

SISTEM TERDISTRIBUSI
“Konfigurasi server DNS dan client”



Disusun oleh :

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PROGRAM STUDI SISTEM KOMPUTER
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1. Konfigurasi DNS Server menggunakan Ubuntu Server

```
root@andreasbonaserver:/etc/bind#  
root@andreasbonaserver:/etc/bind# ip a  
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000  
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00  
    inet 127.0.0.1/8 scope host lo  
        valid_lft forever preferred_lft forever  
    inet6 ::1/128 scope host  
        valid_lft forever preferred_lft forever  
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000  
    link/ether 08:00:27:97:06:7c brd ff:ff:ff:ff:ff:ff  
    inet 192.168.1.15/24 metric 100 brd 192.168.1.255 scope global dynamic enp0s3  
        valid_lft 85922sec preferred_lft 85922sec  
    inet6 fe80::a00:27ff:fe97:67c/64 scope link  
        valid_lft forever preferred_lft forever  
root@andreasbonaserver:/etc/bind#
```

- Langkah install dan konfigurasi DNS server pada Linux Ubuntu
- IP komputer yaitu 192.168.1.15 yang kita akan buat dnsnya
- Jadi aplikasi yang diinstal disini adalah bind 9 jadi 9 itu adalah salah satu aplikasi yang digunakan untuk DNS server atau digunakan sebagai DNS server proses instalasinya sangat cepat tergantung dari kecepatan internet yang kita gunakan

```

Setting up dns-root-data (2023112702~ubuntu0.22.04.1) ...
Setting up bind9-utils (1:9.18.18-0ubuntu0.22.04.2) ...
Setting up bind9 (1:9.18.18-0ubuntu0.22.04.2) ...
Adding group `bind' (GID 119) ...
Done.
Adding system user `bind' (UID 114) ...
Adding new user `bind' (UID 114) with group `bind' ...
Not creating home directory `/var/cache/bind'.
wrote key file "/etc/bind/rndc.key"
named-resolvconf.service is a disabled or a static unit, not starting it.
Created symlink /etc/systemd/system/bind9.service → /lib/systemd/system/named.service.
Created symlink /etc/systemd/system/multi-user.target.wants/named.service → /lib/systemd/system/named.service.
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for ufw (0.36.1-4ubuntu0.1) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
root@andreasbonaserver:/home/andreasbona# cd /etc/bind
root@andreasbonaserver:/etc/bind# ls
bind.keys  db.127  db.empty  named.conf          named.conf.local  rndc.key
db.0       db.255  db.local  named.conf.default-zones  named.conf.options  zones.rfc1918
root@andreasbonaserver:/etc/bind# cp named.conf.local named.conf.local.old
root@andreasbonaserver:/etc/bind# ls
bind.keys  db.255  named.conf          named.conf.local.old  zones.rfc1918
db.0       db.empty  named.conf.default-zones  named.conf.options
db.127    db.local  named.conf.local      rndc.key
root@andreasbonaserver:/etc/bind# _

```

- Untuk membuat DNS servernya kita masuk ke folder dari aplikasi bin yang sudah kita install tadi letaknya di ITC selesai Nah sekarang kita lihat file-file yang ada di folder tersebut ya Ada beberapa file dan file ini nanti yang akan kita konfigurasi jadi kita buat domain yaitu www.bona.com

```

GNU nano 6.2                                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 "bona.com" {
    type master;
    file "/etc/bind/db.bona";
};

zone "15.1.168.192.in-addr.arpa" {
    type master;
    file "/etc/bind/db.192";
};_

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

```

- menjadi IP 192.168.1.15 kita copy dulu file name.com ya kita backup terlebih dahulu file tersebut ya kemudian nanti kita konfigurasi file-file tersebut supaya aman gitu jadi masih ada file aslinya oke sudah muncul file satu file name.com

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

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

zone "15.1.168.192.in-addr.arpa" {
    type master;
    file "/etc/bind/db.192";
};

root@andreasbonaserver:/etc/bind# cp dblocal db.bona
cp: cannot stat 'dblocal': No such file or directory
root@andreasbonaserver:/etc/bind# cp db.local db.bona
root@andreasbonaserver:/etc/bind# nano db.bona
```

- Oke yang kita konfigurasi sekarang adalah name.com di bagian bawah tambahkan perintah berikut ini atau baris kode baris kode berikut ini oke Nah sekarang saya ketikkan terlebih dahulu
- Sekarang kita konfigurasi file yang lain nama filenya adalah DB lokal ya jadi copy db.id Oke sekarang kita buka db.id

```
GNU nano 6.2                                db.bona
;
; BIND data file for local loopback interface
;
$TTL      604800
@         IN      SOA      bona.com. root.bona.com. (
                        2      ; Serial
                        604800 ; Refresh
                        86400  ; Retry
                        2419200 ; Expire
                        604800 ) ; Negative Cache TTL
;
@         IN      NS       bona.com.
@         IN      A        192.168.1.15
www       IN      A        192.168.1.15
mail      IN      A        192.168.1.15
ftp       IN      A        192.168.1.15

root@andreasbonaserver:/etc/bind#
```

- Simpan perubahan lalu restart service BIND9

```
GNU nano 6.2                                db.192 *
;
; BIND reverse data file for broadcast zone
;
$TTL      604800
@         IN      SOA      bona.com. root.bona.com. (
                        1          ; Serial
                        604800     ; Refresh
                        86400      ; Retry
                        2419200    ; Expire
                        604800 )   ; Negative Cache TTL
;
@         IN      NS       bona.com.
1         IN      PTR      bona.com.
```

GNU nano 6.2 interface showing the content of db.192. The interface includes a header bar with the editor name and file name. The main area contains DNS zone file data for bona.com. The bottom status bar displays various keyboard shortcuts for editing and navigation.

- Lakukan cp db 255 db 192
- Lalu ubah isi file db.192 seperti diatas

```
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 192.168.1.15_
options edns0 trust-ad
search .
```

Help Write Out Where Is Cut Execute Location M-U Undo
Exit Read File Replace Paste Justify Go To Line M-E Redo

- Konfigurasi file resolv.conf ubah name server sesuai ip dns server

```

root@andreasbonaserver:/etc/bind# systemctl restart bind9
root@andreasbonaserver:/etc/bind# systemctl status bind9
• named.service - BIND Domain Name Server
   Loaded: loaded (/lib/systemd/system/named.service; enabled; vendor preset: enabled)
   Active: active (running) since Fri 2024-04-12 12:24:25 UTC; 15s ago
     Docs: man:named(8)
  Process: 2326 ExecStart=/usr/sbin/named $OPTIONS (code=exited, status=0/SUCCESS)
 Main PID: 2327 (named)
    Tasks: 4 (limit: 2221)
   Memory: 5.3M
      CPU: 27ms
  CGroup: /system.slice/named.service
          └─2327 /usr/sbin/named -u bind

Apr 12 12:24:25 andreasbonaserver named[2327]: lame server resolving '.' (in '.?'): 198.97.190
Apr 12 12:24:25 andreasbonaserver named[2327]: DNS format error from 192.203.230.10#53 resolv
Apr 12 12:24:25 andreasbonaserver named[2327]: FORMERR resolving './NS/IN': 192.203.230.10#53
Apr 12 12:24:25 andreasbonaserver named[2327]: lame server resolving '.' (in '.?'): 192.5.5.24
Apr 12 12:24:25 andreasbonaserver named[2327]: lame server resolving '.' (in '.?'): 192.58.128
Apr 12 12:24:25 andreasbonaserver named[2327]: lame server resolving '.' (in '.?'): 193.0.14.1
Apr 12 12:24:25 andreasbonaserver named[2327]: DNS format error from 192.112.36.4#53 resolving
Apr 12 12:24:25 andreasbonaserver named[2327]: FORMERR resolving './NS/IN': 192.112.36.4#53
Apr 12 12:24:25 andreasbonaserver named[2327]: lame server resolving '.' (in '.?'): 192.36.148
Apr 12 12:24:25 andreasbonaserver named[2327]: resolver priming query complete: failure
lines 1-22/22 (END)

```

- Lakukan restart systemctl
- Lalu lihat status bind9 apakah sudah active atau ada terjadi masalah

2. Pengetesan

```
Apr 12 12:24:25 andreasbonaserver named[2327]: lame server resolving '.' (in '.?'): 193.0.14.1
Apr 12 12:24:25 andreasbonaserver named[2327]: DNS format error from 192.112.36.4#53 resolving
Apr 12 12:24:25 andreasbonaserver named[2327]: FORMERR resolving './NS/IN': 192.112.36.4#53
Apr 12 12:24:25 andreasbonaserver named[2327]: lame server resolving '.' (in '.?'): 192.36.148
Apr 12 12:24:25 andreasbonaserver named[2327]: resolver priming query complete: failure
lines 1-22/22 (END)
^C
root@andreasbonaserver:/etc/bind# dig bona.com

; <<>> DiG 9.18.18-0ubuntu0.22.04.2-Ubuntu <<>> bona.com
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 61500
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
; COOKIE: bba4b5afc437212b0100000066192876dd4af2aa108cd626 (good)
;; QUESTION SECTION:
;bona.com.                IN      A

;; ANSWER SECTION:
bona.com.                  604800  IN      A      192.168.1.15

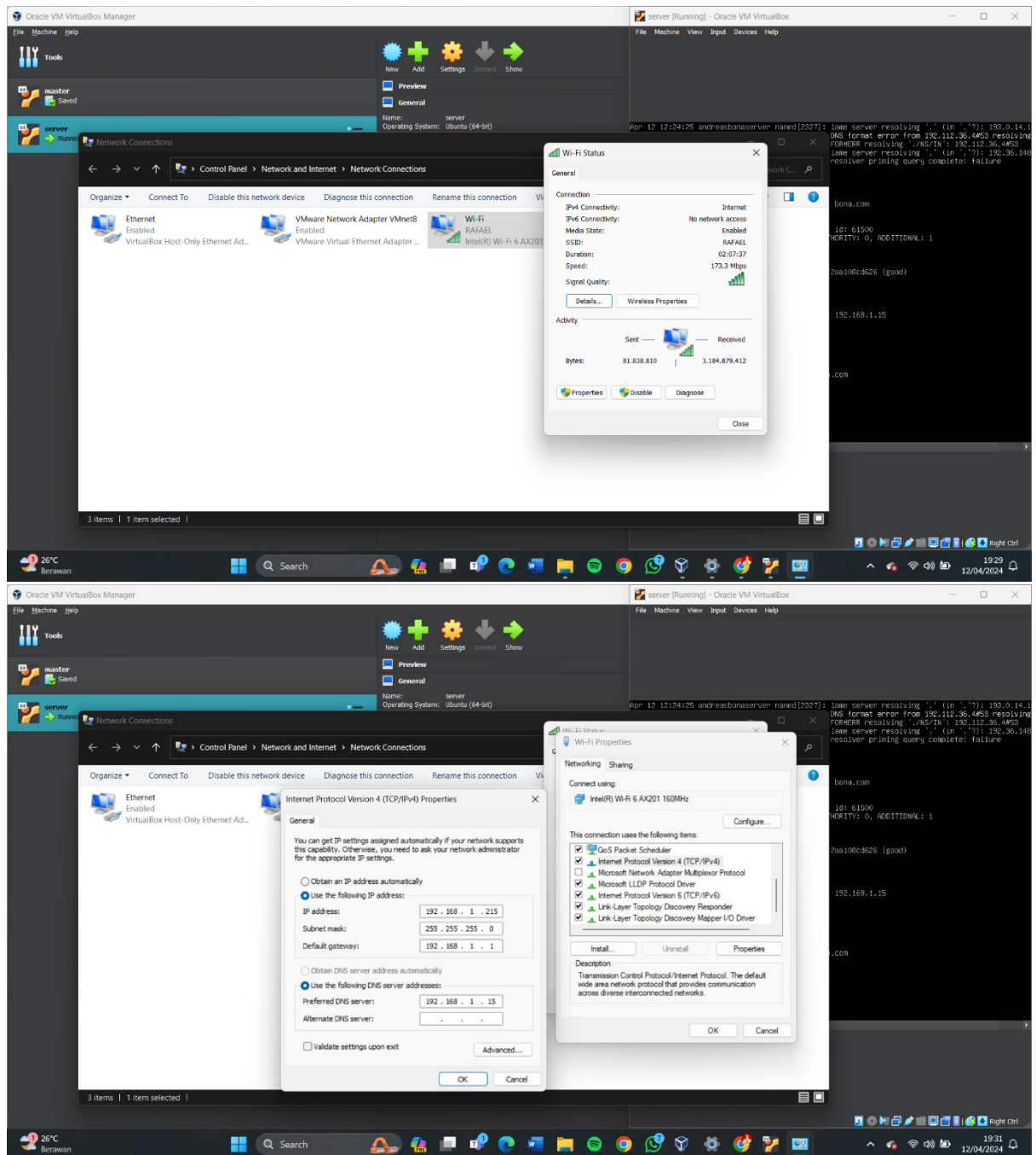
;; Query time: 0 msec
;; SERVER: 192.168.1.15#53(192.168.1.15) (UDP)
;; WHEN: Fri Apr 12 12:26:30 UTC 2024
;; MSG SIZE rcvd: 81

root@andreasbonaserver:/etc/bind# nslookup bona.com
Server:          192.168.1.15
Address:         192.168.1.15#53

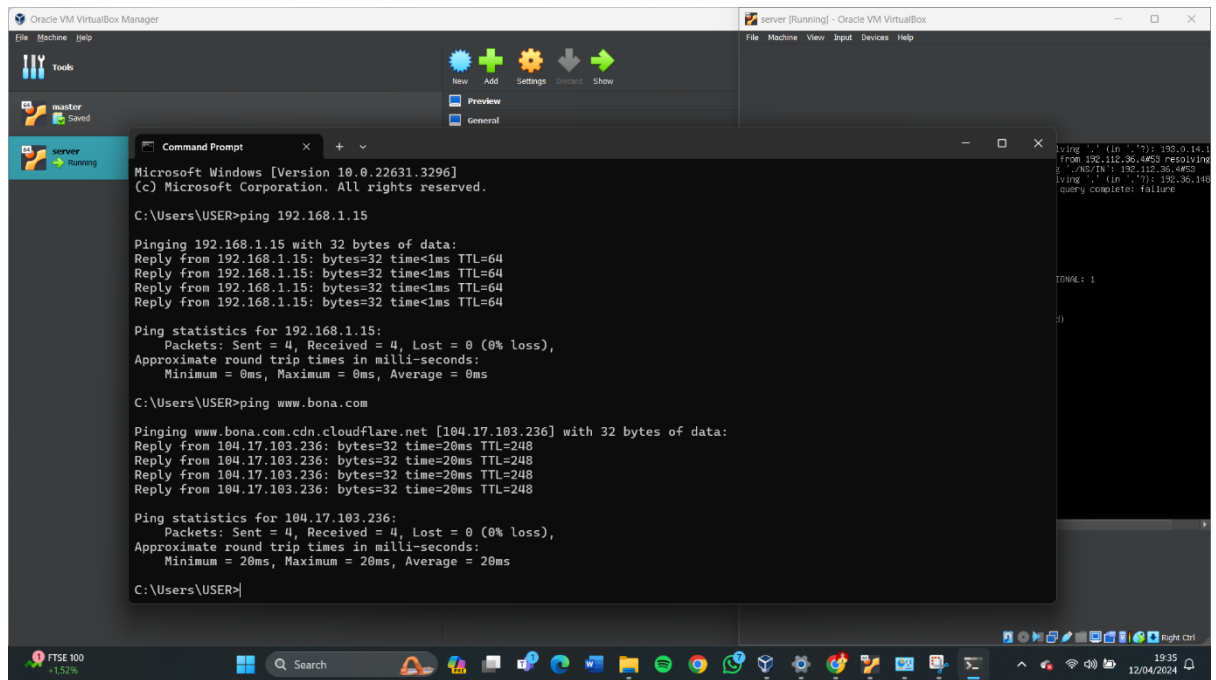
Name:   bona.com
Address: 192.168.1.15

root@andreasbonaserver:/etc/bind# _
```

- Jika semua urutan telah dilakukan saatnya yaitu pengetesan dengan command dig dan nslookup pada www.bona.com



- Lakukan pengkonfigurasi ip pada pc client disini saya menggunakan windows sebagai client



- Terlihat disana saat pengetesan ping pada ip 192.168.1.15 bisa
- Ping pada situs www.bona.com pun selesai
- Dan pc client pun terhubung