

APNIC46 IPv6 Workshop

PART 3: DNS

- 1) Connect to ipv6-lab SSID / PWD lab-ipv6
- 2) Browse to <http://192.168.3.1/files>
- 3) Download ubuntu-apache-dns.ova
- 4) Enable routing in your host:
 - Windows: <https://www.wikihow.com/Enable-IP-Routing>
Easier way method 3 (services.msc, enable/start routing and remote access)
 - Linux/Mac OS X
sudo sysctl -w net.inet.ip.forwarding=1
sudo sysctl -w net.inet6.ip6.forwarding=1
Note: You may want to have all this in a shell script un case of rebooting the host
- 5) Import OVA, make sure to choose reinitialize the MAC addresses
- 6) You may need to change some hardware settings, such as selecting the interface card, enable/disable PAE/NX, USB, etc., all that depends on your own hardware. Even in rare cases changes in your BIOS. Typically, you will need admin access to your host
- 7) Network 1 should be your bridge/WiFi card
- 8) Boot VM, if something fails, read details and go to 6 ...
- 9) Password
usr/pwd -> root/root
- 10) Type startx (enter)
- 11) Click on "activities", type term, and click on it
- 12) Check if /etc/bind/named.conf.options contains listen-on-v6 { any; };

```
options {  
    directory "/var/cache/bind/";  
    listen-on-v6 { any; };  
};
```

13) Let's create the domain **test.org**

14) /etc/bind/named.conf.local should contain the zone file:

```
zone "test.org" {  
    type master;  
    file "test.org";  
};
```

15) Create the zone file at /var/cache/bind/test.org

```
$TTL 86400  
@ IN SOA ns1.test.org. dnsadmin.test.org (  
    2002071901 ; serial  
    28800 ; refresh  
    7200 ; retry  
    604800 ; expire  
    86400 ; ttk  
)
```

```
                IN      NS ns1.test.org.  
  
ns1              IN      A      x.x.x.x  
                IN      AAAA   x::x  
  
web6            IN      AAAA   x::x  
web4            IN      A      x.x.x.x  
www             IN      AAAA   x::x  
                IN      A      x.x.x.x
```

16) Restart bind:

```
service bind9 restart  
service bind9 status
```

17) You can test the zone file:

```
named-checkzone test.org /var/cache/bind/test.org
```

18) Further testing:

```
dig any web4.test.org @::1  
dig any web6.test.org @::1  
dig any www.test.org @::1
```

PART 4: Apache

- 1) Edit /etc/apache2/sites-available/000-default.conf


```
<VirtualHost [x::x]:80>
  DocumentRoot /var/www/html/ipv6
  ServerName web6.test.org
</VirtualHost>

<VirtualHost x.x.x.x:80>
  DocumentRoot /var/www/html/ipv4
  ServerName web4.test.org
</VirtualHost>

<VirtualHost x.x.x.x:80 [x::x]:80>
  DocumentRoot /var/www/html/dual
  ServerName www.test.org
</VirtualHost>
```
- 2) Create the folders for our web sites


```
cd /var/www/html
mkdir ipv4
mkdir ipv6
mkdir dual
```
- 3) Edit a different index.html file inside each folder, example


```
<html>
<head>
<title>IPv4 test page</title>
</head>
<body>This is an IPv4 test page</body>
</html>
```
- 4) A special index.php can also be created (in this case the same in the 3 folders)


```
<?php if(strpos($_SERVER['REMOTE_ADDR'],".")===false)
{
  echo "<font color='#154983' size=2 face='verdana'>Esta usando IPv6
('".$_SERVER['REMOTE_ADDR'].").</font><br><br>";
}else{
  $DIRv4=str_replace("::ffff:", "", $REMOTE_ADDR);
  echo "<font color='#FF0000' size=2 face='verdana'>Esta usando IPv4
('".$_SERVER['REMOTE_ADDR'].").</font><br><br>";
}
?>
```
- 5) You can test with firefox, for both, index.html and index.php

- 6) If you change the DNS server of your windows host, to point to the VM, you can also test from there.