

網路應用入門(一)

Chapter3 建立與設定區域網路

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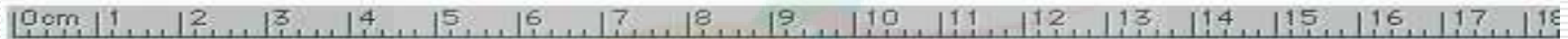
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課程大綱

- 連接網路線
 - 設定網路IP
 - 以Windows xp 為例
 - 使用DHCP (自動取得IP)
 - 使用固定ip
 - 測試工具
 - 網路不通常見問題
 - 使用網路的好習慣
-

網路線 V.S. 電話線

Note the Ethernet Cable's end is fatter.



網路線
RJ45
Cat.5e
Cat.6
8心



電話線
2心

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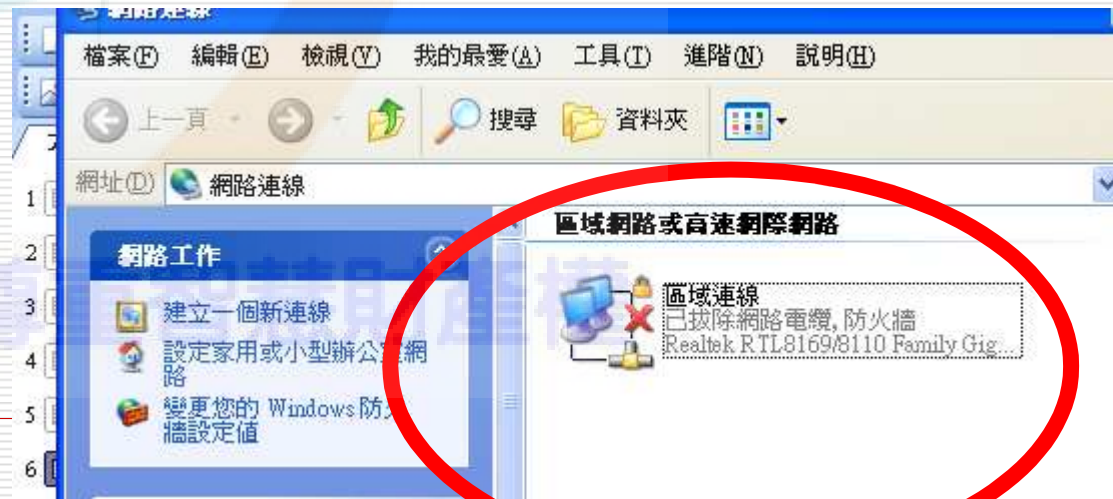
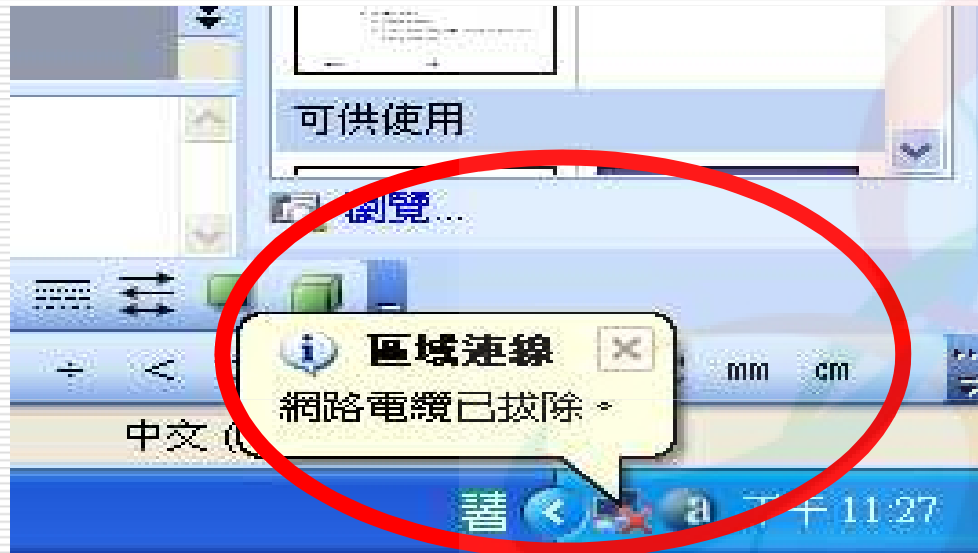
資訊插座(網路孔)



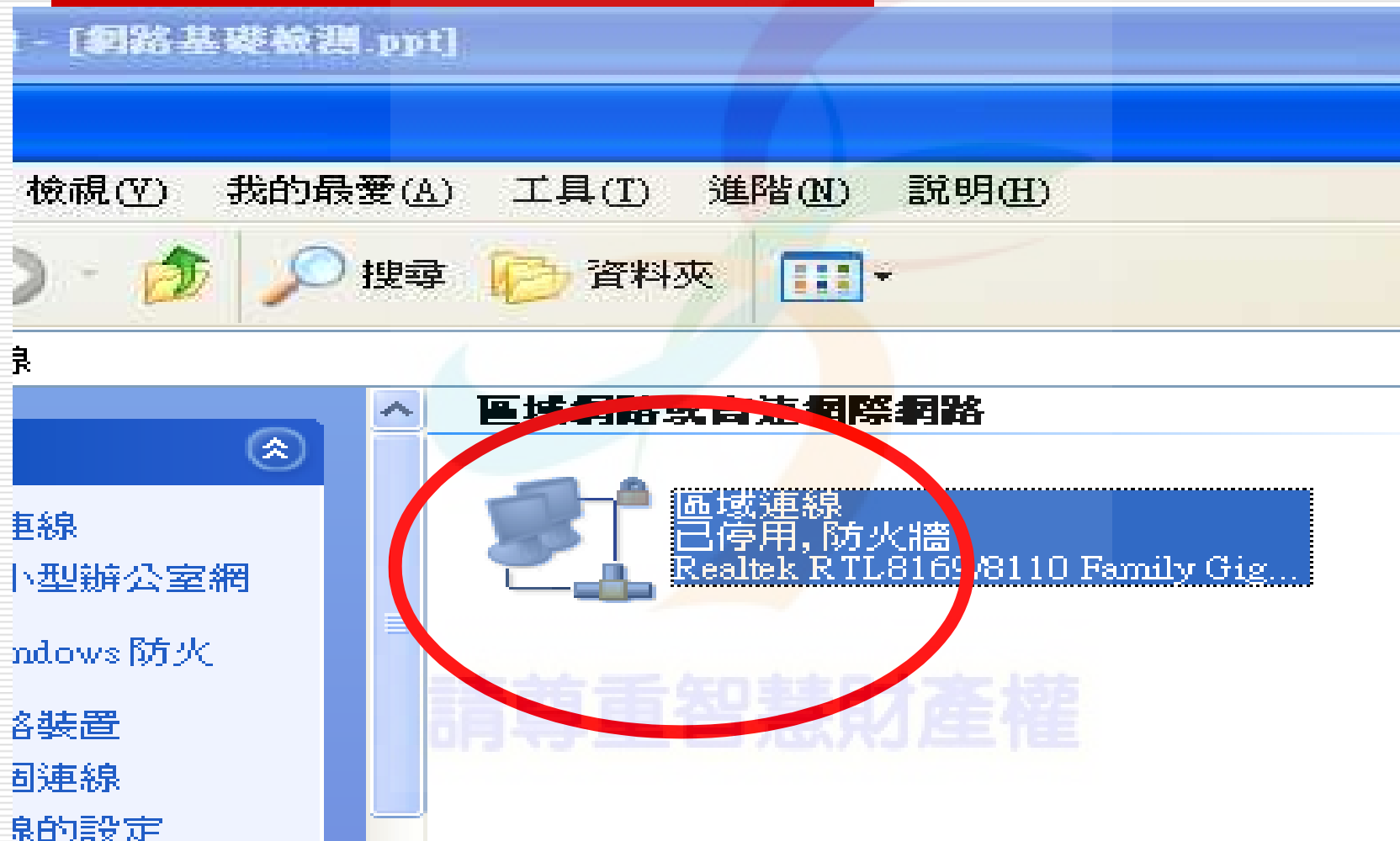
網路卡



網路電纜線已拔除



區域連線停用



設定網路IP



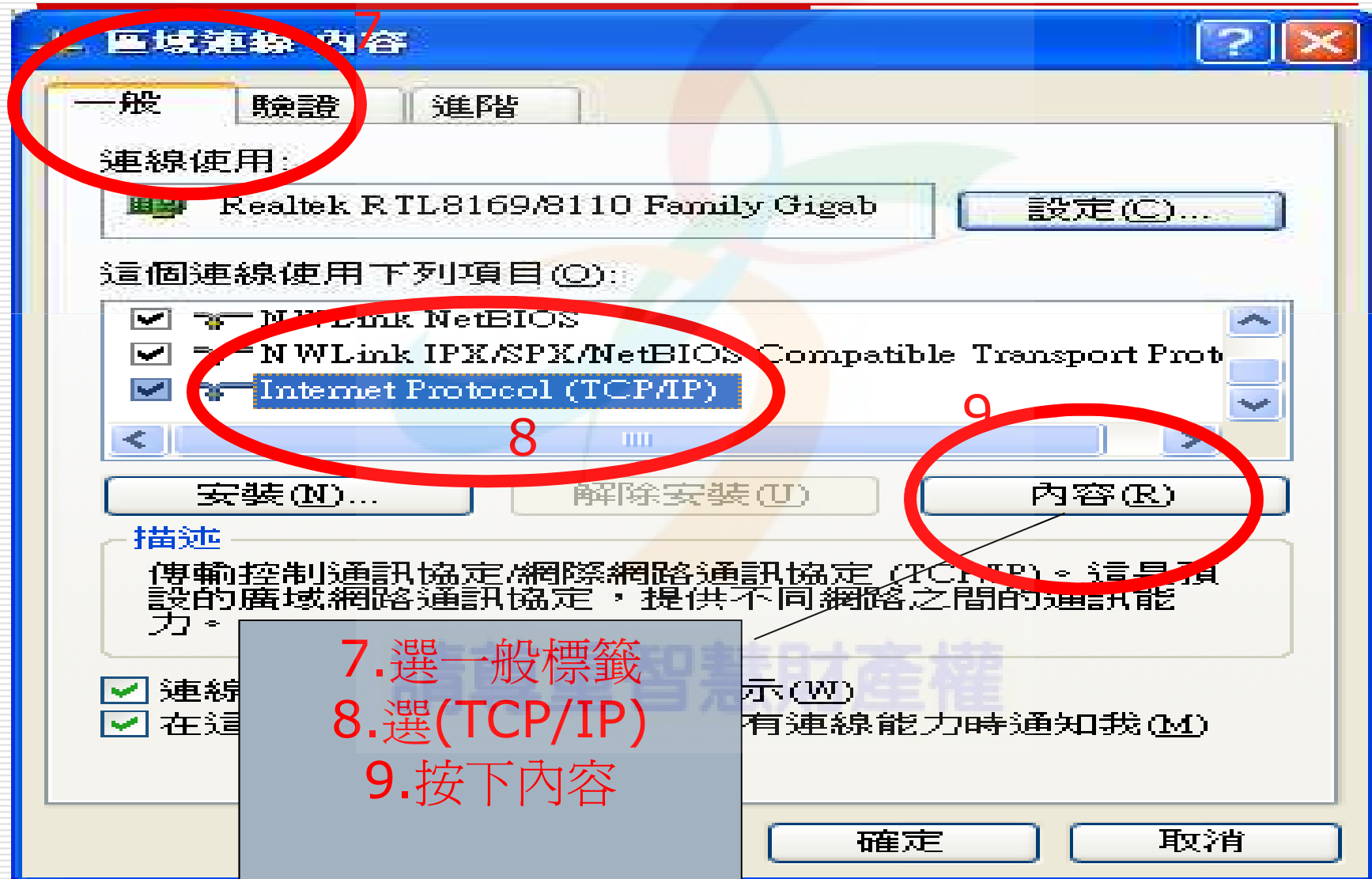
設定網路IP

The screenshot shows the Windows Network Connections window. The title bar reads "網路連線". The menu bar includes "檔案(F)", "編輯(E)", "檢視(V)", "我的最愛(A)", "工具(T)", "進階(N)", and "說明(H)". The address bar shows "網路連線". The main content area is titled "區域網路或高速網際網路" and contains a list of network connections. A red circle labeled "4" highlights the "區域連線" icon. A red circle labeled "5" highlights the context menu that appears over the "區域連線" icon, with the "內容(R)" option selected. A red circle labeled "6" highlights the "內容(R)" option in the context menu. A grey box on the right contains the following text:

- 4. 點選區域連線
- 5. 按滑鼠右鍵
- 6. 選擇內容

At the bottom of the window, there is a watermark that reads "請尊重智慧財產權". The taskbar at the bottom shows the Start button, several open applications, and the system tray with the time "下午 11:38".

設定網路IP



使用DHCP

The image shows a screenshot of the Windows 'Internet Protocol (TCP/IP) 內容' dialog box. The '一般' (General) tab is selected. The '自動取得 IP 位址 (O)' option is selected and circled in red, with a red '10' next to it. Below it, the '自動取得 DNS 伺服器位址 (B)' option is also selected and circled in red, with a red '11' next to it. At the bottom, the '確定' (OK) button is circled in red, with a red '12' and '13' next to it. A grey callout box in the upper right contains the following text: '10. 選自動取得IP位址', '11. 選自動取得DNS伺服器位址', and '12. 確定=>在確定'. The dialog box also features a '進階 (A)...' button and a '取消' (Cancel) button.

Internet Protocol (TCP/IP) 內容

一般 其他設定

如果您的網路支援這項功能，您可
則，您必須詢問網路系統管理員正

自動取得 IP 位址 (O) 10

使用下列的 IP 位址 (S):

IP 位址 (I):

子網路遮罩 (M):

預設閘道 (D):

自動取得 DNS 伺服器位址 (B) 11

使用下列的 DNS 伺服器位址 (F):

使用 DNS 伺服器 (P):

其他 DNS 伺服器 (A):

12、
13

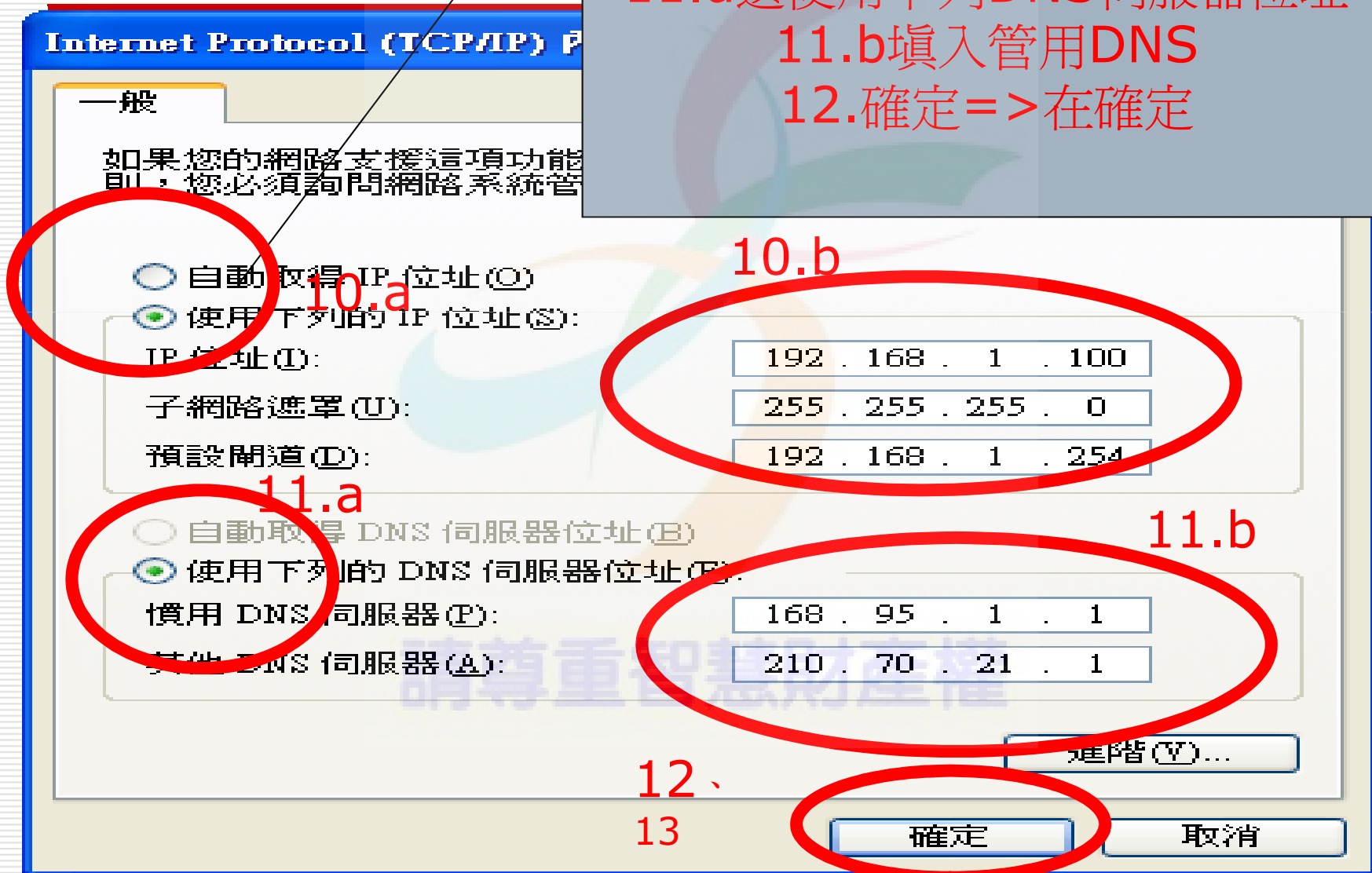
進階 (A)...

確定 取消

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使用固定ip

- 10.a 選使用下列IP位址
- 10.b 填入IP、遮罩、閘道
- 11.a 選使用下列DNS伺服器位址
- 11.b 填入管用DNS
- 12. 確定 => 在確定

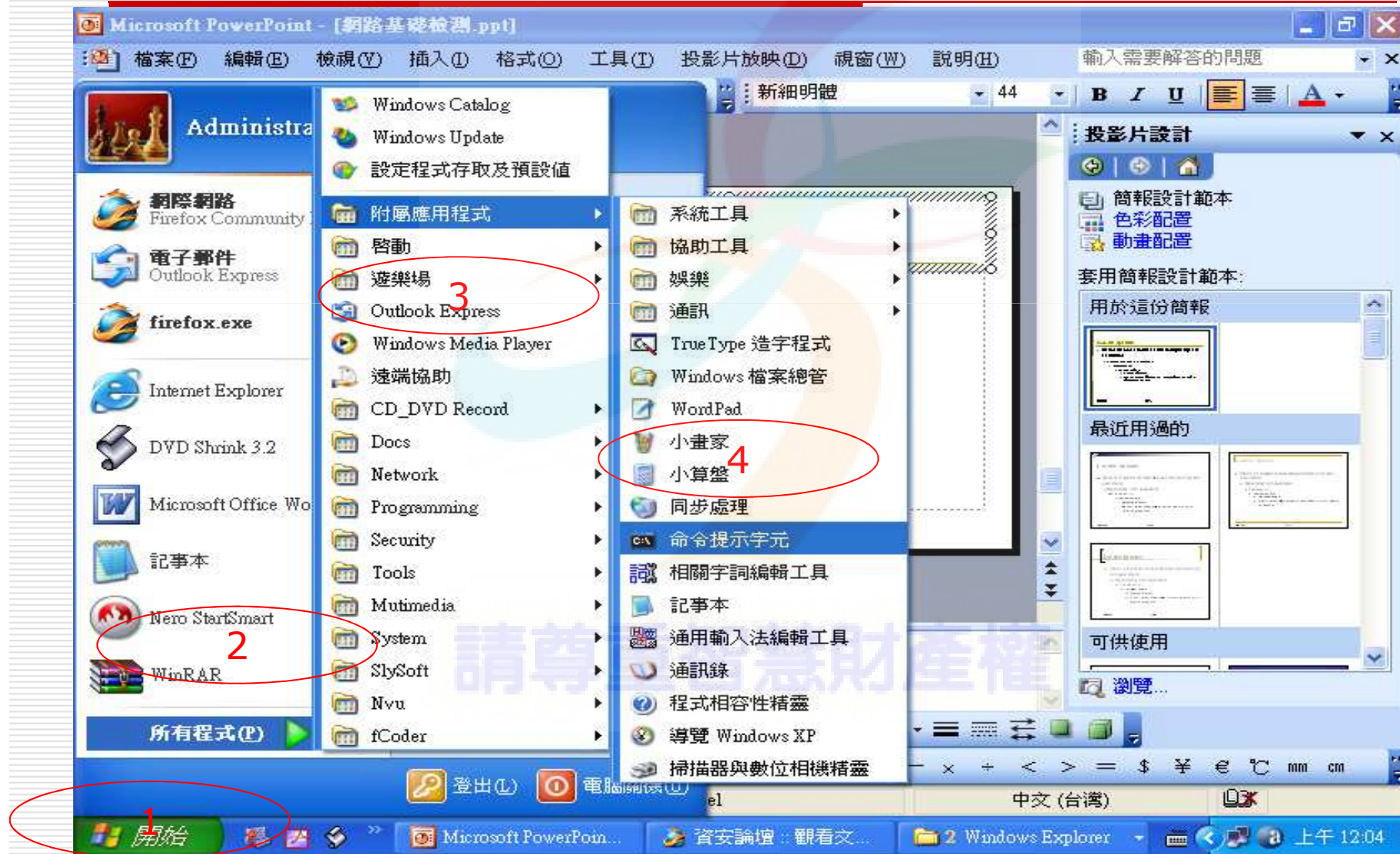


測試工具

- 命令提示字元中輸入
- ipconfig
 - -all 顯示所有資訊
- ping
 - -t 持續不停
- tracert

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命令提示字元



ipconfig

```
C:\C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [版本 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Administrator.LAPUTA-5DEAFD07>ipconfig

Windows IP Configuration

Ethernet adapter 區域連線:

    Connection-specific DNS Suffix  . : zyxel.com
    IP Address. . . . .                : 192.168.1.52
    Subnet Mask . . . . .              : 255.255.255.0
    Default Gateway . . . . .          : 192.168.1.254

C:\Documents and Settings\Administrator.LAPUTA-5DEAFD07>
```

ip

預設閘道

ping (正常)

```
Ethernet adapter 區域連線:  
    Connection-specific DNS Suffix  . : zyxel.com  
    . . . . .                       : 192.168.1.52  
    . . . . .                       : 255.255.255.0  
    . . . . .                       : 192.168.1.254  
C:\Documents and Settings\Administrator.LAPUTA-5DEAFD07>ping -t  
IP address must be specified.  
C:\Documents and Settings\Administrator.LAPUTA-5DEAFD07>ping 192.168.1.254 -t  
Pinging 192.168.1.254 with 32 bytes of data:  
Reply from 192.168.1.254: bytes=32 time=1ms TTL=254  
Reply from 192.168.1.254: bytes=32 time=1ms TTL=254  
Reply from 192.168.1.254: bytes=32 time=1ms TTL=254  
Reply from 192.168.1.254: bytes=32 time=1ms TTL=254  
Reply from 192.168.1.254: bytes=32 time=1ms TTL=254  
Reply from 192.168.1.254: bytes=32 time=1ms TTL=254  
Reply from 192.168.1.254: bytes=32 time=1ms TTL=254  
Reply from 192.168.1.254: bytes=32 time=1ms TTL=254
```

ping 預設閘道

Reply 回應

投影片 16 / 16 Level 英文 (美國) 上午 12:09

ping (異常)

```
Reply from 192.168.1.254: bytes=32 time=1ms TTL=254
Reply from 192.168.1.254: bytes=32 time=1ms TTL=254
Reply from 192.168.1.254: bytes=32 time=1ms TTL=254
Reply from 192.168.1.254: bytes=32 time=1ms TTL=254
Reply from 192.168.1.254: bytes=32 time=1ms TTL=254
Reply from 192.168.1.254: bytes=32 time=1ms TTL=254
Reply from 192.168.1.254: bytes=32 time=1ms TTL=254

Ping statistics for 192.168.1.254:
    Packets: Sent = 144, Received = 144, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 1ms, Average = 1ms
Control-C
^C
C:\Documents and Settings\Administrator.LAPUTA-5DEAFD07>ping 222.222.222.222 -t

Pinging 222.222.222.222 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Request timed out.
```

要求回應時間到卻無回應

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Tracert

```
C:\WINDOWS\system32\cmd.exe

Tracing route to rc.tpe.yahoo.com [202.43.195.13]
over a maximum of 30 hops:

  0  <1 ms    <1 ms    <1 ms    192.168.1.254
  1  61 ms     59 ms     58 ms     dw-61-64-94.so-net.net.tw [61.64.94.254]
  2  60 ms     62 ms     59 ms     61.64.191.41
  3  61 ms     58 ms     60 ms     61.64.126.81
  4  64 ms     76 ms     61 ms     61.64.212.73
  5  64 ms     72 ms     82 ms     61.64.126.26
  6  66 ms     75 ms     62 ms     61.64.126.202
  7  64 ms     65 ms     65 ms     61.64.212.222
  8  66 ms     66 ms     65 ms     203-75-228-70.HINET-IP.hinet.net [203.75.228.70]
  9
 10  61 ms     66 ms     66 ms     tp-s2-c12r6.router.hinet.net [211.22.32.234]
 11  66 ms     64 ms     65 ms     tp-s2-c12r11.router.hinet.net [220.128.1.86]
 12  68 ms     65 ms     65 ms     tp-s2-c12r2.router.hinet.net [220.128.1.117]
 13  63 ms     65 ms     66 ms     tp-s2-c76r2.router.hinet.net [211.22.35.213]
 14  64 ms     66 ms     66 ms     211.22.41.93
 15  67 ms     65 ms     65 ms     alteon11.tpe.yahoo.com [202.43.196.244]
 16  68 ms     65 ms     65 ms     rc.tpe.yahoo.com [202.43.195.13]

Trace complete

C:\Documents and Settings\Administrator.LAPUTA-5DEAFD07>
```

共經過16站

第一站 閘道器

最終站

斷線所在

經過14站正常

```
C:\WINDOWS\system32\cmd.exe - tracert www.123.com.tw
C:\Documents and Settings\Administrator\FD07>tracert www.123.com.tw

Tracing route to www.123.com.tw [220.130.18.242]
over a maximum of 30 hops:

  0  <1 ms    <1 ms    <1 ms    192.168.1.254
  1  61 ms     58 ms     58 ms     dw-61-64-94.so-net.net.tw [61.64.94.254]
  2  61 ms     59 ms     59 ms     61.64.191.189
  3  58 ms     58 ms     60 ms     61.64.126.77
  4  73 ms     77 ms     66 ms     61.64.212.73
  5  72 ms     64 ms     68 ms     61.64.126.26
  6  65 ms     65 ms     65 ms     61.64.212.170
  7  68 ms     65 ms     65 ms     tp-twix-r1.router.hinet.net [211.22.41.202]
  8  64 ms     65 ms     65 ms     tp-s2-c12r5.router.hinet.net [211.22.32.106]
  9  64 ms     66 ms     66 ms     tp-s2-c12r12.router.hinet.net [220.128.2.90]
 10  67 ms     65 ms     65 ms     tp-s2-c12r1.router.hinet.net [220.128.2.117]
 11  63 ms     65 ms     65 ms     tp-e4-c12r1.router.hinet.net [210.65.2.129]
 12  65 ms     65 ms     66 ms     tp-s2-c12r5.router.hinet.net [211.22.36.41]
 13  63 ms     68 ms     69 ms     tp-s2-c12r12.router.hinet.net [168.95.85.205]
 14  *         *         *         Request timed out.
 15  *         *         *         Request timed out.
 16  *         *         *         Request timed out.
 17  *         *         *         Request timed out.
 18  *         *         *         Request timed out.
 19  *         *         *         Request timed out.
 20  *         *         *         Request timed out.
```

斷線所在

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網路不通常見問題

- 網路線未連接或插頭鬆脫 → 檢查線材
 - 網路線 V.S 電話線 → 借用線材再試一次
 - 區域連線停用 → 啓用區域連線
 - 設定錯誤 → 檢查 固定IP or DHCP
 - 設定內容錯誤 → 檢查 ip、遮罩、閘道、DNS
 - 網路不通 → ping
 - 資訊插座、閘道不通 → 求助ISP
 - 只有部分軟體可用 → 檢查防火牆設定
 - Yahoo 不通 → yahoo非網路的全部
-

使用網路的好習慣

- 尊重智財權使用正版軟體
 - 勿任意安裝莫名的軟體與勿開啓來不明信件
 - 不任意開啓跳出視窗或不知名網站
 - 定期更新作業系統修補
 - 安裝防毒軟體與防火牆
 - 定期更新病毒定義檔
 - 避免使用P2P軟體 (eMule、BT、Mxie、Foxy、KKBOX、ezpeer....)
 - 網路生活 == 攻擊與被攻擊的生活
-

The End



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