

LAB: 網路設定

- 請觀察網卡資訊

```
linux-zali:~ # ifconfig
```

- 用 Yast2 GUI 將網卡設定固定 IP ，並設定相關資訊，請觀察資訊

```
linux-zali:~ # yast2 lan  
linux-zali:~ # ifconfig
```

- 請觀察 DNS 資訊

```
linux-zali:~ # cat /etc/resolv.conf
```

- 請觀察路由

```
linux-zali:~ # route
```

- 請觀察資訊

```
linux-zali:~ # cat /etc/sysconfig/network/ifcfg-eth0
```

- 用 Yast2 GUI 將網卡設定 DHCP ，並設定相關資訊，請觀察資訊

```
linux-zali:~ # yast2 lan  
linux-zali:~ # ifconfig
```

- 請觀察網卡資訊

```
linux-zali:~ # ip addr show
```

- 請觀察 DNS 資訊

```
linux-zali:~ # cat /etc/resolv.conf
```

- 請觀察路由

```
linux-zali:~ # ip route show
```

- 請觀察資訊

```
linux-zali:~ # cat /etc/sysconfig/network/ifcfg-eth0
```

LAB: Route and Name Resolution

練習假設網段是 192.168.1.0/24 網段

- 請查看路由
 - `-n` 用數字顯示 IP

```
linux-zali:~ # route
```

or

```
linux-zali:~ # route -n
```

- 請使用 ping www.hinet.net 確認對外連線是否正常

```
linux-zali:~ # ping www.hinet.net
```

- 請移除 Default Gateway

```
linux-zali:~ # route del default gw 192.168.1.10
```

- 請再次查看路由

```
linux-zali:~ # route -n
```

- 請再次使用 ping www.hinet.net ，失敗，找不到路由出去

```
linux-zali:~ # ping www.hinet.net
connect: Network is unreachable
linux-zali:~ # ping 168.95.1.1
connect: Network is unreachable
```

- 請 ping 192.168.1.0/24 其中一台機器，成功，ping 內網 IP 正常
 - `-c` 次數

```
linux-zali:~ # hostname -i
192.168.1.113
linux-zali:~ # ping -c 3 192.168.1.102
PING 192.168.1.102 (192.168.1.102) 56(84) bytes of data.
64 bytes from 192.168.1.102: icmp_seq=1 ttl=128 time=62.6 ms
64 bytes from 192.168.1.102: icmp_seq=2 ttl=128 time=4.28 ms
64 bytes from 192.168.1.102: icmp_seq=3 ttl=128 time=6.44 ms

--- 192.168.1.102 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2003ms
rtt min/avg/max/mdev = 4.280/24.444/62.609/27.001 ms```

* 請把 Default Gateway 給加回去
```

```
linux-zali:~ # route add default gw 192.168.1.10 ``
```

- 請再次查看路由

```
linux-zali:~ # route -n
```

- 請再次使用 ping www.hinet.net，成功，已找到路由出去

```
linux-zali:~ # ping -c 3 www.hinet.net
PING hinet-hp.cdn.hinet.net (210.59.185.4) 56(84) bytes of data.
64 bytes from 210-59-185-4.HINET-IP.hinet.net (210.59.185.4): icmp_seq=1 ttl=57 ti
me=10.5 ms
64 bytes from 210-59-185-4.HINET-IP.hinet.net (210.59.185.4): icmp_seq=2 ttl=57 ti
me=8.67 ms
64 bytes from 210-59-185-4.HINET-IP.hinet.net (210.59.185.4): icmp_seq=3 ttl=57 ti
me=15.9 ms

--- hinet-hp.cdn.hinet.net ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2003ms
rtt min/avg/max/mdev = 8.672/11.709/15.913/3.069 ms
```

- 請查看本機通訊錄

```
linux-zali:~ # cat /etc/hosts
```

- 請查看 DNS 伺服器設定

```
linux-zali:~ # cat /etc/resolv.conf
```

- 請查看解析順序

```
linux-zali:~ # cat /etc/nsswitch.conf
```

- 請使用 ping www.hinet.net 確認對外連線是否正常

```
linux-zali:~ # ping www.hinet.net
```

- 請將 /etc/resolv.conf 的 DNS 改成錯誤的

```
linux-zali:~ # vim /etc/resolv.conf
nameserver 168.95.100.1
```

- 請使用 ping www.hinet.net ，失敗，ping 名稱失敗

```
linux-zali:~ # ping www.hinet.net
```

- 請使用 ping 168.95.1.1 ，ping IP 成功，DNS 解析錯誤

```
linux-zali:~ # ping -c 3 168.95.1.1
PING 168.95.1.1 (168.95.1.1) 56(84) bytes of data.
64 bytes from 168.95.1.1: icmp_seq=1 ttl=247 time=16.4 ms
64 bytes from 168.95.1.1: icmp_seq=2 ttl=247 time=9.49 ms
64 bytes from 168.95.1.1: icmp_seq=3 ttl=247 time=5.02 ms

--- 168.95.1.1 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2003ms
rtt min/avg/max/mdev = 5.023/10.336/16.492/4.721 ms
```

- 請將 /etc/resolv.conf 的 DNS 改指向 168.95.1.1

```
linux-zali:~ # vim /etc/resolv.conf
nameserver 168.95.1.1
```

- 請使用 ping www.hinet.net ，成功，解析名稱正常

```
linux-zali:~ # ping -c 3 www.hinet.net
```