



## Guide – Domain name server

### Objectives:

- DNS configuration
- Zone creation
- Direct and reverse zones

#### 1. Install domain name server

```
apt-get update  
apt-get install bind9
```

#### 2. Create a new zone with the name lr.estga.ua.pt com in which your server is the master server. Edit /etc/bind/named.conf.local and add the following lines at the bottom of the file:

```
zone "lr.estga.ua.pt" IN {  
    type master;  
    file "/etc/bind/zones/lr.estga.ua.pt";  
    allow-query{any;};  
};
```

#### 3. Create the zone file (/etc/bind/zones/lr.estga.ua.pt)

```
mkdir /etc/bind/zones/  
vi /etc/bind/zones/lr.estga.ua.pt
```

#### 4. Editing the file and place there the following lines:

```
$ORIGIN lr.estga.ua.pt.  
$TTL      604800  
@         IN      SOA      ns1r.lr.estga.ua.pt. email.do.gestor. (  
                                1          ; Serial  
                                7200       ; Refresh  
                                120        ; Retry  
                                2419200   ; Expire  
                                604800)   ; Default TTL  
@         IN      NS       ns1r.lr.estga.ua.pt.  
ns1r      IN      A        192.168.1.1
```

#### 5. Validate server's configuration and zone file.

```
named-checkconf  
named-checkzone lr.estga.ua.pt /etc/bind/zones/lr.estga.ua.pt
```



**Note:** Validation output reports problems that have to be fixed before proceeding.

6. Restart the server

```
/etc/init.d/bind9 restart
```

7. Test server's resolution requesting `ns1r.lr.estga.ua.pt` resolution.

```
nslookup ns1r.lr.estga.ua.pt 127.0.0.1
```

8. Add A records for zone machines:

- Hostmachine - 192.168.1.1
- Debapp- 192.168.1.2
- Win2008 - 192.168.1.3
- Elastix - 192.168.1.4
- Zentyal - 192.168.1.5
- pasg - 192.168.1.6
- lmat - 192.168.1.254

9. Test server's resolution for the records added.

**Note:** Changes in configuration files require a server restart to take effect.

10. Add a MX record with a 10 value to the domain email server named `mail.lr.estga.ua.pt` at the bottom of SOA record.

```
@                IN          MX          10    mail.lr.estga.ua.pt.
```

**Note:** MX record just points out email server name, but it does not resolves its name.

11. Test server MX record

```
nslookup -query=MX lr.estga.ua.pt
```

12. Create an alias to `mail.lr.estga.ua.pt` named `www`, adding the following line to the zone records:

```
www      IN      CNAME  mail.lr.estga.ua.pt
```

13. Test `www.lr.estga.ua.pt` resolution.

14. Create a new reverse zone named `1.168.192.IN-ADDR.ARPA` in which your server is the a master server. Edit `/etc/bind/named.conf.local` and add the following lines at the bottom of the file:

```
zone "1.168.192.IN-ADDR.ARPA" IN {  
    type master;  
    file "/etc/bind/zones/192.168.1.rev";  
};
```



15. Edit reverse zone file (/etc/bind/zones/192.168.1.rev) and add there a SOA record accordingly with the following lines:

```
@           IN          SOA      ns1r.l1r.estga.ua.pt. admin.email.addr. (
                                2011101501          ; Serial
                                7200                 ; Refresh
                                120                  ; Retry
                                2419200              ; Expire
                                604800)              ; Default TTL

           IN          NS       ns1r.l1r.estga.ua.pt.
1         IN          PTR      ns1r.l1r.estga.ua.pt.
```

16. Validate servers and reverse zone configuration.

17. Test server reverse resolution:

```
nslookup 192.168.1.1 127.0.0.1
```

18. Taking in consideration the information from 8., complete reverse zone information.

19. Test servers resolution of names belonging to other zones:

```
nslookup mail.ua.pt 127.0.0.1
```

20. Configure forwarders addresses to the server, adding to the bottom of the file /etc/bind/named.conf.options the following lines:

```
forwarders {
    193.136.172.20;
    193.136.172.21;
};
```

21. Repeat the resolution of names belonging to other zones:

```
nslookup mail.ua.pt 127.0.0.1
```