台北縣
NGN教育訓練

D-Link Taiwan

DTSS

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Building Networks for People

Agenda

- **Day1**
- 北縣NGN專案整體架構概述
- 學校端核心交換器(DGS-3627)與網管型POE交換器(DGS-3100)基礎操作及簡易故障排除
- 無線網路接取基地台(DAP-2590)與無線網路使用者認證伺服器(DSA-3600)基礎操作及簡易故障排除
- 無線網路使用者認證機制使用教學
- **Day2**
- 校園網路管理平台【D-Link D-View 6.0】建置教學及運用
- 教室網路語音系統設備網路電話（IP Phone）【D-Link DPH-150SE】操作教學及簡易故障排除
- 教室網路語音系統設備未來性及規劃應用
- 北縣NGN專案維運平台及Call修流程

Day1

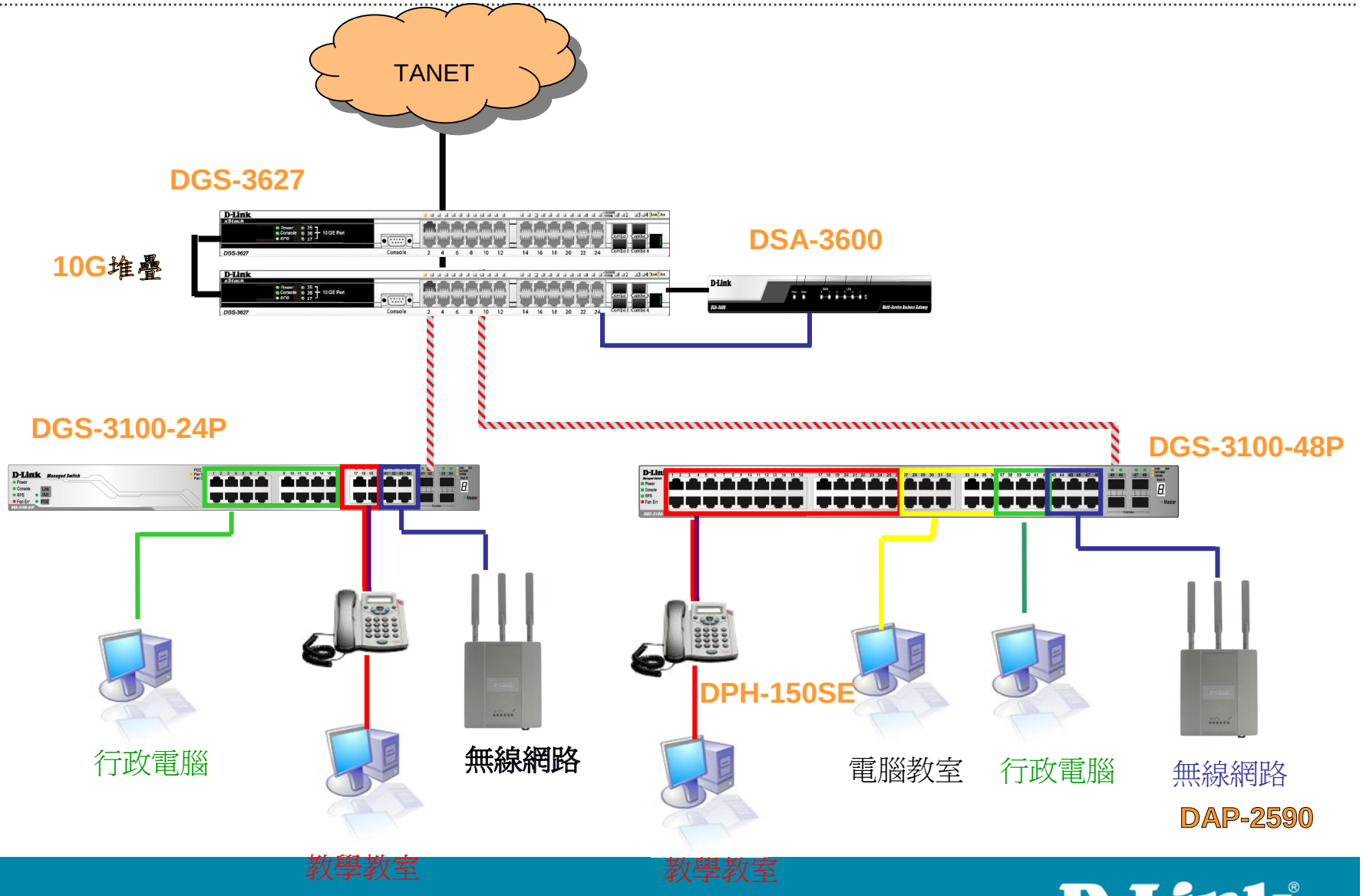
日期	星期	廠牌	講師	上課內容	上課時間
課程第一天					
		D-Link	Johnny Chiang 江國豪	北縣NGN專案整體架構概述	9:00-9:30
		D-Link	Johnny Chiang 江國豪	學校端核心交換器（L3 switch）【D-Link DGS-3627】&有網管及可擴充功能之超高速乙太網路供電交換器連接埠（L2 switch POE）【D-Link DGS-3100-24P & DGS-3100-48P】基礎操作及簡易故障排除	9:30-11:30
		D-Link	Johnny Chiang 江國豪	Q & A	11:30-12:00
		D-Link	Kyle Chuang 鍾天偉	無線網路接取基地台（wireless AP）【D-Link DAP-2590】&無線網路使用者認證伺服器【D-Link DSAP-3600】基礎操作及簡易故障排除	13:20-14:30
		D-Link	Kyle Chuang 鍾天偉	無線網路使用者認證機制使用教學	14:30-15:30
		D-Link	Kyle Chuang 鍾天偉	Q & A	15:30-16:00

Day2

課程第二天					
		D-Link	Shihhung Yang 楊世鴻	校園網路管理平台【D-Link D-View 6.0】建置教學及運用	9:00-11:30
		D-Link	Shihhung Yang 楊世鴻	Q & A	11:30-12:00
		D-Link	Cluster Hsieh 謝元博	教室網路語音系統設備網路電話（IP Phone）【D-Link DPH-150SE】操作教學及簡易故障排除	13:20-14:00
		D-Link	Cluster Hsieh 謝元博	Q & A	14:00-14:20
		D-Link	D-Link	教室網路語音系統設備未來性及規劃應用	14:20-15:20
		大同/D-Link	大同/D-Link	北縣NGN專案維運平台及Call修流程	15:20-16:00

學校架構示意圖

未來學校網路架構



IP網段說明

未來IP網段配置

Vlan	VID	網段	用途
Mgt	1	10.226.76.254	網管用
Wan	2	163.20.203.89/29	對外連結網段
Lan	3	163.20.172.254/24	行政用
dsa_wan	8	10.253.76.254/24	DSA-WAN IP (10.253.76.1)
Intra-1	10	10.231.76.254/24	電腦教室
Intra-2	20	10.241.76.254/24	教學教室
Voice	25	10.243.76.0/24	VoIP
Wlan	30	10.251.76.254/24	無線網路 (IP移至DSA-3600使用)
WPA2	35	10.245.76.0/24	無線WAP2用
MAC	36	10.247.76.0/24	無線Mobile用

各校DGS-3100 IP配置

- 10.226.x.101-110

or

- 10.227.x.101-110

各校DAP-2590 IP配置

- 10.226.x.201-205

or

- 10.227.x.201-205

各校DSA-3600 IP配置

- WAN IP 10.254.x.1

or

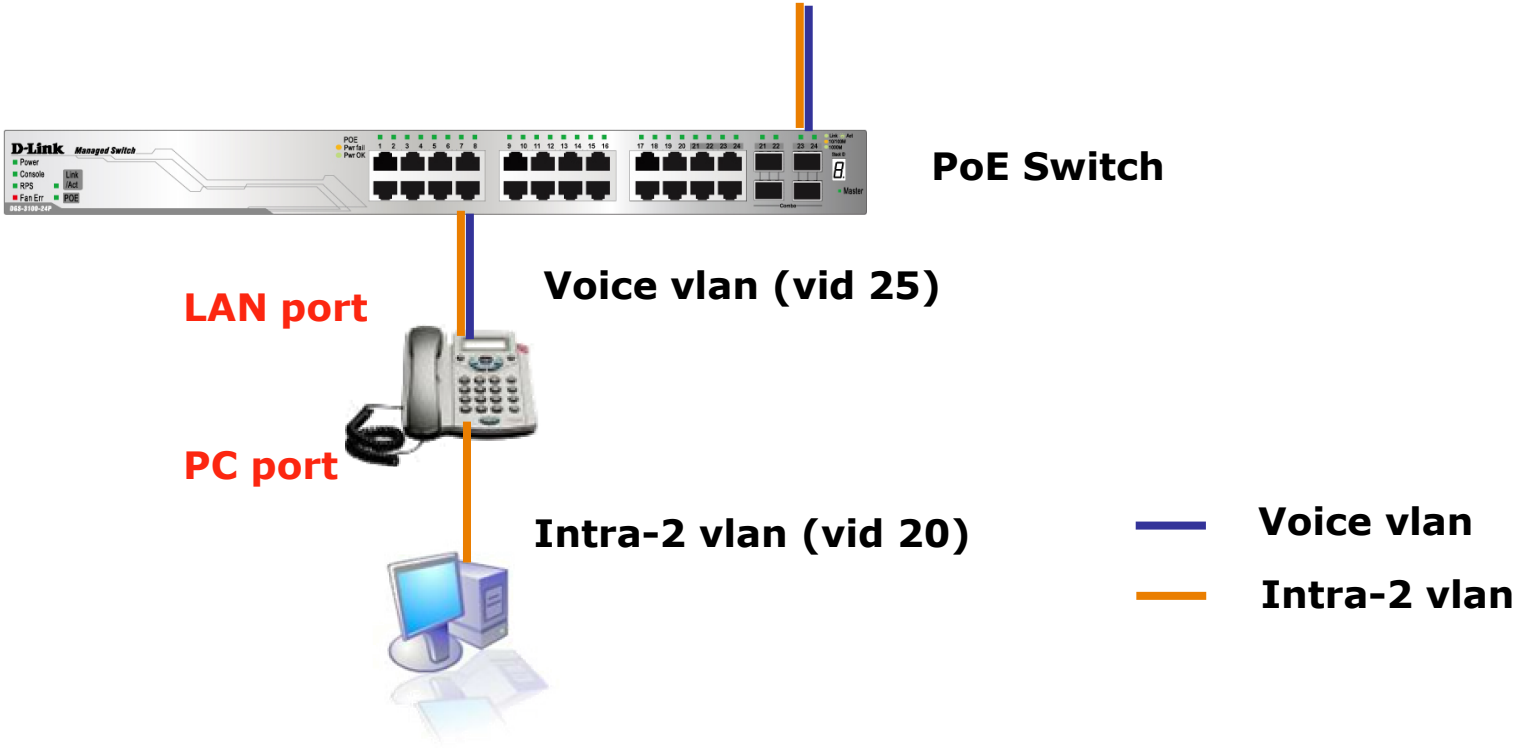
- WAN IP 10.253.x.1

- LAN IP 10.252.x.254

or

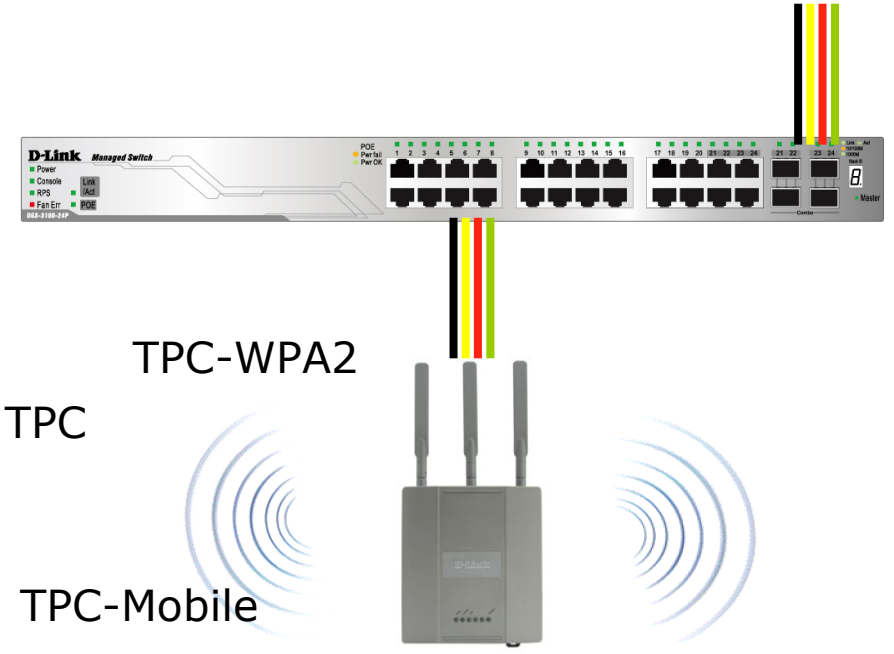
LAN IP 10.251.x.254

架構應用說明—話機



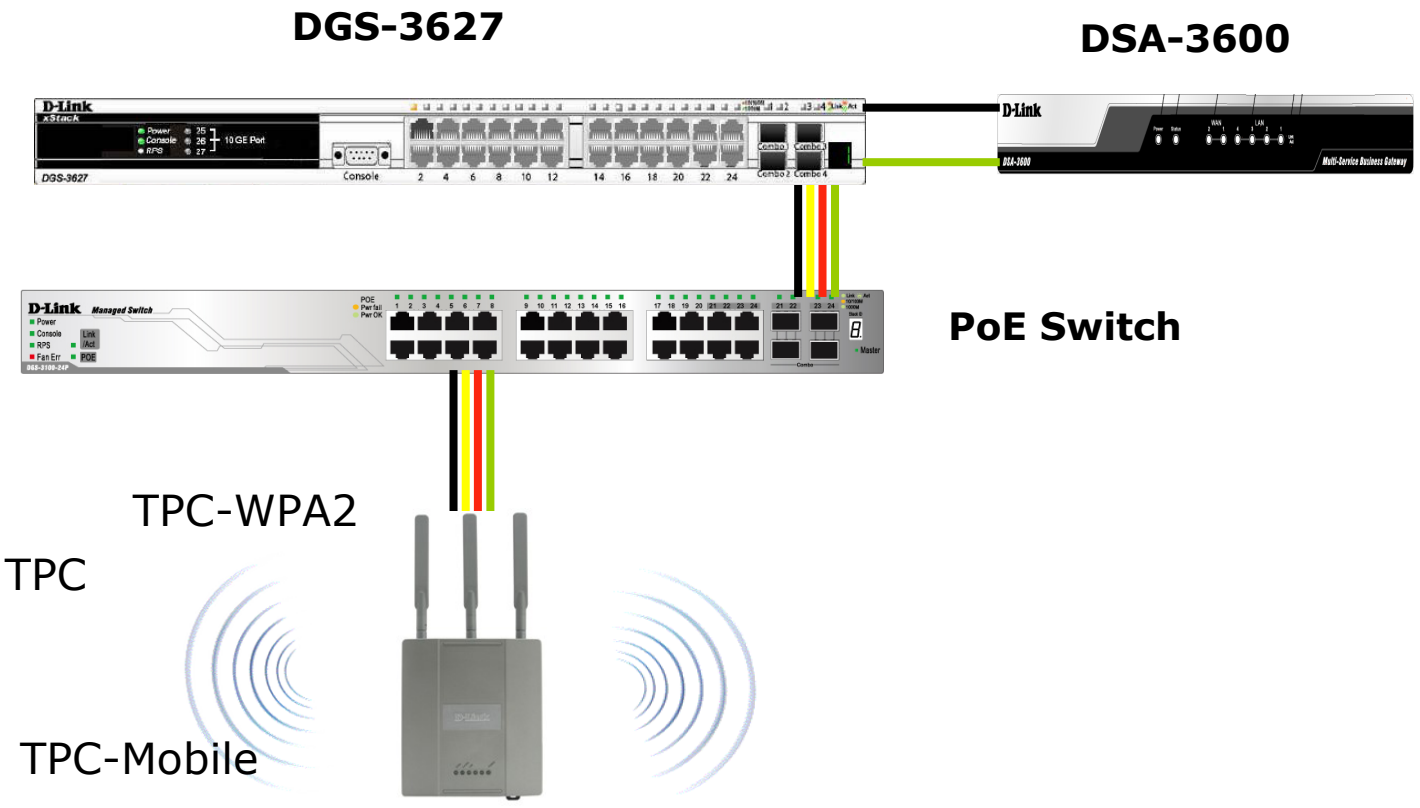
DPH-150SE LAN port負責傳送兩個vlan的流量至PoE Switch
DPH-150SE PC port接取PC

架構應用說明—無線AP



每台DAP-2590提供三組SSID,
TPC提供web認證功能
TPC-WPA2提供WPA2認證功能
TPC-Mobile提供行動裝置MAC認證功能

無線AP認證機制說明



SSID TPC認證透過DSA-3600與後端系統進行驗證
SSID TPC-WAP2則透過DAP-2590與後端認證系統進行驗證
SSID TCP-Mobile則透過DGS-3627與後端系統進行驗證

提供設備項目- 學校端核心交換器

D-Link DGS-3627 L3交換器

- 高擴充性
  - 提供3個10G擴充介面、實體堆疊功能
  - 可升級IPv6 PIMv6群播路由功能
- 承載多元化網路應用
  - 提供IPv4/v6群播機制，整合不同網路服務
- 安全穩定網路存取
  - IPv6 QoS及ACL機制
  - 提供802.1x、網頁模式及MAC位址認證
  - 提供IPv6 Tunneling功能通過IPv6 Ready Logo Phase-2認證，完全支援IPv6環境
  - Endpoint Security安全機制

DGS-3627

D-Link 資源說明

資源說明

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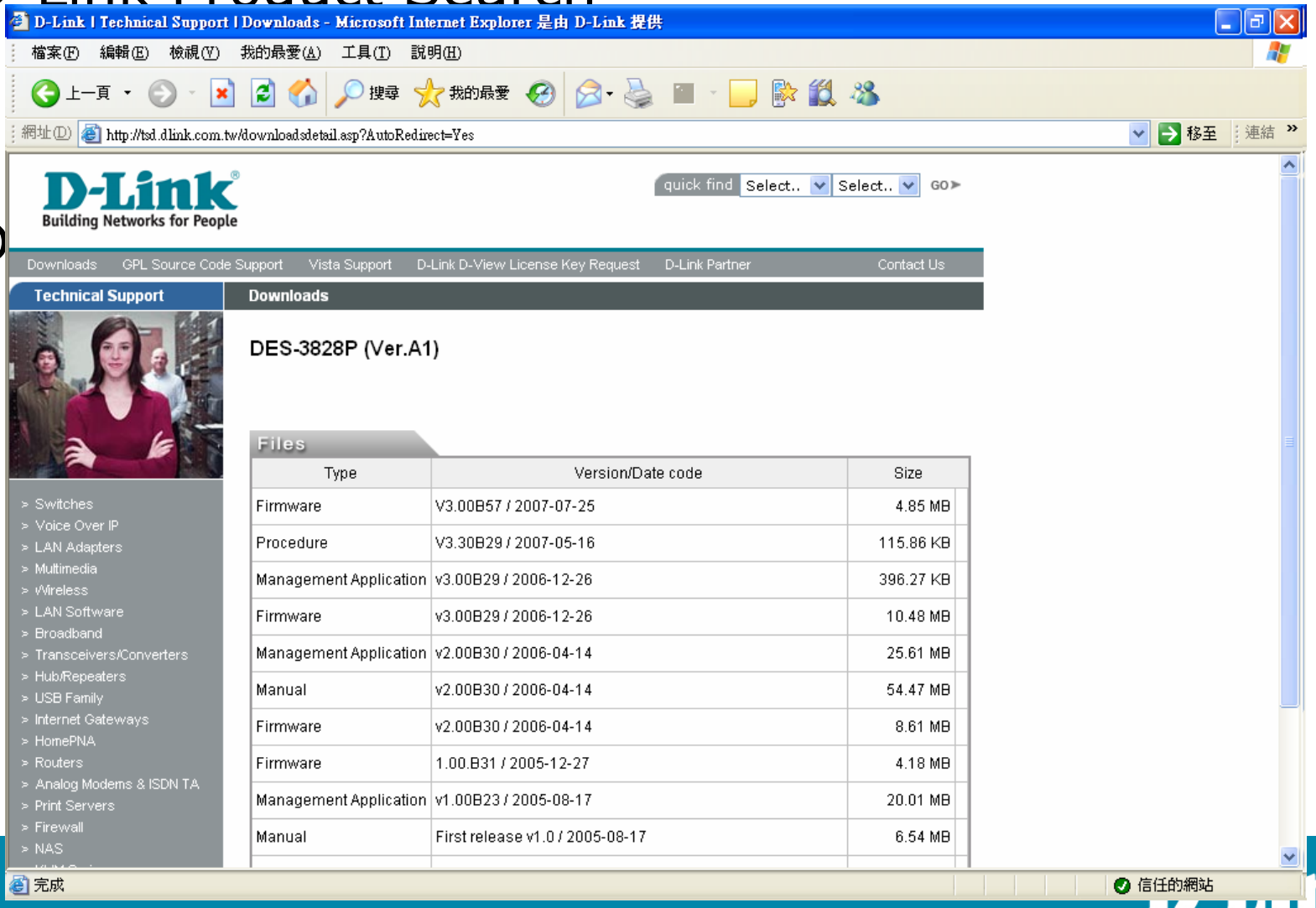
資源說明

- D-Link Product Search
- D



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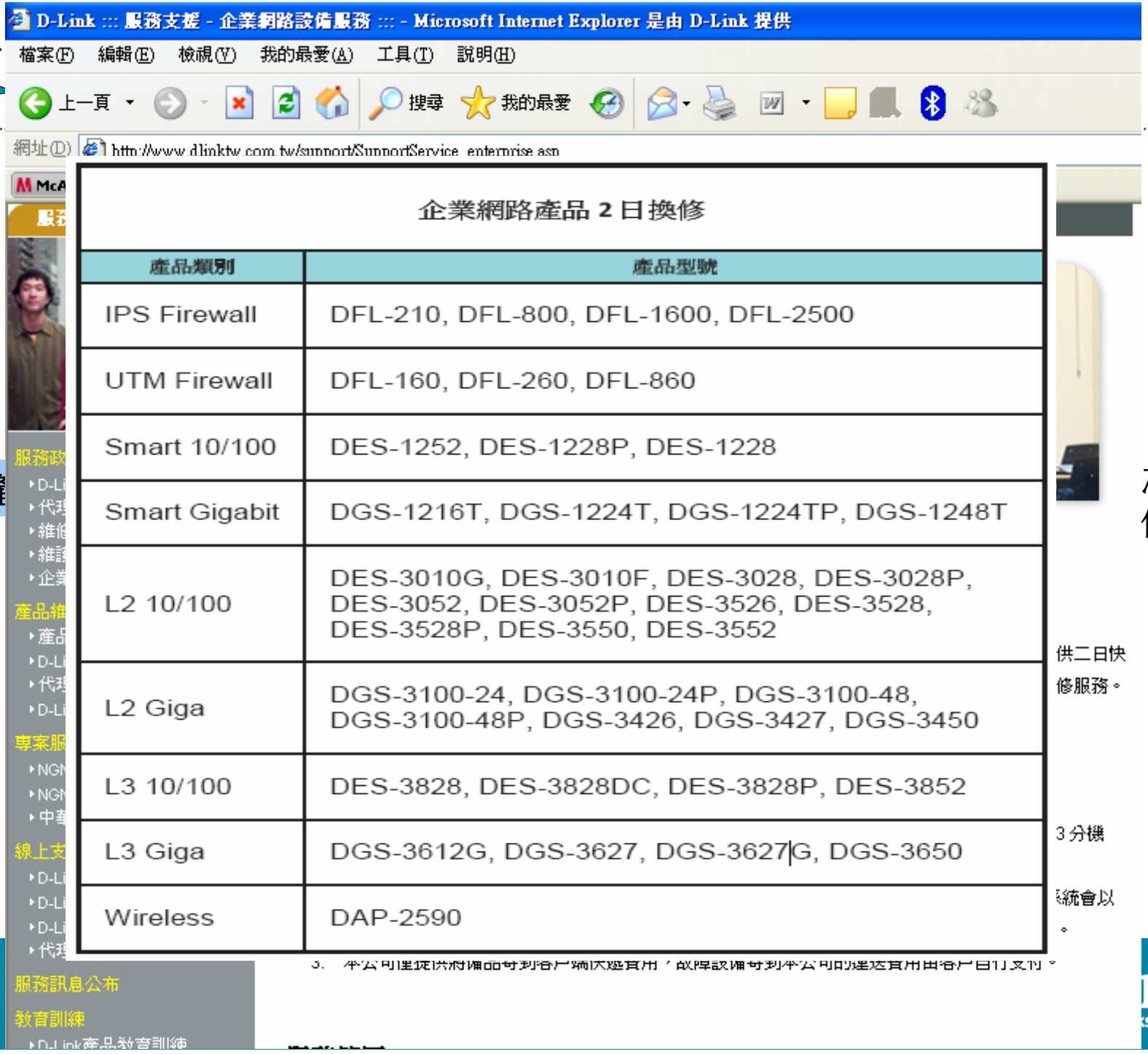

企業網路產品 2 日換修

產品類別	產品型號
IPS Firewall	DFL-210, DFL-800, DFL-1600, DFL-2500
UTM Firewall	DFL-160, DFL-260, DFL-860
Smart 10/100	DES-1252, DES-1228P, DES-1228
Smart Gigabit	DGS-1216T, DGS-1224T, DGS-1224TP, DGS-1248T
L2 10/100	DES-3010G, DES-3010F, DES-3028, DES-3028P, DES-3052, DES-3052P, DES-3526, DES-3528, DES-3528P, DES-3550, DES-3552
L2 Giga	DGS-3100-24, DGS-3100-24P, DGS-3100-48, DGS-3100-48P, DGS-3426, DGS-3427, DGS-3450
L3 10/100	DES-3828, DES-3828DC, DES-3828P, DES-3852
L3 Giga	DGS-3612G, DGS-3627, DGS-3627G, DGS-3650
Wireless	DAP-2590

DGS-3627基礎操作及簡易故障排除

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D-Link Switch 基本操作

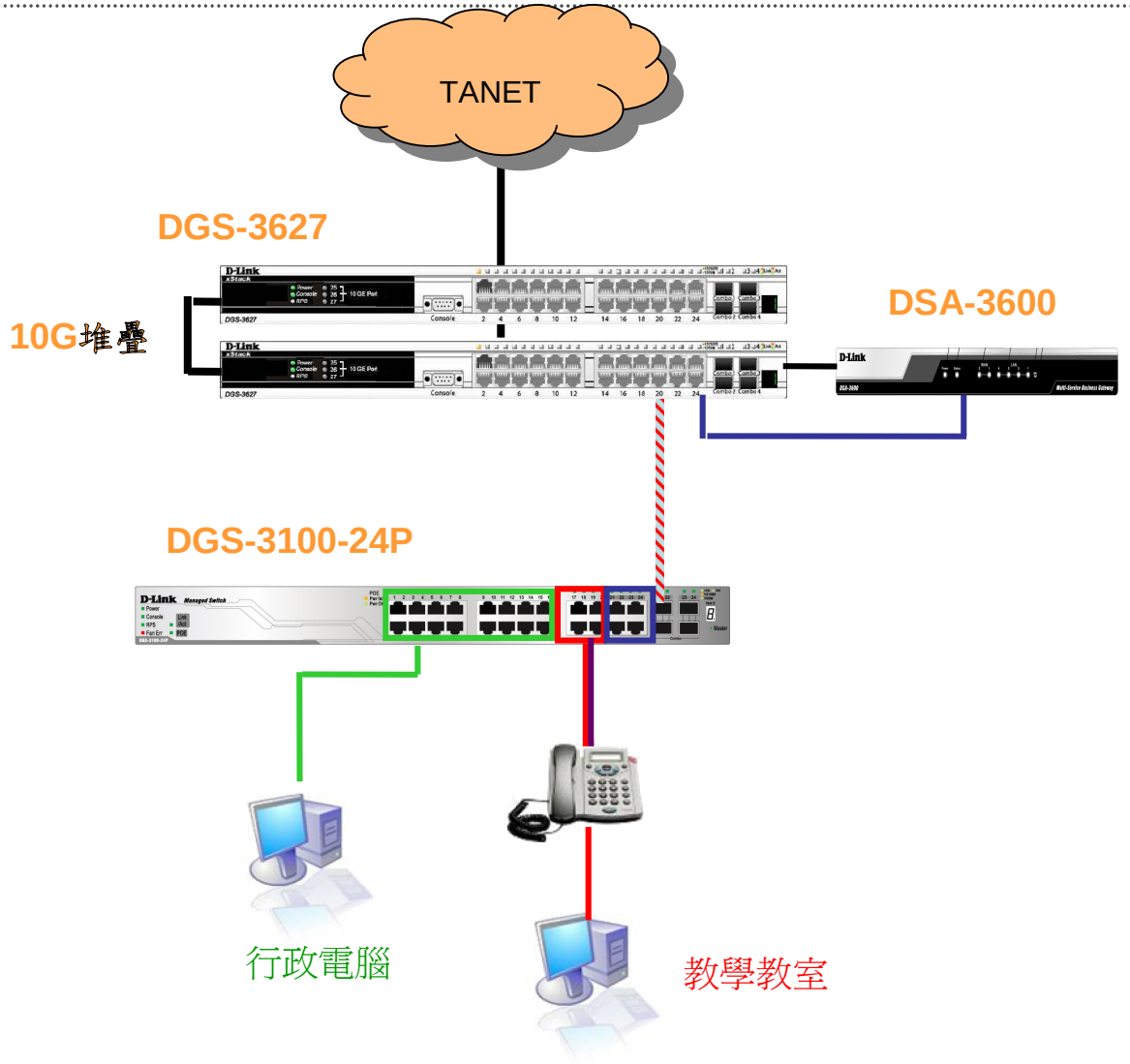
802.1Q vlan

資源說明

D-Link
Building Networks for People

802.1q vlan

未來學校網路架構

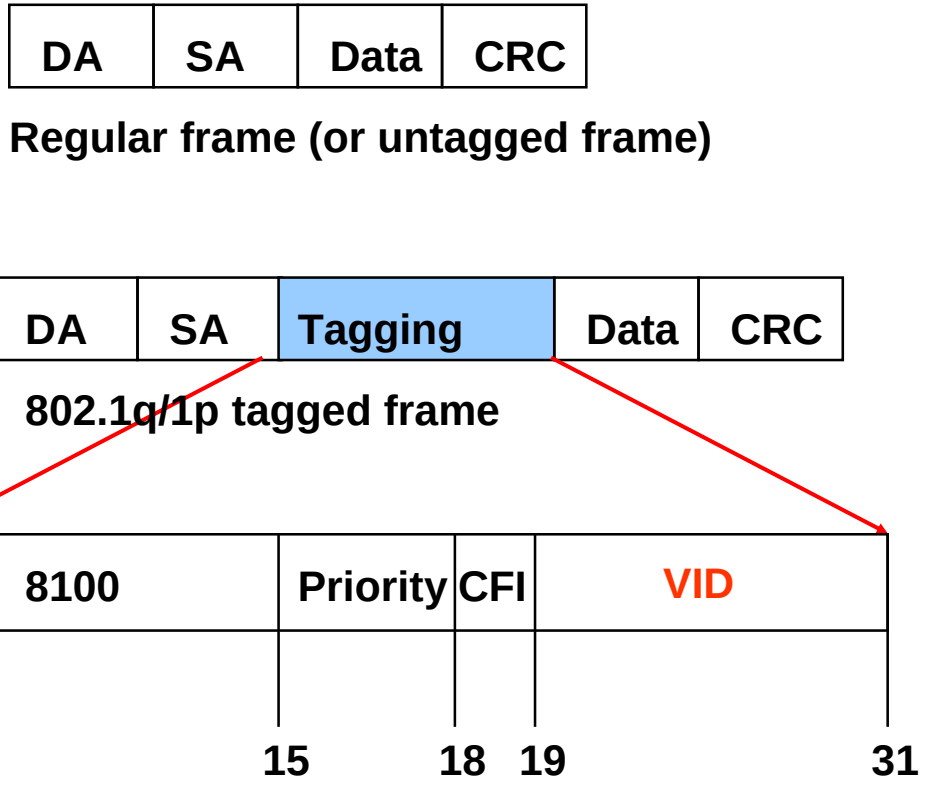


IEEE 802.1p/q Frame Tagging

Vlan tag的欄位由32bits組成,其中vid佔有12bits,因此一台交換器vlan最多支援4096

802.1p欄位有3bits,共可區分8種優先權

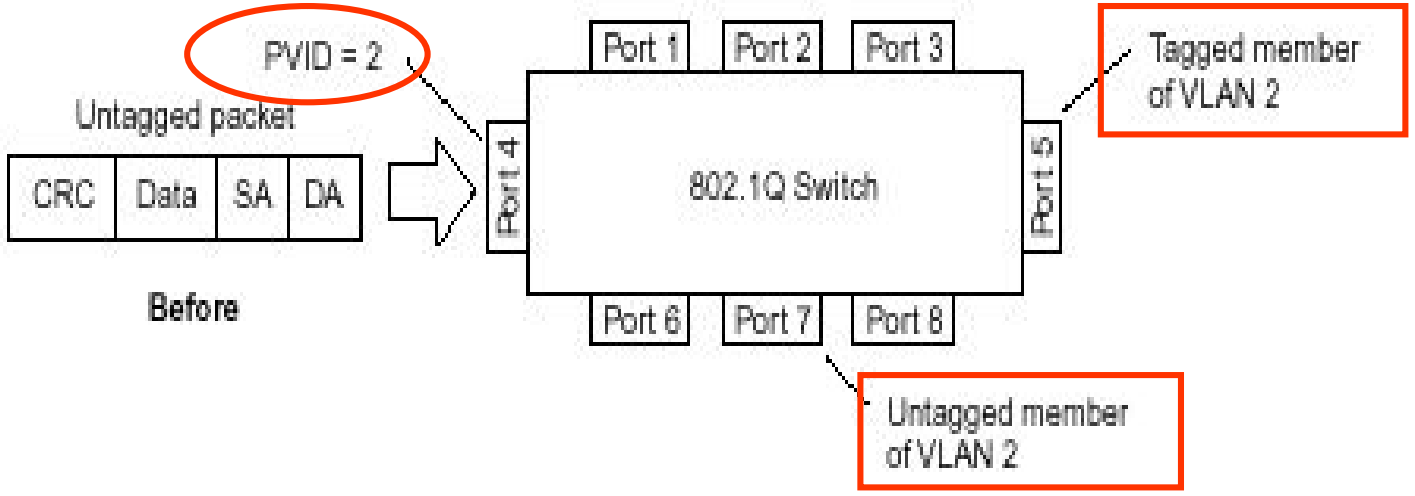
因為4bytes的關係,封包大小變成68-1518bytes



Priority (1p) has 3 bits, 0-7.

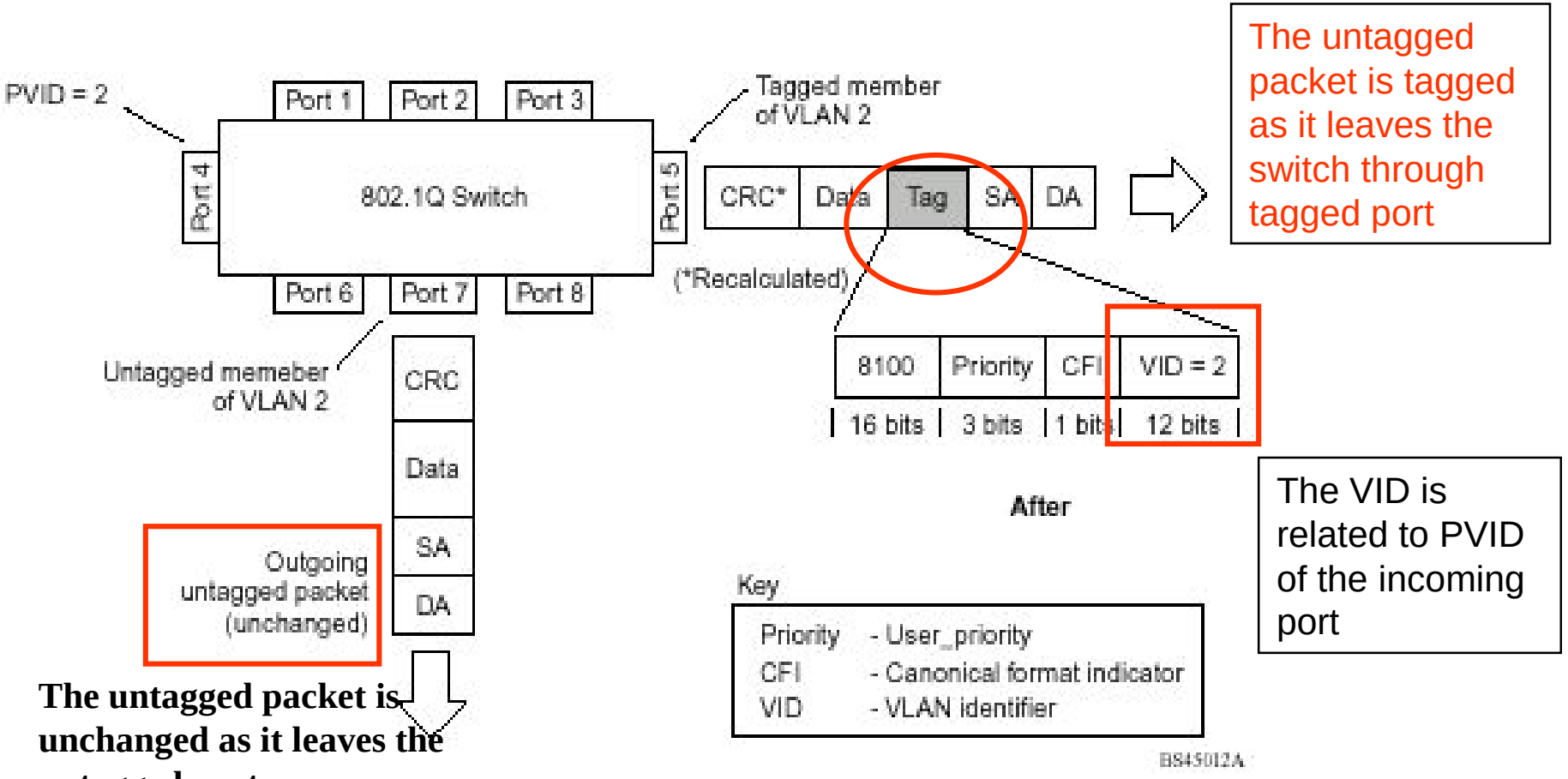
VLAN (1q) has 12 bits, 0-4095

802.1q/p Untagged Incoming Frame



一般封包至Port 4進入後,被歸類為vlan2 (基於PVID=2),如果將由Port 5送出,封包內會帶tag加入802.1q=2,如果將由Port 7送出,封包維持原本的格式,並沒有加入802.1q　資料

802.1q/p Untagged Incoming Frame

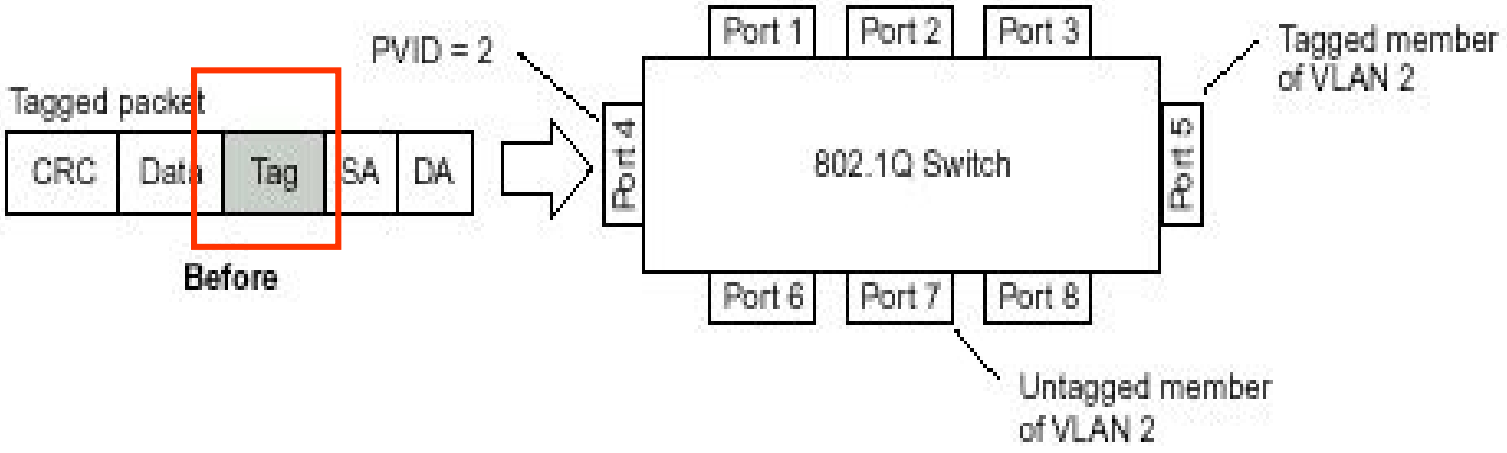


The untagged packet is tagged as it leaves the switch through tagged port

The VID is related to PVID of the incoming port

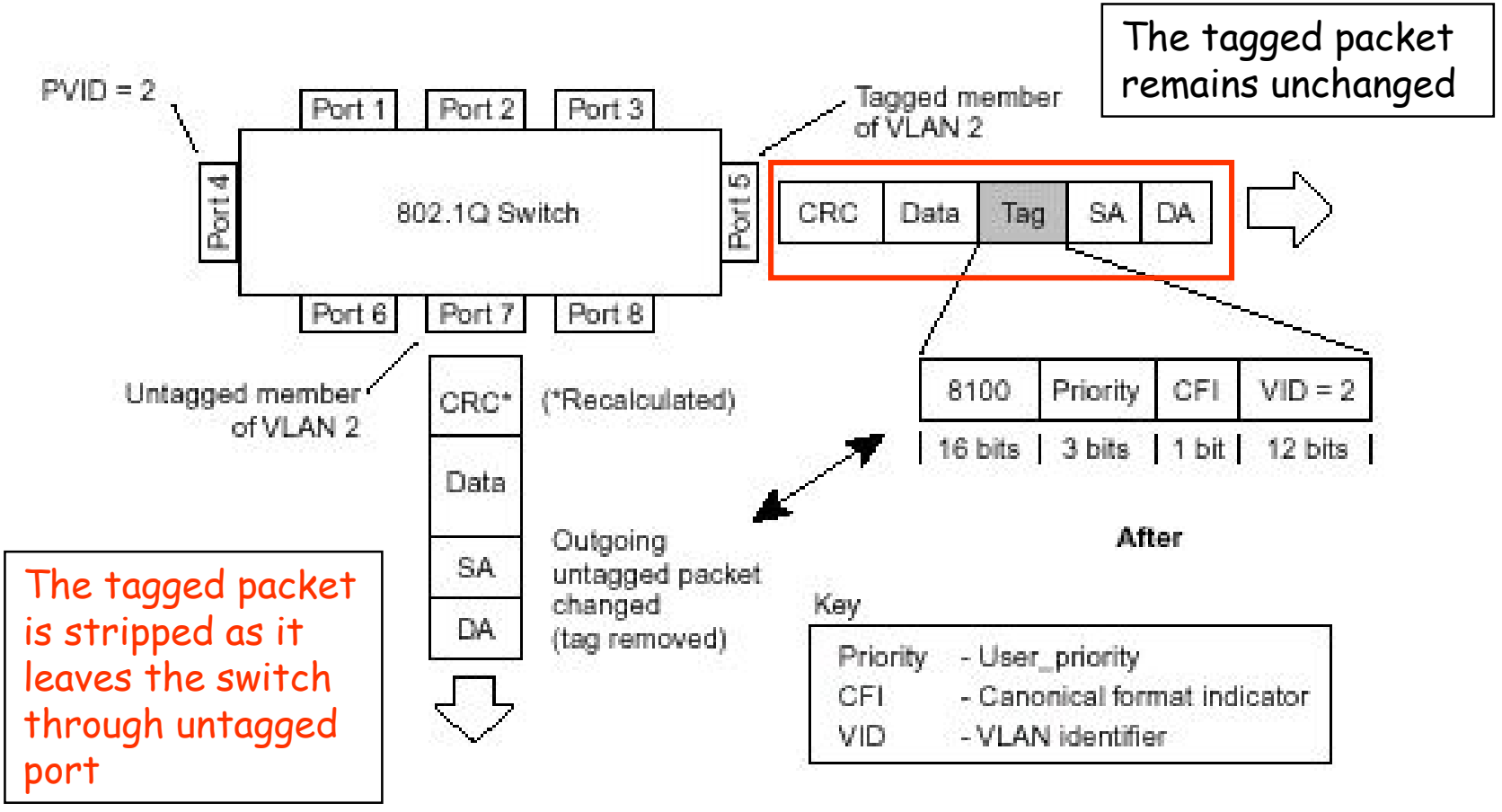
The untagged packet is unchanged as it leaves the untagged port

802.1q/p Untagged Incoming Frame



› 假設封包原本攜帶tag資料,vid=2/802.1p=0自port 4送入,因為本身已經具備vid=2,交換器歸類於vlan2的封包後,若由Port 5送出,則維持原本的封包格式,若由Port 7送出,因為設定為untag,tag欄位的資料將被取下

802.1q/p Untagged Incoming Frame



802.1q/p Tagging Summary

Ingress (incoming frame):

- 如果收到Untag封包,交換器會使用PVID數值來加入tag資料
- 如果收到tag封包,那麼vlan id與802.1p維持不變

Inside the Switch (all frames are tagged)

- 透過VLAN對應出Port後轉送至正確的地方
- 透過Priority欄位對應至不同的優先權等級處理

Egress (outgoing frame):

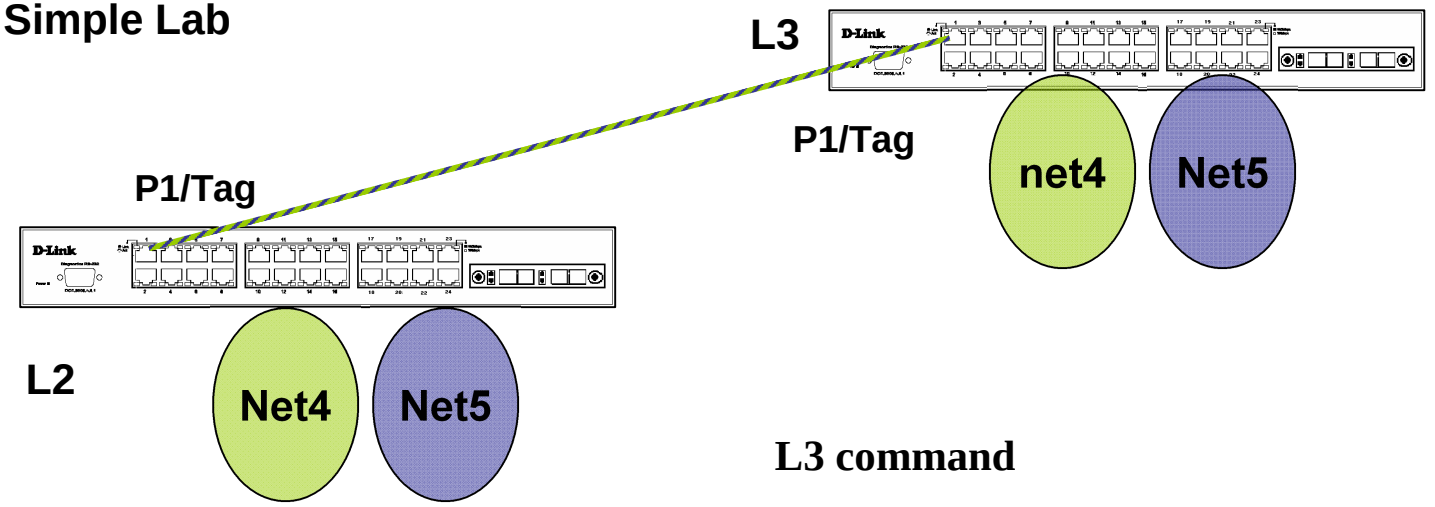
- Untagged egress port: 移除tag欄位資料
- Tagged Egress port: 不改變任何tag資料,繼續將原來的資料送至下一個點

Vlan port使用原則

- Untag Port:連接終端設備如PC,Server,IPcam等
- Tag Port:連接設定完成vlan tag的Switch

802.1Q vlan & L3 LAB

Simple Lab



L2 command

config vlan default delete 1-26
create vlan net4 tag 4
create vlan net5 tag 5
config vlan net4 add untagged 2-8
config vlan net5 add untagged 9-16
config vlan net4 add tagged 1
config vlan net5 add tagged 1
save

L3 command

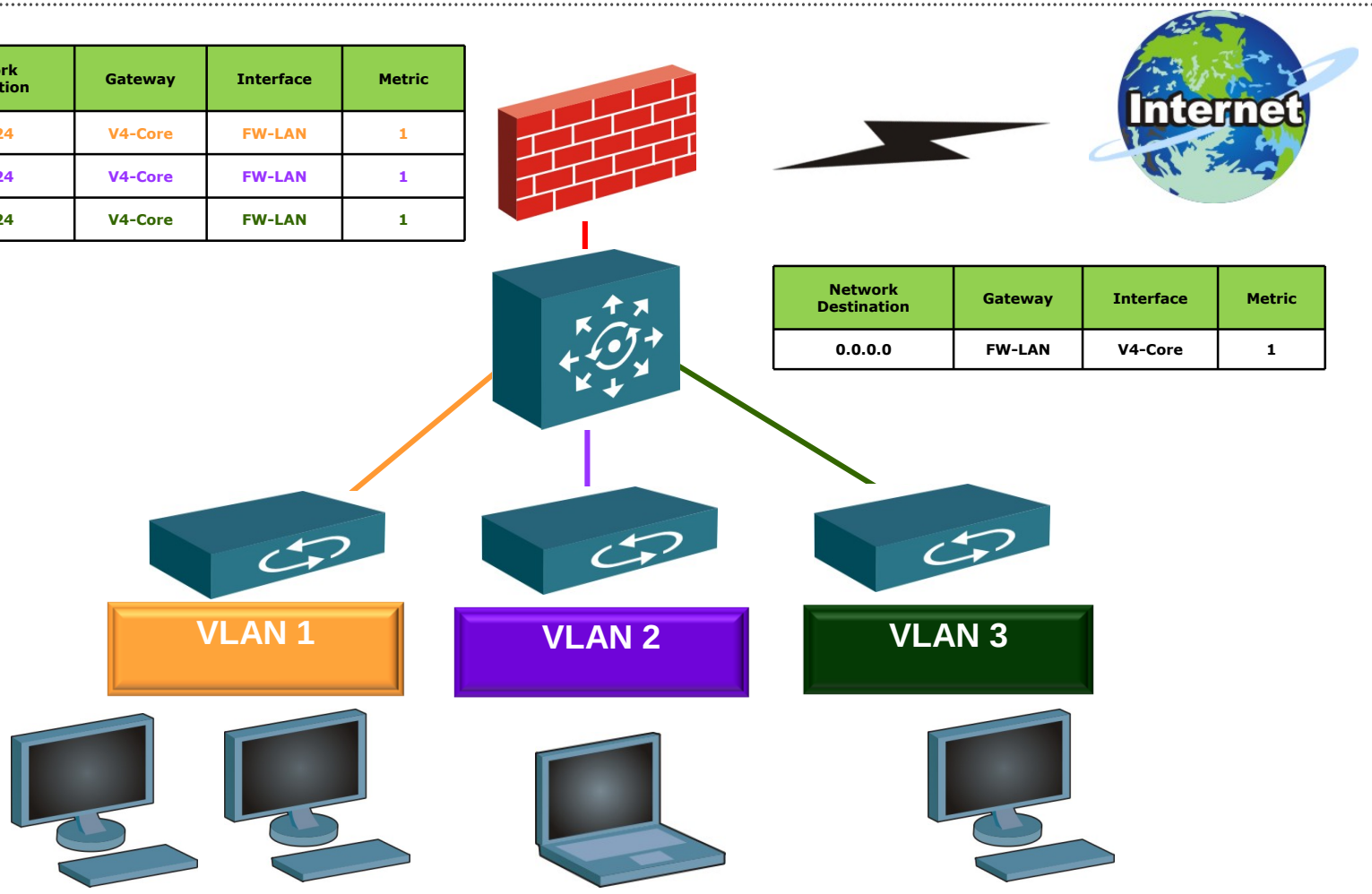
config vlan default delete 1-26
create vlan net4 tag 4
create vlan net5 tag 5
config vlan net4 add untagged 2-8
config vlan net5 add untagged 9-16
config vlan net4 add tagged 1
config vlan net5 add tagged 1
create ipif net4 192.168.4.254/24 net4
create ipif net5 192.168.5.254/24 net5
save

IP Routing

資源說明

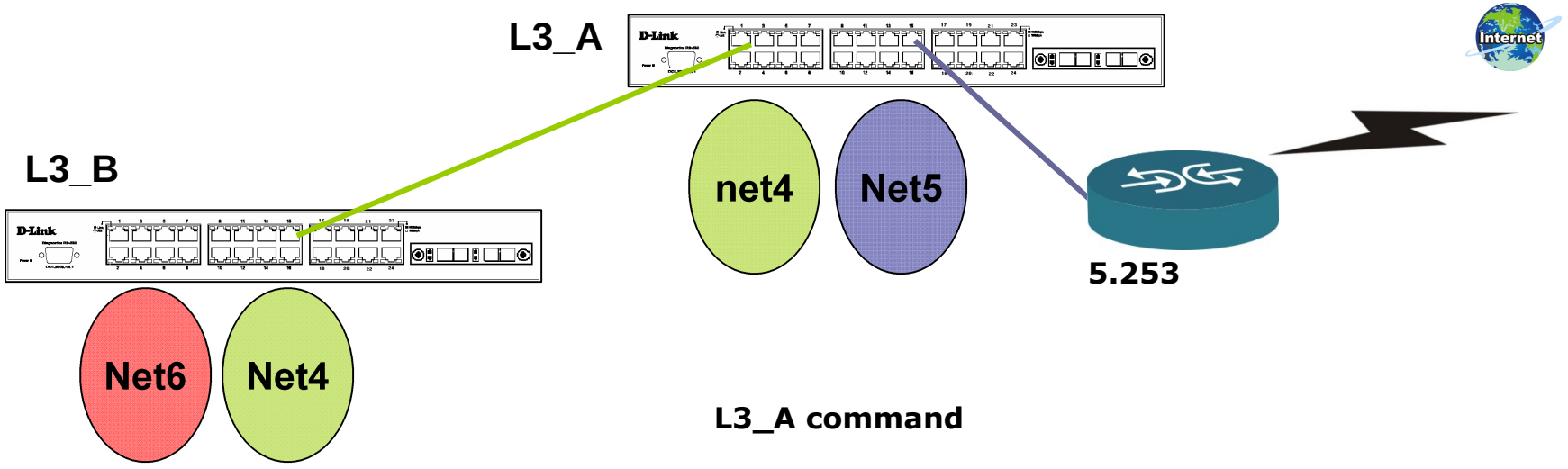
IP Routing

Network Destination	Gateway	Interface	Metric
V1 / 24	V4-Core	FW-LAN	1
V2 / 24	V4-Core	FW-LAN	1
V3 / 24	V4-Core	FW-LAN	1



Network Destination	Gateway	Interface	Metric
0.0.0.0	FW-LAN	V4-Core	1

L3 Routing LAB



L3_A command

```
config vlan default delete 1-26
create vlan net4 tag 4
create vlan net5 tag 5
config vlan net4 add untagged 1-8
config vlan net5 add untagged 9-16
create ipif net4  192.168.4.254/24 net4
create ipif net5  192.168.5.254/24 net5
create iproute 192.168.6.0/24 192.168.4.253 1
create iproute default 192.168.5.253
save
```

L3_B command

```
config vlan default delete 1-26
create vlan net4 tag 4
create vlan net6 tag 6
config vlan net4 add untagged 9-16
config vlan net6 add untagged 1-8
create ipif net4  192.168.4.253/24 net4
create ipif net6  192.168.6.254/24 net6
create iproute default 192.168.4.254 1
save
```

IPv6

v6形式位址表示法

- 32 bits ->128 bits

透過7個冒號將128bits分成8段,每段16bits

- 三種主要表示方式：

FEDC:BA98:7654:3210:FEDC:BA98:7654:3210

1080:0:0:0:8:800:200C:417A

1080::8:800:200C:417A

FF01::101

0:0:0:0:0:0:13.1.68.3

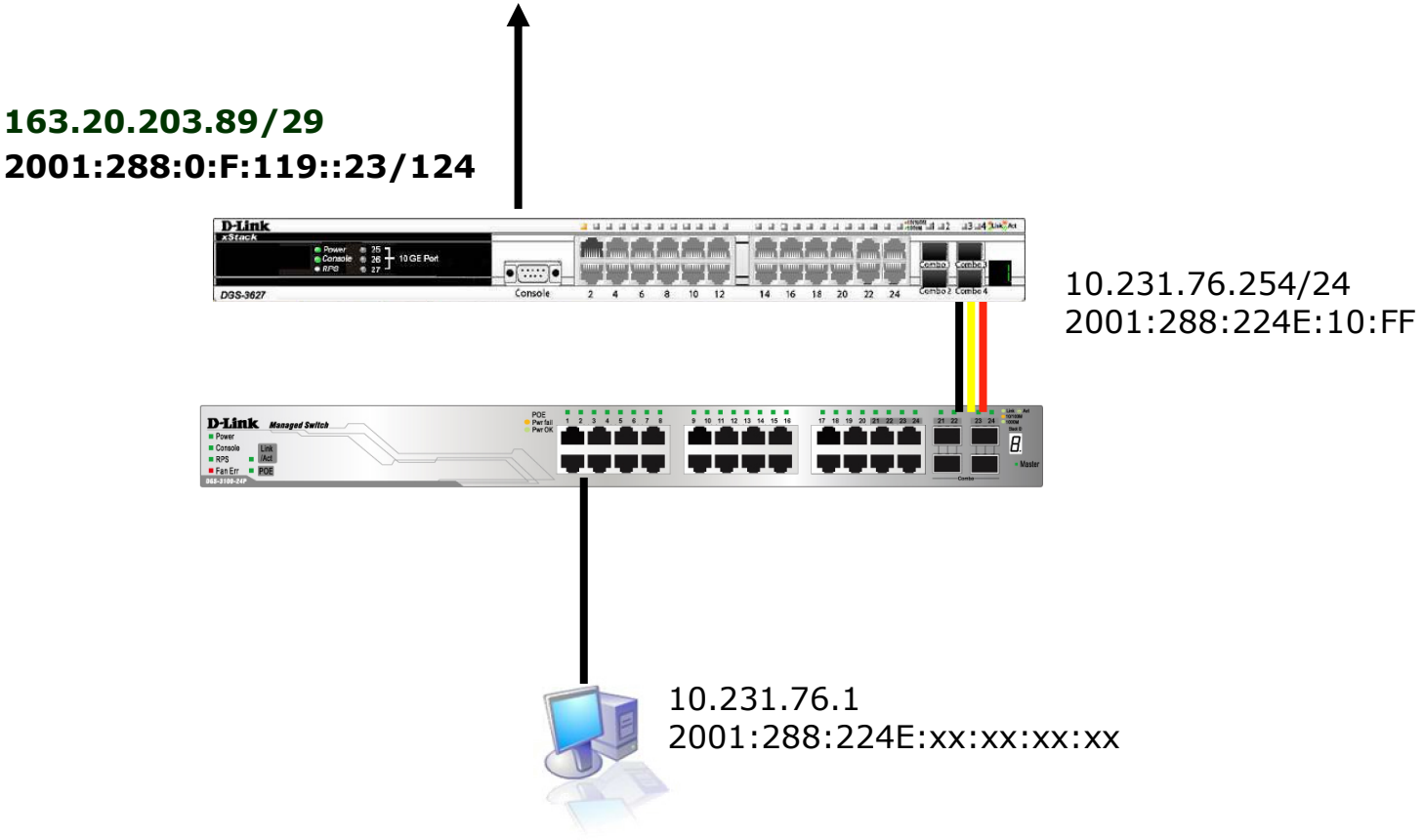
0:0:0:0:0:FFFF:129.144.52.38

IPv6 Auto-configuration

透過具備IPv6功能的交換器啟動IPv6 Auto config功能後,交換器會定時發送IPv6等資訊,安裝IPv6的client取得前半部64bits的資料加上本身的MAC address與相關欄位後建構出完整128bits的IPv6位址

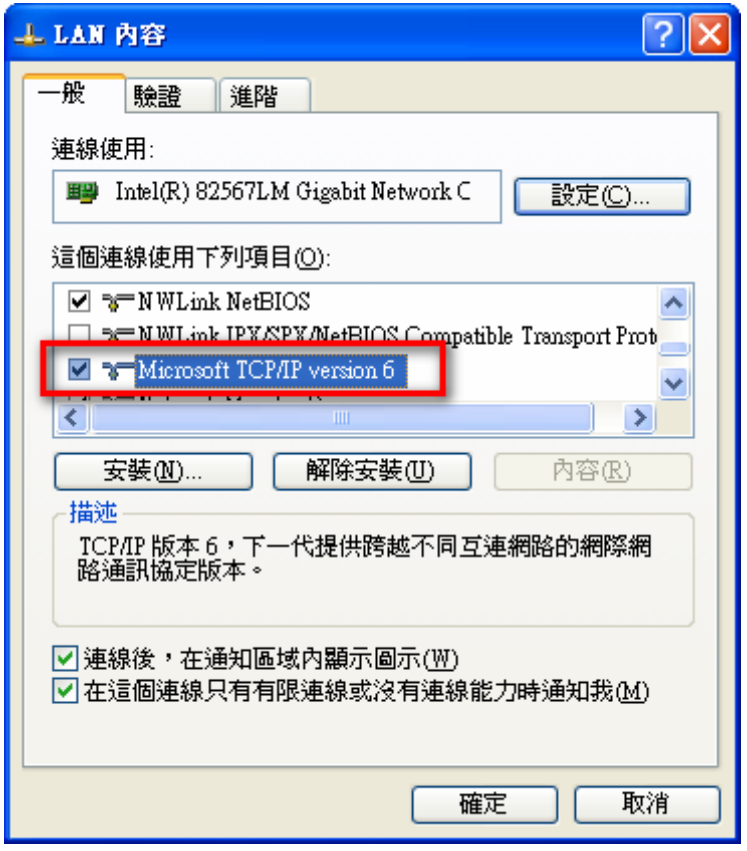
Client端只需要安裝或啟動IPv6協定即可

IPv6 Dualstack topology

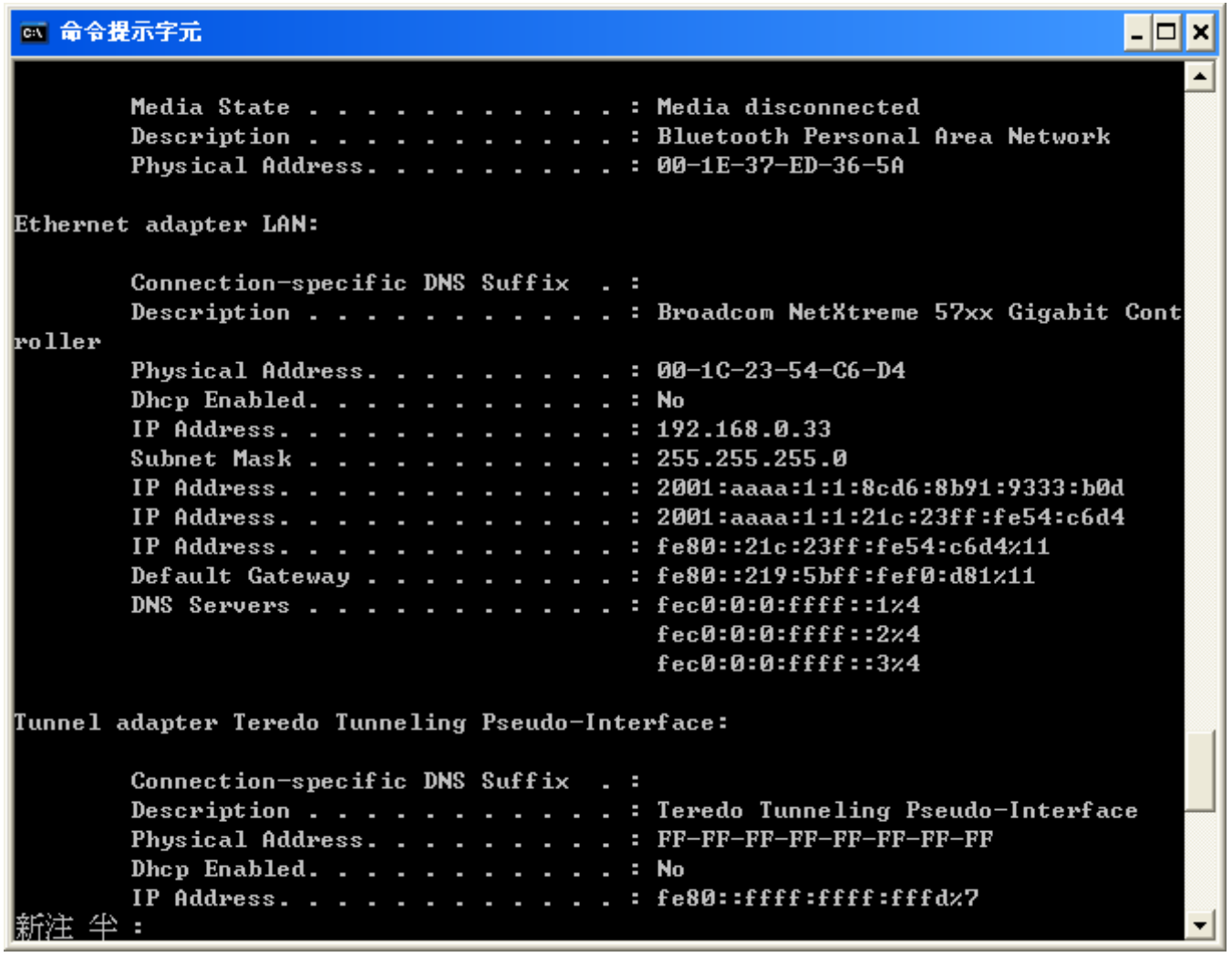


Client DHCP取得IPv4 IP/Mask/GW/DNS
Client auto config取得IPv6 IP/GW

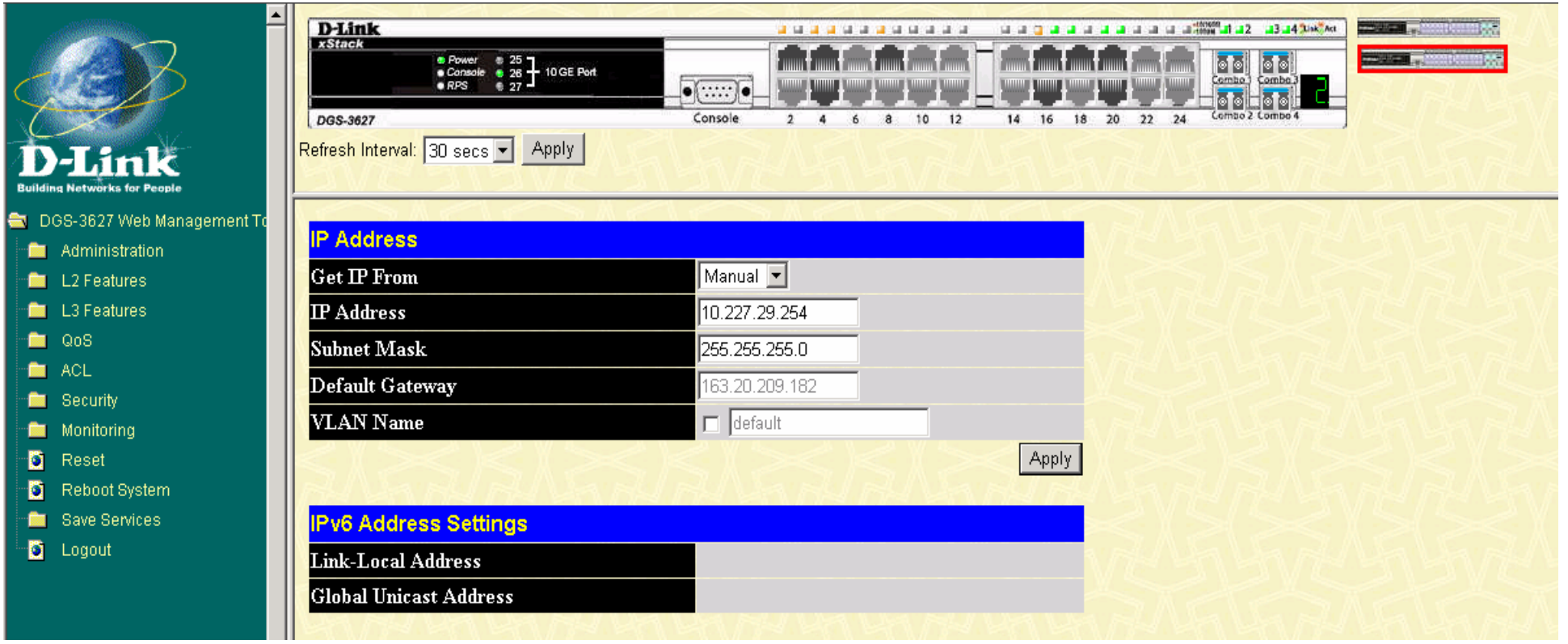
Client安裝IPv6



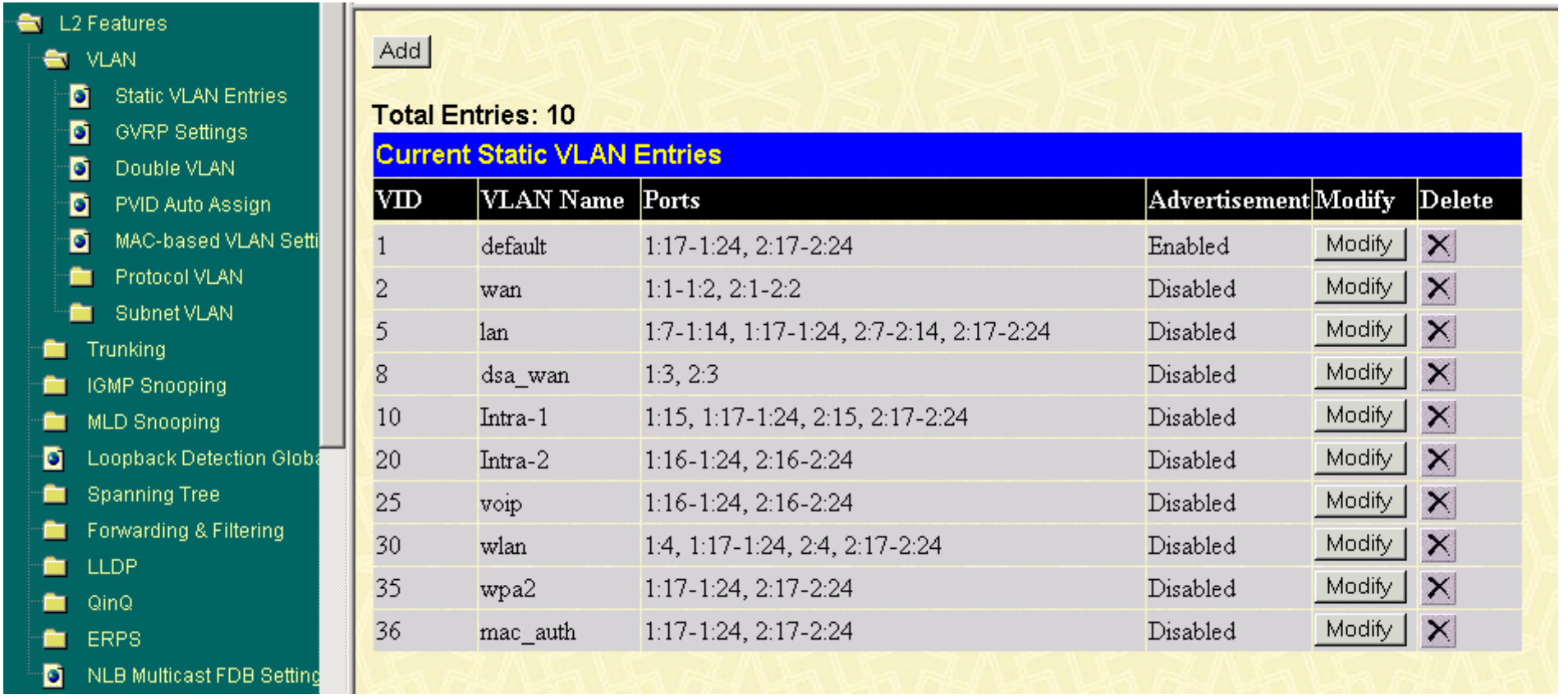
Client IPv6 address



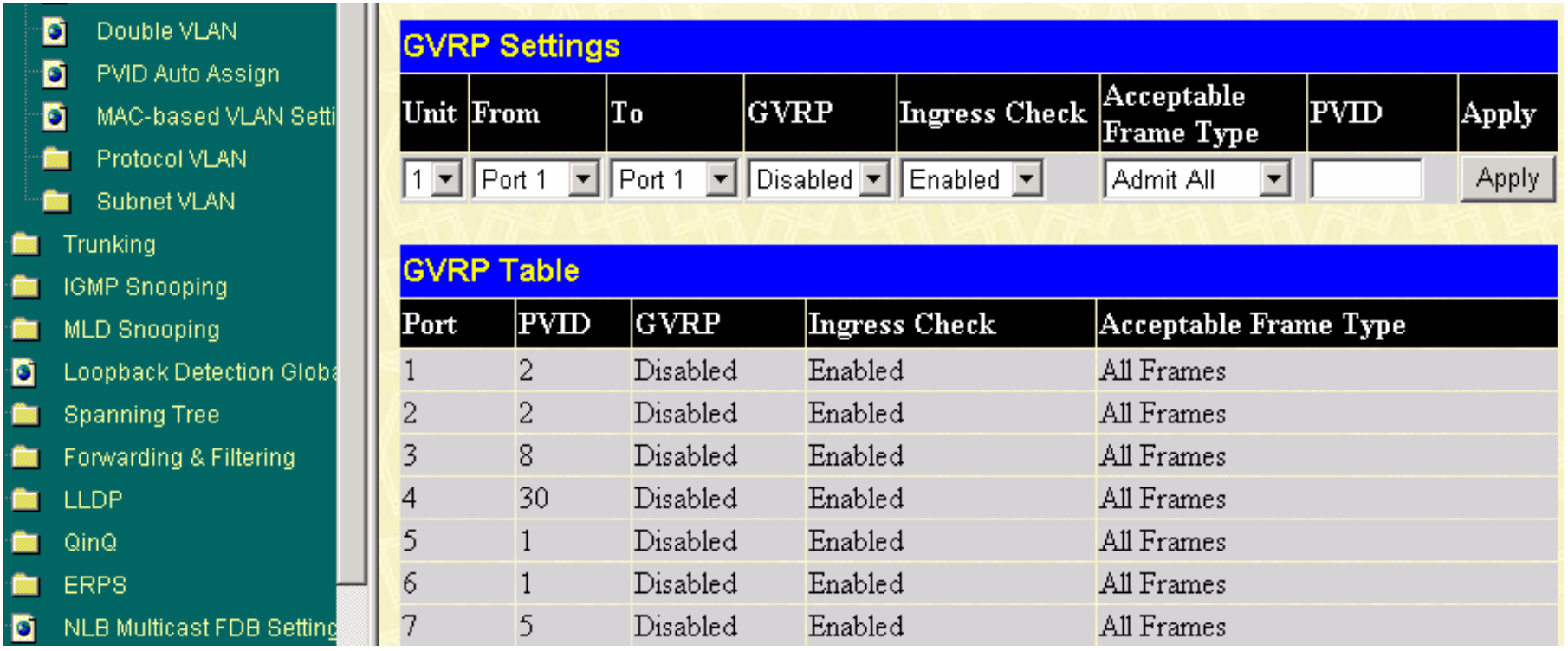
設備管理資訊


D-Link
Building Networks for People
DGS-3627 Web Management To
Administration
L2 Features
L3 Features
QoS
ACL
Security
Monitoring
Reset
Reboot System
Save Services
Logout
D-Link
xStack
Power
Console
RPS
25
26
27
10 GE Port
DGS-3627
Console
2 4 6 8 10 12 14 16 18 20 22 24
Combo 2
Combo 4
Refresh Interval:
30 secs
Apply
IP Address
Get IP From
Manual
IP Address
10.227.29.254
Subnet Mask
255.255.255.0
Default Gateway
163.20.209.182
VLAN Name
default
Apply
IPv6 Address Settings
Link-Local Address
Global Unicast Address

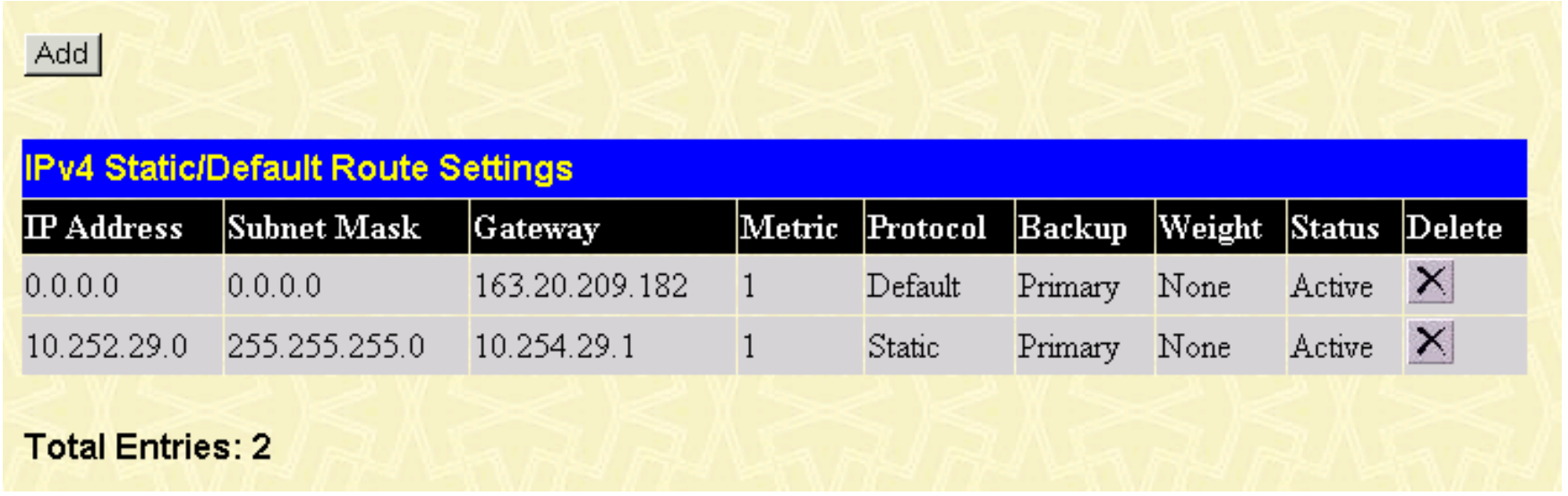
Vlan資訊


L2 Features
VLAN
Static VLAN Entries
GVRP Settings
Double VLAN
PVID Auto Assign
MAC-based VLAN Setti
Protocol VLAN
Subnet VLAN
Trunking
IGMP Snooping
MLD Snooping
Loopback Detection Globa
Spanning Tree
Forwarding & Filtering
LLDP
QinQ
ERPS
NLB Multicast FDB Setting
Add
Total Entries: 10
Current Static VLAN Entries
VID
VLAN Name
Ports
Advertisement
Modify
Delete
1 default 1:17-1:24, 2:17-2:24 Enabled Modify
2 wan 1:1-1:2, 2:1-2:2 Disabled Modify
5 lan 1:7-1:14, 1:17-1:24, 2:7-2:14, 2:17-2:24 Disabled Modify
8 dsa_wan 1:3, 2:3 Disabled Modify
10 Intra-1 1:15, 1:17-1:24, 2:15, 2:17-2:24 Disabled Modify
20 Intra-2 1:16-1:24, 2:16-2:24 Disabled Modify
25 voip 1:16-1:24, 2:16-2:24 Disabled Modify
30 wlan 1:4, 1:17-1:24, 2:4, 2:17-2:24 Disabled Modify
35 wpa2 1:17-1:24, 2:17-2:24 Disabled Modify
36 mac_auth 1:17-1:24, 2:17-2:24 Disabled Modify

Port VID資訊


Double VLAN
PVID Auto Assign
MAC-based VLAN Setti
Protocol VLAN
Subnet VLAN
Trunking
IGMP Snooping
MLD Snooping
Loopback Detection Globa
Spanning Tree
Forwarding & Filtering
LLDP
QinQ
ERPS
NLB Multicast FDB Setting
GVRP Settings
Unit
From
To
GVRP
Ingress Check
Acceptable Frame Type
PVID
Apply
1
Port 1
Port 1
Disabled
Enabled
Admit All
Apply
GVRP Table
Port
PVID
GVRP
Ingress Check
Acceptable Frame Type
1 2 Disabled Enabled All Frames
2 2 Disabled Enabled All Frames
3 8 Disabled Enabled All Frames
4 30 Disabled Enabled All Frames
5 1 Disabled Enabled All Frames
6 1 Disabled Enabled All Frames
7 5 Disabled Enabled All Frames

Routing Table



Add

IPv4 Static/Default Route Settings

IP Address	Subnet Mask	Gateway	Metric	Protocol	Backup	Weight	Status	Delete
0.0.0.0	0.0.0.0	163.20.209.182	1	Default	Primary	None	Active	
10.252.29.0	255.255.255.0	10.254.29.1	1	Static	Primary	None	Active	

Total Entries: 2

監控除錯

設備狀態

Device Status						
ID	Internal Power	External Power	Left Fan	Right Fan	Back Fan	CPU Fan
1	Active	Fail	OK	OK	---	OK
2	Active	Fail	OK	OK	---	OK

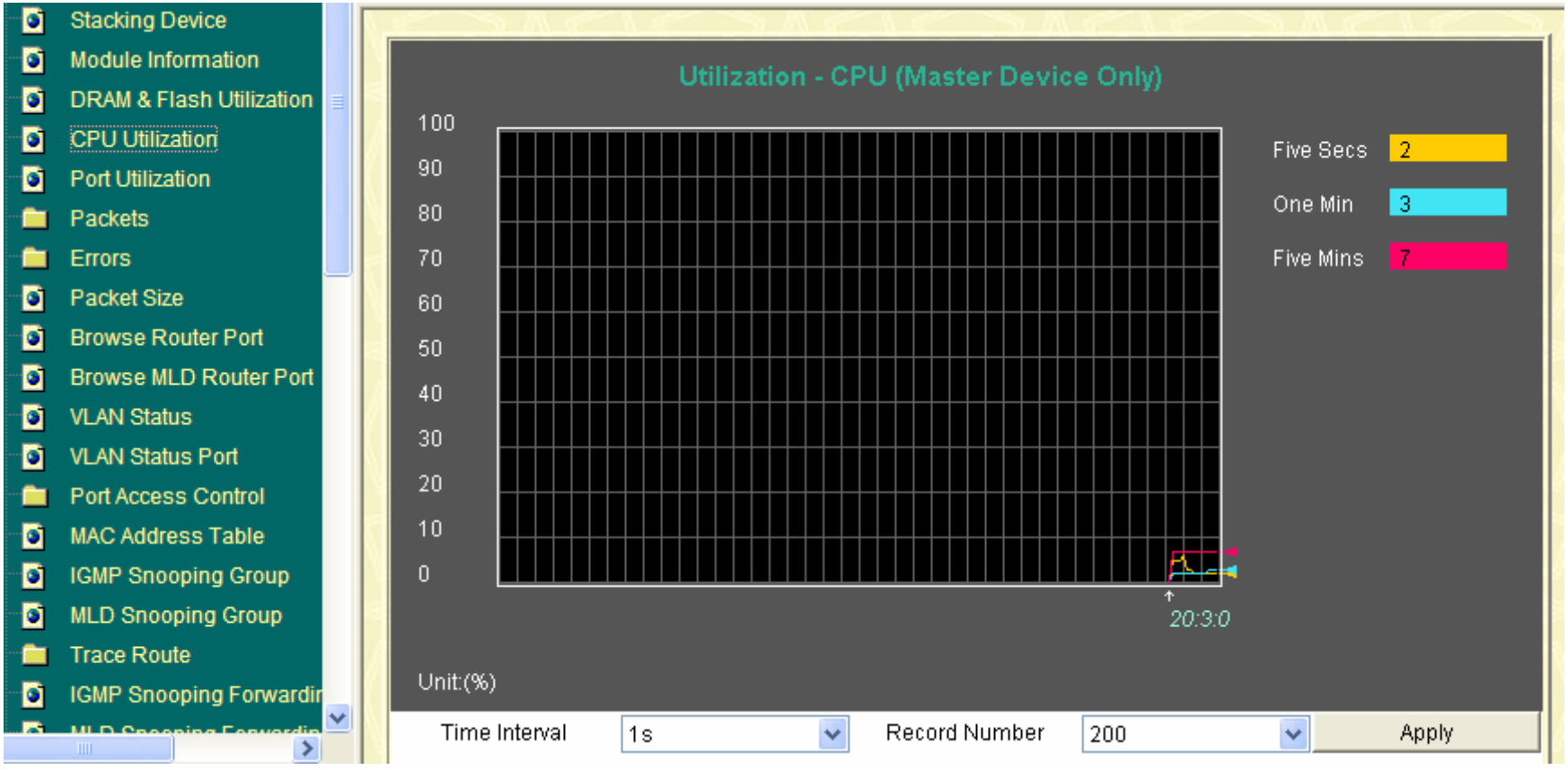
堆疊資訊

Stacking Information

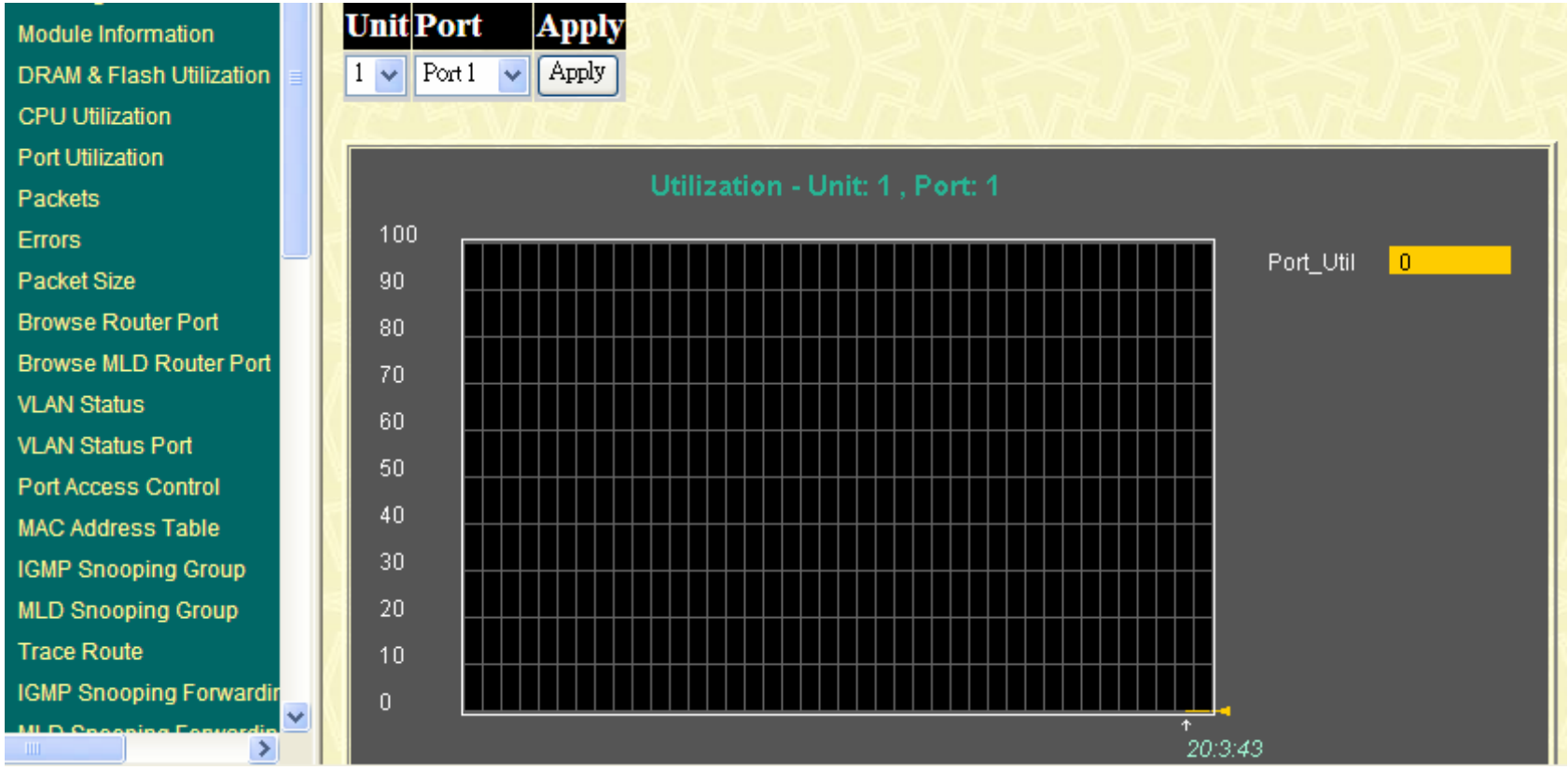
Box ID	User Set	Type	Exist	Priority	MAC Address	PROM Version	Runtime Version	H/W Version
1	User	DGS-3627	Exist	10	00-21-91-A2-AB-00	1.10-B09	2.52.B44	A1
2	User	DGS-3627	Exist	1	00-21-91-A3-6F-00	1.10-B09	2.52.B44	A1
3	___	Not_Exist	No					
4	___	Not_Exist	No					
5	___	Not_Exist	No					
6	___	Not_Exist	No					
7	___	Not_Exist	No					
8	___	Not_Exist	No					
9	___	Not_Exist	No					
10	___	Not_Exist	No					
11	___	Not_Exist	No					
12	___	Not_Exist	No					

Topology : Duplex Chain
My Box ID : 2
Master ID : 2
Backup Master : 1
Box Count : 2

CPU使用率


Stacking Device
Module Information
DRAM & Flash Utilization
CPU Utilization
Port Utilization
Packets
Errors
Packet Size
Browse Router Port
Browse MLD Router Port
VLAN Status
VLAN Status Port
Port Access Control
MAC Address Table
IGMP Snooping Group
MLD Snooping Group
Trace Route
IGMP Snooping Forwardi
Utilization - CPU (Master Device Only)
100
90
80
70
60
50
40
30
20
10
0
20:3:0
Five Secs 2
One Min 3
Five Mins 7
Unit:(%)
Time Interval 1s
Record Number 200
Apply

Port使用率

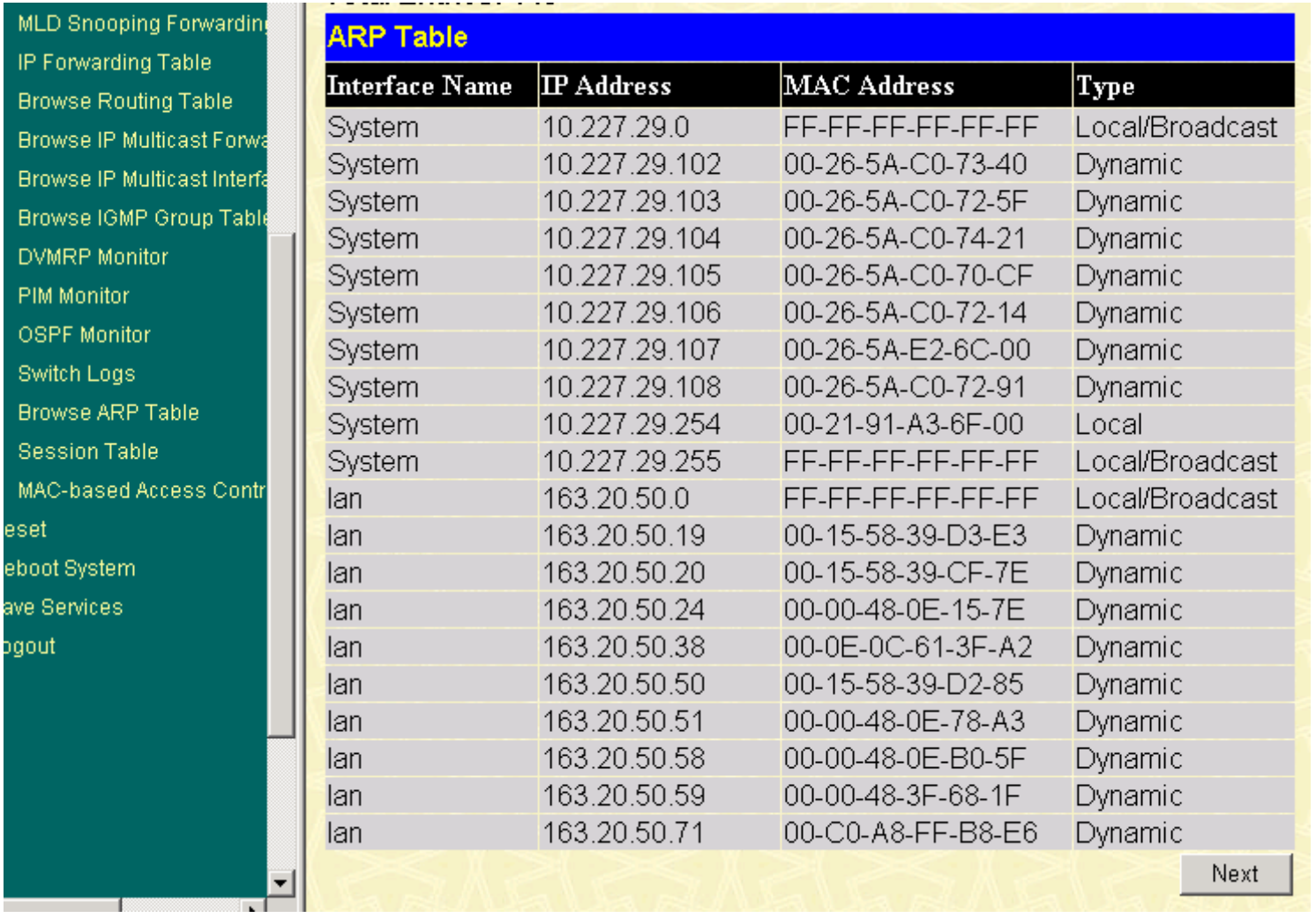

Module Information
DRAM & Flash Utilization
CPU Utilization
Port Utilization
Packets
Errors
Packet Size
Browse Router Port
Browse MLD Router Port
VLAN Status
VLAN Status Port
Port Access Control
MAC Address Table
IGMP Snooping Group
MLD Snooping Group
Trace Route
IGMP Snooping Forwardi
Unit
Port
Apply
1
Port 1
Apply
Utilization - Unit: 1 , Port: 1
100
90
80
70
60
50
40
30
20
10
0
Port_Util
0
20:3:43

Log

Switch History Logs

Sequence	Time	Level	Log Text
28771	2010-05-10, 20:52:00	INFO(6)	Successful login through Web (Username: admin)
28770	2010-05-10, 20:51:57	WARN(4)	Login failed through Web (Username: admin)
28769	2010-05-10, 20:07:35	INFO(6)	Web session timed out (Username: user)
28768	2010-05-10, 19:50:41	INFO(6)	Successful login through Web (Username: user)
28767	2010-05-10, 19:19:21	INFO(6)	Web session timed out (Username: user)
28766	2010-05-10, 19:09:11	INFO(6)	Successful login through Web (Username: user)
28765	2010-05-10, 19:00:53	INFO(6)	Web session timed out (Username: user)
28764	2010-05-10, 18:43:58	INFO(6)	Successful login through Web (Username: user)
28763	2010-05-10, 18:43:55	INFO(6)	Logout through Web (Username: admin)
28762	2010-05-10, 18:43:07	INFO(6)	Successful login through Web (Username: admin)
28761	2010-05-10, 18:40:29	INFO(6)	Logout through Telnet (Username: admin, IP: 203.72.153.57)
28760	2010-05-10, 18:36:20	INFO(6)	Successful login through Telnet (Username: admin, IP: 203.72.153.57)
28759	2010-05-10, 14:30:34	INFO(6)	Telnet session timed out (Username: admin, IP: 203.72.153.57)
28758	2010-05-10, 14:14:30	INFO(6)	Successful login through Telnet (Username: admin, IP: 203.72.153.57)

ARP Table


MLD Snooping Forwardin
IP Forwarding Table
Browse Routing Table
Browse IP Multicast Forwa
Browse IP Multicast Interfa
Browse IGMP Group Table
DVMRP Monitor
PIM Monitor
OSPF Monitor
Switch Logs
Browse ARP Table
Session Table
MAC-based Access Contr
eset
eboot System
ave Services
ogout
ARP Table
Interface Name | IP Address | MAC Address | Type
System | 10.227.29.0 | FF-FF-FF-FF-FF-FF | Local/Broadcast
System | 10.227.29.102 | 00-26-5A-C0-73-40 | Dynamic
System | 10.227.29.103 | 00-26-5A-C0-72-5F | Dynamic
System | 10.227.29.104 | 00-26-5A-C0-74-21 | Dynamic
System | 10.227.29.105 | 00-26-5A-C0-70-CF | Dynamic
System | 10.227.29.106 | 00-26-5A-C0-72-14 | Dynamic
System | 10.227.29.107 | 00-26-5A-E2-6C-00 | Dynamic
System | 10.227.29.108 | 00-26-5A-C0-72-91 | Dynamic
System | 10.227.29.254 | 00-21-91-A3-6F-00 | Local
System | 10.227.29.255 | FF-FF-FF-FF-FF-FF | Local/Broadcast
lan | 163.20.50.0 | FF-FF-FF-FF-FF-FF | Local/Broadcast
lan | 163.20.50.19 | 00-15-58-39-D3-E3 | Dynamic
lan | 163.20.50.20 | 00-15-58-39-CF-7E | Dynamic
lan | 163.20.50.24 | 00-00-48-0E-15-7E | Dynamic
lan | 163.20.50.38 | 00-0E-0C-61-3F-A2 | Dynamic
lan | 163.20.50.50 | 00-15-58-39-D2-85 | Dynamic
lan | 163.20.50.51 | 00-00-48-0E-78-A3 | Dynamic
lan | 163.20.50.58 | 00-00-48-0E-B0-5F | Dynamic
lan | 163.20.50.59 | 00-00-48-3F-68-1F | Dynamic
lan | 163.20.50.71 | 00-C0-A8-FF-B8-E6 | Dynamic
Next

提供設備項目- L2 POE交換器

DGS-3100-24P/48P L2 POE交換器

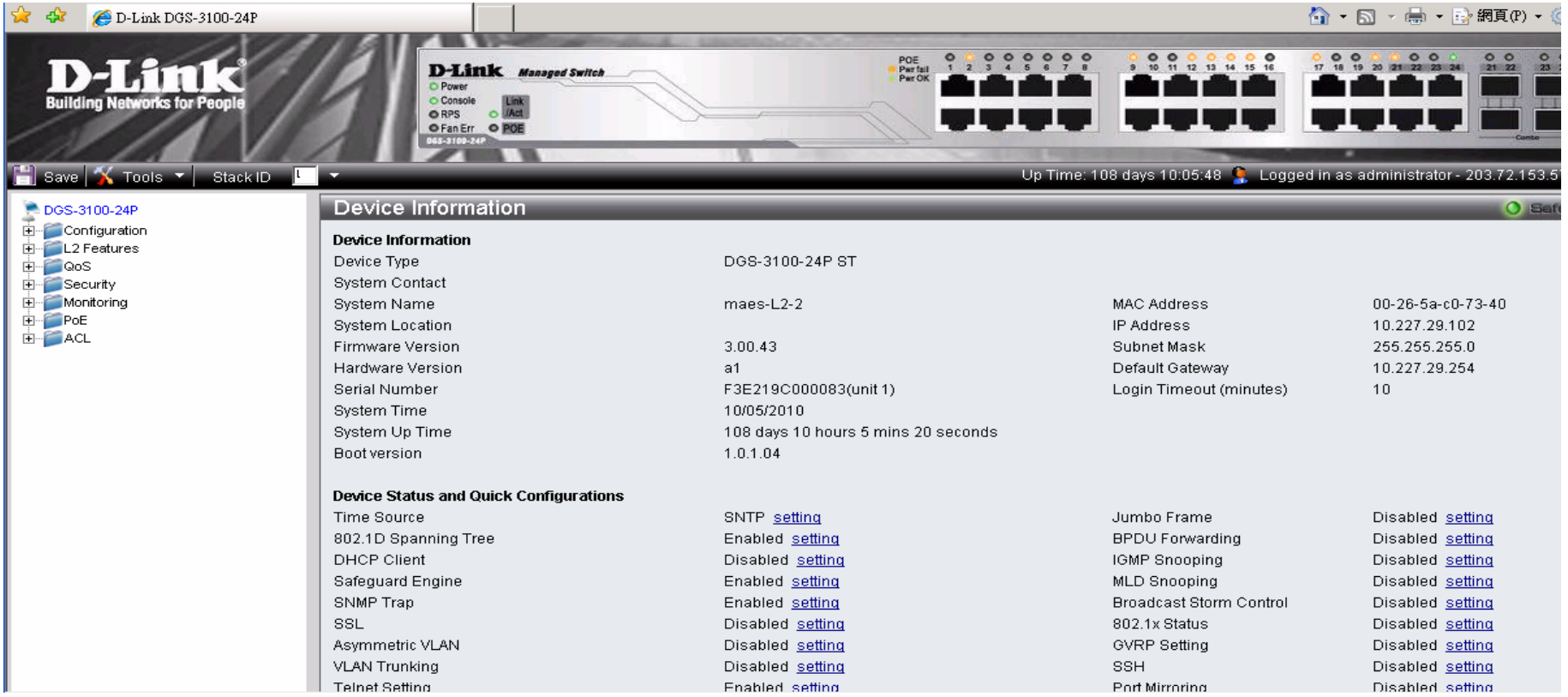
DGS-3100-24P/48P

- 提供高擴充性
  - 提供實體堆疊功能
- 整合多元化網路應用
  - 提供IPv6 MLD Snooping、QoS及ACL機制
- 提供穩定安全網路連線
  - 實測每埠皆滿足網路電話及無線基地台所需電力
- 節能減碳
  - 搭配WiNOC排程功能可自動開啟或關閉POE無線基地台或POE網路電話，以節省電費

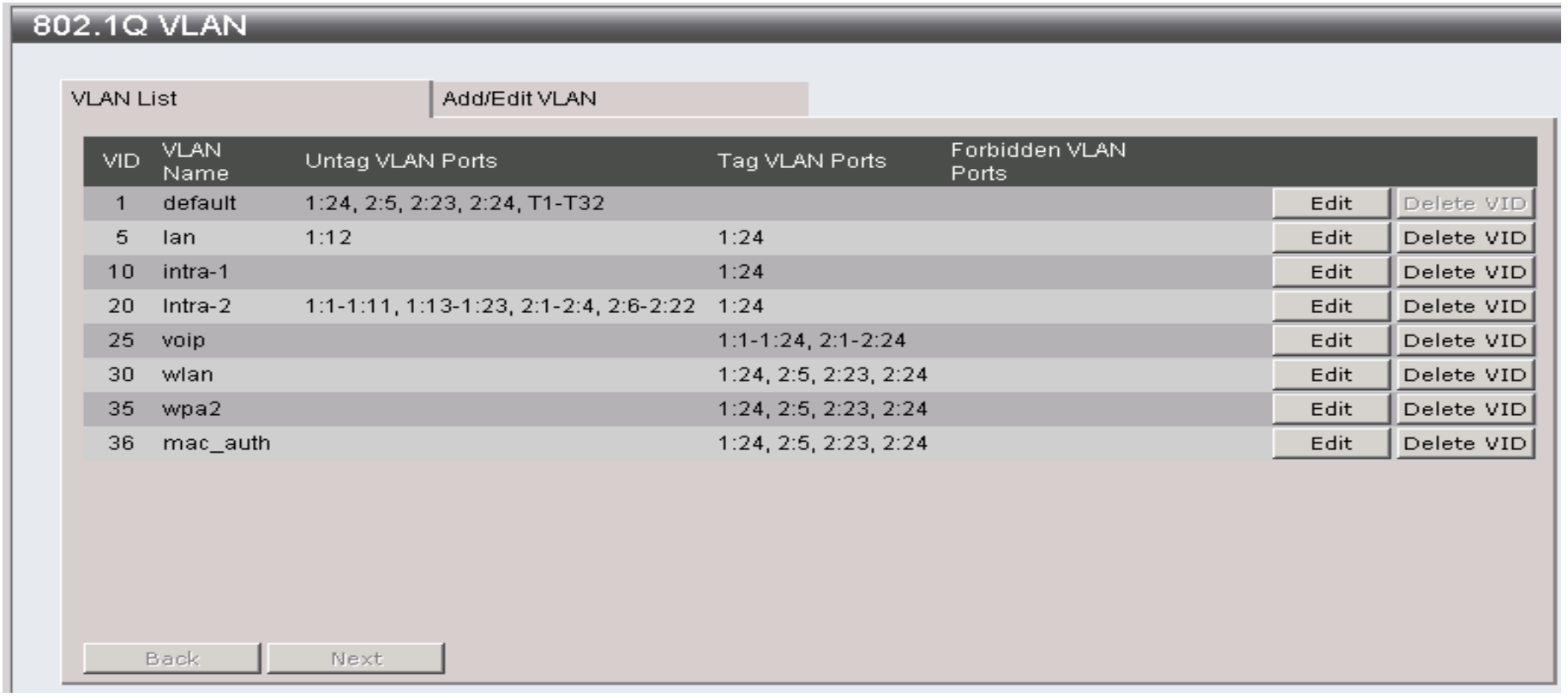
DGS-3100基礎操作及簡易故障排除

D-Link®
Building Networks for People

設備狀態


D-Link DGS-3100-24P
D-Link
Building Networks for People
Managed Switch
Save
Tools
Stack ID
Up Time: 108 days 10:05:48
Logged in as administrator - 203.72.153.5
DGS-3100-24P
Configuration
L2 Features
QoS
Security
Monitoring
PoE
ACL
Device Information
Device Information
Device Type DGS-3100-24P ST
System Contact
System Name maes-L2-2
System Location
Firmware Version 3.00.43
Hardware Version a1
Serial Number F3E219C000083(unit 1)
System Time 10/05/2010
System Up Time 108 days 10 hours 5 mins 20 seconds
Boot version 1.0.1.04
MAC Address 00-26-5a-c0-73-40
IP Address 10.227.29.102
Subnet Mask 255.255.255.0
Default Gateway 10.227.29.254
Login Timeout (minutes) 10
Device Status and Quick Configurations
Time Source SNTP setting
802.1D Spanning Tree Enabled setting
DHCP Client Disabled setting
Safeguard Engine Enabled setting
SNMP Trap Enabled setting
SSL Disabled setting
Asymmetric VLAN Disabled setting
VLAN Trunking Disabled setting
Telnet Setting Enabled setting
Jumbo Frame Disabled setting
BPDU Forwarding Disabled setting
IGMP Snooping Disabled setting
MLD Snooping Disabled setting
Broadcast Storm Control Disabled setting
802.1x Status Disabled setting
GVRP Setting Disabled setting
SSH Disabled setting
Port Mirroring Disabled setting

Vlan資訊


802.1Q VLAN
VLAN List
Add/Edit VLAN
VID
VLAN Name
Untag VLAN Ports
Tag VLAN Ports
Forbidden VLAN Ports
1 default 1:24, 2:5, 2:23, 2:24, T1-T32 Edit Delete VID
5 lan 1:12 1:24 Edit Delete VID
10 intra-1 1:24 Edit Delete VID
20 Intra-2 1:1-1:11, 1:13-1:23, 2:1-2:4, 2:6-2:22 1:24 Edit Delete VID
25 voip 1:1-1:24, 2:1-2:24 Edit Delete VID
30 wlan 1:24, 2:5, 2:23, 2:24 Edit Delete VID
35 wpa2 1:24, 2:5, 2:23, 2:24 Edit Delete VID
36 mac_auth 1:24, 2:5, 2:23, 2:24 Edit Delete VID
Back
Next

Spanning Tree Protocol

資源說明

Spanning Tree Protocol

為何要使用 Spanning Tree Protocol

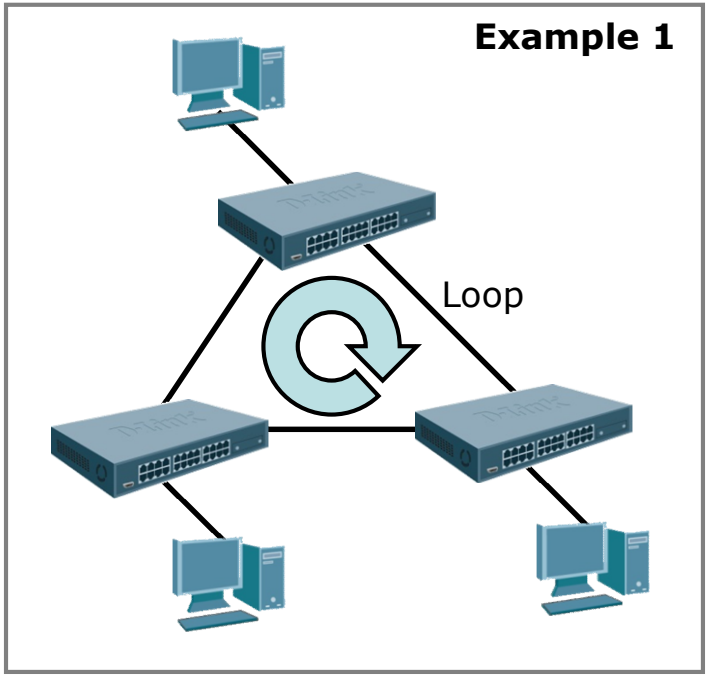
- 防止Loop所造成的網路癱瘓
- 線路備援,預防單點失效

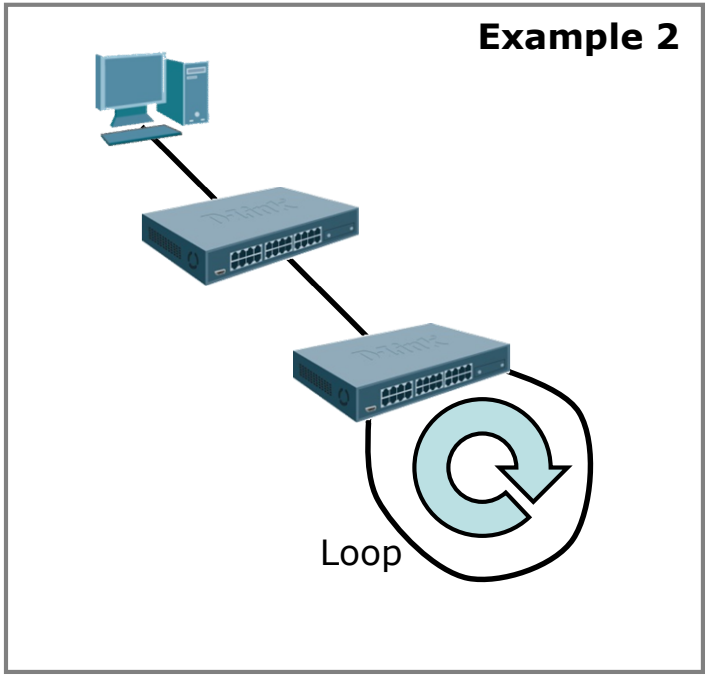
Protocol Versions

- IEEE 802.1D Spanning Tree Protocol (STP)
- IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
- IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)

何謂Loop

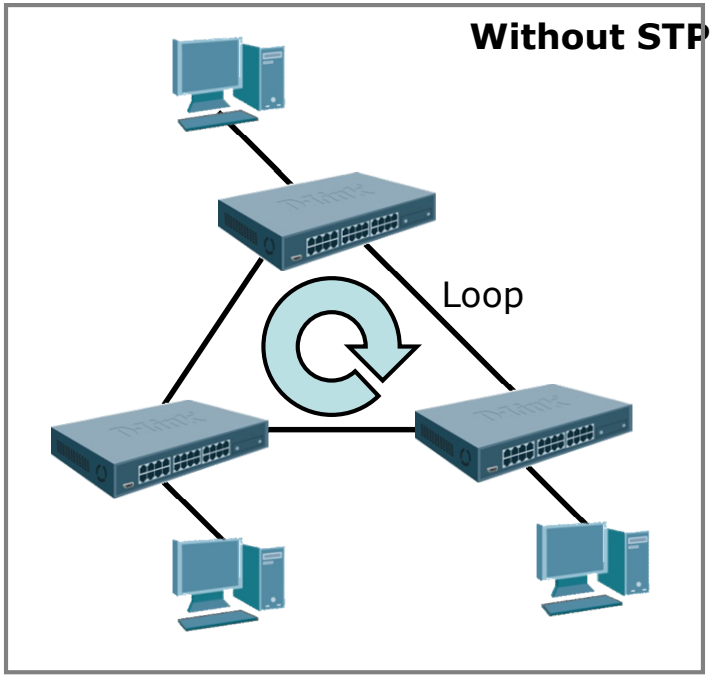
若在L2環境下有線路的迴圈,它將造成廣播風暴導致網路癱瘓

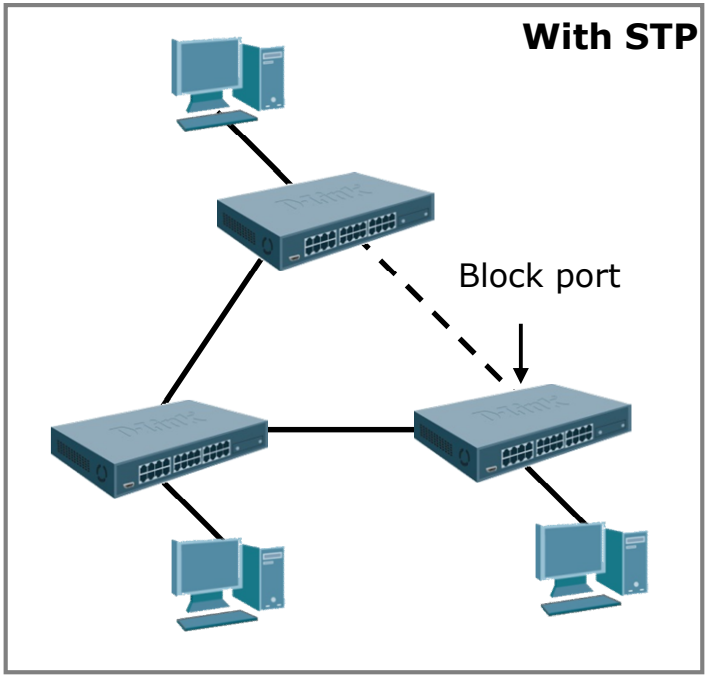




Loop的防範

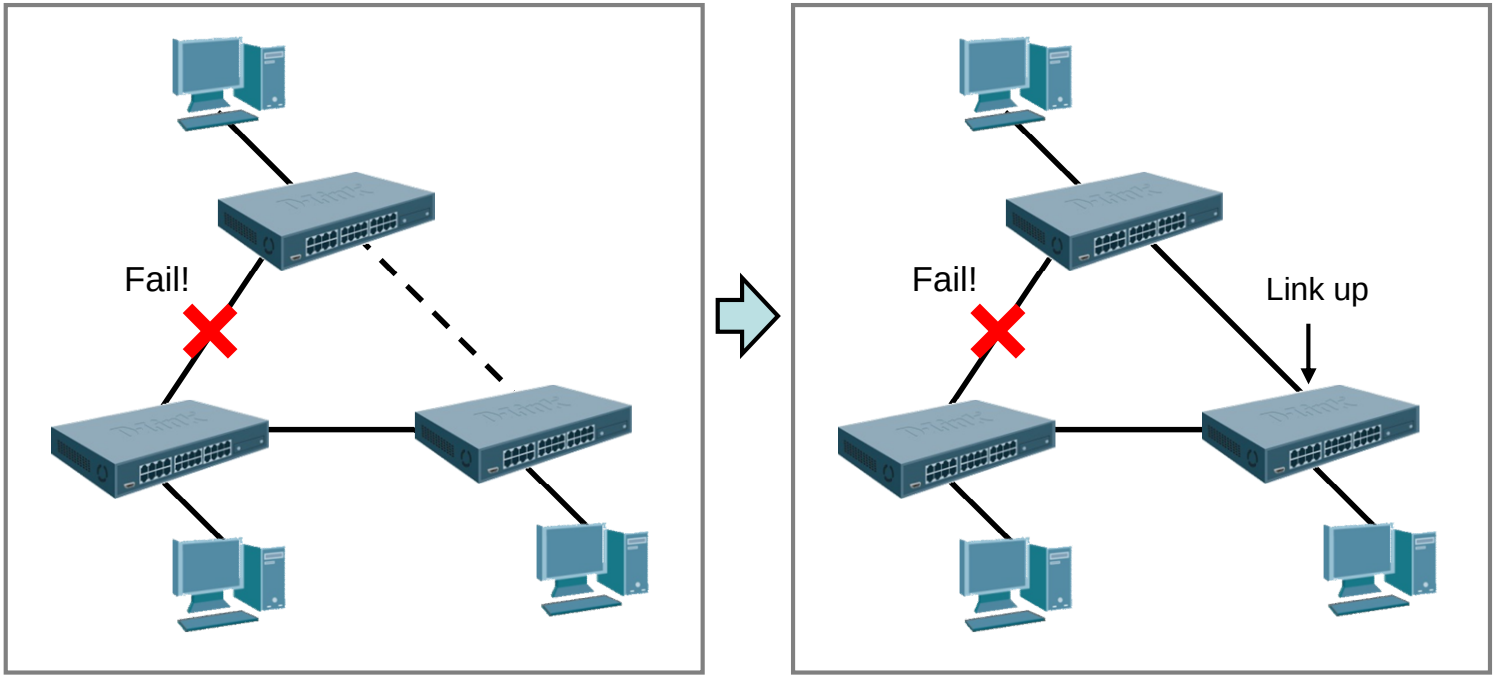
Spanning Tree Protocol可邏輯性封鎖Loop環境內的Port





線路的備援

Spanning Tree Protocol 有線路備援的效果,當既有連線失效時,被封鎖的 Port將會解除封鎖,取代失效的連線.

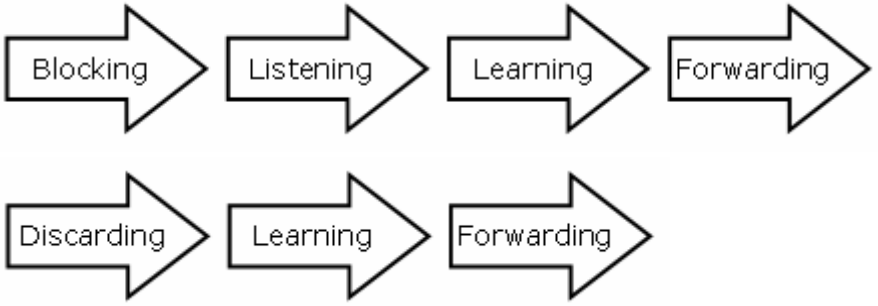


STP & RSTP比較

收斂時間:

STP 802.1d ： 30 Sec.

RSTP 802.1w ：2-3 Sec.

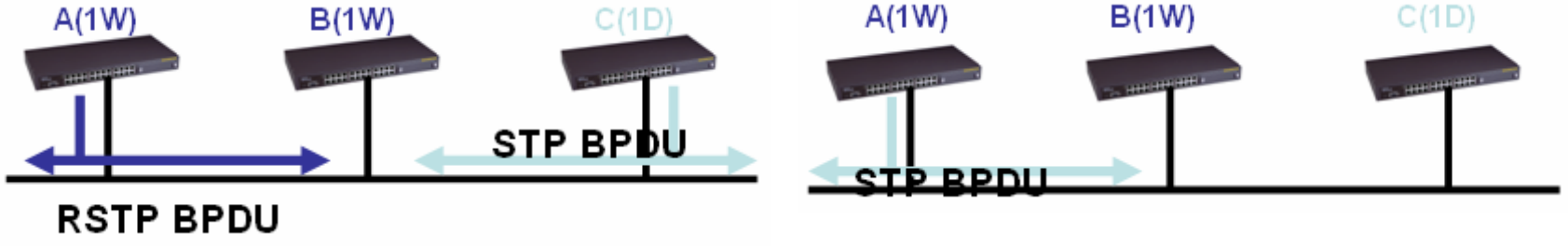


支援運算設備數:

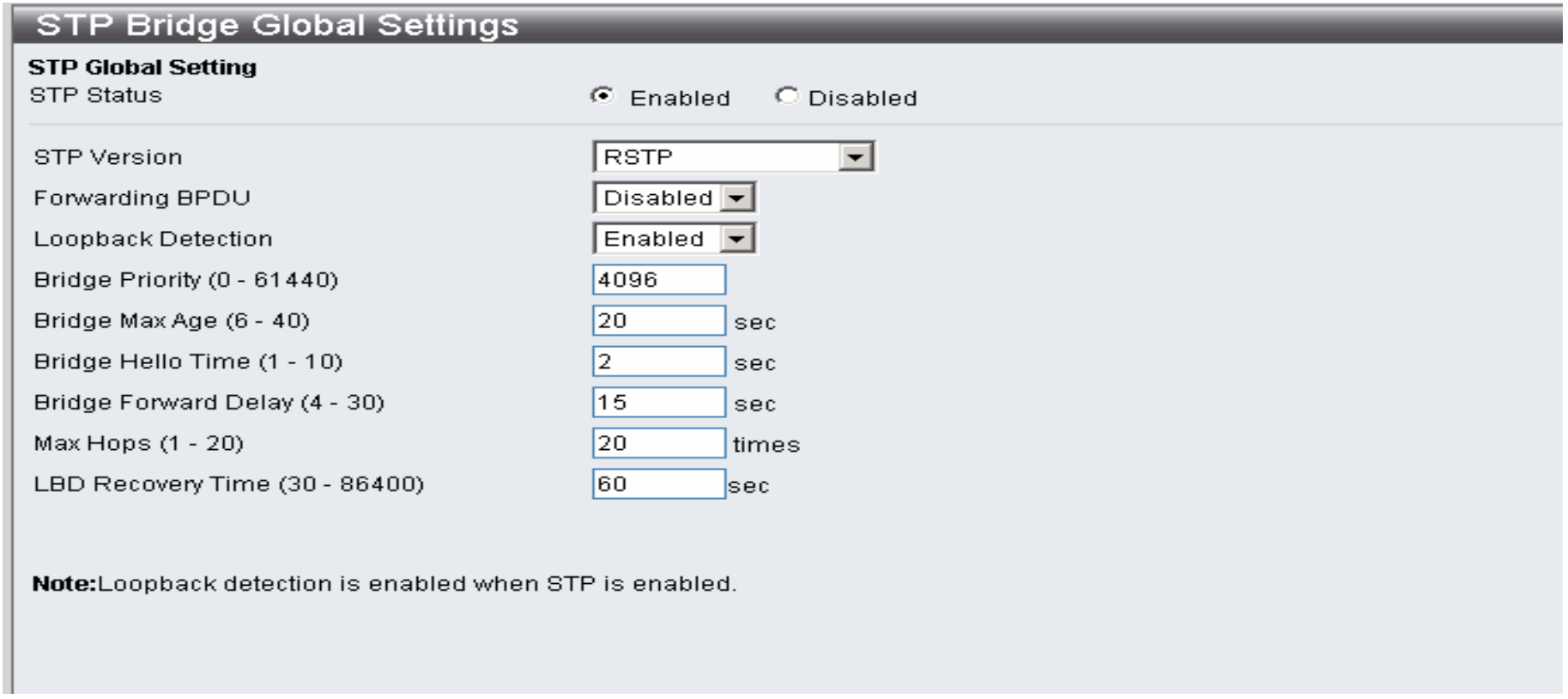
STP 802.1d ： 7 hops

RSTP 802.1w ：18 hops

*若網路上同時存在802.1d & 802.1w設備時,802.1w的設備將向下相容於802.1d.



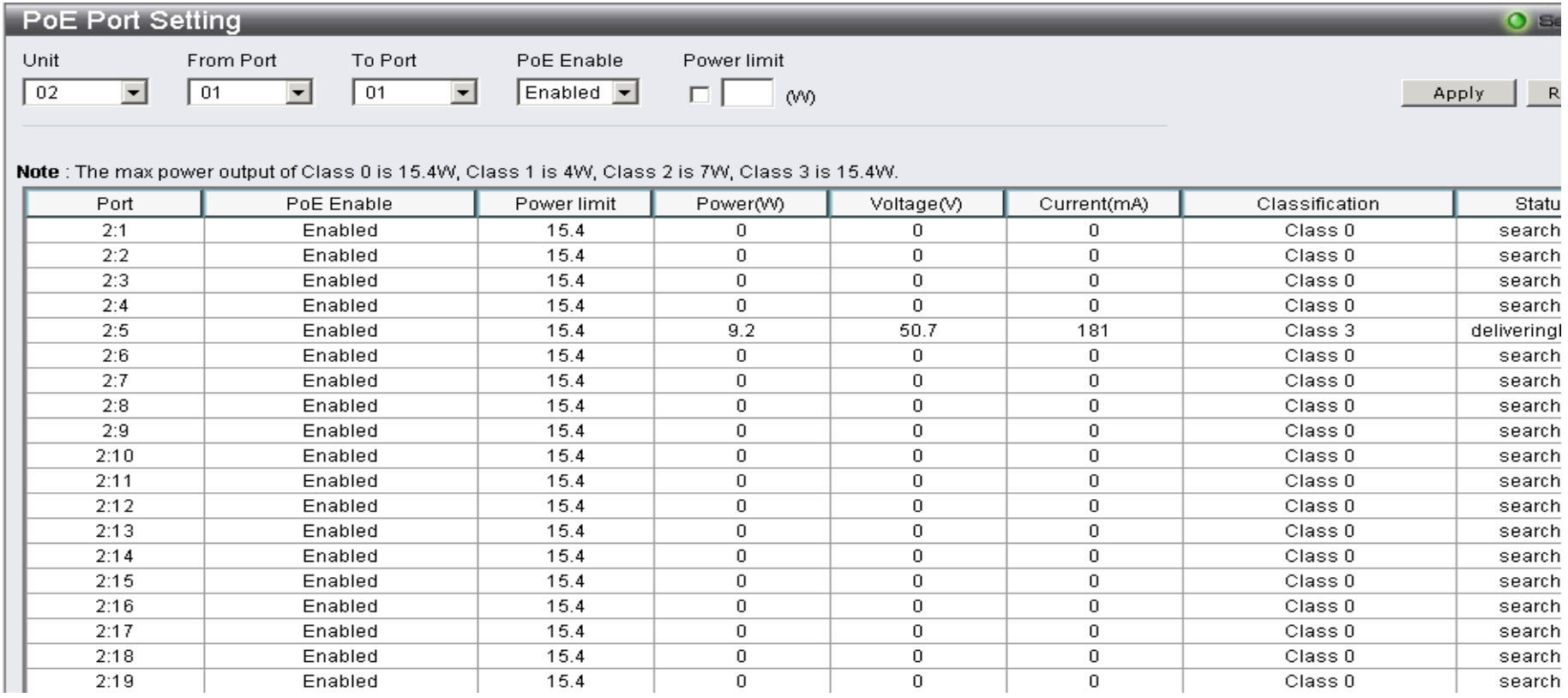
STP功能


STP Bridge Global Settings
STP Global Setting
STP Status
Enabled
Disabled
STP Version
RSTP
Forwarding BPDU
Disabled
Loopback Detection
Enabled
Bridge Priority (0 - 61440)
4096
Bridge Max Age (6 - 40)
20
sec
Bridge Hello Time (1 - 10)
2
sec
Bridge Forward Delay (4 - 30)
15
sec
Max Hops (1 - 20)
20
times
LBD Recovery Time (30 - 86400)
60
sec
Note:Loopback detection is enabled when STP is enabled.

STP Port狀態


MSTI Config Information
Safeguard
Unit
02
Port
01
Find
Edit MSTI Port Setting
Instance ID
Internal Path Cost
Priority
Apply
Msti Designated Bridge Internal Path Cost Priority Status Role
1 N/A 2000000 128 Disabled Designated Edit
2 N/A 2000000 128 Disabled Designated Edit
3 N/A 2000000 128 Disabled Designated Edit
4 N/A 2000000 128 Disabled Designated Edit
5 N/A 2000000 128 Disabled Designated Edit
6 N/A 2000000 128 Disabled Designated Edit
7 N/A 2000000 128 Disabled Designated Edit
8 N/A 2000000 128 Disabled Designated Edit
9 N/A 2000000 128 Disabled Designated Edit
10 N/A 2000000 128 Disabled Designated Edit

PoE資訊



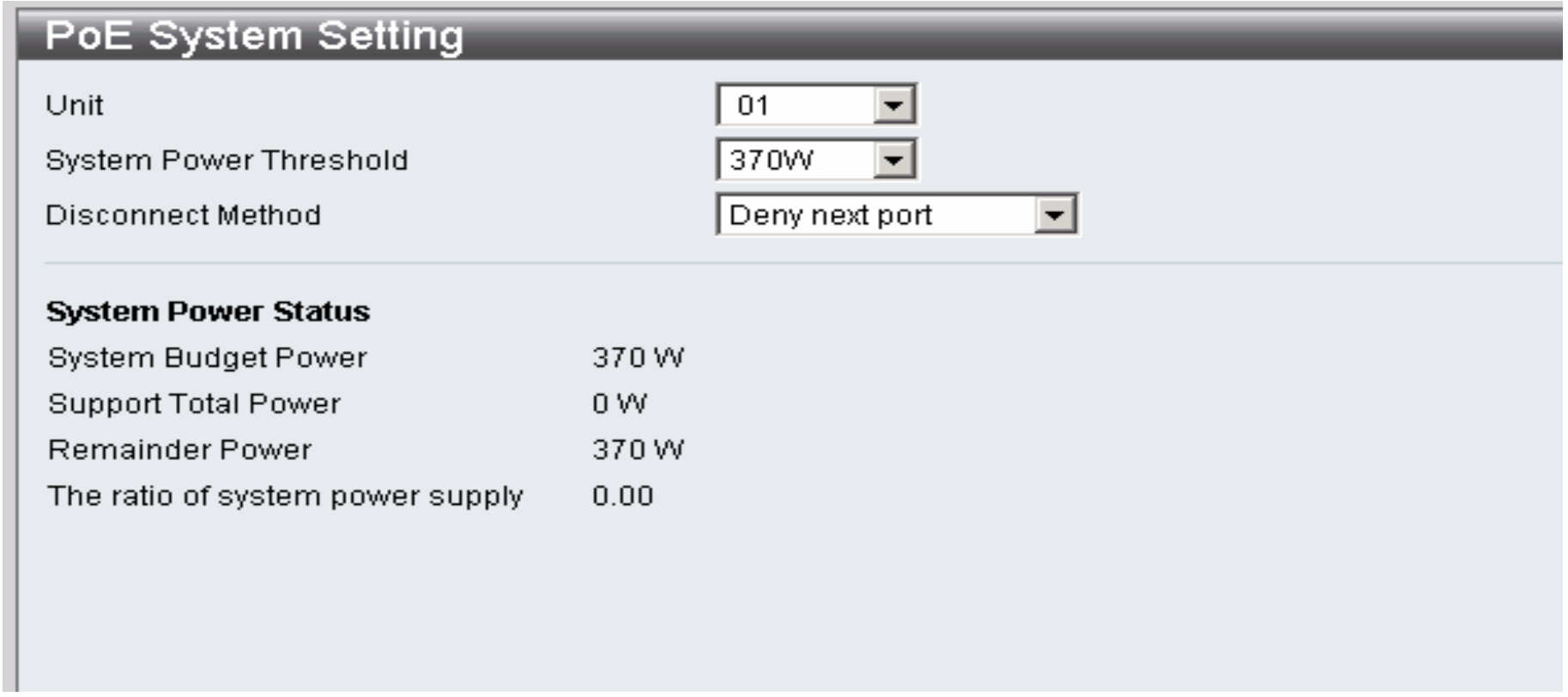
PoE Port Setting

Unit: 02 | From Port: 01 | To Port: 01 | PoE Enable: Enabled | Power limit: (W) | Apply

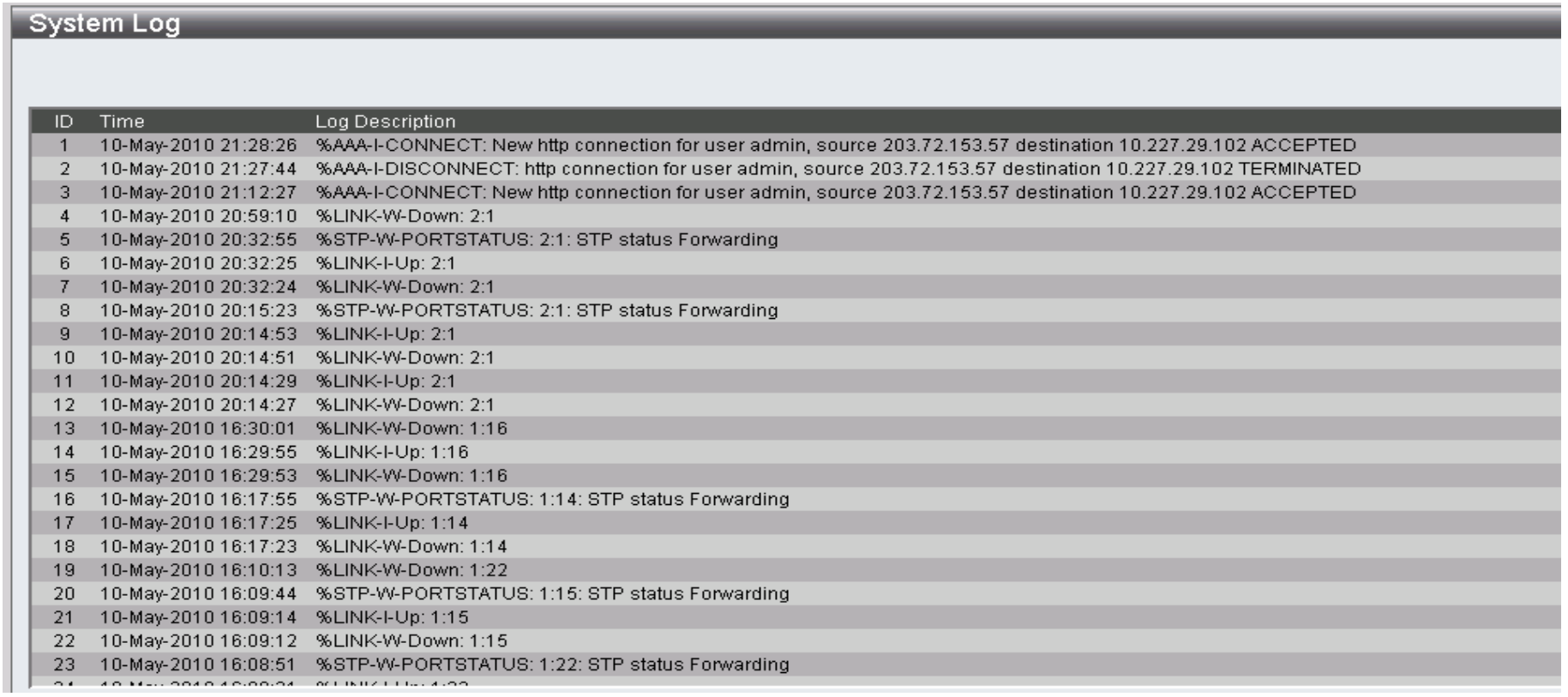
Note : The max power output of Class 0 is 15.4W, Class 1 is 4W, Class 2 is 7W, Class 3 is 15.4W.

Port	PoE Enable	Power limit	Power(W)	Voltage(V)	Current(mA)	Classification	Statu
2:1	Enabled	15.4	0	0	0	Class 0	search
2:2	Enabled	15.4	0	0	0	Class 0	search
2:3	Enabled	15.4	0	0	0	Class 0	search
2:4	Enabled	15.4	0	0	0	Class 0	search
2:5	Enabled	15.4	9.2	50.7	181	Class 3	deliveringl
2:6	Enabled	15.4	0	0	0	Class 0	search
2:7	Enabled	15.4	0	0	0	Class 0	search
2:8	Enabled	15.4	0	0	0	Class 0	search
2:9	Enabled	15.4	0	0	0	Class 0	search
2:10	Enabled	15.4	0	0	0	Class 0	search
2:11	Enabled	15.4	0	0	0	Class 0	search
2:12	Enabled	15.4	0	0	0	Class 0	search
2:13	Enabled	15.4	0	0	0	Class 0	search
2:14	Enabled	15.4	0	0	0	Class 0	search
2:15	Enabled	15.4	0	0	0	Class 0	search
2:16	Enabled	15.4	0	0	0	Class 0	search
2:17	Enabled	15.4	0	0	0	Class 0	search
2:18	Enabled	15.4	0	0	0	Class 0	search
2:19	Enabled	15.4	0	0	0	Class 0	search

PoE資訊(2)


PoE System Setting
Unit
01
System Power Threshold
370W
Disconnect Method
Deny next port
System Power Status
System Budget Power
370 W
Support Total Power
0 W
Remainder Power
370 W
The ratio of system power supply
0.00

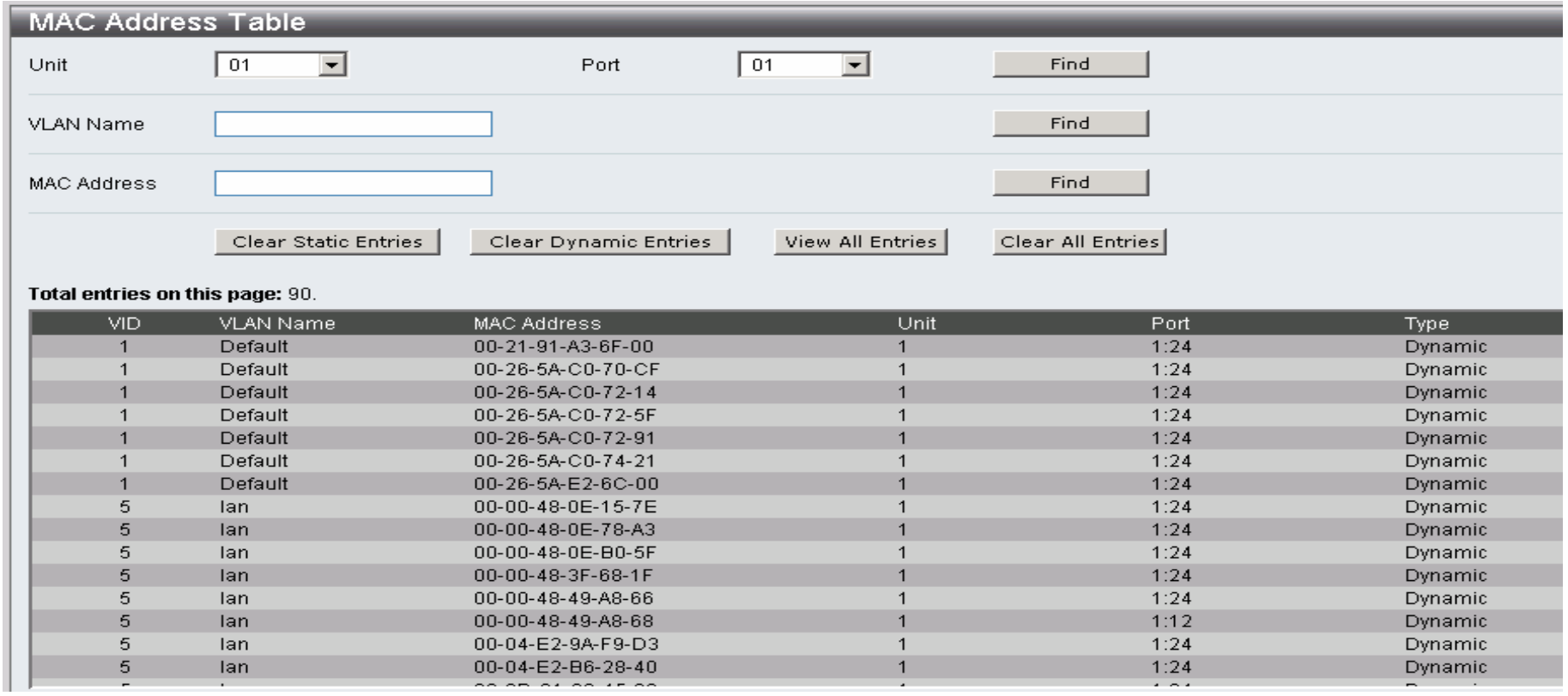
Log



System Log

ID	Time	Log Description
1	10-May-2010 21:28:26	%AAA-I-CONNECT: New http connection for user admin, source 203.72.153.57 destination 10.227.29.102 ACCEPTED
2	10-May-2010 21:27:44	%AAA-I-DISCONNECT: http connection for user admin, source 203.72.153.57 destination 10.227.29.102 TERMINATED
3	10-May-2010 21:12:27	%AAA-I-CONNECT: New http connection for user admin, source 203.72.153.57 destination 10.227.29.102 ACCEPTED
4	10-May-2010 20:59:10	%LINK-W-Down: 2:1
5	10-May-2010 20:32:55	%STP-W-PORTSTATUS: 2:1: STP status Forwarding
6	10-May-2010 20:32:25	%LINK-I-Up: 2:1
7	10-May-2010 20:32:24	%LINK-W-Down: 2:1
8	10-May-2010 20:15:23	%STP-W-PORTSTATUS: 2:1: STP status Forwarding
9	10-May-2010 20:14:53	%LINK-I-Up: 2:1
10	10-May-2010 20:14:51	%LINK-W-Down: 2:1
11	10-May-2010 20:14:29	%LINK-I-Up: 2:1
12	10-May-2010 20:14:27	%LINK-W-Down: 2:1
13	10-May-2010 16:30:01	%LINK-W-Down: 1:16
14	10-May-2010 16:29:55	%LINK-I-Up: 1:16
15	10-May-2010 16:29:53	%LINK-W-Down: 1:16
16	10-May-2010 16:17:55	%STP-W-PORTSTATUS: 1:14: STP status Forwarding
17	10-May-2010 16:17:25	%LINK-I-Up: 1:14
18	10-May-2010 16:17:23	%LINK-W-Down: 1:14
19	10-May-2010 16:10:13	%LINK-W-Down: 1:22
20	10-May-2010 16:09:44	%STP-W-PORTSTATUS: 1:15: STP status Forwarding
21	10-May-2010 16:09:14	%LINK-I-Up: 1:15
22	10-May-2010 16:09:12	%LINK-W-Down: 1:15
23	10-May-2010 16:08:51	%STP-W-PORTSTATUS: 1:22: STP status Forwarding

MAC Address Table



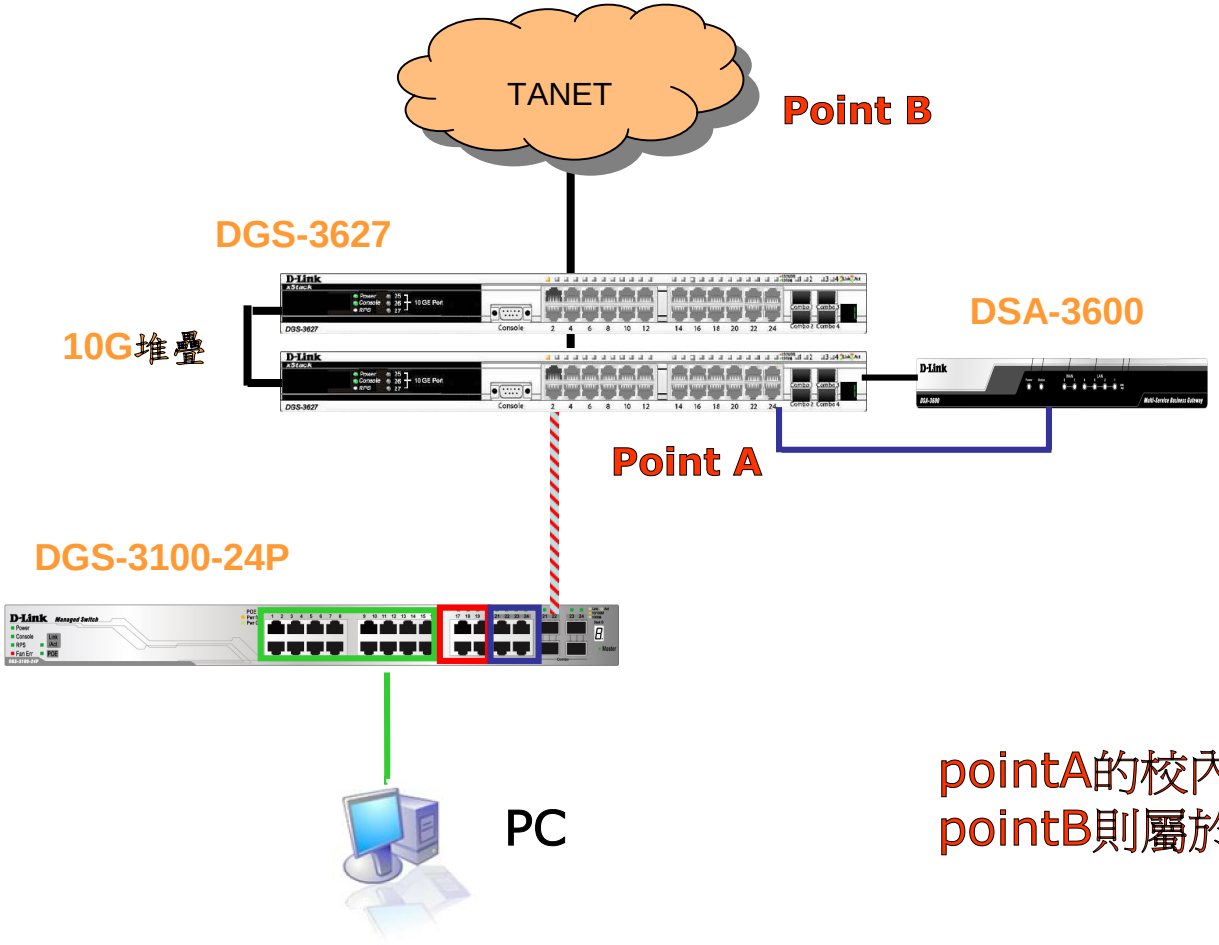
登入DGS-3600/3100帳號密碼

- 學校老師可透過一般帳號登入取得user level的權限查看相關資料與軟體體狀況例如CPU使用率,流量狀態等

常見問題說明

- 網路無法連線
- 非法DHCP Server
- Loop發生判斷
- Giga介面連線問題

網路無法連線



pointA的校內節點,
pointB則屬於校外節點

除錯方向

- Step1:確認是否取得IP

Ipcofnig /all

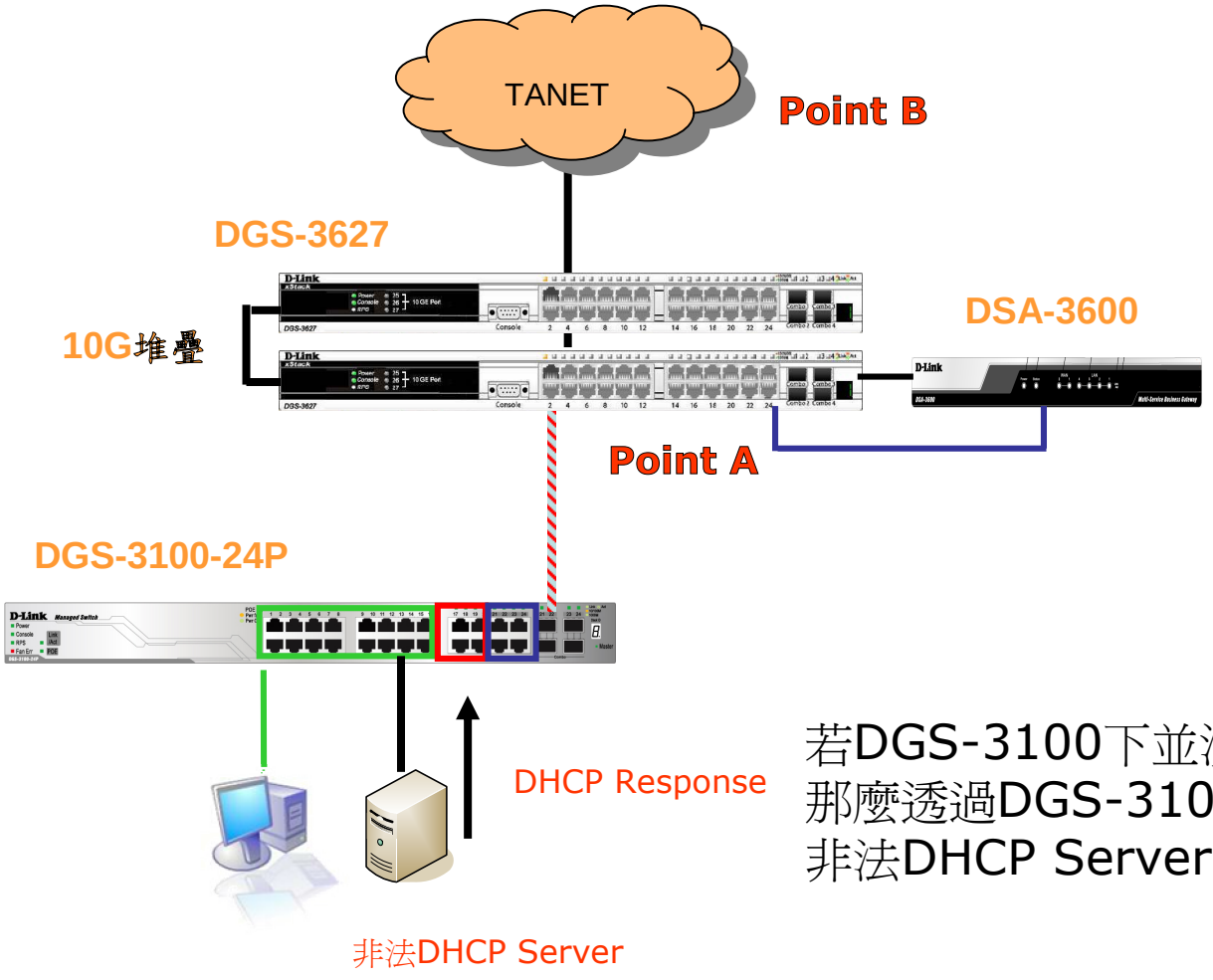
- Step2:使用tracert工具查詢各節點IP,第一個節點IP為校內,其餘為校外

tracert –d 168.95.1.1

- Step3:依照步驟二所顯示的各節點IP,開啟數個DOS視窗使用ping <ip> -t方式監控節點,用以判斷網路異常或是不穩定的位置,以釐清是校內問題還是教研中心端問題

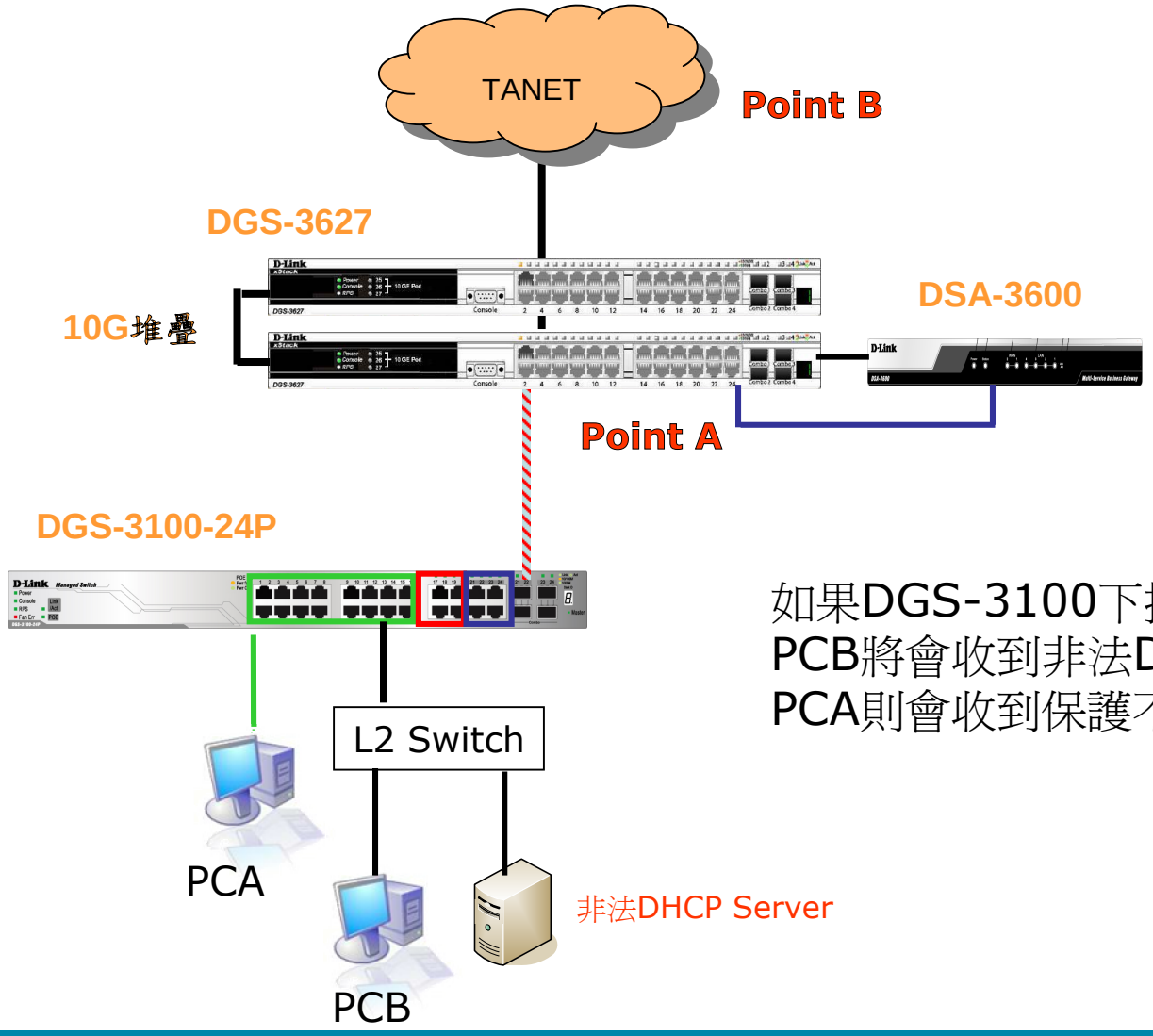
Ping <ip> -t

非法DHCP Server—Status1



若DGS-3100下並沒有再接其他小Switch
那麼透過DGS-3100的功能可以完全阻擋
非法DHCP Server

非法DHCP Server—Status2



如果DGS-3100下接小Switch,那麼
PCB將會收到非法DHCP Server所送的IP,
PCA則會收到保護不影響

Giga介面連線問題

- 具備Gigabit介面的設備,若連線速度欲達到1G的頻寬,則網路線8心線缺一不可,若有缺可能只會有100M的速度或是無法連線的狀況

DGS-3100設定指令

- 針對規劃用來接PC的Port執行以下的功能,本範圍Port 1-16用來接PC

- create access_profile profile_id 1 ip udp src_port_mask ffff
- config access_profile profile_id 1 add access_id 1 ip udp src_port 67 ports 1-16 deny

Loop發生判斷

- L2 Switch的Port燈號閃爍一致且快速
- 監看交換器流量狀態如下

Port1下方造成loop,Switch自Port1接收大量封包後,轉送至Port2-7等有連線的設備上,造成網路癱瘓,拔除Port1將恢復正常

Port	TX/sec	RX/sec	Util	Port	TX/sec	RX/sec	Util
1	0	105041	50	21	0	0	0
2	105039	0	50	22	0	0	0
3	105039	0	50	23	0	0	0
4	105039	0	50	24	0	0	0
5	105038	0	50	25	0	0	0
6	105038	0	50	26	0	0	0
7	105039	0	50	27	0	0	0
8	0	0	0	28	0	0	0
9	0	0	0				

無線網路接取基地台DAP-2590

基礎操作及簡易故障排除

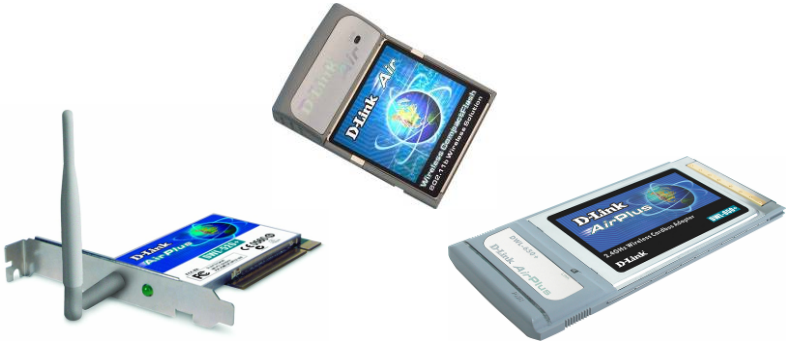
D-Link®
Building Networks for People

802.11 WLAN

WLAN 三大要素

天線

(Antenna)



無線區域網路卡

(Wireless NIC)

無線橋接器

Access Point

WLAN 特性

相較於有線網路，無線網路的優缺點：

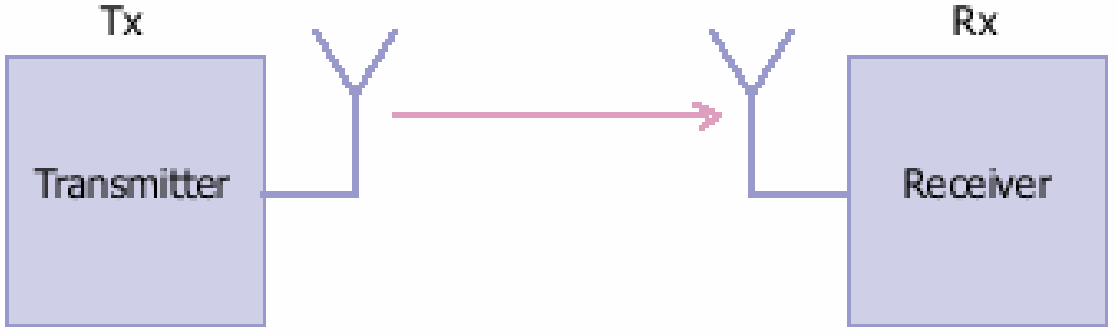
- 優點
  - 彈性大
  - 適性強
  - 安裝易
- 缺點
  - 資料傳輸率(throughput)較低
  - 易受干擾

WLAN標準的發展(1)

- IEEE 802.11 (1997)
  - 第一個標準。
  - 2.4GHz頻段及紅外線進行傳輸。
  - 1或2Mbps的資料傳輸率。
- IEEE 802.11b (1999)
  - 2.4GHz頻段,
  - 傳輸率升至11Mbps。
  - Wi-Fi認証:以此標準開始推展。

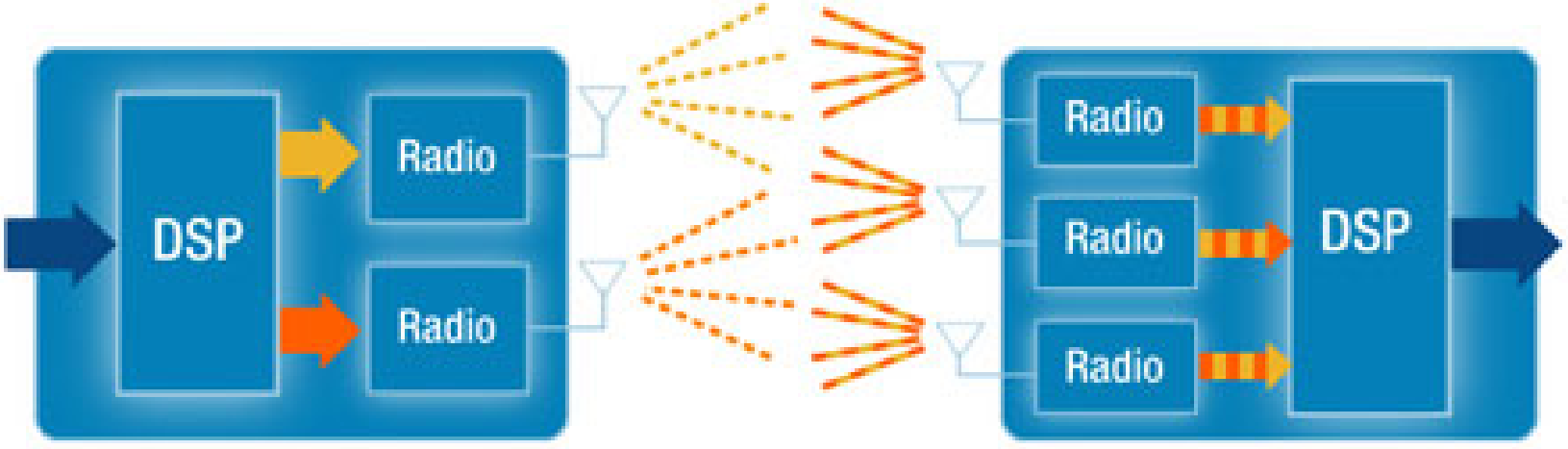
WLAN標準的發展(2)

- IEEE 802.11a (1999)
  - 5GHz頻段。
  - 54Mbps。
- IEEE 802.11g (2003)
  - 802.11b相容。
  - 2.4GHz頻段。
  - 54Mbps。



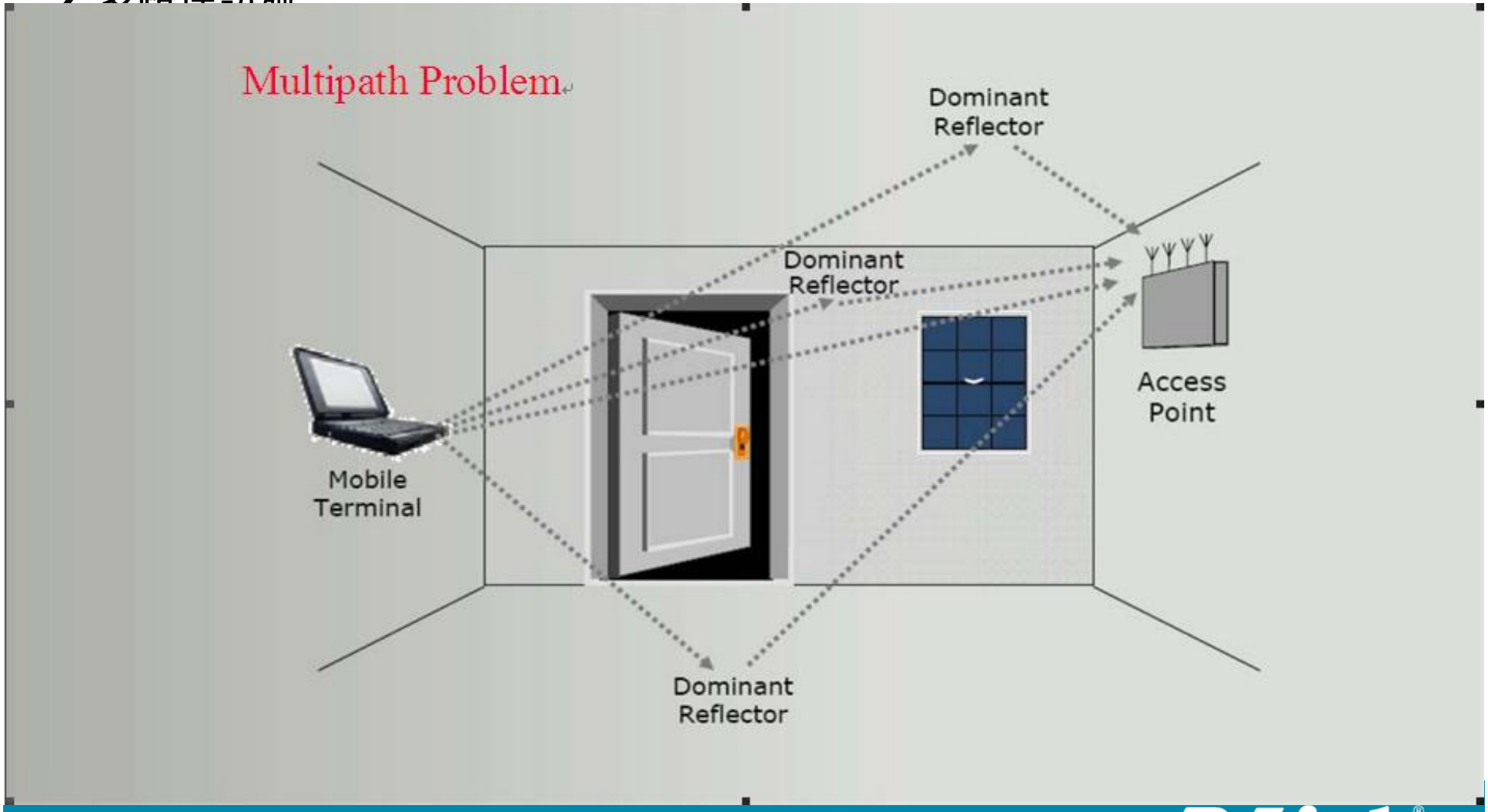
WLAN標準的發展(3)

- IEEE 802.11n (2006)
  - 與802.11a/b/g相容。
  - 傳輸率可達100-300Mbps。
  - 以MIMO技術克服Multipath。

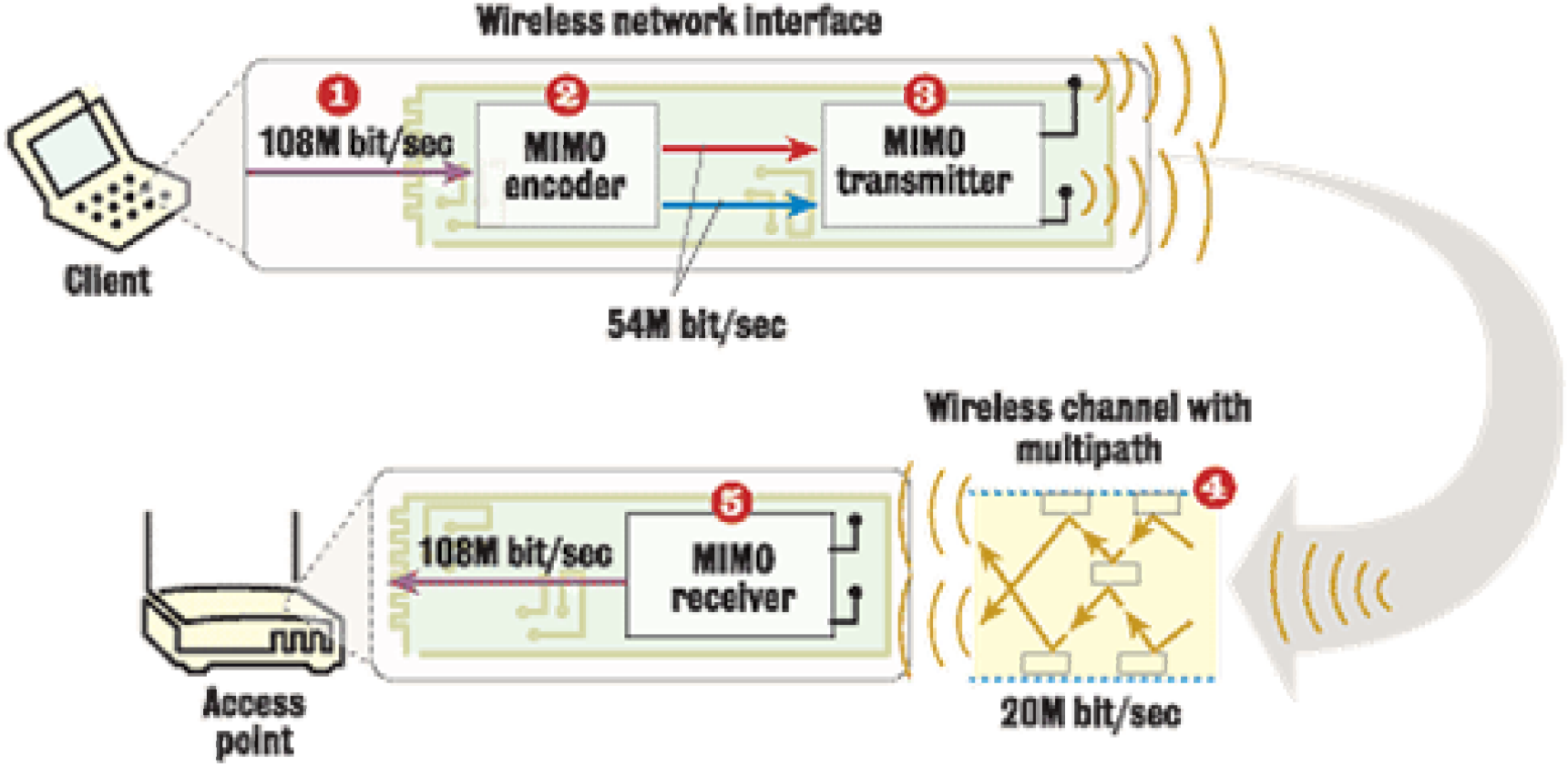


MIMO如何運作

› 多路徑訊號



MIMO如何運作

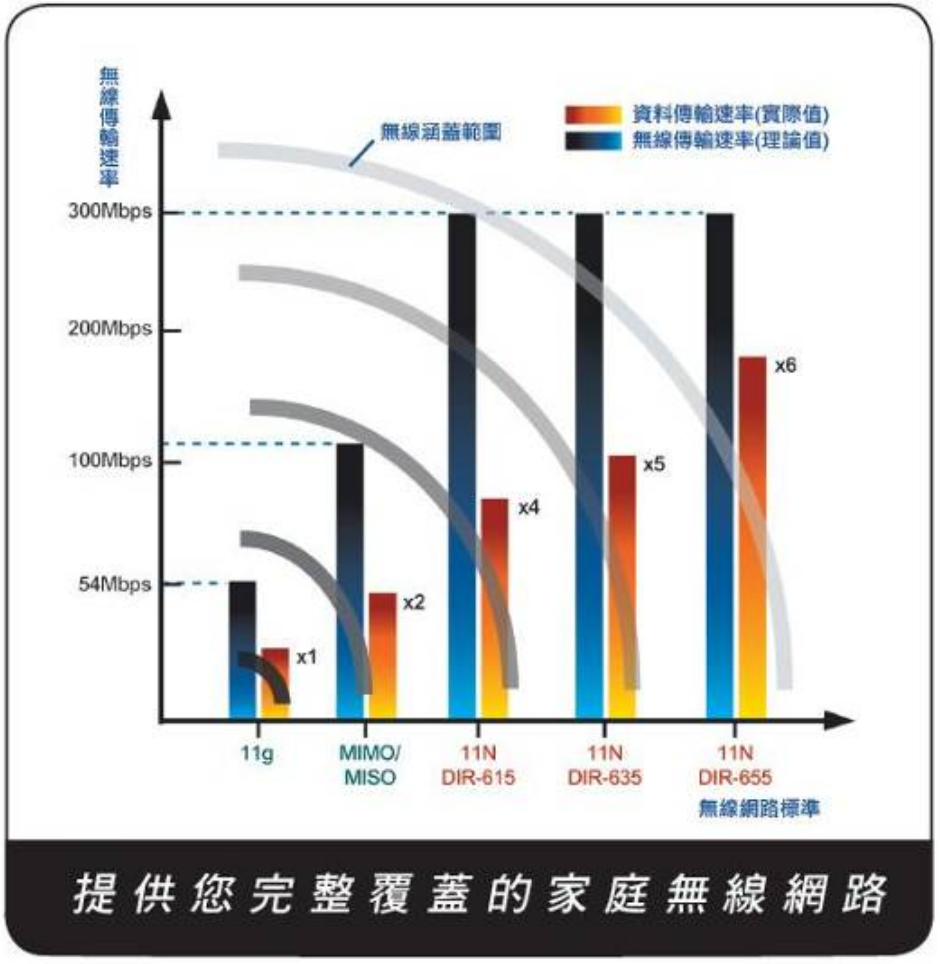

Wireless network interface
1
108M bit/sec
2
MIMO
encoder
3
MIMO
transmitter
Client
54M bit/sec
Wireless channel with
multipath
4
5
108M bit/sec
MIMO
receiver
Access
point
20M bit/sec

Wireless 無線效能差異比較

› 802.11g 無線標準
  -SISO (單一天線1TX/1RX)
  -實體層傳輸速率 54Mbps
  -應用層傳輸速率 25Mbps

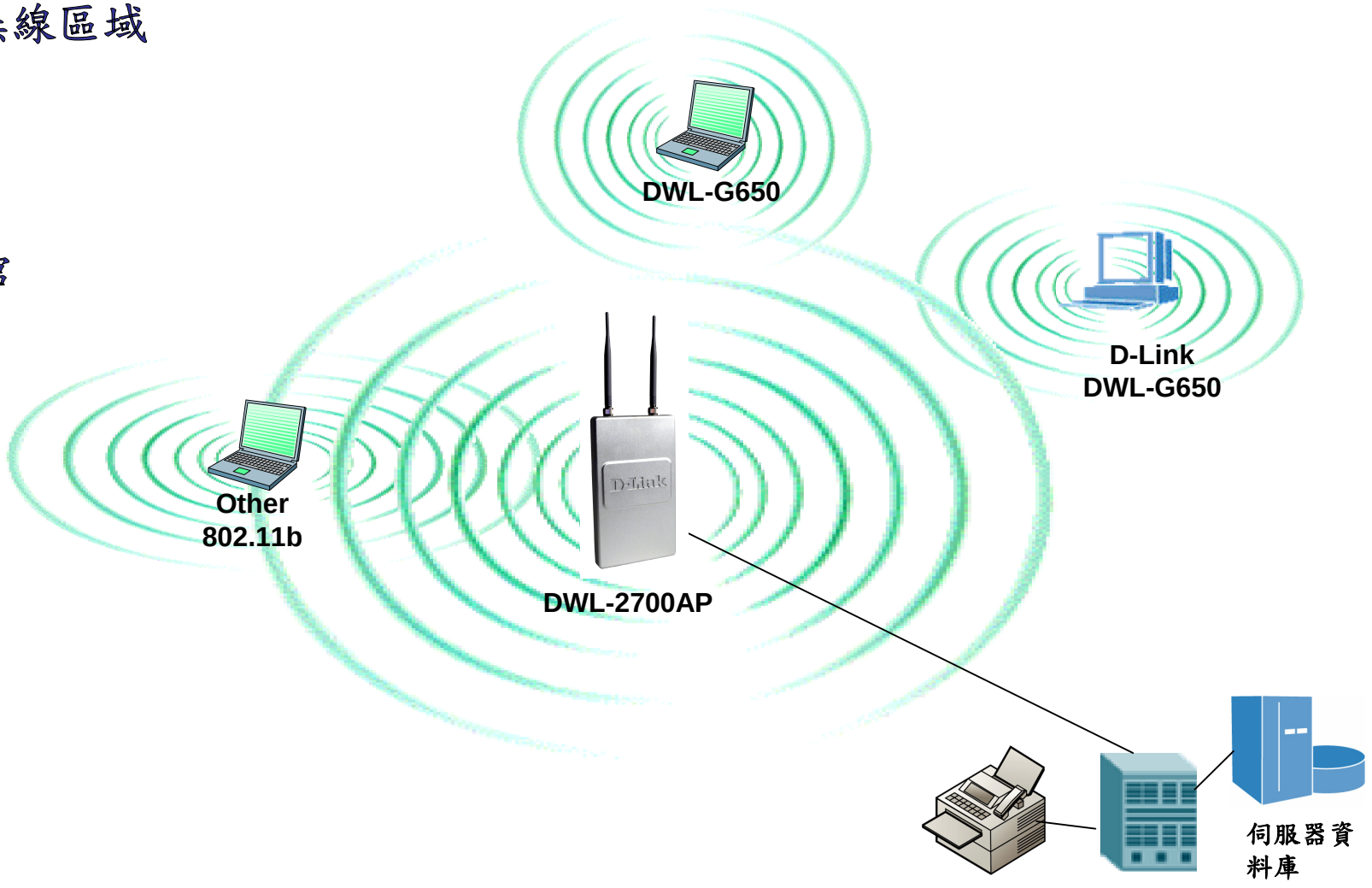
› 802.11n 無線標準
  -MIMO (多組天線技術)
  -實體層傳輸速率 300Mbps
  -應用層傳輸速率
  DIR-615 2TX/2RX：80Mbps
  DIR-635 2TX/3RX：100Mbps
  DIR-655 2TX/3RX：150Mbps

測試數據為搭配D-Link Wireless N 無線網



標準存取節點模式

- 廣大無線區域
- 應用
- 倉庫
- 圖書館
- 醫院

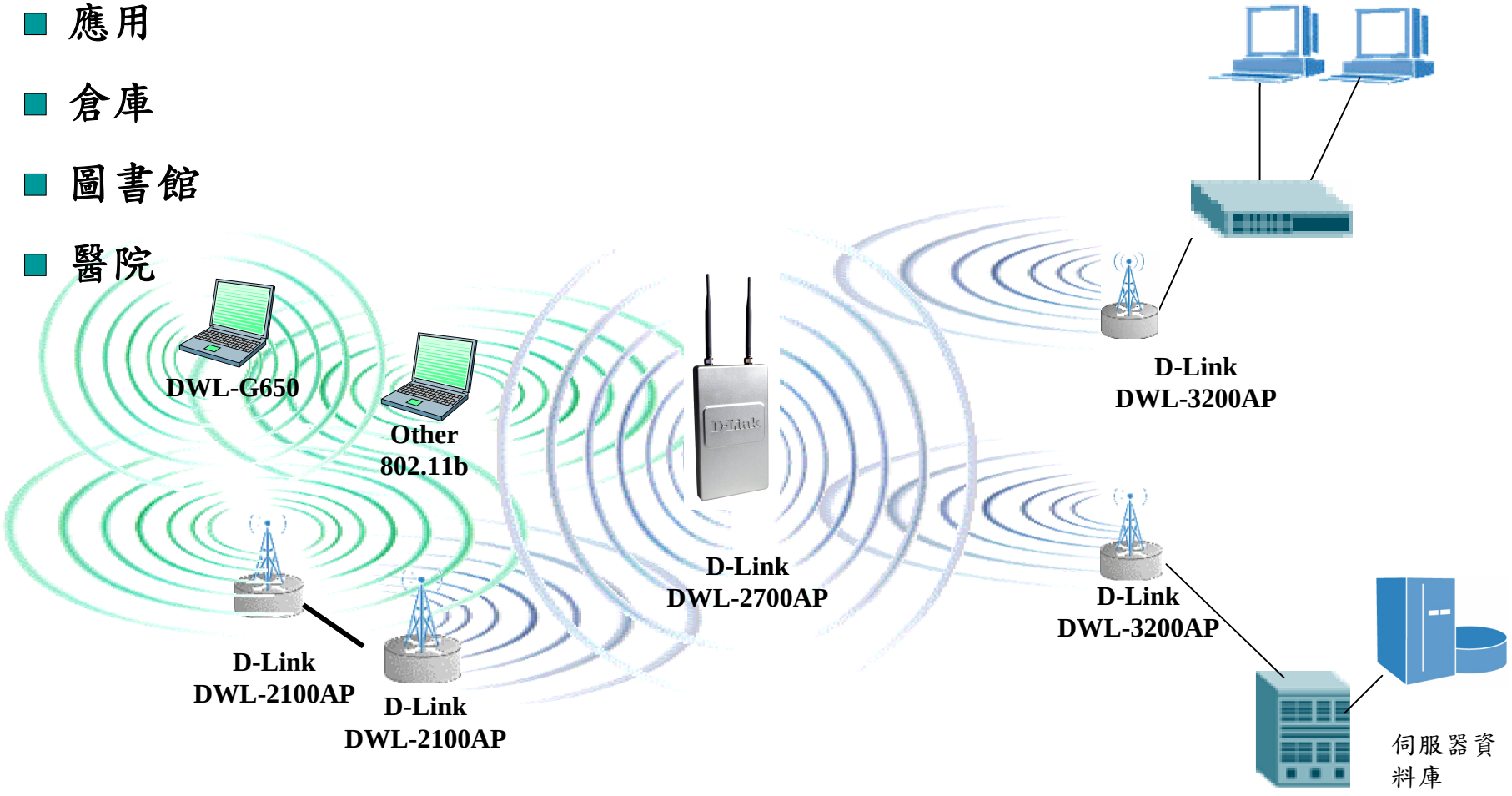


點對點橋接模式

- 高達22/54/108Mbps兩個網路無線連接
- 避免昂貴的鋪線費用
- 可選擇天線
- 室內工作站應用

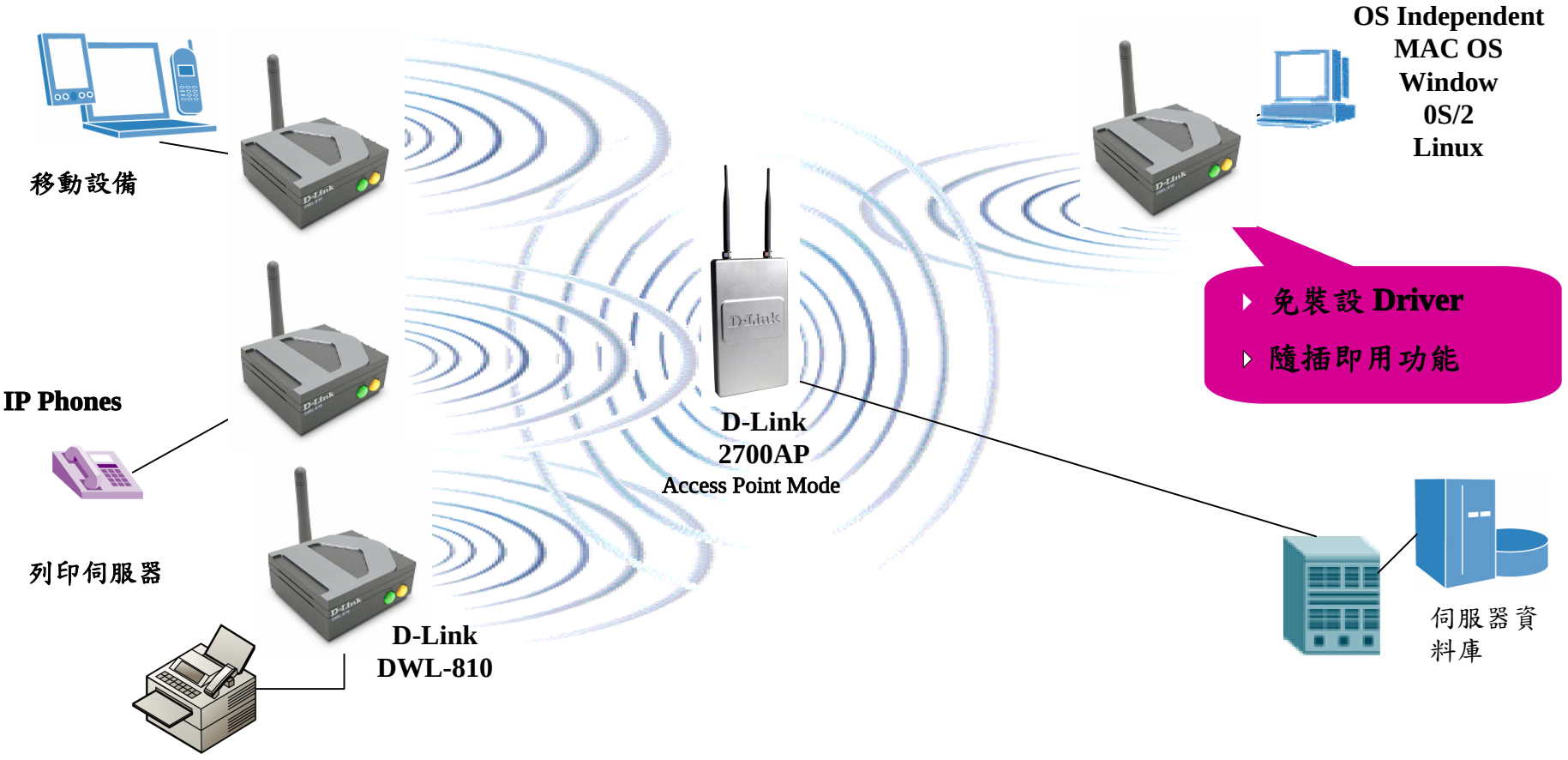
點對多點模式

- 廣大無線區域
- 應用
- 倉庫
- 圖書館
- 醫院



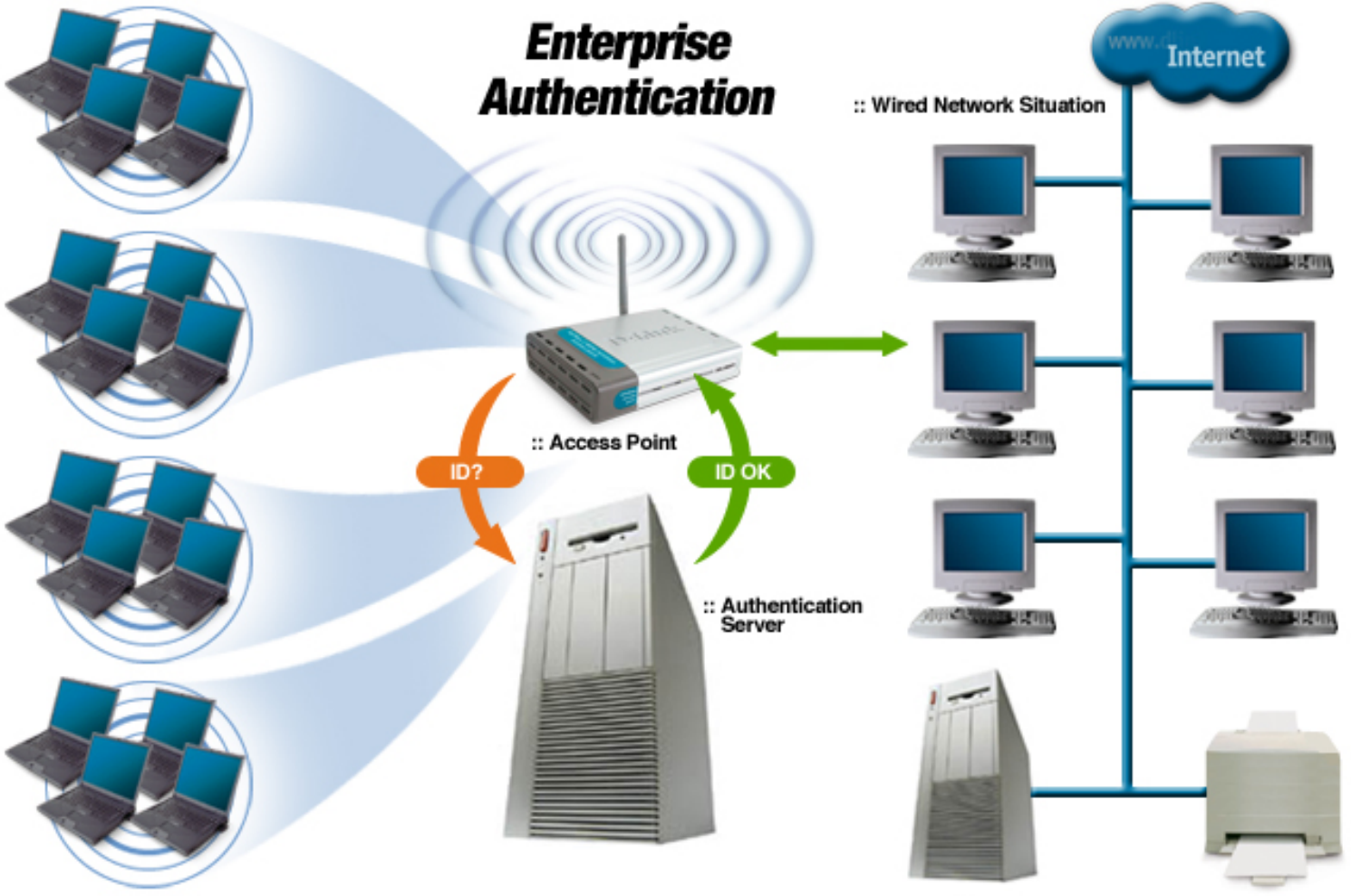
用戶橋接模式

- 能夠將任何標準的乙太網設備轉換成標準用戶802.11b
- 無須安裝驅動程式



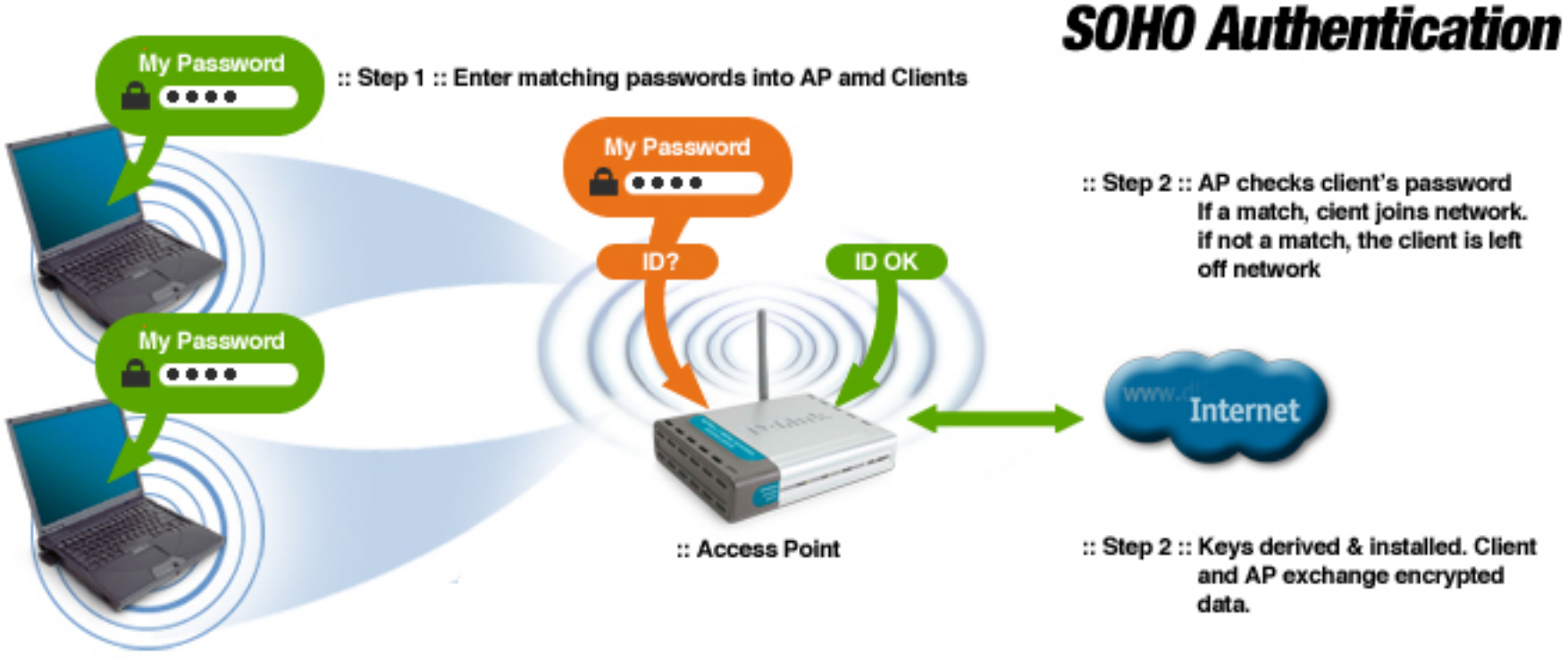
安全性-企業驗證流程

- Extensible Authentication Protocol (WPA-EAP)



安全性-小型辦公室與SOHO族

- Pre-Shared Key (WPA-PSK)



性能Performance

- 實際的傳輸效能約為號稱的1/3~1/2
  - 以802.11b(11Mbps)為例，實際上只有4~6Mbps max
- 影響性能的主要因素有
  - 不規律性的無線電波通訊
  - 強烈的無線電波環境
  - 建築物結構
  - 基地台安置的地點
  - 使用的人數
  - 資料量的多寡
- 實際上，要精確評估性能指標是很困難的

無線可用範圍Range

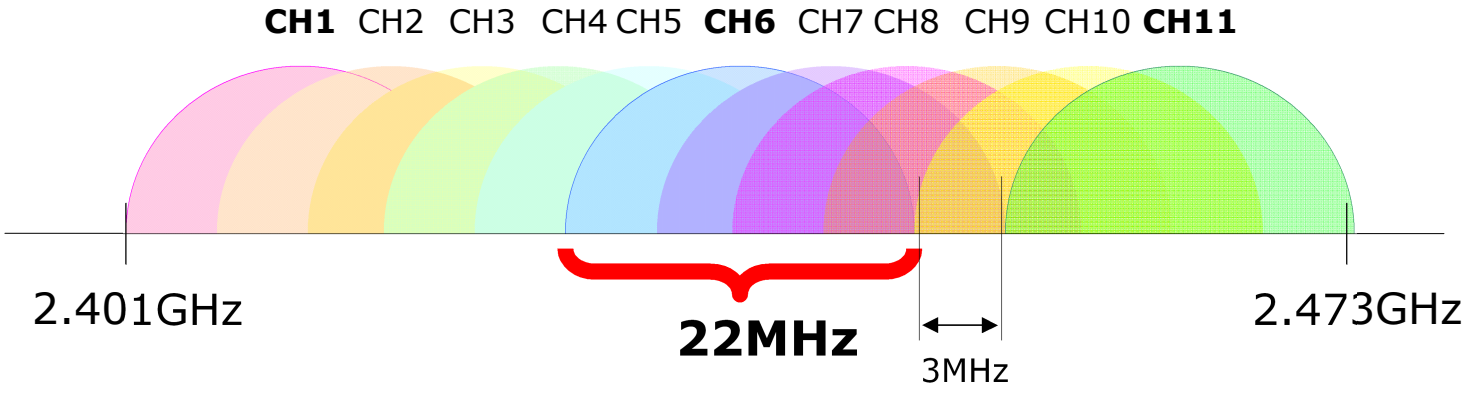
- 一般我們都說在室內空間可達100公尺，開放空間可達300公尺
  - 實際上的設定合理的範圍約為
    - 30~50公尺 1Mbps
    - 10~25公尺 11Mbps
  - 影響無線涵蓋範圍的因素有
    - 建築物的結構與天線的方位(定位)
    - 建築物的死角
    - 溫度
- 解決方法：增加AP數量

安全Safe

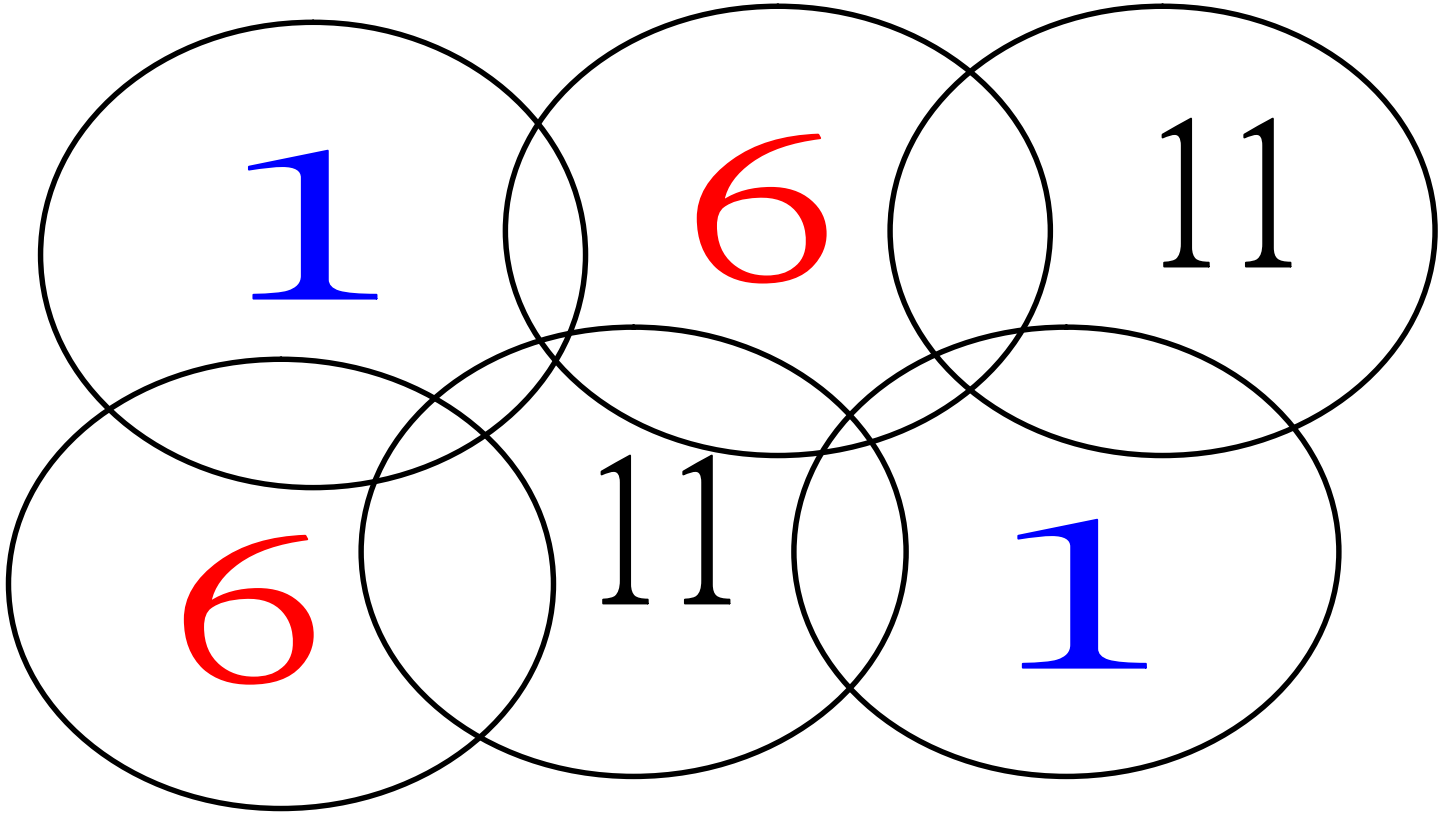
- 無線通訊到底安不安全
  - 無線一般的輸出功率約為100mW
  - 手機輸出功率範圍為600mW
  - 無線電對講機到5W!
- 加上政府嚴格的規定(如我國交通部的DGT)
- 是的，請客戶無須度過擔心，Wireless is Safe

802.11b & 11g無線網路可用的頻道

- 在2.4GHz ISM中，同一空間、欲避免干擾，可以選擇第1、6、11等三個頻道(相隔5頻道，中心頻距25MHz)。

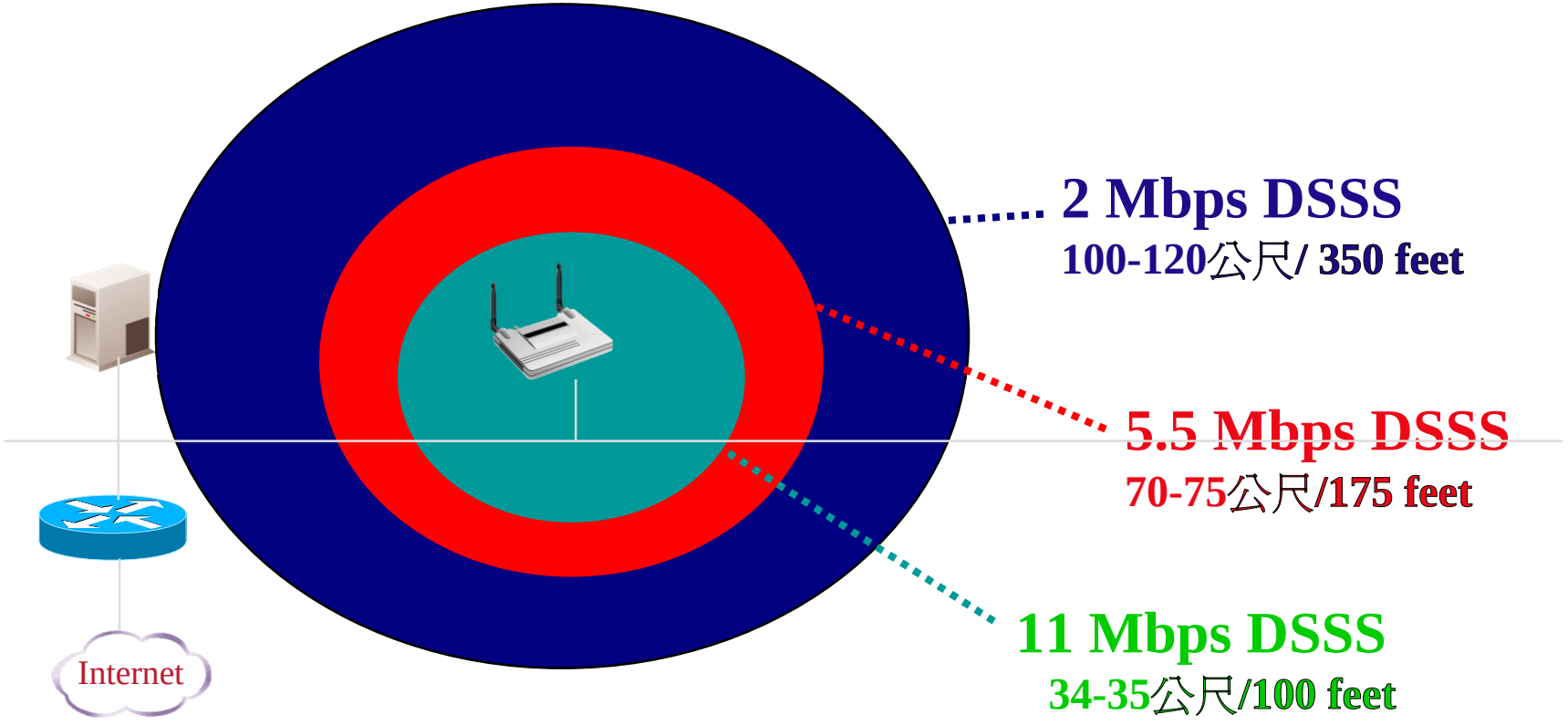


多AP時Channel規劃簡示圖



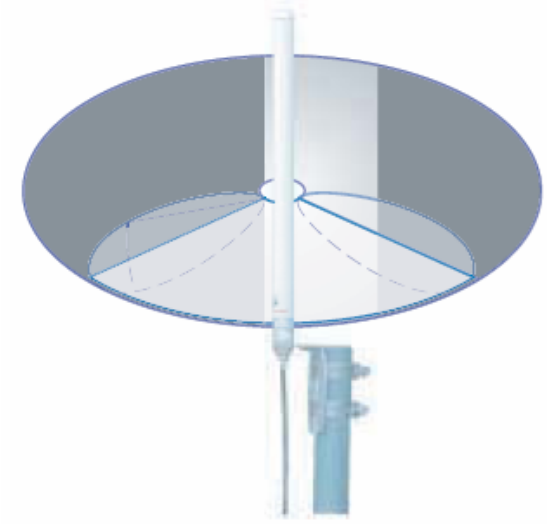
802.11b 無線網路的傳輸距離

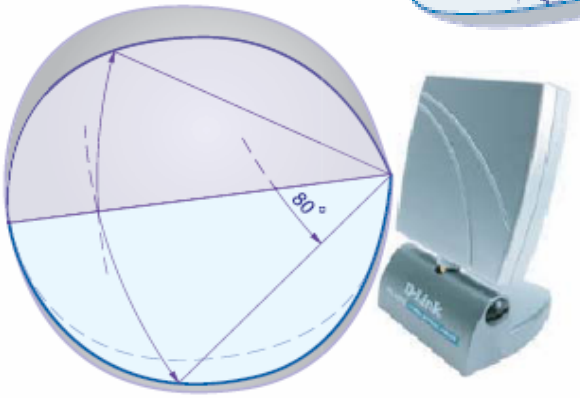
- 無線網路使用距離與他的傳輸速率有絕對關係，傳輸速率越大其傳輸距離就越短。

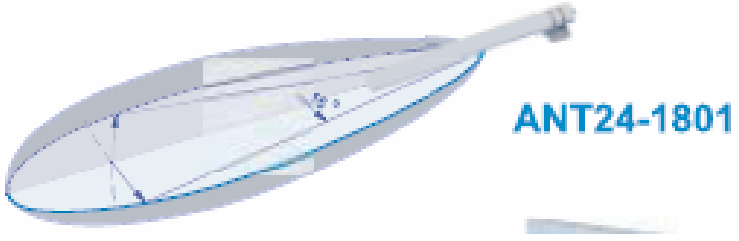


Antenna天線種類

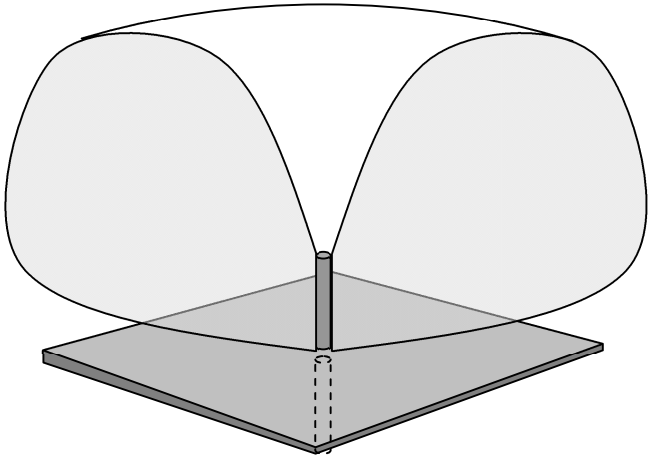
- Omni-directional antenna (全向式天線)
- Semi-directional antenna (半指向式)
- Highly-directional antenna (高指向式)



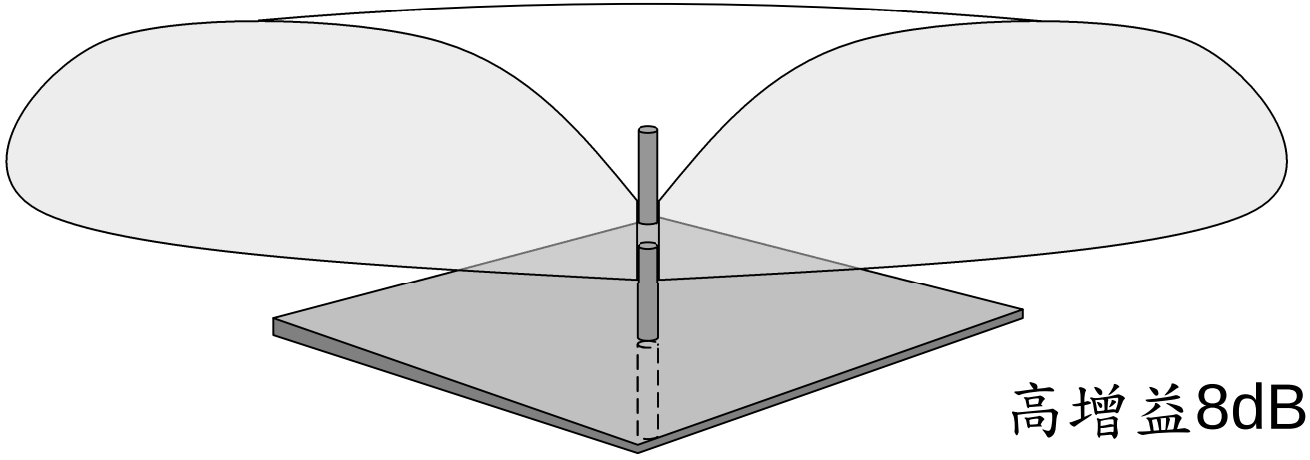




全向式天線能量放射



2dBi天線



高增益8dBi天線

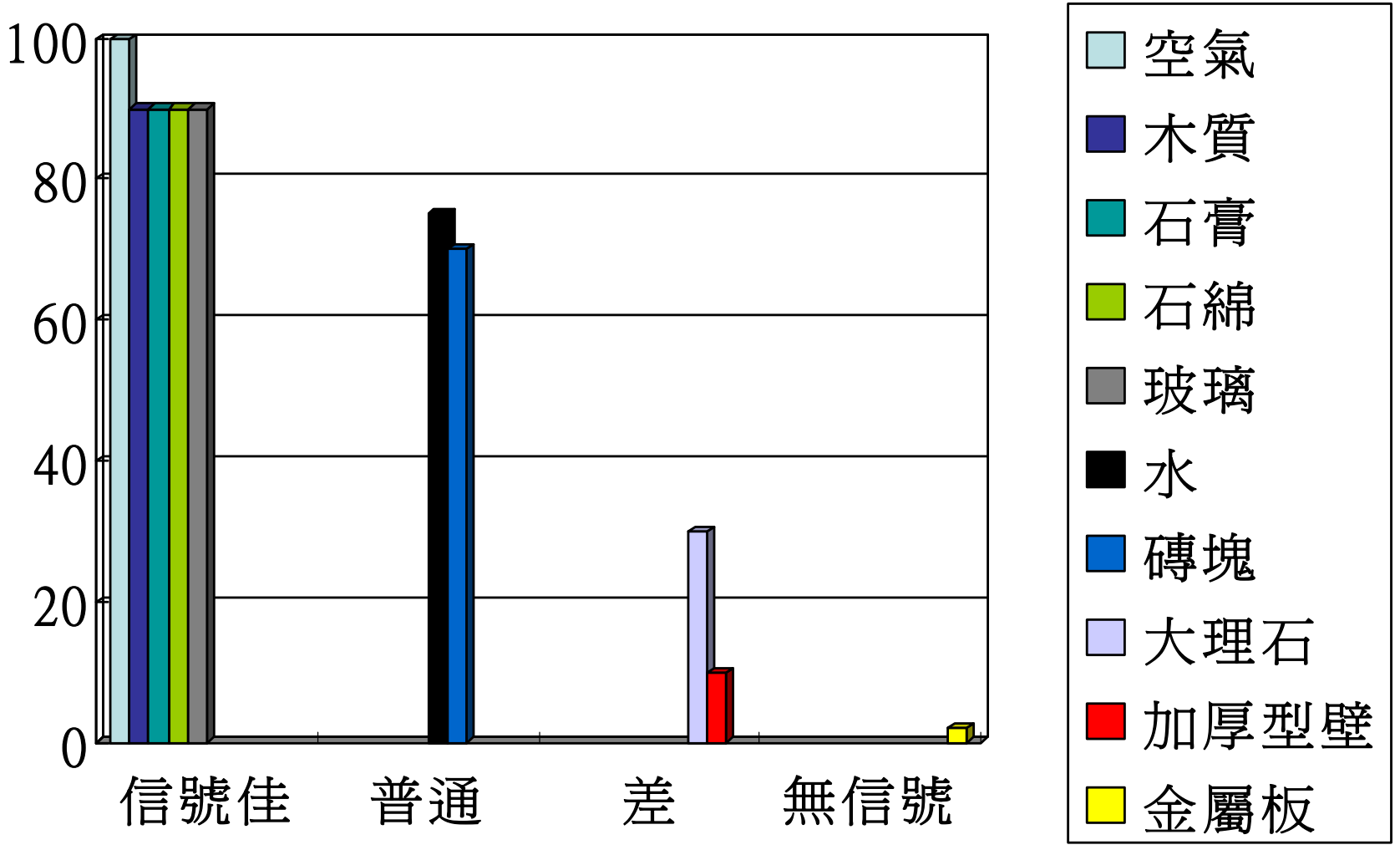
無線AP-擺放方式

一台AP 可連接多少台PC?

- 對無線網路而言我們以一台無線網路基地台的最多承接人數來算大約是一個基地台可承接約**10~15台左右**，這是因為考慮到下列因素；

  - **頻寬:**使用者的工作軟體在網路傳輸時一次所需的網路頻寬。
  - 一台無線基地台的負荷能力與效能比。
  - 用戶工作環境。(一般用戶或多媒體用戶)

無線網路對物質的穿透能力?



無線網路信號會不會被竊取?

- 由於目前市面上的無線網路卡大多被設計成自動搜尋頻狀態，所以有可能您家裡的無線網路基地台所發射出來的信號，會被隔壁鄰居使用而不自知，若不希望這種情況產生，可作下列設定來避免。
- 鎖住特定電腦使用無線網路卡的
  - MAC Address
- 啓動您的無線網路基地台及無線網路卡上的
  - WEP加密功能(容易遭有心人士破解)
  - WPA-PSK/WPA2-PSK (建議使用此種方式進行加密)

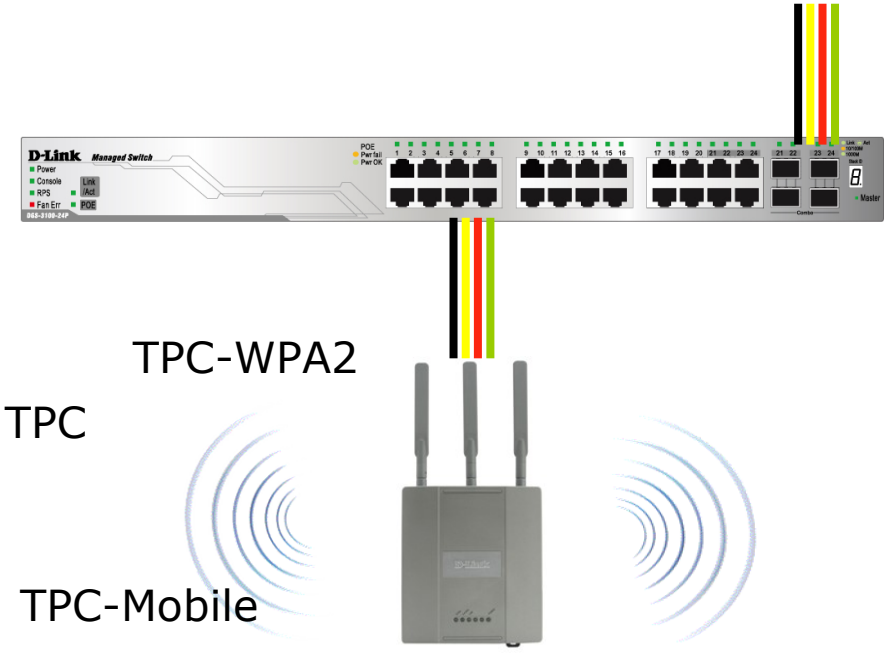
提供設備項目-無線基地台

DAP-2590 802.11a/b/g/n 無線基地台

- 高效能傳輸：
  - 無線傳輸達300Mbps傳輸速率
  - 以Gigabit介面連結有線網路提供高傳輸頻寬
- 高擴充性：
  - 3支(2T3R)雙頻可換式天線，彈性擴充無線連線範圍
  - 各校增設無線基地台中心端不需加購設備或授權
- 整合多元網路應用服務
  - 提供8組SSID，搭配WiNOC多種認證方式與網路VLAN應用
  - 依據不同應用提供頻寬與優先權設定QoS功能
- 穩定安全網路連線
  - 完整安全加密機制(WPA2，802.1X)
  - 金屬外殼，強化硬體穩定性
  - Wireless Partition阻隔無線用戶相互連線
- 節能減碳
  - 搭配WiNOC排程功能，集中管理電源節能省電

DAP-2590

架構應用說明—無線AP



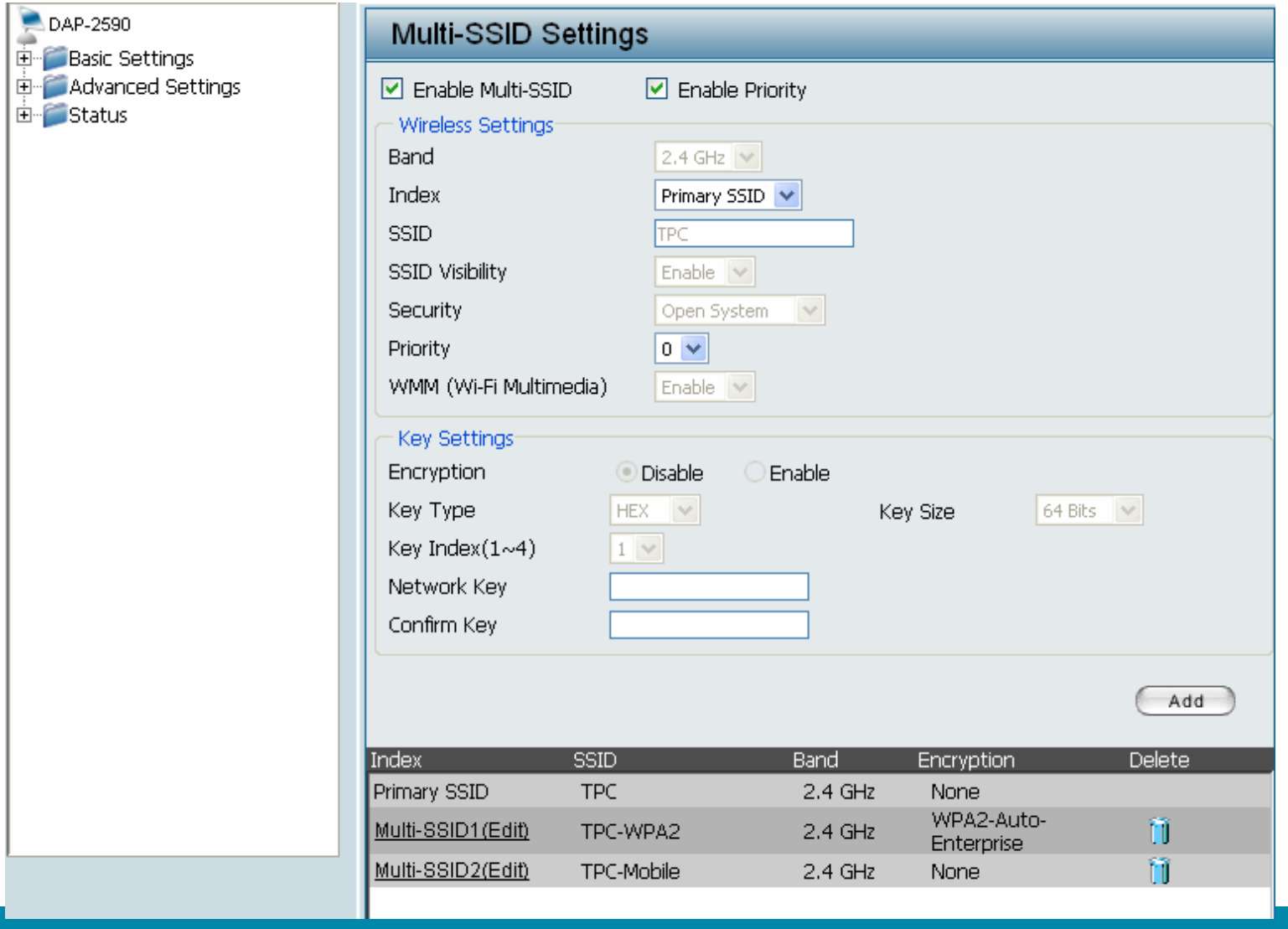
每台DAP-2590提供三組SSID,
TPC提供web認證功能
TPC-WPA2提供WPA2認證功能
TPC-Mobile提供行動裝置MAC認證功能

無線AP連接注意事項

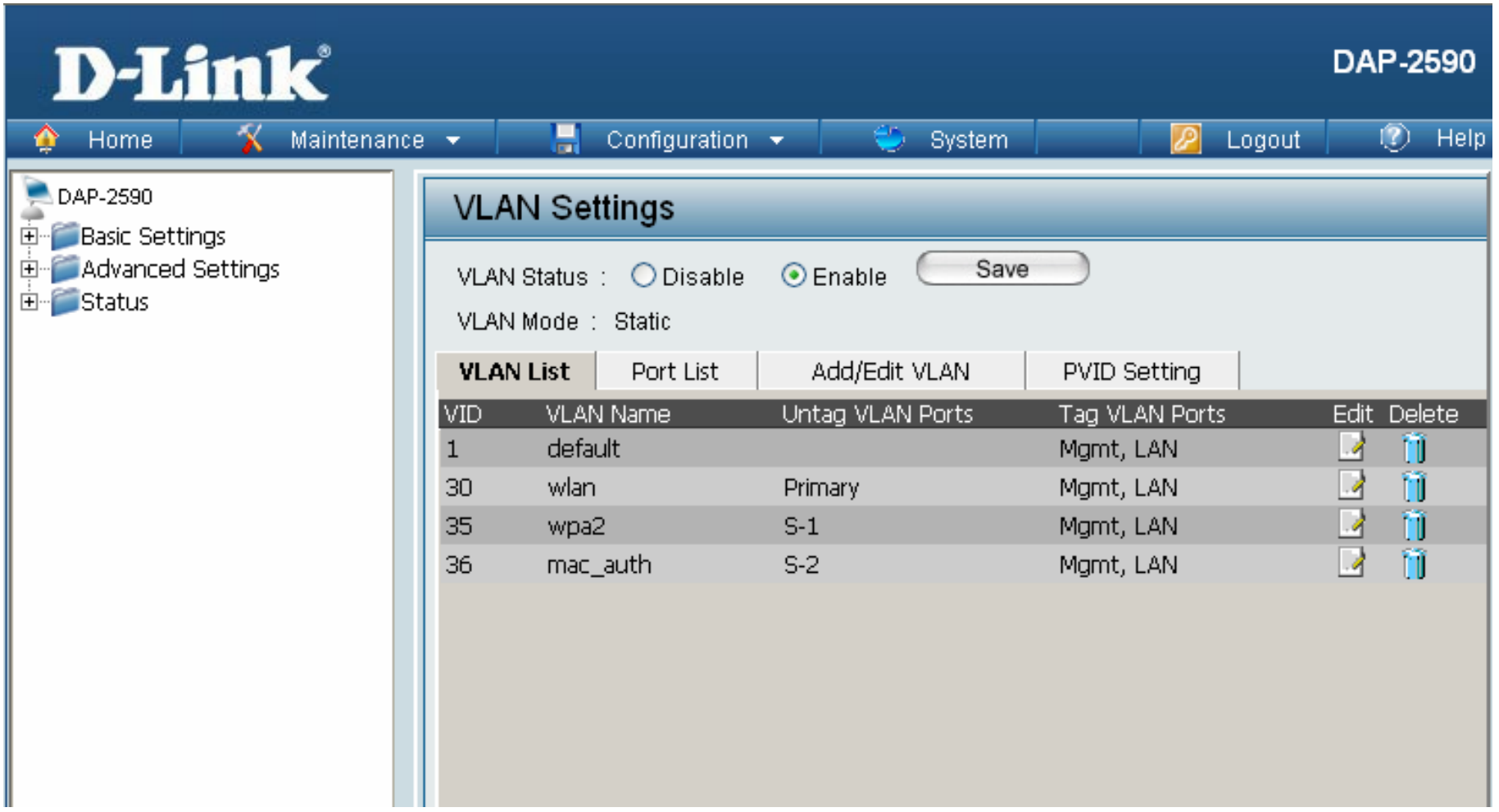
- 由於無線DAP-2590具備三組SSID,也切割3組vlan對應,因此必須接到有規劃的DGS-3100 Switch上特定的Port,該Port接經過設定,vlan可以相互匹配,任意接線將造成不通的現象

- 一般原則規劃DGS-3100最後面的數個Port用來連接DAP-2590

SSID狀態


DAP-2590
Basic Settings
Advanced Settings
Status
Multi-SSID Settings
Enable Multi-SSID
Enable Priority
Wireless Settings
Band
2.4 GHz
Index
Primary SSID
SSID
TPC
SSID Visibility
Enable
Security
Open System
Priority
0
WMM (Wi-Fi Multimedia)
Enable
Key Settings
Encryption
Disable
Enable
Key Type
HEX
Key Size
64 Bits
Key Index(1~4)
1
Network Key
Confirm Key
Add
Index
SSID
Band
Encryption
Delete
Primary SSID
TPC
2.4 GHz
None
Multi-SSID1(Edit)
TPC-WPA2
2.4 GHz
WPA2-Auto-Enterprise
Multi-SSID2(Edit)
TPC-Mobile
2.4 GHz
None

Vlan對應


D-Link
DAP-2590
Home
Maintenance
Configuration
System
Logout
Help
DAP-2590
Basic Settings
Advanced Settings
Status
VLAN Settings
VLAN Status : Disable Enable Save
VLAN Mode : Static
VLAN List
Port List
Add/Edit VLAN
PVID Setting
VID VLAN Name Untag VLAN Ports Tag VLAN Ports Edit Delete
1 default Mgmt, LAN
30 wlan Primary Mgmt, LAN
35 wpa2 S-1 Mgmt, LAN
36 mac_auth S-2 Mgmt, LAN

舊有AP納入

- 學校內若已經有採購D-Link DWL-3200AP,亦想加入如DAP-2590的功能,AP設定部份可參考SOP,另外還需針對以下兩者進行調整

A.規劃DGS-3100特定Port設定vlan tag功能接取AP

B.後端認證系統需要加入此AP進行納管與WPA2認證

- 學校內的舊AP若部分功能無法達到如DAP-2590功能,但至少可支援SSID TPC的web認證方式,那麼可將AP的SSID改為TPC後,於DGS-3100上規劃特定的wlan vlan的untag Port接取PC,需特別注意AP的IP管理問題

AP失連問題

- 由於DAP-2590規劃採用DGS-3100 PoE供電,AP若因為失連等其他原因需要重新啟動的話,無須至現場插拔線路,可針對PoE Switch特定Port開關PoE功能,讓設備重新啟動

無線網路使用者認證伺服器DSA-3600
基礎操作及簡易故障排除

D-Link®
Building Networks for People

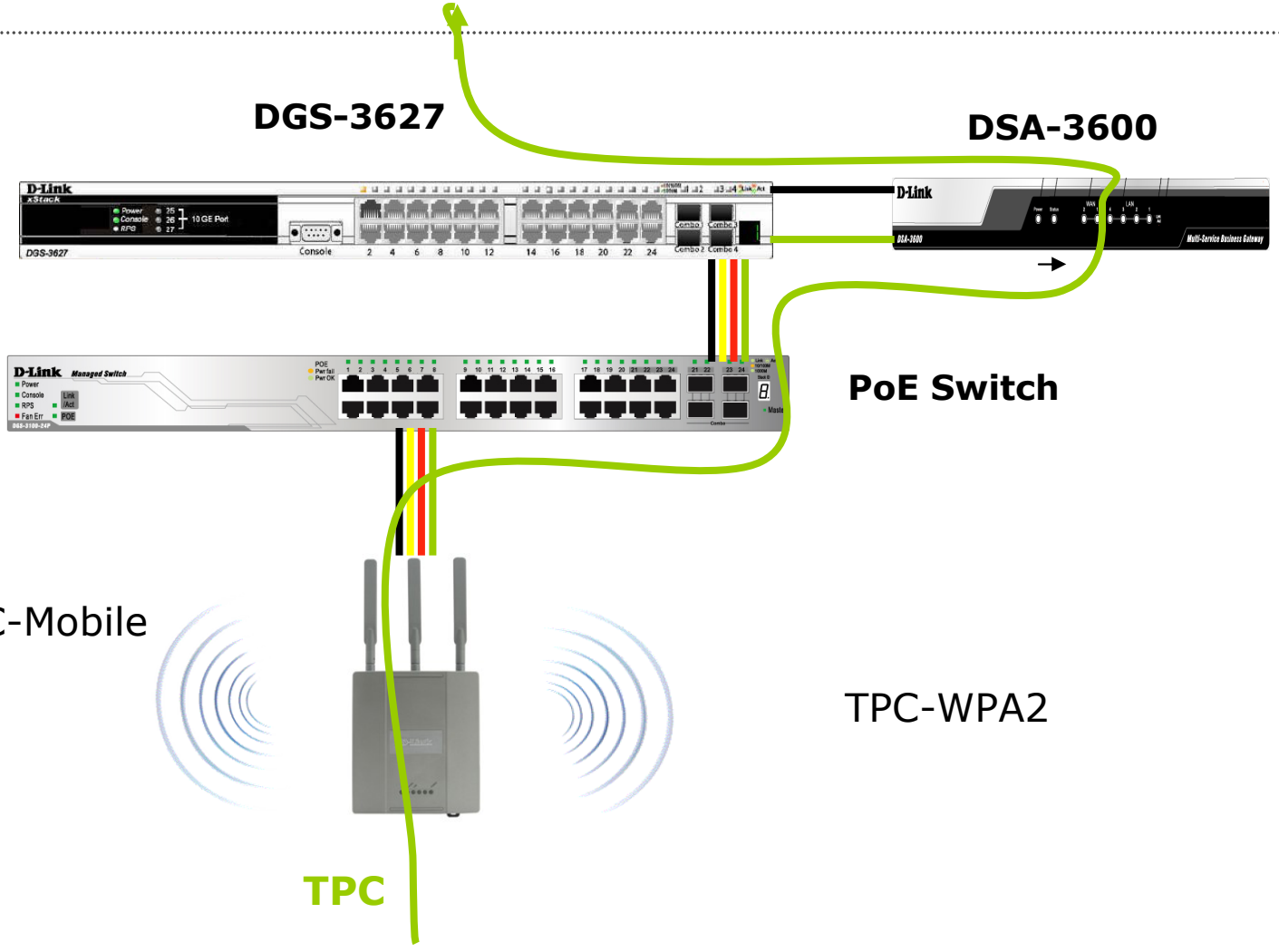
提供設備項目-無線網路使用者認證設備

DSA-3600 無線認證閘道器

- 高相容性
  - 支援多樣性無線認證機制(POP3 、LDAP 、Radius)
- 提供客製化應用
  - 各校獨立中文化網頁認證畫面
  - 認證成功轉址機制，提升在地化網路應用
  - 網頁導引使用者安裝與使用802.1x認證
- 安全網路連線
  - 依據認證身份分配網路權限及頻寬

DSA-3600

無線AP認證機制說明



連線TPC SSID的Traffic Flow

開啟網頁,出現認證視窗


新莊國小無線網路
歡迎使用無線網路
請輸入你的帳號密碼
使用者名稱
密碼
Submit
Clear
Remaining
記住我的帳號
新莊國小 Copyright (c)

登入說明

- 台北縣內的帳號,可直接輸入帳號或輸入帳號加上@tpc.edu.tw
- Example
- test
- test@tpc.edu.tw
- 其他縣市的使用者,請務必輸入帳號@domain資訊
- test1@klc.edu.tw

登入成功畫面


Login Successfully - Microsoft Internet Explorer 是由 D-Link 提供
登入成功
你好, tatung@tpc.edu.tw
如不使用無線網路，請按 Logout 按鈕登出
Logout
謝謝你的使用
登入時間: 2010-05-12 11:50
Remaining Time:
Hour
Min
Sec
Start Browsing

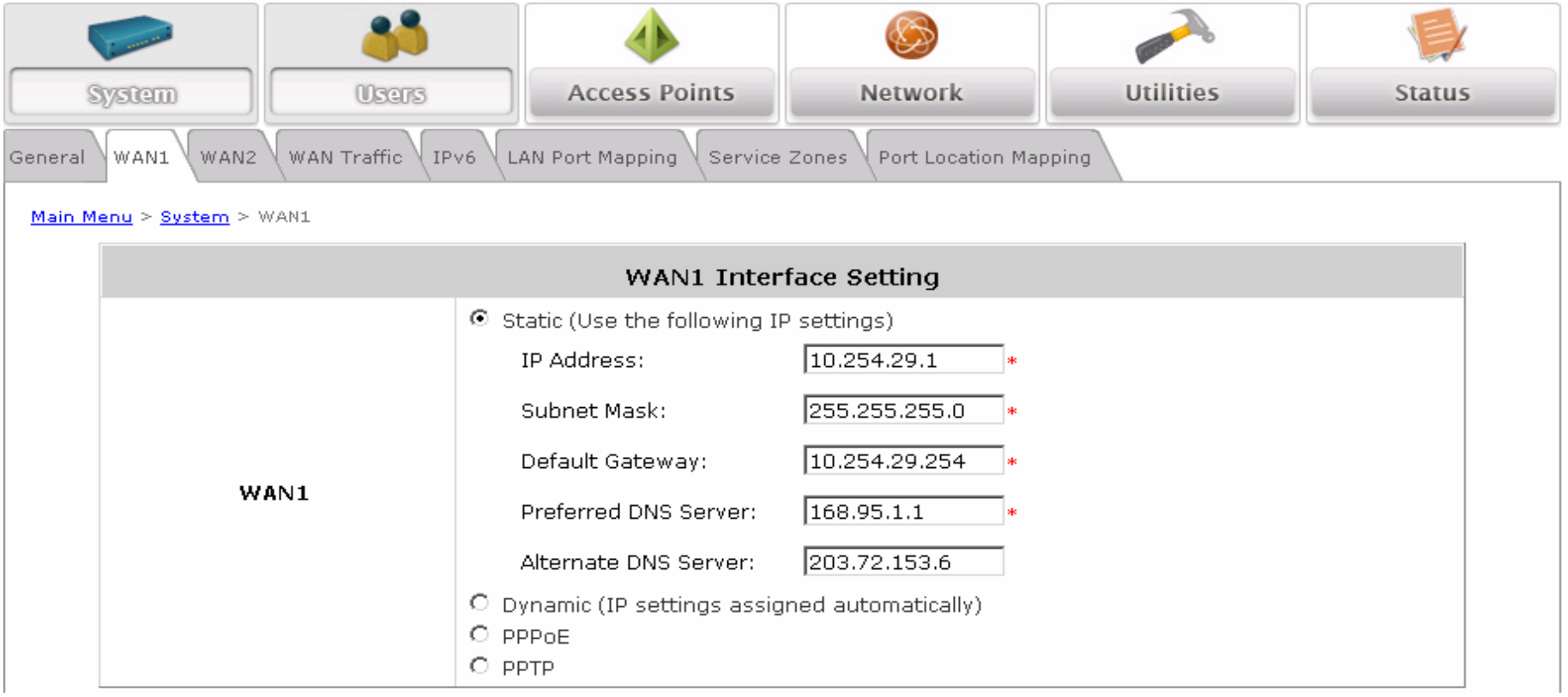
關閉登入成功畫面處置

- 如果不小心將登入成功畫面關閉的話,依然可以繼續使用網路,但若需要登出,請在瀏覽器上鍵入
- http://logout
- Or
- http://1.1.1.1

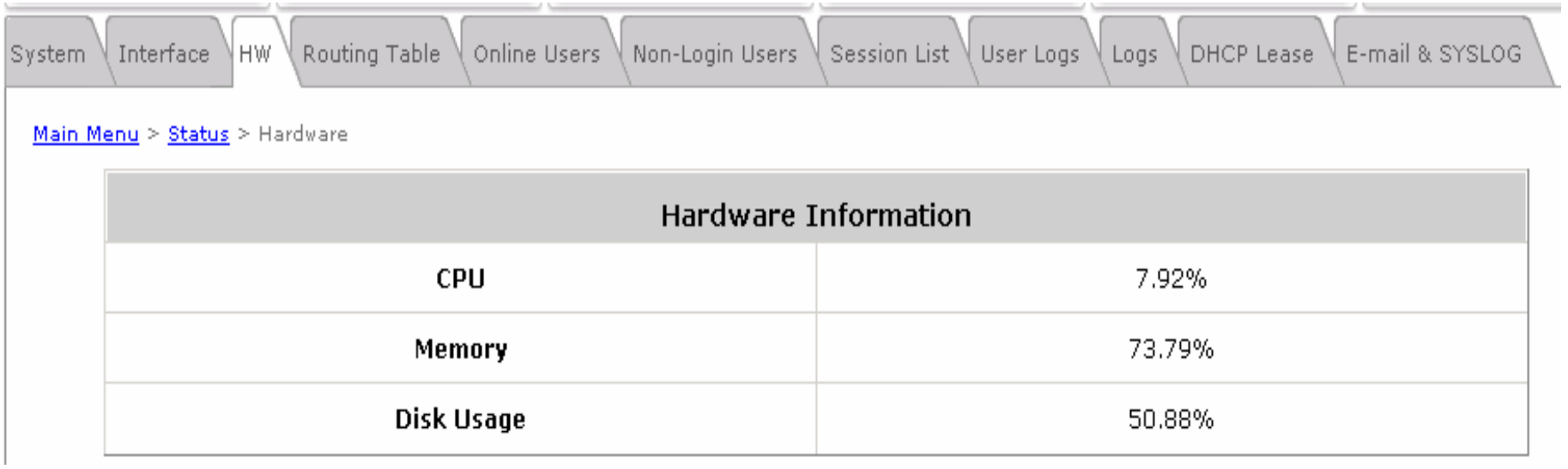
即可登出

由於同一個帳號僅能夠支援一個人登入,無法多人使用同一帳號登入,因此建議不小心關閉網頁後,若不使用,請手動登出

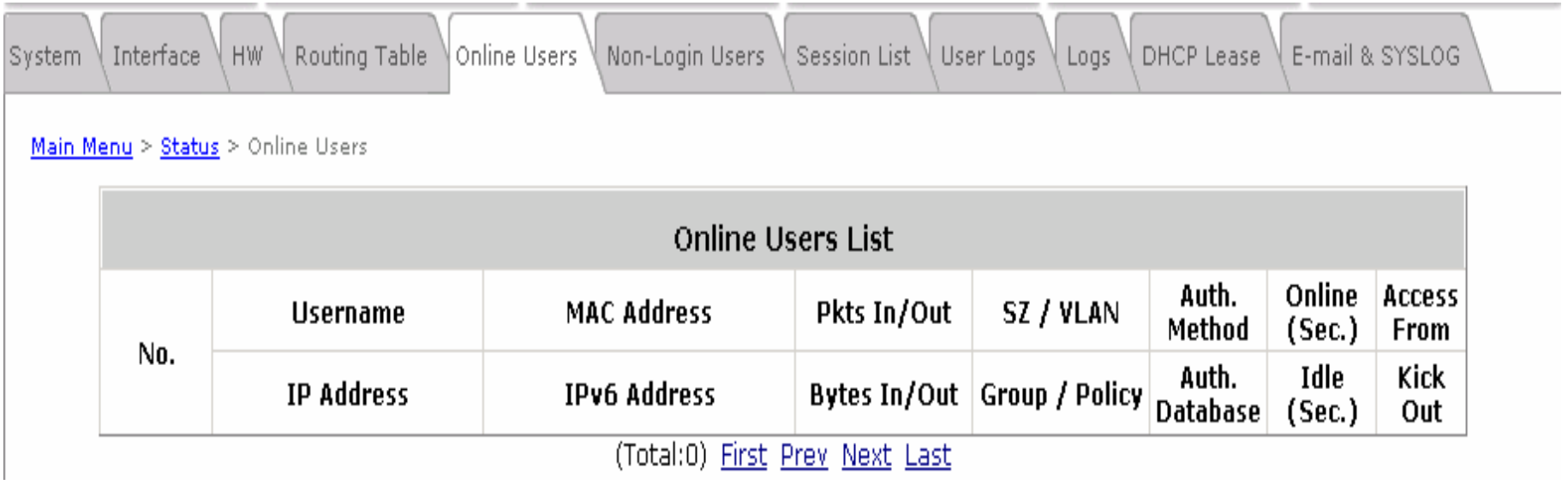
WAN IP


System
Users
Access Points
Network
Utilities
Status
General
WAN1
WAN2
WAN Traffic
IPv6
LAN Port Mapping
Service Zones
Port Location Mapping
Main Menu > System > WAN1
WAN1 Interface Setting
WAN1
Static (Use the following IP settings)
IP Address: 10.254.29.1 *
Subnet Mask: 255.255.255.0 *
Default Gateway: 10.254.29.254 *
Preferred DNS Server: 168.95.1.1 *
Alternate DNS Server: 203.72.153.6
Dynamic (IP settings assigned automatically)
PPPoE
PPTP

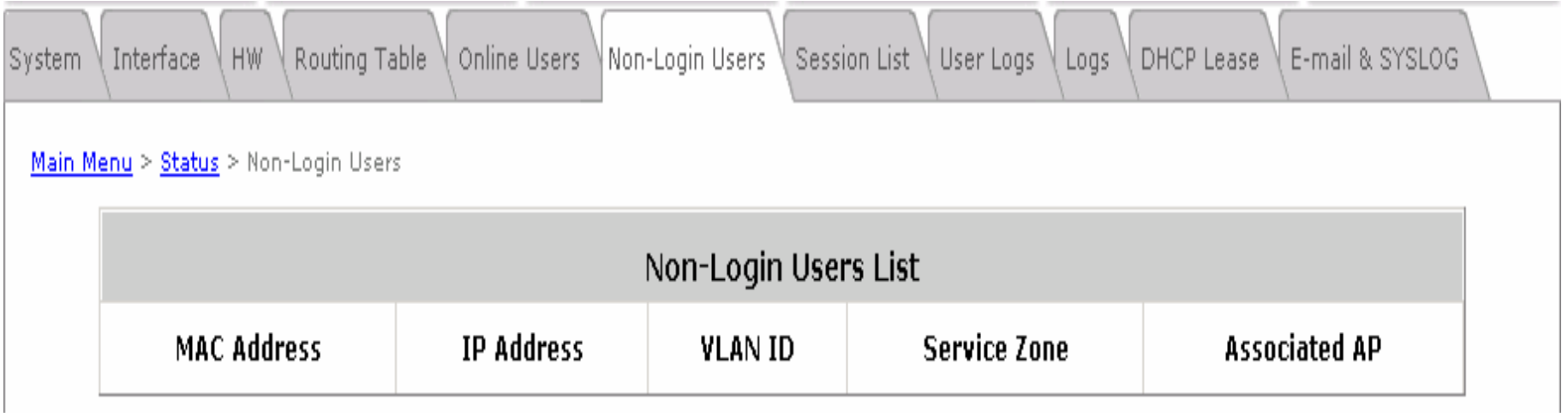
HW Status


System
Interface
HW
Routing Table
Online Users
Non-Login Users
Session List
User Logs
Logs
DHCP Lease
E-mail & SYSLOG
Main Menu > Status > Hardware
Hardware Information
CPU
7.92%
Memory
73.79%
Disk Usage
50.88%

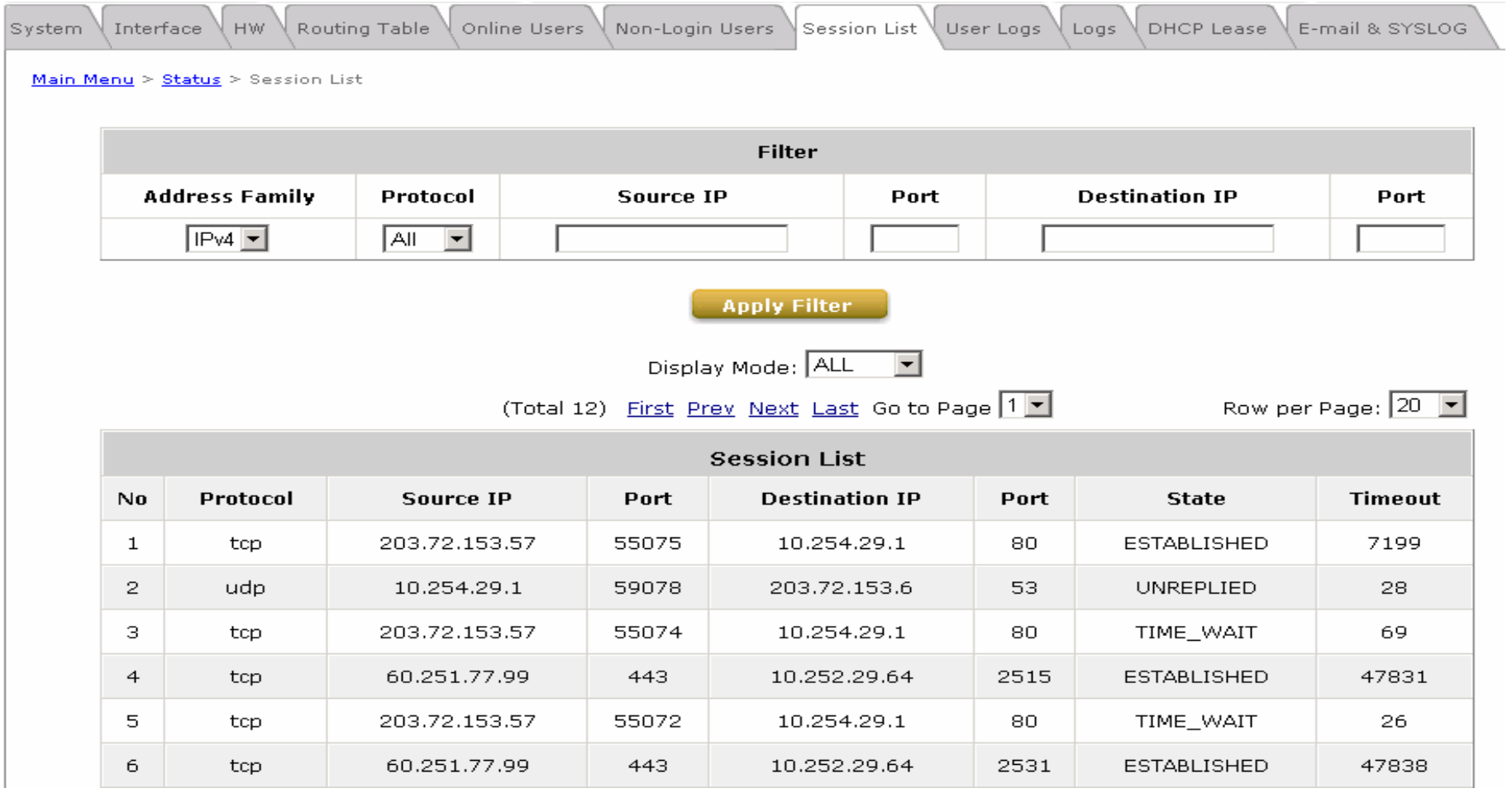
線上使用者


System
Interface
HW
Routing Table
Online Users
Non-Login Users
Session List
User Logs
Logs
DHCP Lease
E-mail & SYSLOG
Main Menu > Status > Online Users
Online Users List
No.
Username
MAC Address
Pkts In/Out
SZ / VLAN
Auth. Method
Online (Sec.)
Access From
IP Address
IPv6 Address
Bytes In/Out
Group / Policy
Auth. Database
Idle (Sec.)
Kick Out
(Total:0) First Prev Next Last

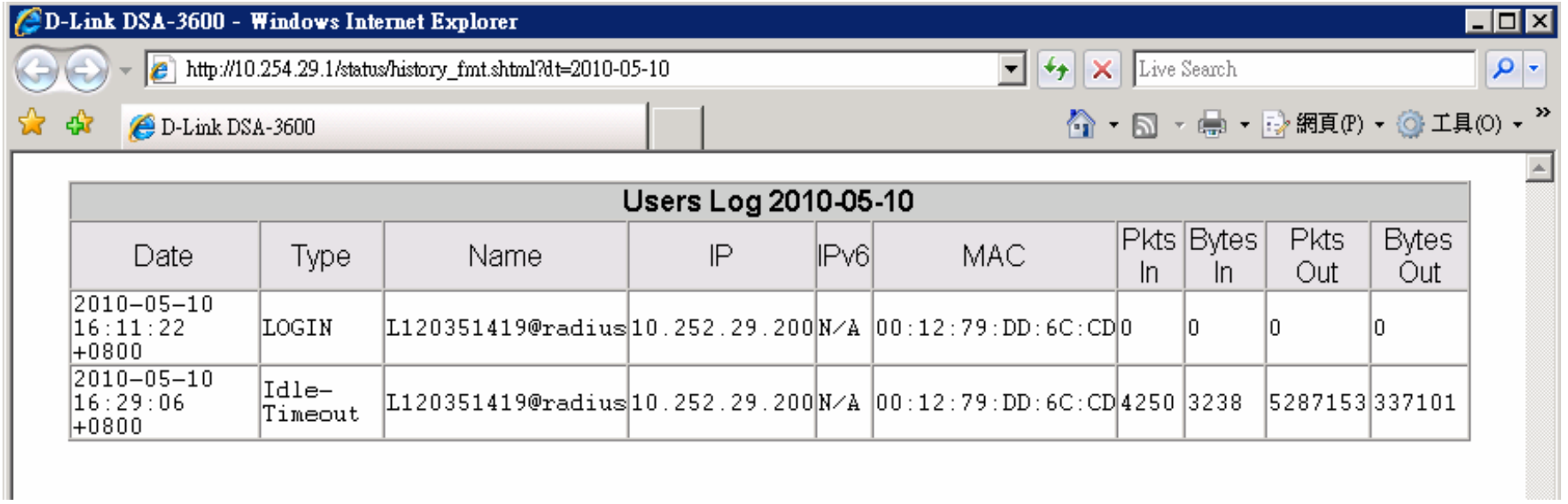
未認證使用者


System
Interface
HW
Routing Table
Online Users
Non-Login Users
Session List
User Logs
Logs
DHCP Lease
E-mail & SYSLOG
Main Menu > Status > Non-Login Users
Non-Login Users List
MAC Address
IP Address
VLAN ID
Service Zone
Associated AP

連線Session


System
Interface
HW
Routing Table
Online Users
Non-Login Users
Session List
User Logs
Logs
DHCP Lease
E-mail & SYSLOG
Main Menu > Status > Session List
Filter
Address Family
Protocol
Source IP
Port
Destination IP
Port
IPv4
All
Apply Filter
Display Mode: ALL
(Total 12) First Prev Next Last Go to Page 1
Row per Page: 20
Session List
No
Protocol
Source IP
Port
Destination IP
Port
State
Timeout
1 tcp 203.72.153.57 55075 10.254.29.1 80 ESTABLISHED 7199
2 udp 10.254.29.1 59078 203.72.153.6 53 UNREPLIED 28
3 tcp 203.72.153.57 55074 10.254.29.1 80 TIME_WAIT 69
4 tcp 60.251.77.99 443 10.252.29.64 2515 ESTABLISHED 47831
5 tcp 203.72.153.57 55072 10.254.29.1 80 TIME_WAIT 26
6 tcp 60.251.77.99 443 10.252.29.64 2531 ESTABLISHED 47838

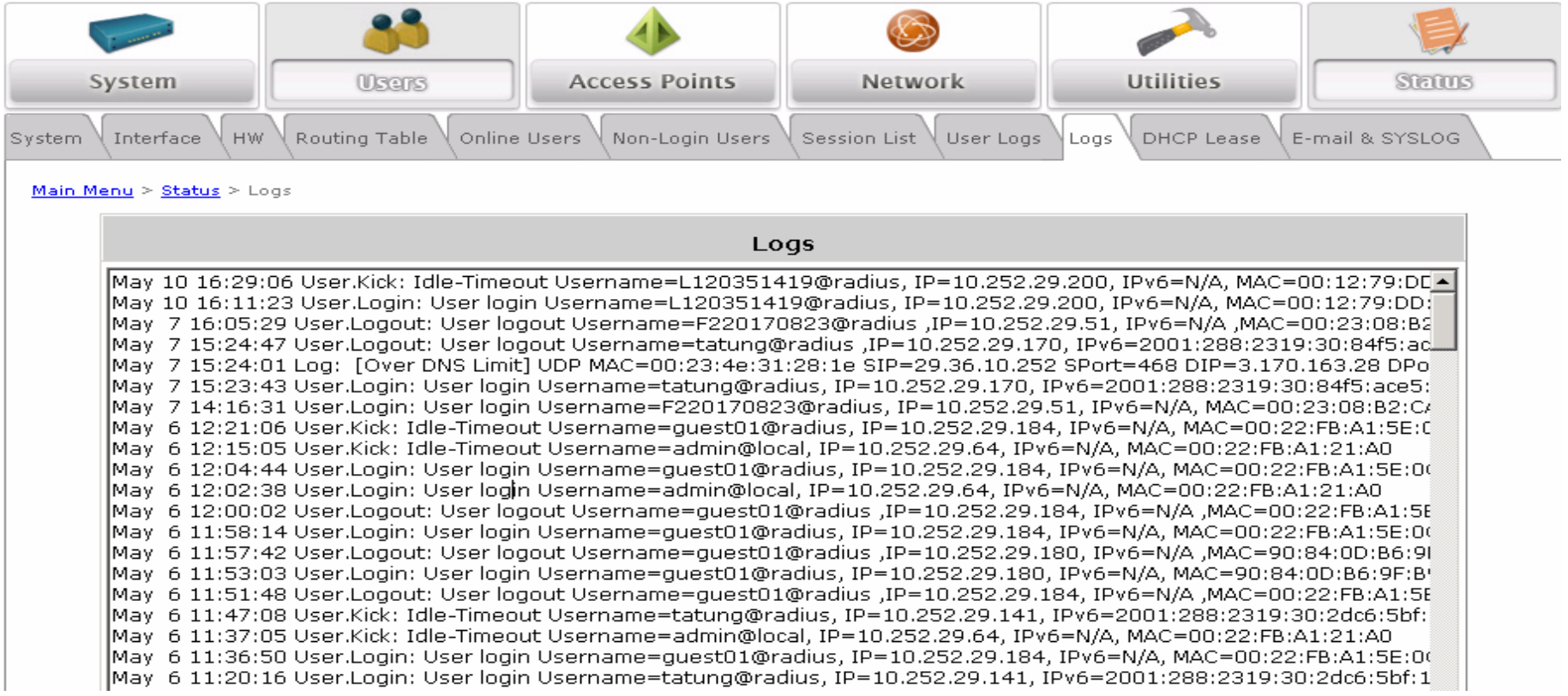
Users log



Users Log 2010-05-10

Date	Type	Name	IP	IPv6	MAC	Pkts In	Bytes In	Pkts Out	Bytes Out
2010-05-10 16:11:22 +0800	LOGIN	L120351419@radius	10.252.29.200	N/A	00:12:79:DD:6C:CD	0	0	0	0
2010-05-10 16:29:06 +0800	Idle-Timeout	L120351419@radius	10.252.29.200	N/A	00:12:79:DD:6C:CD	4250	3238	5287153	337101

logs


System
Users
Access Points
Network
Utilities
Status
System
Interface
HW
Routing Table
Online Users
Non-Login Users
Session List
User Logs
Logs
DHCP Lease
E-mail & SYSLOG
Main Menu > Status > Logs
Logs
May 10 16:29:06 User.Kick: Idle-Timeout Username=L120351419@radius, IP=10.252.29.200, IPv6=N/A, MAC=00:12:79:DD
May 10 16:11:23 User.Login: User login Username=L120351419@radius, IP=10.252.29.200, IPv6=N/A, MAC=00:12:79:DD:
May 7 16:05:29 User.Logout: User logout Username=F220170823@radius ,IP=10.252.29.51, IPv6=N/A ,MAC=00:23:08:B2
May 7 15:24:47 User.Logout: User logout Username=tatung@radius ,IP=10.252.29.170, IPv6=2001:288:2319:30:84f5:ac
May 7 15:24:01 Log: [Over DNS Limit] UDP MAC=00:23:4e:31:28:1e SIP=29.36.10.252 SPort=468 DIP=3.170.163.28 DPo
May 7 15:23:43 User.Login: User login Username=tatung@radius, IP=10.252.29.170, IPv6=2001:288:2319:30:84f5:ace5:
May 7 14:16:31 User.Login: User login Username=F220170823@radius, IP=10.252.29.51, IPv6=N/A, MAC=00:23:08:B2:CA
May 6 12:21:06 User.Kick: Idle-Timeout Username=guest01@radius, IP=10.252.29.184, IPv6=N/A, MAC=00:22:FB:A1:5E:0
May 6 12:15:05 User.Kick: Idle-Timeout Username=admin@local, IP=10.252.29.64, IPv6=N/A, MAC=00:22:FB:A1:21:A0
May 6 12:04:44 User.Login: User login Username=guest01@radius, IP=10.252.29.184, IPv6=N/A, MAC=00:22:FB:A1:5E:0
May 6 12:02:38 User.Login: User login Username=admin@local, IP=10.252.29.64, IPv6=N/A, MAC=00:22:FB:A1:21:A0
May 6 12:00:02 User.Logout: User logout Username=guest01@radius ,IP=10.252.29.184, IPv6=N/A ,MAC=00:22:FB:A1:5E
May 6 11:58:14 User.Login: User login Username=guest01@radius, IP=10.252.29.184, IPv6=N/A, MAC=00:22:FB:A1:5E:0
May 6 11:57:42 User.Logout: User logout Username=guest01@radius ,IP=10.252.29.180, IPv6=N/A ,MAC=90:84:0D:B6:9
May 6 11:53:03 User.Login: User login Username=guest01@radius, IP=10.252.29.180, IPv6=N/A, MAC=90:84:0D:B6:9F:B
May 6 11:51:48 User.Logout: User logout Username=guest01@radius ,IP=10.252.29.184, IPv6=N/A ,MAC=00:22:FB:A1:5E
May 6 11:47:08 User.Kick: Idle-Timeout Username=tatung@radius, IP=10.252.29.141, IPv6=2001:288:2319:30:2dc6:5bf:
May 6 11:37:05 User.Kick: Idle-Timeout Username=admin@local, IP=10.252.29.64, IPv6=N/A, MAC=00:22:FB:A1:21:A0
May 6 11:36:50 User.Login: User login Username=guest01@radius, IP=10.252.29.184, IPv6=N/A, MAC=00:22:FB:A1:5E:0
May 6 11:20:16 User.Login: User login Username=tatung@radius, IP=10.252.29.141, IPv6=2001:288:2319:30:2dc6:5bf:1

無線網路使用者認證機制使用教學

D-Link®
Building Networks for People

校園網路管理平台D-Link D-View 6.0

建置教學及運用

D-Link®
Building Networks for People

教育訓練大綱

- Overview of D-View 6.0
  - 功能
- D-View 6.0 安裝
  - 硬體需求
  - 軟體需求
  - 安裝 D-View 6.0 (Standard version)
  - 使用者註冊
  - 啓用D-view
- 介紹 D-View6.0 功能
  - File Function
  - View Function

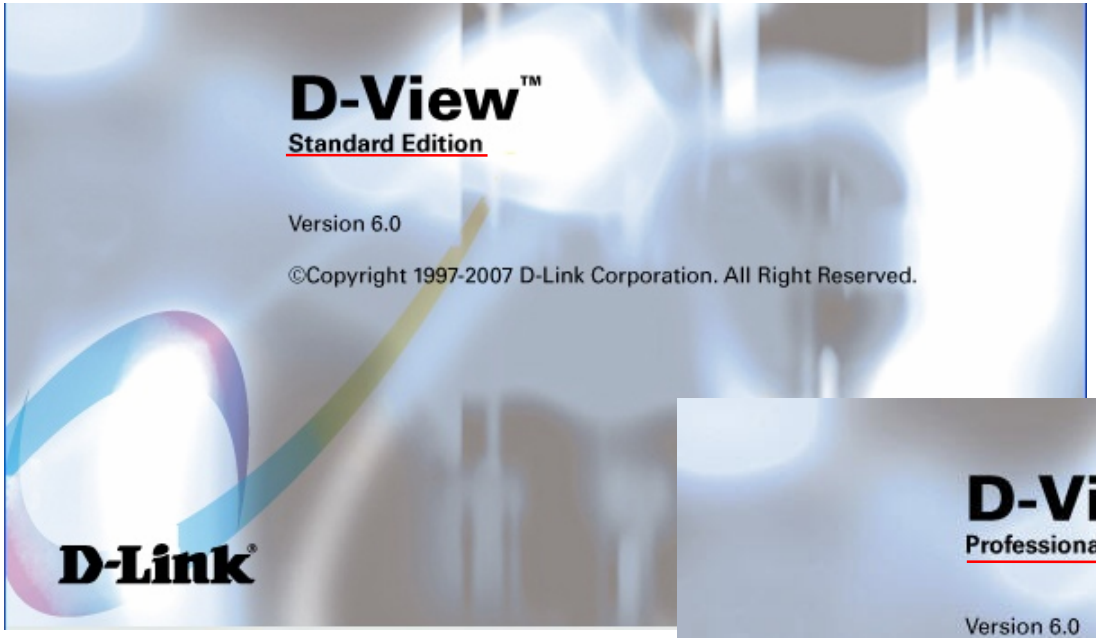
教育訓練大綱

- Topology Function
- Application Function
- System Function
- Net Tools Function
- Advance Function
- D-View6 模組
- D-view存取控制權限
- Q & A

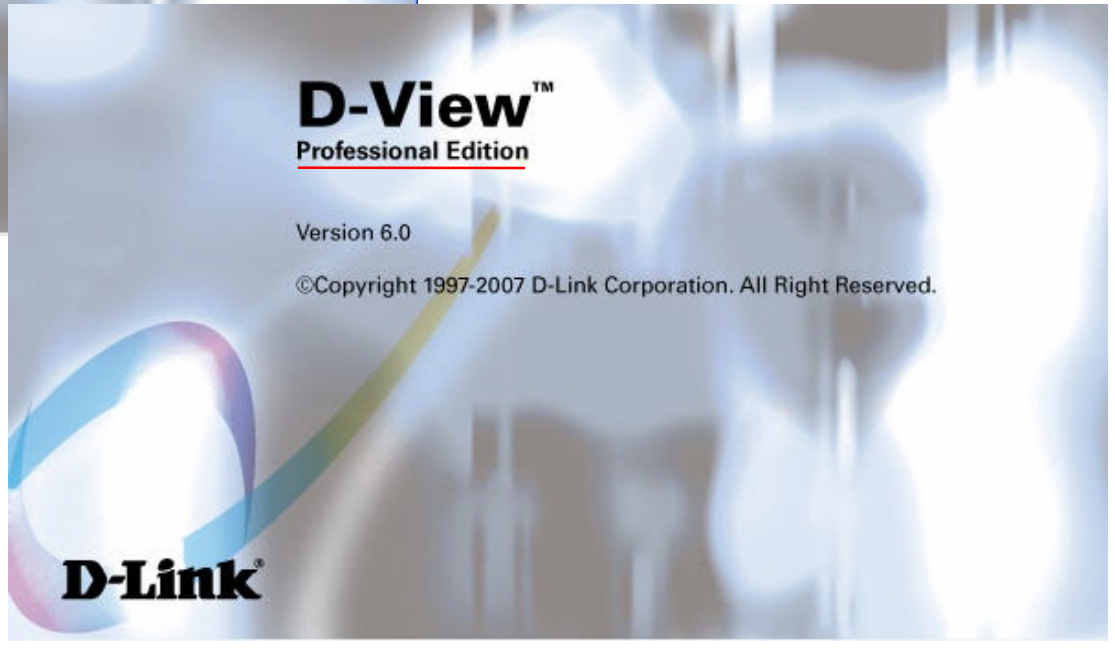
D-Link D-View6
網路管理應用程式

D-Link
Building Networks for People

D-View 6.0 Overview



Standard Version



Professional Version

網路管理

Configuration Management	Topology Generator / Topology Import & Export Hierarchy Topology Manager Batch Program Check for Link Capacity, Safeguard, MIB Utility / MIB Browser & Complier D-View Module Web Configuration
Fault Management	Ping Poll / Ping Poll Log SNMP Poll / SNMP Poll Log Trap Editor / Trap Log Event Config Manager Event Viewer by Netmap or by IP
Performance Management	Performance Monitor-Error Ratio, Data Distribution Port Packet Monitor- Utilization, Packet Info
Security Management	SNMP v3 Configuration NMS System Access Control NMS System Function Module Access Right Control Local and Radius Authentication Modes when Login

D-View 6.0 功能

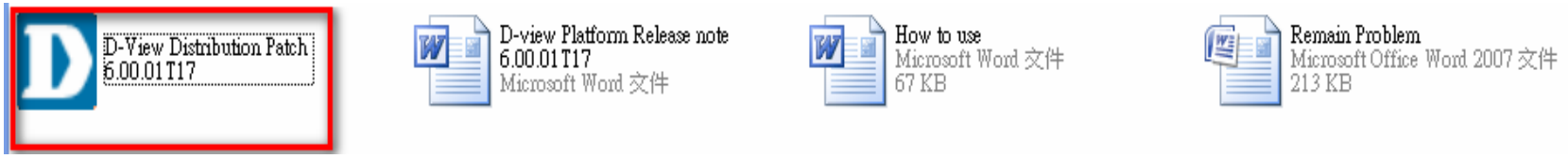
- Cost-effective, easy-to-use SNMP management software for management of workgroup/departmental networks
- Topology creation program useful for network design and layout planning
- Network topology auto-discovery via Topology Generator
- Multiple views to view objects in Ethernet domain by “tree”
- Batch Configuration for Firmware Upgrade, Configuration & Safeguard Engine
- Trap and alarm notification by e-mail
- Database supporting Microsoft SQL Server 2000/2005 and Microsoft Access formats

D-View 6.0 安裝

D-View 6.0 安裝

- 所需的軟體爲
- a.DV-600SV01

- b. Patch 6.00.01T18



- 請學校端自行決定好安裝的D-view主機之後,不要任意更換主機或是更改主機IP

D-View6 Standard Version

Hardware

- CPU: 1.4 GHz or above
- DRAM: 1 GB or above
- Hard drive available space: 200MB
- Ethernet adapter

Software

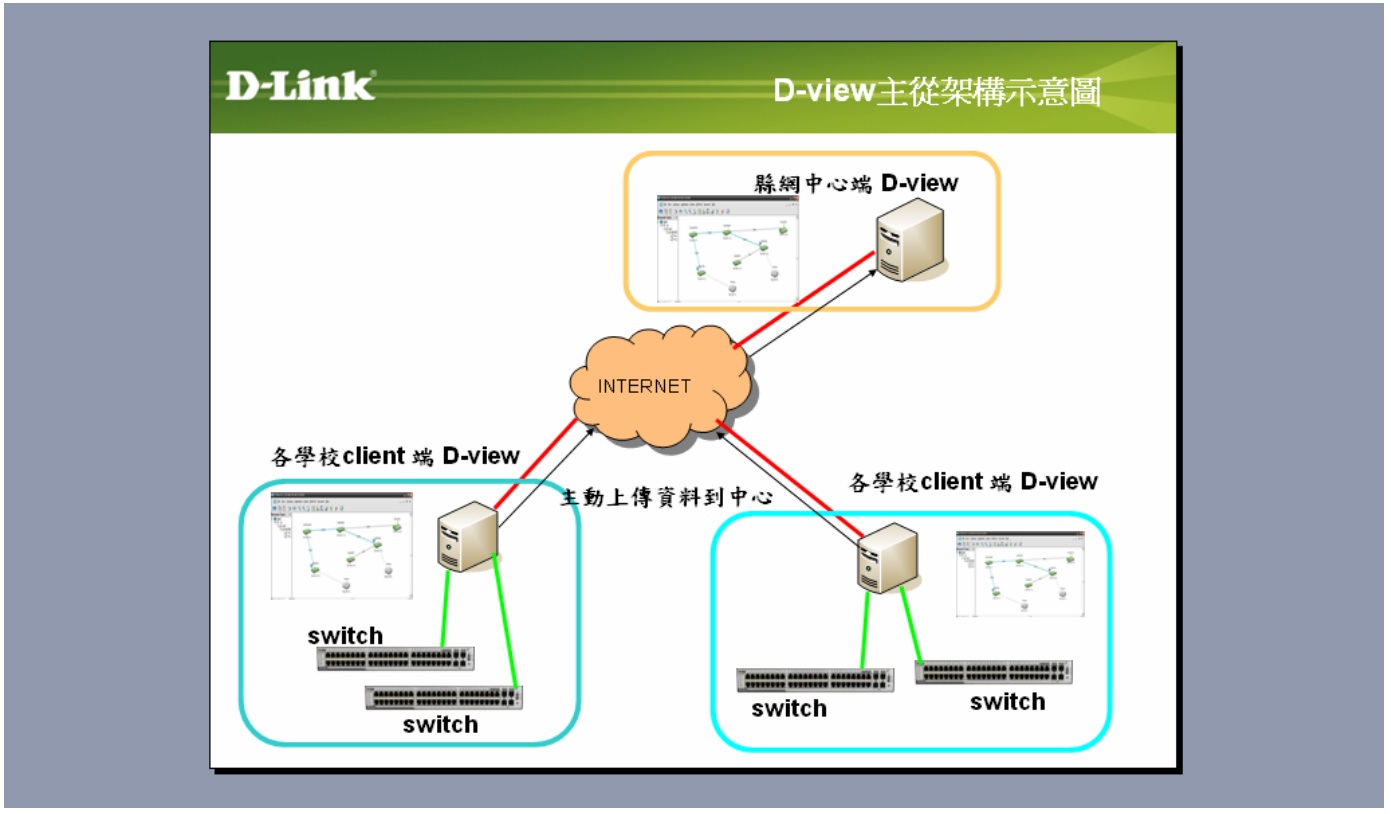
- **Operating System**
  - Windows XP, Windows 2000 Server or Advanced Server (English Version), Windows 2003 (English Version)
  - For better UI display, it is recommended to configure the screen resolution on the management workstation at **1024 x 768.**
- **DBMS**
  - Windows Office Access 2000 (D-View 6.0 for Access 2000)
- **Microsoft Internet Explorer 6 with Service Pack 1 or later**
- **Microsoft XML Parser and SDK, (msxml.msi)**

How to install D-View6 Standard

- Just press "Next" for several times and D-View 6.0 will be installed automatically.

D-View6 with two tier topology

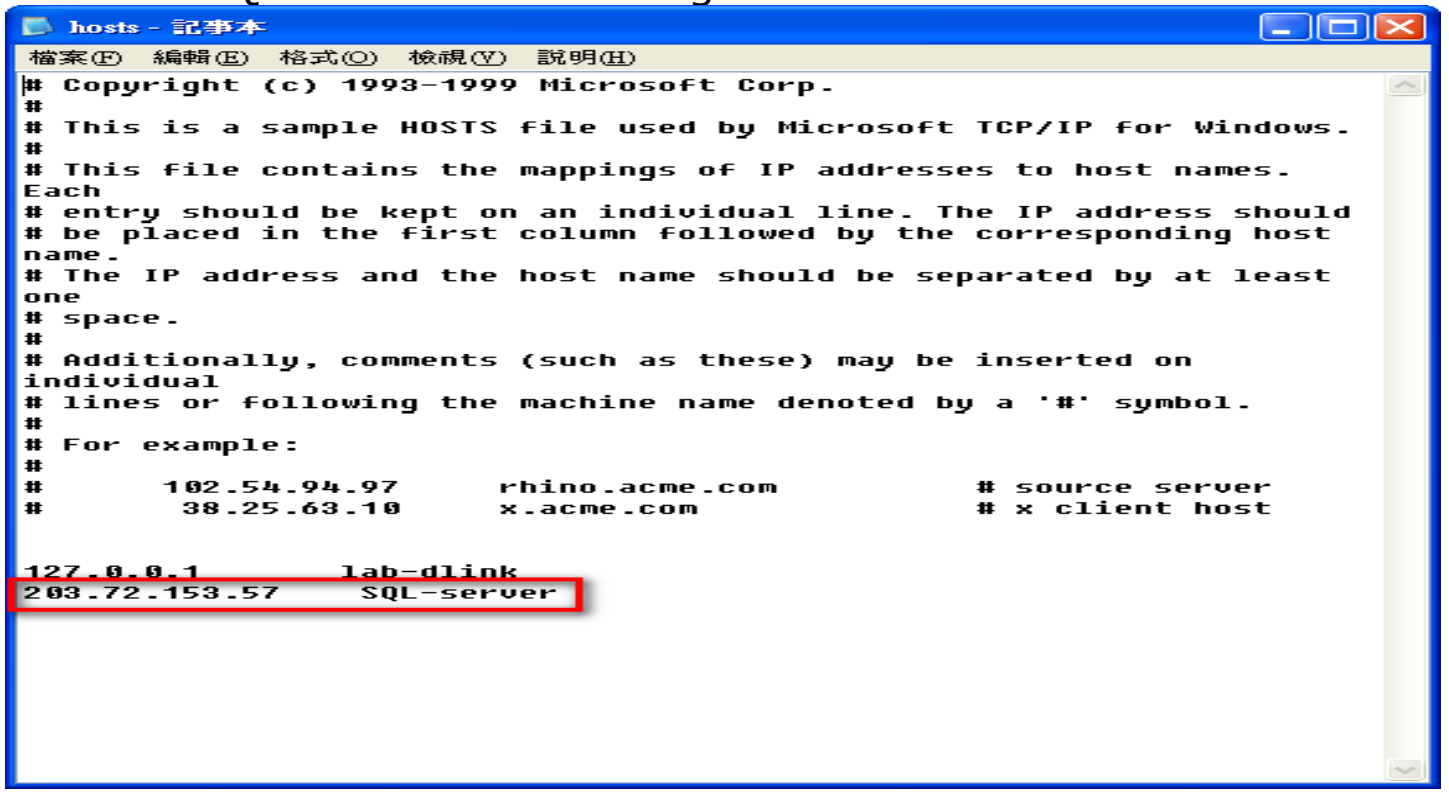
一.D-view分爲兩個部份,一個爲中心端,一個爲各學校端
各學校將會透過主動傳遞topology的方式,把學校自己的網路拓樸圖上傳到縣網中心



D-View6 with two tier topology

› How To Install D-View6 with two tier topology:

- Step7: Configure the hosts.txt file
  - Go to C:\WINDOWS\system32\drivers\etc\hosts
  - Add a SQL-Server as following:



使用者註冊

D-view註冊流程

1.Go to http://dview.dlink.com.tw/

2.Register a Username/Password.

3.Enter MAC address of the host which installed D-View 6.0.

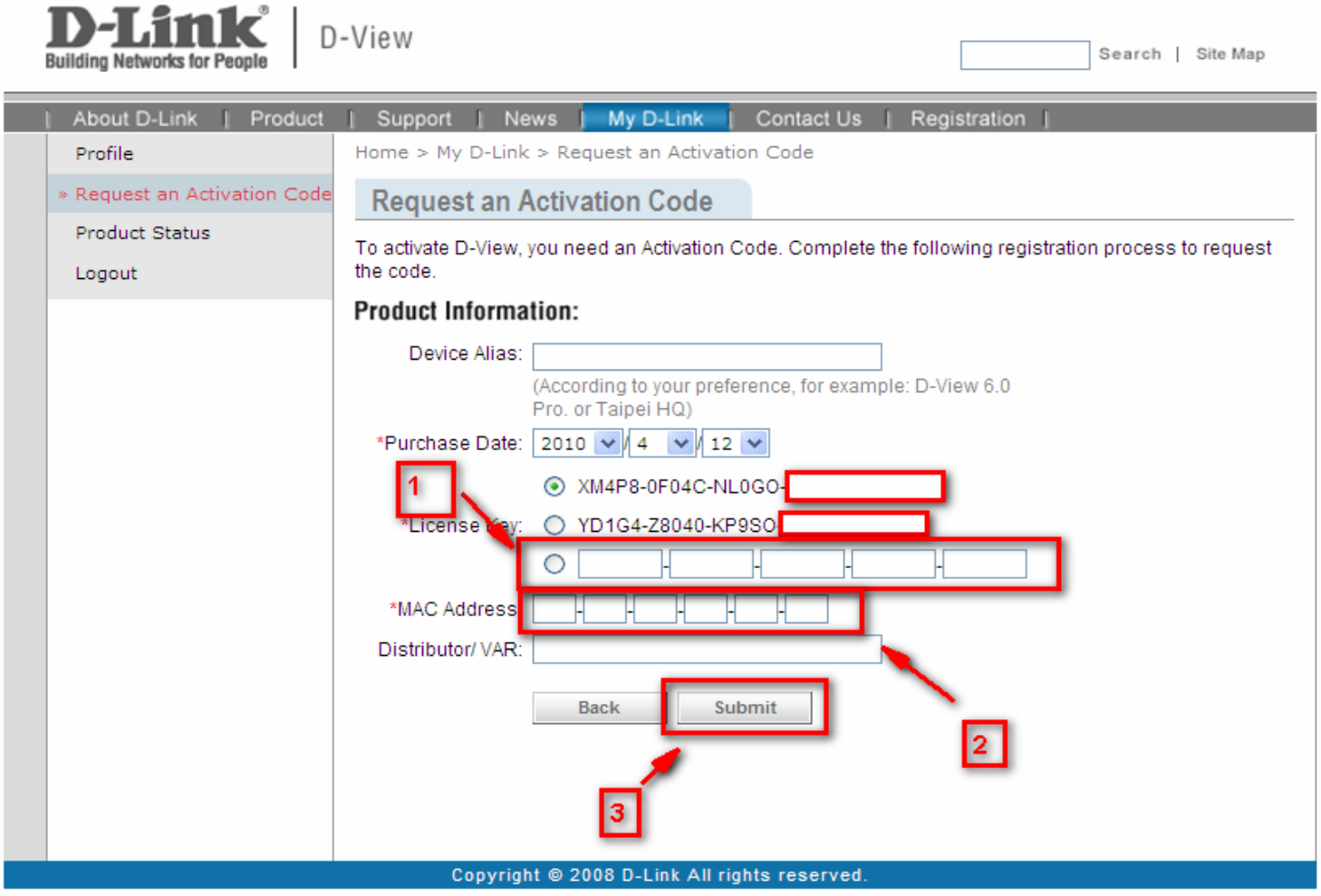
4. Get activation code.

5.One CD-Key can generates 5 activation codes.

CD-Key is not used for activate.

1.請先到D-view 網站 (http://dview.dlink.com.tw/)下註冊會員

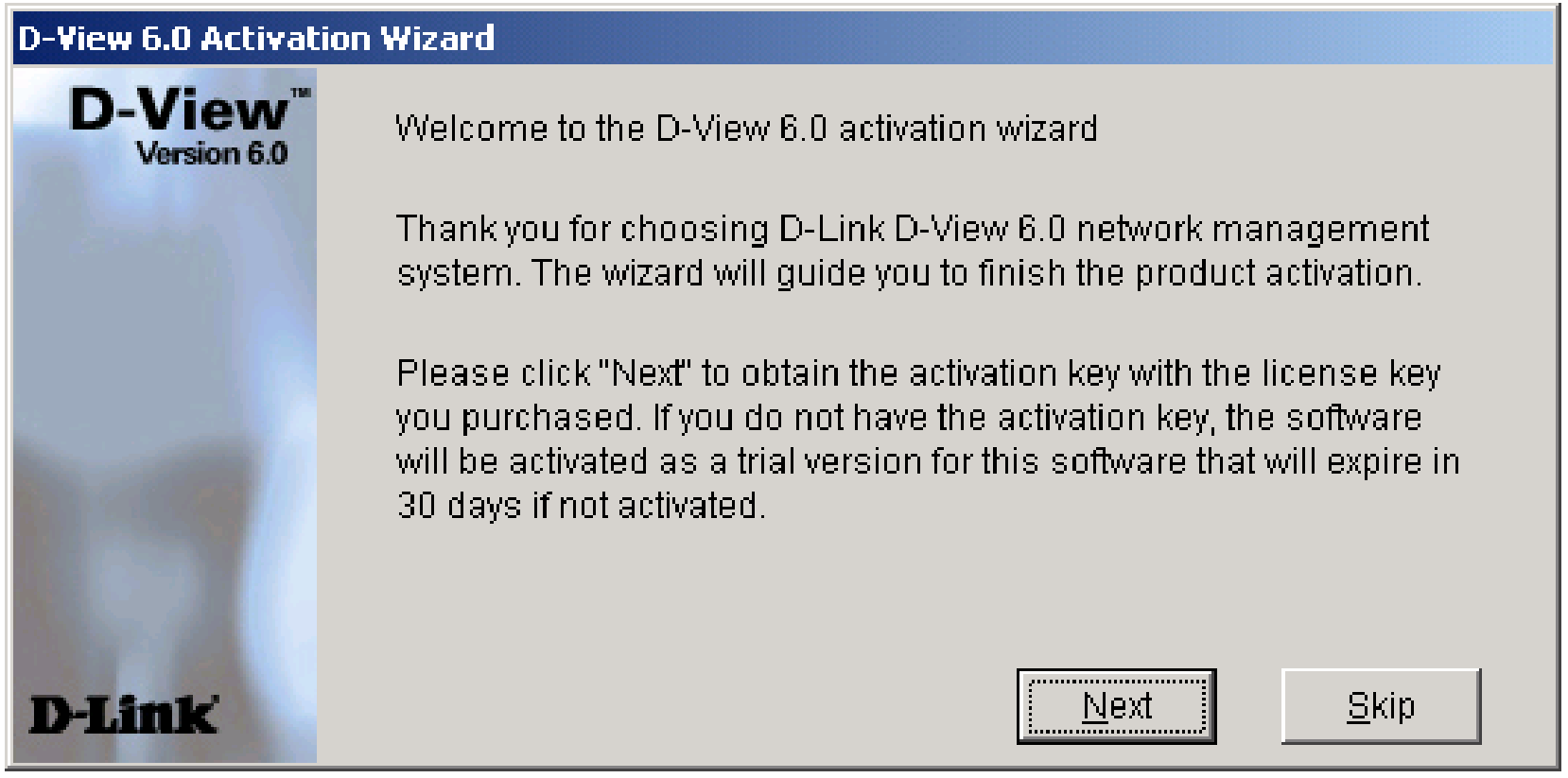
2.安裝前請先把安裝D-view上面的主機MAC連同序號到D-Link網站做註冊,並取得一組啓動碼



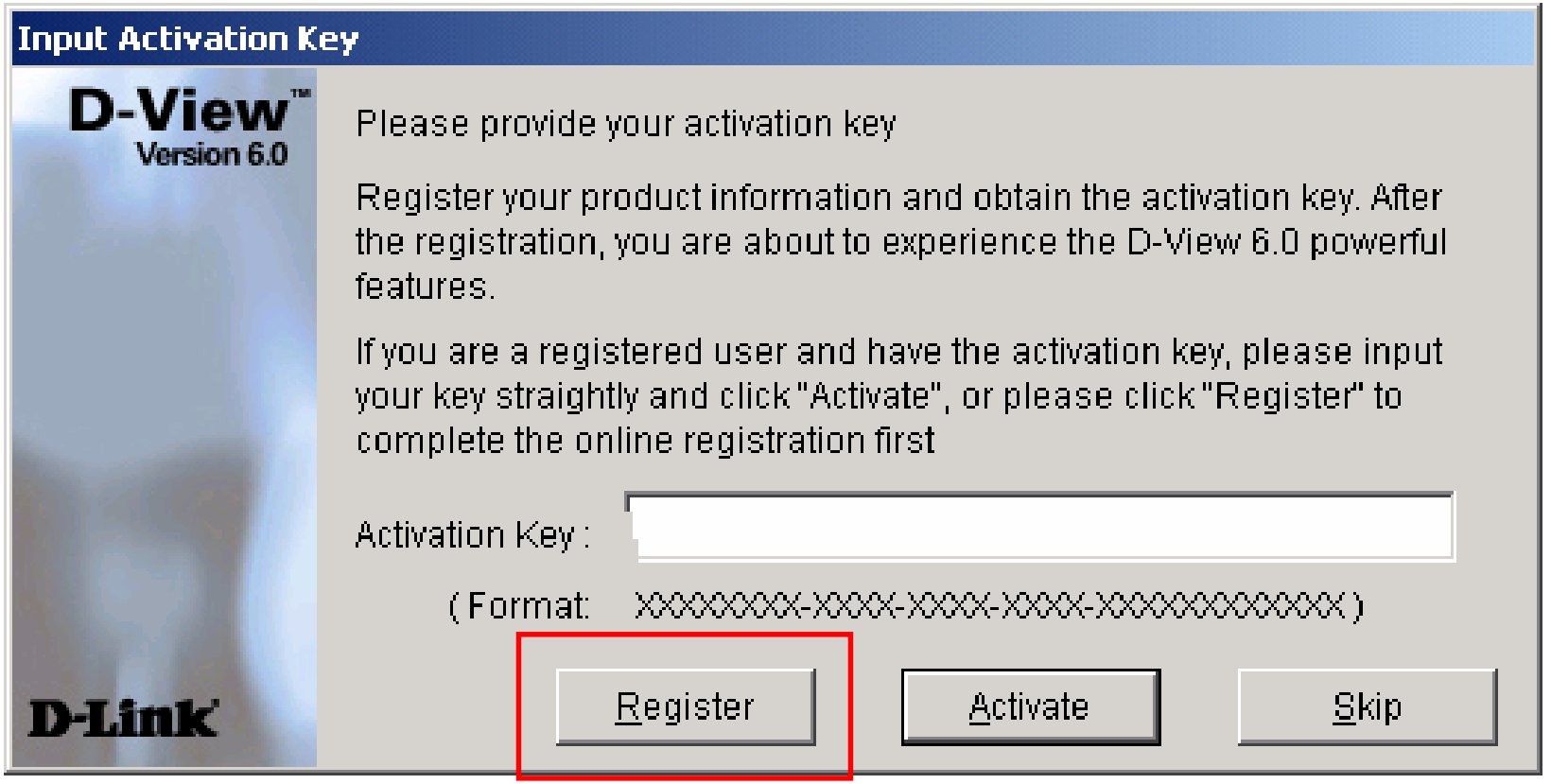
啟用D-view

啟用D-view

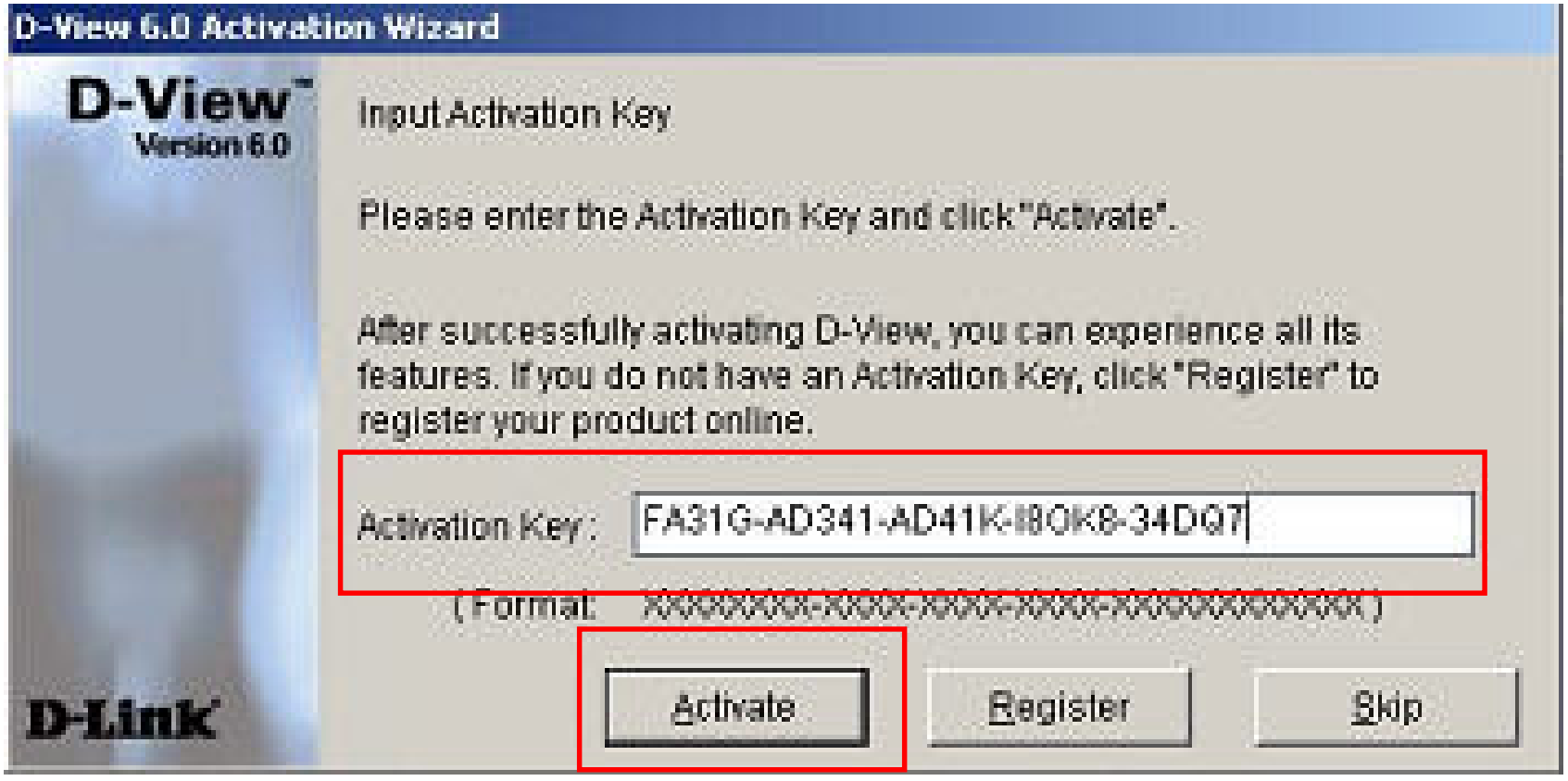
- **At the every first time the user runs D-View 6.0, the Activation Wizard will be launched to guide the user complete the activation procedure.**
- **Without the license activation, by default D-View 6.0 is 30-Day Trial version.**



啟用D-view


Input Activation Key
D-View™
Version 6.0
D-Link
Please provide your activation key
Register your product information and obtain the activation key. After the registration, you are about to experience the D-View 6.0 powerful features.
If you are a registered user and have the activation key, please input your key straightly and click "Activate", or please click "Register" to complete the online registration first
Activation Key :
(Format: XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX)
Register
Activate
Skip

啟用D-view


D-View 6.0 Activation Wizard
D-View
Version 6.0
Input Activation Key
Please enter the Activation Key and click "Activate".
After successfully activating D-View, you can experience all its features. If you do not have an Activation Key, click "Register" to register your product online.
Activation Key :
FA31G-AD341-AD41K-I8OK8-34DQ7
(Format: XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX)
Activate
Register
Skip
D-Link

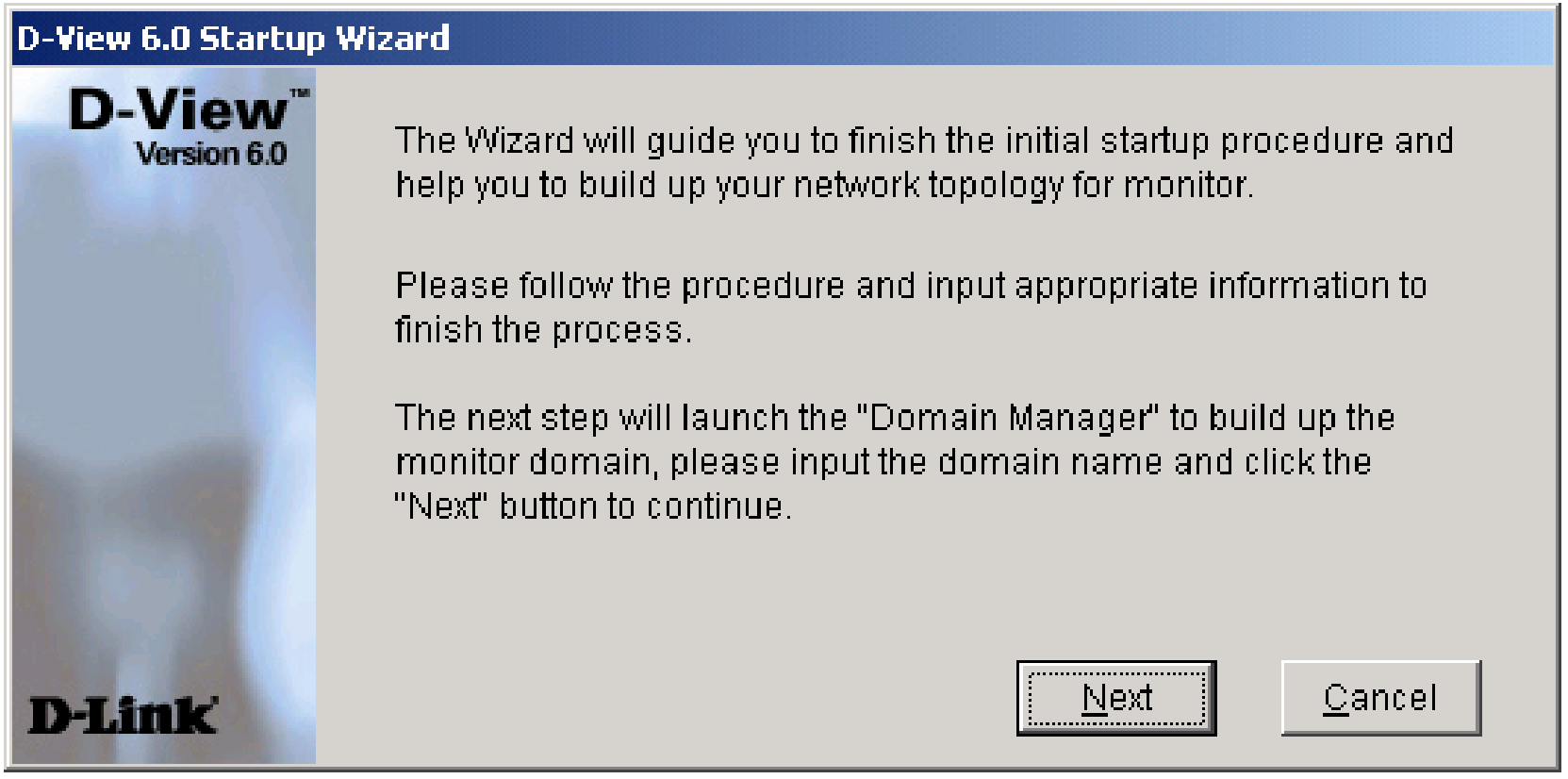
使用D-View6

如何登入D-View 6.0 網管系統

- Launch **D-View** via double clicking the D-View icon.
- Log on D-View NMS platform by providing the following:
- Account: **admin**
- Default Password: **111111**
- Note: Modify the default password of “Admin” via the Menu Bar > System > Change Password after you log on D-View NMS platform.

設定精靈

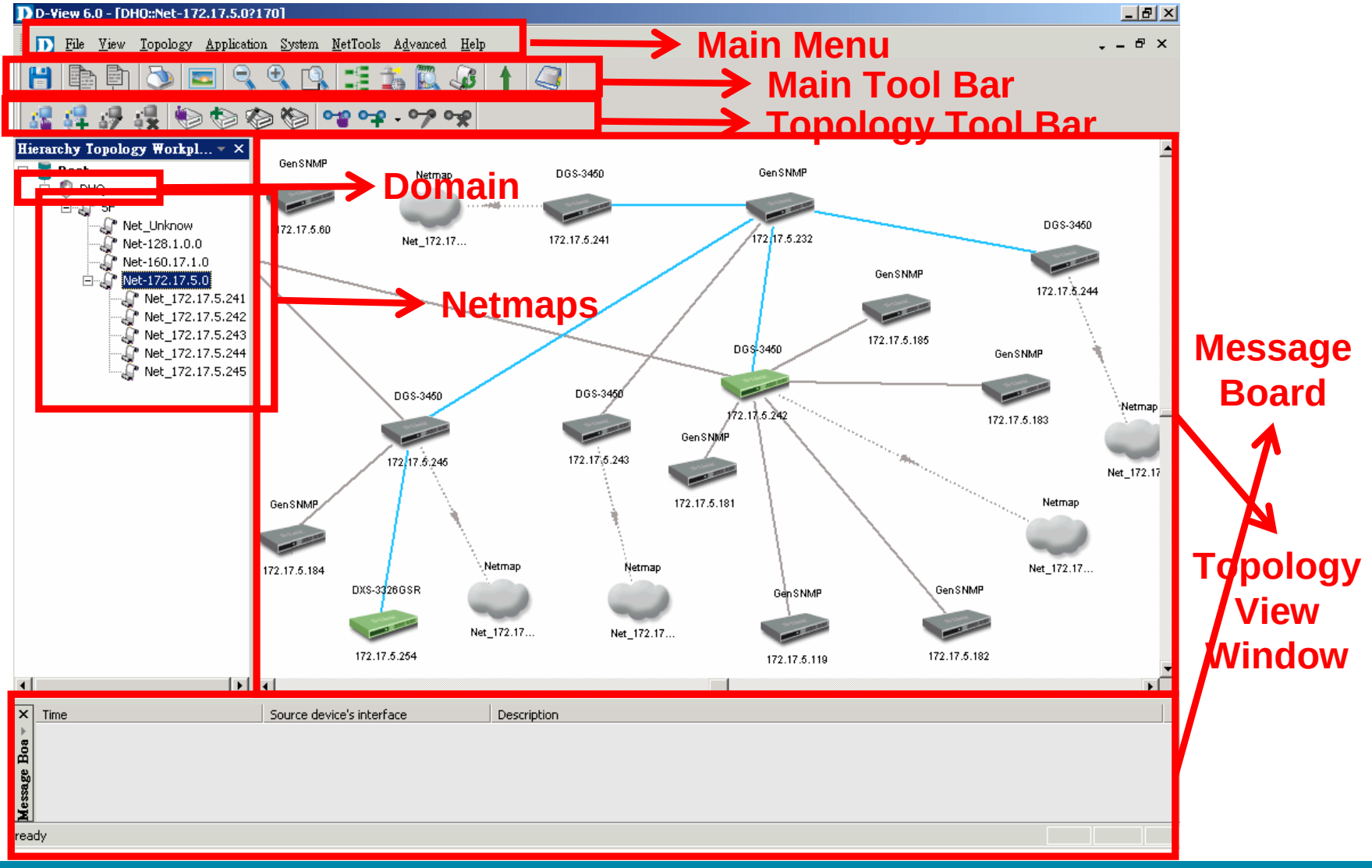
› **While the user initializes D-View 6.0, the Startup Wizard will be launched to guide the service complete the initial configuration.**



如何使用設定精靈

- To create a Domain for management
- To create a Netmap for management
- To perform Topology Auto-Discovery
- To export the generated topology to the NMS platform
- Ready for Polling and Monitoring or any further operations

Main Window


D-View 6.0 - [DHQ::Net-172.17.5.0?170]
File View Topology Application System NetTools Advanced Help
Main Menu
Main Tool Bar
Topology Tool Bar
Hierarchy Topology Workpl...
Net_Unknow
Net-128.1.0.0
Net-160.17.1.0
Net-172.17.5.0
Net_172.17.5.241
Net_172.17.5.242
Net_172.17.5.243
Net_172.17.5.244
Net_172.17.5.245
Domain
Netmaps
Message Board
Topology View Window
Time
Source device's interface
Description
ready

Hierarchy Topology Workspace

- Root：represents the system root domain. Root Domain topology includes Domain and Netmap information.
- Domain: in D-View 6.0, a domain is a logical domain for network management. The network endpoint information cannot be shared among domains. Double-click on a Domain to expend the domain topology.
- Netmap: represents network segments in D-View 6.0. Double-click on a Netmap to open the map view of the netmap.

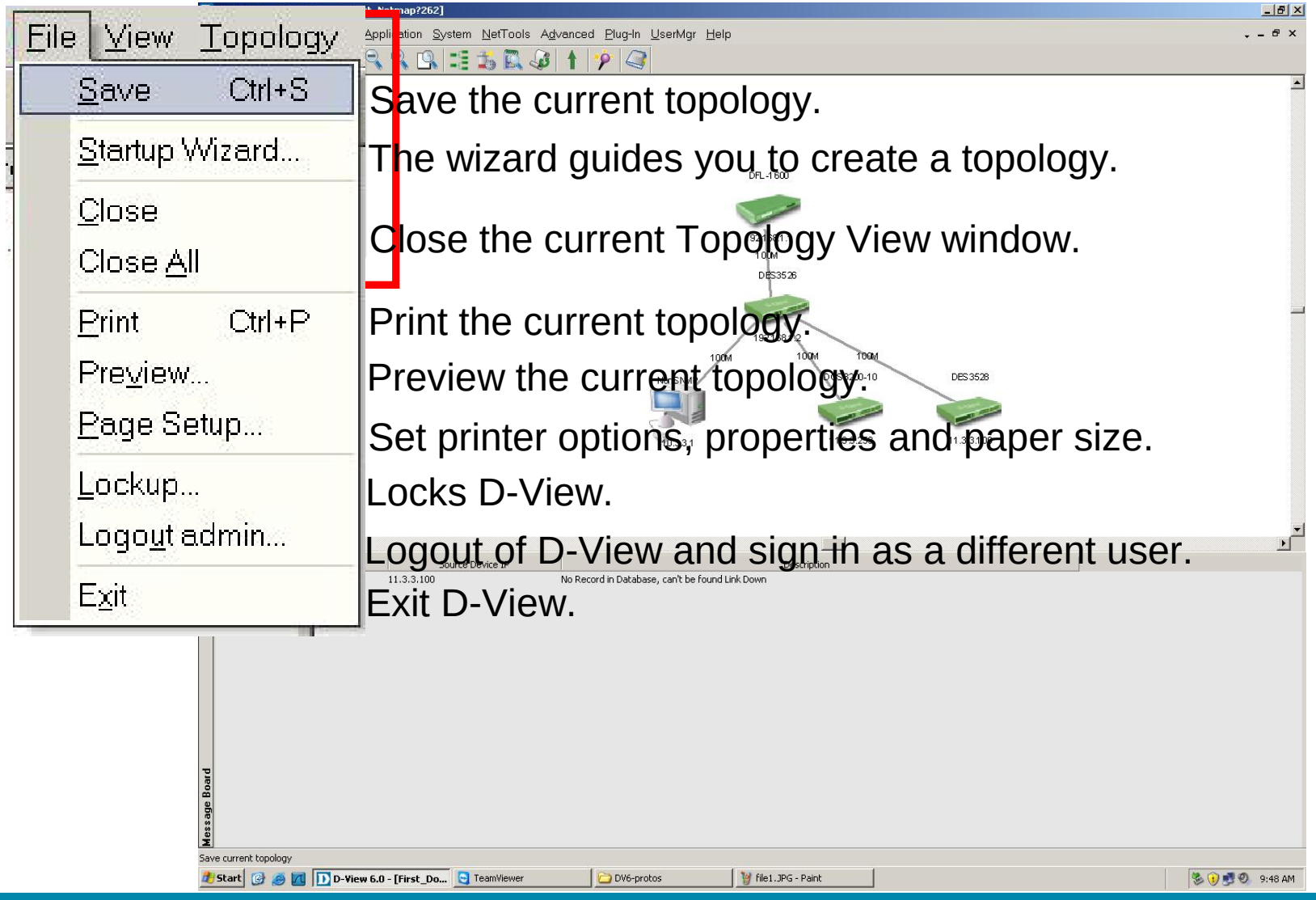
Demo

Building a topology in D-View 6.0

介紹
D-View6.0 功能

File Function

File Function



Save the current topology.

The wizard guides you to create a topology.

Close the current Topology View window.

Print the current topology.

Preview the current topology.

Set printer options, properties and paper size.

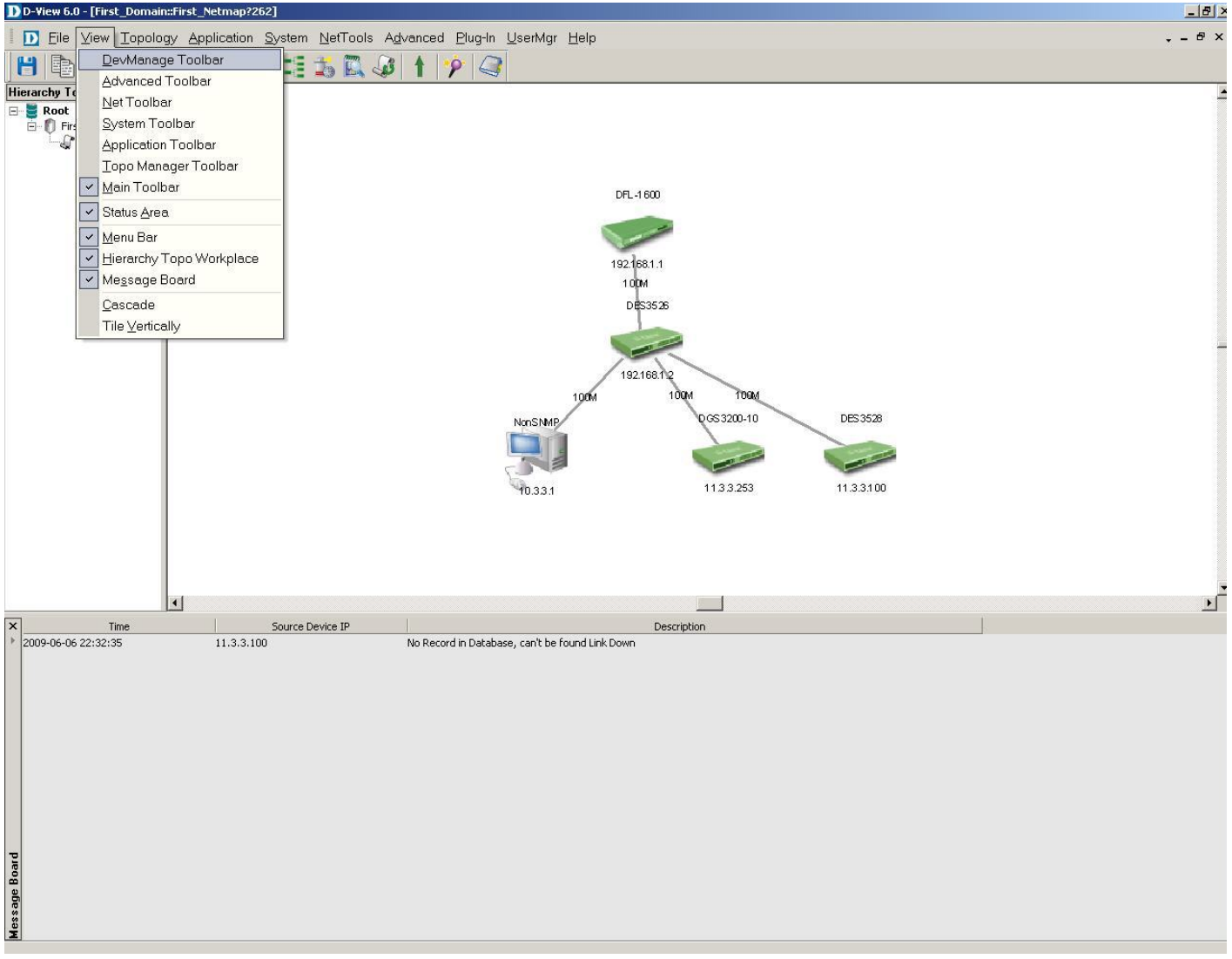
Locks D-View.

Logout of D-View and sign in as a different user.

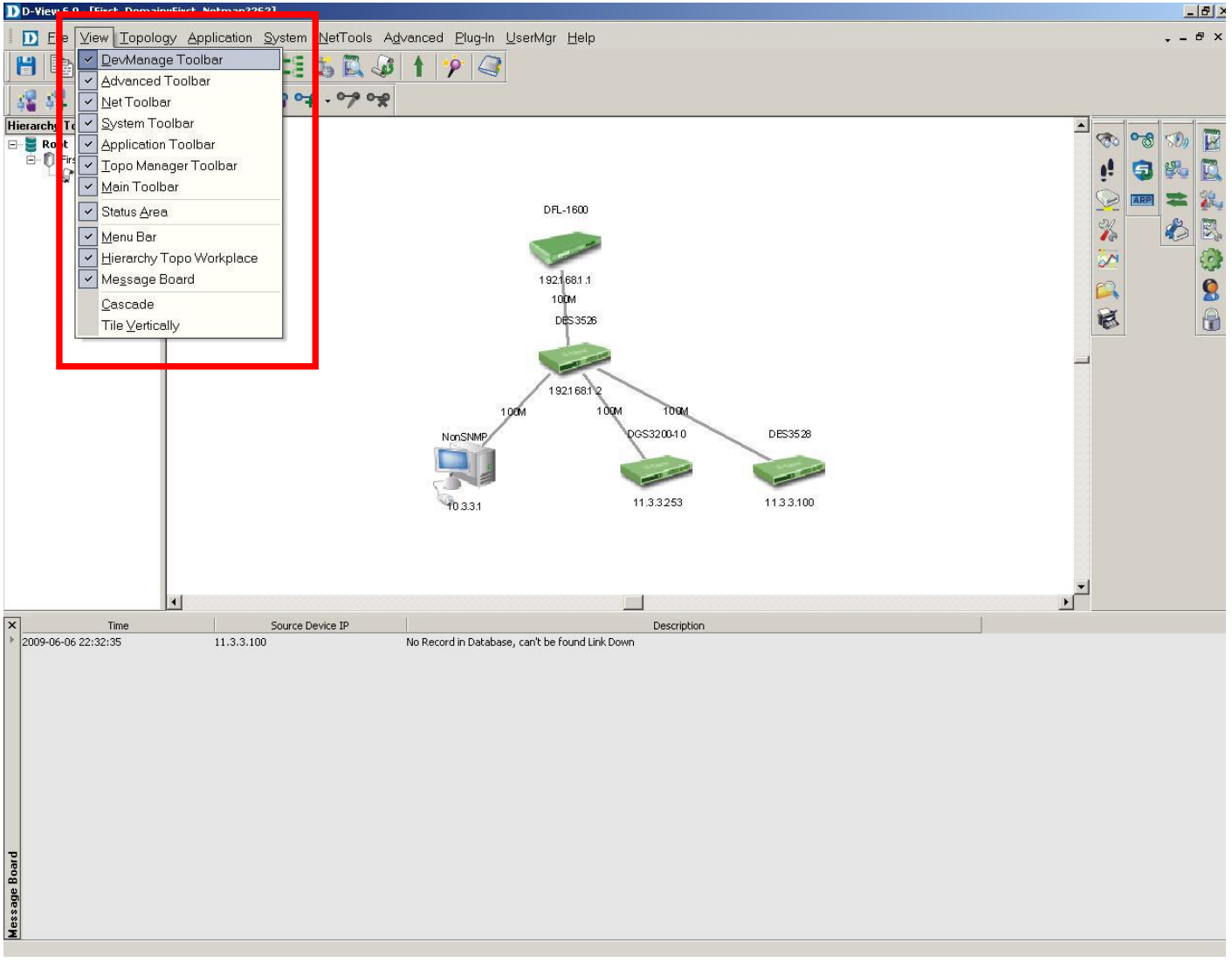
Exit D-View.

View Function

View Function

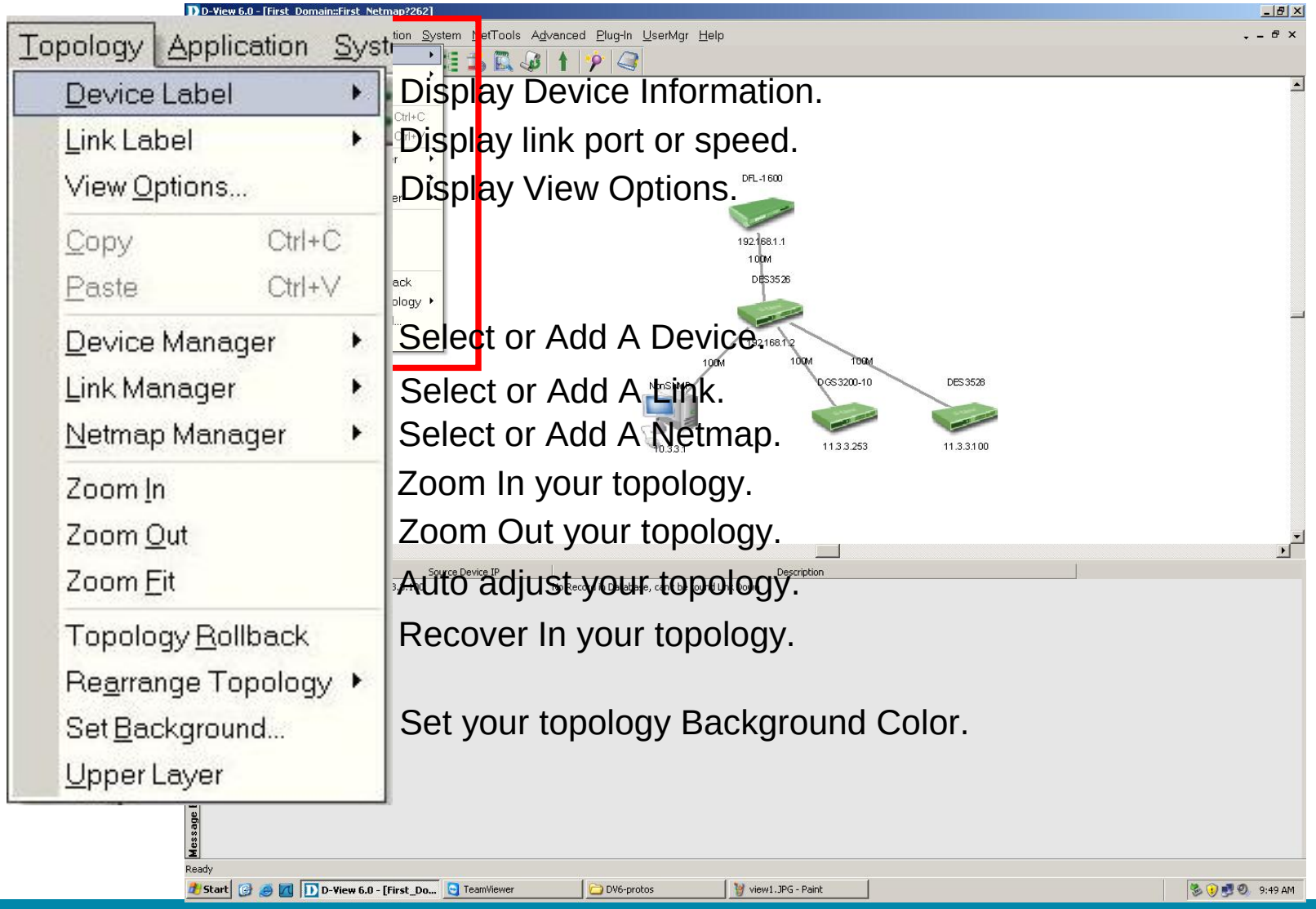


View Function

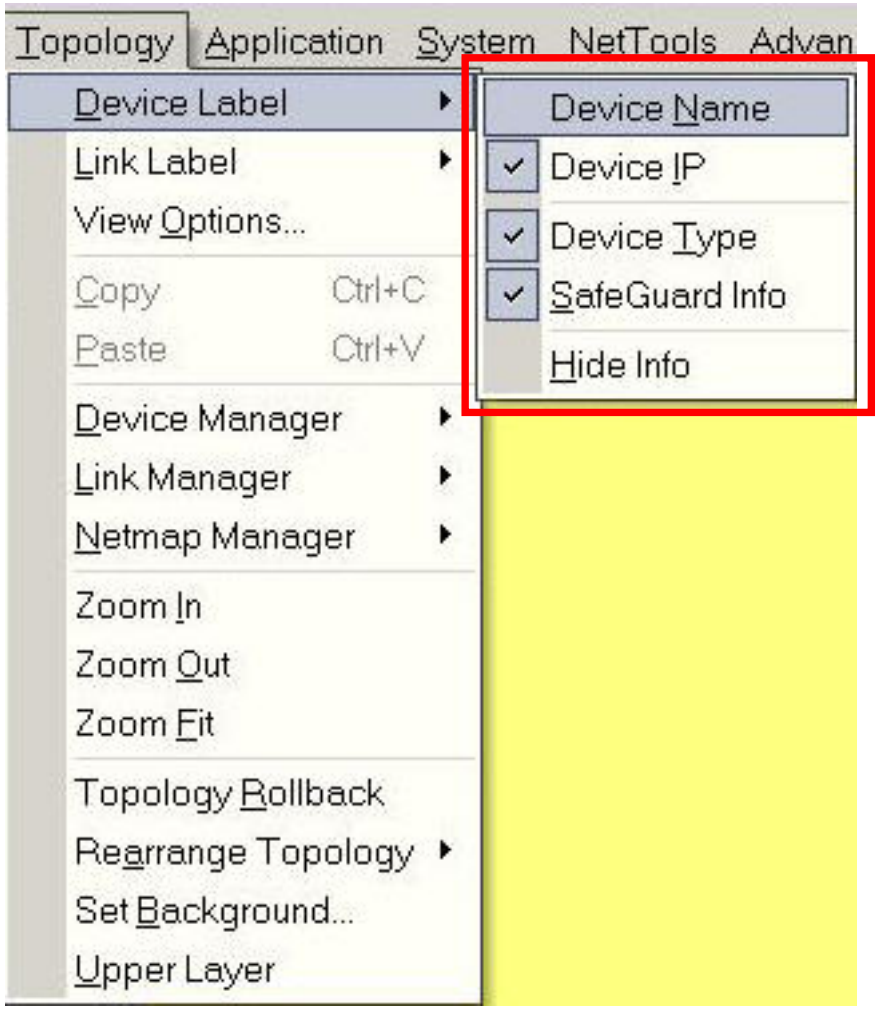


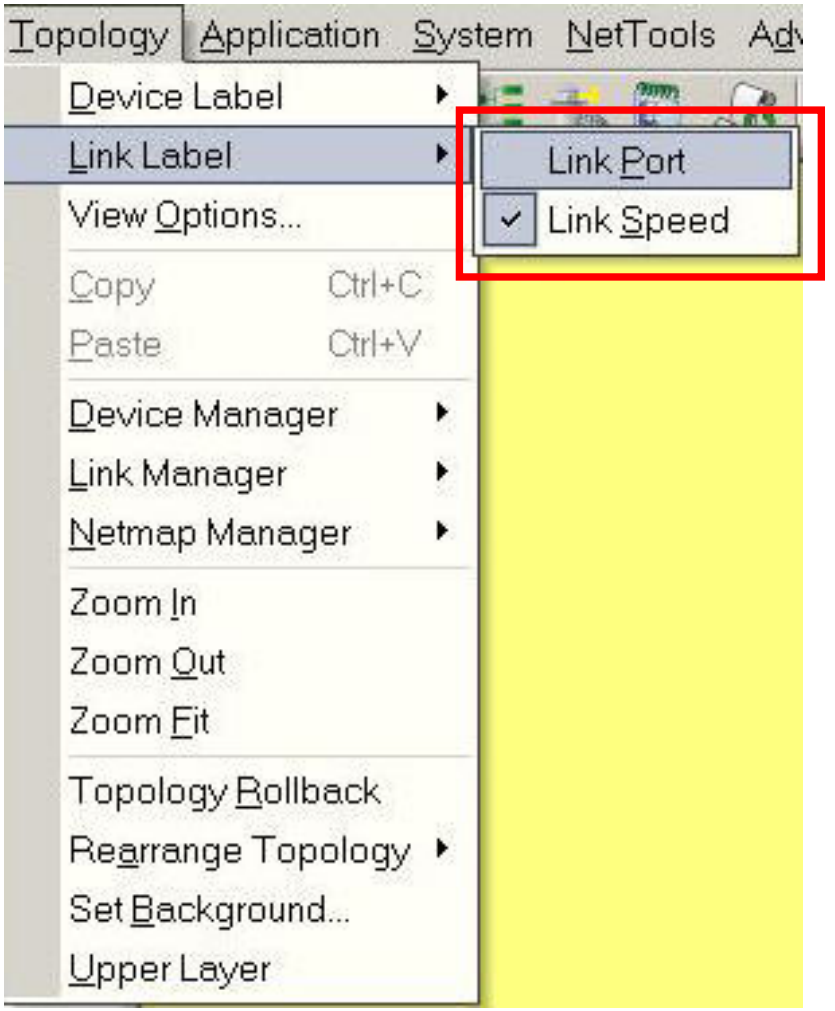
Topology Function

Topology Function

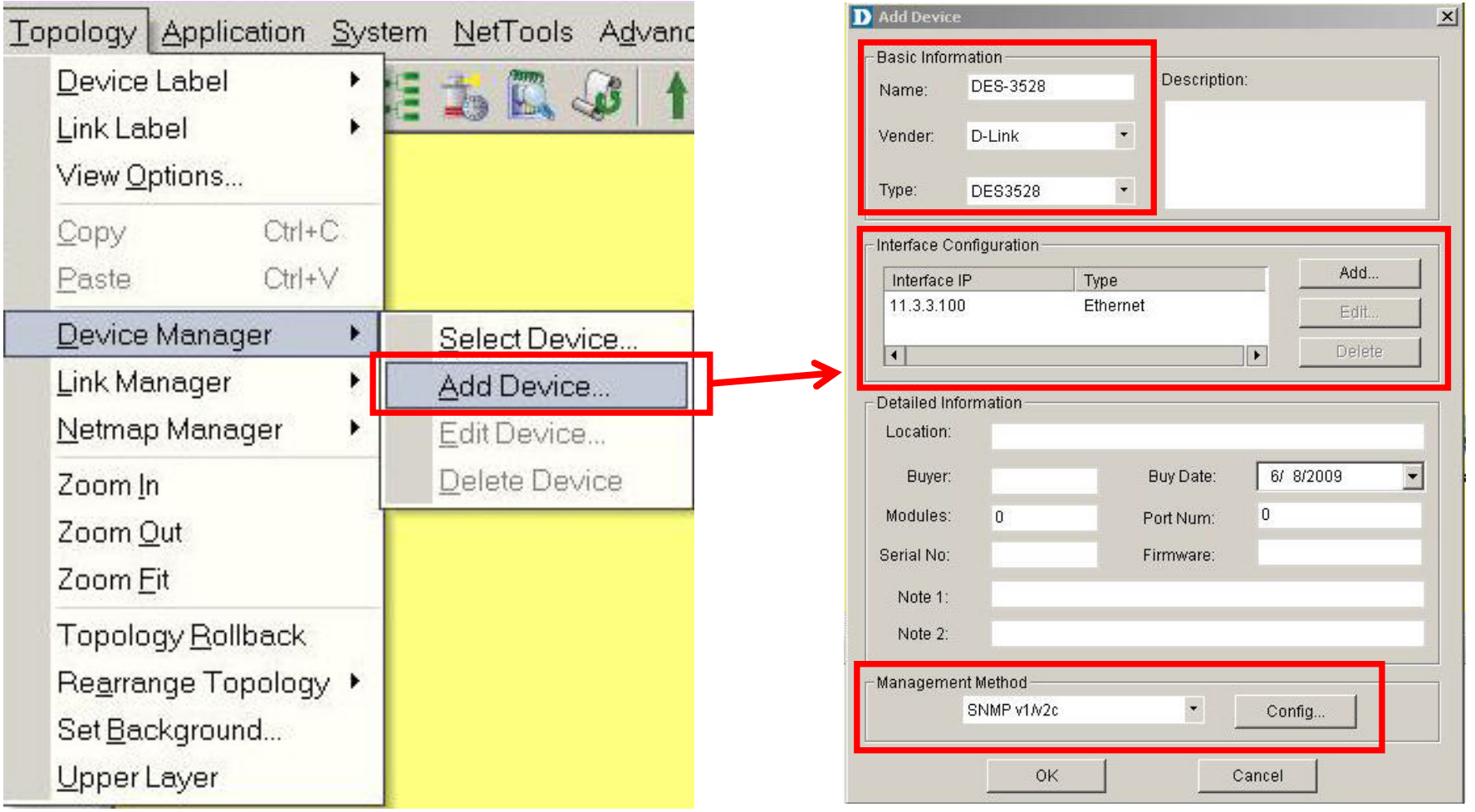


Topology Function

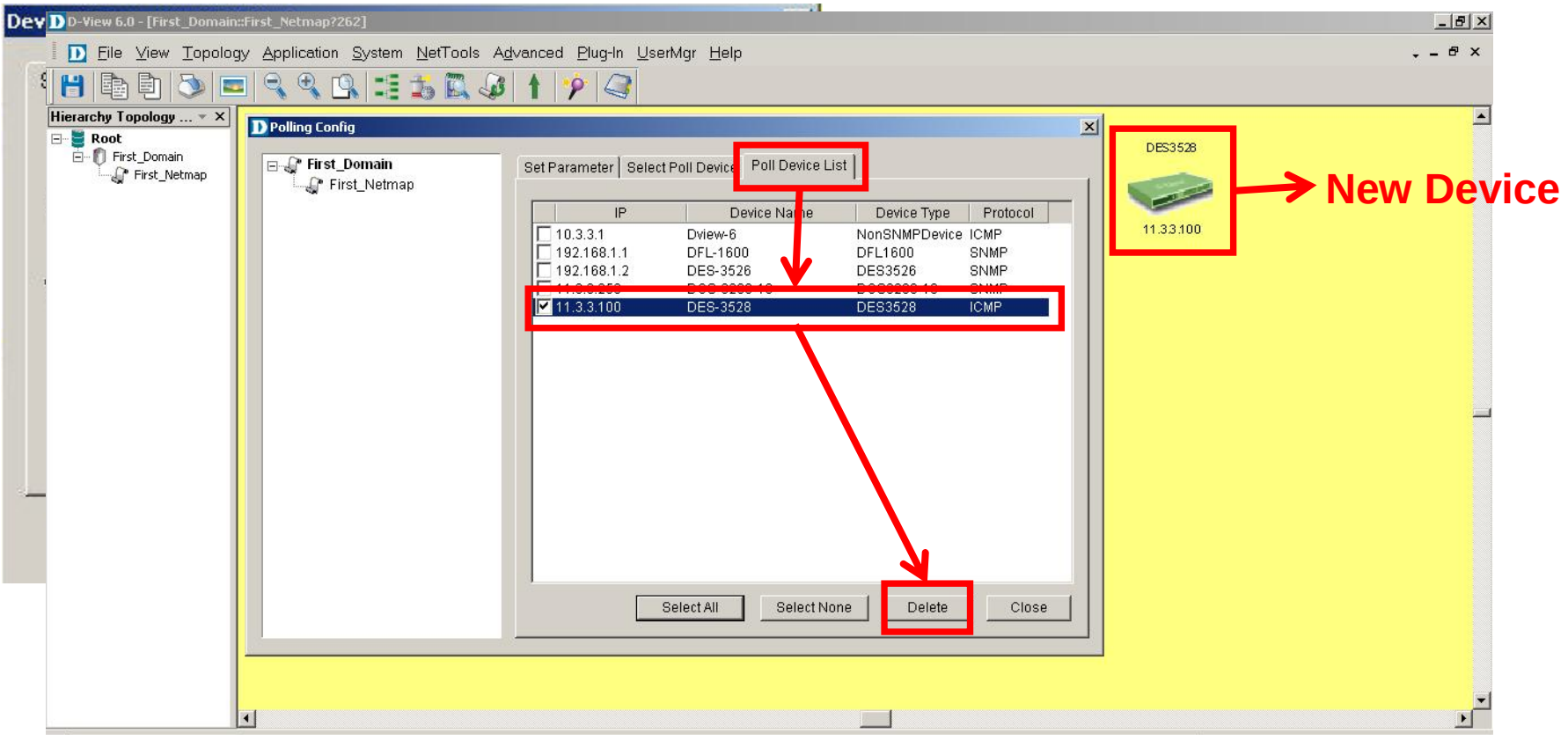




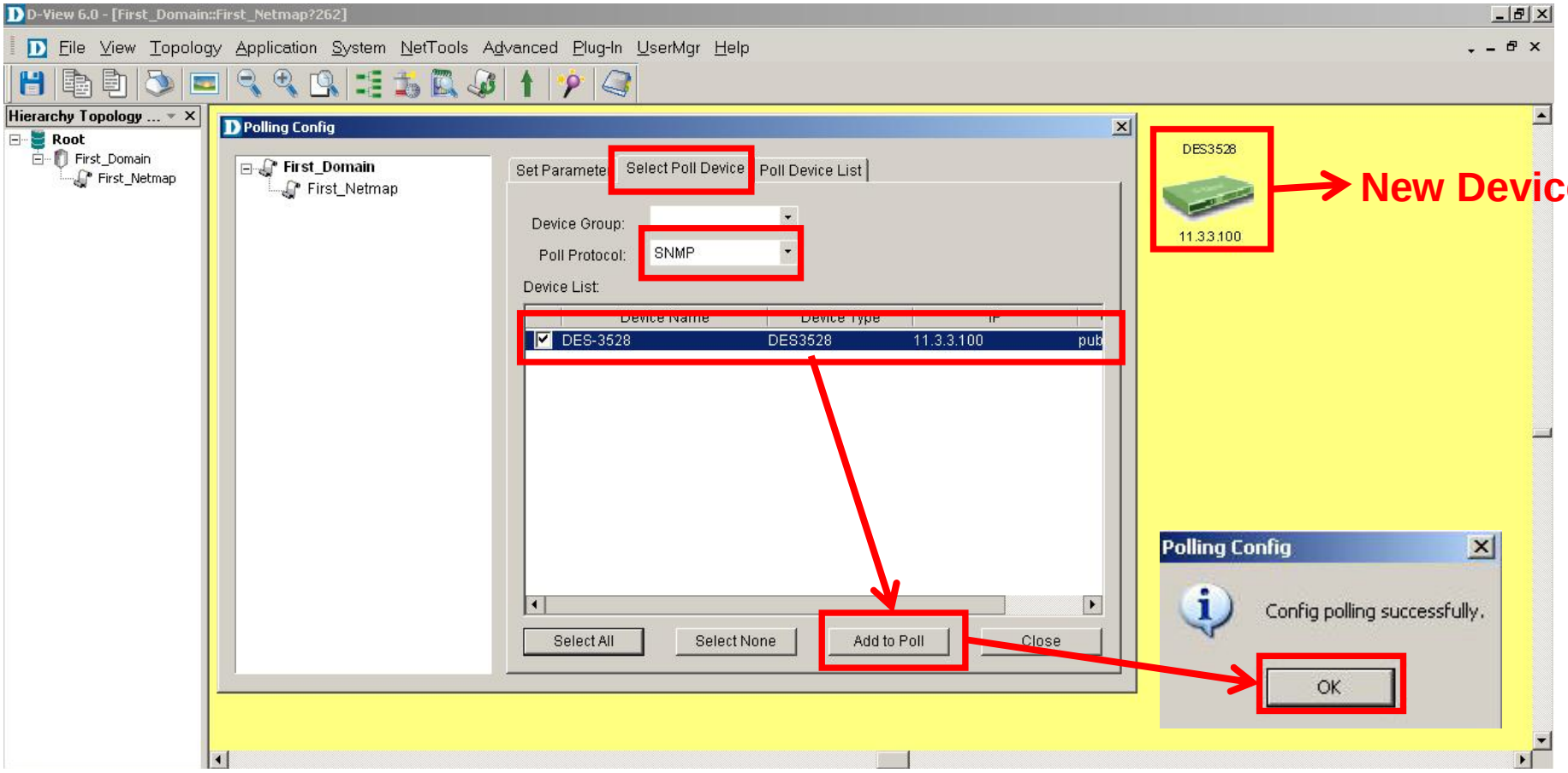
Topology Function – Device Manager



Topology Function – Device Manager



Topology Function – Device Manager

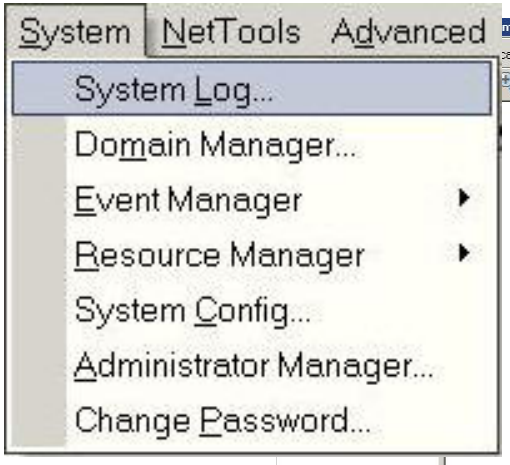


Demo

Use DEVICE_MANAGER To Add Device

System Function

System Function



Store logged events.

Manage domain information.

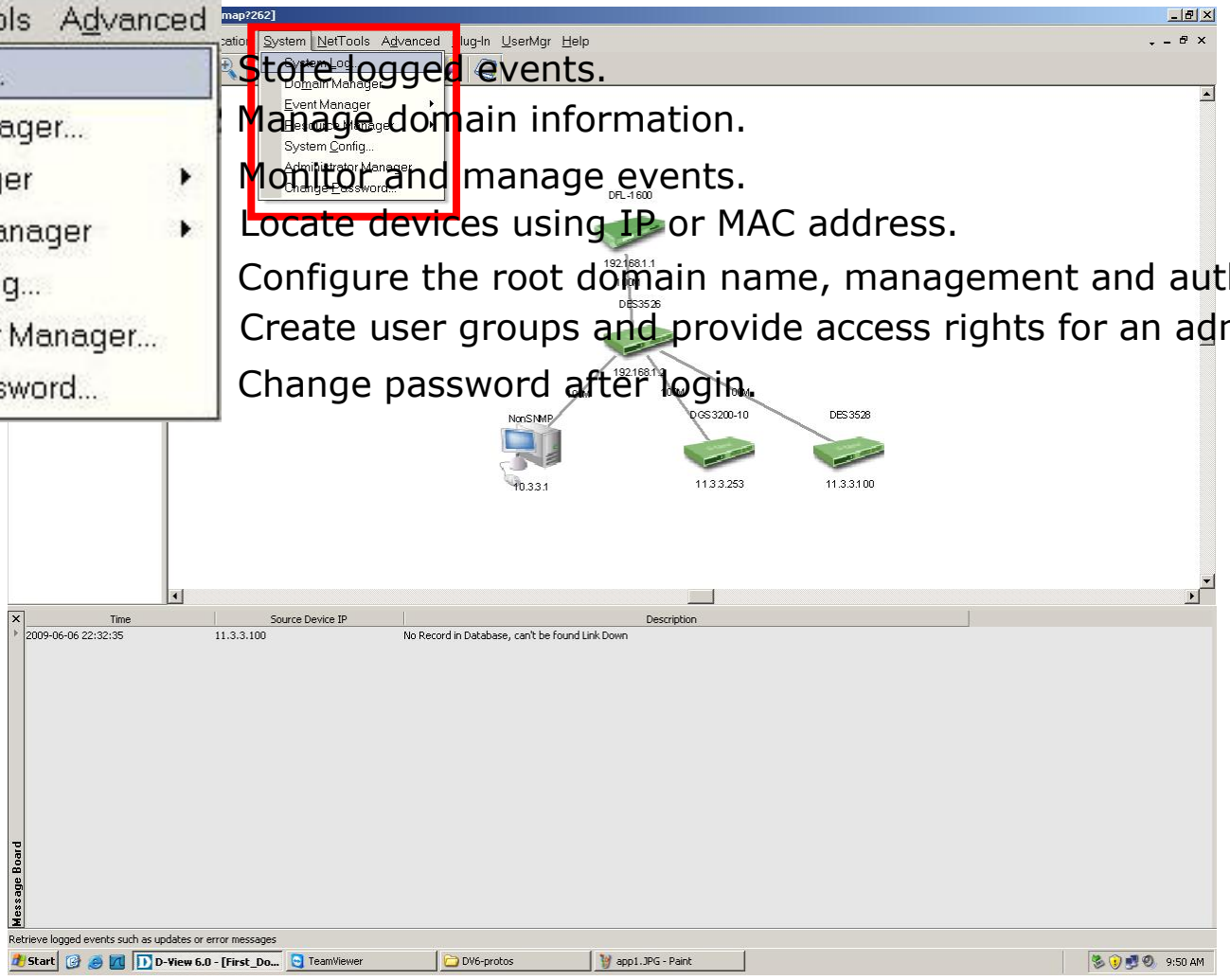
Monitor and manage events.

Locate devices using IP or MAC address.

Configure the root domain name, management and authentication.

Create user groups and provide access rights for an administrator.

Change password after login.



D-Link
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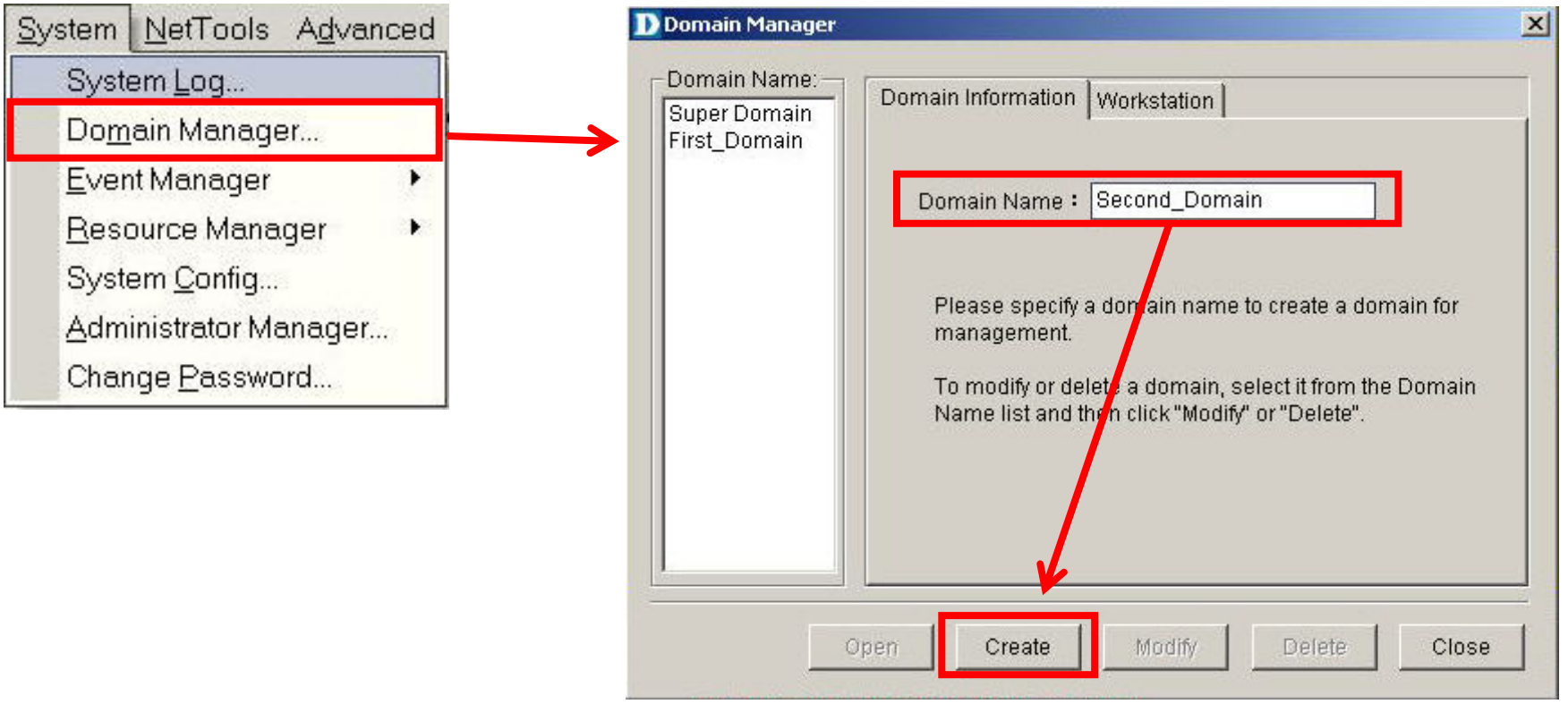
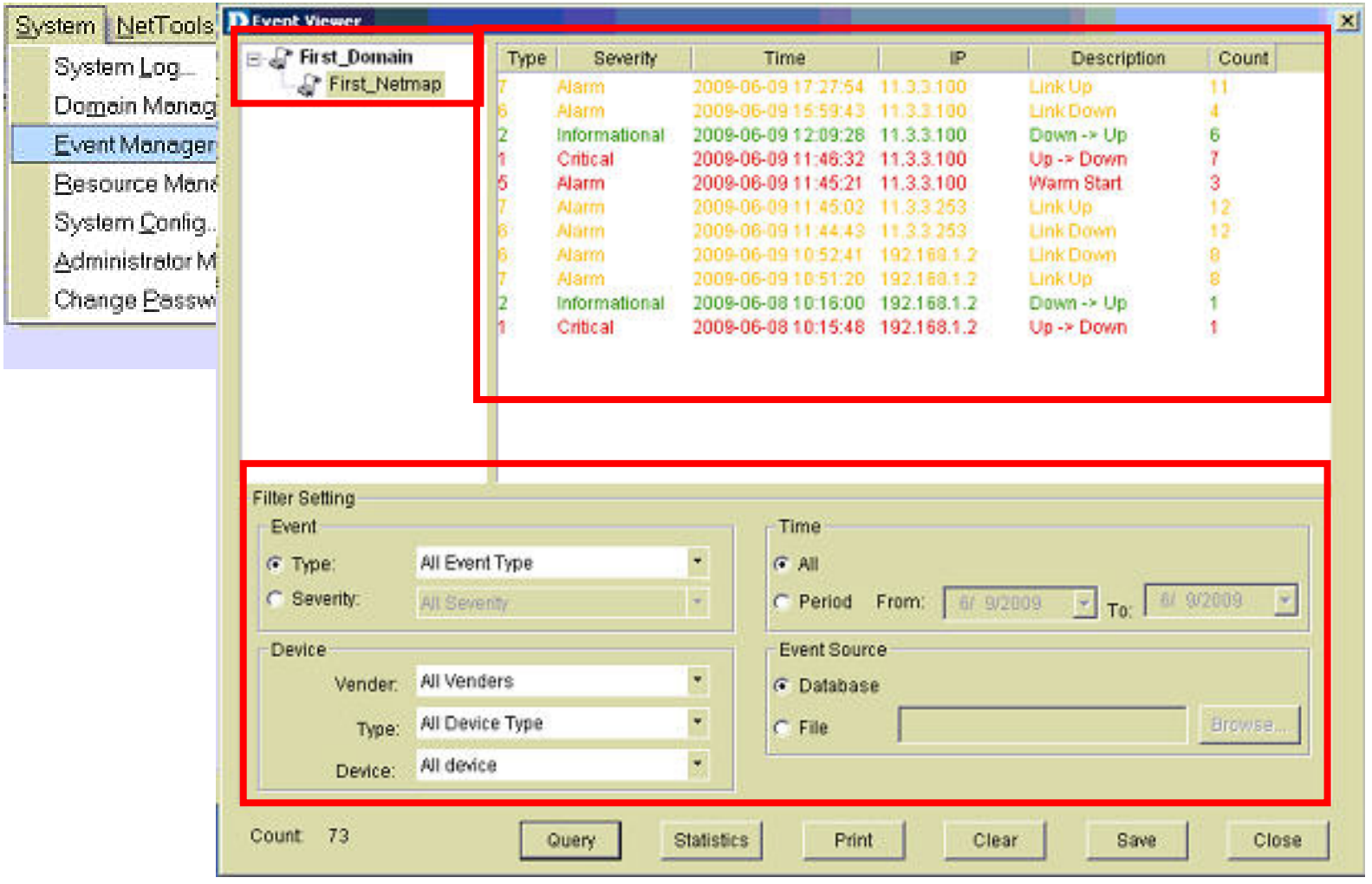
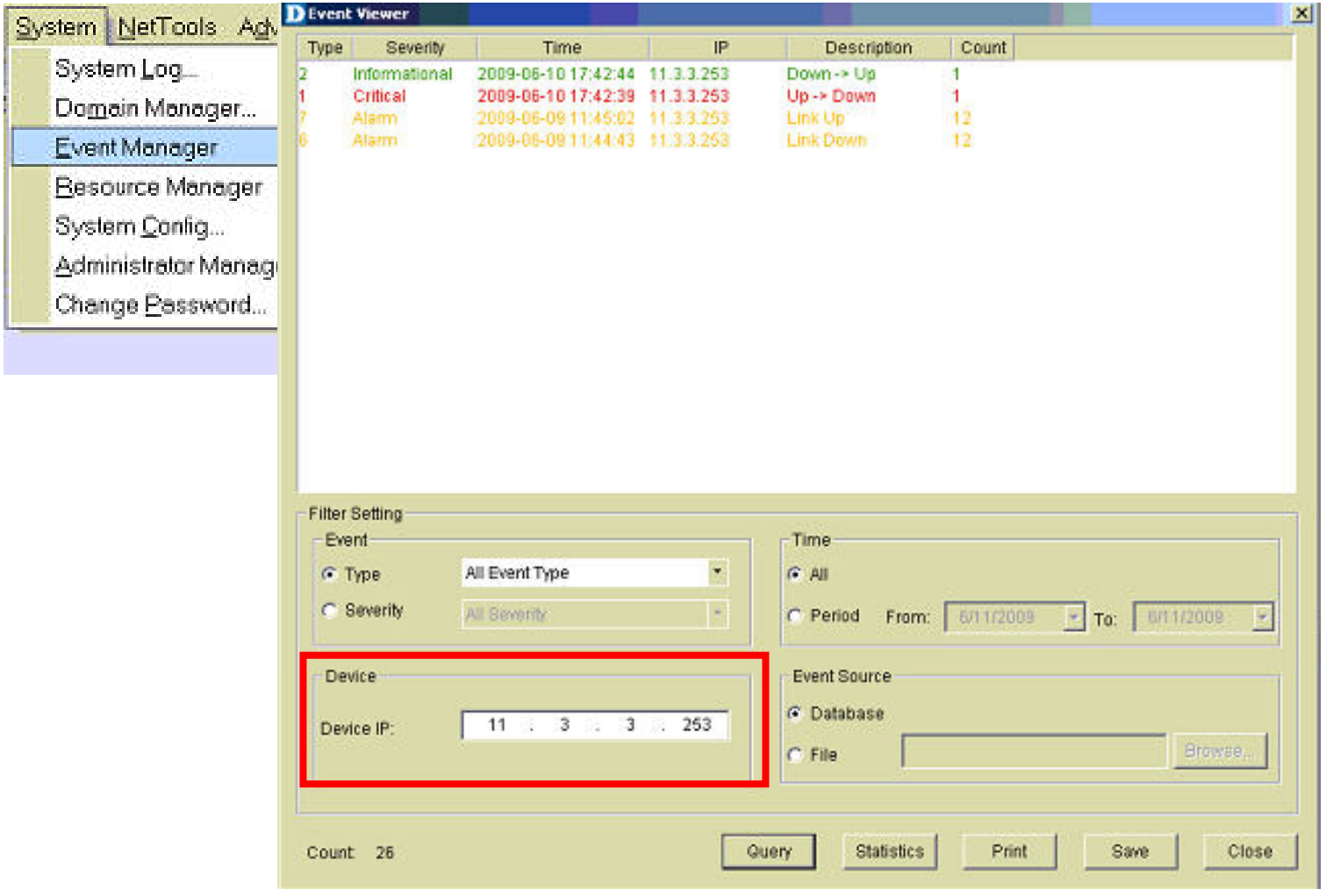
System Function – Domain Manager



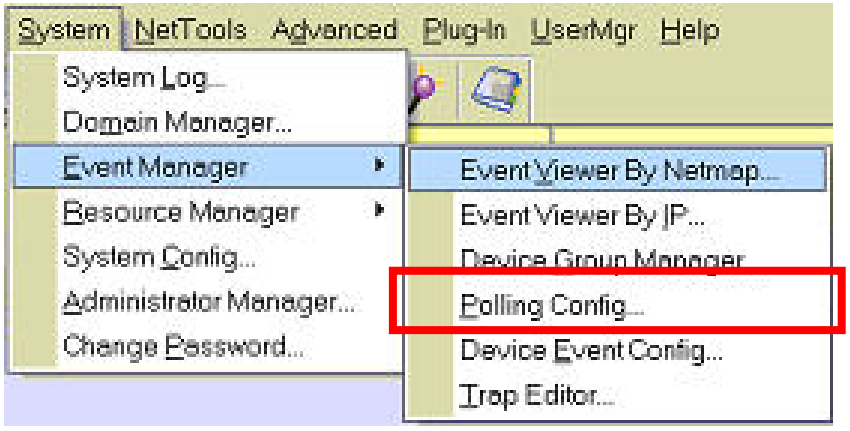
System Function – Event Viewer

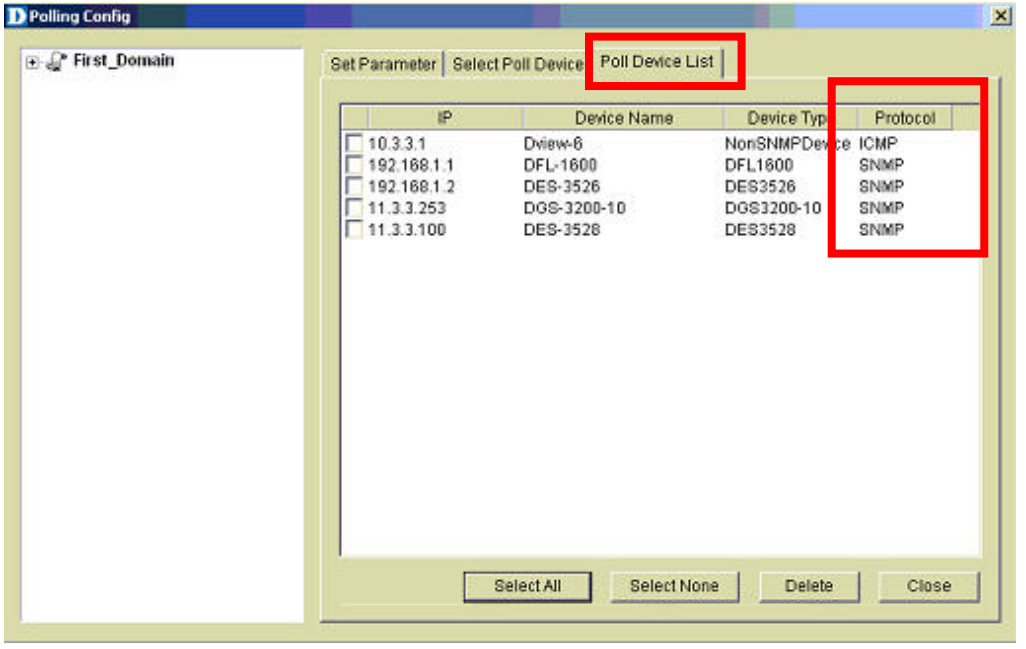


System Function – Event Viewer

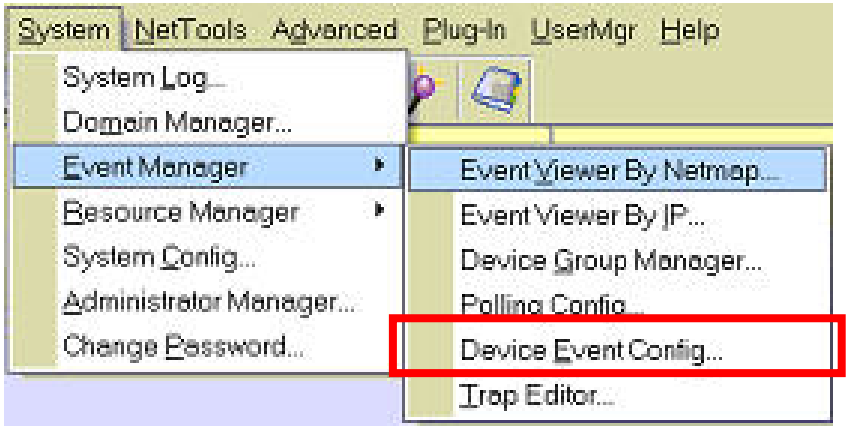


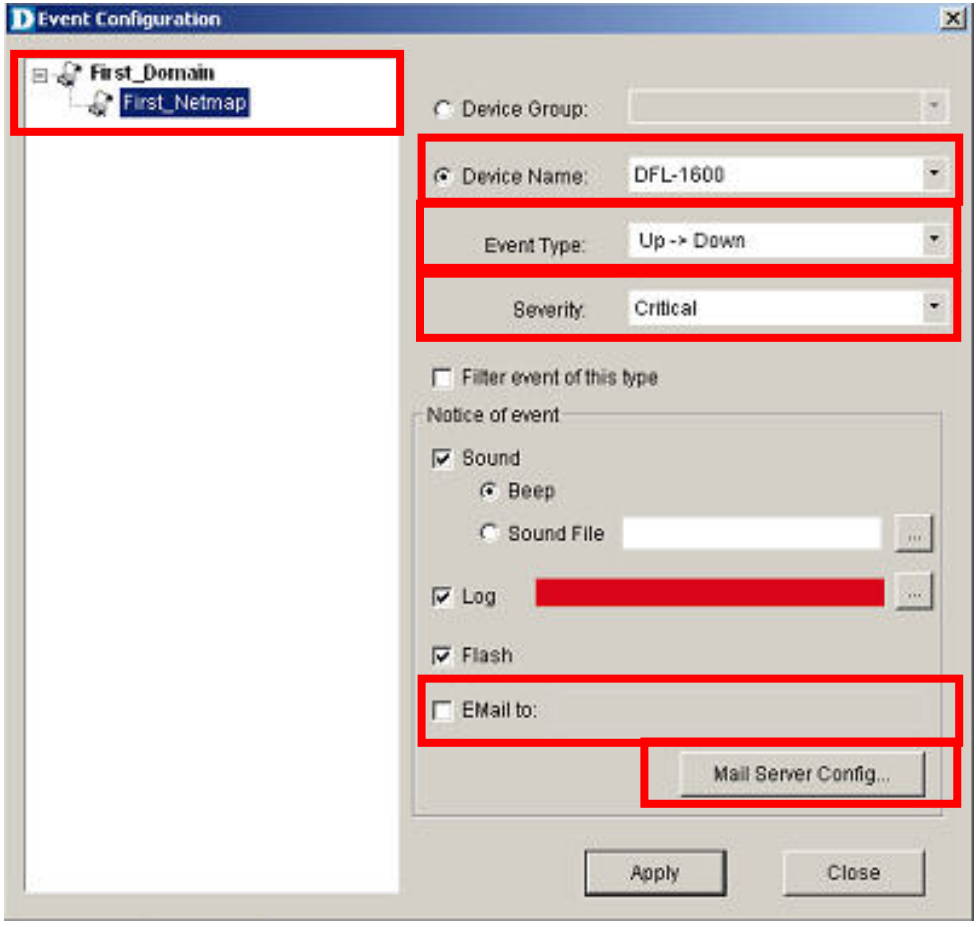
System Function – Polling Config



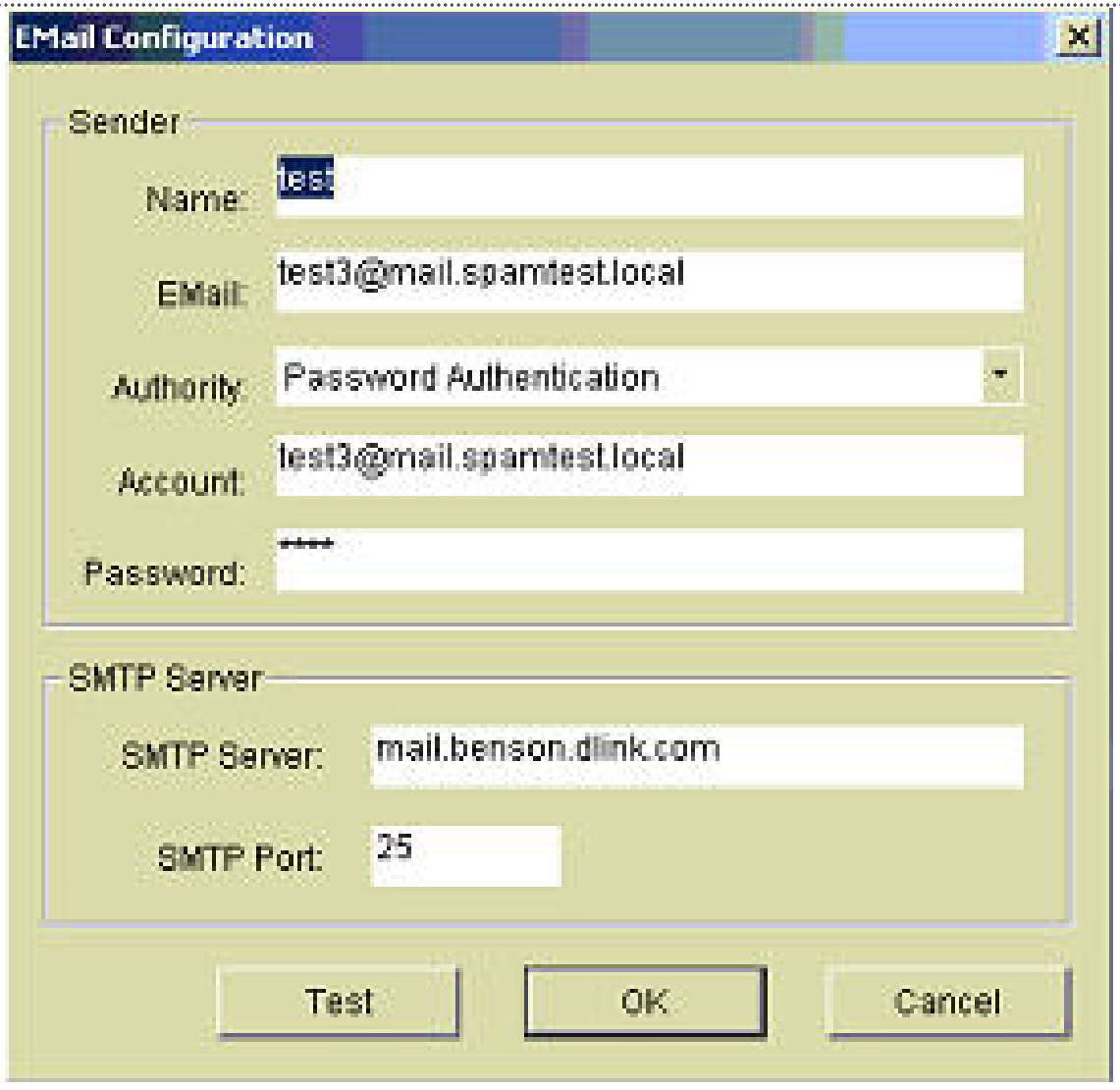


System Function – Device Event Config

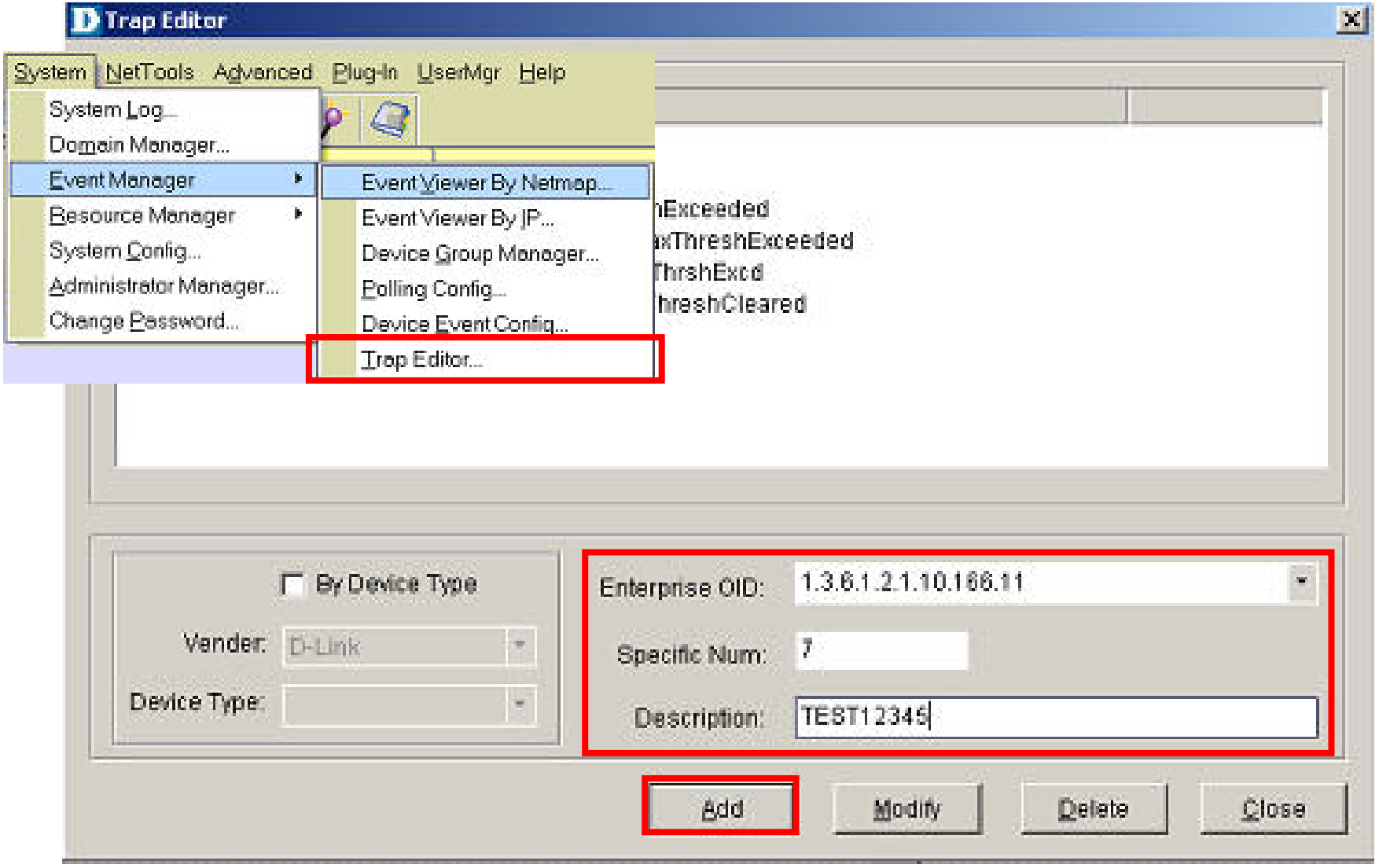




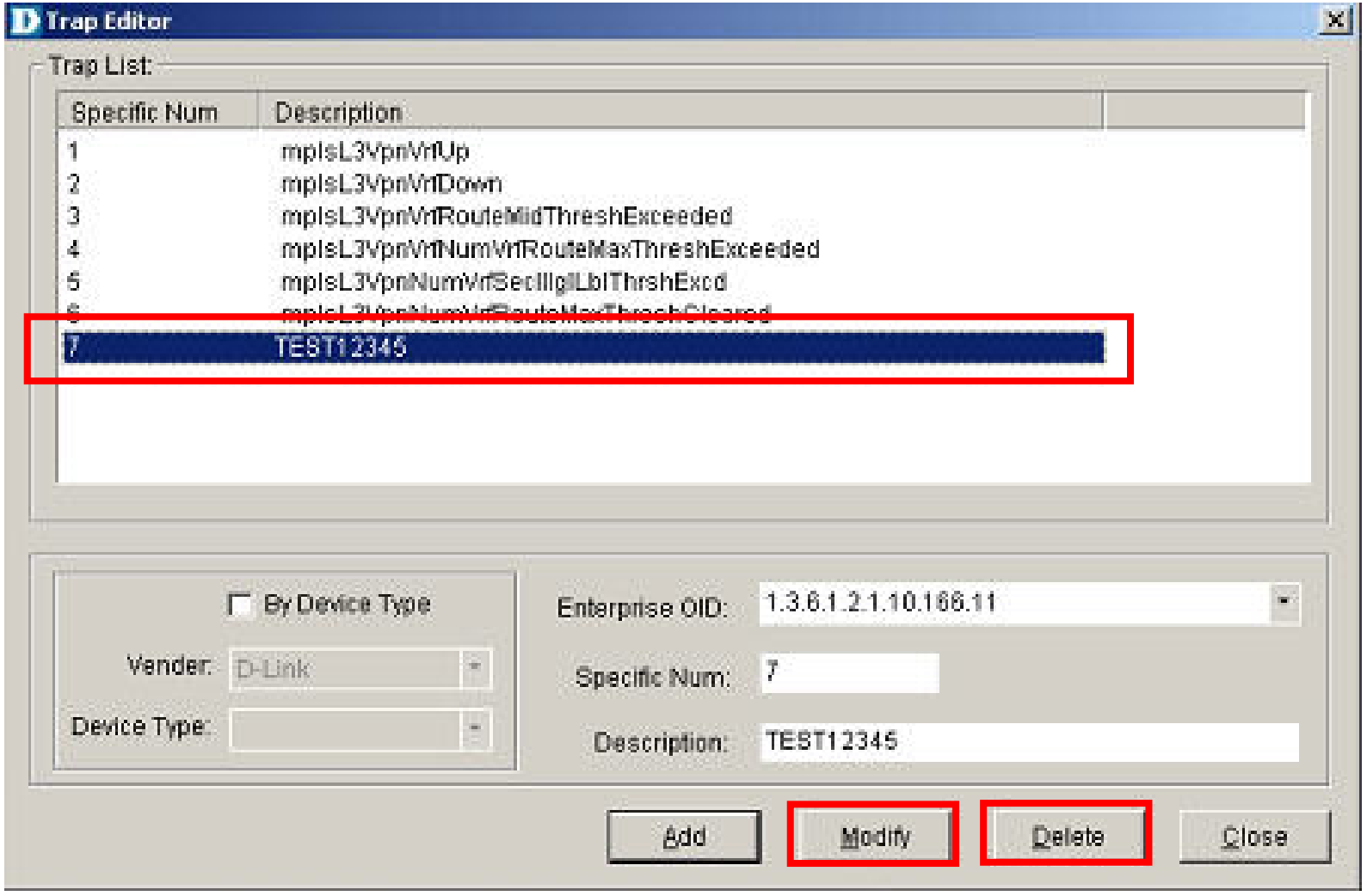
System Function – Device Event Config



System Function – Trap Editor



System Function – Trap Editer

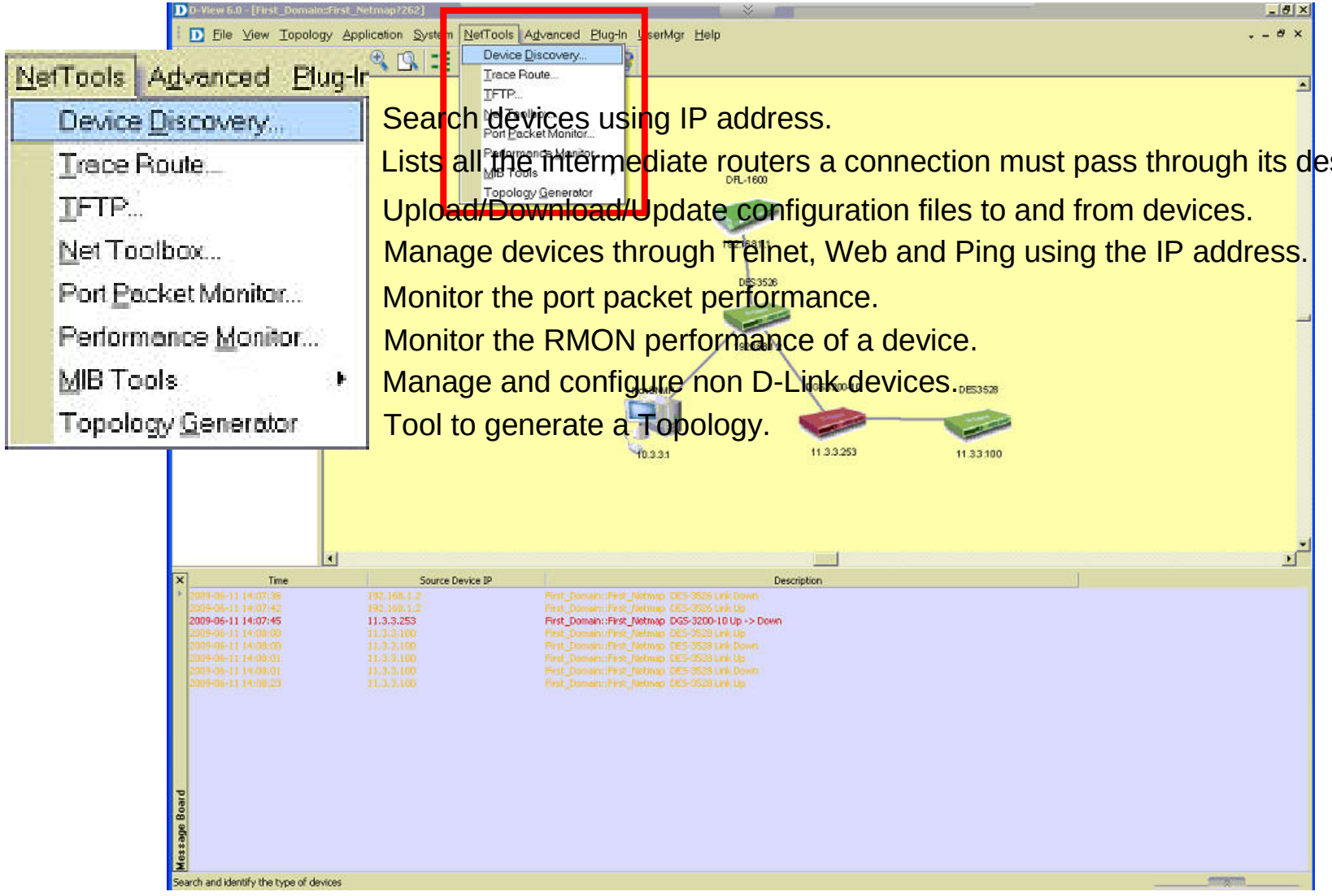


Demo

Use Event_Viewer To Check Events

Net Tools Function

NetTools Function



Search devices using IP address.

Lists all the intermediate routers a connection must pass through its destination.

Upload/Download/Update configuration files to and from devices.

Manage devices through Telnet, Web and Ping using the IP address.

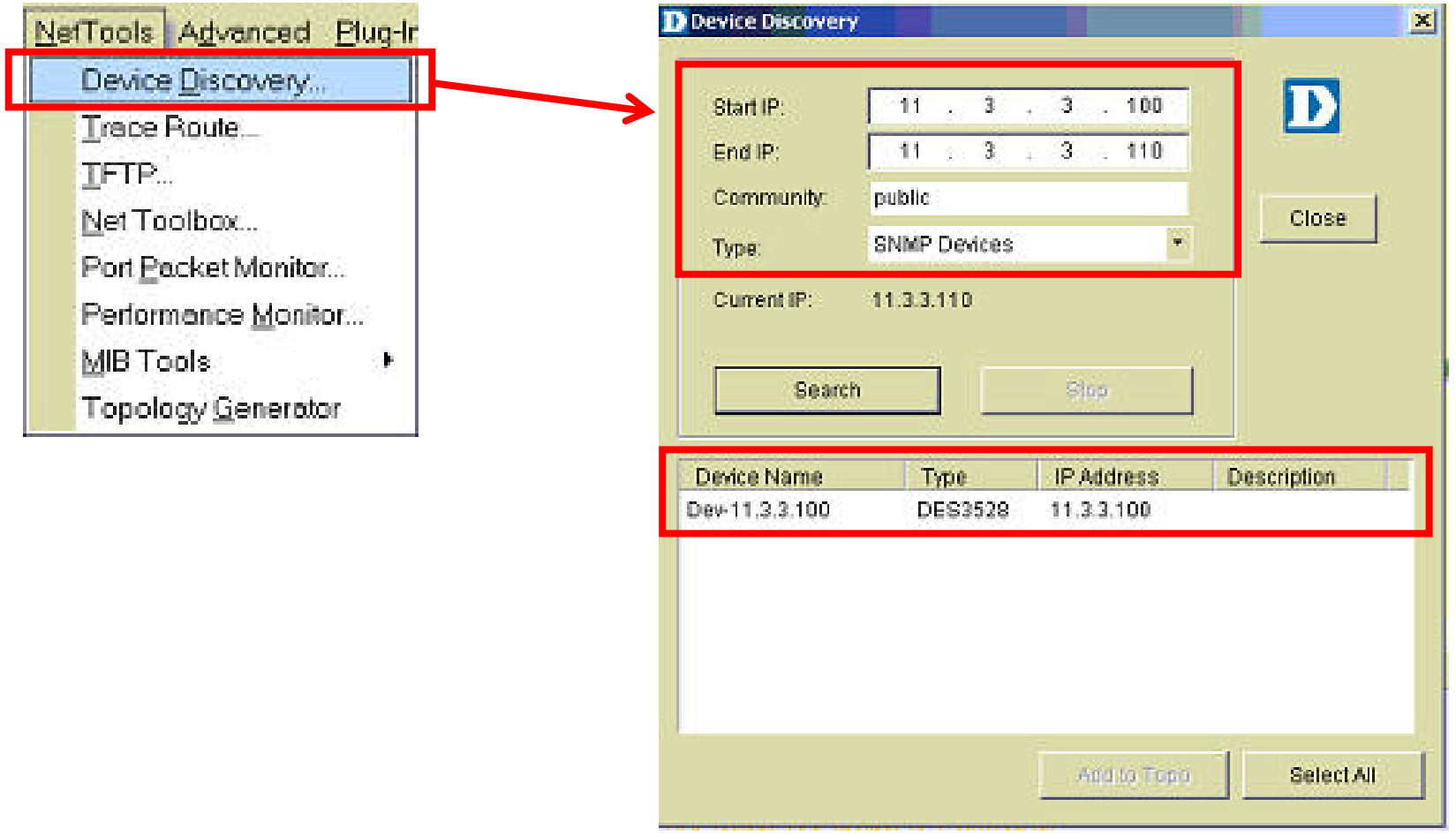
Monitor the port packet performance.

Monitor the RMON performance of a device.

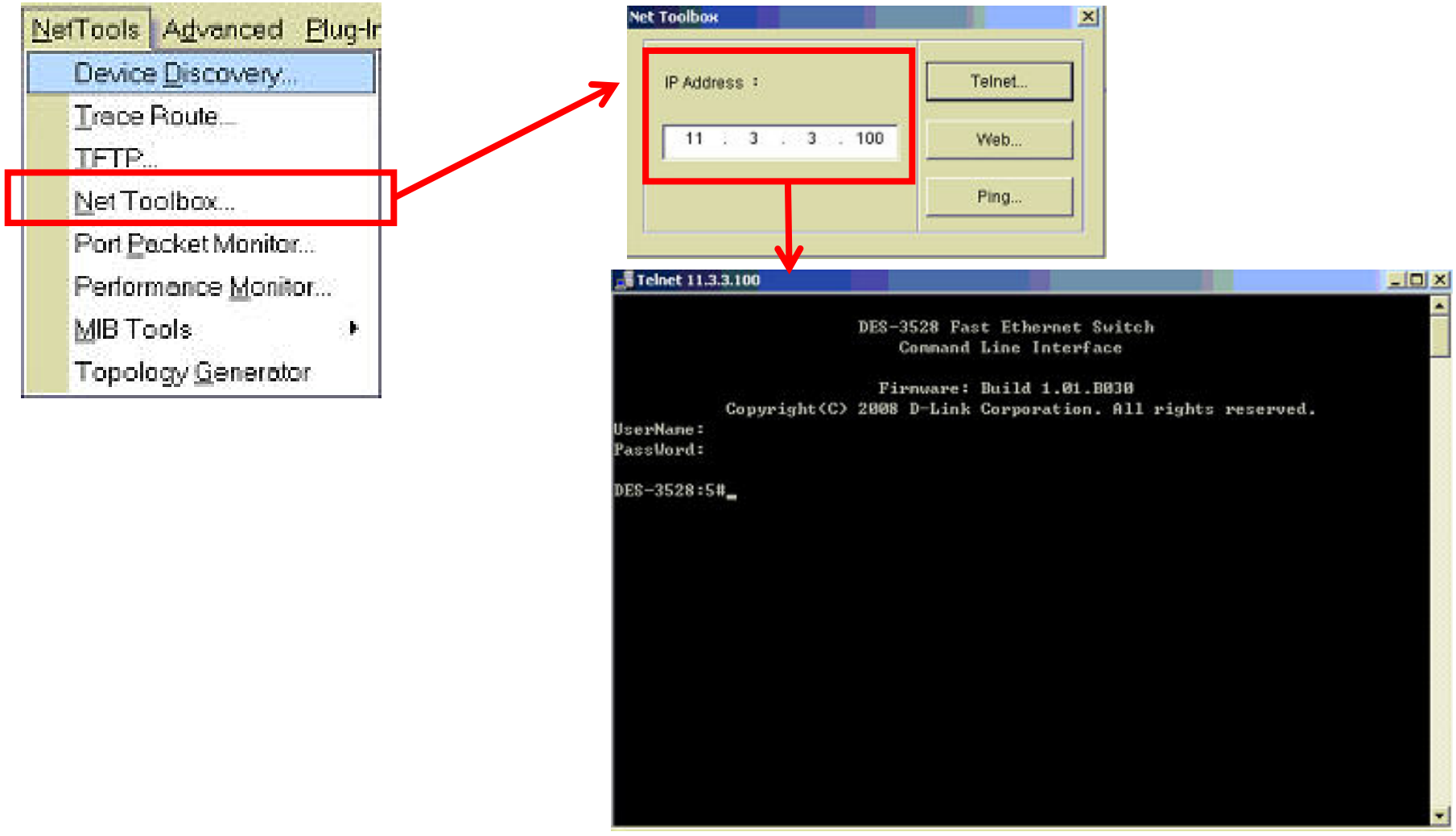
Manage and configure non D-Link devices.

Tool to generate a Topology.

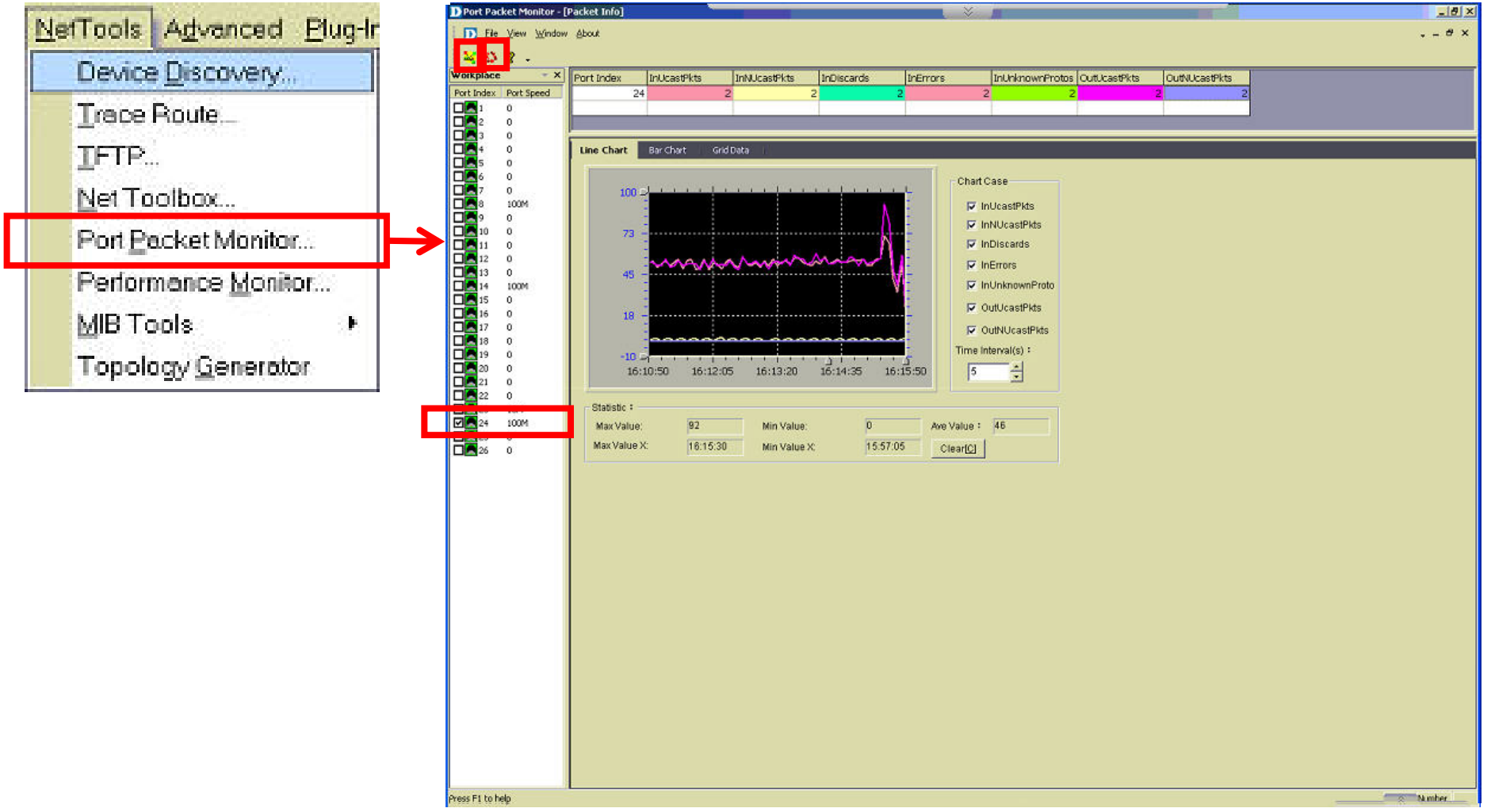
NetTools Function – Device Discovery



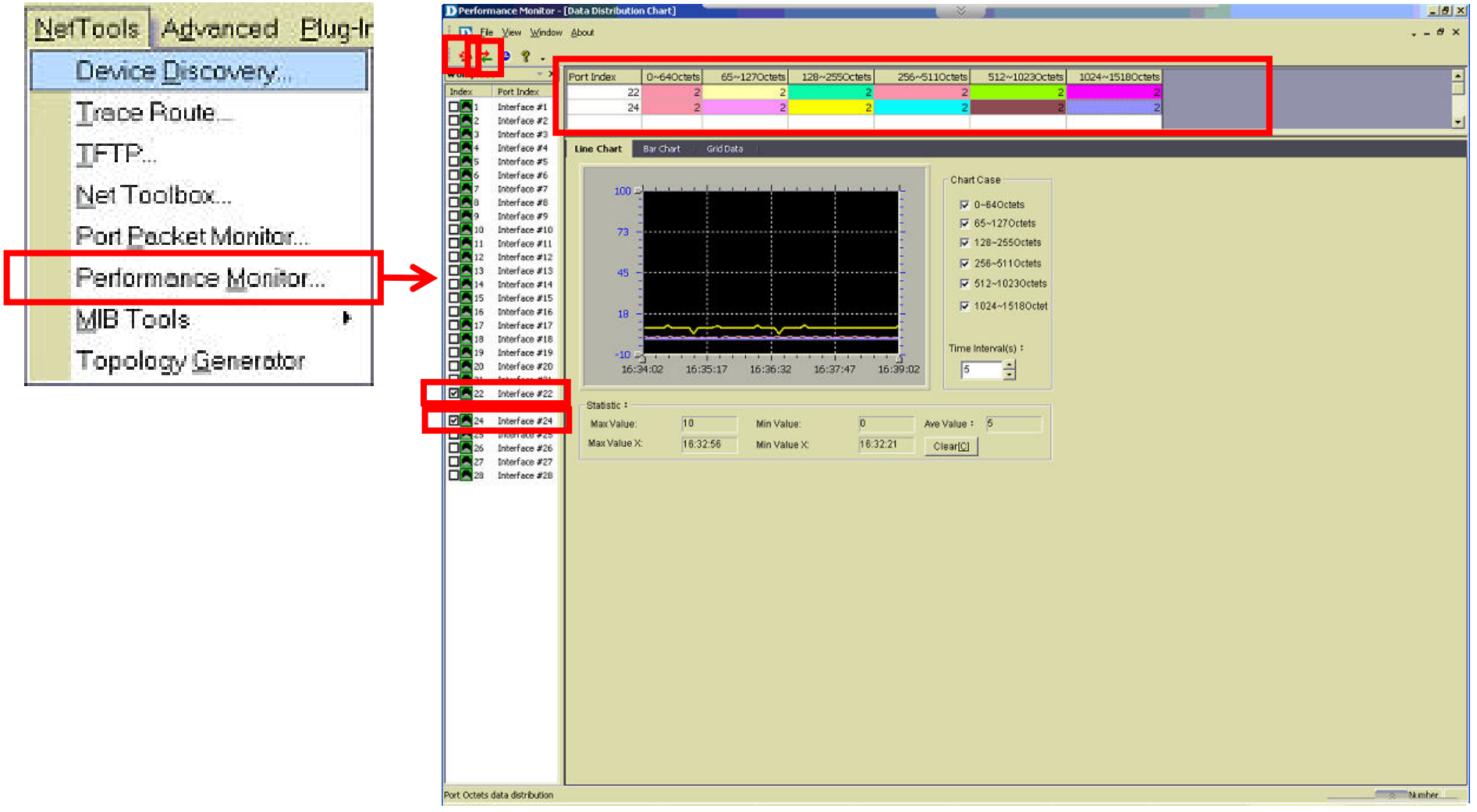
NetTools Function – Net Toolbox



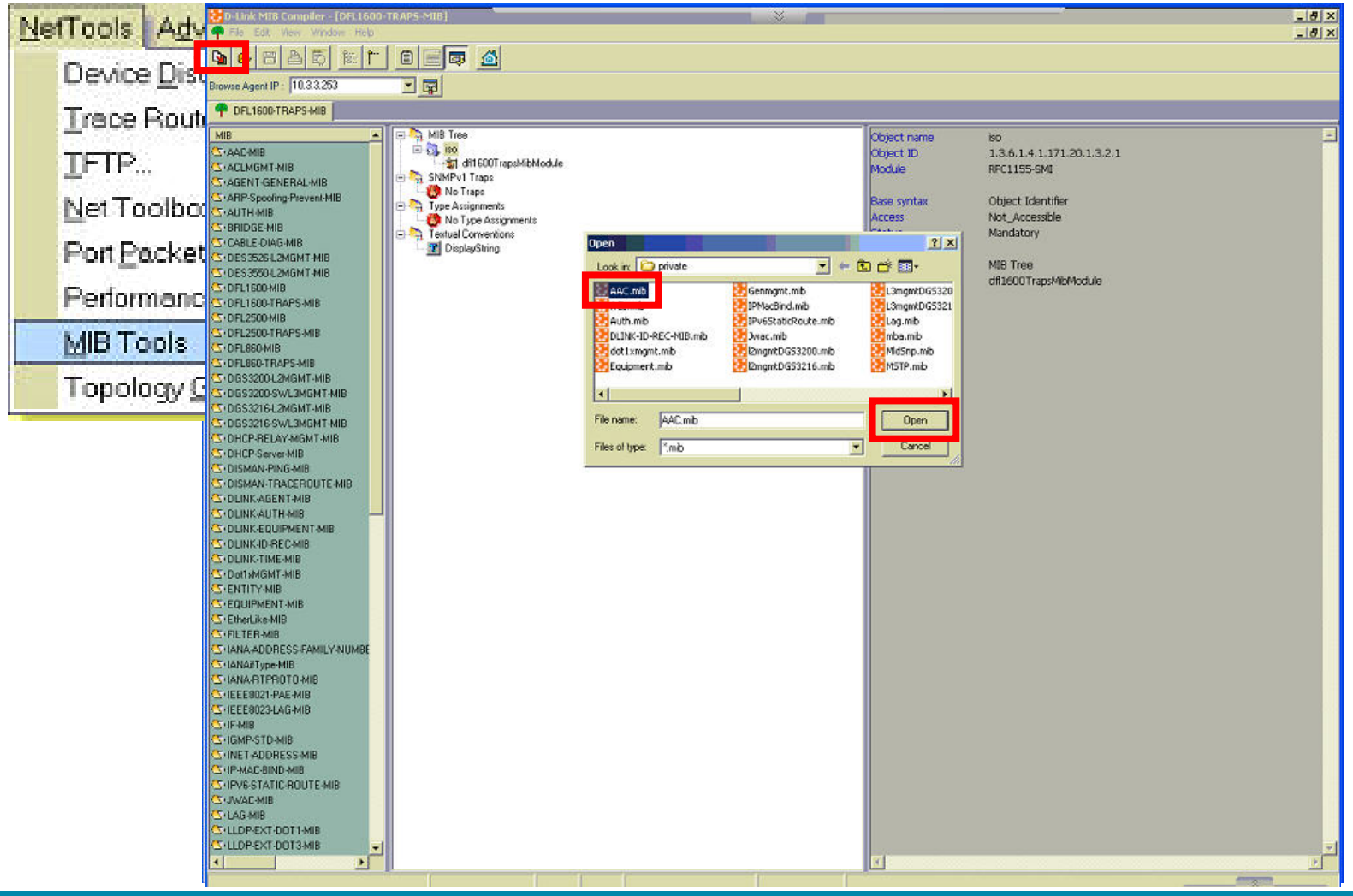
NetTools Function – Port Packet Monitor



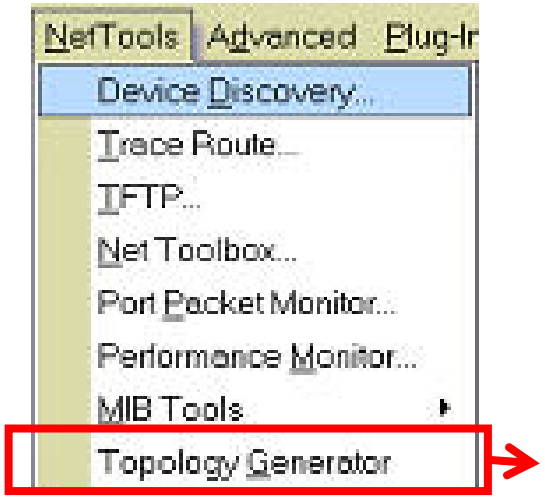
NetTools Function – Performance Monitor

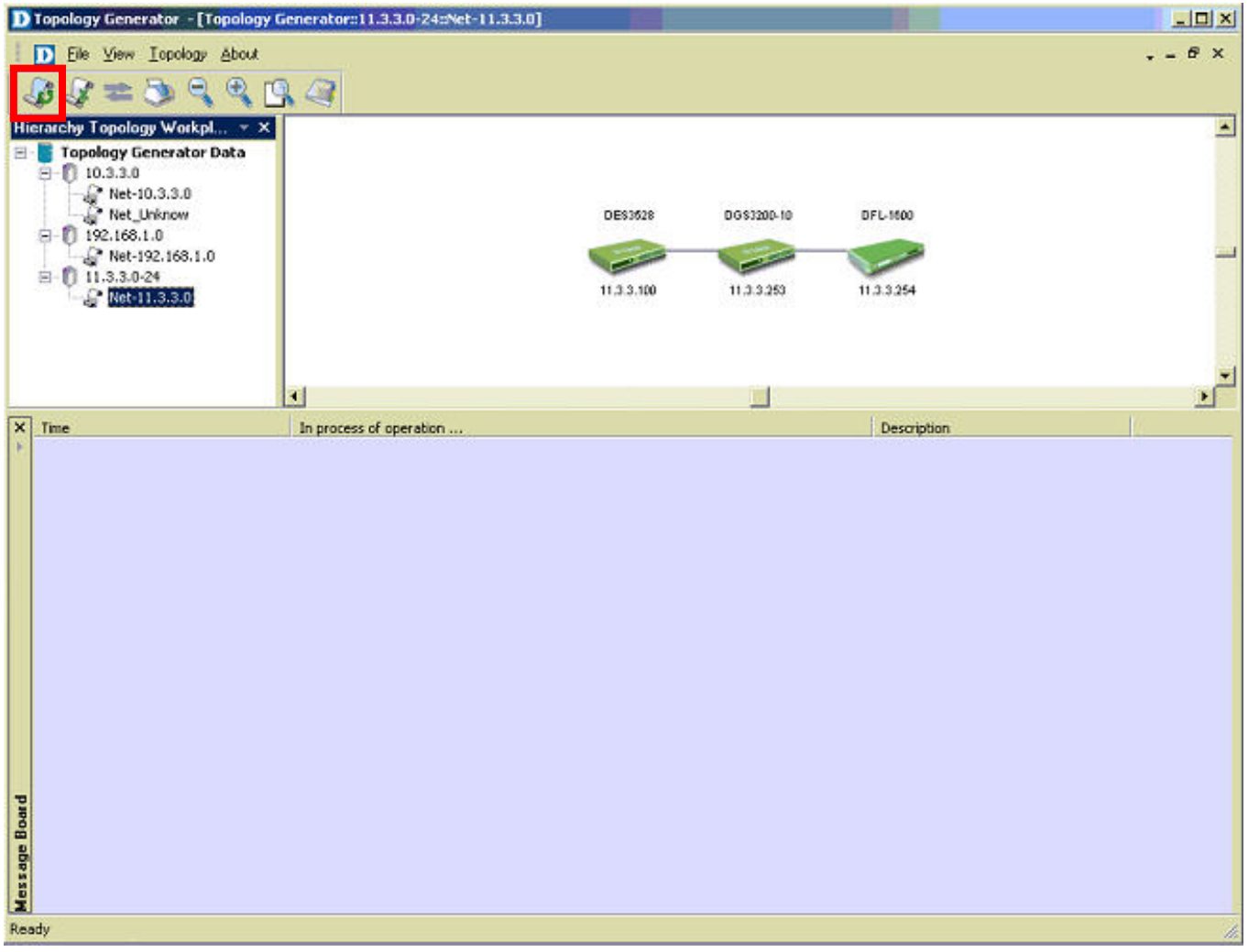


NetTools Function – MIB Tools

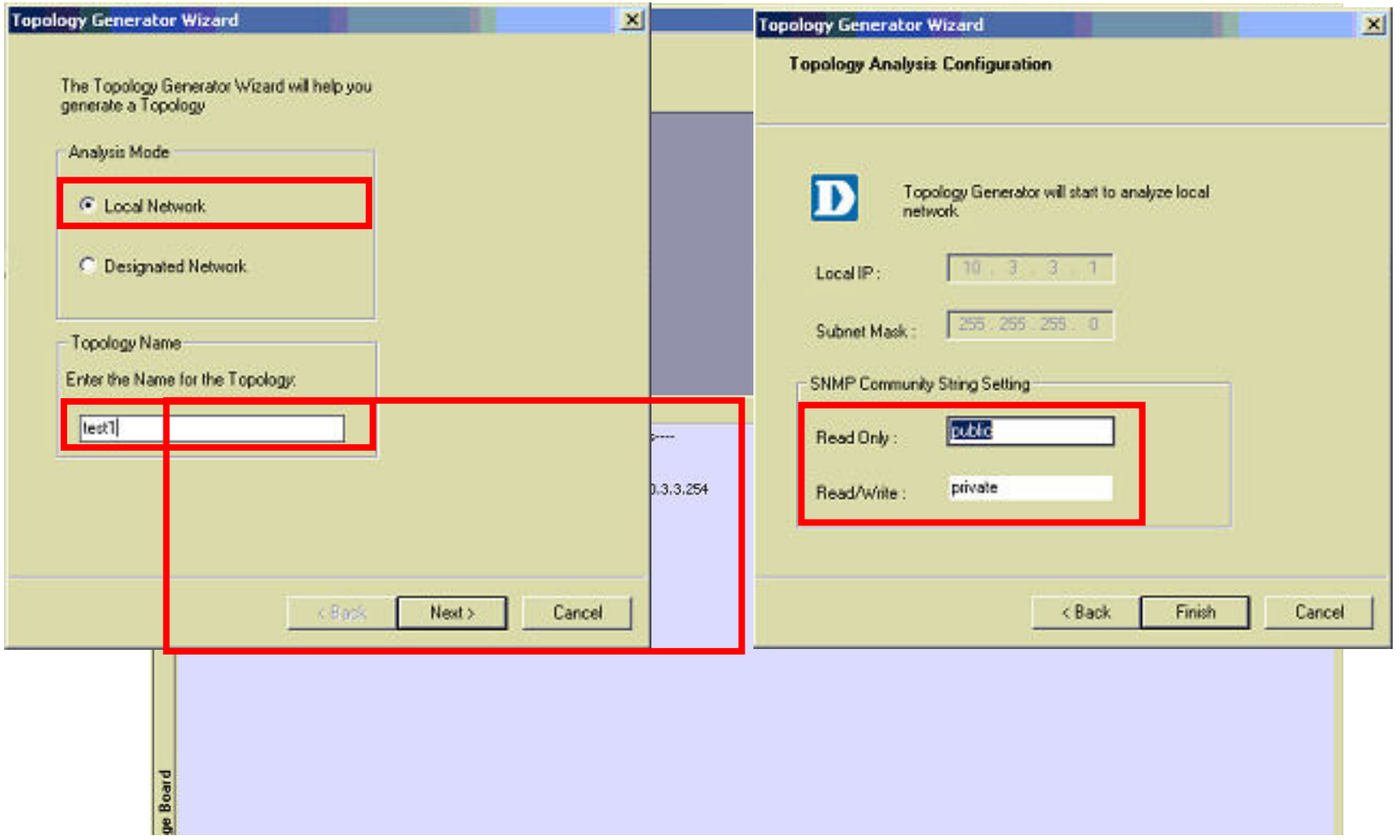


NetTools Function – Topology Generator

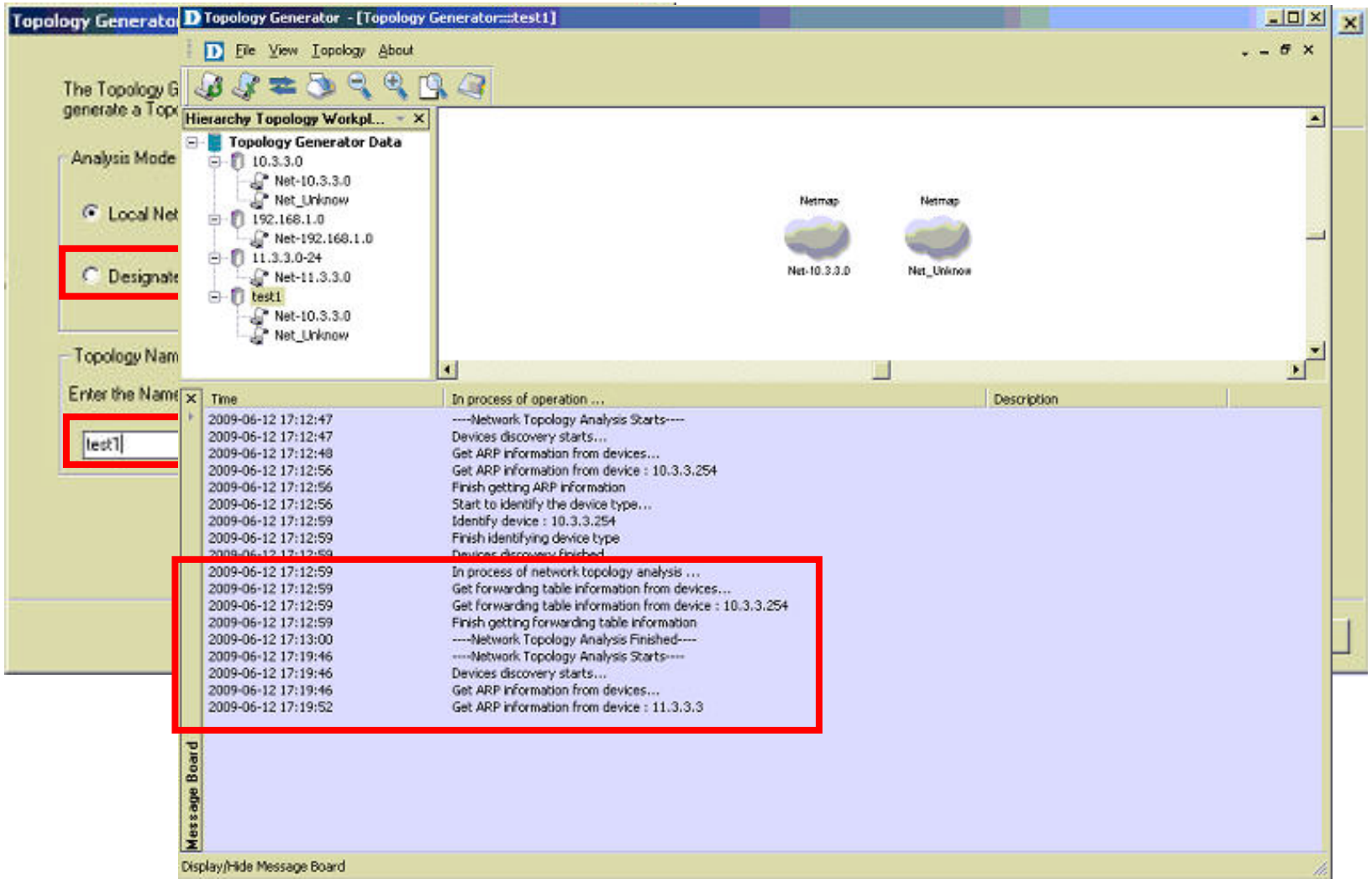




NetTools Function – Topology Generator

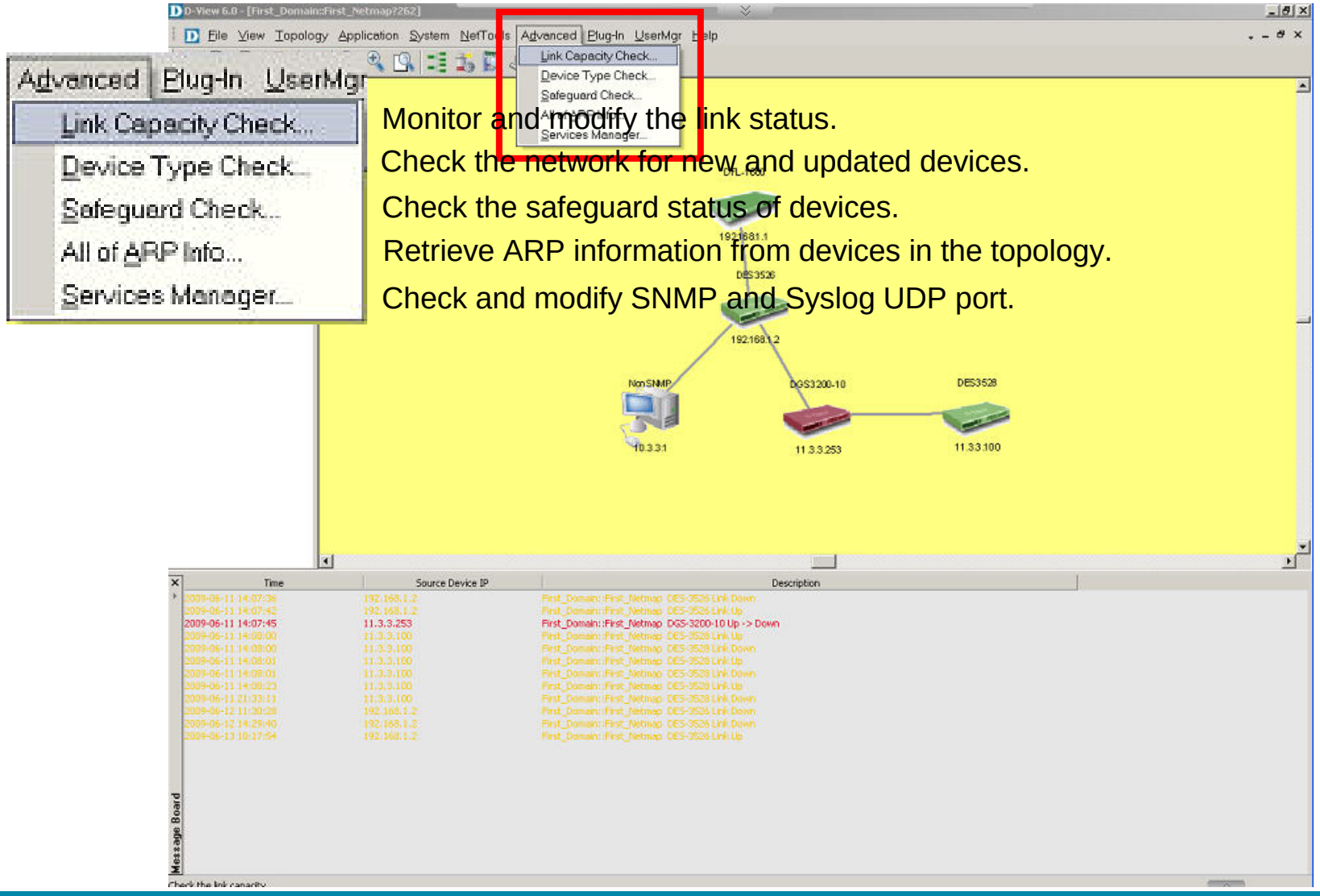


NetTools Function – Topology Generator

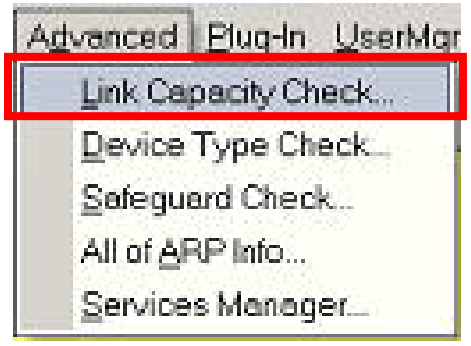


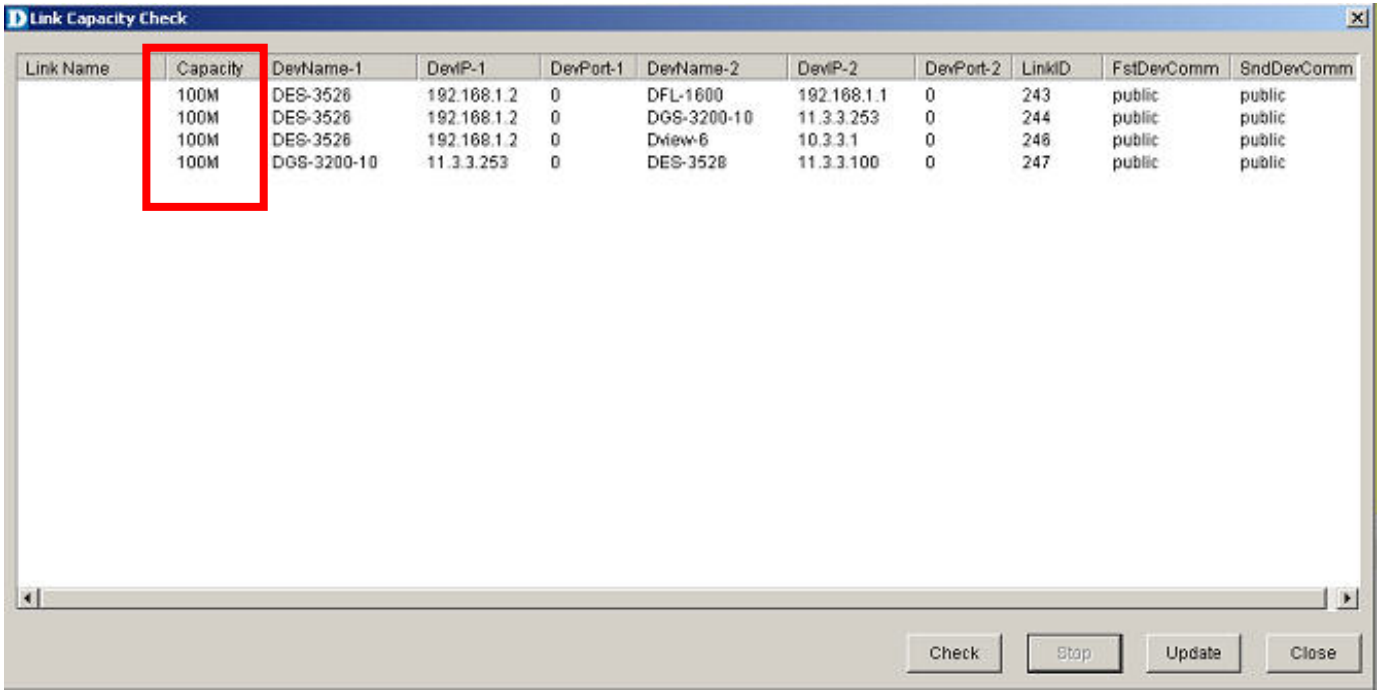
Advance Function

Advance Function

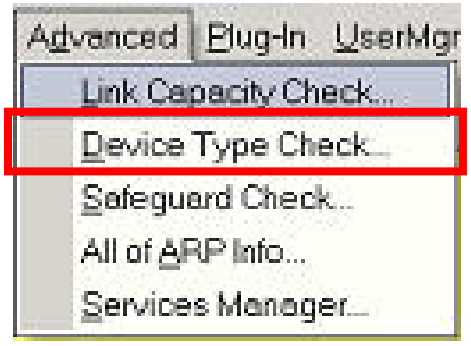


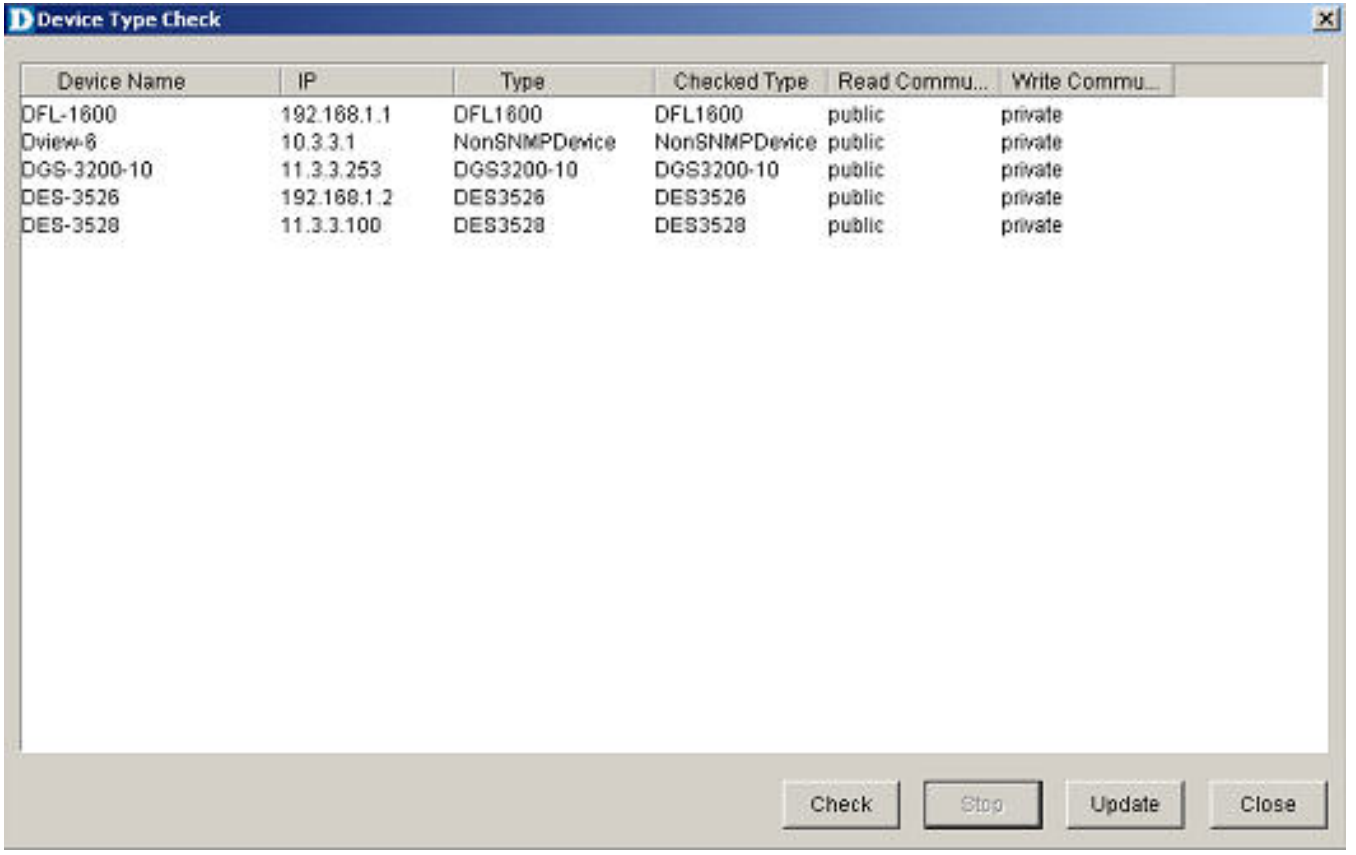
Advance Function





Advance Function





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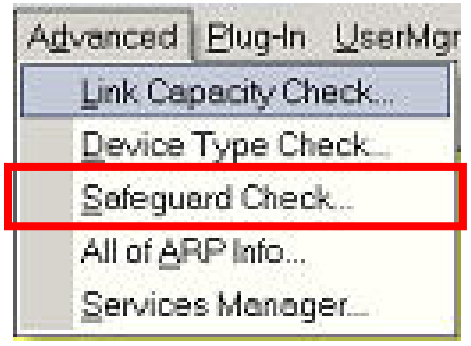

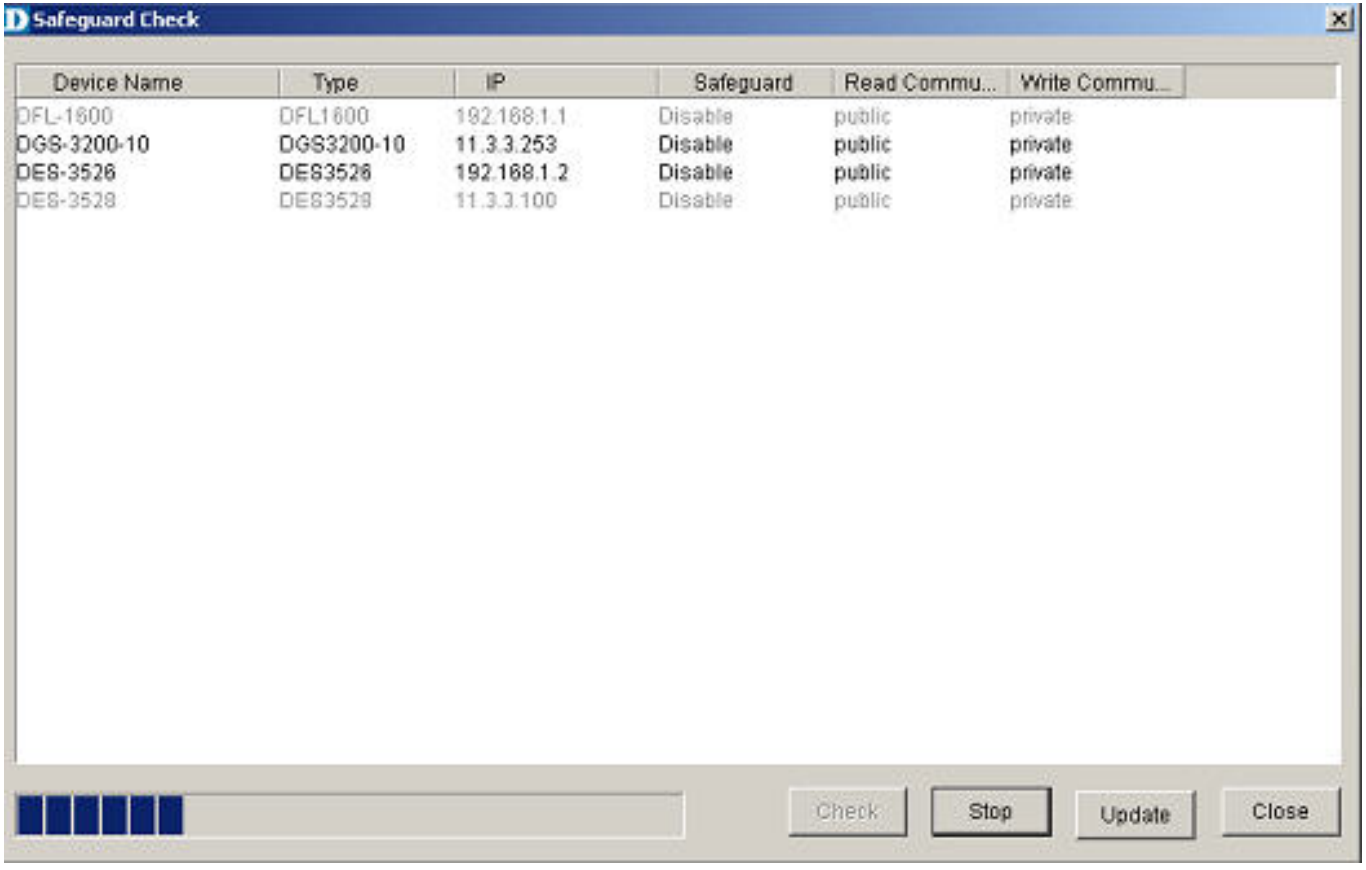

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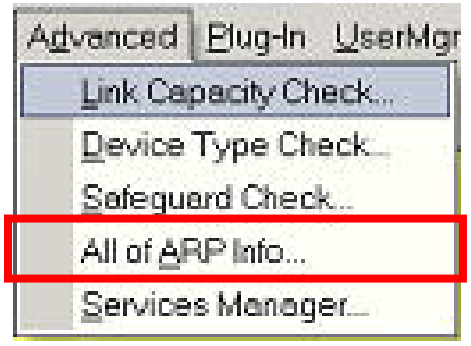
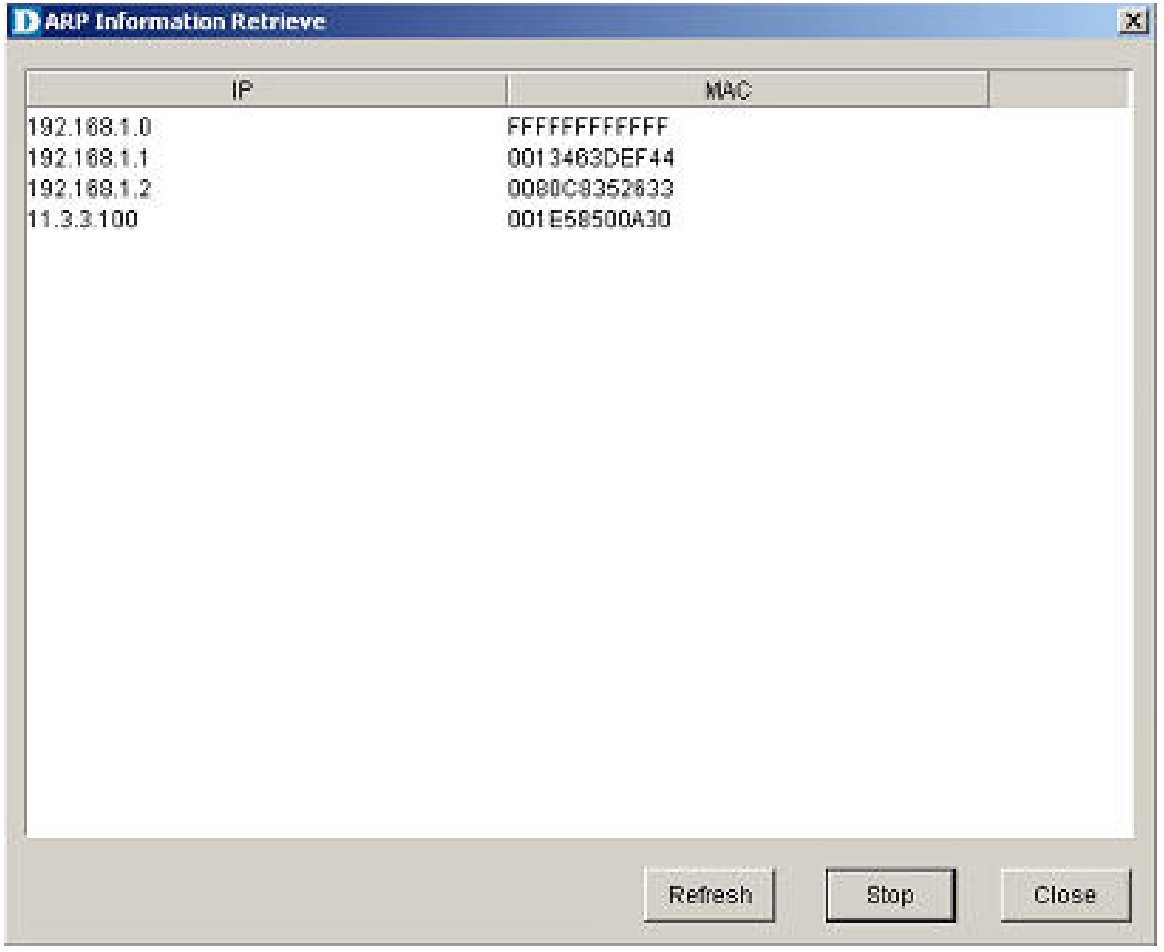
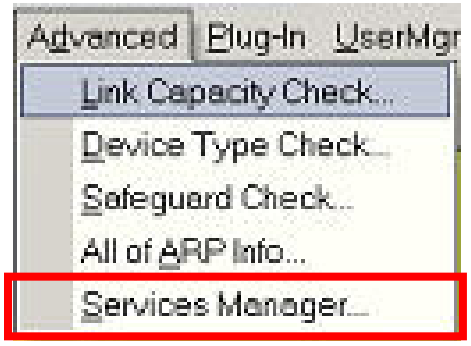
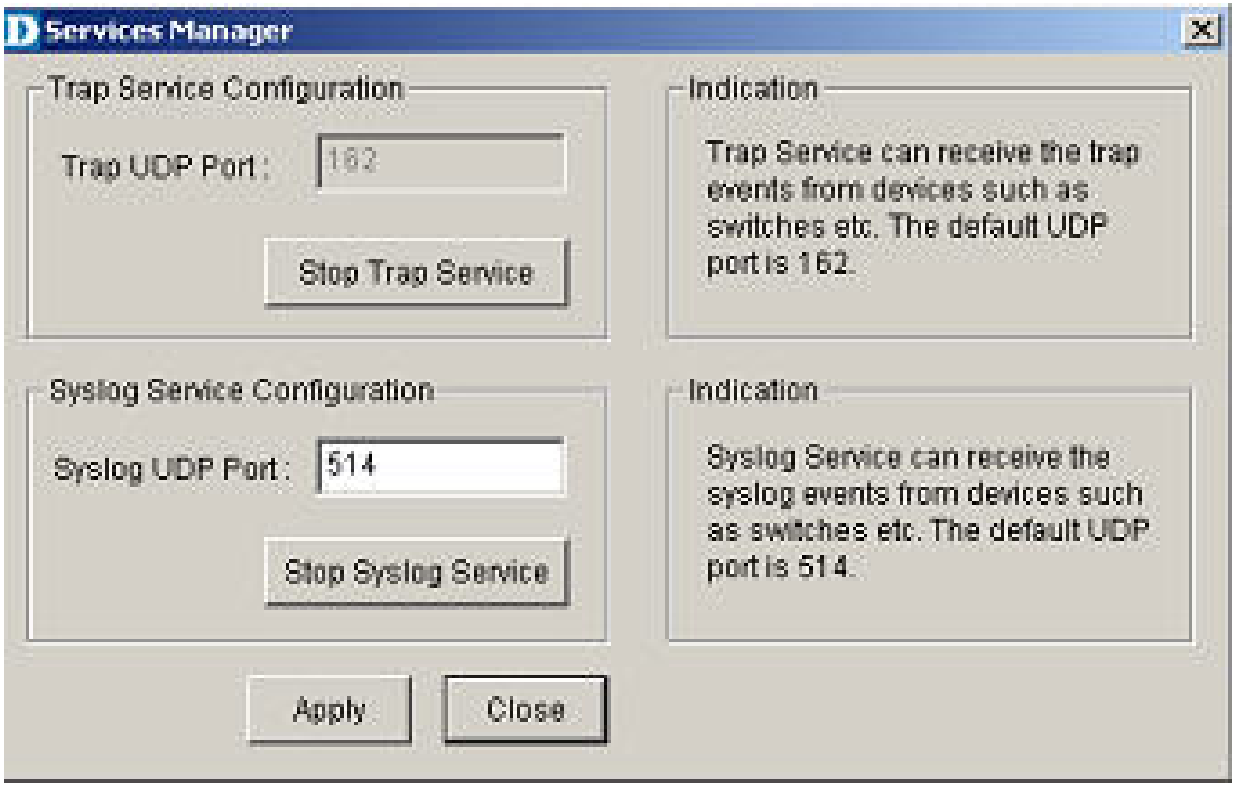




Advance Function





D-View6 模組

D-View6 模組

D-View6 Module

- D-View Module is a graphic interface.
- Provide a easy way to monitor and configure D-Link devices.
- Provide a real-time devices state information.

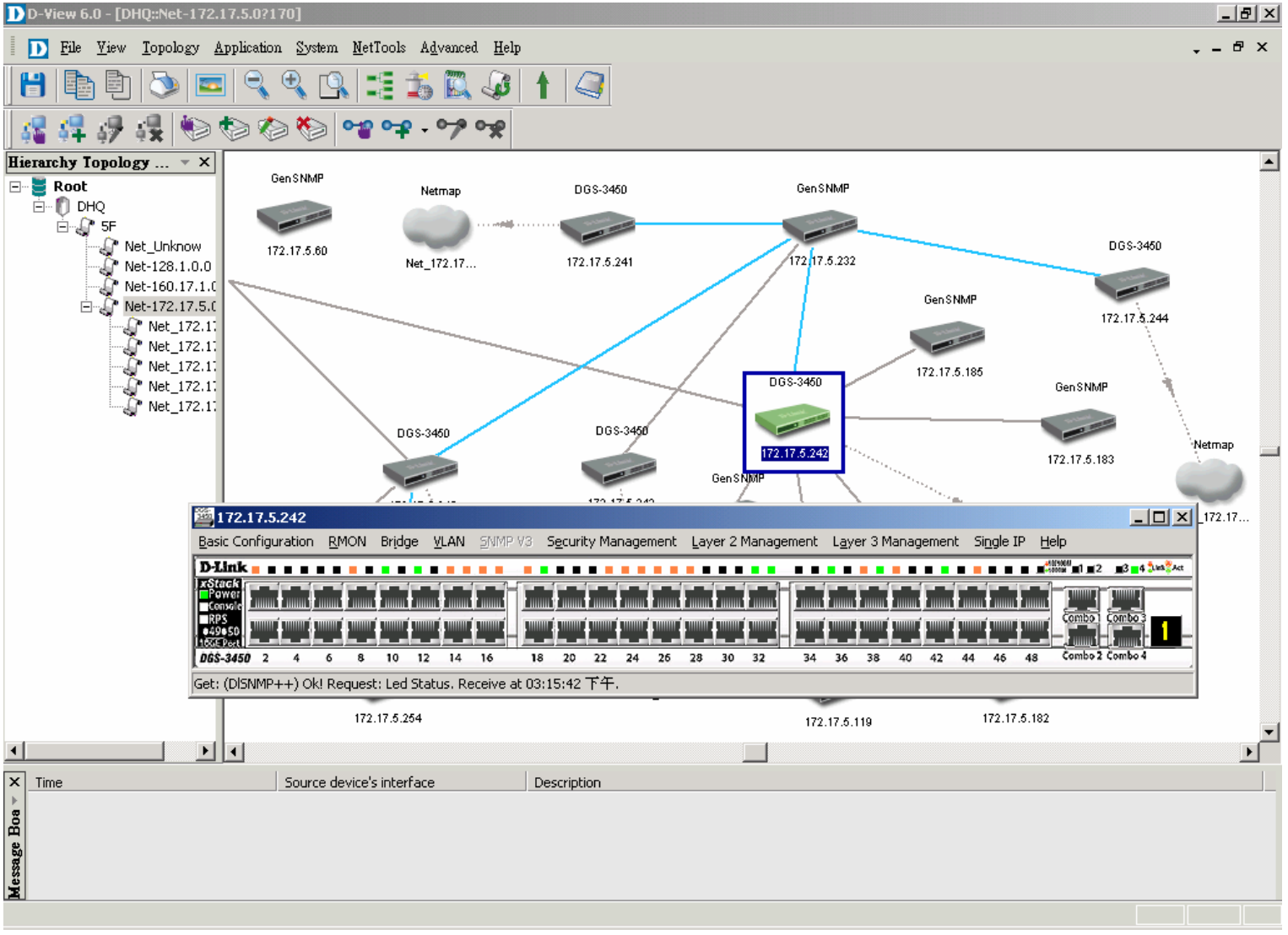
How To Install D-View6 Module

- Go to PMD System and download D-View6 Module for specific D-Link devices.
- Install D-View6 module Application.

How To Use D-View6 Module

- Just double click device icon from the topology view window.

D-View6 模組



Demo

Install & Use D-View6 Module

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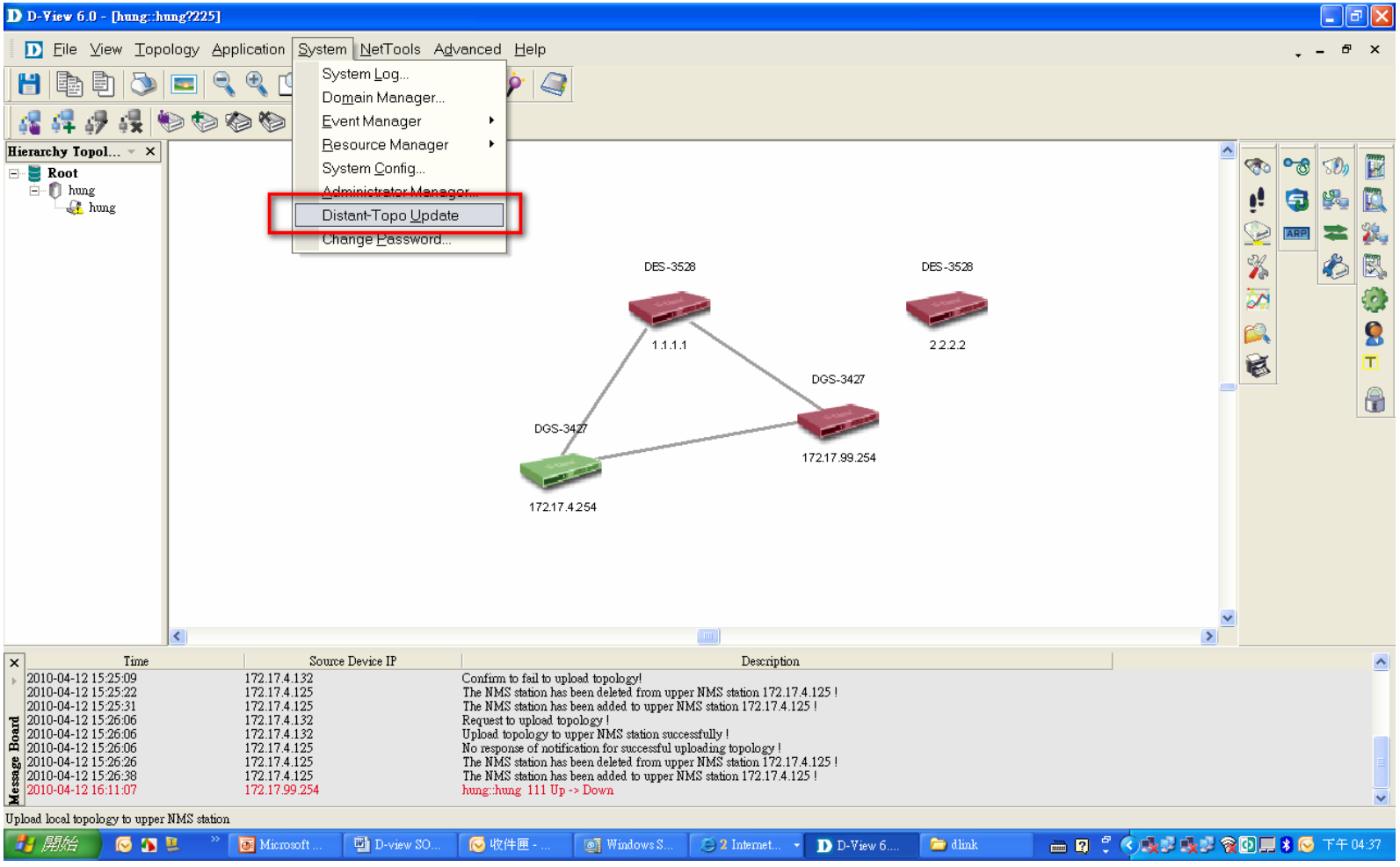
各學校自行上傳D-view topo資料

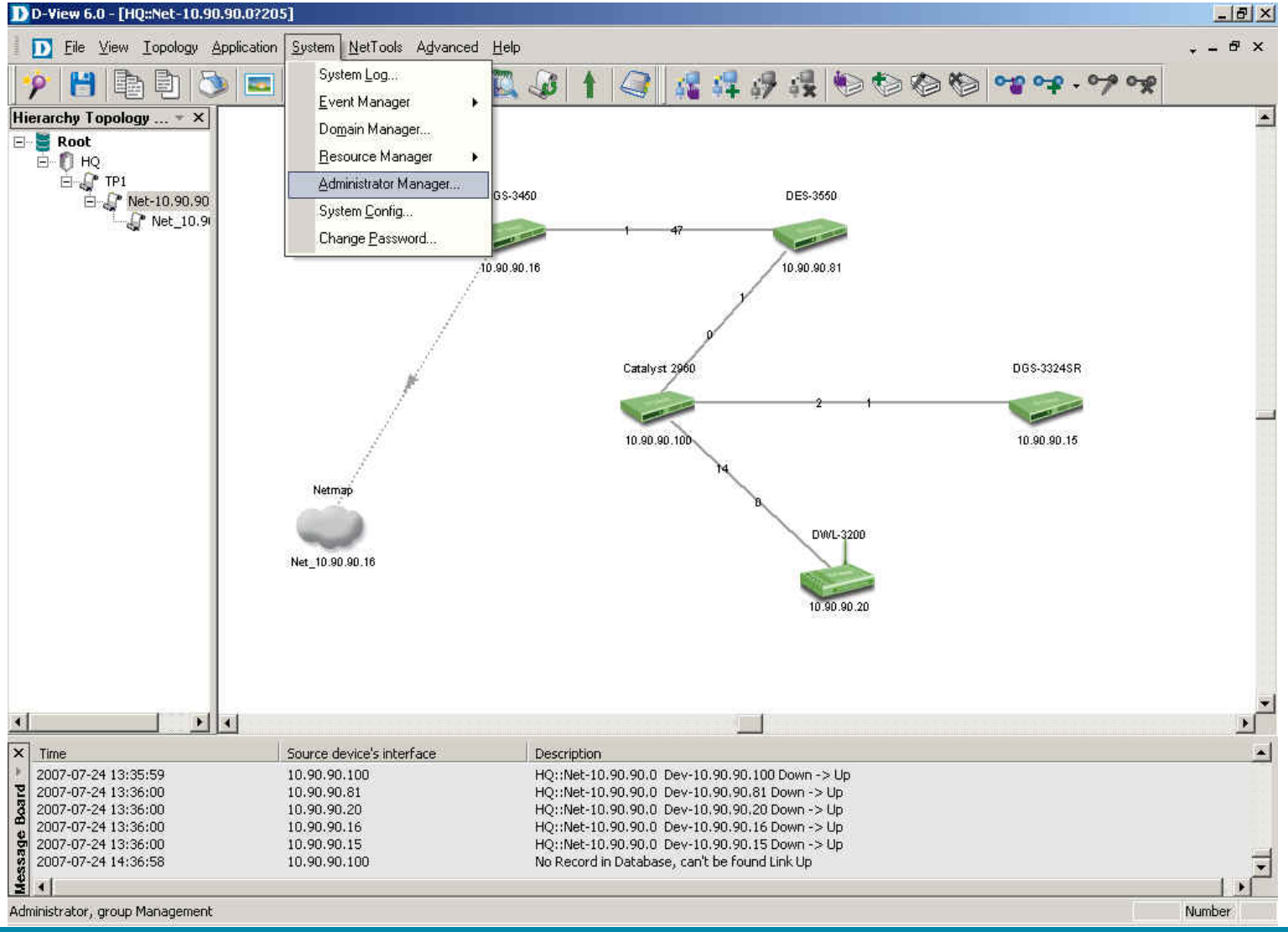


出現已下訊息代表上傳D-view資料已成功

2010-04-12 14:56:26	172.17.4.132	Upload topology to upper NMS station successfully !
2010-04-12 14:56:26	172.17.4.125	No response of notification for successful uploading topology !
2010-04-12 14:56:40	172.17.4.125	The NMS station has been deleted from upper NMS station 172.17.4.125 !
2010-04-12 14:56:47	172.17.4.125	The NMS station has been added to upper NMS station 172.17.4.125 !
2010-04-12 15:25:09	172.17.4.132	Request to upload topology !
2010-04-12 15:25:09	172.17.4.132	Confirm to fail to upload topology!

D-view存取控制權限

D-view存取控制權限



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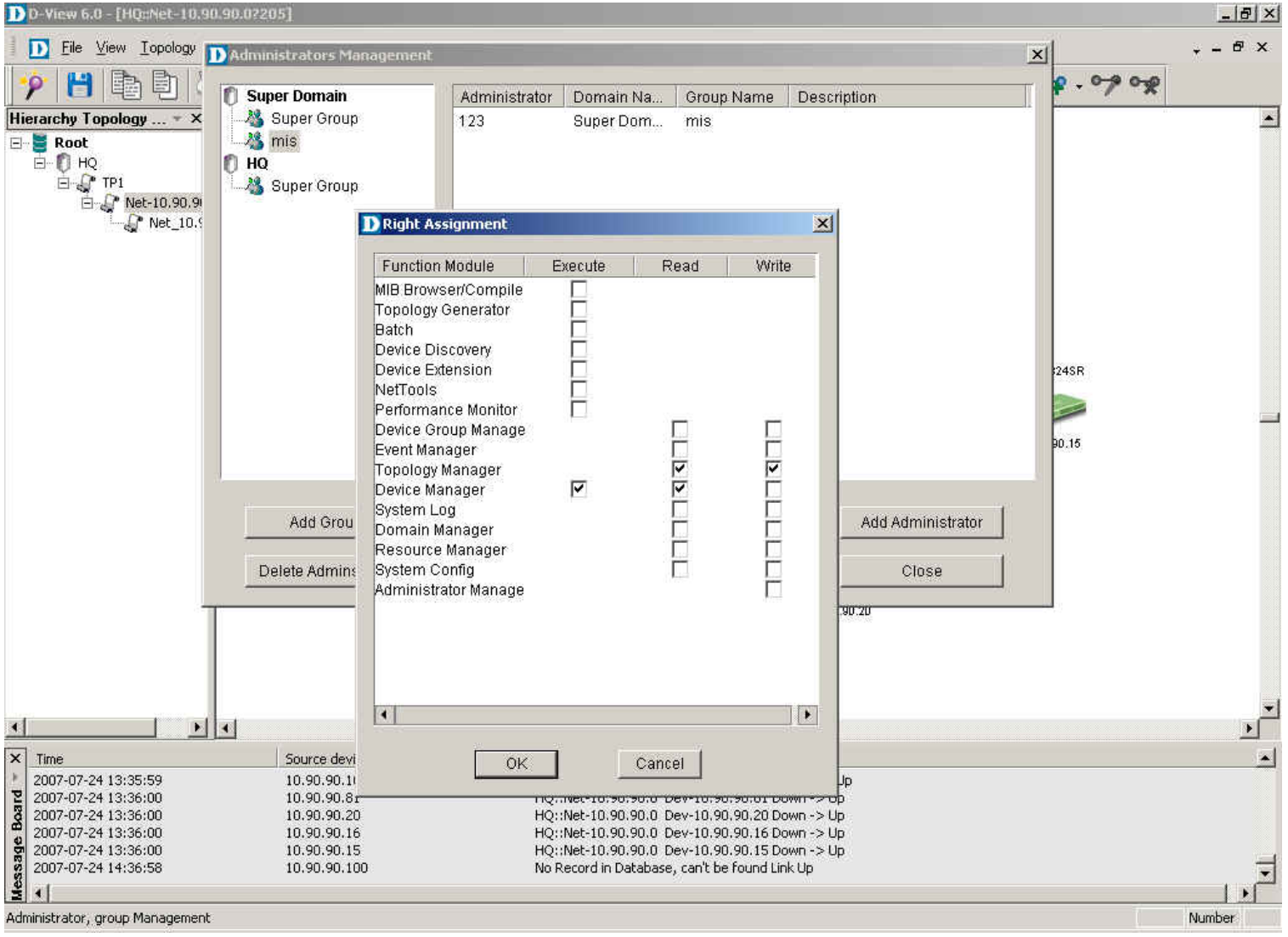
D-view存取控制權限



D-view存取控制權限

- Used in Client-Server Mode (Professional Version Only)
- In D-View 6.0, we can use Group to manage access right to users.
- Users can just access the groups witch they have rights.
- Administrators can assign necessary rights to users.

D-Link DPH-150SE

介紹與操作說明及簡易故障排除

D-Link Taiwan DTSS 謝元博

公司 02-66000123#8667

手機 0972-355-160

Cluster_Hsie@dlink.com.tw

D-Link
Building Networks for People

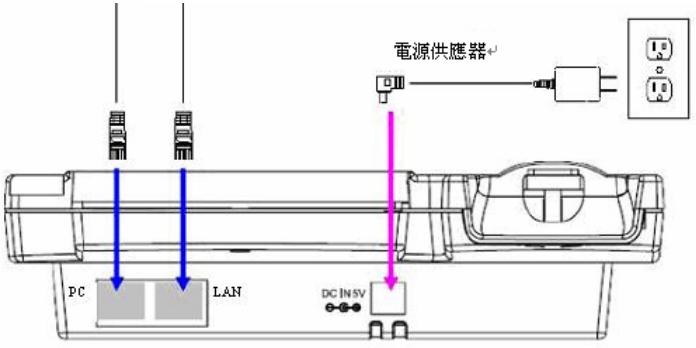
提供設備項目-網路電話

網路電話 **DPH-150SE**

- 高效能高擴充性：
  - 具備2埠Gigabit網路介面，串接教室電腦提供高速傳輸
  - 內建POE介面
- 整合多元應用
  - 支援IPv4/v6 Dual Stack網路電話應用
- 穩定安全網路連線
  - 802.1Q VLAN：可依不同VLAN設定其Qos優先權
- Auto Provision功能：集中派送設定檔及韌體更新
- 節能減碳
  - 搭配WiNOC排程功能，集中管理電源節能省電
- 中文螢幕顯示，方便操作使用

話機連接方法

- 話機標示爲LAN的Port接至交換器
- 話機標示爲PC的Port連接至PC



VoIP 相關Server說明

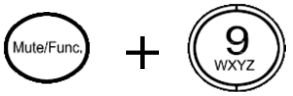
- APS Server:負責針對話機進行自動升級韌體與部署話機設定等資料

- SIP Server:負責話機帳號註冊與後續通話處理之運作

- 話機初次連上網路會指向APS Server報到,升級版本與取得電話號碼與SIP Server IP等設定,之後話機轉向SIP Server註冊帳號密碼,成功後可開始通話

常用功能操作

- 由面板確認IPv4的IP



- 由面板上可看到 IPv6 address

- 查看通話紀錄

切換已接來電 / 未接來電 / 已撥電話

- 調整話筒音量

通話中,按  or  調整音量大小

- 調整 

音量

通話中,按  or  調整音量大小

- 確認Firmware版本

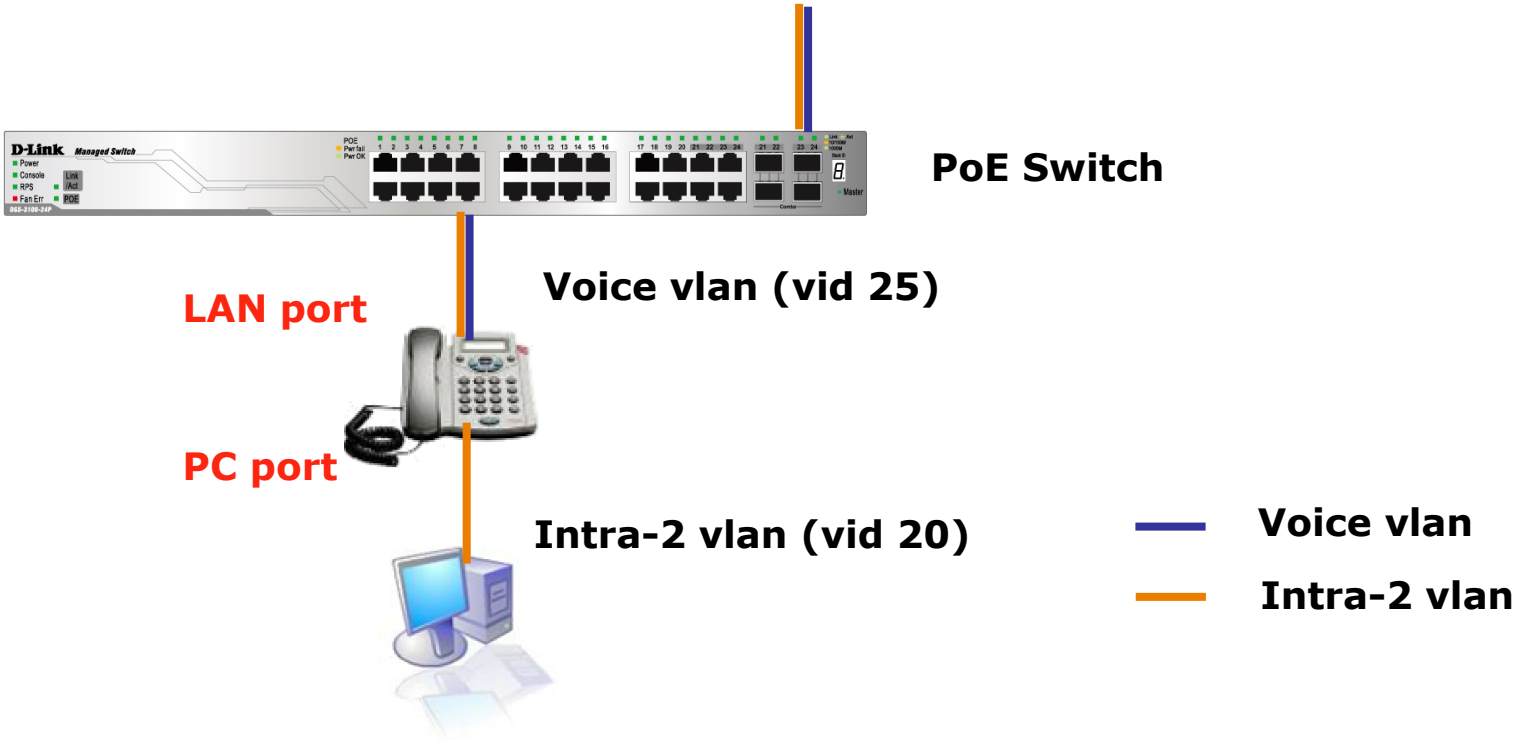
or


- 確認APS位址

常見問題排除說明

- 網路錯誤！
  請確認
  : [LAN]端網路線沒接上.
- DHCP錯誤！
  無法取得 IP
  :網路內沒有DHCP Server發放IP
- 16:14 Nov 1
  1111122222
  :帳號1111122222註冊成功畫面
- 16:14 Nov 1
  :註冊失敗畫面,電話號碼會消失
- 話機若無法註冊成功將會自行Reboot.

話機注意事項



A.由於話機的設定是透過APS自動供裝,因此話機的LAN Port會設定tag25,如果將話機移動到其他DGS-3100以外的交換器Port上,可能會因為上層交換器沒有匹配而無法取得IP完成註冊

B.話機必須在通電的情況下,接在後端的PC網卡才可以順利連線

網路設定　IPv4 / IPv6 / Dualstack

SIP server資訊　VOIP\SIP Setting

SIP Account資訊 VOIP\SIP Account Setting

教室網路語音系統設備
未來性及規劃應用

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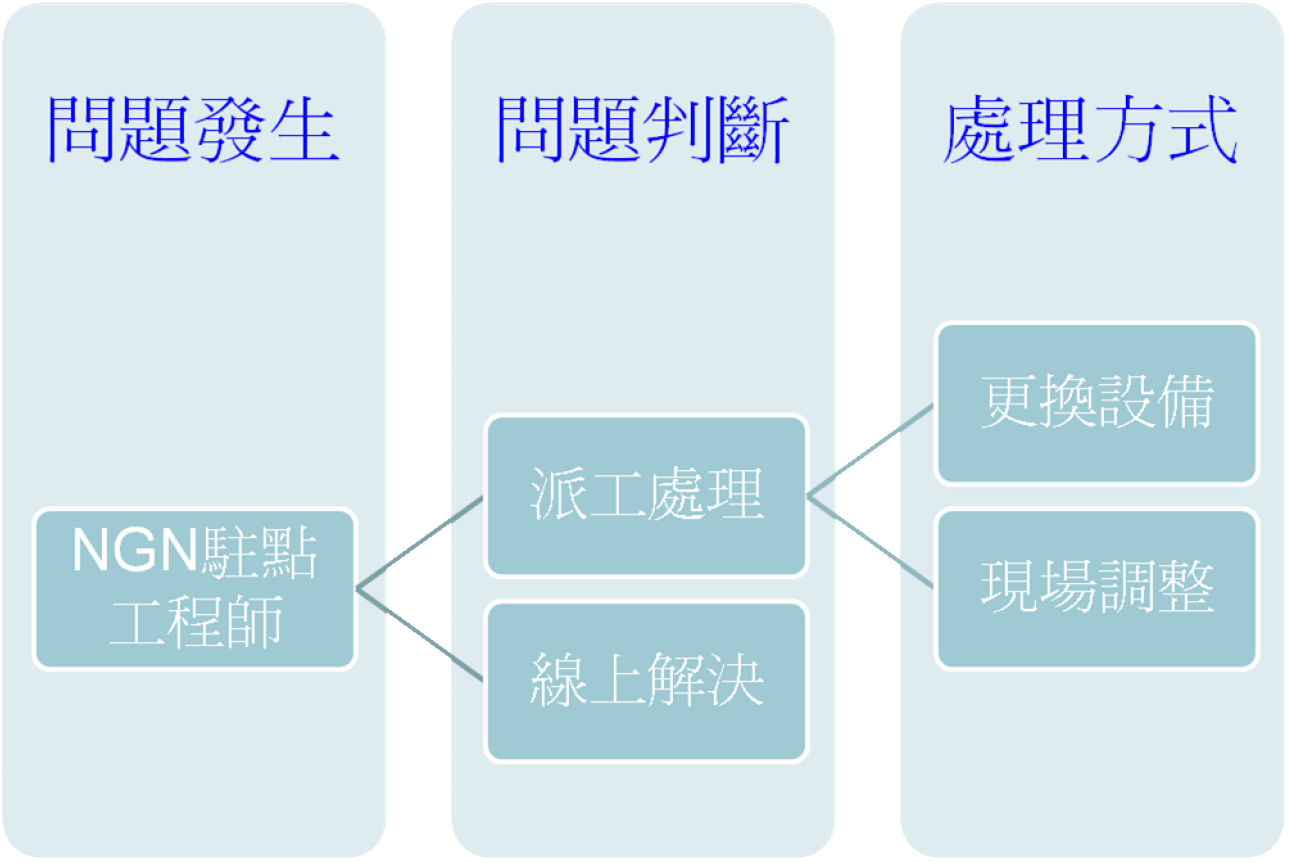
Building Networks for People

北縣NGN專案維運平台及Call修流程

NGN報修聯繫方式

NGN駐點工程師	黃俊福	張智棠
市話	8072-3456#519	8072-3456#520
網路電話	901100519	901100520

報修流程



Thank you!!

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