

8-Port 10/100Mbps Fast Ethernet Switch

ATC-408 Web management Software User Manuals



<http://www.szatc.com>

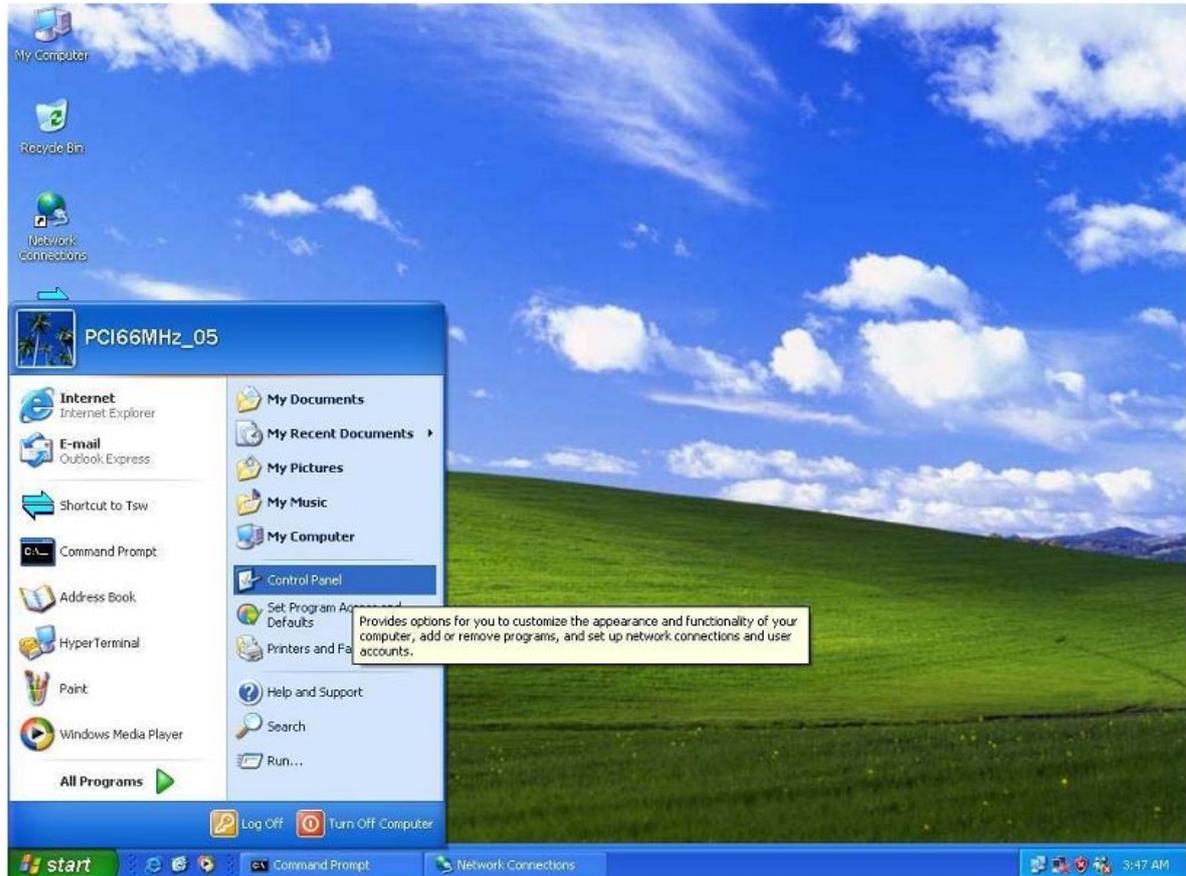
Contents

1	Administrator.....	3
1.1	Authentication configuration.....	7
1.2	System IP Configuration.....	7
1.3	System status.....	9
1.4	Load default setting.....	11
1.5	Firmware update.....	13
1.6	Reset device.....	14
2	Port Management.....	15
2.1	Port configuration.....	15
2.2	Bandwidth Control.....	16
2.3	Broadcast Storm Control.....	19
2.4	Max Packet length.....	21
3	VLAN Setting.....	24
3.1	Multi to 1 Setting.....	24
3.2	Tag Based VLAN.....	26
3.3	Port based VLAN.....	32
4	QoS Setting.....	33
4.1	Class of Service Configuration.....	33
4.2	High Priority Queue Configuration.....	34
4.3	Customization DiffServ.....	36
5	Port Security.....	40
6	Configuration Backup/Recovery.....	41
7	Logout.....	45
8	Appendix Hyper Terminal Authentication.....	46

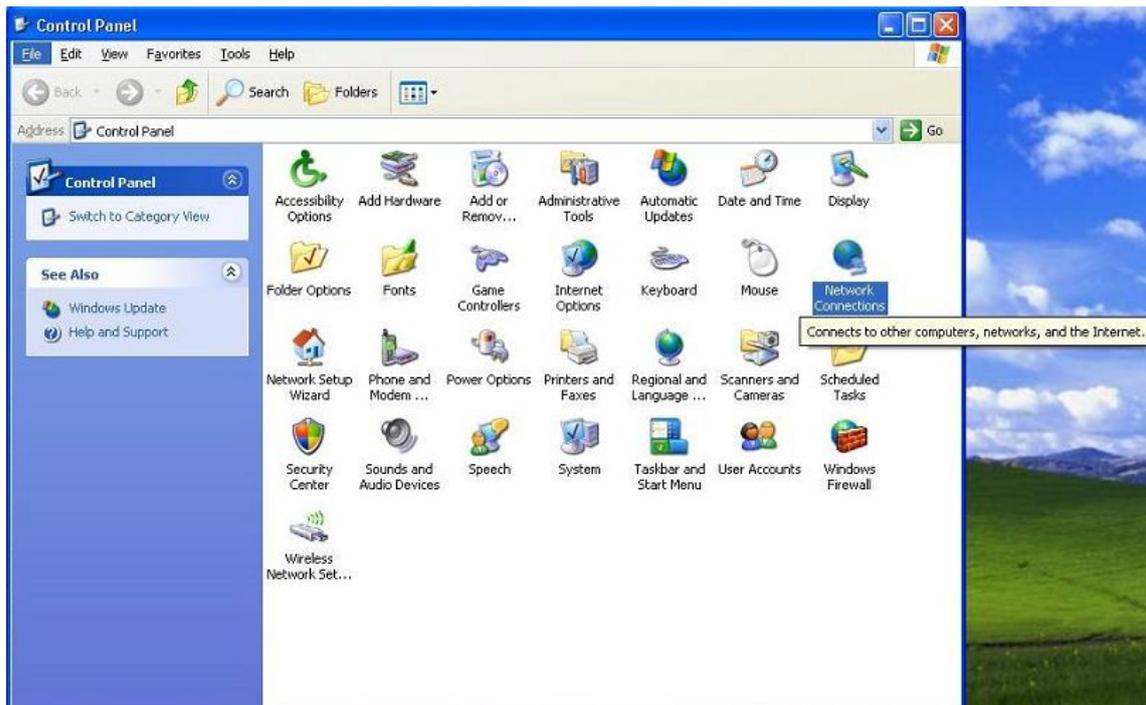
1 Administrator

A. PC NIC setting

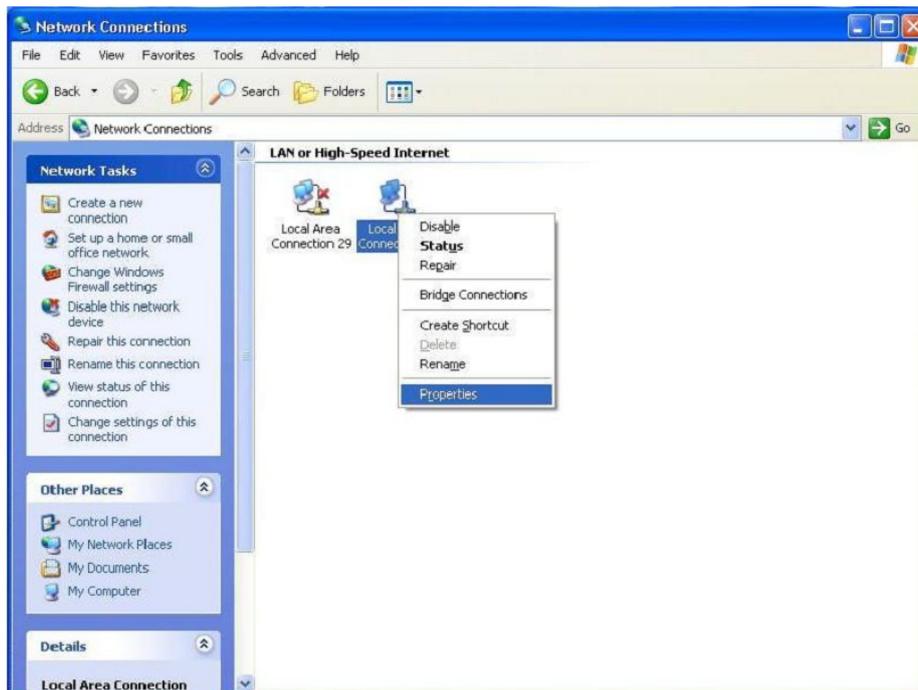
Start→Control Panel



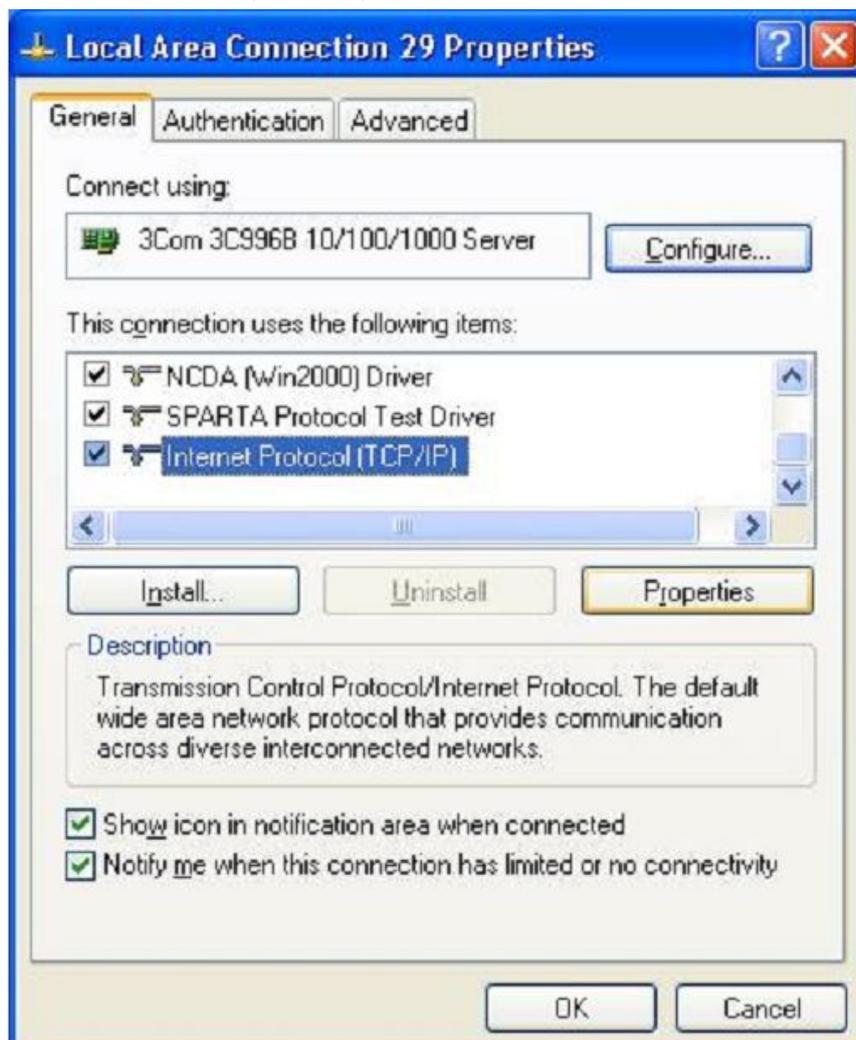
Choose Internet Connection



Choose the Properties of Local Area Connection by clicking the right side of the mouse.



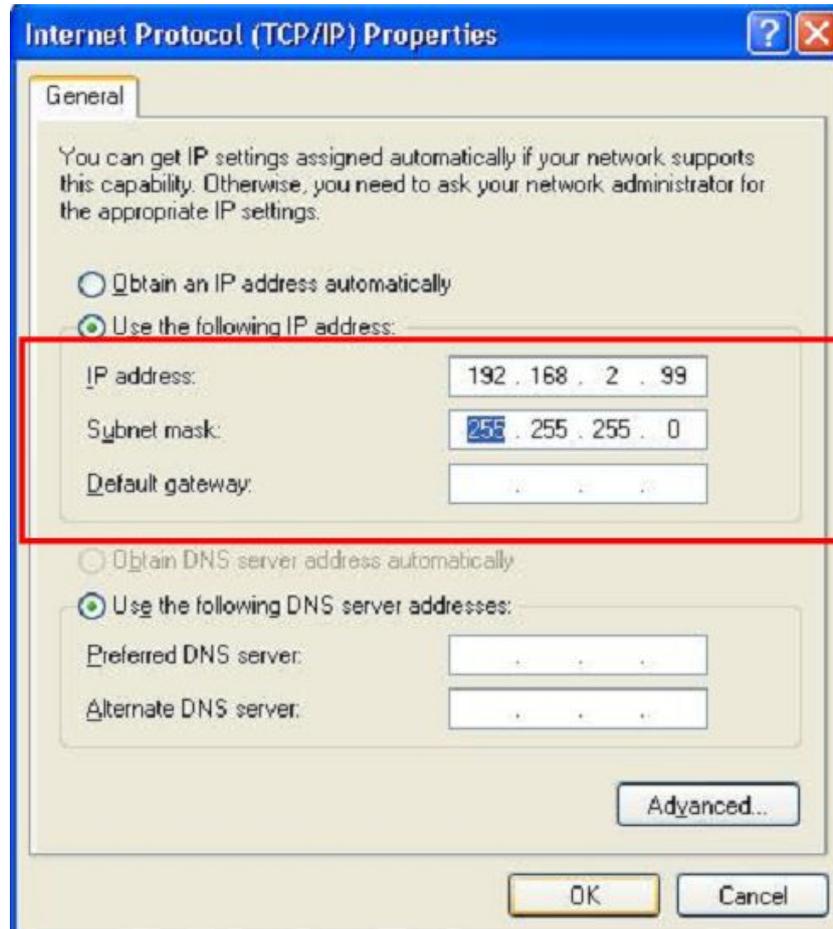
Choose Internet Protocol (TCP/IP)



Use the following IP address:

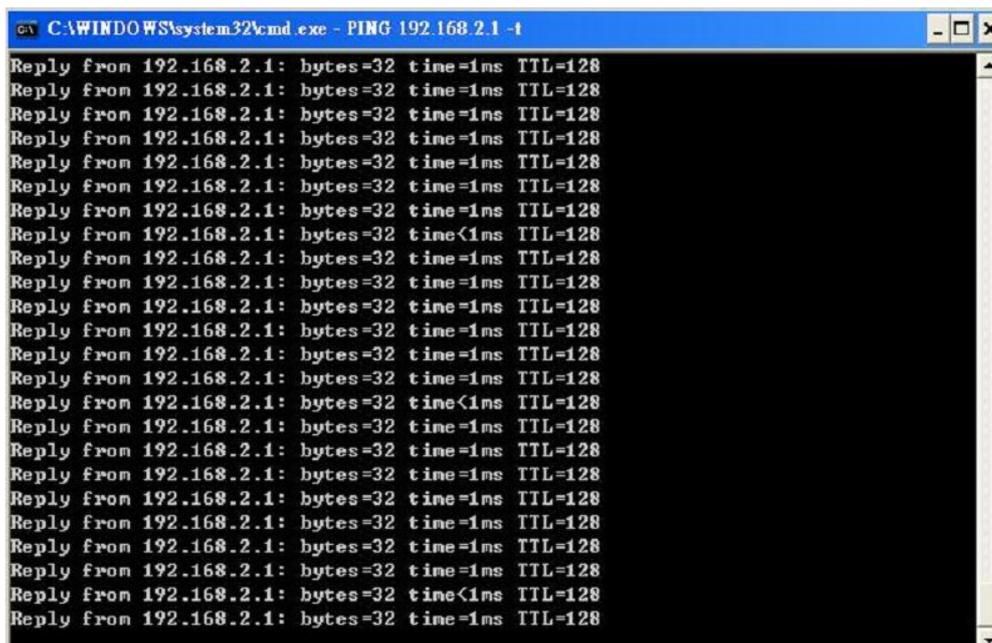
IP address: 192.168.2.X (X: 1~254)

Subnet mask : 255.255.255.0



Check switch IP address

Start→Run→cmd ping 192.168.2.1 -t <enter>

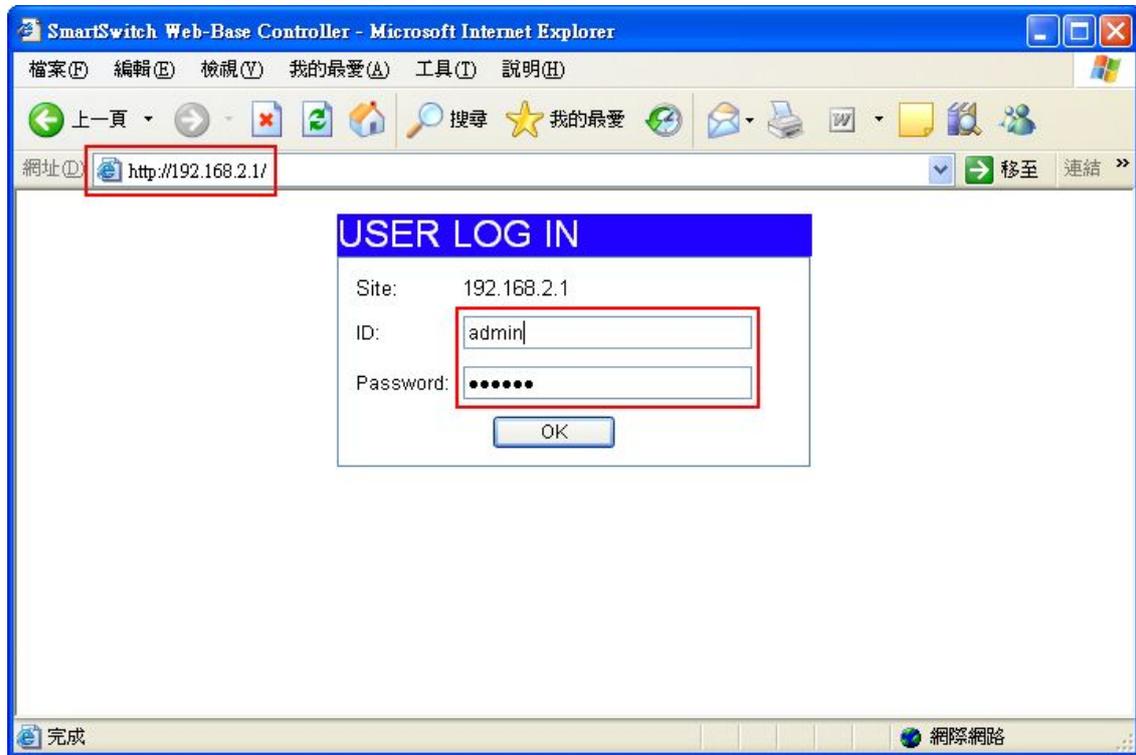


B. Login

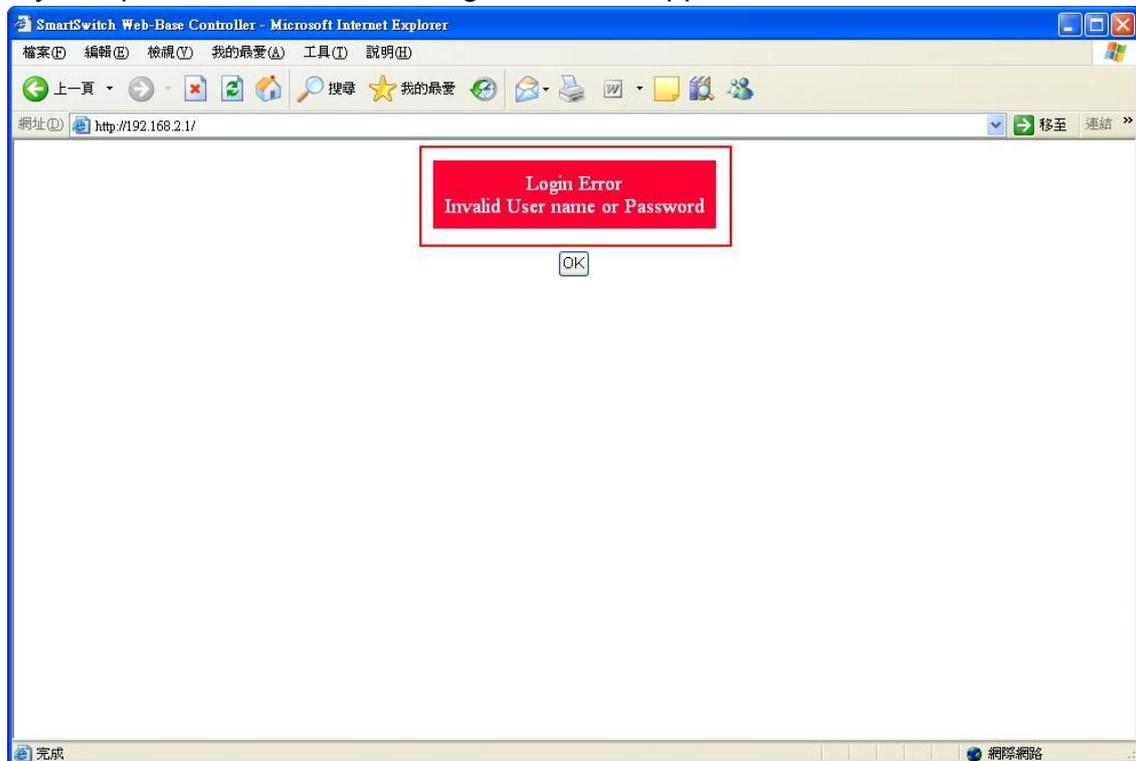
Default IP : 192.168.2.1

Login ID : admin (Lowercase)

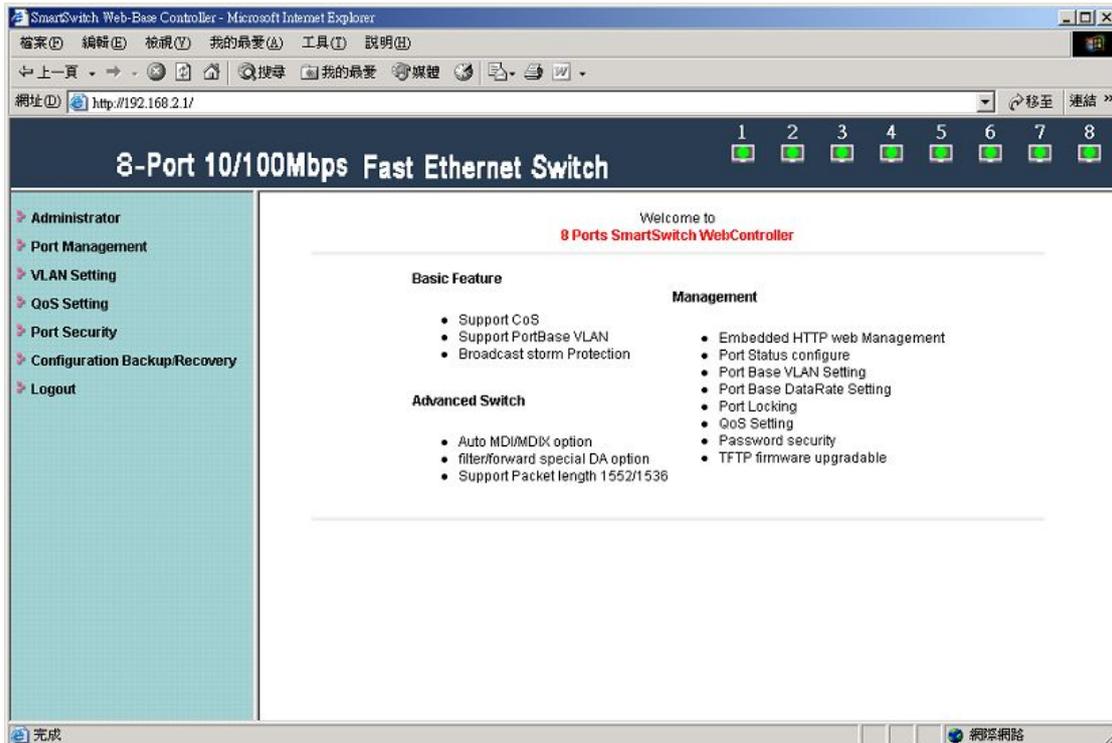
Password : system (Lowercase)



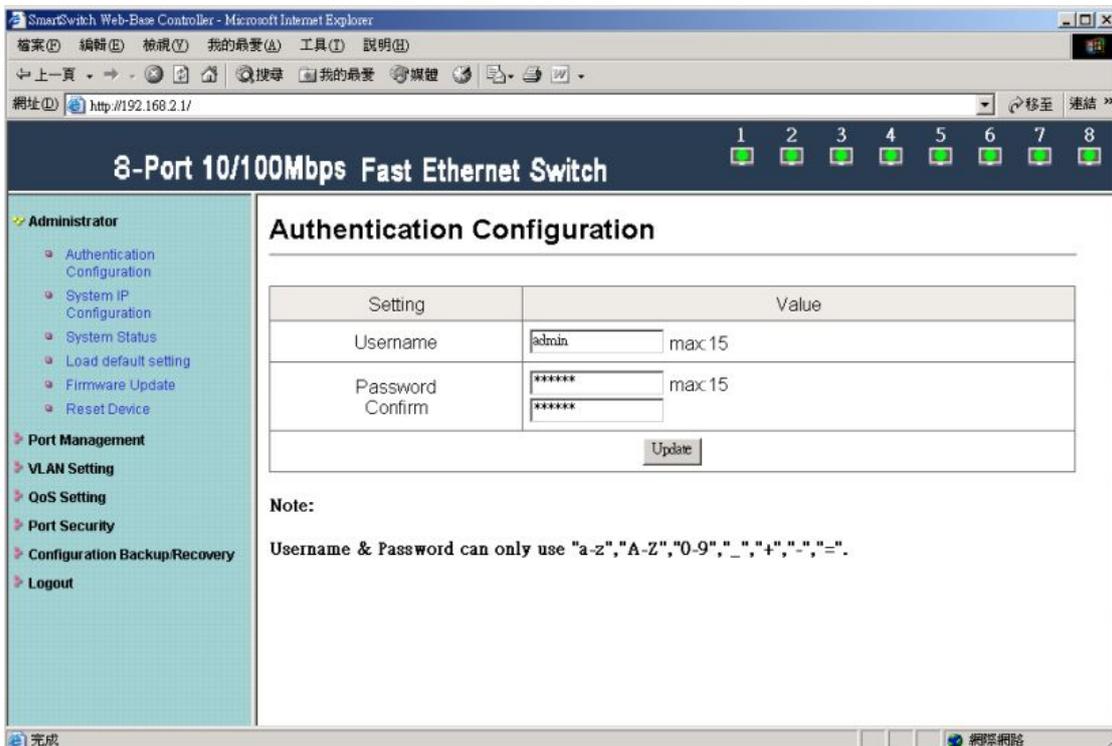
If you input error ID, the following screen will appear.



C. Welcome to 8 Port Smart Switch Web Controller



1.1 Authentication configuration



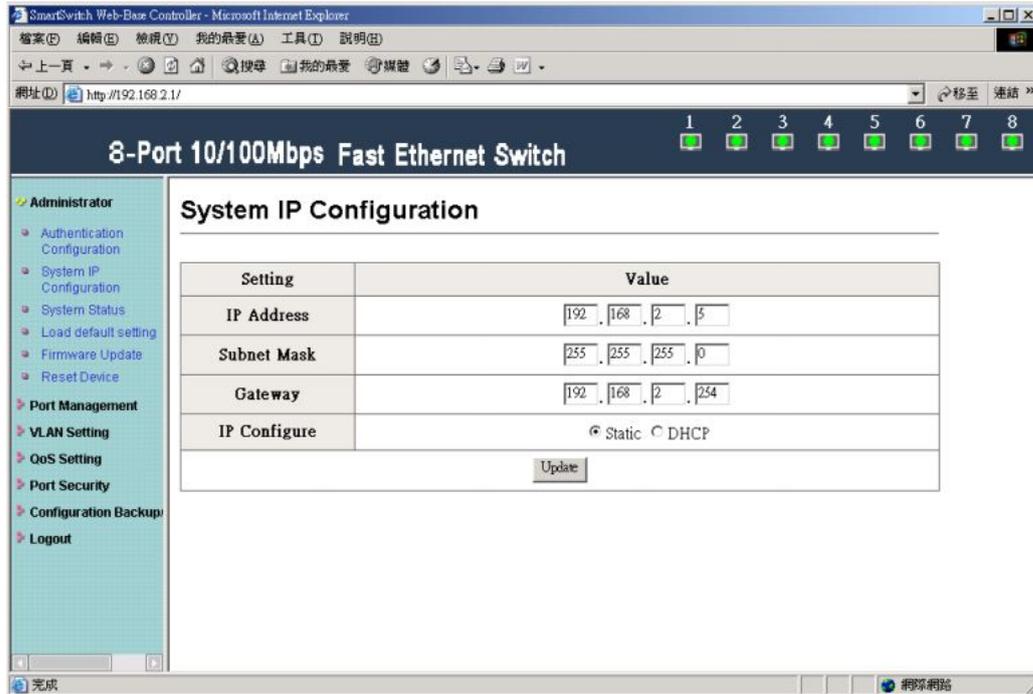
(Username & Password max:15 & can only use a-z,"A-Z","0-9","_","+", "-", "=".)

1.2 System IP Configuration

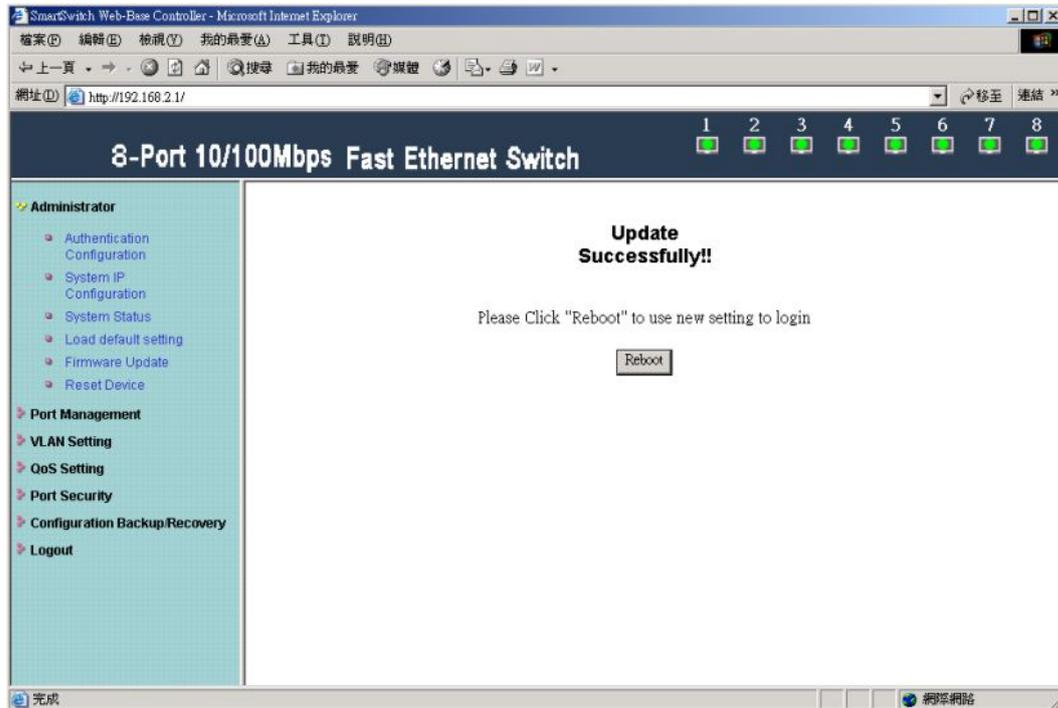
Default IP: 192.168.2.1

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

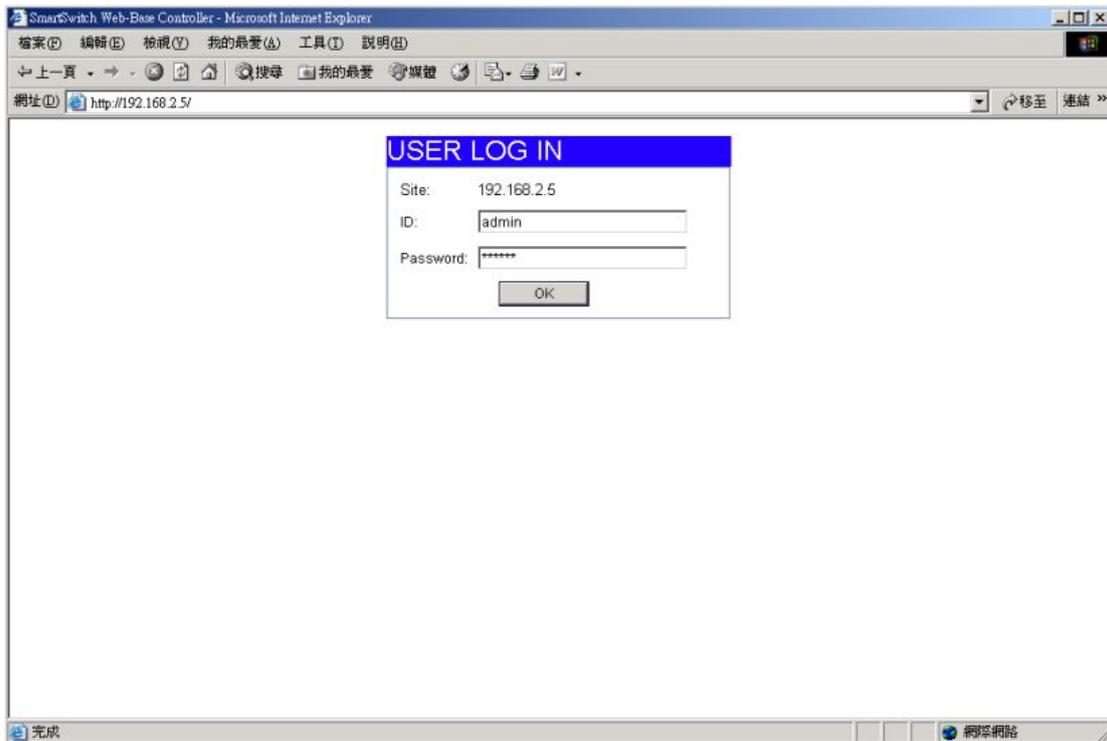
192.168.2.5.



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

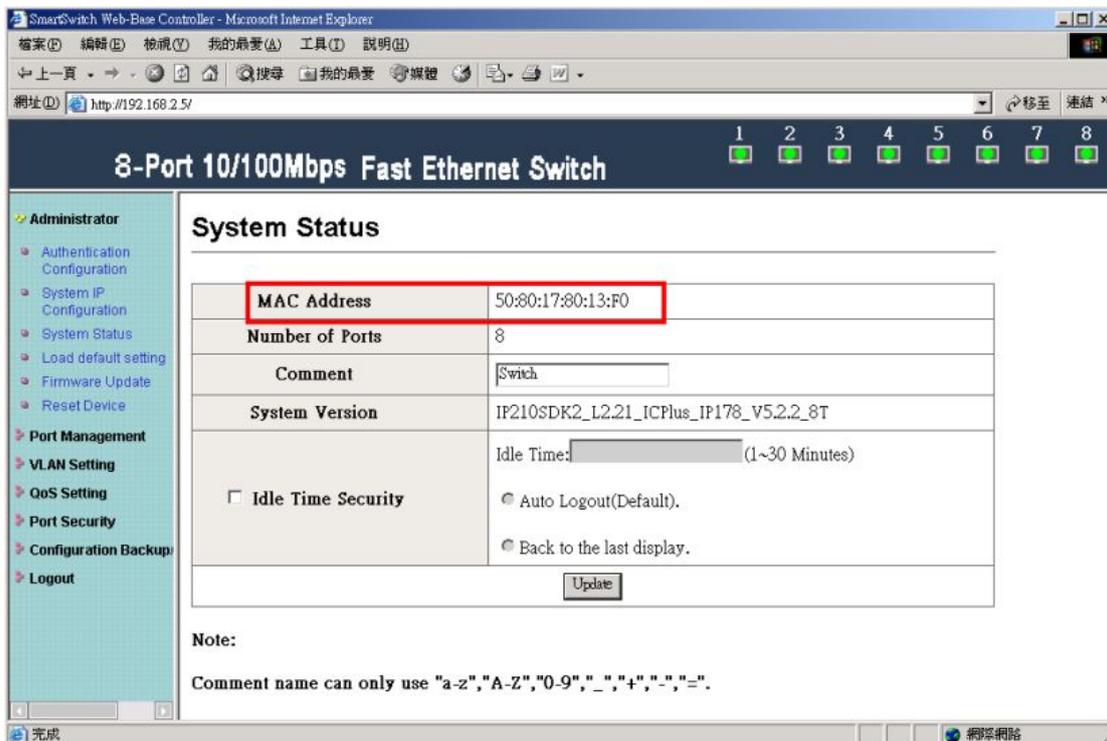


Login in new IP address 192.168.2.5



1.3 System status

This page is used to check the status of switch, including [Switch MAC address](#) and [software version](#).



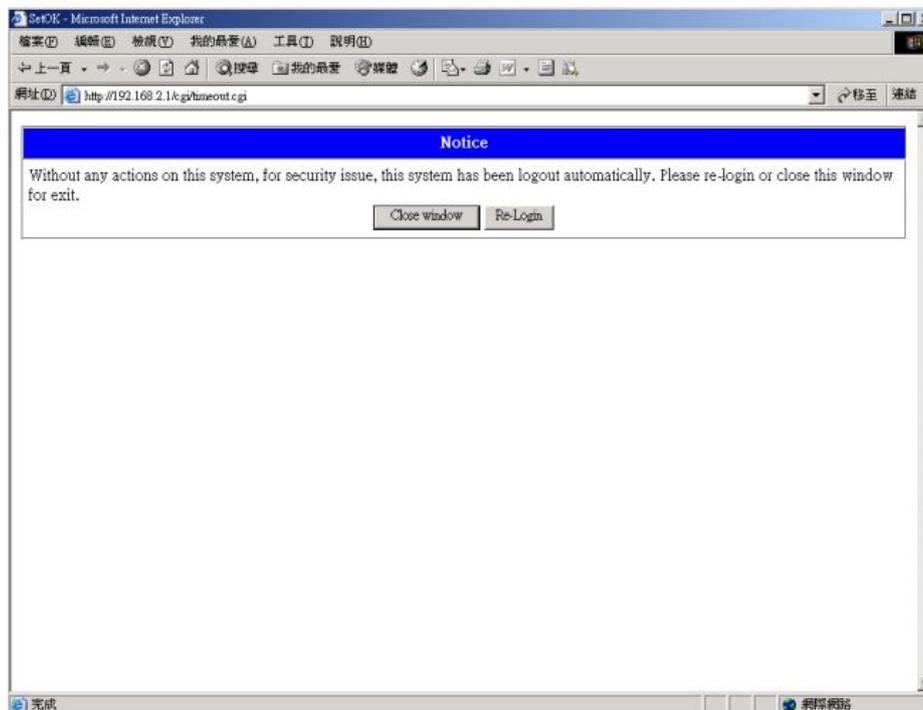
The MAC address and version of .ATC-408 will be shown at system status diagram box. Comment field can accept Aa~Zz, excluding special character.

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 default value.

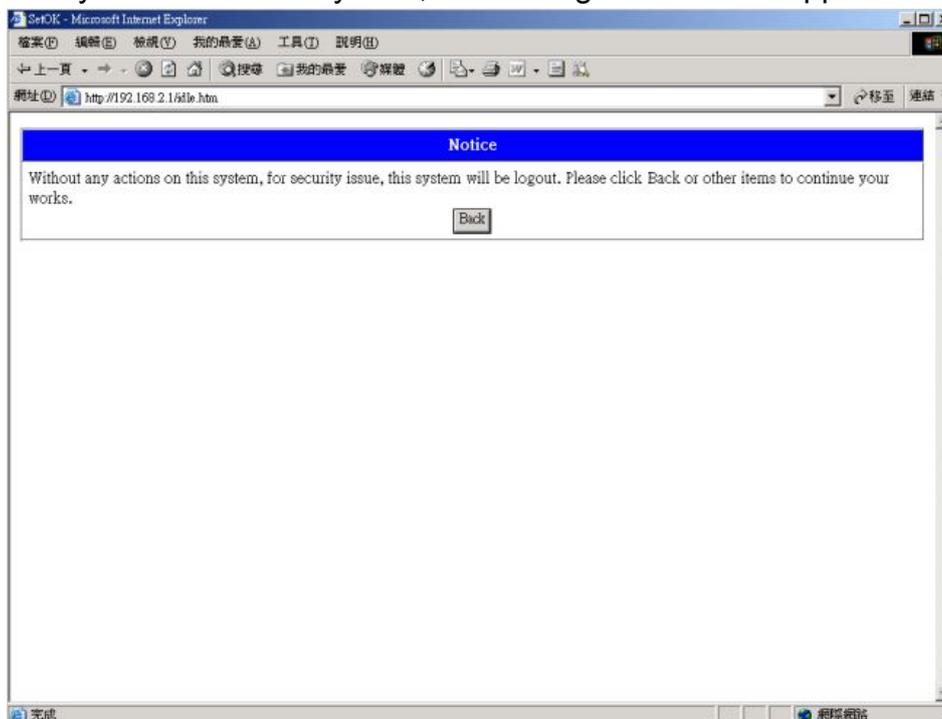
Select Auto Logout (Default).

When idle time expires, following notice will appear.



Select Back to the last display.

Without any actions on this system, back to login screen will appear.



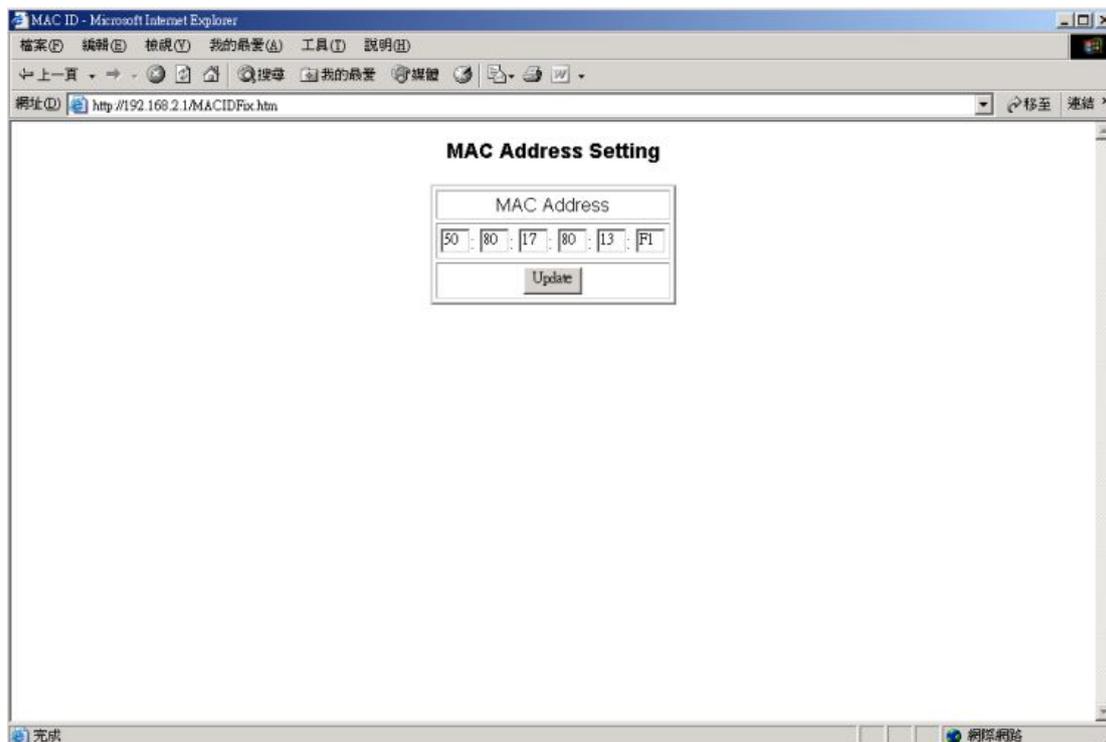
C. MAC address setting

The internet address, <http://192.168.2.1/MACIDFix.htm>, helps user to modify

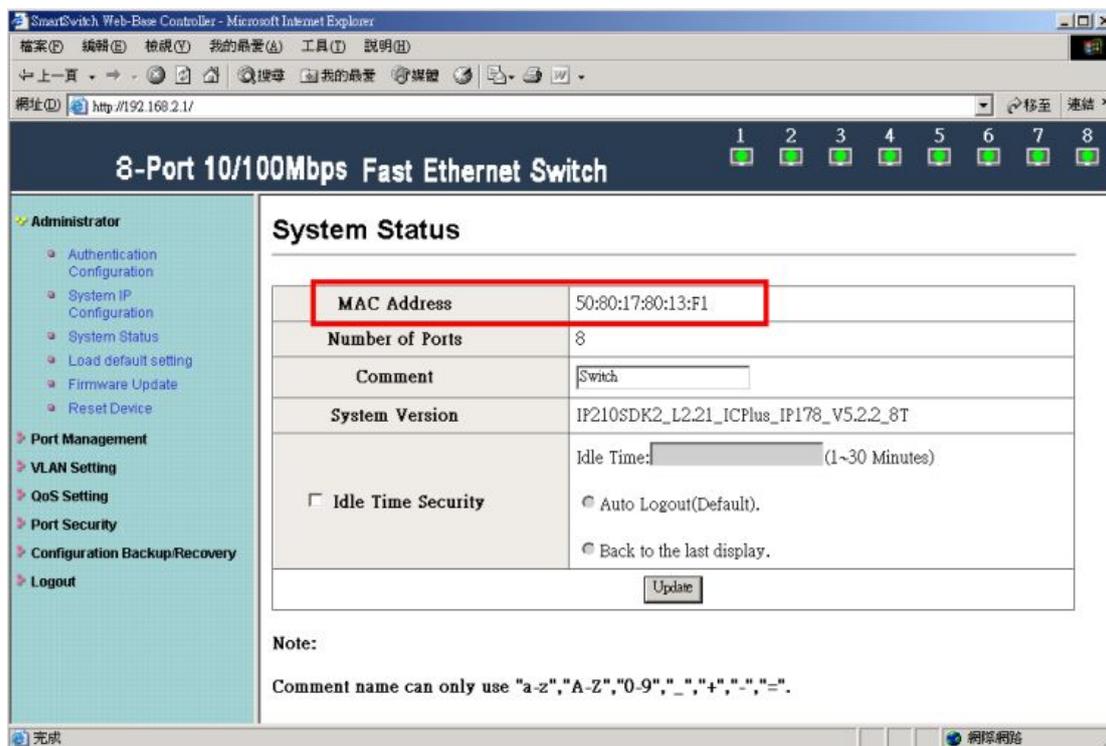
MAC address setting.

For example:

MAC Address, 50:80:17:80:13:F0, is modified as following, 50:80:17:80:13:F1.



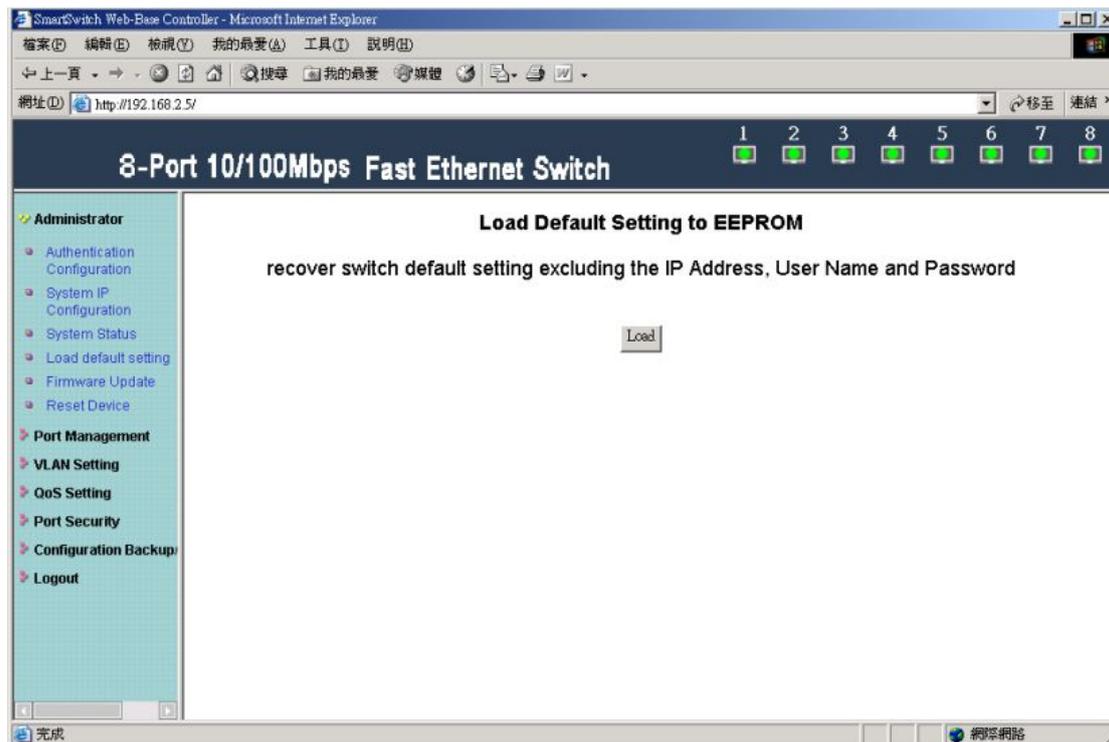
Click Update to get the new MAC address.



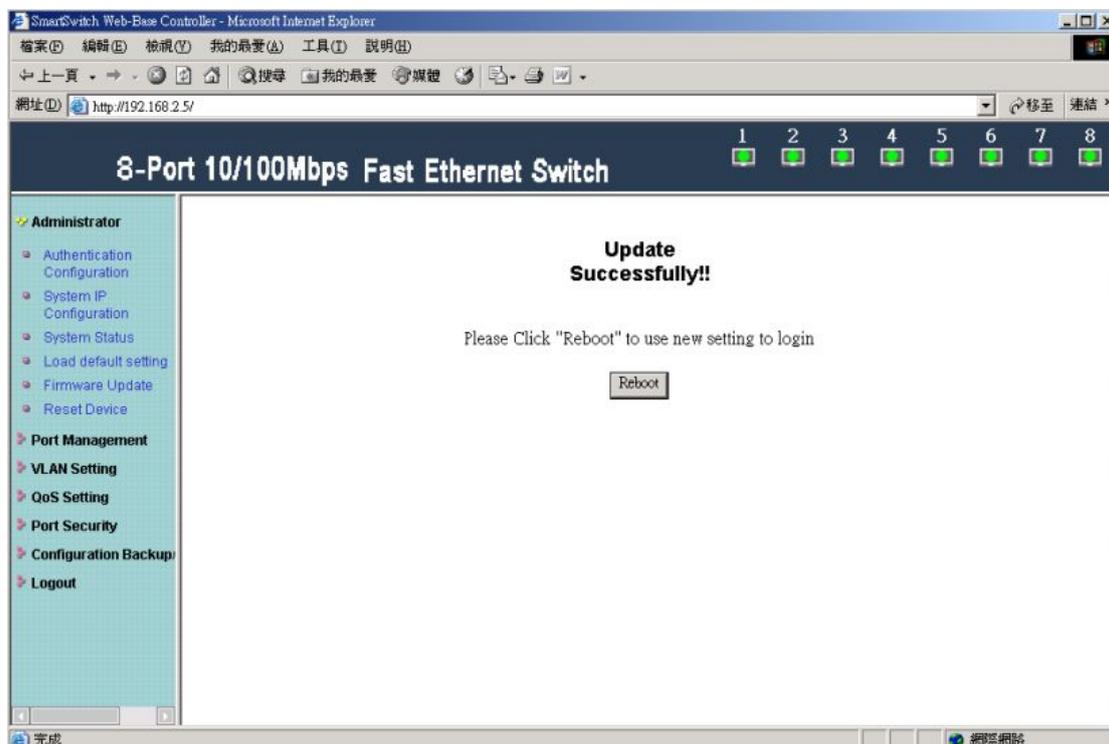
1.4 Load default setting

Clicking the “Load default setting” button will make the switch being set to the

original configuration.



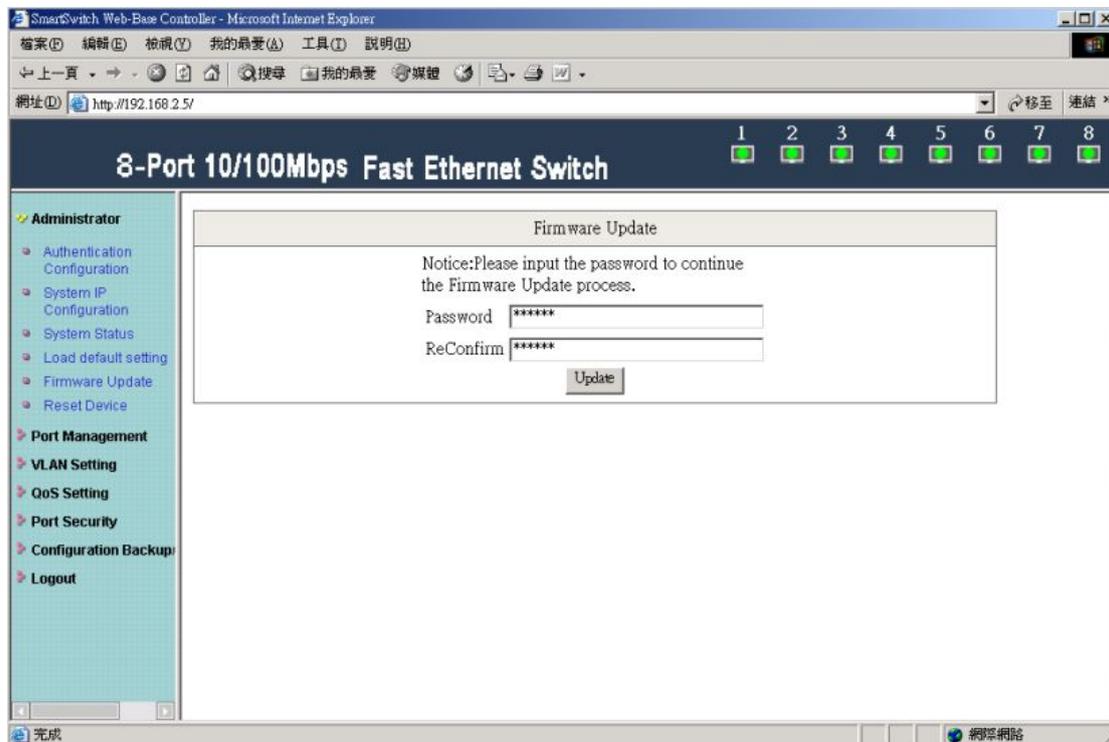
Note: this change only concerns the switch behavior, excluding the change for user name, password and IP configuration.



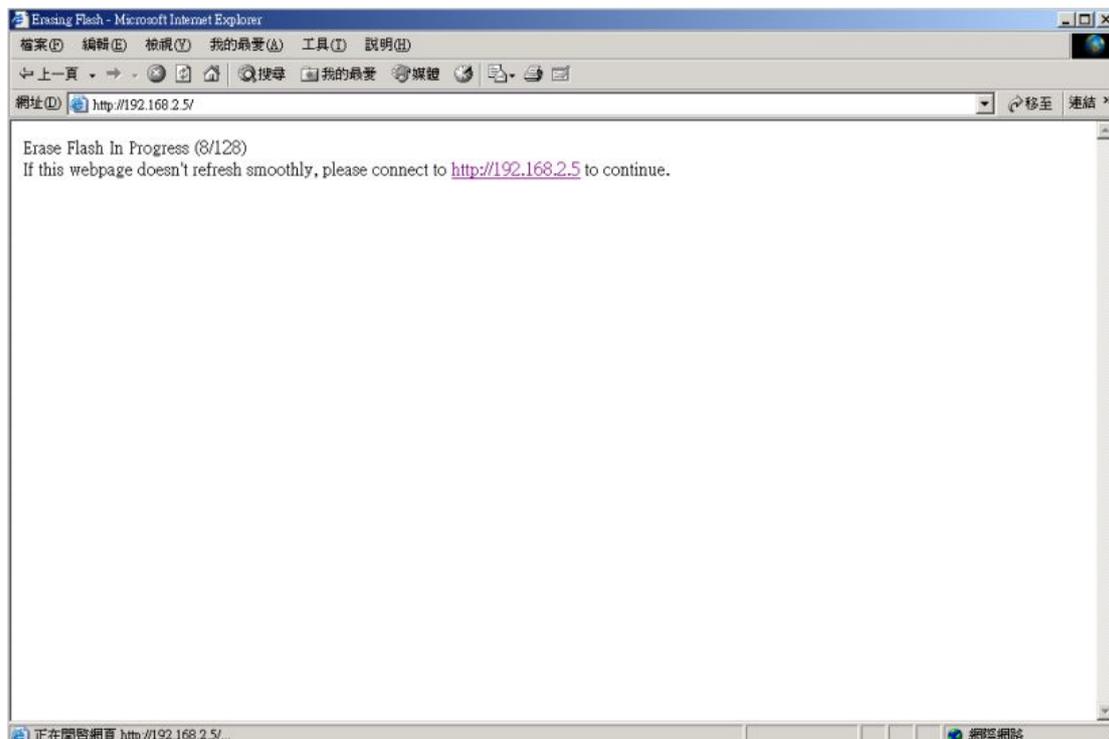
After Completing load process, the "System Setting Saved!!" will appear. Then press "Reset Device" to take effect.

1.5 Firmware update

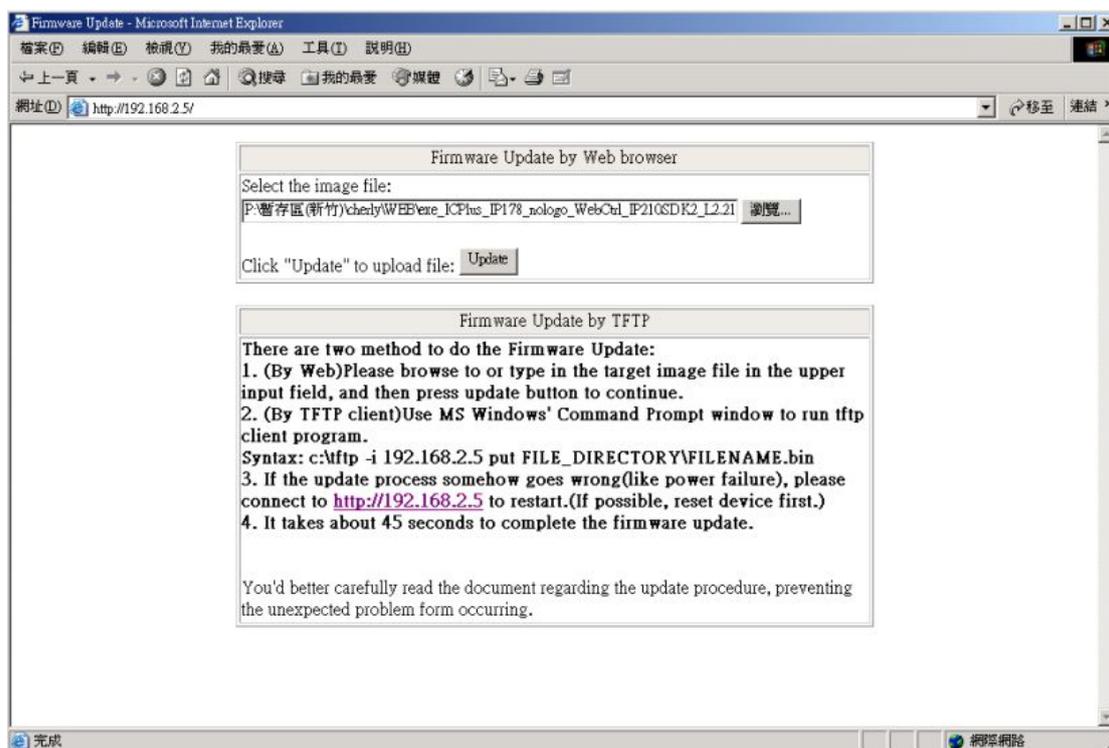
After pressing firmware update button, the switch will erase the older version flash code first. Then enter file name at specific path, and the update will be completed.



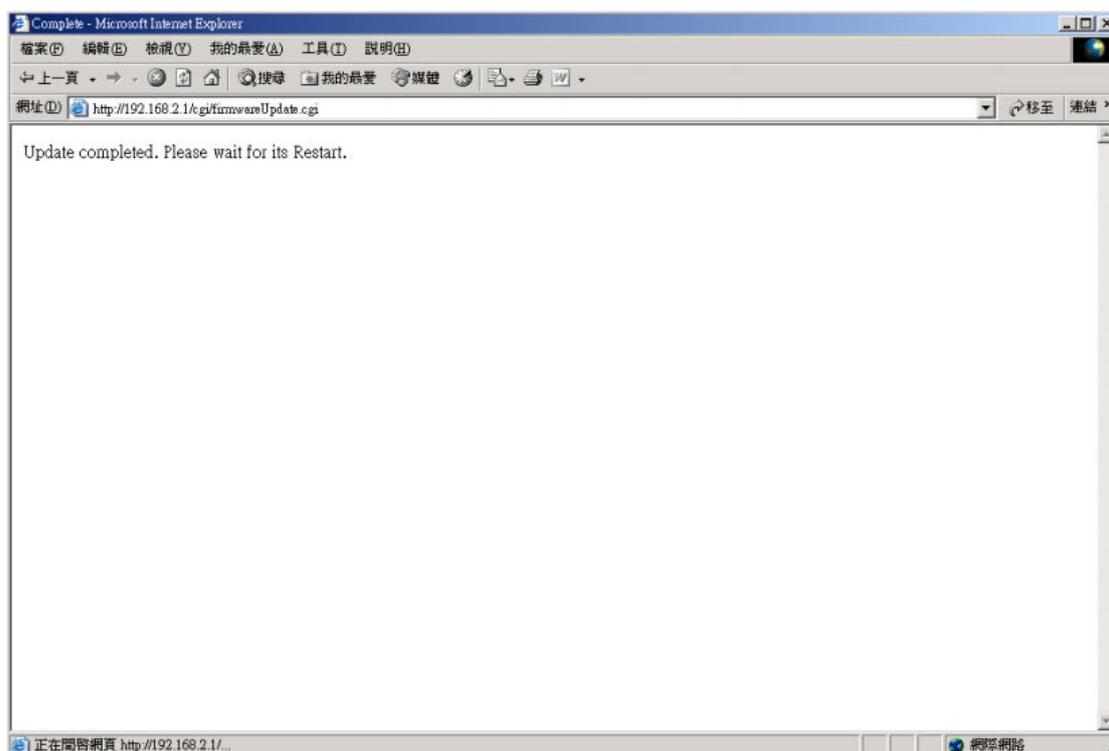
Enter password to execute firmware update process.



After pressing "Update" button, the old web code will be erased.



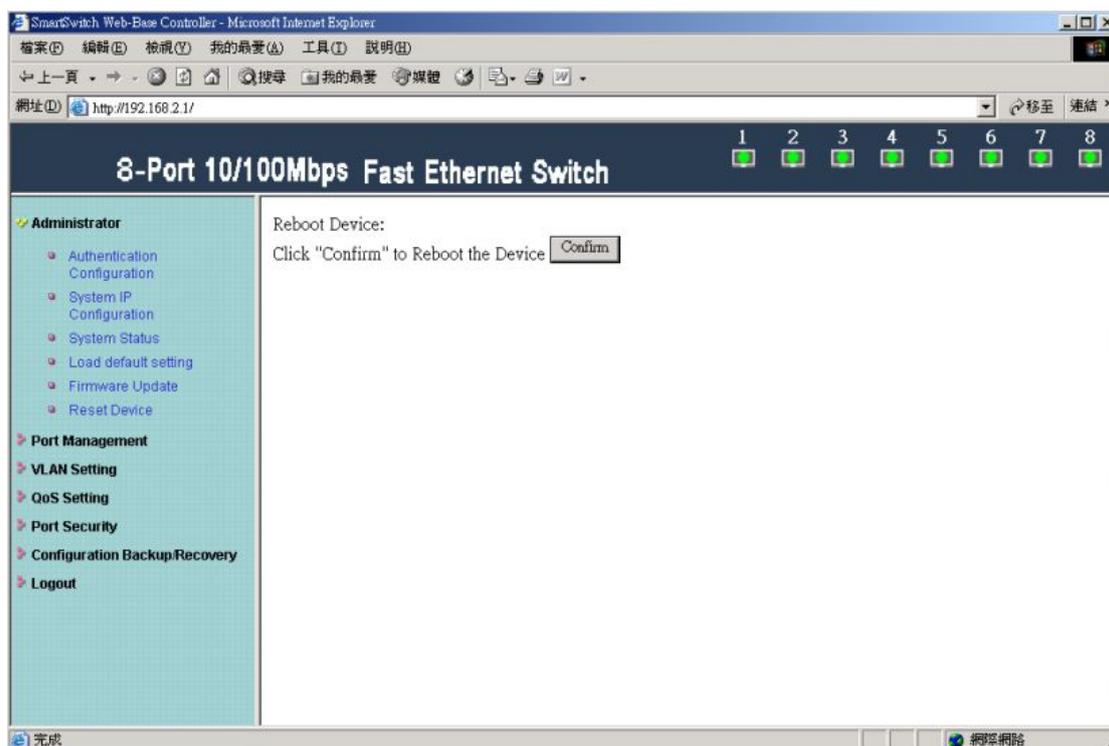
Enter correct path and press “UPDATE” button to complete firmware update process.



Firmware update is finished.

1.6 Reset device

This page is used to reset device.



Press “Confirm” button to take effect for rebooting device.

2 Port Management

2.1 Port configuration

This page allows the user to configure operating mode of the physical port.

Port Control Configuration

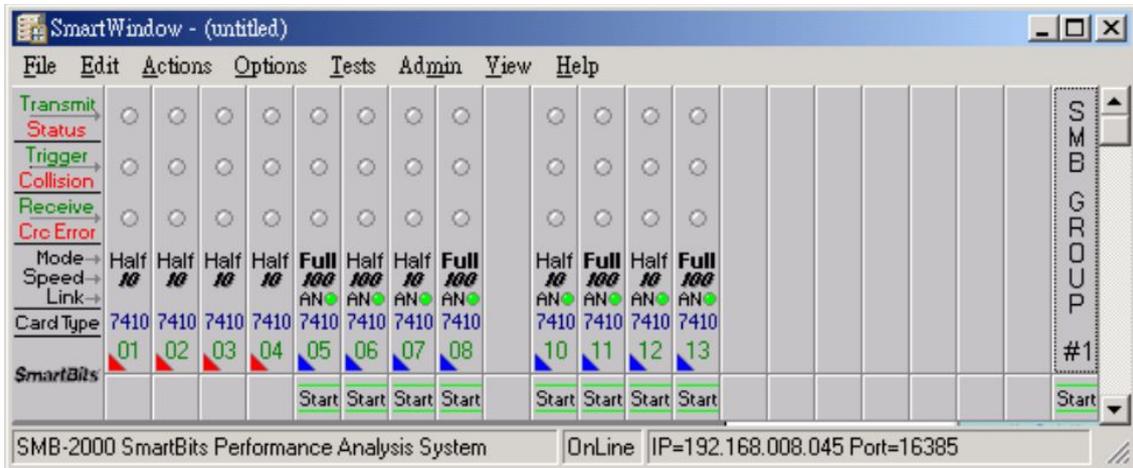
Port No.	Name	Link Capability	Duplex	Port Tx/Rx Ability
1		Auto-Nego.(All Capabilities)	Full	Enable

Note: Port name can only use "a-z","A-Z","0-9","_","+","-","=".

Port	Name	Current Status			Setting Status		
		Link	Speed	Duplex	Capability	Duplex	Port Tx/Rx Ability
1	IC+	●	100Mb	FULL	Auto	---	enable
2	100M-Full	●	100Mb	FULL	Forced 100Mb	FULL	enable
3	abc	●	10Mb	FULL	Forced 10Mb	FULL	enable
4	100M_Half	●	100Mb	HALF	Forced 100Mb	HALF	enable
5	123456789	●	10Mb	HALF	Forced 10Mb	HALF	enable
6	NO==	●	-	-	Auto	---	disable
7		●	-	-	Forced 10Mb	HALF	disable
8		●	100Mb	FULL	Auto	---	enable

After completing the settings, press “Submit” button to take effect.

SMB status



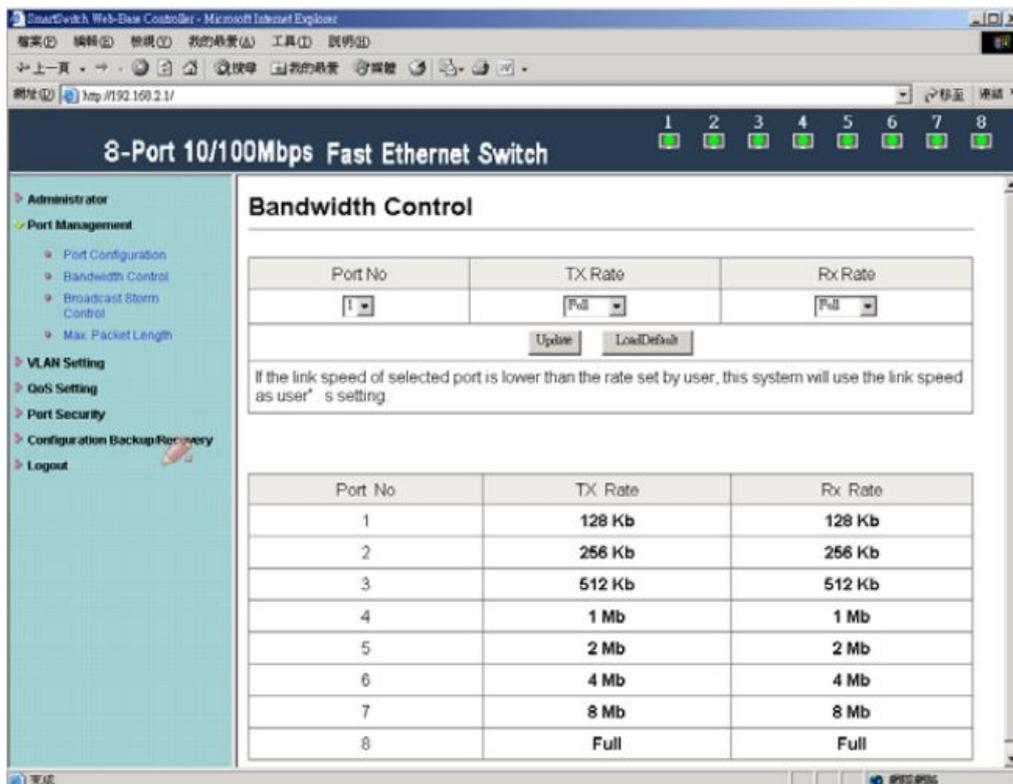
After completing the settings, click update button to take effect. The setting will be reflected at current status window.

2.2 Bandwidth Control

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

Example :

Set Port1→128K、Port2→256K 、Port3→512K 、Port4→1M、Port5→2M 、Port6→4M 、Port7→8M 、Port8→Full



Results :

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

Results : SMB setting : 100M Full, 120m, 60 length , random data

128K TX=16,363(bytes)	128K RX=16,058(bytes)																																																																																																																		
<p>SmartCounters - [Port Counters for 2 ports - (un...)]</p> <table border="1"> <thead> <tr> <th>Ports</th> <th>Rates</th> <th>Rates</th> </tr> <tr> <th></th> <th>21 SX-7410</th> <th>28 SX-7410</th> </tr> </thead> <tbody> <tr><td>21 SX-7410</td><td></td><td></td></tr> <tr><td>22 SX-7410</td><td></td><td></td></tr> <tr><td>23 SX-7410</td><td></td><td></td></tr> <tr><td>24 SX-7410</td><td></td><td></td></tr> <tr><td>25 SX-7410</td><td></td><td></td></tr> <tr><td>26 SX-7410</td><td></td><td></td></tr> <tr><td>27 SX-7410</td><td></td><td></td></tr> <tr><td>28 SX-7410</td><td></td><td></td></tr> <tr><td>Tx Frames</td><td>256</td><td>0</td></tr> <tr><td>Rx Frames</td><td>14</td><td>255</td></tr> <tr><td>Rx Bytes</td><td>897</td><td>16,363</td></tr> <tr><td>Rx Triggers</td><td>0</td><td>255</td></tr> <tr><td>Collisions</td><td>0</td><td>0</td></tr> <tr><td>CRC Errors</td><td>0</td><td>0</td></tr> <tr><td>Alignment Errors</td><td>0</td><td>0</td></tr> <tr><td>OverSize</td><td>0</td><td>0</td></tr> <tr><td>Frag/UnderSize</td><td>0</td><td>0</td></tr> </tbody> </table>	Ports	Rates	Rates		21 SX-7410	28 SX-7410	21 SX-7410			22 SX-7410			23 SX-7410			24 SX-7410			25 SX-7410			26 SX-7410			27 SX-7410			28 SX-7410			Tx Frames	256	0	Rx Frames	14	255	Rx Bytes	897	16,363	Rx Triggers	0	255	Collisions	0	0	CRC Errors	0	0	Alignment Errors	0	0	OverSize	0	0	Frag/UnderSize	0	0	<p>SmartCounters - [Port Counters for 2 ports - (un...)]</p> <table border="1"> <thead> <tr> <th>Ports</th> <th>Rates</th> <th>Rates</th> </tr> <tr> <th></th> <th>21 SX-7410</th> <th>28 SX-7410</th> </tr> </thead> <tbody> <tr><td>21 SX-7410</td><td></td><td></td></tr> <tr><td>22 SX-7410</td><td></td><td></td></tr> <tr><td>23 SX-7410</td><td></td><td></td></tr> <tr><td>24 SX-7410</td><td></td><td></td></tr> <tr><td>25 SX-7410</td><td></td><td></td></tr> <tr><td>26 SX-7410</td><td></td><td></td></tr> <tr><td>27 SX-7410</td><td></td><td></td></tr> <tr><td>28 SX-7410</td><td></td><td></td></tr> <tr><td>Tx Frames</td><td>0</td><td>251</td></tr> <tr><td>Rx Frames</td><td>251</td><td>15</td></tr> <tr><td>Rx Bytes</td><td>16,058</td><td>940</td></tr> <tr><td>Rx Triggers</td><td>251</td><td>0</td></tr> <tr><td>Collisions</td><td>0</td><td>0</td></tr> <tr><td>CRC Errors</td><td>0</td><td>0</td></tr> <tr><td>Alignment Errors</td><td>0</td><td>0</td></tr> <tr><td>OverSize</td><td>0</td><td>0</td></tr> <tr><td>Frag/UnderSize</td><td>0</td><td>0</td></tr> </tbody> </table>	Ports	Rates	Rates		21 SX-7410	28 SX-7410	21 SX-7410			22 SX-7410			23 SX-7410			24 SX-7410			25 SX-7410			26 SX-7410			27 SX-7410			28 SX-7410			Tx Frames	0	251	Rx Frames	251	15	Rx Bytes	16,058	940	Rx Triggers	251	0	Collisions	0	0	CRC Errors	0	0	Alignment Errors	0	0	OverSize	0	0	Frag/UnderSize	0	0
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26 SX-7410																																																																																																																			
27 SX-7410																																																																																																																			
28 SX-7410																																																																																																																			
Tx Frames	497	0																																																																																																																	
Rx Frames	14	496																																																																																																																	
Rx Bytes	906	31,786																																																																																																																	
Rx Triggers	0	496																																																																																																																	
Collisions	0	0																																																																																																																	
CRC Errors	0	0																																																																																																																	
Alignment Errors	0	0																																																																																																																	
OverSize	0	0																																																																																																																	
Frag/UnderSize	0	0																																																																																																																	
Ports	Rates	Rates																																																																																																																	
	22 SX-7410	28 SX-7410																																																																																																																	
21 SX-7410																																																																																																																			
22 SX-7410																																																																																																																			
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27 SX-7410																																																																																																																			
28 SX-7410																																																																																																																			
Tx Frames	0	492																																																																																																																	
Rx Frames	492	14																																																																																																																	
Rx Bytes	31,468	923																																																																																																																	
Rx Triggers	492	0																																																																																																																	
Collisions	0	0																																																																																																																	
CRC Errors	0	0																																																																																																																	
Alignment Errors	0	0																																																																																																																	
OverSize	0	0																																																																																																																	
Frag/UnderSize	0	0																																																																																																																	

512K TX=62,066(bytes)

Ports		Rates	Rates
		23 SX-7410	28 SX-7410
21 SX-7410			
22 SX-7410			
23 SX-7410			
24 SX-7410	Tx Frames	970	0
25 SX-7410	Rx Frames	14	970
26 SX-7410	Rx Bytes	900	62,066
27 SX-7410	Rx Triggers	0	970
28 SX-7410	Collisions	0	0
	CRC Errors	0	0
	Alignment Errors	0	0
	OverSize	0	0
	Frag/UnderSize	0	0

512K RX=59,985(bytes)

Ports		Rates	Rates
		23 SX-7410	28 SX-7410
21 SX-7410			
22 SX-7410			
23 SX-7410			
24 SX-7410	Tx Frames	0	937
25 SX-7410	Rx Frames	937	14
26 SX-7410	Rx Bytes	59,985	882
27 SX-7410	Rx Triggers	937	0
28 SX-7410	Collisions	0	0
	CRC Errors	0	0
	Alignment Errors	0	0
	OverSize	0	0
	Frag/UnderSize	0	0

1M TX=118,145(bytes)

Ports		Rates	Rates
		24 SX-7410	28 SX-7410
21 SX-7410			
22 SX-7410			
23 SX-7410			
24 SX-7410	Tx Frames	1,846	0
25 SX-7410	Rx Frames	14	1,845
26 SX-7410	Rx Bytes	880	118,145
27 SX-7410	Rx Triggers	0	1,845
28 SX-7410	Collisions	0	0
	CRC Errors	0	0
	Alignment Errors	0	0
	OverSize	0	0
	Frag/UnderSize	0	0

1M RX=123,833(bytes)

Ports		Rates	Rates
		24 SX-7410	28 SX-7410
21 SX-7410			
22 SX-7410			
23 SX-7410			
24 SX-7410	Tx Frames	0	1,933
25 SX-7410	Rx Frames	1,935	14
26 SX-7410	Rx Bytes	123,833	928
27 SX-7410	Rx Triggers	1,935	0
28 SX-7410	Collisions	0	0
	CRC Errors	0	0
	Alignment Errors	0	0
	OverSize	0	0
	Frag/UnderSize	0	0

2M TX=231,687(bytes)

Ports		Rates	Rates
		25 SX-7410	28 SX-7410
21 SX-7410			
22 SX-7410			
23 SX-7410			
24 SX-7410	Tx Frames	3,619	0
25 SX-7410	Rx Frames	14	3,620
26 SX-7410	Rx Bytes	866	231,687
27 SX-7410	Rx Triggers	0	3,620
28 SX-7410	Collisions	0	0
	CRC Errors	0	0
	Alignment Errors	0	0
	OverSize	0	0
	Frag/UnderSize	0	0

2M RX=228,343 (bytes)

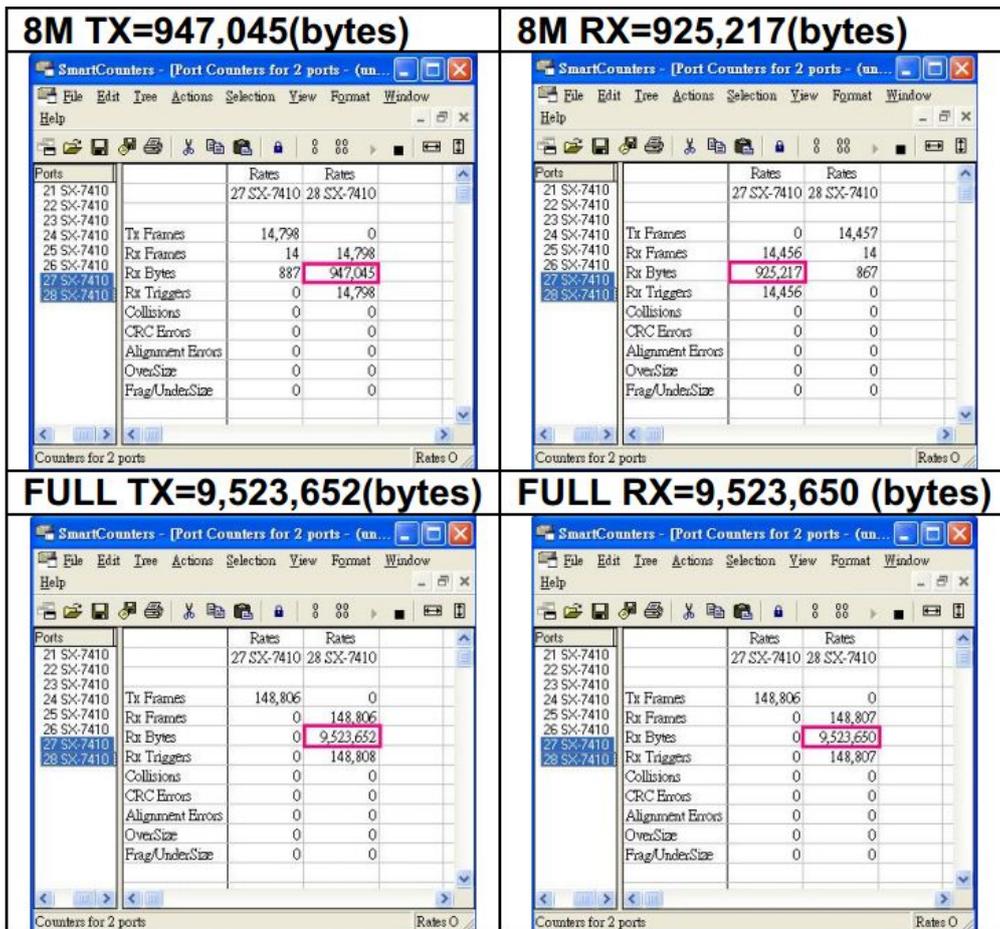
Ports		Rates	Rates
		25 SX-7410	28 SX-7410
21 SX-7410			
22 SX-7410			
23 SX-7410			
24 SX-7410	Tx Frames	0	3,568
25 SX-7410	Rx Frames	3,568	13
26 SX-7410	Rx Bytes	228,343	856
27 SX-7410	Rx Triggers	3,568	0
28 SX-7410	Collisions	0	0
	CRC Errors	0	0
	Alignment Errors	0	0
	OverSize	0	0
	Frag/UnderSize	0	0

4M TX=460,178(bytes)

Ports		Rates	Rates
		26 SX-7410	28 SX-7410
21 SX-7410			
22 SX-7410			
23 SX-7410			
24 SX-7410	Tx Frames	7,075	0
25 SX-7410	Rx Frames	13	7,183
26 SX-7410	Rx Bytes	813	460,178
27 SX-7410	Rx Triggers	0	7,190
28 SX-7410	Collisions	0	0
	CRC Errors	0	0
	Alignment Errors	0	0
	OverSize	0	0
	Frag/UnderSize	0	0

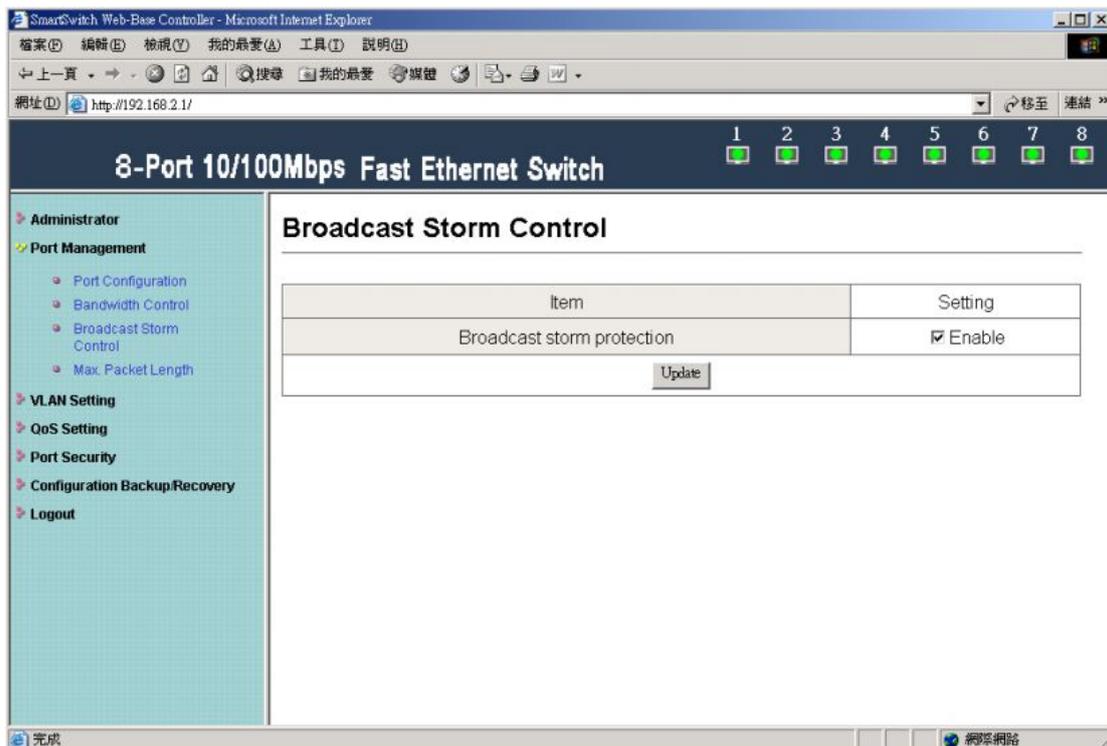
4M RX=472,520(bytes)

Ports		Rates	Rates
		26 SX-7410	28 SX-7410
21 SX-7410			
22 SX-7410			
23 SX-7410			
24 SX-7410	Tx Frames	0	7,382
25 SX-7410	Rx Frames	7,383	13
26 SX-7410	Rx Bytes	472,520	885
27 SX-7410	Rx Triggers	7,383	0
28 SX-7410	Collisions	0	0
	CRC Errors	0	0
	Alignment Errors	0	0
	OverSize	0	0
	Frag/UnderSize	0	0

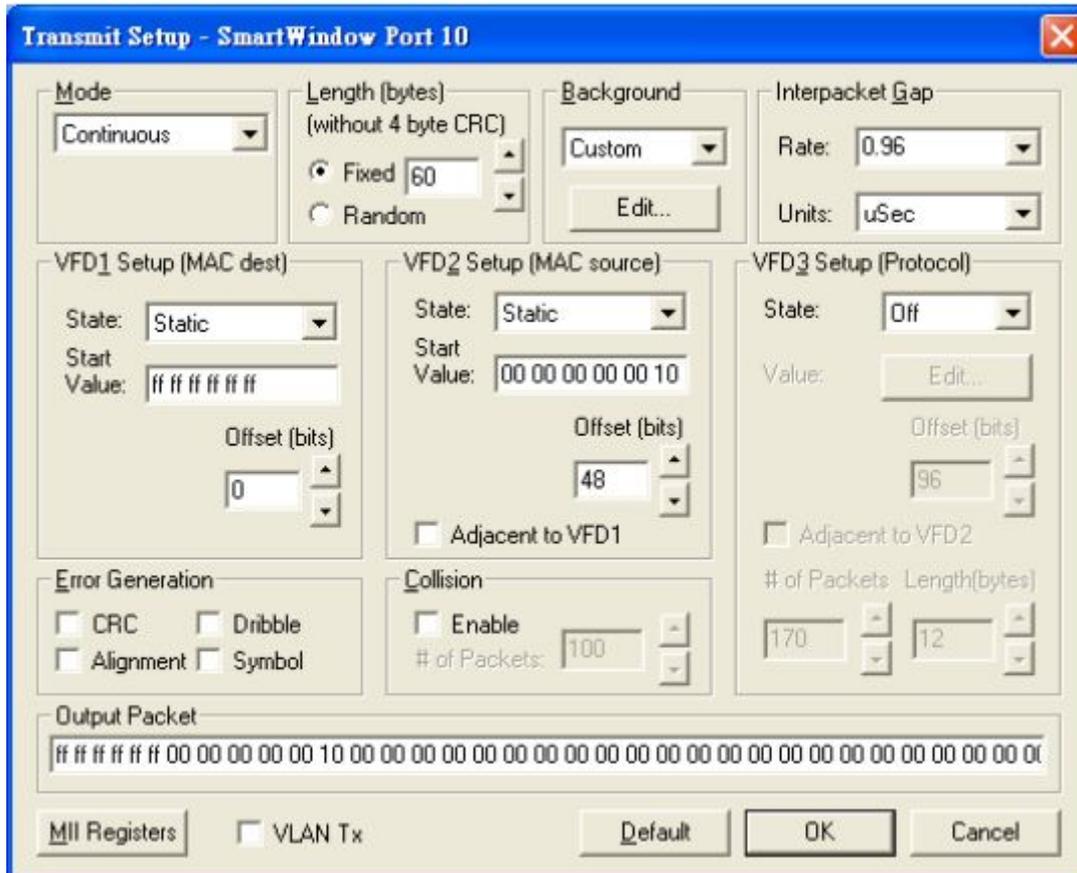


2.3 Broadcast Storm Control

IP178C/IP178CH drops the incoming packet if the number of broadcast packet in queue is over the threshold.



SMB setting:



Results:

A Broadcast Storm Control = **Disable**

All Ports	Events	Events							
	01 SX-7410	02 SX-7410	03 SX-7410	04 SX-7410	05 SX-7410	06 SX-7410	07 SX-7410	08 SX-7410	
Tx Frames	1,000	0	0	0	0	0	0	0	
Rx Frames	0	1,000	1,000	1,000	1,000	1,000	1,000	1,000	
Rx Bytes	0	793,979	793,979	793,979	793,979	793,979	793,979	793,979	
Rx Triggers	0	0	0	0	0	0	0	0	
Collisions	0	0	0	0	0	0	0	0	
CRC Errors	0	0	0	0	0	0	0	0	
Alignment Errors	0	0	0	0	0	0	0	0	
OverSize	0	0	0	0	0	0	0	0	
Frag/UnderSize	0	0	0	0	0	0	0	0	

B Broadcast Storm Control = **Enable**

	Events							
	01 SX-7410	02 SX-7410	03 SX-7410	04 SX-7410	05 SX-7410	06 SX-7410	07 SX-7410	08 SX-7410
Tx Frames	1,000	0	0	0	0	0	0	0
Rx Frames	0	316	316	316	316	316	316	316
Rx Bytes	0	20,224	20,224	20,224	20,224	20,224	20,224	20,224
Rx Triggers	0	0	0	0	0	0	0	0
Collisions	0	0	0	0	0	0	0	0
CRC Errors	0	0	0	0	0	0	0	0
Alignment Errors	0	0	0	0	0	0	0	0
OverSize	0	0	0	0	0	0	0	0
Frag/UnderSize	0	0	0	0	0	0	0	0

2.4 Max Packet length

Two kinds of max packet length, 1536 / 1552 Bytes

A Packet Length (Bytes):1536(default)

8-Port 10/100Mbps Fast Ethernet Switch

Administrator

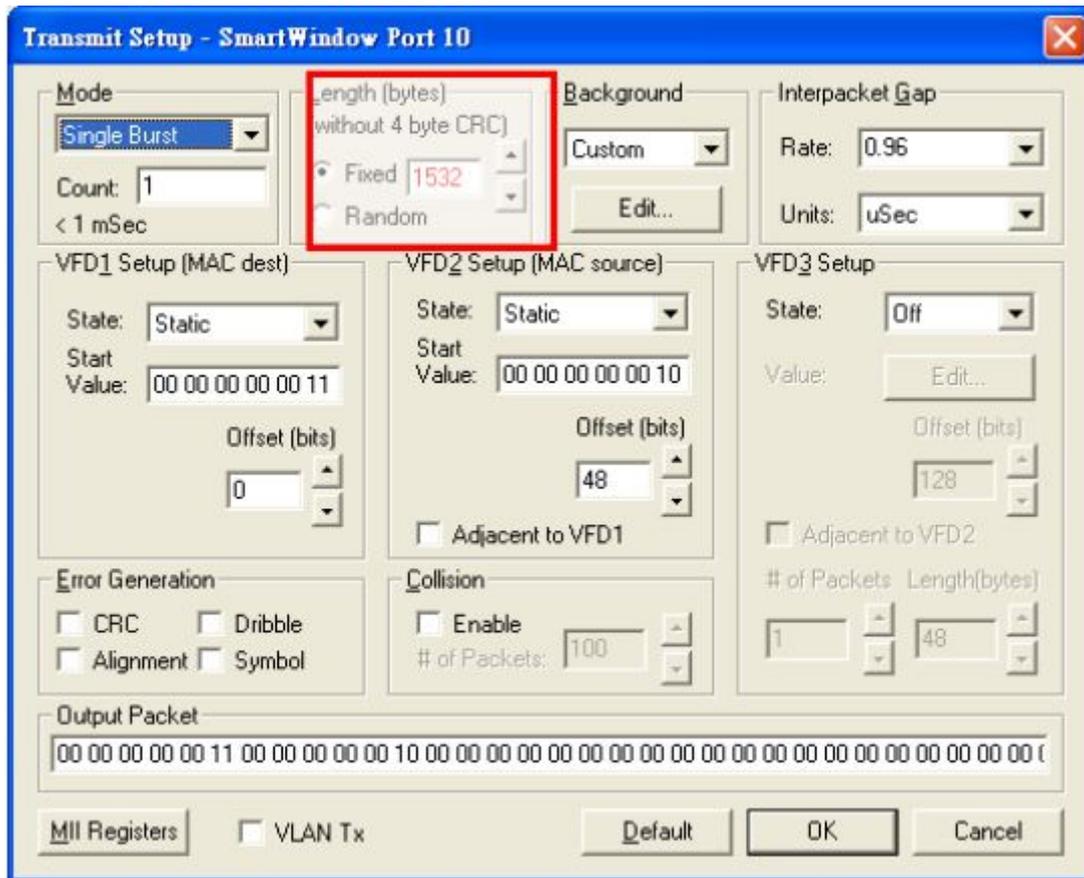
- Port Management
 - Port Configuration
 - Bandwidth Control
 - Broadcast Storm Control
 - Max. Packet Length
- VLAN Setting
- QoS Setting
- Port Security
- Configuration Backup/Recovery
- Logout

Max Packet Length

Item	Setting
Packet Length (Bytes)	<input checked="" type="radio"/> 1536 (default) <input type="radio"/> 1552

Update

SMB setting: set length 1532 bytes because CRC packets occupy 4 byte.



Following chart shows packet length.

Oversize packet length will appear in Oversize column.

The screenshot shows the 'SmartCounters - [Port Counters for 8 ports - (untitled)*]' window. The table displays statistics for 8 ports (10 SX-7410 to 17 SX-7410). The 'Rx Bytes' value for port 11 SX-7410 is circled in red and shows '1,536'. The 'OverSize' column shows a value of 1 for port 11 SX-7410.

Ports		Events	Events	Events	Events
		10 SX-7410	11 SX-7410	12 SX-7410	13 SX-7410
10 SX-7410					
11 SX-7410					
12 SX-7410					
13 SX-7410	Tx Frames	1	0	0	0
14 SX-7410	Rx Frames	0	0	0	0
15 SX-7410	Rx Bytes	0	1,536	0	0
16 SX-7410	Rx Triggers	0	0	0	0
17 SX-7410	Collisions	0	0	0	0
	CRC Errors	0	0	0	0
	Alignment Errors	0	0	0	0
	OverSize	0	1	0	0
	Frag/UnderSize	0	0	0	0

SmartCounters - [Port Counters for 8 ports - (untitled)*]

File Edit Tree Actions Selection View Format Window Help

Ports		Events	Events	Events	Events
10 SX-7410		10 SX-7410	11 SX-7410	12 SX-7410	13 SX-7410
11 SX-7410					
12 SX-7410					
13 SX-7410	Tx Frames	1	0	0	0
14 SX-7410	Rx Frames	0	0	0	0
15 SX-7410	Rx Bytes	0	1,552	0	0
16 SX-7410	Rx Triggers	0	0	0	0
17 SX-7410	Collisions	0	0	0	0
	CRC Errors	0	0	0	0
	Alignment Errors	0	0	0	0
	OverSize	0	1	0	0
	Frag/UnderSize	0	0	0	0

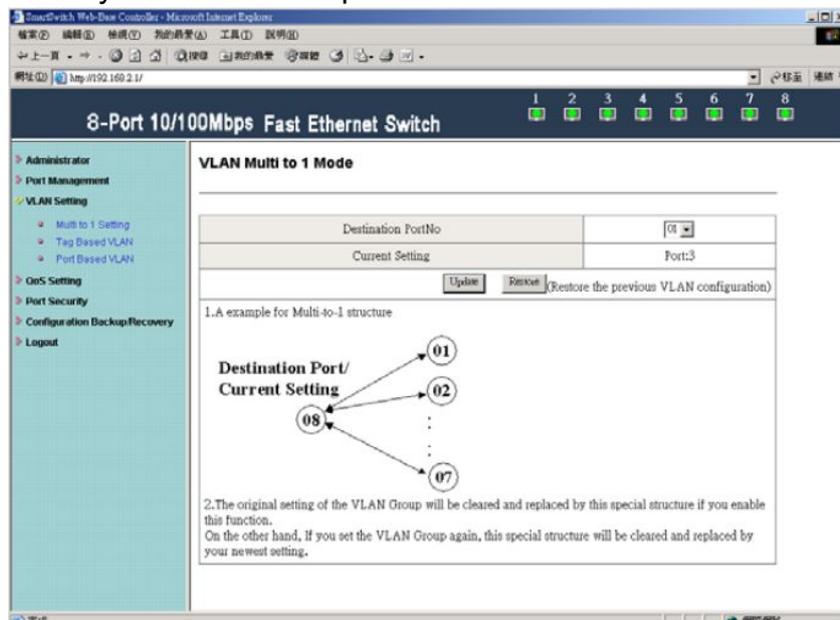
Counters for 8 ports Events Only

3 VLAN Setting

3.1 Multi to 1 Setting

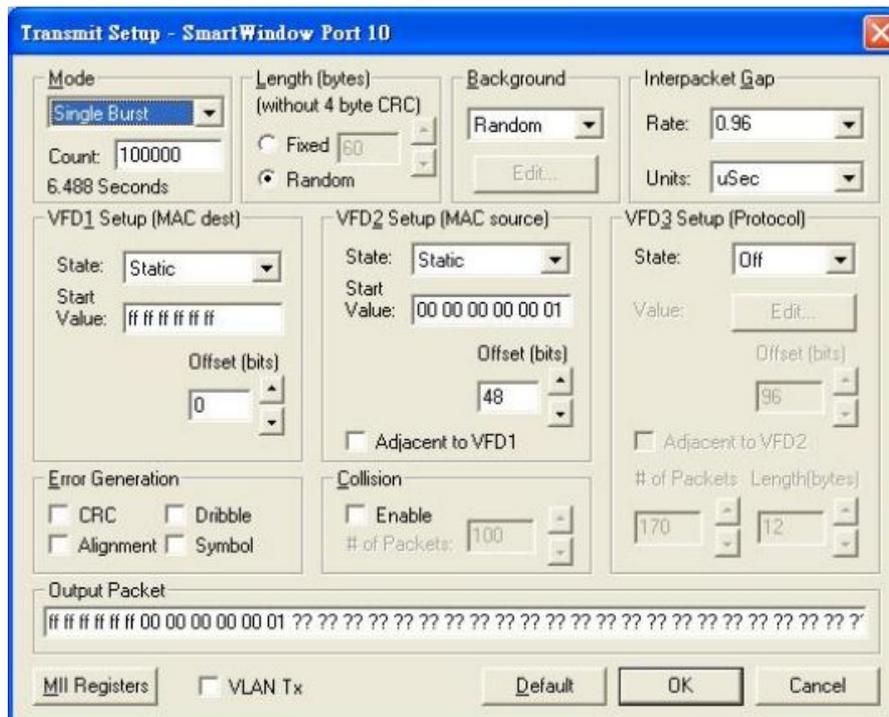
Enable Multi to 1 setting will force Tag Based VLAN and Port Based VLAN function to be disabled.

Set a specific port as an exporting port. Other ports can't transmit and receive packets and only the destination port can.



Example:

Set port 3 as the destination port. When port 0~port 7 transmit packets, only port 3 will receive packets. SMB setting: 100M Full / Flow control=ON



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

Ports	Events	Events	Events	Events	Events	Events	Events	Events	Events
	10 SX-7410	11 SX-7410	12 SX-7410	13 SX-7410	14 SX-7410	15 SX-7410	16 SX-7410	17 SX-7410	
Tx Frames	100,000	100,000	0	100,000	100,000	100,000	100,000	100,000	
Rx Frames	54,454	54,432	700,000	54,450	54,452	54,452	54,454	54,434	
Rx Bytes	3,485,056	3,483,648	553,520,599	3,484,800	3,484,928	3,484,928	3,485,056	3,483,776	
Rx Triggers	0	0	700,000	0	0	0	0	0	
Collisions	0	0	0	0	0	0	0	0	
CRC Errors	0	0	0	0	0	0	0	0	
Alignment Errors	0	0	0	0	0	0	0	0	
OverSize	0	0	0	0	0	0	0	0	
Frag/UnderSize	0	0	0	0	0	0	0	0	

Port 3 transmits broadcast packets and Rx Bytes of port 1~port8 (excluding port 3) receive packets from port 3.

Ports	Events								
	10 SX-7410	11 SX-7410	12 SX-7410	13 SX-7410	14 SX-7410	15 SX-7410	16 SX-7410	17 SX-7410	
Tx Frames	0	0	100,000	0	0	0	0	0	0
Rx Frames	100,000	100,000	10,554	100,000	100,000	100,000	100,000	100,000	100,000
Rx Bytes	79,057,028	79,057,028	675,456	79,057,028	79,057,028	79,057,028	79,057,028	79,057,028	79,057,028
Rx Triggers	100,000	100,000	0	100,000	100,000	100,000	100,000	100,000	100,000
Collisions	0	0	0	0	0	0	0	0	0
CRC Errors	0	0	0	0	0	0	0	0	0
Alignment Errors	0	0	0	0	0	0	0	0	0
OverSize	0	0	0	0	0	0	0	0	0
Frag/UnderSize	0	0	0	0	0	0	0	0	0

3.2 Tag Based VLAN

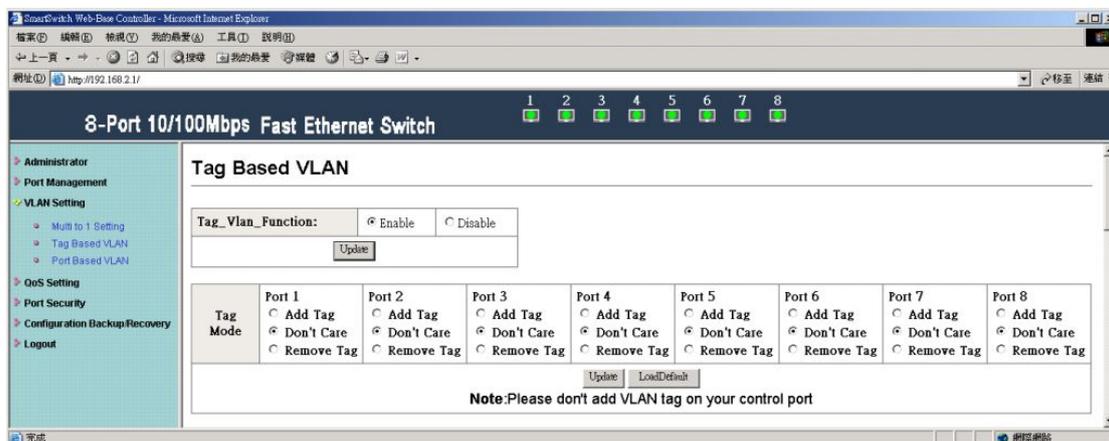
Tag Based VLAN function can't be enabled unless turning off Multi to 1 setting and Port Based VLAN function, meaning load default setting.

Enable Tag Based VLAN function before use, or warning message will appear.



A Set Add Tag / Don't Care / Remove Tag function for port 1~port 8.

(Note: Please don't add VLAN tag on your control port)



Setting as following:

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:

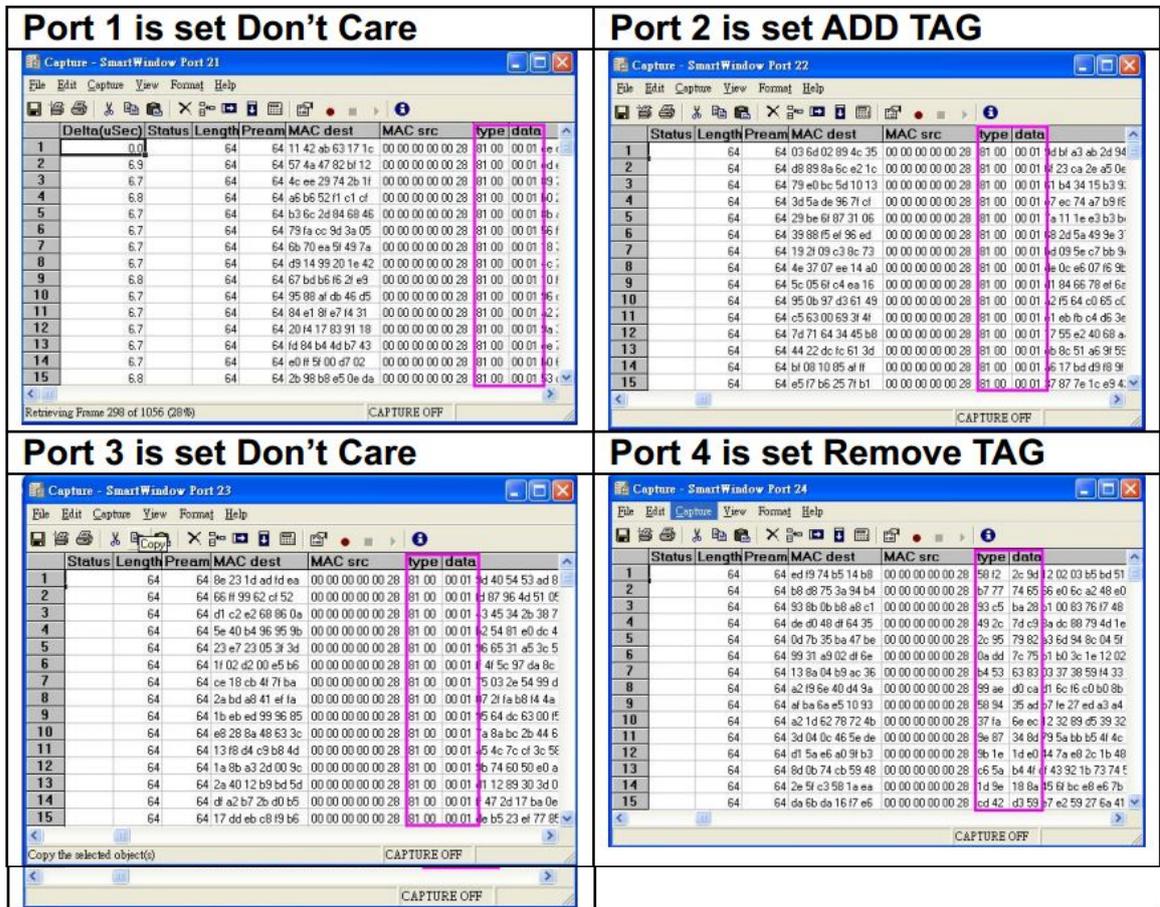
SMB setting: Port 8 transmits packets with VLAN Tag.

The screenshot displays the 'Transmit Setup - SmartWindow Port 28' configuration window. Key settings include:

- Mode:** Single Burst
- Length (bytes):** Fixed 60
- Background:** Random
- Interpacket Gap:** Rate: 0.96, Units: uSec
- VFD1 Setup (MAC dest):** State: Off, Start Value: 00 00 00 00 00 21
- VFD2 Setup (MAC source):** State: Static, Start Value: 00 00 00 00 00 28, Offset (bits): 48
- VFD3 Setup:** State: Off
- Error Generation:** CRC, Dribble, Alignment, Symbol (all unchecked)
- Collision:** Enable (unchecked), # of Packets: 100
- Output Packet:** ?? ?? ?? ?? ?? 00 00 00 00 00 28 81 00 00 01 ?? ?? ?? ?? ?? ?? ?? ?? ?? ?? ?? ?? ??

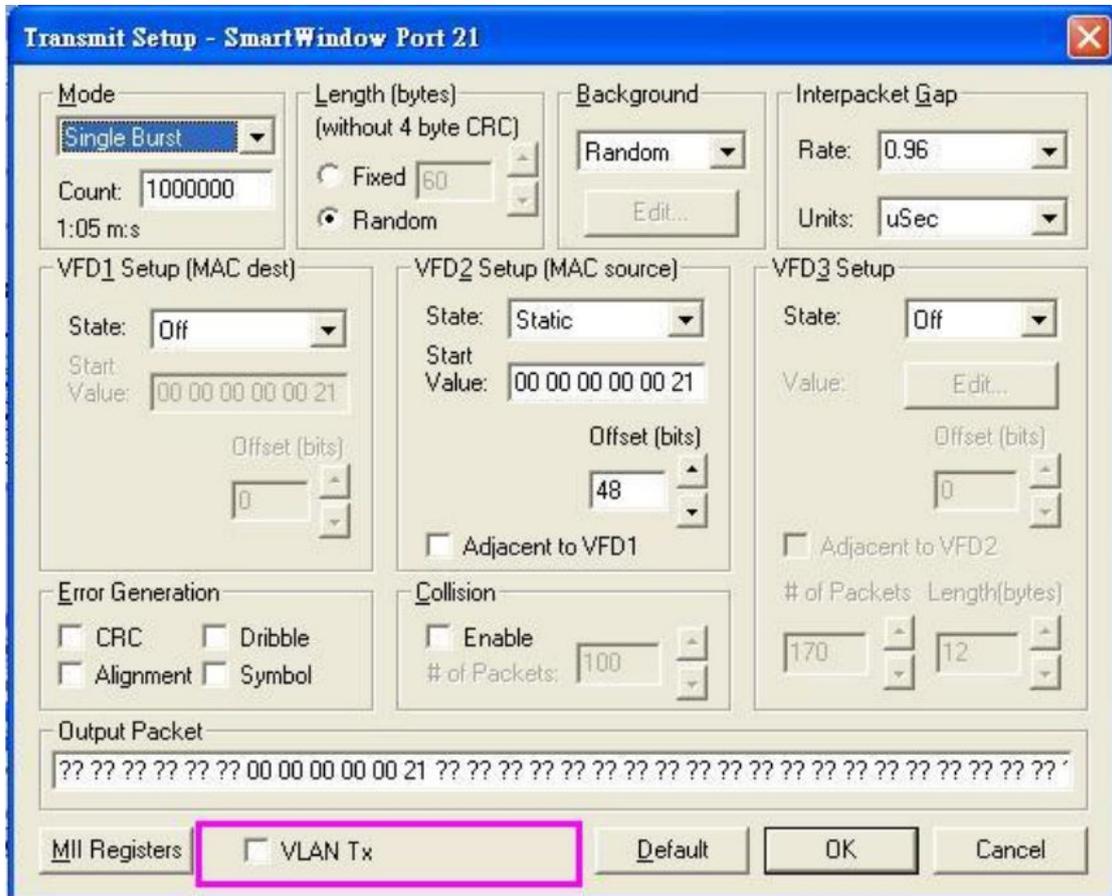
In the foreground, a 'Protocol Editor' window shows a table with columns: VLAN, tpid, pri, cfi, Vid. The first row contains values: 1, 8100, 0, 0, 1.

Example 1 results:



Example 2:

SMB setting: Port 7 transmits packets without VLAN Tag.



Example 2 results:

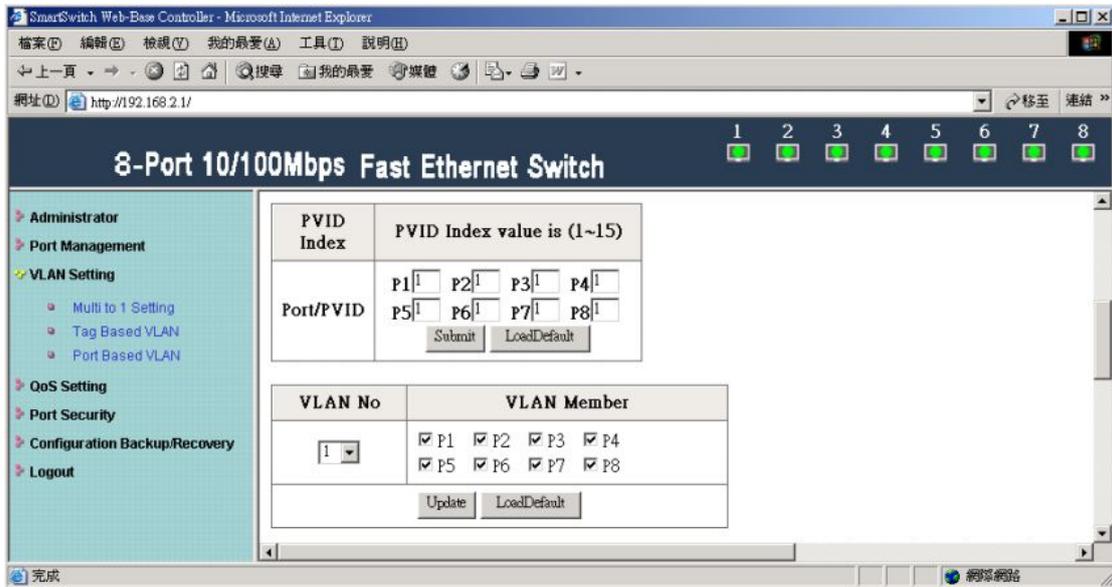
<p>port0 is set Don't Care</p>	<p>port1 is set ADD TAG</p>
<p>port2 is set Don't Care</p>	<p>port3 is set Remove TAG</p>
<p>Port4 is set Don't Care</p>	<p>Port5 is set ADD TAG</p>
<p>Port7 is set Remove TAG</p>	

B PVID Index Setting

This setting must match VLAN Member setting

Set the PVID index of port 1~port 8 and the value is 1~15.

The set results will show as following.



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 ports in VLAN Member 9 will receive the packets from port 5.

The screenshot shows the SmartCounters interface for 8 ports. The title bar indicates it's titled "SmartCounters - [Port Counters for 8 ports - (untitled)*]". The interface has a menu bar (File, Edit, Tree, Actions, Selection, View, Format, Window, Help) and a toolbar. The main area is a table showing port counters for 8 ports (05 SX-7410 to 13 SX-7410). The table has columns for Events and rows for various network metrics. The data is as follows:

Ports	Events	Events	Events	Events	Events	Events	Events	Events	Events
	05 SX-7410	06 SX-7410	07 SX-7410	08 SX-7410	10 SX-7410	11 SX-7410	12 SX-7410	13 SX-7410	
Tx Frames	0	0	0	0	1,000,000	0	0	0	
Rx Frames	1,000,000	1,000,000	0	0	0	1,000,000	0	0	
Rx Bytes	791,001,747	791,001,747	0	0	0	791,001,747	0	0	
Rx Triggers	0	0	0	0	0	0	0	0	
Collisions	0	0	0	0	0	0	0	0	
CRC Errors	0	0	0	0	0	0	0	0	
Alignment Errors	0	0	0	0	0	0	0	0	
OverSize	0	0	0	0	0	0	0	0	
Frag/UnderSize	0	0	0	0	0	0	0	0	

The bottom of the interface shows "Counters for 8 ports" and "Events Only" selected. The status bar indicates "Updating" and "B4".

Example 2:

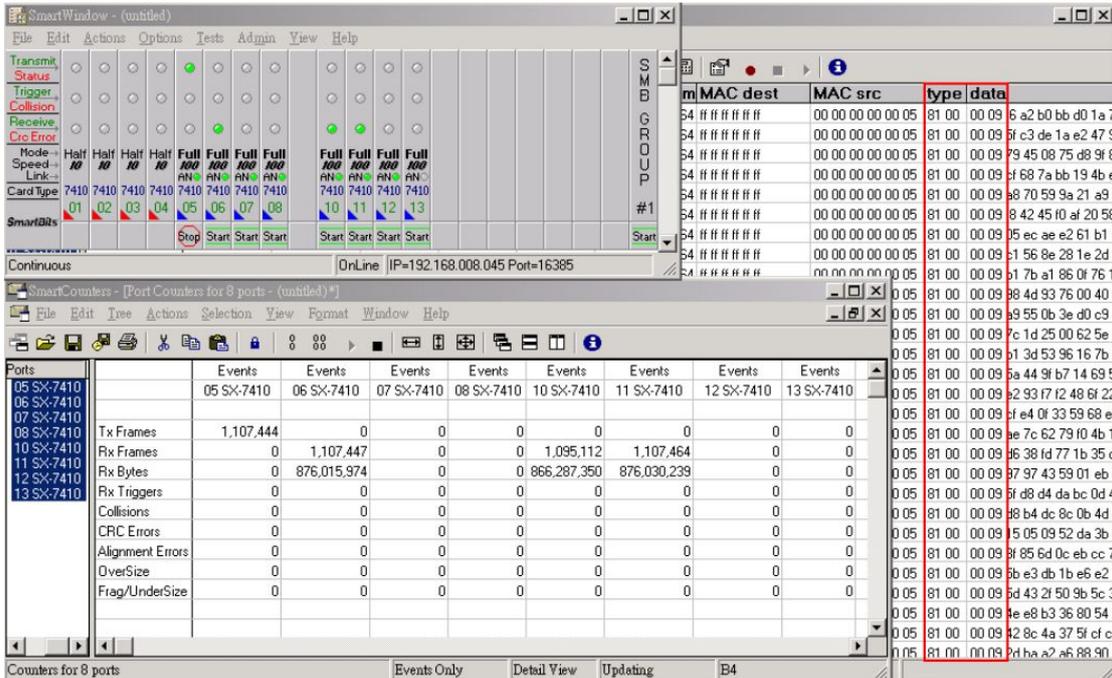
Set 9 as the PVID index value of port 1.

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.

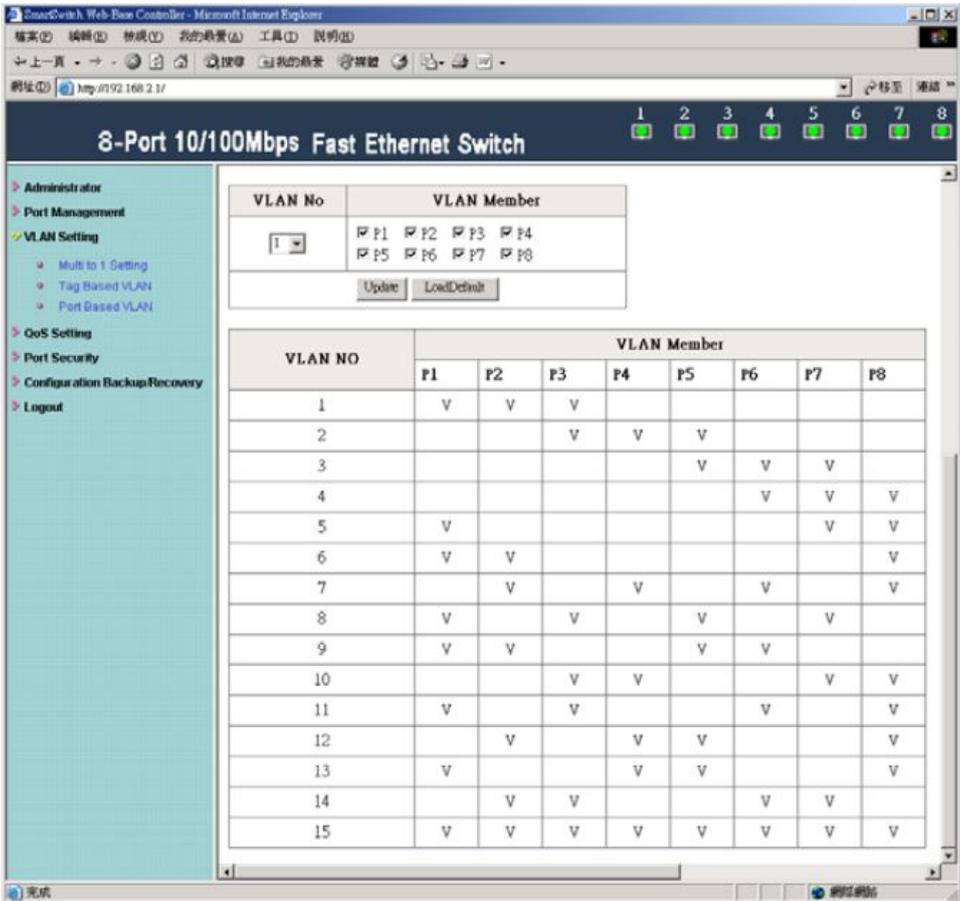
Capture the transmitted packets and know their type data is 8100 0009.



C VLAN Member

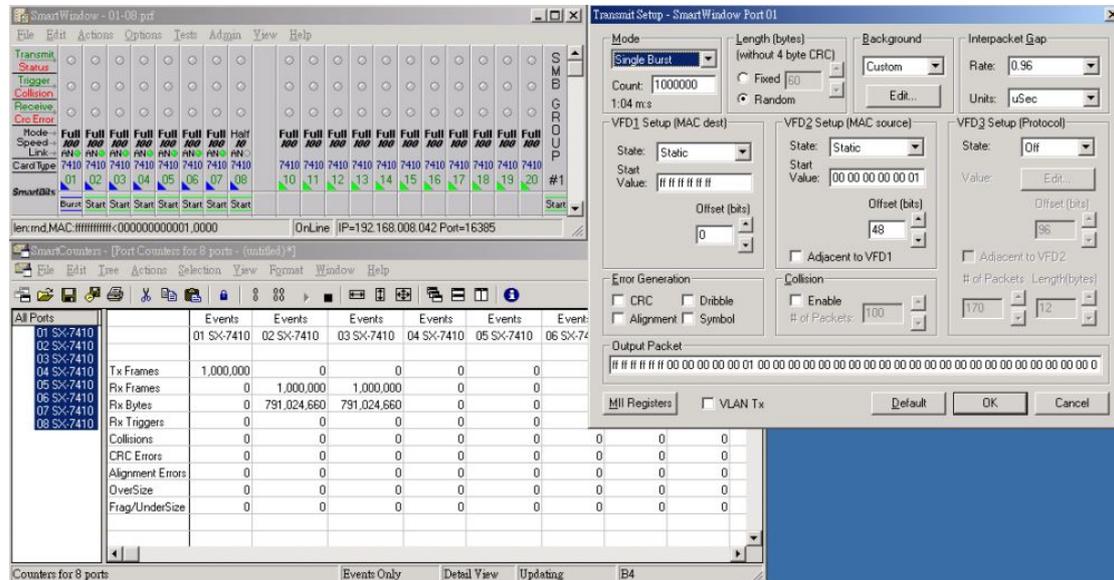
IP178C supports 15 sets of VLAN Group. Member ports in the same VLAN Group can transmit and receive packets from each other but non-member ports can not.

Following chart shows VLAN Member setting.



Example:

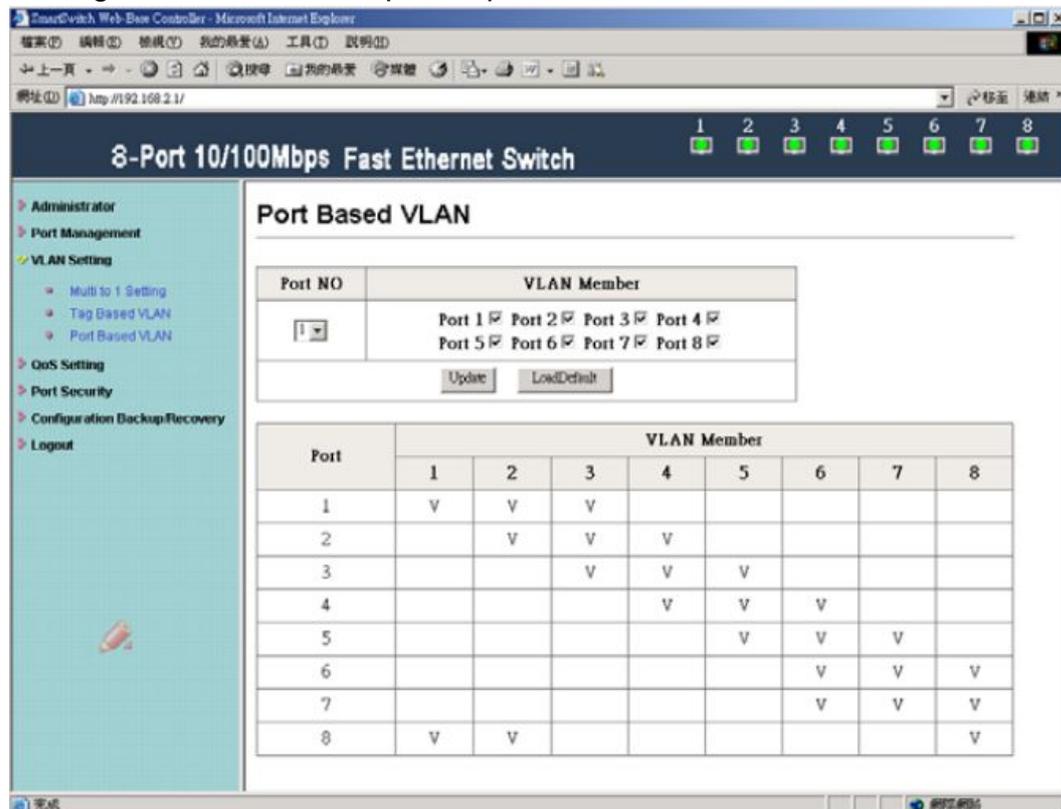
SMB setting: Length Random / Background Custom / DA=Broadcast, SA=01
 Set port 1, port 2, and port 3 in the same VLAN. When port 1 transmits packets,
 only port 2
 and port 3 will receive the packets.



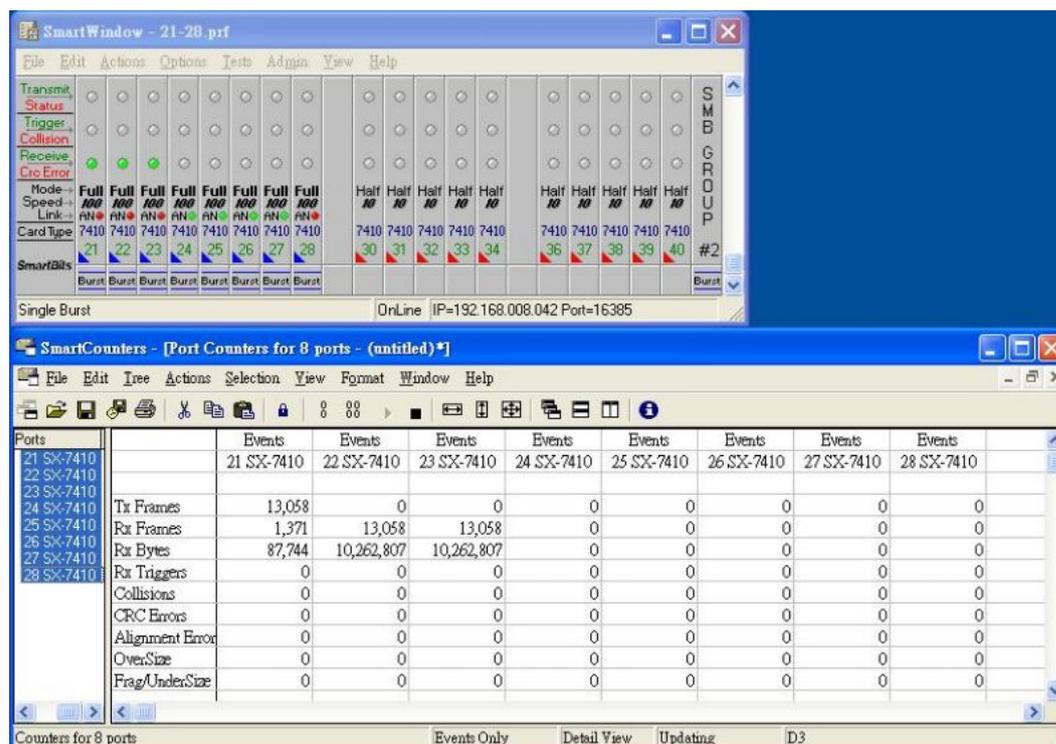
3.3 Port based VLAN

Port Based on LAN function can't be enabled unless turning off Multi to 1 setting and Tag Based VLAN function, meaning load default setting.

Setting 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.



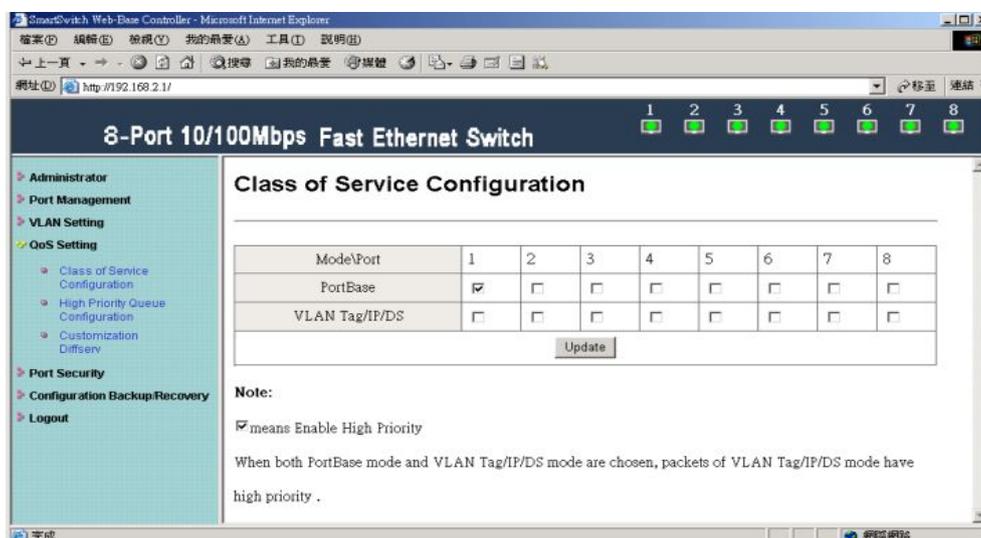
4 QoS Setting

4.1 Class of Service Configuration

High priority is a special channel, which can make important packets pass through quickly.

Each port must set high priority by selecting its port base or VLAN Tag/IP/DS.

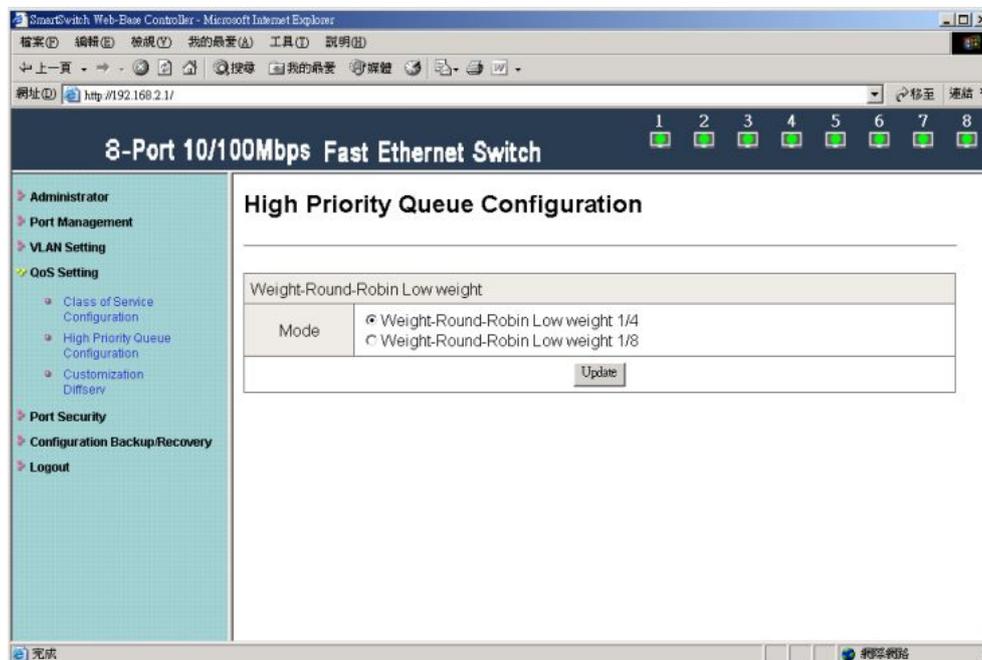
Example: Select Port Base for port 1 and this means that port 1 is set high priority.



4.2 High Priority Queue Configuration

The setting in High Priority Queue Configuration must cooperate with Class of Service Configuration through selecting [VLAN Tag/IP/DS](#).

Weight-Round-Robin Mode sets packets High priority and Low priority, the proportion is 4(8):1.



Example:

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

	Delta(uSec)	Status	Length	Pream	MAC dest	MAC src	type	data
4	66.4		810	64	00 00 00 00 00 07	00 00 00 00 00 06	5c bf	b8 2c ed 42 72 5d cf 63 d8 3b e7 (
5	81.5		1000	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
6	11.7		126	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
7	58.8		715	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
8	70.3		858	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
9	65.6		801	64	00 00 00 00 00 07	00 00 00 00 00 06	6f be	11 e6 c1 4b 83 e8 23 80 c8 35 66
10	59.7		726	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
11	49.6		600	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
12	25.6		300	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
13	100.2		1232	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
14	29.8		353	64	00 00 00 00 00 07	00 00 00 00 00 06	96 9f	75 5d 71 84 30 7d bf 03 ac 05 91 c
15	11.4		123	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
16	87.9		1079	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
17	69.2		845	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
18	44.5		536	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
19	28.1		331	64	00 00 00 00 00 07	00 00 00 00 00 06	22 cd	e8 21 f1 c8 07 ec ec a0 71 e1 8a c
20	12.0		142	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

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

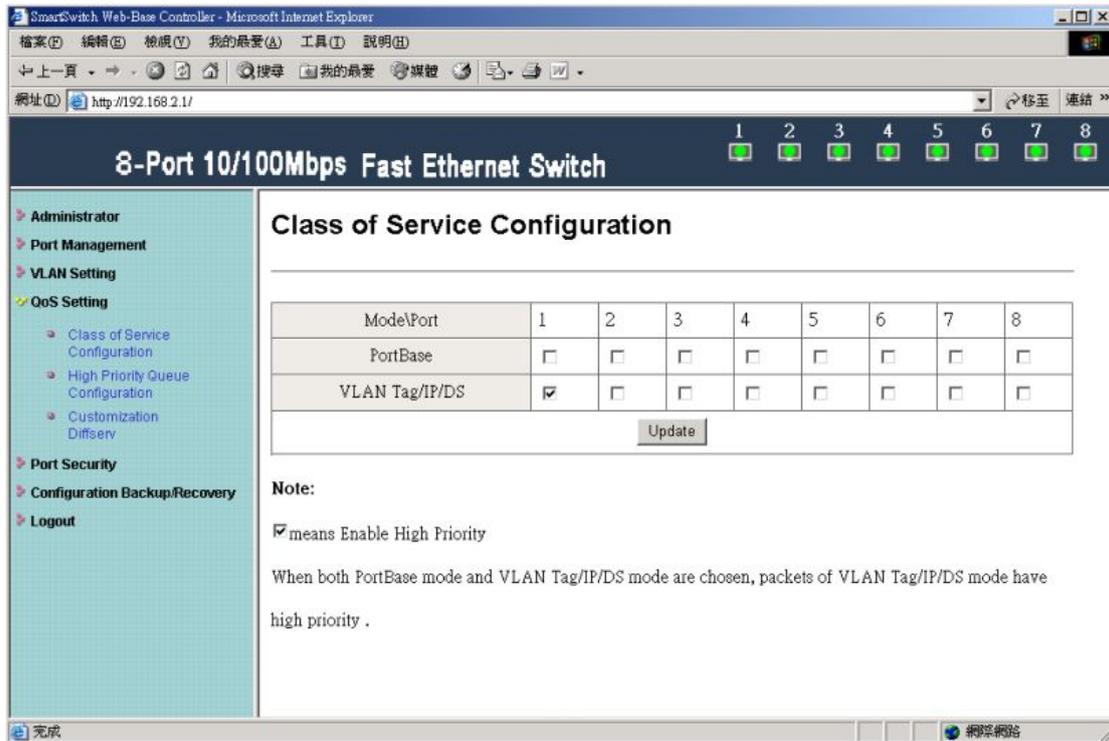
	Delta(uSec)	Status	Length	Pream	MAC dest	MAC src	type	data
11	109.1		1344	64	00 00 00 00 00 07	00 00 00 00 00 05	00 00	00 00 00 00 00 00 00 00 00 00 00 c
12	10.0		105	64	00 00 00 00 00 07	00 00 00 00 00 05	00 00	00 00 00 00 00 00 00 00 00 00 00 c
13	68.2		833	64	00 00 00 00 00 07	00 00 00 00 00 06	c9 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 c
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 c
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 c
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 c
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 c
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 c
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 c
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 c
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 c
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 c
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 c
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 c
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 c
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 c

4.3 Customization DiffServ

Set DiffServ value of IPv4/IPv6 DiffServ frame format in High Priority.

The setting in Customization DiffServe must cooperate with Class of Service Configuration through selecting [VLAN Tag/IP/DS](#).

Example: Select the VLAN Tag/IP/DS for port 1 and therefore port 1 is set High Priority.

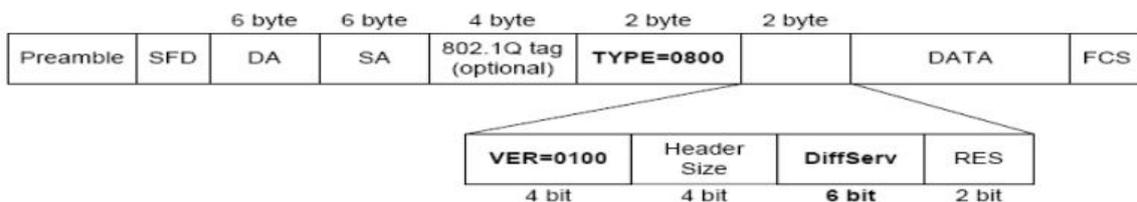


* IPv4/IPv6 DiffServ frame format

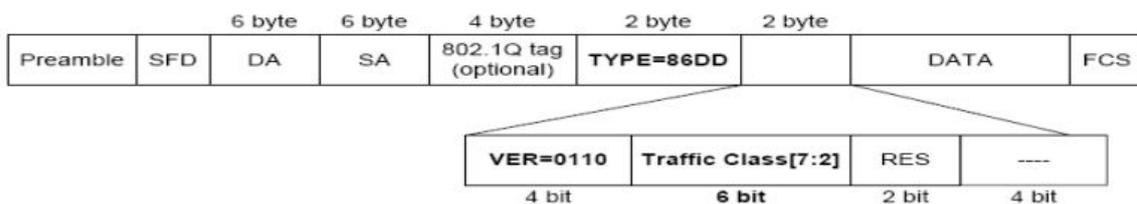
IPv4/IPv6 DiffServ

IP178C LF checks the DiffServ field of a IPv4 frame or Traffic class field [7:2] (TC[7:2]) of a IPv6 frame and uses them to decide the frame's priority if MII register 31.30.[13] DIFFSERV_EN is enabled. IP178C LF uses DiffServ or TC[7:2] as index to select one of 64 bits defined in the MII register 31.22~25 DSCP[63:0]. If the bit is "1", the received frame is handled as a high priority frame.

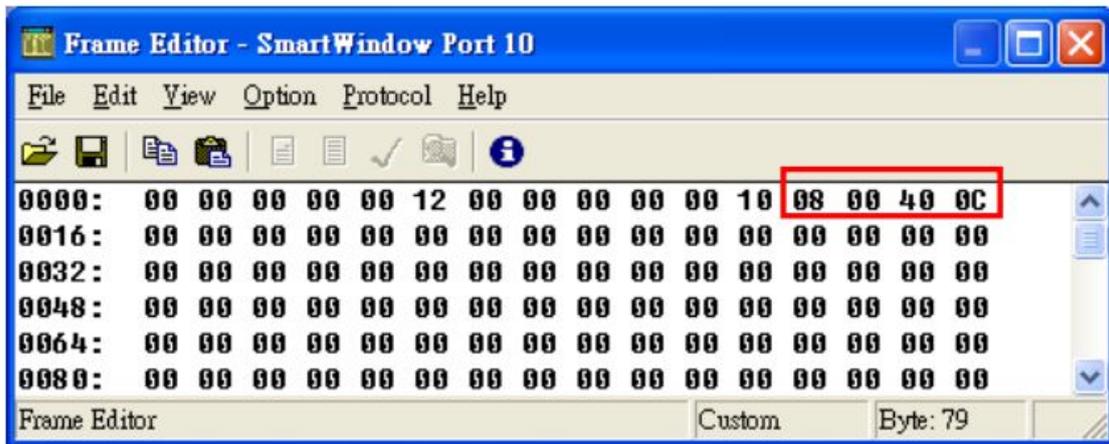
IPv4 frame format



IPv6 frame format



Select index=3 as IPv4/IPv6 DiffServ value, and 3 (hexadecimal) equals 000011 (6 bit).



II. IPv6 DiffServ

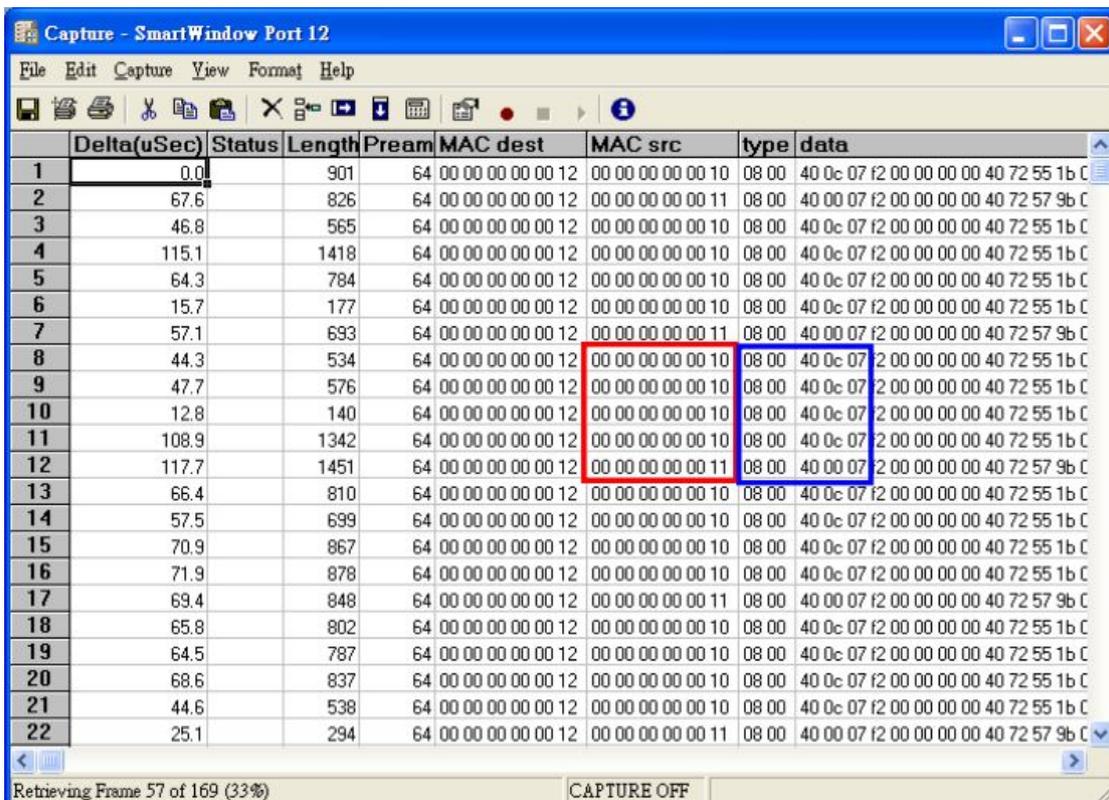
Reference IPv4/IPv6 DiffServ frame format, and then the value is 0110 0000 1100 0000 (2Byte). Therefore, 86DD 60C0 (4 Byte) is the content of IPv6.

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

Frame Editor Custom Byte: 16

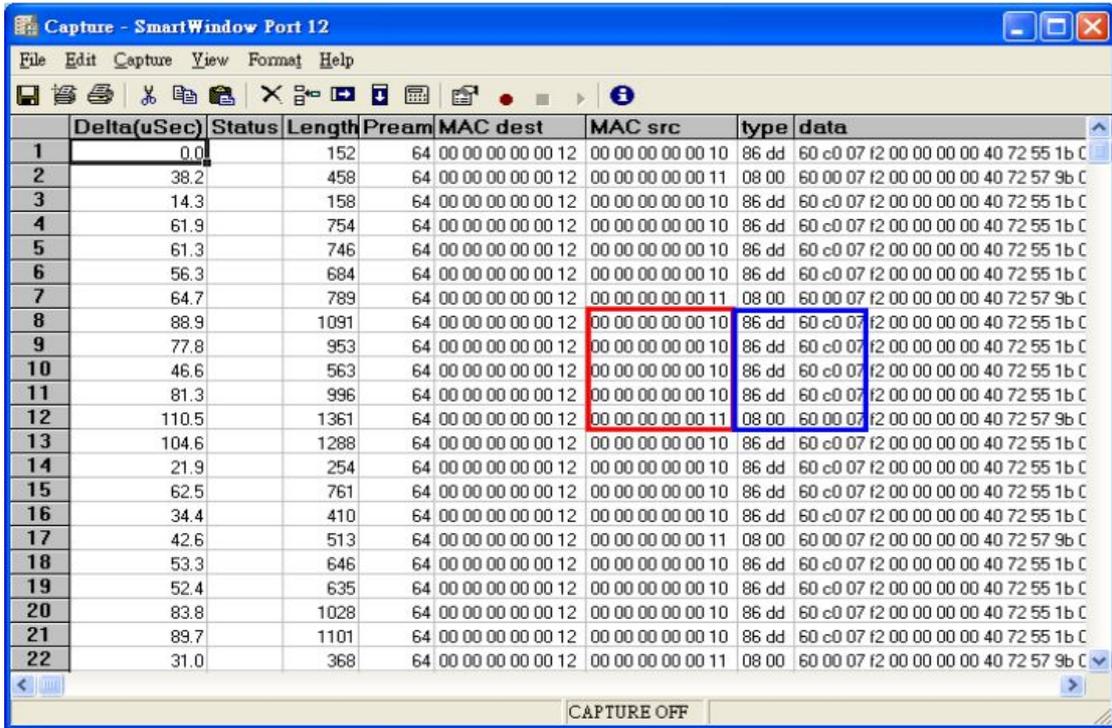
Left frame (in red) shows that WRR is 4:1.

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



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

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

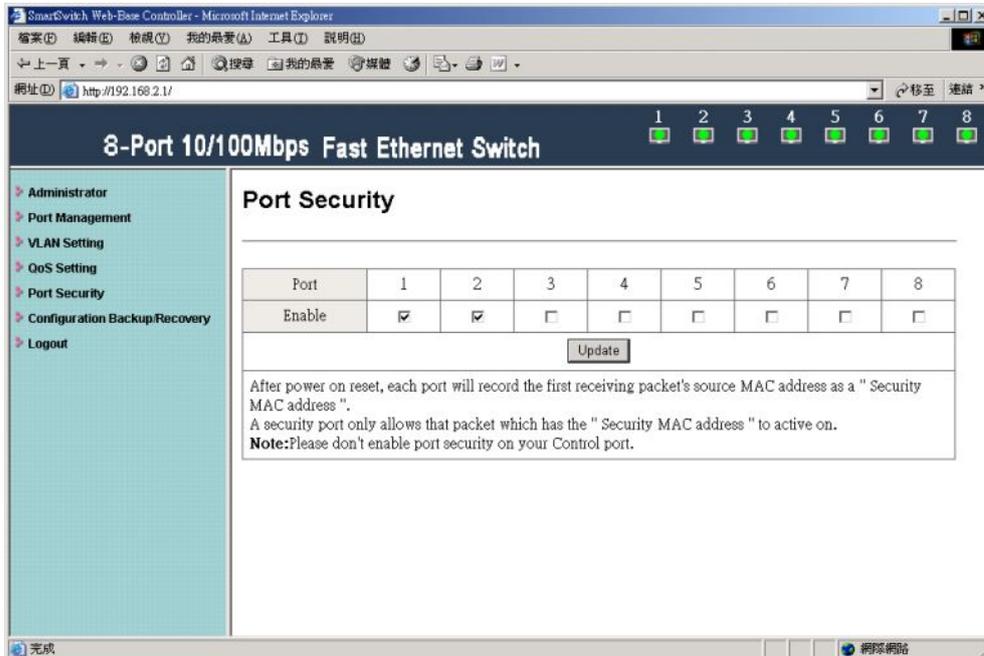


5 Port Security

Enable this function will make ports unable to transmit and receive packets.

Note: Please don't enable port security on your linking port.

Example: Enable port 1 and port 2.



Use SMB to do Ring test and port 1 and port 2 won't receive packets.

The image shows two software windows. The top window, 'SmartWindow - 10-17.prf', displays network status for 20 ports. The bottom window, 'SmartCounters - [Port Counters for 8 ports - (untitled)*]', displays a table of port statistics for ports 10-17. A red circle highlights the Tx Frames and Rx Bytes rows for ports 10-17 in the SmartCounters table.

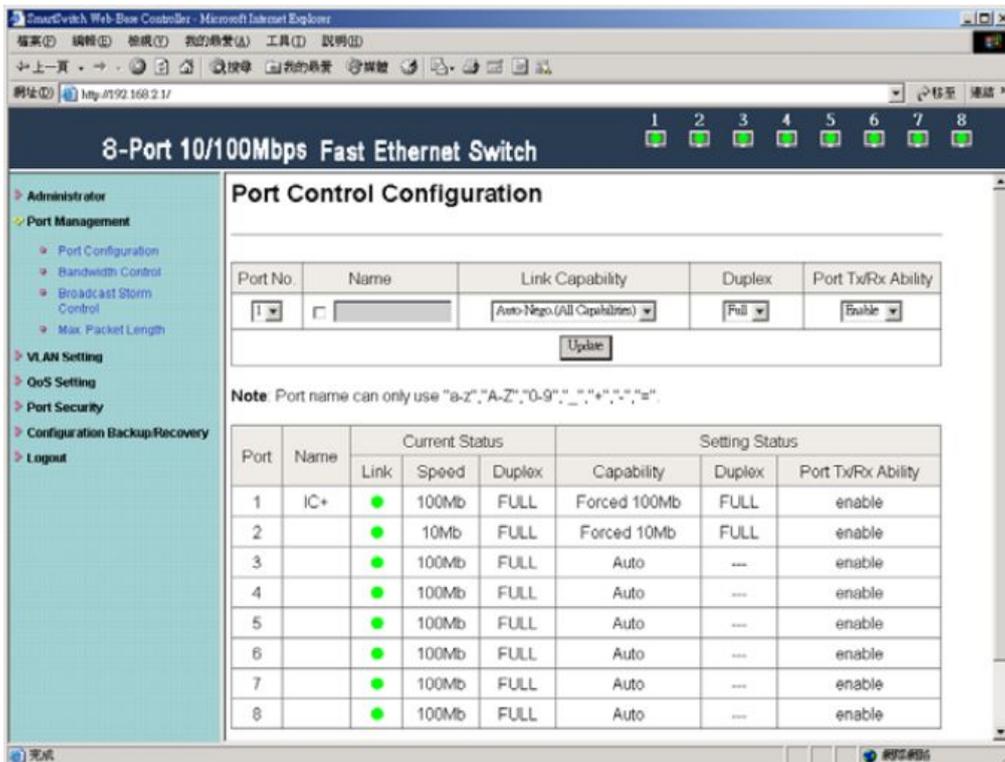
Ports	Rates	Rates							
	10 SX-7410	11 SX-7410	12 SX-7410	13 SX-7410	14 SX-7410	15 SX-7410	16 SX-7410	17 SX-7410	
Tx Frames	15,461	15,494	15,411	15,473	15,411	15,485	15,453	15,397	
Rx Frames	15,479	0	0	15,413	15,475	15,404	15,484	15,451	
Rx Bytes	12,190,803	0	0	12,190,808	12,190,352	12,191,558	12,190,388	12,190,779	
Rx Triggers	15,478	0	0	15,411	15,475	15,404	15,484	15,451	
Collisions	0	0	0	0	0	0	0	0	
CRC Errors	0	0	0	0	0	0	0	0	
Alignment Errors	0	0	0	0	0	0	0	0	
OverSize	0	0	0	0	0	0	0	0	
Frag/UnderSize	0	0	0	0	0	0	0	0	

6 Configuration Backup/Recovery

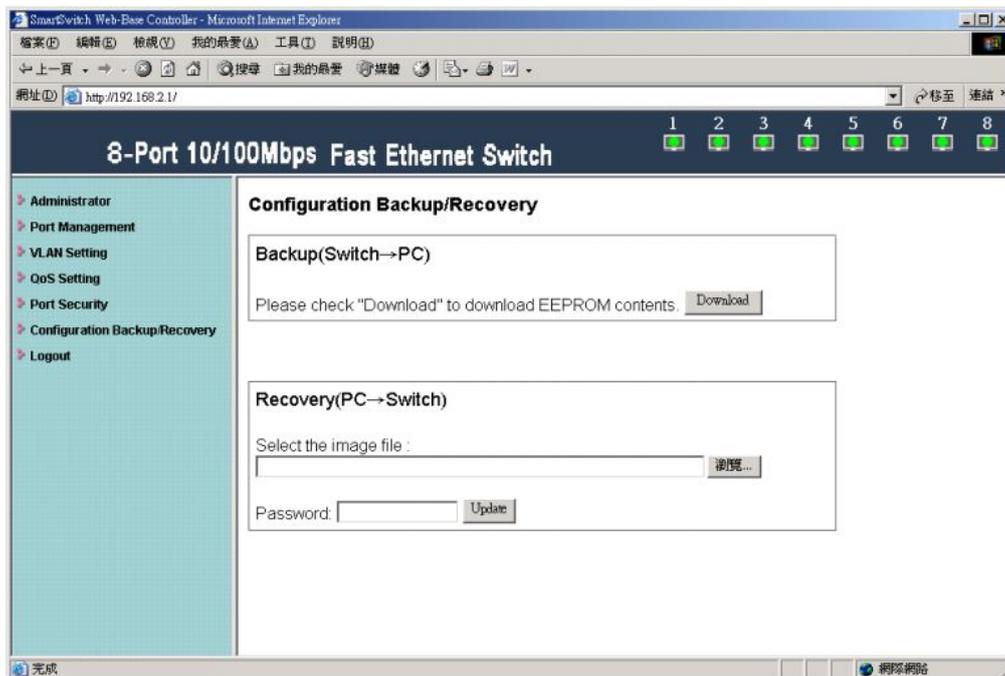
This function can read/write EEPROM.

Authentication method:

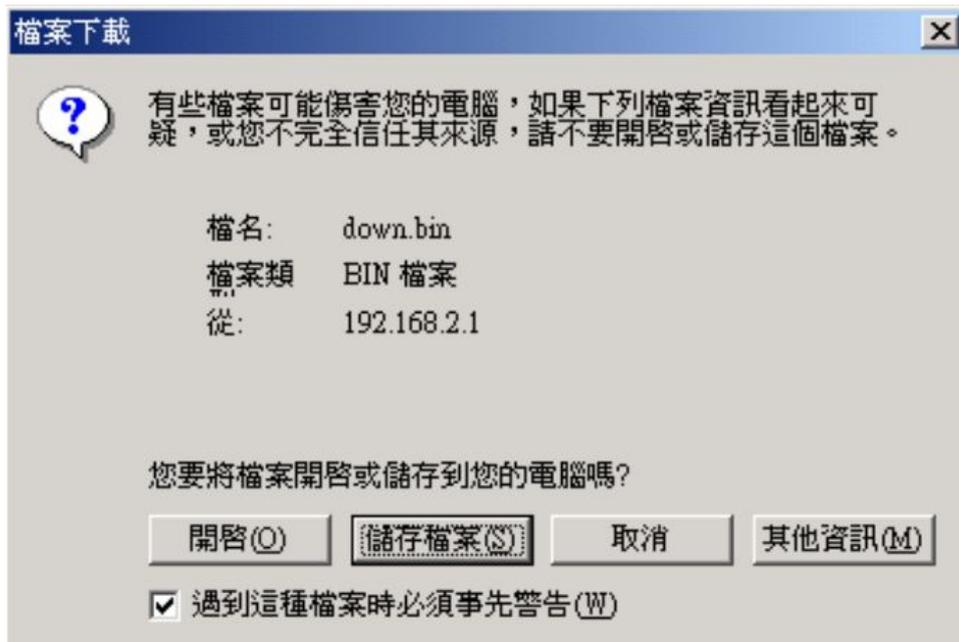
Step 1 、 Set port 1=Forced 100Mb FULL, port 2=Forced 10Mb FULL. Then plug power cord and enter the same web page for ensuring the new setting take effect.



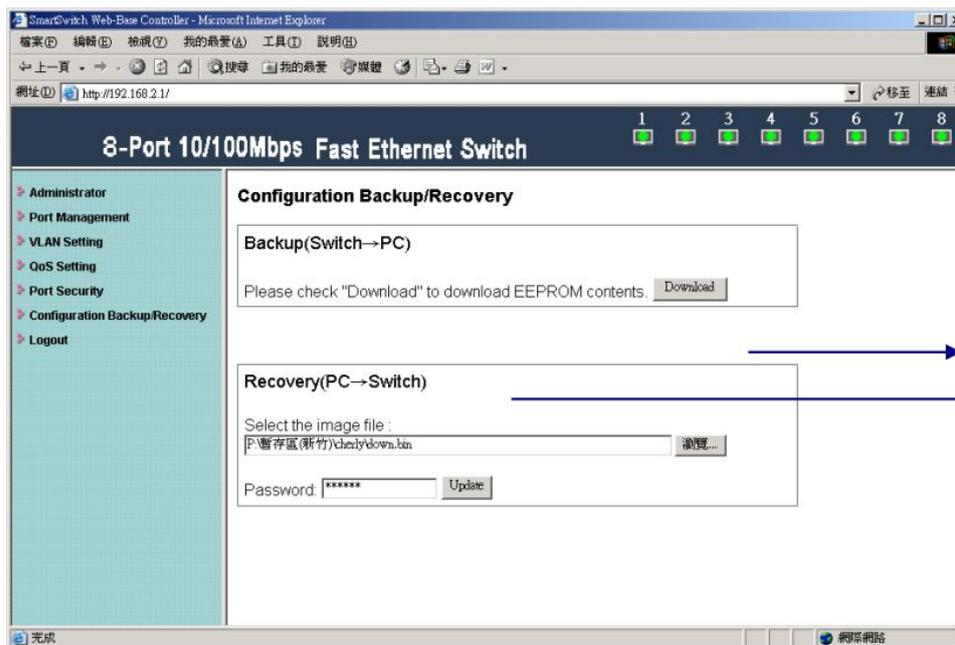
Step 2 、 Enter Configuration Backup/Recovery web page, and then choose Download in Backup(Switch->PC) column for saving this setting.



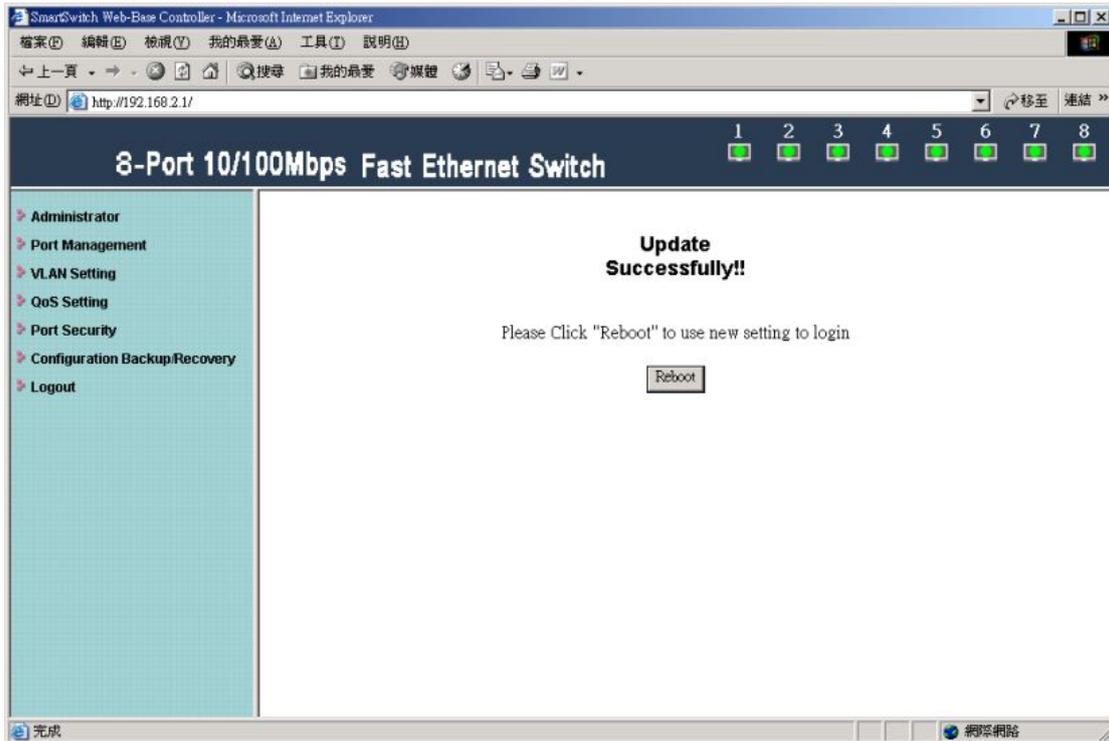
Step 3 、 Save the setting and the file name is x.bin



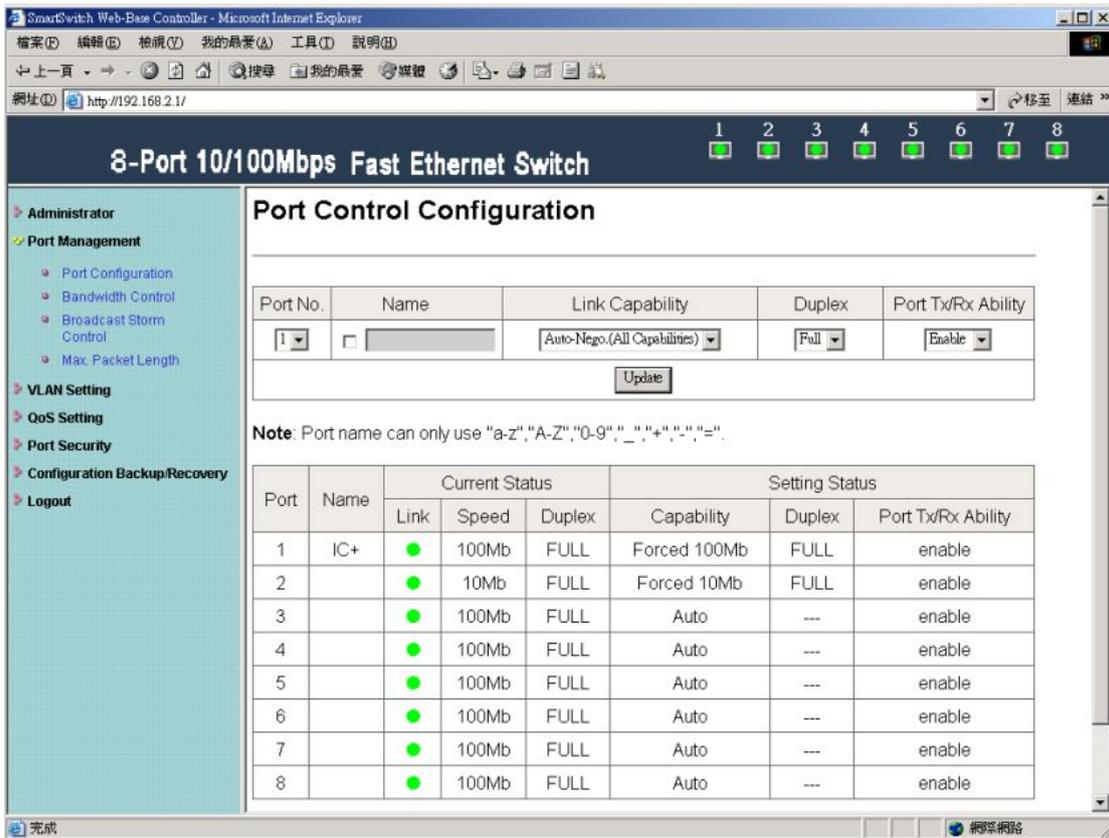
Step 4 、 Choose the image file, enter password, and click Update shown in Recovery(PC->Switch) column for reading EEPROM.



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

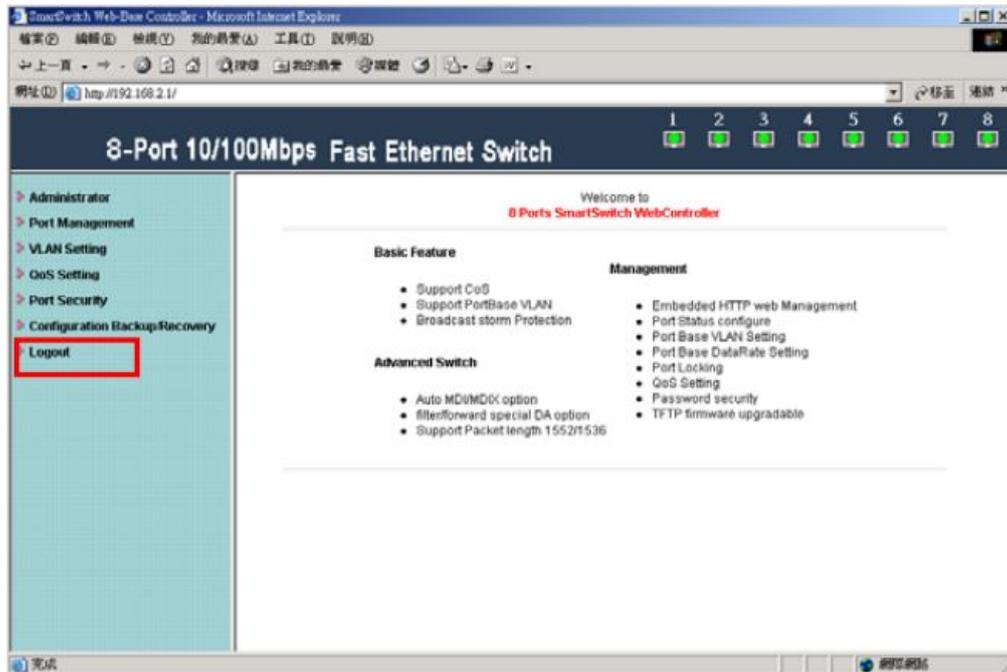


Step 6 、 Enter following web page and know this new setting takes effect.



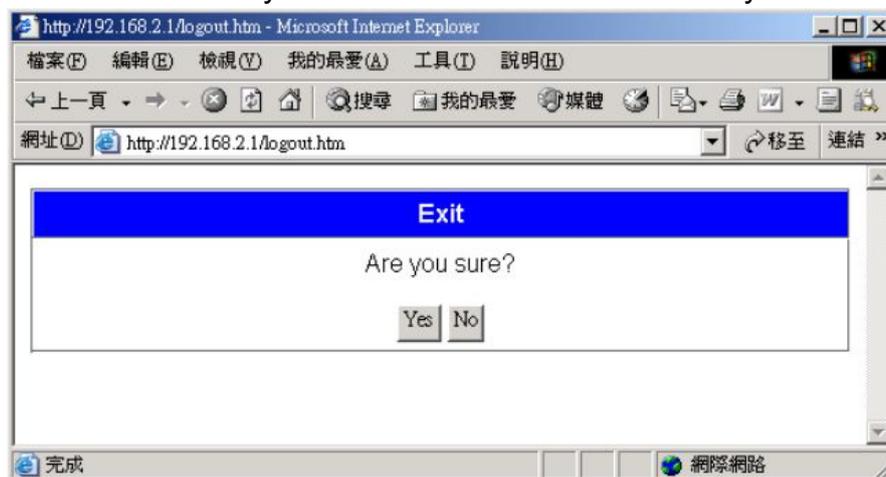
7 Logout

Choose Logout



Exit web page will appear for further confirmation.

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



Click YES will close the web page. Click NO will back to the login web page.

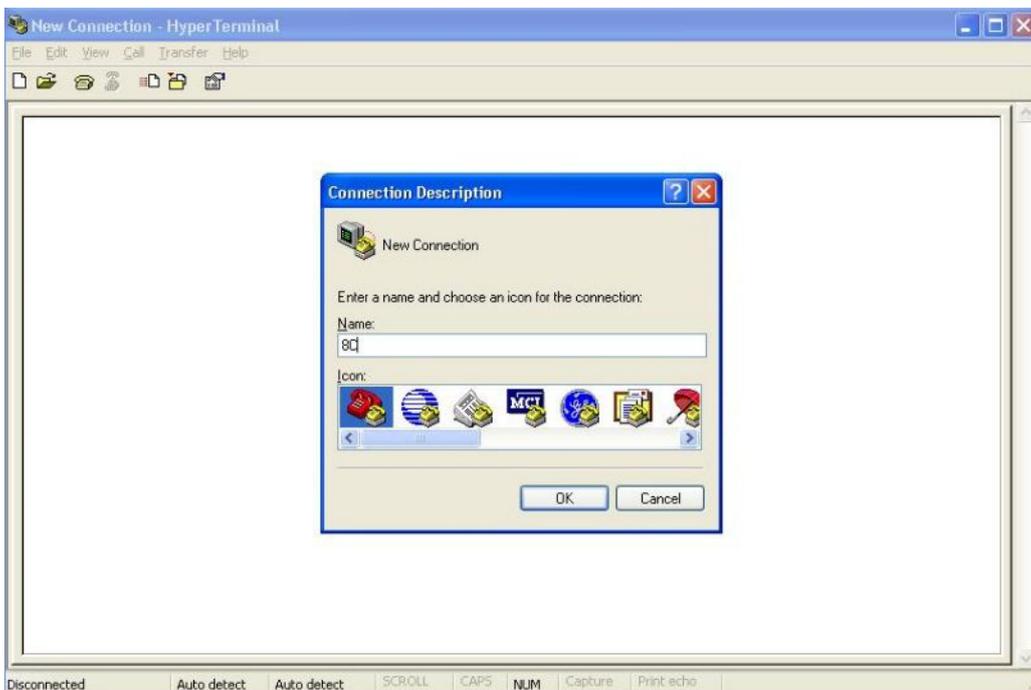


8 Appendix Hyper Terminal Authentication

Step 1 Start → All Programs → Accessories → Communications → HyperTerminal



Step 2 、 Enter a name and choose an icon for the connection



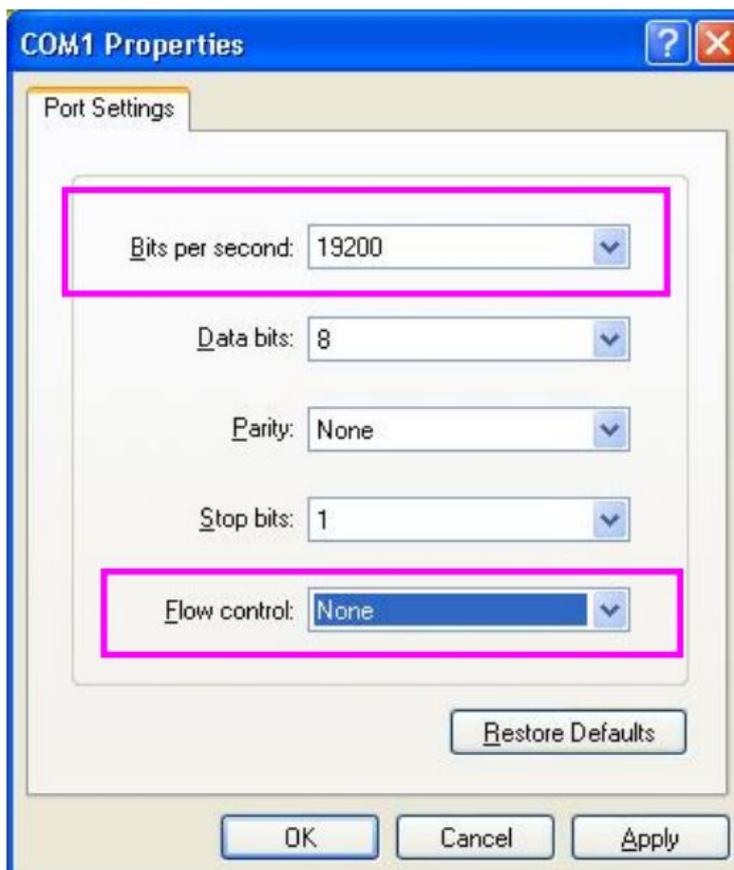
Step 3 、 Connect using: Choose COM1



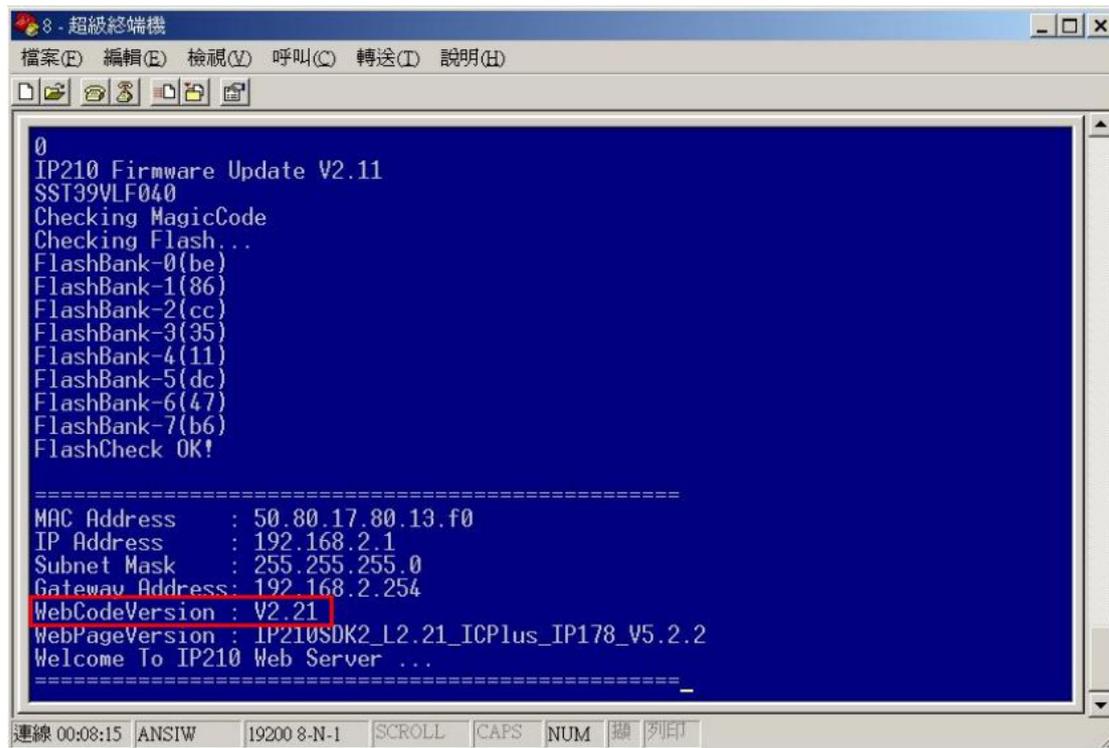
Step 4 、 COM1 properties :

Bits per second : 19200

Flow control: None



Step 5 、 Use Hyper Terminal to authenticate Web Code Version: [V2.21](#)



The screenshot shows a HyperTerminal window titled "8 - 超級終端機". The terminal output displays the following information:

```
0
IP210 Firmware Update V2.11
SST39VLF040
Checking MagicCode
Checking Flash...
FlashBank-0(be)
FlashBank-1(86)
FlashBank-2(cc)
FlashBank-3(35)
FlashBank-4(11)
FlashBank-5(dc)
FlashBank-6(47)
FlashBank-7(b6)
FlashCheck OK!

=====
MAC Address      : 50.80.17.80.13.f0
IP Address       : 192.168.2.1
Subnet Mask      : 255.255.255.0
Gateway Address  : 192.168.2.254
WebCodeVersion   : V2.21
WebPageVersion   : IP210SDK2_L2.21_ICPlus_IP178_V5.2.2
Welcome To IP210 Web Server ...
=====
```

The "WebCodeVersion : V2.21" line is highlighted with a red box. The bottom status bar shows connection details: "連線 00:08:15 ANSIW 19200 8-N-1 SCROLL CAPS NUM 摺 列印".