Domain Name Server (DNS)

Instructions

You will set up a DNS server on R2 that will host the primary zone cn.

This zone will contain R1, R2, R3, R4, Ubuntu and Kali.

*Please note that zone names should be named with a period (.) at the end.

Your goal is to configure a DNS server using BIND9 such that each machine can ping another by name. (e.g. `ping Kali`).

Part 1: Setup DNS Resolution

Prior to configuring our DNS servers, you need to setup our DNS resolution.

For each machine in your network 10.10.10.0/23 , go to `/etc/resolv.conf` and replace any existing configuration directives with the following:

```
nameserver<eth1 interface address of R2>
domain <name of primary zone>
search <name of primary zone>
```

Part 2: Configuring the Primary Zone

On R2, edit `/etc/bind/named.conf.local` to include forward and reverse DNS zone names to BIND9.

Using the below template, name the primary zone, "**cn.**" and the forward zone file as "**db.cn**":

```
zone "<primary zone>" {
        type master;
        file "/etc/bind/db.example";
};
```

Create another entry for the reverse zone, but this time you will name it according to the first three octets of our primary zone server; that is, "10.10.10." and "db.10.10.10" for the reverse zone name and the reverse zone file, respectively.

Next, you will need to create and edit the forward and reverse zone files. The below command will allow you to copy an existing template:

```
sudo cp /etc/bind/db.local /etc/bind/db.cn
```

Edit this file by adding *A records* for R1, R2, R3, R4, Ubuntu and Kali.

You will do the same steps with the Reverse zone file which allows the DNS to resolve an address to a name. The above steps are roughly equivalent, except that you should create pointers for each A record that you configured in the forward zone file.

A pointer should be formatted like so:

```
10.X.X.X      IN     PTR    <machine>.cn.
```

Once you've configured the forward and reverse zone files, restart the DNS service on R2.

```
sudo systemctl restart bind9.service
```

At this stage, you should be able to ping each machine by name from any machine in your network.

Submissions

[20 points] Forward and Reverse zone files for primary DNS server.
[15 points] Host lookup by name using nslookup or dig.
[15 points] Host lookup by address using nslookup or dig
[20 points] Screenshots of R1 pinging R2 and Kali
[30 points] Screenshots of R2 pinging R3, R4, and Ubuntu

Please remember to submit your lab results as a single PDF document. While you may work in groups, you MUST submit your own work.