NCS 490:
FTP Server

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Abstract

A FTP Server is a way to transfer files from one machine to another.

1 Introduction

For this lab we installed a FTP server on one machine and then used our other machine as a client to test it. The FTP install and setup was easy but we had to add some iptables rules to allow FTP and also add a module in our **iptables-config** file.

2 Installing FTP server: vsftpd

We first install the FTP server called **vsftpd** and open the **vsftpd.conf** file to edit:

```
# yum install vsftpd -y
# vim /etc/vsftpd/vsftpd.conf
```

Here we only needed to change 3 lines. We needed to make

```
# anonymous_enable=NO
# local_enable=YES
# chroot_local_user=YES
```

Next we open the **iptables-config** to edit:

```
# vim /etc/sysconfig/iptables-config
```

We only had to edit one line, the **IPTABLES_MODULES=** line and we had to make it equal to **"ip_conntrack_ftp"** with quotes. This allowed our FTP server to run in passive mode.

```
1 # Load additional iptables modules (nat helpers)
2 #   Default: -none-
3 # Space separated list of nat helpers (e.g. 'ip_nat_ftp ip_nat_irc'), which
4 # are loaded after the firewall rules are applied. Options for the helpers are
5 # stored in /etc/modprobe.conf.
6 IPTABLES_MODULES="ip_conntrack_ftp"
```

We also add some iptables rules to allow incoming and outgoing traffic usng the FTP port. The incoming port is 21 and the outgoing port is 20.

```
# iptables -A INPUT -p tcp -m state --state NEW -m tcp --dport 21 -j ACCEPT
# -A OUTPUT -p tcp -m state --state NEW -m tcp --sport 20 -j ACCEPT
# iptables-save
```

Once this is done we restart our FTP server:

```
# service vsftpd restart
```

3 DNS entry

We also want to add a domain name for our ftp server. In my case I just used ftp and the name and it points to my first box, 10.103.67.80. To do this all we have to do is add a entry for ftp in our forward and reverse file. We also must make sure we increment our serial number in our zone files to make sure it replicates our changes to our slave DNS server.

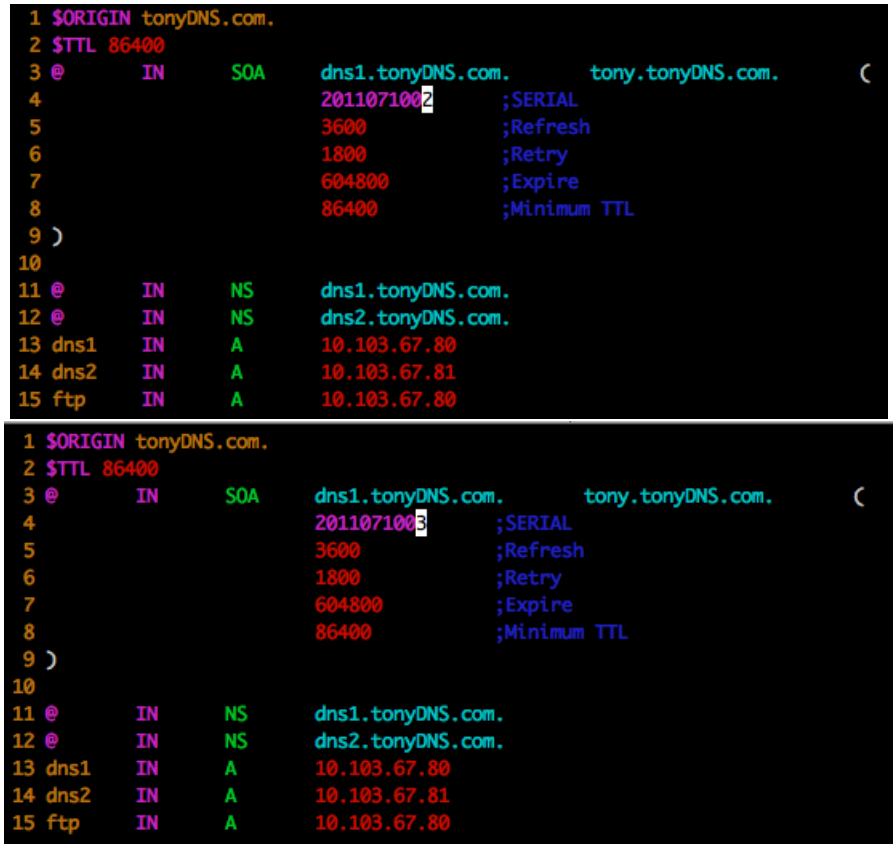


Figure 1: Here we can see the serial number being changed and the ftp entry at the bottom

We do the same for our Reverse zone file:

```
1 $ORIGIN 67.103.10.in-addr.arpa.
2 $TTL 86400
3 @       IN      SOA     dns1.tonyDNS.com.       tony.tonyDNS.com. (
4                         2011071001      ;Serial
5                         3600            ;Refresh
6                         1800            ;Retry
7                         604800          ;Expire
8                         86400           ;Minimum TTL
9 )
10 @       IN      NS      dns1.tonyDNS.com.
11 @       IN      NS      dns2.tonyDNS.com.
12 80      IN      PTR     dns1.tonyDNS.com.
13 81      IN      PTR     dns2.tonyDNS.com.
14 80      IN      PTR     ftp.tonyDNS.com.
```

```
1 $ORIGIN 67.103.10.in-addr.arpa.
2 $TTL 86400
3 @       IN      SOA     dns1.tonyDNS.com.       tony.tonyDNS.com. (
4                         2011071002      ;Serial
5                         3600            ;Refresh
6                         1800            ;Retry
7                         604800          ;Expire
8                         86400           ;Minimum TTL
9 )
10 @       IN      NS      dns1.tonyDNS.com.
11 @       IN      NS      dns2.tonyDNS.com.
12 80      IN      PTR     dns1.tonyDNS.com.
13 81      IN      PTR     dns2.tonyDNS.com.
14 80      IN      PTR     ftp.tonyDNS.com.
```

Now we check our second DNS server to see if the files have replicate:

```
root@pereztr-2 ~ $ cat /var/named/slaves/tonyDNS.com.zone
$ORIGIN .
$TTL 86400      ; 1 day
tonyDNS.com             IN SOA  dns1.tonyDNS.com. tony.tonyDNS.com. (
                                2011071003 ; serial
                                3600       ; refresh (1 hour)
                                1800       ; retry (30 minutes)
                                604800     ; expire (1 week)
                                86400      ; minimum (1 day)
                                )
                        NS      dns1.tonyDNS.com.
                        NS      dns2.tonyDNS.com.
$ORIGIN tonyDNS.com.
dns1                    A       10.103.67.80
dns2                    A       10.103.67.81
ftp                     A       10.103.67.80
```

```
root@pereztr-2 ~ $ cat /var/named/slaves/tonyDNS.com.rr.zone
$ORIGIN .
$TTL 86400      ; 1 day
67.103.10.in-addr.arpa  IN SOA  dns1.tonyDNS.com. tony.tonyDNS.com. (
                                2011071002 ; serial
                                3600       ; refresh (1 hour)
                                1800       ; retry (30 minutes)
                                604800     ; expire (1 week)
                                86400      ; minimum (1 day)
                                )
                        NS      dns1.tonyDNS.com.
                        NS      dns2.tonyDNS.com.
$ORIGIN 67.103.10.in-addr.arpa.
80                      PTR     dns1.tonyDNS.com.
                        PTR     ftp.tonyDNS.com.
81                      PTR     dns2.tonyDNS.com.
```

Figure 2: Forward zone file top and Reverse zone file bottom

4 FTP Test

Now we will test the FTP server on our second server.

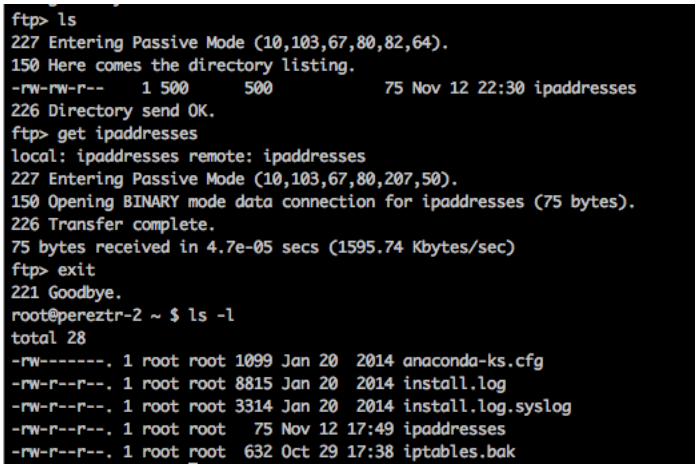
We first install the FTP client:

```
# yum install ftp -y
```

Then to connect we use the ftp command:

```
# ftp ftp
```

We use the **ftp ftp** because we named our FTP server **ftp** then login. We then use the **ls** to see what file are in that users directory and the **get** command to download a file:



5 Conclusion

We have successfully installed and used our FTP server. This is a great way to store files on the FTP server and then transfer then.