# ODOT ES326 Series

# Industrial Switch

# User's Manual

**Sichuan Odot Automation System Co., Ltd.**

**2016-02**

Copyright©2016 All rights reserved by odot

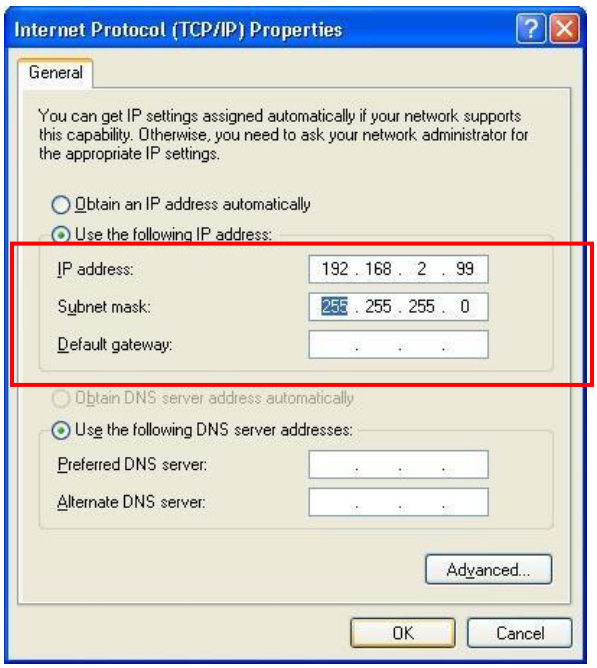
# Content

Administrator ..... 2
1 、 Authentication Configuration 4
2 、 System IP Configuration 4
3 、 System Status 6
4 、 Load default setting 9
5 、 Firmware update 10
6、Reset Device 12
Port Management ..... 13
1 、 Port configuration 13
2 、 Bandwidth Control 15
3 、 Broadcast Storm Control 17
4 、 Max Packet length 19
VLAN Setting ..... 21
1 、 Multi to 1 Setting 21
2 、 Tag Based VLAN 23
3 、 Port Based VLAN 32
QoS Setting ..... 33
1 、 Class of Service Configuration 33
2 、 High Priority Queue Configuration 34
3、Customization DiffServ 37
Port Security ..... 40
Configuration Backup/Recovery ..... 41
Logout ..... 44
Use Hyper Terminal to monitor the status of the switch. ..... 45
Spanning Tree ..... 46
1 . STP Bridge Settings ..... 47
2 . STP Port Settings ..... 48
3 . Loopback Detection ..... 49

## Administrator

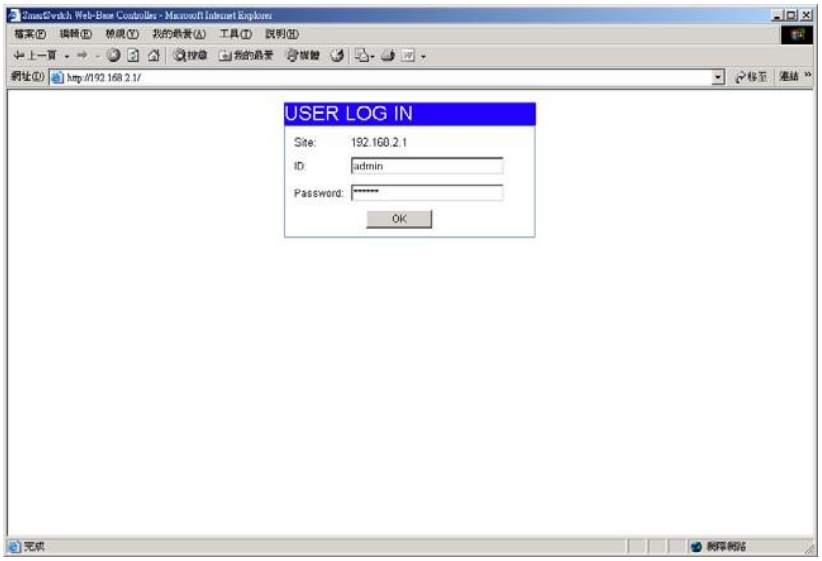
### A、PC NIC setting

IP address：192.168.2.X (X：1~254)
Subnet mask：255.255.255.0

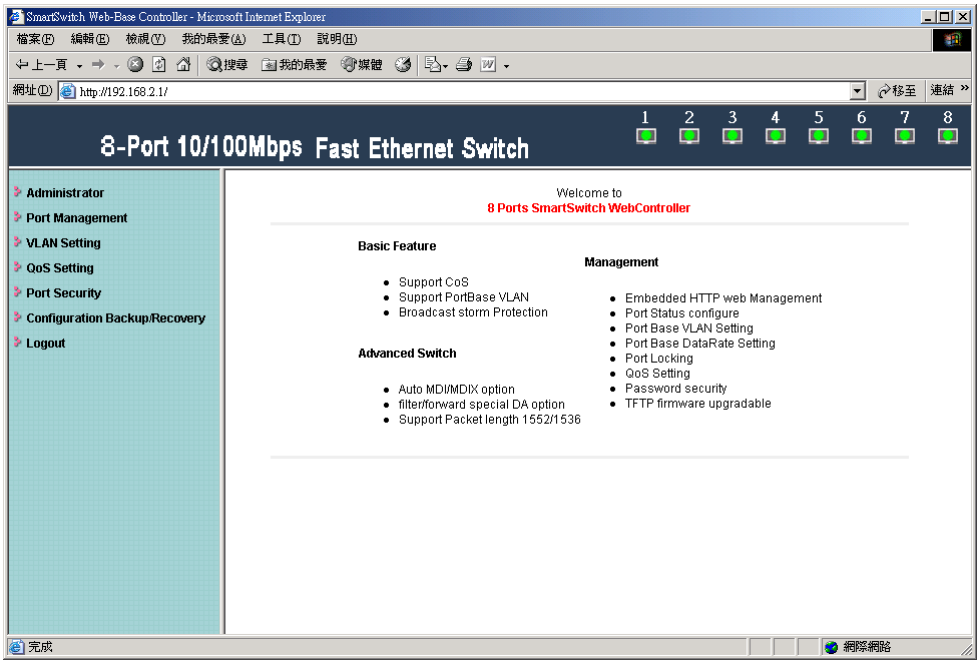



### B、Login

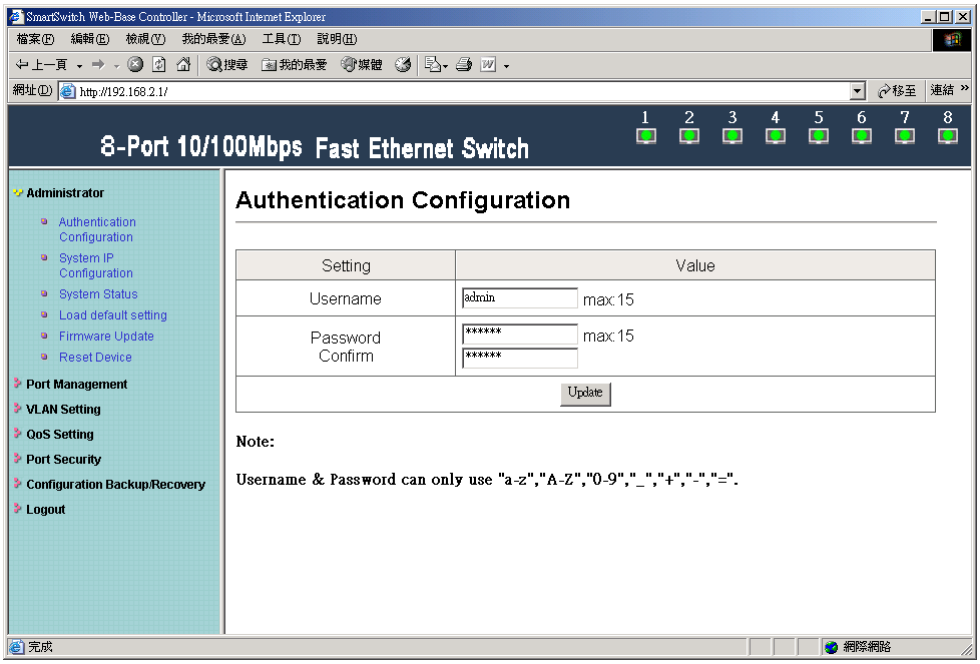
Default IP : 192.168.2.1
Login ID：admin (Lowercase)
Password：system (Lowercase)



## C、Welcome to 8 Port Smart Switch Web Controller



## 1、 Authentication Configuration

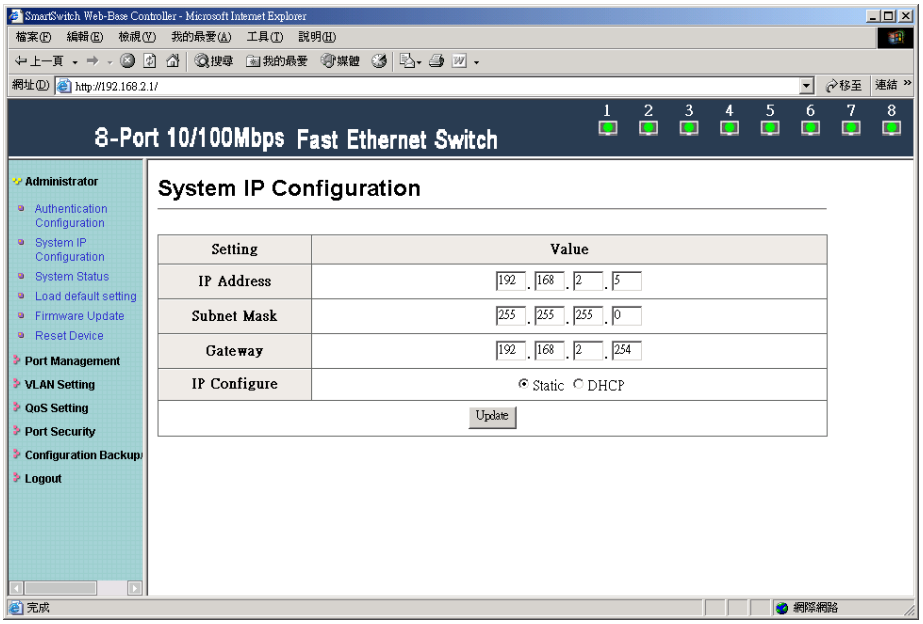



(Username & Password max:15 & can only allows "a-z","A-Z","0-9","_","+","-","=".)

## 2、 System IP Configuration

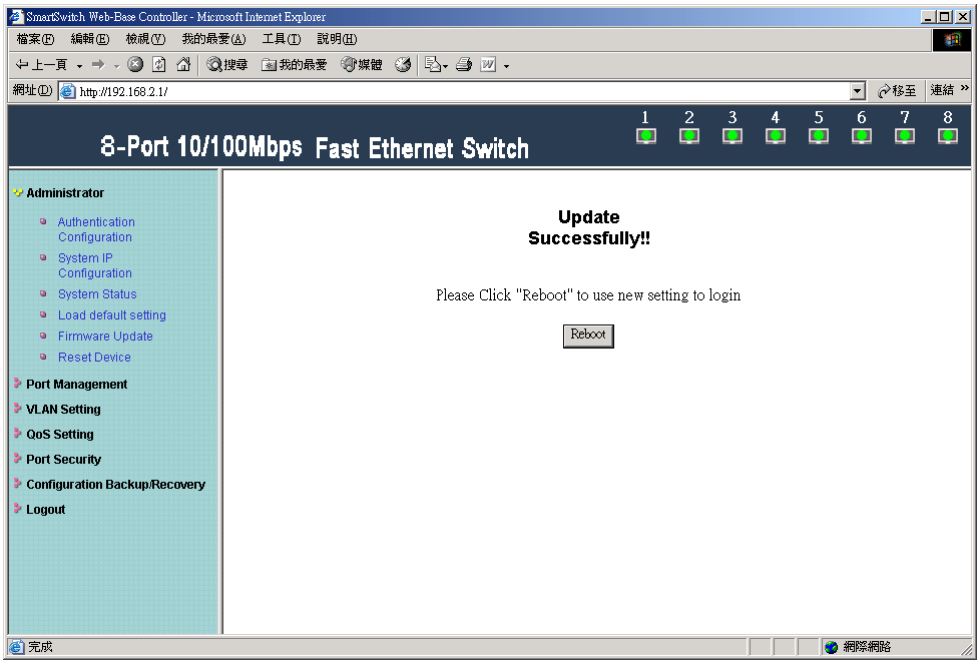
Default IP：192.168.2.1

The following screen is the example of changing the IP address to 192.168.2.5.

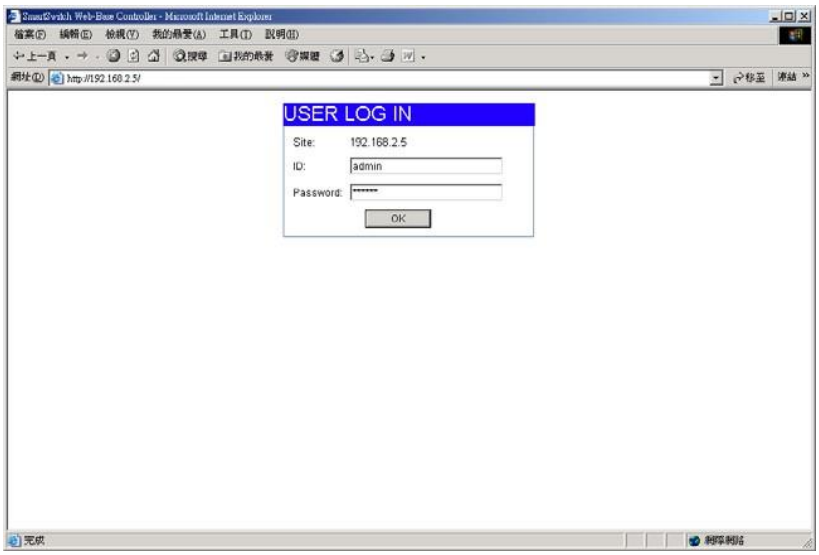


IP address, Subnet Mask, and Gateway at system IP Configuration box can be configured by user. IP178C,and IP178CH also support DHCP methods to get IP address from DHCP server.

After clicking “update”, you will see the system is re-booted.

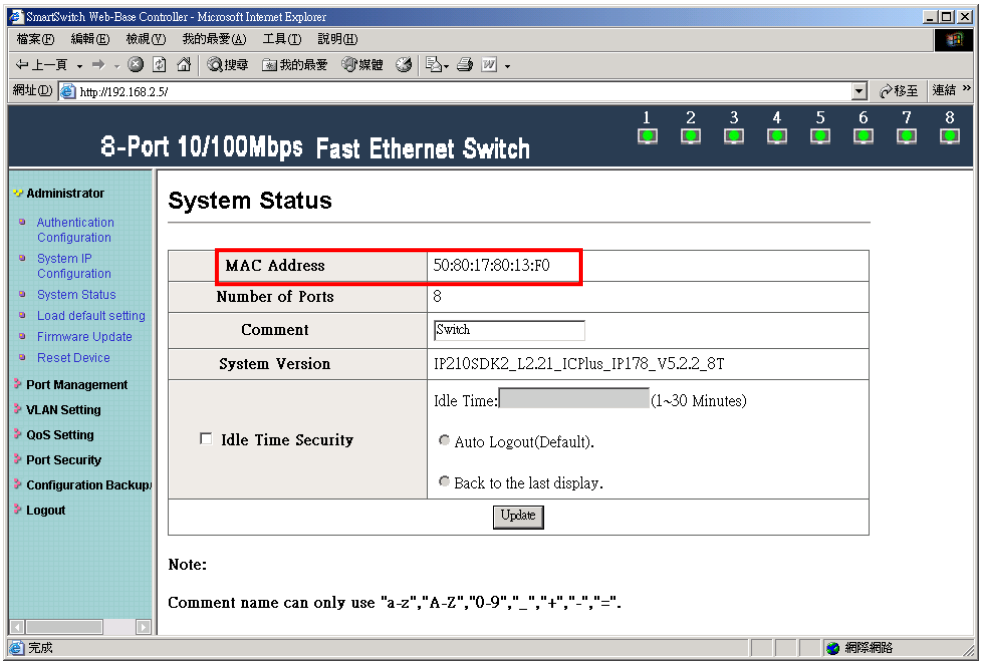



Login in new IP address 192.168.2.5



## 3、 System Status

Display Switch MAC address, software version.

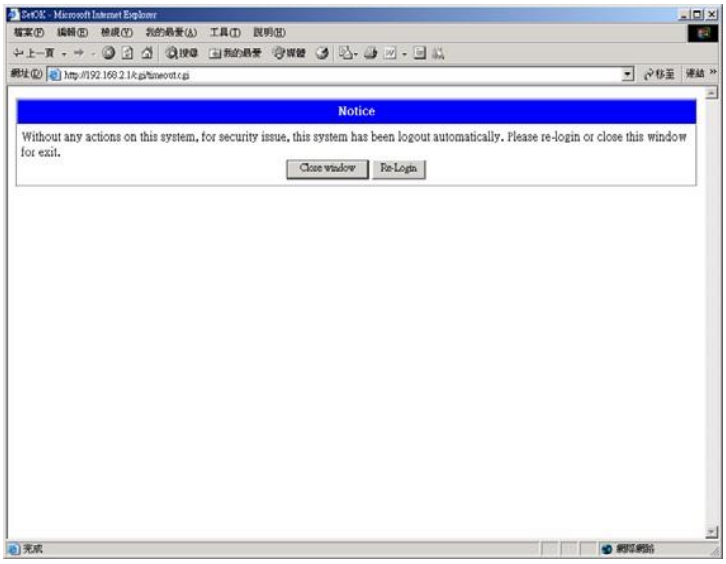



**A. Comment:** It is a nickname of the management switch you can set.

**B. Idle Time Security:** It is an AUTO logout timer and the idle time range is 1~30 Minutes. If select Auto Logout and click update without filling in the idle time blank, then the idle time will be the default value.

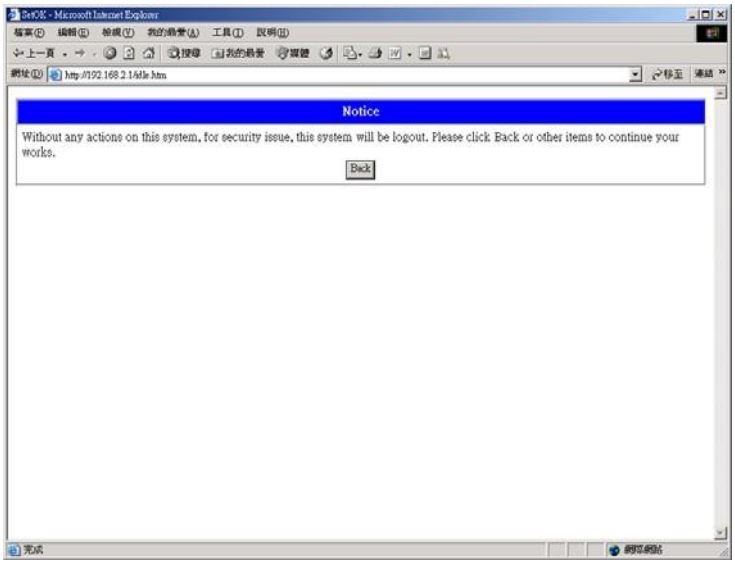
- Select Auto Logout (Default).

When idle time expires, the following notice will show up.

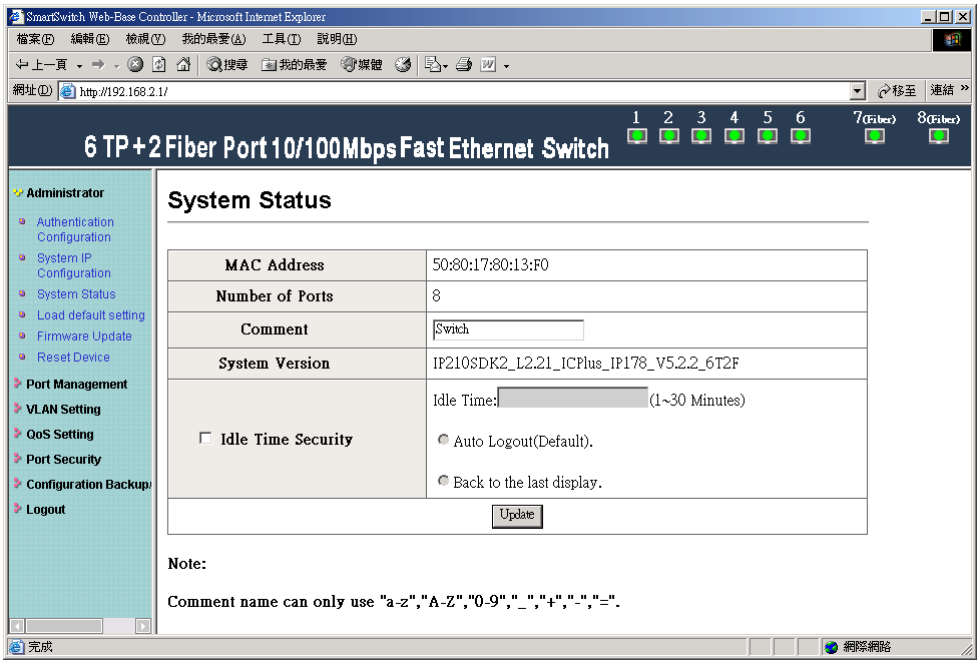


- Select Back to the last display.

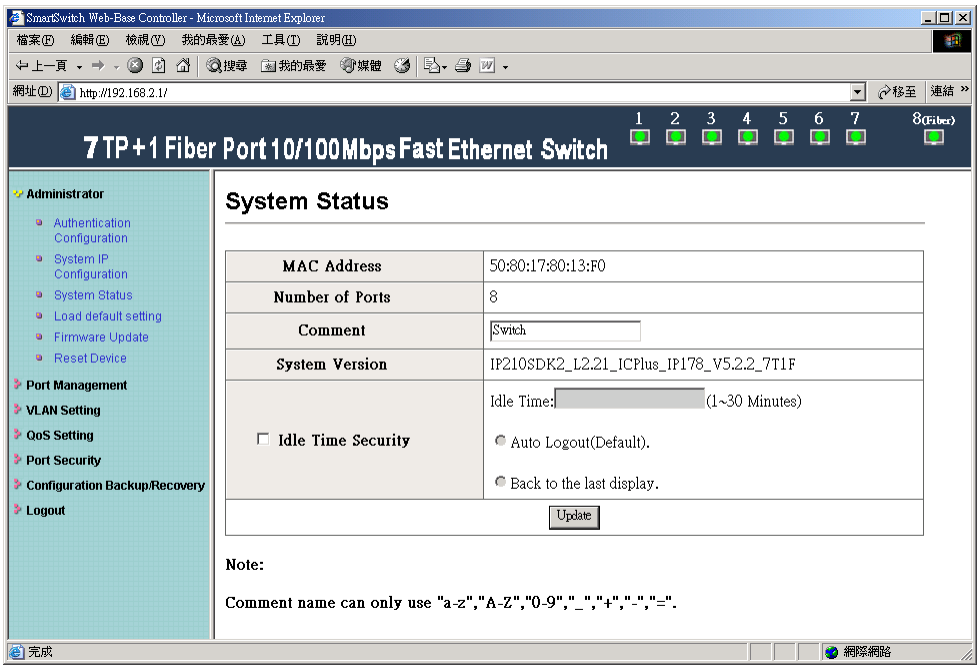
Without any actions on this system, the login screen will show up.




## 6T+2F



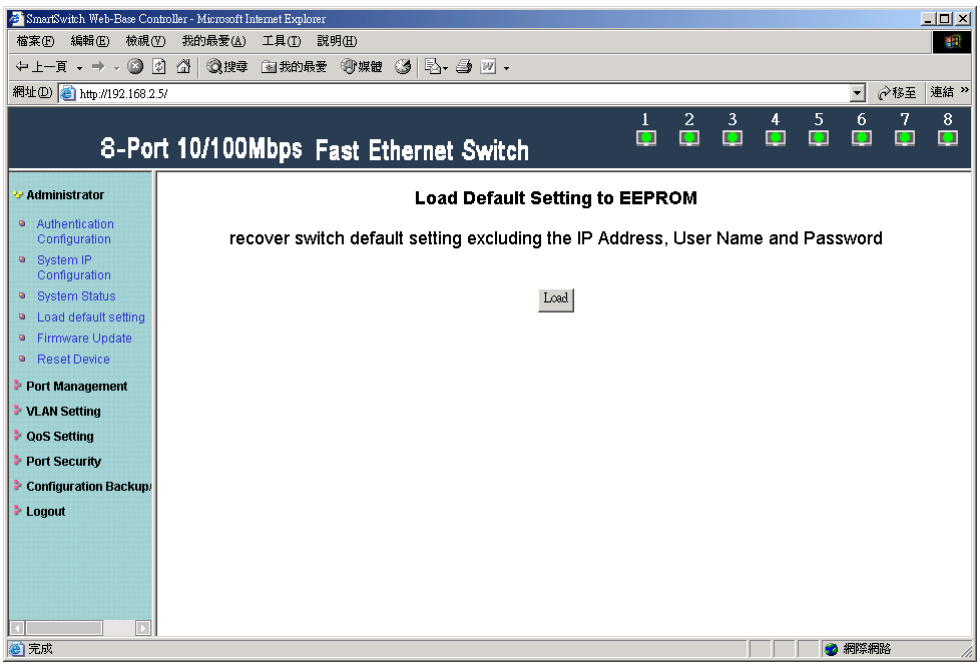
## 7T+1F




(Note: Comment name only use "a-z","A-Z","0-9","_","+","-","=".)

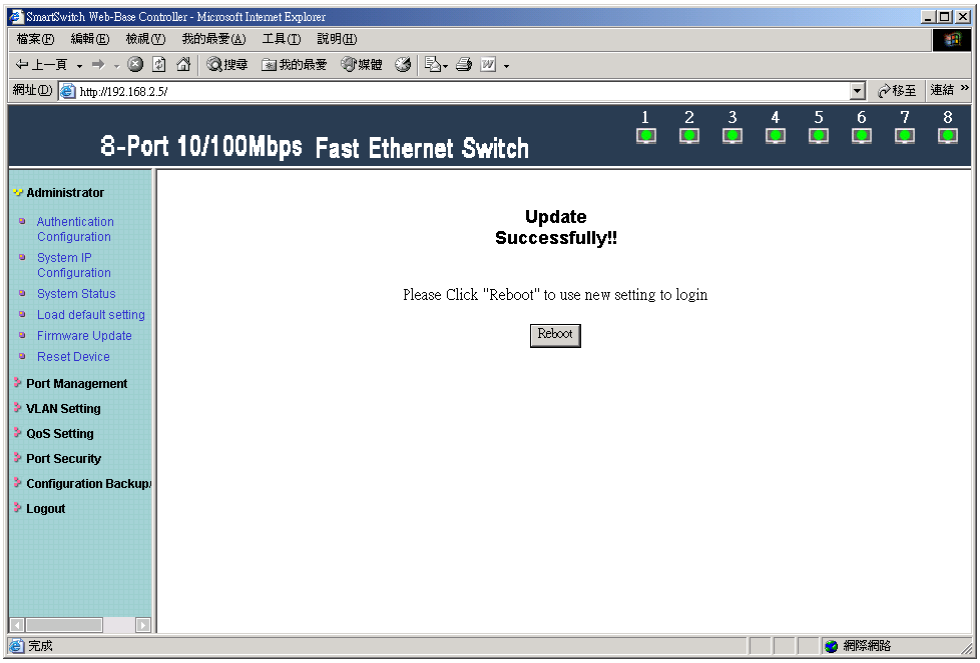
## 4、 Load default setting

Load Default Setting to EEPROM.



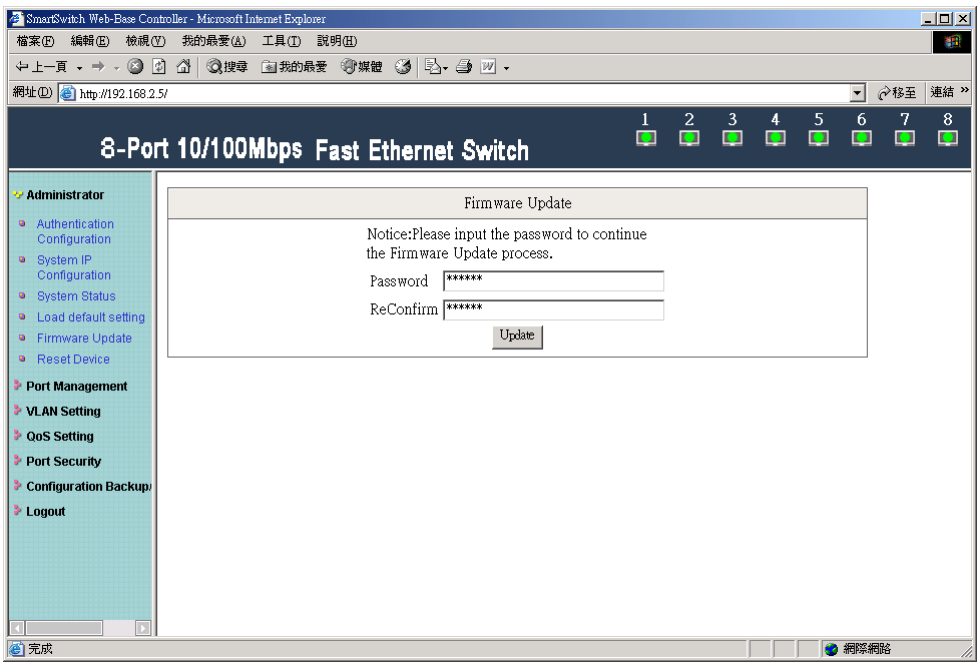

Note: this change only concerns the switch behavior, excluding the change for user name, password and IP configuration.

System Update Successfully! Please Click Reboot to use new setting to login.

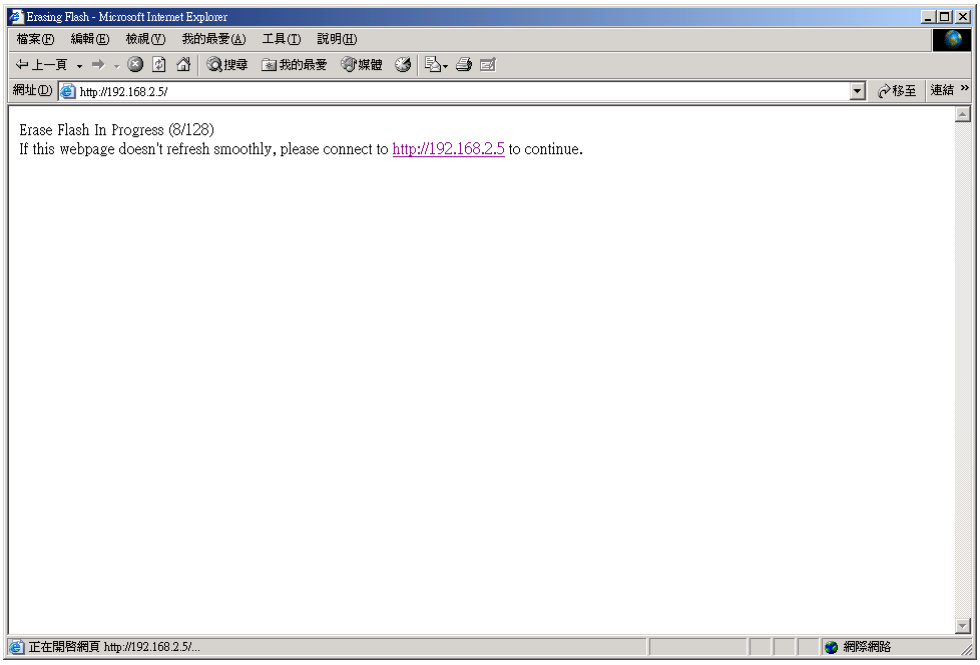


## 5、 Firmware update

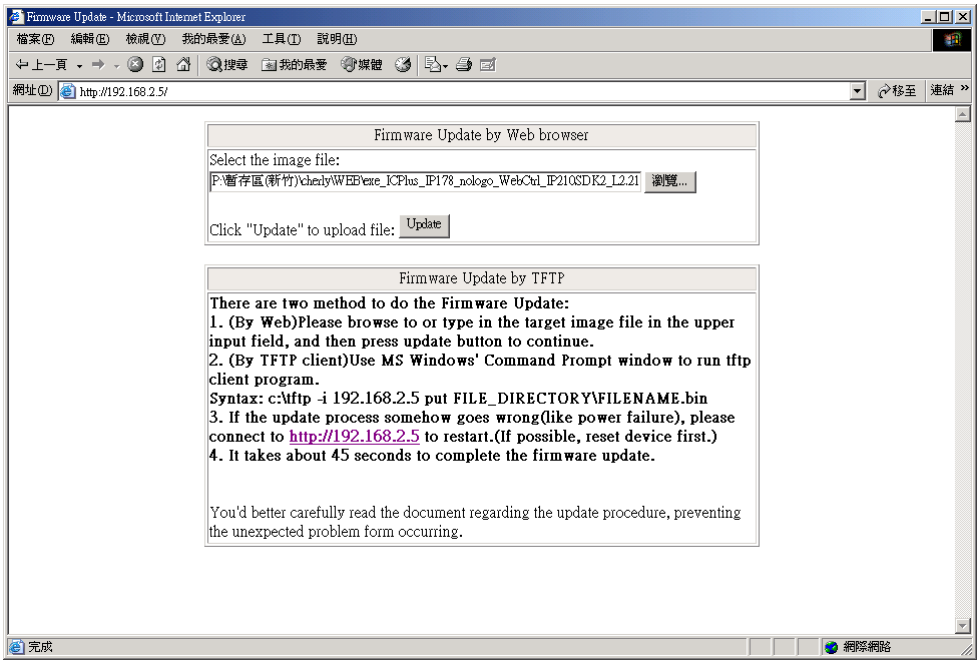
Enter Password & Reconfirm.




Click Update button, and then the old web code will be erased.



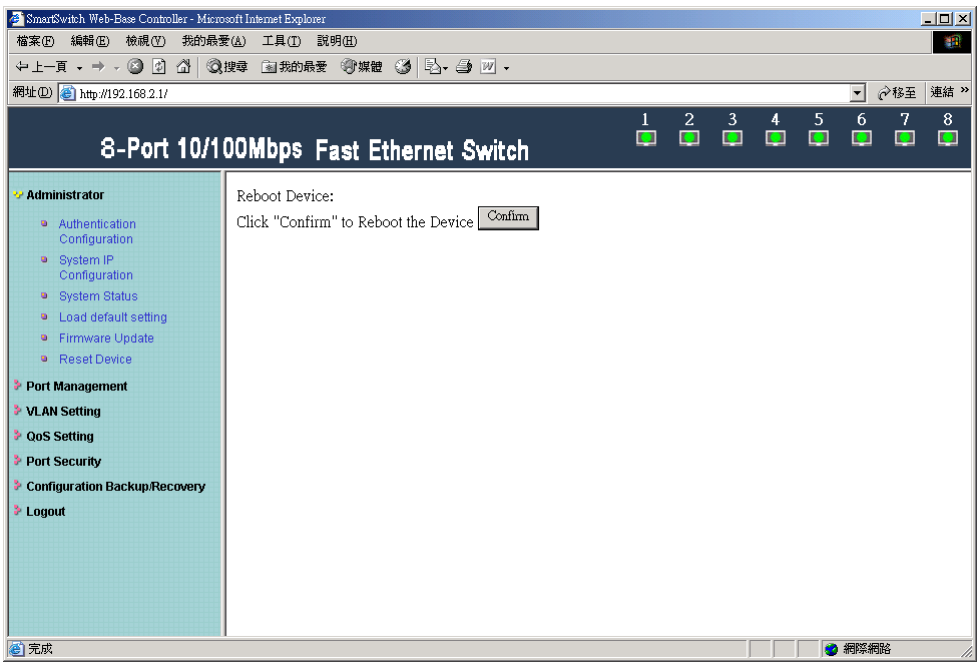
Select the image file(should be ".bin" file) and click UPDATE.




Note：You should use the IP address which you previously set; otherwise the firmware update process cannot be completed.

## 6、Reset Device

Click “Confirm” to Reboot the Device.

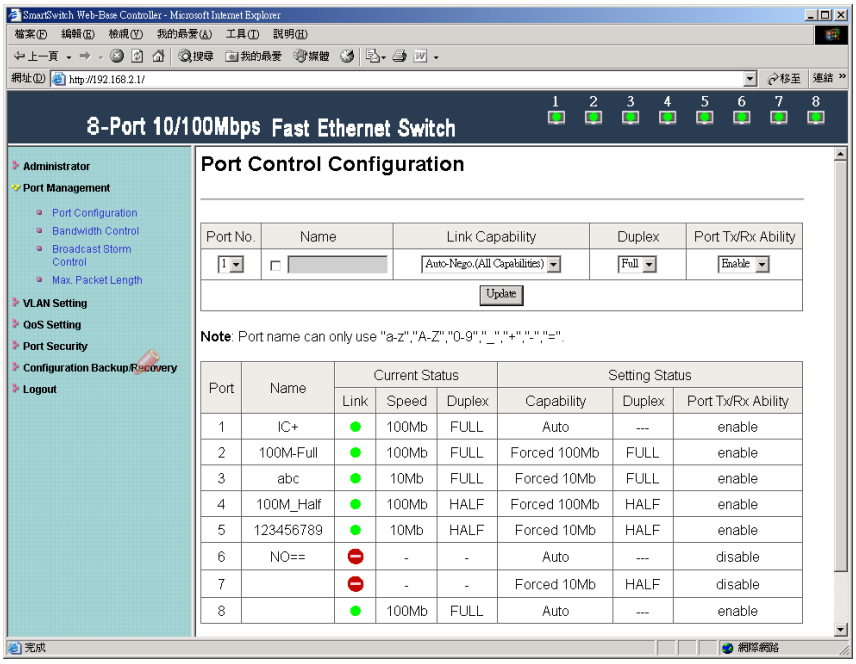


## Port Management

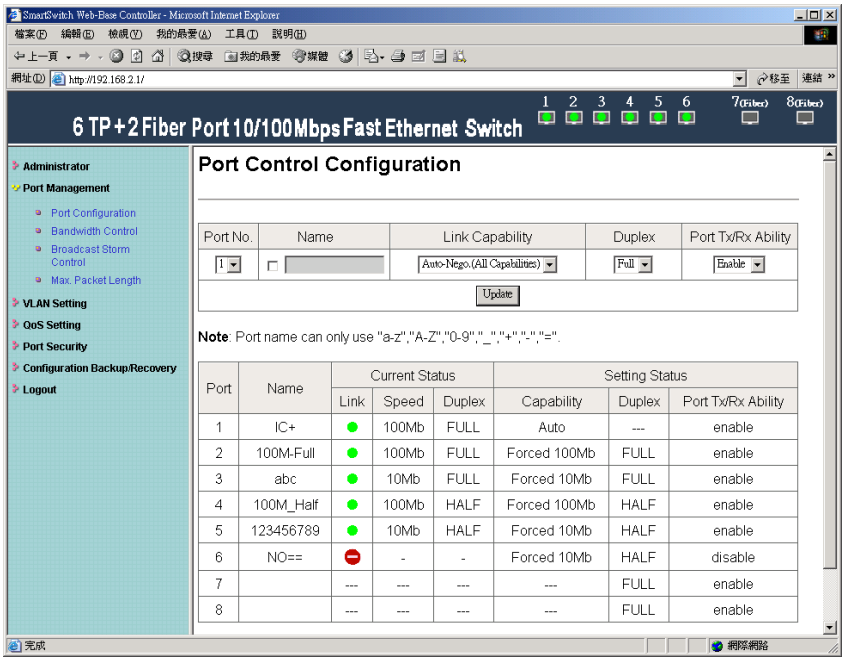
### 1、 Port configuration

User can modify the Name、Link Capatility、Duplex and TX,RX ability for each port.

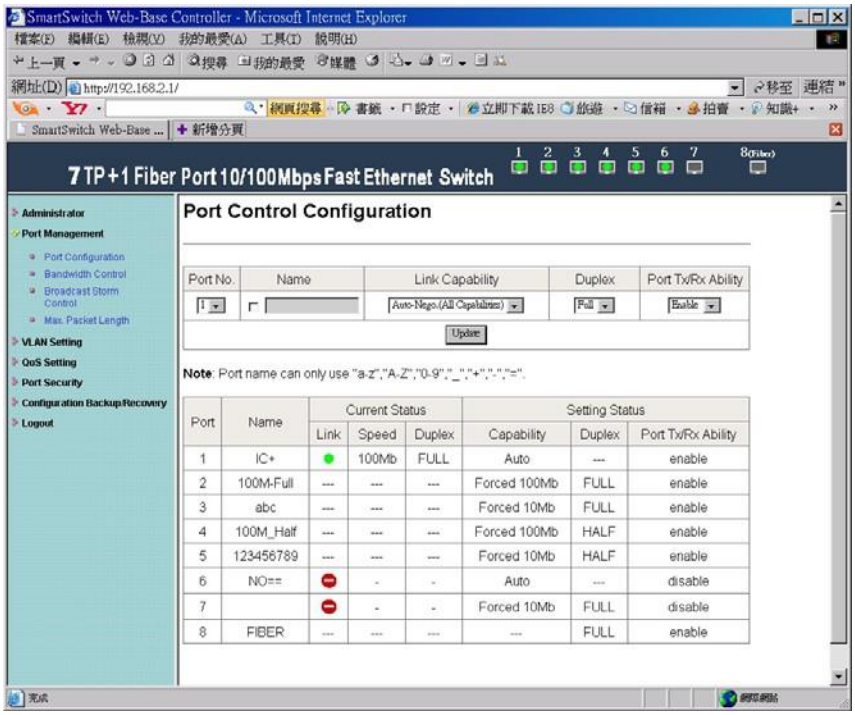
### 8T




### 6T+2F



**7T+1F**



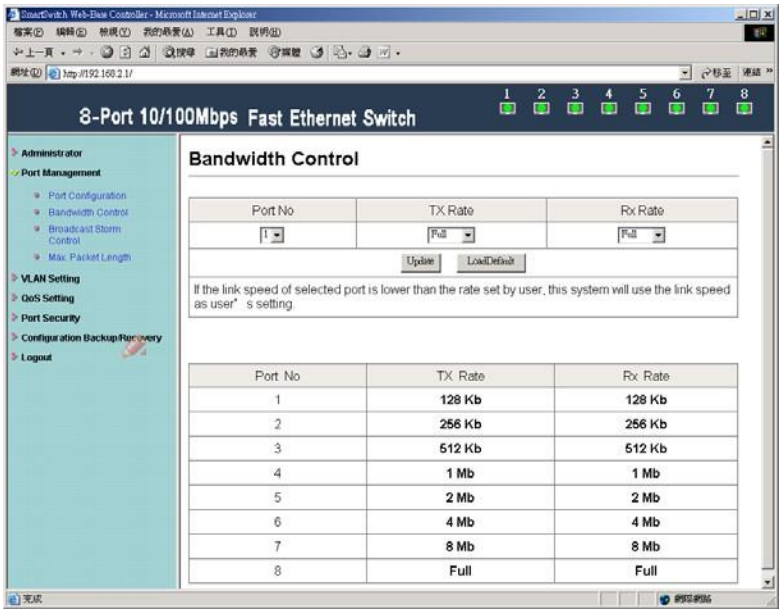

After completing the settings, click update button to take effect. The setting will be reflected at current status window.

## 2、 Bandwidth Control

The range of bandwidth is from 128K to 8M, Full speed.

Example :

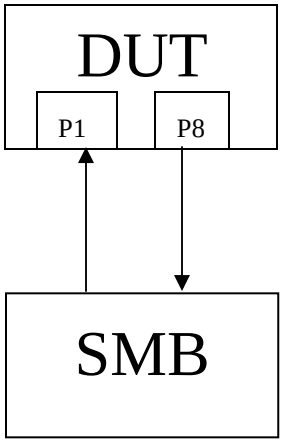
| Bandwidth Control setting | Port1 | Port2 | Port3 | Port4 | Port5 | Port6 | Port7 | Port8 |
|---|---|---|---|---|---|---|---|---|
| | 128K | 256K | 512K | 1M | 2M | 4M | 8M | Full |




To verify the function of bandwidth control, we use a SmartBit to generate the packet traffic. and the network environment is set as the following.

- Equipment
  SmartBits : 2000
- Setting
  100Mbps, Full duplex, fixed length 60bytes, random data.
  The cable connection is depicted as the following figure.
- Cable length
  120m

Port 1 transmits packets to Port 8.

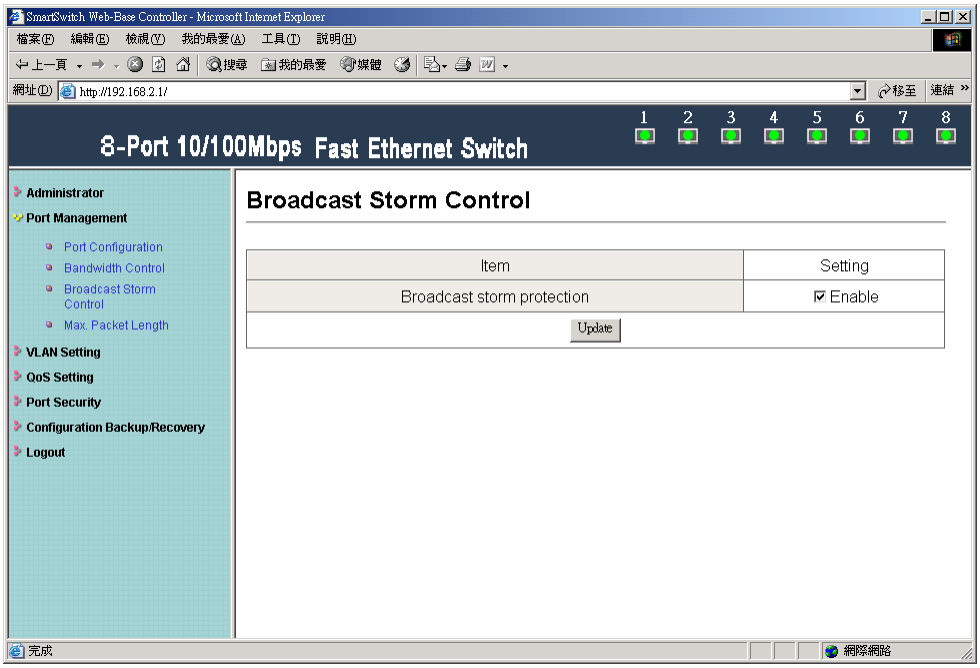



Results：

| Rate | TX | RX |
|---|---|---|
| **128Kb** | 16,363(bytes)*8,1024=128K≒**128K** | 16,058(bytes)*8,1024=125K≒**128K** |
| **256Kb** | 31,786(bytes)*8,1024=248K ≒**256K** | 31,468(bytes)*8,1024=246K≒**256K** |
| **512Kb** | 62,066(bytes)*8,1024=485K ≒**512K** | 59,985(bytes)*8,1024=469K≒**512K** |
| **1Mb** | 118,145(bytes)*8,1024=923K ≒**1M** | 123,833(bytes)*8,1024=967K ≒**1M** |
| **2Mb** | 231,687(bytes)*8,1024=1810M≒**2M** | 228,343(bytes)*8,1024=1784K≒**2M** |
| **4Mb** | 460,178(bytes)*8,1024=3595M≒**4M** | 472,520(bytes)*8,1024=3692M≒**4M** |
| **8Mb** | 947,045(bytes)*8,1024=7399M≒**8M** | 925,217(bytes)*8,1024=7228M≒**8M** |
| **Full** | 9,523,652(bytes)*8,1024=74403M ≒**80M** | 9,523,650(bytes)*8,1024=74403M ≒**80M** |

### 3、 Broadcast Storm Control

IP178C,and IP178CH drop the incoming packet if the number of broadcast packet in queue is over the threshold.




- Equipment

  SmartBits or IXIA

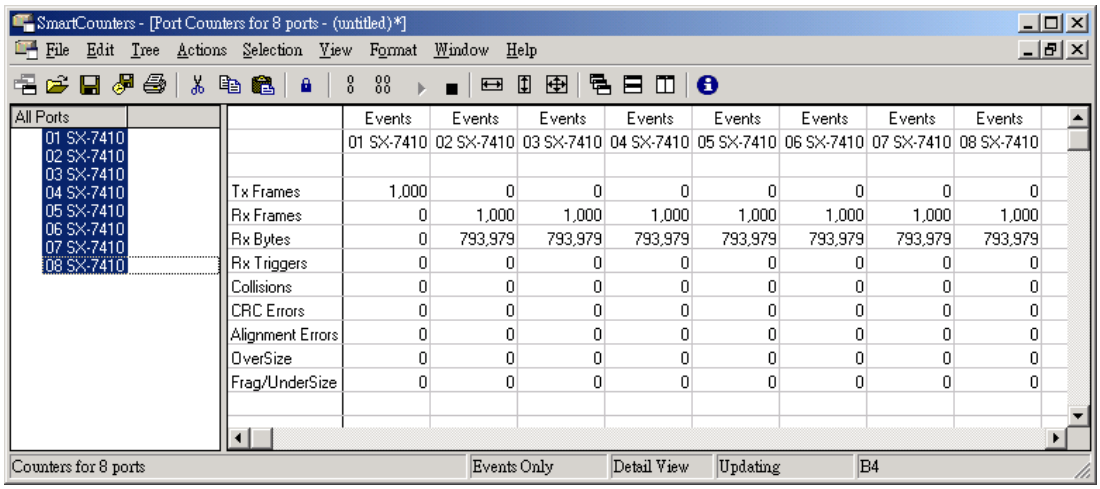
- Setting

  100Mbps, Full duplex, fixed length 60bytes, random data.

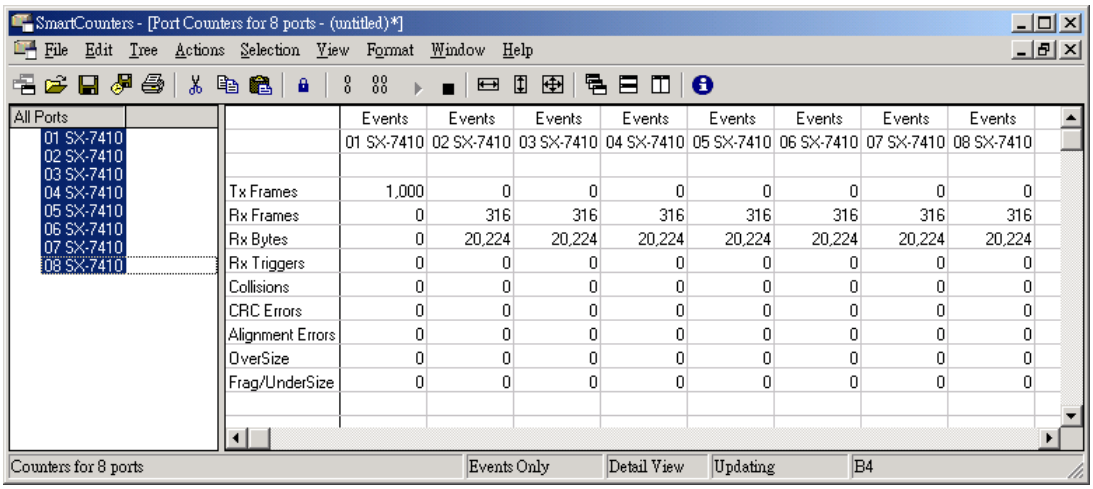
  Continuous Mode, Fixed Length 60bytes, Custom Background, Inter-packet Gap 0.96 uSec, source address: 00 00 00 00 00 01, destination address: ff ff ff ff ff ff

Results：

A、Broadcast Storm Control = **Disable**



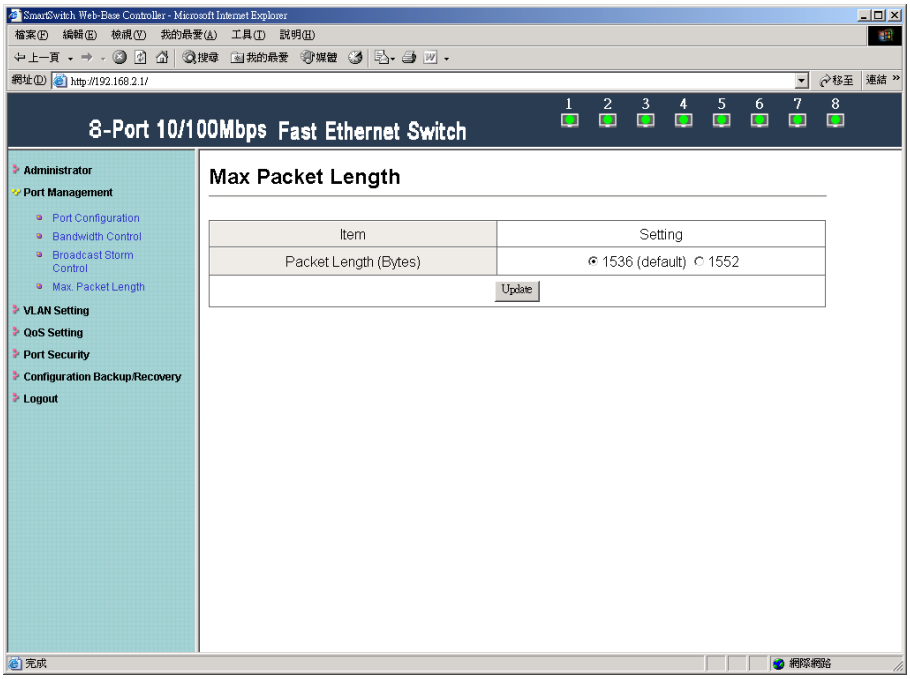

B、Broadcast Storm Control = **Enable**



## 4、 Max Packet length

Two kinds of max packet length: 1536 , 1552 Bytes

**A.** Packet Length(Bytes): **1536(default)**



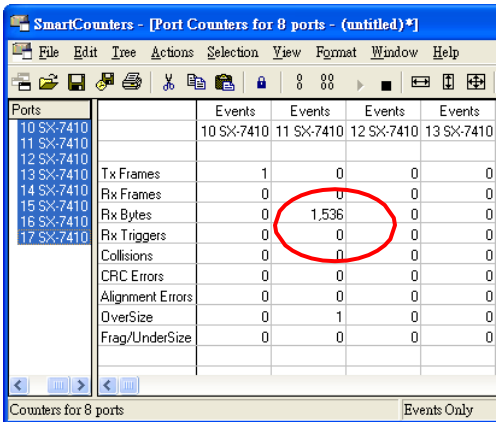

- Equipment

  SmartBits or IXIA

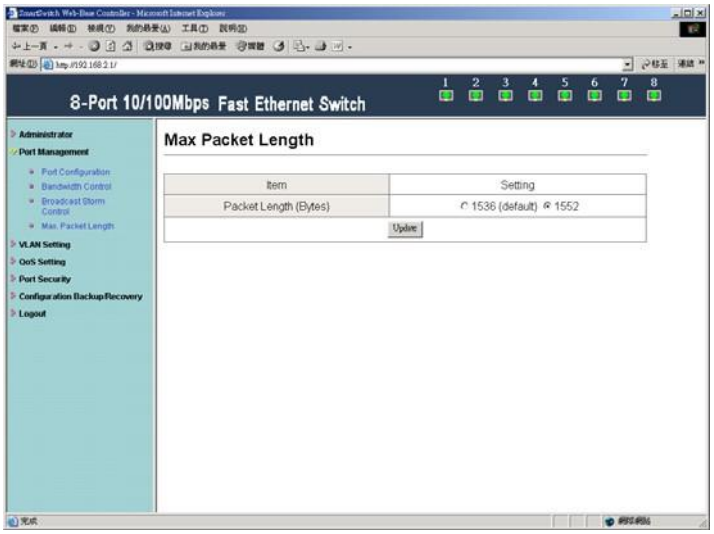
- Setting

  Single Burst Mode , Fixed Length 1532 bytes because CRC packets occupy 4 bytes. , Custom Background , Interpacket Gap 0.96uSec , source address: 00 00 00 00 00 10 , destination address: 00 00 00 00 00 11

Oversize packet length will show up in Oversize row.

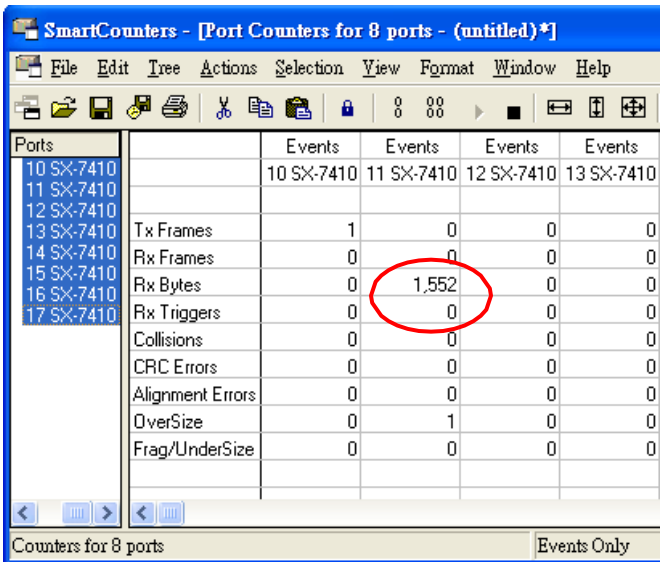


**B.** Packet Length (Bytes): **1552**




- Equipment
  SmartBits or IXIA
- Setting
  Single Burst Mode , Fixed Length 1548 bytes because CRC packets occupy 4 bytes, Custom Background , Interpacket Gap 0.96uSec , source address: 00 00 00 00 00 10 , destination address: 00 00 00 00 00 11

The length of the Oversize packet will show up in Oversize column.

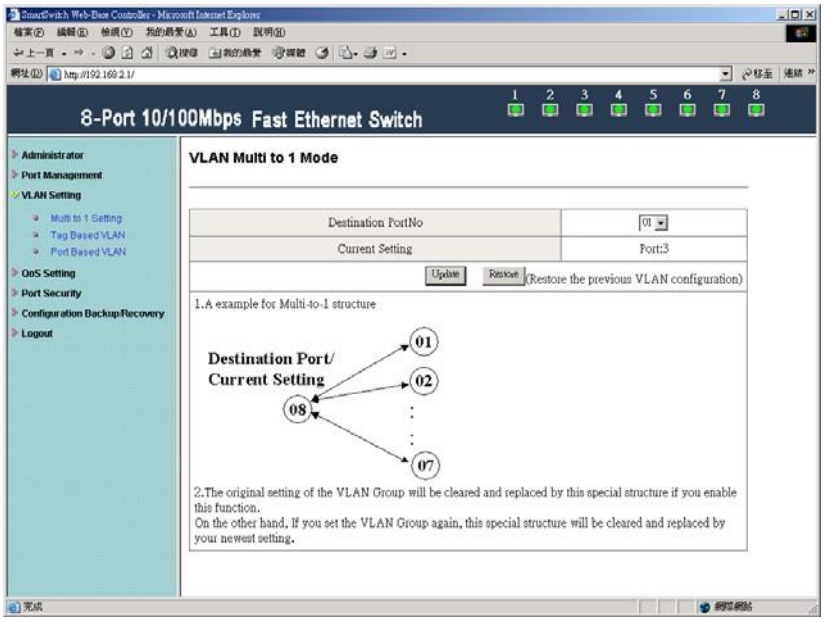


## VLAN Setting

### 1 、 Multi to 1 Setting

Enabling Multi to 1 setting will force both Tag Based VLAN and Port Based VLAN function to be ineffective.

Set a specific port as a mirroring destination port. All other ports can transmit and receive packets to the mirroring destination port, but they can't communicate with each other.




Example:

Set port 3 as the destination port. When port 0~port 7 transmit packets, only port 3 can receive packets.

The testing environment is listed as following.

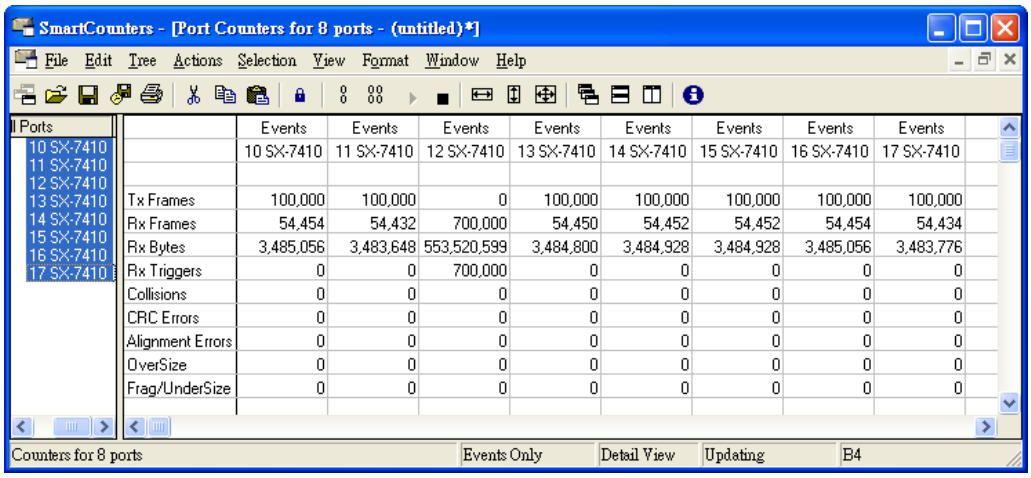
- Equipment

  SmartBits or IXIA

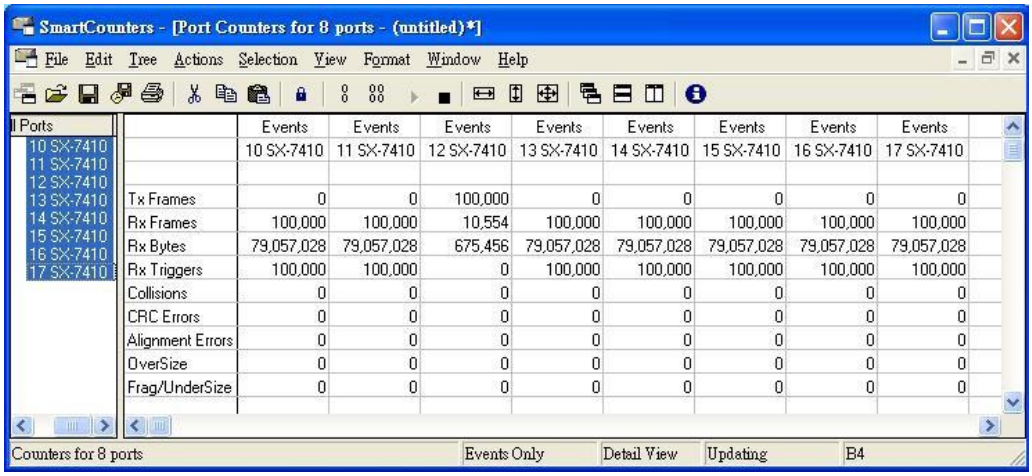
- Setting

  100M Full , Flow control=ON , Single Burst Mode , Random Length , Random Background , Interpacket Gap 0.96 uSec , source address: 00 00 00 00 00 01 , destination address: ff ff ff ff ff ff

Port 1~port 8 transmit packets in turn and only port 3 can receive packets.




Port 3 transmits broadcast packets to port 1~port8 (excluding port 3 itself).



## 2 、 Tag Based VLAN

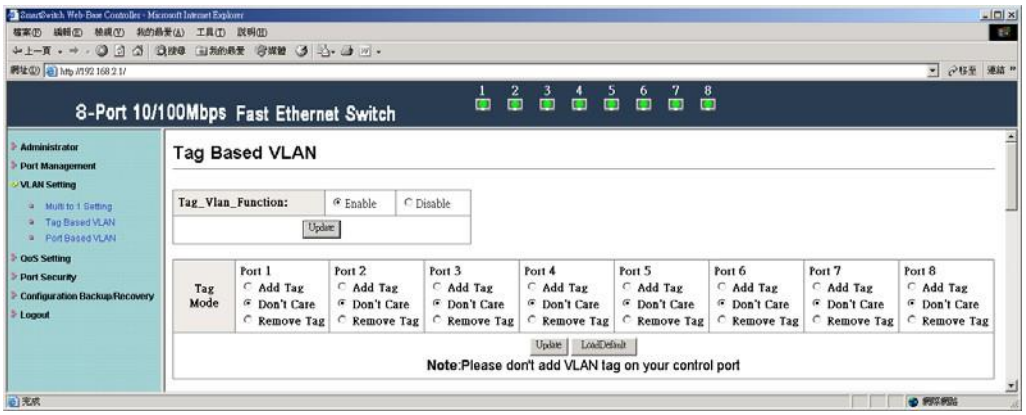
If the Tag Based VLAN function is enabled, Multi to 1 setting and Port Based VLAN will be disabled automatically.

### A、Set “Add Tag” , “Don’t Care” , “Remove Tag” function for port 1~port 8

**Add tag:** The outgoing packet should contain a VLAN tag no matter whether there is a VLAN tag received at the source port.

**Don’t care:** The outgoing packet will keep unchanged no matter whether there is a VLAN tag received at the source port.

**Remove tag:** The VLAN tag of the outgoing packet will be removed no matter whether there is a VLAN tag received at the source port.




| Port | VLAN Tag |
|---|---|
| 1 | Don’t Care |
| 2 | ADD TAG |
| 3 | Don’t Care |
| 4 | Remove TAG |
| 5 | Don’t Care |
| 6 | ADD TAG |
| 7 | Don’t Care |
| 8 | Remove TAG |

Example 1:

Port 8 transmits packets with VLAN Tag.

- Equipment

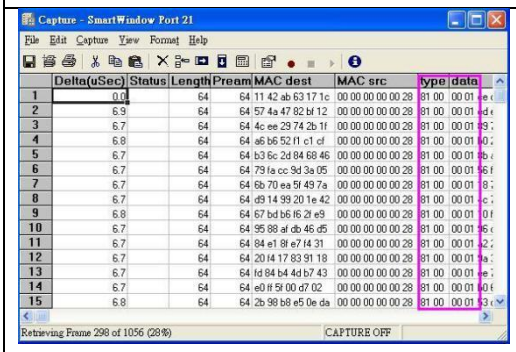
  SmartBits or IXIA

- Setting

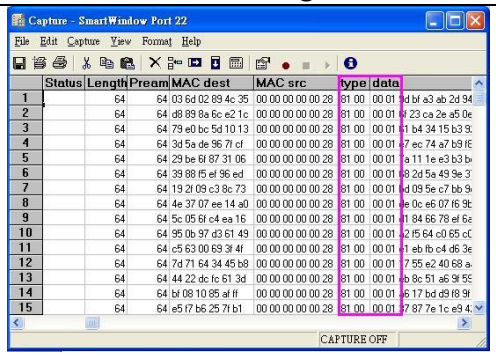
  Single Burst Mode , Fixed Length 60 bytes , Random Background , Interpacket Gap 0.96uSec , source address: 00 00 00 00 00 28 , destination address: ff ff ffff ff ff , packet type 8100 0001

Test result:

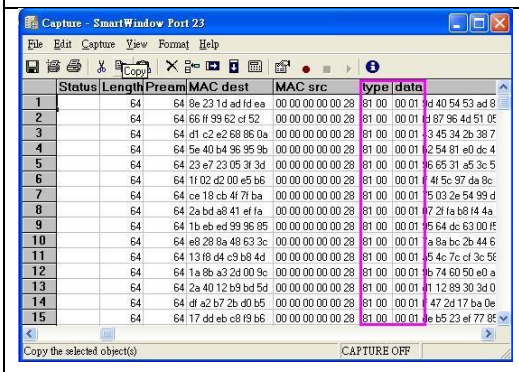
## Port 1 is set Don't care



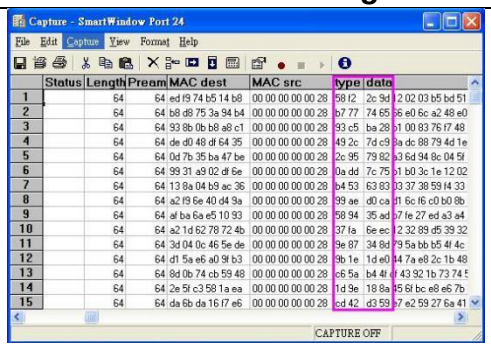

## Port 2 is set Add tag



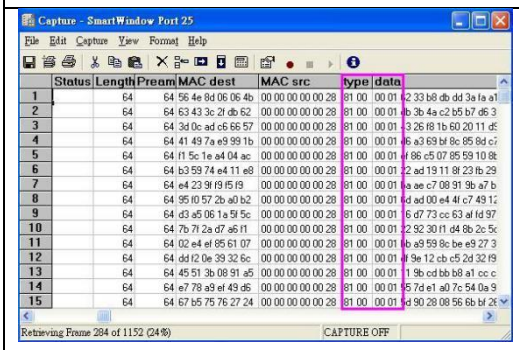

## Port 3 is set Don't care



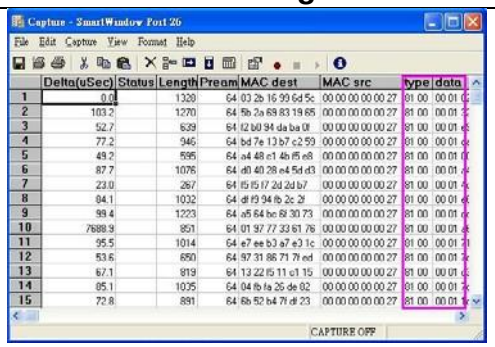

## Port 4 is set Remove tag



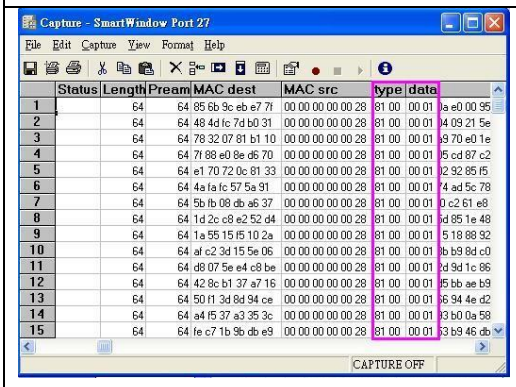

## Port 5 is set Don't care




## Port 6 is set Add tag



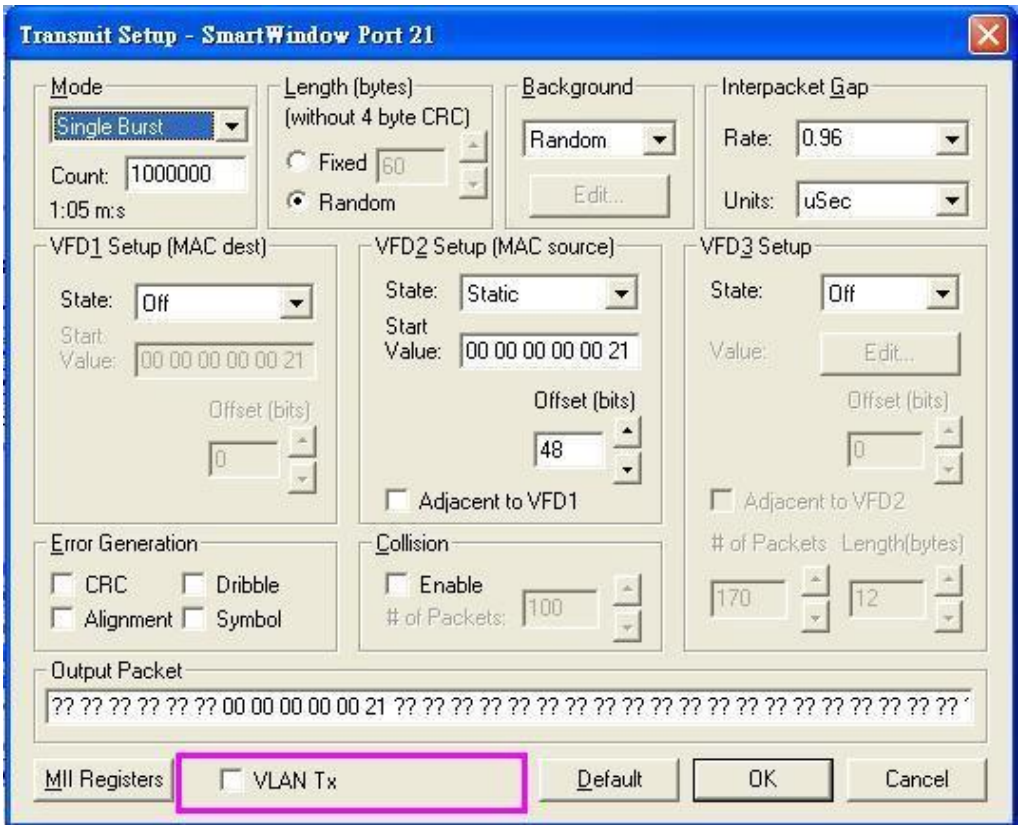

## Port 7 is set Don't care



Example 2:

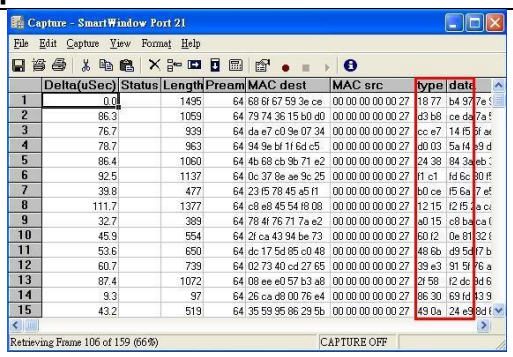
Port 7 transmits packets without VLAN Tag.

SMB setting: Single Burst Mode , Fixed Length 60 bytes , Random Background , Interpacket Gap 0.96uSec , source address: 00 00 00 00 00 21 , destination address: ff ff ff ff ff ff

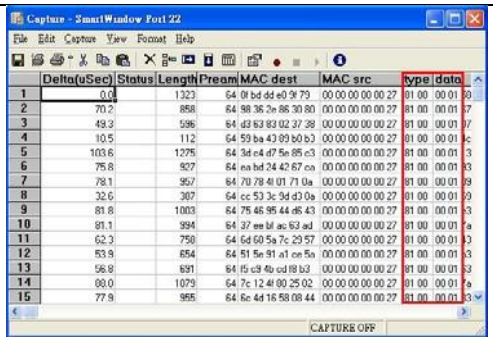

Transmit Setup - SmartWindow Port 21
Mode
Single Burst
Count: 1000000
1:05 m:s
Length (bytes) (without 4 byte CRC)
Fixed 60
Random
Background
Random
Edit...
Interpacket Gap
Rate: 0.96
Units: uSec
VFD1 Setup (MAC dest)
State: Off
Start Value: 00 00 00 00 00 21
Offset (bits)
0
VFD2 Setup (MAC source)
State: Static
Start Value: 00 00 00 00 00 21
Offset (bits)
48
Adjacent to VFD1
VFD3 Setup
State: Off
Value: Edit...
Offset (bits)
0
Adjacent to VFD2
# of Packets Length(bytes)
170
12
Error Generation
CRC
Dribble
Alignment
Symbol
Collision
Enable
# of Packets: 100
Output Packet
?? ?? ?? ?? ?? ?? 00 00 00 00 00 21 ?? ?? ?? ?? ??

Example 2 results:

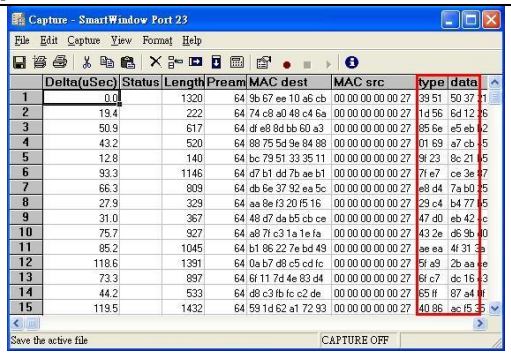
**port0 is set Don't Care**



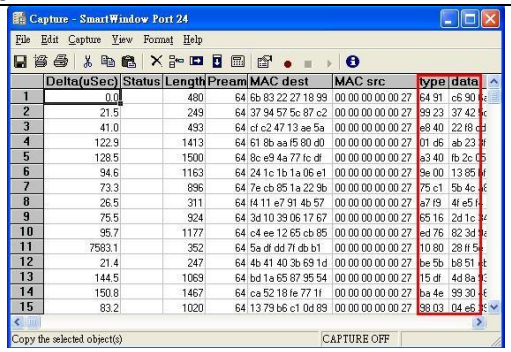

**port1 is set ADD TAG**



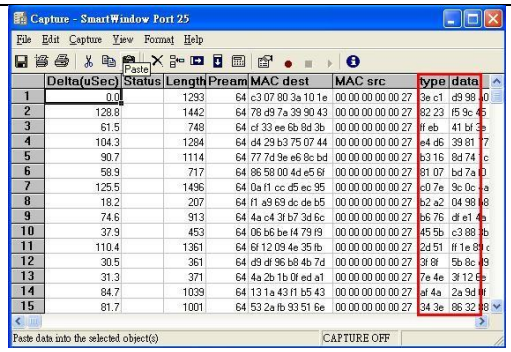

**port2 is set Don't Care**



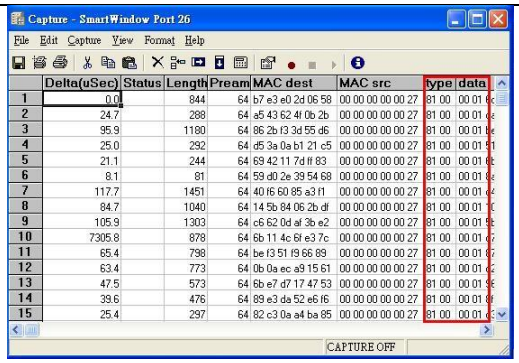

**port3 is set Remove TAG**



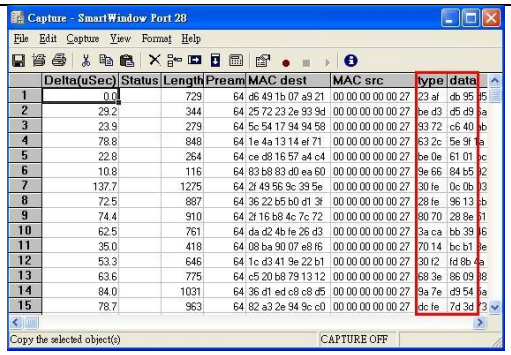

**Port4 is set Don't Care**




**Port5 is set ADD TAG**



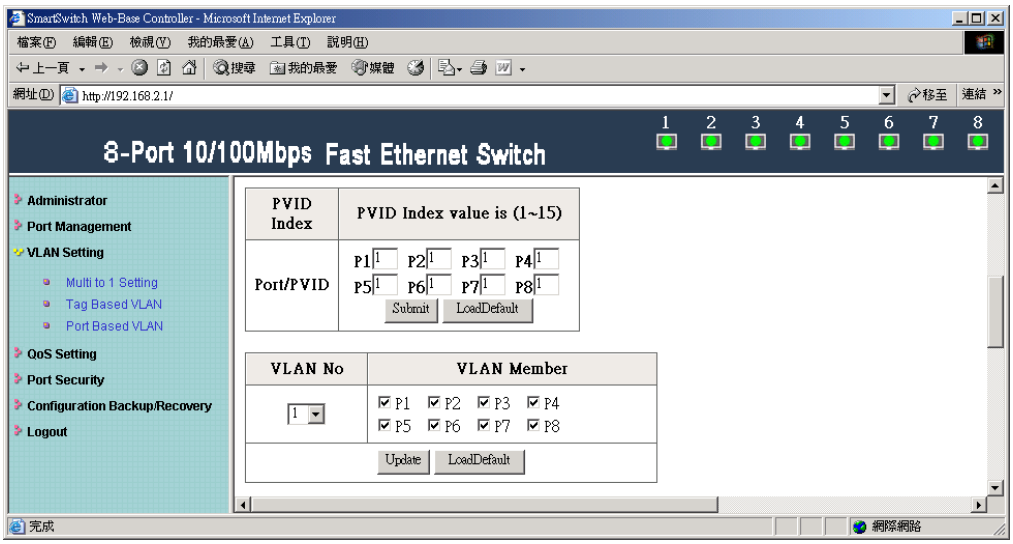

**Port7 is set Remove TAG**



**B、PVID Index Setting**

This setting must match VLAN Member setting.

The valid value of PVID index is 1~15.

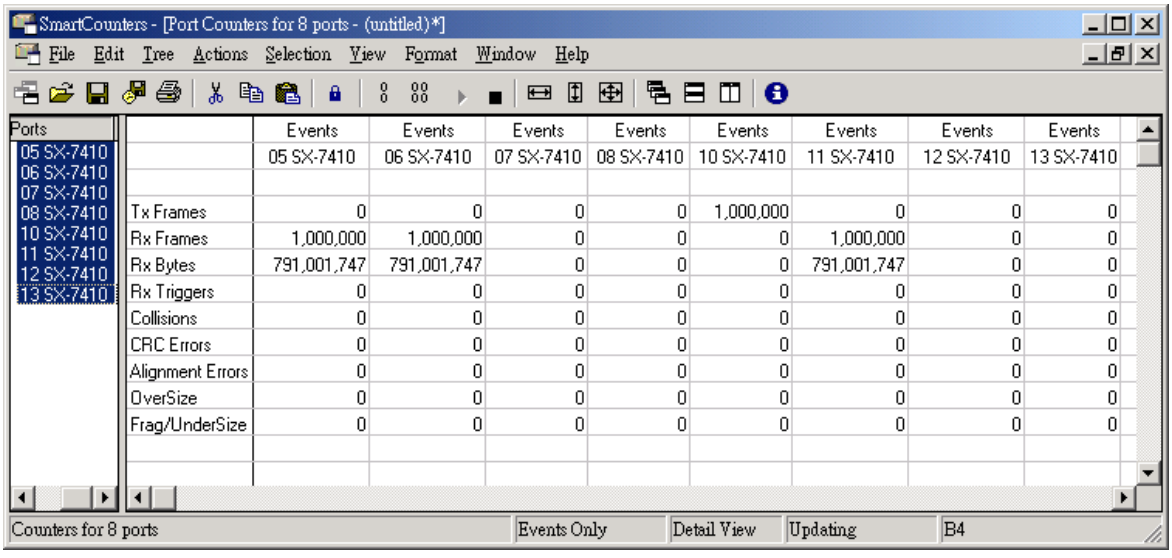



Example 1:

Set 9 as the PVID index value of port 5. Port 5 transmits packets without VLAN Tag.

(Length Random , Background Random , DA=Broadcast, SA=05)

The result is that all ports in VLAN Member 9 will receive the packets from port 5.



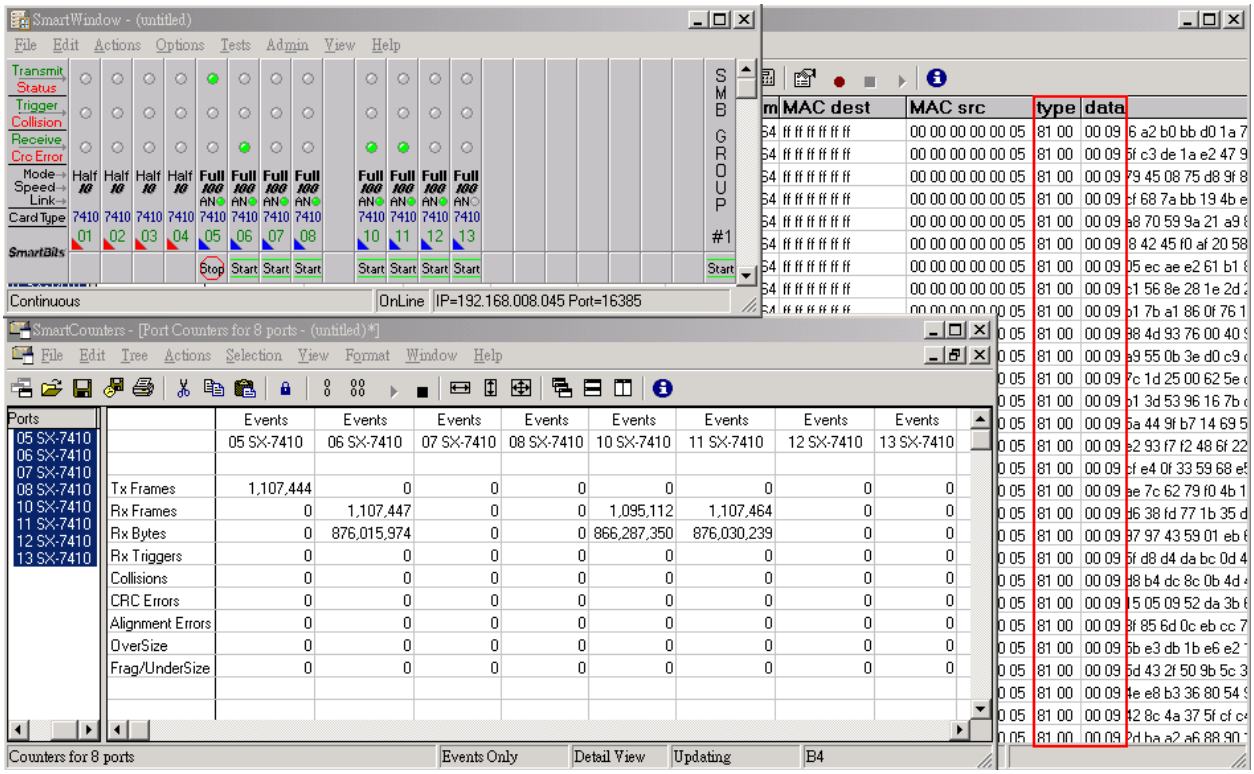
Example 2:

Set 9 as the PVID index value of port 1. Port 1 transmits packets with VLAN Tag.

(Length Random , Background Random , DA=Broadcast, SA=01 , Type data=8100 0009)

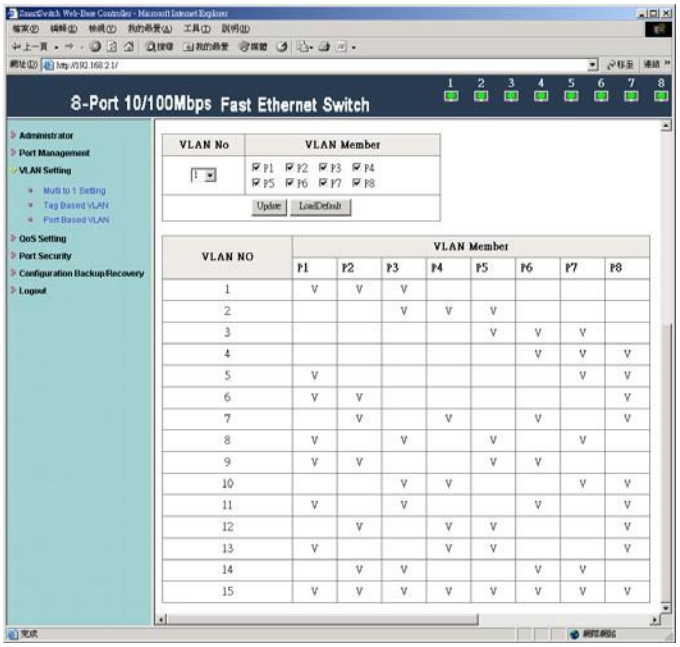
The result is that ports in VLAN Member 9 will receive the packets from port 1.

Capture the transmitted packets and know their type data is 8100 0009.



### C、VLAN Member

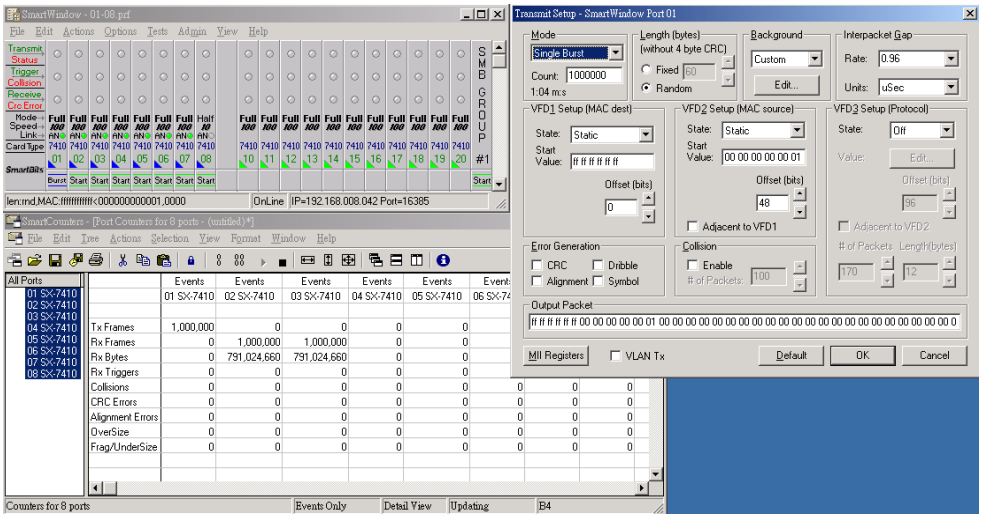
IP178C supports 15 sets of VLAN Group. Member ports in the same VLAN Group can transmit and receive packets from each other but non-member ports cannot.
Following chart shows VLAN Member setting.




Example:

- Equipment
  SmartBits or IXIA
- Setting
  Length: Random, Background: Custom , DA=Broadcast, SA=01

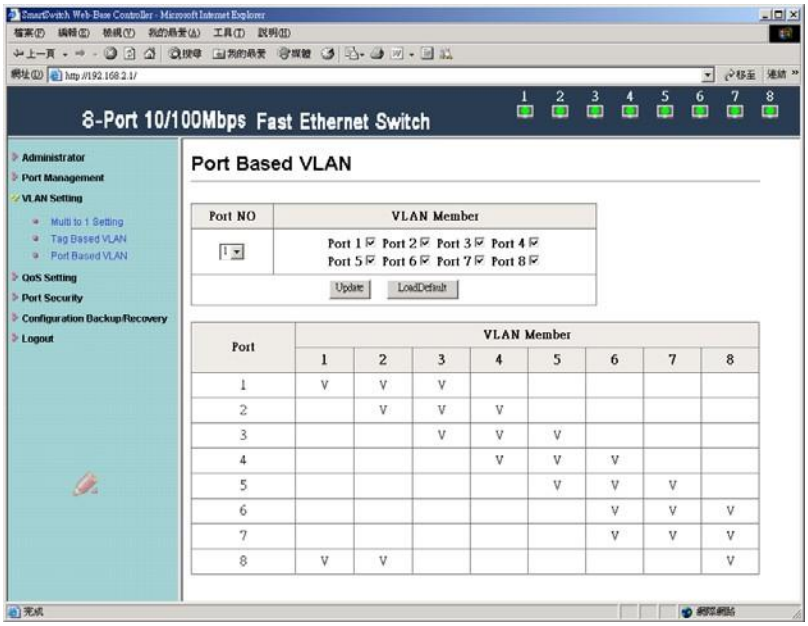
Set port 1, port 2, and port 3 in the same VLAN. When port 1 transmits packets, only port 2 and port 3 will receive the packets.


SmartWindow - 01-08.prf
File Edit Actions Options Tests Admin View Help
Transmit
Status
Trigger
Collision
Receive
Crc Error
SMB GROUP #1
SmartBits
len:rnd,MAC:ffffffffffff<000000000001,0000
OnLine
IP=192.168.008.042 Port=16385
SmartCounters - [Port Counters for 8 ports - (untitled)*]
File Edit Tree Actions Selection View Format Window Help
All Ports
01 SX-7410
02 SX-7410
03 SX-7410
04 SX-7410
05 SX-7410
06 SX-7410
07 SX-7410
08 SX-7410
Events
01 SX-7410
02 SX-7410
03 SX-7410
04 SX-7410
05 SX-7410
Tx Frames 1,000,000 0 0 0 0
Rx Frames 0 1,000,000 1,000,000 0 0
Rx Bytes 0 791,024,660 791,024,660 0 0
Rx Triggers 0 0 0 0 0
Collisions 0 0 0 0 0
CRC Errors 0 0 0 0 0
Alignment Errors 0 0 0 0 0
OverSize 0 0 0 0 0
Frag/UnderSize 0 0 0 0 0
Counters for 8 ports
Events Only
Detail View
Updating
B4
Transmit Setup - SmartWindow Port 01
Mode
Single Burst
Count: 1000000
1.04 m:s
Length (bytes) (without 4 byte CRC)
Fixed 60
Random
Background
Custom
Edit...
Interpacket Gap
Rate: 0.96
Units: uSec
VFD1 Setup (MAC dest)
State: Static
Start Value: ff ff ff ff ff ff
Offset (bits) 0
VFD2 Setup (MAC source)
State: Static
Start Value: 00 00 00 00 00 01
Offset (bits) 48
Adjacent to VFD1
VFD3 Setup (Protocol)
State: Off
Value:
Edit...
Offset (bits) 96
Adjacent to VFD2
# of Packets: Length(bytes) 170 12
Error Generation
CRC Dribble
Alignment Symbol
Collision
Enable
# of Packets: 100
Output Packet
ff ff ff ff ff ff 00 00 00 00 00 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 0
MII Registers
VLAN Tx
Default
OK
Cancel

## 3 、 Port Based VLAN

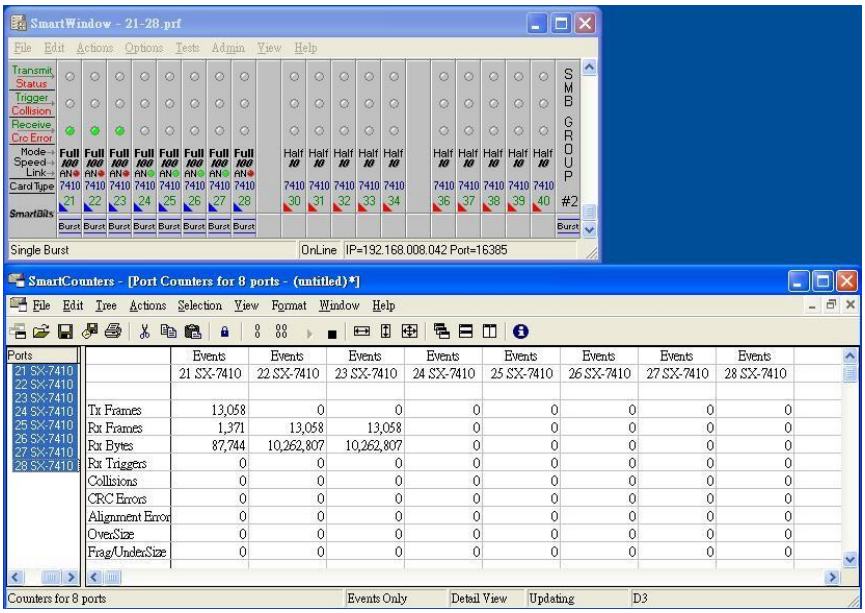
If the port Based VLAN function is enabled, Multi to 1 setting and tag Based VLAN will be disabled automatically.

Set VLAN Member for port 1~port 8.




Example:

Set port 1, port 2, and port 3 in the same VLAN. When port 1 transmits broadcast packets, only port 2 and port 3 will receive the packets.



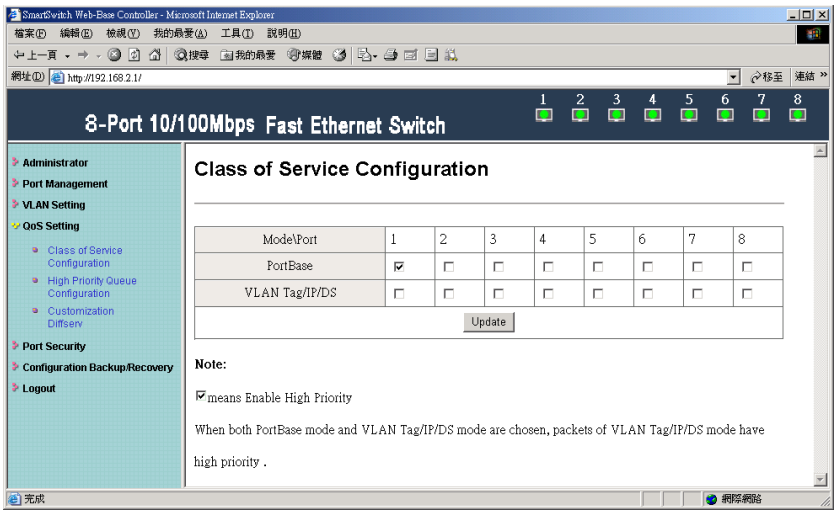
## QoS Setting

### 1 、 Class of Service Configuration

High priority is a special channel, which can make important packets pass through quickly. To set a packet to high priority, the user should select the its port number or VLAN Tag/IP/DS.

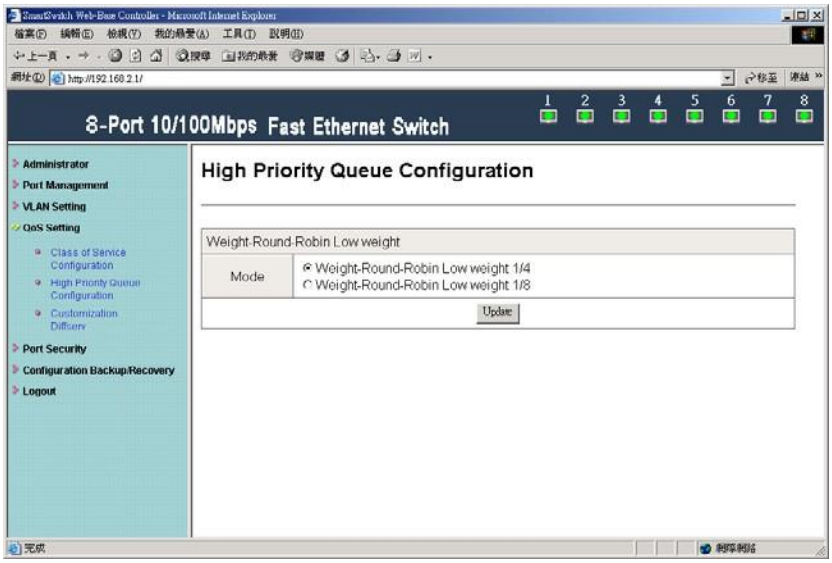
Example:

Select port 1 as the high priority. This means all packets coming from port 1 will be treated as high priority.



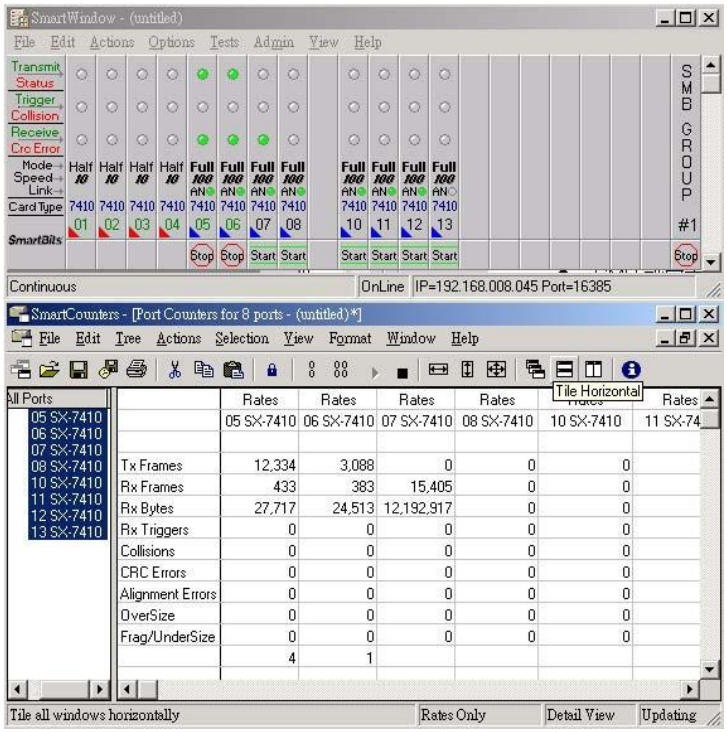
## 2 、 High Priority Queue Configuration

The setting in High Priority Queue Configuration must be in conjunction with Class of Service Configuration by selecting VLAN Tag/IP/DS. Weight-Round-Robin Mode sets packets forwarding ratio of High priority to Low priority. The ratio is 4:1 or 8:1.



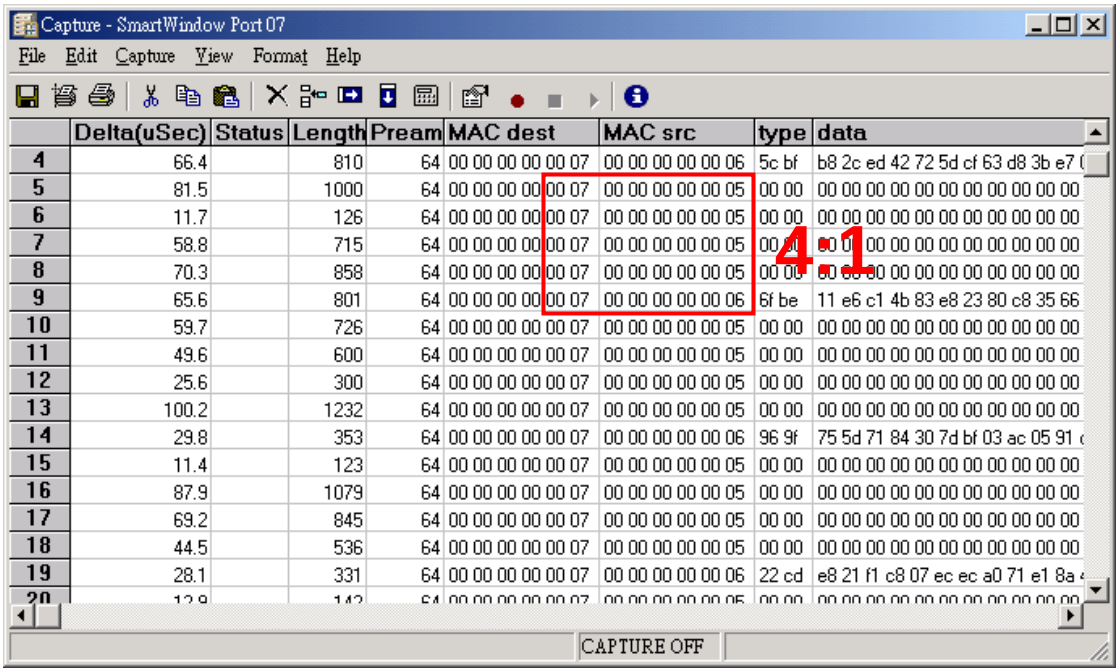

Example:

Set port 5 and port 6 transmit packets to port 7.

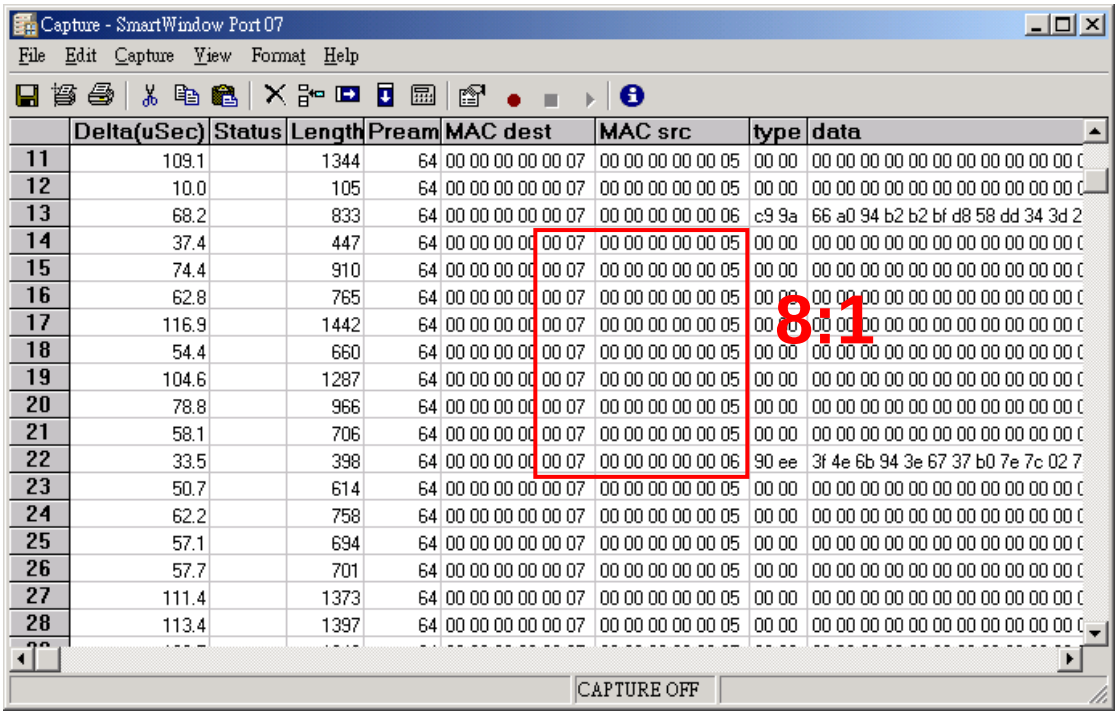


- Equipment
  SmartBits or IXIA
- Setting
  Continuous Mode , Random Length , Custom Background , Interpacket Gap 0.96uSec , SA=05 , DA=07

Capture port 7 packet data and check MAC src column. Find that the ratio of port 5 (High Priority) and port 6 (Low Priority) is 4:1.



Capture port 7 packets and check MAC src column. Find that the ratio of port 5 (High Priority) and port 6 (Low Priority) is 8:1.



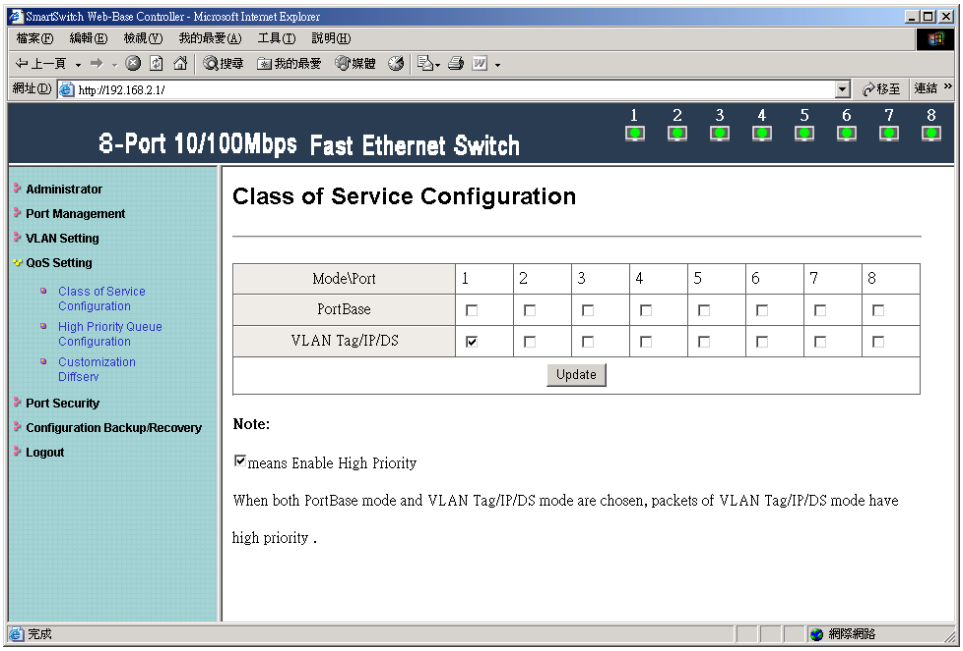

| | Delta(uSec) | Status | Length | Pream | MAC dest | MAC src | type | data |
|---|---|---|---|---|---|---|---|---|
| 11 | 109.1 | | 1344 | 64 | 00 00 00 00 00 07 | 00 00 00 00 00 05 | 00 00 | 00 00 00 00 00 00 00 00 00 00 00 0 |
| 12 | 10.0 | | 105 | 64 | 00 00 00 00 00 07 | 00 00 00 00 00 05 | 00 00 | 00 00 00 00 00 00 00 00 00 00 00 0 |
| 13 | 68.2 | | 833 | 64 | 00 00 00 00 00 07 | 00 00 00 00 00 06 | c9 9a | 66 a0 94 b2 b2 bf d8 58 dd 34 3d 2 |
| 14 | 37.4 | | 447 | 64 | 00 00 00 00 00 07 | 00 00 00 00 00 05 | 00 00 | 00 00 00 00 00 00 00 00 00 00 00 0 |
| 15 | 74.4 | | 910 | 64 | 00 00 00 00 00 07 | 00 00 00 00 00 05 | 00 00 | 00 00 00 00 00 00 00 00 00 00 00 0 |
| 16 | 62.8 | | 765 | 64 | 00 00 00 00 00 07 | 00 00 00 00 00 05 | 00 00 | 00 00 00 00 00 00 00 00 00 00 00 0 |
| 17 | 116.9 | | 1442 | 64 | 00 00 00 00 00 07 | 00 00 00 00 00 05 | 00 00 | 00 00 00 00 00 00 00 00 00 00 00 0 |
| 18 | 54.4 | | 660 | 64 | 00 00 00 00 00 07 | 00 00 00 00 00 05 | 00 00 | 00 00 00 00 00 00 00 00 00 00 00 0 |
| 19 | 104.6 | | 1287 | 64 | 00 00 00 00 00 07 | 00 00 00 00 00 05 | 00 00 | 00 00 00 00 00 00 00 00 00 00 00 0 |
| 20 | 78.8 | | 966 | 64 | 00 00 00 00 00 07 | 00 00 00 00 00 05 | 00 00 | 00 00 00 00 00 00 00 00 00 00 00 0 |
| 21 | 58.1 | | 706 | 64 | 00 00 00 00 00 07 | 00 00 00 00 00 05 | 00 00 | 00 00 00 00 00 00 00 00 00 00 00 0 |
| 22 | 33.5 | | 398 | 64 | 00 00 00 00 00 07 | 00 00 00 00 00 06 | 90 ee | 3f 4e 6b 94 3e 67 37 b0 7e 7c 02 7 |
| 23 | 50.7 | | 614 | 64 | 00 00 00 00 00 07 | 00 00 00 00 00 05 | 00 00 | 00 00 00 00 00 00 00 00 00 00 00 0 |
| 24 | 62.2 | | 758 | 64 | 00 00 00 00 00 07 | 00 00 00 00 00 05 | 00 00 | 00 00 00 00 00 00 00 00 00 00 00 0 |
| 25 | 57.1 | | 694 | 64 | 00 00 00 00 00 07 | 00 00 00 00 00 05 | 00 00 | 00 00 00 00 00 00 00 00 00 00 00 0 |
| 26 | 57.7 | | 701 | 64 | 00 00 00 00 00 07 | 00 00 00 00 00 05 | 00 00 | 00 00 00 00 00 00 00 00 00 00 00 0 |
| 27 | 111.4 | | 1373 | 64 | 00 00 00 00 00 07 | 00 00 00 00 00 05 | 00 00 | 00 00 00 00 00 00 00 00 00 00 00 0 |
| 28 | 113.4 | | 1397 | 64 | 00 00 00 00 00 07 | 00 00 00 00 00 05 | 00 00 | 00 00 00 00 00 00 00 00 00 00 00 0 |

### 3、Customization DiffServ

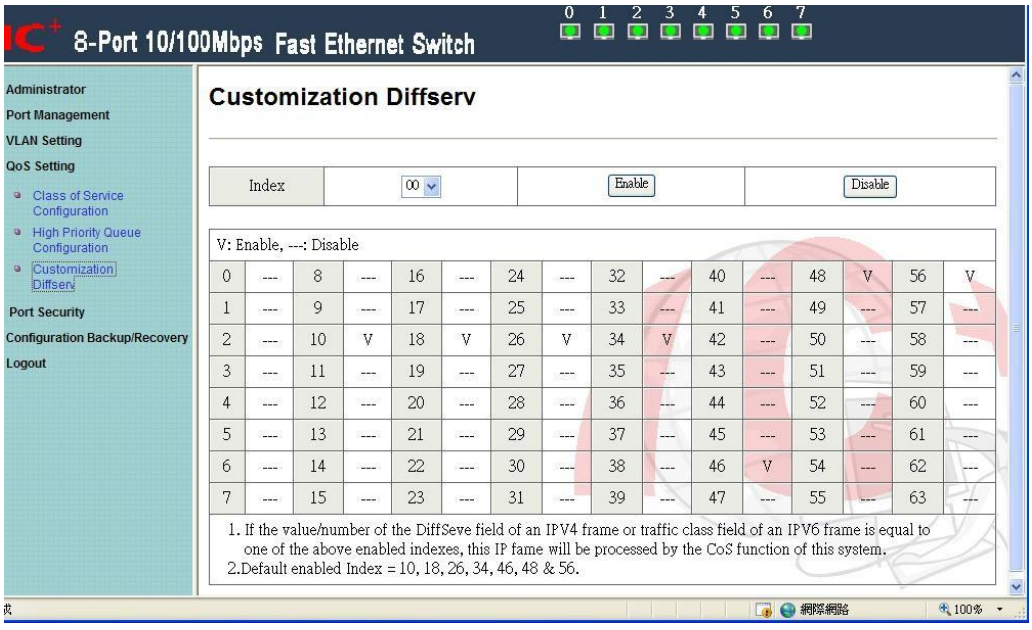
The setting in Customization DiffServe is associated with Class of Service Configuration by selecting VLAN Tag/IP/DS.

Example:

Select the pre-defined VLAN Tag/IP/DS coming from port 1 as the high priority.




There are a 6-bit field in DiffServe, representing 64 possible combinations.

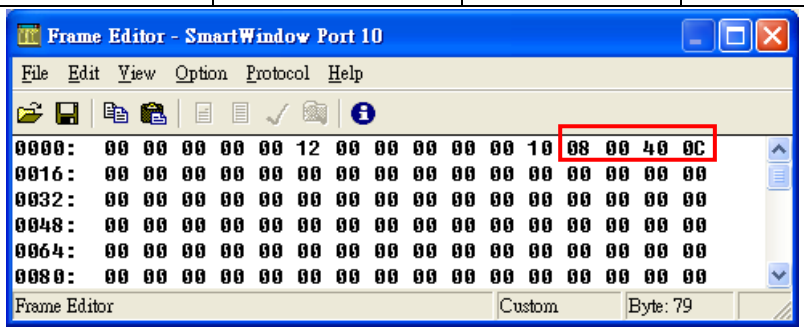


- Equipment
  SmartBits or IXIA
- Setting
  Continuous Mode , Random Length , Custom Background , Interpacket Gap 0.96uSec , SA=10 , DA=12

### I. IPv4 DiffServ

Reference IPv4/IPv6 DiffServ frame format, and then the value is 0100 0000 0000 1100 (2Byte). Therefore, 0800 400C (4 Byte) is the content of IPv4.

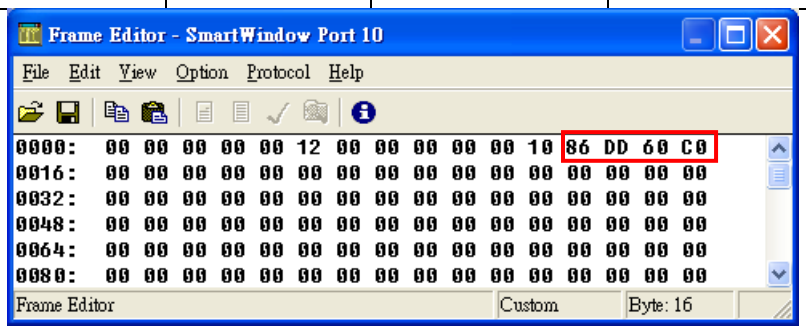
| EEPROM DiffServ value(DSCP) | | TYPE | VER(0100)+Header size | DiffServ+RES |
|---|---|---|---|---|
| Decimal | Binary | Hexadecimal | Hexadecimal | Hexadecimal |
| 3 | 000011 | 08 00 | 40 | 0C |




### II. IPv6 DiffServ

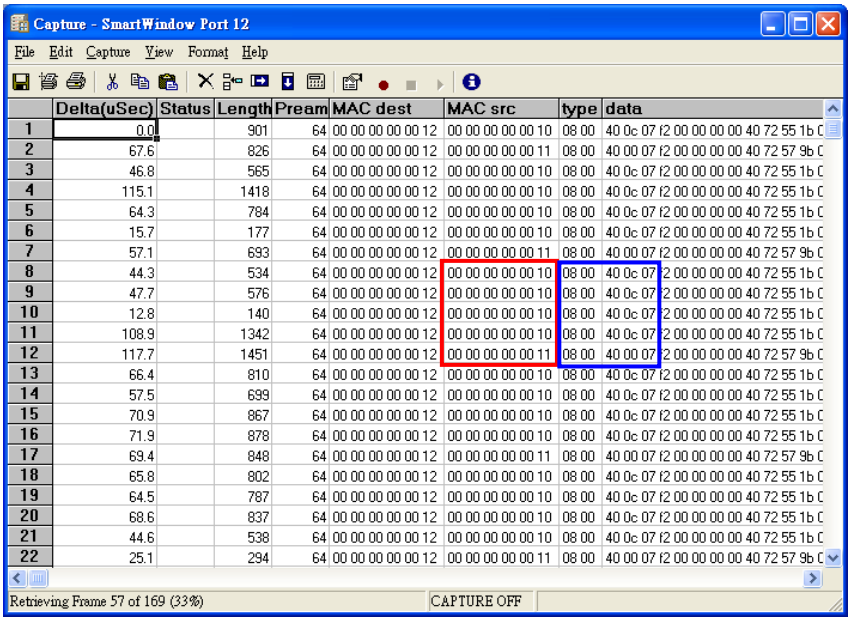
Reference IPv4/IPv6 DiffServ frame format, and then the value is 0110 0000 1100 0000 (2Byte). Therefore, 86DD 60C0 (4 Byte) is the content of IPv6.

| EEPROM DiffServ value | | TYPE | VER(0110)+TC[7:4] | TC[3:2]+RES+0000 |
|---|---|---|---|---|
| Decimal | Binary | Hexadecimal | Hexadecimal | |
| 3 | 000011 | 86 DD | 60 | C0 |



Left frame (in red) shows that WRR is 4:1.

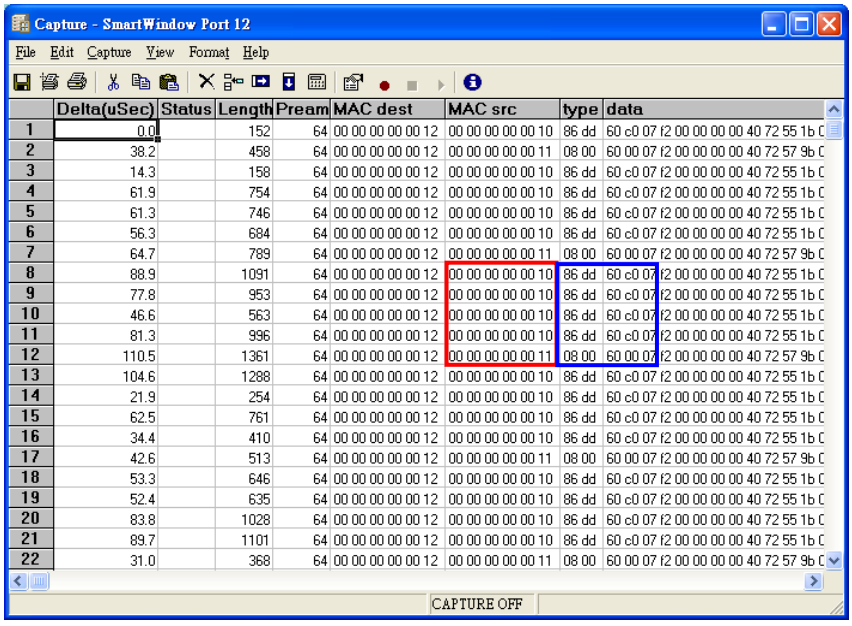
Right frame (in blue) shows the content of IPv4.




| | Delta(uSec) | Status | Length | Pream | MAC dest | MAC src | type | data |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.0 | | 901 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 08 00 | 40 0c 07 f2 00 00 00 00 40 72 55 1b C |
| 2 | 67.6 | | 826 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 11 | 08 00 | 40 00 07 f2 00 00 00 00 40 72 57 9b C |
| 3 | 46.8 | | 565 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 08 00 | 40 0c 07 f2 00 00 00 00 40 72 55 1b C |
| 4 | 115.1 | | 1418 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 08 00 | 40 0c 07 f2 00 00 00 00 40 72 55 1b C |
| 5 | 64.3 | | 784 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 08 00 | 40 0c 07 f2 00 00 00 00 40 72 55 1b C |
| 6 | 15.7 | | 177 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 08 00 | 40 0c 07 f2 00 00 00 00 40 72 55 1b C |
| 7 | 57.1 | | 693 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 11 | 08 00 | 40 00 07 f2 00 00 00 00 40 72 57 9b C |
| 8 | 44.3 | | 534 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 08 00 | 40 0c 07 f2 00 00 00 00 40 72 55 1b C |
| 9 | 47.7 | | 576 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 08 00 | 40 0c 07 f2 00 00 00 00 40 72 55 1b C |
| 10 | 12.8 | | 140 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 08 00 | 40 0c 07 f2 00 00 00 00 40 72 55 1b C |
| 11 | 108.9 | | 1342 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 08 00 | 40 0c 07 f2 00 00 00 00 40 72 55 1b C |
| 12 | 117.7 | | 1451 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 11 | 08 00 | 40 00 07 f2 00 00 00 00 40 72 57 9b C |
| 13 | 66.4 | | 810 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 08 00 | 40 0c 07 f2 00 00 00 00 40 72 55 1b C |
| 14 | 57.5 | | 699 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 08 00 | 40 0c 07 f2 00 00 00 00 40 72 55 1b C |
| 15 | 70.9 | | 867 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 08 00 | 40 0c 07 f2 00 00 00 00 40 72 55 1b C |
| 16 | 71.9 | | 878 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 08 00 | 40 0c 07 f2 00 00 00 00 40 72 55 1b C |
| 17 | 69.4 | | 848 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 11 | 08 00 | 40 00 07 f2 00 00 00 00 40 72 57 9b C |
| 18 | 65.8 | | 802 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 08 00 | 40 0c 07 f2 00 00 00 00 40 72 55 1b C |
| 19 | 64.5 | | 787 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 08 00 | 40 0c 07 f2 00 00 00 00 40 72 55 1b C |
| 20 | 68.6 | | 837 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 08 00 | 40 0c 07 f2 00 00 00 00 40 72 55 1b C |
| 21 | 44.6 | | 538 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 08 00 | 40 0c 07 f2 00 00 00 00 40 72 55 1b C |
| 22 | 25.1 | | 294 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 11 | 08 00 | 40 00 07 f2 00 00 00 00 40 72 57 9b C |

Left frame (in red) shows that WRR is 4:1.

Right frame (in blue) shows the content of IPv6.



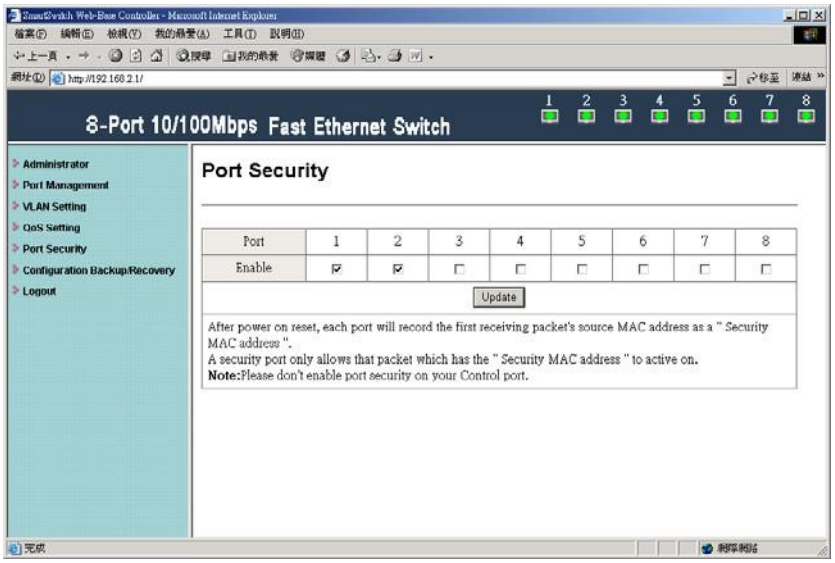

| | Delta(uSec) | Status | Length | Pream | MAC dest | MAC src | type | data |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.0 | | 152 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 86 dd | 60 c0 07 f2 00 00 00 00 40 72 55 1b C |
| 2 | 38.2 | | 458 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 11 | 08 00 | 60 00 07 f2 00 00 00 00 40 72 57 9b C |
| 3 | 14.3 | | 158 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 86 dd | 60 c0 07 f2 00 00 00 00 40 72 55 1b C |
| 4 | 61.9 | | 754 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 86 dd | 60 c0 07 f2 00 00 00 00 40 72 55 1b C |
| 5 | 61.3 | | 746 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 86 dd | 60 c0 07 f2 00 00 00 00 40 72 55 1b C |
| 6 | 56.3 | | 684 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 86 dd | 60 c0 07 f2 00 00 00 00 40 72 55 1b C |
| 7 | 64.7 | | 789 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 11 | 08 00 | 60 00 07 f2 00 00 00 00 40 72 57 9b C |
| 8 | 88.9 | | 1091 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 86 dd | 60 c0 07 f2 00 00 00 00 40 72 55 1b C |
| 9 | 77.8 | | 953 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 86 dd | 60 c0 07 f2 00 00 00 00 40 72 55 1b C |
| 10 | 46.6 | | 563 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 86 dd | 60 c0 07 f2 00 00 00 00 40 72 55 1b C |
| 11 | 81.3 | | 996 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 86 dd | 60 c0 07 f2 00 00 00 00 40 72 55 1b C |
| 12 | 110.5 | | 1361 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 11 | 08 00 | 60 00 07 f2 00 00 00 00 40 72 57 9b C |
| 13 | 104.6 | | 1288 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 86 dd | 60 c0 07 f2 00 00 00 00 40 72 55 1b C |
| 14 | 21.9 | | 254 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 86 dd | 60 c0 07 f2 00 00 00 00 40 72 55 1b C |
| 15 | 62.5 | | 761 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 86 dd | 60 c0 07 f2 00 00 00 00 40 72 55 1b C |
| 16 | 34.4 | | 410 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 86 dd | 60 c0 07 f2 00 00 00 00 40 72 55 1b C |
| 17 | 42.6 | | 513 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 11 | 08 00 | 60 00 07 f2 00 00 00 00 40 72 57 9b C |
| 18 | 53.3 | | 646 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 86 dd | 60 c0 07 f2 00 00 00 00 40 72 55 1b C |
| 19 | 52.4 | | 635 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 86 dd | 60 c0 07 f2 00 00 00 00 40 72 55 1b C |
| 20 | 83.8 | | 1028 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 86 dd | 60 c0 07 f2 00 00 00 00 40 72 55 1b C |
| 21 | 89.7 | | 1101 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 10 | 86 dd | 60 c0 07 f2 00 00 00 00 40 72 55 1b C |
| 22 | 31.0 | | 368 | 64 | 00 00 00 00 00 12 | 00 00 00 00 00 11 | 08 00 | 60 00 07 f2 00 00 00 00 40 72 57 9b C |

**Port Security**

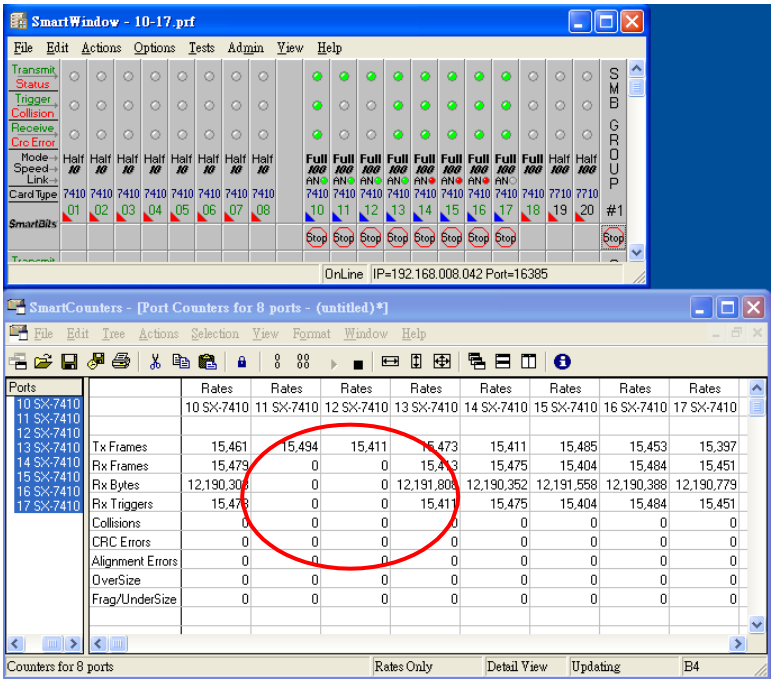
Enabling this function will disable the Tx ability and Rx ability.

Note: Please don't enable port security on the port which is connected to your web management PC.

Example: Enable port 1 and port 2.




Use the test equipment to do Ring test. Check whether port 1 and port 2 can receive packets.

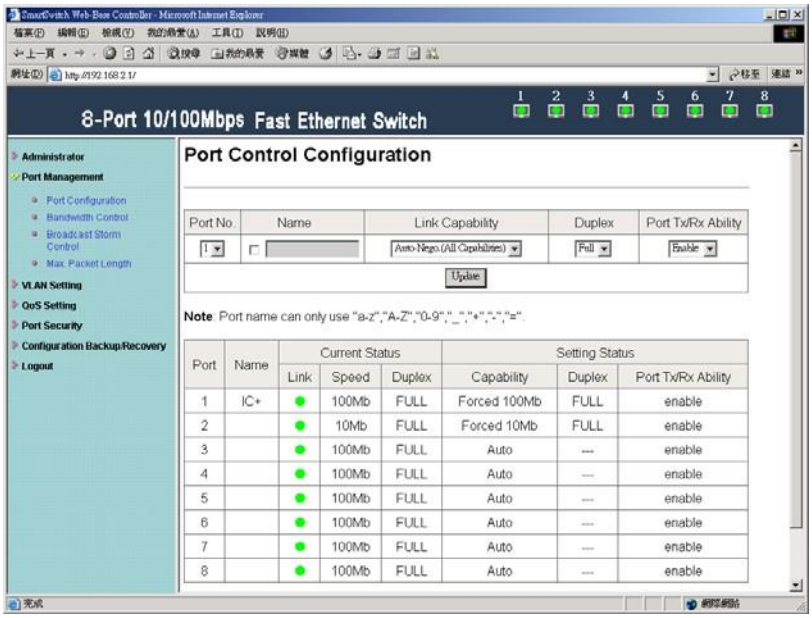


**Configuration Backup/Recovery**

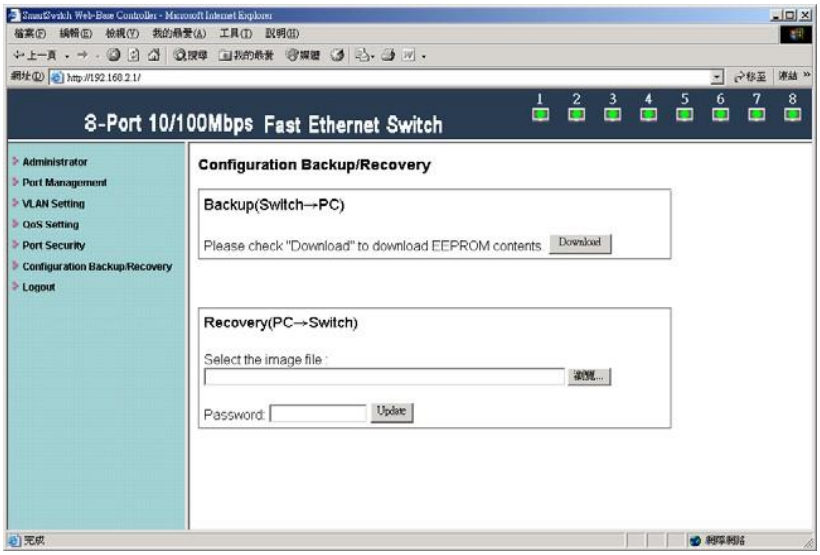
This function can save the switch configuration on your computer or restore the switch configuration by uploading the ".bin" file which is previously save on your computer.

Follow the following steps to verify.

Step 1、Set port 1=Forced 100Mb FULL, port 2=Forced 10Mb FULL. Then plug power cord and enter the same web page for ensuring the new setting take effect.

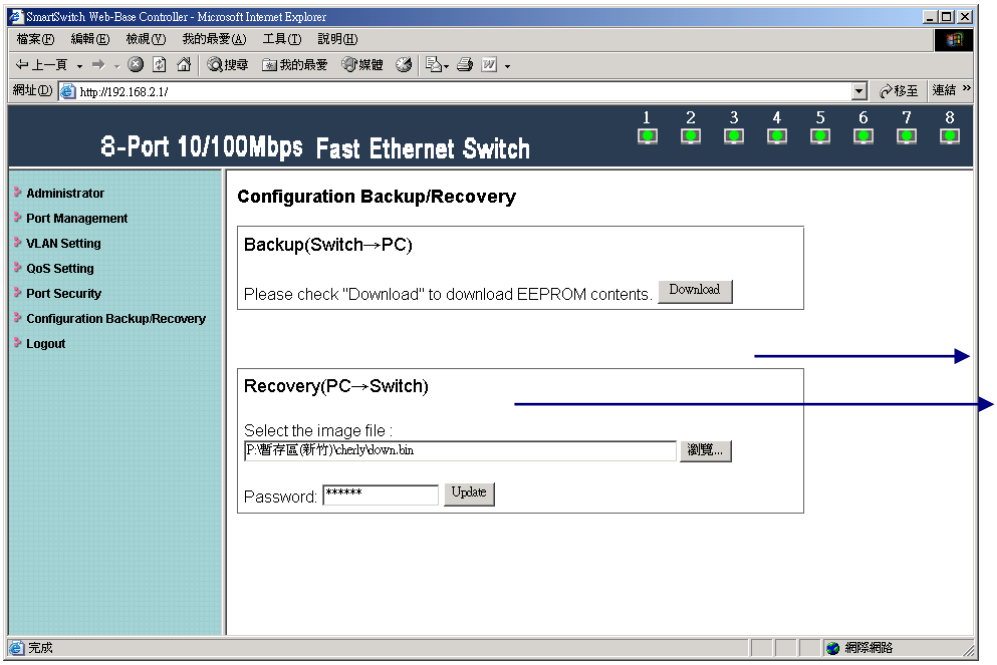



Step 2、Enter Configuration Backup/Recovery web page, and then choose Download in Backup(Switch->PC) column for saving this setting.



Step 3、Save the setting and the file name is x.bin

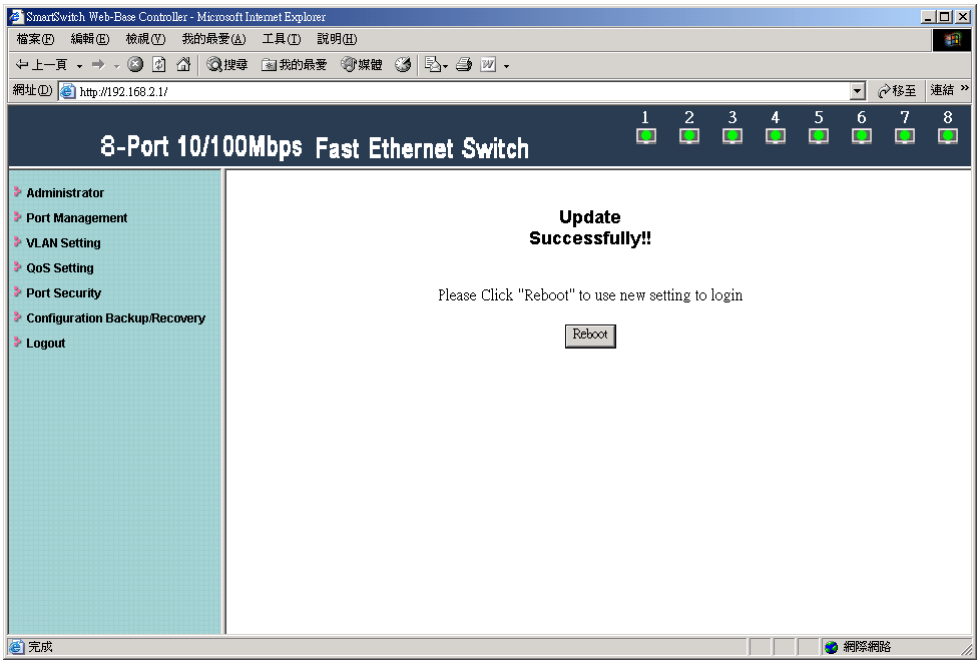
Step 4、Choose the image file, enter password, and click Update shown in Recovery(PC->Switch) column for reading EEPROM.



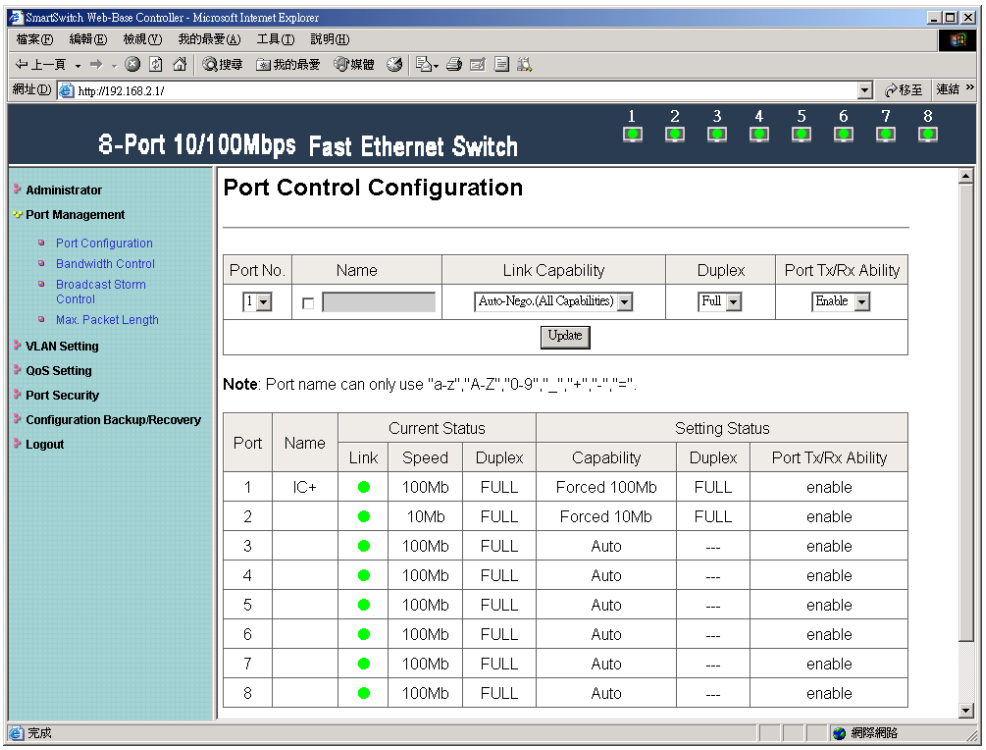

**Select the image file**

**Enter password**

Step 5、Click Reboot to use new setting to login.

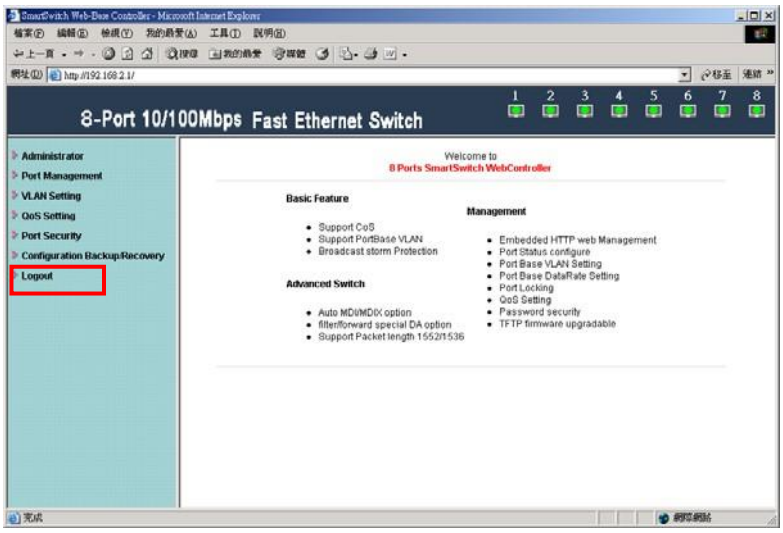



Step 6、Enter following web page and confirm whether this new setting takes effect.



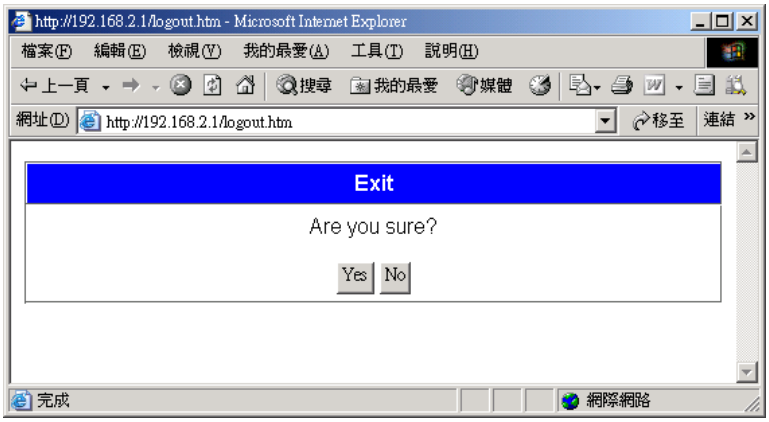
**Logout**

Choose Logout




Exit web page will appear for further confirmation.

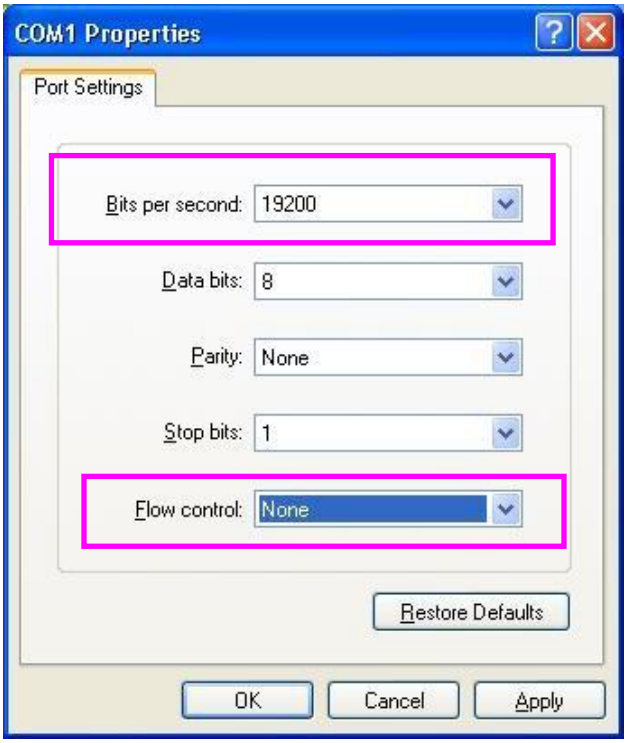
Click YES will leave this system. Click NO will back to this system.



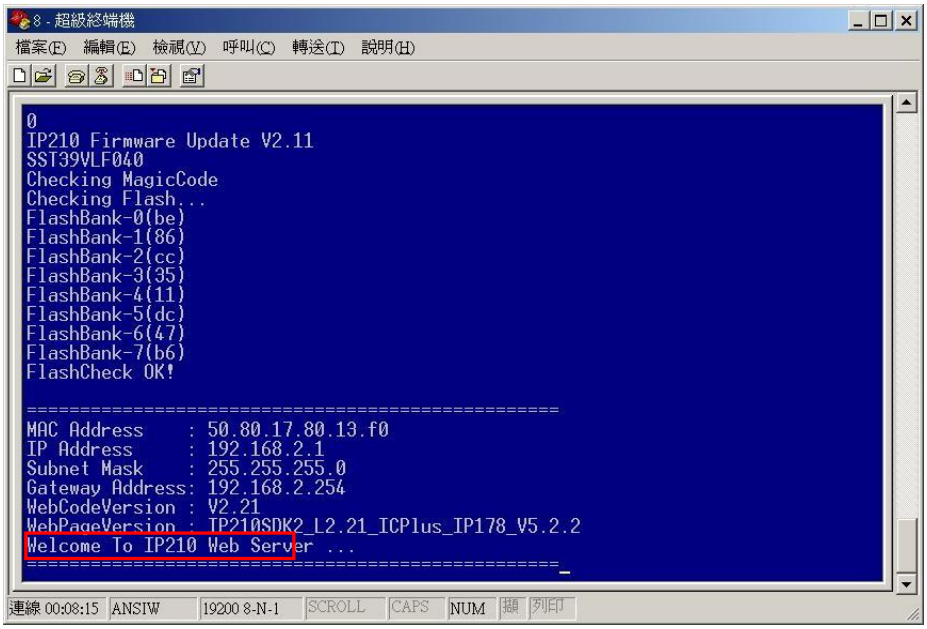
## Appendix

### Use Hyper Terminal to monitor the status of the switch.

Step 1: Set the COM port as the figure shown below.



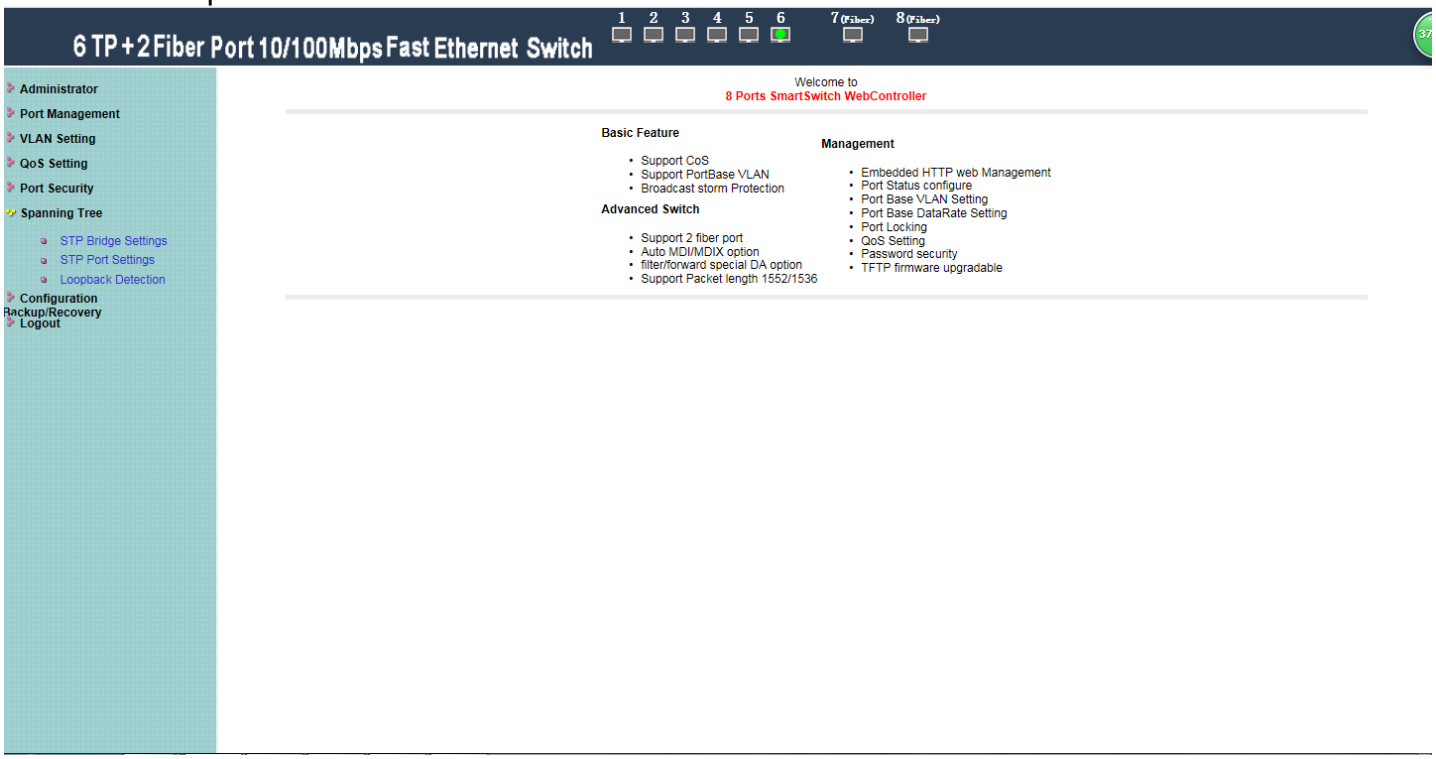

Step 2: Use Hyper Terminal to check Web Code Version: **V2.21**




~ABOVE~

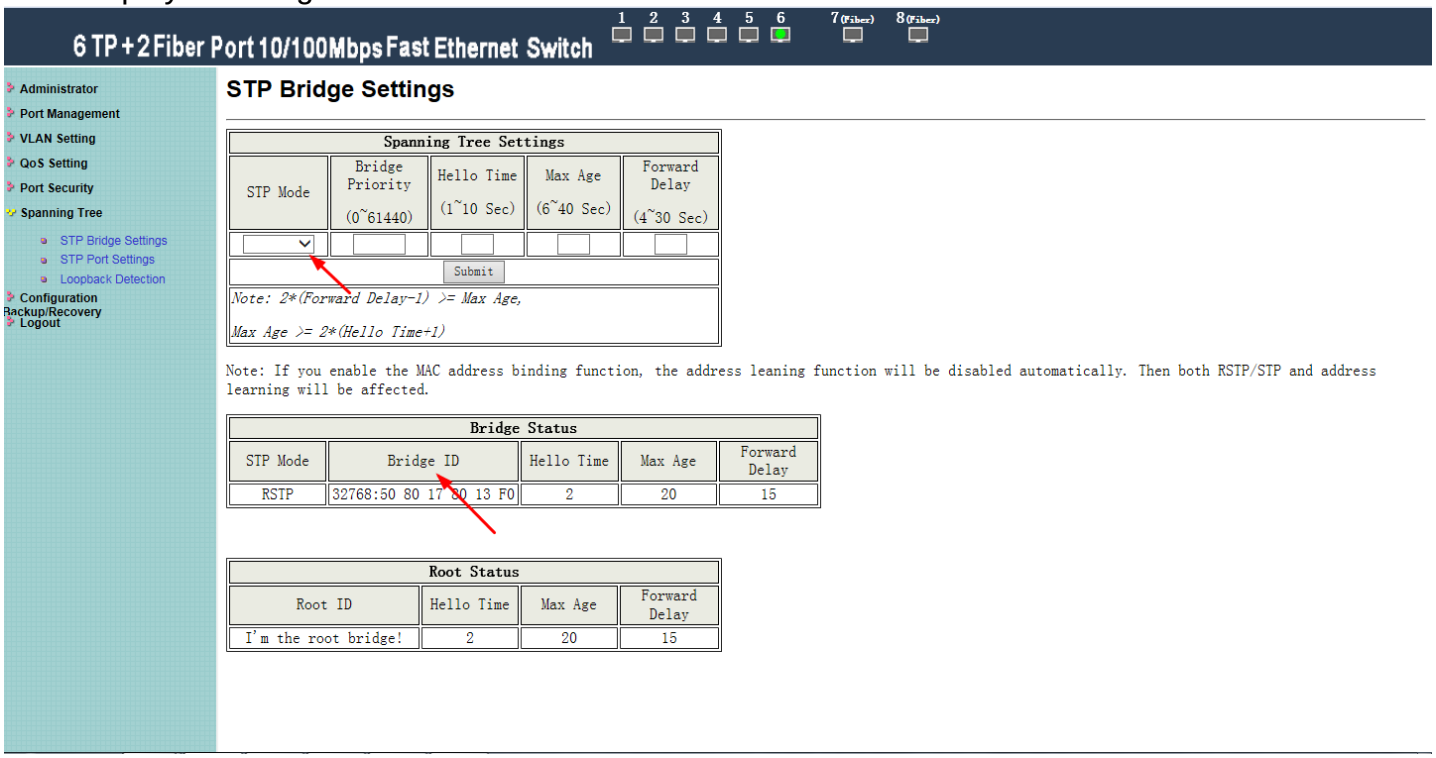
Spanning Tree

User can set up a series of attributes such as STP.



STP Bridge Settings

1. Choice STP Mode
2. 2.Display the bridge ID

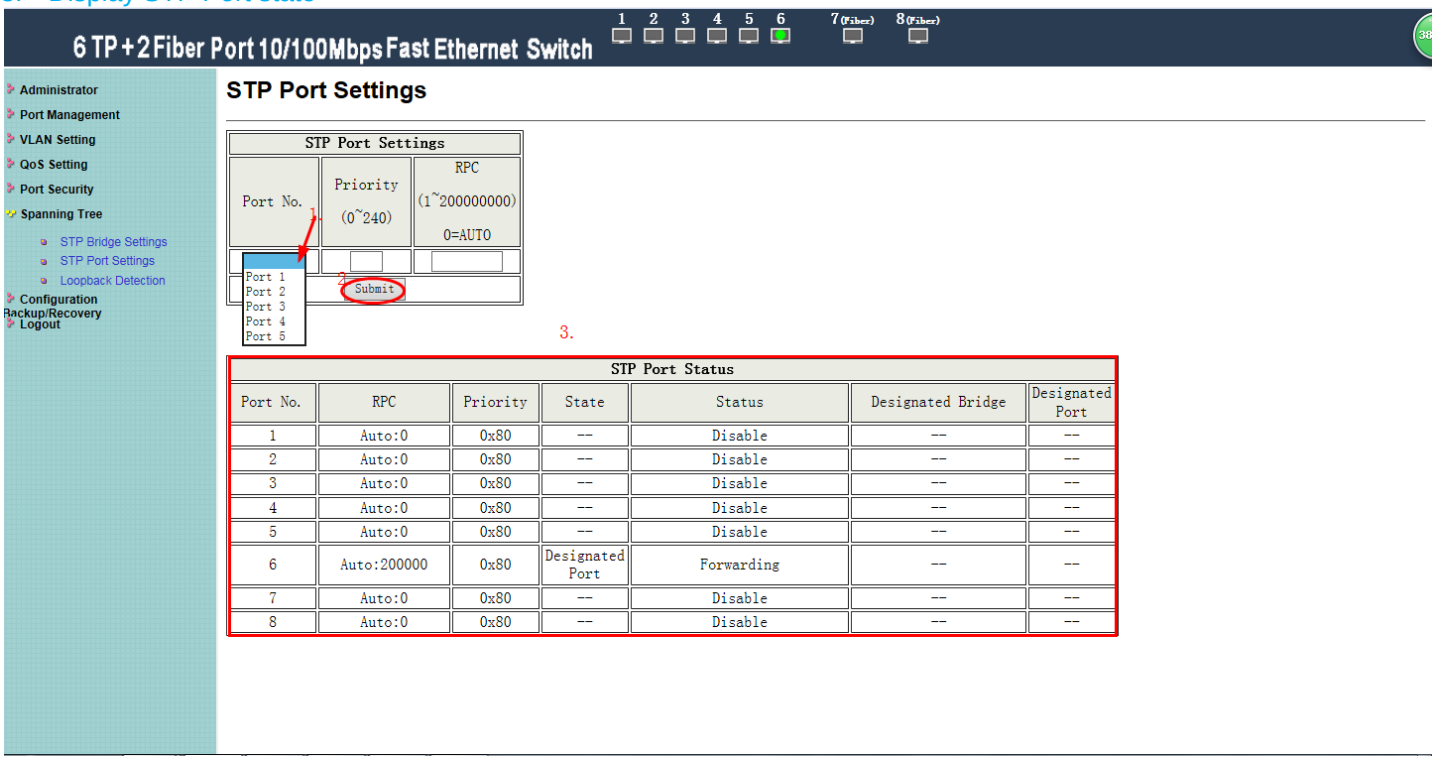


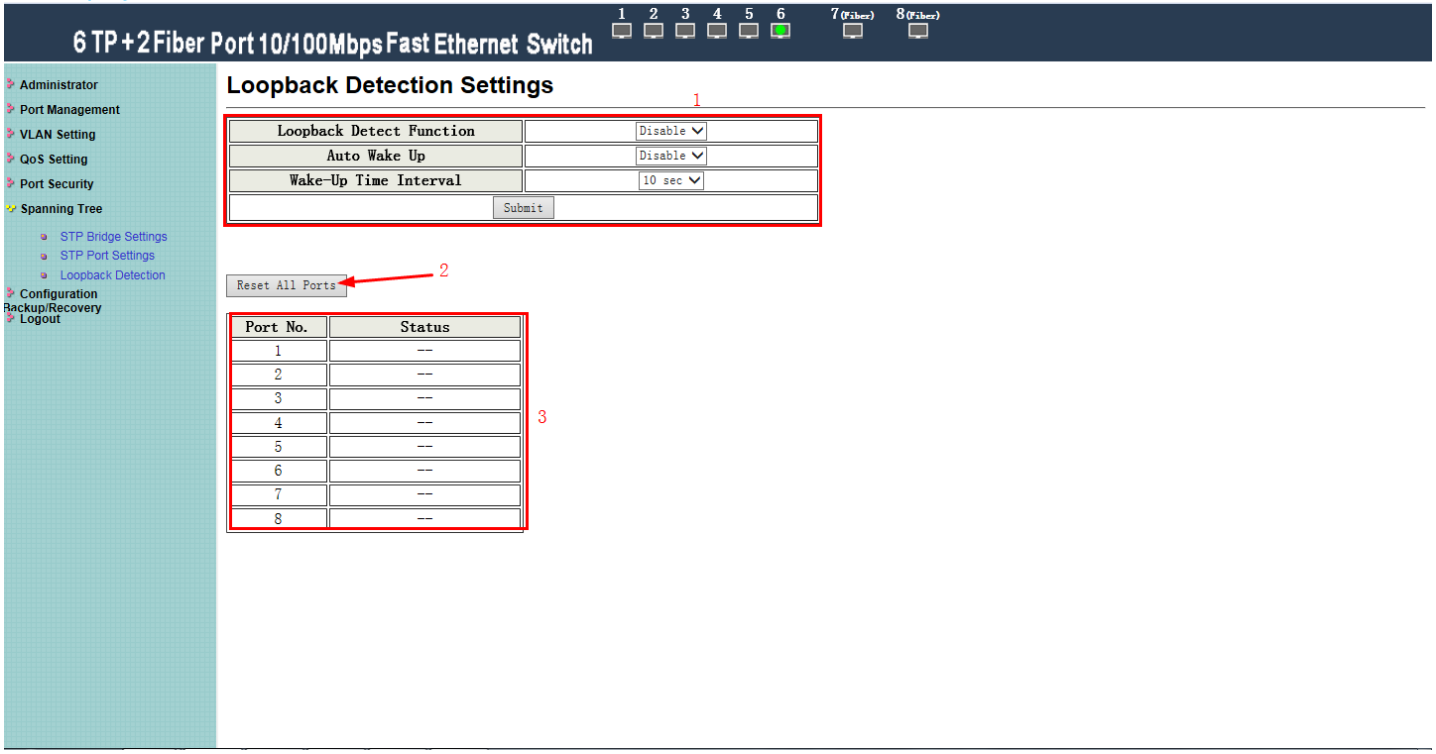

Note: If you enable the MAC address binding function, the address leaning function will be disabled automatically. Then both RSTP/STP and address learning will be affected.

# STP Port Settings

## For viewing and configuring STP Port

1. Select Port No.
2. Confirmation setting
3. Display STP Port state



# Loopback Detection

1. Loopback Detection Settings
2. Reset All Ports
3. Display STP Port State