

## Alex Deghetto DNS LAB

Linux:

On linux you want to start with a nslookup.

View your website beforehand on a private domain.

Change the /etc/hosts file. Use "sudo vim /etc/hosts"

We then have to instal bind9.

```
sudo apt install -y bind9 bind9utils bind9-doc dnsutils
```

Go to the bind9 directory

Cd /etc/bind this is the dns's main config directory

You then have to create 2 zones, the forward and reverse.

Go into etc/bind/named.conf.local file

Edit this file.

```
//
```

```
// Do any local configuration here
```

```
//
```

```
// Consider adding the 1918 zones here, if they are not used in your
```

```
// organization
```

```
//include "/etc/bind/zones.rfc1918";
```

```
zone "sunyorange.edu.local" IN { // Domain name
```

```
type master; // Primary DNS
```

```
file "/etc/bind/forward.sunyorange.edu.local.db"; // Forward lookup file
```

```
allow-update { none; }; // Since this is the primary DNS, it should be none.
```

```
};
```

```
zone "0.88.10.in-addr.arpa" IN {
```

```
//Reverse lookup name, should match your network in reverse order
```

```
type master; // Primary DNS
```

```
file "/etc/bind/reverse.sunyorange.edu.local.db"; //Reverse lookup file
```

```
allow-update { none; }; //Since this is the primary DNS, it should be none.
```

```
};
```

Copy the sample forward zone lookup file to a file called forward.sunyorange.edu.db under the /etc/bind directory

Use this command

```
sudo cp /etc/bind/db.local /etc/bind/forward.sunyorange.edu.local.db
```

We have to edit the zone file and update the content

Use sudo vi /etc/bind/forward.sunyorange.edu.db

Copy and paste this into it:

#### Commands

```
; BIND data file for local loopback interface
;
$TTL      604800
@         IN      SOA      ns1.sunyorange.edu.local. root.ns1.sunyorange.edu.local. (
2         ; Serial
604800    ; Refresh
86400     ; Retry
2419200   ; Expire
604800 )   ; Negative Cache TTL
;
;@        IN      NS       localhost.
;@        IN      A        127.0.0.1
;@        IN      AAAA     ::1
;Name Server Information
@         IN      NS       ns1.sunyorange.edu.local.
;IP address of Name Server

ns1       IN      A        10.88.0.2
;Mail Exchanger

sunyorange.edu.local. IN    MX  10   mail.sunyorange.edu.local.

;A - Record HostName To Ip Address

www       IN      A        10.88.0.2
mail      IN      A        10.88.0.2
;CNAME record

sftp      IN      CNAME     www.sunyorange.edu.local.
```

Make the CNAME a different domain name.

While still in the bind directory, use this command:

```
sudo cp db.127 reverse.sunyorange.edu.local.db
```

This should be the file you created:

### Commands

```
;
; BIND reverse data file for local loopback interface
;
$TTL      604800
@         IN      SOA      sunyorange.edu.local. root.sunyorange.edu.local. (
1         ; Serial
604800    ; Refresh
86400     ; Retry
2419200   ; Expire
604800 )    ; Negative Cache TTL
;

;Name Server Information

@         IN      NS       ns1.sunyorange.edu.local.
ns1       IN      A        10.88.0.2
;Reverse lookup for Name Server

2         IN      PTR      ns1.sunyorange.edu.local.

;PTR Record IP address to HostName

2         IN      PTR      www.sunyorange.edu.local.
2         IN      PTR      mail.sunyorange.edu.local.
```

You must then check the syntax on the dns.

Use:

```
sudo named-checkconf
```

```
sudo named-checkzone sunyorange.edu.local /etc/bind/forward.sunyorange.edu.local.db
```

```
sudo named-checkzone 0.88.10.in-addr.arpa /etc/bind/reverse.sunyorange.edu.local.db
```

Then we must restart and enable with:

```
sudo systemctl restart bind9
```

```
sudo systemctl enable bind9
```

We then must test the server:

```
sudo vim /etc/resolv.conf
```

```
nameserver 10.88.0.2
```

Use the dig command while root:

```
dig www.sunyorange.edu.local
```

#### Commands

```
root@occc-VirtualBox:/etc/bind# dig www.sunyorange.edu.local

; <<>> DiG 9.18.1-1ubuntu1.2-Ubuntu <<>> www.sunyorange.edu.local
;; global options: +cmd
;; Got answer:
;; WARNING: .local is reserved for Multicast DNS
;; You are currently testing what happens when an mDNS query is leaked to DNS
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 39279
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
; COOKIE: 7a2961d20a83950001000000635597b99592cfe9e18ca5dd (good)
;; QUESTION SECTION:
;www.sunyorange.edu.local. IN A

;; ANSWER SECTION:
www.sunyorange.edu.local. 604800 IN A 10.88.0.2

;; Query time: 0 msec
;; SERVER: 127.0.0.1#53(127.0.0.1) (UDP)
;; WHEN: Sun Oct 23 15:36:25 EDT 2022
;; MSG SIZE rcvd: 97

root@occc-VirtualBox:/etc/bind#
```

#### Commands

```
; <<>> DiG 9.18.1-1ubuntu1.2-Ubuntu <<>> -x 10.88.0.2
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 63556
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 3, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
; COOKIE: 40d346ade9a96571010000006355981ab4a78229dfc59828 (good)
;; QUESTION SECTION:
;2.0.88.10.in-addr.arpa. IN PTR

;; ANSWER SECTION:
2.0.88.10.in-addr.arpa. 604800 IN PTR mail.sunyorange.edu.local.
2.0.88.10.in-addr.arpa. 604800 IN PTR ns1.sunyorange.edu.local.
2.0.88.10.in-addr.arpa. 604800 IN PTR www.sunyorange.edu.local.

;; Query time: 0 msec
;; SERVER: 127.0.0.1#53(127.0.0.1) (UDP)
;; WHEN: Sun Oct 23 15:38:02 EDT 2022
;; MSG SIZE rcvd: 154

root@occc-VirtualBox:/etc/bind#
```

IIS/Windows:

Start by opening the server manager

Navigate to roles then go to add roles:

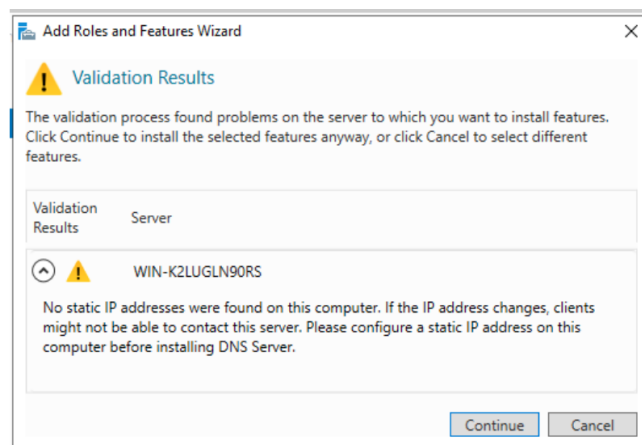
Click next

Then make sure to click the first option: role based or feature based installation, click next

Select the server you want for the server pool then click next

Under the roles, make sure to select DNS Server along with whatever else you want, then click next

Click add features



If you get this cancel and make sure you have a static ip address.

Continue clicking next and then click install once prompted.

Once done you can close it and go to tools; DNS

You want to right click the forward lookup zones folder and click new zone

Click next

Select Primary zone

Make the zone name your Domain name:

Sunyorange.edu.local

Click next

Create new file, then next

Dont allow updates then click next

And then click finish

Then right click the reverse lookup zone folder and create new zone

Click next

Primary zone

ipv4, then next

Put in your ip, then click next

Create new file, then next

Dont allow updates then next

Finish

Now go into the forward lookup zone folder and right click the folder inside. And make a new host (A or AAAA)

Check off create associated pointer.

Then click add host

Go into that same folder you just made the new host in, and go to the www file use this:

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

☐ Obtain an IP address automatically

☒ Use the following IP address:

IP address:	10 . 88 . 0 . 92
Subnet mask:	255 . 255 . 255 . 0
Default gateway:	10 . 88 . 0 . 1

☐ Obtain DNS server address automatically

☒ Use the following DNS server addresses:

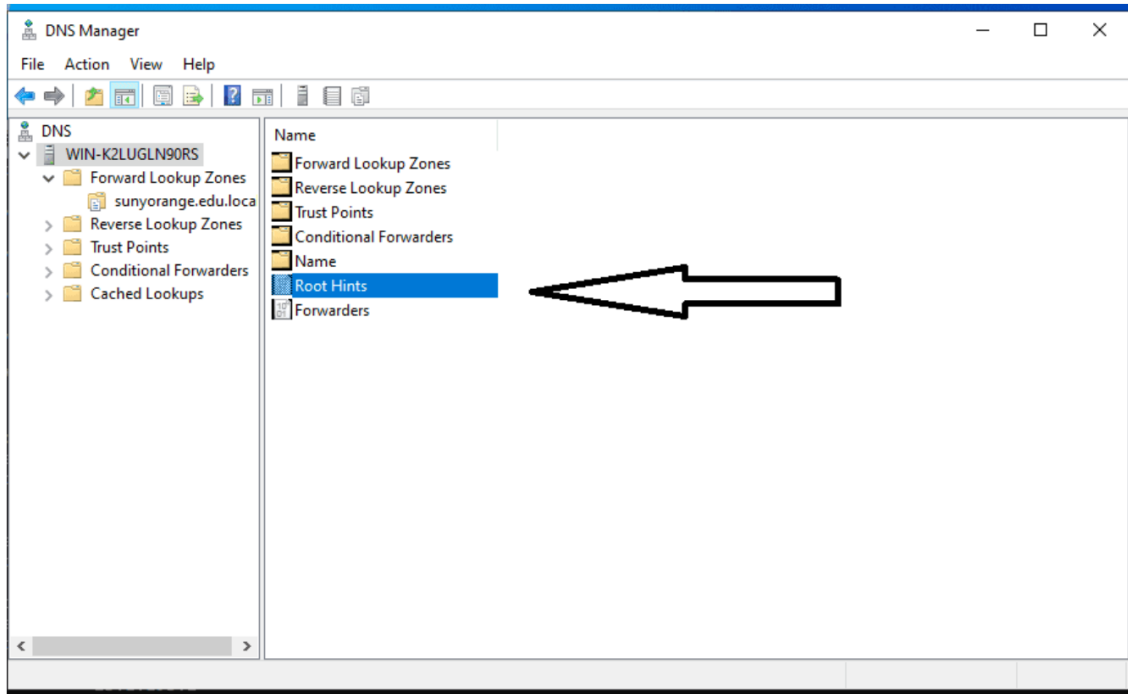
Preferred DNS server:	10 . 88 . 0 . 92
Alternate DNS server:	8 . 8 . 8 . 8

☐ Validate settings upon exit

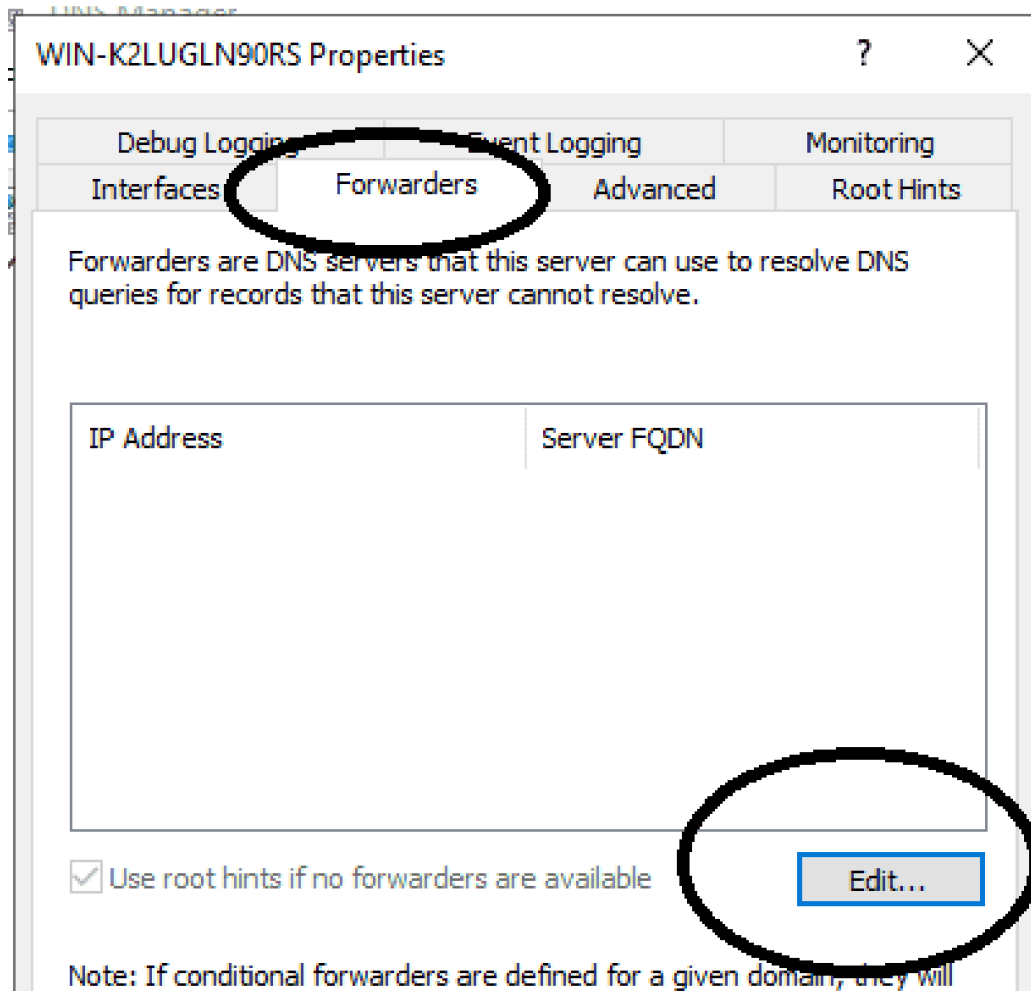
Advanced...

OK Cancel

Follow these steps:







IP Address	Server FQDN	Validated
<Click here to add an IP Address or DNS Name>		
✓ 8.8.8.8	dns.google	OK

Number of seconds before forward queries time out:

The server FQDN will not be available if the appropriate reverse lookup zones and entries are not configured.

Finally click OK then Apply.

Do an nslookup and then check to see if it is up and running.