

USER GUIDE

for 4MI-G804FPM-BP

[Firmware Version 2.4]

주식회사 포엠아이텍

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1. 품질보증서

품 질 보 증 서

◎ 품 명 : FIBER OPTIC PoE L2 SWITCH
◎ 모 델 명 : 4MI-G804FPM-BP
◎ 보 증 기 간 : 구입일로부터 2년

이 제품은 소비자가 정기적으로 사용하던 중 고장이 발생한 경우에 한하여 보증 규정에 의한 무상 수리가 가능합니다.

1. 보증기간 개시일은 기기 납품일로부터 시작됩니다.
2. 보증기간 중 고객이 정상적으로 사용함에 있어 고장이 발생한 경우는 무상 수리를 하여 드립니다.
3. 본 제품에 대한 보증수리 이외의 보상은 실비로 합니다.
4. 본 보증서는 대한민국 내에서만 유효합니다.
5. 제품수리, 교환, 환불에 대한 보상 기준은 경제기획원 고시 소비자 피해 보상 규정에 따릅니다.
6. 수리용 부품 보증 기간은 제품 단종 후 5년입니다.
7. 다음의 각 항의 경우는 "보증 대상의 규정"에 적용하여 유상으로 합니다.
 - 가. 고장의 원인이 본 기 이외의 외부 요인에 의한 고장의 경우
 - 나. 고객이 제품을 개조하여 발생한 고장의 경우
 - 다. 천재, 화재, 지진, 수해, 낙진 등 천재지변에 의한 고장의 경우
 - 라. 구입 후 수송, 이동 등에 의한 고장의 경우

주식회사 포엠아이텍



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2. 개요

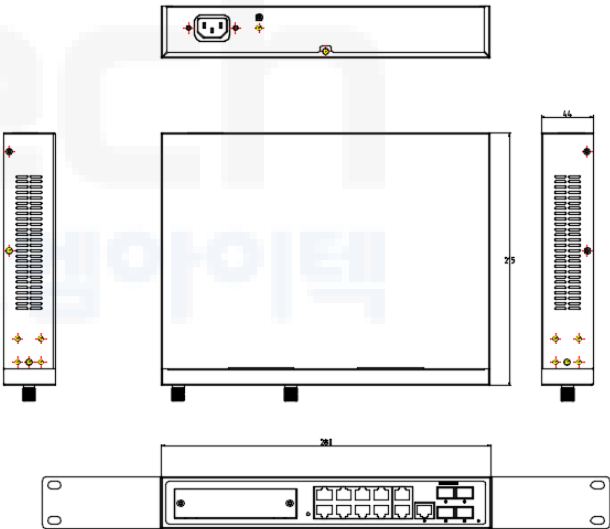
2. 개요

2-1. 장비개요

- ① 본 제품은 10/100/1000Mbps PoE 8Port + 1G 2Port 및 2.5G SFP 2Port + 1G를 이용하여 광 케이블로 전송 하는 L2 PoE Switch 이다.
- ② Features
 - 100/1G/2.5G 2Port + 100/1G SFP 2Port
 - PoE 10/100/1000M 8Port + Uplink 2Port Console 1Port
 - 34G backplane bandwidth
 - SNMP v1/v2, RMON(groups1,2,3,9), Telnet, CLI, WEB Management
 - POE(Power Over Ethernet), POE+ 지원
 - 포트별 낙뢰 방지 보호 소자 TSS(Thyristor Surge Suppressor) 적용
 - G.8032 ERPS(Ethernet Ring Protection Switching) 지원
 - By-pass 스위치(hot plug) 기능 지원(Optional)
 - Ring topology에서 링크 단절 시 장애 복구 타임 20msec 이내
 - 네트워크 GUI 기반의 관리 또는 Web 지원
- ③ Application
 - CCTV, ITV and Traffic Control System
 - Campus Network
 - Community Network
 - Security System
 - Process Control and Monitoring System
- ④ Option(SFP BI-DI Transceiver)



<장비사진(전면부/상단)>



<Dimensions>
W280 X D220 X H44

Model	파장	데이터속도	전송거리	Source	Optic Power	수신	감도(dBm)	Connector Type
4MI-LXWA	1310/1550nm	1.25G	20Km	FP	-10 ~ -3	PIN	< -22	LC/PC
4MI-LXWB	1550/1310nm	1.25G	20Km	DFP	-10 ~ -3	PIN	< -22	LC/PC
4MI-LX20	1310nm	1.25G	20Km	FP	-10 ~ -7	PIN	< -22	LC/PC
4MI-LR10G	1310nm	10G	10Km	DFP	-3 ~ +2	PIN	< -22	LC/PC

2. 개요

2-2. Specification

Standard configuration	8Port PoE 10/100/1000M, 2Port 10/100/1000M Uplink auto-adaptable interfaces 2Port 1G/2.5G + 2Port 1G SFP, 1 Console port	Security features	User hierarchical management and password protection SSH 2.0, SSL, Port isolation, ARP message speed limit Broadcast storm control, Backup for host datum IEEE802.1X & MAC address authentication Mac black holes, IP source protection AAA & RADIUS, MAC learning limit ARP inspection, Anti-DoS attack IP-MAC-VLAN-Port binding
Flash	128MB	QoS	Diff-Serv QoS, Priority Mark/Remark 8*Output queues of each port 802.1p/DSCP priority mapping Queue Scheduling Algorithm (SP, WRR, SP+WRR) Flow-based Packet Filtering Flow-based Redirection
DRAM	1G	ACL	Flow-based Rate Limiting L2 to L4 packet filtering, matching first 80 bytes message. Provide ACL based on MAC, Destination MAC address, IP Source, Destination IP, IP Protocol Type, TCP/UDP Port, TCP/UDP Port Range, and VLAN, etc. Port-based Issuing ACL. ACL based on port and VLAN
Forwarding	25.3Mpps	Management	Console/AUX Modem/Telnet/SSH2.0 CLI Web Management (HTTPS) Download & Management on FTP, TFTP, Xmodem, SFTP, SNMP V1/V2C/V3 One-key recovery NTP, System work log, Ping Test Cable Diagnose, LLDP CPU instant utilization status view NMS - Smart Network Management System Platform (LLDP+SNMP) TSS(Thyristor Surge Suppressor)
Backplane	34Gbps		
Switching	Store forwarding		
MAC table	8K		
Size	280*225*44mm		
Weight	2.5Kg		
Power Source	90~240VAC (auto-adaptable), 50~60Hz, 1A/230V PoE/PoE+		
Power consumption	Up to 150W (Including PoE Power supply)		
Indicator	Power:PWR(green), system :SYS(green), network ;Link/Act(yellow), Fiber port: L/A(green).		
Environment	Working temperature: -20~ 55°C Storage temperature: -40~75°C Humidity: 5~90% no condensation		
STP	IEEE 802.1D STP IEEE 802.1w RSTP IEEE 802.1S MSTP		
VLAN	4K VLAN based on port, IEEE802.1q VLAN based on the protocol VLAN based on MAC Voice VLAN, QinQ configuration Port configuration of Access, Trunk, Hybrid		
Port Aggregation	LACP, Static aggregation Max 5 aggregation groups and 8 ports per group.		
Industrial Ring Network Protocol	G.8032 (ERPS), Recovery time less than 20ms 255 Ring at most, Max 1024 devices per ring		
Port Mirroring	Bidirectional data mirroring based on port		
DHCP	DHCP Client, DHCP Snooping, DHCP Server, DHCP Relay		
Multicast	IGMP Snooping v1/v2, Max 1024 multicast groups, Fast log out MLD Snooping v1/v2, Multicast VLAN		
		Package Contents	Switch Unit * 1 Power Cable * 1 Rack Mount Brackets * 2 Mounting Screws * 10

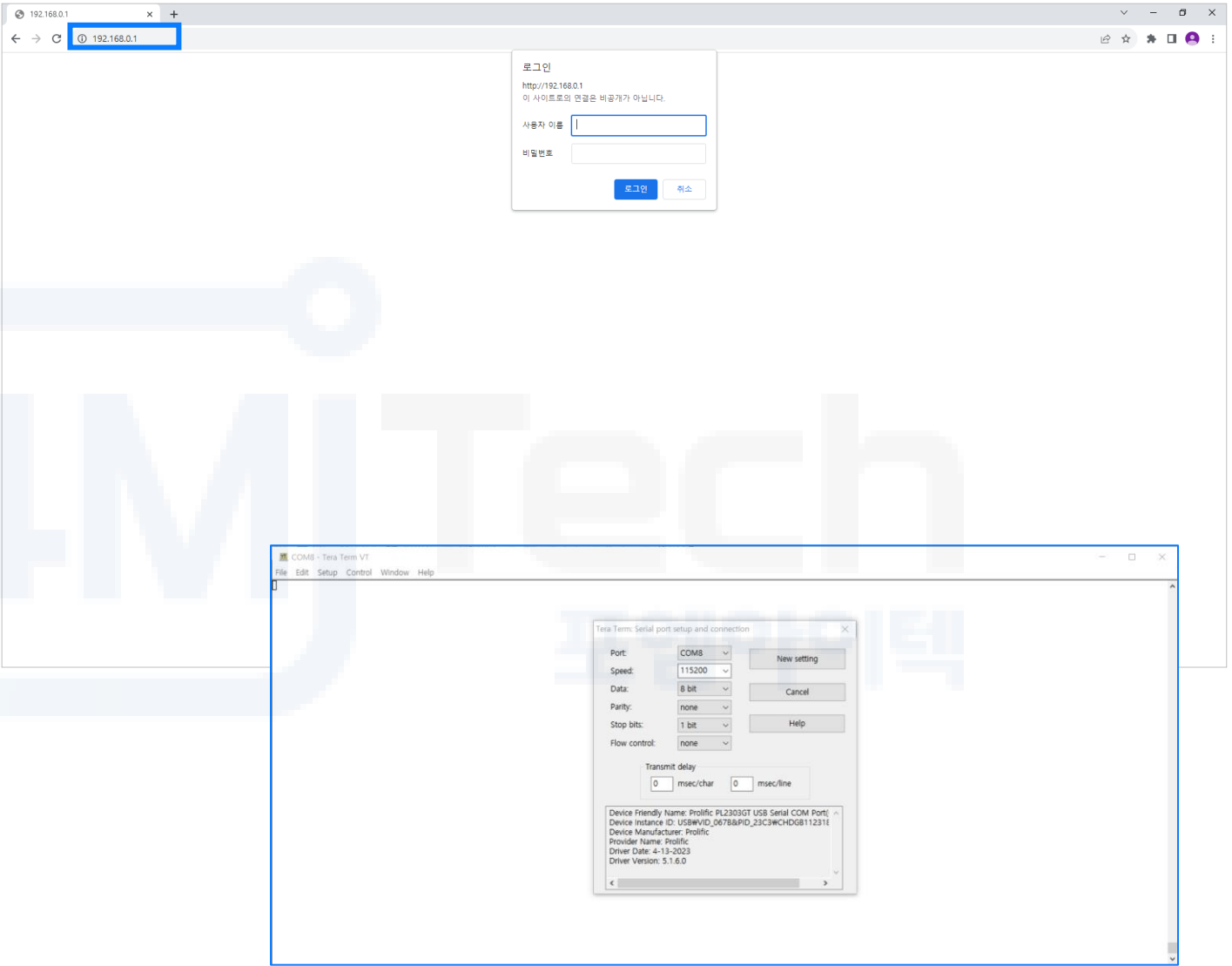
3. 장비접속

3. 장비 접속

- ① Web Browser 주소창에 장비의 IP 입력
(초기 IP : 192.168.0.1/24)
- ② 사용자 이름 및 비밀번호 입력
(사용자 이름 : admin / 비밀번호 : admin)

※ 콘솔 접속의 경우 아래 참조

- Speed : 115200
- Data : 8 bit
- Parity : none
- Stop bits : 1 bit
- Flow control : none



3. 장비 접속

③ 상단 이미지에서 각 포트 상태 확인

※ 커서를 포트에 Over하면 포트 번호 및 속도 표시

※ 이미지별 포트 상태



Link Up



Link Up & PoE Enable



Link Down



SFP 포트 Link Up



SFP 포트 Link Down



4. 설정

4. 설정

4-1. Network Admin

4-1-1. IP Address

- ① Network Admin > IP config로 이동
- ② 변경할 IP 주소 및 Subnet Mask 입력
- ③ 'Save' 버튼으로 저장

2 4 6 8 10

1 3 5 7 9

11 12

Information & Status

Network Admin

- IP Config
- IP Status
- DHCP Server
- NTP
- Timezone
- SNMP
- RMON
- SysLog

Port Configure

PoE

Advanced Configure

Security Configure

QoS Configure

Diagnostics

Maintenance

IP Configuration

Mode

Host

DNS Server 0

No DNS server

DNS Server 1

No DNS server

DNS Server 2

No DNS server

DNS Server 3

No DNS server

DNS Proxy

☐

IP Interfaces

Delete	VLAN	DHCPv4			IPv4		IPv6	
		Enable	Fallback	Current Lease	Address	Mask Length	Address	Mask Length
☐	1	☐	0		192.168.0.1	24		

Add Interface

IP Routes

Delete	Network	Mask Length	Gateway	Next Hop VLAN
Add Route				

Save

Reset

4. 설정

4-1. Network Admin

4-1-2. Default Gateway(IP Routing)

- ① Network Admin > IP Config로 이동
- ② 'Add Route' 버튼 선택
- ③ Network 주소, Subnet Mask 및 Gateway
IP 주소 입력
- ④ 'Save' 버튼으로 저장

※ 설정 삭제 필요 시 'Delete' 체크박스 체크 후
'Save'버튼 선택

The screenshot displays the 4M Tech Network Admin interface. The left sidebar shows the navigation menu with 'Network Admin' expanded. The main content area is divided into two sections: 'IP Configuration' and 'IP Routes'.

IP Configuration

Mode: Host

DNS Server 0: No DNS server

DNS Server 1: No DNS server

DNS Server 2: No DNS server

DNS Server 3: No DNS server

DNS Proxy: ☐

IP Interfaces

Delete	VLAN	DHCPv4		IPv4		IPv6		
		Enable	Fallback	Current Lease	Address	Mask Length	Address	Mask Length
☐	1	☐	0		192.168.0.1	24		

Add Interface

IP Routes

Delete	Network	Mask Length	Gateway	Next Hop VLAN
Delete	0.0.0.0	0	192.168.0.254	0

Add Route

Save Reset

IP Routes (Inset)

Delete	Network	Mask Length	Gateway	Next Hop VLAN
☒	0.0.0.0	0	192.168.0.254	0

Add Route

Save Reset

4. 설정

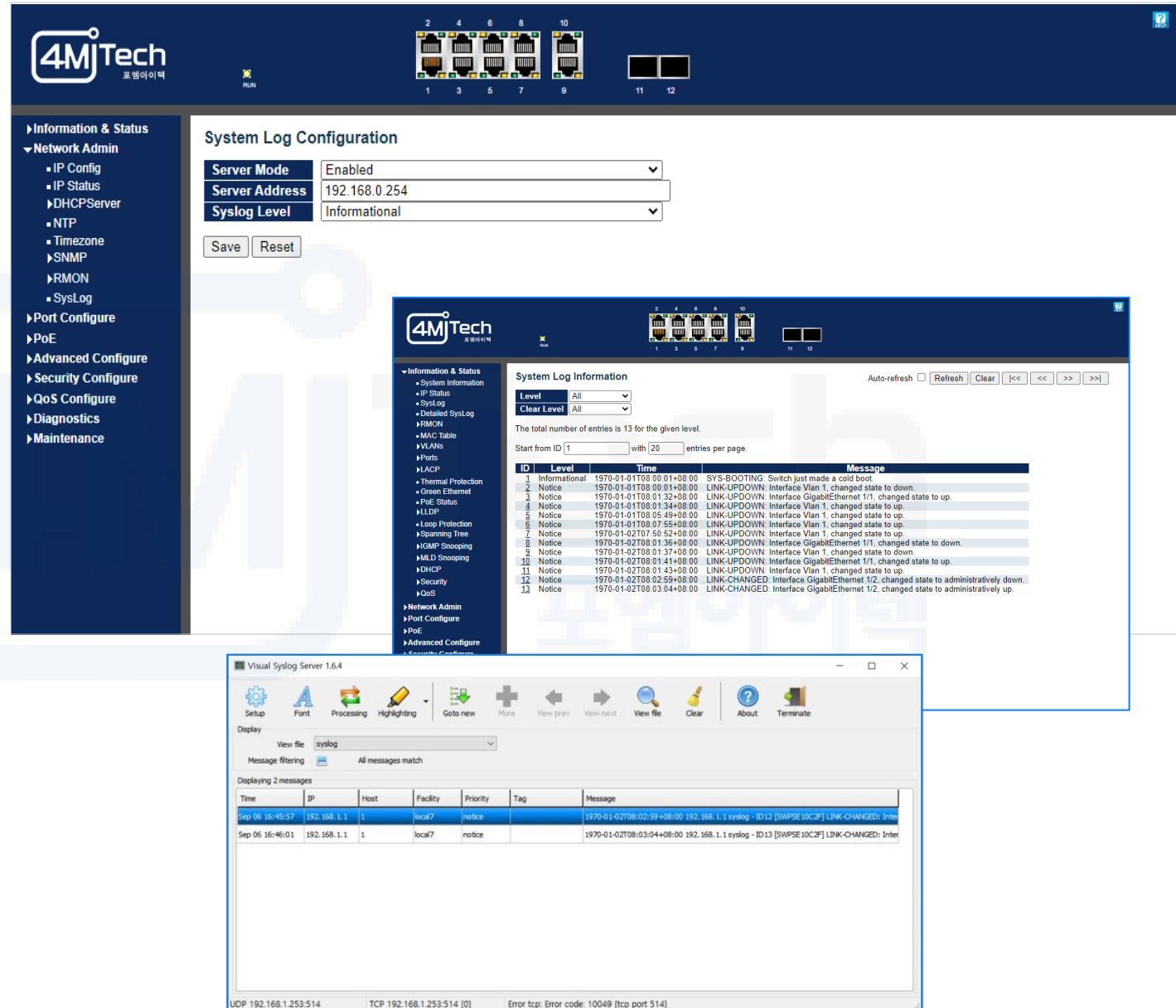
4-1. Network Admin

4-1-3. System Log

- ① Network Admin > SysLog로 이동
- ② Server Mode 'Enable' 선택
- ③ Log 정보를 받을 IP 주소 입력
- ④ Syslog Level 선택
- ⑤ 'Save' 버튼으로 저장
- ⑥ Log 확인

※ Log 확인은 information & Status
> SysLog에서 확인 가능

※ '③'항과 같이 Server Address에 IP를 입력
하면 해당 IP의 Syslog Server에서도 Log
확인 가능



The screenshot displays the 4M Tech web interface for System Log Configuration. The left sidebar shows the navigation menu with 'Network Admin' expanded, leading to 'SysLog'. The main content area is divided into two sections: 'System Log Configuration' and 'System Log Information'.

System Log Configuration:

- Server Mode: Enabled
- Server Address: 192.168.0.254
- Syslog Level: Informational
- Buttons: Save, Reset

System Log Information:

- Level: All
- Clear Level: All
- Auto-refresh: ☐ Refresh Clear << >>
- The total number of entries is 13 for the given level.
- Start from ID 1 with 20 entries per page.

ID	Level	Time	Message
1	Informational	1970-01-01T08:00:01+08:00	SYS-BOOTING: Switch just made a cold boot.
2	Notice	1970-01-01T08:00:01+08:00	LINK-UPDOWN: Interface Vlan 1, changed state to down.
3	Notice	1970-01-01T08:01:32+08:00	LINK-UPDOWN: Interface GigabitEthernet 1/1, changed state to up.
4	Notice	1970-01-01T08:01:34+08:00	LINK-UPDOWN: Interface Vlan 1, changed state to up.
5	Notice	1970-01-01T08:05:49+08:00	LINK-UPDOWN: Interface Vlan 1, changed state to up.
6	Notice	1970-01-01T08:07:55+08:00	LINK-UPDOWN: Interface Vlan 1, changed state to up.
7	Notice	1970-01-02T07:50:52+08:00	LINK-UPDOWN: Interface Vlan 1, changed state to up.
8	Notice	1970-01-02T08:01:36+08:00	LINK-UPDOWN: Interface GigabitEthernet 1/1, changed state to down.
9	Notice	1970-01-02T08:01:37+08:00	LINK-UPDOWN: Interface Vlan 1, changed state to down.
10	Notice	1970-01-02T08:01:41+08:00	LINK-UPDOWN: Interface GigabitEthernet 1/1, changed state to up.
11	Notice	1970-01-02T08:01:43+08:00	LINK-UPDOWN: Interface Vlan 1, changed state to up.
12	Notice	1970-01-02T08:02:59+08:00	LINK-CHANGED: Interface GigabitEthernet 1/2, changed state to administratively down.
13	Notice	1970-01-02T08:03:04+08:00	LINK-CHANGED: Interface GigabitEthernet 1/2, changed state to administratively up.

Below the web interface, a 'Visual Syslog Server 1.6.4' window is shown, displaying a table of received syslog messages:

Time	IP	Host	Facility	Priority	Tag	Message
Sep 06 16:45:57	192.168.1.1	1	local7	notice		1970-01-02T08:02:59+08:00 192.168.1.1 syslog - ID 12 [SWPSE 10C2F] LINK-CHANGED: Inter
Sep 06 16:46:01	192.168.1.1	1	local7	notice		1970-01-02T08:03:04+08:00 192.168.1.1 syslog - ID 13 [SWPSE 10C2F] LINK-CHANGED: Inter

At the bottom of the Visual Syslog Server window, the status bar shows: UDP 192.168.1.253:514 TCP 192.168.1.253:514 [0] Error tcp: Error code: 10049 [tcp port 514]

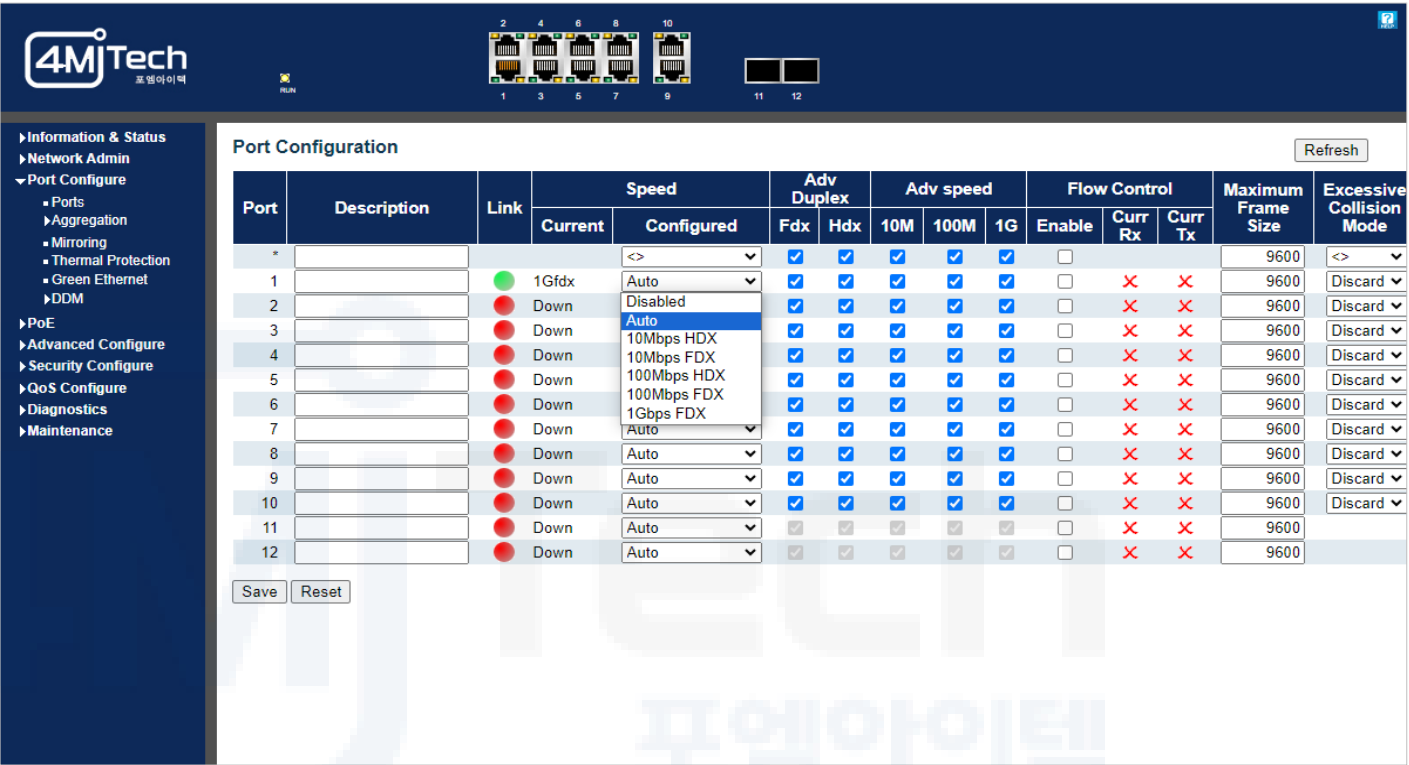
4. 설정

4-2. Port Configure

4-2-1. 모드 변경

- ① Port Configure > Ports 선택
- ② 변경을 원하는 포트 의 Speed Configured
에서 모드 변경
- ③ 'Save' 버튼으로 저장

※ HDX = Half Duplex / FDX = Full Duplex



Port	Description	Link	Speed		Adv Duplex		Adv speed			Flow Control			Maximum Frame Size	Excessive Collision Mode
			Current	Configured	Fdx	Hdx	10M	100M	1G	Enable	Curr Rx	Curr Tx		
*				<>									9600	<>
1		1Gfdx	Auto	Auto	✓	✓	✓	✓	✓	✓	✗	✗	9600	Discard
2		Down	Disabled	Disabled	✓	✓	✓	✓	✓	✓	✗	✗	9600	Discard
3		Down	Auto	Auto	✓	✓	✓	✓	✓	✓	✗	✗	9600	Discard
4		Down	10Mbps HDX	10Mbps HDX	✓	✓	✓	✓	✓	✓	✗	✗	9600	Discard
5		Down	10Mbps FDX	10Mbps FDX	✓	✓	✓	✓	✓	✓	✗	✗	9600	Discard
6		Down	100Mbps HDX	100Mbps HDX	✓	✓	✓	✓	✓	✓	✗	✗	9600	Discard
7		Down	100Mbps FDX	100Mbps FDX	✓	✓	✓	✓	✓	✓	✗	✗	9600	Discard
8		Down	1Gbps FDX	1Gbps FDX	✓	✓	✓	✓	✓	✓	✗	✗	9600	Discard
9		Down	Auto	Auto	✓	✓	✓	✓	✓	✓	✗	✗	9600	Discard
10		Down	Auto	Auto	✓	✓	✓	✓	✓	✓	✗	✗	9600	Discard
11		Down	Auto	Auto	✓	✓	✓	✓	✓	✓	✗	✗	9600	Discard
12		Down	Auto	Auto	✓	✓	✓	✓	✓	✓	✗	✗	9600	Discard

4. 설정

4-2. Port Configure

4-2-2. Aggregation_Static

- ① Port Conifgure > Aggregation > Static
- ② 변경을 원하는 포트를 Group ID 번호로 이동
- ③ 'Save' 버튼으로 저장

※ Aggregation Group 으로 연결할 장비에도 동일한 설정 필요

2 4 6 8 10

1 3 5 7 9

11 12

Information & Status

Network Admin

Port Configure

Ports

Aggregation

Static

LACP

Mirroring

Thermal Protection

Green Ethernet

DDM

PoE

Advanced Configure

Security Configure

QoS Configure

Diagnostics

Maintenance

Aggregation Mode Configuration

Hash Code Contributors

Source MAC Address

Destination MAC Address

IP Address

TCP/UDP Port Number

Aggregation Group Configuration

Group ID	1	2	3	4	5	6	7	8	9	10	11	12
Normal	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Save

Reset

Aggregation Group Configuration

Group ID	1	2	3	4	5	6	7	8	9	10	11	12
Normal	☐	☐	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
1	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Save

Reset

4. 설정

4-2. Port Configure

4-2-3. Aggregation_LACP

- ① Port Configure > Aggregation > LACP
- ② 변경을 원하는 포트의 LACP Enabled 체크 박스 체크
- ③ 'Save' 버튼으로 저장

※ Key value(1-65535)를 Specific으로 선택하고 변경 할 경우 연결할 장비의 Key value도 일치해야 함.

- ※ Role
- Active - Active = O
 - Active - Passive = O
 - Passive - Active = O
 - Passive - Passive = X



The screenshot shows the 4M Tech web interface for LACP Port Configuration. The left sidebar contains a navigation menu with options like Information & Status, Network Admin, Port Configure, and others. The main area displays a table for configuring 12 ports. Ports 1 and 2 are selected with 'LACP Enabled' checked. The table columns are Port, LACP Enabled, Key, Role, Timeout, and Prio. Below the table are 'Save' and 'Reset' buttons.

Port	LACP Enabled	Key	Role	Timeout	Prio
*	☐	<>	<>		32768
1	☒	Auto	Active	Fast	32768
2	☒	Auto	Active	Fast	32768
3	☐	Auto	Active	Fast	32768
4	☐	Auto	Active	Fast	32768
5	☐	Auto	Active	Fast	32768
6	☐	Auto	Active	Fast	32768
7	☐	Auto	Active	Fast	32768
8	☐	Auto	Active	Fast	32768
9	☐	Auto	Active	Fast	32768
10	☐	Auto	Active	Fast	32768
11	☐	Auto	Active	Fast	32768
12	☐	Auto	Active	Fast	32768

Save Reset

4. 설정

4-3. PoE

4-3-1. PoE Setting

- ① PoE > PoE Setting으로 이동
- ② 변경을 원하는 포트의 PoE Mode 선택
- ③ 'Save' 버튼으로 저장
- ④ PoE > PoE status에서 PoE 상태 확인

- ※ PoE+ = 802.3at(최대 30W)
- ※ PoE = 802.3af(최대 15.4W)
- ※ Disabled = PoE 사용 안함



Information & Status

Network Admin

Port Configure

PoE

- PoE Setting
- PoE Scheduling
- PoE Status

Advanced Configure

Security Configure

QoS Configure

Diagnostics

Maintenance

Power Over Ethernet Configuration

Reserved Power determined by

☒ Auto
☐ Manual

Power Management Mode

☒ Actual Consumption
☐ Reserved Power

Power Over Ethernet Supply Configuration

Primary Power Supply [W]

250

Power Over Ethernet Port Configuration

Port	PoE Mode	Priority	PD Alive Check	Maximum Power [W]	Description
*	<>	<>	<>	30	
1	PoE+	Low	OFF	30	
2	PoE+	Low	OFF	30	
3	PoE+	Low	OFF	30	
4	PoE+	Low	OFF	30	
5	PoE+	Low	OFF	30	
6	PoE+	Low	OFF	30	
7	PoE+	Low	OFF	30	
8	PoE+	Low	OFF	30	

Save

Reset



Information & Status

Network Admin

Port Configure

PoE

- PoE Setting
- PoE Scheduling
- PoE Status

Advanced Configure

Security Configure

QoS Configure

Diagnostics

Maintenance

Power Over Ethernet Status

Auto-refresh

Refresh

Local Port	Description	PD class	Power Requested	Power Allocated	Power Used	Current Used	Priority	PD Alive Check	Reset Count	Port Status
1		5	0 [W]	0 [W]	0 [W]	0 [mA]	Low	0		PoE turned OFF
2		5	0 [W]	0 [W]	0 [W]	0 [mA]	Low	0		PoE turned OFF
3		5	0 [W]	0 [W]	0 [W]	0 [mA]	Low	0		PoE turned OFF
4		5	0 [W]	0 [W]	0 [W]	0 [mA]	Low	0		PoE turned OFF
5		5	0 [W]	0 [W]	0 [W]	0 [mA]	Low	0		PoE turned OFF
6		5	0 [W]	0 [W]	0 [W]	0 [mA]	Low	0		PoE turned OFF
7		5	0 [W]	0 [W]	0 [W]	0 [mA]	Low	0		PoE turned OFF
8		5	0 [W]	0 [W]	0 [W]	0 [mA]	Low	0		PoE turned OFF
Total			0 [W]	0 [W]	0 [W]	0 [mA]				

4. 설정

4-4. Advanced Configure

4-4-1. Port Isolation

- ① Advanced Configure > Port Isolation
> Port Isolation 으로 이동
- ② 변경을 원하는 포트의 번호 체크
- ③ 'Save' 버튼으로 저장

※ Port Isolation 기능을 사용하면 VLAN을 구성하지 않고도 서로 다른 포트에 있는 단말 간의 통신을 방지할 수 있음.



4. 설정

4-4. Advanced Configure

4-4-2. Loop Protection

- ① Advanced Configure > Loop Protection
- ② Global Configuration에서 Enable Loop Protection을 Enable로 변경
- ③ 하단의 Action 선택
- ④ 'Save' 버튼으로 저장

※ <Shutdown Port>

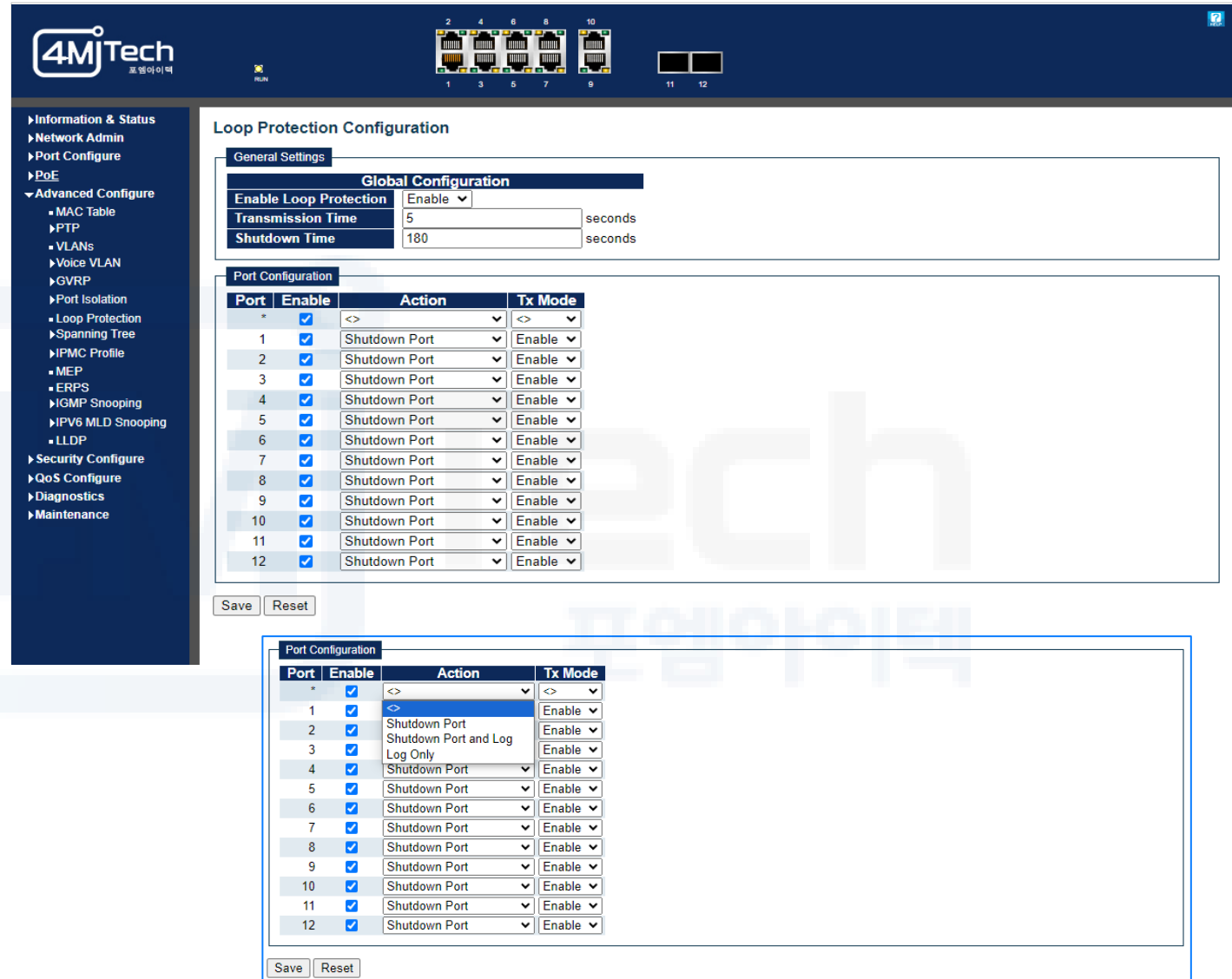
Loop 감지된 포트 Shutdown

<Shutdown Port and Log>

Loop 감지된 포트 Shutdown, 로그남김

<Log Only>

로그만 남김



Loop Protection Configuration

General Settings

Global Configuration

Enable Loop Protection	Enable
Transmission Time	5 seconds
Shutdown Time	180 seconds

Port Configuration

Port	Enable	Action	Tx Mode
*	☒	<>	<>
1	☒	Shutdown Port	Enable
2	☒	Shutdown Port	Enable
3	☒	Shutdown Port	Enable
4	☒	Shutdown Port	Enable
5	☒	Shutdown Port	Enable
6	☒	Shutdown Port	Enable
7	☒	Shutdown Port	Enable
8	☒	Shutdown Port	Enable
9	☒	Shutdown Port	Enable
10	☒	Shutdown Port	Enable
11	☒	Shutdown Port	Enable
12	☒	Shutdown Port	Enable

Save Reset

Port Configuration

Port	Enable	Action	Tx Mode
*	☒	<>	<>
1	☒	Shutdown Port	Enable
2	☒	Shutdown Port and Log	Enable
3	☒	Log Only	Enable
4	☒	Shutdown Port	Enable
5	☒	Shutdown Port	Enable
6	☒	Shutdown Port	Enable
7	☒	Shutdown Port	Enable
8	☒	Shutdown Port	Enable
9	☒	Shutdown Port	Enable
10	☒	Shutdown Port	Enable
11	☒	Shutdown Port	Enable
12	☒	Shutdown Port	Enable

Save Reset

4. 설정

4-4. Advanced Configure

4-4-3. Spanning Tree Protocol

- ① Advanced Configure > Spanning Tree > Bridge Settings로 이동
- ② Protocol Version 선택
- ③ 'Save' 버튼으로 저장
- ④ Advanced Configure > Spanning Tree > CIST Ports로 이동
- ⑤ STP Enabled 체크박스 체크
- ⑥ 'Save' 버튼으로 저장

※ <RSTP>

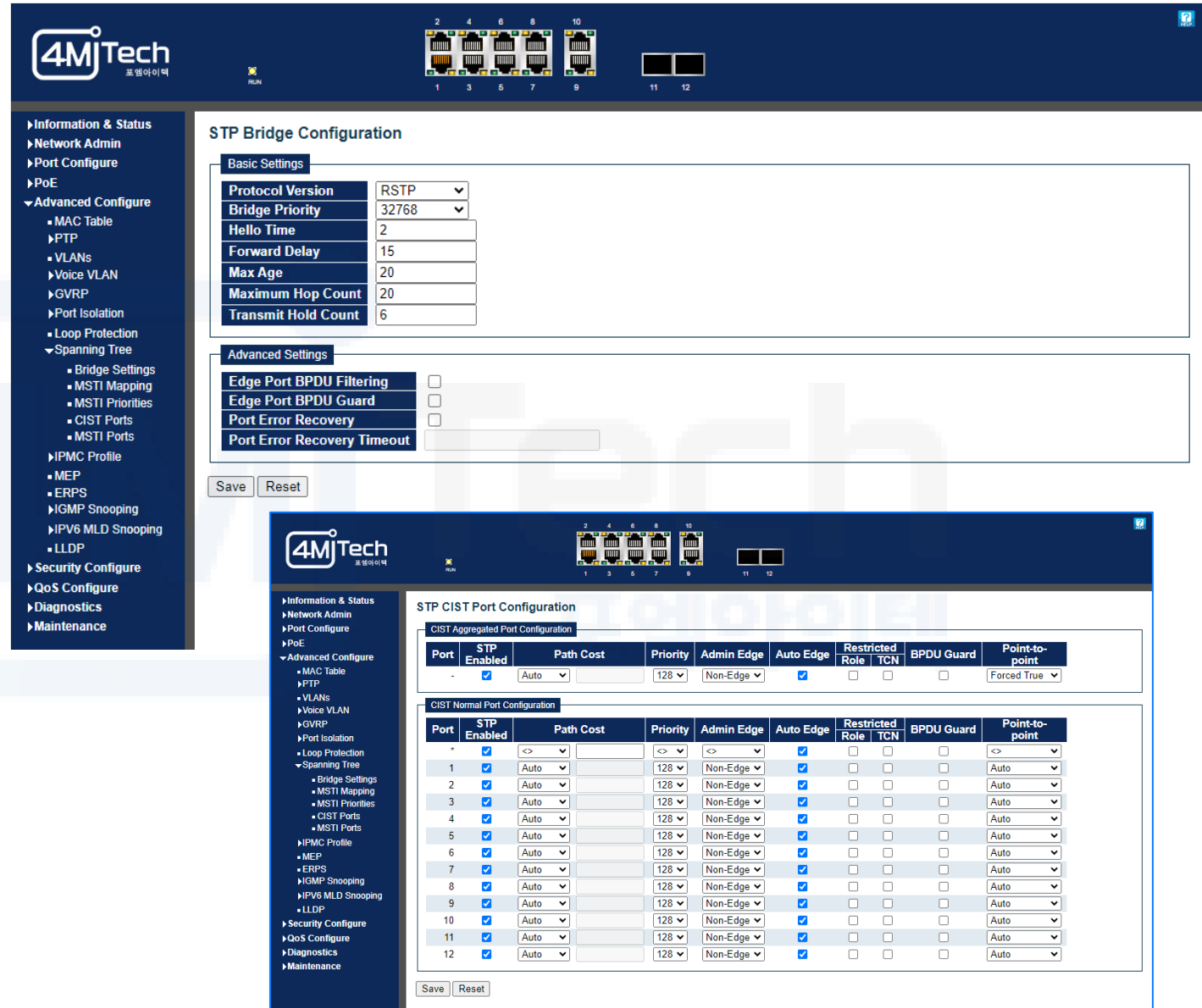
Rapid Spanning Tree Protocol

<MSTP>

Multiple Spanning Tree Protocol

※ Information & Status > Spanning Tree

에서 STP 상태 확인 가능



The screenshot displays the 4M Tech web management interface for STP configuration. The left sidebar shows the navigation menu with 'Spanning Tree' expanded under 'Advanced Configure'. The main content area is divided into two sections: 'STP Bridge Configuration' and 'STP CIST Port Configuration'.

STP Bridge Configuration

Basic Settings

Protocol Version	RSTP
Bridge Priority	32768
Hello Time	2
Forward Delay	15
Max Age	20
Maximum Hop Count	20
Transmit Hold Count	6

Advanced Settings

Edge Port BPDU Filtering	☐
Edge Port BPDU Guard	☐
Port Error Recovery	☐
Port Error Recovery Timeout	

Buttons: Save, Reset

STP CIST Port Configuration

CIST Aggregated Port Configuration

Port	STP Enabled	Path Cost	Priority	Admin Edge	Auto Edge	Restricted Role	TCN	BPDU Guard	Point-to-point
-	☒	Auto	128	Non-Edge	☒	☐	☐	☐	Forced True

CIST Normal Port Configuration

Port	STP Enabled	Path Cost	Priority	Admin Edge	Auto Edge	Restricted Role	TCN	BPDU Guard	Point-to-point
*	☒	<>	<>	<>	☒	☐	☐	☐	<>
1	☒	Auto	128	Non-Edge	☒	☐	☐	☐	Auto
2	☒	Auto	128	Non-Edge	☒	☐	☐	☐	Auto
3	☒	Auto	128	Non-Edge	☒	☐	☐	☐	Auto
4	☒	Auto	128	Non-Edge	☒	☐	☐	☐	Auto
5	☒	Auto	128	Non-Edge	☒	☐	☐	☐	Auto
6	☒	Auto	128	Non-Edge	☒	☐	☐	☐	Auto
7	☒	Auto	128	Non-Edge	☒	☐	☐	☐	Auto
8	☒	Auto	128	Non-Edge	☒	☐	☐	☐	Auto
9	☒	Auto	128	Non-Edge	☒	☐	☐	☐	Auto
10	☒	Auto	128	Non-Edge	☒	☐	☐	☐	Auto
11	☒	Auto	128	Non-Edge	☒	☐	☐	☐	Auto
12	☒	Auto	128	Non-Edge	☒	☐	☐	☐	Auto

Buttons: Save, Reset

4. 설정

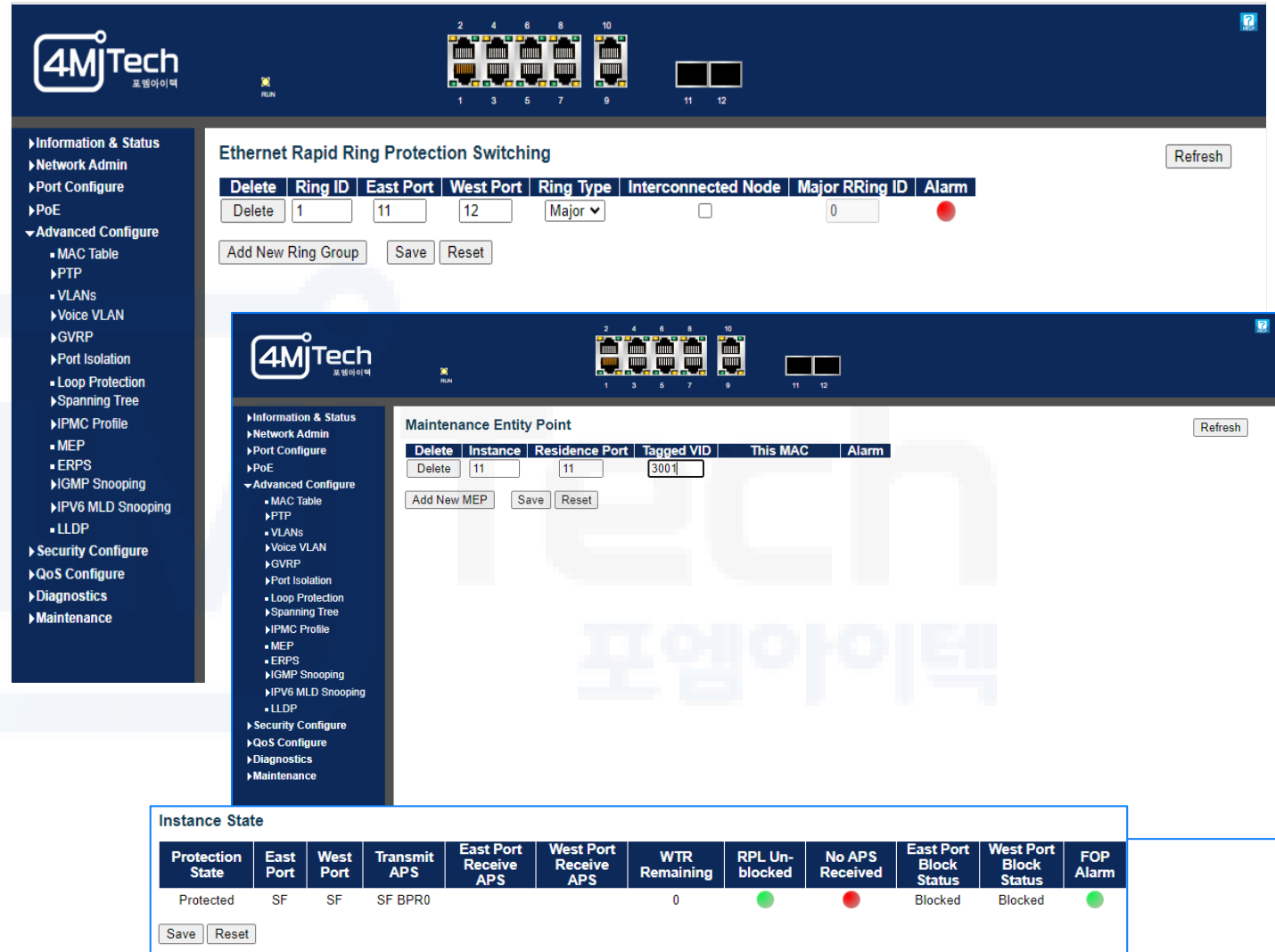
4-4. Advanced Configure

4-4-4. ERPS

- ① Advanced Configure > Spanning Tree > CIST Ports로 이동
- ② STP Enabled에서 전체 체크 해제
- ③ 'Save' 버튼으로 저장
- ④ Advanced Configure > ERPS로 이동
- ⑤ 'Add New Ring Group' 선택
- ⑥ Ring ID(1) / East Port(11) / West Port(12) 입력
- ⑦ 'Save' 버튼으로 저장
- ⑧ Ring ID 버튼 선택하여 세부 설정으로 이동
- ⑨ RPL Role / RPL Port 선택 후 저장
- ⑩ Advanced Configure > MEP로 이동
- ⑪ Add New MEP 선택
- ⑫ Instance(11) / Residence Port(11) / Tagged VID(3001) 입력 > 저장
- ⑬ Add New MEP 선택
- ⑭ Instance(12) / Residence Port(12) / Tagged VID(3001) 입력 > 저장

※ <Protection State>

Idle = 정상 / Protected = 보호중 / pending = 복구(확인) 중



The screenshot shows the 4M Tech web interface for configuring ERPS. The left sidebar contains a navigation menu with categories like Information & Status, Network Admin, Port Configure, PoE, Advanced Configure, Security Configure, QoS Configure, Diagnostics, and Maintenance. The main content area is divided into two sections: 'Ethernet Rapid Ring Protection Switching' and 'Maintenance Entity Point'.

Ethernet Rapid Ring Protection Switching

Delete	Ring ID	East Port	West Port	Ring Type	Interconnected Node	Major RRing ID	Alarm
Delete	1	11	12	Major	☐	0	●

Buttons: Add New Ring Group, Save, Reset

Maintenance Entity Point

Delete	Instance	Residence Port	Tagged VID	This MAC	Alarm
Delete	11	11	3001		

Buttons: Add New MEP, Save, Reset

Instance State

Protection State	East Port	West Port	Transmit APS	East Port Receive APS	West Port Receive APS	WTR Remaining	RPL Un-blocked	No APS Received	East Port Block Status	West Port Block Status	FOP Alarm
Protected	SF	SF	SF BPR0			0	●	●	Blocked	Blocked	●

Buttons: Save, Reset

4. 설정

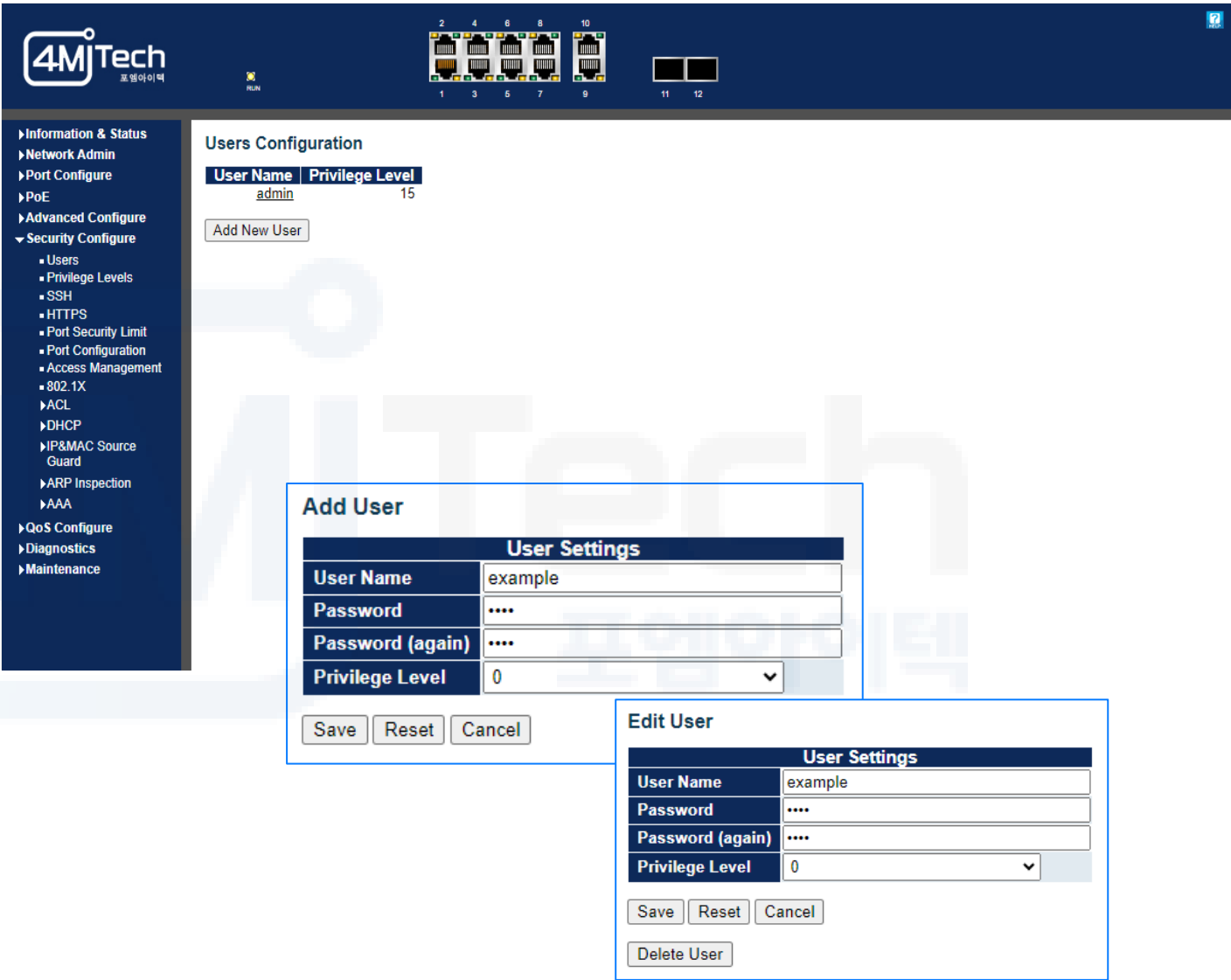
4-5. Security Configure

4-5-1. User(계정 생성/변경/삭제)

- ① Security Configure > Users로 이동
- ② Add New User 선택
- ③ User Name 및 Password 입력 / 권한 선택
- ④ 변경을 원하는 계정 선택
- ⑤ 변경사항 입력 및 선택 후 저장
- ⑥ 삭제를 원하는 계정 선택
- ⑦ 'Delete User' 선택 > 확인

※ 15가 가장 높은 권한.

※ admin 계정은 이름을 변경하거나 삭제할 수 없음.



Users Configuration

User Name	Privilege Level
admin	15

[Add New User](#)

Add User

User Settings	
User Name	example
Password	****
Password (again)	****
Privilege Level	0

[Save](#) [Reset](#) [Cancel](#)

Edit User

User Settings	
User Name	example
Password	****
Password (again)	****
Privilege Level	0

[Save](#) [Reset](#) [Cancel](#)

[Delete User](#)

4. 설정

4-5. Security Configure

4-5-2. Port Configuration

- ① Security Configure
 - > Port Configuration
- ② 각 모드의 사용 여부 및 포트 번호
입력 후 저장



The screenshot shows the 4M Tech web interface for network configuration. The top header includes the 4M Tech logo, a status indicator, and a network diagram showing 12 ports. The left sidebar contains a navigation menu with the following items:

- Information & Status
- Network Admin
- Port Configure
- PoE
- Advanced Configure
- Security Configure (expanded)
 - Users
 - Privilege Levels
 - SSH
 - HTTPS
 - Port Security Limit
 - Port Configuration
 - Access Management
 - 802.1X
 - ACL
 - DHCP
 - IP&MAC Source Guard
 - ARP Inspection
 - AAA
- QoS Configure
- Diagnostics
- Maintenance

The main content area displays three configuration sections:

HTTP Configuration

Mode: Enabled 80

SSH Configuration

Mode: Enabled 22

TELNET Configuration

Mode: Enabled 23

4. 설정

4-5. Security Configure

4-5-3. Access Management

- ① Security Configure
 - > Access Management로 이동
 - ② Mode를 Enable로 변경
 - ③ 접속을 허용할 IP 또는 범위 입력
 - ④ 허용할 프로토콜 선택
 - ⑤ 'Save'버튼으로 저장
- ※ Start IP Address와 End IP Address에
동일한 IP 입력 시 해당 1개 IP만 접속 허용

The screenshot shows the 'Access Management Configuration' page of the 4M Tech web interface. The left sidebar contains a navigation menu with 'Security Configure' expanded, showing 'Access Management' as the selected option. The main content area has a 'Mode' dropdown set to 'Enabled'. Below this is a table for configuring access management entries. The table has columns for 'Delete', 'VLAN ID', 'Start IP Address', 'End IP Address', 'HTTP/HTTPS', 'SNMP', and 'TELNET'. A single entry is shown with 'VLAN ID' 1, 'Start IP Address' 0.0.0.0, and 'End IP Address' 0.0.0.0. Below the table are buttons for 'Add New Entry', 'Save', and 'Reset'.

Delete	VLAN ID	Start IP Address	End IP Address	HTTP/HTTPS	SNMP	TELNET
Delete	1	0.0.0.0	0.0.0.0	☐	☐	☐

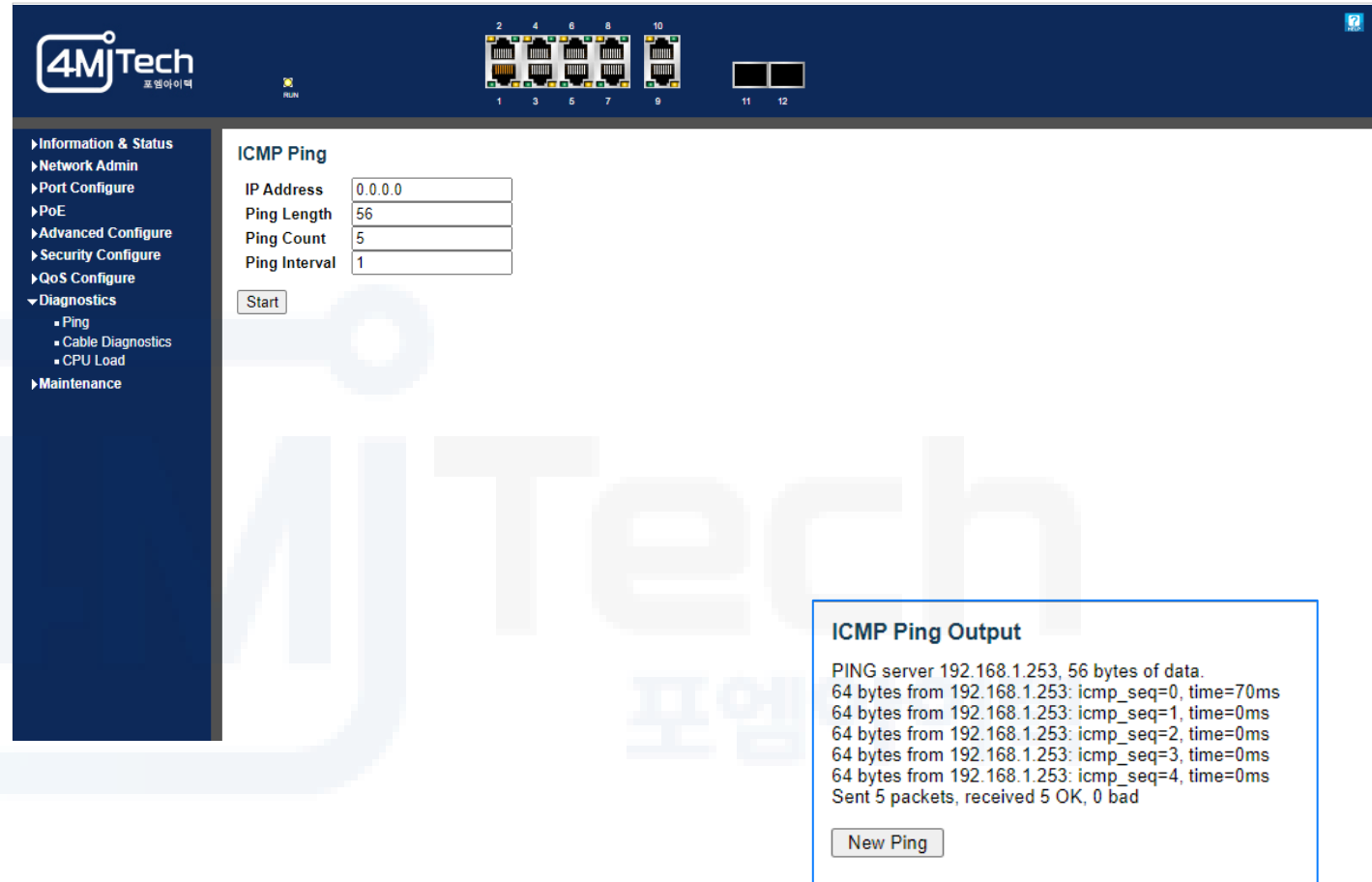
Buttons: Add New Entry, Save, Reset

4. 설정

4-6. Diagnostics

4-6-1. Ping

- ① Diagnostics > Ping으로 이동
- ② Ping을 보낼 IP 주소 입력
- ③ 결과 확인



The screenshot shows the 4M Tech web interface. The top navigation bar includes the 4M Tech logo, a status indicator, and a network diagram showing ports 1 through 12. The left sidebar contains a menu with the following items: Information & Status, Network Admin, Port Configure, PoE, Advanced Configure, Security Configure, QoS Configure, Diagnostics (selected), and Maintenance. Under Diagnostics, there are sub-items: Ping, Cable Diagnostics, and CPU Load. The main content area is titled 'ICMP Ping' and contains the following fields:

- IP Address: 0.0.0.0
- Ping Length: 56
- Ping Count: 5
- Ping Interval: 1

Below these fields is a 'Start' button. A 'New Ping' button is located at the bottom right of the output box.

ICMP Ping Output

```

PING server 192.168.1.253, 56 bytes of data.
64 bytes from 192.168.1.253: icmp_seq=0, time=70ms
64 bytes from 192.168.1.253: icmp_seq=1, time=0ms
64 bytes from 192.168.1.253: icmp_seq=2, time=0ms
64 bytes from 192.168.1.253: icmp_seq=3, time=0ms
64 bytes from 192.168.1.253: icmp_seq=4, time=0ms
Sent 5 packets, received 5 OK, 0 bad
    
```

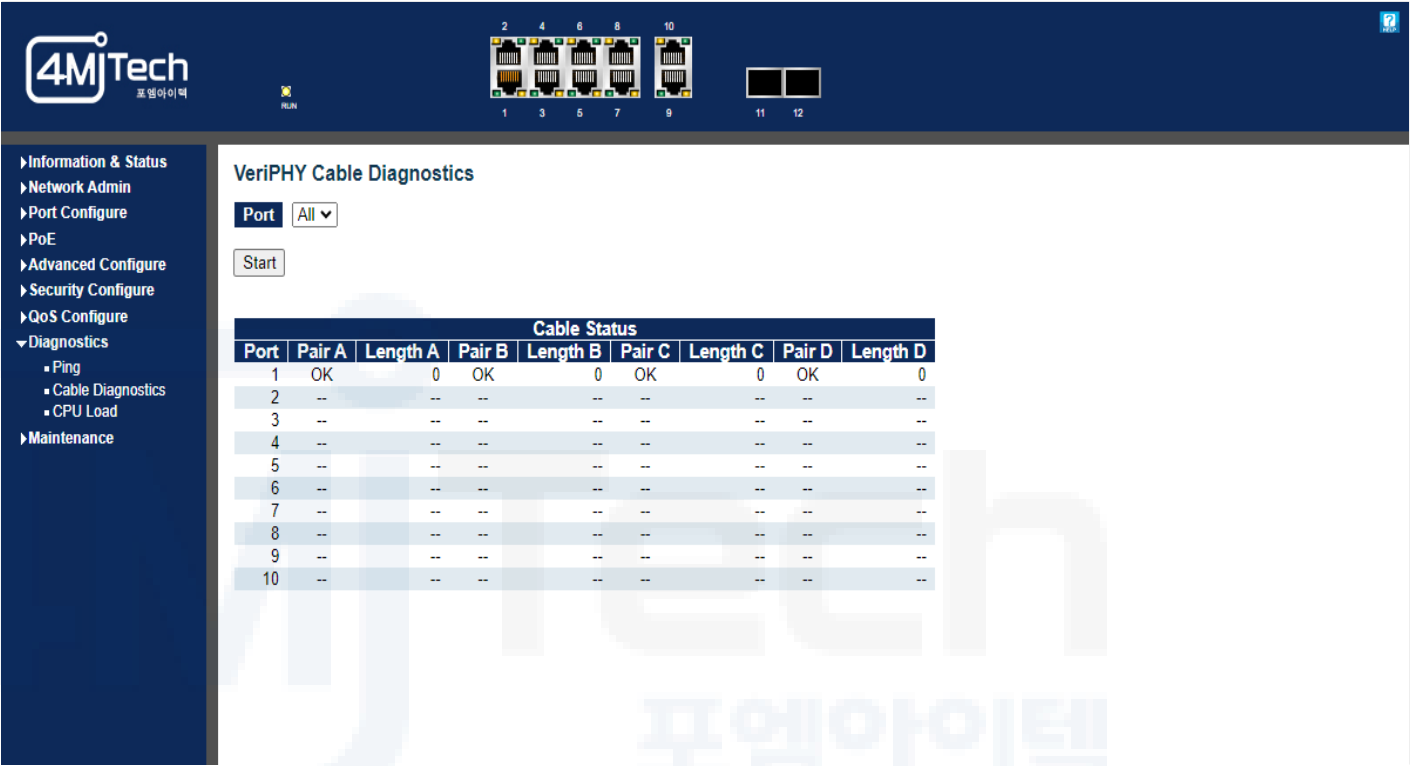
4. 설정

4-6. Diagnostics

4-6-2. Cable Diagnostics

- ① Diagnostics > Cable Diagnostics
- ② 케이블을 점검할 포트번호 선택
- ③ 결과 확인

※ Pair A = 1, 2
 Pair B = 3, 6
 Pair C = 4, 5
 Pair D = 7, 8



Cable Status								
Port	Pair A	Length A	Pair B	Length B	Pair C	Length C	Pair D	Length D
1	OK	0	OK	0	OK	0	OK	0
2	--	--	--	--	--	--	--	--
3	--	--	--	--	--	--	--	--
4	--	--	--	--	--	--	--	--
5	--	--	--	--	--	--	--	--
6	--	--	--	--	--	--	--	--
7	--	--	--	--	--	--	--	--
8	--	--	--	--	--	--	--	--
9	--	--	--	--	--	--	--	--
10	--	--	--	--	--	--	--	--

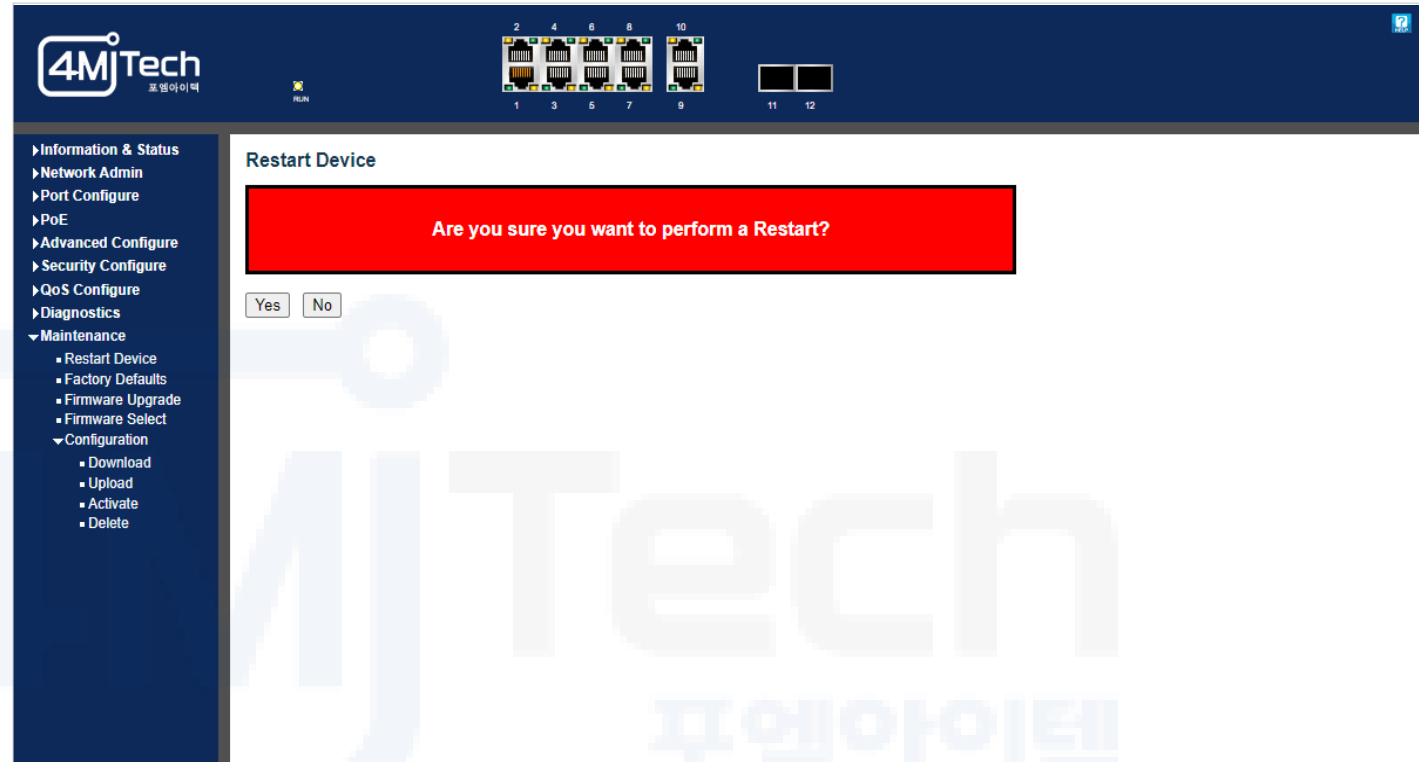
4. 설정

4-7. Maintenance

4-7-1. Restart Device

- ① Maintenance > Restart Device로 이동
- ② 'Yes' 버튼 선택

※ 저장하지 않은 모든 설정은 재부팅 후
무효화 됨.



4. 설정

4-7. Maintenance

4-7-2. Factory Defaults

- ① Maintenance > Factory Defaults로 이동
- ② 'Yes' 버튼 선택

※ 모든 설정은 초기화 되고 startup-config로 시작됨.



Thank you