DNS

1) Objective

In this lab, the student is asked to set up a DNS server for the network on R1.
See https://help.ubuntu.com/lts/serverguide/dns-configuration.html#dns-primarymaster-configuration

2) Instructions

There will be one zone. This will be known as **cnlab.** The router R1 should be configured as a primary DNS server. The names of the machines in the cnlab. zone will be *R1*, *Kali*, *R2*, *R3*, *R4* and *Linux*.

3) Create your DNS Server in two steps. First bring up the DNS server for the domain cnlab. The files you need to edit and create are under /etc/bind. Make sure you create the forward and reverse bindings. Edit /etc/resolv.conf in R2 and Kali and remove any settings such as

```
nameserver 128.238.2.38
search vital-nat-20
Or
domain nyu.edu
search nyu.edu
nameserver 128.238.2.38
```

4) Enter the following into /etc/resolv.conf for every machine in the network.
nameserver <use the internal IP address on eth1> of R1
domain cnlab.
search cnlab.

5) On R1 in /etc/bind create db.cnlab. with the names and addresses of R1, R2 and Kali. Create the reverse zone db.10.XX.YY. where XX and YY are the address of the subnet you created from previous exercise.

6) Create your zone file:
`cp /etc/bind/db.local /etc/bind/db.cnlab (or cp /etc/bind/db.local)`

7) Restart the DNS Service:
`sudo systemctl restart bind9.service`

8) Test it out by pinging the R2 machine and Kali by name from R1.

Points

db.cnlab [40 pts]
db.10.XX.YY [40 pts]
ping R2 [20]

Solution:

1. /etc/bind/named.conf.local: set zone

2. db.cnlab

```
;
; BIND data file for local loopback interface
;
$TTL    604800
@       IN      SOA     localhost. root.localhost. (
                              2         ; Serial
                         604800         ; Refresh
                          86400         ; Retry
                        2419200         ; Expire
                         604800 )       ; Negative Cache TTL
;
@       IN      NS      localhost.
@       IN      A       127.0.0.1
@       IN      AAAA    ::1
R2      IN      A       10.10.10.2
KALI    IN      A       10.10.10.3_
~
```

3. [rev.10.10.10.in](rev.10.10.10.in)-addr.arpa: map name to ip add

```
;
; BIND reverse data file for local loopback interface
;
$TTL    604800
@       IN      SOA     localhost. root.localhost. (
                              1         ; Serial
                         604800         ; Refresh
                          86400         ; Retry
                        2419200         ; Expire
                         604800 )       ; Negative Cache TTL
;
@       IN      NS      localhost.
1.0.0   IN      PTR     localhost.
2       IN      PTR     R2.cnlab
3       IN      PTR     KALI.cnlab_
~
```

4. Edit /etc/resolv.conf in R2,KALI

```
# Dynamic resolv.conf(5) file for glibc resolver(3) generated by resolvconf(8)
#     DO NOT EDIT THIS FILE BY HAND -- YOUR CHANGES WILL BE OVERWRITTEN
domain cnlab
search cnlab
namserver 10.10.10.1
~
~
```

5. Ping result