

DNS Exercise - Delegation

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In this exercise, you will create a new domain, `_something_.ghe0.dns.gh`. You will create master nameservice on your own machine, and someone else will provide slave service. Then you will ask the administrator for the domain above you (`ghe0.dns.gh`) to delegate your domain to you.

Firstly, note that each machine in the classroom has been given a working DNS name: `pcX.ghe0.dns.gh`. Check that it is configured correctly by using the ``hostname`` command - e.g. on `pc18` you should see

```
> # hostname
> pc10.ghe0.dns.gh
```

If not, then configure your server with its name: e.g. for `pc10`

```
> # hostname pc10.ghe0.dns.gh
> # vi /etc/rc.conf
> ...
> hostname="pc10.ghe0.dns.gh"
> # vi /etc/hosts
> ...
> 41.218.234.110      pc10.ghe0.dns.gh
```

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

```
> FreeBSD/i386 (pc10.ghe0.dns.gh) (ttyv0)
>
> login:
```

Exercise

- * Choose a new domain, write it here: ``_____ghe0.dns.gh``
(Do **not** choose any of the pc names, e.g. ``pc10``, as your subdomain)

This could for example be the name of your country code or country name, but REMEMBER that someone might pick the same name! First come, first serve.

- * Find someone who will agree to be slave for your domain. Please find someone across the room (Remember RFC2182: secondaries must be on remote networks in real life). You can have more than one slave if you wish.

- * Create your zone file in ``/etc/namedb/master/xxxxxx.ghe0.dns.gh``
(where `xxxxxx` is your chosen domain)

```
> $TTL 10m
> @      IN      SOA      pcX.ghe0.dns.gh. yourname.example.com. (
>                                     2008052801      ; Serial
>                                     10m             ; Refresh
>                                     10m             ; Retry
>                                     4w              ; Expire
>                                     10m )           ; Negative
>
>                                     IN      NS       pcX.ghe0.dns.gh. ; master
>                                     IN      NS       pcY.ghe0.dns.gh. ; slave
>
> www    IN      A        41.218.234.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 `/etc/namedb/named.conf` to configure your machine as master for your domain:

```
zone "zone.name" { type master; file "master/zone.name.txt"; };
```

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

```
# named-checkconf
# named-checkzone xxxxxx.ghe0.dns.gh
/etc/namedb/master/xxxxxx.ghe0.dns.gh
```

- * Enable named in your server's configuration, by editing the file `/etc/rc.conf` and adding, if this is not already done (it should be).

```
named_enable="YES"
```

Start named with

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

Check the result with

```
# 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 +norec @41.218.234.X xxxxxx.ghe0.dns.gh. soa
# dig +norec @41.218.234.Y xxxxxx.ghe0.dns.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: _____ .ghe0.dns.gh

Master nameserver: pc____.ghe0.dns.gh

Slave nameserver: pc____.ghe0.dns.gh

Slave nameserver: pc____.ghe0.dns.gh (optional)

Slave nameserver: pc____.ghe0.dns.gh (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.xxxxxx.ghe0.dns.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
4 0 0 Tm /BT@c1c5e0 0 0. checked: