Air Live®
www.airlive.com

# Ether-GSH8TW v2

## 8-Port Web Managed Pure Gigabit Switch

# User's Manual

# Declaration of Conformity

We, Manufacturer/Importer

**OvisLink Corp.**
**5F., NO.6, Lane 130, Min-Chuan RD.,**
**Hsin-Tien City, Taipei County, Taiwan**

Declare that the product

**Ethernet Switch**

**Ether-GSH8TWv2**

**is in conformity with**

In accordance with 89/336 EEC-EMC Directive and 1999/5 EC-R & TTE Directive

| Clause | Description |
|---|---|
| ■ **EN 55022:1994/A1 :1995 /A2:1997 Class A** | Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| ■ **EN 61000-3-2:2000 Class A** | Disturbances in supply systems caused by household appliances and similar electrical equipment "Harmonics" |
| ■ **EN 61000-3-3:1995/ A1:2001** | Disturbances in supply systems caused by household appliances and similar electrical equipment "Voltage fluctuations" |
| ■ **EN 55024:1998/A1 :2001/A2:2003** | Information Technology equipment-Immunity characteristics-Limils and Methods of measurement |
| ■ **CE marking** | CE |

**Manufacturer/Importer**

Signature：

Name ： **Albert Yeh**

Position/ Title ： **Vice President**

Date： **2004/10/21**

(Stamp)

# Ether-GSH8TWv2 CE Declaration Statement

| Country | Declaration | Country | Declaration |
|---|---|---|---|
| **cs** Česky [Czech] | OvisLink Corp. tímto prohlašuje, že tento Ether-GSH8TWv2 je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES. | **lt** Lietuvių [Lithuanian] | Šiuo OvisLink Corp. deklaruoja, kad šis Ether-GSH8TWv2 atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas. |
| **da** Dansk [Danish] | Undertegnede OvisLink Corp. erklærer herved, at følgende udstyr Ether-GSH8TWv2overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF. | **nl** Nederlands [Dutch | Hierbij verklaart OvisLink Corp. dat het toestel Ether-GSH8TWv2 in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG. |
| **de** Deutsch [German] | Hiermit erklärt OvisLink Corp., dass sich das Gerät Ether-GSH8TWv2in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet. | **mt** Malti [Maltese] | Hawnhekk, OvisLink Corp, jiddikjara li dan Ether-GSH8TWv2 jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC. |
| **et** Eesti [Estonian] | Käesolevaga kinnitab OvisLink Corp. seadme Ether-GSH8TWv2 vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele. | **hu** Magyar [Hungarian] | Alulírott, OvisLink Corp nyilatkozom, hogy a Ether-GSH8TWv2 megfelel a vonatkozó alapvetõ követelményeknek és az 1999/5/EC irányelv egyéb elõírásainak. |
| **en** English | Hereby, OvisLink Corp., declares that this Ether-GSH8TWv2 is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. | **pl** Polski [Polish] | Niniejszym OvisLink Corp oświadcza, że Ether-GSH8TWv2 jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC. |
| **es** Español [Spanish] | Por medio de la presente OvisLink Corp. declara que el Ether-GSH8TWv2cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE. | **pt** Português [Portuguese] | OvisLink Corp declara que este Ether-GSH8TWv2está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE. |
| **el** Ελληνική [Greek] | ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ OvisLink Corp. ΔΗΛΩΝΕΙ ΟΤΙEther-GSH8TWv2 ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ. | **sl** Slovensko [Slovenian] | OvisLink Corp izjavlja, da je ta Ether-GSH8TWv2 v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES. |
| **fr** Français [French] | Par la présente OvisLink Corp. déclare que l'appareil Ether-GSH8TWv2 est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE | **sk** Slovensky [Slovak] | OvisLink Corp týmto vyhlasuje, že Ether-GSH8TWv2 spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES. |
| **it** Italiano [Italian] | Con la presente OvisLink Corp. dichiara che questo Ether-GSH8TWv2 è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE. | **fi** Suomi [Finnish] | OvisLink Corp vakuuttaa täten että Ether-GSH8TWv2 tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen |
| **lv** Latviski [Latvian] | Ar šo OvisLink Corp. deklarē, ka Ether-GSH8TWv2 atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem. | Íslenska [Icelandic] | Hér með lýsir OvisLink Corp yfir því að Ether-GSH8TWv2 er í samræmi við grunnkröfur og aðrar kröfur, sem gerðar eru í tilskipun 1999/5/EC. |
| **sv** Svenska [Swedish] | Härmed intygar OvisLink Corp. att denna Ether-GSH8TWv2 står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG. | **no** Norsk [Norwegian] | OvisLink Corp erklærer herved at utstyret Ether-GSH8TWv2 er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 1999/5/EF. |

A copy of the full CE report can be obtained from the following address:

**OvisLink Corp.**
**5F, No.6 Lane 130,**
**Min-Chuan Rd, Hsin-Tien City,**
**Taipei, Taiwan, R.O.C.**

This equipment may be used in AT, BE, CY, CZ, DK, EE, FI, FR, DE, GR, HU, IE, IT, LV, LT, LU, MT, NL, PL, PT, SK, SI, ES, SE, GB, IS, LI, NO, CH, BG, RO, TR

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# 1.0 Introduction

AirLive ETHER-GSH8TW v2 switch is a high performance web-smart switch that provides up to 8 10/100/1000Mbps copper Ethernet ports, this device provides a great flexibility for nowadays variety of network application but at lower cost. User doesn't have to learn many sophisticated management function which are usually shown in SNMP switch but just to learn some simple or common control or setting function through either out-of-band RS232 port or Ethernet port, however, some new, advanced and important function such as Tag-VLAN, Trunking, RSTP and IGMP will be supported same as SNMP switch, this means, user doesn't have to pay high cost as tradition layer 2 SNMP switch does while he still can get advanced or common function to meet requirement of general network application. This makes it very suitable for small or medium size company to build up simple network at beginning phase with lower cost. Besides, a optional long-ear accessory also makes it possible to operate in the rack mount environment.

Non-blocking and maximum wire speed performance are designed on all switched ports, it not only supports auto-negotiation but also AUTO-MDIX function on all switched 8 10/100/1000M RJ-45 Gigabit copper ports no matter running with half or full duplex mode, these function make user easy to use and reduce the matching effort between straight and cross-over line issues.

AirLive ETHER-GSH8TW+ web smart switch supports both port-based and 802.1Q (tag-based) VLAN to catch-up the application needed in incoming VLAN age. To increase bandwidth application, it supports up to 4 trunk groups with maximum 8 ports on one Trunk, moreover, these trunk ports are with fair-over function to provide redundant back-up when one or some of trunk ports malfunction. Moreover, to reduced convergent time of STP protocol, Rapid STP ( RSTP ) is supported, to support multicast application IGMP is also supported. ,

Fully LED status display ease user's installation, a reset button is also provided to make user easy to go back to default setting.

# 1.1 Main Features

This switch provides the following main features:

- Non-blocking, full-line speed, store-and-forward
- ROHS compliant
- Support jumbo frame, Max. packet length 9600 bytes
- Auto-Negotiation and Auto-MDIX on all 10/100/1000M copper ports
- Up to 8 10/100/1000 RJ-45 copper ports
- 144K byte packet buffer, 8K MAC entries
- Support port-based VLAN and tag-based (802.1Q) VLAN
- Support RSTP, IGMP
- Port trunk with fail-over capability
- Support flow control for both full/half duplex operations
- Support Multicast storm, Broadcast Storm control as well as Flooding Control
- Support port mirroring
- LED display for each port to show link and activity status
- Desktop and optional Rack mountable kit
- Reset to default " push button " and field code upgradeable

# 1.2 Start to Manage This Switch

Either way user may start to manage this switch, web mode through Ethernet port or terminal mode through RS232 port.

**1,2,1** Web mode default setting are:

Default IP Address: 192.168.1.100
Default IP mask: 255.255.255.0
Default gateway: 192.168.1.254
Default Password airlive

**1.2.2** Terminal mode default setting are: baud rate: 115,200, attribute: 8, None, 1, None
Terminal mode operation: (default password is “airlive” )

Once terminal is connected, the basic operation rule are shown below

Press “ ? “ to find root operation page, then choose command by typing little alphabets

After enter command page, Press “ ? “ to find command parameters and format,
further more, type “ command ? “ to get explanation.

Type “ up “ or “ / “ to go back to previous page

# 2.0 Web management

After login is successfully validated, the switch's home page will show up. The left part on the page provides the *function menus*, while the right part provides the individual configuration value or system parameters value. Function menus are divided into three categories, they are **Configuration, Monitoring and Maintenance,** all functions are shown briefly below

## Configuration

- **System** – system values, such as H/W, F/W version, IP, IP mask, MAC address…etc
- **Ports** – port status and configure port parameters
- **Port-based VLAN** – to setup the port-based VLAN
- **Tag-based VLAN** – to configure the tag-based VLAN
- **Port Trunking** – to build up the trunk function
- **Port Mirroring** – to setup the port mirroring function
- **Quality of Service** – to configure the Quality of Service function
- **Storm Control** – to set all kinds of storm limit
- **LACP** – to set LACP parameter
- **RSTP** – to set RSTP parameter
- **IGMP** – to set IGMP parameter
- **802.1X** – to set 802.1X parameter

## Monitoring:

- **Port Statistics** – to statistic traffic on each ports
- **Detailed Port Statistics** – to statistic more detailed traffic on each ports
- **LACP status** – to show LACP status
- **RSTP status** – to show RSTP status
- **IGMP status** – to show IGMP status
- **Reset** – to reboot the switch with/without writing default configurations
- **Ping** – provide ping function and ping result

## Maintenance

- **Warm Reboot** – to restart system
- **Factory Default** – to get parameter value back to factory default
- **Firm Upgrade** – to upgrade code
- **Config File** – to backup configuration data
- **Logout – to logout**

# 2.1 Configurations

## 2.1.1 System

The system diagram shows every common system parameters, they are H/W, F/W version, MAC address, IP address, subnet mask, IP gateway, default VLAN value of management port, name, password, timeout value, and SNMP communities. Once user finish the setting, he must press the "Apply " button to execute all his setting, and whenever he needs, he may press the " Refresh " button to refresh the system parameters.

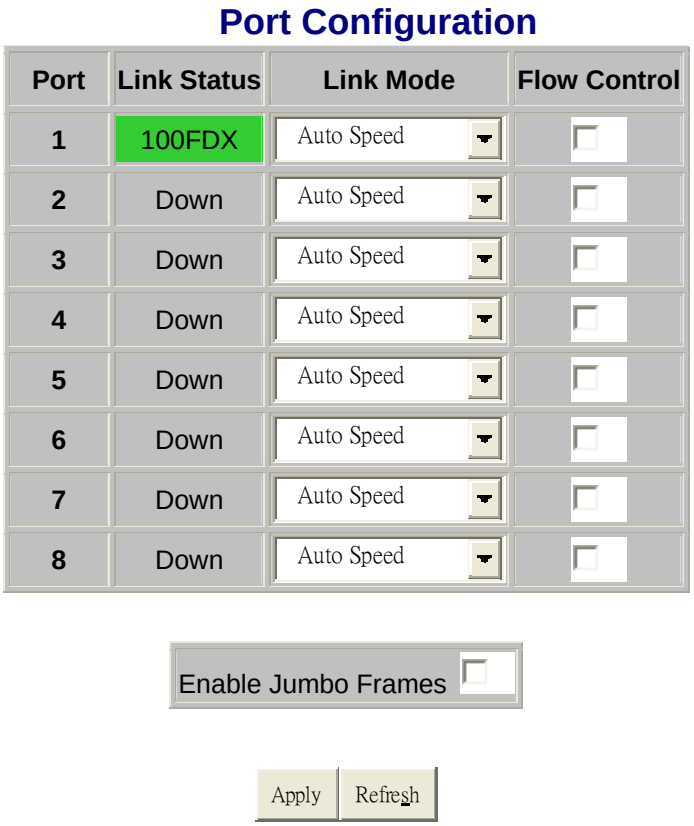
**System Configuration**

| | |
|---|---|
| **MAC Address** | 00-01-c1-00-00-01 |
| **F/W Version** | 1.0 |
| **H/W Version** | 1.0 |
| **IP Address** | 192.168.1.100 |
| **Subnet Mask** | 255.255.255.0 |
| **Gateway** | 192.168.1.254 |
| **Tag VLAN Management Group** | 1 |
| **Name** | |
| **Password** | airlive |
| **Inactivity Timeout (secs)** | 0 |
| **SNMP enabled** | ☑ |
| **SNMP Trap destination** | 0.0.0.0 |
| **SNMP Read Community** | public |
| **SNMP Write Community** | private |
| **SNMP Trap Community** | public |

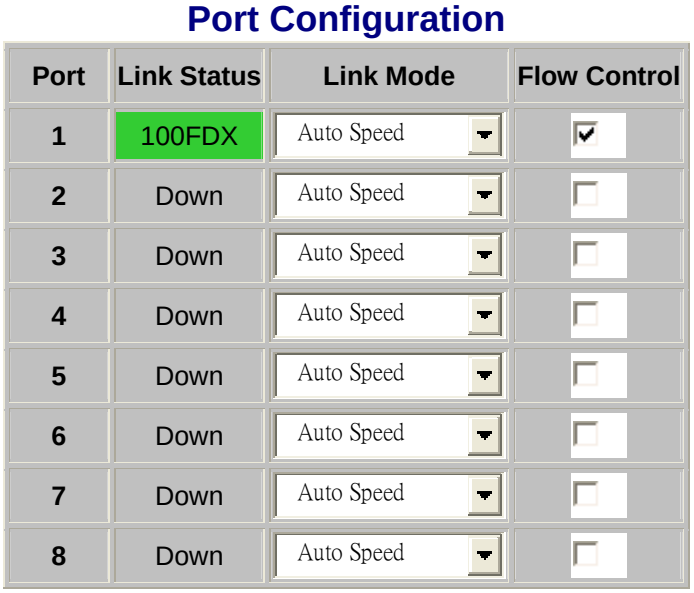
Apply Refresh

# 2.1.2 Ports

Port status page always shows current port status of all 8 ports. User can set link mode, enable or disable flow control and jumbo frame, however, be noticed that the jumbo frame is global setting, it can't be set on individual port but on all device ports at a time. A default diagram is shown below,




Choose and click the ports you want to set, for example, choose port 1, and set port 1 Flow Control enable, then press "Apply", after execution, diagram will shown below



# 2.1.3 Port-based VLAN

Port-based VLAN is a kind of VLAN which is a group of ports marked as a kind by group ID, different VLAN ( different ID ) can't communicate to each other. Before the setting, user must be aware of that there is a default Port-based VLAN, his group ID is 1, so, if user wants to set another new port-based VLAN, better set another group ID rather than 1. After press " Apply " button, the screen will show a new port-based VLAN if he add a new group or screen will delete a port-based VLAN if he delete a group. The important thing is that port-based VLAN is valid only within same device, it will never be valid cross the devices. A default diagram is shown below.

**Port-based VLAN (User Group) Configuration**

| Port-based VLAN Group (User Group) Table | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| No. | Group ID | Member Port | | | | | | | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 | 1 | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |

| Add/Edit a VLAN (User) Group | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Group ID | Member Port | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |

Refresh Delete Apply

Choose and click the ports you want to group, for example, choose port 1, port 2 and set their group ID 2, then press “Apply”, after execution, diagram will shown below

## Port-based VLAN (User Group) Configuration

**Port-based VLAN Group (User Group) Table**

| No. | Group ID | Member Port | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 | 1 | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
| 2 | 2 | ☑ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

**Add/Edit a VLAN (User) Group**

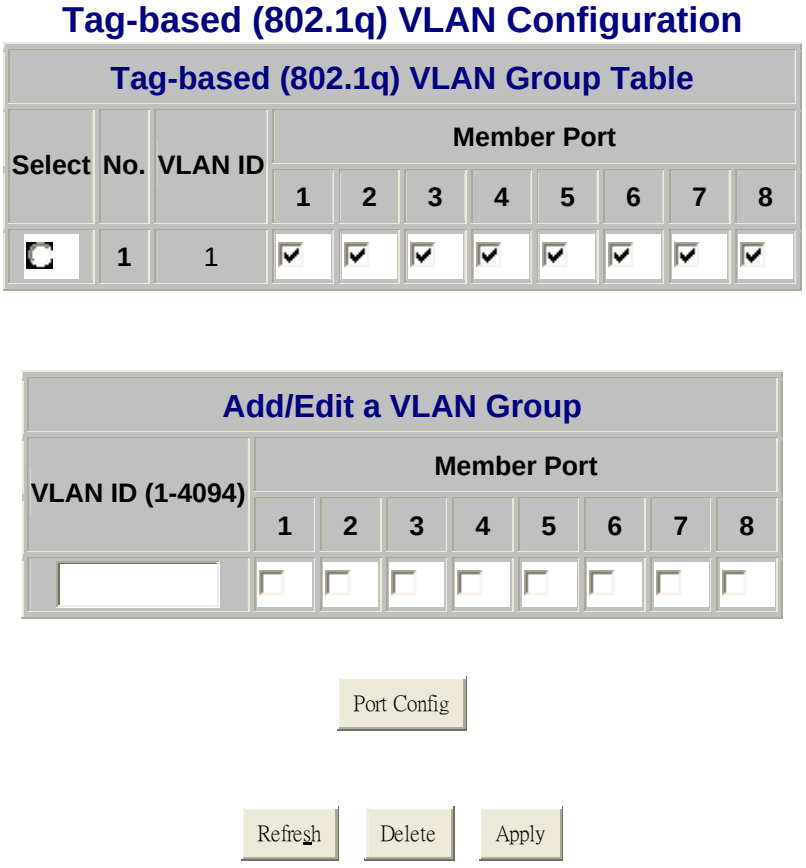
| Group ID | Member Port | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 2 | ☑ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

Refresh  Delete  Apply

# 2.1.4 Tag-based VLAN

Tag-based VLAN is another kind of VLAN which is a group of ports marked as same kind by assigning a tag-value on each port, same as port-based VLAN, different VLAN ( different ID ) can't communicate to each other, and before the setting, there is a default tag-based VLAN, which ID is 1 ( VLAN ID=1 ), so, if he wants to set another new tag-based VLAN, better set another VLAN ID rather than 1 ( tag-base VALN ID ranged from 1 ~ 4094 ). After press " Apply " button, the screen will show a new tag-based VLAN if user add a new VALN, or, a tag-VLAN will be vanished if user delete a VLAN. Two important things must be emphasized here, one is that tag-based VLAN members are valid not only within same device, but also cross the devices as long as they are with same VLAN ID; the other important thing is user must keep in mind that the management-port ( CPU port )VLAN ID should be the same as some member VLAN ID if user want to management through that port, or, management communication will be failed because different VLAN ( different ID ) can't communicate to each other.

A default diagram is shown below.



After assign a tag VLAN, there are further attributes parameter can be assigned for some advanced tag-VLAN application, here below are explanation when entering the " Port Config ", they are:

1. VLAN Aware mode:
   Enable - Strip VLAN tag from received frame, and insert VLAN tag in transmitted frame except ingress frames which tag VID = PVID
   Disable – default state, this means, switch doesn't do VLAN tag stripping and insertion.

2. Ingress filtering:
   Enable - Check ingress frame VLAN ID. Ingress frame will be dropped if frame's VID is not the same as the VID of the ingress port which belongs to a member of a VLAN group
   Disable – Don't do ingress VLAN frame checking, the frame will be flood if VID is not the same

3. Accept Packet Type:
   ALL - Accept all ingress frames
   Tagged only - Only accept ingress frames with VLAN tag

4. Port VID:
   Set port VLAN ID for untagged ingress frames. Set "None" for trunk port member.

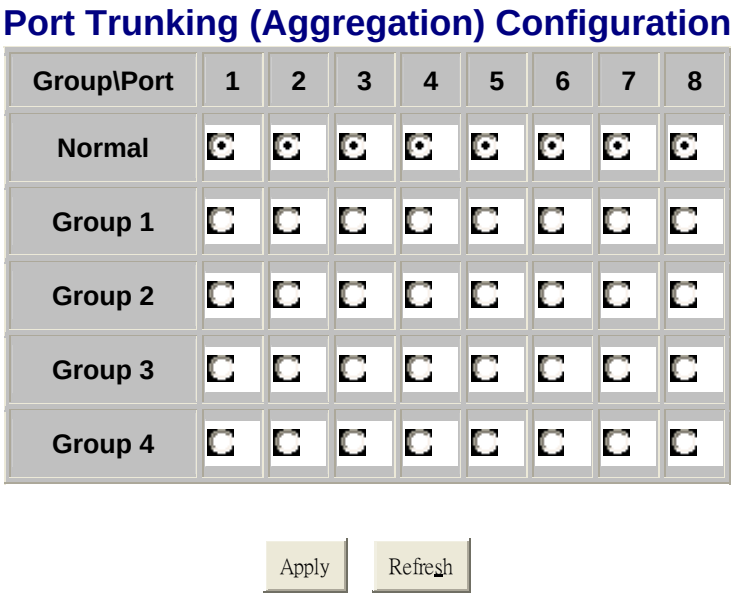
**Tag VLAN Per Port Configuration**

| Port | VLAN aware Enabled | Ingress Filtering Enabled | Acceptable Packet Type | Port VID |
|---|---|---|---|---|
| 1 | ☐ | ☐ | ◉ All ○ Tagged Only | 1 |
| 2 | ☐ | ☐ | ◉ All ○ Tagged Only | 1 |
| 3 | ☐ | ☐ | ◉ All ○ Tagged Only | 1 |
| 4 | ☐ | ☐ | ◉ All ○ Tagged Only | 1 |
| 5 | ☐ | ☐ | ◉ All ○ Tagged Only | 1 |
| 6 | ☐ | ☐ | ◉ All ○ Tagged Only | 1 |
| 7 | ☐ | ☐ | ◉ All ○ Tagged Only | 1 |
| 8 | ☐ | ☐ | ◉ All ○ Tagged Only | 1 |

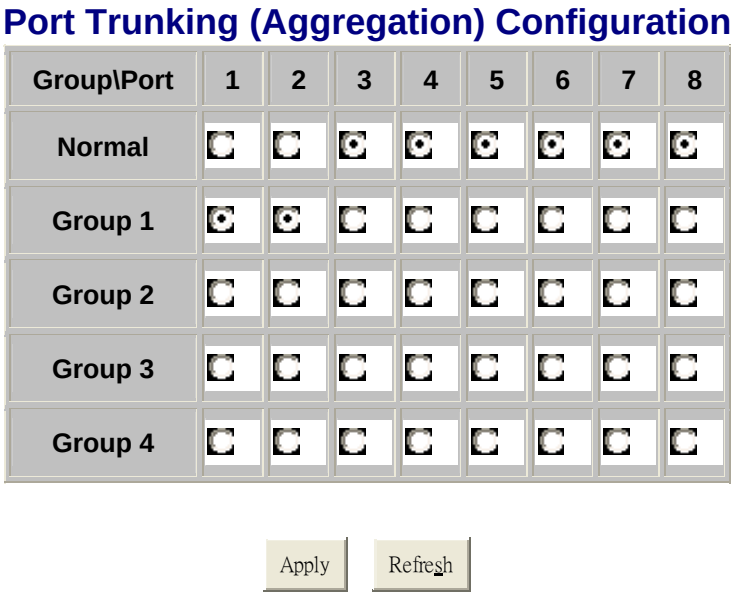
Apply Cancel

# 2.1.5 Port Trunking

A default diagram is shown below, and up to 4 groups are provided

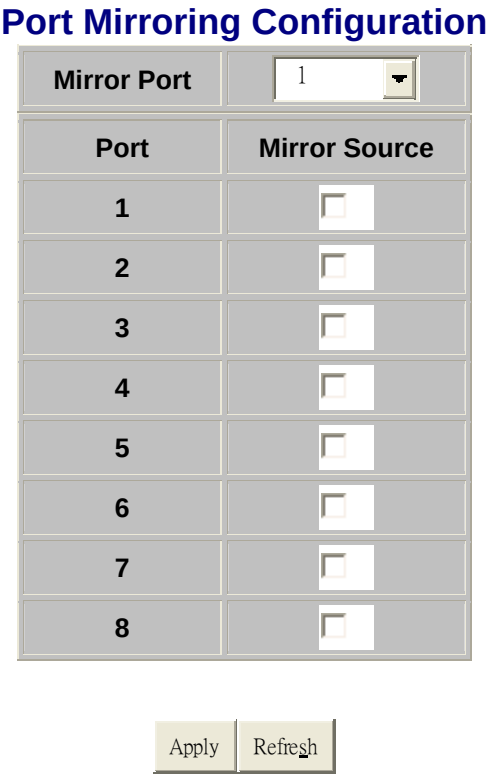



Choose and click the trunk ports you want to group, for example, choose port 1, port 2 into group 1, then press “Apply”, after execution, diagram will shown below

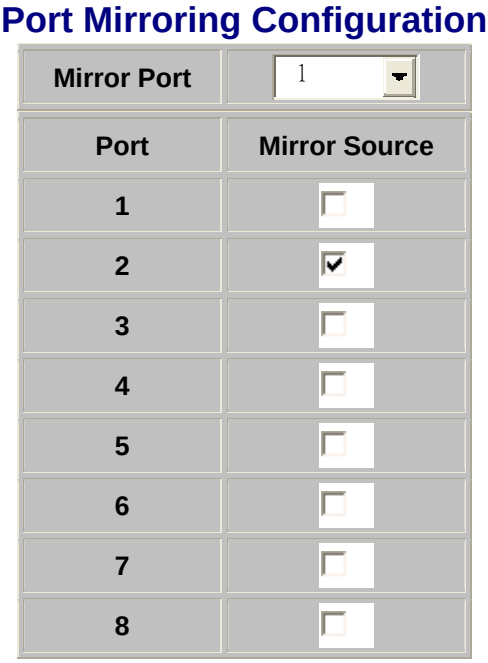


# 2.1.6 Port Mirroring

A default diagram is shown below,

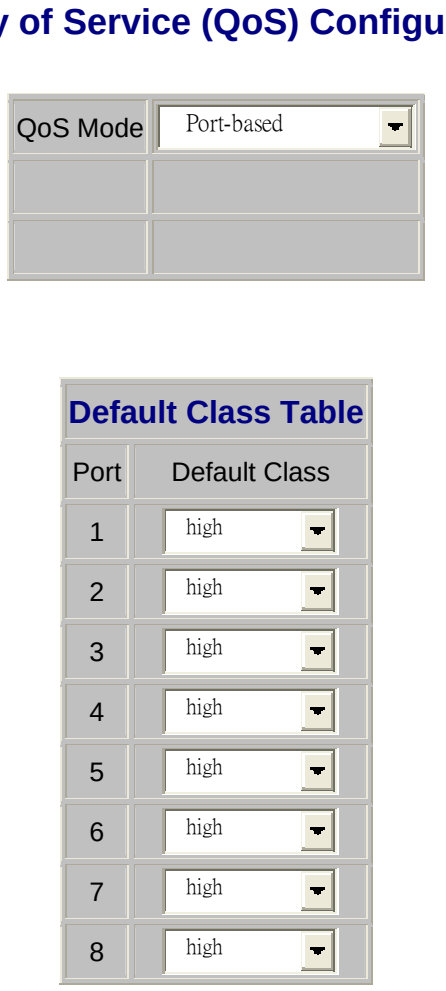



Choose and click the ports you want to monitor, for example, choose port 2
To be monitored, then press “Apply”, after execution, diagram will shown below



# 2.1.7 Quality of Service

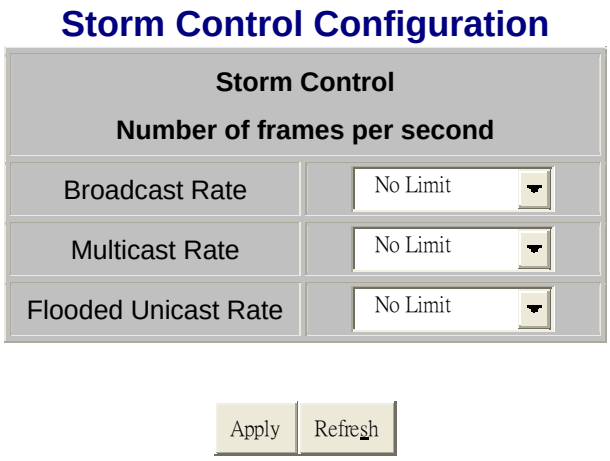
A default diagram is shown below,



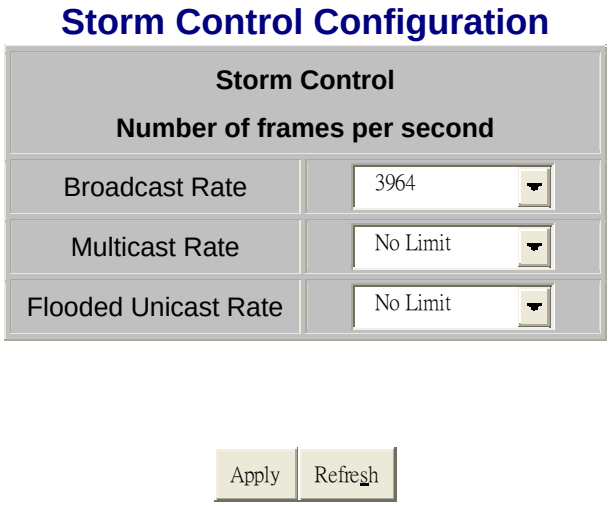

Choose the priority level for the port you want to set, then same priority will get same priority service.

# 2.1.8 Storm Control

A default diagram is shown below,

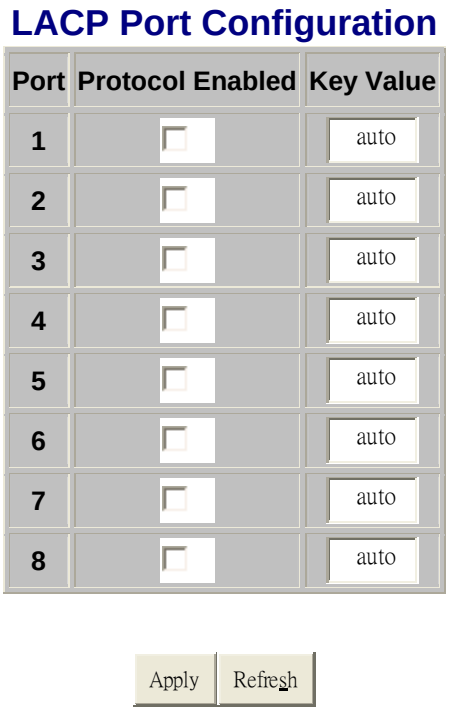



Choose and click type of storm you want to control, for example, choose Broadcast storm with 3,964 frames per second as upper limit, once the Broadcast frame rate higher than 3,964 frame per second, this port will be disabled. Press “Apply”, after execution, diagram will be shown below



# 2.1.9 LACP

Different from the static port trunking, LACP provides another way to dynamically aggregate port to a group (trunk) according to IEEE 802.3ad. A default diagram is shown below,




Two parameters need to be set per port basis in this webpage:

- **Protocol Enabled** – to enable/disable LACP protocol for a port.
- **Key Value** – a number (1~255) to identify the LACP group for a port. All member ports in a LACP group have the same key values. Key number will be automatically generated if "auto" value is set

Choose and click the trunk ports you want to group. For example, select port 7 and port 8 to group into a LACP group with key value 20 for both ports, then press " Apply" to activate the setting. The following figure is the result:

## LACP Port Configuration

| Port | Protocol Enabled | Key Value |
|---|---|---|
| 1 | ☐ | auto |
| 2 | ☐ | auto |
| 3 | ☐ | auto |
| 4 | ☐ | auto |
| 5 | ☐ | auto |
| 6 | ☐ | auto |
| 7 | ☑ | 20 |
| 8 | ☑ | 20 |

Apply Refresh

# 2.1.10 RSTP

The Spanning-Tree Protocol (STP) is IEEE 802.1d standardized method for avoiding loops in switched networks. Enable STP to ensure that only one path at a time is active between any two nodes on the network.

The Rapid-Spanning-Tree-Protocol (RSTP) is a more advanced protocol than STP according to IEEE 802.1w standard. RSTP can shorten spanning tree convergent time while network topology is changed. A default diagram is shown below,

**RSTP Configuration**

| System Configuration | |
|---|---|
| System Priority | 32768 |
| Hello Time | 2 |
| Max Age | 20 |
| Forward Delay | 15 |
| Force version | Normal |

| Port Configuration | | | |
|---|---|---|---|
| Port | Protocol Enabled | Edge | Path Cost |
| Aggregations | ☐ | | |
| 1 | ☐ | ☑ | auto |
| 2 | ☐ | ☑ | auto |
| 3 | ☐ | ☑ | auto |
| 4 | ☐ | ☑ | auto |
| 5 | ☐ | ☑ | auto |
| 6 | ☐ | ☑ | auto |
| 7 | ☐ | ☑ | auto |
| 8 | ☐ | ☑ | auto |

Apply Refresh

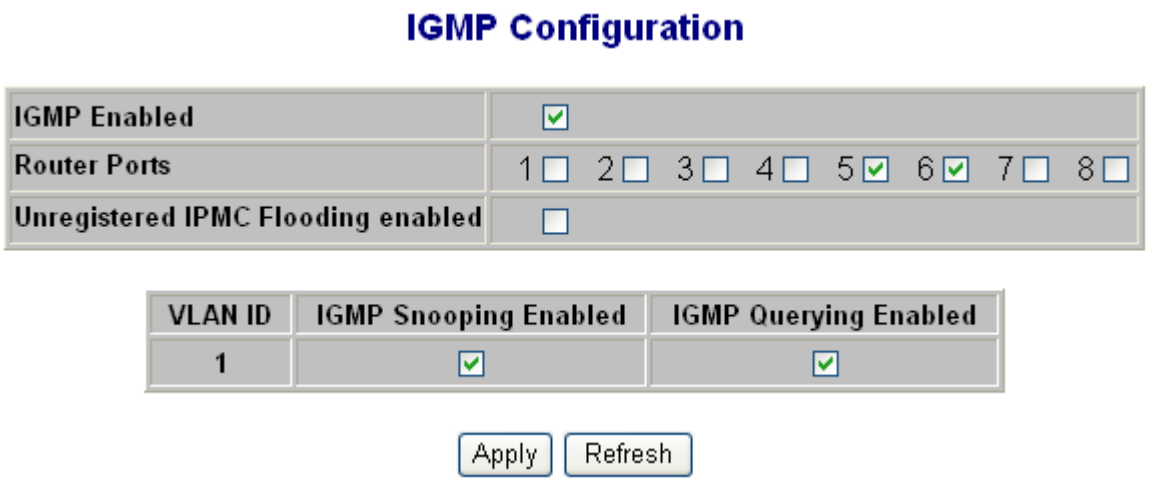
Use the following parameters in the webpage to configure RSTP function:

- **System Configuration**
  - **System Priority** – A value to identify the root bridge. The bridge with lowest value has the highest priority and is selected as the root. 16 numbers are provided in this field from 0 to 61140 in increments of 4096.
  - **Hello Time** -- the number of seconds among the transmission of Spanning-Tree Protocol configuration messages. Enter a number 1 through 10. (default is 2)
  - **Max Age** – the number of second bridge waits without receiving Spanning-Tree Protocol configuration messages before attempting a reconfiguration. Enter a number 6 through 40. (default is 20)
  - **Forward Delay --** the number of seconds a port waits before changing from its Spanning-Tree Protocol learning and listening states to the forwarding state. Enter a number 4 through 30. (default is 15)
  - **Force Version** – normal: use RSTP; compatible: compatible with old STP protocol

- **Port Configuration**
  - **Aggregations** – Enable/disable the RSTP protocol on aggregation links
  - **Protocol Enabled** – Enable/disable the RSTP protocol per port basis
  - **Edge** – Enable/disable to expect a port to be an edge port (an end station) or a link to another STP device
  - **Path Cost** – A value on a port that switch uses to determine which port are the forwarding ports. The lowest number is forwarding ports. The value can be set from 1 to 200000000 or “auto” to be automatically generated.

# 2.1.11 IGMP

The Internet Group Management Protocol (IGMP) is an internal protocol of the Internet Protocol (IP) suite. IGMP can manage the multicast traffic if the members (switches, router or other network devices) of group support IGMP. This switch provides IGMP snooping feature to detect IGMP queries, report packets and manage the IP multicast traffic through the switch. This feature can limit the forwarding of multicast frames to only ports that are a member of multicast group. Only **IPv4** IGMP frames are recognized for this system.




The following parameters are provided for configuring IGMP snooping for this system:

- **IGMP Enabled** – to globally enable/disable IGMP snooping function
- **Router Ports** – to specify administrative router ports for IGMP frames
- **Unregistered IPMC Flooding Enabled** – to set forwarding option for unregistered (not joined) IP multicast traffic. Enabled: to flood frames; Disable: to forward frames to **router ports** only

Two options can be set for each existing VLAN group:

- **IGMP Snooping Enabled** – to enable/disable snooping IGMP frames
- **IGMP Querying Enabled** – to enable/disable sending IGMP querying frames

The example webpage show in above shows the configuration of IGMP function which has IGMP enabled, uses port 5 and 6 as router ports to forward the IGMP frames, forwards unregistered IPMC frames to router ports (port 5 and 6), and enables snooping IGMP and sending querying frames for the VLAN group which VID = 1.

# 2.1.12 802.1x

A default diagram is shown below, user must contact the manager of RADIUS server, and then get IP, UDP port number and secret to operate 802.1X.

**802.1X Configuration**

| | |
|---|---|
| **Mode** | Disabled |
| **RADIUS IP** | 0.0.0.0 |
| **RADIUS UDP Port** | 1812 |
| **RADIUS Secret** | |

| Port | Admin Mode | Port State | Action | | |
|---|---|---|---|---|---|
| 1 | Force Authorized | 802.1X Disabled | Re-authenticate | Force Reinitialize | Statistics |
| 2 | Force Authorized | 802.1X Disabled | Re-authenticate | Force Reinitialize | Statistics |
| 3 | Force Authorized | 802.1X Disabled | Re-authenticate | Force Reinitialize | Statistics |
| 4 | Force Authorized | 802.1X Disabled | Re-authenticate | Force Reinitialize | Statistics |
| 5 | Force Authorized | 802.1X Disabled | Re-authenticate | Force Reinitialize | Statistics |
| 6 | Force Authorized | 802.1X Disabled | Re-authenticate | Force Reinitialize | Statistics |
| 7 | Force Authorized | 802.1X Disabled | Re-authenticate | Force Reinitialize | Statistics |
| 8 | Force Authorized | 802.1X Disabled | Re-authenticate | Force Reinitialize | Statistics |
| | | | Re-authenticate All | Force Reinitialize All | |

Apply Refresh

# 2.2 Monitoring

## 2.2.1. Port Statistics

Choose and click command manual, after execution, diagram will shown below, user can clear counter or refresh as will

### Statistics Overview for all ports

| Port | Tx Bytes | Tx Frames | Rx Bytes | Rx Frames | Tx Errors | Rx Errors |
|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 4837 | 7 | 1122 | 9 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 |

Clear Refresh

# 2.2.2 Detailed Port Statistic

Choose and click command manual, more detailed count will be displayed like below, user can analyze frame per frame size, byte and error types.

## Statistics for Port 2

Clear Refresh

Port 1 | Port 2 | Port 3 | Port 4 | Port 5 | Port 6 | Port 7 | Port 8

| Receive Total | | Transmit Total | |
|---|---|---|---|
| Rx Packets | 152 | Tx Packets | 32 |
| Rx Octets | 12525 | Tx Octets | 19735 |
| Rx High Priority Packets | - | Tx High Priority Packets | - |
| Rx Low Priority Packets | - | Tx Low Priority Packets | - |
| Rx Broadcast | - | Tx Broadcast | - |
| Rx Multicast | - | Tx Multicast | - |
| Rx Broad- and Multicast | 112 | Tx Broad- and Multicast | 0 |
| Rx Error Packets | 0 | Tx Error Packets | 0 |
| **Receive Size Counters** | | **Transmit Size Counters** | |
| Rx 64 Bytes | - | Tx 64 Bytes | - |
| Rx 65-127 Bytes | - | Tx 65-127 Bytes | - |
| Rx 128-255 Bytes | - | Tx 128-255 Bytes | - |
| Rx 256-511 Bytes | - | Tx 256-511 Bytes | - |
| Rx 512-1023 Bytes | - | Tx 512-1023 Bytes | - |
| Rx 1024- Bytes | - | Tx 1024- Bytes | - |
| **Receive Error Counters** | | **Transmit Error Counters** | |
| Rx CRC/Alignment | - | Tx Collisions | - |
| Rx Undersize | - | Tx Drops | - |
| Rx Oversize | - | Tx Overflow | - |
| Rx Fragments | - | | |
| Rx Jabber | - | | |
| Rx Drops | - | | |

# 2.2.3 LACP Status

Choose and click command manual, after execution, diagram will shown like below, user can refresh as will

## LACP Status

| LACP Aggregation Overview</FONT< th> | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Group/Port | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| State | | | | | | | | |

| Legend | | |
|---|---|---|
| | Down | Port link down |
| 0 | Blocked | Port Blocked by RSTP. Number is Partner port number if other switch has LACP enabled |
| 0 | Learning | Port Learning by RSTP |
| | Forwarding | Port link up and forwarding frames |
| 0 | Forwarding | Port link up and forwarding by RSTP. Number is Partner port number if other switch has LACP enabled |

Refresh

| LACP Port Status | | | |
|---|---|---|---|
| Port | Protocol Active | Partner Port Number | Operational Port Key |
| 1 | no | | |
| 2 | no | | |
| 3 | no | | |
| 4 | no | | |
| 5 | no | | |
| 6 | no | | |
| 7 | no | | |
| 8 | no | | |

# 2.2.4 RSTP Status

Choose and click command manual, after execution, diagram will shown like below, user can refresh as will

**RSTP Status**

| RSTP VLAN Bridge Overview | | | | | | |
|---|---|---|---|---|---|---|
| VLAN Id | Bridge Id | Hello Time | Max Age | Fwd Delay | Topology | Root Id |
| 1 | 32769:00-01-c1-00-00-02 | 2 | 20 | 15 | Steady | This switch is Root! |

Refresh

| RSTP Port Status | | | | | | |
|---|---|---|---|---|---|---|
| Port/Group | Vlan Id | Path Cost | Edge Port | P2p Port | Protocol | Port State |
| Port 1 | | | | | | Non-STP |
| Port 2 | | | | | | Non-STP |
| Port 3 | | | | | | Non-STP |
| Port 4 | | | | | | Non-STP |
| Port 5 | | | | | | Non-STP |
| Port 6 | | | | | | Non-STP |
| Port 7 | | | | | | Non-STP |
| Port 8 | | | | | | Non-STP |

# 2.2.5 IGMP Status

Choose and click command manual, after execution, diagram will shown like below, user can refresh as will

**IGMP Status**

| VLAN ID | Querier | Queries transmitted | Queries received | v1 Reports | v2 Reports | v3 Reports | v2 Leaves |
|---|---|---|---|---|---|---|---|
| 1 | Idle | 0 | 0 | 0 | 0 | 0 | 0 |

Refresh

# 2.2.5 Ping

A default diagram is shown below,

**Ping Function**

| Ping parameters | |
|---|---|
| Target IP address | |
| Count | 1 |
| Time Out (in secs) | 1 |

Apply

| Ping Results | |
|---|---|
| Target IP address | 0.0.0.0 |
| Status | Test complete |
| Received replies | 0 |
| Request timeouts | 0 |
| Average Response Time (in ms) | 0 |

Refresh

Fill up the IP address you want to ping, set Time Out time and Counts, for example, IP = 192.168.223.254, count = 5, time pout = 5 sec, then press “Apply”, then press “Refresh” after execution, diagram will shown below

| Ping Results | |
|---|---|
| Target IP address | 192.168.223.254 |
| Status | Test complete |
| Received replies | 0 |
| Request timeouts | 5 |
| Average Response Time (in ms) | 0 |

Refresh

# 2.3 Maintenance

## 2.3.1 Warm Reboot

Choose and click command manual, diagram will shown like below, user can press Yes or No

**Warm Reboot**

Are you sure you want to perform a warm reboot? Yes No

## 2.3.2 Factory Default

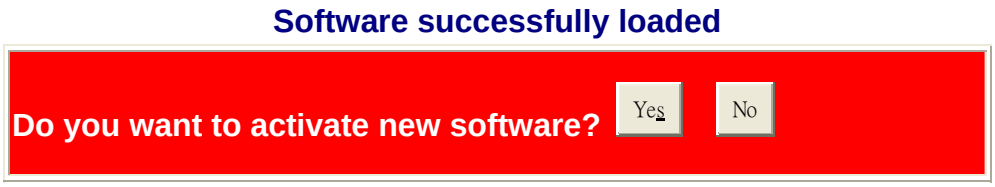
Choose and click command manual, diagram will shown like below, user can press Yes or No

**Factory Default**

Are you sure to reset configurations to factory default? Yes No

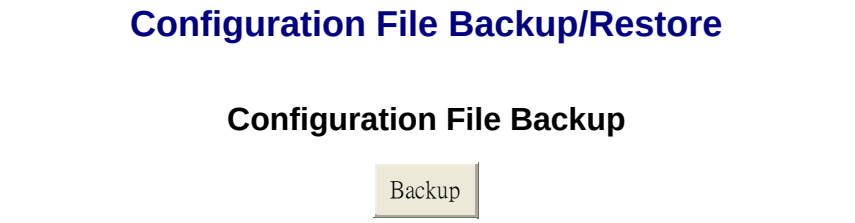
## 2.3.3 Firmware Update

Choose and click command manual, diagram will be shown, and then direct the location of the file that to be updated, then press “ upload “, if success, it will be shown below




## 2.3.4 Config File

Choose and click command manual, diagram will be shown, and then direct the location of the file that to be backup, give a name, then press “ Backup “




Choose and click command manual, diagram will be shown, and then direct the location of the file that to be restored, then press “ Restore “ It will show transfer completed if it success.


# 3.0 Terminal Mode management

Terminal mode is easy to operate, it is useful when in-band ethernet communication is malfunction, or user wants to do some parameter setting, for example, before in-band management through ethernet works, user might have to modify IP address, subnet mask, …etc, he may do these things through terminal mode.

before it starts, user must set up the terminal parameters, such as Hyper terminal in Microsoft Window,

Select COM #: COM 1, COM 2, …then,
Set Baud rate to: 115,200, per second
Set Attribute to 8, None, 1, None ( 8 bit, No parity, 1 stop bit, No protocol in hardware )

Once terminal is connected, then type the password "**airlive**" to login, the basic operation rule are shown below

**Press " ? " to find root operation page,** then choose command by typing little alphabets
The screen will show as below

```
>?
Commands at top level:
System          - System commands
Console         - Console commands
Port            - Port commands
MAC             - MAC commands
VLAN            - 802.1q (Tag-based) VLAN commands
Aggr            - Aggregation commands
LACP            - IEEE 802.3ad Link Aggregation commands
RSTP            - IEEE 802.1w Rapid Spanning Tree commands
User Group      - User Group (Port-based VLAN) commands
QoS             - QoS commands
Mirror          - Mirror commands
IP              - IP commands
Dot1x           - Dot1x commands
IGMP            - IGMP Snooping commands
Debug           - Debug commands
>
```

**After enter command page, Press " ? "** to find command parameters and format, for example

```
>system
System>

System>?
Commands at System level:
System Configuration [all]
System Restore Default [keepIP]
System Name [<name>]
System Reboot
```

System Xmodem
System SNMP [enable|disable]
System Trap [<IP Address>]
System Readcommunity [<community string>]
System Writecommunity [<community string>]
System Trapcommunity [<community strin

**further more, type " command "** to get more information, such as type "configuration"

System>configuration
System Configuration:
Name:
S/W Version: 1.1
CVS Tag: sw_8051_2_29e
Compile Date: Dec 18 2006 12:26:43
H/W Version: 1.0

MAC address: 00-0a-17-02-10-06
SNMP: enabled
Trap IP: 0.0.0.0
Readcommunity: public
Writecommunity: private
Trapcommunity: public

**Type " up " or " / " go back to previous page**

All others command are operated likewise.

The end