

# Amphenol RJ-Switch



## IP67 rugged Ethernet Managed Switch - CLI User Manual -

### CLI User Manual

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This manual applies to the following products:

- **RJSMLAC 8MG CAPS (options)**
- **RJSMLAC 8MG CAPS VAC (NAV) (options)**
- **RESMLAC 8MG CAPS (options)**  
Rugged IP67/68 Managed Gigabit Ethernet Switch

Revision	Date	Modifications
1	April 04, 2012	Initial document
2	December 11, 2013	Updated screen shots
2.1	December 07, 2016	Added P/N RJSMLAC-8MG-CAPS-VAC (NAV) / No change in the content /
2.2	May 09, 2018	Removed RES-SCE-8MG

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## COMMAND LINE INTERFACE

The Ethernet switch Command Line Interface (CLI) is used for out-of-band control of the Ethernet switch. It provides the ability to customize configurations and status monitoring.

## COMMAND LINE OVERVIEW

? Help Up Exit

System Configuration [all]

System Restore Default [keepIP] System Name

[<name>]

System Reboot

System SNMP [enable|disable] System Trap

[<IP Address>]

System Readcommunity [<community string>]

System Writecommunity [<community string>] System

Trapcommunity [<community string>] Console Configuration

Console Password [<password>] Console

Timeout [<timeout>]

Port Configuration [<portlist>]

Port Mode [<portlist>] [<speed>]

Port Flow Control [<portlist>] [enable|disable] Port State

[<portlist>] [enable/disable]

Port MaxFrame [<portlist>] [<framesize>|reset]Port Statistics [<portlist>]  
[clear]

Port VeriPHY [<portlist>] [full|anomaly|termination] MAC Configuration

MAC Add <macaddress> <portlist>|none [<vid>] MAC Delete

<macaddress> [<vid>]

MAC Lookup <macaddress> [<vid>] MAC table

<vidlist>

MAC Flush

MAC Agetime [<agetime>]

VLAN Configuration [<portlist>] VLAN Add

<vidlist> [<portlist>] VLAN Delete <vidlist>

VLAN Lookup <vidlist>

VLAN Aware [<portlist>] [enable|disable]

VLAN PVID [<portlist>] [<vid>|none]

VLAN Frame Type [<portlist>] [all|tagged] Aggr

Configuration

Aggr Add <portlist> Aggr Delete

<portlist> Aggr Lookup <portlist>

Aggr Mode [smac|dmac|xor]

LACP Configuration [<portlist>]  
 LACP Mode [<portlist>] [enable|disable] LACP Key  
 [<portlist>] [<key>|auto]  
 LACP Status  
 LACP Statistics  
 RSTP Configuration [<portlist>] RSTP sysprio  
 [<sysprio>]  
 RSTP hello time [<secs>]  
 RSTP maxage [<hops>] RSTP  
 fwwdelay [<secs>]  
 RSTP version [normal|compat]  
 RSTP Mode [<portlist>] [enable|disable] RSTP Aggr  
 [enable|disable]  
 RSTP Edge [<portlist>] [enable|disable]  
 RSTP Pathcost [<portlist>] [<pathcost>|auto] RSTP mcheck  
 <portlist>  
 RSTP Status  
 RSTP Statistics  
 User Group Configuration  
 User Group Add <grouplist> [<portlist>] User Group  
 Delete <grouplist>  
 User Group Lookup <grouplist> QoS  
 Configuration [<portlist>]  
 QoS Mode [<portlist>] [tag|iptos|port|diffserv|L4] QoS Default  
 [<portlist>] [low|high]  
 QoS Tagprio [<portlist>] [<tagpriolist>] [<class>]  
 QoS Tosprecedence [<portlist>] [<tosprecedencelist>] [<class>] QoS DiffServ  
 [<portlist>] [<dscplist>] [low|high]  
 QoS L4 Default [<portlist>] [<class>]  
 QoS L4 Match [<portlist>] [<class>]  
 QoS L4 Add [<portlist>] <UDP/TCP portlist>  
 QoS L4 Delete [<portlist>] <UDP/TCP portlist>  
 QoS L4 List [<portlist>]  
 QoS Userprio [<portlist>] [<tagprio>]  
 QoS Shaper [<portlist>] [enable|disable] [<rate>] QoS Policer  
 [<portlist>] [enable|disable] [<rate>]  
 QoS Storm Control [<portlist>] [enable|disable] [<rate>]  
 Mirror Configuration  
 Mirror Port [<port>]  
 Mirror Source [<portlist>] [enable|disable] IP Configuration  
 IP Setup [<ipaddress> [<ipmask> [<ipgateway>]] [<vid>] IP Mode  
 [enable|disable]  
 IP ARP

IP DHCP [enable|disable] Dot1x  
Configuration  
Dot1x Mode [enable|disable]  
Dot1x State [<portlist>] [Auto|ForceAuthorized|ForceUnauthorized] Dot1x Server [<IP  
Address>]  
Dot1x UDP Port [<value>]  
Dot1x Secret [<Shared Secret>] Dot1x  
Statistics [<portlist>]  
Dot1x Reauthenticate [<portlist>] [now] Dot1x  
Parameters [<parameter>] [<value>]  
Debug Loopback [int|ext]  
IGMP Configuration  
IGMP Status  
IGMP Groups <vidlist>  
IGMP Mode [enable|disable]  
IGMP State <vidlist> [enable|disable] IGMP Querier  
<vidlist> [enable|disable]  
IGMP Router ports [<portlist>] [enable|disable] IGMP Unregistered  
Flood [enable|disable]

## DETAILED COMMAND DESCRIPTION

Some of the commands have optional parameters. If the optional parameter is omitted, a default value may be used

or the command may display the current setting (i.e. function as a get command).

Example 1, omitted parameter interpreted as display command:

Syntax:

System Name [<name>]

>system name <enter>

System Name: RJSMLAC-8MG-CAPS

Example 2, omitted parameter interpreted as default value (VLAN ID 1):

Syntax:

MAC Add <macaddress> <portlist> [<vid>]

>mac add 010203ABCDEF 16 <enter>

The following sections list the individual commands by showing the syntax and a description of each command.

### *System Configuration*

Syntax:

System Configuration [all] Description:

Show system name, software version, hardware version and management MAC address. Optionally show the full configuration

[all]: Show the total switch configuration (default: System configuration only).

### *System Restore Default*

Syntax:

System Restore Default [keepIP]

Description:

Restore factory default configuration.

[keepIP]: Preserve IP configuration (default: Not preserved).

### *System Name*

Syntax:

System Name [<name>]

Description:

Set or show the system name. The empty string ("") clears the system name.

[<name>]: String of up to 16 characters (default: Show system name).

### *System Reboot*

Syntax:

System Reboot

Description:

Reboot the switch.



## *System SNMP*

Syntax:

System SNMP [enable|disable]

Description:

Activate or deactivate SNMP.

[enable|disable]: Enable/disable SNMP (default: Show SNMP mode).

## *System Trap*

Syntax:

System Trap [<IP Address>]

Description:

Set or show SNMP traps destination.

[<IP Address>]: IP address to send traps to. 0.0.0.0 disables traps (default: Show trap destination).

## *System Readcommunity*

Syntax:

Readcommunity [<community string>]

Description:

Set or show SNMP read community string.

[<community string>]: New community string. (default: Show current value).

## *System Writecommunity*

Syntax:

Writecommunity [<community string>]

Description:

Set or show SNMP write community string.

[<community string>]: New community string. (default: Show current value).

## *System Trapcommunity*

Syntax:

Trapcommunity [<community string>]

Description:

Set or show SNMP trap community string.

[<community string>]: New community string. (default: Show current value).

## CONSOLE COMMANDS

### *Console Configuration*

Syntax:

Console Configuration

Description:

Show configured console password and timeout.

### *Console Password*

Syntax:

Console Password [<password>]

Description:

Set or show the console password. The empty string ("") disables the password check.

[<password>]: Password string of up to 16 characters.

### *Console Timeout*

Syntax:

Console Timeout [<timeout>]

Description:

Set or show the console inactivity timeout in seconds. The value zero disables timeout.

[<timeout>]: Timeout value in seconds, 0, 60-10000.

### *Console Prompt*

Syntax:

Console Prompt [<prompt\_string>]

Description:

Set or show the console prompt string. The empty string ("") clears the prompt string.

[<prompt\_string>]: Command prompt string of up to 10 characters.

## PORT COMMANDS

### *Port Configuration*

Syntax:

Port Configuration [<portlist>]

Description:

Show the configured and current speed, duplex mode, flow control mode and state for the port.

<portlist>: Port list (Default: All ports).

### *Port Mode*

Syntax:

Port Mode [<portlist>] [<mode>]

Description:

Set or show the speed and duplex mode for the port.

<portlist>: Port list (Default: All ports).

<mode> : Port speed and duplex mode (Default: Show configured and current mode).

10hdx : 10 Mbit/s, half duplex.

10fdx : 10 Mbit/s, full duplex.

100hdx : 100 Mbit/s, half duplex.

100fdx : 100 Mbit/s, full duplex.

1000fdx: 1 Gbit/s, full duplex.

auto : Auto negotiation of speed and duplex.

### *Port Flow Control*

Syntax:

Port Flow Control [<portlist>] [enable|disable]

Description:

Set or show flow control mode for the port.

<portlist> : Port list (default: All ports).

[enable|disable]: Enable/disable flow control (default: Show flow control mode).

### *Port State*

Syntax:

Port State [<portlist>] [enable/disable]

Description:

Set or show the state for the port.

<portlist> : Port list (default: All ports).

[enable|disable]: Enable or disable port state (default: Show state).

### *Port MaxFrame*

Syntax:

Port MaxFrame [<portlist>] [<framesize>|reset]

Description:

Set or show the maximum frame size in bytes (including FCS) for frames received on the port. Tagged frames are allowed to be 4 bytes longer than the maximum frame size. Use the reset option to return to the default setting.

[<portlist>] : Port list (default: All ports).

[<framesize>|reset]: Maximum frame size or reset to 1518 bytes (default: Show maximum frame size).

### *Port Statistics*

Syntax:

Port Statistics [<portlist>] [clear]

Description:

Show or clear statistics for the port.

<portlist>: Port list (default: All ports).  
[clear] : Clear port statistics (default: Show statistics).

### *port VeriPHY*

Syntax:

Port VeriPHY [<portlist>] [full|anomaly|termination]

Description:

Perform VeriPHY cable diagnostics on the specified port(s).

<portlist>: Port list (default: All ports).

[full|anomaly|termination]:

Type of diagnostics. Full comprises cable length and full anomaly check, anomaly comprises full anomaly check and termination comprises anomaly check without check for coupling between pairs (default: full).

## MAC TABLE COMMANDS

### *MAC Configuration*

Syntax:

MAC Configuration

Description:

Show the permanently stored MAC table and the MAC ageing timer.

### *MAC Add*

Syntax:

MAC Add <macaddress> <portlist>|none [<vid>] Description:

Add a static MAC address table entry and VLAN ID on ports.

<macaddress>: MAC address, 12-digit hex string, optionally separated with dashes or colons (e.g. 010203ABCDEF or 01-02-03-AB-CD-EF or

01:02:03:AB:CD:EF).

<portlist> : Port list. Use "none" to specify no ports.

[<vid>] : VLAN ID, 1-4095 (default: 1).

### *MAC Delete*

Syntax:

MAC Delete <macaddress> [<vid>]

Description:

Delete MAC address and VLAN ID.

<macaddress>: MAC address, 12-digit hex string, optionally separated with dashes or colons (e.g. 010203ABCDEF or 01-02-03-AB-CD-EF or 01:02:03:AB:CD:EF).

[<vid>] : VLAN ID (default: 1).

### *MAC Lookup*

Syntax:

MAC Lookup <macaddress> [<vid>]

Description:

Lookup MAC address and VLAN ID.

<macaddress>: MAC address, 12-digit hex string, optionally separated with dashes or colons (e.g. 010203ABCDEF or 01-02-03-AB-CD-EF or 01:02:03:AB:CD:EF).

[<vid>] : VLAN ID, 1-4095 (default: 1).

### *MAC Table*

Syntax:

MAC Table <vidlist>

Description:

Show MAC table for the VLAN Ids specified. Since the list can be very long, only the first 20 entries are shown.

<vidlist> : VLAN ID list.

## *MAC Flush*

Syntax: MAC Flush

Description:

Removes non-static MAC address table entries.

## *MAC Age Time*

Syntax:

MAC Agetime [<agetime>]

Description:

Set or show the MAC age timer in seconds. The value zero disables ageing.

[<agetime>]: Age timer in seconds, 0 or 10-65535 (default: Show timer)

## **VLAN COMMANDS**

### *VLAN Configuration*

Syntax:

VLAN Configuration [<portlist>]

Description:

Show the VLAN aware mode, port VLAN ID and accepted frame type for the port and the permanently stored VLAN table.

[<portlist>]: Port list (default: All ports).

### *VLAN Add*

Syntax:

VLAN Add <vidlist> [<portlist>]

Description:

Add VLAN entry and include ports in member set.

<vidlist> : VLAN ID list.

[<portlist>]: Port list (default: All ports).

## *VLAN Delete*

Syntax:

VLAN Delete <vidlist>

Description:

Delete VLAN entry (all ports excluded from member set).

<vidlist> : VLAN ID list.

## *VLAN Lookup*

Syntax:

VLAN Lookup <vidlist>

Description:

Lookup VLAN entry and show port list.

<vidlist> : VLAN ID list.

## *VLAN Aware*

Syntax:

VLAN Aware [<portlist>] [enable|disable]

Description:

Set or show the VLAN awareness mode for the port. VLAN aware ports will strip the VLAN tag from received frames and insert the tag in transmitted frames (except PVID). VLAN unaware ports will not strip the tag from received frames or insert the tag in transmitted frames.

[<portlist>]: Port list (default: All ports).

[enable|disable]: Enable/disable VLAN awareness (default: Show awareness).

## *VLAN PVID*

Syntax:

VLAN PVID [<portlist>] [<vid>|none]

Description:

Set or show the port VLAN ID. Untagged frames received on the port will be classified to this VLAN ID. Frames classified to this VLAN ID will be sent untagged on the port.

[<portlist>]: Port list (default: All ports).

[<vid>|none]: Port VLAN ID, 1-4095 (default: Show PVID).

The 'none' option can be used for trunk links.



## *VLAN Frame Type*

Syntax:

VLAN Frame Type [<portlist>] [all|tagged]

Description:

Set or show the accepted frame type for the port.

[<portlist>]: Port list (default: All ports).

[all|tagged]: Accept all or only tagged (default: Show frame type).

## AGGREGATION/TRUNKING COMMANDS

### *aggregation Configuration*

Syntax:

Aggr Configuration

Description:

Shows the aggregation groups and the aggregation mode.

### *Aggregation Add*

Syntax:

Aggr Add <portlist>

Description:

Add link aggregation group including ports.

<portlist>: Aggregation port list.

### *Aggregation Delete*

Syntax:

Aggr Delete <portlist>

Description:

Delete link aggregation group.

<portlist>: Port list. Aggregations including any of the ports will be deleted.

### *Aggregation Lookup*

Syntax:

Aggr Lookup <portlist>

Description:

Lookup and display link aggregation group.

<portlist>: Port list. Aggregations including any of the ports will be shown.

### *Aggregation Mode*

Syntax:

Aggr Mode [smac|dmac|xor]

Description:

Set or show link aggregation traffic distribution mode.

[smac|dmac|xor]: Aggregation mode, SMAC, DMAC or XOR (default: Show mode).

## **LACP COMMANDS**

Lacp (IEEE 802.3ad Link Aggregation Protocol) provides a way to set up aggregation automatically between switches.

### *LACP Configuration*

Syntax:

LACP Configuration [<portlist>]

Description:

Show the configuration of LACP on all or some ports.

<portlist>: Port list. Default is all ports.

### *LACP Mode*

Syntax:

LACP mode [portlist] [enable|disable]

Description:

Enable or disable LACP on all or some ports.

<portlist>: List of ports to enable or disable LACP. Default is all ports. Enable|disable: Enable or disable LACP on the ports.

### *LACP Key*

Syntax:

LACP key [<portlist>] [<key>|auto]

Description:

The key determines which ports potentially can aggregate together.

## **RSTP COMMANDS**

RSTP is a protocol that prevents loops in the network and dynamically reconfigures which physical links in a switch should forward frames.

### *RSTP Configuration*

Syntax:

RSTP Configuration [<portlist>]

Description:

Show the RSTP Configuration.

### *RSTP Sysprio*

Syntax:

RSTP Sysprio [<sysprio>]

Description:

Set or show the RSTP system priority.

<sysprio>: Number between 0 and 61440 in increments of 4096. This provides for 16 distinct values: 0, 4096, 8192, 12288, 16384, 20480, 24576, 28672, 32768, 36864, 40960, 45056, 49152, 53248, 57344 and 61440.

The lower the system priority the more likely the switch is to become root in Spanning tree.

### *RSTP Hellotime*

Syntax:

RSTP Hellotime [<secs>]

Description:

Set or show the RSTP Hellotime value.

<secs>: Number between 1 - 10 (default is 2)

### *RSTP Maxage*

Syntax:

RSTP Maxage [<secs>]

Description:

Set or show the RSTP MaxAge value.

<secs>: Number between 6 - 40 (default is 20)

### *RSTP Fwddelay*

Syntax:

RSTP Fwddelay [<secs>]

Description:

Set or show the RSTP Forward Delay value.

<secs>: Number between 4 - 30 (default is 15)

### *RSTP Version*

Syntax:

RSTP Version [<version>]

Description:

Set or show the RSTP default protocol version to use.

<version>: normal - use RSTP, compat - compatible with old STP

### *RSTP Mode*

Syntax:

RSTP Mode [<portlist>] [enable|disable]

Description:

Set or show the RSTP mode for the designated ports.

[<portlist>]: Port list (Default: All ports).

[enable|disable]: Enable or disable.

### *RSTP Aggr*

Syntax:

RSTP Aggr [enable|disable]

Description:

Set or show the RSTP mode for aggregated links.

[enable|disable]: Enable or disable.

### *RSTP Edge*

Syntax:

Rstp edge [enable|disable]

Description:

Expect the port to be an edge port (an end station) or a link to another STP device.

[enable|disable]: End-station or bridge.

### *RSTP Pathcost*

Syntax:

RSTP pathcost [<portlist>] [<pathcost>|auto]

Description:

Set or show the RSTP path cost for the designated ports.

[<portlist>]: Port list (Default: All ports).

[<pathcost>]: Number between 1 - 200000000. Auto means auto generated path cost

Path cost is normally reverse proportional to the physical (or aggregated) link speed.

### *RSTP Mcheck*

Syntax:

RSTP Mcheck <portlist>

Description:

Force protocol renegotiations on the specified ports.

<portlist>: Port list.

### *RSTP Status*

Syntax:

RSTP Status

Description:

Show the current state of all RSTP incarnations and the physical (and aggregation) ports that they control.

### *RSTP Statistics*

Syntax:

RSTP Statistics

Description:

Show the current statistics of all RSTP BPDU frames received and transmitted on the physical (and aggregation) ports.

## **USER GROUP COMMANDS**

User groups provide another way than VLAN for making port grouping. With user groups it is possible to share a port between more user groups. An example on how to use user groups is given in chapter 3.5.

### *User Group Configuration*

Syntax:

## User Group Configuration

### Description:

Show the user groups.

### *User Group Add*

#### Syntax:

User Group Add <grouplist> [<portlist>]

#### Description:

Add user group entry including the ports.

<grouplist> : User group ID list.

[<portlist>]: Port list (default: All ports).

### *User Group Delete*

#### Syntax:

User Group Delete <grouplist>

#### Description:

Delete user group entry.

<grouplist>: User group ID list.

### *User Group Lookup*

#### Syntax:

User Group Lookup <grouplist>

#### Description:

Lookup user group entry and show port members.

<grouplist>: User group ID list.

## QoS COMMANDS



## QoS Configuration

Syntax:

QoS Configuration [<portlist>]

Description:

Show the configured QoS mode, IP ToS Precedence priority mapping, VLAN user priority mapping, default priority, default VLAN user priority, L4 default priority, L4 match priority and UDP/TCP entries for the port.

[<portlist>] : Port list (default: All ports).

## QoS Mode

Syntax:

QoS Mode [<portlist>] [tag|iptos|port|diffserv|L4]

Description:

Set or show the priority mode for the port.

[<portlist>] : Port list (default: All ports).

[tag|diffserv]: Enable tag, IP ToS, IP differentiated services or L4 priority for the port (default: Show mode).

## QoS Default

Syntax:

QoS Default [<portlist>] [<class>]

Description:

Set or show the default class. In tag mode, the default class is used for untagged frames. In port mode, the default class is used as the port priority.

In the other modes, the default class is used for non-IP frames and IP frames with options.

[<portlist>]: Port list (default: All ports).

[<class>] : Internal class of service (default: Show class).

## QoS Tagprio

Syntax:

QoS Tagprio [<portlist>] [<tagpriolist>] [<class>]

Description:

Set or show the VLAN user priority mapping.

[<portlist>] : Port list (default: All ports).  
[<tagpriolist>]: VLAN user priority list, 0-7 (default: All user priorities).  
[<class>] : Internal class of service (default: Show class).

### *QoS DiffServ*

Syntax:

QoS DiffServ [<dscplist>] [<class>]

Description:

Set or show the IP Differentiated Services mapping.

[<dscplist>]: IP DSCP list, 0-63 (default: All DSCP values).  
[<class>] : Internal class of service (default: Show class).

Constraint:

only takes a single DSCP number as parameter instead of a DSCP list.

### *QoS Userprio*

Syntax:

QoS Userprio [<portlist>] [<tagprio>]

Description:  
Set or show the default VLAN user priority for received untagged frames.

[<portlist>] : Port list (default: All ports).  
[<tagprio>] : VLAN tag user priority, 0-7 (default: Show user priority).  
[<portlist>] : Port list (default: All ports).  
[enable|disable] : Enable/disable the multicast policer (default: Show multicast policer mode).  
[<rate>] : Leaky bucket rate in Kbit/s [0-1000000k] or Mbit/s [0-1000m].

## **MIRROR COMMANDS**

### ***MIRROR CONFIGURATION***

Syntax:

Mirror Configuration

Description:

Show the mirror destination port and mirror mode for source ports.

### **MIRROR PORT**

Syntax:

Mirror Port [<port>]

Description:

Set or show the mirror destination port.

[<port>]: Mirror destination port (default: Show mirror port).

### **MIRROR SOURCE**

Syntax:

Mirror Source [<portlist>] [enable|disable]

Description:

Set or show the source port mirror mode.

[<portlist>] : Source port list (default: All ports).

[enable|disable]: Enable/disable mirroring of frames received on port  
(default: Show mirror mode).

## **IGMP SNOOPING COMMANDS**

### **IGMP SNOOPING DESCRIPTION**

Per default – and when enabled - IGMP snooping will function in each statically defined VLAN (i.e. those VLANs that are stored in non-volatile configuration memory). The IGMP snooping module will listen to IP multicast router

IGMP queries and the IGMP reports from hosts, and will update the switch device MAC table with IP multicast group MAC addresses and port masks according to the received reports. If no IP multicast router is present in an IGMP enabled VLAN, the switch will perform the querying itself in that particular VLAN.

The switch querying functionality can be enabled and disabled per VLAN. The switch must be setup for IP management (see web management section) in order for the querying to work.

### **IGMP CONFIGURATION**

Syntax:

## IGMP Configuration

### Description:

Show the IGMP configuration.

### **IGMP STATUS**

#### Syntax:

IGMP Status

#### Description:

Show the IGMP operational status and statistics.

### **IGMP GROUPS**

#### Syntax:

IGMP Groups <vidlist>

#### Description:

Show IGMP groups for given VLANs.

### **IGMP MODE**

#### Syntax:

IGMP Mode [enable|disable]

#### Description:

Set or show global IGMP mode. (default:

Show current mode)

### **IGMP STATE**

#### Syntax:

IGMP State <vidlist> [enable|disable]

#### Description:

Set or Show IGMP state per VLAN. (default:

Show IGMP state)

### **IGMP QUERIER**

#### Syntax:

IGMP Querier <vidlist> [enable|disable]

#### Description:

Set or Show IGMP querier state per VLAN. (default: Show

IGMP querier state)

### **ROUTER PORTS**

#### Syntax:

IGMP Router ports [<portlist>] [enable|disable]

Description:

Set or show IGMP administrative router ports. (default: Show current router ports)

#### ***UNREGISTERED FLOOD***

Syntax:

IGMP Unregistered Flood [enable|disable]

Description:

Set or show forwarding mode for unregistered (not-joined) IP multicast traffic. Will flood when enabled, and forward to router-ports only when disabled (default: Show current mode)

## DEBUG COMMANDS

#### ***DEBUG LOOPBACK***

Syntax:

Debug Loopback [int|ext]

Description:

Perform internal or external loopback test.

[int|ext]: Internal or external loopback (default: Internal).

## IP COMMANDS

The TFTP related commands in below are not supported by all versions. From 2.33, they are not supported anymore.

#### ***IP CONFIGURATION***

Syntax:

IP Configuration

Description:

Show configured IP address, mask, gateway, VLAN ID and mode.

### **IP SETUP**

Syntax:

IP Setup [ipaddress> [<ipmask> [ipgateway>]]] [<vid>]

Description:

Set or show IP configuration.

[<ipaddress>]: IP address (default: Show IP configuration).

[<ipmask>] : IP subnet mask (default: Subnet mask for address class).

[<ipgateway>]: Default IP gateway (default: 0.0.0.0).

[<vid>] : VLAN ID, 1-4095 (default: 1).

### **IP MODE**

Syntax:

IP Mode [enable|disable]

Description:

Activate or deactivate the IP configuration.

[enable|disable]: Enable/disable IP (default: Show IP mode).

### **IP PING**

Syntax:

IP Ping [-n <count>][-w <timeout>] <ipaddress>

Description:

Ping the specified IP address.

[-n <count>]: Number of echo requests to send (default: 1).

[-w <timeout>]: Timeout in seconds to wait for each reply (default: 2).

### **IP ARP**

Syntax: IP Arp

Description:

Show the current content of the ARP table.

### **IP DHCP**

Syntax:

IP Dhcp [enable|disable]

Description:

Activate or deactivate the DHCP Protocol.

[enable|disable]: Enable/disable DHCP (default: Show DHCP mode).

#### ***IP TFTP***

Syntax:

IP TFTP [enable|disable]

Description:

Activate or deactivate the TFTP protocol.

[enable|disable]: Enable/disable TFTP (default: Show TFTP mode).

#### ***IP TFTPGET***

Syntax:

IP TFTPGET server-ip filename

Description:

Fetch file from server-ip via the TFTP protocol and store in flash. The content of the file will determine if it is a runtime image or a configuration file.

server-ip: IP address of TFTP-server

filename: Name of source file on TFTP-server

#### ***IP TFTPPUT***

Syntax:

IP TFTPPUT config|image|backup server-ip filename

Description:

Send configuration, image or backup file to server-ip via the TFTP protocol.

config|image|backup: File contains configuration, runtime image or backup image

server-ip: IP address of TFTP-server

filename: Name of destination file on TFTP-server

## **DOT1X COMMANDS**

### ***DOT1X CONFIGURATION***

Syntax:

Dot1x Configuration

Description:

Show current 802.1X configuration.

### ***DOT1X MODE***

Syntax:

Dot1x Mode [enable|disable]

Description:

Enable or disable 802.1X process for the switch.

[enable|disable]: new mode (default: Show current configuration).

### ***DOT1X STATE***

Dot1x State [<portlist>] [Auto|ForceAuthorized|ForceUnauthorized]

Description:

Set or show the 802.1X state for the port.

[<portlist>] : Port list (default: All ports).

[Auto|ForceAuthorized|ForceUnauthorized]: Set 802.1X state for the ports (default: Show mode).

### ***DOT1X SERVER***

Syntax:

Dot1x Server [<IP Address>]

Description:

Set or show RADIUS server IP address.

[<IP Address>]: IP address of external RADIUS server. (default: Show current configuration)

### ***DOT1X UDP PORT***

Syntax:

Dot1x UDP Port [<value>]

Description:

Set up UDP Port for the external RADIUS server.

[<value>]: The UDP port the RADIUS server listens to (default: Show current configuration).

### ***DOT1X SECRET***

Dot1x Secret [<Shared Secret>]

Description:

Set or show the secret shared with the RADIUS server.



[<Shared Secret>]: Shared secret shared with external RADIUS server. (default: Show current configuration)

#### ***DOT1X STATISTICS***

Syntax:

Dot1x Statistics [<portlist>]

Description:

Show 802.1X statistics for the port.

[<portlist>]: Port list (default: All ports).

#### ***DOT1X REAUTHENTICATE***

Syntax:

Dot1x Reauthenticate [<portlist>] [now]

Description:

Refresh (restart) 802.1X authentication process for the port by setting reAuthenticate TRUE.

[<portlist>]: Port list (default: All ports).

[now]: if specified, force re-authentication immediately.

#### ***DOT1X PARAMETERS***

Syntax:

Dot1X Parameters [<parameter>] [<value>]

Description:

Set up advanced 802.1X parameters.

[<parameter>]: Parameter to change.

[<value>]: New value for the given parameter.

## **FILTER COMMANDS**

#### ***FILTER CONFIGURATION***

Syntax:

Filter Configuration [<portlist>]

Description:

Show the configured valid IP address and DHCP server filter for the port.

[<portlist>]: Port list (Default: All ports).

#### ***FILTER SOURCE IP***

Syntax:

Filter Source IP [<portlist>] [all|dhcp|<ipaddress> [<ipmask>]]

Description:

Set or show the valid source IP address for the port.

[<portlist>] : Port list (default: All ports).

[all|dhcp|<ipaddress> [<ipmask>]]: Allow all IP addresses, the IP address from DHCP or static IP address configuration

(default: Show Filter source IP).

#### ***FILTER DHCP SERVER***

Syntax:

Filter DHCP Server [<portlist>] [allow|deny]

Description:

Set or show the DHCP server port.

[<portlist>]: Port list (default: All ports).

[allow|deny]: Enable or disable accepting DHCP reply frame on port

(default: Show Filter DHCP Server).

## EXAMPLES

### VLAN CONFIGURATION

This example shows how to configure two VLANs with the following setup on the RJSMLAC-8MG-CAPS switch:

- VID 1 spans ports 2-8 and VID 2 spans ports 1-3, so port 2 and 3 are members of both VLANs and all 8 ports must be VLAN aware.
- Port 1 is the access port for VID 2, so PVID of port 1 must be set to 2.
- Port 2 is the trunk port for VID 1 and VID 2, so the PVID of port 2 must be set to 'none' and port 2 must be set to accept tagged frames only.
- Port 3 is the hybrid port for VID 1 and VID 2, where VID 1 is the untagged VLAN, so PVID must be set to 1
- Ports 4-8 are access ports for VID 1.

The following CLI session does the above setup provided that the initial configuration is the default configuration:

```
>vlan
```

```
VLAN>delete 1VLAN>add 1 2-8
```

```
VLAN>add 2 1-3
```

```
VLAN>aware enable
```

```
VLAN>pvid 1 2
```

```
VLAN>pvid 2 none
```

```
VLAN>frame type 2 tagged
```

```
VLAN>conf
```

```
VLAN Configuration:
```

Port	Aware	PVID	Frame Type
All	2	enabled	1:
Tagged	none	enabled	2:
All	1	enabled	3:
All	1	enabled	4:
All	1	enabled	5:
All	1	enabled	6:
All	1	enabled	7:
All	1	enabled	8:

```
Entries in permanent table:
```

```
1: 2,3,4,5,6,7,8
```

```
2: 1,2,3
```

```
VLAN>
```

### USER GROUP CONFIGURATION

This example shows how to configure two user groups, port 1+ port 2 and port 4+ port 5, with a common server, port 3.

The following CLI session does the above setup on RJSMLAC-8MG-CAPS switch provided the initial configuration is the default configuration:

```
>user group          # Go to user group level
User Group>delete 1  # Delete default user group 1
User Group>add 2 1-3 # Create user group with ports 1-3
User Group>add 3 3-5 # Create user group with ports 3-5
User Group>add 1 6-8 # Restore default group excluding ports 1-5
```

## *FACTORY DEFAULT CONFIGURATION*

The factory default configuration is a VLAN unaware L2 switch with automatic learning/ageing and auto negotiation enabled on all ports:

- System: The system name string is 8MG.
- Console: The password string is empty and inactivity timeout is disabled. The prompt is ">".
- Port: All ports are enabled for auto negotiation and flow control is disabled. Max frame size is 1518.
- MAC table: The table is empty, auto learning and ageing is enabled. The ageing timer is 300 seconds.
- VLAN: Only VLAN 1 is present in the table and includes all ports. All ports are VLAN unaware with Port VLAN ID 1. All ports accept all frame types.
- Aggregation: No ports are aggregated, but aggregation mode is set to XOR.
- LACP: No ports have LACP enabled.
- RSTP: No ports and no aggregations have RSTP enabled
- User Groups: User group 1 exists and includes all ports.
- QoS: IP ToS Precedence priority is enabled and all Precedence values are given high priority. VLAN tag priorities will be set according to 802.1p. The UDP/TCP port list is empty. Default priority is high. Default user priority is 0. L4 default priority and match priority are low. All shaper and policers are disabled.
- Mirror: Mirroring is disabled.
- IP: IP address is 192.168.0.254, Mask: 255.255.255.0, Gateway: 192.168.0.254. WEB interface is enabled.
- IP: DHCP mode is disabled.
- SNMP: SNMP is enabled. Traps are disabled.
- Dot1X: 802.1X is disabled. All ports set to "Force Authorized"
- IGMP snooping: Disabled in each defined VLAN

## WEB INTERFACE

From the WEB interface it is possible to, among other things:

- Set port mode.
- Enable/disable flow control.
- Configure simple port-based VLAN.
- Configure aggregation groups
- Configure LACP parameters
- Configure RSTP parameters.
- Configure QoS.
  
- Read and clear statistics counters.
- Monitor LACP status
- Monitor RSTP status.
- Configure and monitor 802.1X
- Configure and monitor IGMP snooping (if defined for switch device)
- Configure and monitor Power over Ethernet functions (if defined for switch device)
- Configure source-IP address and DHCP server filter
- Upgrade software

All operations are password protected. The password must be entered at login. The password is the same as is being used in the command line interface.

As stated in the WEB interface is enabled, the IP address is 192.168.0.254 with 255.255.255.0 mask. You can enable DHCP if your environment include a DHCP server. Example for setting IP parameters via the command line interface:

```
>ip setup 10.10.129.189 255.255.252.0 10.10.128.14 1  
>ip mode enable
```

## WEB INTERFACE CONFIGURATION

### LOGIN SCREEN

The screenshot shows the login screen of the Amphenol Military Rugged Managed Gigabit Switch web interface. At the top, there is a banner with the Amphenol logo on the right and the text "Military Rugged Managed Gigabit Switch" and "www.rjswitch.com" on the left. The banner also features silhouettes of a soldier, a tank, and a submarine connected by lines. On the left side of the banner, there are three menu items: "SOLDIERS", "GROUND VEHICLES", and "NAVY". Below the banner, the main content area is dark. On the left, there is a navigation menu with sections: "Configuration" (System, Ports, VLANs, Aggregation, LACP, RSTP, 802.1X, IGMP Snooping, Mirroring, Quality of Service, Storm Control), "Monitoring" (Statistics Overview, Detailed Statistics, LACP Status, RSTP Status, IGMP Status, VeriPHY, Ping), and "Maintenance" (Warm Restart, Factory Default, Software Upload, Configuration File, Transfer, Logout). In the center, there is a prompt "Please enter password to login" above a "Password:" label and an input field. Below the input field is an "Apply" button.

*Enter the password and Press apply to login.*

*\* The password string is empty or « admin » by default.*

## SYSTEM CONFIGURATION

**Configuration**

- System
- Ports
- VLANs
- Aggregation
- LACP
- RSTP
- 802.1X
- IGMP Snooping
- Mirroring
- Quality of Service
- Storm Control

**System Configuration**

MAC Address	1c-51-b5-00-01-36
S/W Version	RJSMMLAC8MG 3.02
H/W Version	1.0
Active IP Address	192.168.1.254
Active Subnet Mask	255.255.255.0
Active Gateway	0.0.0.0
DHCP Server	0.0.0.0
Lease Time Left	0 secs

**Monitoring**

- Statistics Overview
- Detailed Statistics
- LACP Status
- RSTP Status
- IGMP Status
- VeriPHY
- Ping

**Maintenance**

- Warm Restart
- Factory Default
- Software Upload
- Configuration File Transfer
- Logout

DHCP Enabled	<input type="checkbox"/>
Fallback IP Address	192.168.1.254
Fallback Subnet Mask	255.255.255.0
Fallback Gateway	0.0.0.0
Management VLAN	1
Name	
Password	
Inactivity Timeout (secs)	0
SNMP enabled	<input checked="" type="checkbox"/>
SNMP Trap destination	0.0.0.0
SNMP Read Community	public
SNMP Write Community	private
SNMP Trap Community	public

Apply Refresh

### Description:

### Showing information:

1. MAC Address
2. Software Version
3. Hardware Version
4. Active IP Address
5. Active Subnet Mask
6. Active Gateway
7. DHCP Server
8. Lease Time Left

### Available settings:

1. Set either DHCP or Static IP address.
2. Set Management VLAN ID
3. Set System name
4. Set Password
5. Set inactivity timeout – the web interface will logout
6. Set Enable / Disable of SNMP
7. Set SNMP parameters: SNMP Read/Write/Trap community name

*Press Apply to save all changes.*

*Press Refresh to view updated information.*



**PORT CONFIGURATION**

**Description:**

**ENABLE / DISABLE JUMBO FRAME SUPPORT OF UP TO 9K**

1. Enable / Disable "Perfect Reach" - An intelligent algorithm, adjusts power to the required levels after approximately determining the cable length by measuring link pulse degradation. Since the IEEE802.3 specification requires PHYs (physical layer) to communicate at maximum cable reach of 100 m even if plugged into a cable that is much shorter, there would be an unnecessary waste of power. The "Perfect-Reach" feature addresses this problem and helps achieve power savings of up to 10 percent when plugged into shorter cables.

2. Set or show the speed and duplex mode for the port.

Port speed and duplex mode:

- 10hdx : 10 Mbit/s, half duplex.
- 10fdx : 10 Mbit/s, full duplex.
- 100hdx : 100 Mbit/s, half duplex.
- 100fdx : 100 Mbit/s, full duplex.
- 1000fdx: 1 Gbit/s, full duplex.

**Default is auto : Auto negotiation of speed and duplex.**

3. Enable / Disable - Drop frames after excessive collisions

*Press Apply to save all changes.*

*Press Refresh to view updated information.*

## VLAN CONFIGURATION

The screenshot displays the web interface for an Amphenol Military Rugged Managed Gigabit Switch. At the top, there is a banner with the Amphenol logo and the text "Military Rugged Managed Gigabit Switch" and "www.rjswitch.com". Below the banner, the interface is divided into several sections:

- Configuration:** Includes links for System, Ports, VLANs, Aggregation, LACP, RSTP, 802.1X, IGMP Snooping, Mirroring, Quality of Service, and Storm Control.
- Monitoring:** Includes links for Statistics Overview, Detailed Statistics, LACP Status, RSTP Status, IGMP Status, VenPHY, and Ping.
- Maintenance:** Includes links for Warm Restart, Factory Default, Software Upload, Configuration File Transfer, and Logout.

The main content area is titled "Port Segmentation (VLAN) Configuration" and contains the following elements:

- Add a VLAN:** A form with a "VLAN ID" input field and an "Add" button.
- VLAN Configuration List:** A table with one row containing the number "1" in the first column. Below the table are buttons for "Modify", "Delete", "Refresh", and "Port Config".

### ADD VLAN

#### Description:

Enter VLAN ID and press the "Add" button to add a VLAN entry and include ports in member set.

### DELETE VLAN

#### Description:

Press the "Delete" button to delete a VLAN entry (all ports excluded from member set).

*Press Modify to lookup VLAN entry and show port list (set which ports are VLAN members)*

*Press Refresh to view updated information.*

*Press Port Config to set the configuration of VLAN per Port.*

### VLAN MODIFY

#### Description:

Lookup VLAN entry and show port list.

*Press Apply to save all changes.*

*Press Refresh to view updated information.*

### VLAN PER PORT CONFIGURATION

#### Description:

Show the VLAN aware mode, Ingress Filtering mode, Packet Type, port VLAN ID and accepted frame type for the port and the permanently stored VLAN table.

#### ***VLAN AWARE***

##### **Description:**

Set or show the VLAN awareness mode for the port. VLAN aware ports will strip the VLAN tag from received frames and insert the tag in transmitted frames (except PVID). VLAN unaware ports will not strip the tag from received frames or insert the tag in transmitted frames.

#### ***INGRESS FILTERING***

##### **Description:**

Enable / Disable Ingress filtering. When ingress filtering is enable you can set which frame types are accepted.

#### ***VLAN FRAME TYPE***

##### **Description:**

Set or show the accepted frame type for the port.

#### ***VLAN PVID***

##### **Description:**

Set or show the port VLAN ID. Untagged frames received on the port will be classified to this VLAN ID. Frames classified to this VLAN ID will be sent untagged on the port.

The 'none' option can be used for trunk links.

*Press Apply to save all changes.*

*Press Cancel to discard changes.*

**Configuration**

- System
- Ports
- VLANs
- Aggregation
- LACP
- RSTP
- 802.1X
- IGMP Snooping
- Mirroring
- Quality of Service
- Storm Control

**Monitoring**

- Statistics Overview
- Detailed Statistics
- LACP Status
- RSTP Status
- IGMP Status
- VeniPHY
- Ping

**Maintenance**

- Warm Restart
- Factory Default
- Software Upload
- Configuration File Transfer
- Logout

**Aggregation/Trunking Configuration**

Group\Port	1	2	3	4	5	6	7	8
Normal	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Group 1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Group 2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Group 3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Group 4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Apply Refresh

**AGGREGATION CONFIGURATION**

**Description:**

Shows and Set the aggregation groups and the aggregation mode.

*Press Apply to save all changes.*

*Press Refresh to view updated information.*

## LACP COMMANDS

Port	Protocol Enabled	Key Value
1	<input type="checkbox"/>	auto
2	<input type="checkbox"/>	auto
3	<input type="checkbox"/>	auto
4	<input type="checkbox"/>	auto
5	<input type="checkbox"/>	auto
6	<input type="checkbox"/>	auto
7	<input type="checkbox"/>	auto
8	<input type="checkbox"/>	auto

### Description:

LACP (IEEE 802.3ad Link Aggregation Protocol) provides a way to set up aggregation automatically between switches.

### LACP CONFIGURATION

#### Description:

Show the configuration of LACP on all or some ports (default is all ports).

### LACP MODE

#### Description:

Enable or disable LACP on all or some ports.

### LACP KEY

#### Description:

The key determines which ports potentially can aggregate together. Default is auto.

*Press Apply to save all changes.*

Press Refresh to view updated information.

**RSTP SYSTEM CONFIGURATION**

**RSTP SYSTEM PRIORITY**

**Description:**

Set or show the RSTP system priority.

System Priority Number is between 0 and 61440 in increments of 4096. This provides for 16 distinct values: 0, 4096, 8192, 12288, 16384, 20480, 24576, 28672, 32768, 36864, 40960, 45056, 49152, 53248, 57344 and 61440.

The lower the system priority the more likely the switch is to become root in Spanning tree.

**RSTP HELLO TIME**

**Description:**

Set or show the RSTP Hellotime value.

RSTP Hellotime is a Number between 1 - 10 (default is 2)

**RSTP MAX AGE**

**Description:**

Set or show the RSTP MaxAge value.

MaxAge is a Number between 6 - 40 (default is 20)

***RSTP FORWARD DELAY*****Description:**

Set or show the RSTP Forward Delay value.

RSTP forward Delay is a Number between 4 - 30 (default is 15)

***RSTP FORCE VERSION*****Description:**

Set or show the RSTP default protocol version to use.

When set to normal - use RSTP (IEEE802.1w), compatible - compatible with old STP (IEEE802.1d)

***RSTP PORT CONFIGURATION******RSTP AGGREGATION*****Description:**

Set or show the RSTP mode for aggregated links.

Enable or disable RSTP on aggregated links.

***RSTP MODE*****Description:**

Set or show the RSTP mode for the designated ports.

Enable or disable RSTP protocol per port.

***RSTP EDGE*****Description:**

Expect the port to be an edge port (an end station) or a link to another STP device.

Enable for End-station or Disable for bridge.

***RSTP PATH COST*****Description:**

Set or show the RSTP path cost for the designated ports.

RSTP Path Cost is a Number between 1 - 200000000. Auto means auto-generated path-cost

Path-cost is normally reverse proportional to the physical (or aggregated) link speed.

*Press Apply to save all changes.*

*Press Refresh to view updated information.*

**802.1X CONFIGURATION**

**Configuration**      **802.1X Configuration**

System: Disabled ▾  
 Ports: 0.0.0.0  
 VLANs: 1812  
 Aggregation:  
 LACP:  
 RSTP:  
**802.1X**  
 IGMP Snooping  
 Mirroring  
 Quality of Service  
 Storm Control

Port	Admin State	Port State			
1	Force Authorized ▾	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
2	Force Authorized ▾	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
3	Force Authorized ▾	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
4	Force Authorized ▾	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
5	Force Authorized ▾	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
6	Force Authorized ▾	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
7	Force Authorized ▾	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
8	Force Authorized ▾	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
			<a href="#">Re-authenticate All</a>	<a href="#">Force Reinitialize All</a>	

Parameters  
 Apply    Refresh

**Monitoring**  
 Statistics Overview  
 Detailed Statistics  
 LACP Status  
 RSTP Status  
 IGMP Status  
 VeriPHY  
 Ping

**Maintenance**  
 Warm Restart  
 Factory Default  
 Software Upload  
 Configuration File  
 Transfer  
 Logout

**802.1X CONFIGURATION**

**Description:**

Show current 802.1X configuration.

**802.1X MODE**

**Description:**

Enable or disable 802.1X process for the switch.

**802.1X SERVER**

**Description:**

Set or show RADIUS server IP address.

Set the IP address of external RADIUS server. (by default the system shows current configuration)

**802.1X UDP PORT**

**Description:**

Set up UDP Port for the external RADIUS server.

The UDP port the RADIUS server listens to (by default the system shows current configuration).

**802.1X SECRET**



**Description:**

Set or show the secret shared with the RADIUS server.

Set a shared secret with external RADIUS server. (by default the system shows current configuration)

**802.1X ADMIN STATE****Description:**

Set or show the 802.1X state for the port. The available modes are :

- Auto
- Force Authorized
- Force Unauthorized

**802.1X STATISTICS****Description:**

Show 802.1X statistics for the port.

**802.1X RE-AUTHENTICATE****Description:**

Refresh (restart) 802.1X authentication process for the port.

Press the "re-authenticate all" button to perform the re-authentication process for all ports.

**FORCE REINITIALIZE****Description:**

Refresh (restart) 802.1X initialization process for the port.

Press the "re-initialize all" button to perform the re-initialization process for all ports.

*Press Parameters to set up advanced 802.1X parameters.*

*Press Apply to save all changes.*

*Press Refresh to view updated information.*

**ADVANCED 802.1X PARAMETERS****802.1X PARAMETERS****Description:**

Press the Parameters button Set up advanced 802.1X parameters.

Available parameters:

1. Reauthentication [Enabled or Disabled]
2. Reauthentication Period [1-3600 seconds]
3. EAP timeout [1-255 seconds].

*Press Apply to save all changes.*

*Press Refresh to view updated information.*

## IGMP SNOOPING CONFIGURATION

The screenshot shows the web interface for an Amphenol Military Rugged Managed Gigabit Switch. The top banner features the Amphenol logo and the text "Military Rugged Managed Gigabit Switch" and "www.rjswitch.com". Below the banner, the interface is divided into several sections:

- Configuration:** A sidebar menu on the left lists various configuration options, with "IGMP Snooping" highlighted in red.
- IGMP Configuration:** The main content area shows the following settings:
  - IGMP Enabled:
  - Router Ports: 1  2  3  4  5  6  7  8
  - Unregistered IPMC Flooding enabled:
- VLAN Configuration Table:**

VLAN ID	IGMP Snooping Enabled	IGMP Querying Enabled
1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
- Monitoring:** A sidebar menu on the left lists monitoring options.
- Maintenance:** A sidebar menu on the left lists maintenance options.

Buttons for "Apply" and "Refresh" are located below the table.

## IGMP SNOOPING DESCRIPTION

Per default – and when enabled - IGMP snooping will function in each statically defined VLAN (i.e. those VLANs that are stored in non-volatile configuration memory). The IGMP snooping module will listen to IP multicast router, IGMP queries and the IGMP reports from hosts, and will update the switch device MAC table with IP multicast group MAC addresses and port masks according to the received reports. If no IP multicast router is present in an IGMP enabled VLAN, the switch will perform the querying itself in that particular VLAN.

The switch querying functionality can be enabled and disabled per VLAN.

## IGMP CONFIGURATION

### Description:

Show the IGMP configuration.

## IGMP MODE

### Description:

Set or show global IGMP mode.

Enable or disable IGMP functionality for the switch.

## ROUTER PORTS

### Description:

Set or show IGMP administrative router ports. Tag those ports that you would like to act as router ports.

### ***UNREGISTERED IPMC FLOODING***

#### **Description:**

Set or show forwarding mode for unregistered (not-joined) IP multicast traffic. The switch will flood ip multicast traffic when enabled, and forward to router-ports only when disabled.

### ***IGMP SNOOPING PER VLAN***

#### **Description:**

Set or Show IGMP state per VLAN.

[enabled|disabled]

### ***IGMP QUERYING PER VLAN***

#### **Description:**

Set or Show IGMP querier state per VLAN.

*Press Apply to save all changes.*

*Press Refresh to view updated information.*

## MIRROR CONFIGURATION

The screenshot shows the web interface for an Amphenol Military Rugged Managed Gigabit Switch. At the top, there is a banner with the Amphenol logo and the text "Military Rugged Managed Gigabit Switch" and "www.rjswitch.com". Below the banner, there are three navigation tabs: "SOLDIERS", "GROUND VEHICLES", and "NAVY". The main content area is divided into three sections: "Configuration", "Monitoring", and "Maintenance". The "Configuration" section includes links for System, Ports, VLANs, Aggregation, LACP, RSTP, 802.1X, IGMP Snooping, Mirroring (highlighted in red), Quality of Service, and Storm Control. The "Monitoring" section includes links for Statistics Overview, Detailed Statistics, LACP Status, RSTP Status, IGMP Status, VeriPHY, and Ping. The "Maintenance" section includes links for Warm Restart, Factory Default, Software Upload, Configuration File Transfer, and Logout. The "Mirroring Configuration" section is the active page, featuring a table with 8 rows and 2 columns: "Port" and "Mirror Source". Each row has a checkbox in the "Mirror Source" column. Below the table is a "Mirror Port" dropdown menu set to "1", and "Apply" and "Refresh" buttons.

Port	Mirror Source
1	<input type="checkbox"/>
2	<input type="checkbox"/>
3	<input type="checkbox"/>
4	<input type="checkbox"/>
5	<input type="checkbox"/>
6	<input type="checkbox"/>
7	<input type="checkbox"/>
8	<input type="checkbox"/>

Mirror Port: 1

Apply Refresh

## MIRROR CONFIGURATION

### Description:

Show the mirror destination port and mirror mode for source ports.

### MIRROR SOURCE

### Description:

Set or show the source port mirror mode.

Enable / Disable mirroring of frames received on port

### MIRROR PORT

### Description:

Set or show the mirror destination port.

*Press Apply to save all changes.*

*Press Refresh to view updated information.*

## QoS CONFIGURATION

**Configuration**

- System
- Ports
- VLANs
- Aggregation
- LACP
- RSTP
- 802.1X
- IGMP Snooping
- Mirroring
- Quality of Service**
- Storm Control

**Monitoring**

- Statistics Overview
- Detailed Statistics
- LACP Status
- RSTP Status
- IGMP Status
- VeriPHY
- Ping

**Maintenance**

- Warm Restart
- Factory Default
- Software Upload
- Configuration File Transfer
- Logout

**QoS Configuration**

Queue Mode	<input checked="" type="radio"/> Strict <input type="radio"/> WRR
Note : WRR is not supported in Jumbo Frame mode.	
QoS Mode	QoS Disabled

APPLY CANCEL

## QoS CONFIGURATION

### Description:

Show the configured QoS mode, IP ToS Precedence priority mapping, VLAN user priority mapping, default priority and default VLAN user priority.

### QUEUES MODE

### Description:

Set or show the priority mode for the switch.

WRR – Weighted Round Robin – is a scheduling desicipline were each queue is allocated a preset weight that would influence it's QoS.

Strict - is a scheduling discipline were all queues are allocated a fixed priority.

### QoS MODE

### Description:

Set or show the priority mode for the port

The option are: Enable / Disable QoS for the switch, 802.1p Priority and DSCP Priority.

*Press Apply to save all changes.*

*Press Cancel to discard changes.*

### STRICT QoS MODES

### QoS 802.1P

**Description:**

Set or show the 802.1p priority mapping.

*Press Apply to save all changes.*

*Press Cancel to discard changes.*

**QoS DSCP (DIFFSERV)****Description:**

Set or show the IP Differentiated Services mapping.

*Press Apply to save all changes.*

*Press Cancel to discard changes.*

**WRR QoS MODES****QoS 802.1P****Description:**

Set or show the 802.1p priority mapping.

**QoS DSCP (DIFFSERV)****Description:**

Set or show the IP Differentiated Services mapping.

*Press Apply to save all changes.*

*Press Cancel to discard changes.*

**Configuration**

- System
- Ports
- VLANs
- Aggregation
- LACP
- RSTP
- 802.1X
- IGMP Snooping
- Mirroring
- Quality of Service
- Storm Control**

**Monitoring**

- Statistics Overview
- Detailed Statistics
- LACP Status
- RSTP Status
- IGMP Status
- VeriPHY
- Ping

**Maintenance**

- Warm Restart
- Factory Default
- Software Upload
- Configuration File Transfer
- Logout

**Storm Control Configuration**

Storm Control	
Number of frames per second	
Broadcast Rate	No Limit ▼
Multicast Rate	No Limit ▼
Flooded unicast Rate	No Limit ▼

Apply Refresh

**Description:**

Set or show the storm control configuration. The allowed frame rates for ICMP frames, learn frames, multicasts, broadcasts and flooded unicasts are controlled using a central storm controller.

Storm controller can be one of:

- Broadcast
- Multicast
- Flooded Unicast

Frame rate options in kilo bytes

Allowed values are 1k, 2k, 4k, 8k, 16k, 32k, 64k, 128k,

256k, 512k, 1024k, 2048k, 4096k, 8192k, 16384k, 32768k, No Limitation

*Press Apply to save all changes.*

*Press Refresh to view updated information.*

## STATISTICS OVERVIEW

The screenshot shows the Amphenol Military Rugged Managed Gigabit Switch web interface. At the top, there is a navigation menu with 'SOLDIERS', 'GROUND VEHICLES', and 'NAVY'. The main header features the Amphenol logo and the website URL 'www.rjswitch.com'. Below the header, the page title is 'Statistics Overview for all ports'. The interface is divided into three main sections: Configuration, Monitoring, and Maintenance. The Configuration section includes a table with 8 columns: Port, Tx Bytes, Tx Frames, Rx Bytes, Rx Frames, and Tx Errors. The Monitoring section includes links for Statistics Overview, Detailed Statistics, LACP Status, RSTP Status, IGMP Status, VeriPHY, and Ping. The Maintenance section includes links for Warm Restart, Factory Default, Software Upload, Configuration File Transfer, and Logout.

**Configuration**

System  
Ports  
VLANs  
Aggregation  
LACP  
RSTP  
802.1X  
IGMP Snooping  
Mirroring  
Quality of Service  
Storm Control

Port	Tx Bytes	Tx Frames	Rx Bytes	Rx Frames	Tx Errors
1	328234	575	199553	1571	0
2	0	0	0	0	0
3	0	0	0	0	0
4	0	0	0	0	0
5	0	0	0	0	0
6	0	0	0	0	0
7	0	0	0	0	0
8	0	0	0	0	0

**Monitoring**

[Statistics Overview](#)  
[Detailed Statistics](#)  
[LACP Status](#)  
[RSTP Status](#)  
[IGMP Status](#)  
[VeriPHY](#)  
[Ping](#)

**Maintenance**

[Warm Restart](#)  
[Factory Default](#)  
[Software Upload](#)  
[Configuration File Transfer](#)  
[Logout](#)

### Description:

Show statistics overview for all ports.

### Available Information:

1. Port number
2. TX Bytes
3. TX Frames
4. RX Bytes
5. RX Frames
6. TX Errors
7. RX Errors

*Press Clear to reset all the values of the table.*

*Press Refresh to view updated information.*



## DETAILED STATISTICS

SOLDIERS

GROUND VEHICLES

NAVY

**Amphenol**

Military Rugged Managed Gigabit Switch

www.rjswitch.com

**Statistics for Port 1**

**Configuration**

System

Ports

VLANs

Aggregation

LACP

RSTP

802.1X

IGMP Snooping

Mirroring

Quality of Service

Storm Control

**Monitoring**

Statistics Overview

**Detailed Statistics**

LACP Status

RSTP Status

IGMP Status

VeriPHY

Ping

**Maintenance**

Warm Restart

Factory Default

Software Upload

Configuration File

Transfer

Logout

Clear Refresh

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

Receive Total		Transmit Total	
Rx Packets	1595	Tx Packets	
Rx Octets	202720	Tx Octets	
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	821	Tx Broad- and Multicast	
Rx Error Packets	0	Tx Error Packets	
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	-		

### Description:

Show detailed statistics for a specific port.

### Available Information:

1. Receive Total
2. Transmit Total
3. Receive Size Counters
4. Transmit Size Counters
5. Receive Error Counters
6. Transmit Error Counters.

*Press Clear to reset all the values of the table.*

*Press Refresh to view updated information.*

**LACP STATUS**

The screenshot shows the Amphenol web interface for a Military Rugged Managed Gigabit Switch. The top banner features the Amphenol logo and the product name. Below the banner, there are three navigation tabs: SOLDIERS, GROUND VEHICLES, and NAVY. The main content area is divided into three sections: Configuration, Monitoring, and Maintenance. The Configuration section includes a menu with options like System, Ports, VLANs, Aggregation, LACP, RSTP, 802.1X, IGMP Snooping, Mirroring, Quality of Service, and Storm Control. The Monitoring section includes Statistics Overview, Detailed Statistics, LACP Status, RSTP Status, IGMP Status, VeriPHY, and Ping. The Maintenance section includes Warm Restart, Factory Default, Software Upload, Configuration File Transfer, and Logout. The LACP Aggregation Overview section displays a table with columns for Group/Port (1-8) and a row for Normal status. The LACP Port Status section includes a Refresh button and a table with columns for Port, Protocol Active, Partner Port Number, and Operational Port Key. A Legend table explains the colors and numbers used in the LACP status indicators.

**Configuration**

- System
- Ports
- VLANs
- Aggregation
- LACP
- RSTP
- 802.1X
- IGMP Snooping
- Mirroring
- Quality of Service
- Storm Control

**Monitoring**

- Statistics Overview
- Detailed Statistics
- LACP Status
- RSTP Status
- IGMP Status
- VeriPHY
- Ping

**Maintenance**

- Warm Restart
- Factory Default
- Software Upload
- Configuration File Transfer
- Logout

**LACP Aggregation Overview**

Group/Port	1	2	3	4	5	6	7	8
Normal	Green	Red	Red	Red	Red	Red	Red	Red

**Legend**

Red	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
Green	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

**LACP Port Status**

Refresh

**LACP AGGREGATION OVERVIEW**

**Description:**

Show group/port numbers and aggregation mode for each. Colors are explained in the legend.

**LACP PORT STATUS**

**Description:**

Show the LACP status for all ports. Available information is: Port Number, Protocol Active [yes|no], Partner Port Number, Operational Port Key.

*Press Refresh to view updated information.*

**RSTP STATUS**

**Configuration**

- System
- Ports
- VLANs
- Aggregation
- LACP
- RSTP
- 802.1X
- IGMP Snooping
- Mirroring
- Quality of Service
- Storm Control

**Monitoring**

- Statistics Overview
- Detailed Statistics
- LACP Status
- RSTP Status**
- IGMP Status
- VeriPHY
- Ping

**Maintenance**

- Warm Restart
- Factory Default
- Software Upload
- Configuration File
- Transfer
- Logout

**RSTP VLAN Bridge Overview**

VLAN Id	Bridge Id	Hello Time	Max Age	Fwd Delay	Topology	Root Id
1	32769:1c-51-b5-00-01-59	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

**RSTP STATUS**

**Description:**

Show the current state of all RSTP incarnations and the physical (and aggregation) ports that they control.

**RSTP VLAN BRIDGE OVERVIEW**

**Description:**

Show the current RSTP state per VLAN.

Available Information:

1. VLAN ID
2. Bridge ID
3. Hello Time
4. Max Age
5. Forward Delay
6. Topology
7. Root ID

**RSTP PORT STATUS**

**Description:**

Show the RSTP status for all ports.

Available Information:

1. Port/Group Number
2. VLAN ID
3. Path Cost
4. Edge Port
5. P2P Port
6. Protocol
7. Port State

*Press Refresh to view updated information.*

**IGMP STATUS**

**Description:**

Show the IGMP operational status and statistics.

Available Information:

1. VLAN ID
2. Querier
3. Queries Transmitted
4. Queries Received
5. v1 Reports
6. v2 Reports
7. v3 Reports
8. v2 Leaves

*Press Refresh to view updated information.*

The screenshot shows the web interface for an Amphenol Military Rugged Managed Gigabit Switch. At the top, there is a banner with the Amphenol logo and the text 'Military Rugged Managed Gigabit Switch' and 'www.rjswitch.com'. Below the banner, there are three navigation tabs: 'SOLDIERS', 'GROUND VEHICLES', and 'NAVY'. The main content area is divided into three sections: 'Configuration', 'VeriPHY Cable Diagnostics', and 'Monitoring'. The 'VeriPHY Cable Diagnostics' section is active and shows a form with 'Port' set to 'Port 1' and 'Mode' set to 'Full'. There is an 'Apply' button below the form. Below the form is a 'Cable Status' table with the following data:

Pair	Length [m]	Status
A	-	-
B	-	-
C	-	-
D	-	-

The 'Monitoring' section is also visible, showing links for 'Statistics Overview', 'Detailed Statistics', 'LACP Status', 'RSTP Status', 'IGMP Status', 'VeriPHY', and 'Ping'. The 'Maintenance' section is also visible, showing links for 'Warm Restart', 'Factory Default', 'Software Upload', 'Configuration File Transfer', and 'Logout'.

## VERIPHY CABLE DIAGNOSTICS

### Description:

Perform VeriPHY cable diagnostics on the specified port(s).

## VeriPHY Mode

### Description:

Perform cable diagnostics the available options are:

Full - Full comprises cable length and full anomaly check (Default mode)

Anomaly - anomaly comprises full anomaly check

Anomaly w/o X-pair - comprises anomaly check without check for coupling between pairs

## CABLE STATUS

### Description:

Shows the current cable status.

### Available Information:

1. Pair
2. Length
3. Status

Press Apply to save all changes.  
 Press Refresh to view updated information.

## PING

The screenshot shows the web interface for an Amphenol Military Rugged Managed Gigabit Switch. The top banner features the Amphenol logo and the product name. Below the banner, there are three navigation tabs: SOLDIERS, GROUND VEHICLES, and NAVY. The main content area is divided into three sections: Configuration, Ping Parameters, and Monitoring. The Configuration section lists various system settings. The Ping Parameters section includes a form for Target IP address, Count (set to 1), and Time Out (in secs) (set to 1), with an Apply button. The Monitoring section shows Ping Results in a table, indicating a test complete with 0 received replies, 0 request timeouts, and 0 average response time. A Refresh button is also present.

Ping Parameters	
Target IP address	<input type="text"/>
Count	1
Time Out (in secs)	1

  

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

### PING PARAMETERS

#### TARGET IP ADDRESS

##### Description:

The IP Address to send the ping request to.

#### Count

##### Description:

Number of times for the ping request be sent.

#### TIME OUT

##### Description:

Amount of time (in seconds) to pass until the ping request is timed out.

### PING RESULTS

**Description:**

Shows the results of the last ping test.

**Available Information:**

1. Target IP Address
2. Status
3. Received Replies
4. Request Timeout
5. Average Response Time (in milliseconds)

*Press Apply to save all changes.*

*Press Refresh to view updated information.*

**WARM RESTART**

The screenshot shows the configuration interface for an Amphenol Military Rugged Managed Gigabit Switch. The top banner features the Amphenol logo and the product name. Below the banner, the 'Warm Restart' configuration page is displayed. A red confirmation dialog box is overlaid on the page, asking 'Are you sure you want to perform a Warm Restart?' with 'Yes' and 'No' buttons. The left sidebar contains navigation menus for Configuration, Monitoring, and Maintenance.

**Configuration**

- System
- Ports
- VLANs
- Aggregation
- LACP
- RSTP
- 802.1X
- IGMP Snooping
- Mirroring
- Quality of Service
- Storm Control

**Monitoring**

- Statistics Overview
- Detailed Statistics
- LACP Status
- RSTP Status
- IGMP Status
- VeriPHY
- Ping

**Maintenance**

- Warm Restart
- Factory Default
- Software Upload
- Configuration File Transfer
- Logout

*Press Yes to perform a Warm Restart.*

*Press No to cancel.*



## SYSTEM RESTORE DEFAULT

The screenshot shows the web interface of an Amphenol Military Rugged Managed Gigabit Switch. The header features the Amphenol logo and the product name. A navigation menu on the left includes 'SOLDIERS', 'GROUND VEHICLES', and 'NAVY'. The main content area is titled 'Factory Default' and displays a red confirmation dialog box with the text 'Are you sure you want to perform a Factory Default?' and 'Yes' and 'No' buttons. The left sidebar contains a menu with categories: Configuration, Monitoring, and Maintenance, each with a list of sub-items.

**Configuration**

- System
- Ports
- VLANs
- Aggregation
- LACP
- RSTP
- 802.1X
- IGMP Snooping
- Mirroring
- Quality of Service
- Storm Control

**Monitoring**

- Statistics Overview
- Detailed Statistics
- LACP Status
- RSTP Status
- IGMP Status
- VeriPHY
- Ping

**Maintenance**

- Warm Restart
- Factory Default**
- Software Upload
- Configuration File Transfer
- Logout

## FACTORY DEFAULT

### Description:

Restore factory default configuration.

*Press Yes to restore the factory default settings.*

*Press No to cancel.*

**SOFTWARE UPLOAD**

**SOLDIERS**  
**GROUND VEHICLES**  
**NAVY**

**Amphenol**

Military Rugged Managed Gigabit Switch | www.rjswitch.com

**Configuration**  
System  
Ports  
VLANs  
Aggregation  
LACP  
RSTP  
802.1X  
IGMP Snooping  
Mirroring  
Quality of Service  
Storm Control

**Monitoring**  
Statistics Overview  
Detailed Statistics  
LACP Status  
RSTP Status  
IGMP Status  
VeriPHY  
Ping

**Maintenance**  
Warm Restart  
Factory Default  
[Software Upload](#)  
Configuration File  
Transfer  
Logout

**Software Upload**

System:  Parcourir...  
Upload

*Press Browse to find the required firmware from your computer.*

*Press Upload to upload the selected firmware.*

## CONFIGURATION UPLOAD

The screenshot displays the web interface for an Amphenol Military Rugged Managed Gigabit Switch. At the top, there is a navigation menu with three items: 'SOLDIERS', 'GROUND VEHICLES', and 'NAVY'. The main header features the Amphenol logo, a central illustration of a soldier, a tank, and a submarine connected by network lines, and the text 'Military Rugged Managed Gigabit Switch' and 'www.rjswitch.com'. The main content area is divided into three sections: 'Configuration', 'Monitoring', and 'Maintenance'. The 'Configuration' section is active and contains a 'Configuration Upload' sub-section with a file browser button labeled 'Parcourir...', an 'Upload' button, and a 'Configuration Download' sub-section with a 'Download' button. The 'Monitoring' section includes links for 'Statistics Overview', 'Detailed Statistics', 'LACP Status', 'RSTP Status', 'IGMP Status', 'VeriPHY', and 'Ping'. The 'Maintenance' section includes links for 'Warm Restart', 'Factory Default', 'Software Upload', 'Configuration File', 'Transfer', and 'Logout'.

*Press Browse to find configuration files from your computer.*

*Press Upload to upload the required configuration file.*