

DNS Lab

Install BIND 9

By default, BIND 9 is available in the Ubuntu 16.04 default repository. You can easily install it by just running the following command:

```
sudo apt-get install bind9 bind9utils bind9-doc dnsutils -y
```

Configure BIND 9

All the configuration files for BIND 9 are located inside `/etc/bind` directory. Edit the `named.conf.options` file to modify options.

```
sudo nano /etc/bind/named.conf.options
```

To make the nameserver as an authoritative only server, change the **dnssec-validation** option as a comment, and add **recursion no**;

Then, you will need to configure `/etc/bind/named.conf.default-zones` file. This file will be used to define the zone for your domain.

```
sudo nano /etc/bind/named.conf.default-zones
```

Add the following lines:

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

Save and close the file, when you are finished.

Next, Create a zone file for your domain and add necessary resource records like NS record, A record, txt record, MX record that will determine which host is receiving mail for the domain

```
sudo nano /etc/bind/db.examplee.com
```

Make the following changes:

```
$TTL      604800
@         IN      SOA      ns.examplee.com. email.examplee.com. (
                        2          ; Serial
                        604800     ; Refresh
                        86400      ; Retry
                        2419200    ; Expire
                        604800 )   ; Negative Cache TTL
@         IN      NS       ns.examplee.com.
ns        IN      A        10.0.0.10
www       IN      A        10.0.0.10
@         IN      AAAA     ::1
ns        IN      AAAA     2003:db0:2:3::2
www       IN      AAAA     2003:db0:2:3::2
mail      IN      AAAA     2003:db0:2:3::2
examplee.com. MX    10 mail.examplee.com.
examplee.com. IN    TXT    "Authoritative DNS Server"
```

Save and close the file. Change the IP addresses according to your network.

Go to `/etc/bind` and test the changes to the configuration files, by typing in:

```
named-checkzone examplee.com db.examplee.com
```

In `/etc/bind/` run `bind` and see if it's running properly. Error messages will give you hints where the error is.

```
named -g -c /etc/bind/named.conf.default-zones &
```

"-g" to get bind to show message and run in the foreground

"-c" to tell bind what configuration file to use.

Start BIND 9

Now, start bind by using below command

```
service bind9 start
```

Test BIND 9 DNS Server

Once BIND is running, you can do some basic test using DNS tools like dig. Open another terminal session.

To test your name server to display the SOA records for your domain.

```
dig @10.0.0.10 exaamplee.com SOA
```

To test your name server to display NS records

```
dig @10.0.0.10 exaamplee.com NS
```

To test your name server to display other resource records (A, AAAA, or MX). You can also use the `-t` option to set the query type.

```
dig @10.0.0.10 ns.exaamplee.com A
```

```
dig @10.0.0.10 exaamplee.com AAAA
```

```
dig -t MX @10.0.0.10 exaamplee.com
```

Test connectivity with different Fully Qualified Domain Names (FQDNs). Set this server's IP as your DNS in interface configuration. Restart your network service.

```
ping6 mail.exaamplee.com
ping6 www.exaamplee.com
Ping www.exaamplee.com
```