

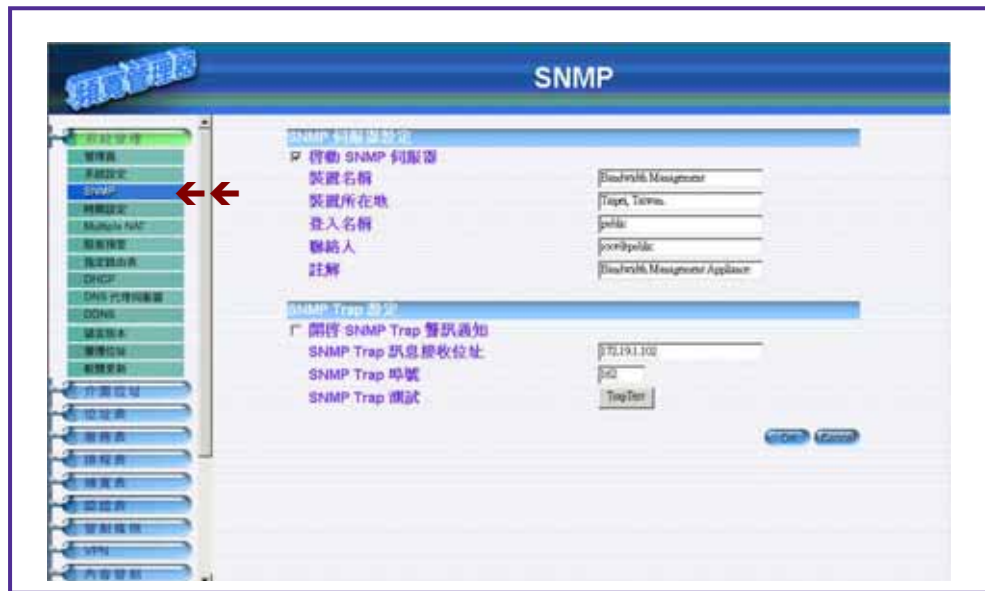
## 使用 WhatsUP 在 Client 端接收 SNMP Server 的網管監控資料

首先到下列網址下載 WhatsUP 軟體：

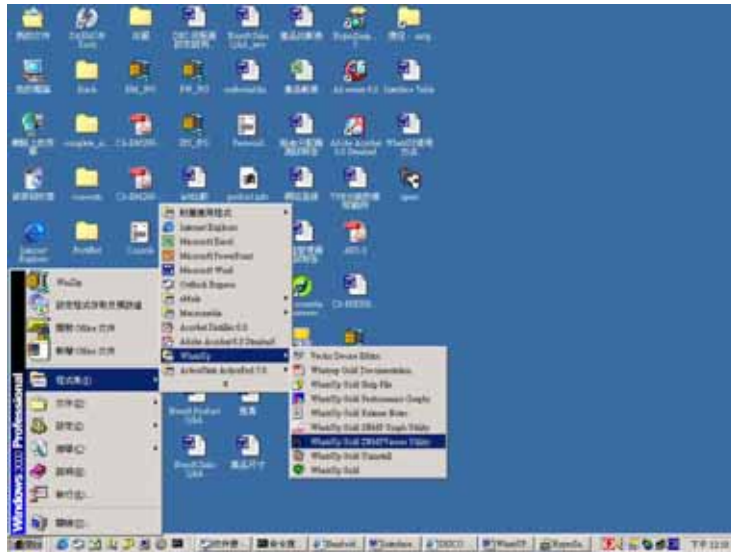
[http://ipswitch.com/\\_download/oneform.asp?product=WG-0000](http://ipswitch.com/_download/oneform.asp?product=WG-0000)

安裝下載的檔案 (wug\_tim.exe)

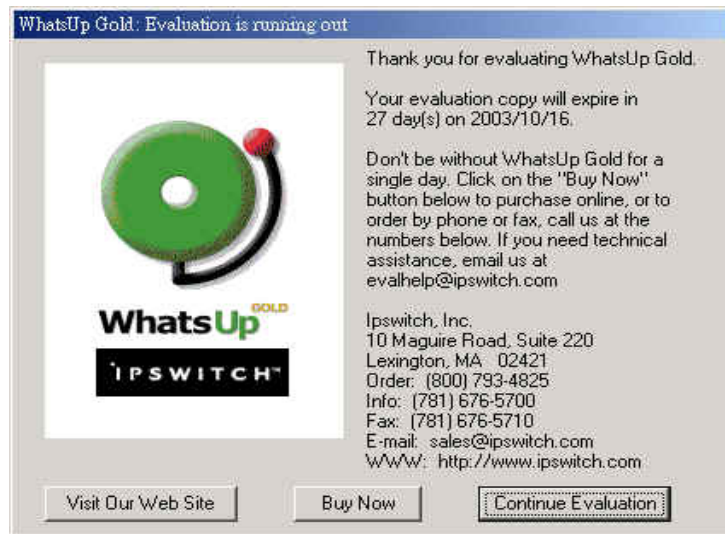
- 步驟 1. 於左方的功能選單中選擇【系統管理】選項，再於其次功能選單中選擇【SNMP】選項。
- 步驟 2. 並於 SNMP 設定視窗的 SNMP 伺服器設定表單中勾選【啟動 SNMP 伺服器】選項，並設定【裝置名稱】、【裝置所在地】、【登入名稱】、【聯絡人】、【註解】等相關資料（亦可用其預設值），最後按下【確定】鈕，完成 SNMP 伺服器的設定。(如下圖)



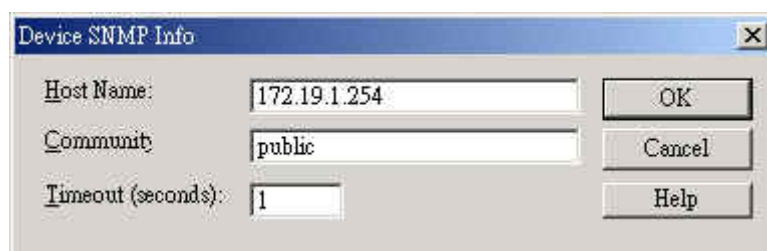
步驟 3. 按【開始】→【程式集】→【WhatsUP】→【WhatsUp Gold SNMPViewer Utility】選項來執行 WhatsUP 軟體。(如下圖)



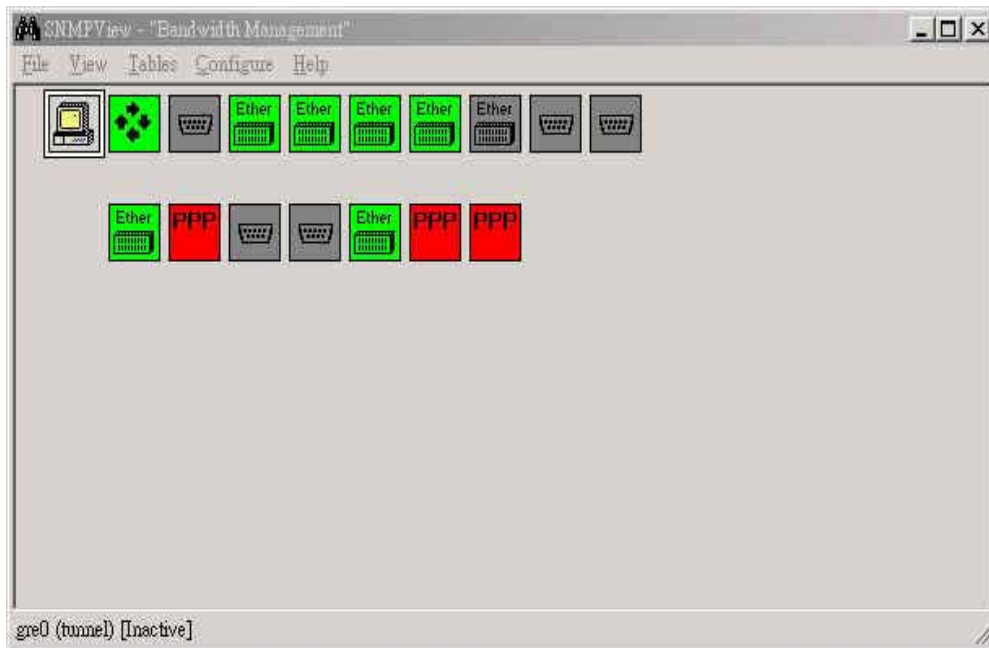
步驟 4. 按下【Continue Evaluation】按鈕。(如下圖)



步驟 5. 於 Device SNMP Info 設定視窗中設定好要連線取得監控資訊的【Host Name】，和 SNMP 伺服器上設定可用來登入的名稱【Community】，最後再設定【Timeout (seconds)】，然後按下【ok】。(如下圖)



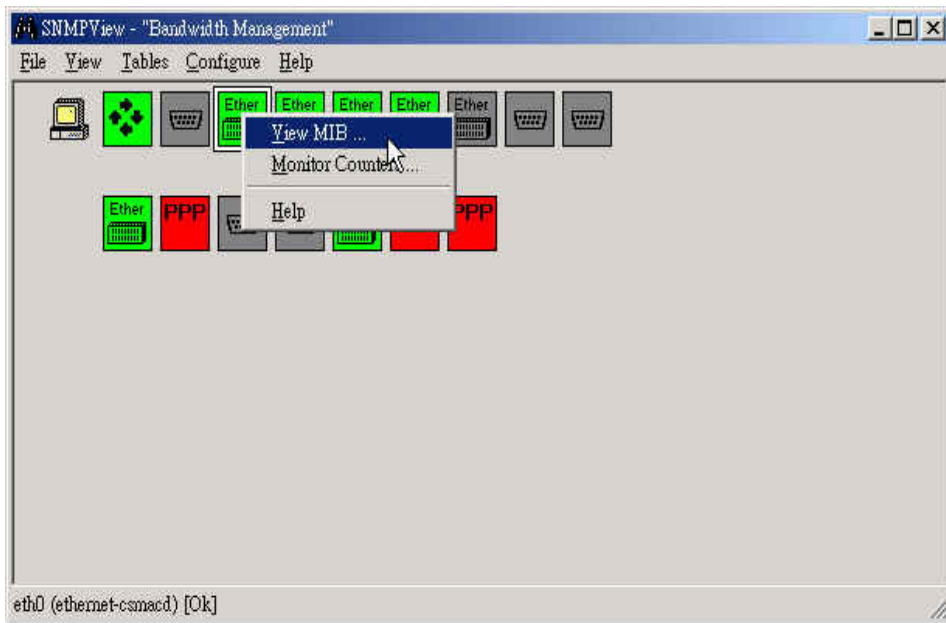
步驟 6. 在顯示的 SNMPView 視窗標題列會顯示連線裝置名稱，而其視窗中則會以圖示顯示連線裝置的介面類型和狀態。(如下圖)



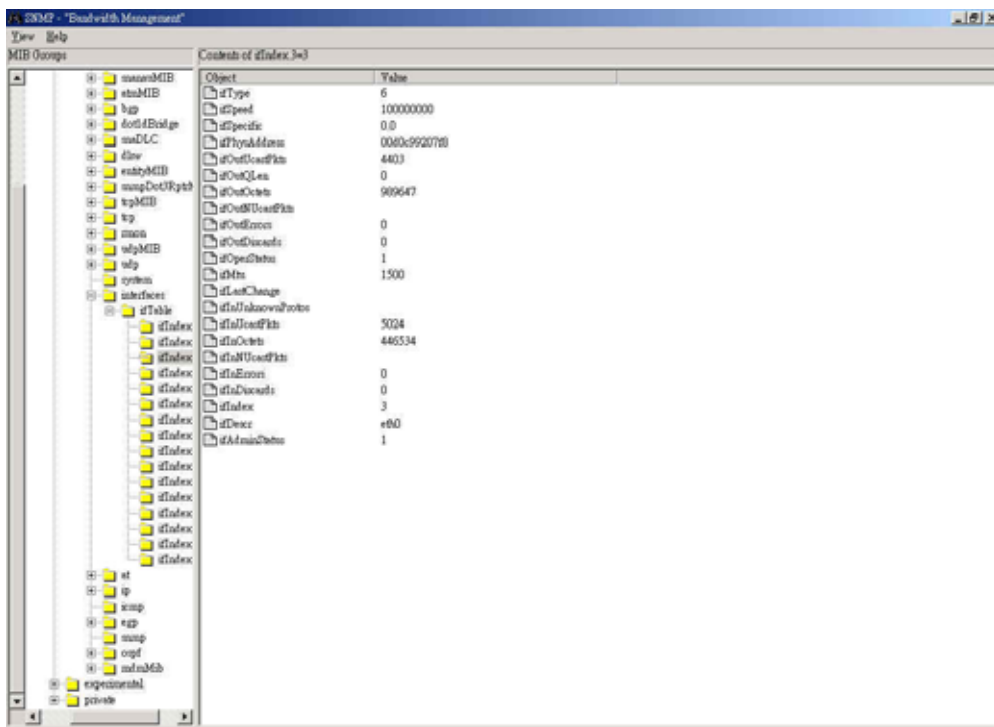
圖示的顏色表示其目前狀態 (如下表)

顏色	狀 態
綠色	介面啟動且運作中
紅色	介面停用
灰色	未定義之介面

步驟 7. 在介面圖示上按滑鼠右鍵，並於彈出式選單中按下【View MIB】選項，可檢視連線裝置之介面的詳細 SNMP 資料。(如下圖)



步驟 8. View MIB 所顯示的連線裝置介面之詳細 SNMP 資料 (會即時更新)。(如下圖)



其 **Object** 所代表的意義如下

ifType : 介面類型

ifSpeed : 介面的傳輸速度

ifSpecific : 介面特性

ifPhysAddress : MAC Address

ifOutUcastPkts : 傳送封包數

ifOutQLen

ifOutOctets : 介面所傳送出的八位元數值總合 (包括結構字元)

ifOutNUcastPkts : 傳送的 broadcast 封包數

ifOutErrors : 傳送錯誤封包數

ifOutDiscards : 傳送時 lost 的封包數

ifOperStatus : 介面卡的狀態 (數值為 1 時代表啟用, 數值為 2 時代表停用)

ifMtu : MTU 設定值 (Bytes)

ifLastChange : 介面啟用時的最新運作狀態值

ifInUnknownProtos : 介面所丟棄之不認識或不支援之封包數

ifInUcastPkts : 接收封包數

ifInOctets : 介面所接收到的八位元數值總合 (包括結構字元)

ifInNUcastPkts : 接收的 broadcast 封包數

ifInErrors : 接收錯誤封包數

ifInDiscards : 接收時 lost 的封包數

ifIndex : 在 MIB 中用來識別介面的唯一值

ifDescr : 介面描述 (可包含廠商、產品名稱和硬體介面版本)

ifAdminStatus : 介面受管理的狀態 (數值為 1 時代表受到管理, 數值為 2 時代表未受到管理)



其 Object 所代表的意義如下

sysUpTime = 連線裝置的持續啓用時間

sysServices = 連線裝置的服務

sysObjectID = 提供連線裝置系統資訊在 MIB 中的物件 ID

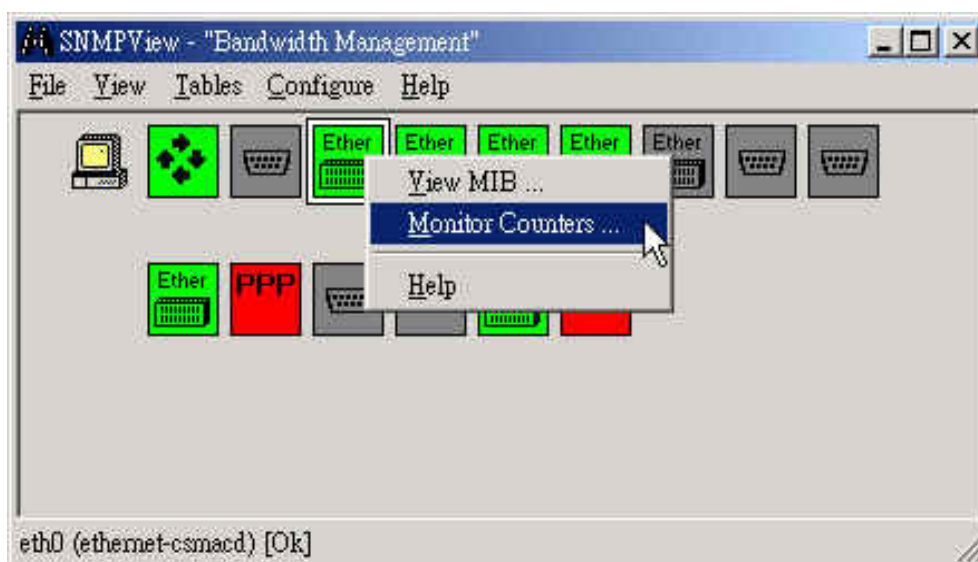
sysName = 裝置名稱

sysLocation = 裝置所在地

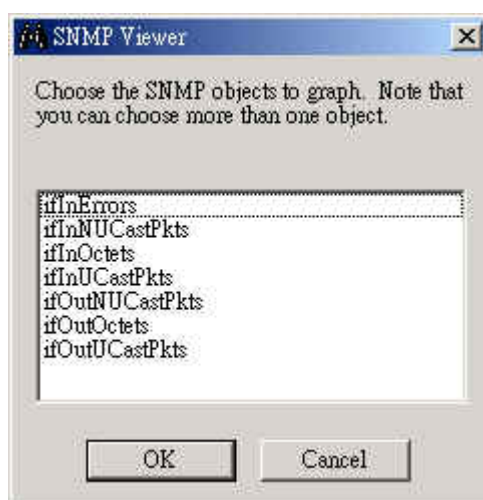
sysDescr = 註解

sysContact = 聯絡人

步驟 11. 在介面圖示上按滑鼠右鍵，並於彈出式選單中按下【Monitor Counters】選項，可圖示化連線裝置之介面的監測值。(如下圖)

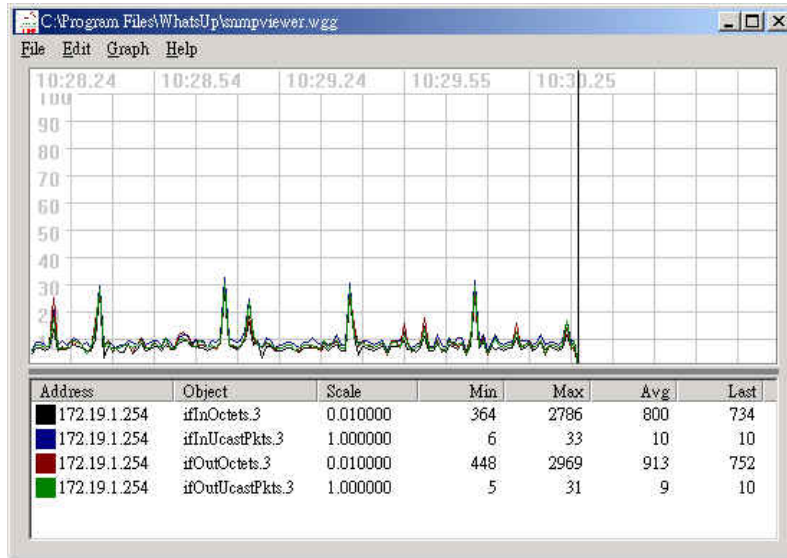


步驟12. 於所顯示的 SNMP Viewer 視窗中選擇欲圖示化的監測值。(如下圖)



步驟13. Monitor Counters 所顯示的連線裝置介面之詳細圖示化 SNMP 資料

( 會即時更新 )。(如下圖)

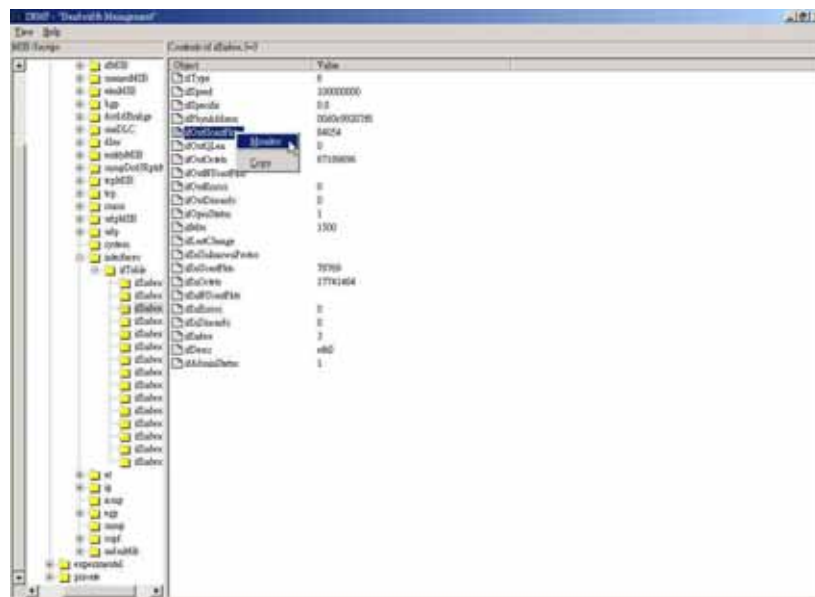


步驟14. 於 View MIB 所顯示的連線裝置介面之詳細 SNMP 資料 ( 會即時更

新 ) 視窗中，在任何一物件 ( Object ) 名稱上按下滑鼠右鍵，並於彈

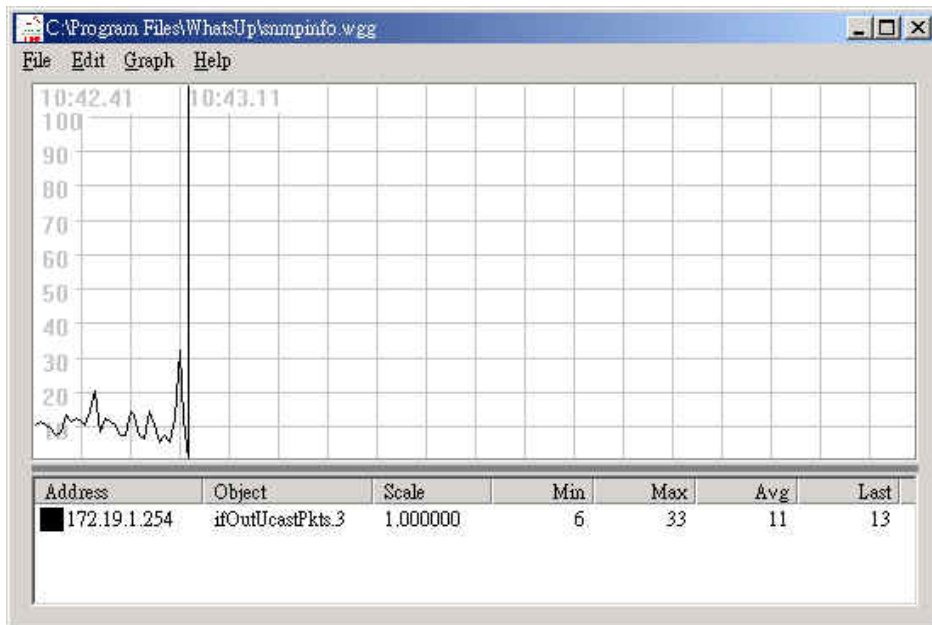
出式旋單中按下【Monitor】選項，可圖示化連線裝置介面之物件的

監測值。(如下圖)

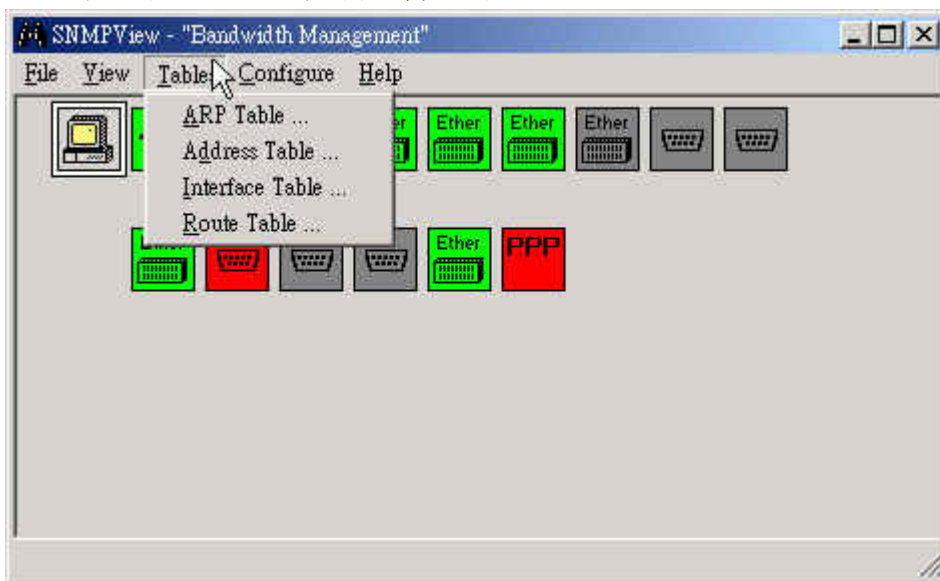




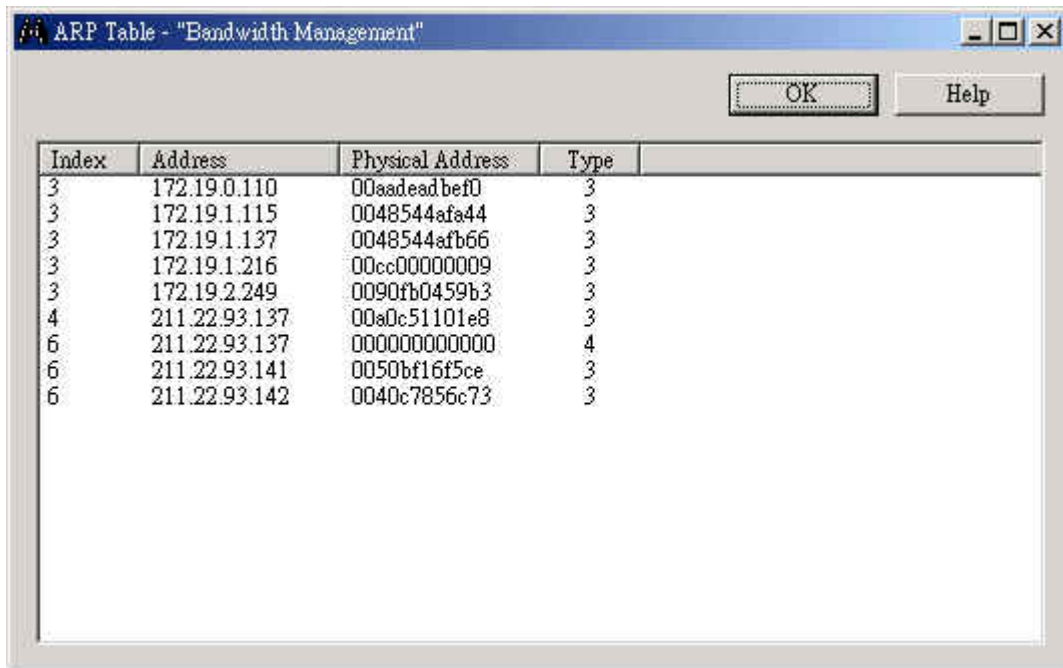
步驟15. Monitor 所顯示的圖示化連線裝置介面之物件監測值（會即時更新）。（如下圖）



步驟16. 在 SNMPView 視窗的功能表 Table 選單中選擇【ARP Table】、【Address Table】、【Interface Table】或【Route Table】，可觀察連線裝置相關的 MIB 資料（會即時更新）。（如下圖）



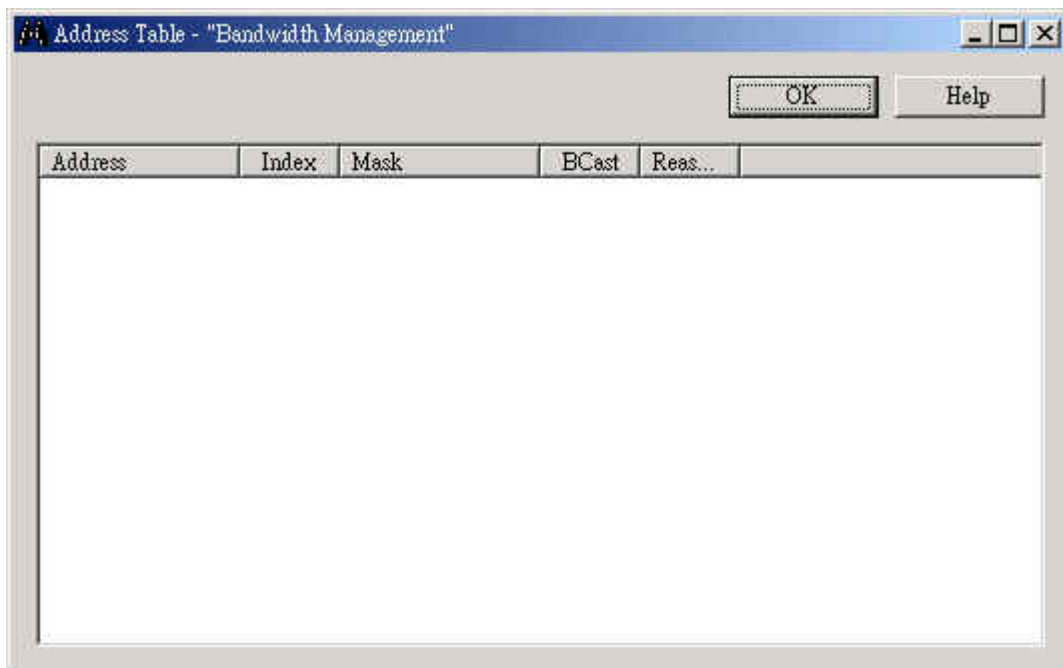
步驟17. 連線裝置 ARP Table 相關的 MIB 資料。(如下圖)



ARP Table - "Bandwidth Management"

Index	Address	Physical Address	Type
3	172.19.0.110	00aadeadbef0	3
3	172.19.1.115	0048544afa44	3
3	172.19.1.137	0048544afb66	3
3	172.19.1.216	00cc00000009	3
3	172.19.2.249	0090fb0459b3	3
4	211.22.93.137	00a0c51101e8	3
6	211.22.93.137	000000000000	4
6	211.22.93.141	0050bf16f5ce	3
6	211.22.93.142	0040c7856c73	3

步驟18. 連線裝置 Address Table 相關的 MIB 資料。(如下圖)



Address Table - "Bandwidth Management"

Address	Index	Mask	BCast	Reas..
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步驟19. 連線裝置 Interface Table 相關的 MIB 資料。(如下圖)

Index	Description	Interface Type	Address	Admi.	Oper.	MTU	Speed	Last Change	ifInCstsPkts	ifInNUCsPkts
1	lo	softwareLoopback		Up	Up	16436	100000000	Error SNMP: Resource...	225	0
2	lo0	other		Down	Down	1500	0	Error SNMP: Resource...	0	0
3	eth0	ethernet-csmacd	0040:9920718	Up	Up	1500	100000000	Error SNMP: Resource...	5572	0
4	eth1	ethernet-csmacd	0040:9920715	Up	Up	1500	100000000	Error SNMP: Resource...	1217	0
5	eth2	ethernet-csmacd	0040:9920716	Up	Up	1500	100000000	Error SNMP: Resource...	6353	0
6	eth3	ethernet-csmacd	0040:9920717	Up	Up	1500	100000000	Error SNMP: Resource...	134	0
7	dummy0	ethernet-csmacd		Down	Down	1500	100000000	Error SNMP: Resource...	0	0
8	tun0	tunnel		Down	Down	1400	0	Error SNMP: Resource...	0	0
9	tun1	tunnel		Down	Down	1476	0	Error SNMP: Resource...	0	0
10	tun2	tunnel		Up	Up	16260	100000000	Error SNMP: Resource...	0	0
11	tun3	ppp	0040:9920715	Up	Down	16260	0	Error SNMP: Resource...	0	0
12	tun4	tunnel		Down	Down	0	0	Error SNMP: Resource...	0	0
13	tun5	tunnel		Down	Down	0	0	Error SNMP: Resource...	0	0
14	tun6	ethernet-csmacd	0040:9920715	Up	Up	1500	100000000	Error SNMP: Resource...	1350	0
15	tun7	ppp		Up	Down	1492	0	Error SNMP: Resource...	3679	0

其 Table 欄位所代表的意義如下

**Index:** A unique value that identifies the interface in the MIB ifTable (same as ifIndex). 在 MIB 中用來識別介面的唯一值

**Description:** Can include the name of the manufacturer, the product name and the version of the hardware interface. 可包含廠商、產品名稱和硬體介面版本

**Interface Type:** The type of interface, distinguished according to the physical/link/network protocol(s) immediately "below" IP in the protocol stack.

介面類型，根據 physical/link/network 協定 (目前在協定堆疊之下的 IP) 來區分

**Address:** The interface's address at the protocol layer immediately "below" IP in the protocol stack. For interfaces that do not have such an address (e.g., a serial line), this object should contain an octet string of zero length.

**Admin Status:** The desired state of the interface: Up ?ready to pass packets; Down; or Testing ?in some testing state.

**Operator Status:** The current state of the interface. Up ?ready to pass packets;  
Down; or Testing ? in some testing state.

**MTU:** The size of the largest IP datagram that can be sent/received on the  
interface, specified in octets.

**Speed:** An estimate of the interface's current bandwidth in bits per second. For  
interfaces that do not vary in bandwidth, or for those where no accurate  
estimation can be made, this object should contain the nominal bandwidth.

**Last Change:** The value of sysUpTime at the time the interface entered its  
current operational state. If the current state was entered prior to the last  
re-initialization of the local network management subsystem, then this object  
contains a zero value. 介面啟用時的最新用作裝態值

**InUCastPkts:** The number of (subnet) unicast packets delivered to a  
higher-layer protocol.

**InUNCastPkts:** The number of non-unicast (i.e., subnet broadcast or subnet  
multicast) packets delivered to a higher-layer protocol.

**InErrors:** The number of inbound packets that contained errors preventing  
them from being deliverable to a higher-layer protocol.

**InDiscards:** The number of inbound packets which were chosen to be  
discarded even though no errors had been detected to prevent their being

deliverable to a higher-layer protocol. One possible reason for discarding such a packet could be to free up buffer space.

**Unknown Protos:** The number of packets received via the interface which were discarded because of an unknown or unsupported protocol. 介面所丟棄之不認識或不支援之封包數

**OutUCastPkts:** The total number of packets that higher-level protocols requested be transmitted to a subnet-unicast address, including those that were discarded or not sent.

**OutNUCastPkts:** The total number of packets that higher-level protocols requested be transmitted to a non-unicast (i.e., a subnet broadcast or subnet multicast) address, including those that were discarded or not sent.

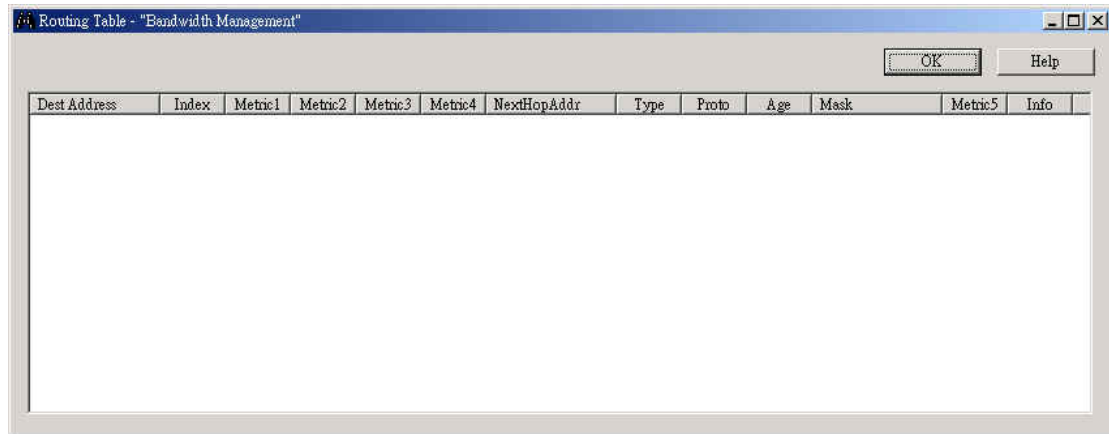
**OutErrors:** The number of outbound packets that could not be transmitted because of errors.

**OutDiscards:** The number of outbound packets which were chosen to be discarded even though no errors had been detected to prevent their being transmitted. One possible reason for discarding such a packet could be to free up buffer space.

**InOctets:** The total number of octets received on the interface, including framing characters. 介面所接收到的八位元數值總合 ( 包括結構字元 )

**OutOctets:** The total number of octets transmitted out of the interface,  
including framing characters. 介面所傳送出的八位元數值總合 ( 包括結構字元 )

步驟20. 連線裝置 Route Table 相關的 MIB 資料。 (如下圖)



The screenshot shows a window titled "Routing Table - Bandwidth Management". The window contains a table with the following columns: Dest Address, Index, Metric1, Metric2, Metric3, Metric4, NextHopAddr, Type, Proto, Age, Mask, Metric5, and Info. The table is currently empty.

Dest Address	Index	Metric1	Metric2	Metric3	Metric4	NextHopAddr	Type	Proto	Age	Mask	Metric5	Info
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