

IP切換學校Server簡易檢測說明

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step1: 網路介面設定確認

以下設定檢查以正新國小為例：

指令: ifconfig

檢查IPv4與IPv6使否正確設定於網路介面上

```
root@dns:~# ifconfig
eth0      Link encap:Ethernet  HWaddr [REDACTED]
          inet addr:163.26.138.1  Bcast:163.26.138.255  Mask:255.255.255.0
          inet6 addr: 2001:288:75a4:0:224:1ff:fe01:f00a/64 Scope:Global
          inet6 addr: fe80::224:1ff:fe01:f00a/64 Scope:Link
          inet6 addr: 2001:288:75a4::1/64 Scope:Global
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:8977429 errors:0 dropped:0 overruns:0 frame:0
          TX packets:6729386 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:2795028819 (2.6 GiB)  TX bytes:236882347 (225.9 MiB)
          Interrupt:18
```

step2:檢視路由

IPv4路由檢視：

route -n

```
root@dns:~# route -n
Kernel IP routing table
Destination      Gateway          Genmask         Flags Metric Ref    Use Iface
163.26.138.0    0.0.0.0         255.255.255.0  U      0      0      0 eth0
0.0.0.0         163.26.138.254 0.0.0.0         UG     0      0      0 eth0
```

IPv6路由檢視：

(請注意, IP切換後, IPv6的gateway統一使用 學校IPv6網段::fffe)

ip -6 route show dev eth0

```
root@dns:~# ip -6 route show dev eth0
2001:288:75a4::/64 proto kernel metric 256 mtu 1500 advmss 1440 hoplimit 4294967295
fe80::/64 metric 256 expires 2sec mtu 1500 advmss 1440 hoplimit 4294967295
default via fe80::226:aff:fe24:ed80 proto kernel metric 1024 expires 0sec mtu 1500 advmss
1440 hoplimit 64
default via 2001:288:75a4::fffe metric 1024 expires 2sec mtu 1500 advmss 1440 hoplimit 429
4967295
ff00::/8 metric 256 expires 2sec mtu 1500 advmss 1440 hoplimit 4294967295
```

step3:檢視相關服務是否啟動

檢視要對外提供的相關服務(port)是否有啟動，如：

DNS(tcp/udp:53) WWW(tcp:80) FTP(tcp:21) SMTP(tcp:25)等

netstat -lt -n(檢視 tcp 埠)

```
root@dns:/etc/bind# netstat -lt -n
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
tcp        0      0 127.0.0.1:10025         0.0.0.0:*                 LISTEN
tcp        0      0 0.0.0.0:139            0.0.0.0:*                 LISTEN
tcp        0      0 0.0.0.0:110            0.0.0.0:*                 LISTEN
tcp        0      0 127.0.0.1:143          0.0.0.0:*                 LISTEN
tcp        0      0 0.0.0.0:21             0.0.0.0:*                 LISTEN
tcp        0      0 0.0.0.0:22             0.0.0.0:*                 LISTEN
tcp        0      0 127.0.0.1:953          0.0.0.0:*                 LISTEN
tcp        0      0 0.0.0.0:25             0.0.0.0:*                 LISTEN
tcp        0      0 0.0.0.0:445            0.0.0.0:*                 LISTEN
tcp6       0      0 :::80                  :::*                    LISTEN
tcp6       0      0 :::53                  :::*                    LISTEN
tcp6       0      0 :::22                  :::*                    LISTEN
tcp6       0      0 :::1:953               :::*                    LISTEN
tcp6       0      0 :::25                  :::*                    LISTEN
```

netstat -lu -n(檢視 udp 埠)

step4:檢查 DNS設定

指令: dig

IPv4正解:

```
root@dns:~# dig @163.26.138.1 www.jses.tn.edu.tw

; <<>> DiG 9.2.4 <<>> @163.26.138.1 www.jses.tn.edu.tw
;; global options: printcmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 16382
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 2, AUTHORITY: 1, ADDITIONAL: 1

;; QUESTION SECTION:
;www.jses.tn.edu.tw.      IN      A

;; ANSWER SECTION:
www.jses.tn.edu.tw.     86400  IN      CNAME   dns.jses.tn.edu.tw.
dns.jses.tn.edu.tw.     86400  IN      A       163.26.138.1

;; AUTHORITY SECTION:
jses.tn.edu.tw.         86400  IN      NS      dns.jses.tn.edu.tw.

;; ADDITIONAL SECTION:
dns.jses.tn.edu.tw.     86400  IN      AAAA    2001:288:75a4::1
```

step4:檢查 DNS設定

IPv4反解:

```
root@dns:~# dig @163.26.138.1 -x 163.26.138.1

; <<>> DiG 9.2.4 <<>> @163.26.138.1 -x 163.26.138.1
;; global options: printcmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 55641
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 1, ADDITIONAL: 2

;; QUESTION SECTION:
;1.138.26.163.in-addr.arpa.      IN      PTR

;; ANSWER SECTION:
1.138.26.163.in-addr.arpa. 86400 IN     PTR     dns.jsles.tnc.edu.tw.

;; AUTHORITY SECTION:
138.26.163.in-addr.arpa. 86400 IN     NS      dns.jsles.tnc.edu.tw.
```

step4:檢查 DNS設定

IPv6正解:(透過 IPv6 查詢DNS主機)

透過IPv6來查詢，可以同時檢查DNS的IPv6是否成功啟動

```
root@dns:/etc/bind# dig @2001:288:75a4::1 www.jses.tn.edu.tw AAAA
; <<>> DiG 9.2.4 <<>> @2001:288:75a4::1 www.jses.tn.edu.tw AAAA
;; global options: printcmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 59843
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 2, AUTHORITY: 1, ADDITIONAL: 1

;; QUESTION SECTION:
;www.jses.tn.edu.tw.          IN      AAAA

;; ANSWER SECTION:
www.jses.tn.edu.tw.         86400  IN      CNAME   dns.jses.tn.edu.tw.
dns.jses.tn.edu.tw.        86400  IN      AAAA    2001:288:75a4::1

;; AUTHORITY SECTION:
jses.tn.edu.tw.            86400  IN      NS      dns.jses.tn.edu.tw.

;; ADDITIONAL SECTION:
dns.jses.tn.edu.tw.        86400  IN      A       163.26.138.1
```

step4:檢查 DNS設定

IPv6反解:

```
root@dns:/etc/bind# dig @2001:288:75a4::1 -x 2001:288:75a4::1
; <<>> DiG 9.2.4 <<>> @2001:288:75a4::1 -x 2001:288:75a4::1
;; global options: printcmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 43462
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 1, ADDITIONAL: 2
;; QUESTION SECTION:
;1.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.4.a.5.7.8.8.2.0.1.0.0.2.ip6.arpa. IN PTR
;; ANSWER SECTION:
1.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.4.a.5.7.8.8.2.0.1.0.0.2.ip6.arpa. 3600 IN PTR dns.jsles.tnc.edu.tw.
;; AUTHORITY SECTION:
4.a.5.7.8.8.2.0.1.0.0.2.ip6.arpa. 3600 IN NS dns.jsles.tnc.edu.tw.
;; ADDITIONAL SECTION:
dns.jsles.tnc.edu.tw. 86400 IN A 163.26.138.1
dns.jsles.tnc.edu.tw. 86400 IN AAAA 2001:288:75a4::1
```

step5:連線測試

ping 本機IP

```
root@dns:~# ping -c 3 www.jses.tn.edu.tw
PING dns.jses.tn.edu.tw (163.26.138.1): 56 data bytes
64 bytes from 163.26.138.1: icmp_seq=0 ttl=64 time=0.0 ms
64 bytes from 163.26.138.1: icmp_seq=1 ttl=64 time=0.0 ms
64 bytes from 163.26.138.1: icmp_seq=2 ttl=64 time=0.0 ms
```

ping gateway

```
root@dns:~# ping -c 3 163.26.138.254
PING 163.26.138.254 (163.26.138.254): 56 data bytes
64 bytes from 163.26.138.254: icmp_seq=0 ttl=255 time=1.6 ms
64 bytes from 163.26.138.254: icmp_seq=1 ttl=255 time=1.5 ms
64 bytes from 163.26.138.254: icmp_seq=2 ttl=255 time=1.5 ms
```

ping www.hinet.net

```
root@dns:~# ping -c 3 www.hinet.net
PING www.hinet.net (202.39.224.7): 56 data bytes
64 bytes from 202.39.224.7: icmp_seq=0 ttl=247 time=8.8 ms
64 bytes from 202.39.224.7: icmp_seq=1 ttl=247 time=9.1 ms
64 bytes from 202.39.224.7: icmp_seq=2 ttl=247 time=9.2 ms
```

step5:連線測試

測試IPv6連線，使用ping6指令
ping6 本機IPv6

```
ubuntu@ubuntu:~$ ping6 -c 3 2001:288:75a4::1
PING 2001:288:75a4::1(2001:288:75a4::1) 56 data bytes
64 bytes from 2001:288:75a4::1: icmp_seq=1 ttl=55 time=106 ms
64 bytes from 2001:288:75a4::1: icmp_seq=2 ttl=55 time=109 ms
64 bytes from 2001:288:75a4::1: icmp_seq=3 ttl=55 time=110 ms
```

ping6 IPv6的gateway

```
ubuntu@ubuntu:~$ ping6 -c 3 2001:288:75a4::fffe
PING 2001:288:75a4::fffe(2001:288:75a4::fffe) 56 data bytes
64 bytes from 2001:288:75a4::fffe: icmp_seq=1 ttl=56 time=111 ms
64 bytes from 2001:288:75a4::fffe: icmp_seq=2 ttl=56 time=111 ms
64 bytes from 2001:288:75a4::fffe: icmp_seq=3 ttl=56 time=100 ms
```

ping6 2001:288:7200:1::1

```
ubuntu@ubuntu:~$ ping6 -c 3 2001:288:7200:1::1
PING 2001:288:7200:1::1(2001:288:7200:1::1) 56 data bytes
64 bytes from 2001:288:7200:1::1: icmp_seq=1 ttl=55 time=102 ms
64 bytes from 2001:288:7200:1::1: icmp_seq=2 ttl=55 time=110 ms
64 bytes from 2001:288:7200:1::1: icmp_seq=3 ttl=55 time=109 ms
```

step6:郵件伺服器與spamfilter測試

telnet 到簡易郵件傳輸協定 (SMTP) 服務的port 25, 以檢視SMTP 連線問題

基本指令如下: 以gmail做測試

- telnet 主機IP 25
- ehlo 學校與spamfilter的位址
- mail from:user@學校的mail server
- rptc to:user@gmail.com
- data
- subject:標題
輸入郵件內容.....
(空一行)
 - (輸入., 按下Enter結束)
- quit

step6:郵件伺服器與spamfilter測試

測試本機mail server

```
root@dns:~# telnet mail.jses.tn.edu.tw 25
Trying 163.26.138.1...
Connected to dns.jsles.tnc.edu.tw.
Escape character is '^]'.
220 dns.jsles.tnc.edu.tw ESMTPostfix (B2D/GNU)
ehlo mail.jses.tn.edu.tw
250-dns.jsles.tnc.edu.tw
250-PIPELINING
250-SIZE 2147483647
250-ETRN
250-AUTH PLAIN LOGIN
250-AUTH=PLAIN LOGIN
250 8BITMIME
mail from:health@mail.jses.tn.edu.tw
250 Ok
rcpt to:kawsing@gmail.com
250 Ok
data
354 End data with <CR><LF>.<CR><LF>
subject:Test my mail Server
This is mail from my mail server
.
250 Ok: queued as 45E039301BD
quit
221 Bye
Connection closed by foreign host.
```

← 輸入,按下Enter結束信件內容 ← 空一格

step6:郵件伺服器與spamfilter測試

測試spamfilter郵件過濾伺服器

```
root@dns:~# telnet spamfilter.jses.tn.edu.tw 25
Trying 163.26.138.5...
Connected to spamfilter.jses.tn.edu.tw.
Escape character is '^]'.
220 spamfilter.jses.tn.edu.tw [ESMTP] SpamSherlock-MailFilter 3.5
ehlo mail.jses.tn.edu.tw
250-spamfilter.jses.tn.edu.tw Hello [163.26.138.1], pleased to meet you
250-SIZE 20971520
250-8BITMIME
250 spamfilter.jses.tn.edu.tw
mail from:health@mail.jses.tn.edu.tw
250 <health@mail.jses.tn.edu.tw>... Sender ok
rcpt to:kawsing@gmail.com
250 kawsing@gmail.com... Recipient ok
data
354 Enter mail, end with '.' on a line by itself
subject:Test relay mail from spamfilter
This mail is relay from spamfilter
← 空一格
.
250 V8Q90W.02783.01 Message accepted for delivery
quit
221 spamfilter.jses.tn.edu.tw closing connection
Connection closed by foreign host.
```

step6:郵件伺服器與spamfilter測試

檢視收件狀況：

☐ ★ health

test my spamfilter

☐ ☆ health

(沒有主旨) - mail from jses.tn.edu.tw