



Enterprise IP Solutions

# OfficeServ 7400

## GSIMT/GSIM User Manual

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# INTRODUCTION

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## Purpose

This document introduces the OfficeServ 7400 GSIMT/GSIM, an application module of the OfficeServ 7400, and describes procedures on installing and using the software.

## Document Content and Organization

This document consists of three chapters and abbreviation, which are summarized as follows:

### **CHAPTER 1. Overview of OfficeServ 7400 GSIMT/GSIM**

This chapter briefly introduces the OfficeServ 7400 GSIMT/GSIM.

### **CHAPTER 2. Installing of OfficeServ 7400 GSIMT/GSIM**

This chapter describes the installation procedure and login procedure.

### **CHAPTER 3. Using OfficeServ 7400 GSIMT/GSIM**

This chapter describes how to use the menus of the OfficeServ 7400 GSIMT/GSIM.

### **ABBREVIATIONS**

Abbreviations frequently used in this document are described.

## Conventions

The following types of paragraphs contain special information that must be carefully read and thoroughly understood. Such information may or may not be enclosed in a rectangular box, separating it from the main text, but is always preceded by an icon and/or a bold title.



### **WARNING**

Provides information or instructions that the reader should follow in order to avoid personal injury or fatality.



### **CAUTION**

Provides information or instructions that the reader should follow in order to avoid a service failure or damage to the system.



### **CHECKPOINT**

Provides the operator with checkpoints for stable system operation.



### **NOTE**

Indicates additional information as a reference.



### **Examples**

Indication that there is a programming example which should be remembered.

## Console Screen Output

- The lined box with ‘Courier New’ font will be used to distinguish between the main content and console output screen text.
- ‘**Bold Courier New**’ font will indicate the value entered by the operator on the console screen.

## References

### OfficeServ 7400 General Description

The OfficeServ 7400 General Description introduces the OfficeServ 7400 platform and presents the information necessary to understand the hardware configuration, specification, and system functionality.

### OfficeServ 7400 Installation Manual

The OfficeServ 7400 Installation Manual describes the conditions necessary for the installation of the system and how to inspect and operate the system.

### OfficeServ 7400 Programming Manual

The OfficeServ 7400 Call Server Programming Manual describes how to program the system using Man Machine Communication (MMC) entities.

## Revision History

EDITION	DATE OF ISSUE	REMARKS
00	11. 2005.	Original Draft
01	02. 2006.	Second Edition
02	11. 2006	- Descriptions of GSIMT are added. - 'Ping' utility is modified. - Setting Web Time-out of 'Admin Config' is added.

# SAFETY CONCERNS

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In order to ensure product safety and proper operation, information followed by the following icons should be carefully read before installing or using the product:

## Symbols



### Caution

Indication of a general caution.



### Restriction

Indication for prohibiting an action for a product.



### Instruction

Indication for commanding a specifically required action.

## CAUTION



### When Changing Network Interface

Note that all IP sessions that are working will be disconnected for a while if a network interface (IP, Gateway, and Subnet Mask) is changed and applied.



### When Using a Web Browser

Use Microsoft Internet Explorer (version 6.0 or higher) as the web browser for the maintenance of the GSIMT/GSIM. Other web browsers are not supported.



### When Changing the DB

If the DB is changed in the OfficeServ 7400 GSIMT/GSIM, then the system will restart.



### When Using a Private key

The private key is provided with the package. The private key allows accessing SSH from the outside. Thus, only trusted administrator should use the key.



### When Deleting Internet Temporary Files

If the GSIMT/GSIM package is upgraded then the Internet temporary files should be deleted. Select the **[Internet Explorer] → [Tools] → [Internet Options]** menu and then click the **[Delete Cookies]** and the **[Delete Files]** buttons in the **[Internet Temporary Files]** area. If these files are not deleted, the webscreen of the GSIMT/GSIM may not be displayed correctly.

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# CHAPTER 1. Overview of OfficeServ 7400 GSIMT/GSIM

This chapter introduces the OfficeServ 7400 system and OfficeServ 7400 GSIMT/GSIM L2/3 Switch.

## Introduction to OfficeServ 7400

The OfficeServ 7400 platform delivers the convergence of voice, data, wired and wireless communications for small and medium sized businesses. This ‘office in a box’ solution offers TDM voice processing, voice over IP integration, wireless communications, voice mail, computer telephony integration, data router and switching functions, all in one powerful platform.

With the GSIMT/GSIM, GPLIMT/GPLIM, and GSIMT/GSIM Data Modules, the OfficeServ 7400 provides network functions such as a gigabit switching, Power Over Ethernet, high speed data routing, and network security in a single converged solution.

This document describes the data and routing capabilities of the OfficeServ 7400 GSIMT/GSIM L2/3 Switch.

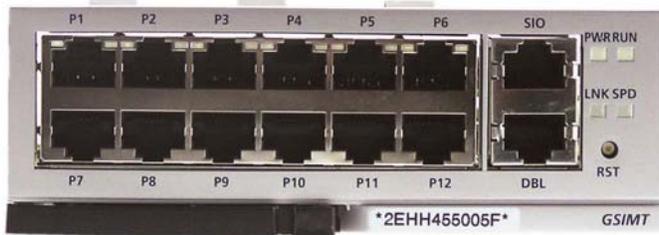


NOTE

### Structure of OfficeServ 7400

For the information on the structure, features, or specifications of the OfficeServ 7400, refer to the ‘OfficeServ 7400 General Description’.

# Introduction to OfficeServ 7400 GSIMT/GSIM



*GSIMT Module*



*GSIM Module*

The OfficeServ 7400 GSIMT/GSIM L2/3 Switch provides the following functionality.

## Switch Functions

- L2/L3 Switch Function
- Jumbo Packet(9216 Bytes) Support
- Managed Switch functions
- Learning Bridge function using Spanning-Tree algorithm
- Layer 2 Frame Priority function (802.1p)
- 802.3x Layer 2 Flow Control
- Packet Mirroring function
- Virtual VLAN(VLAN) function(on the basis of ports, 802.1Q tag)
- VLAN Classification(MAC Based/IP Based/Protocol Based) Function
- Ingress Filtering function for 802.1q VLAN Security
- Dynamic VLAN Management function via GARP VLAN Registration Protocol(GVRP) function
- IP Multicasting Relay support(IGMP Snooping function)
- Load Sharing function for Link Aggregation Control Protocol(LACP)/Port Trunking
- GPLIMIT: Twelve 10/100/1000 Base-TX ports (RJ-45)
- GPLIM: Ten 1000 Base-SX/LX/TX ports (SFP Cage)

## Router Functions

- Path management and queuing function of data packets for external WAN and internal LAN
- Static and dynamic routing functions
  - Support of Routing Information Protocol version1(RIPv1), RIPv2, Open Shortest Path First version2 (OSPFv2),and Border Gateway Protocol4 (BGP4) routing protocol
- Dynamic Host Configuration Protocol (DHCP) function in Ethernet WAN interface

- Support of IP Multicasting
  - Support of Internet Group Management Protocol version1 (IGMPv1) and IGMPv2 protocol
  - Support of Distance Vector Multicast Routing Protocol(DVMRP) and Protocol Independent Multicast-Sparse Mode (PIM-SM) Multicast Route Protocol

### **Data Network Application Functions**

- DHCP Server function
  - Auto-set of network environment for IP equipment in another function block of the OfficeServ 7400 system
- DHCP Relay function
  - Connection of IP equipment in another function block of the OfficeServ 7400 system to an external DHCP server to enable to automatically set network environment.

### **QoS Functions**

- Priority process for layer 2 frame under 802.1p standard(Switch function)
- Priority queuing process for layer 3 packets and priority queuing for a specified IP.
- Priority queuing process for layer 4 packets and priority for Real-time Transport Protocol(RTP) packets(UDP/TCP port)

### **Management Functions**

- Configuration and verification functions for the operations of GSIMT/GSIM functional block via a browser
- Configuration and verification functions for the operations of GSIMT/GSIM functional block via the Simple Network Management Protocol(SNMP)
- 4-Real-time Monitoring(4RMON) function
- System monitoring and management via the system log function
- System synchronization function via Network Time Protocol(NTP)
- Program Upgrade
  - Program upgrade via TFTP
  - Program upgrade via HTTP
  - Program upgrade via Local manager's PC

# CHAPTER 2. Installation of OfficeServ 7400 GSIMT/GSIM

This chapter describes the installation and the login procedure for OfficeServ 7400 GSIMT/GSIM.

## Software Installation

OfficeServ 7400 software is installed on GWIM board. The software package is composed of items described below:

Package	File	Description
<b>Bootrom Package</b>	GSIMT/GSIM-bootldr.img-vx.xx	Boot ROM program
	GSIMT/GSIM-bootldr.img-vx.xx.sum	
<b>Main Package</b>	GSIMT/GSIM-pkg-vx.xx.tar.gz	Upgrade package for HTTP
	GSIMT/GSIM-os..img-vx.xx	'os' partition upgrade package for TFTP
	GSIMT/GSIM-firmware.img-vx.xx	'Firmware' partition upgrade package for TFTP
	GSIMT/GSIM-configdb.img-vx.xx	'configdb' partition upgrade package for TFTP
	GSIMT/GSIM-logdb.img-vx.xx	'logdb' partition upgrade package for TFTP
	GSIMT/GSIM-flash1.img-vx.xx GSIMT/GSIM-flash1.img-vx.xx.sum	Fusing file for the first flash memory
	GSIMT/GSIM-flash2.img-vx.xx GSIMT/GSIM-flash2.img-vx.xx.sum	Fusing file for the second flash memory

## GSIMT/GSIM Installation

1. Insert the GSIMT/GSIM into an open slot in the OfficeServ 7400 cabinet (**excluding slots 0 or 3 which are reserved for the MP40 and LP40 cards**).
2. Connect a PC to any port P1-P12 of the GSIMT/GSIM module with either a straight or cross over cable. Installers will need to configure the TCP/IP settings of the PC to be on the same subnet as the defaultManagement IP address of the GSIMT/GSIM shown in step 3.
3. Using Internet Explorer 6.0 or higher navigate to the default Management IP address of the GSIMT/GSIM (<https://10.0.3.1>).



### Caution when using a Web Browser

The version of Internet Explorer should be 6.0 or higher when logging in and performing maintenance on the GSIMT/GSIM. Other web browsers are not supported.

# Getting Started

1. Start Internet Explorer and enter the Management IP address of the GSIMT/GSIM into the address bar (https://10.0.3.1). The Security Alert window shown below will appear. Click on the Yes button to proceed:



2. A Security Information window will now open. Click on the Yes button to proceed.



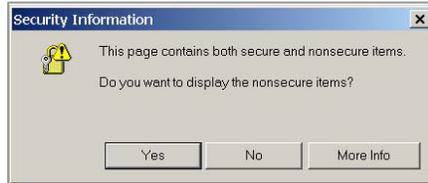
3. The Administrator will now be prompted for a Login ID and Password.



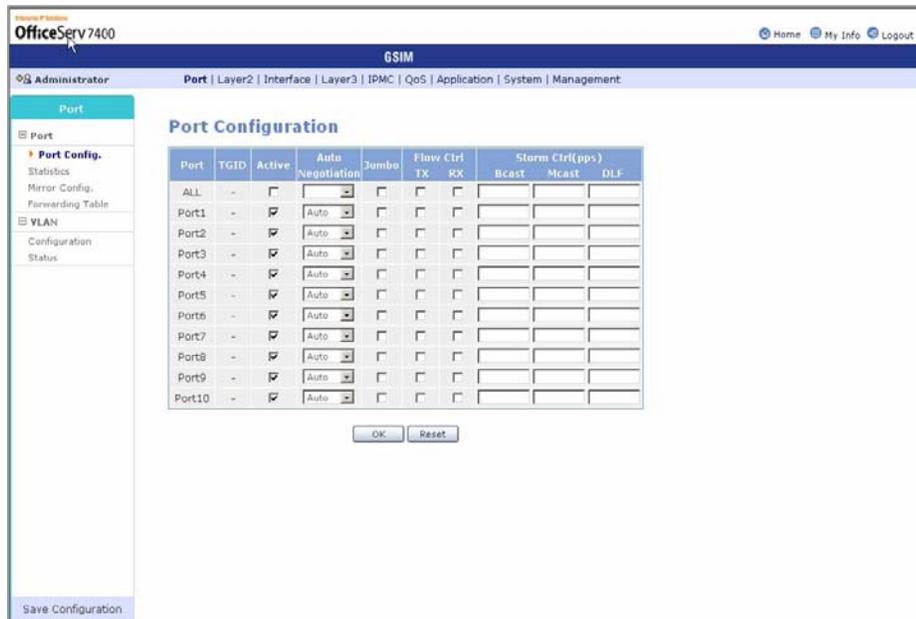
NOTE

The Login ID is “admin” and the default password is “root”.

4. Log into the GSIMT/GSIM using the administrator ID and password and then click on the OK button. The following Security Information window will appear again. Click on the Yes button to proceed.



5. The GSIMT/GSIM menus are displayed in the upper part of the screen. Select each menu to display its submenus on the left section of the screen. For more detailed information for each menu, refer to 'Chapter 3. Using OfficeServ 7400 GSIMT/GSIM' of this document



6. Click the [Logout] button on the upper section of the screen to close the connection to the GSIMT/GSIM system.

# CHAPTER 3. USING OS 7400 GSIMT/GSIM

This chapter describes how to use the menus of OfficeServ 7400 GSIMT/GSIM.

Port	Layer2	Interface	Layer3	IPMC
<ul style="list-style-type: none"> <li>[-] Port                             <ul style="list-style-type: none"> <li>▶ Port Config.</li> <li>Statistics</li> <li>Mirror Config.</li> <li>Forward Table</li> </ul> </li> <li>[-] VLAN                             <ul style="list-style-type: none"> <li>Configuration</li> <li>Status</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>[-] RSTP                             <ul style="list-style-type: none"> <li>▶ Configuration</li> <li>Status</li> </ul> </li> <li>[-] Port Aggregation                             <ul style="list-style-type: none"> <li>Configuration</li> <li>Status</li> </ul> </li> <li>[-] GVRP                             <ul style="list-style-type: none"> <li>Configuration</li> <li>Status</li> </ul> </li> <li>[-] IGMP Snooping                             <ul style="list-style-type: none"> <li>Time Interval</li> <li>Function</li> <li>Multicast Filter</li> <li>Forwarding Table</li> <li>Management</li> </ul> </li> <li>[-] Authentication                             <ul style="list-style-type: none"> <li>Configuration</li> <li>Management</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>IP Configuration</li> <li>DNS</li> <li>Status</li> <li>[-] Utility                             <ul style="list-style-type: none"> <li>Ping</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>[-] General                             <ul style="list-style-type: none"> <li>Routes</li> <li>Management</li> </ul> </li> <li>[-] Configuration                             <ul style="list-style-type: none"> <li>Static</li> <li>RIP</li> <li>RIP Interface</li> <li>OSPF</li> <li>OSPF Interface</li> <li>BGP</li> </ul> </li> <li>[-] List                             <ul style="list-style-type: none"> <li>Access List</li> <li>Prefix List</li> <li>Route Map</li> <li>As Path List</li> <li>Community List</li> <li>Key Chain</li> </ul> </li> <li>[-] Status                             <ul style="list-style-type: none"> <li>RIP</li> <li>OSPF</li> <li>▶ BGP</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>[-] General                             <ul style="list-style-type: none"> <li>▶ Mroutes</li> <li>Management</li> </ul> </li> <li>[-] Configuration                             <ul style="list-style-type: none"> <li>IGMP</li> <li>DVMRP</li> <li>DVMRP Intf</li> <li>PIM-SM</li> <li>PIM-SM Intf</li> </ul> </li> <li>[-] Status                             <ul style="list-style-type: none"> <li>IGMP Groups</li> <li>DVMRP</li> <li>PIM-SM</li> </ul> </li> </ul>
QoS	Application	System	Management	
<ul style="list-style-type: none"> <li>[-] Ingress Service                             <ul style="list-style-type: none"> <li>▶ Class Map</li> <li>Policy Map</li> <li>Service Map</li> </ul> </li> <li>[-] Egress Service                             <ul style="list-style-type: none"> <li>Schedule mode</li> <li>CoS mapping</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>[-] VoIP Service                             <ul style="list-style-type: none"> <li>▶ Management</li> <li>VoIP DB</li> </ul> </li> <li>[-] DHCP Server                             <ul style="list-style-type: none"> <li>Configuration</li> <li>Management</li> <li>Lease Info</li> </ul> </li> <li>[-] DHCP Relay Agent                             <ul style="list-style-type: none"> <li>Configuration</li> <li>Management</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>DB Config</li> <li>Admin Config</li> <li>[-] Log                             <ul style="list-style-type: none"> <li>Configuration</li> <li>Report</li> <li>Download</li> </ul> </li> <li>[-] Time Config                             <ul style="list-style-type: none"> <li>NTP Config</li> <li>Manual Config</li> <li>Timezone</li> </ul> </li> <li>Upgrade</li> <li>Appl Server</li> <li>Reboot</li> </ul>	<ul style="list-style-type: none"> <li>[-] SNMP                             <ul style="list-style-type: none"> <li>▶ Configuration</li> <li>Status</li> <li>Management</li> </ul> </li> <li>[-] RMON                             <ul style="list-style-type: none"> <li>Configuration</li> <li>Status</li> <li>Management</li> </ul> </li> </ul>	

# Port Menu

The **[Port]** menu is used by the administrator to configure the individual switch port settings such as speed, duplex, and flow control, and to configure VLANs. Select the **[Port]** menu and the submenus will be displayed in the upper left side of the window as follows:



## Port Menu Description

Menu	Sub-menu	Description
Port	Port Config.	Used to set and display general port configurations
	Statistics	Used to display the statistic information of each port.
	Mirror Config.	Used to set and display the information on the port mirroring configuration.
	Forward Table	Used to set MAC Age-out Time and to display the MAC Table information for each port.
VLAN	Configuration	Used to set the VLAN configuration.
	Status	Used to display the information configured in <b>[VLAN]</b> → <b>[Configuration]</b> submenu.

# PORT

The [Port] → [Port] submenu is used to set the functionality of the switch ports, to retrieve configuration information on the switch ports, to set up port mirroring, and to adjust the MAC Age-out Timer.

## Port Config.

The [Port] → [Port] → [Port Config.] submenu is used to set the configuration of the switch ports in the GSIMT/GSIM. Once a field is modified click the OK to save the changes.

### Port Configuration

Port	TGID	Active	Auto Negotiation	Jumbo	Flow Ctrl		Storm Ctrl(pps)		
					TX	RX	Bcast	Mcast	DLF
ALL	-	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Port1	-	<input checked="" type="checkbox"/>	Auto <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Port2	-	<input checked="" type="checkbox"/>	Auto <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Port3	-	<input checked="" type="checkbox"/>	Auto <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Port4	-	<input checked="" type="checkbox"/>	Auto <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
*Port5	1	<input checked="" type="checkbox"/>	Auto <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
*Port6	1	<input checked="" type="checkbox"/>	Auto <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Port7	-	<input checked="" type="checkbox"/>	Auto <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Port8	-	<input checked="" type="checkbox"/>	Auto <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Port9	-	<input checked="" type="checkbox"/>	Auto <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Port10	-	<input checked="" type="checkbox"/>	Auto <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Sa1	-	<input checked="" type="checkbox"/>	Auto <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

OK Reset

### Port Configuration Parameter Description

Parameter	Description
<b>Port</b>	Used to displays the port to be configured. If a port name begins with '*', it indicates that the port is a Trunk/LACP member port. The contents such as 'Sa*' or 'Po*' (TGID is included in *) that are set in the Trunk/LACP Interface are identically set in all member ports, and cannot be set in each member port directly.
<b>ALL</b>	Used to apply the same configuration to all ports.
<b>TGID</b>	Used to display the TGID f the port is a member of a Trunk/LACP.
<b>Active</b>	Used to sets whether to make the port active or not
<b>Auto Negotiation</b>	Specifies Auto Negotiation. <b>[Auto]</b> activates Auto Negotiation and <b>[Forced]</b> inactivates Auto Negotiation.
<b>Jumbo</b>	Used for activation/inactivation of Jumbo Frame setup. The activated port allows the forwarding for the frame up to 9,216 Bytes.

Parameter	Description
<b>Flow Ctrl</b>	Used to set whether to perform the Flow Control, and is divided into Tx and Rx.
<b>Storm Ctrl</b>	Used to set whether to perform the Storm Control, and is divided into Bcast (Broadcast), Mcast (Multicast), and DLF (Destination Lookup Failure).

## Statistics

The administrator can retrieve the link status and statistics for each port on the GSIMT/GSIM switch using the **[Port] → [Port] → → [Statistics]** submenu. In order to reset the statistics click the Reset button.

### Statistics

Port	Link	Input Packets	Input Dropped	Input Errors	Output Packets	Output Dropped	Output Errors	Collisions
Port1	Off	0	0	0	3	0	0	0
Port2	Off	0	0	0	3	0	0	0
Port3	Off	0	0	0	3	0	0	0
Port4	Off	0	0	0	3	0	0	0
Port5	Off	0	0	0	3	0	0	0
Port6	Off	1990	1456	0	602	0	0	0
Port7	Off	783	27	0	884	0	0	0
Port8	Off	0	0	0	3	0	0	0
Port9	On	1114	553	0	617	0	0	0
Port10	Off	0	0	0	3	0	0	0

Refresh Reset

### Port Statistics Field Description

Field	Description
<b>Port</b>	Used to display the port number.
<b>Link</b>	Used to display the status of link (up/down).
<b>Input Packets</b>	Used to display the number of the Input Packets.
<b>Input Dropped</b>	Used to display the current Input Dropped Packet numbers.
<b>Input Errors</b>	Used to display the number of the Input Errors.
<b>Output Packets</b>	Used to display the number of the Output Packets.
<b>Output Dropped</b>	Used to display the output packets dropped.
<b>Output Errors</b>	Used to display the number Output Errors.
<b>Collisions</b>	Used to display the number of Collisions.

## Mirror Config.

The administrator can set up the port mirroring feature using the **[Port] → [Port] → [Mirror Config]** submenu. Once a change is made click the OK button to save the configuration.

Only one “Monitoring Port” can be set up for the Port Mirroring function at a given time, and the “Monitored Port” and the “Monitoring Port” cannot be the same. Ingress for the packets received (Rx) and Egress for the packets transmitted (Tx) in the corresponding port can be monitored in the Mirror-To Port. Both configurations contain Rx and Tx.

### Mirroring Configuration

Port Mirroring Configuration												
Monitoring Port	Port 1											
Monitored Port	1	2	3	4	5	6	7	8	9	10	11	12
Option	N	B	N	N	N	N	N	N	N	N	N	N
(N: None, B: Both, I: Ingress, E: Egress)												
<input type="button" value="OK"/> <input type="button" value="Cancel"/>												

### Mirror Config Parameter Description

Parameter	Description
<b>Monitoring Port</b>	Used to set the Monitoring Port.
<b>Monitored Port</b>	Used to select the port and monitoring type for each port being monitored .
<b>Option</b>	Used to describe each Monitoring Port option.

## Forward Table

The **[Port] → [Port] → [Forward Table]** submenu is used to set the MAC Age-out time and to view the learned MAC address of each port. Press the Refresh button to update the displayed information.

The Age-out Time Configuration parameter is used to set the duration of time that a MAC address remains in the MAC address table. The default value is 300 seconds. If the Port connection is released or disconnected then the MAC address is deleted immediately.

### Age-out Time Configuration

Age-out Time Configuration	
MAC Age-out Time (10-1000000)	300 sec
<input type="button" value="Save"/> <input type="button" value="Default"/>	

The Forward Table window displays the MAC address information discovered for each port.

### Forward Table

Port	Vlan	MAC	MAC Type	Learn Type
Port6	1	0000.f04d.0b06	Unicast	Static
Port9	1	0000.f0a1.23a7	Unicast	Dynamic
Port9	1	0013.2032.0994	Unicast	Dynamic
Port9	1	0009.7400.1003	Unicast	Dynamic
Port9	1	000c.f1cf.e604	Unicast	Dynamic
Port9	1	0013.801e.2a80	Unicast	Dynamic
Port9	1	0000.f0da.debb	Unicast	Dynamic
Port9	1	0007.e9ef.b4fd	Unicast	Dynamic
Port9	1	0001.02fd.4684	Unicast	Dynamic
Port9	1	0002.3f6b.bc43	Unicast	Dynamic
Port9	1	a000.ff00.072a	Unicast	Dynamic

Reset

### Forward Table Field Description

Field	Description
<b>Port</b>	Used to display the port number.
<b>VLAN</b>	Used to display the VLAN assignment for the port.
<b>MAC</b>	Used to display the learned MAC Address.
<b>MAC Type</b>	Used to display the MAC type.
<b>Learn Type</b>	Used to display the Learn Type of MAC address.

# VLAN

VLANs are used to divide a network into smaller networks to reduce the traffic and for security purposes. The [Port] → [VLAN] submenu is used to configure and view VLANs, Port VIDs, and VLAN Classifications.

## Configuration

Using the [Port] → [VLAN] → [Configuration] submenu the administrator can configure the VLAN features.

### Port Setup

Port ID	PVID	Ingress-filter	Frame-type
1	1	Disable	All-Packet

The Port Setup fields are used to configure the VLAN ID for each port and the Ingress Filter for VLAN Security. The type of packets coming from the port can be limited via the Frame-Type. If the port is configured as Tagged-Packet and an Untagged-packet enters the port then the packet is discarded.

### Port Setup Parameter Description

Categories	Description
Port ID	Used to select the port to be configured.
PVID	Used to specify the default VLAN IN of a port. The ID can be selected from the currently configured VLAN.
Ingress-Filter	Used to set the use of Ingress Filtering (Enable/Disable).
Frame Type	Used to set the Ingress Packet. (All-Packet/Tagged-Packet).

The VLAN Create field is used to create a VLAN ID. Once a new VLAN-ID is entered click the Save button.

### VLAN Create

VLAN Create	
VLAN-ID	<input type="text"/> (2 - 4094)

The VLAN Edit fields are used to add or delete members to/from the created VLANs. If a port is defined as Egress-Tagged then the packet sent out through that port is sent out as a Tagged-Packet. To delete a VLAN select the VLAN-ID using the pull down menu and then click the Delete button.

## VLAN Edit

Parameter	Argument																				
VLAN-ID	100																				
VLAN Name	VLAN0100																				
VLAN Member	<table border="1"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> <tr> <td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td> </tr> </table>	1	2	3	4	5	6	7	8	9	10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>					
1	2	3	4	5	6	7	8	9	10												
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>																	
Egress-Tagged	<table border="1"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> <tr> <td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td> </tr> </table>	1	2	3	4	5	6	7	8	9	10	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7	8	9	10												
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												

If a port is set as a trunk port (Static Trunk via the **[Layer2] → [Port Aggregation]** submenu) then that port is hidden and the trunk device is displayed (ie sa1, sa2 etc for static and Po1, Po2, etc. for LACP). The member port of each group should have the same VLAN characteristics. Therefore, the ports with the different VLAN characteristics cannot be involved in a trunk group.

## VLAN Edit Parameter Description

Parameter	Description
<b>VLAN-ID</b>	Used to select the VLAN-ID to be configured.
<b>VLAN Name</b>	Used to enter a name to VLAN.
<b>VLAN Member</b>	Used to assign members to a VLAN.
<b>Egress-Tagged</b>	Used to select the type of Egress packet (as Tagged or Untagged).

Using the **[Port] → [VLAN] → <Classification>** fields the administrator can define the VLAN Classification Rules. If overlapped data exists among MAC-Based, IP-Based and Protocol-Based configurations then the MAC-based configuration has the highest priority. If the MAC-based configuration does not exist then the IP-based configuration has the next highest priority. The protocol-based configuration has the lowest priority.

## VLAN Classification

Parameter	Argument
Classification Mode	MAC
VLAN ID	1
Group ID	(1-1024)
Classification Rule	: : : : : :

## VLAN Configuration Parameter Description

Parameter	Description
<b>Classification Mode</b>	Used to set the Classification Mode for a VLAN
<b>Classification Rule</b>	Used to enter the MAC address, IP Address, or Protocol

Parameter	Description
Group ID	Used to enter a Group ID Valid groups numbers are 1~1024.
VLAN ID	Used to set the VLAN ID.

### MAC based VLAN

If MAC is selected as the classification mode then the VLAN Configuration window is displayed as follows. This window is used for the configuration of VLAN in accordance with the source MAC address of the Untagged packet arriving to the port.

#### VLAN Classification

Parameter	Argument
Classification Mode	MAC
VLAN ID	2
Group ID	1 (1-1024)
Classification Rule	00 : 0f : 00 : 12 : 00 : 11

Save Reset

### IP Based VLAN

If IP-Subnet is selected as the classification mode then the VLAN Configuration window is displayed as follows. This window is used to configure VLAN depending on the IP subnet of the Untagged packet coming in the port.

#### VLAN Classification

Parameter	Argument
Classification Mode	IP-Subnet
VLAN ID	2
Group ID	1025 (1025-1153)
Classification Rule	192 . 168 . 0 . 0 / 24

Save Reset

### Protocol Based VLAN

If Protocol is selected as the classification mode then the following VLAN configuration window is displayed as follows. This window is used to configure VLAN depending on the protocol type of the Untagged packet coming into the corresponding port. In the Classification Rule a protocol can be selected and a user can enter the protocol number as hexadecimal value. If the port is set as the trunk group then the same setting is to be made in all member ports of the trunk group.

#### VLAN Classification

Parameter	Argument
Classification Mode	Protocol
VLAN ID	2
Group ID	1154 (1154-1314)
Classification Rule	IP (Hex)
Port Num	port1 (Only Protocol VLAN)

Save Reset

## Status

Using the [Port] → [VLAN] → [Status] submenu the administrator can view the configured VLAN information.

### VLAN Information

Port ID	PVID	Ingress-filter	Frame-type
Port1	100	Disable	All-Packet
Port2	100	Disable	All-Packet
Port3	100	Disable	All-Packet
Port4	100	Disable	All-Packet
Port5	1	Disable	All-Packet
Port6	1	Disable	All-Packet
Port7	200	Disable	All-Packet
Port8	200	Disable	All-Packet
Port9	200	Disable	All-Packet
Port10	200	Disable	All-Packet

### VLAN Information

ID	VLAN Information										
1	default	Member Ports	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Egress Tagged	<input type="checkbox"/>								
100	VLAN0100	Member Ports	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Egress Tagged	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
200	VLAN0200	Member Ports	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					
		Egress Tagged	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>					

### VLAN Classification Information

	Group ID	MODE	VID	Classifier	Port
<input type="checkbox"/>	1	MAC	2	0f.012.011	
<input type="checkbox"/>	1025	IP-Subnet	2	192.168.0.0/24	
	1154	Protocol	2	ip	sa1
<input checked="" type="checkbox"/>	1155	Protocol	2	ip	port1
	1156	Protocol	2	ip	port2

# Layer2 Menu

The Layer 2 Menu is used to configure the Spanning Tree Protocol, GVRP, IGMP, and port based authentication. Once the **[Layer2]** menu is selected the submenus will be displayed in the upper left side of the window as follows:



## Layer 2 Menu Description

Menu	Submenu	Description
<b>RSTP</b>	Configuration	Used to set the bridge and port environment used in RSTP.
	Status	Used to display the RSTP operation status of the switch.
<b>Port Aggregation</b>	Configuration	Used to set the Port Aggregation related values
	Status	Used to display the Port Aggregation values
<b>GVRP</b>	Configuration	Used to set up the GVRP and Dynamic VLAN Creation services.
	Status	Used to display the status of each port where GVRP is set.
<b>IGMP Snooping</b>	Time Interval	Used to set the time interval for IGMP Snooping.
	Function	Used to set the function related with IGMP Snooping.
	Forwarding Table	Used to display the information for the members registered in IGMP Group.
	Management	Used to set whether to operate IGMP Snooping.
<b>Authentication</b>	Configuration	Used to set the Authentication service.
	Management	Used to start or stop the Authentication service.

# RSTP

## Configuration

The Spanning Tree Protocol (STP) and Rapid Spanning Tree Protocols (RSTP) provide a loop free topology for any bridged LAN. Use the [Layer2] → [RSTP] → [Configuration] submenu to begin configuring the RSTP and STP settings.

### Protocol Status

Parameter	Argument
RSTP status	Current Enable

### Bridge Parameter

Parameter	Argument
Bridge Priority	8 (Default : 8 ( 0 - 15 ))
Hello Time	2 sec (Default : 2 ( 1 - 10 ))
Max Age Time	20 sec (Default : 20 ( 6 - 40 ))
Forward Time	15 sec (Default : 15 ( 4 - 30 ))

### Port Parameter

Port Name	Priority	Force Version	Path Cost	Port Fast	Link Type
Port1	8	RSTP	20000	Enable	Shared
Port2	8	RSTP	20000	Enable	Shared
Port3	8	RSTP	20000	Enable	Shared
Port4	8	RSTP	20000	Enable	Shared
Port5	8	RSTP	20000	Enable	Shared
Port6	8	RSTP	20000	Enable	Shared
Port7	8	RSTP	20000	Enable	Shared
Port8	8	RSTP	20000	Enable	Shared
Port9	8	RSTP	20000	Enable	Shared
Port10	8	RSTP	20000	Enable	Shared
Port11	8	RSTP	200000	Disable	Point to Point
Port12	8	RSTP	20000	Enable	Shared

Save Reset

### RSTP Protocol Status/Bridge/Port Parameter Description

Parameter	Description
<b>Protocol Status</b>	Used to display the current status of the RSTP protocol.
<b>Bridge Parameter</b>	Used to configure the Bridge parameters of the switch that RSTP uses. - <b>Bridge Priority:</b> Used to set the priority of Bridges. - <b>Hello Time:</b> Used to set the transmission cycle of BPDU. - <b>Max Age Time:</b> Used to set the Message Age time. - <b>Forward Time:</b> Used to set the time that the state of each port is changed (Discarding-Learning-Forwarding).

Parameter	Description
<b>Port Parameter</b>	<ul style="list-style-type: none"> <li>- <b>Priority:</b> Standard to select the port to be blocked when the switch loop is established.</li> <li>- <b>Force Version:</b> Communication is progressed via the switch connected to the corresponding port and the BPDU that a user specifies. For '0', STP BPDU is transmitted. For '1', RSTP BPDU is transmitted.</li> <li>- <b>Path Cost:</b> Used to set and display the path cost according to the bandwidth when the connection with the opponent is established.</li> <li>- <b>Port Fast:</b> If the port is enabled for Port Fast then the port becomes an Edge port and quickly goes into a forwarding state. If this function is activated then the MAC address learned in the corresponding port is not canceled even when all topologies of Bridges are changed.(If STP is used then the Port Fast function should be disabled.)</li> <li>- <b>Link Type:</b> Used to set and display the type of the link connected to the opponent. The link is connected as point-to-point in RSTP.</li> </ul>

## Status

The [Layer2] → [RSTP] → [Status] submenu is used to display the status of the switch RSTP operation.

### Bridge Information

Parameter	Argument
Protocol Status	Enabled
Designated Bridge Identifier	80000000f0000100
Root Bridge Identifier	80000000f0000100
Root Path Cost	0
Root Port	0
Last Topology changed	Thu Jan 1 09:00:00 1970

### Port Information

Port Name	Port ID	Path Cost	Port Role	Port State	Designated Root
Port1	0x8003	20000	Disabled	Discarding	00000000f0000100
Port2	0x8004	20000	Disabled	Discarding	0000000000000000
Port3	0x8005	20000	Disabled	Discarding	0000000000000000
Port4	0x8006	20000	Disabled	Discarding	0000000000000000
Port5	0x8007	20000	Disabled	Discarding	0000000000000000
Port6	0x8008	20000	Disabled	Discarding	0000000000000000
Port7	0x8009	20000	Disabled	Discarding	0000000000000000
Port8	0x800a	20000	Disabled	Discarding	0000000000000000
Port9	0x800b	20000	Disabled	Discarding	0000000000000000
Port10	0x800c	20000	Disabled	Discarding	0000000000000000
Port11	0x800d	200000	Designated	Forwarding	80000000f0000100
Port12	0x800e	20000	Disabled	Discarding	0000000000000000

Refresh

## RSTP Bridge Status Field Description

Field	Description
<b>Protocol Status</b>	Used to show the RSTP status
<b>Designated Bridge Identifier</b>	Used to display the GPLIMT/GPLIM's bridge information in hexadecimal numbers. The upper four digits represent the bridge priority and the remaining lower digits is the GPLIMT/GPLIM MAC address.
<b>Root Bridge Identifier</b>	Used to display the network root bridge.
<b>Root Path Cost</b>	Once the root bridge is decided this field displays the calculated cost for the path to the root switch.
<b>Root Port</b>	If the current equipment is not the root switch then this field indicates the ID of the port corresponding to the root port. (A switch can have only root port.)
<b>Last Topology Changed</b>	Used to display the most recent time that the RSTP network was reconfigured due to a change in the network configuration.

## RSTP Port Status Field Description

Field	Description
<b>Port Name</b>	Used to display the port number
<b>Port ID</b>	The value is combined with the value of the port priority and the ID value of the port specified in the system. The highest two digits represents the value of the port priority and the lowest two digits consist of port index.
<b>Path Cost</b>	The value indicates the path cost of the corresponding path.
<b>Port Role</b>	The value indicates the role of the port that selected via the BDPDU exchange between switches. The RSTP Port Role is divided into Disable, Alternate, Backup, Designated, Root roles.
<b>Port State</b>	The Port State shows the status of the corresponding port.
<b>Designated Root</b>	Used to display the designated root

# Port Aggregation

## Configuration

Select the **[Layer2]** → **[Port Aggregation]** → **[Configuration]** submenu to specify the configuration related to Port Aggregation. To apply the changes click the Save button. To default the configuration click the Reset button.

### LACP Configuration

The LACP Configuration window can configure trunk groups and add or delete members.

#### LACP Configuration

Parameter	Argument
Group ID	1
Group Mode	Trunk
Group Member	1 2 3 4 5 6 7 8 9 10 <input type="checkbox"/> <input type="checkbox"/>

#### LACP Configuration Parameter Description

Parameter	Description
<b>Group ID</b>	Used to select the group number from 1 to 8.
<b>Group Mode</b>	<b>[Trunk]</b> indicates the use of Static Trunking, and <b>[LACP]</b> indicates the use of the LACP protocol. LACP is distinguished with Static Trunking in that the configuration as the LACP port automatically forms bandwidth.
<b>Group Member</b>	Used to select the members of a group. Up to eight members can be specified.
<b>LACP Mode</b>	Appears when <b>[LACP]</b> is selected in Group mode. In LACP mode, <b>[Active/Passive]</b> can be selected. In Active mode, if a port is connected with a link, the standard system sends LACP packets to the opposite system first. In passive mode, the relevant port replies only when the port receives a packet from the opposite system. If both of the user system and the opposite system are set to Active, the system with higher priority becomes the standard system.

## Load Balance

When packets are sent to the opposite system via a trunk port, the packets are transmitted to the port of members pertaining to the trunk group. The Load Balance window is used for the selection of the algorithm to select the port to sent out the packets.

### Load Balance

Group ID	Load Balance Mode
1	Source + Destination MAC Address

### Load Balance Parameter Description

Parameter	Description
Group ID	Used to select a group number among 1 to 8.
Load Balance Mode	A total of six algorithms are provided. The default value is Source MAC Address + Destination MAC Address. <ul style="list-style-type: none"><li>- Source MAC Address</li><li>- Destination MAC Address</li><li>- Source MAC Address + Destination MAC Address</li><li>- Source IP Address</li><li>- Destination IP Address</li><li>- Source IP Address + Destination IP Address</li></ul>

## LACP Priority

The LACP Priority window is used for the configuration of the system priority and the port priority. Only LACP ports can be configured.

### LACP Priority

VLAN ID	NAME	
System Priority	<input type="text"/>	(1 - 65535 Default : 32768)
Port Priority	1 <input type="text"/>	(1 - 65535 Default : 32768)

### LACP Priority Parameter Description

Categories	Description
System Priority	Used to display the priority of the system. The default value is 32768.
Port Priority	Used to configure the priority of ports. The default value is 32768.

# GVRP

GVRP (GARP VLAN Registration Protocol) is a protocol that facilitates control of virtual local area networks (VLANs) within a network. It defines a method of tagging frames with VLAN configuration data. This allows network devices to dynamically exchange VLAN configuration information with other devices. Select the **[GVRP]** menu to start or stop the GVRP service, to modify the GVRP service for each port, and to view the status of GVRP.

## Configuration

Use the **[Layer2] → [GVRP] → [Configuration]** submenu to start or stop the GVRP service and the Dynamic VLAN Creation service.

### GVRP Basic

Parameter	Argument
GVRP	Disable ▼
Dynamic VLAN Creation	Disable ▼

In the **<GVRP Basic>** window specify the GVRP configuration as Enabled and then click the Save button. Once GVRP is enabled the following configuration window will appear.

### GVRP Configuration

Port	Status	Registration	Applicant	Timers(millisecond)		
				Join	Leave	LeaveAll
<input type="checkbox"/> ALL	Enable ▼	-	-	-	-	-
port1	Disable ▼	-	-	-	-	-
port2	Disable ▼	-	-	-	-	-
port3	Disable ▼	-	-	-	-	-
port4	Disable ▼	-	-	-	-	-
port5	Disable ▼	-	-	-	-	-
port6	Disable ▼	-	-	-	-	-
port7	Disable ▼	-	-	-	-	-
port8	Disable ▼	-	-	-	-	-
port9	Disable ▼	-	-	-	-	-
port10	Disable ▼	-	-	-	-	-
port11	Disable ▼	-	-	-	-	-
port12	Disable ▼	-	-	-	-	-

Make changes to the ports and then click the OK button to save the information. Click the Refresh button to display the latest information of the port .

## GVRP Configuration Field/Parameter Description

Field/Parameter	Description
Port	Used to display the port Number
Status	Used to enable or disable GVRP per port
Registration	Used to display the Registration mode as Normal, Forbidden or Fixed
Applicant	Used to display the Applicant mode as Normal or Active conditions
Join	Used to display the interval for Join Transfer Time
Leave	Used to display the value of Leave Delay Time
LeaveAll	Used to display the value of LeaveAll Transfer Time

## Status

The [Layer2] → [GVRP] → [Status] submenu is used to display the information on the ports where GVRP is configured.

### GVRP Machine

Port	Applicant State	Registrar State
Port1	VO	MT
Port2	VO	MT

### GVRP Machine Field Description

Field	Description
Port	Used to display the Port Number
Applicant State	Used to display the Current Status of the Applicant State Machine
Register State	Used to display the Current Status of the Register State Machine

### GVRP statistics

Port		Join Empty	Join In	Leave Empty	Leave In	Empty
Port1	RX	0	0	0	0	0
	TX	0	0	0	0	0
Port2	RX	0	0	0	0	0
	TX	0	0	0	0	0

Refresh

## GVRP Statistics Field Description

Field	Description
Port	Used to display the Port Number
Join Empty	Used to display the number of Join Empty packets
Join In	Used to display the number of Join In packets
Leave Empty	Used to display the number of Leave Empty packets
Leave In	Used to display the number of Leave In packets
Empty	Used to display the number of Empty packets

## IGMP Snooping

The purpose of Internet Group Management Protocol (IGMP) snooping is to restrain multicast traffic in a switched network. The [Layer2] → [IGMP Snooping] menu is used for the configuration of IGMP Snooping.

### Time Interval

Use the [Layer2] → [IGMP Snooping] → [Time Interval] submenu to configure the time related parameters of IGMP Snooping.

#### Time Interval

Category	Argument
VLAN	Default
Group Membership	120000 ms

OK

VLAN	Group Membership (ms)	Last Member Query (ms)	Max Response (ms)	Other Query (ms)
Default	120000	1000	10000	120000

## IGMP Time Interval Category Description

Categories	Description
VLAN	Pull down menu used to select the VLAN to be configured.
Group Membership	Used to configure the time to exit from the multicast forwarding database list when new report does not exist.
Last Member Query	Used to configure the time to wait a response report after sending a query to check if the host is the last host when multicast router receives a leave message from a host. If the report is not replied until the time is elapsed, the host is deleted from the group.

Categories	Description
<b>Max Response</b>	Used to configure the maximum time until its response when IGMP Snooping query is received.
<b>Other Query</b>	Used to configure the time until the operation as a querier starts when a query from the multicast router does not exist.

Select the VLAN and the Category to configure, enter the timed value, and then click the OK button to store the configuration.

## Function

Use the [Layer2] → [IGMP Snooping] → [Function] submenu to specify the functions related to IGMP Snooping.

### Function

Category	Argument
VLAN	Default
Querier	Enable

OK

VLAN	Querier	Immediate Leave
Default	Disable	Disable
VLAN 2	Disable	Disable

### IGMP Snooping Function Category Description

Categories	Description
<b>VLAN</b>	Pull down menu used to select the VLAN to be configured.
<b>Querier</b>	Used to specify the operation as IGMP querier when the multicast router does not exist.
<b>Immediate Leave</b>	Used to delete a host from the group immediately when receiving the Leave Message.

Select the VLAN and the Category to configure, select 'Enable' or 'Disable', and then click the OK button to store the configuration. The Querier and Immediate Leave values can be set for each VLAN.

## Forwarding Table

Use the [Layer2] → [IGMP Snooping] → [Forwarding Table] submenu to display the information on the members registered in IGMP Group.

### Forwarding Table

VLAN	Multicast IP Address	Member Port	Aging Time
<input type="button" value="Refresh"/>			

Click the Refresh button to update the information displayed on the web screen.

## Management

Use the [Layer2] → [IGMP Snooping] → [Management] to specify the operation of IGMP Snooping.

### IGMP Snooping Management

Scope	Action
Global <input type="button" value="v"/>	Enable <input type="button" value="v"/>
<input type="button" value="OK"/>	

Scope	Current Status
Global	Enable
Default	Enable

In the Scope parameter each VLANs can be turned on or off independantly. However, if Global is set to Disable then all the VLANs become disabled.



NOTE

#### IGMP Snooping Management

If Global is set to Disable mode then other pages within the [Layer2] → [IGMP Snooping] submenu are not be displayed.

## Authentication

The **[Authentication]** submenu is used to enable or disable remote authentication, to review existing authentication information, and to configure individual ports and their authentication methods.

## Management

Use the **[Layer2] → [Authentication] → [Management]** submenu to turn authentication on or off and to define the Radius server management items.

Click the Run button to start the service and click the Stop button to cease the authentication service.

If there is the Radius server performing the 802.1x user authentication then the relevant data must be input here. The host IP address, host, and key should be registered. The default port of the Radius Host Port is 1812 port. Click the OK button to save any changes.

### Authentication Management

Activity	Action
Stop	<input type="button" value="Run"/>

Radius Server Management	
Host IP	<input type="text" value="192"/> . <input type="text" value="168"/> . <input type="text" value="0"/> . <input type="text" value="23"/>
Secret Key	<input type="text" value="samsung"/>
Host Port	<input type="text" value="1812"/>

## Configuration

Use the **[Layer2] → [Authentication] → [Configuration]** submenu to configure the authentication method on a per port basis. If the authentication service has not been started the following window will appear:

### Authentication Configuration

802.1X Port-Based Authentication Disabled

Once the service is started using the **[Layer2] → [Authentication] → [Management]** submenu the following window will appear when using the **[Layer2] → [Authentication] → [Configuration]** submenu

## Authentication Configuration

Port	Control	Reauth	Reauth-period	Tx-period	Supp Time-out	Server Time-out
Port1	None	<input type="checkbox"/>				
Port2	None	<input type="checkbox"/>				
Port3	None	<input type="checkbox"/>				
Port4	None	<input type="checkbox"/>				
Port5	None	<input type="checkbox"/>				
Port6	None	<input type="checkbox"/>				
Port7	None	<input type="checkbox"/>				
Port8	None	<input type="checkbox"/>				
Port9	None	<input type="checkbox"/>				
Port10	None	<input type="checkbox"/>				
Port11	None	<input type="checkbox"/>				
Port12	None	<input type="checkbox"/>				

OK Cancel

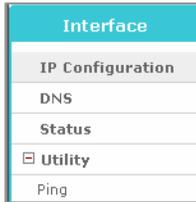
## Authentication Configuration Parameter Description

Parameter	Description
<b>Control</b>	Used to set the authentication mode of each port when employing the (802.1x) authentication - <b>None</b> : Authentication is not performed for the port. - <b>Force-authorized</b> : Admits the port forcibly. - <b>Force-unauthorized</b> : Blocks the port forcibly. - <b>Auto</b> : Allows the port through authentication from the Radius server and blocks the port.
<b>Reauth</b>	Used to set the port for re-authentication.
<b>Reauth-Period</b>	Used to set the timer for the re-authentication cycle when the Reauth box is checked. (1-4294967295sec) default: 3600 sec
<b>Tx-Period</b>	Used to set the cycle that sends Request regularly to supplicant. (1-65535sec) default: 30 sec
<b>Supp-Timeout</b>	Used to set the time before re-sending to the user when EAP is requested.(1-65535sec) default: 30 sec
<b>Sever-Timeout</b>	Used to set the time before re-sending to the device when server authentication of a server is requested.(1-65535sec) default: 30 sec

The Re-authentication settings and cycle settings are applied only when the setting is changed because there is default value.

# Interface

The **[Interface]** submenu is used to set up the Management IP address on the GSIMT/GSIM, to enter the DNS server information, to view the status of the network, and to perform ping testing. The [Interface] submenus will be displayed in the upper left side of the window as follows:



## Interface Menu Description

Menu	Submenu	Description
<b>IP Configuration</b>	-	Used to set an IP address of a VLAN .
<b>DNS</b>	-	Used to sets a name server used in GSIMT/GSIM.
<b>Status</b>	-	Used to display the IP address or MAC information currently being set in a VLAN device.
<b>Utility</b>	Ping	Used to check the network by executing a ping test.

## IP Configuration

This menu is used to set an IP and Administrative up/down.

### Network Interface

Rd Interface
rd1

Interface	
IP	<input style="width: 20px;" type="text" value="10"/> . <input style="width: 20px;" type="text" value="0"/> . <input style="width: 20px;" type="text" value="3"/> . <input style="width: 20px;" type="text" value="1"/>
Netmask	<input style="width: 20px;" type="text" value="255"/> . <input style="width: 20px;" type="text" value="255"/> . <input style="width: 20px;" type="text" value="255"/> . <input style="width: 20px;" type="text" value="0"/>
Interface Up	<input checked="" type="radio"/> On <input type="radio"/> Off

This section of the submenu is used to set the GSIMT/GSIM Management IP address and Netmask information. Enter the new IP address and Netmask information for each VLAN and then click the OK button to save the changes. The default value of the GSIMT/GSIM IP Address is 10.0.3.1/24.

## Network Interface Parameter Description

Menu	Submenu	Description
Rd Interface	-	Used to select a VLAN device that exists in GSIMT/GSIM.
IP	-	Used to set a Network IP.
Netmask	-	Used to set a Netmask.
Interface Up	-	Used to turn the Interface on and off.

### IP Alias

This field is used to add up to 32 IP addresses to an Interface. To add entries, click the Add button and enter the following IP address and netmask. To delete entries, select the entry to be deleted and then click the Delete button.

#### IP Alias

	IP	Netmask
<input type="checkbox"/>	100 . 0 . 0 . 1	255 . 255 . 255 . 0

## DNS

The [Interface] → [DNS] submenu is used to set the name server used by the GSIMT/GSIM.

Name Server Add	
<input type="checkbox"/>	168 . 126 . 63 . 1

Enter the IP address corresponding to the DNS server and then click the Add button. The saved entry is directly applied to the <Static DNS> field of the [Interface] → [DNS] submenu.

#### Static DNS

Name Server List	
<input type="checkbox"/>	168.126.63.1

## Status

This **[Interface]** → **[Status]** submenu is used to retrieve the Interface information from the GSIMT/GSIM.

### Network Status

Interface	IP	Netmask	Status	MAC Address
rd1	10.0.3.1	255.255.255.0	up	0000.f000.0000
rd100	1.1.1.1	255.255.255.0	down	0000.f000.0000

### Status Field Description

Menu	Submenu	Description
<b>Interface</b>	-	Used to display the Interface name
<b>IP</b>	-	Used to display the IP address information
<b>Netmask</b>	-	Used to display the Netmask information
<b>Status</b>	-	Used to display the whether the interface is activated or deactivated

## Utility

Select the **[Interface]** → **[Utility]** submenu to perform ping tests on the GSIMT/GSIM.

<b>Interface</b>
<b>IP Configuration</b>
DNS
Status
<input checked="" type="checkbox"/> <b>Utility</b>
Ping

## Ping

The Ping window is a table which is used to specify and execute the Ping test. When an administrator selects this submenu the following configuration window is displayed.

### Ping

Category	Configuration
Destination IP Address	<input checked="" type="radio"/> <input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>
	<input type="radio"/> <input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>
	<input type="radio"/> <input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>
Option	
Source Address	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>
Packet Size	<input type="text"/>
Retry Count	<input type="text"/>
Time to Live	<input type="text"/>
MTU Discovery Hint	none <input type="button" value="v"/>

### Ping Parameters

Parameter	Description
<b>Destination IP Address</b>	Used to enter the destination IP address for the Ping test
<b>Source Address</b>	Used to set the IP address of the interface for the Ping test
<b>Packet Size</b>	Used to set the packet size to be transmitted
<b>Retry Count</b>	Used to set the retry count. If it set to '0', there is no retry. Max is 3
<b>Time to Live</b>	Used to set the TTL value.

Parameter	Description
<b>MTU Discovery Hint</b> <b>Selects the Path MTU</b> <b>Discovery method</b>	None:
	Do: Uses PMTU but does not treat. In short, packet fragmentation does not occur
	Don't: Does not use PMTU at all. Since it does not set the DF field, the fragmentation may occur in remote site
	Want: Uses PMTU and treats appropriately. In short, if the packet size is longer than MTU, the packet fragmentation occurs

Enter the destination IP (and any extended ping parameters if needed) then click the Run button.

Only one destination IP can be tested at a time and the radio button of the IP Address to be tested must be checked. The radio button of the destination IP Address on the top of the list is set by default.

## Ping

Category	Configuration
Destination IP Address	<input checked="" type="radio"/> 192 . 168 . 1 . 1
	<input type="radio"/> . . . .
	<input type="radio"/> . . . .

Option	
Source Address	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>
Packet Size	<input type="text"/>
Retry Count	<input type="text"/>
Time to Live	<input type="text"/>
MTU Discovery Hint	none <input type="button" value="v"/>

Log
PING 192.168.1.1 (192.168.1.1) from 192.168.1.1 : 56(84) bytes of data.
64 bytes from 192.168.1.1: icmp_seq=1 ttl=64 time=0.129 ms
64 bytes from 192.168.1.1: icmp_seq=2 ttl=64 time=0.020 ms
64 bytes from 192.168.1.1: icmp_seq=3 ttl=64 time=0.018 ms
---
--- 192.168.1.1 ping statistics ---
3 packets transmitted, 3 received, 0% loss, time 1999ms
rtt min/avg/max/mdev = 0.018/0.055/0.129/0.052 ms

# Layer 3 Menu

The **[Layer3]** menu is used to manage static and dynamic routing for the GSIMT/GSIM. Select the **[Layer3]** menu to begin configuring the routing statements and routing protocols. The **[Layer3]** submenus will be displayed in the upper left side of the window as follows:



## Layer3 Menu Submenu Description

Menu	Submenu	Description
<b>General</b>	Routes	Used to display the routing table of GSIMT/GSIM.
	Management	Used to start or stop RIP, OSPF, and BGP.
<b>Configuration</b>	Static	Used to set up a static route.
	RIP	Used to set up RIP.
	RIP Interface	Used to sets the RIP interface.
	OSPF	Used to set up OSPF.
	OSPF Interface	Used to set up the OSPF interface.
	BGP	Used to set up BGP.

Menu	Submenu	Description
List	Access List	Used to set up Access-lists.
	Prefix List	Used to set up Prefix-lists.
	Route Map	Used to set up Route-maps.
	As Path List	Used to set up BGP AS-path lists.
	Community List	Used to set up BGP Community-lists.
	Key Chain	Used to set up the key used for authentication of RIP v2.
Status	RIP	Used to display RIP network information.
	OSPF	Used to display OSPF Neighbor information.
	BGP	Used to display the Neighbor status connected with the BGP network information.

## General

This submenu is used to start and stop the routing protocols RIP, OSPF, and BGP and to view the routing table of the GSIMT/GSIM.

## Routes

In order to view all static and dynamic routes select the [Layer3] → [General] → [Routes] submenu. Click the refresh button to refresh the routing table.

### Routes

Type	Network	Entry
S *>	0.0.0.0/0	[1/0] via 216.62.86.129, eth0
C *>	127.0.0.0/8	is directly connected, loopback
C *>	192.168.1.0/24	is directly connected, eth2
K *>	192.168.2.0/24	via 216.62.86.129, ipsec0
C *>	216.62.86.128/25	is directly connected, eth0

Refresh

### Routes Window Field Description

Item	Description
Type	<ul style="list-style-type: none"> <li>- C: Network directly connected to GSIMT/GSIM network interface</li> <li>- S: Static network set by a administrator</li> <li>- R: Path information received from another router via RIP</li> <li>- O: Path information received from another router via OSPF protocol</li> <li>- B: Path information received from another router via BGP</li> <li>- K: Path information set by system kernel</li> <li>* &gt;: Whether to have activated routing table</li> </ul>

Item	Description
Network	Network/Netmask information of route
Entry	Route information

## Management

In order to turn the GSIMT/GSIM routing protocols on or off select the **[Layer3]** → **[General]** → **[Management]** submenu. Go to the Action pull down menu and select On or Off for each of the routing protocols. Click the OK button to submit the change.

### Management

Protocol	Current Status	Action
RIP	Start	On
OSPF	Start	On
BGP	Start	On

OK

## Configuration

In order to configure static routes, and set up the routing protocols RIP, OSP, and BGP the system administrator will use the **[Layer3]** → **[Configuration]** submenu.

## Static Route

Static routes are entered into the GSIMT/GSIM by the system administrator. An entire network can be configured using static routes but this type of configuration is not fault tolerant. When there is a change in the network or a failure occurs between two statically defined nodes, traffic will not be rerouted. Select the **[Layer3]** → **[Configuration]** → **[Static]** submenu to set the static routes.

Static routes are set by using the Command line.

### Static

Command
<input type="text"/>

OK



In the example listed below the network administrator enters a static route of 100.0.0.0/24 going out through eth0. Click the OK button to submit the command.

### Static

Command
<input type="text" value="ip route 100.0.0.0/24 eth0"/>

OK

When the entered command is successfully executed, the configuration is directly applied to the <Current Status> section of the [Layer3] → [Configuration] → [Static] submenu.

## Current Status

Type	Network	Entry
S *>	0.0.0.0/0	[1/0] via 216.62.86.129, eth0
S *>	100.0.0.0/24	[1/0] is directly connected, eth0

The static route that was entered is redundant because the default route was already sending 100.0.0.0/24 traffic out of eth0.

## Current Status Parameter Description

Item	Description
Type	- S: Static network set by a administrator - *>: Whether to include activated routing table
Network	Network/Netmask information of route
Entry	Route information

## Help

If the system administrator is unsure which static route command to use then they may use the <Help> section to see all possible commands. Select the Command choice (either 'ip route' or 'no ip route' then use the Argument pull down menu to see the possible choices. For example if the administrator wants to see what the correct command is to remove the static route that was just entered they would select "no ip route" and then select the appropriate argument.

## Help

Command	Argument
no ip route	A.B.C.D/M (A.B.C.D INTERFACE )

Then at the command line the following command must be typed in. Then click the OK button to submit the change.

## Static

Command
no ip route 100.0.0.0/24 eth0

OK

## RIP

The Routing Information Protocol (RIP) is one of the most commonly used routing protocols on internal networks (and to a lesser extent, networks connected to The Internet). RIP helps routers dynamically adapt to routing changes on a network by communicating information about which networks each router within a network can reach and how far away those networks are. Select the **[Layer3] → [Configuration] → [RIP]** submenu to begin configuring RIP.

On the GSIMT/GSIM the RIP information (basic and advanced commands) can be entered by using the Command field or by using the RIP Basic fields (basic commands only).

### RIP

Command	
<input type="text"/>	
<input type="button" value="OK"/>	

### RIP Basic

Command	Argument
Version	<input type="radio"/> 1 <input checked="" type="radio"/> 2 (default)
redistribute	<input type="checkbox"/> connected <input type="checkbox"/> static <input type="checkbox"/> ospf <input type="checkbox"/> bgp
network	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/> / <input type="text"/>
<input type="button" value="OK"/>	



In the Command field and RIP Basic examples listed below the network administrator is setting the 192.168.1.0 network for RIP version 2

### RIP

Command	
<input type="text" value="network 192.168.1.0/24"/>	
<input type="button" value="OK"/>	

### RIP Basic

Command	Argument
Version	<input type="radio"/> 1 <input checked="" type="radio"/> 2 (default)
redistribute	<input type="checkbox"/> connected <input type="checkbox"/> static <input type="checkbox"/> ospf <input type="checkbox"/> bgp
network	<input type="text" value="192"/> . <input type="text" value="168"/> . <input type="text" value="1"/> . <input type="text" value="0"/> / <input type="text" value="24"/>
<input type="button" value="OK"/>	

Enter the RIP command or enter the RIP Basic information. If the entered command or RIP Basic information is correct then click on the OK button to submit the change. The new RIP configuration is directly applied to **<Current Status>** of **[Layer3] → [Configuration] → [RIP]** submenu.

## Current Status

Router RIP
router rip
network 192.168.1.0/24

## Help

If a system administrator is unsure which RIP commands to use in the Command field then they may use the Help Command pull down menu to see all possible choices. Once a command is selected the Argument pull down menu will be populated with the appropriate choices. Once the correct RIP command is identified then type it into the Command field and click on the OK button to submit the change

## Help

Command	Argument
redistribute	(kernel connected static ospf isis bgp) metric <0-16> rout

## RIP Interface

The [Layer3] → [Configuration] → [RIP Interface] submenu is used to select the Interfaces which will use RIP, to apply advanced RIP functionality, and to select the send and receive RIP settings per Interface.



NOTE

If a WAN Interface is set up to work through a VPN Tunnel then it will not be possible to send routing updates through it. This includes RIP, OSPF and BGP.

Select the target interface and enter the protocol configuration command directly.

## RIP Interface

Interface	Command
eth0	

If the RIP command is successfully executed then the execution result is directly applied to the <Current Status> of [Layer3] → [Configuration] → [RIP Interface] submenu.

## Current Status

Router RIP Interface eth0
ip rip send version 1 2
ip rip receive version 1 2

## Help

If a system administrator is unsure which RIP commands to use then they may use the Help Command pull down menu to see all possible choices. Select the Command field (either “ip rip” or “no ip rip”) and then the Argument field. Once the correct RIP command is identified then type it into the Command field and click on the OK button to submit the change

## Help

Command	Argument
ip rip	receive version 1 2

## RIP Interface Basic

The RIP Interface Basic fields are used to set the Interface to send and/or receive RIP Versions 1 and 2. After selecting each item click the OK button to submit the change. The applied value will be displayed in the <Current Status> window.

## RIP Interface Basic

Command	Argument
receive version	<input checked="" type="checkbox"/> 1 <input checked="" type="checkbox"/> 2
send version	<input checked="" type="checkbox"/> 1 <input checked="" type="checkbox"/> 2

OK

## Current Status

Router RIP Interface eth0
ip rip send version 1 2
ip rip receive version 1 2

## OSPF

The Open Shortest Path First (OSPF) protocol is a link-state, hierarchical routing protocol. Dijkstra's algorithm which is used to calculate the shortest path tree. It uses cost as its routing metric. A link state database is constructed of the network topology which is identical with all routers in the OSPF area. OSPF is perhaps the most widely used Routing Protocol in large networks. Select the [Layer3] → [Configuration] → [OSPF] submenu to begin configuring OSPF.

On the GSIMT/GSIM the OSPF information (basic and advanced commands) can be entered by using the Command field or by using the OSPF Basic fields (basic commands only).

### OSPF

Command
<input type="text"/>
OK

### OSPF Basic

Command	Argument
redistribute	<input type="checkbox"/> connected <input type="checkbox"/> static <input type="checkbox"/> rip <input type="checkbox"/> bgp
network	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/> / <input type="text"/> <input type="text"/> area ID
OK	



In the Command field and OSPF Basic examples listed below the network administrator is setting the 192.168.1.0 network for OSPF with an area of 100. Click the OK button to apply the change.

### OSPF

Command
network 192.168.1.0/24 area 100
OK

### OSPF Basic

Command	Argument
redistribute	<input type="checkbox"/> connected <input type="checkbox"/> static <input type="checkbox"/> rip <input type="checkbox"/> bgp
network	192 . 168 . 1 . 0 / 24 <input type="text"/> 100 area ID
OK	

Both the Command field and OSPF Basic field entries listed above produce the same configuration and will be displayed under the current status.

## Current Status

Router OSPF
router ospf
network 192.168.1.0/24 area 100

## Help

If a system administrator is unsure which OSPF command to use in the Command field then they may use the Help Command pull down menu to see all possible choices. Once a command is selected the Argument pull down menu will be populated with the appropriate choices. Once the correct OSPF command is identified then type it into the Command field and click on the OK button to submit the change

## Help

Command	Argument
default-metric	<0-16777214>

## OSPF Interface

The [Layer3] → [Configuration] → [OSPF Interface] submenu is used to select the Interfaces which will use OSPF and to apply advanced OSPF functionality. The Command field may be used to enter both basic and advanced OSPF configuration commands and the OSPF Interface Basic fields may be used to enter Basic OSPF configuration commands.

### OSPF Interface

Interface	Command
eth0	

OK

### OSPF Interface Basic

Command	Argument
cost	<input type="text"/> <1-65535> Cost
dead-interval	<input type="text"/> <1-65535> Seconds
hello-interval	<input type="text"/> <1-65535> Seconds
transmit-delay	<input type="text"/> <1-65535> Seconds
retransmit-interval	<input type="text"/> <1-65535> Seconds

OK

Select the target interface and then enter the OSPF configuration command using the Command field or OSPF Interface Basic fields.



NOTE

If a WAN Interface is set up to work through a VPN Tunnel then it will not be possible to send routing updates through it. This includes RIP, OSPF and BGP.

### Help

If a system administrator is unsure which OSPF commands to use then they may use the Help Command pull down menu to see all possible choices. Select the Command field (either “ip ospf” or “no ip ospf”) and then the Argument field. Once the correct OSPF command is identified then type it into the Command field and click on the OK button to submit the change

### Help

Command	Argument
ip ospf	(A.B.C.D) cost <1-65535>

Once an OSPF configuration command is successfully applied the results will be displayed in the [Layer3] → [Configuration] → [OSPF Interface] <Current Status> window

### Current Status

Router OSPF Interface eth0	
ip ospf cost	5
ip ospf dead-interval	55

## BGP

BGP is the core routing protocol of The Internet. It works by maintaining a table of IP networks or 'prefixes' which designate network reachability among autonomous systems (AS). It is a path vector protocol which does not use traditional IGP metrics, but makes routing decisions based on path, network policies and/or rule sets. Select the [Layer3] → [Configuration] → [BGP] submenu to begin configuring BGP.

On the GSIMT/GSIM the BGP information (basic and advanced commands) can be entered by using the Command field or by using the BGP Basic fields (basic commands only).

### BGP

Command	
	<input type="text"/>
<input type="button" value="OK"/>	

### BGP Basic

option	parameter
AS number	<input type="text"/>
neighbor	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/> remote <input type="text"/> <input type="checkbox"/> ebgp-multihop <input type="checkbox"/> next-hop-self
network	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/> / <input type="text"/>
redistribute	<input type="checkbox"/> connected <input type="checkbox"/> static <input type="checkbox"/> rip <input type="checkbox"/> ospf
<input type="button" value="OK"/>	

In the Command fields and BGP Basic field examples listed below the network administrator is setting the 192.168.1.0 network for BGP with an area of 100. The neighbor has an IP Address of 192.168.2.1 and has a remote AS of 200. Click the OK button to apply the change. When using the Command field several entries will need to be entered to set up this configuration. Click the OK button after each entry.

## BGP

Command
router bgp 100

Command
network 192.168.1.0/24

Command
neighbor 192.168.2.1 remote-as 200

OK

## BGP Basic

option	parameter
AS number	100
neighbor	192 . 168 . 2 . 1 remote 200 <input type="checkbox"/> ebgp-multihop <input type="checkbox"/> next-hop-self
network	192 . 168 . 1 . 0 / 24
redistribute	<input type="checkbox"/> connected <input type="checkbox"/> static <input type="checkbox"/> rip <input type="checkbox"/> ospf

OK

Once the entered command/s are successfully executed, the BGP configuration is directly applied to the [Layer3] → [Configuration] → [BGP]. <Current Status> window.

## Current Status

Router BGP
router bgp 100
network 192.168.1.0/24
neighbor 192.168.2.1 remote-as 200

Delete

## help

If a system administrator is unsure which BGP commands to use then they may use the Help Command pull down menu to see all possible choices. Select the Command field and select the BGP entry and then the Argument field entry. Once the correct BGP command is identified then type it into the Command field and click on the OK button to submit the change

# List

## Access List

Access Lists are used on the GSIMT/GSIM to control access to the network. Access lists can prevent certain traffic from entering or exiting the L2/L3 switch. Select the **[Layer3]** → **[List]** → **[Access List]** submenu to begin configuring the Access-list. After setting the target items, click the OK button.

### Access List

Option	Parameter
ID	Word <input type="text"/>
Action	<input type="radio"/> Permit <input checked="" type="radio"/> Deny
Source Match	<input type="radio"/> any
	<input checked="" type="radio"/> Network <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> / <input type="text"/>
Exact match	<input checked="" type="checkbox"/> On/Off

OK

### Access List Parameters

Item	Description
ID	Used to set the Access-list name.
	1~99: Standard Access List
	100~199: Extended Access List
	1300~1999: Standard Access List
	2000~2699: Extended Access List
	Word: Named Access List
Action	Used to allow or reject the packet matched.
Source Match	Sets the match condition. Any - All packets Host - A host Network - Network range
Destination Match	If the ID ranges from 100 to 199 or from 2000 to 2699, then the Destination Match can be set as well as the Source Match condition Any - All packets Host - A host Network - Network range
Exact match	Available when ID is set to word and when match condition is set to Network. Sets only the packets matched correctly with the prefix.

Once the Access List command is successfully executed then the results are directly applied to the [Layer3] → [List] → [Access List] <Current Status> window.

### Current Status

	ID	Entry
<input checked="" type="radio"/>	test	permit 100.0.0.0/24 exact-match

In order to delete an Access List select the radio button to the left of the Access List and then click the Delete button.

### Current Status Fields

Field	Description
ID	Access-list name information
Entry	Access-list description

## Prefix List

The Prefix List provides the most powerful prefix based filtering mechanism. In addition to access-list functionality the Prefix List has prefix length range specification and sequential number specification. You can add or delete prefix based filters to arbitrary points of Prefix List using sequential number specification. Select the [Layer3] → [List] → [Prefix List] submenu to configure the Prefix-list.

If no Prefix List is specified on the GSIMT/GSIM then it acts as a permit rule. If the Prefix List is defined, and no match is found, then a default rule of deny is applied.

### Prefix List

Option	Parameter
ID	<input type="text"/>
Seq	<input type="text"/>
Action	<input checked="" type="radio"/> Permit <input type="radio"/> Deny
Prefix Match	<input checked="" type="radio"/> Any
	<input type="radio"/> <input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/> / <input type="text"/> ge: <input type="text"/> le: <input type="text"/>

## Prefix List Parameters

Parameter	Description
<b>ID</b>	Used to set the prefix-list name.
<b>Seq</b>	Used to set the sequence No. of the prefix-list.
<b>Action</b>	Allows/Rejects the packets matched.
<b>Prefix Match</b>	Sets the match condition. - Any: All packets - Network: network range.

Once the Prefix List information is entered and saved then the results are directly applied to the [Layer3] → [List] → [Prefix List] <Current Status> window.

## Current Status

	ID	Entry
<input checked="" type="radio"/>	test	seq 5 permit 100.0.0.0/24

Once a Prefix List is set in the GSIMT/GSIM it can be removed by selecting the radio button of the Prefix List and then click the Delete button.

## Prefix List Current Status Fields

Field	Description
<b>ID</b>	Prefix-list name information
<b>Entry</b>	Prefix-list information

## Route-Map

Route maps are similar to access lists as they both have criteria for matching the details of certain packets and an action of permitting or denying those packets. Use the [Layer3] → [List] → [Route-Map] submenu to begin configuring Route-Map.

Enter the target value and then click the OK button to save the change.

## Route-Map

Option	Parameter
Name	<input type="text" value="test"/>
Action	<input checked="" type="radio"/> Permit <input type="radio"/> Deny
Sequence	<input type="text" value="1"/>

## Route-Map Parameter Description

Parameter	Description
Name	Route-map name
Action	Sets whether to apply set operation.
Sequence	Sets the sequence No. to additionally delete a route-map

If the Route-Map command is successfully entered and saved then the results will be directly applied to the <Current Status> of the [Layer3] → [List] → [Route-Map] submenu.

## Route-Map Setting

	Name	Entry
<input checked="" type="radio"/>	test	permit 10

## Route-Map Setting Field Description

Field	Description
Name	Route-map name
Entry	Route-map information

Once a Route-Map is created it can be defined. Highlight the radio button to the left of the Route –Map and click the edit button.

## Match

Option	Parameter
<input type="checkbox"/> IP	<input checked="" type="radio"/> Address <input type="text"/> <input type="checkbox"/> Use prefix-list <input type="radio"/> Next-hop <input type="text"/> <input type="checkbox"/> Use prefix-list
<input type="checkbox"/> Metric	<input type="text"/>

## Set

Option	Parameter
<input type="checkbox"/> IP	Next-hop <input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>
<input type="checkbox"/> Metric	<input type="text"/>
<input type="checkbox"/> Weight	<input type="text"/>
<input type="checkbox"/> Community	<input type="text"/>
<input type="checkbox"/> Metric-Type	Type-1 <input type="button" value="v"/>
<input type="checkbox"/> Local Preference	<input type="text"/>

## Route-Map Match Parameter Description

Parameter	Description
IP	- Address: Used to set the access-list or prefix-list for an IP to be matched. - Next-hop: Used to set the Next-hop IP to be matched.
Metric	Used to set the Metric to be matched.

## Route-Map Set Parameter Description

Parameter	Description
IP	Used to set the next-hop of the BGP table.
Metric	Used to set the metric of the BGP table.
Weight	Used to set the weight of the BGP table.
Community	Used to set the community of the BGP table.
Metric-Type	Used to set the metric type of the BGP table. - Type 1: External Type 1 - Type 2: External Type 2
Local Preference	Used to set the local preference from BGP attribute.

If a Route-Map entry needs to be deleted then click the radio button to the left of the Route-Map and then click the Delete button. When the match condition is met and the Action is set to Permit then the job corresponding to Set operation is carried out. If the command is successfully entered and saved then the Route-Map result is directly applied to <Current Status> of the [Layer3] → [List] → [Route-Map] submenu .

## Current Status

	Sequence	Entry
<input type="radio"/>	10	match ip address test
<input type="radio"/>	10	set ip next-hop 1.1.1.1

## Current Status Field Description

Field	Description
Sequence	Matches/Sets operation Sequence No. of route-map.
Entry	Matches/Sets operation information of route-map.

Click the Prev button to return to the route-map window or click the Delete button to delete the selected Match/Set operation.

## As Path List

Select the [Layer3] → [List] → [As Path List] submenu to begin configuring the AS Path access-list entries for the GSIMT/GSIM BGP. Enter the target values and then click the Save button.

### As Path

Option	Parameter
ID	<input type="text" value="test"/>
Action	<input checked="" type="radio"/> Permit <input type="radio"/> Deny
Match	<input type="text" value="100\$"/>

OK

### AS Path List Parameter Description

Parameter	Description
ID	Used to set the AS Path access-list name.
Action	Used to set the system to allow/reject if a BGP route information exists that meets the match condition.
Match	Used to set the match condition.

Once the AS Path command is successfully entered and saved then the results will be directly applied to the <Current Status> of the [Layer3] → [List] → [As Path List] submenu.

### Current Status

	ID	Entry
<input checked="" type="radio"/>	test	permit 100\$

Delete Delete All

### Current Status Field Description

Field	Description
ID	As path access-list name
Entry	As path access-list information

In order to delete an AS Path entry click the radio button to the left of the AS Path rule and then click the Delete button. Click the Delete All button to remove all AS Path entries from the GSIMT/GSIM at the same time.

## Community List

Select the [Layer3] → [List] → [Community List] submenu to begin configuring the Community List of the GSIMT/GSIM BGP. Set the target values and then click the Save button.

### Community List

Option	Parameter
ID	<input type="text" value="test"/>
	<input checked="" type="radio"/> Expanded <input type="radio"/> Standard
Action	<input checked="" type="radio"/> Permit <input type="radio"/> Deny
Match	<input type="text"/>
	<input checked="" type="radio"/> No-Advertise <input type="text"/>

OK

### Community List Parameter Description

Parameter	Description
<b>ID</b>	Used to set the Community list name Expanded - When a normal community list is set Standard - When community list with a selected format is set
<b>Action</b>	Used to set whether to allow/reject the community that is matched
<b>Match</b>	No-Advertise - Do not distribute path to the neighbor router No-Export - Do not distribute path to an external neighbor router Local-AS - Do not distribute path to the neighbor router of the lower AS located at BGP combination network. In other cases, set normally to community list.

Once the Community List command is successfully entered and saved then the results are directly applied to the <Current Status> of the [Layer3] → [List] → [Community List] submenu.

### Current Status

	ID	Entry
<input checked="" type="radio"/>	expanded test	permit no-advertise

Delete Delete All

## Current Status Field Description

Field	Description
ID	Community list name
Entry	Community list information

In order to remove a Community List entry click the radio button to the left of the Community List rule and then click the Delete button. Click the Delete All button to remove all community-list entries at the same time.

## Key Chain

The GSIMT/GSIM uses the Key Chain window for setting up MD5 Authentication for (RIP) Version 2 packets. Select the [Layer3] → [List] → [Key Chain] submenu to begin configuring the Key Chain information. Enter the values and then click the OK button.

### Key Chain

Option	Parameter
Key Chain Name	<input type="text" value="rtrA"/>
Key ID	<input type="text" value="1"/>
Key String	<input type="text" value="123"/>

OK

## Key Chain Parameter Description

Parameter	Description
Key Chain Name	Used to name the Key Chain rule
Key ID	ID number of the Key
Key String	Password to be used in authentication process

Once the Key Chain command is successfully entered and saved then the results are directly applied to the <Current Status> of the [Layer3] → [List] → [Key Chain] submenu.

### Key Chain

Option	Parameter
Key Chain Name	<input type="text"/>
Key ID	<input type="text"/>
Key String	<input type="text"/>

OK

In order to remove a Key Chain entry click the radio button to the left of the Key Chain rule and then click the Delete button. Click the Delete All button to remove all Key Chain entries at the same time.

## Status

### RIP

The [Layer3] → [Status] → [RIP] submenu is used to display the RIP connection status and information of the GSIMT/GSIM.

#### RIP Information

	Network	Next Hop	Metric	From	If	Time
R	20.0.1.0/24	30.0.1.1	2	30.0.1.1	rd2	02:47
R	30.0.1.0/24		1		rd2	
R	192.168.0.0/16	30.0.1.1	2	30.0.1.1	rd2	02:47

Refresh

#### RIP Status Field Description

Field	Description
Network	Displays the network information
Next Hop	Next Hop address of the RIP route that sends neighbor.
Metric	Metric information.
From	Displays the address being connected.
If	Displays the interface information.
Time	Update time.

## OSPF

The [Layer3] → [Status] → [OSPF] submenu is used to display the OSPF connection status and information of the GSIMT/GSIM.

### OSPF Information

Neighbor ID	Pri	State	Dead Time	Address	Interface
192.168.17.101	1	Full/Backup	00:00:37	30.0.1.1	rd2

Refresh

### OSPF Status Field Description

Field	Description
Neighbor ID	Neighbor ID of the other Layer 3 devices using OSPF
Pri	Priority
State	Displays the state of the L3 switch.
Dead Time	Displays the dead time.
Address	Address of the other party
Interface	Interface connected

## BGP

The [Layer3] → [Status] → [BGP] submenu is used to display the BGP connection status and information of the GSIMT/GSIM.

### BGP Information

Category	Value
BGP Router ID	192.168.0.98
Local AS Number	100
BGP Table Version	1
BGP AS-PATH Entries	1
BGP Community Entries	0
Total Neighbor	1

### BGP Information Field Description Part 1

Field	Description
BGP Router ID	Current system router-ID Sets to the IP address that is the highest in the IPs set in loopback when an address or a loopback that is the highest from the IP addresses is used.
Local AS Number	Local AS No. set by a administrator

Field	Description
<b>BGP Table Version</b>	BGP table change version information
<b>BGP AS-PATH Entries</b>	Number of AS PATH Hash tables used in BGP
<b>BGP Community Entries</b>	Number of Hash table of community attribute used in BGP
<b>Total Neighbor</b>	Total sum of BGP neighbor

Neighbor	V	AS	MsgRcvd	MsgSent	TblVer	InQ	OutQ	Up/Down	State/PfxRcd
192.168.0.1	4	100	0	0	0	0	0	never	Idle

### BGP Information Field Description Part 2

Field	Description
<b>Neighbor</b>	IP address of the neighbor router or L2/L3 switch
<b>V</b>	Version No. used by neighbor
<b>AS</b>	AS No. of neighbor
<b>MsgRcvd</b>	Message number received from neighbor
<b>MsgSent</b>	Message number sent from neighbor
<b>TblVer</b>	Latest BGP database version sent from neighbor
<b>InQ</b>	Number of messages that should be received from neighbor and processed
<b>OutQ</b>	Number of messages sent to neighbor
<b>Up/Down</b>	Displays the path time when BGP session is finished. Displays the status when BGP session is not finished.
<b>State/PfxRcd</b>	Number of BGP routes via neighbor or peer group or BGP current status

Network	Nexthop	Metric	LocalPrf	Weight	Path
* > 100.0.0.0/24	0.0.0.0			32768	i

Refresh

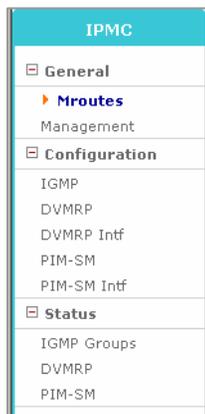
### BGP Information Field Description Part 3

Field	Description
<b>Network</b>	Displays network information. Status code information s - Indicates the suppressed network. * - Indicates proper network information.

Field	Description
	h - BGP dampening is activated. > - best route i - Indicates the network entered by IBGP.
<b>NextHop</b>	NextHop address of the BGP route sent from neighbor
<b>Metric</b>	MED value of BGP neighbor
<b>LocalPrf</b>	Local Preference. Default is 100.
<b>Weight</b>	Weight allocated in prefix - Local route default is 32768. - The default of the sent route is 0.
<b>Path</b>	Displays the list of AS path that should be passed to go to the network corresponding to the prefix. Origin code information i - Information received by the network command e - Information received via EGP ? - Information received by redistribution

# IPMC

For large amounts of data, IP Multicast is more efficient than normal Internet transmissions because the same data is broadcast to many recipients simultaneously. Unlike traditional Internet traffic that requires separate connections for each source-destination pair, IP Multicasting allows many recipients to share the same source. This means that just one set of packets is transmitted for all the destinations. Select the [IPMC] menu to begin configuring IPMC. The submenus will be displayed in the upper left side of the window as follows:



## IPMC Menu Description

Menu	Submenu	Description
<b>General</b>	Mroutes	Displays the Multicast Routing Entry.
	Management	Used to starts/stop IPMC protocol daemons.
<b>Configuration</b>	IGMP	Used to display or change the IGMP configuration.
	DVMRP	Used to display or change the DVMRP default configuration.
	DVMRP Intf	Used to display or change the VIF of theDVMRP.
	PIM-SM	Used to display or change the PIM-SM default configuration.
	PIM-SM Intf	Used to display or change the VIF PIM-SM.
<b>Status</b>	IGMP Groups	Used to displays the IGMP Group information.
	DVMRP	Used to display the DVMRP neighbor and Prune information.
	PIM-SM	Used to display the PIM-SM Neighbor information.

## General

### Mroutes

The [IPMC] → [General] → [Mroutes] submenu is used to display the multicast routing entries.

#### Mroutes

Mroute	Uptime	Expires	Flags	Incoming	Outgoing
(100.1.1.11, 224.1.1.100)	00:00:08	00:03:22	TF	rd2	rd3

I: Immediate Stat, T: Timed Stat, F: Forwarder installed

#### Mroute Field Description

Field	Description
<b>Mroute</b>	Multicast Routing identifier
<b>Uptime</b>	Time passed after starting the operation of multicast routing entry
<b>Expires</b>	Rest time until multicast routing entry is expired
<b>Flags</b>	Multicast routing feature flag. Refer to the description on the lower side
<b>Incoming</b>	Name of VIF to which multicast is sent
<b>Outgoing</b>	List of VIF where multicast is sent

### Management

The [IPMC] → [General] → [Management] submenu is used to start or stop dvmrpd and pimd, IPMC protocol daemons. The <Current Status> field of Management window shows the current status of each daemon. To change the daemon status use the [Action] pull down menu and then click the OK button.

#### Management

Protocol	Current Status	Action
DVMRP	Stop	On <input type="button" value="v"/>
PIM	Stop	Off <input type="button" value="v"/>

#### IPMC Management Field Description

Field	Description
<b>Protocol</b>	IPMC protocol

Field	Description
Current Status	Current IPMC protocol demon status
Action	New status of IPMC protocol demon status

## Configuration

### IGMP

The Internet Group Management Protocol is a communications protocol used to manage the membership of Internet Protocol multicast groups. IGMP is used by IP hosts and adjacent multicast routers to establish multicast group memberships. The **[IPMC] → [Configuration]** submenu is used to display and change the GSIMT/GSIM IGMP configuration.

#### IGMP & Help

IGMP commands can be entered into the Command field and saved by clicking the OK button.. Use the Help field to find an IGMP command.

#### IGMP

Command
<input type="text"/>
<input type="button" value="OK"/>

#### Help

Command	Argument
<input type="text" value="clear ip igmp"/>	<input type="text" value="group"/>

#### IGMP Basic

Enter the new IGMP information and then click the OK button to change the default configuration of IGMP.

#### IGMP Basic

Command	Argument
Interface	<input checked="" type="radio"/> All <input type="radio"/> <input type="text" value="eth0"/> (192.168.17.100/16)
IGMP Query Interval	<input type="text" value="125"/> (1~65535, Default: 125)
Max Response Time	<input type="text" value="10"/> (1~25, Default: 10)
<input type="button" value="OK"/>	

## IGMP Basic Parameter Description

Parameter	Description
<b>Interface</b>	Select the target IGMP interface and select All. Then, all interface configuration values are applied
<b>IGMP Query Interval</b>	Cycle of sending IGMP Membership Query
<b>Max Response Time</b>	Maximum time of waiting a response after sending Membership Query

## IGMP Interface Information

This section of the [IPMC] → [Configuration] → [IGMP] window is used to display the IGMP interfaces.

### IGMP Interface Information

Address	Intf	Querier Address	Query Interval	Max Resp Time
100.1.2.10/24	rd2	100.1.2.10/24	125	10
100.1.3.10/24	rd3	100.1.3.10/24	125	10

Refresh

## IGMP Interface Field Description

Field	Description
<b>Address</b>	IGMP group address
<b>Intf</b>	IGMP interface name
<b>Querier Address</b>	IP address of IGMP interface that sends membership query. IP address of Designate Router(DR)
<b>Query Interval</b>	Cycle of sending Membership Query
<b>Max Resp Time</b>	Maximum time of waiting a response to Membership Query

## Configuration / DVMRP

The Distance Vector Multicast Routing Protocol (DVMRP) is an Internet routing protocol that provides an efficient mechanism for connectionless message multicast to a group of hosts across an internetwork. The [IPMC] → [Configuration] → [DVMRP] submenu is used to display and change the GSIMT/GSIM DVMRP configuration.

### DVMRP & Help

DVMRP commands can be entered into the Command field and saved by clicking the OK button. Use the Help field to find a DVMRP command.

### DVMRP

Command
<input type="text"/>
<input type="button" value="OK"/>

### Help

Command	Argument
<input type="text" value="clear ip dvmrp"/>	<input type="text" value="route A.B.C.D/M"/>

### DVMRP Routes

This submenu is used to display the DVMRP Route items in use.

### DVMRP Routes

Source Network	Flags	Intf	Neighbor	Metric	Uptime	Expires
100.1.2.0/24	.D.	rd2	Directly Connected	1	00:05:10	00:00:00
100.1.3.0/24	.D.	rd3	Directly Connected	1	00:05:05	00:00:00

### DVMRP Routes Field Description

Field	Description
Source Network	VIF network address to which multicast packets flow
Flags	DVMRP route feature flag. N=New, D=Direct Connected, H=Hold down
Intf	VIF name to which multicast packets flow
Neighbor	DVMRP neighbor IP address that provides information on DVMRP route

Field	Description
<b>Metric</b>	DVMRP route Metric(=distance) value
<b>Uptime</b>	Time passed after using the DVMRP route item
<b>Expires</b>	Left time until the DVMRP route item is expired

## DVMRP Intf

The [IPMC] → [Configuration] → [DVMRP Intf] submenu is used to add or set the DVMRP VIF (Virtual Interface).

### RD Interface

This window is used to add L3 interfaces where an IP address is set to DVMRP VIF. Select the target interface to be added to the VIF from the Interface and then enter the target value, and click the Add button.

### RD Interface

Command	Argument
Interface	<input type="text" value="eth0"/> (192.168.17.100/16)
Reject Non-pruners	<input type="checkbox"/> (do not allow old version DVMRP neighbors)
Metric	<input type="text" value="1"/> (1~31)

### RD Interface Parameter Description

Parameter	Description
<b>Interface</b>	Used to select the target L3 interface
<b>Reject Non-pruners</b>	Select the Non-pruners box to indicate that the neighbors only support DVMRP with an older version.
<b>Metric</b>	Metric(=distance) value to be used for multicasting routing by VIF

### DVMRP Interfaces

This section of the submenu is used to display the configuration of the DVMRP VIF. To delete a specific VIF, check the check box on the left of the entry and then click the Delete button.

### DVMRP Interfaces

	Intf	Address	Type	Neighbor Count	Remote Address
<input type="checkbox"/>	rd2	100.1.2.10/24	BCAST	1	N/A
<input type="checkbox"/>	rd3	100.1.3.10/24	BCAST	0	N/A

## DVMRP Interfaces Field Description

Field	Description
Intf	DVMRP VIF name
Address	IP address of DVMRP VIF
Type	DVMRP VIF type. Tunnel, Point-to-Point, Broadcast
Neighbor Count	Number of neighbors connected to DVMRP VIF
Remote Address	Address of the other party in case of Tunnel or Point-to-Point type.(Peer Address)

## PIM-SM

PIM-SM or Protocol Independent Multicast - Sparse-Mode (PIM-SM) is a protocol for efficiently routing to multicast groups that may span wide-area (and inter-domain) internets. Use the [IPMC] → [Configuration] → [PIM-SM] submenu to begin configuring the PIM-SM on the GSIMT/GSIM.

### PIM-SM & Help

PIM-SM commands can be entered into the Command field and saved by clicking the OK button. Use the Help field to find a PIM-SM command.

### PIM-SM

Command
<input type="text"/>
<input type="button" value="OK"/>

### Help

Command	Argument
<input type="text" value="clear ip pim"/>	<input type="text" value="sparse-mode bsr rp-set *"/>

## PIM-SM Basic

These fields are used to set the BSR and RP of the PIM-SM protocol. Mark the check box to the left of each item and then enter the configuration values. Click the OK button to apply the values. To delete the values mark the check box to the left of the item and then click the **Delete** button.

## PIM-SM Basic

	Command	Argument
<input checked="" type="checkbox"/>	RP Address	<input type="text" value="192"/> . <input type="text" value="168"/> . <input type="text" value="17"/> . <input type="text" value="100"/>
<input checked="" type="checkbox"/>	RP Candidate	<input type="text" value="eth0"/> <input type="text" value="22"/> Priority(0~255)
<input checked="" type="checkbox"/>	BSR Candidate	<input type="text" value="eth0"/> <input type="text" value="30"/> MaskLen(0~32) <input type="text" value="100"/> Priority(0~255)

## PIM-SM Basic Parameter Description

Parameter	Description
RP Address	When setting static RP, enter the IP address of RP
RP Candidate	When setting RP Candidate, select VIF and enter the target priority.(Low value has high priority.)
BSR Candidate	When setting BSR Candidate, select VIF and enter the target Mask Length and Priority.(High value has high priority.)

## BootStrap Information

This section of the [IPMC] → [Configuration] → [PIM-SM] submenu is used to display the information on the BootStrap router.

## BootStrap Information

BootStrap Information
PIMv2 Bootstrap information This system is the Bootstrap Router (BSR) BSR address: 192.168.0.99 Uptime: 00:00:04, BSR Priority: 100, Hash mask length: 30 Expires: 00:02:06 Role: Candidate BSR State: Pending BSR  Candidate RP: 192.168.0.99(eth0) Advertisement interval 60 seconds Next Cand_RP_advertisement in 00:00:58

## RP Information

This section of the [IPMC] → [Configuration] → [PIM-SM] submenu is used to display the information on the RP router.

### RP Information

RP Information
PIM Group-to-RP Mappings
Group(s): 224.0.0.0/4
RP: 192.168.0.99
Info source: 192.168.0.99, via bootstrap, priority 22
Uptime: 00:00:02, expires: 00:02:28
Group(s): 224.0.0.0/4, Static
RP: 192.168.17.100
Uptime: 00:00:38

Refresh

## PIM-SM Intf

The [IPMC] → [Configuration] → [PIM-SM Intf] submenu is used to add or modify the PIM-SM VIF (Virtual Interface).

### RD Interface

This section of the [IPMC] → [Configuration] → [PIM-SM Intf] submenu is used to add PIM-SM VIF. Select the target L3 interface from the Interface pull down menu and then enter the target values. Once done click the Add button to add the PIM-SM VIF.

### RD Interface

Command	Argument
Interface	eth0 (192.168.17.100/16)
Mode	Sparse
DR Priority	1 (0~4294967294)
Hello Interval	30 (1~65535)

Add

### PIM-SM RD Interface Parameter Description

Parameter	Description
Interface	Used to select the target L3 interface to be added to PIM-SM VIF
Mode	Used to select the target PIM-SM protocol mode. Sparse, Passive
DR Priority	Used to enter the priority value used when selecting Designate Router (DR). (High value has high priority.)

Parameter	Description
Hello Interval	Cycle of exchanging hello packets with connected PIM-SM neighbors

### PIM-SM Interfaces

This section of the [IPMC] → [Configuration] → [PIM-SM Intf] submenu is used to display the VIFs added to the PIM-SM. To delete a VIF, click the check box on the left of the entry and then click the Delete button.

### PIM-SM Interfaces

	Intf	Address	Mode	Neighbor Count	DR Prio	DR	Hello Intv/Hold
<input type="checkbox"/>	rd2	100.1.2.10/24	Sparse	0	1	100.1.2.10	30/105
<input type="checkbox"/>	rd3	100.1.3.10/24	Sparse	0	1	100.1.3.10	30/105

## IGMP Groups

The [IPMC] → [Status] → [IGMP Groups] submenu is used to display the information on registered IGMP groups.

### IGMP Group Information

Group Address	Intf	Uptime	Expires	Last Reporter
224.1.1.100	rd3	00:00:03	00:04:17	100.1.3.31

### IGMP Groups Field Description

Field	Description
Group Address	IGMP group address
Intf	IGMP interface name
Uptime	Time passed after IGMP group is created
Expires	Left time until the IGMP Group information is expired
Last Reporter	Client IP address that sends the last membership report

# Status

## DVMRP

The [IPMC] → [Status] → [DVMRP] submenu is used to display the information on DVMRP Neighbors.

### DVMRP Neighbors

This section of the [IPMC] → [Status] → [DVMRP] submenu is used to display the information on the DVMRP neighbor whose information is exchanged with the GSIMT/GSIM.

### DVMRP Neighbors

Neighbor Address	Interface	Uptime	Expires
100.1.2.1	rd2	00:02:04	00:00:31

Refresh

### DVMRP Neighbors Field Description

Field	Description
Neighbor Address	IP address of DVMRP Neighbor
Interface	VMRP VIF name
Uptime	Time passed after being connected
Expires	Left time until the Neighbor connection information is expired

### DVMRP Prune Information

This section of the [IPMC] → [Status] → [DVMRP] submenu is used to display the DVMRP Prune items.

### DVMRP Prune Information

Source Address	MaskLen	Group Address	State	FCR Cnt	Expires	ReXmit
100.1.1.0	24	224.1.1.100	.....	0	01:59:06	Off

P: Pruned, H: Host, D: Holddown, N: NegMFC, I: Init

Refresh

### DVMRP Prune Information Field Description

Field	Description
Source Address	Host Ip address that sends multicast packets
MaskLen	Mask length of DVMRP Prune

Field	Description
<b>Group Address</b>	Multicast group address
<b>State</b>	Flags that display the DVMRP Prune status. Refer to the description on the lower side
<b>FCR Cnt</b>	DVMRP Forwarding Cache count
<b>Expires</b>	Time passed after the DVMRP Prune information is created
<b>ReXmit</b>	Left time until retransmission

## PIM-SM

The [IPMC] → [Status] → [PIM-SM] submenu is used to display the neighbor list of the PIM-SM protocol.

### PIM-SM Neighbors

Neighbor	Intf	Uptime	Expires	Ver	DR Priority	DR
100.1.2.1	rd2	00:02:17	00:01:29	v2	1	.

Refresh

### PIM-SM Neighbors Field Description

Field	Description
<b>Neighbor</b>	Neighbor IP address
<b>Intf</b>	IP address of VIF connected with neighbor
<b>Uptime</b>	Time passed after being connected with neighbor
<b>Expires</b>	Left time until the Neighbor connection information is expired
<b>Ver</b>	Version of the PIM-SM protocol used for the connection
<b>DR Priority</b>	Designate Router(DR) priority of neighbor
<b>DR</b>	Displays whether the neighbor is Designate Router(DR)

## QoS Menu

Quality of Service (QoS) refers to the capability of a network to provide better service to selected network traffic over various IP technologies. Select the **[QoS]** menu to begin configuring QoS. The QoS submenus will be displayed in the upper left side of the window as follows: By default there are several VoIP QoS Class Maps, Policy Maps, Service Maps already in place performing QoS for the VoIP Service..



### QoS Menu Description

Menu	Submenu	Description
<b>Ingress Service</b>	Class Map	Generates, modifies and deletes a class map.
	Policy Map	Generates, modifies and deletes a policy map.
	Service Map	Applies a policy map set up at each port.
<b>Egress Service</b>	Schedule Mode	Sets up scheduling method to each port.
	CoS mapping	Sets up CoS queue mapping of each port.

## Ingress Service

The ingress function manages desired traffic by filtering inbound traffic and can manage traffic that exceeds the established traffic volume by measuring the traffic volume.

To set up new QoS rules, three steps are required as follows:

1. Generate a new class map to filter a packet to apply QoS.
2. Generate a new policy map to activate a packet that a class map has filtered.
3. Select the target port and apply the policy map to the port.

## Class Map

Using the **[QoS] → [Ingress Service] → [Class Map]** submenu the system administrator can generate rules to filter incoming packets. The class map can set up multiple fields from the MAC address of Layer2 to the TCP/UDP port of Layer4 simultaneously.

## Display Class Map List

Name	Entry	Rule	Comment	Use
voip_system_src_classmap	1	ip-source-address 192.168.1.211		1
voip_system_dst_classmap	1	ip-destination-address 192.168.1.211		1
voip_common_classmap	1	diffserv-codepoint 40		1
voip_terminal_media_classmap	1	ip-source-port 9000 ip-destination-port 9000 ip-protocol 17		1
	2	ip-source-port 9001 ip-destination-port 9001 ip-protocol 17		

In order to begin creating new QoS Class Maps click the New button to display the following window.

## New Class Map

Category	Value
Name	<input type="text"/>
Comment	<input type="text"/>
Destination MAC	<input type="text"/> : <input type="text"/>
Source MAC	<input type="text"/> : <input type="text"/>
802.1p Priority Tag	<input type="text"/> <input type="button" value="None"/>
VLAN Tag	<input type="text"/> (1~4094)
Ethernet Type	0x <input type="text"/> ( Hex format )
ICMP Type	<input type="text"/> <input type="button" value="None"/>
IP Protocol	<input type="text"/> (0~255) <input type="button" value="None"/>
Destination IP	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/> / <input type="text"/>
Source IP	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/> / <input type="text"/>
Diffserv Code Point	<input type="text"/> (0~63)
Destination Port	<input type="text"/> <input type="button" value="None Range"/>
Source Port	<input type="text"/> <input type="button" value="None Range"/>

## Class Map Parameter Description

Parameter	Description
<b>Name</b>	Name of new class map to be generated. The item cannot be modified when editing the name of the class map. (Alphanumeric characters 1~20 long)
<b>Comment</b>	Simple description for class map. (Alphabetical characters 0~128 long)
<b>Destination MAC</b>	Destination Address of MAC. It is composed of three fields in the method of ZebOS and each field is configured with 4 hexadecimal digits.
<b>Source MAC</b>	Source Address of MAC. The input type is the same as Destination MAC.

Parameter	Description
<b>802.1p Priority Tag</b>	802.1p Priority Tag(0~7 values)
<b>VLAN Tag</b>	VLAN tag(1~4094 )
<b>Ethernet Type</b>	Hexadecimal value(2-byte)
<b>ICMP Type</b>	(0~18)
<b>IP Protocol</b>	(0~255)
<b>Destination IP</b>	Configured with four fields and prefixes. (Four fields between 0~255, Prefix between 0~32)
<b>Source IP</b>	Same as the destination IP.
<b>Diffserv Code Point</b>	(0~63)
<b>Destination Port</b>	Values between 0~65534 or 1~65536. It is in the form of a multiple of 2 when having a range value
<b>Source Port</b>	Same as the destination port.

The following example show a Class Map that filters the priority value of 3 for the source MAC 00:00:00:00:00:01 and 802.1p. Press the OK button to save the class1 Class Map.

### New Class Map

Category	Value
Name	class1
Comment	This is class1
Destination MAC	: : : : :
Source MAC	00 : 00 : 00 : 00 : 00 : 01
802.1p Priority Tag	3
VLAN Tag	(1~4094)
Ethernet Type	0x ( Hex format )
ICMP Type	None
IP Protocol	(0~255) None
Destination IP	. . . /
Source IP	. . . /
Diffserv Code Point	(0~63)
Destination Port	None Range
Source Port	None Range

OK Cancel

The following example shows a Class Map that filters using a source IP network and destination port. Press the OK button to save the class2 Class Map.

### New Class Map

Category	Value
Name	class2
Comment	This is class2
Destination MAC	<input type="text"/> : <input type="text"/>
Source MAC	<input type="text"/> : <input type="text"/>
802.1p Priority Tag	None
VLAN Tag	<input type="text"/> (1~4094)
Ethernet Type	0x <input type="text"/> ( Hex format )
ICMP Type	None
IP Protocol	<input type="text"/> (0~255)   None
Destination IP	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/> / <input type="text"/>
Source IP	192 . 168 . 0 . 0 / 24
Diffserv Code Point	<input type="text"/> (0~63)
Destination Port	80   None Range
Source Port	<input type="text"/>   None Range

OK Cancel

Two new classes have been added to the selection of Class Maps. The radio button of these two Class Maps can be selected for editing or deleting. The default Class Maps are grayed out and can not be edited or deleted.

### Display Class Map List

	Name	Entry	Rule	Comment	Use
<input type="radio"/>	class2	1	ip-source-address 192.168.0.0/24 ip-destination-port 80	This is class 2	0
<input type="radio"/>	class1	1	mac-source-address 0000.0000.0001 prio-tag 3	This is class1	0
<input type="radio"/>	voip_system_src_classmap	1	ip-source-address 192.168.1.211		1
<input type="radio"/>	voip_system_dst_classmap	1	ip-destination-address 192.168.1.211		1
<input type="radio"/>	voip_common_classmap	1	diffserv-codepoint 40		1
<input type="radio"/>	voip_terminal_media_classmap	1	ip-source-port 9000 ip-destination-port 9000 ip-protocol 17		1
<input type="radio"/>		2	ip-source-port 9001 ip-destination-port 9001 ip-protocol 17		

New Add Edit Delete

In order to generate an additional entry to an existing Class Map select the radio button for the desired Class Map and then click the Add button. Only the fields related to that class map are displayed. Fill in the fields and then press the OK button.

### Add Class Entry

Category	Value
Entry Number	<input type="text" value="2"/>
ip-source-address	<input type="text" value="192"/> . <input type="text" value="168"/> . <input type="text" value="1"/> . <input type="text" value="0"/> / <input type="text" value="24"/>
ip-destination-port	<input type="text" value="24"/> <input type="text" value="None Range"/>

## Policy Map

The policy map fields are used to assign the use and priority of defined Class Maps to a specific Policy Map. The priority is applied to the action of higher values when being identical to all class maps set up by a packet. The default class of the policy map executes the basic action of packets that are not included in the class map.

### Display Policy Map List

Name	Class	Seq	Entry	Action	Comment	Use
None						

Press the New button to create a new policy map.

### New Policy Map

Category	Value
Name	<input type="text"/>
Comment	<input type="text"/>
Default-class	<input type="text" value="None"/>
class2	<input type="text" value="None"/>
class1	<input type="text" value="None"/>
voip_system_src_classmap	<input type="text" value="None"/>
voip_system_dst_classmap	<input type="text" value="None"/>
voip_common_classmap	<input type="text" value="None"/>
voip_terminal_media_classmap	<input type="text" value="None"/>

Create a Policy Map name, and then assign the Class Maps to the Policy Map. Once the data is entered click the OK button to save the changes.

## Policy Map Parameter Description

Parameter	Description
<b>Name</b>	Used to set the name of new policy map to be generated. The item cannot be modified when editing the name of the class map. (Alphanumeric characters 1~20 long)
<b>Comment</b>	Simple description for the policy map.(Alphabetical characters 0~128 long)
<b>Default-class</b>	Used to designate the basic action for the packets that are not identical with all class map set up to the policy map.
<b>Class-list</b>	Used to display the class map list that sets up in class map.
<b>sequence</b>	Used to enter the priority value. 10 is the highest priority and 15 is the lowest

The following example shows a Policy Map named policy1 being created, setting a priority of 15 for the class1 Class Map and a priority of 14 for the class2 Class Map. The default-class is usable as it is set up as shown below.

### New Policy Map

Category	Value
Name	<input type="text" value="policy1"/>
Comment	<input type="text" value="This is policy1"/>
Default-class	<input type="text" value="Use"/> ▼
class1	<input type="text" value="Sequence 15"/> ▼
class2	<input type="text" value="Sequence 14"/> ▼

Click the OK button to generate a the policy map, policy1.

### Display Policy Map List

	Name	Class	Seq	Entry	Action	Comment	Use
<input type="radio"/>		class1	15	1	Conform action clauses: permit	This is policy1	0
<input type="radio"/>	policy1	class2	14	1	Conform action clauses: permit		
<input type="radio"/>		default	0		Conform action clauses: permit		

In order to modify an existing Policy Map select the radio button to the left of the Policy Map and the click the Edit button.

To further define the Policy Map select the radio button to the left of the Policy Map and then click the Active button.

### Conform Action

	Category	Value
<input checked="" type="checkbox"/>	permit	
<input type="checkbox"/>	deny	
<input type="checkbox"/>	copy-to-mirror	
<input type="checkbox"/>	increase-counter	
<input type="checkbox"/>	tos-to-priority	
<input type="checkbox"/>	priority-to-tos	
<input type="checkbox"/>	drop-precedence	
<input type="checkbox"/>	set-out-port-ucast	None <input type="button" value="v"/>
<input type="checkbox"/>	set-out-port-non-ucast	None <input type="button" value="v"/>
<input type="checkbox"/>	set-out-port-all	None <input type="button" value="v"/>
<input type="checkbox"/>	insert-vlanid	<input type="text"/> (1~4094)
<input type="checkbox"/>	insert-priority	None <input type="button" value="v"/>
<input type="checkbox"/>	set-priority	None <input type="button" value="v"/>
<input type="checkbox"/>	insert-tos	None <input type="button" value="v"/>
<input type="checkbox"/>	insert-dscp	None <input type="button" value="v"/>
<input type="checkbox"/>	set-ecn	None <input type="button" value="v"/>

The Conform Action fields are where policy actions are set for a particular Policy Map.

### Conform Action Parameter Description

Parameter	Description
<b>permit</b>	Switches a packet.
<b>deny</b>	Drops a packet without switching.
<b>copy-to-mirror</b>	Copies a packet to the port when a mirror port is set up.
<b>increase-counter</b>	Increases internal counter.
<b>tos-to-priority</b>	Sets up the value of ToS precedence 3bit of the IP header to the value of 802.1p.
<b>priority-to-tos</b>	Sets up the value of 802.1p to the value of ToS precedence 3bit of the report IP header.
<b>drop-precedence</b>	The packets that the action is set up are drops preferentially when congestion occurs in an egress.
<b>set-out-port-ucast</b>	Redirects a unicasted packet to an established port.
<b>set-out-port-non-ucast</b>	Redirects a packet that is not an unicast to an established port.
<b>set-out-port-all</b>	Re direct to an established port for all packets.
<b>insert-vlanid</b>	Changes the value of VLAN ID to the established value.
<b>insert-priority</b>	Changes the value of 802.1p to the established value.
<b>set-priority</b>	Sets up the priority of packets internally.
<b>insert-tos</b>	Changes the value of ToS to the established value.
<b>insert-dscp</b>	Changes the value of DSCP to the established value.

Parameter	Description
<b>set-ecn</b>	Changes the value of ECN to the established value.

The Exceed Action fields are where the administrator sets up the action for packets exceeding the established rate-limit bandwidth.

### Exceed Action

	Category	Value
<input type="checkbox"/>	rate-limit	limit : <input type="text"/> Kbps    burst : <input type="text"/> Kbit
<input type="checkbox"/>	permit	
<input type="checkbox"/>	deny	
<input type="checkbox"/>	drop-precedence	
<input type="checkbox"/>	insert-dscp	None ▾
<input type="checkbox"/>	set-ecn	None ▾

### Exceed Action Parameter Description

Parameter	Description
<b>rate-limit</b>	- limit: The value of a bandwidth to apply exceed-action. - burst: The value of burst to apply exceed-action.
<b>permit</b>	Switches a packet.
<b>deny</b>	Drops a packet without switching.
<b>drop-precedence</b>	A packet that an action is set up is dropped preferentially when congestion occurs.
<b>insert-dscp</b>	Changes the value of DSCP to the established value.
<b>set-ecn</b>	Changes the value of ECN to the established value.

The Conform Action or Exceed Action functions performs multiple actions and ‘permit’ and ‘deny’ is set up exclusively. In the following example, Conform Action is set up as traffic exceeding 500Mbps are denied when the value of dscp is 3 for the packets included in the class1 and the internal priority is 7.

### Conform Action

	Category	Value
<input checked="" type="checkbox"/>	permit	
<input type="checkbox"/>	deny	
<input type="checkbox"/>	copy-to-mirror	
<input type="checkbox"/>	increase-counter	
<input type="checkbox"/>	tos-to-priority	
<input type="checkbox"/>	priority-to-tos	
<input type="checkbox"/>	drop-precedence	
<input type="checkbox"/>	set-out-port-ucast	None
<input type="checkbox"/>	set-out-port-non-ucast	None
<input type="checkbox"/>	set-out-port-all	None
<input type="checkbox"/>	insert-vlanid	(1~4094)
<input type="checkbox"/>	insert-priority	None
<input checked="" type="checkbox"/>	set-priority	7
<input type="checkbox"/>	insert-tos	None
<input checked="" type="checkbox"/>	insert-dscp	3
<input type="checkbox"/>	set-ecn	None

### Exceed Action

	Category	Value
<input checked="" type="checkbox"/>	rate-limit	limit : 500000 Kbps burst : 20000 Kbit
<input type="checkbox"/>	permit	
<input checked="" type="checkbox"/>	deny	
<input type="checkbox"/>	drop-precedence	
<input type="checkbox"/>	insert-dscp	None
<input type="checkbox"/>	set-ecn	None

After configuring the Confirm and Exceed Action parameters the window is displayed as follows:

### Display Policy Map List

	Name	Class	Seq	Entry	Action	Comment	Use
<input type="radio"/>	policy1	class1	15	1	Conform action clauses: permit set-priority 7 insert-dscp 3 Exceed action clauses: rate-limit 500000 20000 deny	This is policy1	0
<input type="radio"/>		class2	14	1	Conform action clauses: permit		
<input type="radio"/>		default	0		Conform action clauses: permit		

## Service Policy

Once the Policy Maps are created it is time to apply them to the switch ports., Simply select the desired policy map of each port from Service Policy and click the OK button to confirm the change..

### Service Policy

Port	Policy Map	Port	Policy Map
Port 1	None	Port 6	None
Port 2	None	Port 7	None
Port 3	policy1	Port 8	None
Port 4	None	Port 9	None
Port 5	None	Port 10	None

### Service Policy Parameter Description

Parameter	Description
Port	Used to display the Port Number of Switch.
Policy Map	Used to set the policy map name or establishable policy map list to a port.

A selection of None removes QoS from the port.

## Egress Service

The Egress Service performs scheduling functions for traffic transferred from the switch according to each Q and mapping packets by transferring each packet to the desired Queue according to its priority. There are 8 internal Queues per each port in Egress.

### Schedule Mode

There are 3-Schedule Modes. Strict priority, round robin and weighted round robin. When the weighted round robin mode is used then administrators can set the value of the weight according to each Q.

#### Schedule Mode

Port	Mode	Weight							
Port 1	weighted-round-robin	q0	q1	q2	q3	q4	q5	q6	q7
Port 2	weighted-round-robin	q0	q1	q2	q3	q4	q5	q6	q7
Port 3	weighted-round-robin	q0	q1	q2	q3	q4	q5	q6	q7
Port 4	weighted-round-robin	q0	q1	q2	q3	q4	q5	q6	q7
Port 5	weighted-round-robin	q0	q1	q2	q3	q4	q5	q6	q7
Port 6	weighted-round-robin	q0	q1	q2	q3	q4	q5	q6	q7
Port 7	weighted-round-robin	q0	q1	q2	q3	q4	q5	q6	q7
Port 8	weighted-round-robin	q0	q1	q2	q3	q4	q5	q6	q7
Port 9	weighted-round-robin	q0	q1	q2	q3	q4	q5	q6	q7
Port 10	weighted-round-robin	q0	q1	q2	q3	q4	q5	q6	q7

OK

#### Schedule Mode Parameter Description

Parameter	Description
<b>Port</b>	Used to display the Port Number of Switch
<b>Mode</b>	Used to set the Schedule Mode (strict-priority, round-robin, weighted-round-robin)
<b>Weight</b>	Used to set the weight. It is available if weighted round robin is used.

## CoS Mapping

Packets are transferred to each Q according to the priority (0~7). Basically, the priority 0 is mapped to Q 0 and the priority 7 is mapped to Q 7 sequentially. The following shows a window that the packet of Priority 3 is changed to Q 4 instead of Q 3 in Port3.

### CoS Mapping

Port	Priority	Queue	Priority	Queue
Port 3	0	0	4	4
	1	1	5	5
	2	2	6	6
	3	4	7	7

Queue	Threshold	Queue	Threshold
0	128	4	128
1	128	5	128
2	128	6	128
3	128	7	128

Each Q has its own threshold. If a value that is higher than the threshold is led into the Q, the value is dropped.

### CoS Mapping Parameter Description

Parameter	Description
Port	Used to set the Port Number of Switch
Priority	Priority Value (0~7) of packet
Queue	Q (0~7) to serve packet
Threshold	Used to set the Threshold (0~2048) to set up each Q (0~2048)

# Application Menu

The [**Application**] menu is used to start or stop the VoIP Service, and to configure and manage the DHCP Server and DHCP Relay Agent. The [**Application**] submenus will be displayed in the upper left side of the window as follows.

Application	
[-] VoIP Service	
▶ Management	
VoIP DB	
[-] DHCP Server	
Configuration	
Management	
Lease Info	
[-] DHCP Relay Agent	
Configuration	
Management	

## Application Menu Description

Menu	Submenu	Description
<b>VoIP Service</b>	Management	Used to start or stop the functions of the VoIP Service.
	VoIP DB	Used to display the VoIP DB information of the OfficeServ 7400 system
<b>DHCP Server</b>	Configuration	Used to set the DHCP Server parameters.
	Management	Used to start and stop the DHCP Server.
	Lease Info	Used to verify the status of DHCP Leases.
<b>DHCP Relay Agent</b>	Configuration	Used to configure the DHCP Relay Agent by registering an interface and DHCP server.
	Management	Used to start and stop the Executes/Stops DHCP Relay Demon by applying the DHCP Relay setup.

## VoIP Service Menu

Select the [Application] → [VoIP Service] submenu to start and stop the VoIP Service and the view the the VoIP DB.

### Management

Using the [Application] → [VoIP Service] → [Management] submenu the system administrator can start or stop the VoIP Service. By default the VoIP Service is running after the GSIMT/GSIM finishes its booting cycle. Click the Stop or Run button to change the status of VoIP Service.

#### VoIP Service Management

Activity	Action
Running	<input type="button" value="Stop"/>

#### VoIP Management Parameter Description

Parameter	Description
Activity	Used to display the status of the current VoIP Service.
Action	Used to change the status of VoIP Service. .

### VoIP DB

Using the [Application] → [VoIP Status] → [VoIP DB] submenu the system administrator can display the current VoIP Service information on the OfficeServ 7400 system.

#### VoIP Database

Call Server	Status	IP	MAC Address
MCP	Connected	192.168.1.200	00.00.f0.e8.5d.f1

MGI Cabinet	Slots	Status	IP	MAC Address
1	8	Connected	192.168.1.201	00.00.f0.e8.4b.59

ITP Index	Status	IP	TEL NUM	MAC Address
1	Connected	63.166.115.52	3201	00.00.f0.22.38.69

WIP Index	Status	IP	TEL NUM	MAC Address
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## VoIP Database Field Description

Field	Description
Call Server	This field displays the type of call server
Status	This field displays the status of each card and phone
IP	This field displays the IP information of each card and phone
MAC Address	This field displays the MAC address information of each card and phone
MGI Slots	This field displays the slot of the MGI card
ITP Index	This field displays the index of ITP Phone
WIP Index	This field displays the index of WIP Phone
Port	This field displays the port of ITP/WIP Phone
TEL NUM	This field displays the phone number of ITP/WIP Phone

## DHCP Server

The [System] → [DHCP Server] submenus are used to configure and edit the DHCP scope (Pool), to start and stop the DHCP server, and to track the DHCP Lease status for the network devices which acquire IP addresses using DHCP. .

## Configuration

The [System] → [DHCP Server] → [Configuration] submenu allows the administrator to set various configuration items for the DHCP Server. The Pool Name, Network Address and Range Address are all required fields in DHCP Server configuration and are designated with an asterisk.

### General Options

Parameter	Argument
* Pool Name	<input type="text"/>
* Network Address	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/> / <input type="text"/>
* Range Address	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/> ~ <input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>
Lease Time	<input type="text" value="1"/> Days <input type="text" value="0"/> Hours <input type="text" value="0"/> Minutes <input type="checkbox"/> Infinite
Group Number	<input type="text"/>
Client ID	<input type="text"/>
Vendor ID	<input type="text"/>
Domain Name	<input type="text"/>
Default-Router	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>
Fixed Address	Host <input type="text"/>
	MAC <input type="text"/> : <input type="text"/>
	IP <input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>
DNS Server	1) <input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/> 2) <input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>
WINS Server	1) <input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/> 2) <input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>

## General Options Parameter Description

Parameter	Description
* <b>Pool Name</b>	Used to set up the name of Pool to distinguish it from the other Pools.
* <b>Network Address</b>	Used to enter the value of a Network number. The value is classified into IP type and Netmask.
* <b>Range Address</b>	Used to set up the range of IP addresses that the DHCP Server allocates to DHCP Clients. Enter the first/last IP addresses to be allocated in order to designate the range.
<b>Lease Time</b>	Used to set up the duration of the DHCP Lease. The default lease time is 1 Day.
<b>Client ID</b>	Used to set up a Client Identifier.
<b>Vendor ID</b>	Used to sets up a Vendor Class Identifier.
<b>Domain Name</b>	Used to set up a Domain Name.
<b>Default-Router</b>	Used to set up the IP address of the Default Router.
<b>DNS Server</b>	Used to set up the DNS Server/s.
<b>WINS Server</b>	Used to set up the WINS Server/s.

The Fixed Address assignments are used for allocating a fixed IP address for a specific client.

## The Assignment of Fixed Address

	Host	MAC	IP
<input type="checkbox"/>	<input type="text"/>	<input type="text"/> : <input type="text"/>	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>
<input type="button" value="Add"/> <input type="button" value="Delete"/>			
<input type="button" value="Save"/> <input type="button" value="Cancel"/>			

## Assignment of Fixed Address Parameter Description

Parameter	Description	
<b>Fixed Address</b>	<b>Host</b>	Used to set up the Name of Host.
	<b>MAC</b>	Used to set up the MAC address of a specific client.
	<b>IP</b>	Used to set up the IP Address to be allocated.

The Current Running Configured Information window is used to view, edit, or delete existing DHCP Pools. If a Pool needs to be deleted or modified check the box to the left in the Pool window and then click the Edit or Delete button.

## Current Running Configured Information

Select	Parameter	Argument
<input type="checkbox"/>	Pool Name	Manual
	Network	192.168.1.0/24
	IP Address Range	192.168.1.50 ~ 192.168.1.75
	Lease Time	2 Days 0 Hours 0 Minutes
	Default-Router	192.168.1.254
	Domain Name	manual.com
	DNS Servers	12.12.12.1
	WINS Servers	12.12.12.2

## Management

The [System] → [DHCP Server] → [Management] submenu is used by the system administrator to start or stop the DHCP server.

### DHCP Server Management

Status	Action
Stop	<input type="button" value="Run"/>

Click the Run button to start the DHCP Server and click the Stop button to halt the DHCP server

### Lease Info

The [System] → [DHCP Server] → [Lease Info] submenu is used to view the active Lease information.

### DHCP Leases Usage

Pool Name	Network	Total	Used	Usage
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### DHCP Leases Information

IP	MAC	Lease Starts	Lease Ends
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## DHCP Relay Agent

The [System] → [DHCP Relay Agent] submenus are used to configure DHCP Relay feature..

### Configuration

By using the [System] → [DHCP Relay Agent] → [Configuration] submenu the administrator can begin to configure the DHCP Relay Agent settings. First designate an interface which will accept DHCP leases from a DHCP Server. Click the add button if more interfaces need to be added to the list. If an interface needs to be removed from the list then check the box for that interface and then click the Delete button.

Then add the DHCP Server/s which will be handing out the DHCP leases into the Server List, If more than one DHCP server is going to be used then click the Add button and enter the IP Address of the additional server/s. If a DHCP server needs to be removed from the server list then check the box for that server and then click the Delete button.

### Interface List Configuration

Check	Argument
<input type="checkbox"/>	ETH <input type="text" value="eth0"/>

Check	Server List	Server
<input type="checkbox"/>	Server List	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>

### Management

By using the [System] → [DHCP Relay Agent] → [Management] submenu the administrator can start or stop the DHCP Relay Agent service.

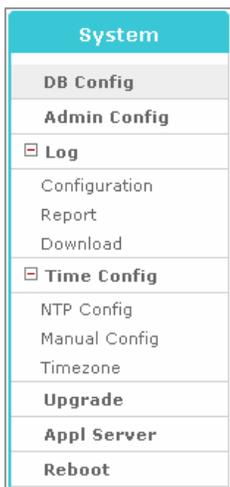
### DHCP Relay Agent Management

Status	Action
Stop	<input type="button" value="Run"/>

Click the Run button to start the DHCP Relay Agent and click the Stop button to halt the DHCP Relay Agent.

# System Menu

The System Menu is used to import or export the GSIMT/GSIM database, to view system logs, to configure the DHCP server and relay functions, to set time attributes, to upgrade the software, and to reboot the system. Select the **[System]** menu and the submenus will be displayed in the upper left side of the window as follows:



## System Menu Description

Menu	Submenu	Description
DB Config		Manages the current configuration DB of GSIMT/GSIM
Admin Config		Sets up the authentication of the manager
Log	Configuration	Used to set up logging policies
	Report	Used to search the current system logs
	Download	Used to download the system logs
Time Configuration	NTP Config	Used to enter the NTP server info
	Manual Config	Used to manually configure time
	Timezone	Used to set the GSIMT/GSIM timezone
Upgrade		Used to upgrade the GSIMT/GSIM software
Appl Server		Used to allow SSH, FTP, and Telnet access to the GSIMT/GSIM
Reboot		Used to Reboot the GSIMT/GSIM

## DB Config

Use the [System] → [DB Config] submenu to export the GSIMT/GSIM database, to import the GSIMT/GSIM database, or to default the GSIMT/GSIM to the factory defaults.

### Configuration System DB

Select	Type	Description
<input checked="" type="radio"/>	Import	<input type="text"/> <input type="button" value="Browse..."/>
<input type="radio"/>	Export	Export the current system db.
<input type="radio"/>	Default	Change the current system db to default system db.

### DB Config Parameter Description

Parameter	Description
Import	Used to restore a previously saved database
Export	Used to save the existing DB
Default	Used to restore the DB to factory defaults

After the GWIM is defaulted the administrator must use one of the default IP addresses such as 10.0.4.1 through the LAN port when using Web Management.

## Admin Config

The [System] → [Admin Config] submenu is used to set up the authentication server for logging into the GSIMT/GSIM and for changing the Web Time-out configuration. The choices for authentication server are Local, Radius or Taccas+ . Check the box of the authentication method desired and then click the OK button to save the change. Once the setting is applied then the selected authentication method configuration window will be displayed.

### Login Policy

Category	Value
Set Policy	<input checked="" type="checkbox"/> Local <input type="checkbox"/> Radius <input type="checkbox"/> Taccas+

## Local

The local password is the Admin password that is used to access the GSIMT/GSIM router using Telnet, SSH, FTP, and Web Management. Enter the new password and then click the OK button to save the change.

## Local

Category	Configuration
New Password	<input type="text"/>
Confirm New Password	<input type="text"/>

OK

## Radius

If a Radius server will be used then select the Radius box. Then enter the information for the Radius authentication server. Up to 5 lists can be entered.

## Radius

Radius Server IP	Radius Server Key	Time out
<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>	<input type="text"/>	<input type="text"/>

Add Delete

## Taccas+

If Taccas+ will be used then select the Taccas+ box. Enter the information for the Taccas+ authentication method. Up to 5 lists can be entered. When deleting the list of all the server IPs, the corresponding secret key values are also deleted.

## Taccas+

Taccas+ Server
<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>

Taccas+ Secret Key
<input type="text"/>

Add Delete

## Log

The **[Log]** submenu is used to configure the system log by selecting specific GSIMT/GSIM attributes, to run system log reports, and to download a system log report to a file.

### Configuration

The **[System] → [Log] → [Configuration]** submenu is used to determine which system attributes will be included in the system log.

#### Log Policy

Advanced Service		
System	ON <input type="radio"/>	OFF <input checked="" type="radio"/>
NETWORK	ON <input type="radio"/>	OFF <input checked="" type="radio"/>
FIREWALL	ON <input type="radio"/>	OFF <input checked="" type="radio"/>
PPTP	ON <input checked="" type="radio"/>	OFF <input type="radio"/>
IPsec	ON <input checked="" type="radio"/>	OFF <input type="radio"/>
L2TP	ON <input checked="" type="radio"/>	OFF <input type="radio"/>

Click the ON or OFF radio button to include or ignore the GSIMT/GSIM attribute. The choices are System , NETWORK, FIREWALL, PPTP, IPsec, and L2TP. Once the radio buttons are selected then click the OK button to apply the changes.. Click the Reset button to return the Log Policy to the previous status before applying the change.

### Report

Using the **[System] → [Log] → [Report]** submenu the administrator can retrieve the logs stored in the system according to attributes, date, and time.

#### Report Policy

Advanced Service					
Log Type	ALL <input checked="" type="radio"/>	SYSTEM <input type="radio"/>	NETWORK <input type="radio"/>	FIREWALL <input type="radio"/>	
	PPTP <input type="radio"/>	L2TP <input type="radio"/>	IPSEC <input type="radio"/>	IDS <input type="radio"/>	

Detail Search					
	YEAR	MONTH	DAY	HOUR	MINUTE
From	2005 ▼	9 ▼	27 ▼	11 ▼	00 ▼
To	2005 ▼	9 ▼	27 ▼	18 ▼	00 ▼

Click the radio button for the desired log type and then select the date and time. Then click the OK button to run the report. Click the Reset button to return the log report settings to default.

## Log Report

[2005-9-27 11 : 00] ~ [2005-9-27 18 : 00]

Date/Time	Message	Type
2005/9/27 17:50:40	ROOT LOGIN on `console`	login
2005/9/27 17:50:40	session opened for user toor by (uid=0)	login
2005/9/27 11:24:30	accepted smux peer: oid SNMPv2-SMI::enterprises.3317.1.2.2, descr zebos-7.2.1.ZebOS-7-2-1-rc1-customer	snmpd
2005/9/27 11:24:30	[smux_accept] accepted fd 12 from 127.0.0.1:32775	snmpd
2005/9/27 11:24:30	accepted smux peer: oid SNMPv2-SMI::enterprises.3317.1.2.5, descr zebos-7.2.1.ZebOS-7-2-1-rc1-customer	snmpd
2005/9/27 11:24:30	[smux_accept] accepted fd 11 from 127.0.0.1:32774	snmpd
2005/9/27 11:24:30	accepted smux peer: oid SNMPv2-SMI::enterprises.3317.1.2.3, descr zebos-7.2.1.ZebOS-7-2-1-rc1-customer	snmpd
2005/9/27 11:24:30	[smux_accept] accepted fd 10 from 127.0.0.1:32773	snmpd
2005/9/27 11:24:28	accepted smux peer: oid SNMPv2- SMI::enterprises.3317.1.2.10, descr zebos-7.2.1.ZebOS-7-2-1- rc1-customer	snmpd
2005/9/27 11:24:28	[smux_accept] accepted fd 9 from 127.0.0.1:32772	snmpd

1/4

## Download

Using the [System] → [Log] → [Download] submenu the administrator can download a log report to a PC. Simply press the Download button and the system log will be downloaded in the form of a compressed file.

## Log File Management

Download log file
To download log files
Click the [Download] button.

## Time Configuration

Using the [System] → [Time Configuration] submenu the system administrator can either synchronize the date and time of the GSIMT/GSIM with a NTP server or manually set the date and time.

### NTP Config

Use the [System] → [Time Configuration] → [NTP Config] submenu to set up a NTP Time Server/s to synchronize the date and time with the GSIMT/GSIM. The Current Time window indicates the current date and time of the GSIMT/GSIM. The NTP Server Status window indicates the status of NTP Server synchronization process.

The Time Server fields are used to enter the NTP Time Server IP Addresses. Click the OK button to start or restart the NTP daemon to register the Time Server.

### NTP Configuration

Current Time	
2005. Sep. 26. (Mon) 19:13:57	

NTP Server Status	
Status	stop

Time Server	
Server 1	<input type="text"/>
Server 2	<input type="text"/>

## Manual Config

By using the [System] → [Time Configuration] → [Manual Config] submenu the administrator can manually set and modify the date and time of the GSIMT/GSIM. In the Date/Time Configuration window enter the desired date and time and then click the OK button to save the changes. The new date and time will be displayed in the Current Time window. In order to synchronize the date and time of the system with the MP40 then check the Set by C/S box and then click the OK button to save the change..

### Manual Configuration

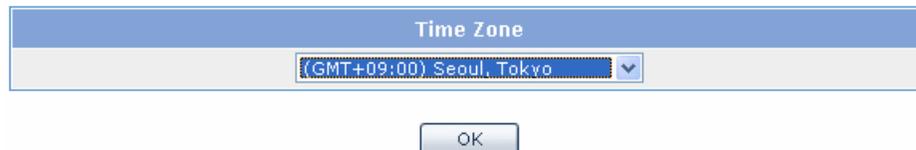


The Manual Configuration dialog box consists of three stacked panels. The top panel, titled "Current Time", displays "2005. Sep. 26. (Mon) 21:36:43". The middle panel, titled "Date/Time Configuration", contains five dropdown menus for date and time: "2005", "Sep", "26", "21", and "36". The bottom panel, titled "Synchronization from Call Server", features a checkbox labeled "Set by C/S" which is currently unchecked. An "OK" button is centered below the dialog box.

## Timezone

By using the [System] → [Time Configuration] → [Timezone] submenu the administrator can change Time Zones by selecting the desired timezone and then by clicking the OK button to save the change.

### Time Configuration



The Time Configuration dialog box has a single panel titled "Time Zone" with a dropdown menu showing "(GMT+09:00) Seoul, Tokyo". An "OK" button is centered below the dialog box.

## Upgrade

Upgrading the GSIMT/GSIM software is performed using the [System] → [Upgrade] submenu. First obtain the appropriate upgrade files . Then enter the new software package version number in the Package Version field.

### Select Package Upgraded

Package Version	Current Version	Released Date	Upgraded Date
<input type="text" value="v1.32"/>	v1.31	2007.01.27	2005.7.17

Then select one of the three types of upgrade methods (TFTP, HTTP, or Local). If the Upgrade method is TFTP or HTTP enter the correct IP address of the server. Then click the OK button to start the upgrade process.

### Select Upgrade Method

Upgrade Method	Upgrade Server IP
<input checked="" type="radio"/> TFTP	<input type="text" value="192"/> . <input type="text" value="168"/> . <input type="text" value="1"/> . <input type="text" value="20"/>
<input type="radio"/> HTTP	
<input type="radio"/> Local	<input type="text"/> <input type="button" value="Browse..."/>

## Appl Server

Using the [System] → [Appl Server] submenu the administrator can control remote access to the GSIMT/GSIM using SSH, FTP and Telnet. In order to secure the system from hackers Samsung recommends that these are disabled and only turned on when the administrator needs to use them for debugging, and uploading or downloading files.

### Application Server

	On/Off
SSH	<input checked="" type="checkbox"/>
FTP	<input checked="" type="checkbox"/>
Telnet	<input checked="" type="checkbox"/>

Check the box of the access method and then click the OK button to save the change.

## Reboot

Using the [System] → [Reboot] submenu the administrator can reboot the GSIMT/GSIM.

### System Reboot

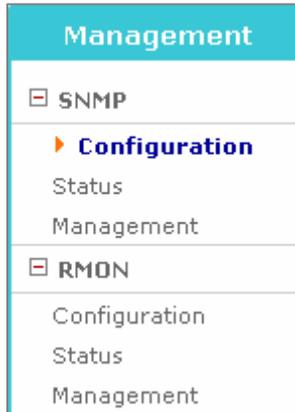


Simply click the OK button and all the services will be terminated and the system will reboot.

The webscreen will return to the initial login window and the webscreen will not operate until the network and services are all up and running

# Management Menu

The SNMP and RMON settings are configured and managed using the **[Management]** menu. The submenus will be displayed in the upper left side of the window as follows:



The image shows a screenshot of a 'Management' menu. The menu is titled 'Management' in a blue header. Below the header, there are two main sections. The first section is for 'SNMP', which is expanded to show three sub-items: 'Configuration' (indicated by a blue arrow), 'Status', and 'Management'. The second section is for 'RMON', which is also expanded to show three sub-items: 'Configuration', 'Status', and 'Management'. Each section is preceded by a small square icon with a minus sign.

## Management Menu Description

Menu	Submenu	Description
<b>SNMP</b>	Configuration	Used to display the configuration items of SNMP.
	Status	Used to displays the SNMP configuration currently configured.
	Management	Used to starts or stop the SNMP service.
<b>RMON</b>	Configuration	Used to display the configuration items of RMON.
	Status	Used to display the RMON configuration currently configured.
	Management	Used to start or stop the RMON services.

# SNMP

## Configuration

SNMP is a set of protocols used for managing complex networks. The [SNMP]→[Configuration] submenu is used by the administrator to enter SNMP System Options, SNMP Community information, SNMP v3 User information, and Trap Manager information. Once all the changes are entered then click the Save button at the bottom of the window. Click the Reset button to reset the configuration.

### System Option

The following window is used to set up the SNMP System Options.

System Option	
Location	<input type="text"/>
Contact	<input type="text"/>
Name	<input type="text"/>
Engine ID	<input type="text"/>

### SNMP System Option Parameter Description

Parameter	Description
Location	Used to enter the information for System Location
Contact	Used to enter the information for System Contact
Name	Used to enter the information for System Name
Engine ID	Used to enter the information for System Engine ID

### Community

The following window is used to add new community information used in SNMP v1/2c.

Community	
New Community name	<input type="text"/>
Community Network	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/> / <input type="text"/>
Access	<input checked="" type="radio"/> Read Only <input type="radio"/> Read Write

### Community Parameter Description

Parameter	Description
New Community name	Used to fill in the new community name being added
Community Network	Used to set up new community network
Access	Used to set up the access authority.

## SNMPv3 Administrator Add

The following window is used to enter the SNMPv3 Administrator v3 information.

SNMPv3 User Add	
User Name	<input type="text"/>
User Password	<input type="text"/>
Authentication	MD5 <input type="button" value="v"/>
Encryption	None <input type="button" value="v"/>
Access	<input checked="" type="radio"/> Read Only <input type="radio"/> Read Write

## SNMP v3 Parameter Description

Parameter	Description
<b>Administrator Name</b>	Used to enter the new administrator's name
<b>Administrator Password</b>	Used to enter the new administrator's password (8 alphanumeric characters)
<b>Authentication</b>	Used to set up the authentication method.
<b>Encryption</b>	Used to set up the ciphering method.
<b>Access</b>	Set up access authority.

## Trap Manager

The following window is used to set up the IP address used to transmit a trap. Up to five IP addresses can be entered.

Trap Manager	
IP Address	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>
Community Name	<input type="text"/>

## Trap Manager Parameter Description

Parameter	Description
<b>IP Address</b>	Used to set up a new Trap IP Address
<b>Community Name</b>	Used to set up a community to be used for transmitting to the Trap IP Address added.

## Status

The [Management] → [SNMP] → [Status] submenu is used to view the SNMP System Configuration information and to delete the SNMP Community, SNMPv3 User and SNMP Trap information. In order to delete the Community, User, and Trap settings select the box to the left of the item that needs to be deleted and then click the Delete button. Click the Reset button to initialize the settings.

### SNMP Config Information

System Information	
Location	Seoul, Korea
Contact	support@
Name	OS7400-GSIM
Engine ID	GSIM

Select	Community Name	Community Net	Access
	private	local	Read Write
	public	anynet	Read Only

Select	User Name	Access
	root	Read Write

Select	Trap IP	Trap Port
<input type="checkbox"/>	192.168.0.123	162

### Status Field Description

Field	Description
<b>System Information</b>	This field displays the information set up for the System Options.
<b>Select</b>	Used to select the information to delete.
<b>Community Name</b>	This field display the community name.
<b>Community Net</b>	This field displays the configured name of the Community Network.
<b>Community Access</b>	This field displays the access authority of the configured community.
<b>Administrator Name</b>	This field displays the configured administrator's name.
<b>Access</b>	This field displays the access authority of the configured administrator.
<b>Trap IP</b>	This field displays the configured Trap IP.
<b>Trap Port</b>	This field displays the configured Trap Port.

## Management

The [Management] → [SNMP] → [Management] submenu is used to start and stop the SNMP service. Click the Run button to start the SNMP service and click the Stop button to halt the SNMP service.

### SNMP Management

Activity	Action
Running	<input type="button" value="Stop"/>

### SNMP Management Field Description

Field	Description
Activity	This field displays the operational condition of the SNMPservice.
Action	Used to select whether to start or stop SNMP.

## RMON

### Configuration

Remote Monitoring (*RMON*) is a standard monitoring specification that enables various network monitors and console systems to exchange network-monitoring data. RMON provides network administrators with more freedom in selecting network-monitoring probes and consoles with features that meet their particular networking needs. Use the [Management] → [RMON] → [Configuration] submenu to begin configuring RMON.

Enter the History and Event Options and then click the Save button to apply the changes. Click the Reset button To initialize the RMON.

History Option	
MAX History Buckets	<input type="text" value="1000"/> ( 50 - 5000 )
MIN History Interval	<input type="text" value="15"/> min. ( 1 - 60 )

### History Option

The History Option window is used to set up the RMON history options.

### RMON Configuration Parameter Description

Parameter	Description
MAX History Buckets	Used to set up the maximum history storage space.
MIN History Interval	Used to set up the minimum history sample collection cycle.

## Event Options

The Event Options window is used to set up the RMON event options.

Event Option	
MAX Event Logs	<input type="text" value=""/> ( 50 - 2000 )

## RMON Event Options Parameter Description

Parameter	Description
Max Event Logs	Used to set up the maximum number of Event Logs.

## Status

The [Management] → [RMON] → [Status] submenu is used to view the RMON System Configuration.

History Global Status	
MAX History Buckets	1000
Granted History Buckets	0
Used History Buckets	0
MIN History Interval	15 min.

Event Global Status	
MAX Event Logs	400
Saved Event Logs	0

## RMON Global Status Field Description

Field	Description
<b>MAX History Buckets</b>	This field displays the maximum history storage space that has been set up.
<b>Granted History Buckets</b>	This field displays the history storage space that is currently allocated.
<b>Used History Buckets</b>	This field displays the history storage space that is currently used.
<b>MIN History Interval</b>	This field displays the minimum history sample collection cycle.
<b>Max Event Logs</b>	This field displays the maximum number of logs that are set up.
<b>Saved Event Logs</b>	This field displays the number of logs that is currently stored.

## Management

The [Management] → [RMON] → [Management] submenu is used to start and stop the SNMP service. Click the Run button to start the RMON service and click the Stop button to halt the RMON service.

### RMON Management

The administrator can start/stop the RMON service.

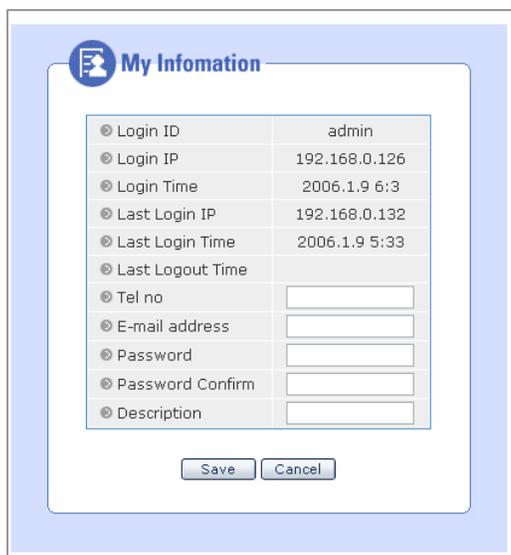
RMON Management	
Activity	Action
Stop	<input type="button" value="Run"/>

### RMON Management Field Description

Item	Description
Activity	This field displays the operational status of the current service.
Action	Used to to start or stop RMON.

## My Info Menu

Click the  My Info icon on the upper right hand side of the GSIMT/GSIM Web Page to open the My Info window. In this window administrators can enter a telephone number, an E-mail address, and description of the router . This window is also used to enter the admin password which is used when logging into the GSIMT/GSIM router. Enter the new admin password into the Password and Password Confirm fields and then click the Save button.



The screenshot shows a window titled "My Information" with a table of login details and several input fields. The table contains the following data:

Login ID	admin
Login IP	192.168.0.126
Login Time	2006.1.9 6:3
Last Login IP	192.168.0.132
Last Login Time	2006.1.9 5:33
Last Logout Time	

Below the table are input fields for:

- Tel no
- E-mail address
- Password
- Password Confirm
- Description

At the bottom of the window are "Save" and "Cancel" buttons.

### My Info Parameters

Item	Description
<b>Login ID</b>	This field displays the login ID.
<b>Login IP</b>	This field displays the IP address of the PC logged into the GSIMT/GSIM.
<b>Login Time</b>	This field displays time when the login occurred.
<b>Last Login IP</b>	This field displays the last login IP address.
<b>Last Login Time</b>	This field displays the last login time.
<b>Last Logout Time</b>	This field displays the last logout time.
<b>Tel no</b>	Used to enter the Telephone No. of the administrator
<b>E-mail address</b>	Used to enter the E-mail address of the administrator
<b>Password</b>	Used to enter the Password to be modified
<b>Password Confirm</b>	Used to enter the Password again to confirm the change
<b>Description</b>	Used to enter a Description of the Router

# ABBREVIATION

## A

ARP      Address Resolution Protocol

## B

BGP      Border Gateway Protocol  
BPDU     Bridge Protocol Data Unit  
BSR      Bootstrap Router

## C

CTI      Computer Telephony Integration

## D

DHCP     Dynamic Host Configuration Protocol  
DNS      Domain Name Server  
DVMRP    Distance Vector Multicast Routing Protocol

## G

GSIMT/GSIM      Gigabit Switch Interface Module  
GVRP              GARP VLAN Registration Protocol

## H

HTTP     Hypertext Transfer Protocol

## I

IGMP     Internet Group Management Protocol  
IPSec    IP Security Protocol  
IPMC     IP Multicast

## L

LAN      Local Area Network  
L2TP     Layer 2 Tunneling Protocol

## **N**

NTP Network Time Protocol

## **P**

PIM-SM Protocol Independent Multicast-Sparse Mode

PoE Power Of Ethernet

PPTP Point to Point Tunneling Protocol

PVC Permanent Virtual Circuit

PVID Port VLAN Identification

## **Q**

QoS Quality of Service

## **R**

RMON Realtime Monitoring

RP Rendezvous Point

RSTP Rapid Spanning Tree Protocol

## **S**

STP Spanning Tree Protocol

SNMP Simple Network Management Protocol

## **T**

TFTP Trivial File Transfer Protocol

## **V**

VLAN Virtual Local Area Network

VPN Virtual Private Network