

AfNOG 2004 Dakar, Senegal

Track 1 - Scalable Internet Services

Domain Name System - Exercise 5

Setting up an Authoritative Slave/Secondary Name Server

In this exercise you will setup a slave/secondary name server on your computer.

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

You will have to give the person setting up a slave nameserver for your domain the following pieces of information.

Domain Name: _____afnogws.gh
Master Nameservers FQDN: _____t1.ws.afnog.org
IP Address of Master Nameserver: 84.201.31.____

2. Do the following on your own computer.

Edit the /etc/namedb/m/<domain-name>.afnogws.gh
(where <domain-name>.afnogws.gh is the zone file you created in the previous exercise). Make an entry in that file for a secondary name server.

The entries will now look something like:

<.....After your SOA record.....>

```
IN      NS   pc#.t1.ws.afnog.org.  
IN      NS   pc##.t1.ws.afnog.org. ; <----- this is the entry to add  
IN      A   84.201.31.#
```

(Where pc##.t1.ws.afnog.org. is the name of the slave nameserver machine.)

NOTE: DO NOT FORGET to increase the serial number in the zone file (usually by 1).

3. Edit the /etc/namedb/named.conf and add the IP address of the slave server to the "allow-transfer" directive for your domain. This is to allow the slave nameserver for your zone transfer the zone file from your computer.

```
zone "<domain-name>.afnogws.gh" {  
    type master;  
    file "m/<domain-name>.afnogws.gh";  
    allow-transfer { 84.201.31.##; 84.201.31.##; }; //<----- edited line.  
};
```

(Where 84.201.31.## is the IP address of the slave nameserver.)

4. Reload the zone file and check for errors in the `/var/log/messages` file.
5. If there are no errors in the `/var/log/messages` file, run a `dig +nored` on your domain name for NS records.

IMPORTANT: If after the step 5. above you don't have any errors, ask your friend to setup the slave/secondary nameserver for you on his/her machine.

SETTING UP THE SLAVE NAMESERVER

1. If you are slave for someone else set it up by editing the `/etc/namedb/named.conf` file.

```
# vi /etc/namedb/named.conf
```

Make the following entries in the `/etc/namedb/named.conf` file.

```
zone "<friends-domain-name>.afnogws.gh" {
    type slave;
    file "s/<friends-domain-name>.afnogws.gh";
    masters {
        84.201.31.##;
    };
    allow-transfer { none; };
};
```

(Where <friends-domain-name> is the domain name you are setting up a slave nameserver for and 84.201.31.## is the IP address of the master nameserver.)

2. Enter the following command to reload the `named.conf` file, and transfer the zone file from the master nameserver.

```
# ndc reload
```

3. Check the log file `/var/log/messages` to ensure that your named server started without any errors.
4. Check if the `<friends-domain-name>.db` file exists in the `/etc/namedb/s` directory. If it exists, then the slave/secondary nameserver has transferred the zone file from the master/primary name server. This file in the `/etc/namedb/s` is created by the named daemon and should not be edited.

```
# ls -al /etc/namedb/s
```

5. If it does not exist you will have to debug the problem to figure out what the problem could be. Your main debugging tool here will be the log file `/var/log/messages`.
6. Once you get the `<friends-domain-name>.afnogws.gh` file in the `/etc/namedb/s` directory, Test if your server is resolving the domain.

```
# dig +norec @127.0.0.1 <friends-domain-name>.afnogws.gh ns  
Check if you get an AA (Authoritative Answer).
```

You have now successfully setup a slave nameserver for your friend. Inform you friend that the slave nameserver has been setup.

Once slave name server has been setup for our domain:

7. Test if the secondary your friend setup for you works and is setup correctly.

```
# dig +norec @84.201.31.# <domain-name>.afnogws.gh soa  
# dig +norec @84.201.31.## <domain-name>.afnogws.gh soa  
Check if the serial numbers are the same.
```

```
# dig +norec @84.201.31.# <domain-name>.afnogws.gh ns  
# dig +norec @84.201.31.## <domain-name>.afnogws.gh ns  
Check if the results in the ANSWER SECTION from the two commands are the same.
```

8. Please fill the domain name request form below and submit it to the hostmaster for delegation.

Domain name: _____**.afnogws.gh**

Master nameserver: **pc____.t1.ws.afnog.org**

Slave nameserver: **pc____.t1.ws.afnog.org**

Slave nameserver: **pc____.t1.ws.afnog.org (optional)**

Slave nameserver: **pc____.t1.ws.afnog.org (optional)**

9. You will not get delegation until the hostmaster 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
10. Once you have delegation, try to resolve `www.<domain-name>.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

11. Add a new entry to your zone file. Remember to update the serial number and reload your zone file.

```
# ndc reload <domain name>.afnogws.gh
```

Check that your slaves have updated. Try resolving this new name from elsewhere.