Setting up DNS Server using Bind

Configuring a DNS server using **BIND9** on **Ubuntu** involves setting a static IP, installing the BIND package, and configuring the global options and local zone files.

Here is a step-by-step guide to setting up a basic authoritative DNS server for a domain (e.g., mydns.local).

1. Prerequisites and Static IP Configuration

Before installing BIND9, the server your needs a stable, static IP address. Ubuntu uses Netplan for network configuration. Check your IP address and configure your network. Make sure it is accessible.

2. Install BIND9

Install the BIND (Name Daemon - named) package and utility tools.

sudo apt update

sudo apt install bind9 bind9utils

3. Configure Global Options (named.conf.options)

This file controls the server's behavior, security, and external lookups.

sudo vim /etc/bind/named.conf.options

Check and make the changes to look like the following:

```
options {
   directory "/var/cache/bind";
    // Listen only on loopback and the DNS server's static IP
    listen-on { 127.0.0.1; YourStaticIP; };
    recursion yes;
    dnssec-validation auto;
    auth-nxdomain no;
};
```

4. Define Local Zone (named.conf.local)

This file tells BIND which domains it is authoritative for (and where its zone files are located).

sudo vim /etc/bind/named.conf.local

Add Forward and Reverse Zones (future work): Add the following blocks, defining the forward zone for mydns.local.

```
// Forward Zone (Name to IP)

zone "mydns.local" {

        type master;

file "/etc/bind/zones/db.mydns.local";

};
```

5. Create Zone Data Files

Forward Zone File (db.mydns.local)

This file maps hostnames to IP addresses.

Create the file from a template:

sudo cp /etc/bind/db.local /etc/bind/zones/db.mydns.local

sudo vim /etc/bind/zones/db.mydns.local

Edit the records to like the following:

```
$TTL    604800

@       IN      SOA     ns1.mydns.local. admin.mydns.local. (

                3       ; Serial

           604800       ; Refresh

            86400       ; Retry

          2419200       ; Expire
```

604800) ; Negative Cache TTL

;

@ IN NS ns1.mydns.local.

ns1 IN A YourStaticIP ; DNS Server IP

web IN A YourWebStaticIP ; Example Web Server

test IN A YourTestWebStaticIP ; Example Test Server

6. Final Configuration and Testing

Check Configuration Syntax:

sudo named-checkconf # Checks global files

sudo named-checkzone mydns.local /etc/bind/zones/db.mydns.local
 # Checks forward zone

Note: *If all checks return **"OK"**, proceed.*

Restart BIND9:

sudo systemctl restart bind9

Local Test: Query your DNS server (using its loopback address) for a record:

dig @127.0.0.1 web.mydns.local

7. Client Test:

On another machine, configure its DNS to use your **DNS Static IP address** and run *dig web.mydns.local* or *ping web.mydns.local* commands.

What are the results?