IN      NS       ns.zahraneager.com.
1         IN      PTR      ns.zahraneager.com.
1         IN      PTR      www.zahraneager.com
1         IN      PTR      mail.zahraneager.com
```

Simpan perubahan lalu restart service bind9

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

DNS Caching berfungsi apabila client menggunakan DNS Local dan ingin terhubung dengan Internet. jadi PC client masih bisa terhubung ke Internet meskipun client menggunakan DNS Local. untuk konfigurasinya cukup simple yaitu dengan 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.

```
GNU nano 6.2 /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 {
        8.8.8.8;
        8.8.4.4;
    };

    //=====
    // If BIND logs error messages about the root key being expired,
```

4. Pengetesan

Untuk pengetesan jalankan nslookup pada nama domain

```
Server:          192.168.1.16
Address:         192.168.1.16#53

www.zahraneager.com canonical name = ns.zahraneager.com.
Name:   ns.zahraneager.com
Address: 192.168.1.16

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

Lalu test ping ke domain tersebut

```
PING zahraneager.com (192.168.1.16) 56(84) bytes of data:
64 bytes from zahraneager.com (192.168.1.16): icmp_seq=1 ttl=64 time=0.017 ms
64 bytes from zahraneager.com (192.168.1.16): icmp_seq=2 ttl=64 time=0.023 ms
64 bytes from zahraneager.com (192.168.1.16): icmp_seq=3 ttl=64 time=0.042 ms
64 bytes from zahraneager.com (192.168.1.16): icmp_seq=4 ttl=64 time=0.024 ms

--- zahraneager.com ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3073ms
rtt min/avg/max/mdev = 0.017/0.026/0.042/0.009 ms
root@zahrn-VirtualBox:/home/zahrn#
```