# 2.DNS

Experiment: 4

Date: 13-06-2024

Aim: To create and configure DNS Server

# **Description:**

A DNS Server is a computer server that contains a database of public IP addresses and their associated hostnames, and in most cases, serves to resolve, or translate, those common names to IP addresses as requested.

Port No: 53

Package name: bind9

Configuration file: /etc/bind/named.conf. (Primary configuration file),/etc/bind/db.root (root

nameservers)

#### **Procedure:**

#### **CASHING NAMESERVER**

When configured as a caching nameserver BIND9 will find the answer to name queries and remember the answer when the domain is queried again.

Install bind9 by typing

\$sudo apt install bind9

\$sudo apt install dnsutils

- 2. The default configuration is set up to act as a caching server. All that is required is simply adding the IP Addresses of your ISP's DNS servers. Simply uncomment and edit the following in /etc/bind/named.conf.options:
- 3. Restart it by typing

\$sudo systemctl restart bind9.service

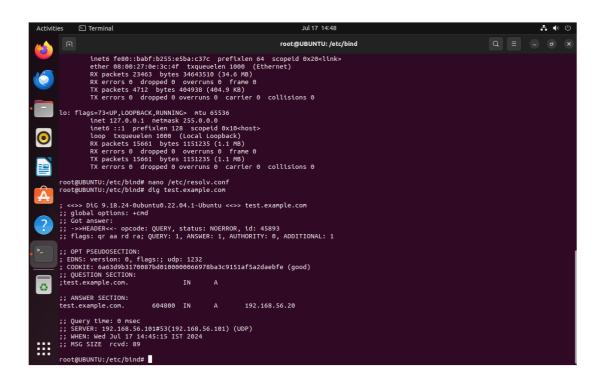
#### PRIMARY MASTER

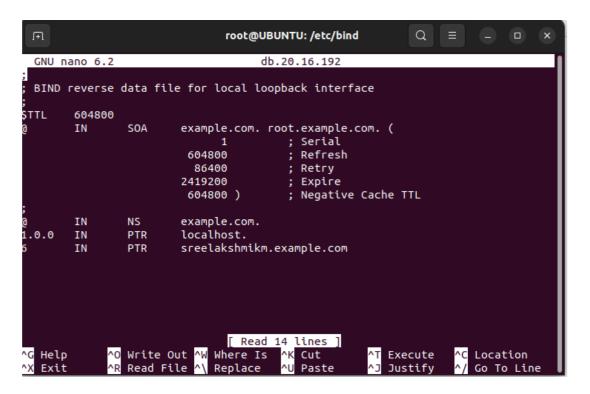
As a primary master server BIND9 reads the data for a zone from a file on it's host and is authoritative for that zone.

### Forward zone file

To add a DNS zone to BIND9, turning BIND9 into a Primary Master server, the first step is to edit /etc/bind/named.conf.local:

\$sudo cp /etc	/bind/db.local /etc/bind/db.example.com
\$sudo system	ctl restart bind9.service
Reverse Zone	File
	zone is set up and resolving names to IP Addresses, a Reverse zone needs to be ws DNS to resolve an address to a name.
1.	Edit /etc/bind/named.conf.local
2.	Now create the /etc/bind/db.192 file:
\$sudo cp /etc	/bind/db.127 /etc/bind/db.192
=	edit /etc/bind/db.192 changing the basically the same options as tc/bind/db.example.com:
4.	After creating the reverse zone file restart BIND9:
\$sudo system	ctl restart bind9.service
5.Check the s	tatus
\$Sudo service	e bind9 status
6.Check if nslo	pokup can resolve \$nslookup ftp.example.com
\$nslookup ub	untu.example.com
7.Gather info	rmation about your DNS server
\$dig ubuntu.e	example.com
\$dig <u>www.exa</u>	ample.com
\$dig ftp.exam	ple.com

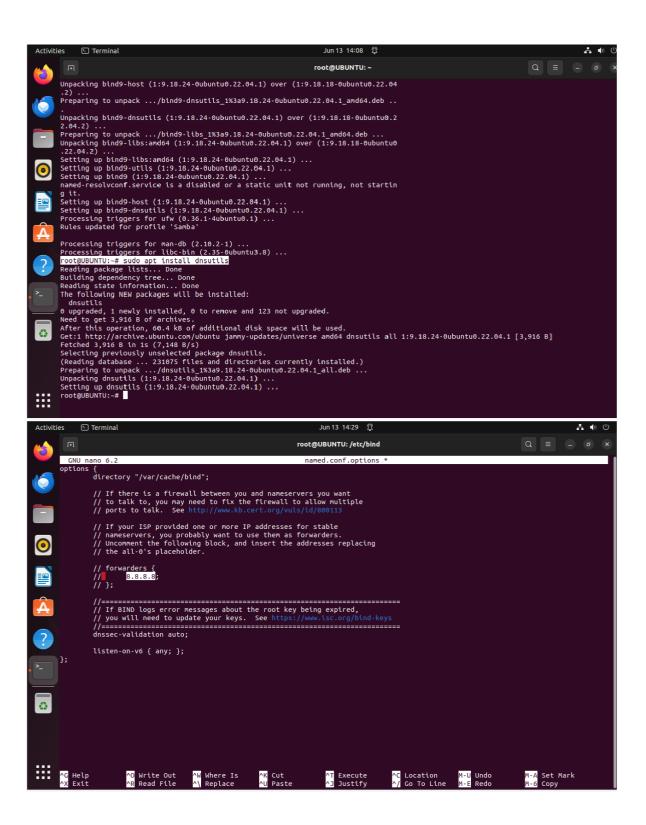


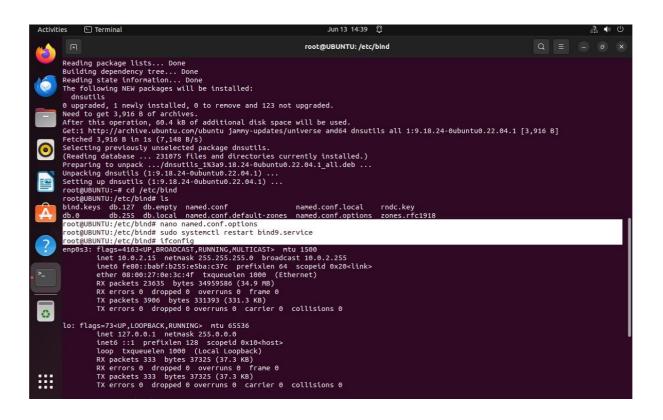


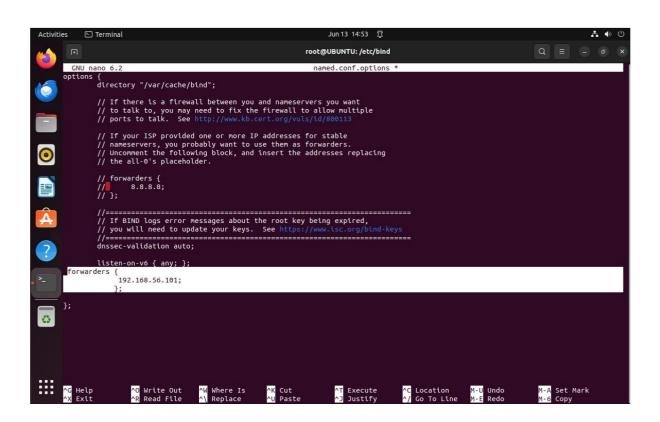
```
root@UBUNTU: /etc/bind
;; AUTHORITY SECTION:
                          10800
                                  IN
                                            SOA
                                                     a.root-servers.net. nstld.verisi
gn-grs.com. 2024071700 1800 900 604800 86400
;; Query time: 143 msec
;; SERVER: 172.16.30.119#53(172.16.30.119) (UDP)
;; WHEN: Wed Jul 17 16:39:40 IST 2024
:: MSG SIZE rcvd: 144
root@UBUNTU:/etc/bind# nslookup 192.16.20.15
15.20.16.192.in-addr.arpa
                                  name = ftp.example.com.20.16.192.in-addr.arpa.
root@UBUNTU:/etc/bind# nano db.20.16.192
root@UBUNTU:/etc/bind# sudo systemctl restart bind9.service root@UBUNTU:/etc/bind# nslookup 192.16.20.6
6.20.16.192.in-addr.arpa
                                   name = sreelakshmikm.example.com.20.16.192.in-ad
dr.arpa.
root@UBUNTU:/etc/bind# nano db.20.16.192
root@UBUNTU:/etc/bind# nslookup 192.16.20.6
6.20.16.192.in-addr.arpa name = sree
                                   name = sreelakshmikm.example.com.20.16.192.in-ad
dr.arpa.
root@UBUNTU:/etc/bind#
```

```
root@UBUNTU: /etc/bind
;; SERVER: 172.16.30.119#53(172.16.30.119) (UDP)
;; WHEN: Wed Jul 17 16:27:53 IST 2024
;; MSG SIZE rcvd: 138
root@UBUNTU:/etc/bind# nano db.local
root@UBUNTU:/etc/bind# cp db.127 db.20.16.192
root@UBUNTU:/etc/bind# nano db.20.16.192
root@UBUNTU:/etc/bind# nano name.conf.local
root@UBUNTU:/etc/bind# nano named.conf.local
root@UBUNTU:/etc/bind# nano db.local
root@UBUNTU:/etc/bind# nano db.127
root@UBUNTU:/etc/bind# nano db.20.16.192
root@UBUNTU:/etc/bind# sudo systemctl restart bind9.service
root@UBUNTU:/etc/bind# dig 192.16.20.15
  <<>> DiG 9.18.24-Oubuntu0.22.04.1-Ubuntu <<>> 192.16.20.15
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NXDOMAIN, id: 17343
;; flags: qr rd ra ad; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1
;; OPT PSEUDOSECTION:
 EDNS: version: 0, flags:; udp: 1232
COOKIE: a0e92b521e6b422d010000006697a6741e622cf9d1cf83d7 (good)
```

# **Forward**





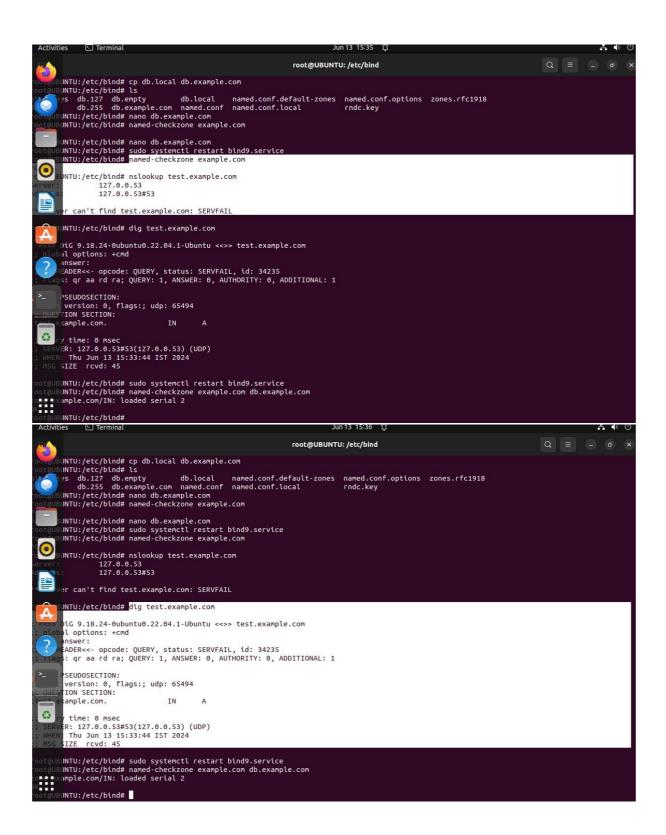


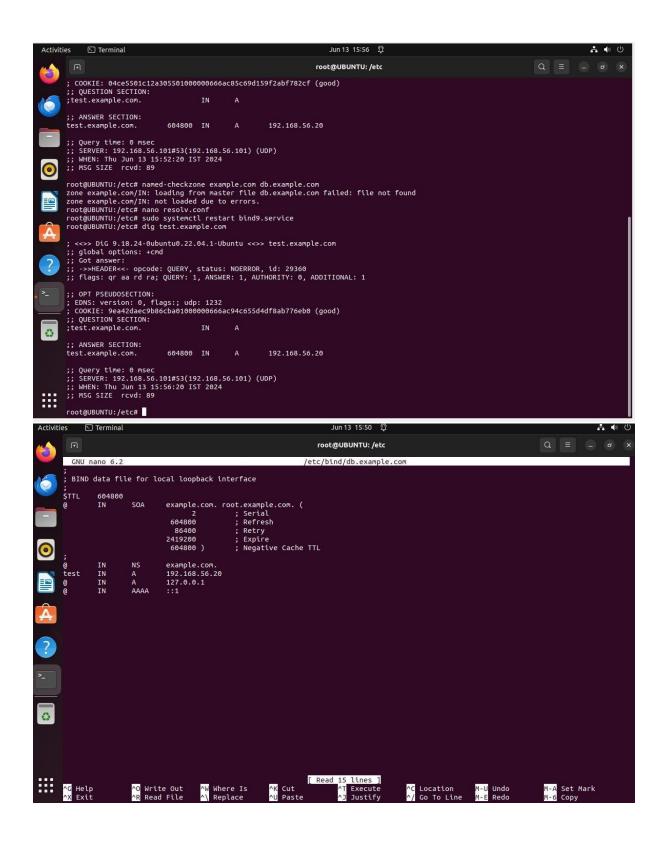
```
oot@UBUNTU:/etc/bind# sudo systemctl restart bind9.service
Oot@UBUNTU:/etc/bind# named-checkzone example.com db.example.com
       UBUNTU:/etc/bind#
  GNU nano 6.2
                                                                                            named.conf.local *
//
// Do any local configuration here
// Consider adding the 1918 zones here, if they are not used in your
// organization
//include "/etc/bind/zones.rfc1918";
 zone "example.com" IN{
type master;
file "/etc/bind/db.example.com";
                                                                                                                                                        M-A Set Mark
M-6 Copy
^G Help
^X Exit
                     ^K Cut
^U Paste
                                                                                                             C Location M-U Undo
// Go To Line M-E Redo
                                                                                                                                                                             M-] To Bracket
^O Where Was
                                                                                        root@UBUNTU: /etc/bind
  BIND data file for local loopback interface
TTL 604800
TN
                                 example.com. root.example.com. (
2 ; Sertal
604800 ; Refresh
86400 ; Retry
2419200 ; Expire
604800 ) ; Negative Cache TTL
                     SOA
                               example.com.

192.168.56.101

127.0.0.1

::1
          IN
IN
IN
IN
test
                    ^T Exec >_ C Location M-U Undo
^] Just C Go To Line M-E Redo
                                                                                                                                                        M-A Set Mark M-1 To Bracket
M-6 Copy ^0 Where Was
G Help
```





Conclusion: The DNS has installed and configured successfully.