RC002 EMS User Manual

RC-A033-V116-060124-EN

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CONTENTS

Chapter 1   Preface

1.1   About This Manual

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

1.2   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.

1.3   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 with collision detection

Chapter 2　Overview

RC002 EMS (Element Management System) provides GUI for device management. A device view generated by the EMS is identical with appearance of the real device. In addition, that view could truly reflect current status of the device, so you can monitor and maintain the device in a centralized and quick way.

From the main view of RC002 EMS, you can manage up to 4 RC001/RC002 Chassis simultaneously, and the number of managed modules plugged in each chassis could be 15 at the most. These modules may cover the functional modules of Optical Transceiver, Protocol Converter, PDH, and Multiplexer.

RC002 EMS runs on the NView platform. It enables you to monitor the entire range of Optical Transceiver products.

Chapter 3   Service Module Management

3.1   Service Module Configuration

➢ Open the chassis view

Double click a chassis object beneath chassis tree to open the chassis view shown in figure 3-1.
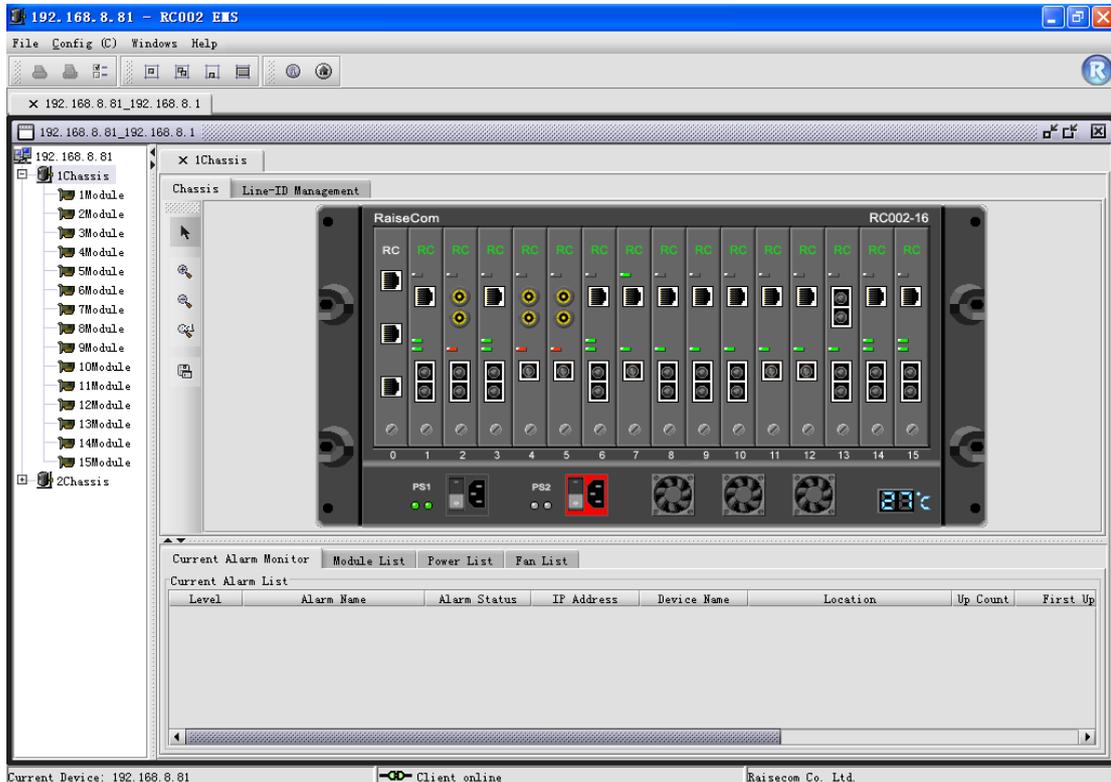

Figure 3-1 The Chassis Panel Window

➢ Open the Remote Module view

Select a module on the chassis view and right click, then select [**Show Remote Module**] item to open the module management window shown in figure 3-2.
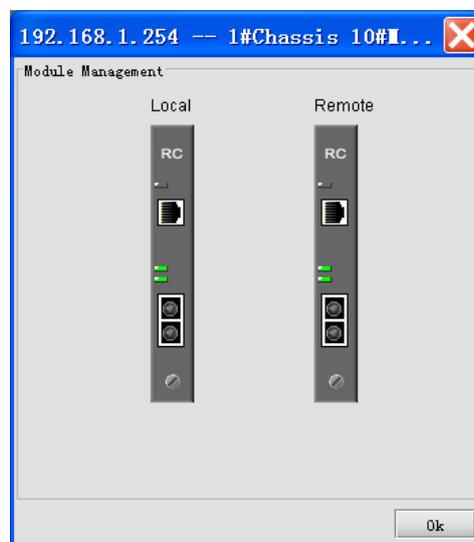

Figure 3-2 The Module Management Window

➢ Open the service module configuration window

Select Remote module in the Module Management window and right click, then select the [**Configure Module**] item. A module configuration window similar to figure 3-3 will appear.
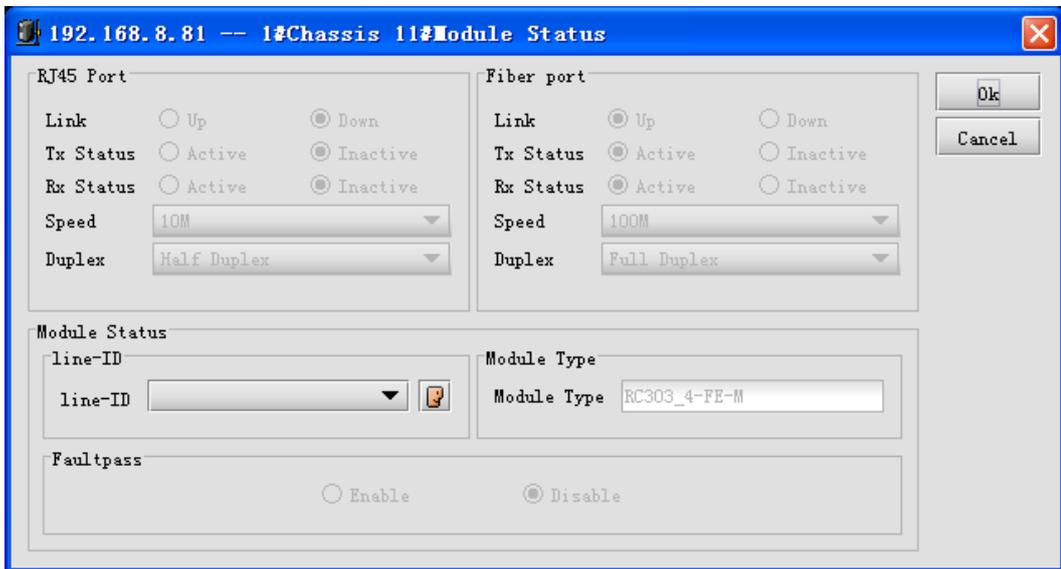

Figure 3-3 The Remote Module Status Window

3.2 Service Module Batch Configuration

Select the network management module plugged in the first slot of chassis panel, and select [**Card Batch Configuration**] from the right click menu. A **Module Batch Configure** dialog box similar to figure 3-4 will appear.
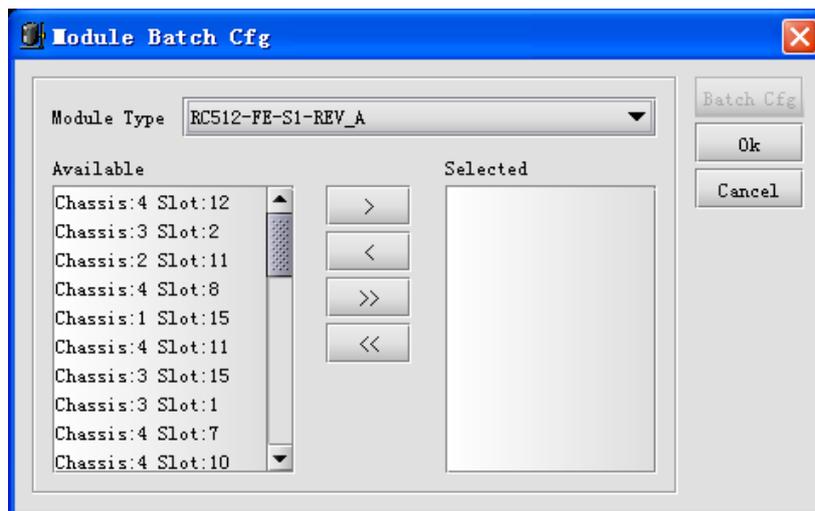

Figure 3-4 The Module Batch Configuration Window

Select module type from the "Module Type" drop down menu, and select relevant slot in which this module to be populated. Afterwards, click the [**Batch Cfg**] button to open the property configuration window for corresponding module type.

3.3 Flux Monitor

➢ Open the flux monitor window

Select one or more modules on chassis panel, and select [**Stat of Flux**] from the right click menu to open the **Stat of Current Flux** window(s). The flux collection cycle and task status are available for these windows. You can control these parameters for a particular module through its relevant Flux Statistic window shown in figure 3-5.
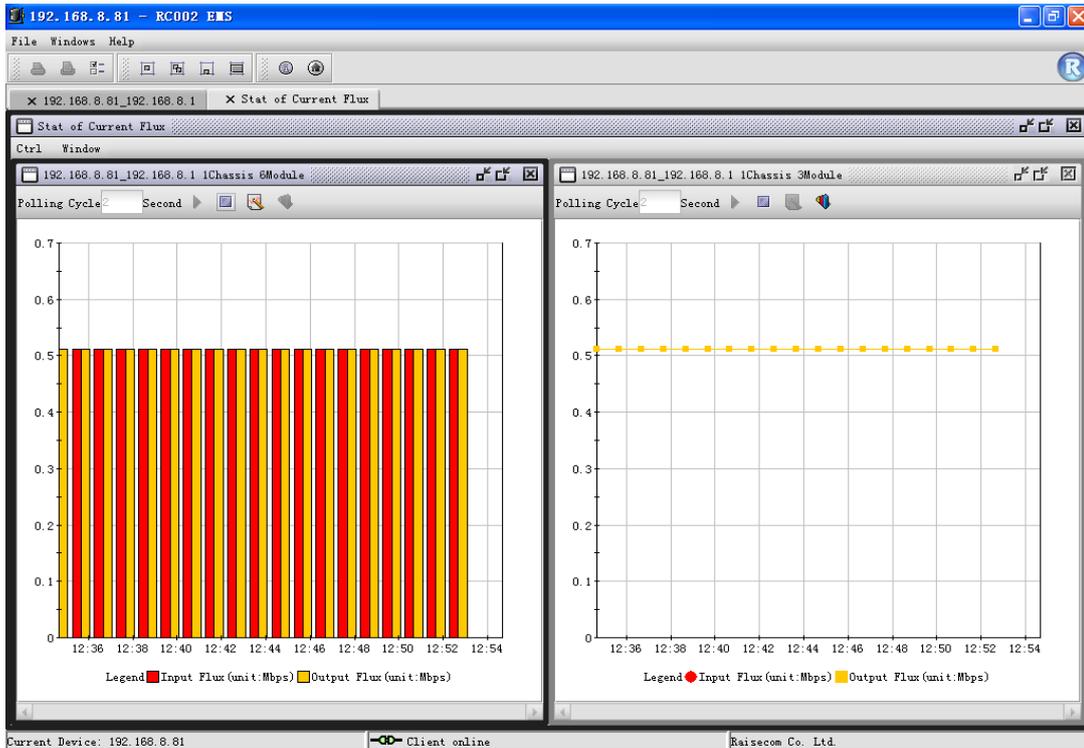

Figure 3-5 The Stat of Current Flux Window

Note: Only the modules that support Flux Statistic function could perform the "Stat of Current Flux" task.

Chapter 4   Operation And Maintenance

4.1   Device System Information

➢ Open the device system information window

Select [**Configure**] in the main menu -> [**Configure System**] item to open the **Configure System** window shown in figure 4-1. It provides configuration of information including node name, node location, chassis temperature threshold and remote module temperature threshold. In addition, it also enables you to configure up to 8 SNMP Trap target servers, and provides naming service for each chassis.

Figure 4-1 The Configure System window

4.2   Polling Device

➢ Open the device polling configuration window

Select [**Configure**] in the main menu-> [**Configure Polling**] item to open the **Config Polling** window shown in figure 4-2. It provides capability to schedule polling interval on online status of each chassis respectively.
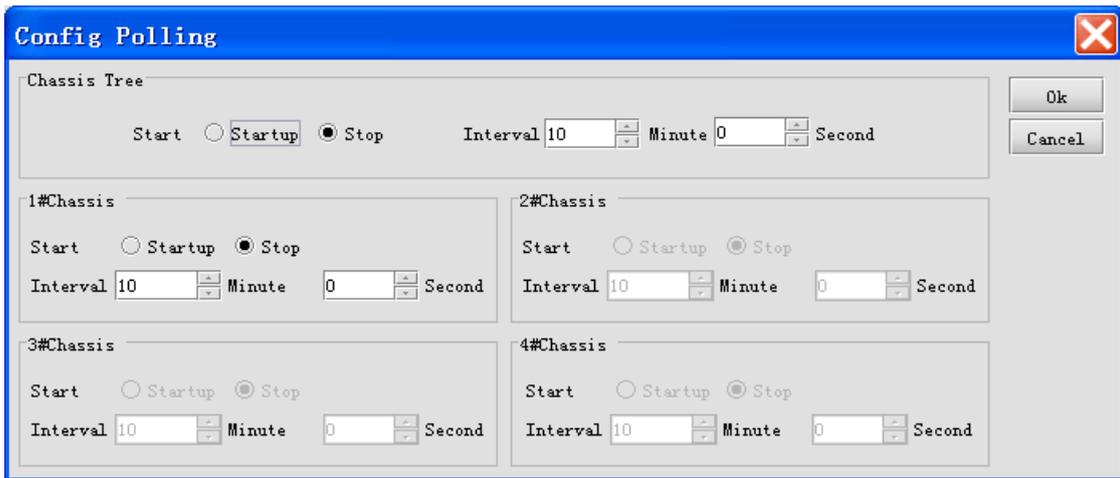
Figure 4-2 The Polling Configuration window

4.3 Line Loopback Test

Select a service module on chassis panel, and select [**Loopback**] from the right click menu. The Loopback operation window similar to figure 4-3 will appear.
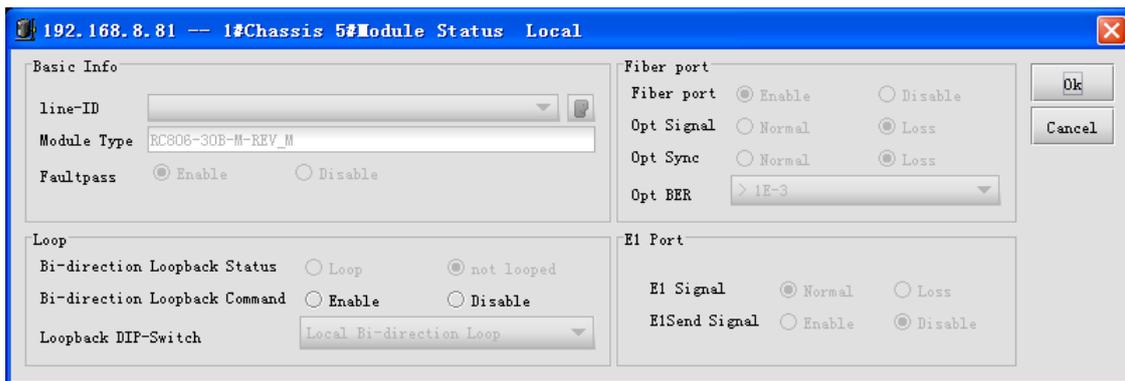
Figure 4-3 The Line Loopback Test Information

Note: The "Loopback" item is available only if the selected service module supports line loopback function.

4.4 Launching Reset Command

Select a service module on chassis panel, and select [**Reset Module**] to perform reset operation.
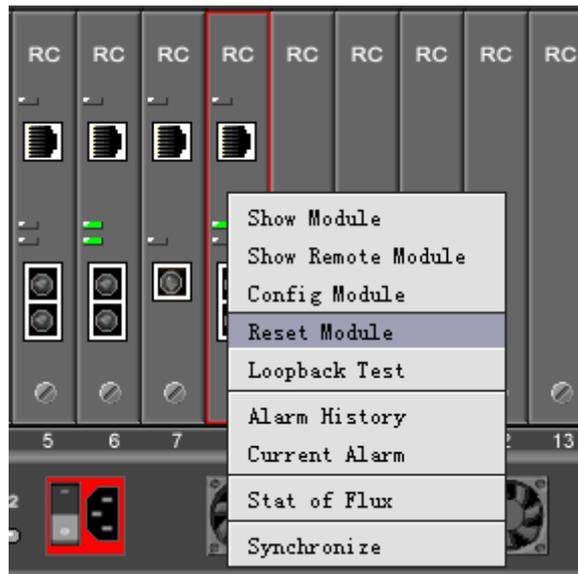
Figure 4-4 The Reset Module Command

Note: The "Reset Module" item is available only if the service module supports reset function.

4.5   The Status Of Power And Fan

The section beneath Chassis view is split into several tabs, including Current Alarm Monitor, Module List, Power List and Fan List tab. These tabs provide access to working status of each power and fan, see figure 4-5 for reference.

Figure 4-5 The Power State Panel

4.6   Link Information Management

➢ Open the Link Management window

Double click chassis tree to open the Chassis view -> select Link-ID Management tab to view customer information associated with each remote module. See figure 4-6 for reference.
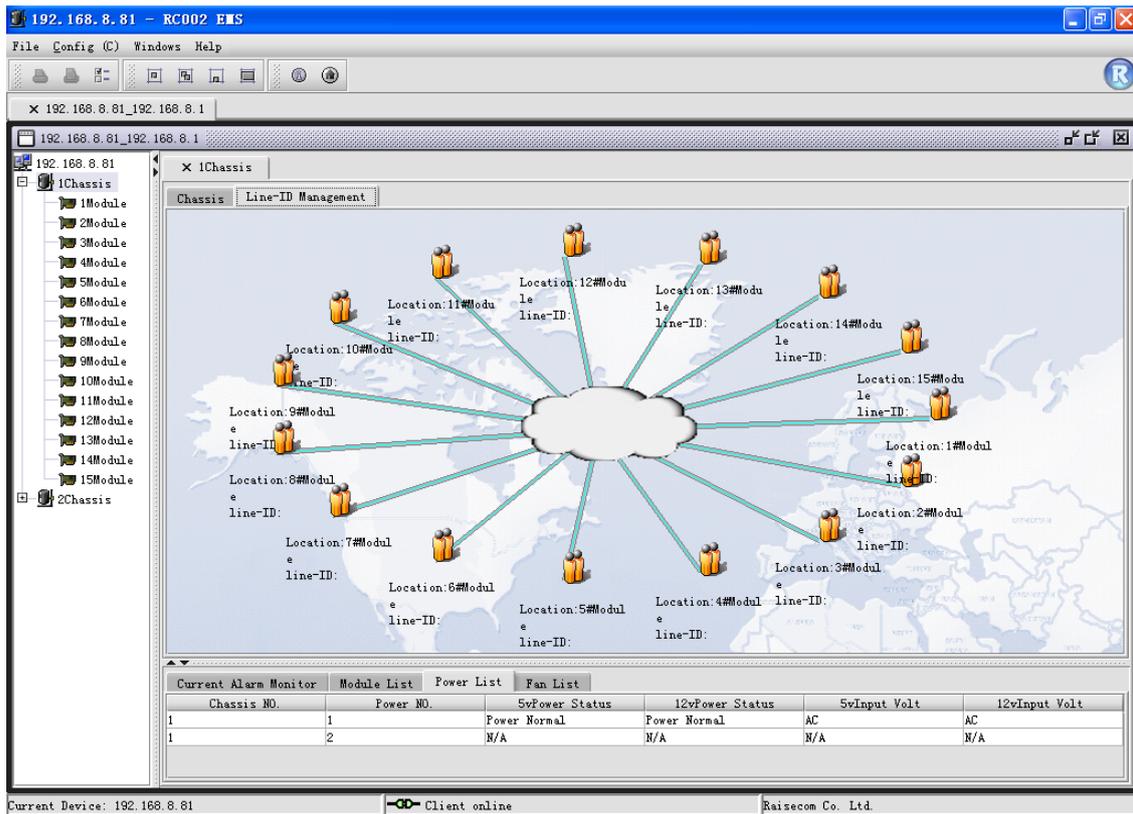
Figure 4-6 The Link-ID Management Tab

4.7 Chassis Panel Management

➢ Objects On The Panel

Object	Icon	Description
Power		The power supply is working normally.
		The power supply is working abnormally.
Fan		The fan is working normally.
		The fan is working abnormally.
Thermometer		The temperature is within normal range.

➢ Tools On The Panel

The Chassis View window is also configured with a tool bar for providing functions like zoom the view.

The buttons available on it are as follows:

GUI	Object	Description
	Mouse Interaction	Trigger mouse event when selected, such as launch right click menu. With no operation when unselected.
	Zoom In	Zoom in the device view by proportion.
	Zoom Out	Zoom out the device view by proportion.
	Restore	Restore the device view to initial size.
	Save	Save the device view as a picture.

4.8 Viewing The Online Status of Chassis and Module

The icons on chassis tree use different states to indicate alarm status and online status of per chassis or module. The following table summaries all states as applicable:

Object	Description
	The chassis is working normally and has no alarms generated.
	The chassis has alarms generated.
	Indicates the chassis has been missed. At this time, double clicking this chassis will trigger a message indicating the device view cannot be opened, see figure 4-7.
	The card is working normally.
	The card has alarms generated.

The Error message for indicating *Chassis Loss* is as follows.
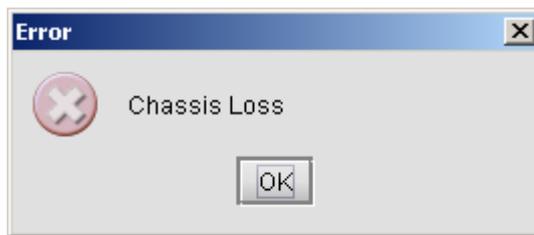

Figure 4-7 The Chassis Loss dialog box

Chapter 5   Alarm And Event Management

5.1   Viewing Current Alarms

➢ Open the Current Alarms Management window

Double click the NView Platform function tree, and select [**Current Alarms Management**] (see NView platform user manual for details).
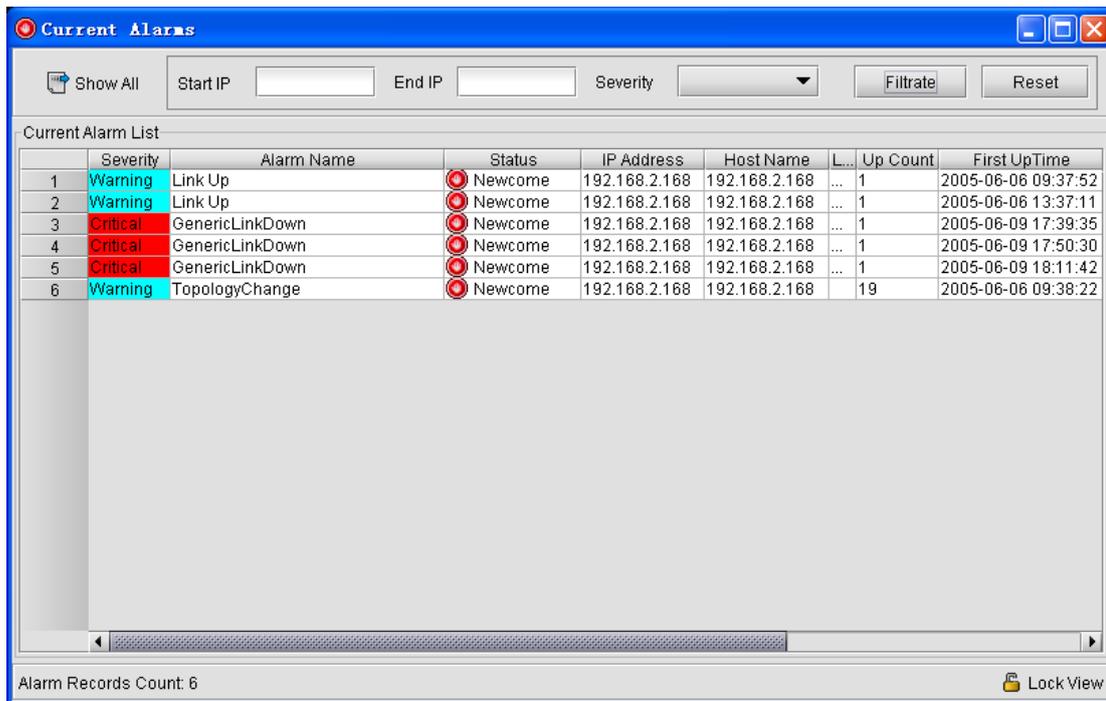
Figure 5-1 The Current Alarms window

➢ Acknowledge alarm record(s)

Select a record with state of "Newcome" presenting in the "Status" column, and select [**Acknowledge**] from the right click menu.

➢ Delete current alarm record(s)

Select one or more records in the Alarm List, and select [**Delete**] from the right click menu.

➢ Export current alarm record(s)

Select [**Export**] from the right click menu to export record(s) into a Text or Excel file.

➢ Filter current alarms

Input filtration conditions - IP address range and severity level, then click [**Filter**].

Note: the IP Address Range field supports asterisk wildcard "*". For example, "192.168.1.*", the address range of asterisk wildcard here can be set as "Start IP Address".

➢ View Alarm Details

Click a record in the Alarm List, and select [**Property**] from the right click menu. A Property dialog box will popup as the figure 5-2 shows.
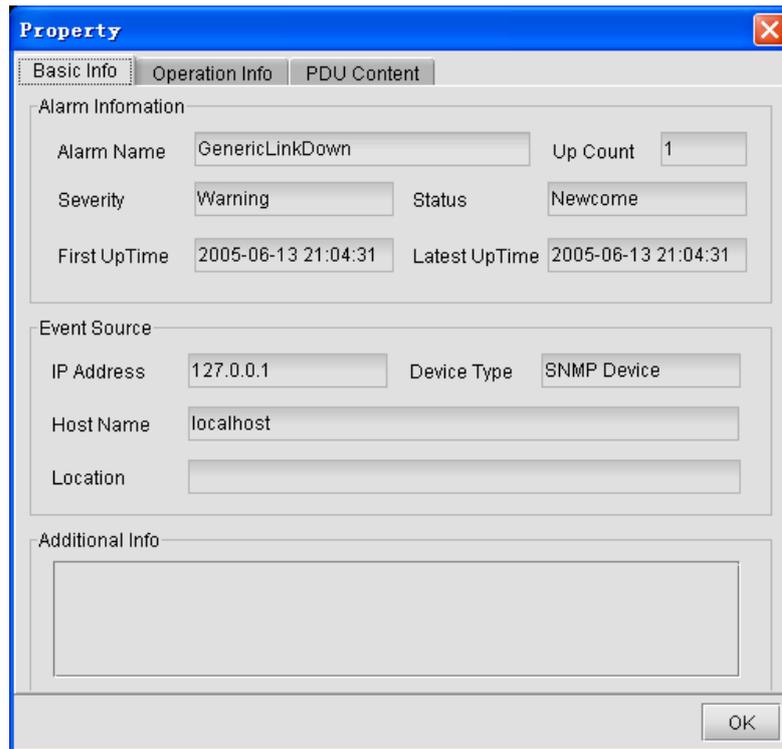
Figure 5-2 The Property dialog box

5.2 Viewing History Alarms

➢ Open the History Alarms Management window

Double click the Nview Platform function tree, and select [**History Alarms Management**].

Figure 5-3 The History Alarms window

➢ Delete history alarm record(s)

Select one or more records in Alarm List, and select [**Delete**] from the right click menu.

➢ Export history alarm record(s)

Select [**Export**] from the right click menu to export the record(s) into a Text or Excel file.

➢ View alarm details
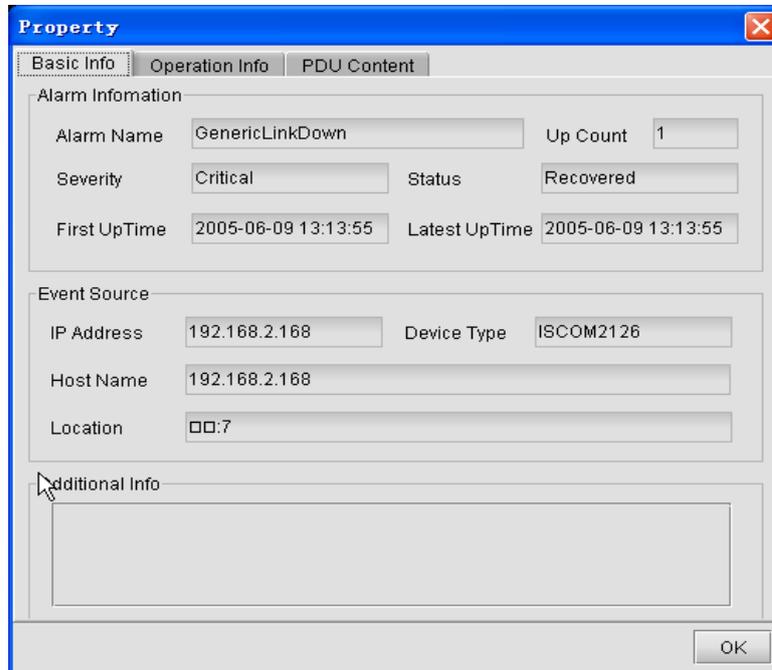
Figure 5-4 The Property dialog box

➢ Query history alarms

Select [**Query**] from the right click menu, the Query Condition panel will appear. It enables query on history alarms by condition(s) like device node, time range, alarm type and alarm level.
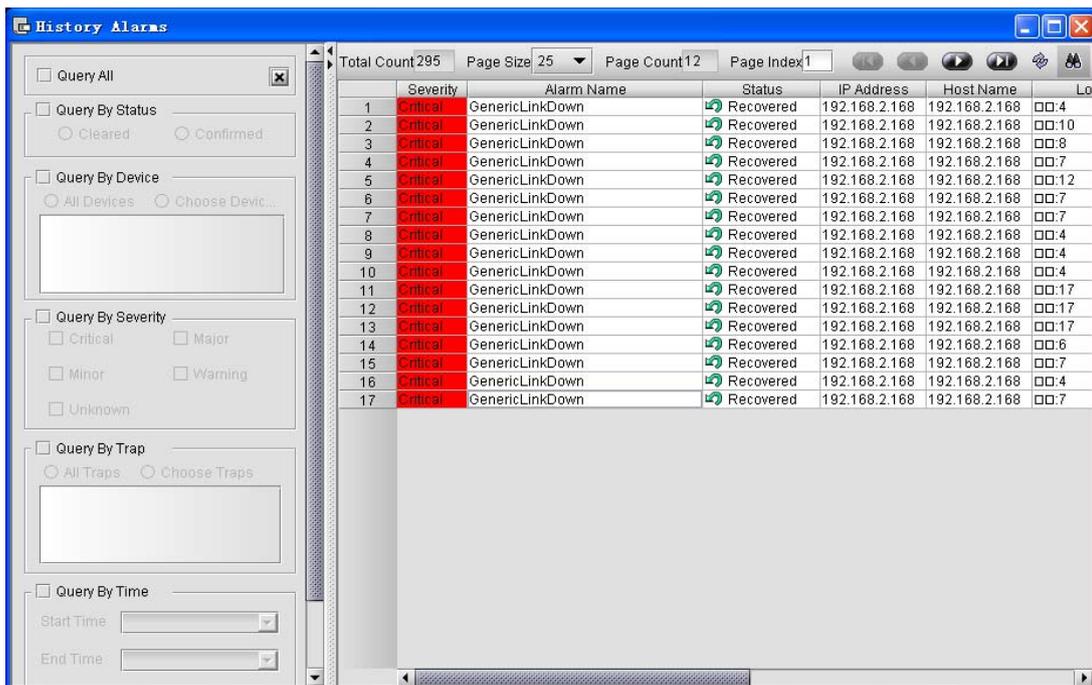
Figure 5-5 The History Alarms Management dialog box

Appendix A   Alarm Type

Number	Alarm Name	Alarm Source
1	5V Power Status	Chassis
2	12V Power Status	Chassis
3	Fan Status	Chassis
4	Chassis Temperature	Chassis
5	Chassis Loss	Chassis
6	Ethernet Port Link	Optical Transceiver, Protocol Convertor, Multiplexer
7	Remote Ethernet Port Link	Optical Transceiver, Protocol Convertor, Multiplexer
8	Optical Link	Optical Transceiver
9	Optical Receive Link	Optical Transceiver
10	Optical Send Link	Optical Transceiver
11	Remote Optical Link	Optical Transceiver
12	Ethernet Port Speed	Optical Transceiver
13	Card Loss	Optical Transceiver, Protocol Convertor, Multiplexer, PDH
14	Chassis Backpanel Loss	Chassis
15	Local Voltage out of Upper Limit	Optical Transceiver
16	Local Voltage out of Lower Limit	Optical Transceiver
17	Remote Voltage out of Upper Limit	Optical Transceiver
18	Remote Voltage out of Lower Limit	Optical Transceiver
19	Local Optical Send Power	Optical Transceiver
20	Remote Optical Send Power	Optical Transceiver
21	Local Optical Receive Sensitivity	Optical Transceiver
22	Remote Optical Receive Sensitivity	Optical Transceiver
23	Local Laser Signal	Optical Transceiver
24	Remote Laser Signal	Optical Transceiver
25	Local SD Signal	Optical Transceiver
26	Remote SD Signal	Optical Transceiver
27	Remote Chassis Temperature	Optical Transceiver, Remote Switch
28	Remote Card Fault	Optical Transceiver
29	Local Card Abnormal	Optical Transceiver
30	Remote Card Recover	Optical Transceiver, Protocol Convertor, Multiplexer
31	E1 Signal Loss(NO.1)	PDH, Protocol Convertor
32	Optical signal Loss	PDH, Protocol Convertor
33	Local Optical Synchronization Loss	PDH, Protocol Convertor
34	Local Optical ErrCode Ratio more than 10E-3	PDH, Protocol Convertor
35	Local Optical ErrCode Ratio more than 10E-6	PDH, Protocol Convertor
36	Remote E1 Signal Loss(NO.1)	PDH, Protocol Convertor
37	Remote Optical Signal Loss	PDH, Protocol Convertor
38	Remote Optical Synchronization Loss	PDH, Protocol Convertor

39	Remote Optical ErrCode Ratio more than 10E-3	PDH, Protocol Convertor
40	Remote Optical ErrCode Ratio more than 10E-6	PDH, Protocol Convertor
41	E1 Frame Loss	PDH, Protocol Convertor
42	E1 CRC	PDH, Protocol Convertor
43	Singlemode Optical Link	Optical Transceiver
44	Multimode Optical Link	Optical Transceiver
45	Ethernet Port 1 Link	Optical Transceiver (2 Ethernet Ports)
46	Ethernet Port AIS Signal	PDH, Protocol Convertor
47	Ethernet Port AIS Signal	PDH, Protocol Convertor
48	E1 Signal Loss(NO.2)	PDH, Protocol Convertor
49	Remote E1 Signal Loss(NO.2)	PDH, Protocol Convertor
50	Remote EPort Speed	Remote Switch
51	Remote EPort Duplex	Remote Switch
52	Remote Switch EPort link	Remote Switch
53	Local General Alarm	PDH, Protocol Convertor, Multiplexer
54	Optical Receive Phase Clock	PDH
55	Optical Send Clock	PDH
56	Optical Digital Signal Scope	PDH
57	Optical Digital Signal	PDH
58	Optical Frame Synchronization Loss	PDH
59	EPort Revceive Phase Clock	PDH
60	EPort Send Clock	PDH
61	EPort Signal Scope	PDH
62	EPort Digital Signal	PDH
63	EPort Frame Synchronzation Loss	PDH
64	Remote E1 Signal Loss' 'Critical	PDH, Protocol Convertor
65	E1 encode violation	PDH, Protocol Convertor
66	Remote E1 AIS Signal	PDH, Protocol Convertor
67	Remote E1 Frame Syn LOS	PDH, Protocol Convertor
68	E1 CRC	PDH, Protocol Convertor
69	E1 Signal 10E-5Error	PDH, Protocol Convertor
70	Remote E1 Signal Loss	PDH, Protocol Convertor
71	Remote E1 encode violation	PDH, Protocol Convertor
72	Remote E1 AIS Signal	PDH, Protocol Convertor
73	Remote E1 Frame Syn LOS	PDH, Protocol Convertor
74	Remote E1 CRC	PDH, Protocol Convertor
75	Local EthernetPort Link	Optical Transceiver
76	Remote E1 AIS	Multiplexer
77	Remote E1 LOF	Multiplexer
78	Remote E1 CRC	Multiplexer
79	Remote General Alarm	Multiplexer
80	Remote Device General Alm	Multiplexer
81	client to CWDM LOL	CWDM
82	client to CWDM LOA	CWDM
83	CWDM to client LOL	CWDM
84	CWDM to client LOA	CWDM

85	CWDM TX Fault	CWDM
86	CWDM Signal LOS	CWDM
87	CWDM Module loss	CWDM
88	client TX Fault	CWDM
89	client Signal LOS	CWDM
90	client Module loss	CWDM
100	communicate with agent fail	Chassis
10005	Discovered New Chassis	Chassis
10006	EPort Link Up	Optical Transceiver, Protocol Convertor, Multiplexer
10007	Remote EPort Link Up	Optical Transceiver, Protocol Convertor, Multiplexer
10008	Fiber Port Link Up	Optical Transceiver
10009	Fiber Port Rx Link Up	Optical Transceiver
10010	Fiber Port Tx Link Up	Optical Transceiver
10011	Remote Fiber Port Link Up	Optical Transceiver
10013	Insert Card	Optical Transceiver, Protocol Convertor, Multiplexer, PDH
10031	E1 Signal Normal(NO.1)	PDH, Protocol Convertor
10032	Optical signal Normal	PDH, Protocol Convertor
10033	Local Optical Synchronization Normal	PDH, Protocol Convertor
10036	Remote E1 Signal Normal(NO.1)	PDH, Protocol Convertor
10037	Remote Optical Signal Normal	PDH, Protocol Convertor
10038	Remote Optical Synchronization Normal	PDH, Protocol Convertor
10043	Singlemode Fiber Port Link Up	Optical Transceiver
10044	Multimode Fiber Port Link Up	Optical Transceiver
10045	Ethernet Port Link Up(NO.2)	Optical Transceiver (2 Ethernet Port)
10046	Ethernet Port AIS Normal	PDH, Protocol Convertor
10048	E1 Signal Normal(NO.2)	PDH, Protocol Convertor
10049	Remote E1 Signal Normal(NO.2)	PDH, Protocol Convertor
10054	Optical Receive Phase Clock Normal	PDH
10055	Optical Send Clock Normal	PDH
10056	Optical Digital Signal Scope Normal	PDH
10057	Optical Digital Signal Normal	PDH
10058	Optical Frame Synchronization Normal	PDH
10059	EPort Revceive Phase Clock Normal	PDH
10060	EPort Send Clock Normal	PDH
10061	EPort Signal Scope Normal	PDH
10062	EPort Digital Signal Normal	PDH
10063	EPort Frame Synchronzation Normal	PDH
10064	Remote E1 Signal Loss	PDH, Protocol Convertor
10066	Remote E1 AIS Normal	PDH, Protocol Convertor
10067	Remote E1 Frame Syn Normal	PDH, Protocol Convertor
10070	Remote E1 Signal Normal	PDH, Protocol Convertor
10072	Remote E1 AIS Normal	PDH, Protocol Convertor
10073	Remote E1 Frame Syn Normal	PDH, Protocol Convertor
10075	Local EPort Link Up	Optical Transceiver

10076	Remote E1 AIS Normal	Multiplexer
10077	Remote E1 Syn Normal	Multiplexer
10086	CWDM Signal Normal	CWDM
10087	Inserted CWDM Fiber Module	CWDM
10089	client Signal Normal	CWDM
10090	Inserted client Fiber Module	CWDM

Appendix B   Abbreviation Table

Abbreviation	Full Name
ADM	Add-Drop Multiplexer
AIS	Alarm Indication Signal
APS	Automatic Protection Switching
ASON	Automatic Switched Optical Network
ASTN	Automatic Switched Transport Network
ATM	Asynchronous Transfer Mode
AU	Administrative Unit
AU-n	Administration Unit，level n
AUG	Administration Unit Group
AU-PTR	Administration Unit Pointer
BA	Booster Amplifier
BBE	Background Block Error
BBER	Background Block Error Ratio
BER	Bit Error Ratio
BITS	Building Integrated Timing Supply
BML	Business Management Layer
CMI	Coded Mark Inversion
C-n	Container-n
CORBA	Common Object Request Broker Architecture
CV	Code Violation
DB	Data Base
DBMS	Data Base Management System
DCC	Data Communications Channel
DCE	Data Circuit-terminating Equipment
DCF	Data Communications Function
DCN	Data Communications Network
DDN	Digital Data Network
DLL	Dynamic Link Libraries
DNA	Distributed Network Architecture
DNI	Dual Node Interconnection
DQDB	Distributed Queue Double Bus
DTE	Data Terminal Equipment
DWDM	Dense Wavelength-division Multiplexing
DXC	Digital Cross Connect
ECC	Embedded Control Channel
EDFA	Erbium Doped Fiber Amplifier
EM	Element Management
EMC	Electro Magnetic Compatibility
EMI	Electro Magnetic Interference
EML	Element Management Layer
EMS	Element Management System

EOS	Ethernet Over SDH
ES	Error Second
ESD	Electronic Static Discharge
ESR	Error Second Ratio
ETSI	European Telecommunication Standards Institute
FDM	Frequency Division Multiplexing
FDDI	Fiber Distributed Data Interface
FEBBE	Far End Background Block Error
FEES	Far End Error Second
FESES	Far End Severely Error Second
GUI	Graphical User Interface
HDLC	High Digital Link Control
HPC	Higher order Path Connection
HW	High-Way
IP	Internet Protocol
ITU-T	International Telecommunication Union-Telecommunication Standardization Sector
L2	Layer 2
LAN	Local Area Network
LAPD	Link Access Procedure On D-channel
LCT	Local Craft Terminal
LOF	Loss Of Frame
LOP	Loss Of Pointer
LOS	Loss Of Signal
LPC	Lower order Path Connection
MAC	Medium Access Control
MAN	Metropolitan Area Network
MCU	Micro Control Unit
MD	Mediation Device
MF	Mediation Function
MII	Medium Independent Interface
MM	Multi Mode
MS	Multiplex Section
MS-AIS	Multiplex Sections -Alarm Indication Signal
MS-PSC	Multiplex Sections - Protection Switching Count
MS-PSD	Multiplex Sections - Protection Switching Duration
MS-SPRing	Multiplexer Section Shared Protection Ring
MSAP	Multiple Service Access Platform
MSOH	Multiplex Section Over Head
MSP	Multiplex Section Protection
MSTP	Multiple Service Transport Platform
MSSP	Multiple Service Switching Platform
MTIE	Maximum Time Interval Error
NE	Network Element
NEF	Network Element Function
NEL	Network element Layer

NML	Network Manager Layer
NMS	Network Management System
OAM	Operation, Administration and Maintenance
OFS	Out of Frame Second
OOF	Out of Frame
OS	Operation System
OSF	Operation System Function
OSI	Open System Interconnect
PCB	Printed Circuit Board
PCM	Pulse Code Modulation
PDH	Plesiochronous Digital Hierarchy
PGND	Protection GND
TDEV	Time Deviation
TDM	Time Division Multiplex
TIM	Trace Identifier Mismatch
TM	Terminal Multiplexer
TMN	Telecommunications Management Network
TU	Tributary Unit
UAS	Unavailable Second
VC	Virtual Container
VC-n	Virtual Container，level n
VDN	Virtual Data Network
VLAN	Virtual Local Area Network
WAN	Wide Area Network
WDM	Wavelength Division Multiplexing
WS	Work Station
WSF	Work Station Function