



Lab Exercise 2 – Recursive DNS Server

Objectives

Install a recursive DNS server.

Background

A recursive server is a type of DNS server that performs DNS lookups for client resolvers. It has the capability of caching results for a time specified in the Time to Live (TTL).

What You Need

Linux Server with BIND already installed (finished Lab 1).

Steps:

1. Create a directory in `/var/named`. Let us call this folder “recursive.”

```
sudo su
mkdir -p /var/named/recursive
cd /var/named/recursive
```

2. Download the `root.hints` file from the fileserver and save in the recursive folder. Note: `root.hints`, `db.cache`, `named.cache`, `named.ca`, `named.root` usually refer to the same file.

```
wget http://192.168.30.254/dns/root.hints
```

3. Using `vi` or your favorite text editor, create a file called `named.conf`. This is the BIND configuration file.

```
vi named.conf
```

a. The options statement is where you can add global options to be used as defaults by BIND. Only one options field should be defined in the configuration file. For now, let us define the working directory as follows.

b. Create the reverse loopback zonefile `db.127.0.0.1` and `db.ip6`. (Skip if you didn't do step 3.d)

```
$TTL 1d
@      SOA      localhost.  root.localhost.  (
                20160101      ;serial no
                30m           ;refresh
                15m           ;retry
                1d            ;expire
                30m           ;negative cache ttl
)
      NS       localhost.
1     PTR      localhost.
```

5. Try running bind with `-g` and `-c named.conf` and see if BIND complains for errors.

```
named -g -c named.conf
```

6. Test recursive name server to get an A & AAAA record of `www.apnic.net`.

```
dig @127.0.0.1 www.apnic.net
dig @127.0.0.1 www.apnic.net AAAA
```

Test your recursive name server to query other RRs like `SOA`, `MX`, and `PTR` records. To verify that your server caches information, query the same RR twice and compare the query time.

The complete `named.conf` for a recursive server is as follows:

