

RackView

User Guide

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May 1997*



NetComm  [®]

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Before You Begin your Installation

This installation manual contains detailed instructions for the installation of your product. We recommend reading and following these instructions thoroughly to ensure correct installation of the RackView program.

Introduction

SNMPc is a software package that runs on a MS Windows system to manage SNMP devices over a TCP/IP network. RackView is a “plug in” that adds to the SNMPc program to allow a graphical interface for managing your ProRack Modems.

It is necessary to install Castlerock Computing’s SNMPc package before installing the RackView program.

Installation

Frontier Technology's SuperTCP is included for installation as an example of an IP stack program. Windows 95 users with ethernet controllers can just use the Windows 95 stack.

Installing Frontier Technology's SuperTCP

1. Run Install off the SuperTCP CD-ROM and follow instructions until complete.
2. Once software is installed and your computer is restarted, go to the Setup option for SuperTCP
3. On the left hand side of the Setup screen scroll down to Interfaces.



4. Enter IP address, IP address mask and driver type.
5. On the right hand side of the screen choose Setup.
6. Complete required parameters (this will vary, depending on how you are intending on managing your rack. ie. via Ethernet/SLIP)

Once these are setup and you have rebooted your machine you should try and Ping your management modem.

1. Go to the Ping option in SuperTCP.
2. Enter in your Controller modem's IP Address at the Hostname option of the screen.
3. Hit Start.
4. If a packet is returned you now have a link to your Controller.

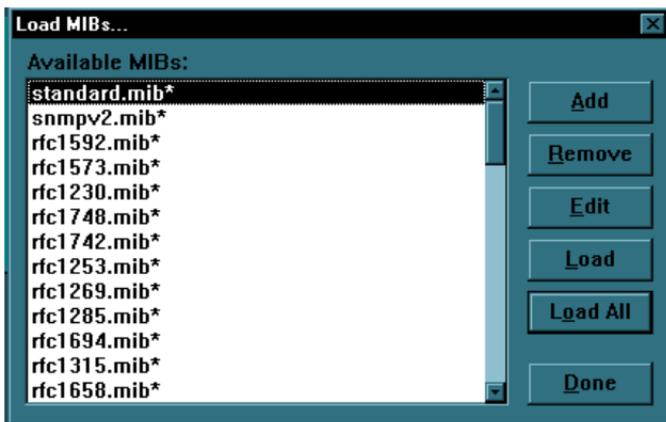
You are now ready to install SNMPc.

Installing CastleRock's SNMPc

1. Run Setup from Program Disk 1.
2. Choose which installation suits you.
3. Once SNMPc is installed you can now install NetComm RackView.

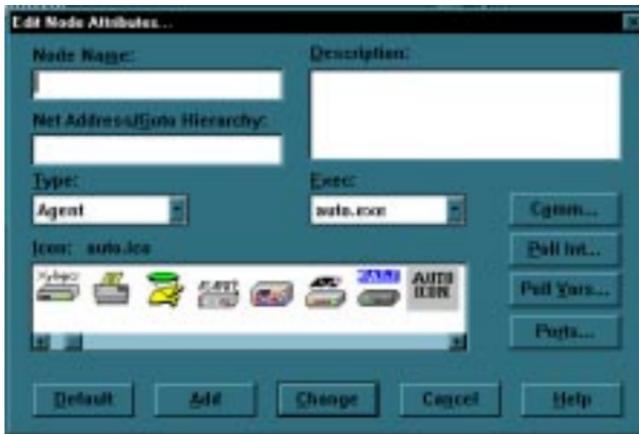
Installing RackView

1. Install SNMPc (make sure you have an appropriate TCP/IP stack such as SuperTCP installed first) - refer to the SNMPc Manual.
2. Insert the RackView diskette and run Setup from Windows. The RackView Help, Configuration Manager and Security Manager icons will be added to the SNMPc program group.
3. The Management Information Base (MIB) for NetComm ProRack modems now needs to be compiled into SNMPc.
4. Start SNMPc and from the SNMPc Config menu select Compile MIB the following screen appears:



4. Select Load All command button in the dialog box, the NetComm MIB will be compiled into SNMPc. Select Done when this process is complete.

5. You will now need to create a SNMPc map which includes your NetComm ProRack. SNMPc maps display a picture of your network and enable you to access the various nodes of your network via icons, refer to the SNMPc Reference Guide for further details of SNMPc maps.
6. To add an icon for your NetComm ProRack to the map of your network select edit Object from the SNMPc Edit menu. The following screen will appear:



7. Change the parameters on this screen as shown below:
 - a) Enter a suitable name for the node in the node Name box (eg, "The_Rack").
 - b) Set Net Address to the IP address of your NetComm Management Module (see the Management Module User's Guide for details of setting the IP address of the ProRack).

- c) Set the Exec entry to 'bitview.exe'.
 - d) Press the Comm button. Change the Set string to equal a community string within the ProRack which has read and write access and the Get string to equal a community string with read access. Change the trap string to the Trap string of the ProRack, by default this will be SNMP_Trap (see the ProRack User's Guide for details of setting ProRack community strings).
 - e) Press the Poll Int button and change the Poll Interval to be greater than 30 seconds.
 - f) Press Change to set the new values.
6. In the Config/poll retries menu set the Timeout value to be greater than 30 seconds.
 7. You are now ready to use RackView.
 8. Double click on the icon representing the NetComm ProRack, the Tower will be displayed. Double click on one of the frames within the tower to display the frame screen and to manage individual modems.

System Configuration

It is important for the maximum modem number to be set correctly to allow efficient operation of the system. This is a SNMP MIB variable and can be set in terminal mode using the #S1 menu:

```
Rack Up Address: 192.168.7.139 Remote IP/Router Address: 192.168.7.1
Netmask       : 255.255.255.0 Ethernet MAC address 00606400100F
Slots Per Frame: Ethernet 16 Slots + Huax Modem 017

Community String      Access Level
public                Read
private              Read + Write + SecureRead + SecureWrite
SNMP_Trap             Traps

+ Add Community String or Change Access
- Delete String
T Set Community String for Traps
S Set Rack Controller IP address
> Add Inbound IP Address
< Delete Inbound IP Address
L List Inbound IP Address
F Select No. Slots Per Fram 16/17
M Set Max Modem Number
Q to exit
Command?
```

1. Type: AT#S1

The above screen will appear.

2. Type M to set the Max Modem number

The screen will prompt you for the number of modems currently installed in the ProRack. Enter the appropriate number and enter.

4. Type: Q to exit

Or in Windows(r) via SNMPc :

1. Double click on the icon representing the ProRack to display the Tower.
2. Go to the Rack menu and highlight Controller Version.
3. Double click on the table or select the Edit button to display the following screen:

Field Name	Value	Action
controllerVersion	1	Set
maxModemNumber	16	Set
anyModemNumber	1	Set
trapReceiverIPAddress	192.168.7.50	Set
slotPerFrame	UNK	Set
		Set

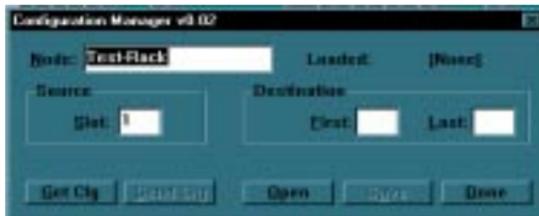
4. Type the number of modems in the maxModemNumber field .
5. Click on the Set button and then on the Done button to complete the task.

Configuration Manager

The Configuration Manager allows the configuration of a single modem to be copied or saved for future use. The configuration includes settings of all AT commands, Security Configuration parameters (but not users) and Traps that will be sent by the modem.

NOTE: Although this feature can be accessed in previous firmware versions, it requires V2.79a or later in both management module and slaves to function correctly.

1. Go to the Rack menu and highlight Configuration Manager or double click on the Configuration Manager icon.



2. To load a modem configuration, type the slot number of the source modem configuration in the source field and click on the Get Config button or click on the Open button to select a saved modem configuration file (*.mcf).
3. Type the slot number range in the destination fields and click on the Send button.
4. RackView's Configuration Manager will automatically send the configuration to the destination modem slots.
5. Click on the Done button when finished.

Security Menu and Security Manager

The Security Manager can be accessed through the Rack menu or by double clicking on the Security Manager icon.

NOTE: Although this feature can be accessed in previous firmware versions, it requires V2.79a or later in both the management module and slaves to function correctly.

Configuring your Modem to send Traps

Traps are alarms that will sound and notify the user of certain problems that may be occurring with the Prorack modems. Traps range from power failure in the modems (PFail) to connections ending (ConnectEnd) and EQM rises (EQMrise). Traps are sent out by your modem to a specific IP Address and displayed by SNMPc. To setup your modem to send Traps start RackView and follow the procedures outlined below.

Trap setup for Modems:

1. From the pull-down menu select Rack.
2. Then highlight Traps.
3. From here you have 3 options -
 - a) Receiver IP Address
 - b) Enable Receivers
 - c) Enable Traps
4. Each one must be setup before Traps will work.
5. Click on Receiver IP Address .
6. In the Trap Receiver IP Address section, enter in the IP address of your machine (eg. 211.211.211.211).
7. Click Set and then Done.
8. Repeat steps 1 and 2.
9. Click on Enable Receivers.
10. Your IP Address will be present along with a list of Traps DISABLED.

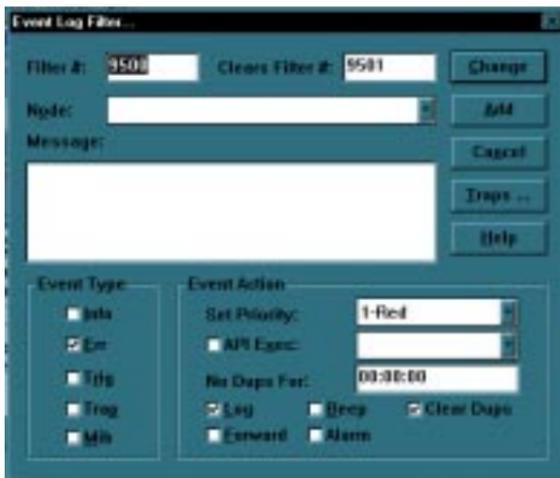
11. By clicking on Edit you can ENABLE any traps you wish to be received by your machine. (It is best to enable everything here). Click on >> to see the second page of traps.
12. Once you have done this click Set All and Done.
13. Repeat Steps 1 and 2.
14. Click on Enable Traps.
15. In here you can specifically configure each modem for Traps (That is, not all modems need to be set the same).
16. Highlight the modem number you wish to configure and press Edit.
17. To Enable the trap, change the zero (0) to a one (1).
19. Repeat the process for each modem.

You now have to setup SNMPc to receive Traps (see next topic).

Configuring SNMPc to Receive Traps

To configure SNMPc to receive traps from the ProRack modems, follow the procedures outlined below:

1. Select Event Actions from the SNMPc Config menu. The SNMPc Event log Filters screen will be displayed.
2. Click on the Edit button. the following screen will appear:



3. In the top left hand side choose a filter number (any number ≤ 9999).
4. Change the Node option to the name of the node you wish to receive Traps from (or leave it blank if you wish to receive the trap from any node which sends it) and select the pull-down menu to see a list of possible nodes.

5. In the bottom right hand side check the boxes Log, Beep and Alarm. (This specifies what action SNMPc will take when a trap is received).
6. Select the Trap option from Event Type on the bottom left of the screen.
7. Click on the Traps... button.
8. Change the Enterprise, in the top right hand corner, to Mibversion, via the pull-down menu.
9. Choose a Trap you wish to see (eg. mdmTrapfail).
10. Select O.K. This will take you back to the 'Event Log Filter' screen.
11. Select Add to add the new trap to the event log filters.
12. Repeat this process from step 2 onwards, choosing a different Trap each time at stage 9 (until all traps you want are chosen).

The Management Information Base (MIB)

The Rack Management MIB is incorporated in, and released in conjunction with the NetComm Rack Modem Firmware and may alter as new versions of code are released. The MIB on your disk has the same released code as your controller and may have extra features to those noted in this overview. Check your MIB file.

NetComm Rack MIB is a definition of the parameters that can be accessed or set in NetComm's ProRack® Modems using SNMP Management software. This information is organized into a series of Tables.

The NetComm Rack Management Information Base (MIB) is compiled in accordance with ASN.1 format. The current pre-standard modem MIB is grouped into modules under the identity of ID, Line Interface, DTE Interface, Call Control Statistics and Signal Converter. This has been modified to support NetComm's modems and will be published as an enterprise MIB (registered with the IANA).

The Simple Network Management Protocol is a recognized standard of communication between the managed devices and the management station over the computer network. Network Management provides the capability of monitoring and configuring various remote devices via computer network.

All the MIB entries for the NetComm Rack modems and shows how they are grouped into tables within the MIB. These entries correspond to parameters which may be set in each Rack modem. As you can see from the parameter listing, each Rack modem has been designed to be fully configurable remotely, with the manager

having full access to all AT commands, S registers, individual modem statistics and modem capability specifications.

Before you can use the Management program to manage NetComm Rack modems you must first allow the manager to load NetComm's MIB into the program's 'managed devices' database. NetComm Rack MIB is supplied on a 3.5" diskette with each Rack Controller and is also available on the NetComm Bulletin Board Service (02 9878 3755). Please refer to the user manual of your particular manager for details of loading the NetComm MIB into the manager's database.

After configuring the manager software, you will be able to query and configure the Rack modems and access information in each Rack modem as defined in the NetComm Rack MIB.

RFC Compliance

RFC's are the guidelines issued by the Internet Activities Board (IAB) to standardize the various areas of TCP/IP networking. NetComm's Rack Controller is an SNMP v1 agent (RFC 1157 compliant) and supports MIB-II (RFC 1213) TCP/IP management. The MIB described in this document is NetComm's enterprise specific MIB for the Rack modems. This MIB is described using the structure of management information (SMI) defined in RFC 1155. To load the MIB into a management system the RFC 1155/SMI must also be present. This is usually supplied with the management system, as is the MIB defined by RFC 1213.

Information Table

These variables will return the modem's Identity Strings

ID String 0 - Displays numeric identity code

ID String 1 - Reports OK or ROM checksum number

ID String 2 - Verify modem firmware checksum and return a result of OK or ERROR

ID String 3 - Returns ROM and revision level

ID String 4 - Displays Hayes-compatible coded strings containing product and feature specific information

ID String 9 - Displays product identity and revision level

Capabilities Table 1

This table contains variables which may be queried to determine the modem's capabilities and settable options.

Product Type

Telephone Line Types

Basic Capabilities

Character Formats Command Mode

Locked DTE Speeds

Autobaud DTE Speeds

PSTN Modulation Standards

PSTN V.34 Modulation Standards

Leased Line Modulations

Leased Line V.34 Modulations

Command Styles

Echo Controls

Response Codes

Command Timeout

Connect Messages

Dial Signals

Pulse Timings

Dial Modifiers

Number of Stored Phone Numbers

Call Progress Decodings

Calling tones

Guard Tones

Data Modes

Flow Control Mechanisms

Error Correction Standards

Inactivity Timeouts

Compression Standards

V.42bis Maximum Table Size

V.42bis Maximum String Length

Encryption Standards

Adaptive Error Correction Standards

Capabilities Table 2

This table contains variables which may be queried to determine the modem's capabilities and settable options.

Stored Configuration
Transmit Level Adjust
Leased Line Options
DTR dial
DTR Options
DSR Options
DCD Options
CTS Options
Synchronous Clock Options
Break Options
Long Space Disconnect
Autosynchronous
On-line Help Text
Speaker Modes
Speaker Volumes
Handshake Abort
MNP block sizes
Xon-Xoff Passthrough
V.42 phase detection
Command Verification
Disconnection Delay
Readable EQM
Readable Receive Level
Voice Synchronous
Lock Modulation
Compromise Equalizer
Fax Supported
Voice Supported
Remote Access

Password Security
Security Database Size
Blacklisting Supported
Analog Loopback
Analog Loopback with Selftest
Remote Loopback
Remote Loopback with Selftest

State Table 1

These entries return details regarding the modem's current state.

Major State
Detail State
Modulation Method
Line Speed
Data Mode
Compression Method
V.42bis Code Words
V.42bis String Length
Encryption Method
Port Speed
Port Parity
Asynchronous Data Length
Receive Level
Transmit Level
Scaled EQM
RS232 CTS
RS232 DSR
RS232 DCD
RS232 DTR
RS232 RTS
RS232 RING
RS232 AL
RS232 RDL

State Table 2

These entries return details regarding the modems current switch settings and LED status.

Switch Dumb Mode
 Switch Auto Answer
 Switch Sync
 Switch Originate
 Switch AL
 Switch RDL
 Switch V.25bis A
 Switch V.25bis B
 Led Auto Answer
 Led 1
 Led 2
 Led 3
 Led Transmit Data
 Led Receive Data
 Led Off Hook
 Led Carrier Detect
 Led Terminal Ready

Current Connection Statistics Table

This table contains statistical information relating to the current modem connection.

Time Elapsed
 Bytes Transmitted To Line
 Bytes Transmitted To Port
 Bytes Received From Line
 Bytes Received From Port
 Frames Transmitted To Line
 Frames Received To Line

Errors Transmitted To Line
 Errors Received To Line
 Retrains Initiated Locally
 Retrains Initiated Remotely

Operational Statistics Table

Various operational counters.

Time Up Since Last Reset
 Total Time Up
 Total Time On-line
 Incoming Connections Accepted
 Incoming Connections Failed
 Outgoing Connections Accepted
 Outgoing Connections Failed
 Bytes Transmitted To Line
 Bytes Transmitted To Port
 Bytes Received From Line
 Bytes Received From Port
 Frames Transmitted To Line
 Frames Received To Line
 Errors Transmitted To Line
 Errors Received To Line
 Retrains Initiated Locally
 Retrains Initiated Remotely
 Disconnects Initiated Locally
 Disconnects Initiated Remotely
 Disconnects Due To Carrier Loss
 Disconnects Due To Handshake Fail
 Disconnects Due To No Answer Tone
 Disconnects Due To Wrong Speed
 Disconnects Due To No Error
 Disconnects Due To Too Many Retransmits
 Disconnect Due To Inactivity
 Disconnect Due To Other Reasons

Connection Statistics Table

This table contains statistics on the types of connections which were established.

Speed V.21 V.32

Speed Bell

Speed V.22

Speed V.22bis

Speed V.32 4800 bps

Speed V.32 7200 bps

Speed V.32 9600 bps

Speed V.32 12000 bps

Speed V.32 14400 bps

Speed V.34 14400 bps

Speed V.34 16800 bps

Speed V.34 19200 bps

Speed V.34 21600 bps

Speed V.34 24000 bps

Speed V.34 26400 bps

Speed V.34 28800 bps

Protocol None

Protocol MNP

Protocol MNP10

Protocol V.42

Compression None

Compression V.42bis

Compression MNP 5

Encryption Statistics

AT Commands Table

The current setting of all the AT commands.

Total Reset

ATA - Command Answer

ATB - Select Communication Standard

ATD - Command Dial

ATE - Echo

ATH - Hang Up

ATI - Identity

ATL - Speaker Volume

ATM - Speaker Monitor

ATO - Return On-line

ATP - Pulse Dial

ATQ - Quiet

ATR - Host Terminal Speed Lock

ATT - Tone Dial

ATV - Verbal

ATW - Connect Report

ATX - Extended

ATZ - Reset

AT& Commands Table

The current setting of all the AT& commands.

AT&B - Character Length

AT&C - DCD Control

AT&D - DTR Control

AT&F - Factory Defaults

AT&G - Guard Tone

AT&H - Clock Control

AT&K - Flow Control

AT&L - Leased Line

AT&M - Synch Asynchronous Mode
 AT&N - Abort Connection
 AT&P - Pulse Ratio Selection
 AT&R - Rts Cts Control
 AT&S - DSR Control
 AT&T - Self Test
 AT&W - Write Configuration
 AT&X - Transmit Clock
 AT&Y - Profile

AT\ Commands Table

The current setting of all the AT\ commands.

ATA - MNP Block Size
 ATB - Generate Break
 ATJ - Auto Reliable Fallback
 AT\K - Break Control
 AT\N - Asynchronous Mode
 AT\Q - Extended Flow Control
 AT\T - Inactivity Timer
 ATV - Error Correction Codes
 ATX - Xon Xoff Pass Through

AT# Commands Table

The current setting of all the AT# commands.

AT#A - Remote Access
 AT#B - Hayes Compatibility
 AT#C - V.25 calling Tones
 AT#D - V.25bis Direct Calling
 AT#E - Encryption
 AT#F - Front Panel Test Loop
 AT#I - V.22bis Leased Line Mode
 AT#J - V.42 Detection Phase

AT#K - MNP10
 AT#M - Command Mode
 AT#N - V.25bis Character Encoding
 AT#O - Buffer Overflow Handling
 AT#Q - V.25bis Terminal Speed
 AT#R - Enable Remote Control
 AT#U - V.25bis Character Set
 AT#V - Command Verifier

AT% Commands Table

The current setting of all the AT% commands.

AT%B - V.32bis Originate
 AT%C - Compression Control
 AT%D - Disconnect Delay
 AT%E - Auto Retrain
 AT%F - DTR DSR Override
 AT%H - NMP 10 Link Negotiation
 AT%K - CTS Dial Handshake
 AT%L - Level Control
 AT%M - LED Function
 AT%P - DCD Timing
 AT%Q - Display EQM
 AT%R - CTS Control
 AT%S - DSR Control
 AT%T - DCD Control
 AT%U - V.42 Response
 AT%V - Synchronous Voice
 AT%X - X.32 Enable

AT Miscellaneous Commands Table

The current setting of the miscellaneous AT commands.

AT! - LockSpeed

AT-K - V.42 to MNP10 switching

AT-Q - MNP10 Fallback

AT:E - V.32 compromise equalizer

AT)M - Power level adjustment in MNP10

AT*W - Welcoming Message

S Table

The current setting of the S registers.

Indexed by S Register number

S Register Value

Dial Table

Internally stored telephone numbers.

Dial Number

Stored Dial String 0

Stored Dial String 1

Stored Dial String 2

Stored Dial String 3

Stored Dial String 4

Stored Dial String 5

Stored Dial String 6

Stored Dial String 7

Stored Dial String 8

Stored Dial String 9

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Email: support@netcomm.com.au

Web Page: <http://www.netcomm.com.au>

FTP site: ftp.netcomm.com.au

Fax: (02) 9887 4274

Phone: 1 800 642 067or
9878 7473 in the Sydney metropolitan area

BBS: (02) 9878 3755

TeleMarketing

Fax: (02) 9805 0254

Phone: 1 800 269 950 or
9878 7333 in the Sydney metropolitan area

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