

LAB: nameserver (DNS)

Lab Environment

The workshop WiFi:

- SSID: `workshop`
- PASS: `iiij/2497`

Hosts - Virtual machines (Ubuntu 18.04LTS/LXC)

- Hostname: `nsXX.workshop`
- IPv6: `fd00:2497:1::X`
- IPv4: `10.0.0.X`

Where `X` and `XX` is your group ID. For group 1, hostname is `ns01.workshop`, IPv6 address is `fd00:2497:1::1`, and IPv4 is `10.0.0.1`.

Domain names

- `groupXX.workshop`

Where `X` and `XX` is your group ID. For group 1, domain name is `group01.workshop`.

Install and configure bind9

`ssh` to your virtual server and install bind9.

```
$ sudo apt install bind9
```

Note: The sudo password is `iiij/2497`

Open `/etc/bind/named.conf.options` to modify options.

```
$ sudo vi /etc/bind/named.conf.options
```

Update the lines in the `options` section like below.

```
options {  
    ...  
        recursion no;  
};
```

The above configuration disables DNSSEC verification and make your nameserver act as an authoritative only server.

Open `/etc/bind/name.conf.local` to add your domain configuration.

```
$ sudo vi /etc/bind/named.conf.local
```

Add the following configuration.

```
zone "groupXX.workshop" {  
    type master;  
    file "/etc/bind/groupXX.workshop";  
};
```

Note: `XX` is your group ID.

Create a zone file.

```
$ sudo vi /etc/bind/groupXX.workshop
```

Note: The filename must be exactly same as you specified in the `named.conf.local` file.

```
$TTL 300  
@ IN SOA nsXX.workshop root.nsXX.workshop (  
    1      ; Serial  
    604800 ; Refresh  
    86400  ; Retry  
    2419200 ; Expire  
    300    ; Negative Cache TTL  
)  
  
@ IN NS nsXX.workshop.  
nsXX.workshop. IN A      10.0.0.X  
nsXX.workshop. IN AAAA  fd00:2497:1::X
```

Note: We configure the default valid lifetime for each record and negative cache lifetime rather small values for handson, however you may need to use logner values.

Restart the bind9 service.

```
sudo systemctl restart bind9
```

Check the bind9 service status by `rndc` and `systemctl` commands.

```
$ sudo rndc status
$ sudo systemctl status bind9
```

Check your domain information with the `dig` command.

```
$ dig groupXX.workshop @localhost
```

Add **A** record (IPv4)

Add the following line at the bottom of your db file (`/etc/bind/groupXX.workshop`).

```
ping.groupXX.workshop. IN A 10.0.0.X
```

Also, increment the serial number from `1` to `2` .

Reload the updated database.

```
$ sudo rndc reload groupXX.workshop
```

Test if the new name is registered by the `ping` command.

```
$ ping ping.groupXX.workshop
```

Add **AAAA** record (IPv6)

Add the following line at the bottom of your db file (`/etc/bind/groupXX.workshop`).

```
ping.groupXX.workshop. IN AAAA fd00:2497:1::X
```

Also, increment the serial number from `2` to `3` (or whatever value appropriate).

Reload the updated database.

```
$ sudo rndc reload groupXX.workshop
```

Test if the new name is registered by the `ping6` command.

```
$ ping6 ping.groupXX.workshop
```

