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 "example.com" {
 type master;
 file "/etc/bind/db.example.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.example.com
```

Make the following changes:

```
$TTL    604800
@       IN      SOA     ns.example.com. email.example.com. (
                              2           ; Serial
                         604800           ; Refresh
                          86400           ; Retry
                        2419200           ; Expire
                         604800 )         ; Negative Cache TTL
@       IN      NS      ns.example.com.
ns      IN      A       192.168.0.102
www     IN      A       192.168.0.102
@       IN      AAAA    ::1
ns      IN      AAAA    2001:db8:100::XX
www     IN      AAAA    2001:db8:100::XX
mail    IN      AAAA    2001:db8:100::XX
example.com.    MX      10 mail.example.com.
example.com.    IN      TXT "Authoritative DNS Server"
```

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

Test the changes to the configuration files, by typing in:

```
named-checkzone example.com db.example.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 @192.168.0.102 example.com SOA
```

To test your name server to display NS records

```
dig @192.168.0.102 example.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 @192.168.0.102 ns.example.com A
```

```
dig @192.168.0.102 example.com AAAA
```

```
dig –t MX @192.168.0.102 example.com
```

Test connectivity with different Fully Qualified Domain Names (FQDNs)

```
ping6 mail.example.com
ping6 www.example.com
Ping www.example.com
```