JISC Regional Support Centre of the NORTH

Setting up the DNS for Unix with less than 256 addresses

- The following example is based on a college being assigned 16 addresses, the college as been assigned the range 200.200.200.17 – 200.200.200.32

The DNS Manager tool administers the Domain Name System (DNS). DNS is networked, distributed database that manages the mapping of TCP/IP hostnames to IP addresses and IP addresses to Hostnames.

DNS data is complex and requires all entries to be in exact format. DNS Manager acts as a front end to the DNS data files and ensures that the files are maintained in the correct format. You are still responsible for making sure that the data itself makes sense.

The following terms are used within DNS Manager

- A *server* is the DNS service running on an Unix server.
- A *Zone* is an administration grouping of domain names
- A *domain name* is a name that identifies an organisation on the Internet.
- A *record* is the individual unit of DNS data.

Simple Configuration for DNS on Unix

Login to the server and change to the directory

/var/named

create a file using your favourite text editor with a recognisable name such as

db.sunshine-coll

populate the db file with records similar to below

	Record Type	*Hostname*	*IP address*
dns.sunderland.ac.uk	**NS**		
orac.sunderland.ac.uk	**NS**		
domain name	**A**	**dns0**	**195.195.200.18**
router	**A**	**gw**	**195.195.200.19**
webserver	**A**	**www**	**195.195.200.20**
mailserver	**A**	**mail**	**195.195.200.21**

An example forward zone for

```
; BIND version in.named LOCAL-000105.12/15/99M11 Wed Jan  5 15:59:11 PST 2000
; BIND version Generic-5.8-February 2000
; zone 'cleveland.ac.uk'  last serial 2000100901
; from 195.195.200.17   at Thu Oct  5 11:52:01 2000
$ORIGIN ac.uk.
Sunshine-coll      IN     SOA     dns0.sunshine-coll.ac.uk. postmaster.sunshine-coll.ac.uk. (

                                   2000100501 28800 14400 3600000 86400 )
                                   IN     NS     dns0.sunshine-coll.ac.uk.
                                   IN     NS     orac.sunderland.ac.uk.
                                   IN     MX     10 mail.sunshine-coll.ac.uk.
$ORIGIN cleveland.ac.uk.
dns0                               IN     A                 195.195.200.19
gw                                 IN     A                 195.195.200.18
www                                IN     A                 195.195.200.20
mail                               IN     A                 195.195.200.21
localhost                          IN     A                 127.0.0.1
```

Important things to remember.

nb. After every .ac.uk include a **.**

nb. Update the serial number after every edit using the format year/month/day/sequence eg, 2000100901

Save the file and change to the directory

/etc

edit the file **named.conf** using your favourite text editor

the named.conf file will look similar to

```
options {
        directory       "/var/named";

};

zone "0.0.127.in-addr.arpa" in {
        type master;
        file "db.127.0.0";
};

zone "sunshine-coll.ac.uk" in {
        type master;
        file "db.sunshine-coll";
        masters { 195.195.200.19; };
};

 zone "17/28.200.195.195.in-addr.arpa" in {
        type master;
        file "db.17.28.200.195.195";
        masters { 195.195.200.19; };
};
```

/var/named the location of the db file

The primary name server is the *master*. A secondary name server is the *slave.*

195.195.200.19 the IP address of the DNS

17/28.200.195.195.in-addr.arpa

17	start of IP allocation
28	subnet mask bit-count
200.195.195	reverse IP range

Save the file and change to the **root** directory

Enter the command

/reset_named

IP address allocation	*Subnet mask*	*Subnet mask bit-count*
128	255.255.255.128	25
64	255.255.255.192	26
32	255.255.255.224	27
16	255.255.255.240	28
8	255.255.255.248	29

Nb.

if you have 64 addresses with ip range starting at 195.195.200.65 to 195.195.200.128 the named.conf entry will be

65/26.200.195.195.in-addr.arpa