RAISECOM

www.raisecom.com

Mirror Function Configuration Guide
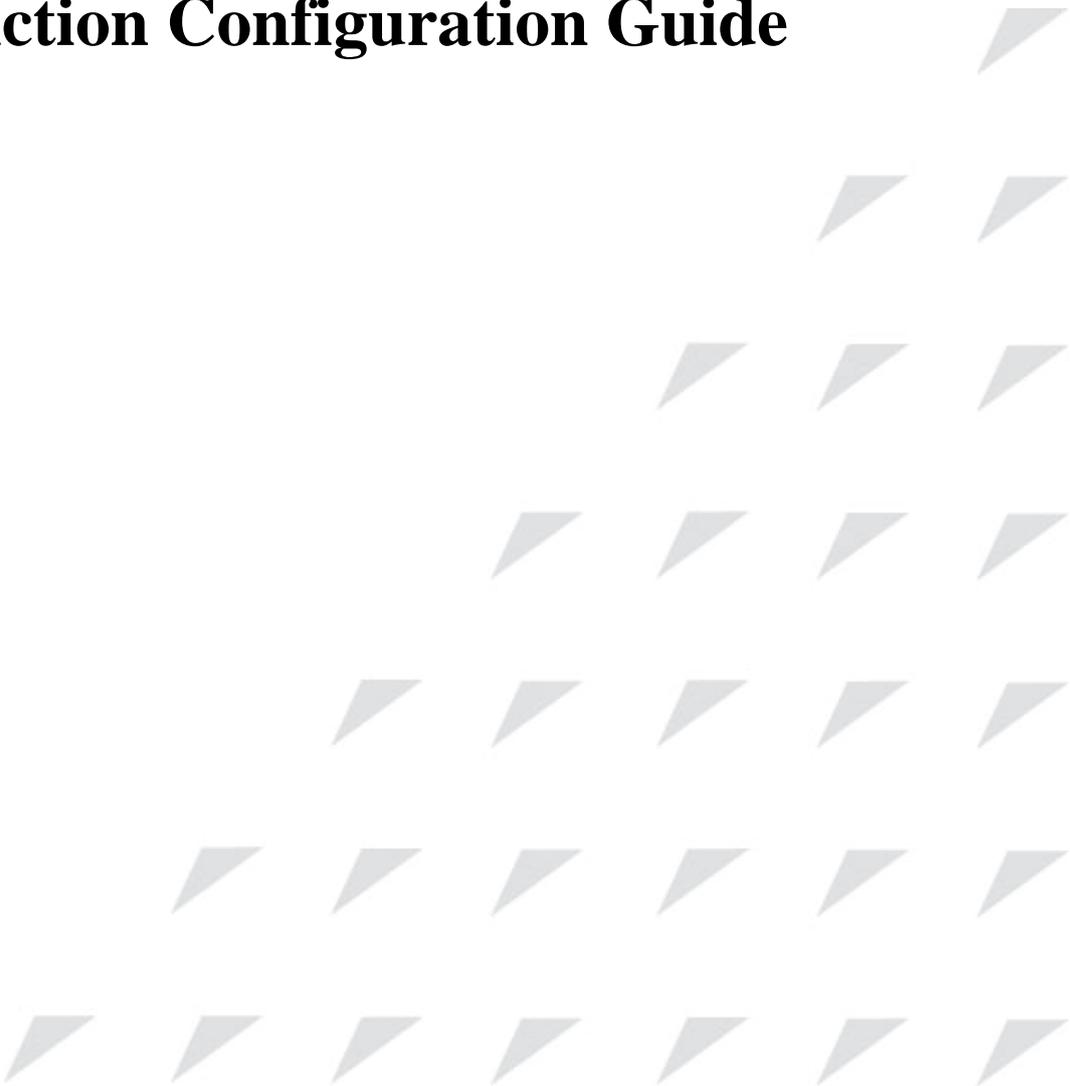
Legal Notices

Warranty.

Restricted Rights Legend.

Copyright Notices.

Trademark Notices

Contact Information

Technical Assistance Center

The Raisecom TAC is available to all customers who need technical assistance with a Raisecom product, technology, or, solution. You can communicate with us through the following methods:

Add: 1120, Haitai Tower, 229 Fourth North Loop Middle Road, Haidian District, Beijing 100083

Tel: +86-10-82884499 Ext.878 (International Department)

Fax: +86-10-82885200, +86-10-82884411

World Wide Web

You can access the most current Raisecom product information on the World Wide Web at the following URL:

http://www.raisecom.com

Feedback

Comments and questions about how the NView iEMS system software works are welcomed. Please review the FAQ in the related manual, and if your question is not covered, send email by using the following web page:

http://www.raisecom.com/en/xcontactus/contactus.htm.

If you have comments on the NView iEMS specification, instead of the web page above, please send comments to:

export@raisecom.com

We hope to hear from you!

CONTENTS

Preface

About This Manual

This manual introduces primary functions of the configuration management software for RC series products.

Who Should Read This Manual

Sales and marketing engineers, after service staff and telecommunication network design engineers could use this manual as a valuable reference. If you want to get an overview on features, applications, architectures and specifications of Raisecom RC series integrated access devices, you could find useful information in this manual as well.

Compliance

The RC series products developed by Raisecom are strictly complied with the following standards as well as ITU-T, IEEE, IETF and related standards from other international telecommunication standard organizations:

YD/T900-1997 SDH Equipment Technical Requirements - Clock

YD/T973-1998 SDH 155Mb/s and 622Mb/s Technical conditions of optical transmitter module and receiver module

YD/T1017-1999 Network node interface for the Synchronous Digital Hierarchy (SDH)

YD/T1022-1999 Requirement of synchronous digital hierarchy (SDH) equipment function

YD/T1078-2000 SDH Transmission Network Technique Requirements-Interworking of Network Protection Architectures

YD/T1111.1-2001 Technical Requirements of SDH Optical Transmitter/Optical Receiver Modules——2.488320 Gb/s Optical Receiver Modules

YD/T1111.2- 2001 Technical Requirements of SHD Optical Transmitter/Optical Receiver Modules——2.488320 Gb/s Optical Transmitter Modules

YD/T1179- 2002 Technical Specification of Ethernet over SDH

G.703 Physical/electrical characteristics of hierarchical digital interfaces

G.704 Synchronous frame structures used at 1544, 6312, 2048, 8448 and 44 736 kbit/s hierarchical levels

G.707 Network node interface for the synchronous digital hierarchy (SDH)

G.774 Synchronous digital hierarchy (SDH) - Management information model for the network element view

G.781 Synchronization layer functions

G.783 Characteristics of synchronous digital hierarchy (SDH) equipment functional blocks

G.784 Synchronous digital hierarchy (SDH) management

G.803 Architecture of transport networks based on the synchronous digital hierarchy (SDH)

G.813 Timing characteristics of SDH equipment slave clocks (SEC)

G.823 The control of jitter and wander within digital networks which are based on the 2048 kbit/s hierarchy

G.825 The control of jitter and wander within digital networks which are based on the synchronous digital hierarchy (SDH)

G.826 End-to-end error performance parameters and objectives for international, constant bit-rate digital paths and connections

G.828 Error performance parameters and objectives for international, constant bit-rate synchronous digital paths

G.829 Error performance events for SDH multiplex and regenerator sections

G.831 Management capabilities of transport networks based on the synchronous digital hierarchy (SDH)

G.841 Types and characteristics of SDH network protection architectures

G.842 Interworking of SDH network protection architectures

G.957 Optical interfaces for equipments and systems relating to the synchronous digital hierarchy

G.691 Optical interfaces for single channel STM-64 and other SDH systems with optical amplifiers

G.664 Optical safety procedures and requirements for optical transport systems

I.731 ATM Types and general characteristics of ATM equipment

I.732 ATM Functional characteristics of ATM equipment

IEEE 802.1Q Virtual Local Area Networks (LANs)

IEEE 802.1p Traffic Class Expediting and Dynamic Multicast Filtering

IEEE 802.3 CSMA/CD Access Method and Physical Layer Instruction

Chapter 1 Mirror Function Configuration

1.1 Local Port Mirror Function Principle

Mirror function is to copy some messages the appointed destination port from the appointed source port, while the normal message transmission works well. With this function, exchange equipment user can monitor the message delivering and receiving of a certain port, and analyse the network situation or defaults.
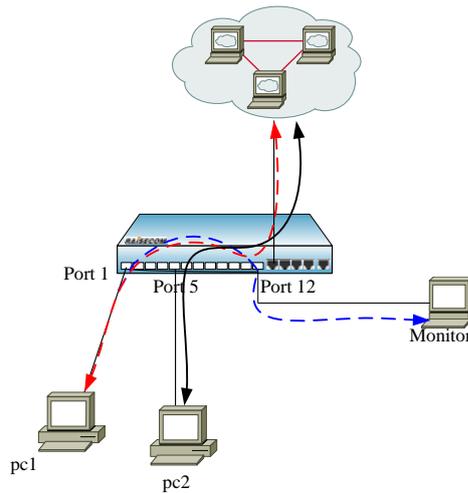
1-1 Mirror Function

Consult 1-1 as the principle.

PC1 and PC2 connect internet through port 1 and port 5 of the exchange equipment. When we need to monitor the data from PC1, we need to appoint the port 1 of the facility on connection as the mirror source port, and enable the mirror function of the receiving port message, then appoint monitoring port 12 as the destination port. When the data message from PC1 enters the exchange equipment, it will transfer the message and copy the message to the mirroring destination port (port 12). The monitoring equipment connected with the mirror destination port can receive the messages that is mirrored and make analysis.

1.2 Local Port Mirror Function Configuration

1.2.1 The Default Configuration

Function	Default value
Port mirroring	Disable
Mirror source port	Example
Mirror destination port	Port 1

1.2.2 Local Port Mirroring Function configuration

The traffic of source port will be copied to monitor port, so that network administrators can analyze

the network.. Port 1 is monitor port by default, the source port and the monitor can not be same port.

When the mirror function go into effect, the message from I/O mirror ports will be copied to the monitoring port. The mirroring rules are set when the mirror ports are configured: both, ingress and/or egress. Also, the port can not be set as mirror port when it has already been set as monitoring port.

Only after the mirror function is enabled can the other configurations go into effect.

Step	Command	Description
1	config	Enter global configuration mode
2	**mirror** { **enable** | **disable** }	Enable/disable the mirror function
3	**mirror monitor-port** *port_number*	Set the monitor port. *port_number* is physical port number, range is 1-26.
4	**mirror source-port-list**{ **both** *port-list* / **ingress** *port-list*/ **egress** *port-list* / **ingress** *port-list* **egress** *port-list*}	Set source port list, and appoint the corresponding ingress/egress *port-list* is the physical port list, use ',' and '- to carry out multi-port input.
5	**exit**	Quit global configuration mode and enter privileged EXEC mode.
6	show mirror	Show mirror configuration

⚠Notice

➢ The mirroring messages also need to comply the VLAN configuration transmission rules of the port.

➢ There can be more than one mirroring port, but only one monitoring port is allowed. Mirror function is disabled by default.

With configuration command **no mirror source-port-list**, the mirroring port that has been configured can be deleted.

With configuration command **no mirror all**, all the mirroring configuration can be deleted.

1.2.3 Monitoring And Maintaining

The command to show the port mirroring function

Command	Description
show mirror	Show the port mirroring function

1.2.4 Typical Configuration Example

Set port 26 as the monitoring port, **ingress** port 5-8, **egress** port 7-12

Raisecom #**config**

Raisecom (config)#**mirror enable**

Raisecom (config)#**mirror monitor-port** 26

Raisecom (config)#**mirror source-port-list ingres**s 5-8 **egress** 7-12

Raisecom (config)#**exit**

Raisecom #**show mirror**

Mirror: Enable

Monitor port: 26

-----------the ingress mirror rule-----------

Mirrored ports: 5-8

-----------the egress mirror rule-----------

Mirrored ports: 7-12

1.3 Mirroring Data Control Function

1.3.1 Mirroring Data Control Default Configuration

Function	Default value
Mirror destination port halting the not-mirroring data	Disable
Import packet distributaries at mirror source port	1
Import packets of mirror source port filters source MAC address	0000.0000.0000
Import packets of mirror source port filters destination MAC address	0000.0000.0000
Export packets distributaries at mirror source port	1
Export packets of mirror source port filters source MAC address	0000.0000.0000
Export packets of mirror source port filters destination MAC address	0000.0000.0000

1.3.2 Mirror Data Control Configuration

With the following commands the mirror data can be within transmission control:

Step	Command	Description
1	**config**	Enter global mode

2(optical)	**mirror block-non-mirror** [**enable|disable**]	Configure the mirror destination port to enable/disable the filter function for the not-mirror messages
3(optical)	**mirror** [**ingress** | **egress**] **divider** *<1-1023>*	Configure after how many messages a packet is sent to the mirror pot from the source mirror ports' mirror data
4(optical)	**mirror** [**ingress** | **egress**] **filter** {**source** | **destination**} HHHH.HHHH.HHHH	For the source mirror port, configure to which MAC address the mirror function is closed
5	**exit**	Quit global configuration mode and enter privileged EXEC mode
6	**show mirror**	Show mirror configuration

⚠Notice:

These commands are all configured in global configuration mode，and once the configuration is carried out it will affect all the source ports and destination ports.

The source and destination filter can configure only one MAC address.

1.3.3 Monitoring And Maintaining

Show the commands of mirror function

Command	Description
show mirror	Show mirror configuration

1.3.4 Typical Configuration Example

To figure 1-1, if there is too many data messages for port 1 to receive, and reducing the packets number for the monitoring facility is needed, it is supposed to do the following configuration:

Raisecom #**config**

Raisecom (config)#**mirror enable**

Raisecom (config)#**mirror monitor-port** 12

Raisecom (config)#**mirror source-port-list ingres**s 1

Raisecom (config)# **mirror ingress divider 200**

Raisecom (config)#**exit**

Raisecom #**show mirror**

Mirror: enable

Monitor port: 12

Non-mirror port: Not block

-----------the ingress mirror rule----------

Mirrored ports: 1

Filter rule: All

Divider: 200

MAC address: 0000.0000.0000

-----------the egress mirror rule-----------

Mirrored ports: --

Filter rule: All

Divider: 1

MAC address: 0000.0000.0000

1.4 VLAN Stream Mirror Function

Function	Default value
VLAN mirror port list	`Empty`
VLAN mirror VLANlist	Empty

1.4.2 Configure VLAN Stream Mirror Function

VLAN included in the VLAN stream mirror VLAN list, can be mirrored to the monitoring port if the entrance to the switch exists in the VLAN stream mirror port list.

Step	Command	Description
1	**config**	Enter global configuration mode
2	**mirror source-vlan portlist** *portlist*	Configure VLAN stream mirror port list `Portlist`:, port list, can make multi-port input through the connector ',' and '-'.
3	**mirror source-vlan vlanlist** *vlanlist*	Configure VLAN stream mirror VLAN list `Vlanlist`, VLAN list, can make multi-VLAN ID input through the connector ',' and '-'.
4	**exit**	Quit global configuration mode and enter privileged EXEC mode
5	**show mirror**	Show mirror configuration

Use **no** to clear up VLAN stream mirror port list, or **no mirror source-vlan portlist.**

Use **no** to clear up VLAN stream mirror VLAN list, or **no mirror source-vlan vlanlist.**

⚠ **Notice**

➢ *Use the same command to enable VLAN stream mirror function and enable local port mirror function.*

➢ *The same monitoring port is used for VLAN stream mirror function and local port stream mirroring function.*

➢ *The local port mirror command **no mirror all** is compatible, but when it is executed, VLAN stream mirror function is no longer valid.*

➢ *VLAN that has not been created can be added to VLAN stream mirror VLAN list, but will not be valid until it has been created and active.*

1.4.3 Monitoring And Maintaining

Show the command of VLAN stream mirror function:

Command	Description
show mirror	Show mirror configuration

1.4.4 Typical Configuration Example

 ➤ Aim

Configure the monitoring port as 5, mirror the messages from VLAN 10, port 2 to the monitoring port.

 ➤ Configuration step

Step 1: enable mirror function, and configure monitoring port 5

Raisecom (config)#**mirror enable**

Raisecom (config)#**mirror monitor-port 5**

Step 2: configure VLAN stream mirror VLAN list

Raisecom (config)#**mirror source-vlan vlanlist 10**

Step 3: configure VLAN stream mirror port list

Raisecom (config)#**mirror source-vlan portlist 2**

Show the result:

Raisecom#**show mirror**

Mirror: Enable

Monitor port: 5

--------------the ingress mirror rule----------------

Mirrored ports: --

VlanMirrored ports: 10

VlanMirrored Vlans: 2

---------------the egress mirror rule---------------

Mirrored ports: --