

### DNS Exercise 3.1: Setting up a domain

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In this exercise, you will create a new domain, `_something_.afnogws.gh`. You will create master name server 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 (`afnogws.gh`) 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

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\* Choose a new domain, write it here: ``_____`.afnogws.gh``  
(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.afnogws.gh`` (where xxxxxx is your chosen domain)

```
> $TTL 10m
> @      IN      SOA      pcX.sse.ws.afnog.org.  yourname.example.com. (
>                                     2008052700      ; 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.afnogws.gh \
    /var/named/etc/namedb/master/xxxxx.afnogws.gh
```

- \* 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 +noredc @196.200.219.X xxxxx.afnogws.gh. soa
# dig +noredc @192.200.219.Y xxxxx.afnogws.gh. 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:          _____afnogws.gh
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 name servers 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.afnogws.gh`:

- 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.