

DCI Network Management System

User Manual

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1 Product Overview

DCI Network Management System (hereinafter referred to as DCI) is a unified management platform for OTN transmission network equipment of NewNets, LLC. By using it, users can not only complete the configuration and maintenance of a single network element, but also station from the perspective of network management, comprehensive management of network elements in the entire network is implemented, including topology management, configuration management, alarm management, performance management, and log management and so on. Readership

This document is mainly applicable to the following engineers:

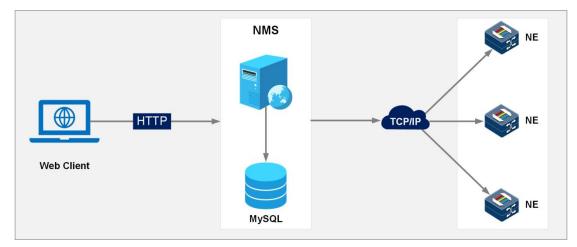
- 1) Network Planning Engineer
- 2) Test Engineer
- 3) Business Configuration Engineer
- 4) Field Maintenance Engineer
- 5) System Maintenance Engineer

Content Introduction

This document mainly introduces the general operation of the network management platform, including the installation and startup of the network management system, login, logout, password change, security management, configuration management of network elements, alarm management, performance management, daily maintenance of the network management system, common problems, etc..

2 Software Architecture

DCI is based on B/S (Browser/Server) architecture, and the TCP/IP protocol is used to communicate between each part, and its structure is shown in the following figure.





3 Operating Environment Requirements

The following runtime environment is our recommended base runtime environment, as shown in Table 1-1.

Server-side configuration	Client-side configuration (browser)
CPU: main frequency 2.4G and above	
Memory: 8G or more	Display resolution: 1920x1080
Hard disk: 500G or more	Browser: Google Chrome, Microsoft Edge,
OS: Windows Server 2016, Windows 10,	Firefox
Windows 11	

Table 1-1 Operation environment configuration

4 Software Deployment

4.1 Software List

The Install folder contains the VisualCppRedist_AIO_x86_x64.exe plug-in and the

"NMS" one-click installation package.

) • I	nstall			× ¢ 1	叟索"Install"	م
	名称	修改日期	类型	大小		
	MMS.exe	2023/3/8 10:10	应用程序	506,048 KB		
	VisualCppRedist_AIO_x86_x64_v64.exe	2023/3/8 14:07	应用程序	28,220 KB		

4.1.1 Software description



Description

Figure 1 - Microsoft environment runtime installation package, providing the necessary runtime environment to install the network management system.

Figure 2 - Network management system installation package, containing all the

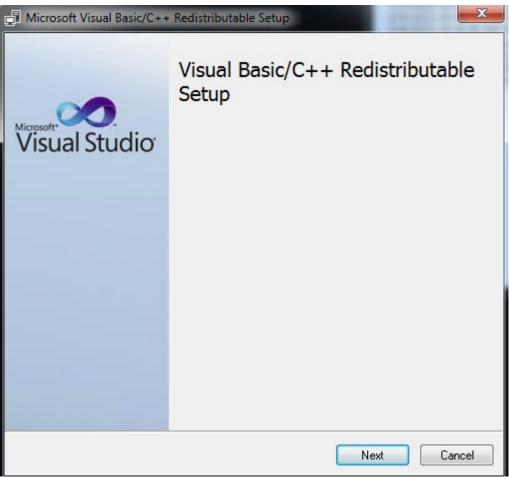


programs needed to install network management.

4.2 Program Installation

4.2.1 Installation environment

- 1. Install VisualCppRedist_AIO_x86_x64.exe, as follows:
- (1) Double-click the VisualCppRedist_AIO_x86_x64.exe application.
- (2) Click "Next".



(3) Click "Finish".





2. Install the network management system one-click installation package, as follows:

(1) Double-click the installation package to open the network management software installation program, click "Next".



B	Setup - NMS	- • ×
	Welcome to the NMS Setup Wiza This will install NMS version V2.1.3 on your comp It is recommended that you close all other applic continuing. Click Next to continue, or Cancel to exit Setup.	uter.
	Next >	Cancel

(2) Select the location where the network management software will be installed, and click "Next" after selection.

Setup - NMS
Select Destination Location Where should NMS be installed?
Setup will install NMS into the following folder. To continue, click Next. If you would like to select a different folder, click Browse.
D:\BS Browse
At least 2,241.9 MB of free disk space is required.
< <u>B</u> ack <u>N</u> ext > Cancel

(3) Click "Install" to start the installation of the network management software.



B i	Setup - NMS
	Ready to Install Setup is now ready to begin installing NMS on your computer.
	Click Install to continue with the installation, or click Back if you want to review or change any settings.
	Destination location: D:\BS
	< <u>B</u> ack Install Cancel
<u>fði</u>	Setup - NMS 📃 🗖 🗙
	Installing Please wait while Setup installs NMS on your computer.
	Extracting files D:\BS\Java\jdk1.8.0_201\jre\lib\rt.jar

(4) Click "Finish" to close the installation screen.

Cancel





(5) After the installation is completed, the "Server" icon will appear on the desktop, which is used to open and close the network management service.



4.3 Software Operation

4.3.1 Start SFTP service

Operation steps

(1) In the network management software installation directory (such as D:\BS), find the mini-sftp-server_x64.exe application software, double-click the software.



	Name	Date modified	Туре	Size
	鷆 dci	3/1/2023 1:58 AM	File folder	
s	퉬 Java	3/1/2023 1:55 AM	File folder	
ices	ル mysql-5.6.43-winx64	3/1/2023 1:56 AM	File folder	
	퉬 Output	3/1/2023 1:55 AM	File folder	
	퉬 redis	3/1/2023 1:58 AM	File folder	
	🎉 RedisDesktopManager	3/1/2023 1:58 AM	File folder	
	鷆 sftpData	3/1/2023 1:55 AM	File folder	
	退 ui	3/1/2023 1:58 AM	File folder	
	🛄 ManageEN	3/1/2023 10:01 AM	Application	54 KB
	🕐 mini-sftp-server.x64	12/9/2022 11:39 AM	Application	1,825 KB
	🚳 run	2/25/2023 3:16 PM	Windows Batch File	1 KB
	🚳 run1	11/29/2022 11:37	Windows Batch File	1 KB
	🚳 run2	2/25/2023 3:15 PM	Windows Batch File	1 KE
	🚳 stop	2/25/2023 3:15 PM	Windows Batch File	1 KB
	🚳 stop1	11/29/2022 11:52	Windows Batch File	1 KB
	🚳 stop2	2/25/2023 3:16 PM	Windows Batch File	1 KB
	uninstall.dat	3/1/2023 1:58 AM	DAT File	1,172 KB
	🔯 uninstall	3/1/2023 1:55 AM	Application	729 KB

(2) After the software is running, the User, Password and Port defaults to root, root, 22, the service storage root directory can be customized, it is recommended to set it to the network management software installation directory (such as D:\BS), click the "Start" button to start SFTP service.

Port: 22 Abo	User: root		<u>S</u> tart
oot path: D:\BS	assword: ****		Options
nnections:	Port: 22		About
1		3	
address/IP connected @		connected @	

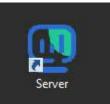
4.3.2 Start the network management system service end

Operation steps

(1) Double-click the icon of "Server" to open the interface of Network Management



System Server.



(2) Click the "Start server" button to run the network management software.

📴 DCI Network Management System	x
Start server Stop server	
3/9/2023 10:05:03 AM The MySQL5.6 service has been started 3/9/2023 10:05:03 AM The Redis service has been started 3/9/2023 10:05:03 AM The primary service is not started 3/9/2023 10:05:03 AM UI not rendered	*
	· ·

3. It will take 5 minutes to start the network management system service, please wait patiently. When the operation interface of the network management system server shows that MySQL 5.6 service has been started, Redis service has been started, UI has been rendered and the server has been started, the network management system service is started and completed, as shown in the following figure.



DCI Network Management System	
Start server Stop server	
3/9/2023 10:18:12 AM The MySQL5.6 service has been started 3/9/2023 10:18:12 AM The Fiedis service has been started 3/9/2023 10:18:12 AM UI not rendered 3/9/2023 10:18:34 AM The MySQL5.6 service has been started 3/9/2023 10:18:34 AM The Redis service has been started 3/9/2023 10:18:35 AM UI not rendered 3/9/2023 10:18:35 AM UI not rendered 3/9/2023 10:18:36 AM UI not rendered 3/9/2023 10:19:55 AM The primary service is starting 3/9/2023 10:19:55 AM The primary service has been started	
	T

5 Webmaster Introduction

5.1 Logging in to the Webmaster

Operation Prerequisites

The server side of the network management system has been started and completed. Operation steps

Open Google or Firefox browser, enter the server IP address and port number: xx.xx.xx:81 to enter the network management system login interface. Enter user name and password to login. (The default login user name of super administrator is admin, password 123456).

DCI Network Management System Unir Passent Remember passend	
Lopic	
()	



5.2 Introduction of Network Management Interface

5.2.1 Main interface

The main interface of DCI network management system consists of main topology tree, menu bar, legend description, dynamic alarm statistics, etc.



1 - Topology tree 2 - Menu bar 3 - Legend description 4 - Dynamic alarm statistics5 - Topology diagram

Topology tree

Topology tree mainly shows root nodes, subnets, network elements and other objects in a tree-like structure. When you click on a topology tree element, the element will be centered in the topology diagram on the right.

Menu bar

The menu bar provides the main management function entrance of the network management system, including topology, alarm, performance, configuration, log, user, and system.

🖳 Topology 🗸 🚊 Alarm 🗸 🖾 Performance 🗸 🍓 Configuration 🗸 🖶 Log 🗸 🏚 User 🖌 🙎 System 🗸

Legend description

The legend is used to explain the meaning of the different icons and colors.

Topology tree icon:

	Node
--	------



.	Subnets
	NE(Network element): the icon will change according to the color corresponding to the alarm level

Net element icon:

DTW OTH	Indicates that the site is configured as an optical termin station	
OLA OLA	Indicates that the site is configured as an optical relay station	
Received a grant	Indicates that the station is configured as a reconfigura plug-and-play station	

Alarm level color classification:

Critical
Major
Minor
Warning

Dynamic alarm statistics

Dynamic alarm statistics are used to present the current number of alarms of different alarm levels in real time. When a new alarm is generated, the color block count of the corresponding alarm level increases and flashes to indicate, and when the alarm is cleared, the color block count of the corresponding alarm level decreases.



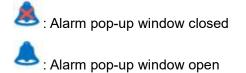
Turn on/off alarm sound

Click the alarm sound icon at the bottom right corner of the network management interface to turn on or off the alarm sound, as shown in the following figure.





Click the alarm popup icon at the bottom right corner of the network management interface to enable or disable the alarm pop-up window as shown in the following figure.



Topology diagram

Provides intuitive and visual topology drawing, which graphically displays the distribution of network elements, the connection relationship between network elements and the current fault and performance status of network elements on the topology diagram.

User center

Background Information

The user center consists of two parts, User Information and Basic Information. In the user Information shows the current user name, phone number, email, role and the creation date and other information. In the basic information, you can change the user login password. In the operation, you need to enter the old password to complete the change.

Operation steps

In the main interface, click on the user's avatar in the upper right corner and click on "User" to jump to the user center interface.

ser Information		Basic Information	n	
		Change Password		
- <u>Sa</u> n		* Old Password	Please Enter Old Password	
		* New Password	Please Enter New Password	
User Name	admin	* Confirm Password	Please confirm the password	
Phone Number			Save	
Email				
Role	Super Admin			
Creation Date	2021-12-26 19:51:08			

6 Topology Management

Topology management consists of subnets, network elements and fiber cables. In topology management, you can add and delete subnets, network elements and fiber cables; at the same time, you can also add and delete subnets, network elements and fiber cables on the physical topology map.



Introduction to Topology View

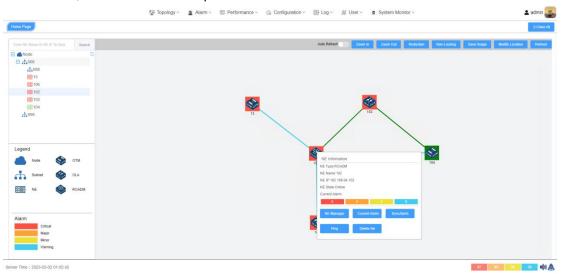
There is a row of auxiliary function buttons at the top right of the topology view interface, including: manual Refresh and Auto Refresh (every 10 seconds), topology map Zoom In and Zoom Out function, expansion slot ratio Reduction, net element Locking and Non-Locking function, and Modify Location of net element.

Zoom in and out function: Click "Zoom in" or "Zoom out" to zoom in or out the canvas and topology icons simultaneously.

Modify location function: In the topology view area, select the network element, you can freely drag the network element at a suitable position, and click the "Modify Location" button to fix the position of the network element.

					1.00	20	1995
Auto Refresh	Zoom In	Zoom Out	Reduction	Non-Locking	Save Image	Modify Location	Refresh

In the topology view area, right-click on the network element, a network element information pop-up window will appear with information about the type, name, and IP of the element, as well as related operation button functions.



6.1 Adding Subnets

Method 1: Right click the "Create Subnet" button in the topology view, the "Add" pop-up window will appear, enter the corresponding information, the parent path can be selected in the drop-down, click " Confirm", add subnet successfully.

Method 2: Click the menu bar - "Topology" and select "Subnet" to enter the subnet interface, then click the "Add" button, enter the specified information according to the pop-up prompt and click " Confirm " to confirm.



Add		×
* Name	Please Enter Name	
* Parent Path	Select	~
Remarks	Please Enter Remarks	
	Select NE	
	Confirm Cancel	
	Confirm Cancel	

When you finish adding a subnet, you can group the network elements and select the network elements to belong to this subnet.

Edit: Enter the subnet view interface, click the "Edit" button, the "Edit" dialog box pops up, you can edit the relevant information, click "Confirm" again to edit the subnet successfully.

	×
666	
Node	×
Please Enter Description	
Select NE	
Confirm Cancel	
	Node Please Enter Description Select NE

6.2 Deleting Subnets

Operation prerequisites

There are no network elements under the subnet.

Operation steps

Enter the subnet view interface, if only one subnet information is deleted, directly click the "Delete" button in the operation item, a system prompt will pop up, click "Confirm"; if multiple subnets are deleted, by checking the check box in front of the operation item, click if you want to delete multiple subnets, click "Delete Batch", the system prompt will pop up, click "Confirm", the operation interface will pop up, and the subnets will be deleted successfully.

Add Takes Tokins Takin				Refresh Display And Hide		
Ξ.	Operation	Name	Parent Path	Description		
		Node				
	Edit Delete	666	Node			
	Edit Delete	888	Node			
Selected:	Selected Trans Empty					



6.3 Adding Network Elements

Method 1: Right click the "Create NE" button in the topology view, the "Add" pop-up window will appear, enter the corresponding information and click "Confirm" to add the element successfully.

Method 2: Click the menu bar - "Topology" and select "NE" to enter the element interface, then click "Add", enter the specified information according to the pop-up window, and click " Confirm ".

When adding network elements, please note that the gateway type is "Gateway", the port is 830 by default, the account password is root by default, and modification is prohibited. The factory management IP of the network element: 192.168.126.111, subnet mask: 255.255.255.0

Add	×	
* Parent Path	Select	
* Site Type	Select v	
* Name	Please Enter Name	
* Gateway Type	Gateway	
* IP Address	Please Enter IP Address	
* Port	830	
* NE User	root	
* Password		
Remarks	Please Enter Remarks	
	Get Coordinate	
	Confirm Cancel	

Edit: Enter the interface of the network element view, click the "Edit" button, and the "Edit" dialog box pops up, you can edit and modify the information of the network element name, site type and description, etc.. Click " Confirm " again to edit the network element



successfully.

Edit		X
* Parent Path	Node / 666	~
* Site Type	OTM	
* Name	13	
* Gateway Type	Gateway	~
* IP Address	192.168.64.13	
* Port	830	
* NE User	root	
* Password	***	
Remarks	Please Enter Remarks	
	Get Coordinate	
	Confirm Cancel	

The colors of different network element icons represent that the element is in different states, as shown in Table 1-2.

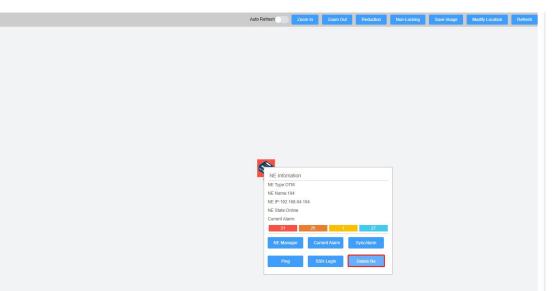
Color Status	Color Definition
Green	Normal
Red	The highest level alarm is an emergency alarm
Orange	The highest level alarm is a main alarm
Yellow	The highest level alarm is a secondary alarm
Blue	The highest level alarm is a prompt alarm
Grey	Device offline

Table 1-2 Network element icon color definition

6.4 Deleting Network Elements

Method 1: Right-click the element in the topology view and click the "Delete NE" button to delete the element.





Method 2: Enter the network element view interface, select the network element to be deleted, if only one network element information is deleted, click the "Delete" button directly in the operation item, a system prompt will pop up, click "Confirm"; if multiple network elements information is deleted, by checking the check box in front of the operation item if you want to delete multiple network elements, click "Delete Batch" by checking the check box in front of the operation item, and then click " Confirm " to pop up the operation interface and delete the network elements successfully.

Scre	en									
NE	Name Please Enter NE Name	Search	Reset							
Add I	xport Delete Batch									Refresh Display And Hid
	Operation	Parent Path	Site Type	NE Туре	NE Name	NE IP	Port	Longitude	Latitude	Remarks
	Edit Delete	Node	OTM	Gateway	104	192.168.64.104	830	-359	-153	
	Edit Delete	Node	OTM	Gateway	13	192.168.64.13	830	-778	-302	
	Edit Delete	Node	OTM	Gateway	106	192.168.64.106	830	-1061	-373	
Selected	2Items Empty							Total 3	10/page v c	1 > Go to 1

Note: After deleting a network element, all the topological connections of that element are deleted simultaneously.

6.5 Creating Fiber Cables

When creating a fiber cable, the network management will automatically determine whether the link has diagnostic functions after selecting the corresponding source and host network elements and ports according to the physical connection. Among them, the OTS layer fiber connection has diagnostic function, such as OLA, but the rest of the connection doesn't have diagnostic function.

Operation prerequisites

Two or more network elements exist under the subnet.

Operation method

Method 1: Right-click the blank space in the topology view area, click the "Create Fiber" button, the "Add" pop-up window will appear, enter the corresponding information, the fiber direction is "Single Fiber Unidirectional" by default. Click "Add" to add the fiber successfully.



Method 2: Click the menu bar - "Topology" and select "Fiber" to enter the fiber interface, then click "Add", according to the pop-up window prompts to enter relevant information and click "Add" to confirm.

Add				×
Selete Subnet	Select			
* Source NE	Select ~	* Sink NE	Select	
* Board Type-Chassis-Slot (Source Port)	Select ×	* Board Type-Chassis-Slot (Sink Port)	Select	~~
Fiber Cable Info				
* Cable Name				
* Fiber Type	Select			×
* Direction	Single Fiber Unidirectional			
* Distance (km)				
Link Diagnosis	No diagnosis required			
Create Time	2023-03-11 10:28:57			
Creator	admin			
Remarks				
	Add Cancel			

Edit: Enter the cable view interface, click the "Edit" button, the "Edit" dialog box pops up, you can edit the relevant information of the cable, click "Edit" at the bottom of the pop-up window to bring up the operation interface and edit the fiber cable successfully.

Edit				×
Selete Subnet	Node / 666			
* Source NE	102	* Sink NE	103	
* Board Type-Chassis-Slot (Source Port)	OLA-1-1(LA1IN)	* Board Type-Chassis-Slot (Sink Port)	OA-1-1(BAOUT)	
Fiber Cable Info				
* Cable Name	102-103			
* Fiber Type	G.652			
* Direction	Single Fiber Unidirectional			
* Distance (km)	25			
Link Diagnosis	Diagnosis			
* Design Loss(dB)	16			
* Loss threshold(dB)	22			
Create Time	2023-03-01 17:22:29			
Creator	admin			
Remarks				
	Edit Cancel			

The topology connection between different types of boards is also distinguished by the color of the fiber cable, which indicates whether the link has diagnostic functions and the current topology connection status. As shown in Table 1-3.



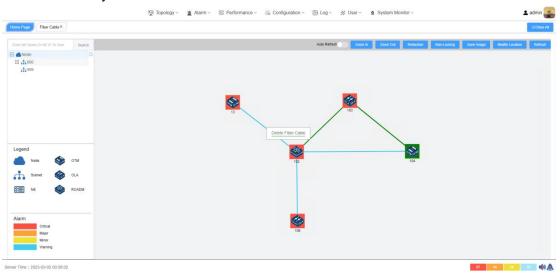
Color of fiber cable	Link diagnostics	Connection status
Blue	No diagnosis	Normal
Green	Diagnosis	Normal
Red	Diagnosis	Overstep the limit
Grey	Diagnosis	Offline

Table 1-3 Fiber cable color description

6.6 Deleting Fiber Cables

Method 1: Right-click the fiber cable in the topology view area, and then the "Delete Fiber Cable" button will pop up, click "Delete Fiber Cable" to delete the fiber cable.

Method 2: Enter the fiber view interface, click the "Delete Fiber Cable" button, the "System Prompt" pops up, click "Confirm", then pop-up the operation interface, delete the fiber successfully.



6.7 Network Element Connection Diagnosis

Background information

Diagnosis of the network element connection can be performed by ping test to check whether the specified network element network is reachable.

Operation steps

Right-click the network element in the topology view area, and click the "Ping Test" button in the "NE Submenu" to bring up the "Ping" pop-up window, which will automatically perform a ping connection on the network element.

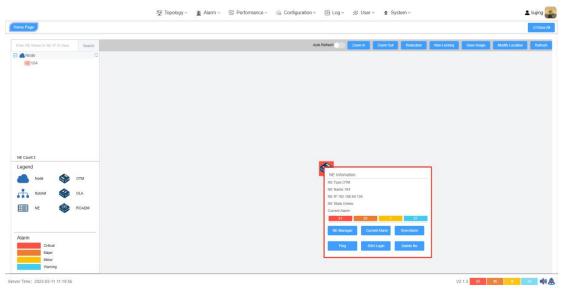


mi Pago					
					() Close A
	ch		Auto Battach Topon In	Town Cod Data Non Locking	Save Image Modify Location Refmsh
Node	P	ing		×	
#885					
III 13 1106		Pinging 192.168.64.102 with 32 bytes of data: Reply from 192.168.64.102: bytes=32 time<1ms TTL=128 Reply from 192.168.64.102: bytes=32 time<1ms TTL=128			
E 102					
103		Reply from 192.168.64.102: bytes=32 time<1ms TTL=128 Ping statistics for 192.168.64.102: Packets: Sent = 4, Received = 4, Lost = 0 (0% koss),			
104		Approximate round trip times in mill-seconds: Minimum = 0ms, Maximum = 0ms, Average = 0ms			
.egend				104	
Node 😵 OTM				104	
Subret 🍪 OLA					
NE 🍪 ROADM					
Narm				_	
Critical Major					
Minor					
Warning					
r Time : 2023-03-02 01 06-18					

6.8 Opening the Network Element Manager

Operation steps

Enter the topology view, right-click the element, and click the "NE Manager" button in the "Element Submenu" to open the NE manager interface of the element to view and configure the element, subrack, single board, port and other information.



7 Network Element Manager

The Network Element Manager(NE Manager) is adopted as the main operation interface for managing network elements, and each element is used as the operation object for hierarchical configuration, management and maintenance for elements, subracks, single boards and ports respectively.



7.1 Network Element Information

<complex-block><complex-block><complex-block><complex-block>

7.1.1 Introduction to the network element view

7.1.1.1 Introduction to the network element tree

Network element tree - board icon description

The left side of the NE Manager displays the Element-Subrack/Single Board/Port in a tree structure, where the single board and port icons dynamically change color to visually show the user their working status.

Icon color	Physical board in place status	Physical and logical board models	Alarm status
Grey	Out of position	1	/
Purple	In position	Inconsistency	/
Green	In position	Consistent	No alarms

The board icon colors are defined as shown in Table 1-4.

Table 1-4 Board icon color definition

Network element tree - port icon description

When the logical board is the same as the physical board model and the panel display is normal, the color of the port icon is the same as the color meaning of the network element icon, indicating the highest level of alarms currently present on the port.

7.1.1.2 Network element panel view description

The network element panel is used to visualize the logical and physical board view of all slots of the network element.

• When the logical board is aligned with the physical board, displaying the logical board correspondence view (in sharp colors)



- When the logical board doesn't correspond to the physical board, displaying the corresponding view of the logical board (with a red frame around the periphery of the view)
- When a logical board has been configured and the physical board is not in place, the corresponding view of the logical board is displayed (grayed out color).
- When no logic board is configured, an empty panel is displayed.

As shown in the figure below.

Master Subrack Slot	SLOT4	EIU
		0 00 2

Description of the function buttons on the right side of the network element panel view

1) Click the "Refresh View" button to manually refresh the view and update the panel status in real time.

(2) Click the "Front/Back View" button, you can switch the view of the master subrack equipment before and after the view, you can view the back of the device's main control(SCU), power supply(PSU), fan panel(FAN) status.

7.1.2 Viewing network element information

Open the NE Manager, click the element name in the left element tree, and click "NE Information" in the right element configuration information interface submenu to switch to the element information page, where you can query the element name, site type, IP address, port number, current time of the element, and other data.



Item		Parameter
Name		104
Туре		OTM
Gateway Type		Gateway
IP Address		192.168.64.104
Port		830
Creator		admin
Creation Time		2023/3/1 17:19:27
NE Time		2023/3/2 17:58:20
NE Timezone		(UTC+08:00)China, Malaysia, Philippines, Singapore
Description		

7.2 Network Element Base Configuration

7.2.1 Setting the network element IP

Operation steps

Open the NE Manager, click the element name in the left element tree, click "Set NE IP" in the right element configuration information interface submenu to switch to the Set Element IP page, enter the IP address, subnet mask and gateway address, and click "Confirm".

Item			Parameter	
IP Addr	ess		192.168.64.104	
Subnet	Mask		255.255.255.0	
Gatewa	y Address		192.168.64.1	

7.2.2 Global LLDP

Enable LLDP global function, default LLDP off. Operation steps

Open the NE Manager, click the element name in the left element tree, click "LLDP Global" in the right element configuration information interface submenu to switch to the global LLDP configuration page, select Enabled or Disabled as required, click "Confirm", wait for the operation success prompt to pop up and then click "Query", the current configuration is consistent with the set value that the operation is successful.



	IE Information	Set NE IP	LLDP Global	
ltem			Parameter	
LLDP			Enabled	~

7.2.3 Setting the time zone of network elements

Operation steps

Click the menu bar - "Configuration", select the sub-menu "NE Time", enter the network element time interface, expand the network element tree on the left, select the network element, display the network element time details on the right, manually configure the information box at the "Time Zone" click "Confirm", wait for the successful operation prompt to pop up and then click "Refresh" button, the current configuration is consistent with the set value that is set successfully.

Item		Pa	arameter	
NE Name	3		104	
NE Time			③ 2023-03-10 09:53:50	
Time Zon	e		(UTC+08:00)China, Malaysia, Philippines, Singapore	
NTP Configuration Pa		P	(UTC+11:00)Solomon Islands, Sakhalin Island (UTC+10:00)Melbourne, Vladivostok (UTC+09:00)Japan and South Korea (UTC+08:00)China, Malaysia, Philippines, Singapore (UTC+07:00)Thailand, Vietnam	
NTP Ena	Server List		UTC+06:00)Novosibirsk, Bhutan, Bangladesh (UTC+05:00)Kathmandu, Mumbai, New Delhi, Karachi (UTC+04:00)ABU Dhabi, Dubai (UTC+03:00)Moscow, Tehran (UTC+02:00)Cairo, Athens,Jerusalem	

Note: After setting the time zone of the network element successfully, the time of the network element will be synchronized with the local time zone time.



7.2.4 Setting the network element time

Operation steps

Click the menu bar - "Configuration", select the submenu "NE Time", enter the network element time interface, expand the network element tree on the left, select the network element, the right side shows the network element time details, manually configure the information box at the "NE Time" to enter the setting values, click "Confirm", wait for the successful operation prompt to pop up and then click the "Refresh" button, the current configuration is consistent with the setting value that is set successfully.

tem		Parar	neter							
NE Name		104								
NE Time			2023-03-10	09:53:5	o					
Time Zone			UT(2023	-03-10			09:53:5	0		~
			« <		202	23 Ma	arch		> >>	
NTP C	onfiguration		« «	Mon	202 Tue	23 Ma	arch Thu	Fri	> > Sat	
0.000 0.0	onfiguration	Parar	Sun					Fri 3		
0.000 0.0		Parar	Sun net 26	Mon	Tue	Wed	Thu		Sat	
tem			Sun net 26	Mon 27	Tue 28	Wed	Thu 2	3	Sat 4	Confir
tem NTP Enabl	le		Sun 26 ble 5	Mon 27 6	Tue 28 7	Wed 1 8	Thu 2 9	3	Sat 4 11	Confir
tem NTP Enabl			Sun 26 ble 5 12	Mon 27 6 13	Tue 28 7 14	Wed 1 8 15	Thu 2 9 16	3 10 17	Sat 4 11 18	Confir

7.2.5 SCU reversal

DCI devices support automatic and manual SCU reversal. Users can query the SCU status, the current active SCU and manually reverse to the backup SCU through NMS. Operation prerequisites

The network element is currently in a dual SCU state.

Operation steps

Enter the NE manager, select the subrack, choose the "SCU Switching" submenu, click the "Switch To Standby SCU" button in the operation item, wait for the successful operation prompt to pop up and click "Query". If the SCU status is the same as the setting, the switch is successful.



Operation	SCU Slot	Online/Offline	SCU State
Switch To Secondary SCU	SCU-1-9	Online	Primary
	SCU-1-10	Online	Secondary

7.3 Viewing Subrack Information

Operation steps

Open the NE Manager, click the subrack name in the left element tree, and the subrack details will be displayed in the right element configuration information screen, including subrack ID, subrack name, current subrack temperature and power, subrack version, PN, SN and other data.

	텔 Topology ~ 📋 Alarm ~ 🛙	🖾 Performance 🗸 🙆 Configuration 🗸 🗐 Log 🗸 🚽 User 🖌 🙎 System 🗸	ᆂ liujing 🌉
Home Page 104-NE Manager×			© Close All
104	Refeeth Subrack Information Stot Information	n Switch To Secondary SCU Interface	
Anaster Subrack	item	Parameter	
Slot1(P616) Slot2(P616)	Subrack ID	1	
Slot3(OCM8)	Subrack Name	Master Subrack	
Slot5(P512)	Temperature (*C)	32.5	
Slot7(P514)	Power(W)	284	
Slot9(SCU)	Hardware Version	VERA	
Slot10(SCU)	Firmware Version	2.00718	
Slot12(FAN)	Software Version	V100R002SPC1008018	
Slot13(FAN)	PN	1830DK8	
Slot14(APU)	SN	1830DK81801280003	
Slot15(APU)	Vendor	NMS	
Expansion Slot21(MUX48)	Mfg-date	2018-01-28	
Expansion Stot22(MUX96) Expansion Stot23(MUX48)	Description		
Expansion Siot23(MUX48)			
		Query	
Server Time: 2023-03-11 17:47:46			
3YEI 1816, 2020-00-11 11.47,40			V2.1.5 63 49 7 50 📢 🤇

7.4 Slot Information Operation Instructions

Background information

The physical board is the actual in-place board inserted on the current subrack; while the logical board is the single board at the configuration level created on the NMS. If the logical board is created and the corresponding physical board is in place, the service can be configured normally.

Open the NE Manager, click the name of the subrack in the element tree on the left, and click "Slot Information" in the submenu of the element configuration information interface on the right to switch to the slot information page, where you can view the type, status, description and other information of all the slots of the current subrack, and add, edit and delete slot boards on this page. In this page, you can also add, edit and delete slot boards.



7.4.1 Adding a logic board

Operation prerequisites

The logical board is not configured, and the physical board is in place or not in place.

Operation steps

Click the "Edit" button to add a logic board.

Editor

Operation prerequisites

The logical board is configured and the physical board is in place.

Operation steps

Click the "Edit" button to modify the current slot description information.

7.4.2 Deleting logical boards

Operation prerequisites

The logical board is configured, the physical board is not in place.

Operation steps

Click the "Delete" button, a system prompt will pop up, click "Confirm" to delete successfully.

104	Subrack Information	Slot Inform	nation Switch	n To Secondary	SCU I	nterface		
Amaster Subrack								
Slot1(P616)	Subrack1 (Maste	1						
Slot2(P616)	Operation	Slot	Logical Br	pard Physic	al Board	Online/Offline	Description	
Slot3(OCM8)	Edt Delete	1	P616		2	Offline	1	
T Slot5(P512)	Edt Delete	2	P616		2616	Online		
Slot7(P514) Slot9(SCU)	Construction of the second							
Slot10(SCU)	Edit Delete	3	0CM8	0	TDS	Online	DC110CM	
Slot11(FAN)	Edt	4						
Slot12(FAN)	Edt Delete	5	P512		2512	Online		
Slot13(FAN)		-						
Slot14(APU)	Edit Delete	7	P514		1	Offline	1	
Slot15(APU)	Edt	9	SCU		BCU	Online	DC11SCU	
Expansion Slot21(MUX48)	Edt	10	SCU		1	Offline	T	
Expansion Slot22(MUX96) Expansion Slot23(MUX48)								
Ed Expansion Sidi23(MUX46)	Edt	11	FAN		FAN	Online	DC11FAN	
	Edt	12	FAN		FAN	Online	DC11FAN	
	Edt	13	FAN		FAN	Online	DC11FAN	
		2.5						
	Edt	14	PSU		APU	Online	DC11PSU	
	Edt	15	PSU		1	Offline	- E	
	OIU Expansion S	Int Information						
	OID Expansion S	or mormation	Logical Boar	Physical Boa	Online/Of	flin		
	Operation	Slot	d d	rd	e		Description	
	Edt	20						
	Edt. Delete	21	MUX48	7	Offline		1	

Warning: Deleting a logical board will delete the single board configuration information at the same time.

7.5 View SCU Operation Information

The SCU board submenu includes in-position status, temperature, memory capacity, currently available memory, current CPU occupancy, SCU version model, etc. Board descriptions can be added as needed.

Operation steps

Open the NE Manager, expand the element tree on the left and select the SCU slot, switch the interface to the SCU submenu, and click "Query" to view the latest relevant data.



13	Board Information		
Master Subrack	Item	Parameter	
Slot2(P616)	Subrack-slot	Subrack1(Master Subrack)-Stot9	
E Slot3(P514)	Online/Offline	Online	
E Slot5(P512)	Temperature ("C)	30.5	
E Slot7(P514)	Memory(MB)	3800	
Slot9(SCU)	Available Memory(MB)	2337	
Slot10(SCU) Slot11(FAN)	Cpu Utilization(%)	21	
Slot12(FAN)	Primary/Secondary	Primary	
Slot13(FAN)	Hardware Version	VERA	
Slot14(APU)	Firmware Version	2.00T18	
Slot15(APU)	Software Version	2.00T18	
	PN	20230305	
	SN	202303062022122801	
	Vendor	9CU	
	Mtg-date	2022-12-28	
	Description		
			Query

7.6 Configuring Fan Mode and Speed

The fan board submenu contains information such as in-position status, temperature, fan speed regulation mode, and current fan speed.

Configure fan mode

Operation steps

Open the NE Manager, expand the Element Tree on the left and select the fan slot, select the option parameter (AUTO/MANUAL) in the "Fan Mode" column of the Fan Single Board submenu, click "OK", wait for the successful operation prompt and then click "Query", the current mode is the same as the set value, which means the setting is successful.

Configure fan speed

Operation prerequisites

The current fan single board speed control mode is MANUAL.

Operation steps

Open the NE Manager, expand the element tree on the left and select the fan slot, select the option parameter (HIGH/MIDDLE/LOW) in the "Fan Speed" column of the fan board submenu, click "Confirm", wait for the successful operation prompt and click "Query", the current speed is the same as the set value, which means the setting is successful.



ne Page 13-NE Manager×				
13	Refresh Board Information			
Master Subrack				
Slot1(P616)	Item	Parameter		
ESlot2(P616)	Subrack-slot	Subrack1(Master Subrack)-Stot12		
Slot3(P514)	Online/Offline	Online		
Slot5(P512)	Temperature (*C)	32.5		
] Slot7(P514)			[Proc	
Slot9(SCU)	Fan Mode	MANUAL	×	
Slot10(SCU)	Fan Speed	HIGH		
Slot11(FAN)	Hardware Version	V1.0		
Slot12(FAN)	Firmware Version	1.0.10		
Slot13(FAN)	Software Version	2.00118		
Slot14(APU)		20230305		
Slot15(APU)	PN			
	SN	2023030620220516		
	Vendor	FAN		
	Mig-date	2022-05-16		
	Description			
			Confirm Query	

Note: If the chassis is fully equipped with electrical layer boards, it is recommended to adjust the fan speed to above MIDDLE level when the fan speed regulation mode is Manual.

7.7 Checking the power consumption of the power supply

board

The Power sub-menu shows the in-position status of the power supply, the supported power supply methods, the device power supply supports HVDC\DC\AC power supply methods, the current input current voltage, the output current voltage, the power supply version model and other information.

Operating steps

Open the NE Manager, expand the NE tree on the left and select the power supply slot, the interface switches to the power supply sub-menu and click on "Query" to view the latest relevant data.

13 Rubush 30 Madder Statmack	Nami Budrack-stof Dollae-Offine Temperature (*C) Bugeot Power Bughy Mode Carnet Power Bughy Mode Mac Odgat Power Bughy Mode Mac Odgat Power Bughy Bug Carsen(mA) Input Vitage(V)	Parameter Subrachtphafer Subrach-Statt Onten 33.8 HVOC.DC.AC AC 800.9 1595.9 221.0
Sect(Ps16) Sect(Ps16) Sect(Ps14) Sect(Ps12) Sect(Ps12) Sect(Ps14) Sect(Ps14)	Subrack-risk Dollavoffline Temperature (°C) Support Foreir (°C) Support Foreir Supply Mode Marc Outper Supply Mode Marc Outper Supply Mode Ingo Currentiform) Ingo Currentiform)	Subrach (Marker Subrach) Start 4 Ontime 33.8 HVDC.DC.AC AC 800.9 1385.5
Bost(N+5) Bost(N+5)	Subrack-risk Dollavoffline Temperature (°C) Support Foreir (°C) Support Foreir Supply Mode Marc Outper Supply Mode Marc Outper Supply Mode Ingo Currentiform) Ingo Currentiform)	Subrach (Marker Subrach) Start 4 Ontime 33.8 HVDC.DC.AC AC 800.9 1385.5
Skd5(P514) Skd5(P512) Skd7(P514) Skd7(P514) Skd7(P514) Skd7(P514) Skd17(FAN) Skd17(FAN) Skd17(FAN) Skd17(FAN) Skd14(FAN) Skd14(FAN)	Online/Ottine Temperature (*C) Slupport Power Slupply Mode Current Power Slupply Mode Mic Odput Power(V) Imput Current(PutA) Input Vallage(V)	Осве 33.8 НИСССАС АС 800.0 1595.8
Bott(pP12) Bott(pP14) Bott(SCU) Bott(SCU) Bott(SCU) Bott(SCU) Bott(SCU) Bott(SCU) Bott(SPAN) Bott(SPAN) Bott(SPAN) Bott(SPAN)	Temperature (*C) Support Power Supply Mode Current Power Supply Mode Mas: Output Power(YV) Input Current(PA) Input Voltage(V)	33.0 HYDODOGAC AC 800.0 1985.0
BRUT(2F)14 BRUT(2F)1 BRUT(2F)1 BRUT(2F)1 BRUT(2F)1 BRUT(2F)1 BRUT(2F)1 BRUT(2F)1 BRUT(2F)1 BRUT(2F)	Support Power Supply Mode Current Power Supply Mode Max: Output Power(W) Input Current(mA) Input Voltage(V)	HV0C,DC,AC AC 800.0 1585.0
Set1(SCU) Set1(FAN) Set1(FAN) Set1(FAN) Set1(FAN) Set1(FAN) Set1(FAN)	Current Power Supply Mode Max: Output Power(W) Input Current(mA) Input Voltage(V)	AC 800.0 1595.0
Sich10(SCU) Sich11(FAN) Sich12(FAN) Sich13(FAN) Sich14(APU)	Max Output Power(W) Input Current(mA) Input Voltage(V)	800.0 1585.0
Sid11(FAN) Sid12(FAN) Sid12(FAN) Sid13(FAN) Sid14(APU)	Input Current(mA) Input Voltage(V)	1585.0
Stott2(FAN) Stott3(FAN) Stott4(APU)	Input Voltage(V)	
Slot14(APU)		221.0
	Output Current/m b)	
Slot15(APU)	output current(nin)	27156.0
	Output Voltage(mA)	12.0
	Hardware Version	VER:A
	Firmware Version	2.00T18
	Software Version	2.00718
	PN	G1342-0800WNA
	SN	G13420800A22033
-	Vendor	GOSPOWER
	Mg-date	2022-01-29
		2022-01-28
	Description	



7.8 Viewing electrical layer board information

The single board sub-menu shows data such as sub-rack-slot ID, logical board, physical board type name, board in-position status, board current temperature, board current version model and factory time, and supports comments on the board. Power management can be selected as enabled and disabled, the default is enabled. Operating steps

Open the NE Manager, expand the NE tree on the left and select the electrical layer board slot, the interface switches to the single board sub-menu and click "Query" to view the latest relevant data.

me Page 13-NE Manager×			
13	Board Information Working Mode	Reboot	
2 Master Subrack			
Slot1(P616)	Item	Parameter	
1 Slot2(P616)	Subrack-slot	Subrack1(Master Subrack)-Stot1	
E Slot3(P514)	Logical Board	P616	
Slot5(P512)	Physical Board	P616	
Siot7(P514)	Online/Offline	Online	
Slot9(SCU)	Temperature (*C)	41.5	
Slot10(SCU)	Hardware Version	Ver B	
Slot12(FAN)	Firmware Version	2.00T18	
Slot13(FAN)	Software Version	2.00T18	
Slot14(APU)	PN	20230303	
Slot15(APU)	SN	20230303202210226666	
	Vendor	7515	
	Mfg-date	2022-10-22	
	Power Switch	Enabled	
	Description		

7.9 Setting electrical layer board working mode

The working mode is the type of service configuration that can be supported by the single board .

Operating steps

Open the NE Manager, expand the NE Tree on the left and select the electrical layer board slot, click "Working Mode" to switch to the Working Mode sub-menu, pull down the "Working Mode" column to select the option parameters, click "confirm" "Wait for the successful operation prompt to pop up and click "Query", the current configuration is the same as the set value, then the operation is successful.

Item Parameter Working Mode 4x100G	
Working Mode	



7.10 Single board reset

In the NE Manager interface, click on an existing electrical layer board in the left NE tree, select the "Reboot" view, drop down and select the parameter "Cold Reboot", select it and a pop-up window will appear, click "confirm" to perform a cold reboot of the board.

ltem	Parameter
Reboot	Select

7.11 Setting line side port

7.11.1 Setting the optical channel frequency

Operating steps

The CFP2 module information configuration operation is the same for each rate line side.

Enter the NE manager, expand the electrical layer board on the left side of the NE tree, select the configuration port, switch to the optical channel sub-menu, select the option parameter in the "channel interval" column, the configuration optical channel frequency will display the frequency supported by the current channel interval, drop down to select the parameter, click "confirm" ", wait for the operation success prompt pop-up and click "query", the current configuration and the set value is the same that the operation is successful.

ltem	Parameter	
Online/Offline	Offline	
Speed	400G	
Modulation	16QAM	
Channel Interval(GHz)	400G-16QAM-100GHz	
Target Frequency(THz)	400G-16QAM-75GHz	
Target Output Power(dBm)	400G-16QAM-100GHz	

7.11.2 Setting the transmitting optical power

Operating steps

Enter the NE manager, expand the electrical layer board on the left side of the NE tree, select the configuration port, switch to the optical channel sub-menu, enter the configuration value in the "Target output power" column, click "confirm"", wait for the successful operation prompt to pop up and click "The actual transmitting optical power is the same as the configured value, which means the setting is successful.



ome Page 104-NE Manager×			(C) Cito
104	OCH OTN Transceiver Infomation		
Master Subrack			
Slot1(P616)	Item	Parameter	
Slot2(P616)	Online/Offline	Online	
Slot3(OCM8)	Speed	200G	
E Slot5(P512)	Modulation	OPSK	
Port(L1)			
Port(C1)	Channel Interval(GHz)	200G-QPSK-75GHz ~	
Port(C2)	Target Frequency(THz)	196.1125 ~	
Port(C3)			
Port(C4)	Target Output Power(dBm)	2.0	
Port(C5)	Actual Frequency(THz)	196.1125	
Port(C6)	Actual Input Power (dBm)	-60.0	
Port(C7)	Actual Output Power(dBm)	1.99	
Port(C8)	Description		
Port(C9)	5000000		
Port(C10)		Confirm Query	
Port(C11)		Contrain Guery	
Port(C12)			
Port(C13)			
Port(C14)			
Port(C15)			
Port(C16)			
Port(C17)			
Port(C18)			
Port(C19)			
Port(C20)			
Slot7(P514)			
Slot9(SCU) Slot10(SCU)			

7.11.3 Setting line-side port loop-back

Operating steps

Open the NE Manager, expand the electrical layer board on the left side of the NE Tree, select the configuration port, enter the OTN sub-menu, pull down the "Loop back" column and select the option parameter, click "confirm"", wait for the successful operation prompt to pop up and click Click "Query", the current configuration is consistent with the set value that is set successfully.

e Page 13-NE Manager×			00
13	OCH OTN Transceiver Infe	mation	
Master Subrack		T	
Slot1(P616)	Item	Parameter	
Port(L1)	Link State	DOWN	
Port(C1)	Loopback	NONE	
Port(C2) Port(C3)	Latency Test	NONE	
Port(C4)	Latency Test Results	FACILITY	
Slot2(P616)	Description	TERMINAL	
Slot3(P514) Slot5(P512)	LADOCIÓNINAL		
Slot7(P514)			Query
Slot9(SCU)			
Slot10(SCU)			
Slot11(FAN)			
Slot12(FAN)			
Slot13(FAN) Slot14(APU)			
Slot15(APU)			

7.11.4 Setting line side port Latency Test

Latency Test status

Operating steps

Open the NE Manager, expand the electrical layer board on the left side of the NE tree, select the configuration port, enter the OTN sub-menu, pull down the "Latency Test "



column and select the option parameters (DISABLED/NEAR/FAR), click "confirm"" and wait for the operation After the success prompt pops up, click "Query", the current configuration is consistent with the set value, then the setting is successful.

	🕎 Topology 🗸 🚊 Alarm ~	🖾 Performance ~ 🛯 @ Configuration ~ 🗃 Log ~ 彦 User ~ 🙎 System ~	ᆂ liujing 🌉
Home Page 13-NE Monager×			⊙Close Al
13	OCH OTN Transceiver Inf	omation	
Amaster Subrack Sol1(P616)	Item	Parameter	
Port(L1)	Link State	DOWN	
Port(C1)	Leopback	NONE	
Port(C2)	Latency Test	DISABLED	
Port(C4)	Latency Test Results	DISABLED	
 Slot2(P616) Slot3(P514) 	Description	NEAR FAR	
 Slot5(P512) Slot7(P514) 		Owny	
Slot9(SCU)			
Slot10(SCU)			
Slot11(FAN)			
Slot12(FAN)			
Slot14(APU)			
Slot15(APU)			
Server Time: 2023-03-11 15:55:27			V2.1.5 57 40 7 52 🐗 🧶

View Latency Test results

Prerequisites for operation

The boards at both ends are successfully interconnected, with NEAR configured at end A and FAR at end B. Check the measurement results at end A. Operating steps

Open the NE Manager, expand the electrical layer board in the left NE tree, select the configuration port, go to the OTN sub-menu, click the "View" button in the "Latency Test Results" column, and the Latency test results data box will pop up to view.

	🕎 Topology ~ 🚊 Ala	arm - 🚿 Performance	 Configuration - 🕞 L 	.og v 🔅 User v 😦	System ~	🚨 liujing 🥁
Home Page 13-NE Manager×						© Close Al
I3 Ruflech						
E 🖉 Master Subrack	Item Link State		Parameter			
Port(L1) Port(C1) Port(C2)	Loopback		NONE			
Port(C3)	Latency Test Latency Test Results		NEAR ···			
Sol2(P616) Sol2(P514) Sol5(P512)	Description					
Sict7(P514) Sict7(P514) Sict9(SCU)	Latency Test Results				×	
Skotto(SCU)	Latency_max Latency_avg	4294967295.0 429496728.0	Latency_max	4294967295.0		
SI012(FAN) SI013(FAN) SI013(FAN)	cannot_arg	42740720.0				
Skott5(APU)						
Server Time: 2023-03-11 15:55:33						V2.1.5 99 37 97 99

7.11.5 Setting line side optical module laser Enable

Operating steps



Open the NE manager, expand the electrical layer board on the left side of the NE tree, select the configuration port, enter the optical module sub-menu, select the option parameter in the "Laser Enable" column, click "confirm"", wait for the successful operation prompt to pop up and then click "The current configuration is the same as the set value, which means the setting is successful.

Home Page 104-NE Manager×			0
104	Refresh OCH OTN Transceiver Infomation		
Master Subrack			
Slot1(P616)	Item	Parameter	
Slot2(P616)	Online/Offline	Online	
Slot3(OCM8)	Laser Enable	Enabled	
Slot5(P512)		LINDIG	
Port(L1)	Transceiver Form Factor	Enabled	
Port(C1)	Compliance Code	Disabled	
Port(C2)	Distance	- P	
Port(C3)	Vendor	Acada Comm Inc.	
Port(C4)	PN	DP04CFP2-M34-00E	
Port(C5)	SN	205153858	
Port(C6)	Temperature (*C)	53.0	
Port(C7)			
Port(C8)	Input Power(dBm)	-50.0	
Port(C9)	Output Power(dBm)	1.99	
Port(C10)	Description		
Port(C11)			
Port(C12)		Query	
Port(C13)			
Port(C14)			
Port(C15)			
Port(C16)			
Port(C17)			
Port(C18)			
Port(C19)			
Port(C20)			
Slot7(P514)			
Slot9(SCU)			
Slot10(SCU)			

7.12 Setting client-side port

7.12.1 Setting up a client-side port loop-back

Operating steps

Open the NE Manager, click to expand the electrical layer board, select the configuration port, enter the port status sub-menu, select the option parameter in the "Loopback" column, click "confirm"", wait for the successful operation prompt to pop up and click "Query", the current configuration is the same as the set value, which means the setting is successful.

Iome Page 104-NE Manager×			_ ⊙ c
104	Port Status Interface Transceive	er Information LLDP	
A Master Subrack			
+ Slot1(P616)	Item	Parameter	
Slot2(P616)	Link State	DOWN	
E Slot3(OCM8)	Loopback	NONE	
Slot5(P512)			
Port(L1)	Description	NONE	
Port(C1)		FACILITY	
Port(C2)		TERMINAL Query	
Port(C3)			
Port(C4)			
Port(C5)			
Port(C6)			
Port(C7)			
Port(C8)			
Port(C9)			
Port(C10)			
Port(C11)			
Port(C12)			
Port(C13)			
Port(C14)			
Port(C15)			
Port(C16)			
Port(C18)			
Port(C18)			
Port(C20)			
■ Pon(C20) ■ Slot7(P514)			
Slot9(SCU)			
Slot10(SCU)			



7.12.2 Setting the port service type

Port service type setting rules, as shown in Table 1-5.

Board name	Working mode	Support service type
P616	4X100G	Support 100GE, 100GE_FlexE, OTU4 service mode
FOIO	4×100G	and synchronous C1 configuration for ports C2~C4
	2X100G	Supports 100GE, 100GE_FlexE, OTU4 service modes
		and synchronous of C12 ports with C11 configuration
		Ports C1~C10: 10GE_MAC_Penetrate,
P514		10_Bit_Penetrate, STM64, OTU2 service modes
	1X100G+10X10G	supported
		Port C11: 100GE, 100GE_FlexE, OTU4 service modes
		supported
P512	20X10G	Supports 10GE_MAC_Penetrate, 10_Bit_Penetrate,
		STM64, OTU2 service modes

Table 1-5 Port support service types

Operating steps

Open the NE manager, click to expand the electrical layer board, select the configuration port, enter the interface sub-menu, select the option parameter in the "Service Type" column, click "confirm"", wait for the operation success prompt to pop up and click " Query", the current configuration is consistent with the set value that is set successfully.



ome Page 104-NE Manager ×			⊙Close
104	Refresh Port Status Interface Transi	eiver Infomation LLDP	
Master Subrack		Terror and the second se	
 Slot1(P616) 	Item	Parameter	
Slot2(P616)	Service Type	10GE_MAC_Penetrate	
Slot3(OCM8)	ALS		
Slot5(P512)	16.0	10GE_MAC_Penetrate	
Port(L1)	Description	10GE_Bit_Penetrate STM64	
Port(C1)		OTUZ	
Port(C2)		Confirm Query	
Port(C3)			
Port(C4)			
Port(C6)			
Port(C7)			
Port(C8)			
Port(C9)			
Port(C10)			
Port(C11)			
Port(C12)			
Port(C13)			
Port(C14)			
Port(C15)			
Port(C16)			
Port(C17)			
Port(C18)			
Port(C19)			
Port(C20)			
 Slot7(P514) 			
Slot9(SCU)			
Slot10(SCU)			

7.12.3 Setting client-side FEC

The FEC setting rules are shown in Table 1-6.

Board Type	Port Type	Service type	FEC function
		100GE	Support
P616	100G	100GE_FlexE, OTU4	Not
		TOUGE_FlexE, OT04	support
		100GE	Support
	100G	100GE_FlexE, OTU4	Not
P514			support
(2.2	10G	10GE_MAC_Penetrate, 10_Bit_Penetrate,	1
	100	STM64, OTU2	/
D512	100	10GE_MAC_Penetrate, 10_Bit_Penetrate,	
P512	10G	STM64, OTU2	/

Table 1-6 FEC function settings

Operating steps

Open the NE Manager, click to expand the electrical layer board, select the configuration port, enter the interface sub-menu, select the option parameter in the "FEC"



column, click "confirm"", wait for the successful operation prompt pop-up and click "Query" The current configuration is consistent with the set value, that is, the setting is successful.

me Page 104-NE Manager×			⊙ Close
104	Port Status Interface Transc	ceiver Infomation LLDP	
Master Subrack	Item	Paraméter	
Slot2(P616) Port(L1)	Service Type	100GE 🗸	
Port(C1)	FEC	DISABLED	
Port(C2) Port(C3)	ALS	ENABLED	
Port(C4)	Description	Distanti Co.	
T Slot5(P512)		Centim Query	
Slot7(P514)			
Slot10(SCU)			
Slot12(FAN)			
Slot14(APU)			
Slot15(APU) Expansion Slot21(MUX48)			
Expansion Slot22(MUX96) Expansion Slot23(MUX48)			

7.12.4 Setting laser to switch off automatically (ALS)

Board Type	Port Type	Service type	ALS function
		100GE, 100GE_FlexE	Support
P616	100G	OTU4	Not
			support
		100GE, 100GE_FlexE	Support
	100G	OTU4	Not
P514			support
1 314	10G	10GE_MAC_Penetrate, 10_Bit_Penetrate	Support
		STM64, OTU2	Not
			support
P512	10G	10GE_MAC_Penetrate, 10_Bit_Penetrate	Support
		STM64, OTU2	Not

The ALS setting rules are shown in Table 1-7.



support

Table 1-7 ALS function settings

Operating steps

Open the NE manager, click to expand the electrical layer board, select the configuration port, enter the interface sub-menu, select the option parameter in the "ALS" column, click "confirm", wait for the successful operation prompt pop-up and click "Query" The current configuration is consistent with the set value, that is, the setting is successful.

104	Port Status Interface Transceiver Info	mation LLDP	
Master Subrack Subtl(P616)	Item	Paraméter	
Slot2(P616)	Service Type	100GE	
Port(L1)			
Port(C1)	FEC	DISABLED	
Port(C2)	ALS	ENABLED	
Port(C3)	Description	ENABLED	
Port(C4) Slot3(OCM8)	LUSS MONTH	DISABLED	
 Slot5(P512) 		Contine Query	
E Slot7(P514)			
Slot9(SCU)			
Slot10(SCU)			
Slot11(FAN)			
Slot12(FAN) Slot13(FAN)			
Slot14(APU)			
Slot15(APU)			
Expansion Slot21(MUX48)			
Expansion Slot22(MUX96)			
Expansion Slot23(MUX48)			

7.12.5 Setting client side module laser Enable

Operating steps

Enter the client side of the optical module sub-menu, "laser Enable" column, select the option parameters, the system prompt, click "confirm"", wait for the successful operation prompt pop-up and click "Query " The current configuration is the same as the set value, that is the setting is successful.

13	Port Status Interface Th	ransceiver Information	LLDP			
Amaster Subrack	1000 EST					
Slot1(P616)	Item		Parameter			
 Slot(P616) Slot2(P616) 	Online/Offline		Online			
Slot2(P515)						
Port(L1)	Leser Enable		Enabled	<u>^</u>		
Port(C11)	Transceiver Form Factor		Enabled			
Port(C12)	Compliance Code		Disabled			
Slot5(P512)	Distance		10			
E Slot7(P514)	Vendor		OEM			
Slot9(SCU)	PN		TR-FC13R-NBK			
Slot10(SCU)	SN		INJBT7850740			
Slot11(FAN)	Temperature (*C)		39.9			
Slot12(FAN)	Input Power(dBm)		5.17			
Slot13(FAN)						
Slot14(APU)	Output Power(dBm)		7.77			
Slot15(APU)	Description					
	Subchannel Information	Jacoust December	(Beer)	Output Damas (dData)	_	
	Lane ID	Input Power(Output Power(dBm)		
	1	-0.92		2.39		
	2	-0.59		1.66		
	3	-0.54		0.75		
	4	-1.37		2.03		
					Query	

7.12.6 Ethernet client-side LLDP Global

Configuring LLDP

Operating steps

Enter the LLDP sub menu, select the "LLDP Global" option parameter, click "confirm"", wait for the successful operation prompt to pop up and click "Query", the current configuration and the set value The current configuration is consistent with the set value, which means the setting is successful.

me Page 13-NE Manager×			⊙ Close Al
	Port Status Interface Transceiver Infomation	LLDP	
13	Refresh		
Master Subrack	Item	Parameter	
Slot2(P616)	LLDP Global(Note: LLDP Configuration is not supported in OTNI)	Disabled	
Slot3(P514)	Local Port		
Port(L1)	Neighbor Name	Enabled Disabled	
Port(C11) Port(C12)	Neighbor Port		
Slot5(P512)	Neighbor IP		
Slot7(P514)	Neighbor MAC Address	1	
Slot9(SCU)	Neighbor Port Description	31 ·	
Slot10(SCU)	Neighbor System Description		
Slot12(FAN)			
Slot13(FAN)		Query	
Slot14(APU)			
Slot15(APU)			

View LLDP

Prerequisites for operation

Only when the global LLDP mode is enabled, and then the client side port LLDP is enabled, the client side port will report LLDP information normally. The port docked to a switch or other device port also needs to be LLDP enabled.

Operating steps

Enter the LLDP submenu, turn on LLDP global enable and wait 1-2 minutes to query data related to LLDP neighbour information.

Home Page 13-NE Manager×			⊙ Close
13 Rotresh	Port Status Interface Transceiver Information	LLDP	
Master Subrack Slot1(P616)	item	Parameter	
Slot2(P616)	LLDP Global(Note: LLDP Configuration is not supported in OTNI)	Enabled	
Slot3(P514)	Local Port	C11	
Port(L1)	Neighbor Name	switch	
Pon(C11)	Neighbor Port	52	
Slot5(P512)	Neighbor IP	T	
E Slot7(P514)	Neighbor MAC Address	00:00:00:00:00:01	
Slot9(SCU)	Neighbor Port Description	52	
Slot10(SCU) Slot11(FAN)	Neighbor System Description	OpenSwitch V5.0R8.4L1 (asterlusion) Linux 4.14.48-yocto-standard #1 SM	
Skotts(APU)			



Note: When the port service type is OTN, the LLDP function is not available.

8 Alarm management

The alarm management function is a functional group for managing the faults of various network devices managed by the network management system during the operation of the system. It is capable of unified alarm management for the whole network equipment, providing alarm collection and display as well as querying the current and historical alarms of network elements, alarm shield, alarm email forwarding and other functions to improve the accuracy and efficiency of alarm processing.

The nature of alarms is divided into two categories: fault alarms and event alarms.

Fault alarms: are alarms generated by the failure of a hardware device or the failure of some important function.

Event alarms: are alarms that are suggestive or where the fault does not correspond to the recovery.

8.1 Current alarms

8.1.1 view current alarm

There are two ways to view current alarm.

Way 1: Right-click the NE in the topology view area, and click the "view Current Alarm" button in the "NE Information Box" to jump to the current alarm interface of the network element and view all the current alarm information of the NE, which is convenient for users to browse directly.

Way 2: Click on the menu bar - "Alarm", click on the sub-menu "Current Alarm" to jump to the current alarms page and view all the alarms generated by the current network elements.

In the current alarm screen, the "Auto Refresh" button is a left and right moving button (when clicked, it will switch from refresh to off or from off to refresh), in the refresh state the current page is refreshed every 10 seconds, in the off state the current page is not refreshed.



Scre	n								
N	E Name	Please Select N	E Name 💛 Subra	ICK ID Please Select Subrack ID	Slot	Please Select Slot	V Port Please Select F	ort ~	
Sta	irt Time	 Start Time 	End	Time S End Time	Alarm Level	Please Select Alarm Level	V Type Please Select T	ype v	Search Reset
ir Ba	ich Cle	iar All Export Csv	SyncAlarm					Auto F	Refresh Display
		Operation	Alarm Level	Alarm Type	NE Name	NE IP	Alarm Location	Alarm Name	Generation Time
	>	Clear Shield	Major	Fault Type	106	192.168.64.106	Subrack1-Slot1(P616)-PortC1	ODUK_PM_AIS	2023-03-04 02:17:21
	>	Clear Shield	Major	Fault Type	105	192.158.54.105	Subrack1-Slot1(P616)-PortC2	ODUK_PM_AIS	2023-03-04 02:17:21
	>	Clear Shield	Critical	Fault Type	106	192.168.64.106	Subrack1-Slot1(P616)-PortC2	ODUK_PM_SSF	2023-03-04 02:17:21
		Clear Shield	Critical	Fault Type	106	192.168.64.106	Subrack1-Slot1(P616)-PortC1	ODUK_PM_SSF	2023-03-04 02:17:20
	5	Clear Shield	Major	Fault Type	106	192.168.64.106	Subrack1-Slot1(P616)-PortC4	ODUK_PM_AIS	2023-03-04 02:17:16
	>	Clear Shield	Critical	Fault Type	106	192.168.64.106	Subrack1-Slot1(P616)-PortC4	ODUK_PM_SSF	2023-03-04 02:17:16
	Σ	Clear Shield	Major	Fault Type	106	192.168.64.106	Subrack1-Slot1(P616)-PortC3	ODUK_PM_AIS	2023-03-04 02:17:14
	>	Clear Shield	Critical	Fault Type	106	192.168.64.106	Subrack1-Slot1(P616)-PortC3	ODUK_PM_SSF	2023-03-04 02:17:14
	>	Clear Shield	Warning	Fault Type	106	192.168.64.106	Subrack1-Slot1(P616)	FEATURE_WITHOUT_LICENSE	2023-03-04 02:15:14
ed:(Items E	mpty					Total 385 10/page v	(1 2 3 4 5	6 39 > Go to

In the filter criteria box, you can select filter criteria to view and operate on the specified alarms according to your needs, either by using a single filter criterion or by combining several filter criteria. The scope of the filter varies according to the object to be filtered.

1) When a NE is selected and the rest are empty, all alarms for that NE are filtered out.

2) When a NE slot is selected and the rest are empty, all alarms under that NE slot are filtered out.

3) When the NE port is selected, all alarms under this port are filtered.

Click on the 'Search' button to perform a filter, click on the 'Reset' button to clear the filter and display all alarms. The filtering operation allows the user to quickly find and accurately locate a specific alarm.

Screen								
NE Name	Please Select NE Name	Subrack ID	Please Select Subrack ID	Slot	Please Select Slot	Port	Please Select Port	
Start Time	() Start Time	End Time	End Time	Alarm Level	Please Select Alarm Level	Туре	Please Select Type	Search Reset

8.1.2 Clear Current alarm

In the alarm data table of the current alarm screen, check the check boxes in front of the action items and click on "Clear Batch" to clear the alarms in bulk . Click on "Clear All" without checking the check boxes, then click on "confirm" to clear all the data for the current alarm. When working on only one alarm, simply click on the "Clear" button in the data line to clear the alarm data. After the clear operation, the corresponding alarm data will be moved to the historical alarm list.

Auto Clear: when the fault is recovered, the alarm will be automatically cleared and transferred to the historical alarm, the operator will be displayed as Auto and the clearing time will be the time when the fault is recovered.

Manual clear: clear alarm are not received due to communication interruptions, at this point they need to be cleared manually, after clearing they are transferred to historical



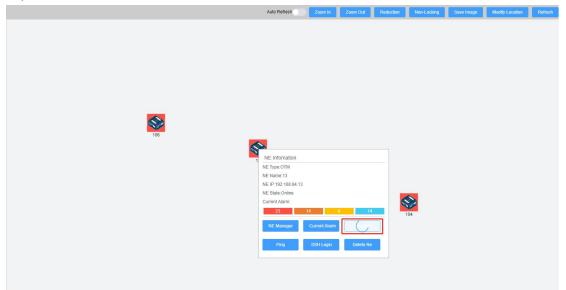
alarms, the operator clears the user name manually, the clearing time is the time the operation is cleared manually.

Clear Ba	atch C	lear All Exp	port Csv	SyncAlarm	
		Operatio	on	Alarm Level	Alarm Type
	>	Clear S	hield	Major	Fault Type
C.	>	Clear S	Shield	Major	Fault Type

8.1.3 Synchronization Current alarms

Mode of operation

Way 1: Right-click on the NE in the topology view area and click on the "Current Alarm" button in the "NE Information Box" to synchronization all the alarms of this network element in real time, so that the data can be updated and the accuracy of the data can be improved.



Way 2: Click on the menu bar - "Alarm", select the sub-menu "Current Alarm" to enter the current alarm interface. Click the "Alarm Synchronization" button, a dialog box will pop up, select the network element that needs to be synchronized, and click "confirm"" to synchronize all the current alarms of that network element.



				😨 Topology - 🙍 Alarm	Performance - 🛞 0	Configuration ~ 💮 Log ~	🕸 User ~ 🔒 System Monitor		🛓 admin 🧾
Home P	age	Current Alarm×							© Chine All
N	E Nam	e (Phone Select No	Subr	rack ID Fiscan Subject Subject ID	Siot 1		Port Plana Salect F		
Sta	art Tim	e 🗇 MetTroc.	En	d Time	Alarm Level		Type Please lister t		Search Report
Clear Bo	639 (B	eerAll Export Csv 1	lyncAtarm					Auto E	Refresh Display And Hide
		Operation	Alarm Level	Alarm Type	NEName	NEIP	Alarm Location	Alarmi Name	Generation Time
		Clear Shield	4Equit	Alarm Synchronisation			>	DUK_FM_AIS	2023-03-04 02 17:21
								DUK PM_AIS	2023-03-04 02:17:21
		Clear Shield	Critical	* Selective network element	Select			DUK_PM_SSF	2023-03-04 02:17:21
			Critical		13 106			DUK_PM_SSF	2823-83-04 62 17 20
		Clear Shield	MNOT		102			DUK_PM_AIS	2023-03-04 02:17.18
			Criticat	Fault Type	103			ODUK_PM_SSF	2023-03-04 02:17:16
		Clear Shield	CALL COLOR	Fault Type	106	192.168.64.106	Subrack1-Siet1(P616)-PortC3	ODUK_PM_AIS	2923-03-04 02:17:14
			Critical	Fault Type	106	192.168.64.105	Subrack1-Bist1(P616)-PorIC3	ODUK_PM_SSF	2923-03-04 02 17 14
		Clear Shield	Warning	Fault Type	105	192.168.64.106	Subrack1-Slot1(P016)	FEATURE_WITHOUT_LICENSE	2023-03-04 02:15:14
Selected (Diterns E						Total 385	1 2 3 4 5	6 29 > Gato 1
Server Tim	ie : 203	23-03-02 18 41 42							101 74 22 70 📢 🍂

8.1.4 Exporting current alarm

The "Export Csv" button allows you to select the alarms that need to be exported according to your needs, and export the alarm information to excel format for storage. Click on "Export Csv" and you will be prompted, click on "confirm"" to export.

Clear B	itch Ex	port Csv SyncAlarm						Auto Refr	esh Display And His
		Operation	Alarm Level	Alarm Type	NE Name	NE IP	Alarm Location	Alarm Name	Generation Time
	>	Clear Shield	Ma)or	Fault Type	13	192.168.64.13	Subrack1-Slot7(P514)-PortC2	ODUK_PM_AIS	2023-03-10 16:57:21
	>	Clear Shield	Major	Fault Type	13	192.168.64.13	Subrack1-Slot7(P514)-PortC4	ODUK_PM_AIS	2023-03-10 16:57:21
	>	Clear Shield	Critical	Fault Type	13	192.168.64.13	Subrack1-Slot7(P514)-PortC2	ODUK_PM_SSF	2023-03-10 16:57:21
	>	Clear Shield	Critical	Fault Type	13	192.168.64.13	Subrack1-Slot7(P514)-PortC4	ODUK_PM_SSF	2023-03-10 16:57:21
	>	Clear Shield	Major	Fault Type	13	192.168.64.13	Subrack1-Slot7(P514)-PortC1	ODUK_PM_AIS	2023-03-10 16:57:20

8.2 History alarm

8.2.1 view history alarm

Operating steps

Click on the menu bar - "Alarm", then click on the sub-menu "History Alarm" to jump to the History Alarm page, where you can view all cleared alarms, their location, details of when they were cleared and who cleared them.

The "Search" and "Reset" buttons function in the same way as in the current alarm.

Note: Historical alarm data cannot be deleted, it can only be dumped and the old data is no longer retained by the network administrator after dumping.



Scree	E Name Please Select NE Name	Subrack ID	Please Select Subrack ID	V Slot Please	Select Slot v	Port Please Select Port		
Sta	ert Time Start Time	End Time	S End Time	Alarm Level Please	Select Alarm Level 🗸			Search Reset
ort C	a)						Auto Refres	h 📄 Retresh Display Ar
	NE Name	NE IP	Alarm Level	Alarm Name	Alarm Location	Generation Time	Clearer	Clear Time
1	105	192.168.64.106	Major	ALS_ACTIVE	Subrack1-Slot1(P616)-PortC2	2023/3/4 02:17:14	Auto	2023/3/4 02:18:24
	105	192.168.64.106	Major	ALS_ACTIVE	Subrack1-Slot1(P616)-PortC1	2023/3/4 02:17:14	Auto	2023/3/4 02:17:30
	106	192.168.64.106	Minor	OTUK_SSF	Subrack1-Slot1(P616)-PortC3	2023/3/4 02:17:14	Auto	2023/3/4 02:17:21
	106	192.168.64.106		OTUK_SSF	Subrack1-Slot1(P616)-PortC4	2023/3/4 02:14:56	Auto	2023/3/4 02:17:14
	106	192.168.64.106	Minor	OTUK_SSF	Subrack1-Slot1(P616)-PortC3	2023/3/4 02:14:54	Auto	2023/3/4 02:17:14
	105	192.168.64.106		OTUK_SSF	Subrack1-Slot1(P616)-PortC2	2023/3/4 02:14:52	Auto	2023/3/4 02:17:14
	105	192.168.64.106	Minor	OTUK_SSF	Subrack1-Slot1(P616)-PortC1	2023/3/4 02:14:50	Auto	2023/3/4 02:17:14
	103	192.168.64.103	Critical	EQPT_MISMATCH	Subrack1-Slot3(OTA35)	2023/3/4 01:59:04	Auto	2023/3/4 02:00:34
	106	192.168.64.106	Minor	OUT_PWR_LOW	Subrack1-Slot3(P514)-PortL1	2023/3/4 01:53:04	Auto	2023/3/4 01:53:53
	106	192.168.64.106	Warning	PORT_MODULE_OFFLINE	Subrack1-Slot3(P514)-PortL1	2023/3/4 01:52:24	Auto	2023/3/4 01:53:04
led (Interns Empty					Total 478 10/page 🗸 🗧	1 2 3 4 5 6	48 > Go to [

8.2.2 Exporting history alarm

The "Export Csv" button has the same function as in the current alarm.

Export C	Ado Rebert 🔵 fototer										
	NE Name	NE IP	Alarm Level	Alarm Type	Alarm Name	Alarm Location	Generation Time	Clearer	Clear Time		
	13	192.168.64.13	Critical	Fault Type	NE_OFFLINE	NE	2023/3/11 14:50:07	Auto	2023/3/11 14:53:47		
	104	192.168.64.104	Critical	Fault Type	NE_OFFLINE	NE	2023/3/11 14:28:20	Auto	2023/3/11 14:39:32		
	13	192.168.64.13	Critical	Fault Type	OPUK_CSF	Subrack1-Slot7(P514)-Port	2023/3/10 16:57:18	Auto	2023/3/10 16:57:19		
	13	192.168.64.13	Critical	Fault Type	OPUK_CSF	Subrack1-Slot7(P514)-Port	2023/3/10 16:57:18	Auto	2023/3/10 16:57:19		

8.3 Alarm shield

8.3.1 New add alarm shield

Click on the menu bar - "Alarm", click on the sub-menu "Alarm shield", open the alarm shield view, click "Add", in the new pop-up window, select the shield NE, shield range, shield object in the Add pop-up window, and then click "confirm"" to add the alarm shield successfully.

Description of the shield rules.

1) When a network element is selected as the shield target, all alarms under that element are shielded.

2) When a single board is selected for shield, all alarms under that single board are shielded.

3) When a port is selected as the shield target, all alarms under that port are shielded.



	🖳 Topology 🗸 🚊 Alarm 🗸	🖾 Performance - 🛛 🗐 Log -	🚳 Configuration ~ 🚿 User	✓		💄 admin 🌉
Home Page Alarm Shield ×						⊙ Close All
NE Name Please Select NE Name V Scarch	Repet					
Add Dekke Batch						Refresh Display And Hide
Numbe r NE Name	NE IP		Object Name		Object Range	
		No Data				
Selected Ottems Empty	Add			×		
	Item "Shield NE	Parameter V				
	"Shield Range	Select ~				
	*Shield Object	Select ~				
	Confirm Cancel					
	Conten					
						-40.4
erver Time: 2023-04-04 11:20:38					V2.2.0 128 71	

8.3.2 Query alarm shield

Enter the name of the network element to be queried and click "Search" to view all alarm shield information for that element.

		몇 Topology ~	🚊 Alarm ~	E Performance ~	🗐 Log 🗸	Configuration ~	ø User ∽	g System √	ᆂ admin 🌉
Home Page	Alarm Shield×								⊙Close All
NE Name	Please Select NE Name 🛛 🗸	Reset							

8.3.3 Deleting alarm shield

In the alarm shield screen, delete the searched alarm shield data.

Operating steps

Tick the checkbox in front of the serial number. Click on "Delete Batch" to delete the alarm shield.

sea	rchs				
NE	Name 1	3 Search Reset			
Add 1	Delete Batch	NE Name	NE IP	Object Name	Refresh Display And Hide
	Number	NE Name	NE P.	Object Name	Object Range
	1	13	192.168.64.13	Subrack1-Slot1(P616)-PortC1	Port
	2	13	192.168.64.13	Subrack1-Slot7(P514)-PortC3	Port
0	3	13	192.168.64.13	Subrack1-Slot9(SCU)	Slot
	4	13	192.168.64.13	Subrack1-Slot2(P616)-PortC2	Port
Selected	2Items Empty				

8.4 Alarm Forwarding

8.4.1 Configuring alarm forwarding E-mail information

Menu bar - "Alarm", click on the sub-menu "Alarm Forwarding" to enter the alarm forwarding view interface. The first step is to complete the alarm e-mail server configuration, fill in the sender e-mail information correctly, different types of e-mail, SMTP address and port number are not the same, please check to confirm the server type and



SMTP information to be used before configuring the server e-mail. The e-mail types supported by network management are: QQ, Netease, Sohu, Google and Microsoft.

"Send test email" button function, used to verify whether the e-mail configuration is successful, click to enter the recipient's email address, click "Send test email" again, pop-up prompt "test passed " means the configuration is successful.

Sender Inform	ation
* Email Name	admin
* Email Auth Code	kyxkuonogdqhifbf
* Email Address	abc123@qq.com
* SMTP Address	smtp.qq.com
* SMTP Port	25
	Receive Email Address
	Send Test Email Cancel
	Configure Refresh

8.4.2 Configuring alarm forwarding rules

In the menu bar - "Alarm", select the sub-menu "Alarm Forwarding" to enter the alarm forwarding view interface. Click the "Add Rule" button and the "Add" pop-up window will appear. In the pop-up window, enter the rule name, select the specified network element or all network elements, check the desired alarm name and select the rule status. At the receiving email list, fill in the receiving email user name and address information and click the "Add" button on the right side, the receiving email information will be added successfully, and finally click "Add" at the bottom, after the rule is added successfully, when the corresponding network element generates the checked alarm, it will After the rule is successfully added, when the corresponding network element to the receiving email synchronously.



Add				×
* Rule Name	1			
* NE	 ➡ Node ➡ ∴ 666 ➡ ∴ 885 ➡ ≡ 13 ➡ 106 ➡ ≡ 102 ➡ 103 ➡ 104 ➡ ∴ 999 			
* Select Alarms Name	Alarm Type	Alarm Name	Alarm Level	
		ETH_LOS	CRITICAL	
		TCA_ETH_CRC_ERR	MINOR	
		ETH_LOS_SYN	CRITICAL	
* Status	Enabled			
Receive Email List	Username Email	Add		
	Operation	Username	Email Address	
		No Data		
	Add Cancel			

Rule Status

Alarm Matiliantian Duta

The "Refresh" button function is used to update the rule data and status.

The "Enable Batch" button function enables the alarm notification rule, which is enabled by default.

The "Disable Batch" button function turns alarm notification rules off. At least one rule must be ticked in front of the action item for the operation to be successful.

Add Rule Delete Batch Enable Batch Disable Batch	Search Refresh			
Operation	Rule Name	Alarm Source	Receive Email Address	Status
Edit	1	106	abc123@.com	Enabled

8.4.3 Deleting alarm forwarding rules

In the menu bar - "Alarm", select the sub-menu "Alarm Forwarding" to enter the alarm forwarding view. Check the check boxes in front of the action items. Click on "Delete Batch" to delete the alarm notification rule. To delete a single alarm notification rule, click on the "Delete" button; you can also edit a single alarm notification rule by clicking on the "Edit" button and selecting the information you want to edit or view.

Add Rule Delete Batch Enable Batch Disable Batch	Search Refresh			
C Operation	Rule Name	Alarm Source	Receive Email Address	Status
Edit Delete	4	13	abc123@163.com	Enabled
Edit Delete	2	106	abd123@gmail.com	Enabled
Total 2 20/page V C 1 V Go to 1				

9 Performance Management

Periodically collects various performance data of network elements to form statistics for monitoring, providing maintenance personnel with a means of evaluation and analysis.



The ability to query performance against performance object types enables efficient collection of valid performance, improves processing efficiency and reduces the need for network administrators to process large amounts of redundant performance data. The display focuses mainly on key performance, reducing the amount of data and improving calculation efficiency.

9.1 Current performance

9.1.1 View current performance

Operating steps

Server Time : 2023-03-09 17:08:16

Click on the menu bar "Performance" to enter the current performance interface, select the performance type, NE, etc., as shown in the figure, you can query the real-time performance data of the corresponding network element according to the performance type.

me Paş	ge Current Performance									00
* Pf	М Туре ЕТН		✓ Ø *NE	13		* Subrack Sub	rack1			
	* Slot P616-1-1		∨ ⊚ Port	C1		• PM Granularity 15m	in			Query Res
port	Zeroing									
ex	PM Granularity	NE Name	PM Location	РМ Туре	PM Parameter	Instant	Min	Max	Avg	PM Time
	15MIN	13	Subrack1-Slot1(P616)-Port	ETH	RX-BYTES	0.0	T	T.	1	2023-03-09 17:07:56
	15MIN	13	Subrack1-Slot1(P616)-Port	ETH	RX-CRC-ERR-SUM	0.0	1			2023-03-09 17:07:56
	15MIN	13	Subrack1-Slot1(P616)-Port	ETH	TX-BYTES	0.0	1	1	1	2023-03-09 17:07:56
	15MIN	13	Subrack1-Slot1(P616)-Port	ETH	RX-PKTS	0.0				2023-03-09 17:07:56
			Subrack1-Slot1(P616)-Port	ETH	TX-PKTS	0.0	1	í.	1	2023-03-09 17:07:56
	15MIN	13	Sabrack - Sakri (F6 10) - Polt	EIN		0.0				
	15MIN	13	300400 H 300 (P3 10) P01	EIN	PACKE	5.0				
	15MIN	13	3001403 1-300 ((*) 10)*01	EIN						
	150014	13	Social AN 194 (194 (197 AL.)	EIN						
	158/114	13	Social ALTISM (proj)/Pat.	EIN	DATAS					
	150/114	13	Social Addression (PE 19) Part	EIN	Data 2					

V2.1.4 49 35 4 37 📢 🕭

1-8 below.	
Performance	Performance parameters
type	
ΟΤυ	Signal to Noise Ratio OSNR, SM Background Block BER, SM BER sec
	ES, SM Severe BER sec SES, SM Unavailable sec UAS, Pre-FEC
	BER, Post-FEC BER POST-BER
ETH	Total packets received RX-PKTS, total packets sent TX-PKTS, total
	bytes received RX-BYTES, total bytes sent TX-BYTES, CRC error
	packets received RX-CRC-ERR-SUM
Transceiver	input optical power INPUT-POWER, output optical power
	OUTPUT-POWER, bias current LASER-BIAS-CURRENT, module
	temperature TEMPERATURE
card	Temperature TEMPERATURE

Performance types and corresponding performance parameters, as shown in Tables 8 below.

Table 1-8 Performance type parameters



9.1.1.1 View the OTU Performance

Operating steps

Click on the menu bar "Performance > Current Performance" to enter the current performance interface, select the performance type "OTU", then select NE, subrack, slot, port, PM Granularity and click query, the query results will be displayed in the table below The data includes each performance parameter under the performance type, current value and PM Granularity, and the FEC BER before error correction and FEC BER after error correction supports querying current value, maximum value, minimum value, average value and PM time.

me í	Page Current Pe	rformance×								0
•	РМ Туре оти			* NE 106		* Subrack S	ubrack1			
	Slot P514-	4	× 8	Port L1		PM Granularity	smin			Query Res
	t Zerong PM Granularity	NE Name	PM Location	РМ Туре	PM Parameter	Instant	Min	Max	Avg	PM Time
_		NE Name 105	PM Location Subrack1-Stat3(P514)-P	10000	PM Parameter PRE-FEC-BER	Instant 1.033E-2	Min 7	Max	Avg 7	PM Time 2023-03-02 16 08 29
o per l	PM Granulerity	1000000118A	and the second	orill.1 OTU	and the second second	(11) 15. (13) 1	Min 7	Max 7 7	Avg 7 1	

9.1.1.2 View ETH performance

Operating steps

Click on the menu bar "Performance > Current Performance" to enter the current performance interface, select the performance type as "ETH ", then select the corresponding NE, subrack, slot, port, PM Granularity and click on query, the query result will be shown in the table below .The data includes each performance parameter under the performance type, the current value and the PM time.

Iome	Page Current Perfor	nance×	똋 Topology ~	<u>∎</u> Alarm ~		nfiguration - 🕀 Log -				adm
	PM Type ETH		• • • • • •	106		Subrack Subr	ack1			
	' Slot P514-1-3		v @ Port	C11		* PM Granularity 15m	n			Ouery Rese
Troo	t Zerono									
(po	t Zeroing PM Granularity	NE Name	PM Location	РМ Туре	PM Parameter	Instant	Min	Max	Avg	PM Time
(pt)		NE Name 105	PM Location Subrack1-Stet2(P514)-Port	РМ Туре ЕТН	PM Parameter RX-BYTES	Instant 0.0	Min 1	Max /	Avg /	PM Time 2023-03-02 17:40:29
(pol	PM Granularity	10000	1000-0000000	000000000			Min I I	Max /	Avg 7	10000000
	PM Granularity	105	Subrack1-Slot3(P514)-Port	ЕТН	RX-BYTES	0.0	Min 7 7	Max 7 7 7	Avg <i>I</i> <i>I</i> <i>I</i>	2023-03-02 17:40:29
	PM Granularity 15MIN 15MIN	105	Subrack1-Stet3(P514)-Port Subrack1-Stet3(P514)-Port	ETH ETH	RX-BYTES RX-CRC-ERR-SUM	0.0	Min <i>t</i> <i>t</i> <i>t</i> <i>t</i>	Max t t t t t t	Avg 7. 7. 7. 7.	2023-03-02 17:40:29 2023-03-02 17:40:29

9.1.1.3 View transceiver performance

Operating steps

Click on the menu bar "Performance > Current Performance" to enter the current performance interface, select the performance type "Transceiver, then select NE, subrack, slot, port, PM Granularity and click on query, the query results will be displayed in the table below. The data includes each performance parameter under the performance type, current value, maximum value, minimum value, average value and PM time.



ome P	ige Current Perk	mance×								
• •	M Type TRANSC	EIVER	~ e .	NE 106		' Subrack Sub	ROK1			
	* Slot P514-1-3		× 0 *P	ort C11		• PM Granularity 15m	1			Query Re
mont	Zeroing									
	Zeroing PM Granularity	NE Name	PM Location	РМ Туря	PM Parameter	Instant	Min	Мах	Avg	PM Time
	And and a second second	NE Name	PM Location Subrack1-Slot3(PS14)-Port	РМ Туре	PM Parameter OUTPUT-POWER	Instant 7.43	Min -60.0	Мак 7.45	Avg -6.23	
	PM Granularity		Contraction and an open set	РМ Туре	a second s	Constant of the second		and the second s		PM Time
	PM Granularity ISMIN	105	Subrack1-Sldt3(#514)-Port	PM Type TRANSCEIVER TRANSCEIVER	OUTPUT-POWER	7.43	-60.0	7.45	-6.23	PM Time 2023-03-02 17:44:17

9.1.1.4 View card performance

Operating steps

Click on the menu bar "Performance > Current Performance" to enter the current performance interface, select the performance type "CARD", then select select NE, subrack, slot, port, PM Granularity and click on the query, the query results will be displayed in the table below. The data includes each performance parameter under the performance type, current value, maximum value, minimum value, average value and PM time.

00
V (i) Query Res
Max Avg PM Time
Max Avg PM Time

9.1.2 Performance zeroing

If you want to zeroing the current performance monitoring data, you can do the same for 15 minutes and 24 hours when you want to zeroing the current performance type monitoring data as a result of the current performance query and start monitoring again Operating steps

Click on the menu bar "Performance > Current Performance" to enter the current performance interface, first select the PM type, then select NE, subrack, slot, port, PM Granularity to query the current performance, click on the "Zeroing" button in the upper left corner of the query result table. Wait for the "Operation Successful" prompt to pop up, the current performance data will be cleared and the counting will start again.

		-								
Home Pag	e Current Performance									⊙CK
* PI	A Type ETH		✓ Θ *NE	104		* Subrack Subra	k1			
	* Slot P512-1-5		✓ Ø *Port	C1	~ @ }•	PM Granularity 15min				Query Rese
Export	Zeroing									
	Zeroing PM Granularity	NE Name	PM Location	РМ Туре	PM Parameter	Instant	Min	Мах	Avg	PM Time
-		NE Name	PM Location Subrack1-Slot5(P512)-Por	РМ Туре ЕТН	PM Parameter RX-BYTES	Instant 0.0	Min	Max /	Avg /	PM Time 2023-03-10 17:48:50
-	PM Granularity						Min 1 1	Max / /	Avg /	
-	PM Granularity 15MIN	104	Subrack1-Slot5(P512)-Por	ЕТН	RX-BYTES	0.0	Min 7 7 7	Max 7 7 7	Avg 7 7 7	2023-03-10 17:48:50
Export Index 1 2 3 4	PM Granularity 15MIN 15MIN	104	Subrack1-Slot5(P512)-Por Subrack1-Slot5(P512)-Por	ЕТН	RX-BYTES RX-CRC-ERR-SUM	0.0	Min 7 7 7 7 7 7	Max / / / / /	Avg / / / / / / /	2023-03-10 17:48:50 2023-03-10 17:48:50



9.1.3 Export Current performance

The "Export" button function exports the current data in the query results table to

excel format for storage.

			몇 Topology	🖌 🚊 Alarm ~ 🔜	Performance - 🖓 Co	infiguration ~ 🕀 Log	l∼ ∰ User~ 💁 S	System ~		Liujing
ome Pag	e Current Performance	×								⊙ Close
PN	Туре ЕТН		✓ Ø *NE	104		* Subrack Subrac	d			
	* Slot P512-1-5		∨	C1	~ © *	PM Granularity 15min				Query Reset
Export	Zeroing									
ndex	PM Granularity	NE Name	PM Location	РМ Туре	PM Parameter	Instant	Min	Max	Avg	PM Time
	15MIN	104	Subrack1-Slot5(P512)-Por	ETH	RX-BYTES	0.0	1	1	1	2023-03-10 17:48:50
	15MIN	104	Subrack1-Slot5(P512)-Por	ETH	RX-CRC-ERR-SUM	0.0	1	T	T	2023-03-10 17:48:50
	15MIN	104	Subrack1-Slot5(P512)-Por	ETH	TX-BYTES	0.0	1	1	1	2023-03-10 17:48:50
	15MIN	104	Subrack1-Slot5(P512)-Por	ETH	RX-PKTS	0.0	1	1	1	2023-03-10 17:48:50
	15MIN	104		ETH	TX-PKTS	0.0				2023-03-10 17:48:50

10 System management

10.1 Data dump

The data dump function facilitates the preservation and backup of data.

forme Page Data Dump							⊙ Close
Manual Dump	History AlarmManual Dump						
History Alarm Data	File Path	D:Jalarm					
Login Log	File Format	Excel (*.stoc)					
Auto Dump	* Data Generation Time						
History Alarm Data	* Data Generation Deadline						
Operation Log			Confirm	Refresh			
I Login Log							

10.1.1 Alarm dump

10.1.1.1 Automatic dump

Background information

The automatic file dump time is 02:00 and when the data exceeds the maximum storage capacity a percentage (%) of the database will be automatically dumped to the corresponding folder on the network management server.

Operating steps

Click on the menu bar - "System", click on the sub-menu "Data Dump" to enter the data dump interface view. To automatically dump historical alarm data, select "History



alarm data" and choose the dump location, enter the maximum storage capacity, the percentage of the database to be dumped (%) and click "confirm"" to set up the dump successfully.

me Page Data Dump	9						⊙Clos
Ianual Dump	History AlarmAuto Dump						
History Alarm Data	File Path	D:talarm					
Operation Log	File Format	Excel (*.vtoc)					
uto Dump	* Total Memory	1000000					
History Alarm Data	* Dump Database Of(%)	50					
Operation Log			Confirm	n Refresh			
Login Log							

10.1.1.2 Manual dump

Operating steps

Click on the menu bar - "System", click on the sub-menu "Data Dump" to enter the data dump interface view. To manually dump history alarm data, select "History Alarm data" and choose the dump location, enter the data generation time and data generation deadline, then click "ok" and wait for the successful operation prompt to pop up and check the corresponding file directory of the server for the existence of the specified dumped The folder is successfully dumped.

3		9 I	opolog	,				ù Configuration ~ 🗃 Log ~ 🕺 User ~ 🙎 System ~	
History AlarmManual Dump									
File Path	D:lalarm								
File Format									
* Data Generation Time	0 2023-03	-10 00.00	:00						
* Data Generation Deadline	© 2023-03	-10 20:08	00						
					-				
	2	023-03-1	0		20.08.0	00			
		0	20	23 M	arch		× ×		
			2.0	2.0 110	ui chi		~ ~		
	s	un Mo	n Tue	Wed	Thu	Fri	Sat		
		6 2)	78	1	2	3	4		
		5 6				-			
	21	12 13	14	15	16	17	18		
	्य	19 20	21	22	23	24	25		
	2	16 27	28	29	30	31			
			0.15		8		8		
						New	OK		

10.1.2 Log dump

10.1.2.1 Automatic dump

Operating steps



Click on the menu bar - "System", click on the sub-menu "Data Dump", enter the data dump interface view. To automatically dump log data, select "Operation Log" and choose the dump location, enter the maximum storage capacity, the percentage of the database to be dumped (%) and then click "confirm"" to set up the dump successfully.

		멸 Topology ~	🚊 Alarm - 🛛 🖾 Performance	- 💮 Configuration - 🗐 L	.og ∽ 😤 User ∽	System ∼	ᆂ liujing 🌉
Home Page Data Dump>							⊙Close All
Manual Dump	Operation Log Auto Dump						
History Alarm Data	File Path	D:loperlog 🗸					
Login Log	File Format	Excel (*.vinx)					
Auto Dump	* Total Memory	1000000					
History Alarm Data	* Dump Database Of(%)	50					
Login Log			Confirm Refresh				
Server Time: 2023-03-11 16:22	:07						V2.1.5 58 37 7 52 📢 🕭

10.1.2.2 Manual dump

Operating steps

Click on the menu bar - "System", click on the sub-menu "Data Dump" to enter the data dump interface view. To manually dump log data, select "Operation Log" and choose the dump location, enter the data generation time and data generation deadline, then click "ok"" and wait for the successful operation prompt to pop up and check the corresponding file directory for the existence of the specified dump folder. The dump is successful. The procedure for manual dumping of logs is the same as above.

amp×		
Operation Log Manual Dur	an	
File Path	D'operlog V	
File Format	Excel (*.disx)	
* Data Generation Time	© 2023-03-10 00:00:00 @	
Data Generation Deadline	© 2023-03-10 13.08:00 ©	
	liesh	
	2023-03-10 13:08:00	
	« < 2023 March > »	
	Sun Mon Tue Wed Thu Fri Sat	
	26 27 28 1 2 3 4	
	5 6 7 8 9 🕦 11	
	12 13 14 15 18 17 18	
	19 20 21 22 23 24 25	
	26 27 28 29 30 31 1	
	2 3 4 5 6 7 8	
	Now OK	