

DNS Exercise 3.1: Setting up a domain

In this exercise, you will create a new domain, `_something_.afnog.org.rw`. You will create master nameservice on your own machine, and someone else will setup their machine to be a slave server for your domain. Then you will ask the administrator for the domain above you (`afnog.org.rw`) to delegate your domain to you.

Firstly, note that each machine in the classroom has been given a working DNS name: `pcX.sse.ws.afnog.org`. Check that it is configured correctly by using the `hostname` command - e.g. on `pc23` you should see

```
> # hostname
> pc23.sse.ws.afnog.org
```

If not, then configure your server with its name: e.g. for `pc23`

```
> # hostname pc23.sse.ws.afnog.org
> # vi /etc/rc.conf
> ...
> hostname="pc23.sse.ws.afnog.org"
> # vi /etc/hosts
> ...
> 196.200.219.23    pc23.sse.ws.afnog.org
```

You should also be able to see your machine's hostname at the login screen on the console:

```
> FreeBSD/i386 (pc23.sse.ws.afnog.org) (ttyv0)
>
> Login:
```

Exercise

* Choose a new domain, write it here: `_____afnog.org.rw`
(Do not choose any of the pc names, e.g. `pc23`, as your subdomain)

* Check that the directories you need exist. If they don't, create them:

```
# mkdir /var/named/etc/namedb/master
# mkdir /var/named/etc/namedb/slave
# chown bind /var/named/etc/namedb/slave
```

* Find someone who will agree to be slave for your domain. You must choose someone on a DIFFERENT table to you. (Remember RFC2182: secondaries must be on remote networks). You can have more than one slave if you wish.

* Create your zone file in `/var/named/etc/namedb/master/xxxxx.afnog.org.rw` (where `xxxxx` is your chosen domain)

```
> $TTL 10m
> @      IN      SOA   pcX.sse.ws.afnog.org.  yourname.example.com. (
>                               2009051200      ; Serial
>                               10m             ; Refresh
>                               10m             ; Retry
>                               4w              ; Expire
>                               10m )          ; Negative
>
>                               IN      NS      pcX.sse.ws.afnog.org.  ; master
>                               IN      NS      pcY.sse.ws.afnog.org.  ; slave
>
> www    IN      A      196.200.219.X      ; your own IP
```

Replace `yourname.example.com.` with your home E-mail address, changing `"@"` to `"."` and adding a `"."` to the end.

We have chosen purposely low values for TTL, refresh, and retry to make it easier to fix problems in the classroom. For a production domain you would use higher values, e.g. `$TTL 1d`

* Edit `/var/named/etc/namedb/named.conf` to configure your machine as master for your domain (see slides for information how to do this)

* Check that your config file and zone file are valid, and then reload the nameserver daemon:

```
# named-checkconf
# named-checkzone xxxxx.afnog.org.rw \
/var/named/etc/namedb/master/xxxxx.afnog.org.rw
```

* If there are any errors, correct them*

```
# rndc reload
# tail /var/log/messages
```

* If there are any errors, correct them*. Some configuration errors can cause the daemon to die completely, in which case you may have to start it again:

```
# /etc/rc.d/named restart
```

* Assist your slaves to configure themselves as slave for your domain, and configure yourself as a slave if asked to do so by another table. Again, the instructions for how to do this are on the slides. If you have changed your `named.conf` so that you are a slave for someone else, make sure there are no errors in `/var/log/messages` after you do `rndc reload`.

* Check that you and your slaves are giving authoritative answers for your domain:

```
# dig +nored @196.200.219.X xxxxx.afnog.org.rw. soa
# dig +nored @192.200.219.Y xxxxx.afnog.org.rw. soa
```

Check that you get an AA (authoritative answer) from both, and that the serial numbers match.

* Now you are ready to request delegation. Bring the following form to the classroom instructor:

```
Domain name:      _____afnog.org.rw
Master nameserver: pc____.sse.ws.afnog.org
Slave nameserver:  pc____.sse.ws.afnog.org
Slave nameserver:  pc____.sse.ws.afnog.org (optional)
```

Slave nameserver: pc____.sse.ws.afnog.org (optional)

- * You will not get delegation until the instructor has checked:
 - Your nameservers are all authoritative for your domain
 - They all have the same SOA serial number
 - The NS records within the zone match the list of servers you are requesting delegation for
 - The slave(s) are not on the same desk as you
- * Once you have delegation, try to resolve www.xxxxx.afnog.org.rw:
 - On your own machine
 - On someone else's machine (who is not slave for you)
 - On a machine elsewhere on the Internet, if you have access to one
- * Add a new resource record to your zone file. Remember to update the serial number. Check that your slaves have updated. Try resolving this new name from elsewhere.