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Log into the Switch Web Interface

The default management address of the switch is 192.168.10.12/24, when logging into the web management page of the switch, you need to set the IP address of the local network card and the IP address of the switch are in the same segment, as shown in the following screen: the IP address of the local network card is set to 192.168.10.222/24.

Obtain an IP address aut	tomatically
Use the following IP addr	ess:
IP address:	192 . 168 . 10 . 222
S <u>u</u> bnet mask:	255 . 255 . 255 . 0
Default gateway:	

Enter the management address of the switch in the search bar of the browser, screen as

below:

- 🗋	☑ 192.168.10.12	5	2 >	S	Control 1
Ccisco	http://192.168.10.12/	http://192.168.10.12/login.html			

Confirm to enter the web verification page of the switch.



User Name: admin

Password: admin.

Click login to login to the web interface of the switch.

Switch Information

This module is used to view the internal data of the switch when it is running, including the flow rate of the port, the working mode, and the log information of the switch.

Global Information

Ports Status	
Global Info	
Product Model	\$2100_8GP_2F
Serial Number	SN0000000
MAC Address	00:11:22:33:44:55
Firmware Version	V1.0.1.1-g012940b
Uptime	0 Day 0 Hours 14 Minutes
System Time	1970-01-01 12:57:26 Synchronise system time
System load	
(28° 780 7%° 7%°

The following functions are in included:

1 View the current port status, port working mode and port speed of the switch. Move the



icon and he port name, status, bandwidth, duplex mode, and rate will be

displayed.



3 To check the CPU and memory usage of the switch.



Statistical Information

To check the message data received and sent by various ports, including Basic Packet

Statistics, Detailed Packet Statistics, MAC Frame Length Statistics and MAC Frame Error Statistics.

view Switching:	Statistics from	m last clear-up 🗸						
Port	Rx Bytes	Rx Packets	Rx Dropped	Rx Errors	Tx Bytes	Tx Packets	Tx Dropped	Tx Errors
G1	1132475	6486	232	0	1703815	6079	0	0
G2	0	0	0	0	0	0	0	0
G3	0	O	0	0	0	0	0	0
G4	752996	4382	169	0	1007070	4049	0	0
G5	0	0	0	0	0	0	0	0
G6	0	0	0	0	0	0	0	0
G7	0	0	0	0	0	0	0	0
G8	0	0	0	0	0	0	0	0
G9	0	0	0	0	0	0	0	0
G10	0	0	0	0	0	0	0	0

Log Information

Log is used to view simple switch log, and can view switch startup and port startup data,

screen as blew:

Index	System Time	Log Level	Туре	Module	Param	Log Content	
i -	1970-01-01 12:53:53	alert	Link	PORT	G4	Interface [G4] state change to up.	
2	1970-01-01 12:53:50	alert	Link	PORT	G1	Interface [G1] state change to down.	
3	1970-01-01 12:53:17	event	Login	System	User	User admin login form ip [192.168.10.88]	
1	1970-01-01 12:45:18	event	Login	System	User	User admin login form ip [192.168.10.88]	
5	1970-01-01 12:43:15	alert	Link	PORT	G1	Interface [G1] state change to up.	
5	1970-01-01 12:43:13	alert	Link	PORT	G1	Interface [G1] state change to up.	
7	1970-01-01 12:39:58	alert	Link	PORT	G1	Interface [G1] state change to up.	
3	1970-01-01 10:23:29	alert	Link	PORT	G1	Interface [G1] state change to down.	
9	1970-01-01 09:30:30	event	Login	System	User	User admin login form ip [192.168.10.88]	
10	1970-01-01 08:00:32	alert	Link	PORT	G1	Interface [G1] state change to up.	
11	1970-01-01 08:00:31	alert	PoE	POE		POE chip detects error, poe process exits.	
40	1070 01 01 09:00:00	alast	Link	DODT	04	Interface (C1) state shange to up	

Alarm List

This page is used to view the alarm information of the switch;

Index System Time Log Level Type Module Param Log Content	
---	--

Port Management

Port Configuration

In this page, you can set the port rate, duplex mode, the max frame length (the value range is 1518-10240), flow control and switch port.

In the link status, indicates that the port is not connected, or the port has been manually down. When the link status is or , it indicates that the port is working normally, the color is the port working mode (green is Gigabit, yellow is 100MB).

On this page, you can not only view the port link status and port working mode, but also set the port working mode, such as "100MB full / half duplex", "Gigabit full / half duplex" and "adaptive". You can also close the specified port through this page, which is the same as the command "shut down".

For the frame size setting, the default is basic frame 1522, which can be modified to super long frame 9600. The value range of this item is 1518-10240.

Name	State	Medium	Speed	Duplex	Flowctl State	Speed Config	Max Frame	Flowctl	Enable
Select All						Auto 🗸		0	
G1	*	COPPER	1000M	Half	*	Auto 🗸	1518	0	
G2	*	COPPER	1000M	Full	*	Auto 🗸	1518	0	
G3	*	COPPER	1000M	Full	*	Auto 🗸	1518	0	
G4	٠	COPPER	1000M	Full	*	Auto 🗸	1518	0	
G5	*	COPPER	1000M	Full	*	Auto 🗸	1518	0	
G6	*	COPPER	1000M	Full	*	Auto 🗸	1518	0	
G7	*	COPPER	1000M	Full	*	Auto 🗸	1518	0	
G8	*	COPPER	1000M	Full	*	Auto 🗸	1518	0	
G9	*	FIBER	1000M	Full	*	Auto 🗸	1518	0	
G10	*	FIBER	1000M	Full	*	Auto 🗸	1518	0	
						Δορίγ			

Port Isolation

This page is used to configure the port isolated. The isolated ports cannot communicate with

each other, and the isolated ports can communicate with other non isolated ports.

Select All	All Not Isolatio 🖌		
Name	Port Isolate	Name	Port Isolate
G1	0	G2	0
G3	0	G4	0
G5	0	G6	0
G7	0	G8	0
G9	0	G10	0
n: Unable to communicate h	netween isolated note		

Tip: Isolated ports can communicate with other devices

Mirroring Port

This page is used to configure the mirr	or port,	Mirror Destination Port	None M	irror 🗸
is used to configure to accept mirror data.	Mirror Dest	ination Port	None Mirror 🗸	is used
				is used

to configure all port mirroring properties in one step.

The configuration representative in the following page mirrors the sent message data of port

4 to port 1, screen as blew:

Mirror Destination Port	G1 👻	Port Config	None Mirror 👻
Port	Mirror Direction	Port	Mirror Direction
G1	None Mirror 🗸	G2	None Mirror 🗸
G3	None Mirror 🗸	G4	Tx Mirror 🗸
G5	None Mirror 🗸	G6	None Mirror 🗸
G7	None Mirror 🗸	G8	None Mirror 🗸
G9	None Mirror 🗸	G10	None Mirror 🗸

Apply

Rate Limited

This page is used to limit the upper limit of port rate;

Port	Ingress Rate(kbps)	Ingress Burst Size (Kbits)	Egress Rate(kbps)	Egress Burst Size (Kbits
*	Global Config	Global Config	Global Config	Global Config
G1	0	2048	0	2048
G2	0	2048	0	2048
G3	0	2048	0	2048
G4	0	2048	0	2048
G5	0	2048	0	2048
G6	0	2048	0	2048
G7	0	2048	0	2048
G8	0	2048	0	2048
G9	0	2048	0	2048
G10	0	2048	0	2048

Cancel Apply

Storm Control

This page is used to limit the packet rate of port broadcast, multicast and unicast,

Port	Broadcast(pps)	Multicast(pps)	Unknown Unicast(pp:		
*	Global Config	Global Config	Global Config		
G1	0	0	0		
G2	0	0	0		
G3	0	0	0		
G4	0	0	0		
G5	0	0	0		
G6	0	0	0		
G7	0	0	0		
G8	0	0	0		
G9	0	0	0		
G10	0	0	0		

Cancel Apply

Port Energy Saving

This function is used to open the energy saving mode of switch port, screen as blew:

Select All	0		
Name	EEE	Name	EEE
G1	0	G2	0
G3	0	G4	0
G5	0	G6	0
G7	0	G8	0
		Apply	

PoE

PoE Port Configuration

You can view the working status of the port PoE and the current voltage and current data

Port	linkState	Power Supply State	Voltage(V)	Current(mA)	Power(w)	Priority	E
Select All						low 🗸	
G1	*	4	0	0	0	middle 🗸	
G2	*	4	0	0	0	middle 🗸	
G3	*	4	0	0	0	middle 🗸	
G4	*	4	0	0	0	middle 🗸	
G5	*	4	0	0	0	middle 🗸	
G6	*	4	0	0	0	middle 🗸	
G7	*	4	0	0	0	middle 🗸	
G8	*	4	0	0	0	middle 🗸	

In the link column of the page, indicates that the port has no data transmission, indicates that the port is in forwarding state, in the power supply status column indicates that the port is not PoE powered, and indicates that the port is in PoE power supply state. The voltage, current, and power columns respectively display the voltage, current and power provided by the POE power supply port. The priority column is used to change the PoE power supply priority of the switch port. When the overall power is insufficient, the port with higher priority will give priority to power supply. The startup bar is used to enable the port PoE function.

Devices Power Supply

This page is used to set the total output power of the switch, with a value range of 60 \sim 300W. It can also be used to view the total output power and chip temperature of the current switch.

provided, screen as blew:

	1616-000
Total Power: 0 (W)	

Timing Power Supply Configuration

Configure the periodic outage period or specific outage time of the switch.

ADD Time Range	
Name	Add
Config the time	
Time-Range Name	Del Del Del
Start Time	yyyy-MM-dd HH:mm
End Time	yyyy-MM-dd HH:mm
Time	HH:mm - HH:mm
Week	Sun Mon Tue Wed Thu Fri Sat

Apply the set power-off time to the port, and turn on this function by default for all ports.

Port	linkState	Power Supply State	Voltage(V)	Current(mA)	Power-off Time Range	Timing Power Sup
Select All					•	
G1	*	4	0	0	~	
G2	*	4	0	0		
G3	*	4	0	0	~	
G4	*	4	0	0	•	
G5	*	4	0	0	~	
G6	*	4	0	0		
G7	*	4	0	0	~	
G8	*	4	0	0	~	

Intelligent Power Supply Configuration

Set PoE port to automatically disconnect power supply when there is no data transmission within a certain period of time. The default value is that when there is no data transmission in 120 seconds, the POE port will disconnect the power supply, and the value range is 60 ~ 600 seconds.

PoE AI		Notice: OneKey PoE AI enabled automaticall
Zero Flow Interval	120	Range: 60-600 (S)
Notice: Port's zero flow automatic detection, if more th nterrupt the port's PoE power supply, 10 seconds late	in the zero flow interval, then restart it's power supply again.	

Open the port intelligent power supply function, which is all on by default.

PoE AI config	Al Port config				
		Port			Al Port
	Se	elect All			
		G1			
		G2			
		G3			
		G4			
		G5			
		G6			
		G7			
		G8			
				Apply	

L2 Management

MAC address table

Check the MAC address of the device mounted on the switch

Add	Del Expired Time(s):						
	Index	MAC Address	vlan	Port	Ту	pe	
0	1	00-26-9e-f6-93-f5	1	G4	dynamic	Bind	

VLAN Configuration

This page includes viewing VLAN State, VLAN Configuration, Voice VLAN Configuration, MAC

VLAN configuration and IP VLAN configuration.

Screen as blew:

Vlan State	Vlan Config	Vlan Config Voice VLAN Config MAC VLAN Config IP VLAN Config				ig				
Vian					î.	Port				
Vian	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10
1	0	0	U	O	0	U	U	O	U	0

Vlan State	Vlan Config	Voice VLAN Config	MAC VLAN Config	IP VLAN Config		
Port		Vian Mode	P	DIV	vlan untag	vlan tag
Select All	1	nybrid 🗸				
G1	a la	access 🗸		1	1	
G2	a	access 🗸		1	1	
G3	a	access 🗸		1	1	
G4	a	access 🗸		1	1	
G5		access 🗸		1	1	
G6	a	access 🗸		1	1	
G7	a	access 🗸		1	1	
G8	a	access 🗸		1	1	
G9	a	access 🗸		1	1	
G10	a	access 🗸		1	1	

The screen below shows the configuration of port VLAN;

Port properties that can be set:

Access:

Access ports are normally used to connect to end stations. Dynamic features like voice VLAN

may add the port to more VLANs behind the scenes. Access ports have the following

characteristics:

- •Member of exactly one VLAN, the Port VLAN (Access VLAN), which by default is 1.
- •Accepts untagged and C-tagged frames.
- Discards all frames that are not classified to the Access VLAN

•On egress all frames classified to the Access VLAN are transmitted untagged.

The access port is usually used to connect to the terminal station. For example, the dynamic characteristics of voice VLAN can add ports to multiple VLANs behind the scenes. The access port has the following characteristics:

•There is only one VLAN, port VLAN (also known as access VLAN), which is a member of 1 by default.

accept unlabeled frames and C-labeled frames,

• Drop all frames in unclassified access VLAN,

•All frames to the exit are sent unmarked.

Trunk:

The trunk port can traffic multiple VLANs at the same time and is usually used to connect to other switches. The trunk port has the following features:

• by default, the trunk port is a member of all existing VLANs. This can be achieved by using a limited number of VLANs.

•Unless enabled on the port of VLAN relay, divided into different VLANs, and the frame of

that the port is not a member will be discarded.

•By default, all frames, but VLAN (also known as local VLAN) frame tags classified into ports get about exits. The frames classified to the port VLAN do not get the exit of c-tag,

•The exit marker can change all frames of the marker, in which case only the entry of the marked frame is accepted,

•VLAN trunking may be enabled.

Hybrid:

The hybrid port is similar to the trunk port in many ways, but adds additional port configuration capabilities. In addition to the characteristics described for the relay port, the hybrid port also has the following capabilities:

•It can be configured as VLAN tag or unknown, C-tag all, S tag all, or S-custom tag all.

•The inlet filtration can be controlled.

•The exit annotation and configuration of the access frame can be configured independently.

Port VLAN: Determine the VLAN ID (also known as PVID) of the port. The allowable VLAN

range is 1 to 4095, and the default is 1.

Voice VLAN configuration's screen as blew:

Vlan State	Vlan Config	Voice VLAN Config	MAC VLAN Config	IP VLAN Config			
The corre	sponding port un	ntagged belongs to the v	an function to take effe	ct; port receives the n	nessage, match the conditio	ons set will enter the corresp	onding VLAN
Enable vo	ice vlan			0			
Vlan id				1	range: 1-4094		
cos				5	range: 0-7		
dscp				46	range: 0-63		
				Set			
Voice vlar	MAC						
MAC					For Example	e: 00-01-02-03-04-05	
MAC mas	ĸ				For Example	e: fc-ff-ff-00-00-00	
				Add			
No		MAC		MAC mask			

Enable Voice VLAN, the Access port will carry the IP voice traffic from the IP phone. When

the switch is connected to Cisco IP phone (such as Cisco 7960 IP phone), the voice traffic sent by

IP phone has three layers of IP priority and two layers of CoS value, which are set to 5 by default.

For IEEE 802.1Q or IEEE 802.1p tagged traffic, the default cos value is untrusted.

Configure VLAN based on MAC address, screen as blew:

Vlan State	Vlan Config	Voice VLAN Config	MAC VLAN Config	IP VLAN Config]	
Vlan id MAC					range: 1-4094	For Example: 00-01-02-03-04-05
				Add		
No		VID		MAC		
			Nor	matching records found	ſ.	

Configure VLAN based on IP, screen as blew:

Vlan State	Vlan Config	Voice VLAN Config	MAC VLAN Config	IP VLAN Config		
Vlan id					range: 1-4094	
IP						For Example: 10.1.1.0/2
				Add		
No		VID		IP		
			Nor	natching records found		

GVRP

Enable the GVRP function, screen as blew:

Global Config	Port Config	GVRP Statistics	
Enable GVR	•		0
Create Dyna	mic VLAN		0
			Apply

The enabled GVRP function is applied to the designated port and configure its timer.

Port	Enable GVRP	Registration Mode	Applicant State	Join Timer(cs)	Leave Timer(cs)	LeaveAll Timer(cs
Select All	0	normal 🗸	normal 🗸			
G1	0	normal 🗸	normal 🗸	20	60	1000
G2	0	normal 🗸	normal 🗸	20	60	1000
G3	0	normal 🗸	normal 🗸	20	60	1000
G4	0	normal 🗸	normal 🗸	20	60	1000
G5	0	normal 🗸	normal 🗸	20	60	1000
G6	0	normal 🗸	normal 🗸	20	60	1000
G7	0	normal 🗸	normal 🗸	20	60	1000
G8	0	normal 🗸	normal 🗸	20	60	1000
G9	0	normal 🗸	normal 🗸	20	60	1000
G10	0	normal 🗸	normal 🗸	20	60	1000



Used to view the operation information of GVRP.

Global Config	Port Config	GVRP Sta	atistics							
Port	JoinEmpty Rx	Joinin Rx	LeaveEmpty Rx	Leaveln Rx	Empty Rx	JoinEmpty Tx	JoinIn Tx	LeaveEmpty Tx	Leavein Tx	Empty Tx
				No m	atching records	found				

Link Aggregation

On this page, you can configure static aggregation groups, dynamic aggregation groups, and view link aggregation information;

Static aggregation configuration: click create static aggregation group TID value range is (1-4), that is, up to 4 static aggregation groups can be created.

Port Member: Port join aggregation must be the same speed and full duplex

This switch supports 32 groups of aggregation, each group supports up to 8 ports. To configure an aggregation group, just select the convergence port to the same line group number, as shown in Figure 21: 1-2 ports converge in a group; 3-4 ports in a group. Please keep configuration consistency for the ports of aggregation group members, such as port rate mode, VLAN information, etc.

Link aggregation load balancing mode supports:

"Source MAC address" (load balancing calculation based on source MAC address of message)

"Destination MAC address" (load balancing calculation based on the destination MAC address of the message), "

"IP address" (the source IP address and the destination IP address of the message are XOR, and then the load balancing calculation is performed)

"TCP / UDP port number" (load balancing calculation is based on the TCP / UDP port number of the message).

Four modes can be selected and combined. The assignment of equalization algorithm is global.

If LACP dynamic aggregation protocol is enabled on some ports, static aggregation cannot be configured manually.

Note:

Static aggregation on the same port cannot be configured simultaneously with dynamic LACP aggregation.

							,				
Est	ablish	Del						Loa	d balancing model:	SRC&DST	MAC
_	Trunk					F	ort				
	ITUIK	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10
	NOt Trunk	0	0	0	0	0	0	0	0	0	0
						No matching reco	ords found				
1	100		10.921			Apply					
E	ista	blish T	Гid		_	Арріу					1
E	id:	blish T	[1-4				_				

Configure dynamic aggregation port as blew:

Static aggreg	ation config	Dynamic	aggregation config	Link Aggregation Inform	nation		
System ID:	00- <mark>11-</mark> 22-33-4	4-55	System Priority:	32768 Set			
Nam	e	Activit	ty Mode	Send Mode	Port Priority	Key Value	Enabled
Select	All		~		1-65535	0-65535	0
G1			~	- •	32768	0	0
G2			~	- *	32768	0	0
G3			~		32768	0	0
G4			~		32768	0	0
G5			~	•	32768	0	0
G6			~		32768	0	0
G7			~	•	32768	0	0
G8			~		32768	0	0
G9			~	•	32768	0	0
G10			~	*	32768	0	0

Link aggregation information: view switch aggregation port information.

The switch supports port dynamic aggregation. After enable the dynamic protocol of the port, the devices on both sides of the convergence exchange information through the protocol. According to the parameters and status of both sides, the matching links are automatically gathered together to send and receive data. After the convergence is formed, the switching equipment maintains the convergence link state, and automatically adjusts or disbands the aggregation link when the configuration of both sides changes.

The configuration parameters of dynamic protocol include protocol switch state, key negotiation and active / passive mode selection. Only when the dynamic protocol is turned on can the dynamic negotiation be carried out, which may lead to the formation of aggregation links.

The key is the basis of negotiation. Only the ports with the same key can negotiate to form an aggregation link. The negotiation mode is "active | passive". When "active" is selected, the device will actively initiate aggregation negotiation; when "passive" is selected, the device will passively accept the aggregation negotiation initiated by other devices. If some ports have been converged statically, the dynamic convergence of LACP cannot be realized.

Note: dynamic LACP aggregation and static convergence on the same port cannot be

configured at the same time

atic aggreg	gation config	Dynamic aggregation	n config	Link Aggr	egation	Information					
Trunk	Mode		Numt	per Ports			Port List		Loa	d Balancing	
			Local					Peer			

MSTP Configuration

Global configuration: select the spanning tree protocol version (STP / RSTP / MSTP is

optional), MSTF	protocol is selected by	y default.
-----------------	-------------------------	------------

Enable Span	ning-tree	0	
Protocol Ver	sion	⊖ stp⊖rstp●m	stp
Max Age		20	range : 6-40
Hello Time		2	range : 1-10
Forward Dela	ау	15	range : 4-60
Max Hops		20	range : 1-40
Revision Lev	vel	0	range : 0-65535
Configuratio	n Name	001122334455	Less than 32 Byte

An example of configuring MSTP:

Set the mapping VLAN of multi spanning tree.

Configuration name: identifies the name of the VLAN to MSTI mapping, the bridge must

share the name and revision (see below), and the VLAN-to-MSTI mapping configuration in order to share the MSTI spanning tree. (within region) the name is up to 32 characters.

Configuration version: revision of MSTI configuration above. It must be an integer between 0 and 65535.

Mapped VLANs: a list of VLANs mapped to MSTI. VLANs must be separated by commas and / or spaces. VLAN can only be mapped to one MSTI. An unused MSTI should remain empty. (that is, no VLAN is mapped to it).

Global Config	Instance Config	Interface Instance Config	Interface Config		
MSTI ID				1 *	
Priority					For example: 0-61440, the default 32768, step 4096
Vlan Mapped				0.10.15	Separated by a space, with '-' said range. Such as: 2 4-
			A	dd	
	0.000.00.44.00.00.4				2
Designated Root	8.000.00:11:22:33:4	4:55 Root Port	none Root Pa	th Cost	0

No	MSTI ID	Priority	Vian Mapped	Bridge ID	Regional Root	Internal Path Cost	Time Since Topo-change	Topo- change Count		
1	0	32768	1-4094	8.000.00:11:22:33:44:55	8.000.00:11:22:33:44:55	0	0	0	Set	

Interface instance configuration: configure the enable of the instance on the port. Screen as

blew:

TI ID: 0	•)							
Interface	Ports List	Enable	MSTI ID	Priority	Admin Cost	Oper Cost	Role	State
Select All								
G1	G1	*	0	128	0	20000	Disabled	forwardin
G2	G2	*	0	128	0	200000000	Disabled	forwardir
G3	G3	*	0	128	0	200000000	Disabled	forwardir
G4	G4	*	0	128	0	20000	Disabled	forwardin
G5	G5	*	0	128	0	20000000	Disabled	forwardin
G6	G6	*	0	128	0	200000000	Disabled	forwardin
G7	G7	*	0	128	0	200000000	Disabled	forwardir
G8	G8	*	0	128	0	20000000	Disabled	forwardir
G9	G9	*	0	128	0	20000000	Disabled	forwardir
G10	G10	*	0	128	0	20000000	Disabled	forwardir

Interface configuration: configure the enabled port of spanning tree protocol and the

enabled port of BPDU message. Screen as blew:

Interface	Ports List	BPDU Guard	Admin I	Edge	Oper Edge	Admin Point	-to-Point	Oper Point-to-Point
Select All		0	Auto	~		Auto	~	
G1	G1	0	Auto	~	NO	Auto	~	Yes
G2	G2	0	Auto	~	NO	Auto	~	NO
G3	G3	0	Auto	~	NO	Auto	~	NO
G4	G4	0	Auto	~	NO	Auto	~	Yes
G5	G5	0	Auto	~	NO	Auto	~	NO
G6	G6	0	Auto	~	NO	Auto	~	NO
G7	G7	0	Auto	~	NO	Auto	~	NO
G8	G8	0	Auto	~	NO	Auto	~	NO
G9	G9	0	Auto	~	NO	Auto	~	NO
G10	G10	0	Auto	~	NO	Auto	~	NO

Loop Protection

Global Configuration: enable and set loop protection, screen as blew:

Global Config Port Config	
Enable	0
Tx interval	1 range : 1-10 s
Port Auto-Recover Time	3 s. Blocked port will recover if not received PDU while timer expires
	Apply

Port Configuration: enable the loop protection function on the port.

The loop protection includes double fiber ring protection and four fiber ring protection.

The unidirectional ring is usually composed of two optical fibers, one of which is the working fiber, represented by S; the other is the protective fiber, represented by P. Protection switching is accomplished by a reverse switch.

In addition to the unidirectional switching ring, there are also bidirectional multiplexer switching double fiber ring and bidirectional multiplexing segment switching four fiber ring. But the analysis shows that the unidirectional path switching double fiber ring is the best considering the node cost, system complexity and product compatibility.

The working mode is divided into recovery mode and non recovery mode. In the recovery mode, when the working section has recovered from the failure state, the working path automatically switches back to the working section. In the non recovery mode, even if the

working section has been restored to normal, the working path is still unchanged in the

protection section. Generally, 1 + 1 protection can work in both recovery mode and non recovery

mode, while 1: N protection can only work in recovery mode.

Port	Enabled	tx	State	Loop
Select All				
G1			Down	*
G2			Down	*
G3			Down	*
G4			Forwarding	*
G5			Down	*
G6			Down	*
G7			Down	*
G8			Down	*
G9			Down	*
G10			Down	*

DHCP-snooping

Global configuration: enable DHCP monitoring function, screen as blew:

Global Config	Static Binding	Port Config	
Enable DHCI	P-Snooping		0
			Apply

Static Binding: configure the static listening port, screen as blew:

IP Address	For Example: 192.168	3.1.1
Port	G1 🗸	
	Add	

Port Configuration: enable DHCP monitoring function on the port, screen as blew:

Port	Untrust	IPS
Select All	0	
G1	0	
G2	0	
G3	0	
G4	0	
G5	0	
G6	0	
G7	0	
G8	0	
G9	0	
G10	0	

IGMP Snooping

IGMP snooping global configuration: configure IGMP monitoring enable and IGMP function

attributes, screen as blew:

IGMP Snoop	ing Global Config	IGMP Snooping VLAN Config	IPv4 Static Multicast			
Enable				0		
Member	Port Aging Time			300 rang	e: 200-1000(Defaults: 300)	
Router P	ort Aging time			105 Unit:	seconds Range: 1-1000 (Default:	105)
			Set			
Index	Vlan Id	Multicast Sour	ce Multicas	st Address	Static Member Ports	Dynamic Member Ports(Aging time)
			No matching record	rds found		

IGMP snooping VLAN configuration: configure static multicast VLAN, screen as blew:

Vlan Id		1	~	
Port Fast Leav	9	0		
Query Source	Address		For Example:	192.168.1.254
Query Interval		10	Unit: seconds	Range: 2-300
Max Response	Time	10	Unit: seconds	Range: 1-25 (default: 10)
Last-Member G	uery interval	1	Unit: seconds	Range: 1-5 (default: 1)
		Set	i i i i i i i i i i i i i i i i i i i	

IPv4 Static Multicast: configure static multicast function and enable port static multicast

function, screen as blew:

IGMP Snooping Global Co	nfig IGMP Snooping V	LAN Config	IPv4 Static M	ulticast	
Vlan Id		1	~		
Multicast Source				For Example: 192.168.1.1	
Multicast Address				For Example: 225.1.2.3	
Port List	Select All	G9 G10			
				Add	
Index VI	an Id	Multicast Sourc	e	Multicast Address	Static Member Ports
			No mate	hing records found	

802.1x authentication

Global configuration: enable 802.1x authentication function.

Radius client address: configure radius authentication client address.

Radius server shared secret key: a secret of up to 29 characters is shared between the server

and the switch.

Radius server timeout: (can be set to a number between 3 and 3600 seconds) It is the

maximum time to wait for a response from the server. If the server does not respond within this

time frame, we will consider it dead and continue to use the next enabled server (if any); the RADIUS server uses the UDP protocol, which is not reliable by design. In order to deal with the lost frames, the super interval is divided into three sub intervals, each of which has the same length. If no response is received within the subinterval, the request is transmitted again. This algorithm will cause radius server to be queried up to three times before it is considered as dead server.

Global Config RADIUS Server Config	Port-based Authentication	Authentication Host	
802.1X Settings			
Enable 802.1X		0	
Auth Method		Port-Auth	•
RADIUS Client Address			For Example : 192.168.200.1
RADIUS Client Port		1812	range : 0-65535 , Defaults 1812
RADIUS Server Key			range : less than 64 characters
RADIUS Server Retransmit		3	range: 1-100, Defaults 3
RADIUS Server Timeout		5	range: 1-1000, Defaults 5
RADIUS Server Deadtime		0	range: 0-1440, Defaults 0
		Apply	

Radius server settings: set radius server attributes.

Radius server address: configure the radius server address.

Radius server port number: configure the radius server port number.

Radius server shared password: a secret of up to 29 characters is shared between the server and the switch.

Radius server retransmission times: configure the radius service death retransmission times.

Radius server timeout: (can be set to a number between 3 and 3600 seconds) is the maximum time to wait for a response from the server. If the server does not respond within this time frame, we will consider it dead and continue to use the next enabled server (if any). The RADIUS server uses the UDP protocol, which is not reliable by design. In order to deal with the lost frames, the super interval is divided into three sub intervals, each of which has the same length. If no response is received within the subinterval, the request is transmitted again. The server will be considered dead before the server is killed at most 3 times.

IP Address	The Port Number	Server Key	Retransmit	Timeout	
		No matchin	ng records found		
dd RADIUS Server					
RADIUS Server Address			For Example : 192.168.	200.1	
RADIUS Server Port		range: 0-65535, Defaults 1812			
RADIUS Server Key range : less than 64 characters				racters	
RADIUS Server Retransmit			range: 1-100, Defaults 3		
RADIUS Server Timeout			range : 1-1000 . Defaul	15.5	

Port-based Authentication: Configure 802.1x authentication port.

Global Cor	nfig RADIUS Se	erver Config Port-ba	sed Authenticatio	n Au	thentication Hos	st				
Port Name	Port Auth Enable	Port Auth Mode	Ctrl Direction	Version	Auth Status	Quiet Period	Reauth Max	EAP Tx Period	Reauth Period	Reauthenti
Select All	0	Force Unauthorized 🗸	Both-dir 🗸	1 🗸						
G1	0	Auto	In-dir 🗸	2 🗸	Uncontrolled	60	2	30	3600	
G2	0	Auto	In-dir 🗸	2 🗸	Uncontrolled	60	2	30	3600	(
G3	0	Auto	In-dir 🗸	2 🖌	Uncontrolled	60	2	30	3600	
G4	0	Auto 🗸	In-dir 🗸	2 🗸	Uncontrolled	60	2	30	3600	
G5	0	Auto	In-dir 🗸	2 🗸	Uncontrolled	60	2	30	3600	
G6	0	Auto	In-dir 🗸	2 🗸	Uncontrolled	60	2	30	3600	(
G7	0	Auto 👻	In-dir 🗸	2 🗸	Uncontrolled	60	2	30	3600	
G8	0	Auto 🗸	In-dir 🗸	2 🗸	Uncontrolled	60	2	30	3600	
G9	0	Auto	In-dir 🗸	2 🖌	Uncontrolled	60	2	30	3600	
G10	0	Auto	In-dir 🗸	2 🗸	Uncontrolled	60	2	30	3600	(

Apply

Authentication Host: View 802.1x authentication host properties.

Global Config	RADIUS Server Config	Port-based Authentic	ation Author	entication Host		
Port-Auth Inform	mation					
User Na	me Po	t Sess	sion Time(s)	Authentication Method	MAC Address	Session State and Reason
			No matchin	g records found		

Senior Management

QOS Configuration

Global Configuration: Enable QoS function and configure QoS function properties.

olicy	● SP ○WRR ○WFQ
Veight	W0: 0 W1: 0 W2: 0 W3: 0
	W4: 0 W5: 0 W6: 0 W7: 0
CoS-Queue Map	Cos 0 V -> Queue 0 V Set
Current Map	0->0 1->1 2->2 3->3 4->4 5->5 6->6 7->
Maps to new DSCP & CoS based on the DSCP in	packet IP header. By default, DSCP & CoS Mapping are not changed.

Port Configuration: Configure the QoS function properties on the port.

Port	Default CoS	Trust Mode
Select All	0 ~	Trust CoS
G1	0	Trust CoS
G2	0	Trust CoS
G3	0 🗸	Trust CoS
G4	0	Trust CoS
G5	0 ~	Trust CoS
G6	0	Trust CoS
G7	0	Trust CoS
G8	0	Trust CoS
G9	0 🗸	Trust CoS
G10	0 🗸	Trust CoS

ACL Configuration

MAC ACL configuration: Configure MAC based ACL access list.

Entry ID				range : 0-31	
Rule ID				range : 0-7	
Action			deny	~	
Source MA	c			For example: 02-02-03-0	4-05-06, do not fill, that "a
Source MA	C MASK			For example: fc-ff-ff-00-0	0-00, do not fill, that "any
Destination	MAC			For example: 02-02-03-0	4-05-06, do not fill, that "
Destination	MAC Mask			For example: fc-ff-ff-00-0	0-00, do not fill, that "any
Time-Range	e Name			✓ It is empty, indicating that	t it is effective anytime
			Add		

No matching records found

IP ACL Configuration: Configure IP based ACL access control list.

MAC ACL CONFIG	IP ACL CONFIG	TIME RANGE CONFIG	ACL GROUP CONFIG	
Entry ID				range : 0-31
Rule ID				range : 0-7
Action			deny	
Protocol			any	
Source IP				For example: xxx.xxx.xxx, do not fill, that "any"
Source mask				For example: xxx.xxx.xxx, do not fill, that "any"
Source Port				Range: 0-65535, is empty, meaning any port
Destination IP				For example: xxx.xxx.xxx, do not fill, that "any"
Purpose mask				For example: xxx.xxx.xxx, do not fill, that "any"
Destination Port				Range: 0-65535, is empty, meaning any port
Time-Range Nam	9			It is empty, indicating that it is effective anytime
			Add	

TIME RANGE Configuration: ACL time range setting.

MAC ACL CONFIG	IP ACL CONFIG	TIME RANGE CONFIG	ACL GROUP CONFIG
ADD Time Range			
Name			Add
Config the time			
Time-Range Name			Del Del Absolute O Periodic
Start Time			yyyy-MM-dd HH:mm
End Time			yyyy-MM-dd HH:mm
Time			HH:mm - HH:mm
Week			Sun Mon Tue Wed Thu Fri Sat
Name		State	Time
			No matching records found

ACL GROUP Configuration: Configure ACL access control list port group.

MAC ACL CONFIG	IP ACL CONFIG	TIME RANGE CONFIG	ACL GROUP CONFIG	
Port			G1 v - G1	•
MAC ACL			exist)	\checkmark Is blank, indicating that the rules applied to delete the port (if any
IP ACL			exist)	\checkmark Is blank, indicating that the rules applied to delete the port (if any
			Set	

	Port	MAC access list ID	IP access list ID	
	G1			
	G2			
	G3			
	G4			
	G5			
	G6			
	G7			
	G8			
lia html	G9			

SNMP Configuration

System Information: Enable all SNMP protocol versions, configure SNMP protocol system

properties and enable trap

function.

FNS200-Series	switch	user	manual
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omation	Group	V3 User	Alarm	
SNMP Sys	tem			
Mode				
versions				V1,V2C,V3
System Na	ame			System Name
Location I	nformation			Your Location
Contact In	formation			Your Contact
Engine Nu	umber			
Trap Conf	ig			
Start Up				0

Group: Configure SNMP community properties.

SNMD Community Config				
SNMP Community Comig				
Name				
Community Attributes		rocommunity	~	
		Add		

Name	Community Attributes	
public	rocommunity	Del
private	rwcommunity	Del

V3: configure the member attribute of SNMP V3 protocol version.

Infomation	Group V3 Use	Alarm				
V3 User (Config					
Name						
User Attr	ibute		ro	user 🗸		
Certificat	ion Information		M	D5 •		
Encrypt i	nformation		DE	ES 🗸		
			Add			
Index	Name	User Attribute	Authentication Mode	password	Encryption mode	Encryption password
1	admin	rouser				
2	admin	rwuser				

Trap: configure trap receiving address and corresponding SNMP protocol version.

nfomation	Group	V3 User	Alarm			
Trap Conf	ig					
Address				(
versions				(V1	~
				Add		
		8 al al an an a				

Address	versions
0.0.0.0	V1
0.0.0.0	V2C

RMON

Event group: query and add event groups monitored remotely.

Event Group	Statistics Group	History Group	Alarm Group)				
Index							Event group number:	0-1024 (delete, just fill in this item)
Description]	
Action					none	~	J	
				Ad	d			
Inc	dex	Descriptio	on	Act	on		Recent Time	
				No matching r	ecords found			

Statistics group: query the statistical information of specific events after the event is broken.

Event Group	Statistics Group	History Group	Alarm Group			
Index						Event group number: 0-1024 (delete, just fill in this item)
Port				G1	,	•
				Add		
	Index			Name		
			N	o matching records four	d	

History group: add and query the history of a specific event at the port.

Event Group Statistics G	roup History Group Alarm Gro	oup		
Index			Event group number: 0-1	1024 (delete, just fill in this item
Sample Port		G1	~	
sampling Interval			range : 5-65535(Second	ls)
Max Sample Number			Max Sample Number : 0	-100
		Add		
Index	Sample Port	sampling Interval	Number Samples	
		No matching records found		

Alarm group: add the attribute of alarm event query on the port.

Event Group	Statistics Group	History Group	Alarm Group	
Index				Event group number: 0-1024 (delete, just fill in this item)
Sample Por	t -			G1
Alarm Parar	neters			DropEvents 🗸
sampling In	terval			range : 5-65535(Seconds)
Sampling Ty	pe			absolute 🗸
Rising Edge	Threshold			range : 0-4294967295
Falling Edge	e Threshold			range : 0-4294967295
Rising Edge	Event			Event group index, when the alarm is triggered, the corresponding event of the event group will be activated, Range: 0-1024
Falling Ever	it			Event group index, when the alarm is triggered, the corresponding event of the event group will be activated, Range: 0-1024

LLDP Configuration

Global configuration: turn on and configure LLDP function attributes.

lobal Config Port Config LLDP Neighbor	
LLDP	0
Tx interval	30 range: 5-32768 Seconds
Tx Delay	2 range: 1-8192 Seconds
Tx Hold Times	4 range: 2-10
Port Reinit Delay	2 range: 2-5 Seconds
Manage Address	For Example: 192.168.1.1
TLV optional to send	
Manage Address TLV	
Port Description TLV	
System Capability TLV	
System Description TLV	
System Name TLV	

Port configuration: configure port LLDP function attributes.

Port	tx	rx
Select All		
G1		
G2		
G3		
G4		
G5		
G6		
G7		
G8		
G9		
G10		and here a
	Apply	
)P 邻居:查询 L	LDP 邻居信息;	
obal Config Port Config	LLDP Neighbor	
		lite Manage Address Local Bast of

NTP Configuration

Global configuration: configure NTP function enable, time zone selection and check the

NTP Global Config	NTP Server Config			
Mode		0		
Time Zone Setti	ıgs	(GMT+08:00) Irl	kutsk Uli 🗸	
Time Interval		300	Second / time	range: 5-65535 Defaults: 300

NTP server configuration: configure the NTP server address and view the NTP server status.

P Global Config	ITP Server Config		
Server		Add Server	
Commonly used serve	er		
China		202.108.6.95 202.112.29.82	
TaiWan		120.119.28.1	
America		24.56.178.140 131.107.13.100	
Index	Server	State	
1	202.108.6.95	unknown	1

Anti Attack

It can open DDoS and ICMP echo;

DDOS	0
lcmp-echo	0
	Apply

System Management

User Settings

Modify the user login password, the account name can not be changed or added users.

Administrator	admin
New Password	16 characters at most
Retype Password	16 characters at most

Network Settings

IPv4 configuration: modify the IPv4 address of the switch, cannot add IP address.

Manage Interface	eth0	
IPV4 Address	192.168.10.12/24	For Example : 10.0.0.2/24
Default Gateway		For Example : 10.0.0.1
Preferred DNS Server		For Example : 10.0.0.1
Alternative DNS Server		For Example : 10.0.0.1

IPv6 configuration: modify the IPv6 address of the switch, cannot add IP address.

Manage Interface	eth0	
IPV6 Address	fe80::fe01/64	For Example : fe80::01/6
Default Gateway		For Example : fe80::01

Alarm Configuration

Configure switch alarm function to enable.

larms			
Config Alarm Conditions			
Select All PMU Alarm	Port Link Alarm	PoE Alarm	Loop Alarm
			Apply

Service Configuration

Configure switch Telnet, SSH, HTTP version protocol and service port.

Telnet Service	
TELNET Port	23
SSH Service	
SSH Port	22
HTTP Service	HTTP 🗸
HTTP Port	80
	Apply

Configuration Management

For reset, upload and download switch configuration.

Restore factory settings	Restore factory settings	
Upload Config	选择文件未选择任何文件	Upload
Download Config	Download	

Firmware Update

It is used to upgrade the software version of the switch.

Product Model	\$2100_8GP_2F
Hardware Version	V1
Firmware Version	V1.0.1.1-g012940b
Compile Time	Nov 30 2019 09:51:27
New Firmware File	选择文件】未选择任何文件

Diagnostic Testing

Ping detection: use the ping function of the switch to detect whether the link between the

Ping Detection	Tracert Detection	Cable Detection		
PAddress			Ping	

switch itself and other IP devices is smooth.

Tracert detection: Traceroute.

Ping Detection	Tracert Detection	Cable Detection	
IP Address			Traceroute

Network line detection: detect the network line attribute of all network ports of the switch.

Ping Detection	Tracert Detection	Cable Detection	
Cable Detection:	····· •		

Reboot Device

Restart the switch.

Restart

Restart