


IPV6應用於主機及DNS網域解析設定解說

麟瑞科技 郭璨榮



系統整合、資訊服務的第一選擇



2009/11/05

1.V6 IP 網段建置建議

2.Server V6 IP 設定

3.V6 DNS設定

4.V6 Web Server設定

5.參考資料



V6 IP 網段建置建議

1. 雲嘉區網V6網段
2001:288:6000::/36(2001:288:6000--6FFF)
2. 雲嘉中正區網連線單位
2001:288:6000::/39(2001:288:6000--61FF)
3. 雲嘉區網 下游學校每個單位分派到網段
2001:288:600X::/48
4. 建議設定為 Server V6網段與V4網段第三碼相同
5. EX:140.XXX.AAA.0/24 ->2001:288:600X:AAA::/64



Server V6 IP 設定

Solaris

假定原本V4 IP 為 140.XXX.AAA.BBB

In /etc/rc.local

```
ifconfig hme0 inet6 addif 2001:288:600X:AAA::BBB/64 up  
/usr/sbin/route add -inet6 default 2001:288:600X:AAA::CCC -  
interface
```



Server V6 IP 設定

Linux

假定原本V4 IP 為 140.XXX.AAA.BBB

```
1.In /etc/sysconfig/network-scripts/ifcfg-eth0  
IPV6ADDR=2001:288:600X:AAA::BBB/64
```

```
In /etc/sysconfig/network  
IPV6_DEFAULTGW=2001:288:600X:AAA::CCC
```



Server V6 IP 設定

FreeBSD

假定原本V4 IP 為 140.XXX.AAA.BBB

In /etc/rc.conf

```
ipv6_enable="YES"
```

```
ipv6_ifconfig_r10="2001:288:600X:AAA::BBB prefixlen 64"
```

```
ipv6_defaultrouter="2001:288:600X:AAA::CCC"
```



測試

1. 可ping6到自己的Gateway

```
[root@splunklog ~]# ping6 2001:288:6001:241::250
PING 2001:288:6001:241::250(2001:288:6001:241::250) 56 data bytes
64 bytes from 2001:288:6001:241::250: icmp_seq=0 ttl=64 time=2.06 ms
64 bytes from 2001:288:6001:241::250: icmp_seq=1 ttl=64 time=22.4 ms
64 bytes from 2001:288:6001:241::250: icmp_seq=2 ttl=64 time=0.550 ms
64 bytes from 2001:288:6001:241::250: icmp_seq=3 ttl=64 time=0.861 ms
```

2. 可ping6到區網網站 (2001:288:6001:1::21)

3. 可traceroute6到區網網站.

```
[root@splunklog ~]# traceroute6 2001:288:6001:1::21
traceroute to 2001:288:6001:1::21 (2001:288:6001:1::21), 30 hops max, 40 byte packets
 1  2001:288:6001:241::250 (2001:288:6001:241::250)  0.568 ms  1.023 ms  1.270 ms
 2  2001:288:6001:9::251 (2001:288:6001:9::251)  0.417 ms  0.469 ms  0.465 ms
 3  2001:288:0:f:123::1f (2001:288:0:f:123::1f)  0.597 ms  0.650 ms  0.755 ms
 4  2001:288:6001:1::21 (2001:288:6001:1::21)  0.529 ms  0.562 ms  0.576 ms
```



V6 DNS設定(正查)

僅需增加Record

In named.conf

```
options { # sure other options here, too listen-on-v6 { any; };  
};
```

- V4 DNS Record “IN A”
- V6 DNS Record “IN AAAA”
- EX: ycrc.ccu.edu.tw

```
ycrc    IN      A          140.123.1.21
```

```
ycrc    IN      AAAA     2001:288:6001:1::21
```



V6 DNS設定(反查)

需增加zone file

1. EX 2001:288:6001:1::/64
2. In named.conf

```
zone "1.0.0.0.1.0.0.6.8.8.2.0.1.0.0.2.ip6.arpa." {  
    type master;  
    file "ipv6-rev/ipv6.1.rev";  
    allow-query { any; };  
};
```



V6 DNS設定(反查)

ipv6-rev/ipv6.1.rev

\$TTL 36000

```
@      IN      SOA      suncc.ccu.edu.tw.  root.ccu.edu.tw. (
                2009102205 ; Serial
                21600   ; Refresh  6 hours
                3600    ; Retry   1 hour
                1209600 ; Expire  14 days
                172800 ) ; Minimum  2 days
      IN      NS      suncc.ccu.edu.tw.
      IN      NS      dns2.ccu.edu.tw.
```

\$ORIGIN 1.0.0.0.1.0.0.6.8.8.2.0.1.0.0.2.ip6.arpa.

```
1.2.0.0.0.0.0.0.0.0.0.0.0.0.0.0      IN      PTR      ycrc.ccu.edu.tw.
```



V6 WWW Server 設定

httpd.conf

In FreeBSD

Install apache with ipv6 support apache+ipv6-1.3.41

Listen 140.XXX.AAA.BBB 80

Listen 2001:288:600X:AAA::BBB 80

In Linux (assume apache2)

Listen 80



V6 WWW Server 設定

Virtual Host

```
<VirtualHost [2001:288:600X:AAA::BBB]:80  
  140.XXX.AAA.BBB:80>  
  ServerName example.school.edu.tw  
  # ...sure more config lines  
</VirtualHost>
```



參考資料

1. 教育部TANet IPv6位址分配原則 網頁

<http://domain.edu.tw/dns/v6.htm>

2. **Linux IPv6 HOWTO**

<http://tldp.org/HOWTO/Linux+IPv6-HOWTO/>

3. 雲林縣網鐘主任網頁

<http://www.to2100.idv.tw/>

