StarView™
Element Management System

Instruction Manual

August 24, 2001
IMN-112959-E03

HARRIS

Revision History

Issue Date	ECO/DRN	Description
January 2, 2001	ECO-19954_1	First release.
April 30, 2001	ECO-20020	Added the following: Windows 2000 installation, SNMP services setup & module export configuration, Map customization, Galaxy setup and MicroStar PPP connection utility. Expanded StarView enhancements & equipment screen information. Removed non-applicable information.
August 24, 2001		Updated Windows service pack information. Added the following: equipment requiring proxy support, equipment screen information, Refresh and Total Refresh, Quadralink II, MicroStar PPP connection for Windows 2000, MicroStar direct connection via RTU port.

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GETTING STARTED

This chapter describes system requirements and how to install StarView.

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- "Technical Support" (page 3) provides information about Harris Customer Resource Center.
- "System Requirements" (page 4) provides the minimum list of system requirements to run StarView.
- "Operating Environment Setup for Windows NT" (page 5) provides required information before installing StarView on Windows NT.
- "Operating Environment Setup for Windows 2000" (page 14) provides required information before installing StarView on Windows 2000.
- "SNMP Services Setup for the SNMP Proxy" (page 32) provides information on the services setup
- "If your version is not 5.00 or greater, then connect to the Microsoft Web site and install the latest version of MSIE." (page 22) explains how to install StarView components.
- "SNMP Services Setup for the SNMP Proxy" (page 32) provides required information after installing StarView.

Introduction

Welcome to the Harris Microwave Communications Division, StarView™ Element Management System. StarView™ provides the tools you need to proactively manage your Harris radio networks from a single operator's Windows NT or Windows 2000 workstation. StarView Element Management System allows you to communicate

directly with legacy Harris radio equipment via an SNMP proxy agent and newer Harris radio equipment via embedded SNMP agents. The StarView Element Management System is a powerful management system. With StarView you can easily monitor your entire network. StarView Element Management features include:

- Graphical interface
- Network status that allows up to the minute feedback on network performance
- Alarm status that allows immediate feedback on your network's health
- Local and remote connectivity with Harris radio equipment
- Online Help for easy access to StarView operation information

StarView's easy to navigate graphical interface provides access to all your network components. You can easily move through your network to view whole segments or individual nodes. StarView provides a customizable interface that allows you to change backgrounds, icons, menus, toolbars and shortcuts.

Network status is quickly available through the high-level network submap and alarm log. StarView users can view radio events by severity and then pass the information onto other StarView systems in the network.

StarView includes remote operational capability utilizing the Internet via Web browser. The StarView system runs on Windows NT and Windows 2000 and is based on Hewlett-Packard® Network Node Manager. Customized for Harris Radio Equipment, StarView Element Manager provides on-line user documentation, always available at your fingertips.

Package Contents

StarView software package includes the following two CD-ROMs:

- **Install** FarScan CD-ROM
- **Install** StarView CD-ROM

NOTE

If you are installing FarScan for Windows, you must install the FarScan program before you install the StarView program.

The FarScan CD-ROM includes:

- FarScan for Windows
- FarScan Database
- FarScan SNMP Module
- FarScan Utility
- FarScan Instruction Manual

The StarView CD-ROM includes:

- HP OpenView (HPOV)
- StarView HPOV Enhancements
- StarView Equipment Screens

Technical Support

24-hour Emergency Support

If you are experiencing a traffic-affecting or traffic-threatening situation, technical support is available 24 hours a day, seven days a week, including holidays. If you call the Technical Assistance Center during nonbusiness hours, a Product Support Engineer will return your call within 30 minutes.

Business Hours

Monday through Friday

USA: 6:30am to 5:00pm (Pacific Standard Time)
Canada: 7:30am to 5:00pm (Eastern Standard Time)

Contact Information

	USA (Domestic Customers)	Canada (International Customers)
Telephone	1-800-227-8332 (+1) 650-594-3800	1-800-465-4654 (+1) 514-421-8333
Fax	(+1) 650-594-3621	(+1) 514-685-4580
Mail Address	Harris Corporation, MCD Technical Assistance Center 350 Twin Dolphin Drive Redwood Shores, CA 94065-1421	Harris Corporation, MCD Technical Assistance Center 3 Hotel-de-Ville Dollard-des-Ormeaux Quebec, Canada H9B 3G4
E-mail	crcusa@harris.com	crcmtl@harris.com
Internet	http://www.microwave.harris.com/cservice	

NOTE

Please refer to our customer service web site for CRC addresses in other countries.

Information to Provide

Information to provide when you contact us:

- Detailed description of the problem or trouble symptom and what caused it to occur.
- If your StarView network system reported an abnormal condition or alarm, provide a printout of the FarScan or StarView activity log.
- Make a screen capture of the display related to the problem or symptom. To create a screen capture: Press **Print Screen** on your keyboard and then paste the image into the Windows program, PaintBrush.
- Write down the FarScan and StarView software serial numbers.

System Requirements

You need the following minimum system requirements to run StarView:

- Microsoft Windows NT® Version 4.0 Service Pack 5, or
  Microsoft Windows 2000® Service Pack 1, or
  Microsoft Windows 2000® Advanced Server Service Pack 1
- Personal computer with a Pentium 450 MHz or faster processor
- 128 megabytes (MB) RAM
- 300 MB of free hard disk space
- VGA Monitor (Super VGA recommended)
- Two COM ports
- Ethernet PCI Network Interface Card - 10BaseT, RJ-45 Connector (minimum 10 Mbps network)
- Microsoft Windows NT/ Windows 2000 compatible mouse
- Microsoft Windows NT/Windows 2000 compatible VGA card
- Sound card with speakers
- 56K modem
- Microsoft Windows NT/Windows 2000 compatible printer

Additional Recommended System Requirements:

- For Video Display: Use 17" monitor and set **Screen Area** to 1024x768 pixels
- Set Paging File Size to 125 MB or higher
- Uninterruptible Power Supply (UPS)

Additional Hardware and Software Documentation

Visit our StarView web site at http://download.harris.com.

Operating Environment Setup for Windows NT

Before you can start FarScan and StarView, you must set up the operating environment. If using Windows NT, continue with this section. If using Windows 2000 see "Operating Environment Setup for Windows 2000" (page 14). The operating environment setup on Windows NT system is necessary for a compatible installation of the FarScan SNMP Module and the StarView program.

NOTE

Make sure you are running Microsoft Windows NT, Version 4.0 Service Pack 5. You can find the Service Pack number on your computer in **Control Panel** on the **Help** menu. Click **Help** and then click **About Windows NT**.

Set up or check for the following system requirements on Windows NT:

- User Administration Rights
- TCP/IP Services with a Static IP Address
- Minimum Virtual Memory Requirements
- SNMP Services
- Peer Web Services (StarView only)
- MS Internet Explorer 5.0 Web Browser (StarView only)

Administrator Rights

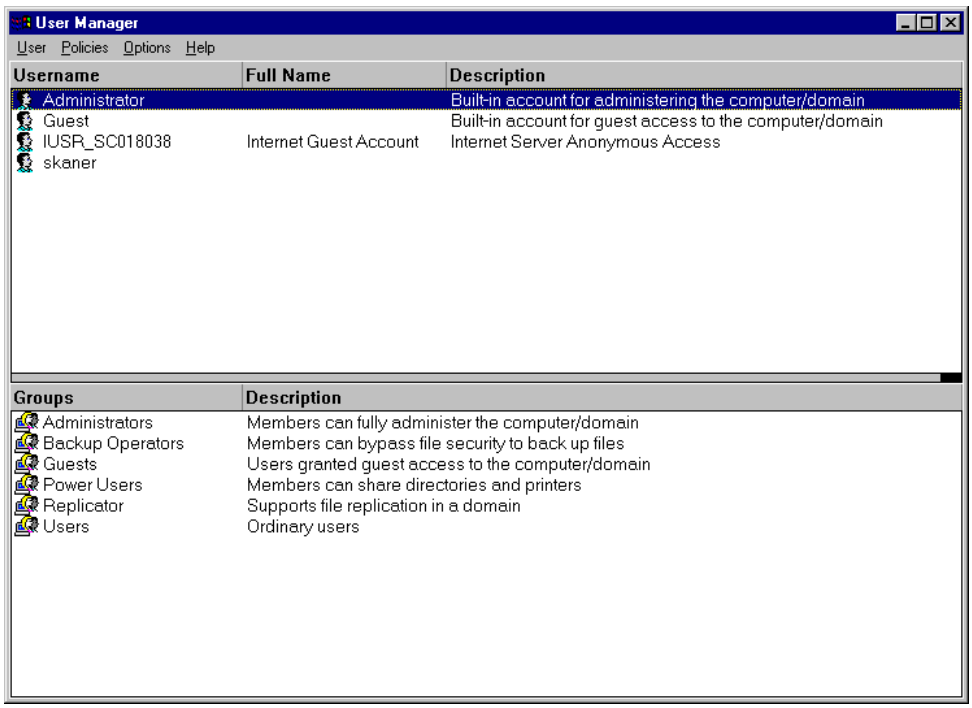
The user setting up the Windows NT environment must log on to a user account that has membership in the Administrator local group.

To set up Administrator rights:

1. On the Windows NT taskbar, click the **Start** button.
2. On the **Start** menu, click **Programs**.
3. On the submenu, click **Administrative Tools (Common)**.

4. On the submenu, click **User Manager**. The **User Manager** dialog box appears.

User Manager Dialog Box



5. On the **Groups** list, double-click **Administrators**. The **Local Group Properties** dialog box appears.

If the user installing the SNMP Module does not have Administrator rights, then the user must click the **Add** button to add their Full Name to the Group list of Administrators before installing the SNMP Module or else authenticate by using the administrator's password.

TCP/IP Services with Static IP Address

To install TCP/IP on your computer, you must be configured with an IP address, a subnet mask, and a default gateway for each network adapter on the computer. You can configure the IP address statically or dynamically.

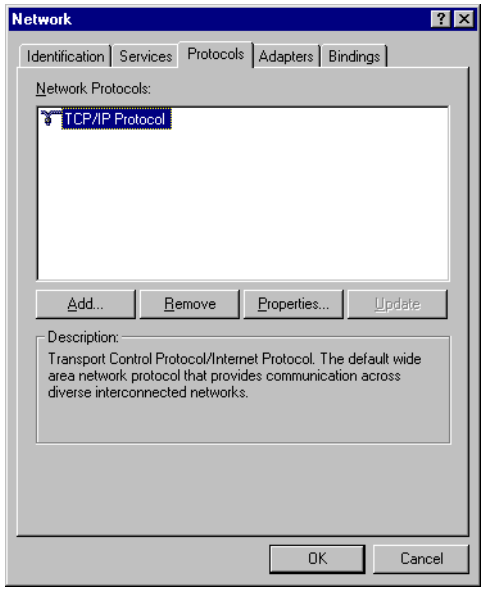
To install TCP/IP Services and set up your Static IP Address:

1. On the Windows NT taskbar, click the **Start** button.
2. On the **Start** menu, click **Settings**.

3. On the submenu, click **Control Panel**. The **Control Panel** window appears.

4. On the **Control Panel** window, double-click the **Network** icon. The Network sheet appears.

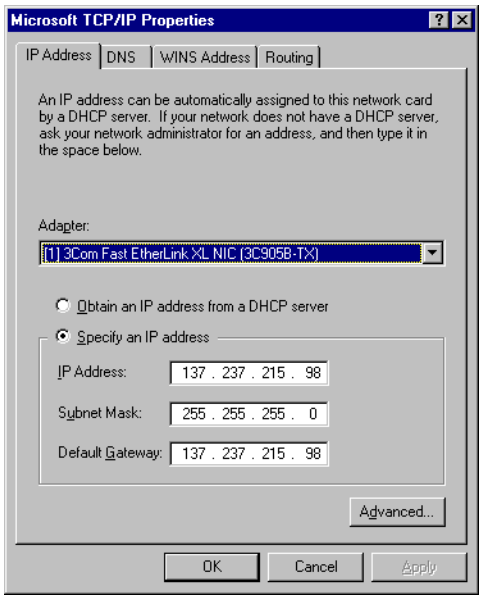
Network sheet



5. On the **Network** sheet, click the **Protocols** tab. The **Network Protocols** list appears. If the TCP/IP Protocol is not listed, then click **Add** and select **TCP/IP Protocol** from the **Select Network Protocol** dialog box, and then click **OK**.

6. On the **Network** sheet, select the **TCP/IP Protocol** and then click the **Properties** button. The **Microsoft TCP/IP Properties** sheet appears.

Microsoft TCP/IP Properties sheet



7. On the **Microsoft TCP/IP Properties** sheet, click the **IP Address** tab.

8. Specify the IP Address, Subnet Mask and Default Gateway for the client computer:
   - Select the **Specify an IP address** check box.
   - On the **IP Address** text box, enter your IP address.
   - On the **Subnet Mask** text box, enter your subnet mask.
   - On the **Default Gateway** text box, enter your default gateway address.

9. Click **OK** and restart your computer.

SNMP IP Address List

The IP address identifies a node on a network and specifies routing information. Each node on the network must be assigned a unique IP address, which is made up of the network ID, plus a unique host ID. The address is represented in dotted-decimal notation, with the decimal value of each octet separated by a period (for example 137.237.215.108). All Harris equipment, networked computers, and devices must have an assigned static IP address

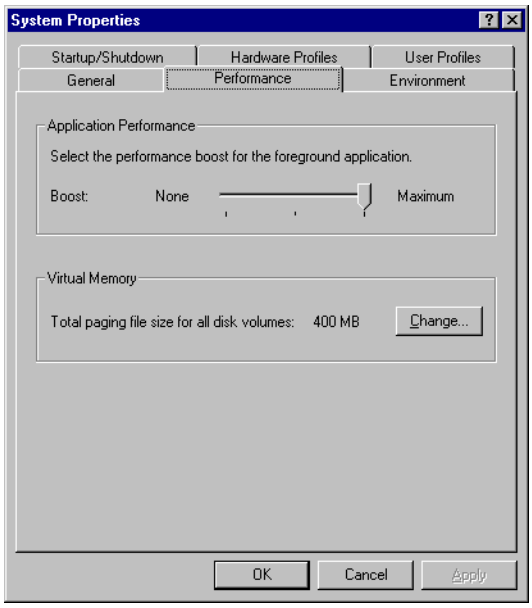
Virtual Memory

To increase performance, Windows NT provides **Virtual Memory** or paging files. Paging files allocate space on the hard disk as if the virtual memory were actual memory. To run FarScan and StarView, the **Paging File Size for Selected Drive** must be set to 128 MB or greater.

To set up the Paging File Size:

1. On the Windows NT taskbar, click the **Start** button.
2. On the **Start** menu, click **Settings**.
3. On the submenu, click **Control Panel**. The **Control Panel** window appears.
4. On the **Control Panel** window, double-click the **System** icon. The **System Properties** sheet appears.

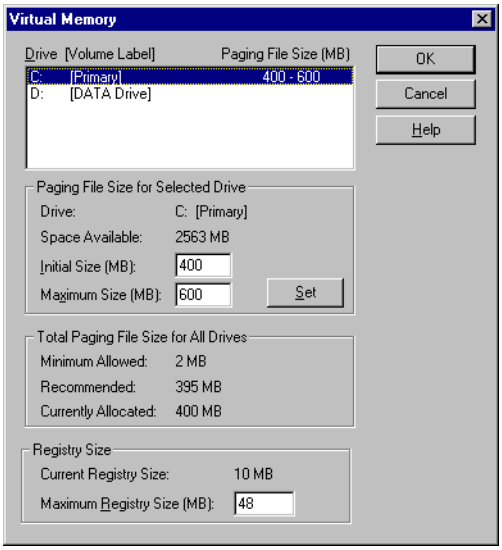
System Properties sheet



5. On the **System Properties** sheet, click the **Performance** tab. For **Virtual Memory** the **Total paging file size for all disk volumes** is listed.

Click the **Change** button if the paging file size is less then 140 MB. Enter the correct values for **Initial Size (MB)** and the **Maximum Size (MB)** and then restart the Windows NT operating system.

Virtual Memory dialog box



SNMP Service

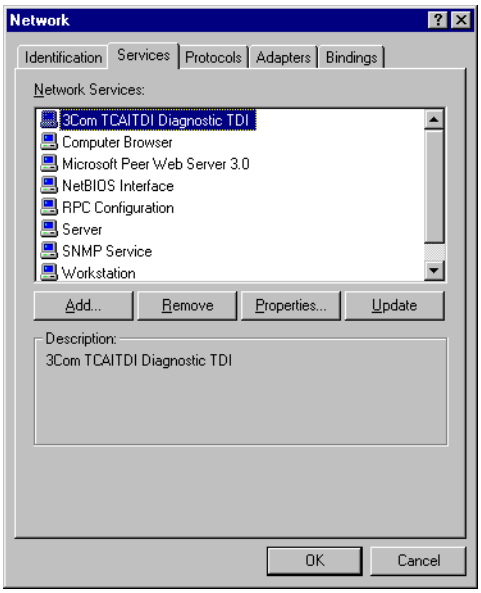
The SNMP Service allows the user to configure an SNMP agent. The user must manually assign a unique IP address to equipment accessed through SNMP.

To set up SNMP Services:

1. On the Windows NT taskbar, click the **Start** button.
2. On the **Start** menu, click **Settings**.
3. On the submenu, click **Control Panel**. The **Control Panel** window appears.
4. On the **Control Panel** window, double-click the **Network** icon. The **Network** sheet appears.

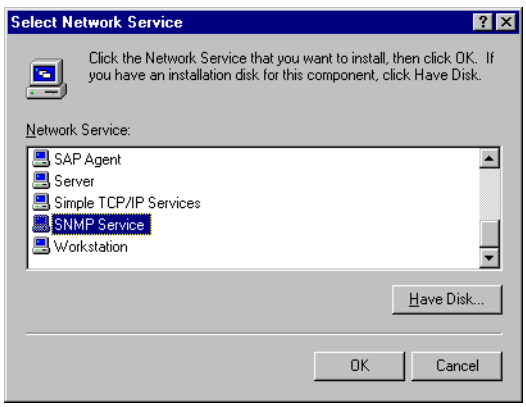
5. On the **Network** sheet, click the **Services** tab. The **Services** list appears.

Network Services sheet



If **Services** does not list SNMP, then click the **Add** button and select **SNMP Service**. On the **Control Panel** window, double-click the **Services** icon and set SNMP **Status** to Started and **Startup** to Automatic.

Select Network Services dialog box



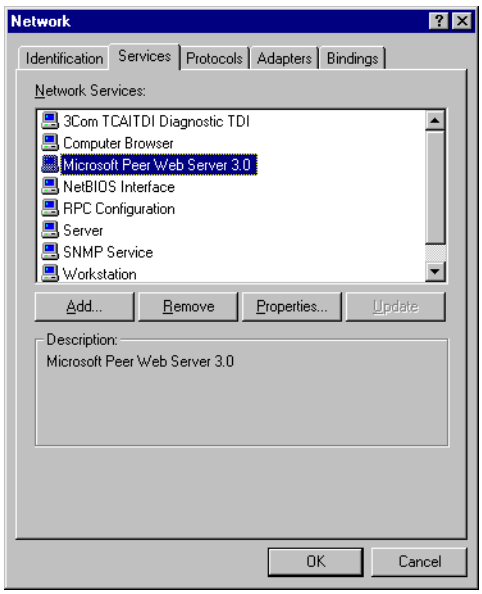
Peer Web Services

Peer Web Services is provided as a subset of Microsoft's Internet Information Services (IIS). You can develop a Web site on your local network.

To install Peer Web Services:

1. On the Windows NT taskbar, click the **Start** button.
2. On the **Start** menu, click **Settings**.
3. On the submenu, click **Control Panel**. The **Control Panel** window appears.
4. On the **Control Panel** window, double-click the **Network** icon. The **Network** sheet appears.
5. On the **Network** sheet, click the **Services** tab. The **Network Services** list appears.

Network Services sheet for Peer Web Server



If Microsoft Peer Web Server 3.0 is not listed, then click the **Add** button and select **Microsoft Peer Web Server**. Follow the instructions and configure the appropriate parameters.

Microsoft Internet Explorer 5.0 Web Browser

To set up or check for Microsoft Internet Explorer (MSIE) 5.0:

1. On the Windows NT taskbar, click the **Start** button.
2. On the **Start** menu, click **Internet Explorer**. The Microsoft Internet Explorer (MSIE) program appears.
3. On the MSIE menu, click the **Help** menu.
4. On the **Help** menu, click **About Internet Explorer**. The **About Internet Explorer** window appears.

If your version is not 5.00 or greater, then connect to the Microsoft Web site and install the latest version of MSIE.

Operating Environment Setup for Windows 2000

This section outlines the steps necessary to set up the operating environment for Windows 2000. The operating environment setup on Windows 2000 is necessary for a compatible installation of the FarScan SNMP Module and the StarView program.

NOTE

Make sure you are running Microsoft Windows 2000, Version 5.0 Service Pack 1. You can find the Service Pack number on your computer in **Control Panel** on the **Help** menu. Click **Help** and then click **About Windows**.

Set up or check for the following system requirements on Windows 2000:

- User Administration Rights
- TCP/IP Services with a Static IP Address
- Minimum Virtual Memory Requirements
- SNMP Services
- Peer Web Services (StarView only)
- MS Internet Explorer 5.0 Web Browser (StarView only)

Administrator Rights

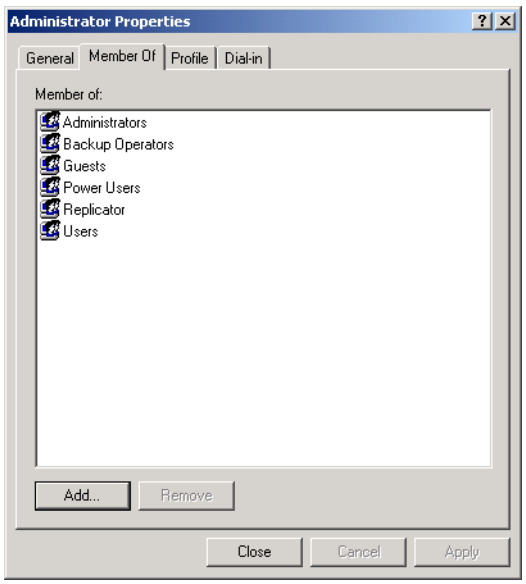
The user setting up the Windows 2000 environment must log on to a user account that has membership in the Administrator local group.

To set up Administrator rights:

1. On the Windows 2000 taskbar, click the **Start** button.
2. On the **Start** menu, click **Settings.**
3. On the submenu, click **Control Panel**. The **Control Panel** window appears.
4. On the **Control Panel** window, double-click on the **Administrative Tools** icon. The **Administrative Tools** window appears.
5. On the Administrative Tools window, double-click on the **Computer Management** icon. **The Computer Management** sheet appears.
6. On the **Computer Management** window, double-click on the **Local Users and Groups** option.
7. On the submenu, click **Users**. A list of valid users appears on the right of the window.
8. From the list of valid users, double-click on the appropriate user**.**

9. On the ***Username*** **Properties** window, select the **Member Of** tab. Ensure that the user is a *Member Of* the Administrators group.

User Properties sheet



If the user installing the SNMP Module does not have Administrator rights, then the user must click the **Add** button to add the Administrative Group to the user's profile before installing the SNMP Module or else authenticate by using the administrator's password.

TCP/IP Services with Static IP Address

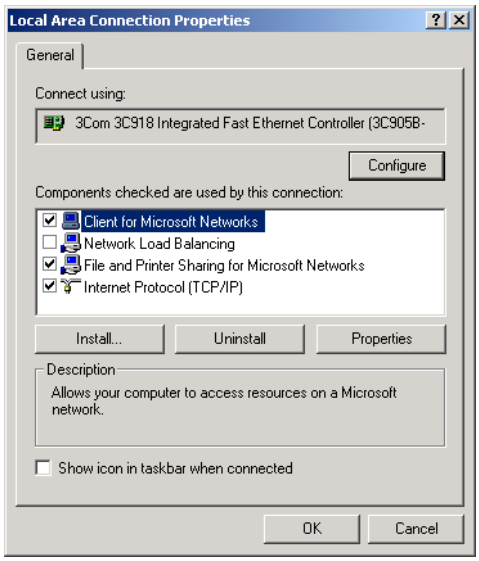
To install TCP/IP on your computer, you must be configured with an IP address, a subnet mask, and a default gateway for each network adapter on the computer. You can configure the IP address statically or dynamically.

To install TCP/IP Services and set up your Static IP Address:

1. On the Windows 2000 taskbar, click the **Start** button.
2. On the **Start** menu, click **Settings**.
3. On the submenu, click **Network and Dial-up Connections**. The **Network and Dial-up Connection** window appears.

4. On the **Network and Dial-up Connection** window, double-click the **Local Area Connection** icon. The **Local Area Connection Properties** sheet appears.

Local Area Connection Properties



5. On the **Local Area Connection Properties** sheet, ensure the Internet Protocol (TCP/IP) check box is selected. If the Internet Protocol (TCP/iP) check box is not selected, select the box.

6. double-click on Internet Protocol (TCP/IP). The **Internet Protocol (TCP/IP) Properties** sheet appears.

7. On the **Internet Protocol (TCP/IP) Properties** sheet, select the **Use the following IP address** radio button.

Specify the IP Address, Subnet Mask and Default Gateway for the client computer.

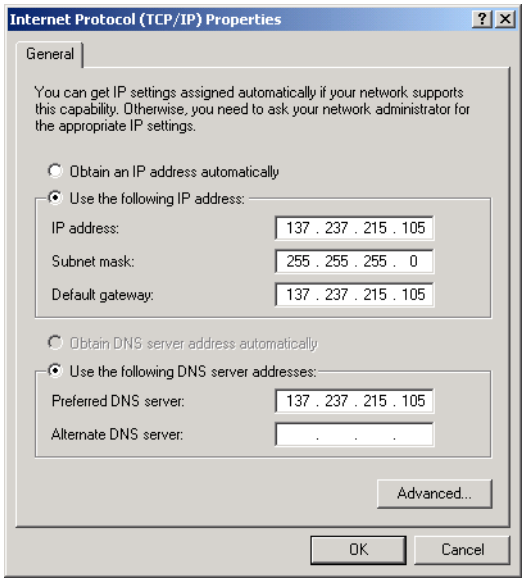
1. On the **IP Address** text box, enter your IP address.

2. On the **Subnet Mask** text box, enter your subnet mask.

3. On the **Default Gateway** text box, enter your default gateway address.

4. Click **OK** and restart your computer.

Internet Protocol TCP/IP Properties sheet



SNMP IP Address List

The IP address identifies a node on a network and specifies routing information. Each node on the network must be assigned a unique IP address, which is made up of the network ID, plus a unique host ID. The address is represented in dotted-decimal notation, with the decimal value of each octet separated by a period (for example 137.237.215.108). All Harris equipment, networked computers, and devices must have an assigned static IP address

Virtual Memory

To increase performance, Windows 200 provides **Virtual Memory** or paging files. Paging files allocate space on the hard disk as if the virtual memory were actual memory. To run FarScan and StarView, the **Paging File Size for Selected Drive** must be set to 140 MB or greater.

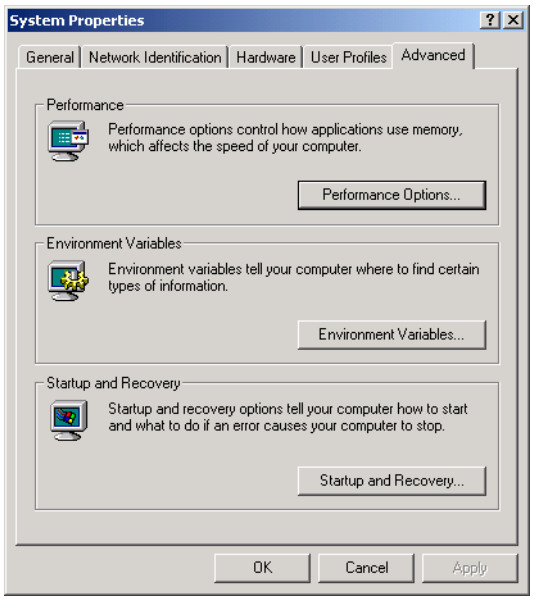
To set up the Paging File Size:

1. On the Windows 2000 taskbar, click the **Start** button.
2. On the **Start** menu, click **Settings**.

3. On the submenu, click **Control Panel**. The **Control Panel** window appears.

4. On the **Control Panel** window, double-click the **System** icon. The **System Properties** sheet appears.

System Properties sheet

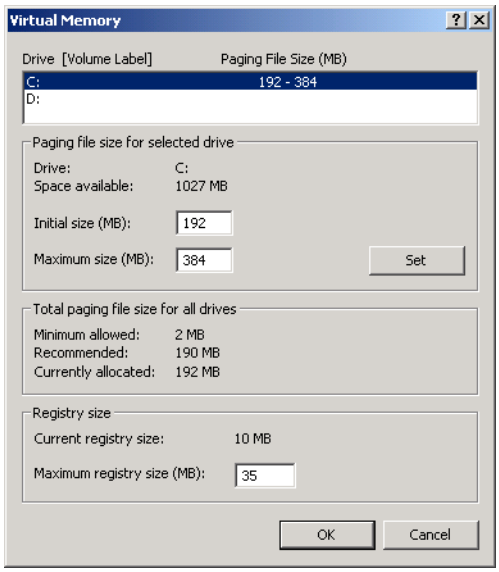


5. On the **System Properties** sheet, click the **Advanced** tab. Select the **Performance Options** button.

6. For **Virtual Memory** the **Total paging file size for all disk volumes** is listed.

Click the **Change** button if the paging file size is less then 128 MB. Enter the correct values for **Initial Size (MB)** and the **Maximum Size (MB)** and then restart the Windows 2000 operating system.

Virtual Memory dialog box



SNMP Service

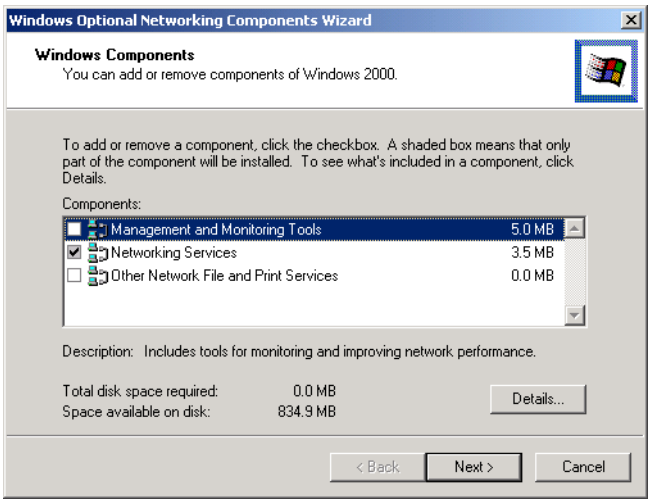
The SNMP Service allows the user to configure an SNMP agent. The user must manually assign a unique IP address to equipment accessed through SNMP.

To set up SNMP Services:

1. On the Windows 2000 taskbar, click the **Start** button.
2. On the **Start** menu, click **Settings**.
3. On the submenu, click **Network and Dial-up Connections**. The **Network and Dial-up Connections** window appears.
4. On the **Network and Dial-up Connections** window, select the Advanced menu option.

5. On the submenu, select **Optional Networking Components**. The **Windows Optional Networking Components Wizard** appears.

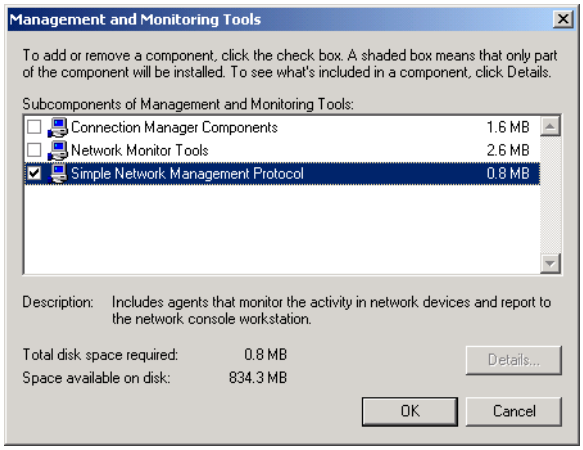
Windows Optional Networking Components Wizard sheet



6. From the **Windows Optional Networking Components Wizard,** double-click on the **Management and Monitoring Tools** checkbox. The **Management and Monitoring Tools** sheet appears.

If the **Simple Network Management Protocol** checkbox is not selected, then select the **Simple Network Management Protocol** checkbox and then select the **Okay** button. On the **Windows Optional Networking Components Wizard,** window, select the **Next** button and the SNMP Services will be installed.

Select Network Services dialog box



Microsoft Internet Explorer 5.0 Web Browser

To set up or check for Microsoft Internet Explorer 5.0:

1. On the Windows 2000 taskbar, click the **Start** button.
2. On the **Start** menu, click **Internet Explorer**. The Microsoft Internet Explorer (MSIE) program appears.
3. On the MSIE menu, click the **Help** menu.
4. On the **Help** menu, click **About Internet Explorer**. The **About Internet Explorer** window appears.

If your version is not 5.00 or greater, then connect to the Microsoft Web site and install the latest version of MSIE.

Program Installation

After setting up the environment, you are now ready to start the StarView installation.

To install StarView, you must install the following components:

- StarView HPOV
- StarView HPOV Enhancements
- StarView Equipment Screens

If you are using radio equipment that requires a Proxy support, FarScan components should be installed:

- FarScan for Windows and FarScan Database for legacy equipment that requires proxy agent.
- SNMP Module for legacy equipment that requires proxy agent

NOTE

Check your system layout plan to determine whether your system is to be connected to a radio requiring FarScan for Windows. Management of Aurora 5800, CAU, DVA, DVM-45, MegaStar 1+1, MegaStar 1:n, MicroStar and Quadralink II require the SNMP Module. Management of MicroStar, Galaxy and

MicroStar Gen II does not require the SNMP Module. Management of Constellation radios may be accomplished with or without the use of the SNMP Module.

Installing FarScan for Windows

1. Start Windows NT or Windows 2000.
2. Close all other Windows programs and insert the FarScan install CD into your CD-ROM drive.
3. The **FarScan Master Setup** begins automatically. Follow the on-screen instructions to complete installation.

If the FarScan Master Setup does not appear, click the **Start** button and then click **Run**. In the command line text box, type "D:\setup" (where D:\ or another drive, for example E, is the letter of the CD-ROM drive containing the FarScan install CD).

4. When the **FarScan for Windows Setup** registration dialog box appears, enter the case specific serial number located on the back of the CD box and then click OK. FarScan setup starts searching for previous versions of FarScan.
5. If FarScan setup finds an older version, the **FarScan Group Detected** dialog box appears. To be able to run an older version of FarScan, click the **Add** button.
6. If you choose not to use the older version of FarScan, click the **Overwrite** button and **FarScan for Windows Setup** converts the older version's database and message files to the current version.
7. If setup cannot find an earlier version of FarScan, the **New Directory** dialog box appears. Accept the default directory, **C:\FarScan\FS4W_32** or **Enter full pathname for new FarScan directory**. Click **OK** to install FarScan for Windows.
8. On the **Install Directory Notification** dialog box that appears, verify that the **New FarScan version will be installed into a new directory**, then click the **Start Install** button. If the new directory is not correct, click the **Repeat** button to set up the new directory and follow instructions.

You have successfully installed FarScan for Windows. You must next create database files for your Harris equipment. You can create your database when the **Create FarScan Database Files** dialog box appears. Click the **Cancel** button if you already have database files for your equipment or you can create your database files later.

To create FarScan Database Files:

1. On the **Create FarScan Database Files** dialog box, click **OK**. The **Database Customization for FarScan** dialog box appears.
2. Click the **Setup** button. The **DbCustomize** dialog box appears.
3. Wait for setup to scan for the **Available Harris MCD Equipment Types** list. From the **Available Equipment Types** list, select each equipment type on your network by clicking the **Add** button. A red check mark indicates your selections; FarScan is selected by default. If need to change your **Harris Equipment Types** list, then click the **Remove** button to clear an equipment type selection.
4. Click the **Build DB** button. The **Database Name** dialog box appears.
5. Open the FarScan directory, and then enter a file name for the database. Click the **Save** button. The **Database Name** dialog box saves the database files into POL, MGT, and MGA format. After the **Database Customize** dialog box appears, click **OK**.
6. On the **Available Harris MCD Equipment Types** dialog box, click **Exit** to finish the database installation.

Installation of FarScan for Windows and FarScan database is complete.

NOTE

You must connect to your equipment and set up the polling cycles before installing the SNMP Module or StarView. See FarScan Instruction Manual for installation and operating procedures.

Installing SNMP Module

The SNMP Module provides an SNMP V1 standard open interface to Harris legacy equipment. Legacy equipment includes MegaStar 1+1, Megastar 1:N, DVA, CAU, Aurora 5800, and Quadralink II. After installing the SNMP Module, you can manage Harris Radio Equipment from the StarView Element Management System or any standard

MIB browser. To install and operate the SNMP Module, you must configure a static IP address on your Windows operating system. For instructions on how to configure a Static IP Address, refer to "Operating Environment Setup for Windows NT" (page 5) or "Operating Environment Setup for Windows 2000" (page 14). To install the FarScan SNMP Module:

1. Start Windows NT or Windows 2000.
2. Close all other Windows programs and insert the FarScan install CD into your CD-ROM drive.
3. The **FarScan Master Setup** begins automatically. Follow the on-screen instructions to complete installation.

If the **FarScan for Windows Master Setup** does not appear, click the **Start** button and then click **Run**. In the command line text box, type "D:\setup" (where D:\ or another drive, for example E, is the letter of the CD-ROM drive containing the FarScan install CD).

4. When the **FarScan SNMP Setup Ver. Setup** registration dialog box appears, enter the case specific SNMP serial number located on the back of the CD box and click **OK**. The **FarScan SNMP Module Application Setup** dialog box appears.
5. After selecting the destination for installing the SNMP Module, install the SNMP Module.
6. Click **Finish**.

NOTE
The user must configure and connect to the Harris equipment to operate the SNMP Module in FarScan.

Installing StarView

To install StarView from the **StarView Master Setup**, you must complete installation of **HPOV**, **StarView Enhancements**, and **StarView Equipment Screens**.

Installing HPOV

1. Start Windows NT or Windows 2000.

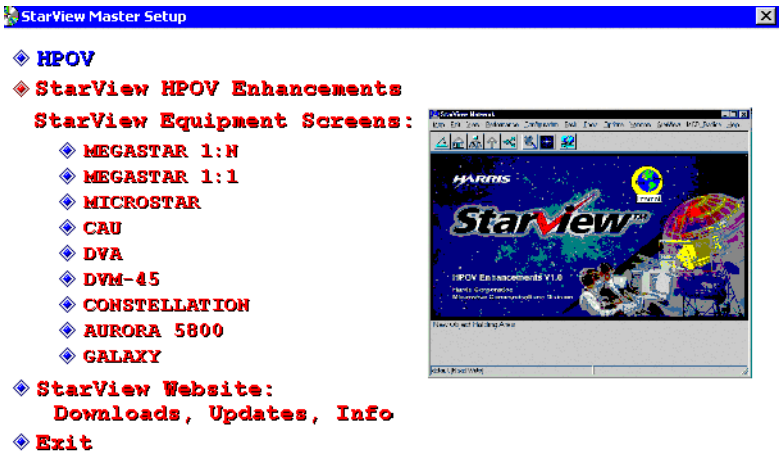
2. Close all other Windows programs and insert the StarView install CD into your CD-ROM drive.

3. The **StarView Master Setup** begins automatically. Follow the on-screen instructions to complete installation.

If the StarView for Windows Master Setup does not appear, click the **Start** button and then click **Run**. In the command line text box, type "D:\setup" (where D:\ or another drive, for example E, is the letter of the CD-ROM drive containing the StarView install CD).

4. After the **Equipment Screens Setup** registration dialog box appears, enter the case specific serial number located on the back of the CD box and click **OK**. The **StarView Master Setup** dialog box appears.

StarView Master Setup - HPOV



5. On the **StarView Master Setup** dialog box, click **HPOV**.

6. The Install Shield Wizard guides you through all the necessary steps and instructions on the **Network Node Manager Setup**.

7. After selecting a directory to install HPOV, select a setup option:

   Typical installs program files and background graphics.

   Compact installs program files only.

   Custom allows the user to choose from:

   - Program files

   - Background graphics

   - Contributed applications

- SNMP MIBs
- SNMP RFC papers
- Online user manuals
- Technical white papers

To install all available modules, the recommended installation option for StarView is **Custom**.

For this installation, use the **Custom** option to install **Network Node Manager Setup**.

NOTE
A System Configuration Warning appears about IPX network if you have not installed IPX network. If you are not using IPX networking, ignore this warning.

After the **Select Components** dialog box appears (see Step 7), select the components for your system and click the **Next** button.

1. After the **Configure Discovery Options** dialog box appears, clear the **Start Network auto-discovery after the installation** check box.
2. After the **SNMP Configuration** dialog box appears, confirm that your settings for default gateway is correct and that community is set to **public**.
3. Click **Finish** to complete the installation and return to **StarView Master Setup**.

You must next install **StarView HPOV Enhancements** from the **StarView Master Setup**.

Installing StarView Enhancements

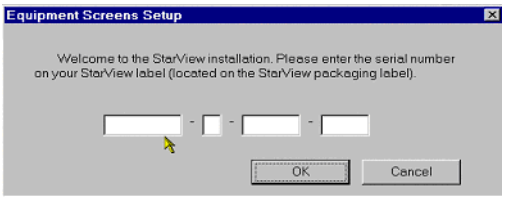
The StarView Enhancements application provides background screens, menu items, toolbar icons, product scripts and application connections that are required to complete the StarView product installation.

To install the StarView Enhancements:

1. Insert the StarView CD and enter the serial number. The serial number is found on the StarView CD label. The serial number validation is case specific. Ensure that the serial number is entered exactly as it appears on the printed label. If you are installing from the download.harris.com web site, you already

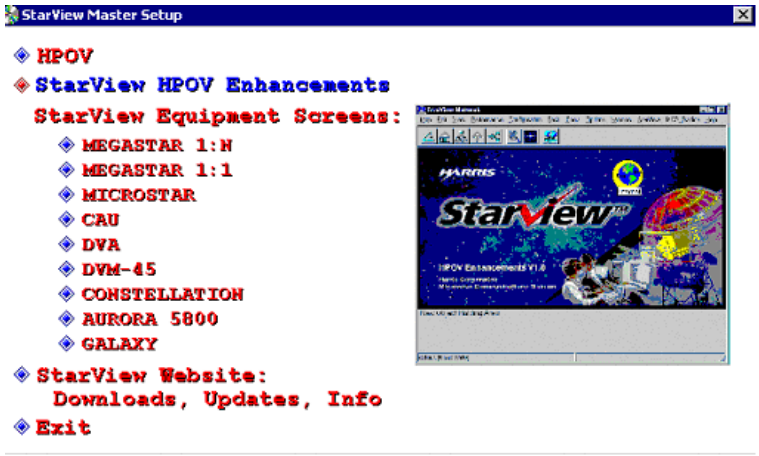
have the serial number. Select the **OK** button. The **StarView Master Setup** menu appears. If you are installing from the web site, you will need to enter the serial number upon selection of the StarView Enhancements download.

Equipment Screen Setup



2. On the **StarView Master Setup** menu, click **StarView Enhancements**. Follow the instructions that appear on the screen for installing StarView Enhancements. StarView Enhancements setup starts.

StarView Master Setup



3. From the **StarView Enhancements to HPOV** Welcome menu, click **Next**. The License Agreement Setup window appears.

4. From the **StarView Enhancements to HPOV** License Agreement Setup window, click **Yes**. The Information window appears.

5. From the **StarView Enhancements to HPOV** Information window, click **Next**. The Destination Location window appears.

6. From the S**tarView Enhancements to HPOV** Destination Location window, enter a destination for the StarView enhancements. This is accomplished by selecting the **Browse** button and entering in a destination. When this is complete, select **Next**. The Confirmation window appears.

7. From the S**tarView Enhancements to HPOV** Confirmation window, confirm you selection by clicking **Next**. The Setup Complete window appears.

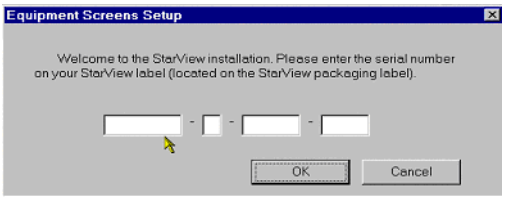
8. From the StarView Enhancements to HPOV Setup Complete window, click **Finish** to complete setup.

Installing StarView Equipment Screens

This program will install StarView Equipment Screens on your computer. StarView Equipment Screens provide a graphical interface to the Harris Microwave Radio family. The graphical interface provides access to racks, shelves, and cards (Lowest Field Replaceable Unit). The StarView Equipment Screens also provide on-screen alarm and inventory information.

1. Insert the StarView CD and enter the serial number. The serial number is found on the StarView CD label. The serial number validation is case specific. Ensure that the serial number is entered exactly as it appears on the printed label. If you are installing an update, you will already have the serial number. Select the **OK** button. The **StarView Master Setup** menu appears. If you are installing from the download.harris.com web site, you will need to enter the serial number upon selection of the Equipment Screen file to download.

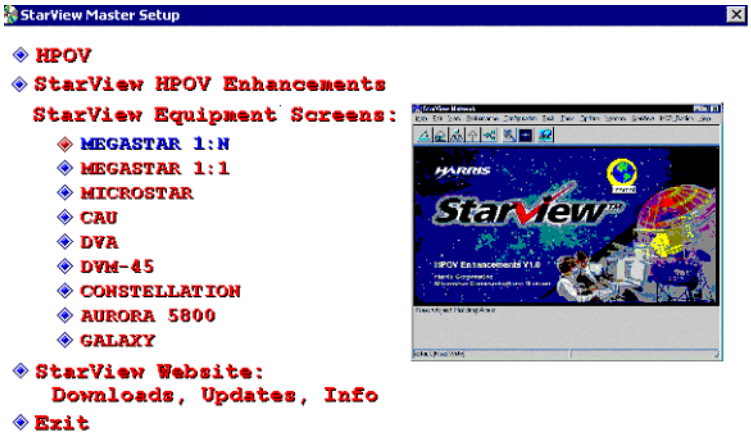
Equipment Screen Setup



2. StarView Enhancements setup starts. On the **StarView Enhancements to HPOV** Welcome window, click **Next**.

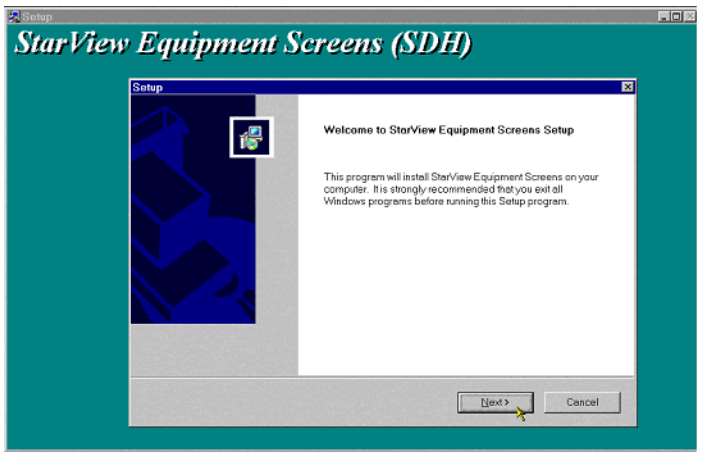
3. On the **StarView Master Setup** menu, click **the StarView Equipment Screen** that you are interested in installing. The Equipment Screen setup for that radio type appears. For the purposes of the manual, setup of the MegaStar 1:N (SDH) equipment screens are shown. This screen does not appear if installing from the web site.

StarView Master Setup



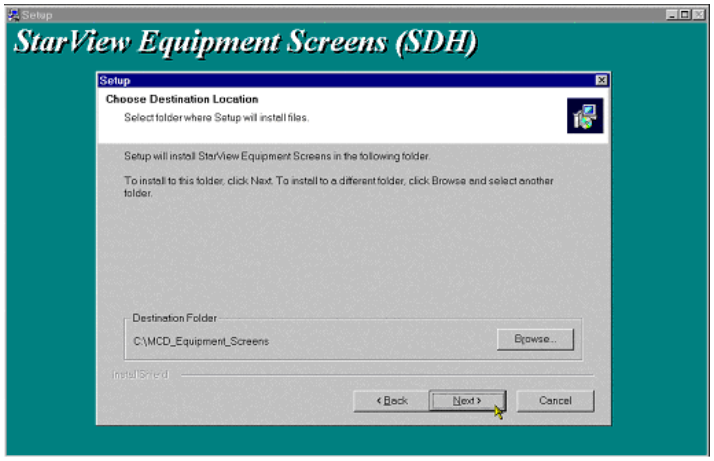
4. At the Welcome Window for the equipment type, select **Next**. If installing from the web site, this screen appears after executing the setup.exe file.

StarView Equipment Screen Setup - Welcome



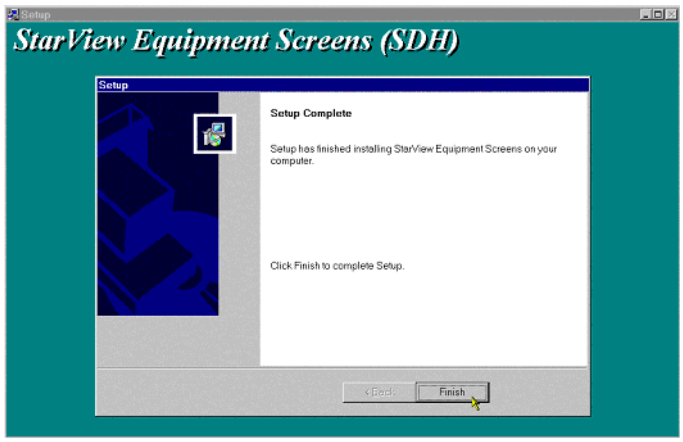
5. From the Destination Window, select the destination that the Equipment Screens are to be copied.

StarView Equipment Screen Setup - Destination



6. The Harris Equipment Screen MIBs are automatically copied to the **C:\OpenView\snmp_mibs\vendor\Harris** directory. When StarView Equipment Screen setup has completed copying files, the **Setup Complete** screen appears. Click **Finish** to complete.

StarView Equipment Screen Setup - Complete



If you have been notified that there is an update to Harris Radio Equipment Screens, then connect to the Harris Web site at http://download.harris.com. Click **StarView** and download the equipment screens for your Harris Radio Equipment. You can also download the latest HP OpenView patches.

This concludes the installation of FarScan for Windows, FarScan SNMP Module and StarView. You must now complete Operating Environment Setup # 2 to ensure that StarView runs properly.

SNMP Services Setup for the SNMP Proxy

During the installation of StarView / HPOV, SNMP Services necessary to run FarScan SNMP Module with StarView are set up on the Windows operating system. These services are set up automatically during the install, they are included here for your reference. The SNMP Services include:

- SNMP EMANATE Adapter for NT
- SNMP EMANATE Master Agent for NT
- SNMP Service
- SNMP Trap Service

The **SNMP Trap Service** is set to:

Status: Started

Startup: Automatic

The **SNMP EMANATE Adapter for NT** and **SNMP EMANATE Master Agent** and **SNMP Service** are set to:

Status: Stopped (represented by a blank entry)

Startup: Manual

If Windows reports any errors, go back and check "Operating Environment Setup for Windows NT" (page 5) and "Operating Environment Setup for Windows 2000" (page 32). If Windows continues to report errors, reinstall your Windows Service Pack or contact "Technical Support" (see page 3) for technical assistance.

CHAPTER

2

CONFIGURING SNMP

This chapter shows you how to configure and connect your Harris equipment to the StarView and FarScan SNMP Module.

- "Introduction" (page 33) provides an overview for configuring the Simple Network Management Protocol (SNMP) agent for StarView and FarScan.
- "FarScan SNMP Module" (page 34) manages access policy to legacy Harris Equipment. This section explains how to set up the FarScan SNMP Module.
- "Network Topology Discovery and Updating" (page 43) provides information for assigning IP addresses to the SNMP module using Harris equipment.

Introduction

The StarView Element Management System provides the tools you need to proactively manage your Harris radio networks. StarView incorporates FarScan for Windows and HP OpenView into a Windows NT or Windows 2000 computer based element management system. The Simple Network Management Protocol (SNMP) agent over the Internet Protocol (IP) provides access capability to your Harris equipment. SNMP is an open protocol which allows monitoring and controlling capability through your StarView Element Manager.

This chapter shows you how to configure and connect your Harris equipment through:

- The SNMP Module in FarScan for Windows for legacy equipment.
- SNMP agents provided by StarView Element Manager and on-board Harris equipment.

FarScan SNMP Module

The FarScan SNMP Module interface manages access policy to Harris equipment acting as a proxy agent for the StarView Element Management System. Using the SNMP Module, the user can assign IP addresses to Harris equipment found in the FarScan Equipment File list. The StarView Element Manager allows the user to send SNMP commands to Harris Equipment using the assigned IP addresses.

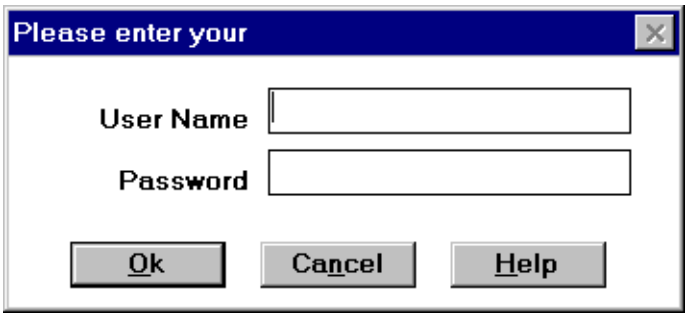
The SNMP service converts all SNMP requests, commands, or traps to SCAN commands and conversely converts outbound equipment based messages from SCAN to SNMPV1. Any allowed SNMPV1 Manager can send SNMPV1 queries or messages to Harris equipment connected to FarScan using Management Information Base II (MIB II) objects. The StarView Element Management System, a community member, knows the access policy.

On the main FarScan window, the SNMP Service icon shows the current status.

Starting FarScan for Windows

1. Start FarScan for Windows.
2. The **Please enter your** dialog box appears.

FarScan Logon dialog box

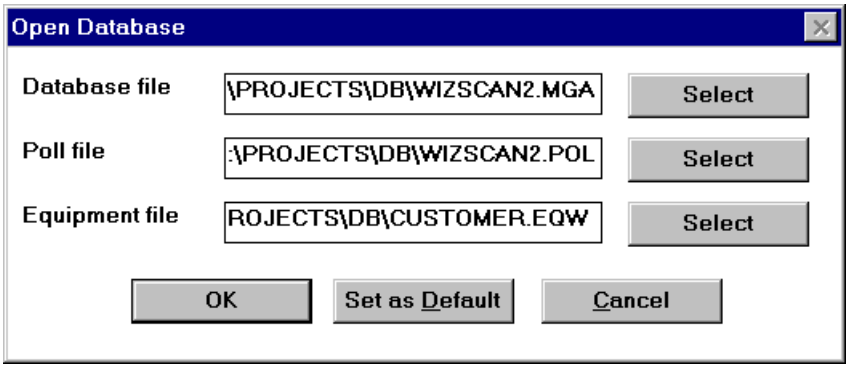


3. On the **User Name** text box, enter **farscan**.
4. On the **Password** text box, enter **manager**.

Password: manager is Access Level 7. Administrators can assign user access level for security. System Manager or Access Level 7 controls access to all operations.

5. Click the **OK** button. The **Open Database** dialog box appears.

Open Database dialog box



If the **Open Database** dialog box does not appear, then the default database, poll, and equipment files are set.

6. Select the **Database file** text box, then click the **Select** button.

7. The **Open** dialog box appears. Select the database file, and then click **OK**.

Repeat steps 6 and 7 for the **Poll file**.

8. On the **Open Database** dialog box, click the **Set as Default** button. The new database file opens when you start FarScan for Windows.

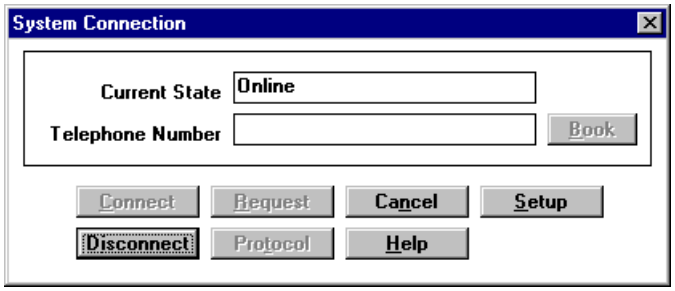
Enabling the System Port

You must connect online before you can operate FarScan.

To connect online:

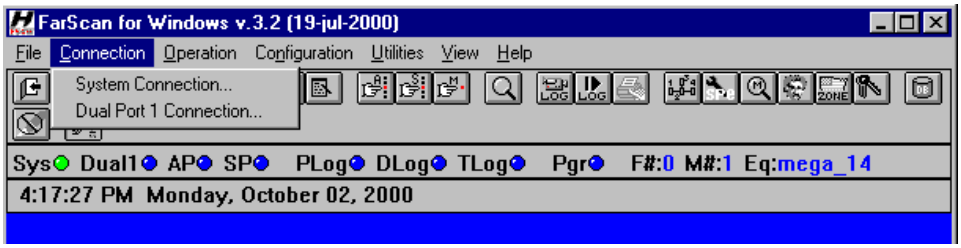
1. On the **Connection** menu, click **System Connection**. The **System Connection** dialog box appears.

System Connection dialog box



2. On the **System Connection** dialog box, click the **Connect** button. The **Current State** changes from **Offline** to **Online**. After making the connection, the **Sys** LED turns green.

System Connection



For further instructions on enabling the system port, see your FarScan for Windows manual.

To configure the SNMP Module, FarScan for Windows must be connected to your Harris equipment. You can easily test your Harris equipment connection by sending a **Manual Command** to the target equipment.

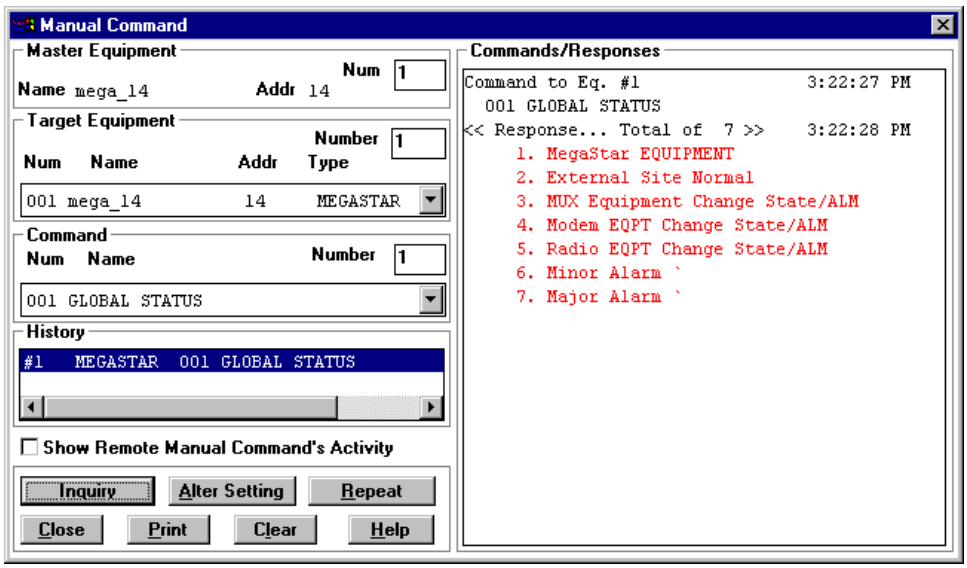
Sending a Manual Command

Manual commands allow manual control of the network diagnostic system. Using manual control, you can monitor the status of any target equipment.

To send a Manual Command:

1. On the **Operation** menu, click **Manual Command**. The **Manual Command** dialog box appears.

Manual Command dialog box



2. In the **Target Equipment** list, select the target equipment you want to test.
3. In the **Command** list, select **Global Status**.
4. Click the **Inquiry** button. The equipment response displays in the **Commands/Responses** window.

Repeat the **Manual Command** procedure for each type of Harris equipment to ensure your equipment is connected and operational. You can now configure the SNMP Module.

Configuring the SNMP Module

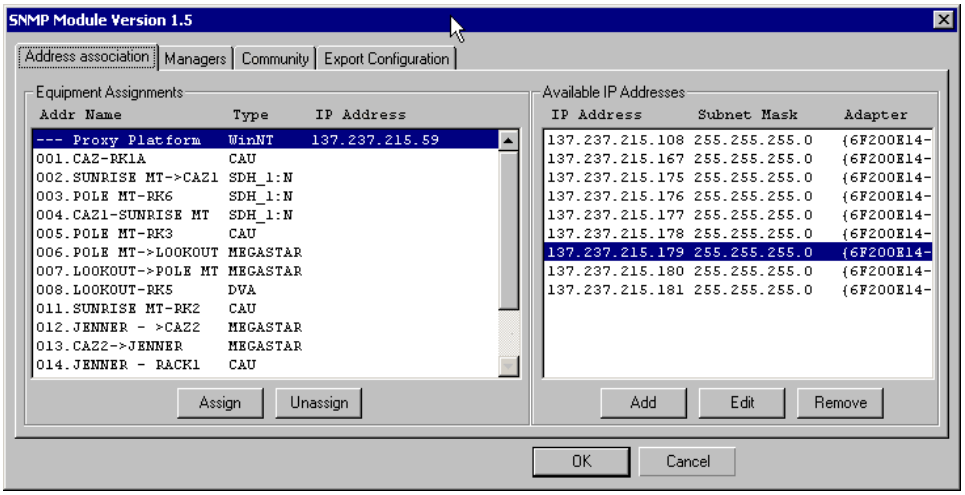
To configure the SNMP Module, you must add and assign IP addresses to the SNMP Module.

1. Click the Start menu, point to FarScan and click FarScan SNMP Module.
2. On the FarScan **Configuration** menu, click **SNMP Configuration**. The **SNMP Module** appears.

All Harris equipment requires an IP address.

3. On the **SNMP Module** sheet, click the **Address Association** tab. The **Equipment Assignments** list appears on the left pane and **Available IP Addresses** appears on the right pane.

SNMP Module Address Association tab



Adding IP Addresses

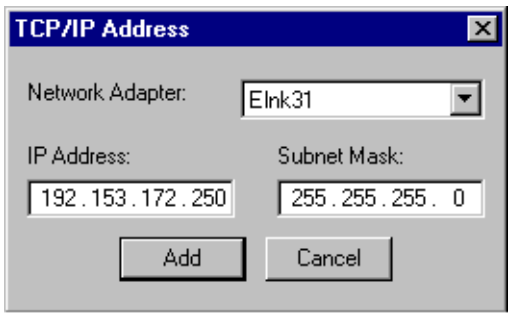
You must provide sufficient IP addresses to associate with your Harris equipment.

To add IP addresses:

1. On the **Available IP Addresses** list, click the **Add** button to enter IP addresses for Harris equipment.

2. The **TCP/IP Address** dialog box appears.

TCP/IP Address dialog box



3. On the **TCP/IP Address** dialog box, enter the IP address in the **IP Address** text box and Subnet Mask in the **Subnet Mask** text box.

4. Click the **Add** button. A new IP addresses appears in the **Available IP Address** list.

Continue adding IP addresses for all available Harris equipment. Restart the computer when all IP addresses have been added.

Assigning IP Addresses

The SNMP Module provides the user with the ability to assign IP addresses to Harris equipment.

To assign IP addresses:

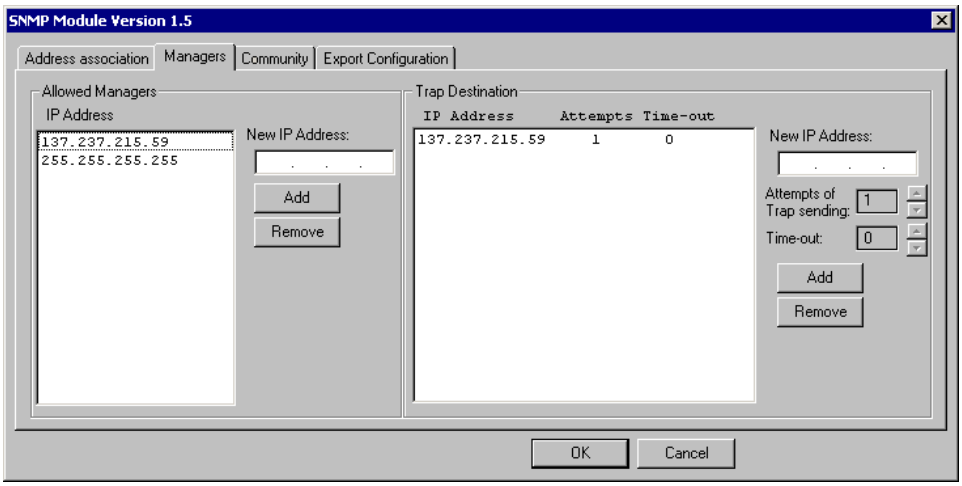
1. On the **Equipment Assignments** list, select the equipment that needs an IP address assignment.
2. On the **Available IP Addresses** list, select an IP address for the selected equipment.
3. Click the **Assign** button. The selected IP address appears with the selected equipment.
4. Continue assigning IP addresses to the available equipment and click **OK**.

Assign all available IP addresses to your Harris equipment. If you made an error when entering an IP address, you can edit or remove the IP address. After making changes to the SNMP Module, you must restart the computer.

SNMP Module Manager Setup

The **Managers** tab allows the user to configure two lists of SNMP managers with rights to monitor Harris radio equipment.

SNMP Module - Managers tab



The **Allowed Managers** list displays the IP addresses of SNMP managers. SNMP managers can send SNMP requests to Harris radio equipment. If the SNMP Module receives a request from an unlisted IP address, the SNMP Module cannot respond. For systems that have SNMP Module and StarView cohosted, 255.255.255.255 needs to be added as an allowed manager.

The **Trap Destination** displays a list of SNMP manager IP addresses to which the SNMP Module can send SNMP trap requests.

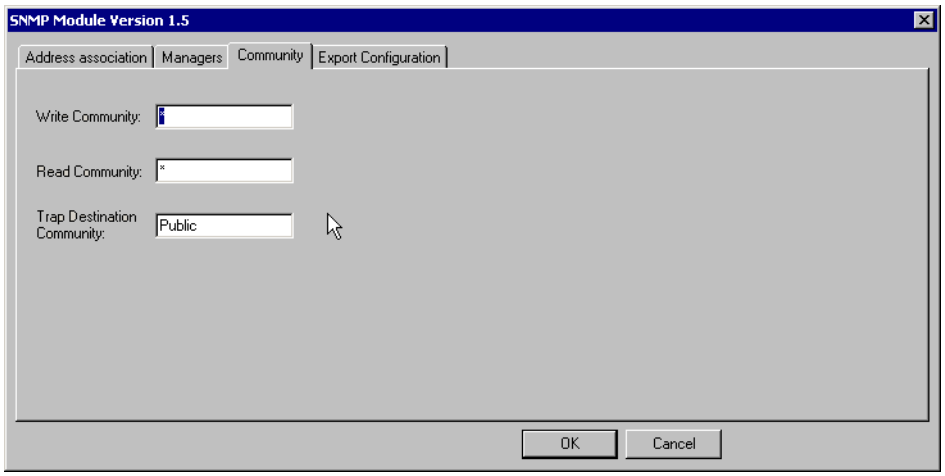
SNMP Module Community Setup

The **Community** tab enables you to configure community parameters for secure SNMP transactions.

To set up the Community:

1. On the **Community** dialog box, enter an asterisk (*) in the **Write Community** text box.
2. On the **Community** dialog box, enter an asterisk (*) in the **Read Community** text box.
3. On the **Community** dialog box, enter **public** in the **Trap Destination Community** text box.

SNMP Module - Community tab



4. Click **OK** and restart the computer.

Using AutoPoll

To ensure that your Harris equipment is connected and working properly, run FarScan AutoPoll. AutoPoll sends a global inquiry to all equipment listed in the FarScan equipment file. AutoPoll checks for normal and abnormal responses to determine if a secondary command is necessary. If AutoPoll reports any alarms, then AutoPoll sends a sequence of commands to determine the source of the alarm.

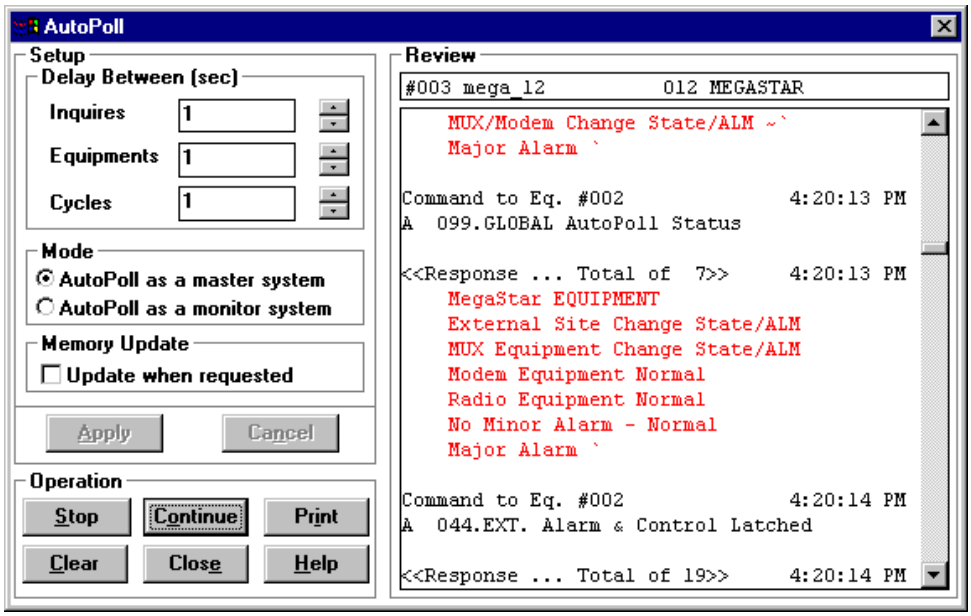
To run AutoPoll:

1. On the **Operation** menu, click **AutoPoll**. The **AutoPoll** dialog box appears.
2. On the **Delay Between (sec)** text boxes, set **Inquiries**, **Equipments**, and **Cycles** to one second.
3. On **Mode,** select **AutoPoll as a master system**.

If you are running **AutoPoll** from a computer in a persistent network, then enable **AutoPoll as a master system**. If you are running **AutoPoll** from a temporary location in the same network, select **AutoPoll as a monitor system**.

4. Click the **Apply** button if you make any changes to **AutoPoll Setup**.

AutoPoll dialog box



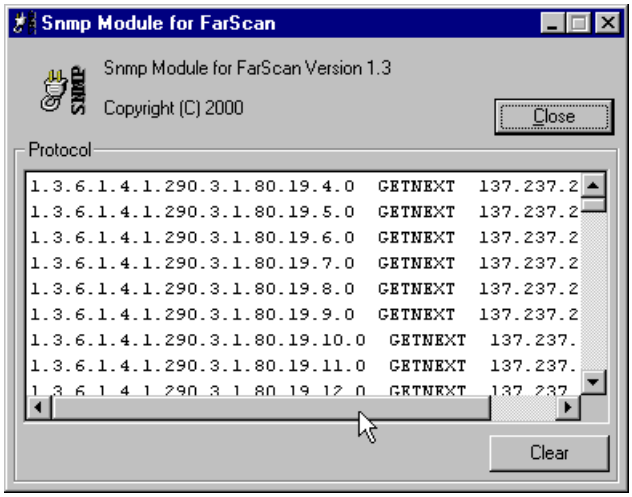
5. On **Operation**, click the **Start** button. When **AutoPoll** starts, the **Start** button changes to **Stop**.

The **AutoPoll** LED turns green while processing. Responses display in the **Review** section of the **AutoPoll** dialog box. New responses appear in red.

Show SNMP Activity

For diagnostic testing of SNMP activity, use the **SNMP Activity** window to review all SNMP activity on the network. On the **View** menu, click **Show SNMP Activity**. The **SNMP Activity** window appears. The program scans for SNMP activity, which appears in the **SNMP Activity** window.

SNMP Activity window



Additional instructions for installing FarScan for Windows and connecting to Harris equipment is available in your FarScan for Windows manual.

SNMP Module Export Configuration

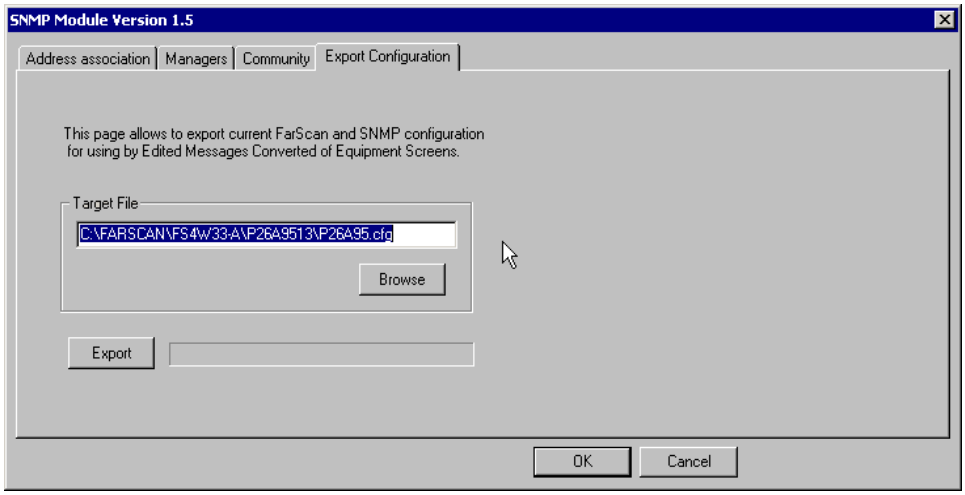
The **Export Configuration** tab enables you to specify a file that will be used to perform edited messages conversion. Edited messages enables you to customize the text response of messages on specified commands.

To set up the Export Configuration file:

1. On the **Export Configuration** dialog box, either enter the pathname and filename or select the **Browse** button.
2. If you selected the **Browse** button, traverse the directories until the appropriate file is located.
3. On the **Export Configuration** dialog box, select the **Export** button.

4. On the **Export Configuration** dialog box, select the **OK** button.

SNMP Module Export Configuration tab



Network Topology Discovery and Updating

StarView Element Manager polls the network known objects and creates a database of these objects. From the database, StarView Element Manager draws a map that provides a graphical representation of your network. StarView Element Manager then continues to monitor the network and updates the database and the map with discovered topology, such as new and non-responding nodes.

A map consists of a variety of objects, such as networks, gateways, and segments. You can modify a map in the following ways: add and delete objects, add and delete connections, move and transfer objects, and change the object type.

Network Node Manager automatically creates and stores a default map in a database. You can also load an IP topology database from a hosts file. Loadhosts loads or adds hosts to the IP topology database maintained by StarView Element Manager.

For configuring SNMP agents, rather then allowing StarView Element Manager to poll the network, you can use the loadhosts command to create an IP topology database from a hosts file that lists Harris equipment and specific network nodes.

Using Loadhosts

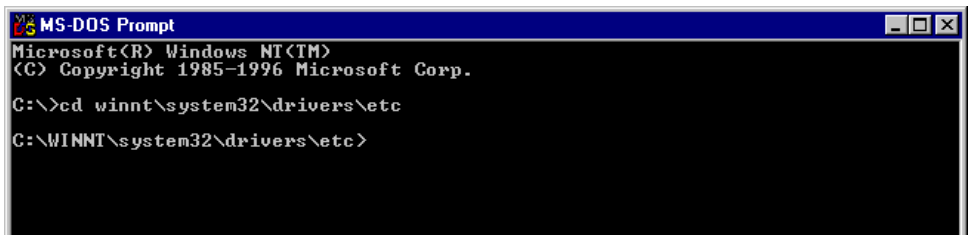
For each input line, **loadhosts** uses the IP address and hostname to add an entry to the database. If no entry exists that matches the input hostname, an entry is created. If an entry already exists for that hostname, the IP address is added as an additional interface for the input hostname.

The network mask generates automatically based on the class of the IP address and existing entries, and the status of the new entry is set to **up**.

To load hosts:

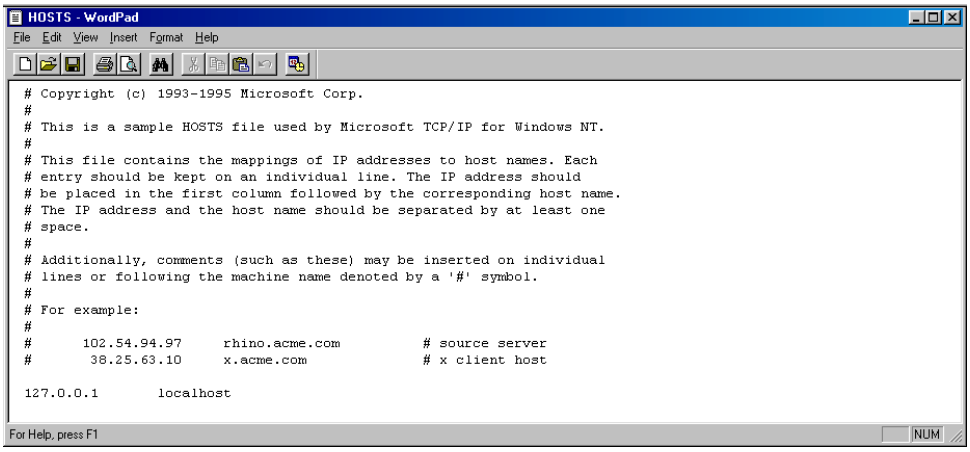
1. Click **Start**, point to **Programs**, and then click **MS-DOS Prompt**.
2. At the command prompt, change to the directory or folder **winnt\system32\drivers\etc\hosts** storing the IP address and hostname text file.

Hosts file location



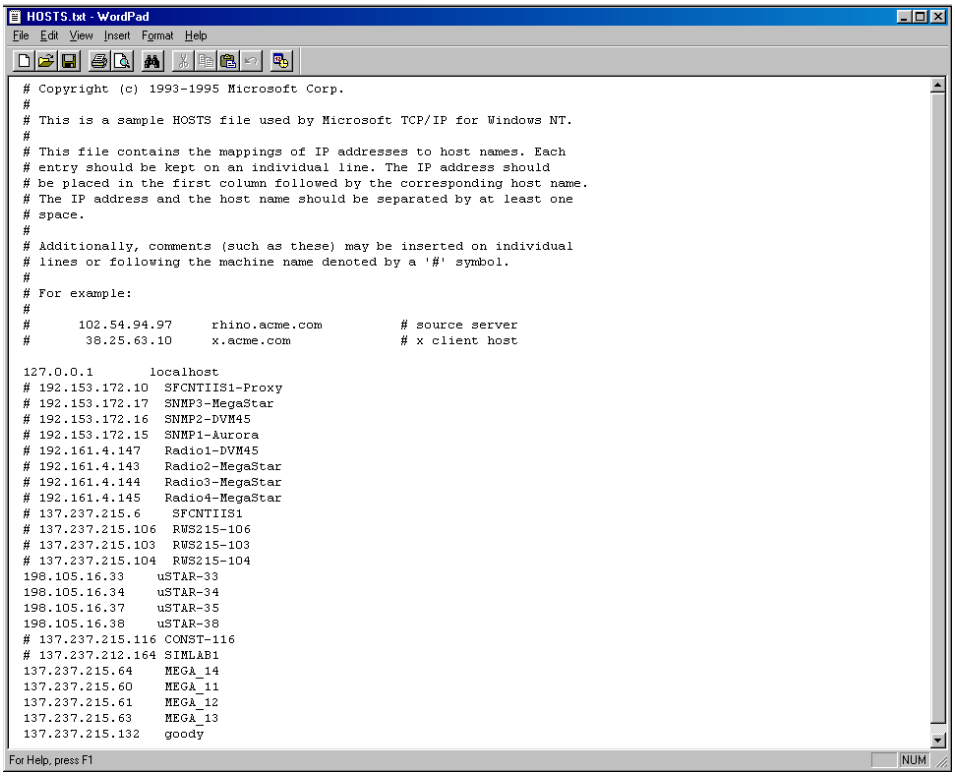
3. Open the **hosts** file with a text file editor.

Hosts file



4. In the hosts file, enter the IP addresses for your Harris equipment and nodes supporting the SNMP protocol. Save the **hosts** file.

Host files with IP addresses



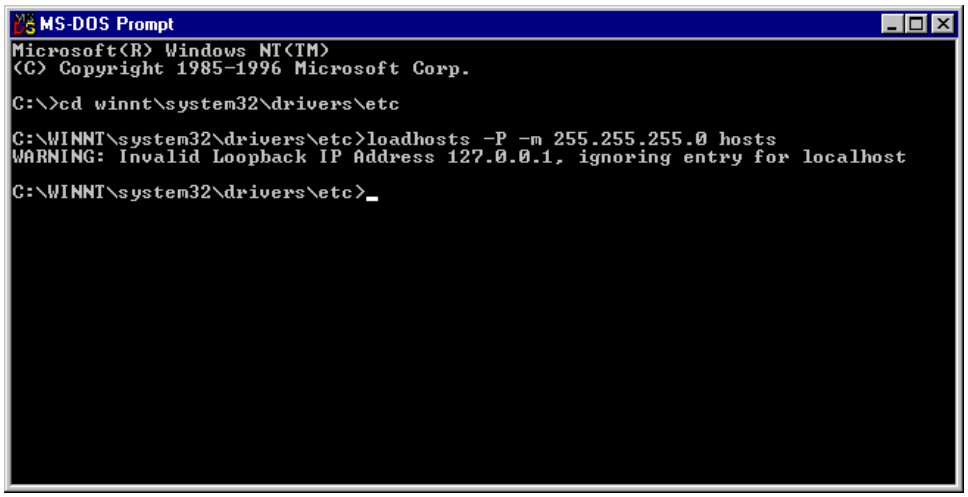
5. From the command prompt, type **`loadhosts -P -m 255.255.255.0 hosts`**, and then press **Enter**.

The parameter for loadhosts **`-P`** tells StarView Element Manager to mark new nodes as supporting the SNMP protocol and **`-m`** tells StarView Element Manager to use mask as the IP subnet mask instead of determining IP subnet mask based on the class of the IP address of the new nodes. In our example, the subnet mask is set to **`255.255.255.0.`**

NOTE

Text beginning with the **#** character indicates text on the same line is not processed by the loadhosts command.

Loadhosts command



SNMP Configuration

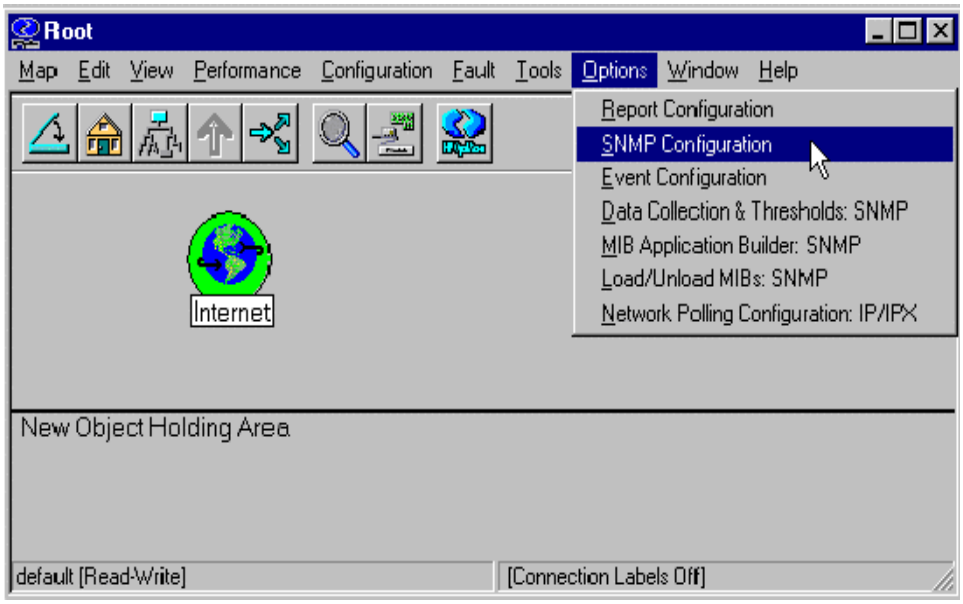
You can use the SNMP Configuration command to change any of the default SNMP configuration values for SNMP community names, proxies, timeout intervals, and number of retries using any Harris equipment. This command is necessary when different nodes in your network have different SNMP community names, or when topology differences affect querying the node.

The SNMP Configuration command lets you:

- Change status-polling intervals

- Configure a specific node or a group of nodes to have different values than the default configuration

SNMP Configuration Window



When an application initiates an SNMP request, SNMP looks for a configuration entry in the node list for a node to query. If the application cannot find such an entry, it looks for the first IP address wildcard entry (or, in the case of IPX nodes, a Specific Nodes entry with an IPX network name) in the network list that most closely matches the address of the node and uses that entry if one exists. If a network entry does not exist for the desired node, the application uses the default SNMP configuration.

SNMP Configuration for Specific Nodes

You can use the **Specific Nodes** tab to configure a specific node, identified by IP Hostname, IP Address, IPX Address or proxied Target name.

SNMP Parameters:

In the **SNMP Parameters** list box you can set any of the following options for each specific node listed:

- **Get Community** provides the SNMP community name that the management application uses as authorization when issuing SNMP requests (for example, Get and GetNext) to the target. This community name is also used for SNMP Set requests if the management application cannot resolve an explicit Set Community name for the target node.
- **Set Community** provides the SNMP community name that the management application uses as authorization when issuing SNMP Set requests to the target. You can configure SNMP agents with different community names for Set requests than for query requests. Use this field to configure the SNMP management applications according to this distinction.
- **Proxy** provides the identity of a proxy node for the target node. When a proxy is specified for the target, and an SNMP application issues a request to the target node, the request is actually directed to the proxy node. The proxy must be either an IP hostname in your name server, an IP address, or an IPX address.
- **Retry** provides the maximum number of retries the management application will attempt before concluding that the target is unreachable. Valid values are zero to ninety-nine.
- **Timeout** provides the amount of time the management application will wait for a response before attempting to retry the SNMP request to the target. The previous time-out value doubles after each unsuccessful retransmission. If SNMP requests are always timing out to an agent(s) increase the default time-out value.
- **Remote Port** provides the UDP port number on the target node where an SNMP agent expects to receive SNMP requests. The standard SNMP port is 161. This field is generally used only for specialized proxy agents which do not listen to the standard SNMP port.
- **Status Polling** provides the repetition rate of the ping query of the target status. To change the polling interval, enter a new number followed by an **s**, **m**, **h**, **d**, or **y** to specify seconds, minutes, hours, days, or years, respectively. If no time value is supplied after the number, the default is seconds, **s**.

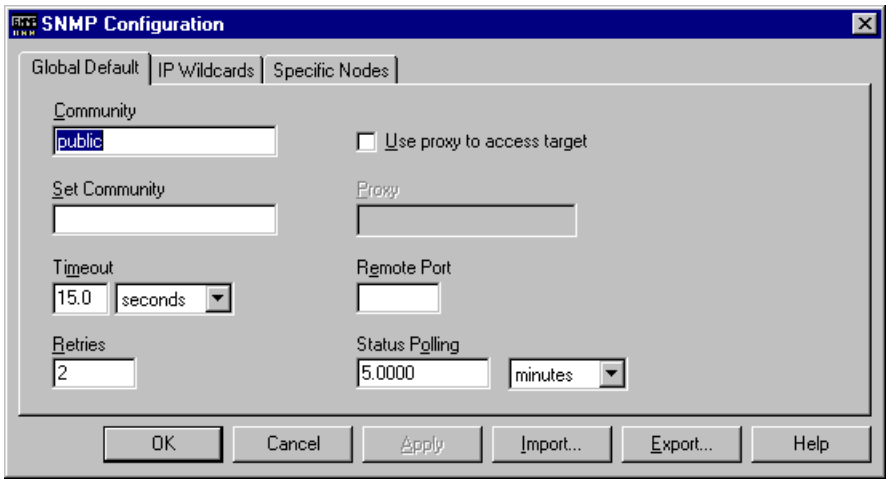
Configuring an Individual SNMP Node

You can configure a specific node to have different values than the default configuration.

To configure an individual SNMP node:

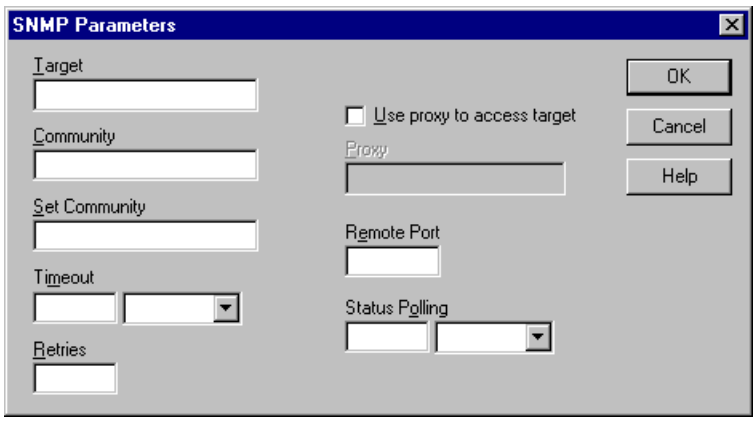
1. On the **Options** menu, click **SNMP Configuration**. The **SNMP Configuration** sheet appears.

SNMP Configuration sheet



2. Click the **Specific Nodes** tab, and then click **Add**. The **SNMP Parameters** dialog box appears.

SNMP Parameters dialog box



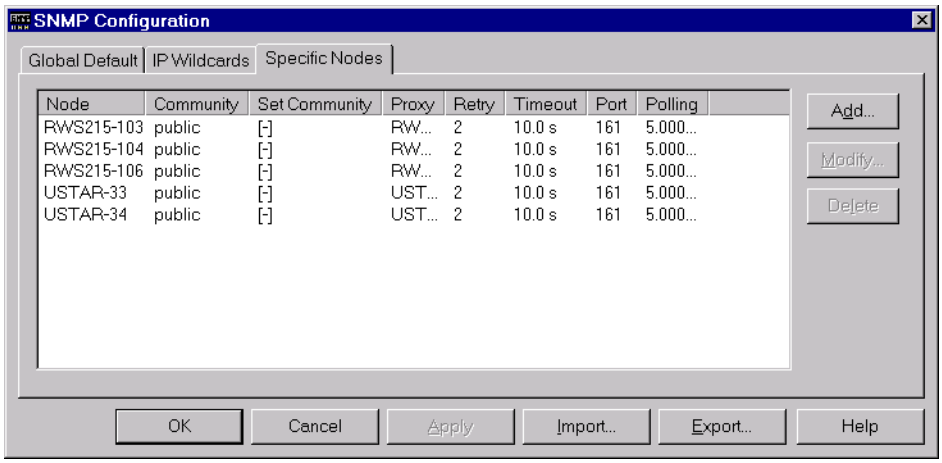
3. Type the name of the node in the **Target** text box.

The name can be an IP hostname, an IP address, an IPX address, or a non-SNMP node that has a proxy.

4. Modify the value or values that are different from the default configuration, then click the **Add** button.

The new node appears in the **Node Selection** list.

Specific Nodes tab



5. Click the **OK** or **Apply** button to apply the modifications.

For configuring a Group of SNMP Nodes, IP Wildcards, or setting the Global Default, refer to the NNM Manual on the **Windows** menu.

CHAPTER

3

STARVIEW BASICS

This chapter explains the basic features and operations of the StarView Element Management System.

- "Introduction" (page 51) provides an overview of Network Topology and shows how the SNMP Manager and agents communicate using Simple Network Management Protocol.
- "StarView Menu and Toolbar" (page 52) explains the basic features of StarView Element Manager.
- "Network Topology" (page 54) describes how to build a conceptual layout of your network and its systems.
- "Diagnosing IP Connectivity Problems" (page 88) shows how to gather and test connectivity information.
- "Diagnosing Performance Problems" (page 90) shows the menu commands to address performance on a network.

Introduction

The StarView Element Management System supplies capabilities, such as the SNMP MIB Browser, that monitor and control Harris SNMP-capable systems on your network. A Harris SNMP-capable system is a Harris device, such as a radio that has an SNMP interface provided by the Harris SNMP Module or on-board SNMP agent. An agent performs network management tasks at the request of the manager such as StarView. StarView and the SNMP agents communicate using Simple Network Management Protocol Version 1 (SNMPV1). StarView Element Management System supports network protocol SNMPV1.

An SNMP agent uses a Management Information Base (MIB) to retrieve information about the device on which it resides. The MIB acts as an index to network information about the device: network addresses, status conditions, network traffic statistics, and much more. Each type of information represents a MIB object.

StarView Element Manager creates:

- A database of objects for all the nodes on your network and created objects
- A map of your network

The map provides a layout of your network. The map is a composite of submaps that provides an interactive environment for managing objects on your network. A submap is a schematic view of all or part of the network map. Each submap provides a different view of the larger network map. You can view submaps hierarchically to show an increasing level of detail.

Dynamic graphical representations of your network hierarchy reflect the changing conditions of your network from a system level to equipment cards. These graphical symbols represent network segments and connections for each submap. Entities on the network, such as Harris equipment, a PC-board, a computer, a printer, a group of computers or printers, a subnet, a connection between two computers, or the interface for an entire network are all represented by graphical symbols. You decide how to best display your network. You can easily customize the StarView interface by creating network maps, connections, and selected groupings. You can include or exclude any entities on a submap, or group them together to optimally manage your needs.

StarView Menu and Toolbar

To use the StarView Element Manager efficiently, you need to learn the menu bar and toolbar to navigate through the submaps and work with network objects. The commands in the menu bar represent the functions they perform and the toolbar assists submap navigation.

Toolbar

The toolbar displays buttons for frequently used commands. You can show or hide the toolbar by selecting **Toolbar** from the **View** menu.

StarView Toolbar

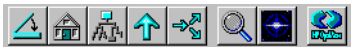


Table 1: Toolbar Operations

Icon	Click this button	To
	Close	Close this submap
	Home	Display the home submap of the open map
	Root	Display the top-level submap of the map
	Parent	Display the submap from which the current submap was originally created
	Quick Navigator	Display the Quick Navigator
	Panner	Display the Panner window

Using Quick Navigator

Click the **Quick Navigator** button to open submaps or symbols in submaps that you display frequently. You must first add the symbols to the **Quick Navigator** window that you want to display.

See HPOV Manual for instructions on using Quick Navigator.

StarView Menu Bar

Use the StarView menu bar to access all available commands to monitor your network:

Table 2: StarView Menu Commands

Menu Item	Command Operation
Map	Commands to view, modify, or work with maps, submaps, and snapshots
Edit	Commands to change the representation of the data displayed in the submap window or in the open map
Performance	Commands for viewing and troubleshooting status and network performance data on system resources
Configuration	Commands to configure and provide information about your network
Fault	Diagnostic commands
Tools	Commands for tools that perform actions on specific types of nodes
Options	Commands to configure and customize how StarView performs network management activities
Window	Commands for arranging open submaps and displaying the root, home, or parent submap for the active submap
Help	Help information on Network Node Manager and using integrated applications

Network Topology

A map is a conceptual layout of your network and its systems. You can define properties for a map and view the submaps that make up the map. Submaps are set up hierarchically to show an increasing level of detail. You can create multiple maps, but only one map is open at a time during a session of StarView. You can use different maps based on IP submapping for defining different management regions or for different presentations of the same management region. You can also tailor different maps to the needs of individual users.

Managing Maps

Using the **Map** menu, you can manage your maps in the following ways:

- Set your User Default Map and Layout
- Create a Map
- Customize a Map
- Open, Copy and Delete Maps
- Configure Maps and Applications
- List Maps and Applications
- Map Permissions

User Default Map

When you first create a map, the home submap is the root submap. You can select the map to be the user default map that opens each time you start a session. StarView Element Manager creates a system default map, however you can select any map as your user default map.

To set your user default map:

1. On the **Map** menu, click **Open**.
2. From the **Map** list, select the map you want to set as the user default map.
3. Click the **Set User Default** button. The map name appears in the user default map text box.
4. Click the **Close** button.

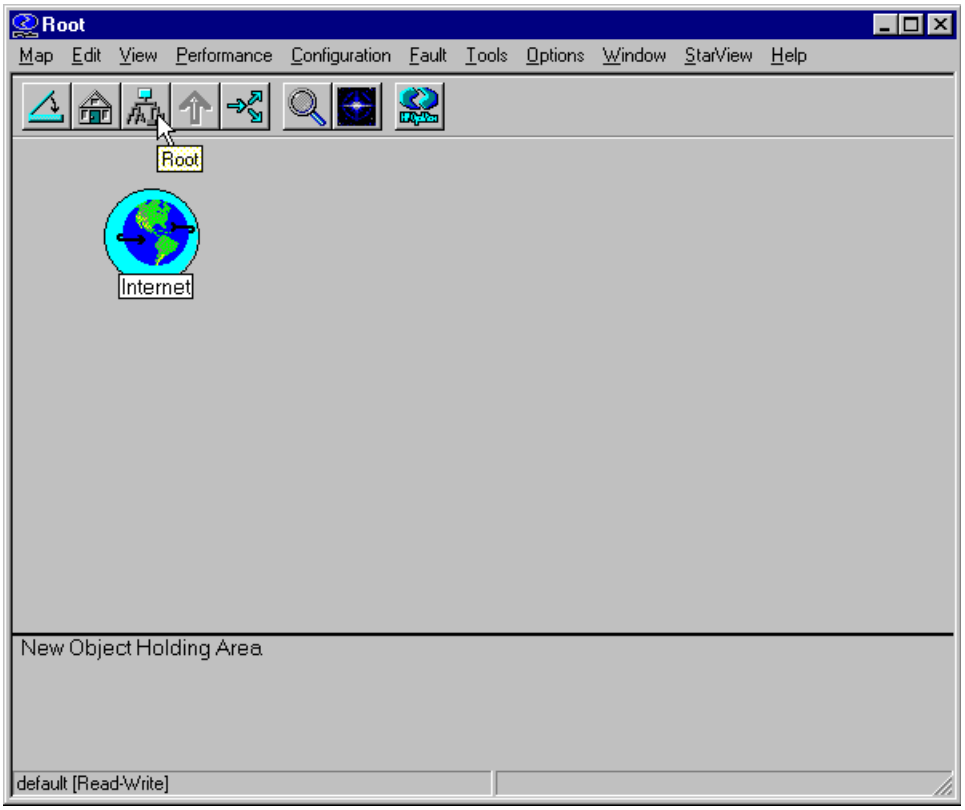
The layout you set for a submap determines how StarView arranges symbols on the submap. The **Auto Layout** option enables or disables the default layout arrangement.

When you paste symbols into a submap, or when an application adds them, the Auto Layout setting determines whether you or StarView Element Manager arranges the symbols.

- If you select the **Auto Layout** option, StarView Element Manager arranges symbols in the default layout arrangement

- If you cancel the **Auto Layout** option, StarView Element Manager creates a **New Object Holding Area** in the lower portion of the submap, and puts symbols there. You can drag the symbols onto the submap and arrange them the way you want to view the submap.

  StarView Root view



To turn **Auto Layout** on or off for all submaps of the open map:

1. On the **Map** menu, click **Properties**.
2. On the **Properties** sheet, click the **View** tab.
3. Select or clear the **Auto Layout** option, and then click **OK**.

To turn **Auto Layout** on or off for the current submap:

1. On the **Map** menu, point to **Submap**, then click **Properties**.
2. On the **Properties** sheet, click the **View** tab.
3. Select or clear the **Auto Layout** option, and then click **OK**.

If you clear the **Auto Layout** option, the **New Object Holding Area** appears at the bottom of your submap.

Creating a Map

You can create multiple maps and customize how you display information about objects on each map. Multiple maps can display information about the same object because maps obtain their information from the same source, the StarView Element Manager database.

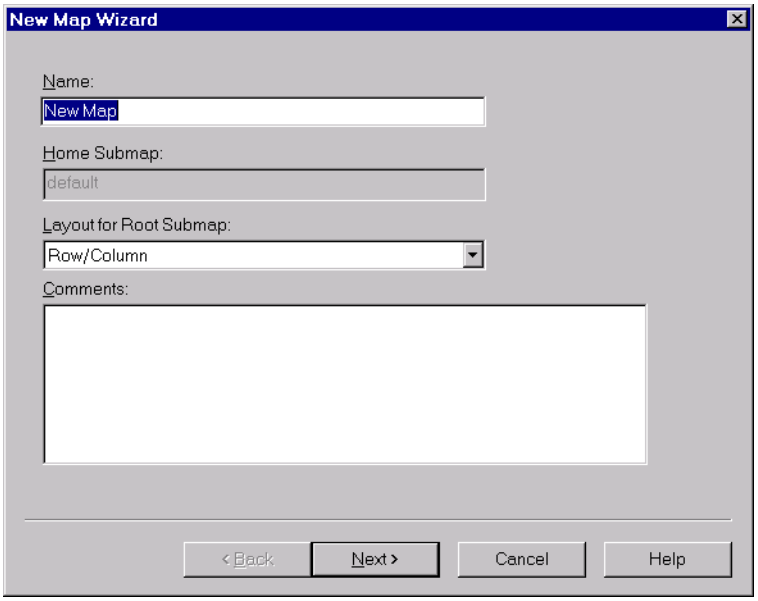
Different maps can:

- Define different management regions
- Define different presentations of the same management region
- Configure to the responsibilities of individual operators

To create a Map:

1. On the **Map** menu, click **New**. The **New Map Wizard** appears.

New Map Wizard



2. Assign the new map name by entering a name in the **Name** text box and additional information and keywords in the **Comments** text box.

3. Click the **Next** button to enter the new map's description. The map's description is also called the map's properties.

After you have created your map, you can modify or view your map description by selecting **Properties** on the **Map** menu.

About Map Properties

A map description can consists of the following properties:

- Name of a map
- Compound status
- Configuration of applications
- View of a map
- Comments

Each map must have a unique name. You can change the name only when you have the map open with read/write access. You can modify the **Compound Status** scheme for a map that is open with read/write access. By setting **Compound Status** options, you determine how StarView Element Manager transmits the operational status of symbols in child submaps to symbols of the corresponding parent object in higher-level submaps. Symbols in higher-level maps change color to indicate the operational status of symbols in lower-level maps.

Map Properties sheet

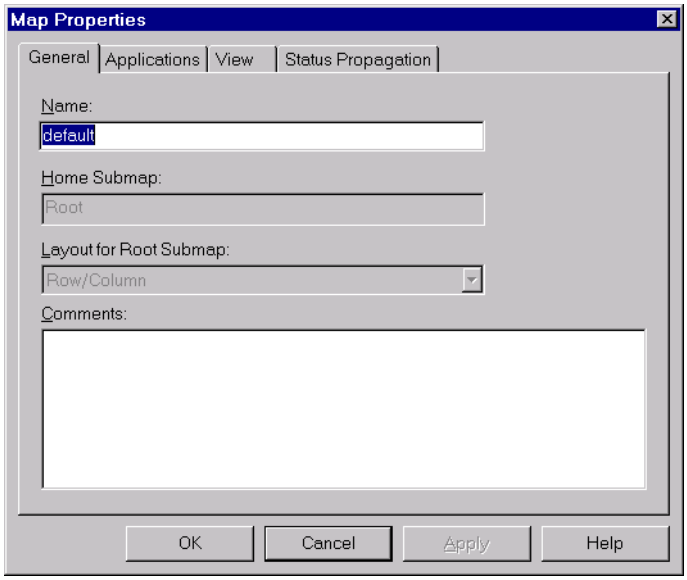


Table 3: Map Properties Sheet

General tab	
Name	Displays the name of the open map.
Home submap	Displays the name of the submap that displays when you open a map.

Table 3: Map Properties Sheet (Continued)

General tab	
Layout for Root submap	Displays the current layout chosen for the Root submap.
Comments	Displays comments about a map.
Applications tab	
Configurable Applications	Displays the installed applications on the platform.
Configure For This Map	Displays a configuration dialog box.
View tab	
Overlay Submaps	The overlay program automatically places new submaps in the same window from which you accessed them.
User Plane Shadow	Displays a drop shadow beneath symbols whose objects you cannot manage by an application.
Auto Layout	Specifies that StarView arrange symbols added to a sub-map automatically instead of putting them into a holding area for you to arrange manually.
Status Propagation tab	
Compound Status	Options for indicating how StarView warns you of network problems.

Naming a Map

All maps must have a unique map name.

To change the name of a map:

1. On the **Map** menu, click **Properties**. The **Map Properties** sheet appears.
2. Click the **General** tab, and then type a new name in the **Name** text box.
3. Click the **OK** button.

Configuration of Applications

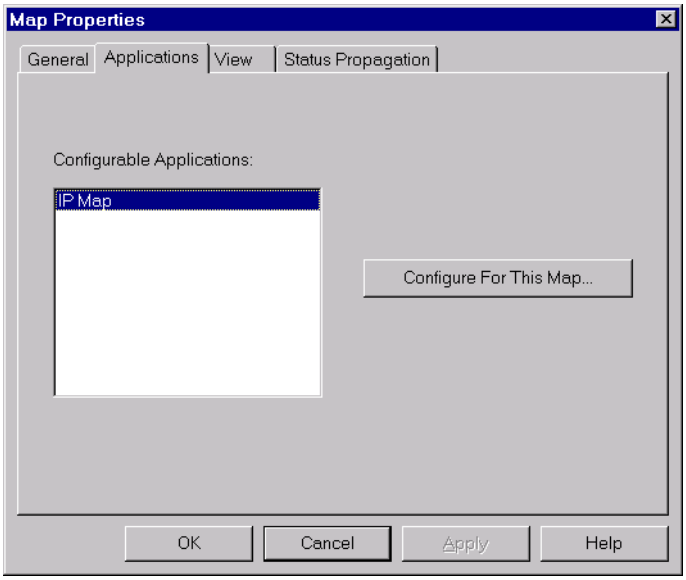
You can configure Network and system management applications to operate a specific way in a map. You can also configure an application differently for each map. You can view the registered network and system management applications in the **Configurable**

Applications list on the **Map Properties** sheet. Some applications may require or permit configuration during map creation only. You can configure multiple applications for a map; however, you must configure one application at a time.

To configure an application:

1. On the **Map** menu, click **Properties**.
2. Select an application in the **Configurable Applications** list.

Map Properties - Applications tab



3. Click **Configure For This Map**. The **Configuration** dialog box appears. The application determines the options in this dialog box.
4. On the **Configuration** dialog box, you can change the values and settings.
5. Click the **Verify** button to ensure the changes are valid, then click **OK**.
6. On the **Map** Properties dialog box, click the **Apply** button to apply your changes.

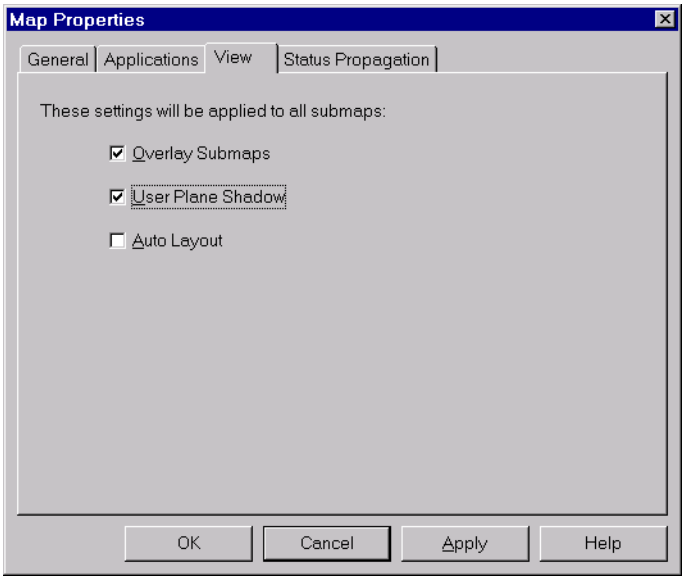
Setting the Map View

To set the Map View:

1. On the **Map** menu, click **Properties**. The **Map Properties** sheet appears.

2. Click the **View** tab.

Map Properties - View tab



3. Select or clear the following:
   - Overlay Submaps
   - User Plane Shadow
   - Auto Layout
4. Click the **Apply** button.

Setting Compound Status

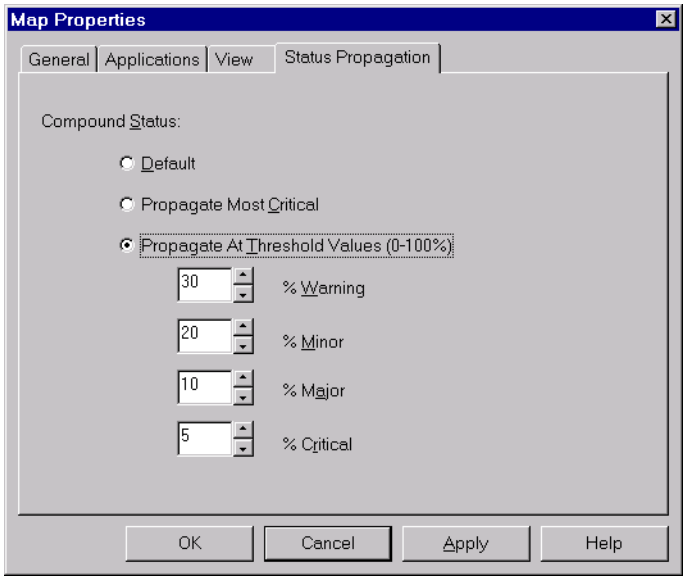
You can modify the compound status scheme when you create a new map or change map properties on the **Map Properties** sheet. You can select one of the three compound status schemes. The compound status setting applies to the entire map.

To set compound status:

1. On the **Map** menu, click **Properties**. The **Map Properties** sheet appears.

2. Click the **Status Propagation** tab.

Map Properties - Status Propagation tab



3. Select one of the following compound status settings:
   - Default
   - Propagate Most Critical
   - Propagate At Threshold Values

Select the **Default** option to have StarView Element Manager propagate status according to the default compound status categories listed in the Default Compound Status Categories table:

NOTE
StarView Element Manager does not propagate administrative status conditions.

Table 4: Default Compound Status Categories

Status of symbols in the child submap	Status of parent object symbols
None normal or abnormal	Unknown
All normal	Normal
One abnormal and all others normal	Warning
Multiple abnormal and multiple normal	Minor
One normal and all others abnormal	Major

Table 4: Default Compound Status Categories (Continued)

Status of symbols in the child submap	Status of parent object symbols
All abnormal	Critical

Select the **Propagate Most Critical** option to propagate the most critical abnormal operational status of any symbol in the child submap to parent submaps.

Select **Propagate At Threshold Values** to set threshold values that determine when StarView Element Manager propagates status. The dialog box displays four fields in which you can change these threshold value settings. Enter a value ranging from 0 to 100. The default values are:

Table 5: Propagate at Threshold Levels

Percent of symbols affected	Status State
30%	Warning
20%	Minor
10%	Major
5%	Critical

Each value indicates the minimum percentage of symbols in a submap that must be in the corresponding status state before that state is propagated. If more than one status state meets or exceeds its minimum percentage, StarView Element Manager propagates the most severe of those states.

Comments

You can enter and display comments, notes, or keywords for a map.

To add comments to a map:

1. On the **Map** menu, click **Properties**. The **Map Properties** dialog box appears.
2. Click the **General** tab, then enter any comments about the map in the **Comments** text box.
3. Click the **OK** button.

You can search for a map using keywords in the **Comments** text box using the **Find** command.

Customizing a Map

You can customize your map to represent the geographical location of your objects. For instance, you can move your network elements on a background graphic that represents the elements' geographic location.

To customize a map, turn **Auto Layout** off for either the current submap or all submaps:

For the current submap:

1. On the Map menu, click to **Properties**.
2. On the **Properties** sheet, click the **View** tab.
3. Select or clear the **Auto Layout** option, and then click **OK**.

For all submaps:

1. For all submaps: On the **Map** menu, point to **Submap**, then click **Properties**.
2. On the **Properties** sheet, click the **View** tab.
3. Select or clear the **Auto Layout** option, and then click **OK**.

If you clear the **Auto Layout** option, the **New Object Holding Area** appears at the bottom of your submap.

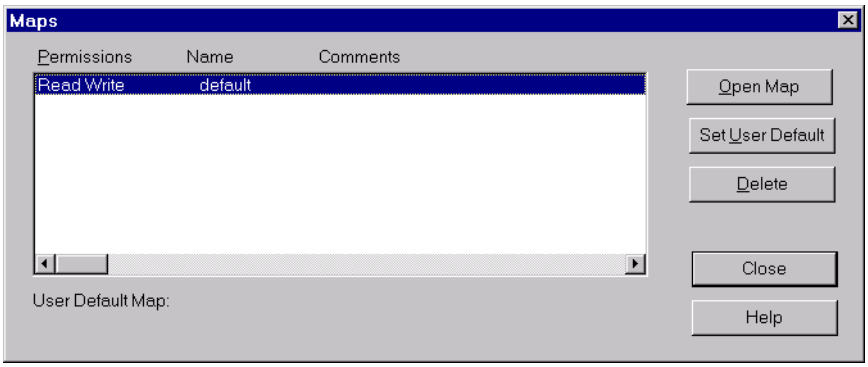
Opening, Copying and Deleting Maps

In StarView, you can create new maps, delete maps, and choose the map to display from existing maps. You can open any map listed in the **Maps** list; however, StarView Element Manager allows only one map open at any time for any single session. StarView Element Manager saves and closes the map currently open before opening another map. You can make a copy of an open map and save it under a new name. You can delete a map, including all the submaps, snapshots, and symbols in the map. You must be certain when deleting a map because deleting symbols and objects can have multiple effects within the program.

To open a map:

1. On the **Map** menu, click **Open**. The **Maps** dialog box appears.

Maps dialog box



2. On the **Maps** dialog box, select the name of the map you want to open, then click the **Open Map** button.
3. Click **OK** in the warning box. StarView Element Manager closes all submap windows and dialog boxes of the open map, and opens the selected map.

To copy a map:

1. On the **Map** menu, click **Save As**. The **Save As** dialog box appears with the name of the open map in the **Name of Open Map** text box.
2. Enter a new name for the new map in the **Name of Save Map** text box. The name must be unique across all map names.
3. Enter any comments you want to make in the **Comments** text box.
4. Click the **OK** button.

StarView Element Manager saves a copy of the open map under the new map name, but does not open the map. On the **Map** menu, click **Open** to select the new map.

To delete a map:

1. On the **Map** menu, click **Open**. The **Maps** dialog box appears.
2. On the **Maps** dialog box, select the name of the map that you want to delete.
3. In the warning box that appears, click **OK**.

StarView Element Manager deletes the map along with the symbols, submaps, and snapshots in that map.

Managing Map Permissions

Any user can run StarView Element Manager by default and have permission to make changes to maps. However, only the first user who opens a StarView Element Manager session has read/write access to the program. Subsequent users who open the same session have read-only access.

Read/Write Map Access - A map opened with read-write access is completely editable. You can add projects, add connections, create submaps, and change object attribute values. Only one operator can have a specific map open with read-write access at any one time.

Read/Only Map Access - When you open a map with read-only access, you cannot edit the map. Editing procedures include cutting, copying, pasting, deleting, and modifying items in the map including symbols, objects, and submaps. You cannot edit descriptive information about the items either. However, you can view status changes, find objects, and update topological changes by selecting **Refresh** on the **Map** menu.

If your map opens with read-only access:

- Usually another person has already opened the map. Only one person can have read-write access to a map at one time.
- Your administrator may have changed map permissions to limit who can access maps.

A map can be open with read-write access by only one operator per session. If you have read-only access to a map that is listed in the **Maps** dialog box as read-write, another operator may already have the map open with read/write access. If an operator with read/write access to a map closes the map, you can get read/write access to the map by choosing **Refresh** on the **Map** menu.

About Submaps

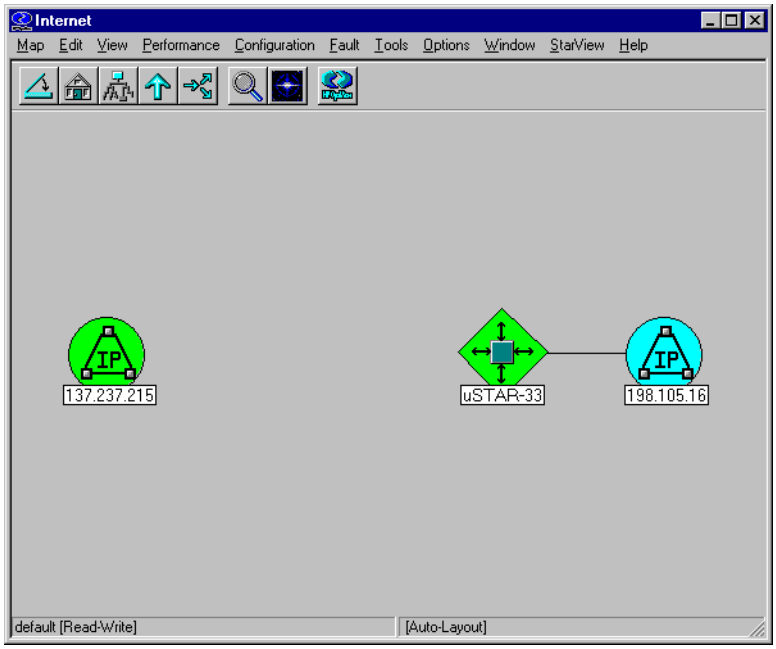
A submap consists of related symbols that the user can view in a single window. Each submap provides a specific view of a network environment contained in a map. You can open and display multiple submaps of the open map at the same time.

A root submap, created by StarView Element Manager, provides a top-level submap for every map. Below the root submap, other submaps organize hierarchically. You can also create an independent submap that is not a member of a hierarchy.

The Submap Window

A sample submap window:

Submap window



Configuring a Submap

You can modify submap characteristics. After creating the submap, you cannot change the default layout arrangement. However, you can disable the default layout arrangement by clearing the **Auto Layout** option on the **View** tab on the **Map Properties** sheet. See the **View** tab on the **Map Properties** sheet in the About Maps section of this chapter.

Using the **Parent Submap** option, if one exists, sets the submap that opens when you click the **Parent** button on the toolbar of the active submap (the one whose properties you are configuring).

Only submaps that contain an explodable symbol for the parent object of the active submap can be parent submaps. Any submap with an explodable symbol that opens this submap is in the **Parent Submap** list.

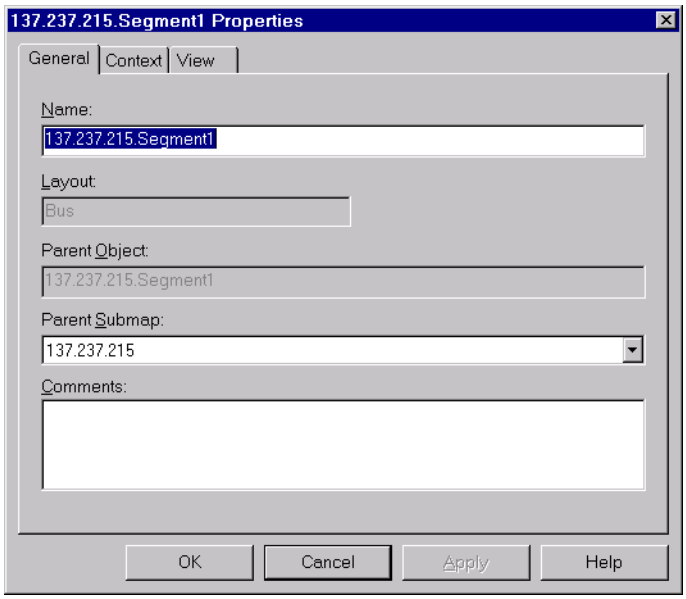
Configuring the parent submap is meaningful only when:

- The submap has a parent object
- The submap's parent object represents symbols in more than one submap

To configure a **Parent Submap** option:

1. On the **Map** menu, click **Properties**. The **Submap Properties** sheet appears.

Submap Properties sheet



2. On the **Submap Properties** sheet, click the **General** tab.
3. In the **Parent Submap** list, select a parent submap, and then click **OK**.

If there is no list, the submap has only one parent submap possible.

Creating a Child Submap

You can create a submap of an object that represents an explodable symbol and does not have a child submap. Parent objects are objects with child submaps. Double-clicking the explodable symbol for a parent object opens the child submap, which displays the network hierarchy associated with that object.

To create a child submap:

1. Double-click the symbol you want.
2. The **New Submap Wizard** appears.

To create a submap with default properties, click **Next** and then click **Finish**.

To modify the default submap properties, select the **Modify** option and then click **Next.**

See **About Map Properties** or instructions on how to modify the submap properties or refer to your HPOV manual.

Setting the Background Graphic

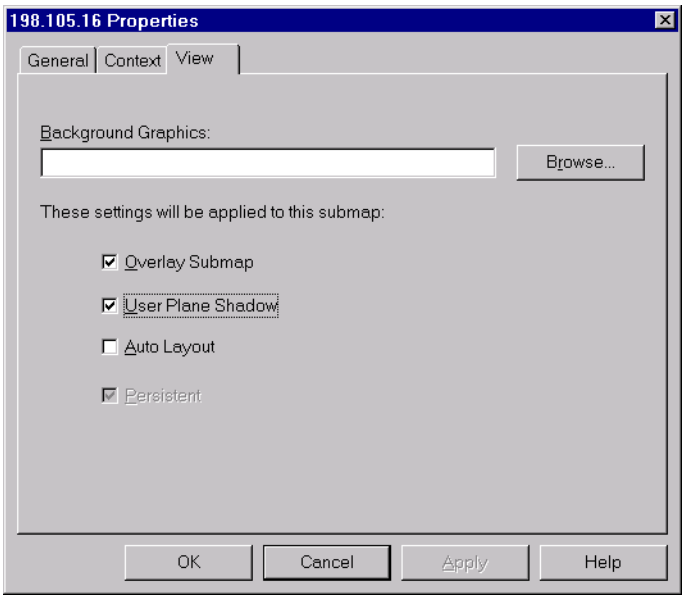
You can add a graphic to the background of a submap, or replace an existing graphic. A graphic serves as a background for the symbols in a submap. A graphic can provide contextual information, such as a floor plan for systems or a map of geographically diverse sites. Either you or an application can set a graphic. StarView Element Manager supports the following graphic file formats:

- BMP: Bitmap
- GIF: CompuServe Graphics Interface File
- JPEG: Joint Photographic Experts Group
- TIFF: Tagged Image File Format

To set the Background Graphic:

1. On the **Map** menu, point to **Submap**, then click **Properties**. The **Submap Properties** sheet appears.
2. On the **Submap Properties** sheet, click the **View** tab. The **Submap Properties** sheet appears.

Submap Properties - View tab



3. Enter the name and full path of the graphic in the **Background Graphics** text box or click the **Browse** button to locate the graphic file.
4. Click the **Apply** button.

The submap displays the graphic.

About Objects

An object represents a particular entity or resource in a networked systems environment. An object might represent a physical piece of equipment on the network, the components of a node on the network, or parts of the network itself.

Each object consists of a group of attributes (properties) that describe the object. For example, a computer object might include an attribute called Host Name. You can change the description of an object by changing the value of its attributes. Applications can define attributes to manage the object.

Symbols represent objects graphically on your map. For example, you could represent a computer by a symbol composed of the outline for the computer symbol class and the bitmap for a workstation symbol subclass.

Adding Objects

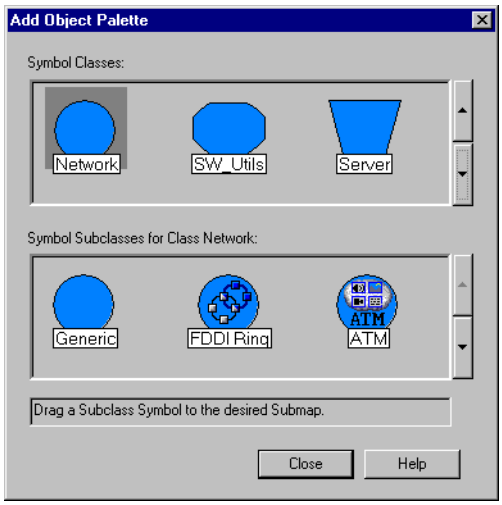
You can add a new object to the submap by selecting a symbol to represent the object:

- Identifying a label for the symbol
- Defining the properties for the symbol
- Modifying object attributes values to describe the object
- Identifying a unique selection name for the object

To add an object:

1. On the **Edit** menu, click **Add Object**. The **Add Object Palette** dialog box appears.

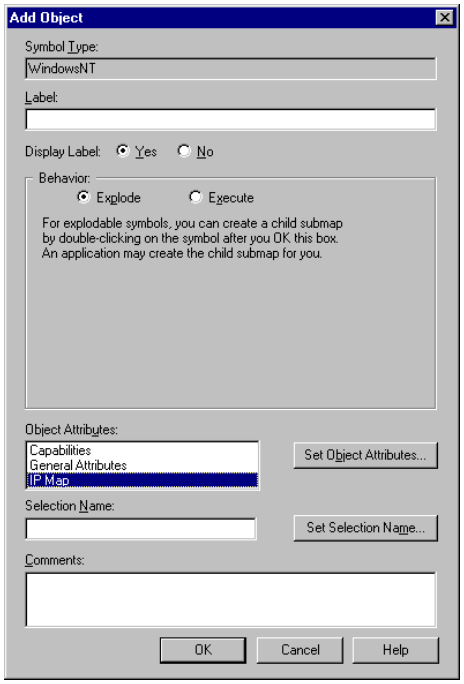
Add Object Palette dialog box



2. On the **Add Object Palette** dialog box, click the symbol that represents the class of the object you want to add. The Symbol Subclasses appear in the Symbol Subclasses graphical list.

3. Find the subclass symbol that you want to add and drag it to the submap. The **Add Object** dialog box appears.

Add Object dialog box



4. In the **Add Object** dialog box, you can enter the following information. Only the **Selection Name** is mandatory.
   - Label - Optional field for assigning a label to the symbol
   - Display Label - Indicates whether to display the label beneath the symbol on the submap
   - Behavior - Determines the behavior of the symbol
   - Object Attributes - Lists attributes that you can display, view, or assign to an object
   - Selection Name - Enter a selection name to the object you are adding
   - Comments - Optional area for entering comments about the object

5. On the **Add Object** dialog box, click the **OK** button after entering the appropriate information. The symbol on the submap represents the new object.

6. On the **Add Object Palette** dialog box, click the **Close** button.

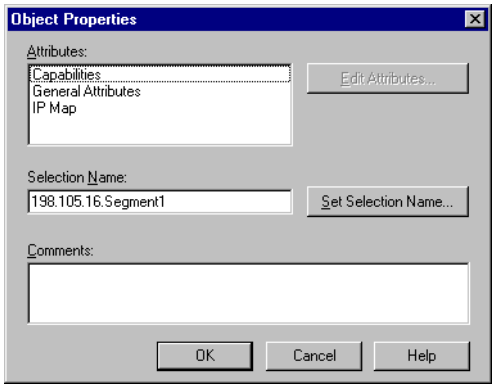
You can also define information about the object using the Object Properties dialog box after the symbol appears on the submap.

To add information using the **Object Properties** dialog box:

1. On the submap, select the object symbol.

2. On the **Edit** menu, click **Object Properties**. The **Object Properties** dialog box appears.

Object Properties dialog box



3. From the available options, change or enter information for using the object symbol, and then click **OK**.

The symbol on the submap represents the new object with your modifications.

Object Attributes

An object represents a resource by representing the attributes of the resource. The full description of an object is a combination of the object attributes assigned to the object by StarView Element Manager, by applications, and by users and administrators. An attribute provides information about the values and state of the object.

The **Attributes** list in the **Add Object** or **Object Properties** dialog box, such as **IP Map**, allow you to assign object attributes. The attribute categories are:

- Capability - These attributes determine what menu items are dimmed.
- General - These attributes are not application specific.

- Application Names - Each application can define attributes for objects. For example, IP Map assigns several attributes to the node object, including IP Hostname, IP Address, and IP Status.

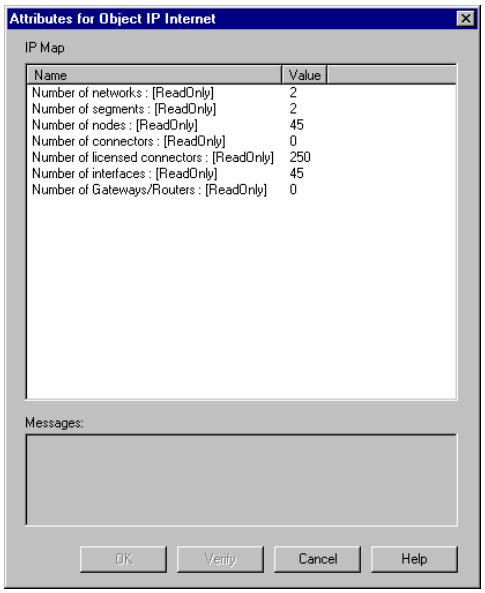
Object Attributes for IP Internet

The **Attributes for Object** dialog box displays statistical information about the number of resources found under the IP Internet object on your map. This count includes objects on the application plane; StarView Element Manager does not count objects on the user plane. IP Map maintains the values for the object.

The information displayed is from the map database and thus, is as current as the last poll.

- Number of networks - Indicates the number of networks under the IP internet object.
- Number of segments - Indicates the number of segments under the IP internet object.
- Number of nodes - Indicates the number of nodes under the IP internet object.
- Number of Gateways/Routers - Indicates the number of gateway/routers under the IP internet object.
- Messages - Displays instructions, information, and error messages.

Object Attributes dialog box for IP Internet



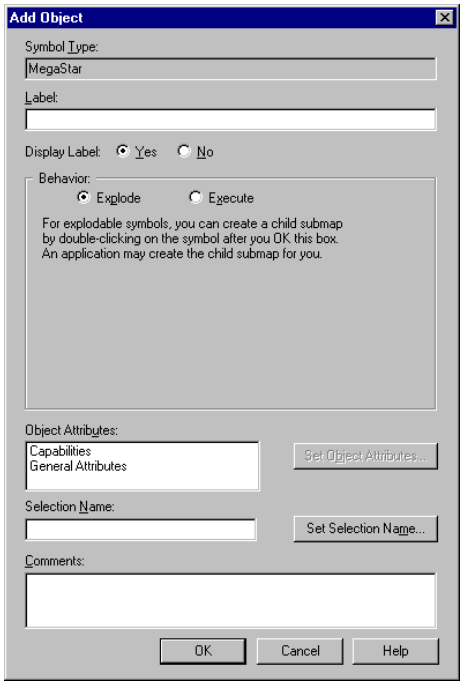
Connecting Objects

To add a connection, you must have two icon symbols, or an icon symbol and a backbone, to connect on a submap. The symbols represent the objects you are connecting. The connection symbol also represents an object.

To add a connection:

1. On the **Edit** menu, click **Add Connection**.
2. On the **Add Connection** dialog box, select one of the connection symbols.
3. In the submap window, select the symbol of the first object you want to connect.
4. In the submap window, select the symbol of the second object you want to connect. The connection symbol appears between the two selected symbols on the submap, and the **Add Object** dialog box appears.

Add Object dialog box



You can assign values or change the default settings for the following options:

- Symbol Type - Displays the class and subclass of the symbol.
- Label - Displays the connection symbol label. Enter a label here, if desired.
- Display Label - Indicates whether to display the label.

- Behavior - Determines the behavior of the symbol.
- Object Attributes - Displays the object attribute categories for the object.
- Set Object Attributes - Displays a Set Attributes dialog box in which you can display, view, or assign attributes to an object.
- Selection Name - Displays the selection name for the object, if any.
- Comments - Displays comments about the object. Enter any comments you want to make here.

5. On the **Add Object** dialog box, click **OK**. StarView Element Manager adds the object to the database.
6. On the **Add Connection** dialog box, click **OK**.

Automatic Radio Identification

StarView automatically changes radio nodes to the appropriate radio icon during the autodiscovery process or as new radios are added to the network. In addition, the radio icons are automatically changed to executable symbols. The steps for manual setup are contained in the following paragraphs.

Adding a Node

Using a symbol from the Connector or Computer class, you can add a node object to the following submaps:

Table 6: Connecting a Node

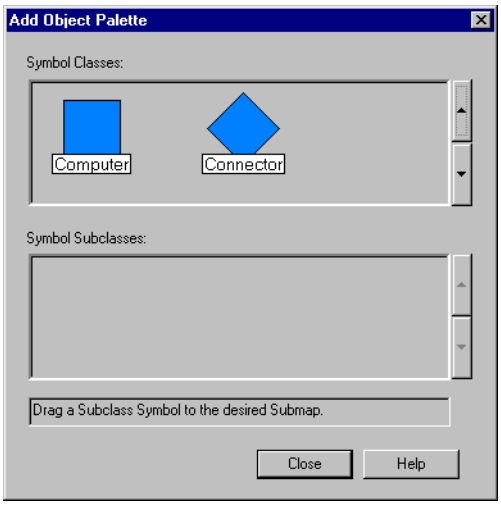
Type of Submap	Connector Class	Computer Class
Internet	Gateway	None
Network	Any type	None
Segment	Any type	Any type

NOTE
You cannot add a node object to a root submap.

To add a node:

1. Open a submap and from the **Edit** menu, click **Add Object**. The **Add Object Palette** appears.

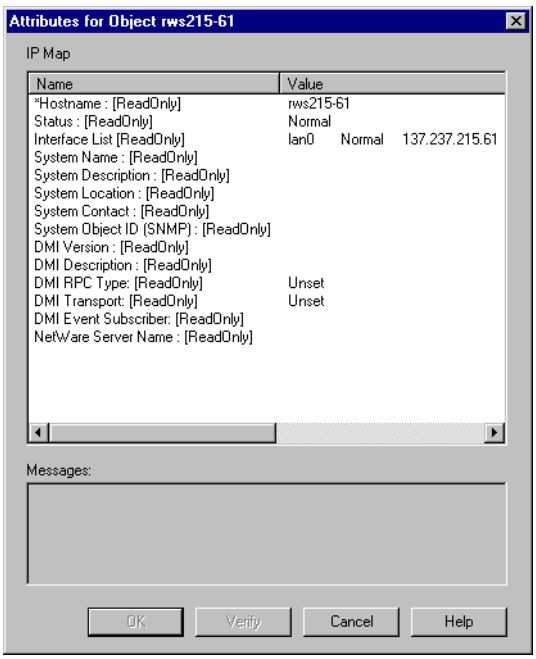
Add Object Palette - Connector or Computer



2. On the **Add Object Palette** dialog box, select the **Connector** or **Computer class** from the **Symbol Classes** list. The list of symbol subclasses appears below.
3. Select the subclass symbol to represent the node, and drag it to the submap. The **Add Object** dialog box appears.
4. Enter a label for the symbol in the **Label** text box.
5. Select **IP Map** in the **Object Attributes** list, and click **Set Object Attributes**. The **Add Object - Set Attributes** dialog box appears.
6. In the **IP Map** list, click an entry to display the **Set Attribute Value** dialog box, and type the required information in the text box.

You must enter a host name or an address. Entering a physical address or changing the subnet mask is optional. For IPX nodes, enter the host name and physical address only.

Add Object - Set Attributes



1. Enter the host name in the **IP Hostname** text box and click **OK**.
2. Enter the IP address in the **IP Address** text box and click **OK** (IP node only).
3. Enter the subnet mask in the **Subnet Mask** text box and click **OK** (IP node only).
4. Enter the physical address in the **Physical Address** text box and click **OK**.

The program checks for validity each time you click **OK**. If the information is valid, click **OK**. The **Add Object** dialog box reappears.

5. Enter a selection name for the node object in the **Selection Name** text box, and then click **OK**.

Adding a Segment

You can add a segment object to a network submap by placing one of the segment symbols on the submap.

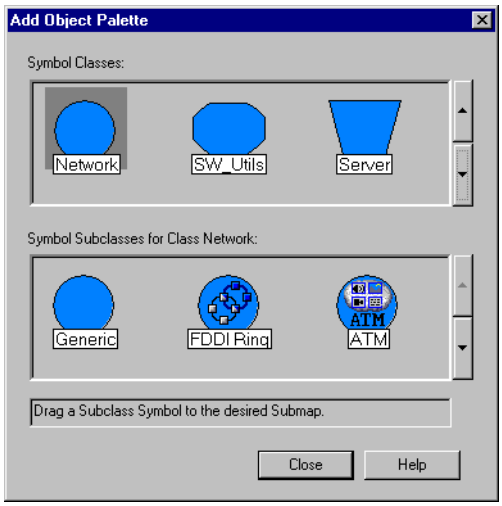
To add a segment:

1. Open a network submap, and then on the **Edit** menu, click **Add Object**. The **Add Object Palette** appears.

NOTE
You cannot add a segment to the root or Internet submaps.

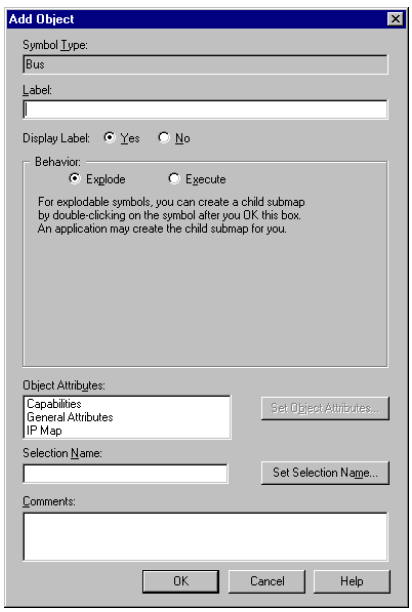
2. On the **Add Object Palette**, select the **Network Class** from the **Symbol Classes** list. The list of symbol subclasses for the network class appears below.

Add Object Palette - Network Class



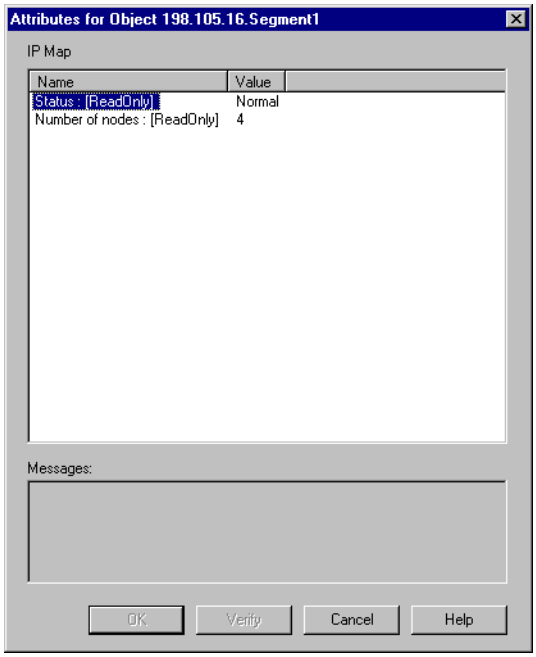
3. Select a subclass symbol to represent your segment and drag it onto the network submap. The **Add Object** dialog box appears.

Add Object dialog box



4. Enter a symbol label name in the **Label** text box.
5. Select **IP Map** in the **Object Attributes** list, and then click **Set Object Attributes**. The **Add Object - Set Attributes** dialog box appears.
6. In the **IP Map** list, click the **Name** entry to display the **Set Attribute Value** dialog box.
7. Enter the segment name in the **Name** text box and click **OK**. The **Add Object - Set Attributes** dialog box appears again.

IP Map Attributes for a Segment



IP Map checks the validity of the text and, if it is valid, activates the **OK** button. You can now add the segment to the network submap.

To add the segment to the network submap:

1. On the **Add Object - Set Attributes** dialog box, click **OK**.
2. In the **Add Object** dialog box, enter a selection name for the segment object in the **Selection Name** text box.
3. On the **Add Object** dialog box, click OK.

The segment symbol appears on the network submap. Double-clicking an IP segment symbol opens an empty segment submap. You can add objects to the segment submap by selecting **Add Object** from the **Edit** menu, or by pasting symbols onto the submap. However, remember that you can add only one segment at a time.

About Symbols

A symbol is a graphical representation of a particular object. An object can represent symbols in several submaps, or even by multiple symbols in the same submap. A symbol has properties that are unrelated to the object that it represents.

Symbol properties include:

- Symbol Variety - There are two varieties of symbols: icon or connection.
- Symbol Type - The symbol type determines the appearance of the symbol.
- Symbol Status - Symbols can display status information using color.
- Symbol Behavior - A symbol can either open a submap or perform an action on an object or set of objects.

Icon Symbols

Icon symbols represent objects such as workstations, PCs, cards, devices, software, geographical locations, networks, servers, and clients. Each icon symbol is composed of a symbol class, which indicates graphically by the outside shape of the symbol, and a symbol subclass, which indicates graphically by the image within the outside shape.

Connection Symbols

A connection symbol is a line that graphically connects two icon symbols or an icon symbol and a backbone (a bus or a ring backbone) on a submap. Like an icon symbol, a connection symbol represents an object that may reside on the application plane or the user plane or may just show status.

When using connection symbols, you can:

- Select from several connection types such as generic solid line, dashed line, dotted line, and dot-dash when adding a connection.
- Define a layout pattern during submap creation: bus, star, point-to-point, ring, or row and column.
- Display a symbol pop-up menu for the connection, and open the **Symbol Properties** dialog box to view and modify symbol properties.

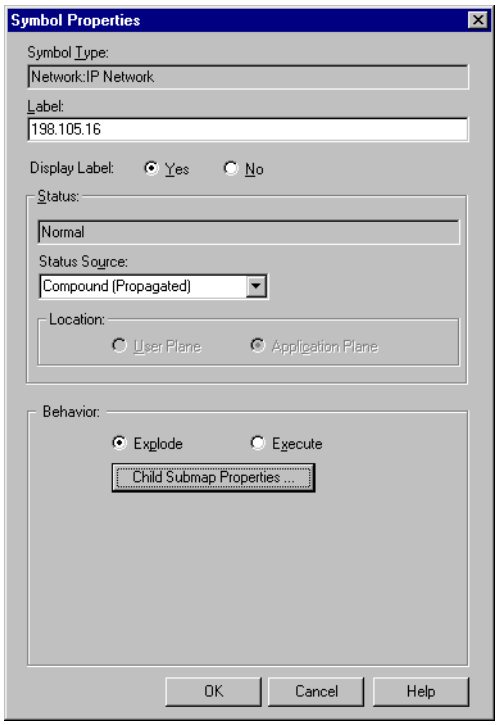
Modifying Symbol Properties

You can view or modify the basic properties of an icon symbol.

To modify the basic properties of an icon symbol:

1. Select a symbol on the submap window and right-click the mouse.
2. On the shortcut menu, click **Symbol Properties**. The **Symbol Properties** dialog box appears.

Symbol Properties dialog box

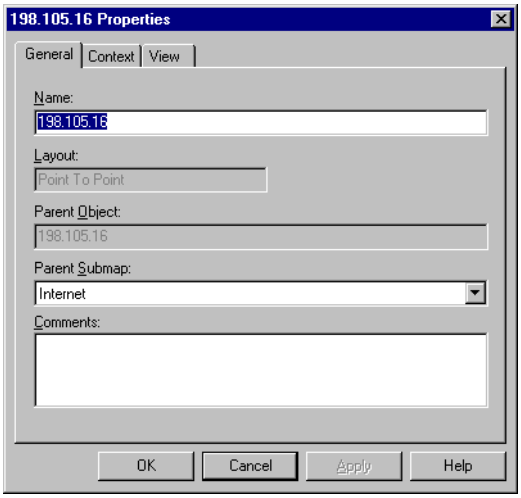


You can view or modify the settings for the following properties:

- Symbol Type - Displays the class and subclass of the selected symbol. The class and subclass comprise the symbol type.
- Label - Determines the label for the selected symbol. To change or assign the symbol label, enter text for the label in this field. You can change the symbol label any time the map is open with read/write access.
- Display Label - Determines whether or not to display the label. Select **Yes** to display the symbol label beneath the symbol, or **No** to omit the label.
- Status - Displays the current status of the symbol.
- Status Source - Determines the source from that which generated the status. Three possible sources generate status for the symbol: Symbol, Object, or Compound. The status source of a symbol is set automatically by the application that manages the object.
- Location - Displays the plane on which the symbol is located: the user plane or the application plane.

- Behavior - Determines whether the symbol is explodable or executable. Select one of the options in the **Behavior** section of the **Symbol Properties** dialog box to change a symbol's behavior when you double-click the symbol: Select **Explodable** or **Execute**.
- Child Submap Properties - Displays the **Submap Properties** dialog box for the child submap that displays the layer of the network hierarchy associated with that object.

Child Submap Properties dialog box



Adding Executable Symbols

When you add an executable symbol you must define the action that the symbol executes and the target object on which the symbol acts. This procedure explains how to add an executable symbol that performs an action.

NOTE

You can display two symbols of the same object: one symbol to expand into a child submap, and one symbol to execute an application that performs actions on the objects in the child submap.

To add an executable symbol:

1. On the **Edit** menu, click **Add Object**.
2. On the **Add Object** dialog box, select a symbol outline from the **Symbol Classes** list.
3. From the **Symbol Subclasses** list, select a symbol subclass and drag it onto the submap.

4. On the **Add Object** dialog box, enter a label for the symbol and define how you want the symbol to display.
5. On the **Add Object** dialog box under **Behavior,** select **Execute**.
6. On the **Application Action** list, select the application/action combination that you want the executable symbol to perform.
7. Select the target objects which the application can act upon, then click **Target Objects**. The **Target Objects** dialog box appears.

Add the objects you want the application to target. Use one of the following two methods:

- Enter the selection name of the object in the **Additional Objects** text box, and then click **Add**.
- Click **Get Selections**. This method places all objects in the **Target Objects** list.

1. On the **Target Objects** dialog box, click **OK**.
2. On the **Add Object** dialog box, click **OK**.

A square appears around the symbol to indicate that it is executable. When you double-click the executable symbol, the chosen application and action affect the target objects.

Adding Harris Equipment to StarView

Adding Harris equipment is similar to adding an executable symbol. You must define the action that the symbol executes and the target objects on which the symbol acts. During the installation of StarView and Equipment Screens, icon symbols for your Harris Equipment are provided in the **Add Object Palette** dialog box. You can begin adding Harris equipment by creating a submap that displays your Harris equipment.

Adding Harris equipment requires that you first add a node, followed by adding a segment to the node. After adding the segment to the network submap, you can add objects that represent your Harris equipment by selecting the **Add Object** from the **Edit** menu.

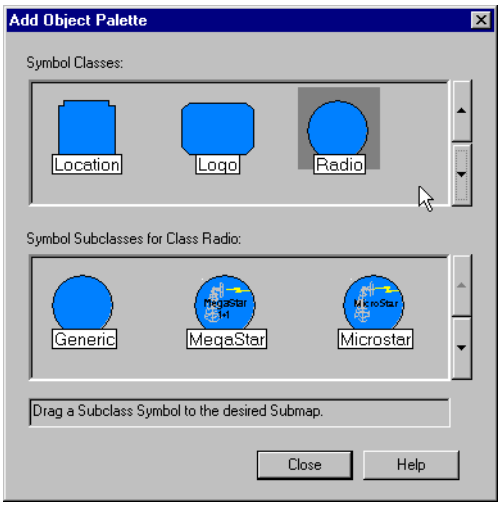
NOTE

Harris equipment that only runs with the FarScan SNMP Module requires the user to start FarScan and start the FarScan SNMP Module before configuring Harris equipment in StarView Element Manager. Most Harris equipment requires FarScan and the FarScan SNMP Module.

To add Harris equipment to a segment submap:

1. On the **Edit** menu, click **Add Object**. The **Add Object Palette** dialog box appears**.**

Harris Equipment Add Object dialog box

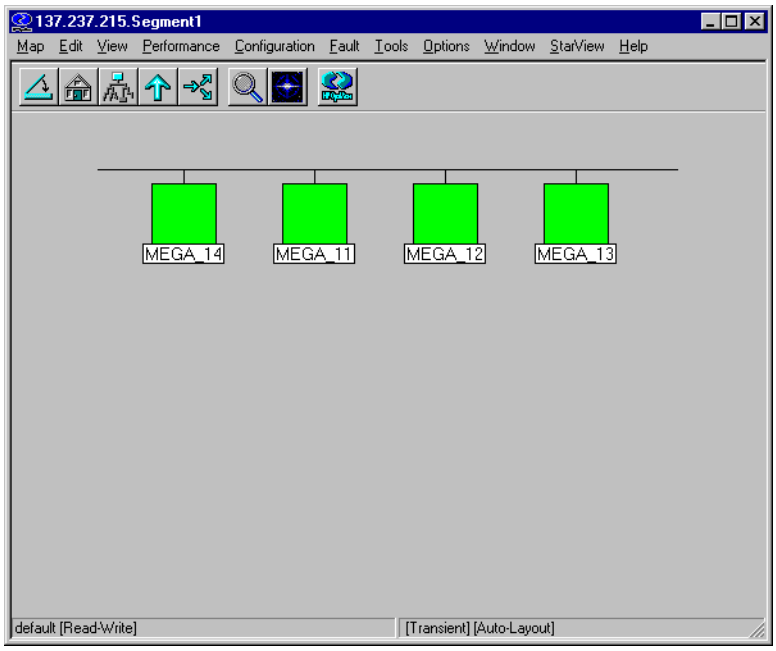


2. On the **Add Object Palette** dialog box, click the Harris equipment symbol that represents the subclass object you want to add. The **Symbol Subclasses for Class Radio** appears in the **Symbol Subclasses** graphical list.

3. Find the **Subclass Symbol** that you want to add and drag it to the submap.

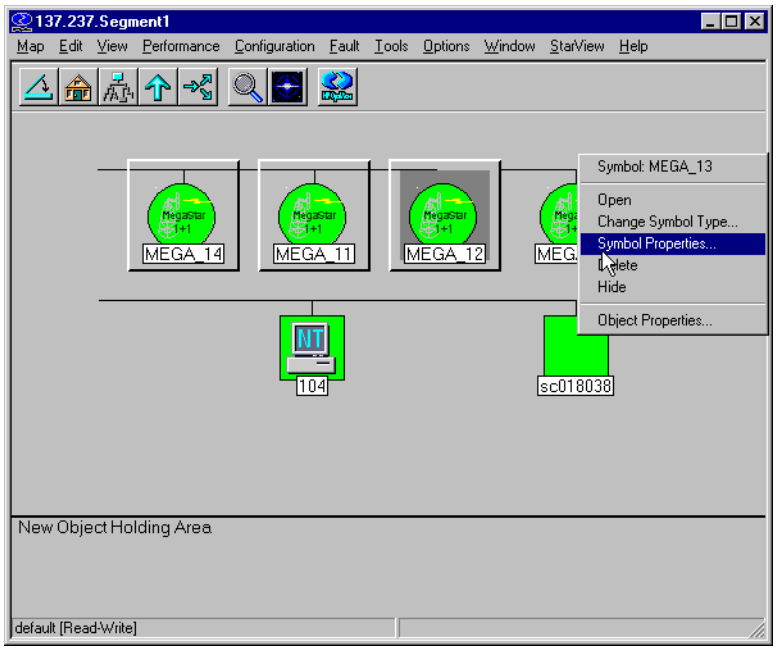
Repeat steps one through three until you complete adding your Harris equipment to the segment submap.

Harris equipment segment submap



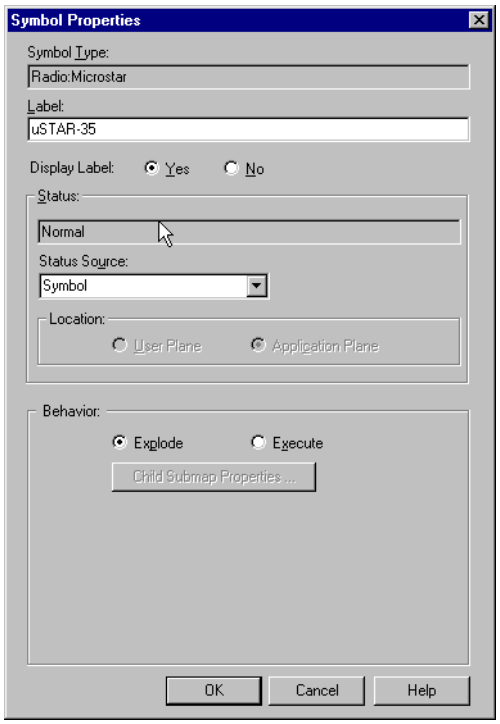
4. On the submap, click a Harris Radio Equipment symbol, and then right-click. The **Symbol** submenu appears.

Symbol Submenu



5. Click **Symbol Properties**. The **Symbol Properties** dialog box appears.

Harris Equipment Symbol Properties dialog box



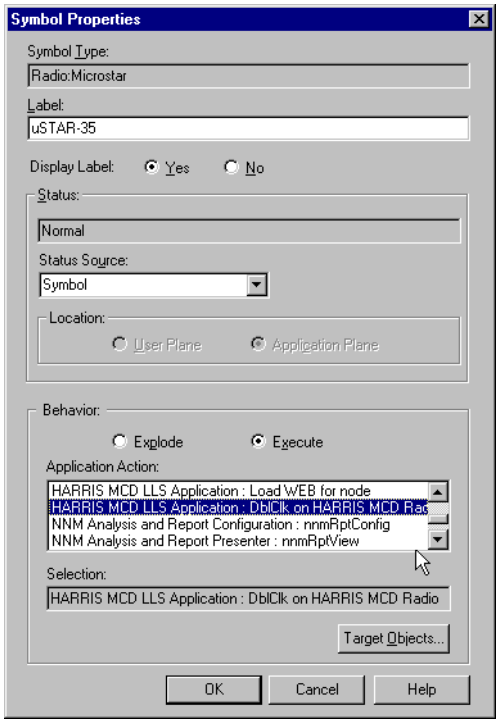
6. On the **Symbol Properties** dialog box under **Behavior**, select **Execute**. Under **Behavior**, the **Application Action** list appears.

You can now configure the executable behavior of the Harris equipment.

To configure the behavior of your Harris equipment:

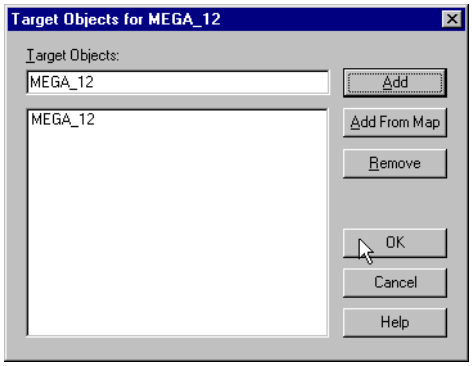
1. On the **Symbol Properties** dialog box under **Behavior**, in the **Application Action** list, select **Harris MCD LLS Application: DblClk on Harris Radio**.

Harris Equipment Symbol Properties Application Action



2. On the **Symbol Properties** dialog box, click the **Target Objects** button. The **Target Objects** for Harris equipment dialog box appears.

Target Objects dialog box

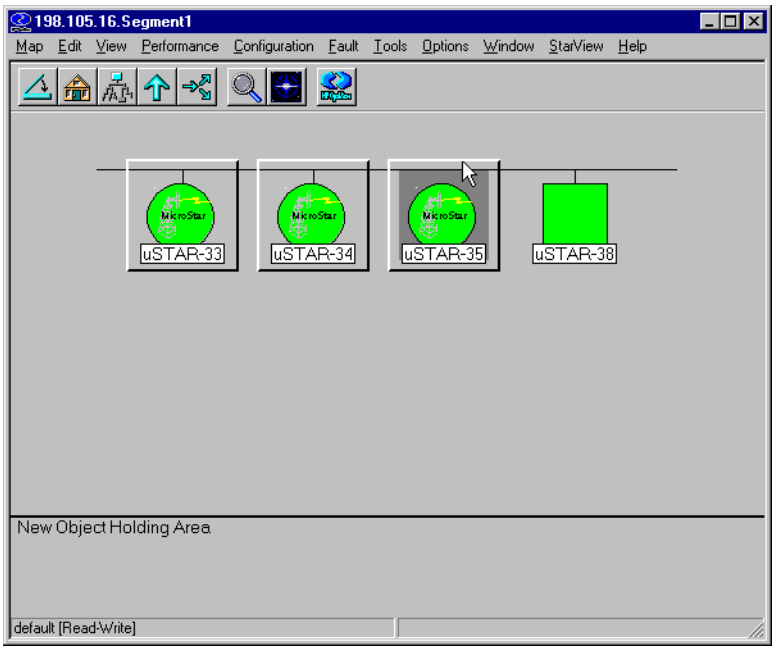


3. On the **Target Objects** dialog box, select your Harris equipment on the **Target Objects** list.

4. Click **Add**, and then click **OK**.

A square appears around the Harris equipment symbol to indicate that it is executable. When you double-click the Harris equipment symbol, the chosen application and action opens the Harris equipment screen.

Harris Equipment Executable Symbol



Diagnosing IP Connectivity Problems

You can diagnose connectivity problems by:

- Testing connectivity
- Finding routes between nodes
- Gathering connectivity information

Testing Connectivity

You can test connectivity by choosing the **Test IP/TCP/SNMP** command on the **Fault** menu. You can use other commands on the **Fault** menu to determine the number of packets sent and lost and the round-trip times, between the local management system and another node or nodes. You can also use this command to diagnose network connection problems by testing networking protocols.

Use patterns in the status colors to determine connectivity problems. For example, if a connector and all objects on one side of it are down (red), the connector is probably the source of the problem.

Behavior

When you select multiple nodes, the input and output for all nodes appear in one dialog box.

This operation performs the following tests:

- ICMP Echo - Sends an ICMP Echo request or ping to check the IP connection. The ICMP Echo request determines whether you can communicate with a remote node by sending a packet and getting it back. You can choose the **Ping** command to send one ICMP Echo packet (64 bytes) per second to a remote node. The output displays the number of packets sent and lost, and the round-trip times. Either the output is the time in milliseconds that it takes the exchange to complete or the output is an error. To send ICMP Echo packets between remote nodes, choose **Remote Ping** from the **Fault** menu.
- TCP Connect - Performs a TCP connection to TCP port #23 (Telnet) to determine whether you can connect to a remote node. The output is either an OK or an error. This test may fail since some Windows NT operating system workstations may not have a telnet server installed.
- SNMP Get - Gets a system description from SNMP using the community name configured through the **SNMP Configuration** command in the **Options** menu. If the test is unsuccessful either the node does not support SNMP, the system is not up, or the community name is wrong. The output is either an OK or an error.

Finding Routes Between Nodes

To find specific IP routes between nodes, use the **Locate Route: via SNMP** command on the **Fault** menu. This operation highlights the connections between both nodes and all IP addressable objects. The operation also lists information such as the source node and address and the intervening gateways and gateway addresses.

Gathering Other Connectivity Information

The menu commands below offer additional help for diagnosing connectivity problems.

IP Addresses

Choose this command to list the IP and link addresses for the selected remote SNMP nodes. Use this command for determining IP and interface addresses associated with a node without looking through configuration files. You can access the **Addresses** command on the **Configuration** menu, and then click **Network Configuration**.

Routing Table

Select this command to list the routing table information for the selected remote SNMP nodes. Information on selected remote SNMP nodes determines how to route IP packets on the nodes. Use this command for diagnosing connectivity problems where one node cannot communicate with the other. You can access the **Routing Table** command on the **Configuration** menu, and then click **Network Configuration**.

ARP Cache

Choose this command to list the Address Resolution Protocol (ARP) Cache table for the selected remote SNMP nodes. The **ARP Cache** command is useful for diagnosing connectivity problems because it indicates whether two nodes have a different link address for a third node. You can access the **ARP Cache** command on the **Configuration** menu, and then click **Network Configuration**.

IP Services

Choose this command to list the services configured to the selected remote SNMP nodes. The configuration of services that support a node can be useful in determining if the services are working properly. You can access the **IP Services** command on the **Configuration** menu, and then click **Network Configuration**.

For more information on diagnosing IP connectivity problems, refer to your Network Node Manager manual and online Help.

Diagnosing Performance Problems

Use the following menu commands to diagnose performance problems:

Interface Status Command

When selecting a node object on the map, select this command to list the status of all interfaces on the selected node. The Interface Status command lists incoming and outgoing packets and errors per connected interface for a remote SNMP node. This command is useful for determining the status of each selected node or interface on the map, which is useful in troubleshooting. You can access the **Interface Status** command on the **Fault** menu.

Disk Space Command

Choose this command to list the available file system space used and available on an HP OpenView SNMP Agent node. You can access the **Disk Space** command on the **Performance** menu, point to **System**, and then click **Disk Space**.

CPU Load Command

The **CPU Load** command monitors and graphs the average number of jobs in the run queue for each of the selected SNMP Agent nodes. The graph is useful for viewing and tracking CPU utilization patterns. This information can be useful in determining how to distribute tasks among several nodes. You can access the **CPU Load** command on the **Performance** menu, point to **System**, and then click **CPU Load**.

Ethernet Traffic Command

Select this command to monitor and graph interface statistics for an SNMP Agent node. The **Ethernet Traffic** command also lists LAN card statistics for a remote SNMP Agent node. You can access the **Ethernet Traffic** command on the **Performance** menu, point to **Network Activity**, and then click **Ethernet Traffic**.

Ping Command

Use the **Ping** command to determines whether two nodes or interfaces can communicate. Select this command to send one ICMP Echo packet per second from the local management system to a remote node. The output displays the number of packets sent and lost, and the round-trip times. You can access the **Ping** command on the **Fault** menu.

Remote Ping Command

The **Remote Ping** command determines whether two remote nodes or interfaces can communicate. Select the **Remote Ping** command to send one ICMP Echo packet per second from the local management system to a remote node. The output displays the number of packets sent and lost, and the round-trip times. You can access the **Ping** command on the **Fault** menu.

You can also check the status colors, which indicate whether interfaces are down on gateways, or analyze collected MIB data to detect network performance problems. In addition, you can use the **SNMP MIB Browser** command on the **Tools** menu to get a snapshot of MIB values.

NOTE
Using a Domain Name Server (DNS) significantly improves performance for your StarView network. You must request your system administrator to include all Harris equipment and StarView IP addresses in the DNS on your network.

For more information on diagnosing IP connectivity problems, refer to your Network Node Manager manual and online Help.

CHAPTER

4

MANAGING A NETWORK

This chapter explains network faults, configuration, and performance management of the StarView Element Management System.

- "Introduction" (page 93) provides an overview of network topology and diagnosing network faults and performance problems using SNMP.
- "Checking for Network Problems" (page 94) provides information about polling for network information and watching for alarms.
- "Alarm Categories" (page 100) explains the alarm system and how to browse alarms for the network and Harris equipment.
- "MIB Browser" (page 102) explains how to access network information through the Browse MIB operation.

Introduction

StarView Element Manager provides tools for fault, configuration, and performance management for Harris MCD Radio networks utilizing SNMP/UDP protocols. You can use StarView Element Manager to:

- Automatically discover your network environment and allow you to monitor its status.
- View the current topology of your network using StarView Element Manager's automatic discovery and mapping.
- Diagnose and automatically respond to network faults and performance problems from a central location.

- Manage any vendor device that supports the Simple Network Management Protocol V1 (SNMPV1). StarView Element Manager manages both standard and enterprise-specific Management Information Base (MIB) objects.
- Use forms, tables, and graphs to view network and system configuration information for the nodes on your network.

StarView Element Manager polls the network to discover known objects and then creates a database of these objects. From this database, StarView Element Manager draws a map that provides a graphical representation of your network. StarView Element Manager then continues to monitor the network and updates the database and the map with discovered topology changes, such as new and non-responding nodes.

StarView Element Manager automatically creates and stores a default map in a database. A map consists of a variety of objects, such as networks, gateways, and segments. Through the following editing operations, you can modify a map for an even better representation of your network: add and delete objects, add and delete connections, move and transfer objects, and change object type.

Checking for Network Problems

You can proactively check for network problems by:

- Polling for network information
- Watching for alarms

Polling for Network Information

The product continually polls for:

- Status of objects (operating state : alarm condition)
- Network topology changes, including the discovery of new nodes
- Configuration changes
- Surpassing of threshold values that exceed a preset limit

For example, you can set thresholds on CPU loads, disk space used, interface and link errors, and collected MIB data.

You can set the frequency of polling or toggle it on or off by using the SNMP Configuration command located in the **Options** menu. You can also set the threshold type and threshold value (limit) on a per node basis: select **Data Collection & Thresholds: SNMP** from the **Options** menu.

Data Collection & Thresholds: SNMP

Choose this command to configure data collection to:

- Collect MIB data from network nodes at regular intervals
- Store the collected MIB data into a file
- Define thresholds for the collected MIB data and generate events when exceeding the specified thresholds
- Define thresholds for notification of traffic patterns that are outside normal parameters

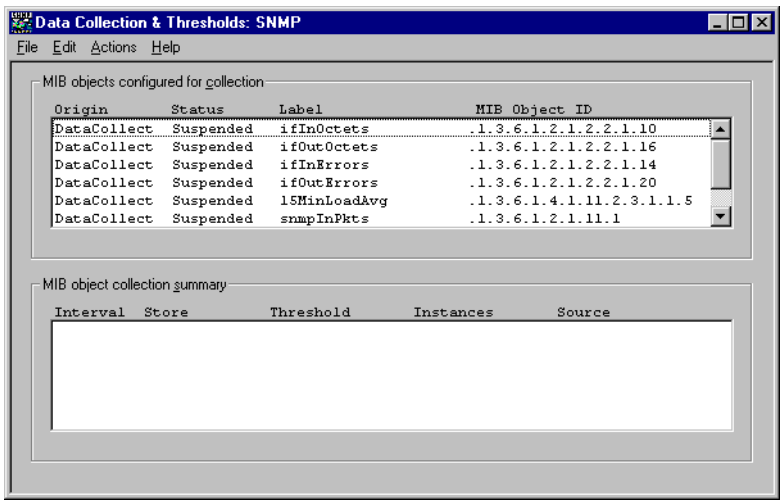
NOTE

The node that you collect data from must support SNMP and use only numeric MIB values when collecting data or monitoring thresholds.

To collect data from a MIB object:

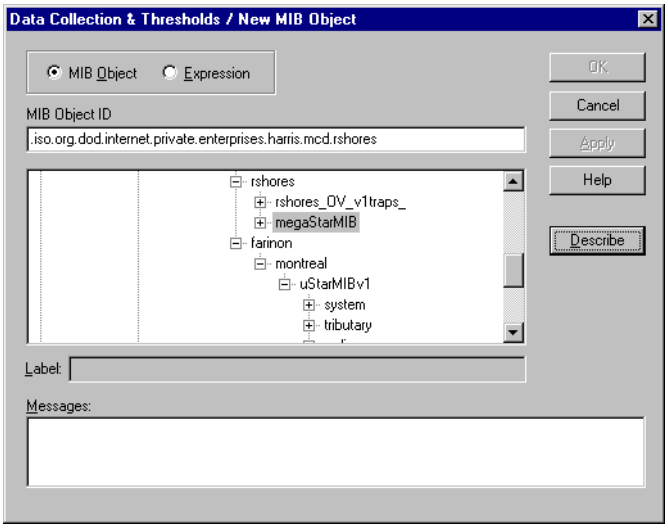
1. On the **Options** menu, click **Data Collection & Thresholds: SNMP**. The **Data Collection & Thresholds: SNMP** dialog box appears.

Data Collection & Thresholds: SNMP dialog box



2. On the **Data Collection & Thresholds: SNMP** dialog box, click **MIB Object** from the **Edit** menu, and then click **New**. The **New MIB Object** dialog box appears.

New MIB Object dialog box



3. On the **Collection Mode** option menu, select a collection mode.

4. Select the **MIB Object** option to collect data on a MIB object or the **Expression** option to collect data on an expression. The default is **MIB Object**.

If you are collecting data on a MIB object, specify the MIB object ID for which you want to collect data using one of these methods:

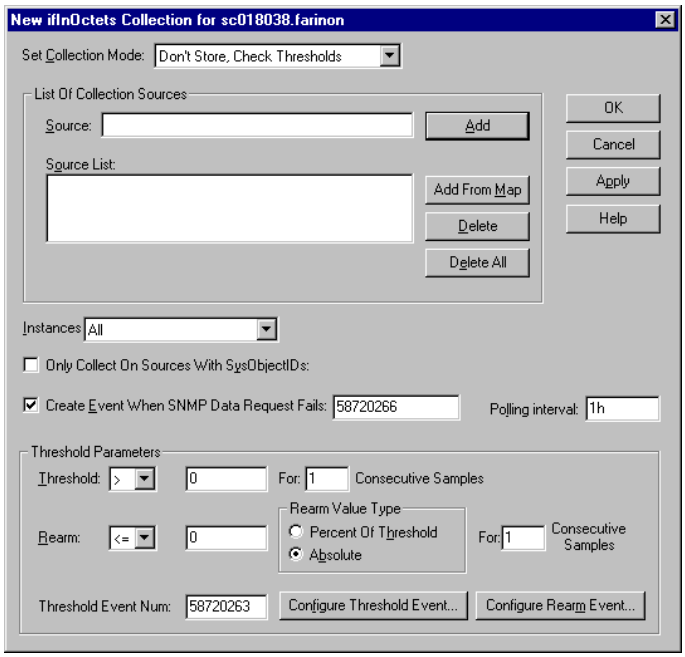
- Select an object on the MIB tree in the **MIB Object ID** list. Type or paste the full MIB object ID in the **MIB Object ID** text box.
- Select the item from the **Expression ID** list for collecting data on an expression.

5. Enter the label.

The label defaults to the last component of the MIB name. Use the label as the file name to store the data. Click the **OK** or **Apply** button.

The **MIB Object ID** is added to the **MIB Objects Configured for Collection** list in the **Data Collection & Thresholds** dialog box, and the **New Object Collection for Device** dialog box appears.

New Object Collection for Device dialog box



To add the source name to the New Object Collection for Device:

1. On the **New Object Collection for Device** dialog box, enter the source name.

The source name can be an IP hostname, an IP address, or an IPX address. You can also specify a file containing a list of hostnames or IP addresses (one per line). When you add a source name, the name appears in the **Source** list.

2. On the **Polling Interval** text box, enter a value followed by a **s**, **m**, **h**, or **w** indicating seconds, minutes, hours, or weeks, respectively. The polling interval determines how often the program collects data from the source.

3. On the **MIB instance** text box, enter the MIB instance on which you want to collect data.

If the object on which you want to collect data does not support multiple instances, the instance is 0.

If you have multiple instances of a MIB object on a node, use one of the following methods:

1. Explicitly configure a data collection for each instance.
2. Specify the instance by typing a wildcard representing multiple instances. For example, an asterisk (*) means collect on all instances of this object.

To define Thresholds for Monitored MIB Values:

1. Select one of the following items from the list next to the **Set Collection Mode** label:
   - Don't Store, Check Thresholds
   - Store, Check Thresholds

The **Threshold** and **Rearm** selections become available.

2. In the **Threshold** text box, enter the threshold value.
3. On the **Rearm** text box, enter a rearm value. You can specify the rearm value as a percent of the threshold value or an absolute number. Suggested rearm value is seventy-five percent of the threshold value.

When a collected value meets the threshold condition, the data collector generates an event. To avoid continuously generating events, specify a rearm condition that coincides with the trend you are tracking. When a MIB value meets the rearm condition, the data collector issues a rearm event. The program does not issue another threshold event until the rearm event occurs and the collected value again meets the threshold condition.

4. Optionally, enter a **Threshold Event Number**.
5. Optionally, you can specify a value for the **consecutive samples** text box. This value specifies the number of consecutive times the threshold expression must be satisfied before generating a corresponding event.
6. Click **OK** to set this threshold and exit the dialog box. Click **OK** when all thresholds are set.
7. On the **File** menu, click **Save**.

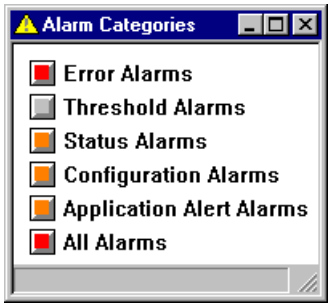
The modified threshold configurations take effect. If the status of the MIB object is **Suspended**, change the status to **Collecting** by selecting the object and click **Resume Collection** from the **Actions** menu.

The data collection configuration is re-analyzed by **snmpCollect** each time you save the collected data. If you used IP wildcards, and you have a large number of managed nodes, there may be a significant delay before collections resume. StarView Element Manager stores the collected data in the openview\databases\snmpCollect directory.

Watching for Alarms

StarView Element Manager actively notifies you, through the **Alarm Categories** window, when an event occurs. Each category of alarms has a corresponding button that changes color when an alarm occurs.

Alarm Categories dialog box



You can view alarms to help diagnose problems. You can view alarms of all types for a specific node by selecting the **Alarms** command on the **Fault** menu. By choosing the **Event Configuration** command on the **Options** menu, you can: define the format of event log messages, determine which events to take action on, and determine what actions to take when the management station receives an event. The key benefit of configuring actions for events is that you can customize the management station and automate some of the fault management tasks.

Alarm Browser

- Browses incoming events and events contained in the event database
- Filters alarms based on acknowledgment, severity, time, source, message, and/or event type
- Runs predefined additional actions on alarms
- Visually identifies correlated events and allows you to show the secondary events that make up the correlated event

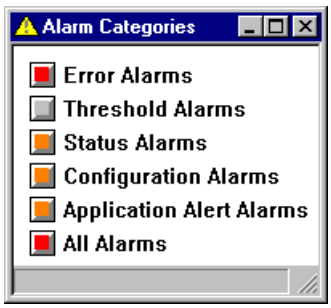
To access alarm information on selected objects, choose the **Alarms** command from the **Fault** menu.

Alarm Categories

You can view the alarm categories in a small window that is normally open in the upper right corner of the screen. The **Alarm Categories** window contains buttons corresponding to each of the alarm categories. StarView Element Manager defines a set of default categories. You can add categories, delete categories, or modify the alarms assigned to a category. The buttons in this window light up to indicate alarms that are unacknowledged from the **Alarm Browser**. If there are no alarms in the category, the button color is the same as that of the map background. The color of the push button reflects the most severe alarm in the category. The **All Alarms** category contains all the alarms that are present in the other categories. You can modify the list of categories. The colors are:

- Normal is green
- Warning is cyan
- Minor is yellow
- Major is orange
- Critical is red

Alarm Categories dialog box

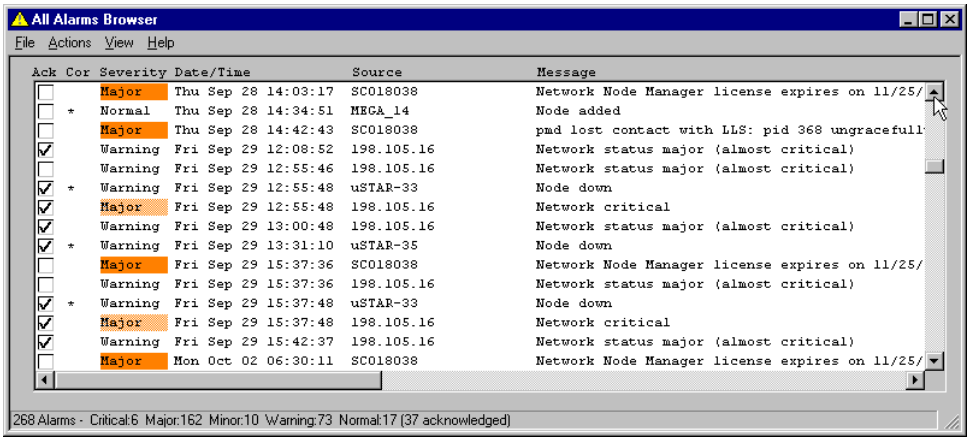


Browsing Alarms

Each category in the **Alarm Categories** window has its own **Alarm Browser** window. The **Alarm Browser** window contains a list of alarms belonging to the associated category. The **Alarm Browser** window also contains status information on the number of alarms in the window, their severity, and any filtering information.

The **Alarm Browser** window lists all undeleted alarms for the selected category. The alarms are in chronological order with the most recent alarm at the bottom of the list.

All Alarms Browser dialog box



The **Alarm Browser** dialog box displays the alarm status of each alarm:

Table 1: Alarm Status

Alarm Status	Explanation
Ack	A check mark indicating whether the alarm is acknowledged or unacknowledged
Corr	An asterisk (*) indicating that the alarm is correlated
Severity	The severity of the alarm
Date/Time	The day of the week, date, and time when the alarm occurred
Source	An identifier (such as a node name) for the network object where the alarm originated
Message	A brief description of the alarm

The bottom of the **Alarm Browser** window contains a status table. This table contains the total number of alarms in all the categories and the number of alarms sorted by severity.

MIB Browser

Your primary means of accessing network information through the graphical interface is through this Browse MIB operation. One advantage of using this operation is that you need not refer to your configuration files or your naming resolution scheme such as the \etc\hosts file used in the Configuring SNMP chapter. You can use the **Browse MIB** window, launched by the SNMP **MIB Browser** command on the **Tools** menu, to query and display current MIB values on a selected device and set the value on the selected device.

Using the Find operations, you can find a node by its name, attribute, comment, symbol status, symbol type, and symbol label. You can also enter comments about nodes using the **Map Properties** command on the **Map** menu and later find the nodes by these comments. You can also view the selected node on the map so you can easily find it.

Browse MIB Window

You can use the Browse MIB operation to:

- Query and set MIB values for both Internet-standard and enterprise-specific MIB objects
- Graph MIB values, including specific instances

The **Browse MIB** dialog box contains the following options, buttons, and commands:

Browse MIB dialog box

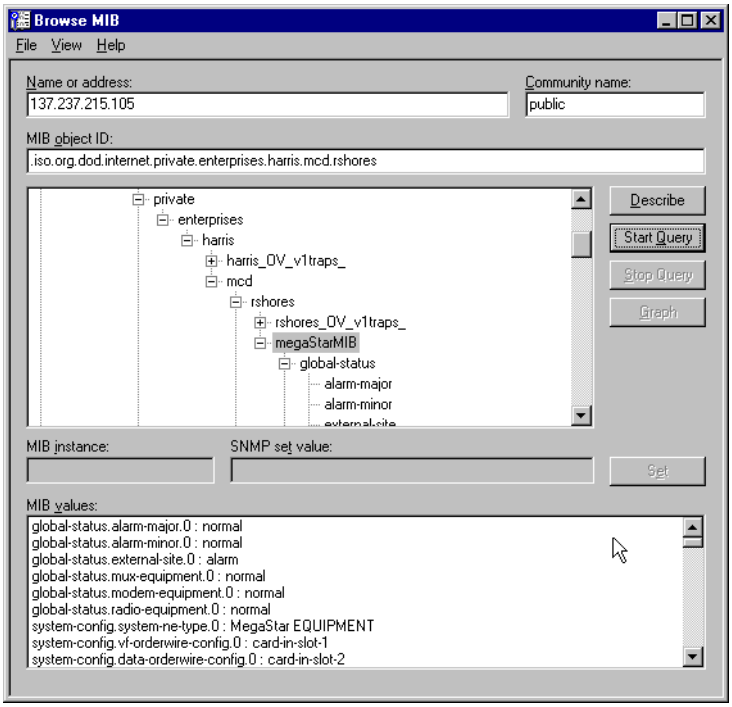


Table 2: MIB Browser menu bar

File	
Save	Saves the results of MIB queries to a file as /tmp/browser.save.
Close	Closes the MIB Browse dialog box
View	
Messages	Shows any error or informational messages related to the operation
Change Selection	Changes the name or address to the node selected on the map
SNMP Packet Trace	Displays ASN.1 packet trace of sent and received SNMP messages
Object Identifiers as Text	Toggle this feature to allow the next request you make to display the output of object identifiers as either text or series of numbers

Edit the **Browse MIB** dialog box using the following fields and buttons:

Table 3: Edit Browse MIB dialog box

Name or Address	Use the option to specify the name, IP address, or IPX address of the first node selected on the map. When displaying MIB values on a different node, either type the name of the node in the Name or Address field or select the node on the map and click Reselect.
Community Name	Use the option to specify the community name of the agent that is running on the selected node. If the community name is public or if the agent's community name is configured in the SNMP Configuration dialog box, you can run Get request queries without having to specify a community name. In this case, the SNMP Configuration dialog box will automatically display the community name configured for the selected agent, as soon as you select an item from the MIB Object ID selection list. If the community name is not public and is not configured, you must type in the community name that will allow Get requests on the selected agent.
MIB Object ID	Use this option to select an MIB object on which to collect data.
MIB Instance	Use this option to specify the instance of an object when you set a MIB value or when you want to query or graph a specific instance of an object. The MIB browser does not allow wildcards.
SNMP Set Value	Use this option to specify a new value when setting a MIB value.
MIB Values	Use this option to display the results of query operations.
Describe	Use this option to display information about the MIB object, such as the object ID, type, and description of the object as specified in the loaded MIB database. This button is unavailable until you select an item from the selection list.
Start Query	Use this option to start the MIB query of the object selected from the selection list. This button is unavailable until you select one and only one item from the selection list.
Stop Query	Use this option to stop a MIB query in process.
Graph	Use this option to graph the values selected from the selection list in a line graph. You can also graph specific instances.
Set	Use this option to change a MIB value or an agent.

Querying MIB Objects

On the **Tools** menu, you can use the **SNMP MIB Browser** command to query MIB objects.

To query a MIB object:

1. Select the node you want in the map.
2. On the **Tools** menu, click **SNMP MIB Browser**. The **Browse MIB** dialog box appears.
3. To view the MIB values, select the MIB object you want.

You can specify the MIB object ID in one of the following ways:

- Select the desired MIB object by moving up or down the MIB tree
- Type or paste the MIB object ID in the **MIB Object ID** field

Optionally, you can query specific instances by specifying the full MIB object ID and then specify the instance in the **MIB Instance** field. By selecting the branch of the MIB tree containing the MIB objects, rather than a single MIB object, you can display the values of many MIB objects at the same time.

NOTE

You cannot query if multiple objects are selected. When you click **Start Query**, the MIB Browser queries and displays the MIB values for all MIB objects supported by the specified node that are below the selected branch in the MIB tree.

4. Click **Start Query** to query the MIB object.
5. Click **Stop Query** to stop displaying MIB values.

Setting MIB Values

The selected node on which you want to set MIB values must support SNMP and the agent must be configured to respond to SNMP Set requests. You must also know the agent's set community name.

To set MIB values:

1. Complete steps one through five for Querying MIB Objects.
2. Select the MIB value you want to change from the MIB Values. You can view the current value in the **SNMP Set Value** text box.
3. Type in the new value for the object in the **SNMP Set Value** text box.
4. Click **Set**.

NOTE
After you click Set, the value on the agent changes. You may not see the changes on the map until the management system has done the appropriate polling.

You have now set the MIB values. The message area indicates the success or failure of the operation. Many nodes require a different community name for sets than for queries.

Graphing MIB Values

You can graph MIB values.

To graph MIB values:

1. On the **Tools** menu, click **SNMP MIB Browser**. The **Browse MIB** dialog box appears.
2. Select the MIB object or objects that you want to graph from the **MIB Object ID** selection list.

To graph a specific instance of the selected object, type the instance value in the **MIB Instance** text box, or do a query and then click the proper instance in the **MIB Values** list.

You can only graph MIB values that are numeric. If you are not sure whether a value is numeric, do one of the following:

- Look for visual clues. The **Graph** button is unavailable until you select a numeric MIB value.
- Click **Describe** to get a description of the selected MIB object.

3. Click the **Graph** button.

The graph appears, plotting the MIB values over time.

CHAPTER

5

MANAGING HARRIS EQUIPMENT

This chapter describes how to manage Harris equipment using StarView.

- "Introduction" (page 107) provides an overview of using the Simple Network Management Protocol agent over Internet Protocol for Harris equipment.
- "FarScan SNMP Module" (page 109) describes the FarScan SNMP Module interface to Harris equipment.
- StarView Equipment Screens (page 109) describes the StarView equipment screens for the Harris radios.
- MicroStar PPP Connection Utility (Windows NT) (page 149) describes the Galaxy equipment screens.
- MicroStar PPP Connection Utility (Windows NT) (page 149) describes the process for connecting StarView directly to MicroStar.

Introduction

StarView Element Manager allows you to view your Harris radio network down to a card level from a Windows NT or Windows 2000 workstation. StarView Element Manager, customized for Harris Radio Equipment, provides real time views of your Harris radio network. You can easily navigate from the submap that defines your Harris radio network to a live view of the working components.

The Simple Network Management Protocol (SNMP) agent over the Internet Protocol (IP) provides access capability to your Harris equipment. SNMP is an open protocol which allows monitoring and controlling capability through your StarView Element Manager.

The SNMP protocol provides a flexible network-management tool common to Harris equipment that allows monitoring and controlling of radios by StarView Element Manager. SNMP provides a quick and dynamic response to alarm conditions which accelerates alarm notification and reduces polling requirements.

Within a Harris MCD radio network, SNMP can be implemented in two ways:

- Proxy agent for converting proprietary SCAN protocol to SNMP
- Embedded SNMP agent (Agent is on-board equipment)

Using the proprietary protocol by installing a proxy agent on a Windows NT or Windows 2000 computer performs three tasks:

1. Translates the proprietary protocol messages into SNMP and back
2. FarScan sequentially polls each radio on the network to obtain status information
3. Reports alarm conditions in the form of SNMP traps to StarView Element Manager

When utilizing equipment with an SNMP embedded agent, the radio software provides on-board SNMP capability.

The task of management is to provide an interface for centralized control and monitoring of network devices. The StarView Element Manager uses SNMP to poll network devices equipped with an SNMP agent. The SNMP agent resides in each element or radio on the network. The agent responds to requests from StarView Element Manager. The most common requests are:

- A **Get** request which enables the management station to retrieve the value of objects from the agent such as status or configuration information.
- A **Set** request which enables the management station to set the value of objects from the agent such as configuration parameters.
- A **Trap** message enables an agent to notify the management station of events. Trap messages are used to report unsolicited events such as alarms.

To avoid congestion of network messages that do not require immediate intervention, trap messages from a network device can be followed by "GET" requests (polling) from the StarView Element Manager for detailed alarm information. Information on networked devices are structured using the radio parameters found in the SNMP Management Information Base (MIB). The MIB is a logical representation of the network element being managed. MIBs are present at both the manager and agent sides in order for the two sides to communicate with each other.

To view your Harris equipment, select the submap that displays your Harris equipment, and then double-click the Harris equipment symbol. The Harris equipment screen appears. Each equipment screen window provides a toolbar and menu bar to navigate and access information about your Harris radio network.

FarScan SNMP Module

The FarScan SNMP Module interface provides an SNMP interface to Harris equipment by acting as a proxy agent for the StarView Element Management System. Using the SNMP Module, the user can assign IP addresses to Harris equipment found in the FarScan Equipment File list. The StarView Element Manager allows the user to send SNMP commands to Harris Equipment using the assigned IP addresses.

The SNMP module converts all SNMP requests and commands to SCAN commands and conversely converts outbound equipment based messages (traps) from SCAN to SNMP. A manager must be listed in the "allowed manager" area of the SNMP Module in order to have access to the equipment connected to FarScan. The StarView Element Management System, a community member, knows the correct access policy. For additional information on the proper use of FarScan, please reference Chapter 2.

StarView Equipment Screens

StarView Equipment Screens provide detailed configuration and status information of your Harris equipment. To view your Harris equipment, double-click the Harris radio symbol on the appropriate submap. The StarView Equipment Screen corresponding to the radio is displayed. Each equipment screen window provides a toolbar and menubar to navigate and access information about your Harris radio.

The Galaxy radio equipment screens are provided via a Java-based web interface. The following figures depict the StarView Equipment Screen main screens for CAU, Constellation, DVA, DVM6-45, MegaStar and MicroStar. The tables that follow provide a description of the Menu Options available from the StarView Equipment Screen Main Screen and the StarView Status Information located on the bottom of the Main Screen.

StarView Equipment Screen Main Screen

Above the Menu Options is the name of the node, the equipment type and the file version number. The symbols directly below the Menu Options allow traversing through the current StarView windows (back, forward, parent), a refresh of the current window and a refresh of all open windows.

Table 1: Harris Equipment Menu Bar

Click this Command	To
File	Opens File menu
Exit	Close equipment screen
Provisioning	Allows operator the ability to change settings on the equipment (SNMP set)
Configuration	Configure Equipment, Polling, and Labels Editor
Equipment	Set up Inventory Group for equipment

Table 1: Harris Equipment Menu Bar (Continued)

Click this Command	To
Polling	Set Communication time out, Retry count, Poll period, and set Automatic Object Polling for Community of SNMP agent
Label Editor	Change labels on external inputs.
View	Opens View menu
Toolbar	Toggle display of toolbar
Status Bar	Toggle display of status bar
Refresh	Refresh the current display. Discussed in more detail in next section.
Total Refresh	Refresh all views of the equipment screen. Discussed in more detail in next section
Log	Displays current log of the last polling of the network on selected equipment
Summary	List object names and their object values
Data Dialog Display	Choosing names provides the default MIB object values. Choosing labels provides an English language conversion for the object values.
Legend	Toggle the display of Alarms Legend
Equipment Screen List	List Equipment Screens for that equipment type
Window	List open windows for navigation
New Window	NoOp, reserved
Cascade	Arrange windows in workspace to overlap
Tile	Arrange windows in workspace so they do not overlap
Arrange Icons	NoOp; reserved
Help	Provide on-line Help for this Harris equipment
About Equipment Screens	Display license and version information on Harris equipment

Table 2: StarView Status Information (bottom of Main Screen)

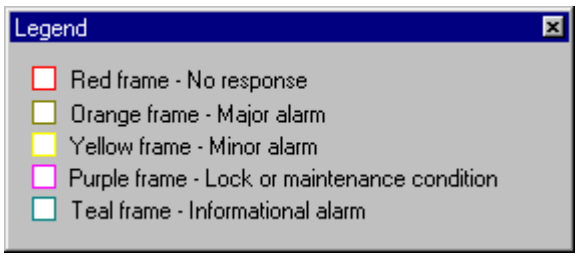
Connection Status	Indicates whether SNMP communication to the radio is Connected or Disconnected
Command Status	Indicates state of the status poll or the set request: Receiving (yellow), Completed (green), Not Completed (red).

Table 2: StarView Status Information (bottom of Main Screen)

Poll Type	Indicates whether the polling is Manual or Automatic
Lock Status	CAP, NUM, SCRL. If the words CAP, NUM, SCRL are visible then the operator has CAP lock, NUM lock and/or Scroll lock active on the keyboard.

The color legend used for the Equipment Screens corresponds to the higher level StarView Alarm Browser colors. Select **Display Legend** from the Help index to learn more about these symbols and status colors.

Legend



StarView provides a graphical representation of alarm indicators by placing a colored box around the item in alarm. This colored box is hierarchical in nature. For example, an operator viewing the highest level view (radio icon) would see the radio icon surrounded by yellow. Further traversing the hierarchy by double-clicking on the icon shows a rack view of the radio with a yellow box around the radio. This hierarchy continues down to the field replaceable unit for those radios with multiple view capability.

The next few paragraphs provide examples of the following Harris equipment: Aurora, CAU, Constellation, DVA, DVM, Galaxy, MegaStar and MicroStar.

Refresh and Total Refresh

StarView provides the ability to perform a **Refresh** or a **Total Refresh** of the MIB objects that provide information to the Equipment Screens.

Each radio type has an associated *radio_type.ini* file (for example microstar.ini). This file is located in the MCD_Equipment_Screens*radio_type* directory. This file contains polled MIB values and a section named LIFETIME. This LIFETIME section has associated time out values for these polled MIB values.

When the Equipment Screen is first brought up, StarView polls for information. The returned information is stored in the *radio_type.ini* file and provides data to the Equipment Screens.

When a **Total Refresh** is performed, a complete poll of all MIB objects is performed. The *radio_type.ini* file is updated with this information and the Equipment Screen is updated with this information. Because a **Total Refresh** polls for all MIB objects, the time period for the completion of this task may vary based on network configuration.

When a **Refresh** is performed, StarView looks in the *radio_type.ini* file and looks in the LIFETIME section of the file for the time-out values associated with the MIB objects. The only objects polled are those objects whose time out value has expired. The *radio_type.ini* file is updated with the values associated with these polled objects. If the polled information has not timed out, the previous value existing in the *radio_type.ini* file remains unchanged. Therefore, the Equipment Screens can be updated with:

1. All new information (all time-outs have expired)
2. Previously stored information (no time-outs have expired)
3. A combination of new and previously stored information.

Because a **Refresh** only polls for some MIB objects, the amount of time required for updated information is quicker than that of a **Total Refresh**.

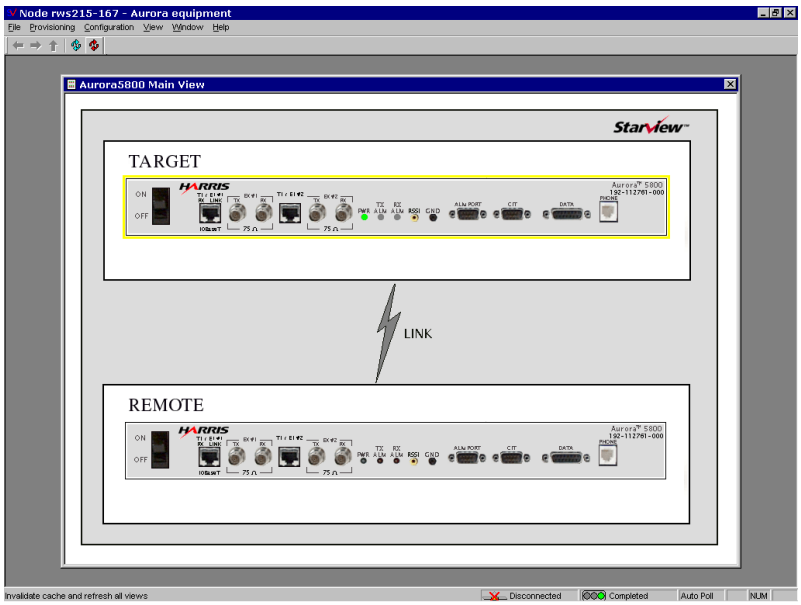
The time-out period associated with each MIB object may be changed to accommodate the end-user's needs. The default for most MIB objects is sixty seconds. This can be tuned to a smaller interval. The user must realize that decreasing this interval may increase the amount of time required for an update because of the number of objects polled. The time-out associated with configuration items (such as software version number) is set to NEVER. NEVER may be used for those MIB objects that will not change.

Aurora Equipment Screens

The Aurora family of radios is a series of spread spectrum microwave radios used in small communications networks or as spurs in large networks. StarView communicates with the Aurora radios through the use of an SNMP Proxy agent. The proxy agent is composed of FarScan, SNMP Module and the SCAN database. There is one Equipment

Screen associated with the Aurora radio. For additional information on the Aurora radios please refer to the Aurora 5800 or Aurora 2400 equipment manuals. An example Equipment Screen of the Aurora 5800 is provided.

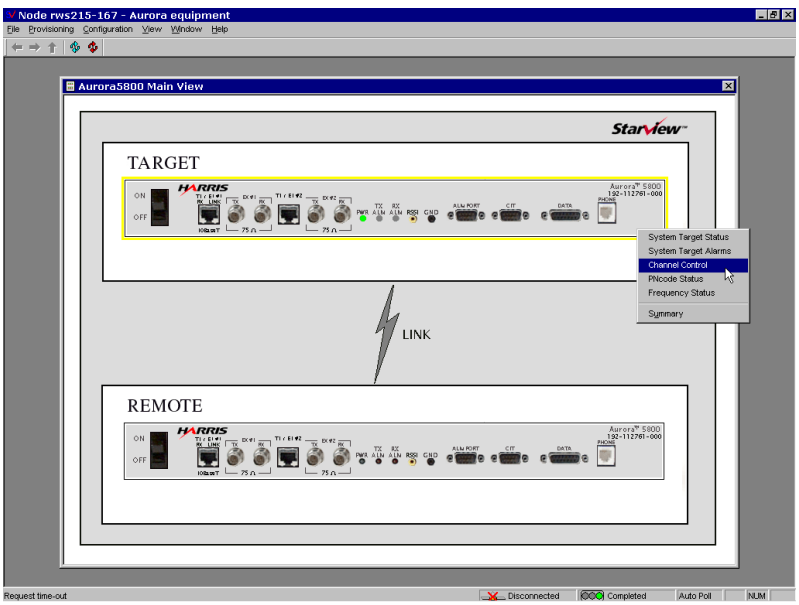
Aurora Equipment - Main View



NOTE

Harris Aurora equipment requires installation of FarScan for Windows and proxy agent SNMP Module.

Aurora Equipment - Right Click

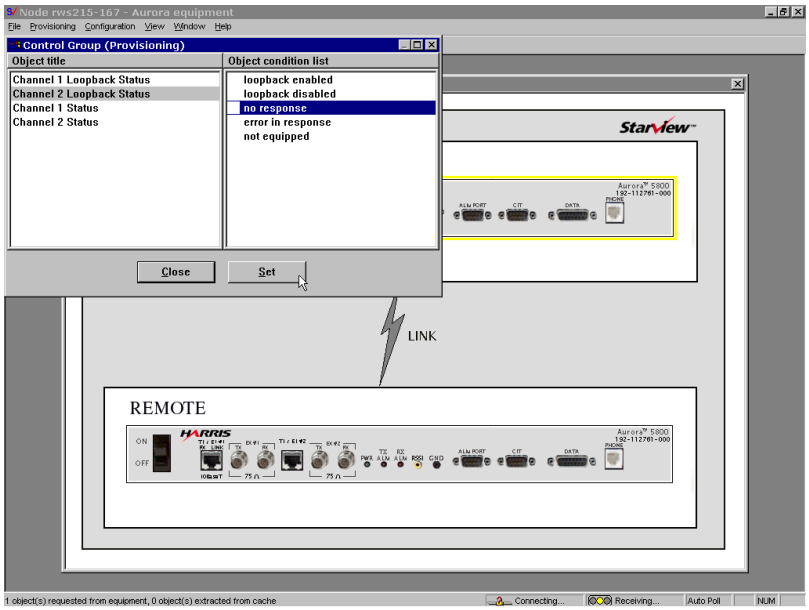


Right clicking on the pictorial representation of the radio provides status information for the Aurora radio.

Table 3: Aurora Equipment - Right Click

Click this command	To
System Target Status	View and set objects in the System Group
System Target Alarms	View and set objects in the Alarm Group
Channel Control	View and set objects in the Channel Control Group
PN Code Status	View and set objects in the PNCode Group
Frequency Status	View and set objects in the Frequency Group
Summary	List object names and their object values. This is the same as selecting View -> Summary.

Aurora Equipment - Control Group



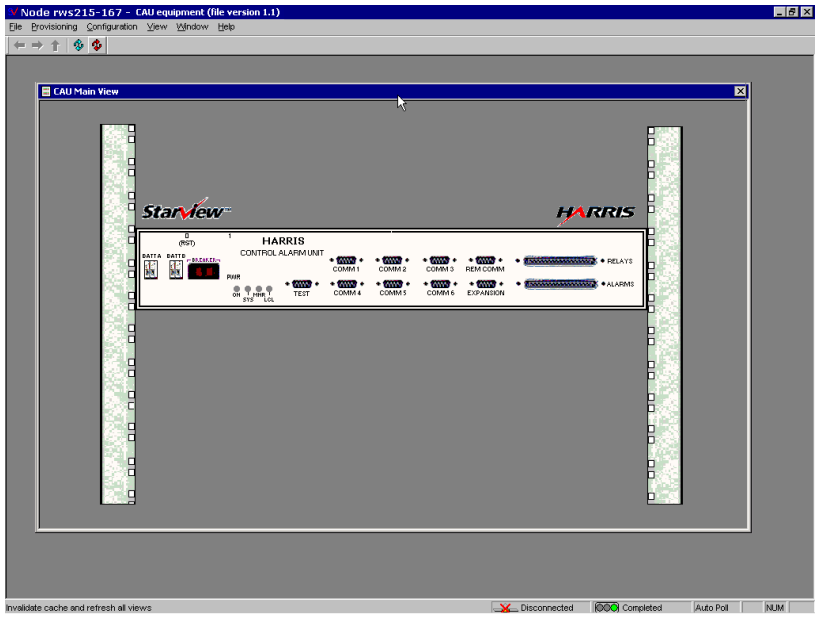
The picture above provides an example of selecting **Provisioning** from the Menu Options. By selecting **Channel 2 Loopback Status** under the Object Title, the list of valid values appears under the Object condition list. By selecting a value, no response, and then clicking the **Set** button, a set command is sent to the radio. If successful, a check mark appears by the object condition. The top section of the RFU houses the Power Amplifiers and Receivers. The lower portion houses the Transmitters and the RFU Fans.

CAU Equipment Screens

StarView communicates with the CAU equipment through the use of a proxy SNMP agent. The proxy agent is composed of FarScan, SNMP Module and the SCAN database. There is one Equipment Screen associated with the CAU.

The following picture represents the Main View for the CAU.

CAU Equipment - Main View



NOTE

Harris CAU equipment requires installation of FarScan for Windows and proxy agent SNMP Module.

CAU Equipment - Right Click

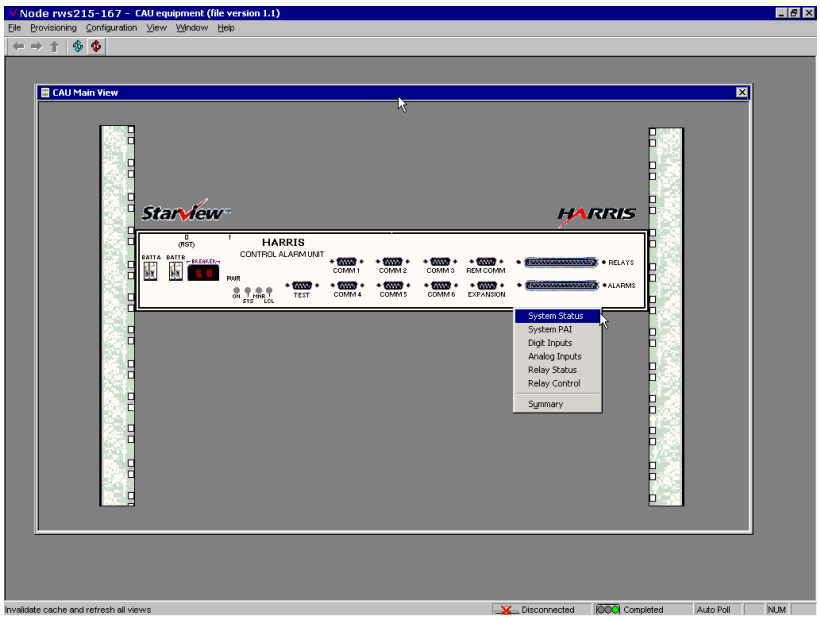
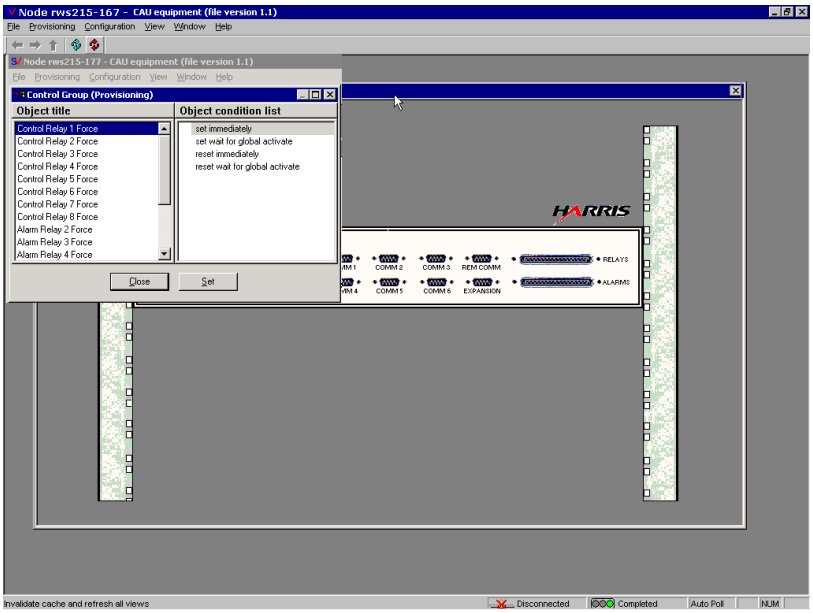


Table 4: CAU Equipment - Right Click

Click this command	To
System Status	View and set objects in the System Group
System PAI	View and set objects in the System PAI Group
Digit Inputs	View and set objects in the Digit Inputs Group
Analog Inputs	View and set objects in the Analog Inputs Group
Relay Status	View and set objects in the Relay Status Group
Relay Control	View and set objects in the Relay Control Group
Summary	List object names and their object values. This is the same as selecting View -> Summary.

CAU Equipment - Provisioning



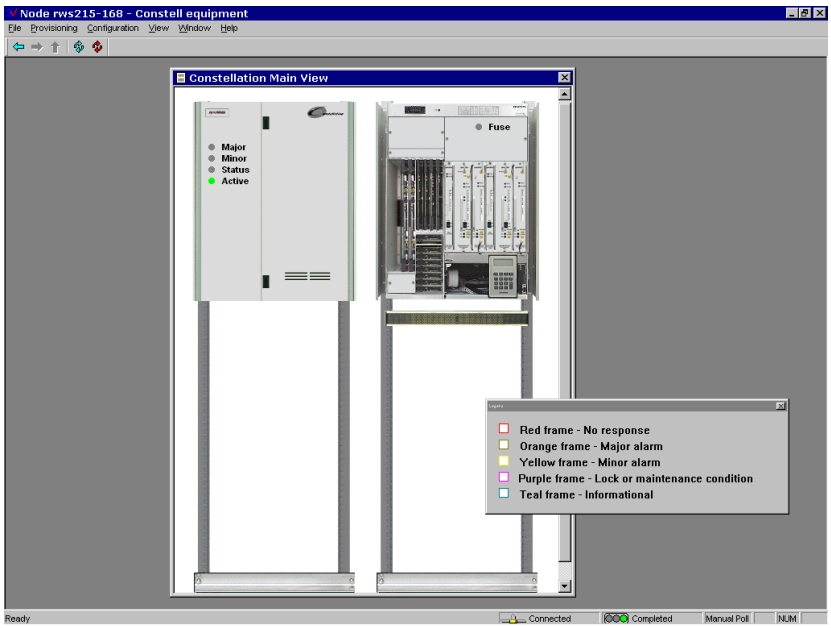
Control Provisioning allows the operator to change the SNMP Configuration of the radio by performing SNMP sets. This is accomplished by selecting an object in the **Object title** column, a valid command in the **Object configuration** column, and then clicking the **Set** button. Note that the Command Status at the bottom of the StarView Equipment Screen Main Screen indicates **Receiving** until the command has completed. If the command is successful, a red check mark appears beside the selected Object configuration command.

Constellation Equipment Screens

The Constellation radio is a low-to-medium range capacity digital microwave radio. StarView communicates with the Constellation radio through the use of an embedded SNMP agent. In addition, there is a Proxy agent for Constellation with supported Equipment Screens. There are four Equipment Screens associated with the Constellation radio. For additional information on the Constellation radio, please reference the Constellation equipment manual.

The following picture represents the Main View for Constellation.

Constellation Equipment - Main View



Constellation Equipment - Right Click

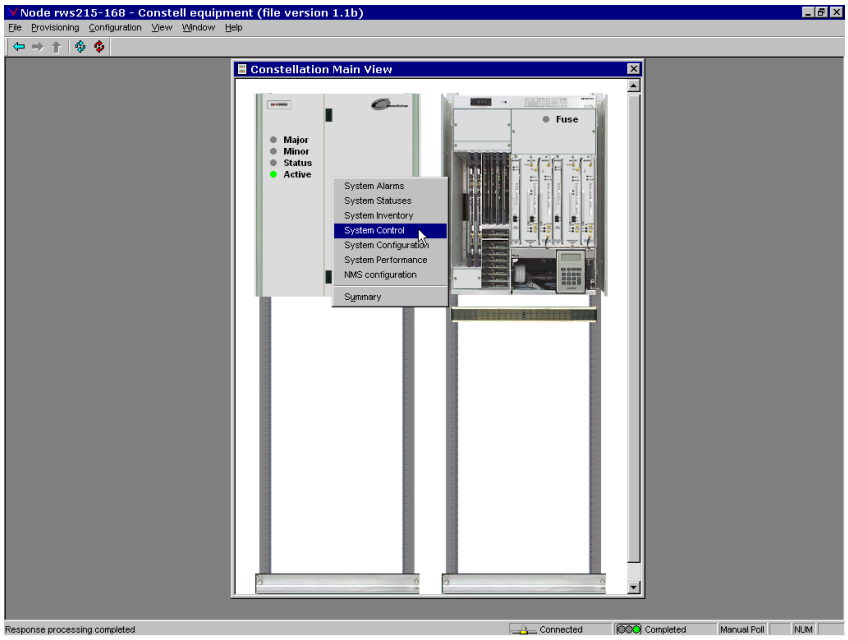


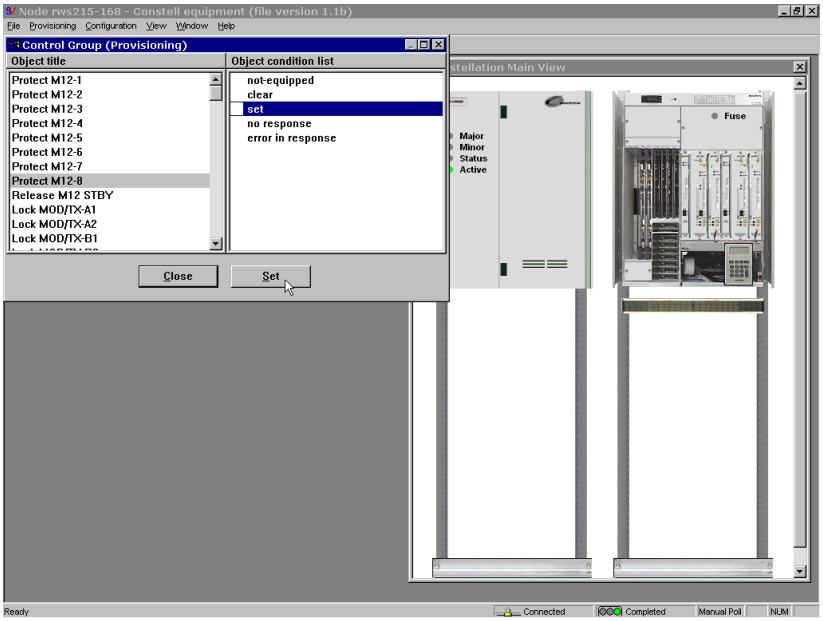
Table 5: Constellation Equipment - Right Click

Click this command	To
System Alarms	View and set objects in the System Group

Table 5: Constellation Equipment - Right Click

Click this command	To
System Statuses	View and set objects in the System Statuses Group
System Inventory	View and set objects in the System Inventory Group
System Control	View and set objects in the System Control Group
System Configuration	View and set objects in the System Configuration Group
System Performance	View and set objects in the System Performance Group
NMS Configuration	List object names and their object values. This is the same as selecting View -> Summary.

Constellation Equipment - Provisioning

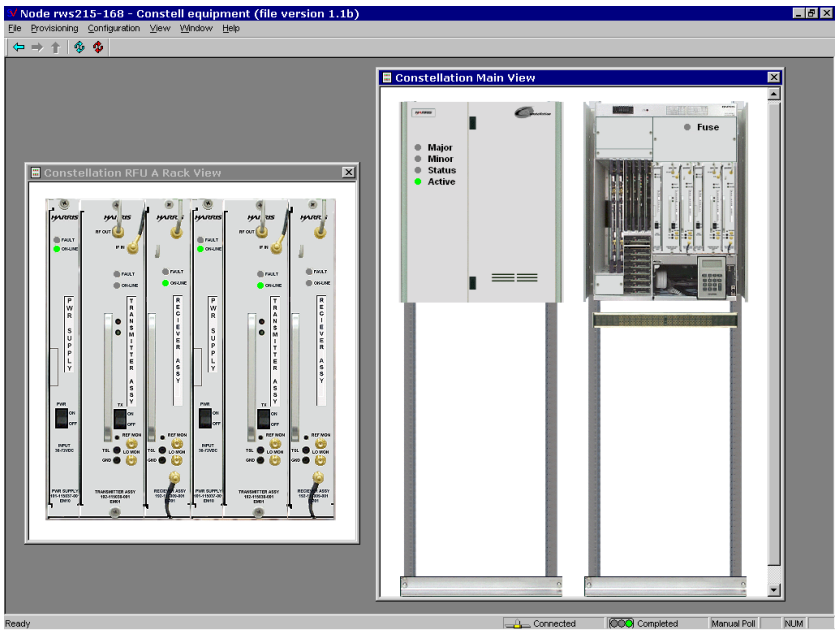


Control Provisioning allows the operator to change the SNMP Configuration of the radio by performing SNMP sets. This is accomplished by selecting an object in the **Object title** column, a valid command in the **Object configuration** column, and then clicking the **Set** button. Note that the Command Status at the bottom of the StarView Equipment Screen Main Screen indicates **Receiving** until the command has completed. If the command is successful, a red check mark appears beside the selected Object configuration command.

Constellation Radio Frequency Unit (RFU)

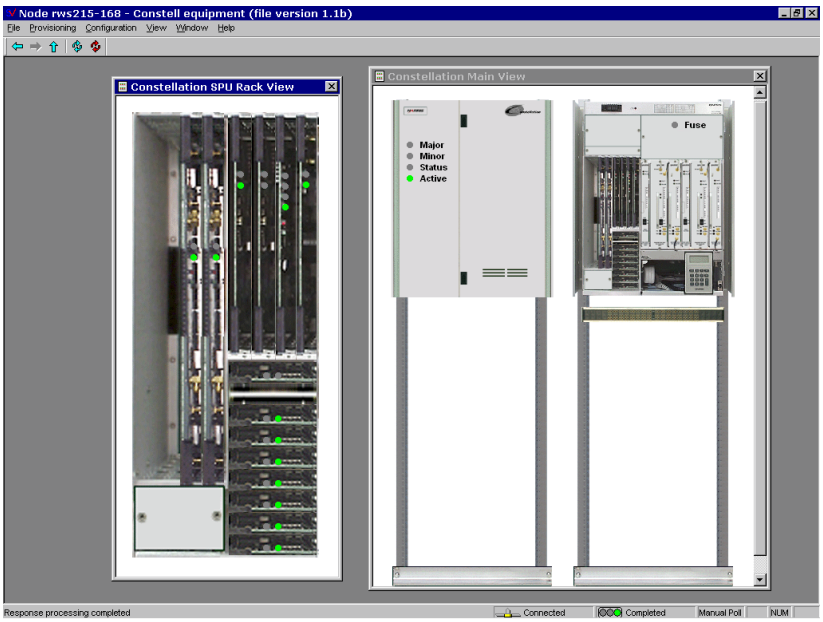
In a non-protected unit there is one RFU. In a protected unit, there are two RFUs. RFUb acts as backup in case the (primary) RFUa fails. The following picture shows both the Constellation Main View and Constellation RFU screens.

Constellation Equipment - RFU Rack



Constellation Signal Processing Unit (SPU)

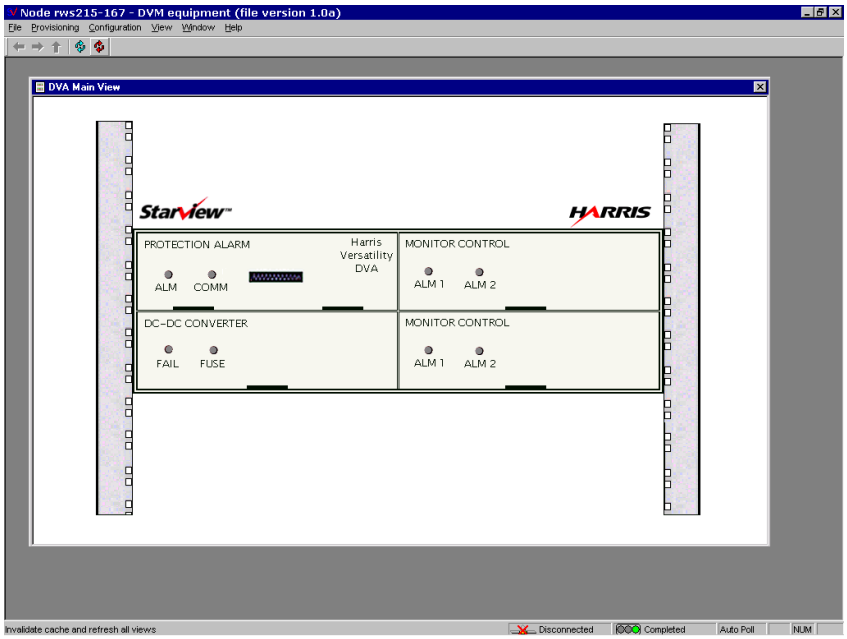
Constellation Equipment - SPU



DVA Equipment Screens

StarView communicates with the DVA equipment through the use of an SNMP Proxy agent. The proxy agent is composed of FarScan, SNMP Module and the SCAN database. There is one Equipment Screen associated with the DVA radio.

DVA Equipment - Main View



NOTE

DVA equipment requires installation of FarScan for Windows and proxy agent SNMP Module.

DVA Equipment - Right Click

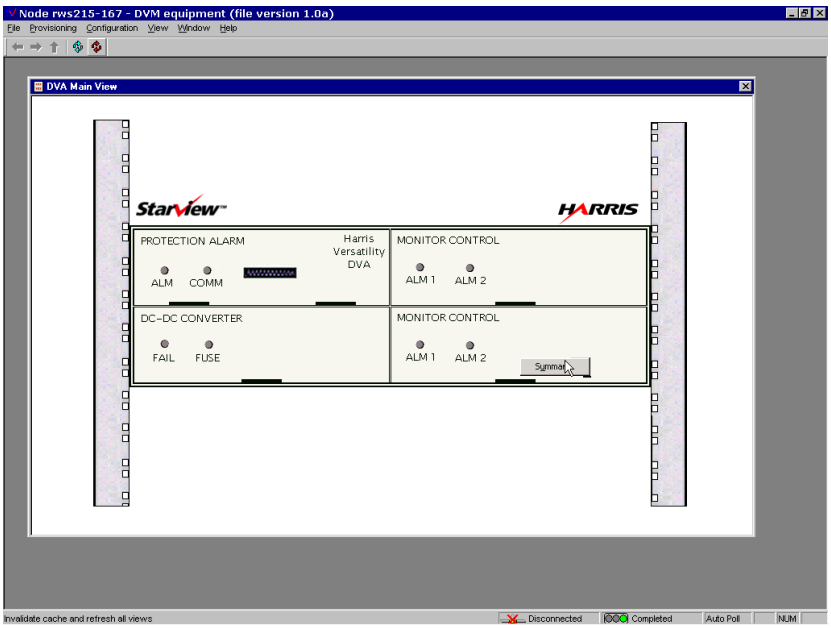
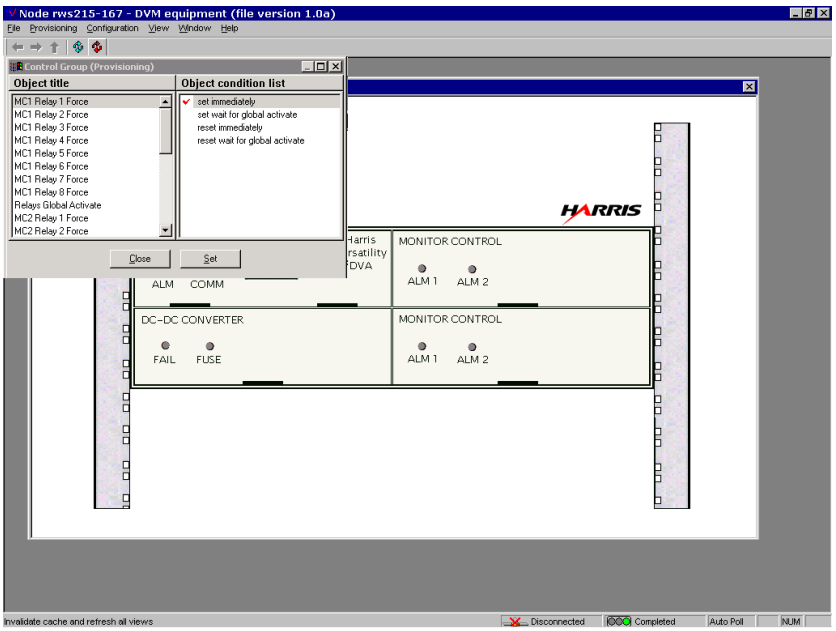


Table 6: DVA Equipment - Right Click

Click this command	To
Summary	List object names and their object values. This is the same as selecting View -> Summary.

DVA Equipment - Control Provisioning

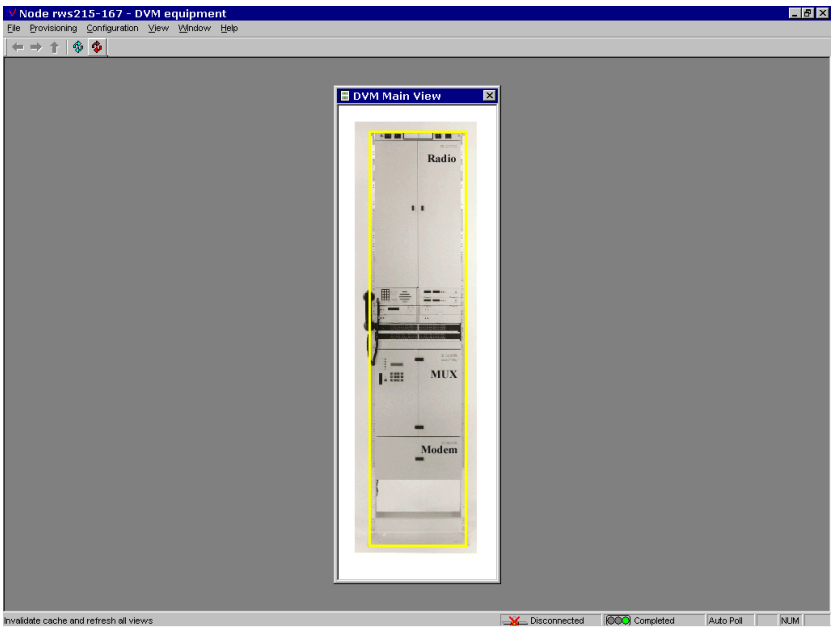


Control Provisioning allows the operator to change the SNMP Configuration of the radio by performing SNMP sets. This is accomplished by selecting an object in the **Object title** column, a valid command in the **Object configuration** column, and then clicking the **Set** button. Note that the Command Status at the bottom of the StarView Equipment Screen Main Screen indicates **Receiving** until the command has completed. If the command is successful, a red check mark appears beside the selected Object configuration command.

DVM6-45 Equipment Screens

StarView communicates with the DVM radio through the use of an SNMP Proxy agent. The proxy agent is composed of FarScan, SNMP Module and the SCAN database. There is one Equipment Screen associated with the DVM radio.

DVM6-45 Equipment - Main View



NOTE

DVM6-45 equipment requires installation of FarScan for Windows and proxy agent SNMP Module.

DVM6-45 Equipment - Right Click

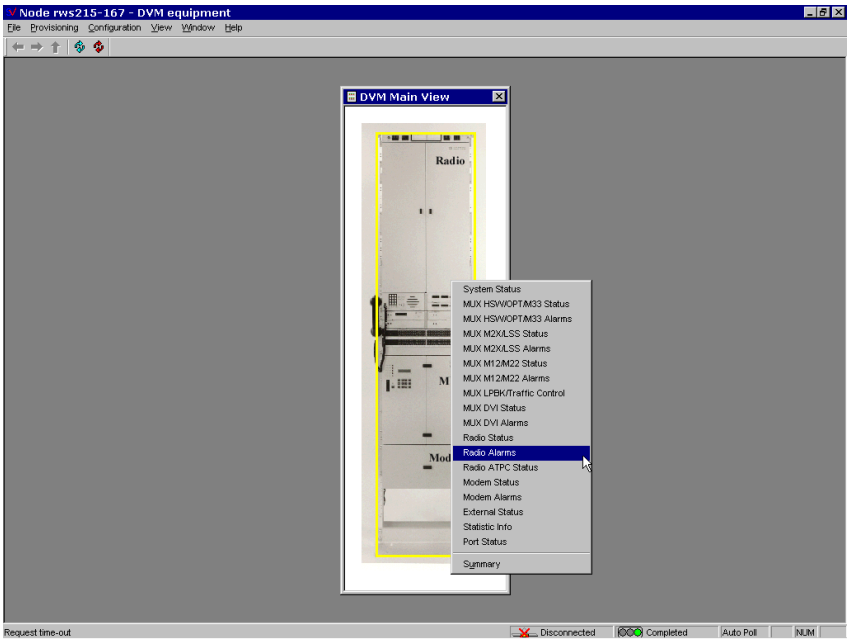


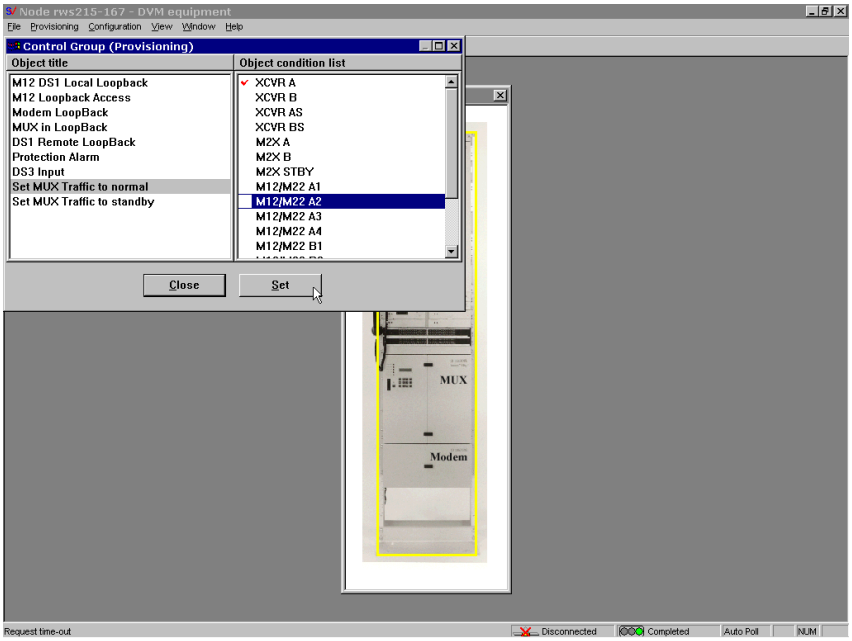
Table 7: DVM6-45 Equipment - Right Click

Click this command	To
MUX HSW/OPT/M33 Status	View and set object in the HSW, OPT and M33 Groups
MUX/HSW/OPT/M33 Alarms	View alarms in the HWS, OPT and M33 Groups
MUX M2X/LSS Status	View and set objects in the MX2 and LSS Groups
MUX MX2/LSS Alarms	View alarms in the MX2 and LSS Groups
MUX M12/M22 Status	View and set objects in the M12/M22 Groups
MUX M12/M22 Alarms	View alarms in the M1/M22 Group
MUX LPBK/Traffic Control	List object names and their object values. This is the same as selecting View -> Summary.
MUX DV1 Status	View and set objects in the MUX DV1 Group
MUX DV1 Alarms	View alarms in the MUX DV1 Group
Radio Alarms	View and set objects in the Radio Group
Radio ATPC Status	View and set objects in the Radio ATPC Group

Table 7: DVM6-45 Equipment - Right Click (Continued)

Click this command	To
Modem Status	View and set objects in the Modem Group
Modem Alarms	View objects in the Modem Alarms Group
External Status	View and set objects in the External Group
Statistic Info	View and set objects in the Statistical Info Group
Port Status	View and set objects in the Port Group
Summary	List object names and their object values. This is the same as selecting View -> Summary.

DVM6-45 Equipment - Control Group

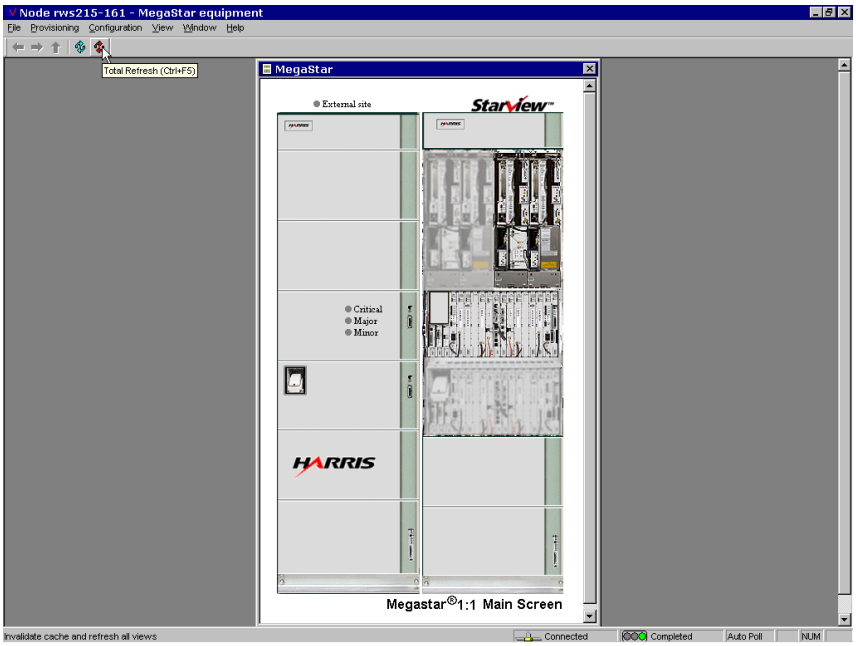


Control Provisioning allows the operator to change the SNMP Configuration of the radio by performing SNMP sets. This is accomplished by selecting an object in the **Object title** column, a valid command in the **Object configuration** column, and then clicking the **Set** button. Note that the Command Status at the bottom of the StarView Equipment Screen Main Screen indicates **Receiving** until the command has completed. If the command is successful, a red check mark appears beside the selected Object configuration command.

MegaStar Equipment Screens

StarView communicates with the MegaStar 1+1 and the MegaStar 1:N radios through the use of an SNMP Proxy agent. The proxy agent is composed of FarScan, SNMP Module and the SCAN database. There are three Equipment Screens associated with the MegaStar radios. For additional information on the MegaStar radio, please reference the MegaStar equipment manual.

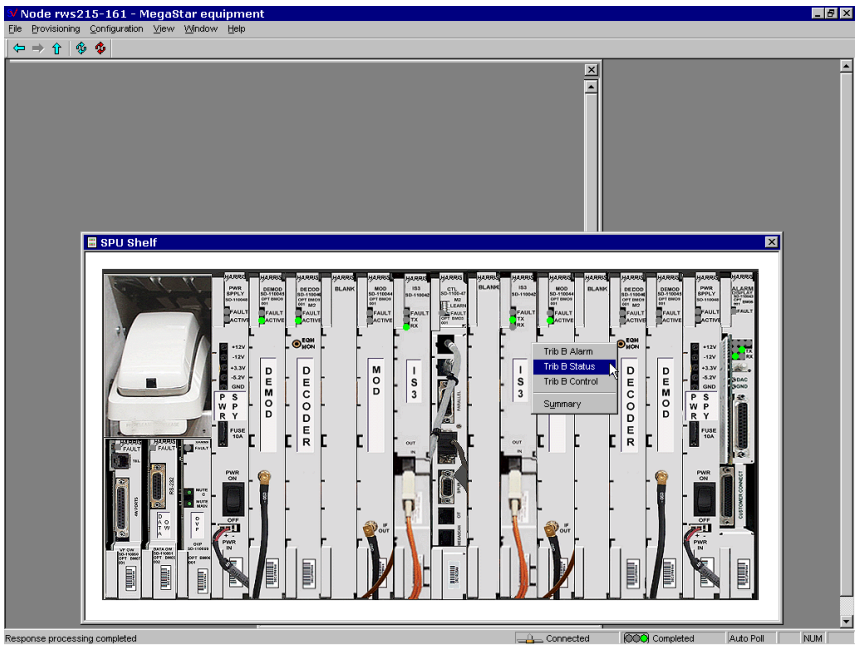
MegaStar Equipment - Main View



NOTE

Harris Megastar equipment requires installation of FarScan for Windows and proxy agent SNMP Module.

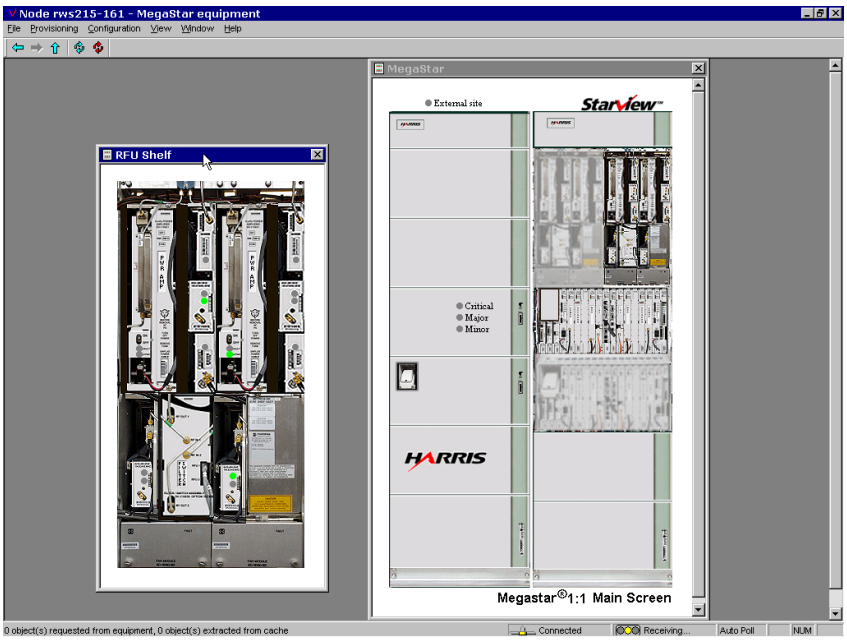
MegaStar Equipment - Signal Processing Unit (SPU) Shelf



List of cards on SPU Shelf from left to right:

1 - Data Orderwire
2 - VF Orderwire
3 - Overhead Processor
4 - DC-DC Converter
5 - Demodulator
6 - Decoder
7 - Reserved for future use
8 - Modulator
9 - Tributary Interface
10 - SPU Controller
11 - Switch Interface
12 - Tributary Interface
13 - Modulator
14 - Reserved for future use
15 - Decoder
16 - Demodulator
17 - DC-DC Converter
18 -Alarm Display

MegaStar Equipment - Radio Frequency Unit (RFU) Shelf



Radio Frequency Unit (RFU)

The RFU occupies 14 RMS on the equipment rack. The plug-in subassemblies connect with other subassemblies via the backplane and/or coaxial cables.

One RFU takes up one-half the width of the equipment rack and houses one or two transmitters and receivers. Two RFUs can be equipped side-by-side within the MegaStar rack.

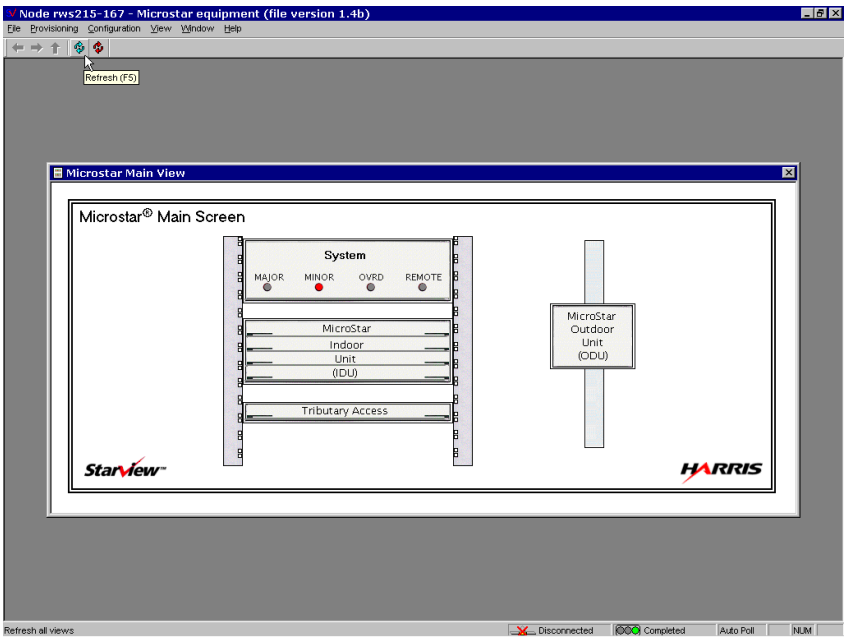
The top section of the RFU houses the Power Amplifiers and Receivers. The lower portion houses the Transmitters and the RFU Fans.

See your MegaStar equipment manual for more information.

MicroStar Equipment Screens

StarView communicates with the MicroStar radio though the use of an embedded SNMP agent. Although there is a Proxy agent for the MicroStar, there are currently no Equipment Screens that support the Proxy agent. There are four Equipment Screens associated with the MicroStar radio. MicroStar radios require a conversion of SNMP/PPP to SNMP/UDP. This may be accomplished through the use of a terminal server or through the use of the MicroStar PPP Conversion Utility. This section provides examples of the Equipment Screens and the two methods to provide PPP to UDP conversion.

MicroStar Equipment - Main View



MicroStar Equipment - Right Click

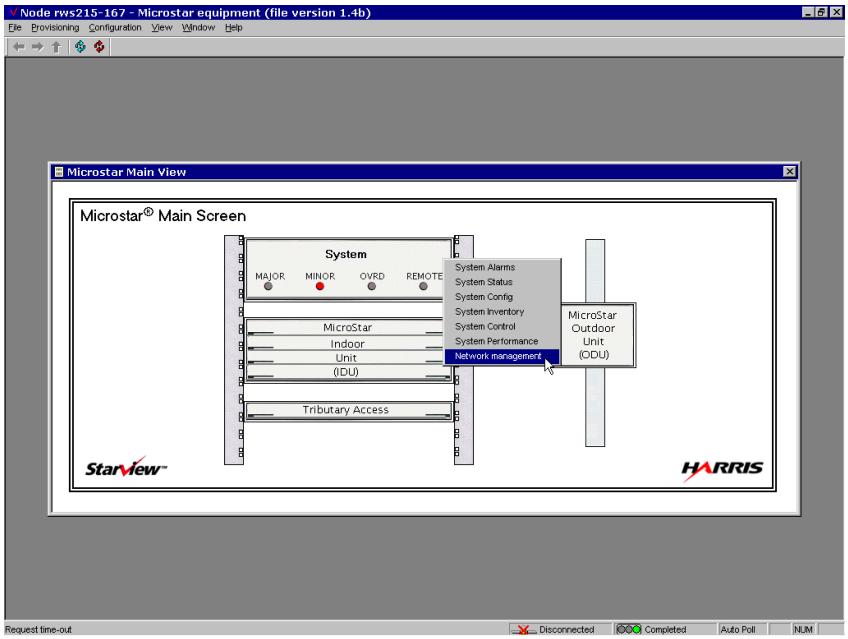
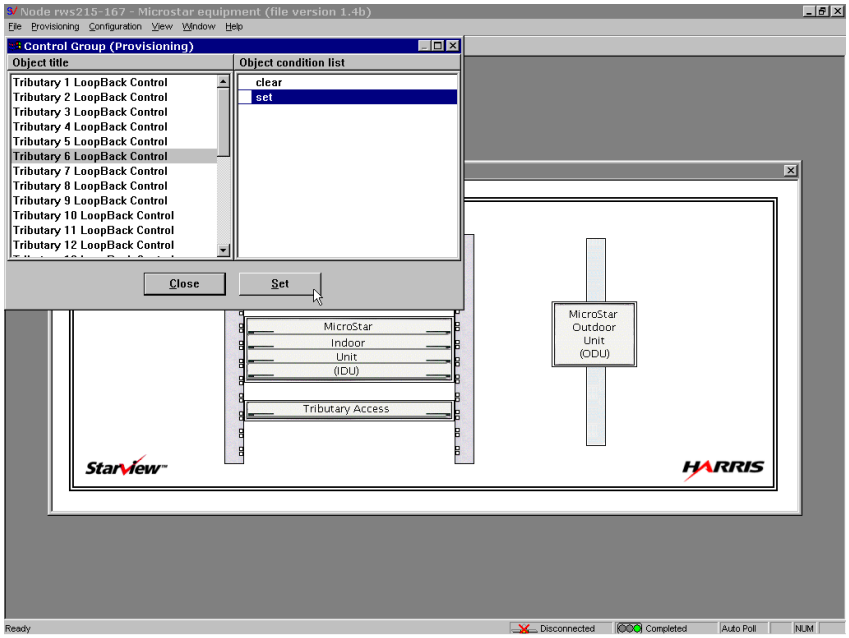


Table 8: MicroStar Equipment - Right Click

Click this command	To
System Alarms	View and set objects in the Alarms Group
System Status	View and set objects in the System Group
System Config	View and set objects in the System Config Group
System Inventory	View and set objects in the System Inventory Group
System Control	View and set objects in the System Control Group
System Performance	View and set objects in the System Performance Group
Network Management	List object names and their object values. This is the same as selecting View -> Summary.

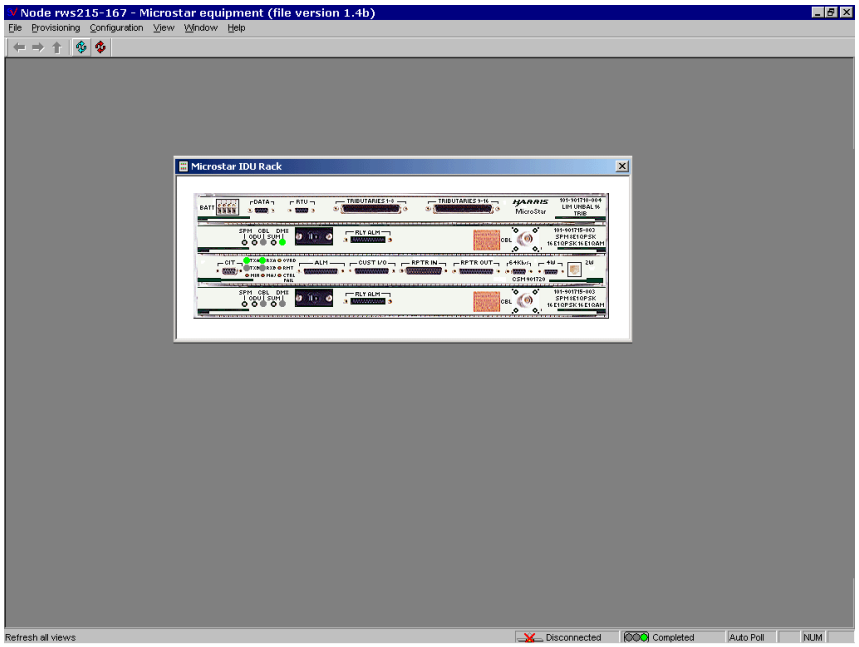
MicroStar Equipment - Provisioning



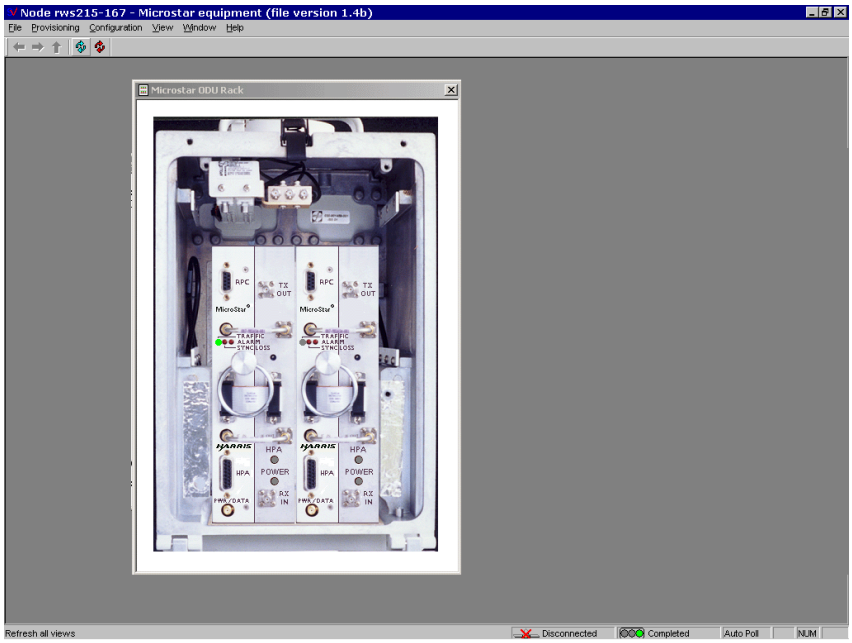
Control Provisioning allows the operator to change the SNMP Configuration of the radio by performing SNMP sets. This is accomplished by selecting an object in the **Object title** column, a valid command in the **Object configuration** column, and then clicking the **Set** button. Note that the Command Status at the bottom of the StarView Equipment Screen Main Screen indicates **Receiving** until the command has completed. If the command is successful, a red check mark appears beside the selected Object configuration command.

The MicroStar IDU Rack View, MicroStar ODU Rack VIew, and MicroStar Tributary Access View can be reached by double-clicking on the respective component in the MicroStar Main View. The pictorial representation for each View follows.

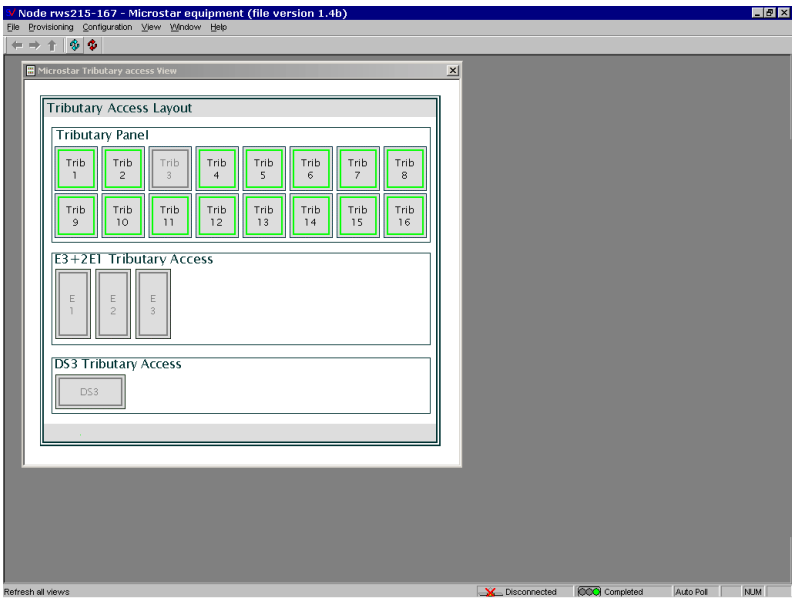
MicroStar IDU Rack



MicroStar ODU Rack View



MicroStar Tributary Access View

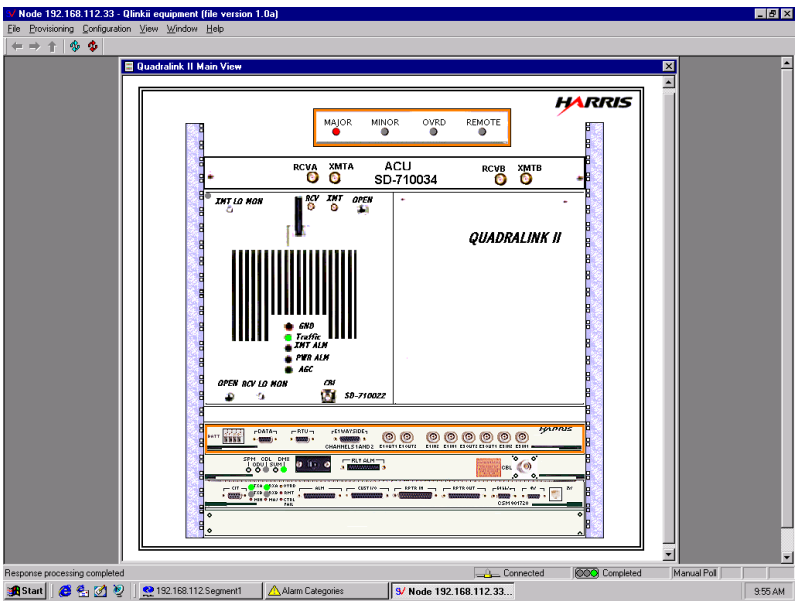


Quadralink II Equipment Screens

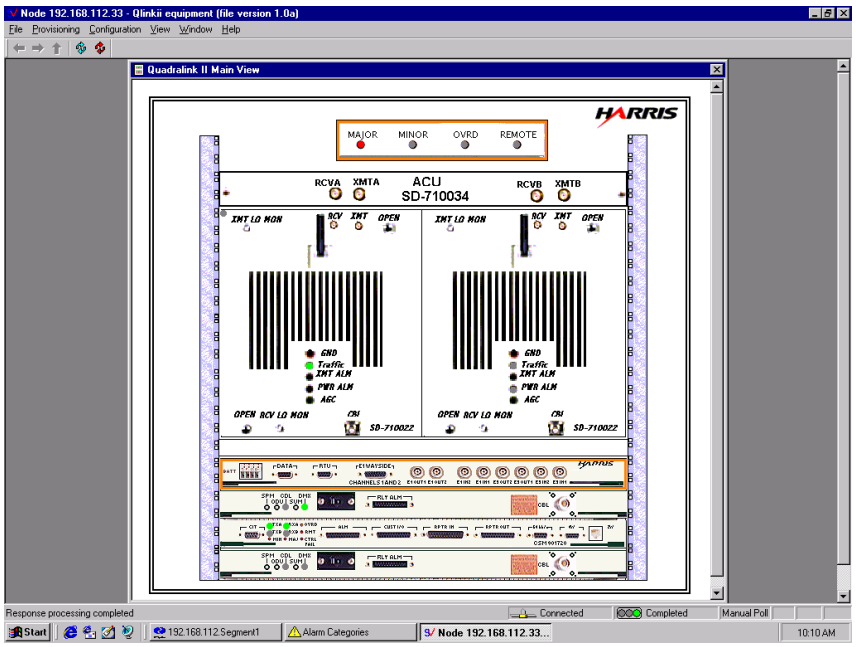
StarView communicates with the Quadralink II equipment through the use of a proxy SNMP agent. The proxy agent is composed of FarScan, SNMP Module and the SCAN database. There is one Equipment Screen associated with the Quadralink II. The Quadralink II may have a repeater configuration.

The following picture represents the Main View for the Quadralink II.

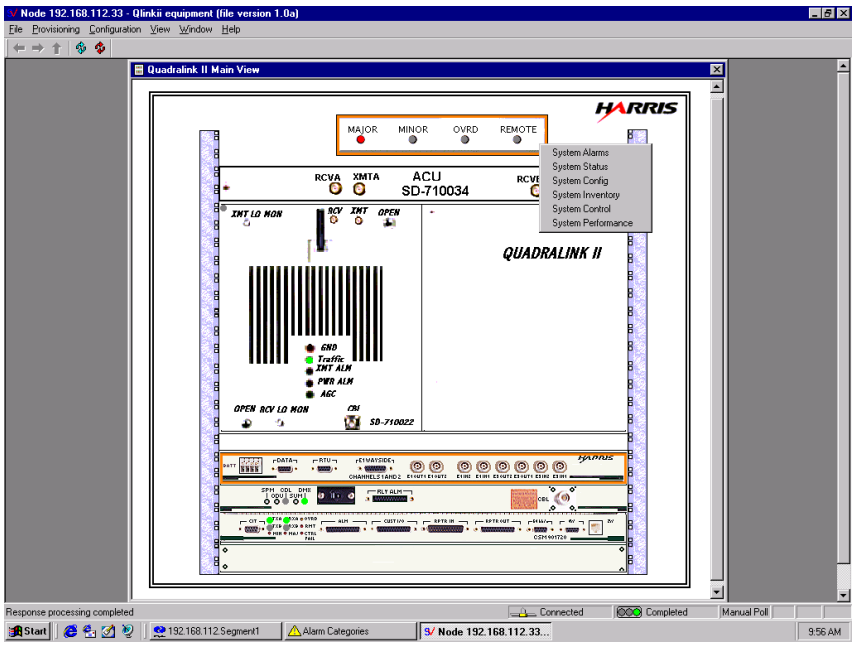
Quadralink II Equipment - Main View



Quadralink II Equipment (Repeater) - Main View



Quadralink II - Right Click



The right click options for the Quadralink II are the same for the repeater configuration.

Table 9: Quadralink II Equipment - Right Click

Page Name	Purpose
System Alarms	View and set objects in the System Group

Table 9: Quadralink II Equipment - Right Click

Page Name	Purpose
System Status	View and set objects in the System Statuses Group
System Config	View and set objects in the System Configuration Group
System Inventory	View and set objects in the System Inventory Group
System Control	View and set objects in the System Control Group
System Performance	View and set objects in the System Performance Group

Galaxy Equipment Screens

The Galaxy radios include an Outdoor Unit (ODU) and an Access Interface Unit (AIU). StarView communicates with the Aurora radios by use of an embedded SNMP agent. The ODU and AIU are represented by separate icons on the StarView map. When the operator double-clicks the ODU and/or AIU icon, StarView launches the Microsoft Internet Explorer web-browser. The User Authentication Screen appears. Once the user has been approved, access to the web based Equipment Screens is allowed. For additional information on the Galaxy radios, please reference the Galaxy equipment manual.

The following pages are provided by the Galaxy web interface.

Table 10: Galaxy Web Pages

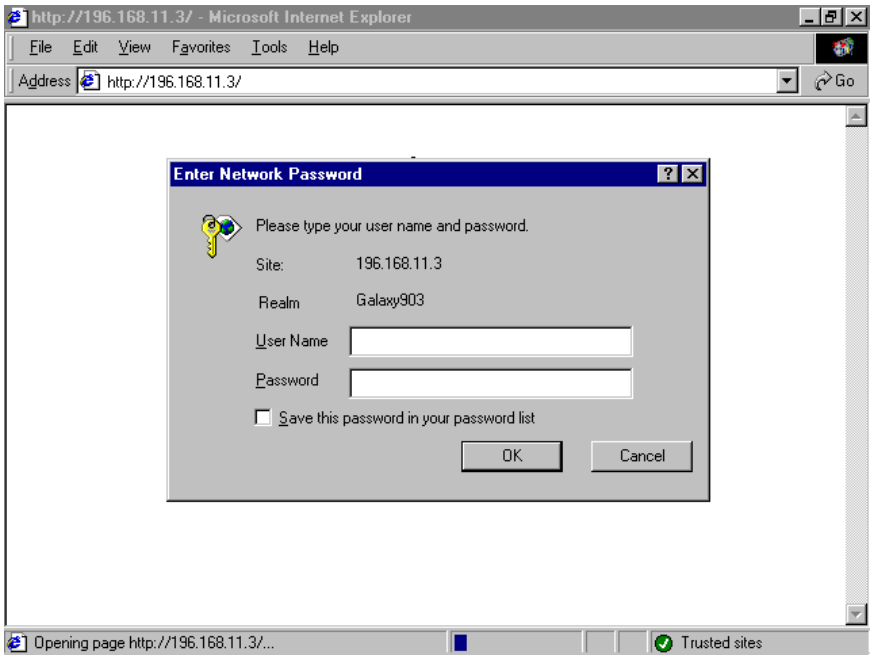
Page Name	Purpose
User Authentication	Allows access to the Galaxy Web Pages. This page is reached when the user double-clicks the Galaxy radio icon.
Alarm & Status	Displays the status of the radio and lists alarms
Control	Provides loopback options and transmitter muting
Performance	.Allows Control of performance information
Inventory	Provides parts, numbers and revisions and software versions
System Configuration	Provides options for configuring the system
NMS Configuration	Allows configuration of the NMS channel capacity
IP Configuration	Lists the IP addresses for Netcom and wireless interfaces and for static routers.
SNMP Configuration	LIsts allowed managers and provides trap and setting options

Table 10: Galaxy Web Pages

Page Name	Purpose
Wireless Configuration	Lists the authentication options

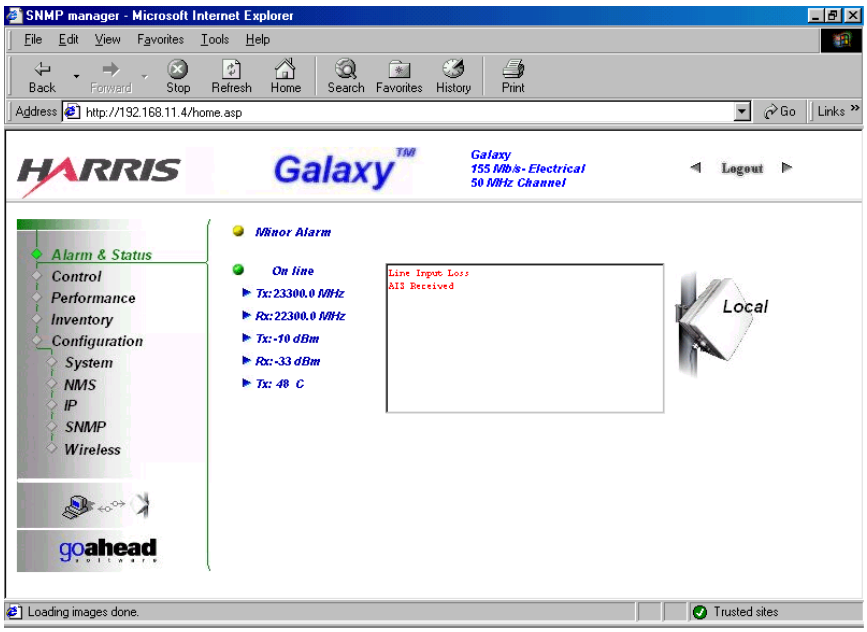
User Authentication

Galaxy User Authentication



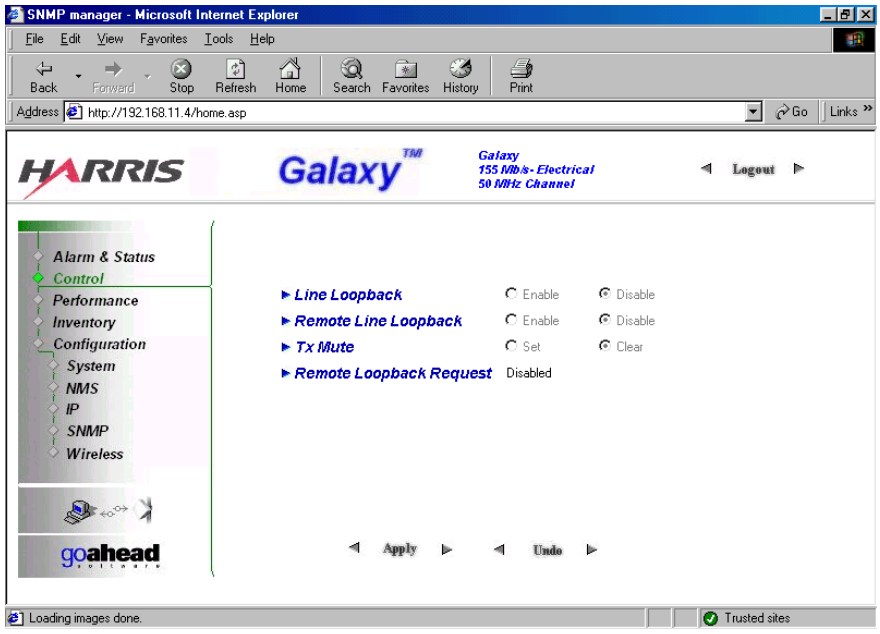
Alarm and Status

Galaxy Alarm & Status Page



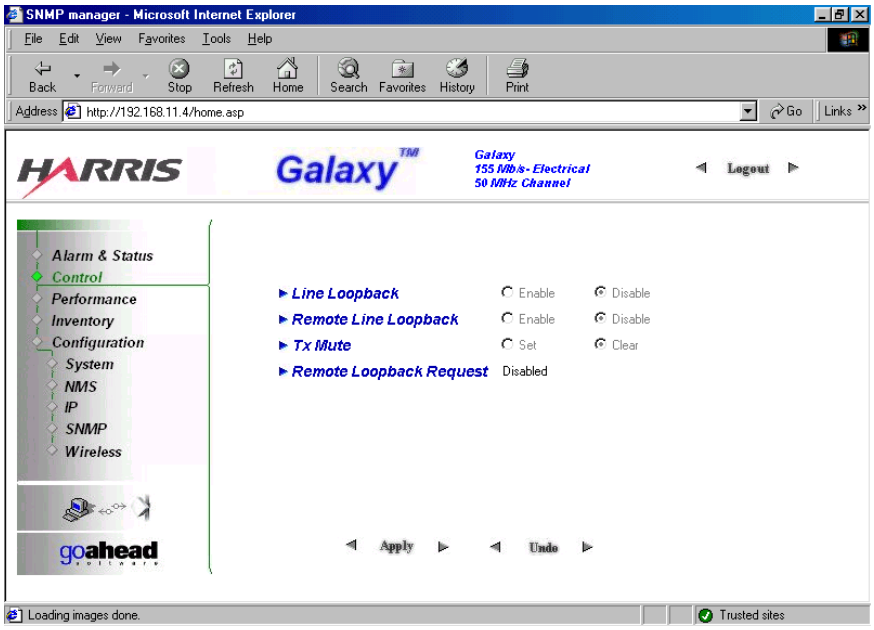
Control

Galaxy Control Page



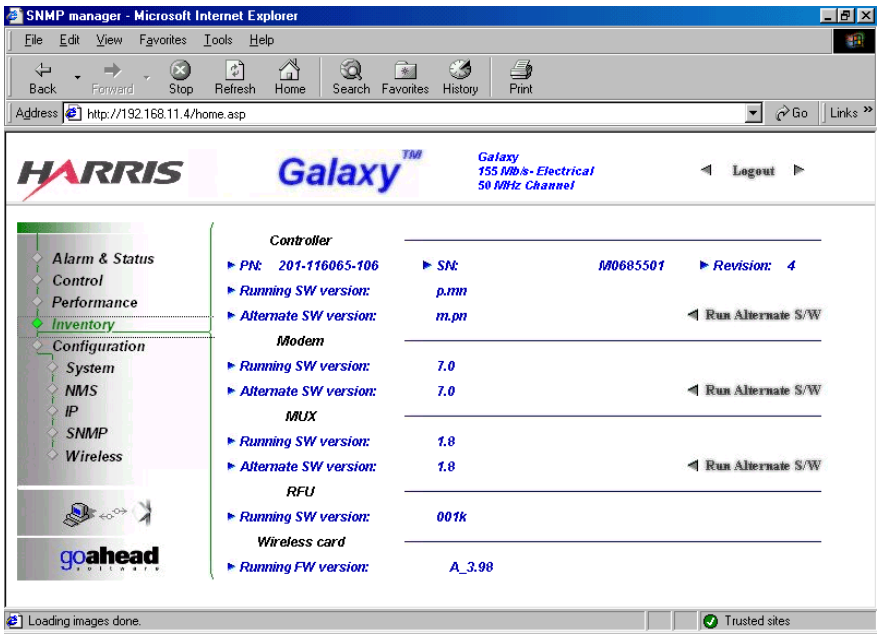
Performance

Galaxy Performance Page



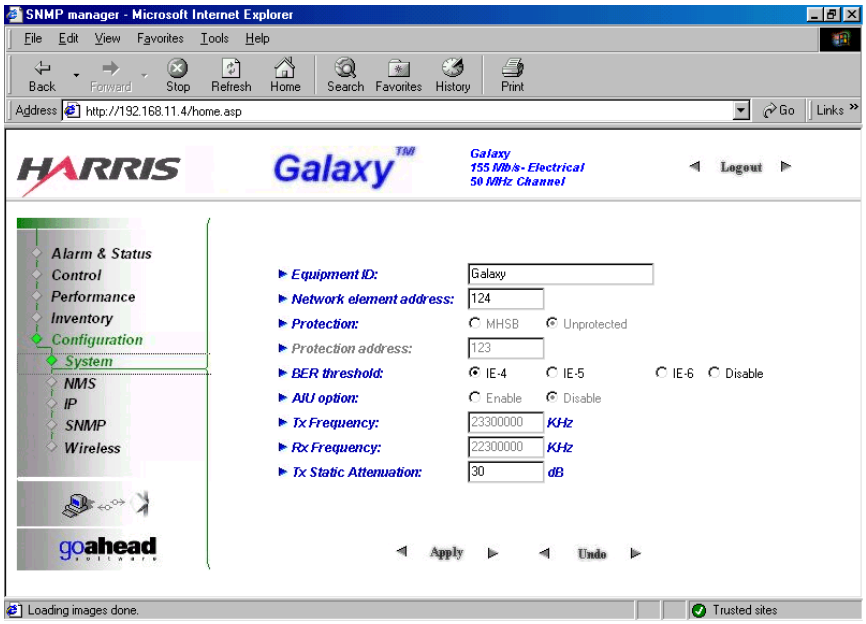
Inventory

Galaxy Inventory Page



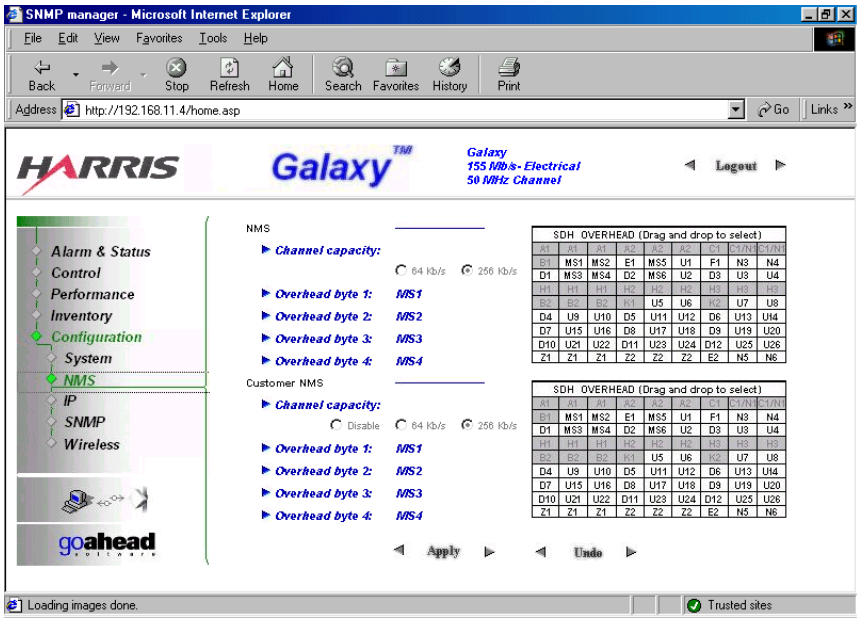
System Configuration

Galaxy System Configuration Page



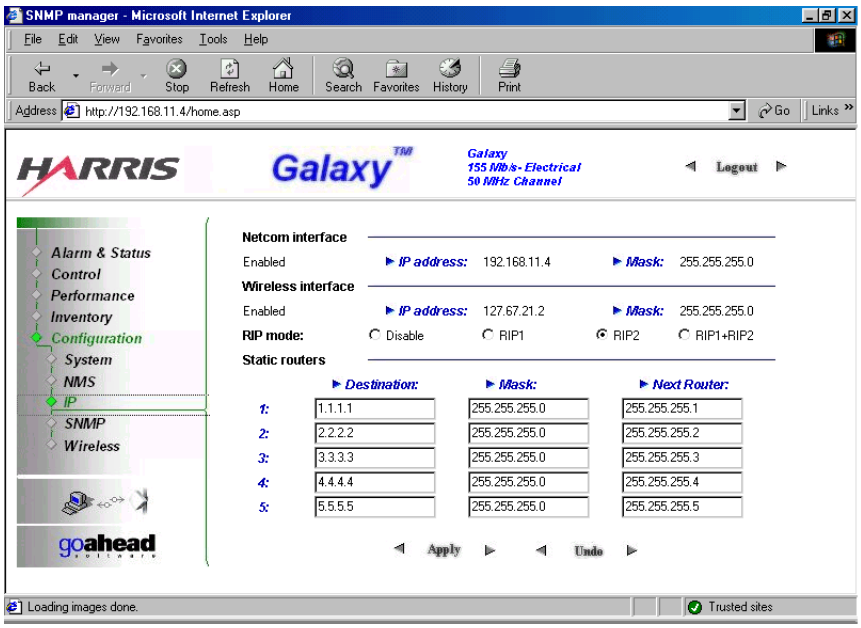
NMS Configuration

Galaxy NMS Configuration Page



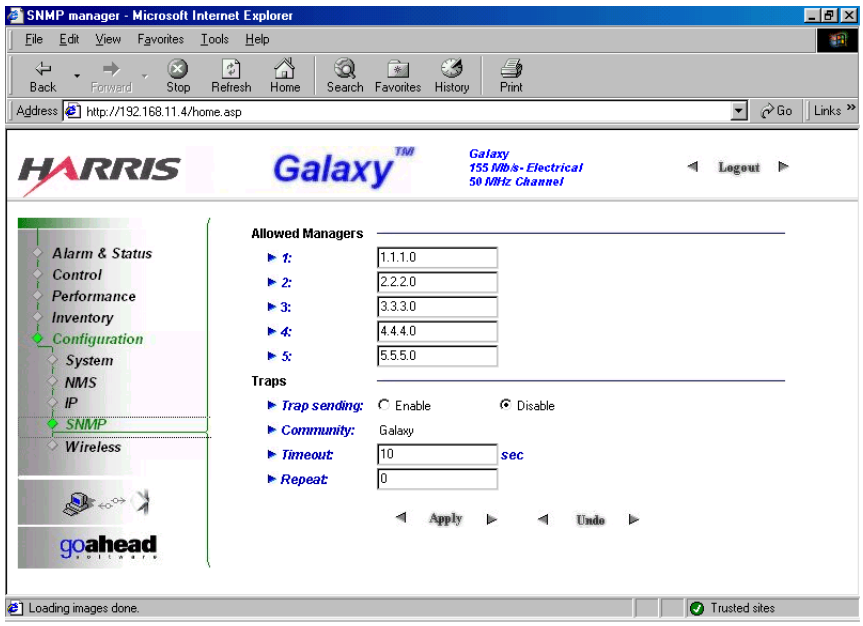
IP Configuration

Galaxy IP Configuration Page



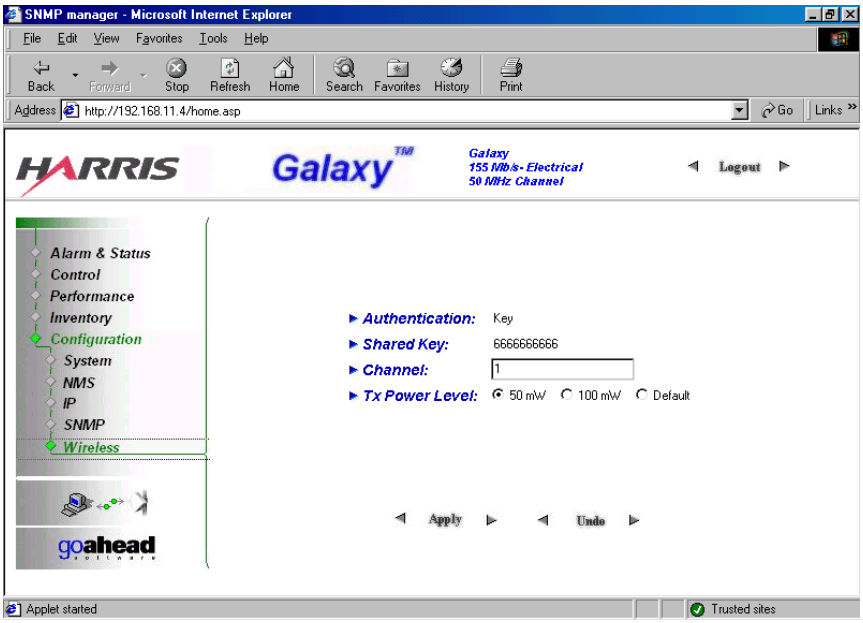
SNMP Configuration

Galaxy SNMP Configuration



Wireless Configuration

Galaxy Wireless Configuration



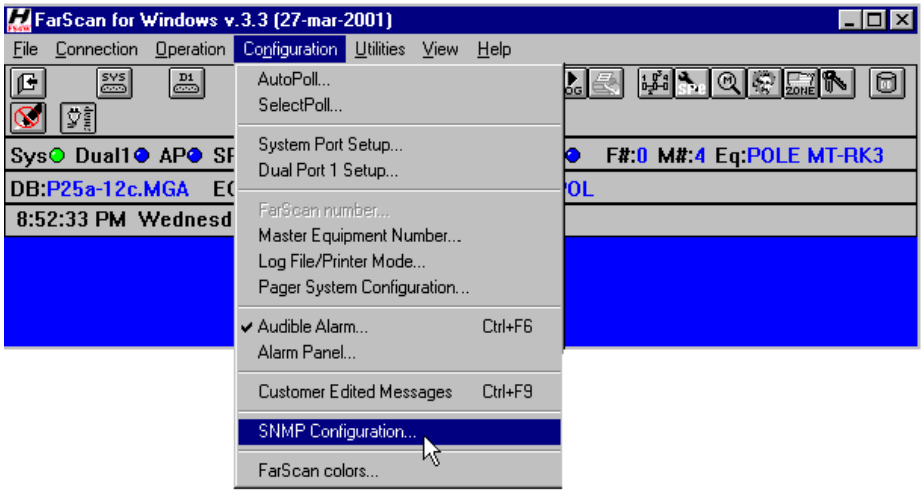
Edited Messages

Edited Messages change the labels on the external contact points in FarScan. This is done to provide more descriptive message labels for radios with Proxy agents. This section describes how to transfer edited messages from FarScan to StarView.

In the SNMP Module there is an Export Configuration tab that enables transferring of edited messages to a file. From this file, the edited messages can be transferred to a node in StarView.

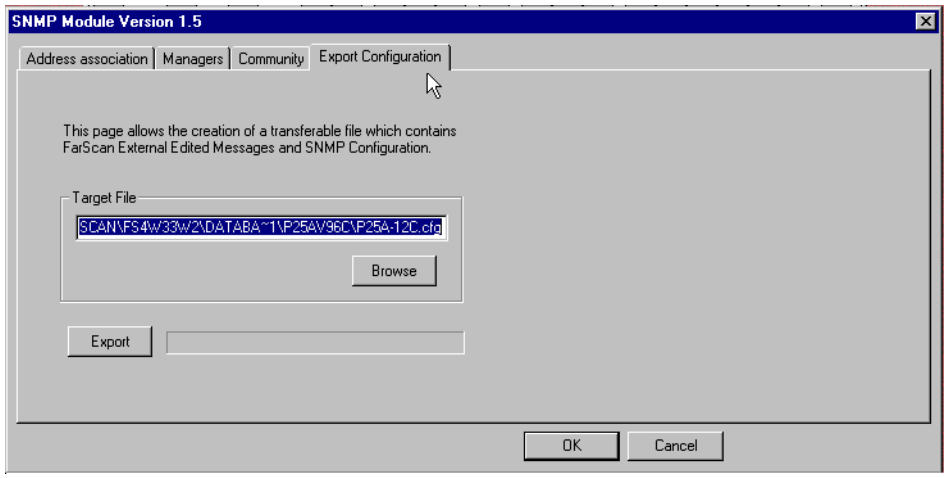
1. From the FarScan Main Menu, select **Configuration -> SNMP Configuration**. The **SNMP Module** window appears.

FarScan For Windows



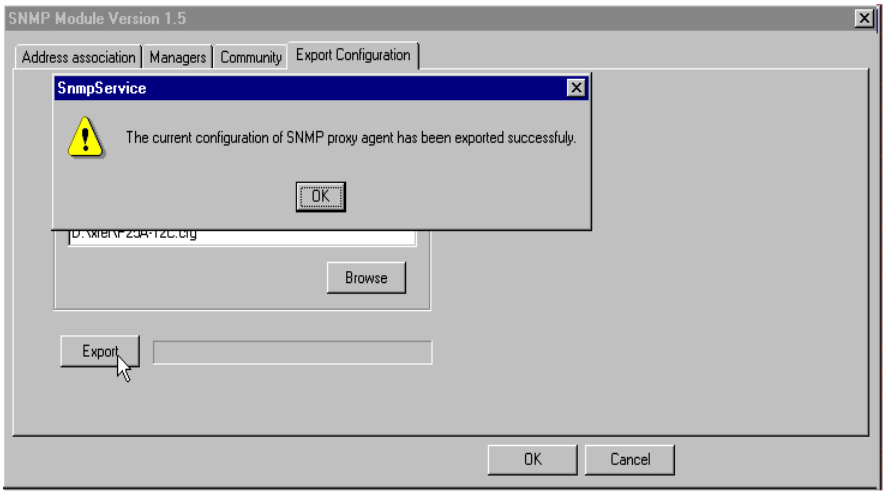
2. From the **SNMP Module** window, select the **Export Configuration** Tab.

SNMP Module Window - Export Configuration



3. A default target file name appears with the default path. This is the file that contains edited messages for transfer to StarView. You can change the default file to any other valid file type by using the **Browse** button. Select the **Export** button to select the export file. A **Confirmation** window appears once the transfer is complete.

SNMP Service Confirmation

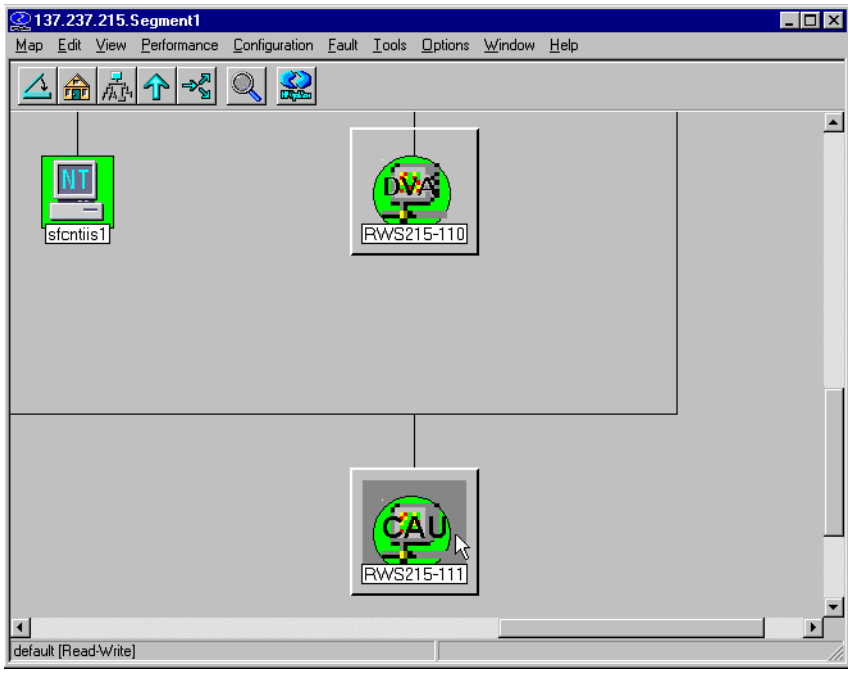


4. Click **OK**. The export of edited messages is complete.

The next step is to finish the transfer using StarView.

In StarView, select the node that requires the transferred Edited Messages from FarScan.

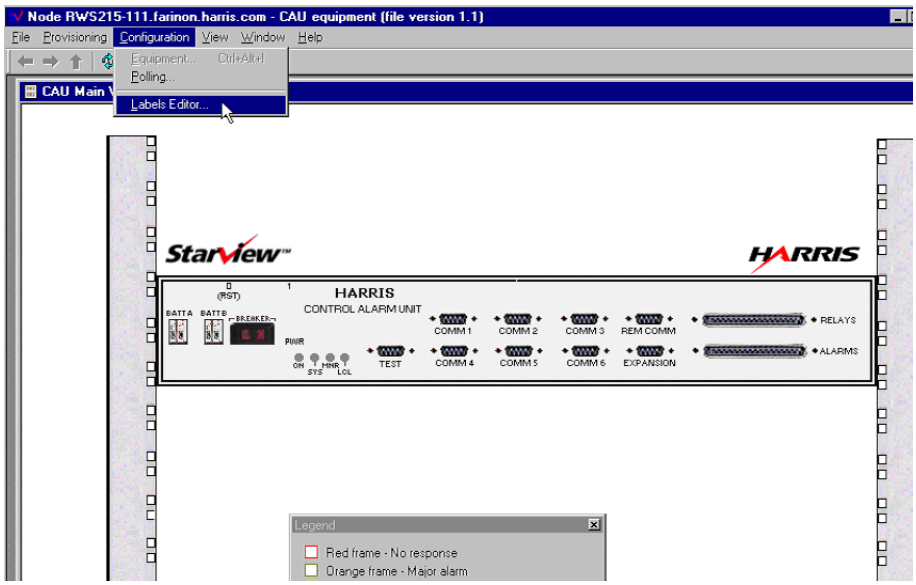
StarView Node Display



1. Double-click the node requiring the edited messages. The **Equipment Screen** window for that node appears.

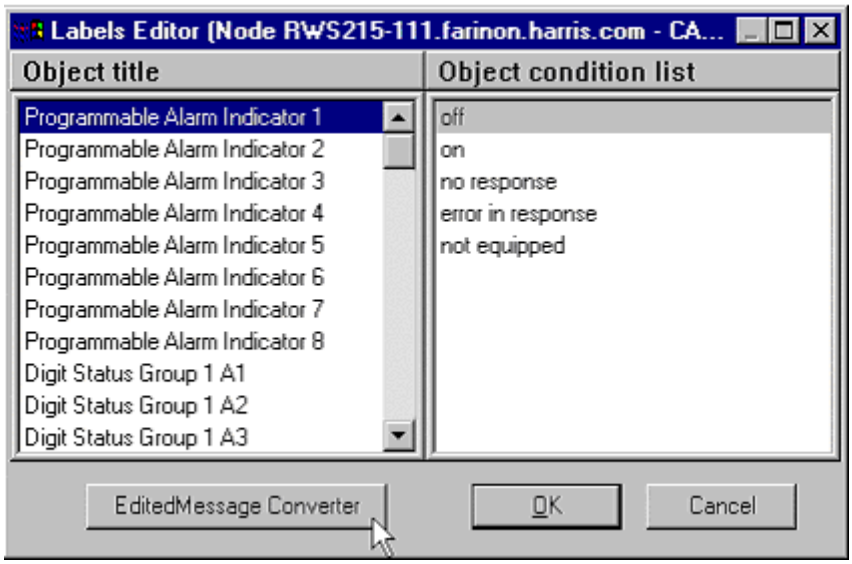
2. In the **Equipment Screen** window, select **Configuration -> Labels Editor.**

Equipment Screen Window

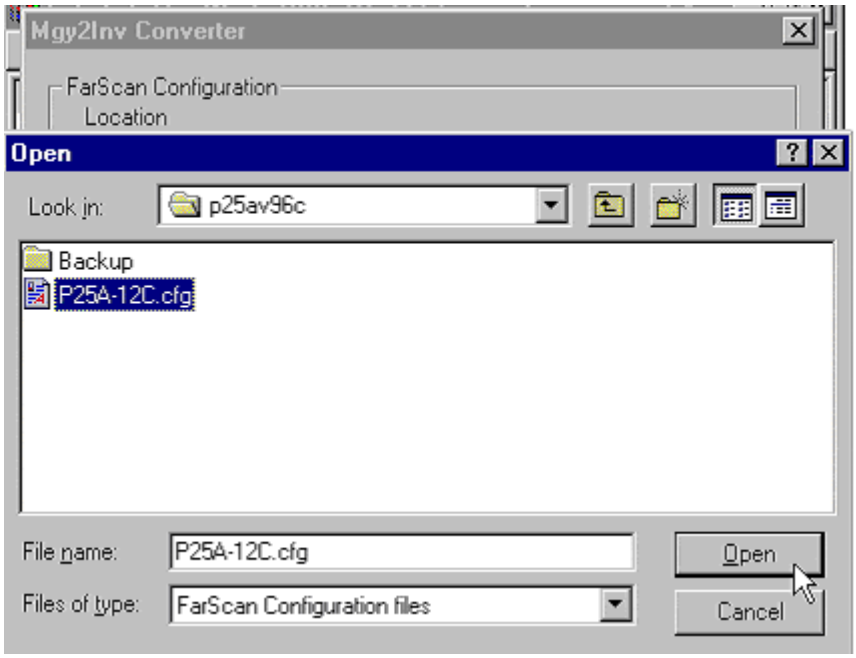


3. The **Labels Editor** window appears. Select the **EditedMessage Converter** button. Find the path and file name containing the exported messages from FarScan.

Labels Editor

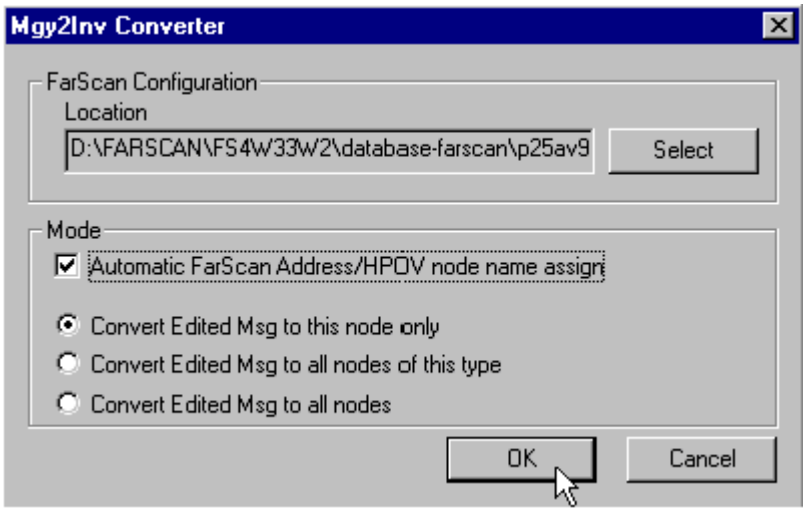


Label Editor -> Open



4. The **Mgy2Inv Converter** window appears. Select the desired transfer mode and then click **OK**.

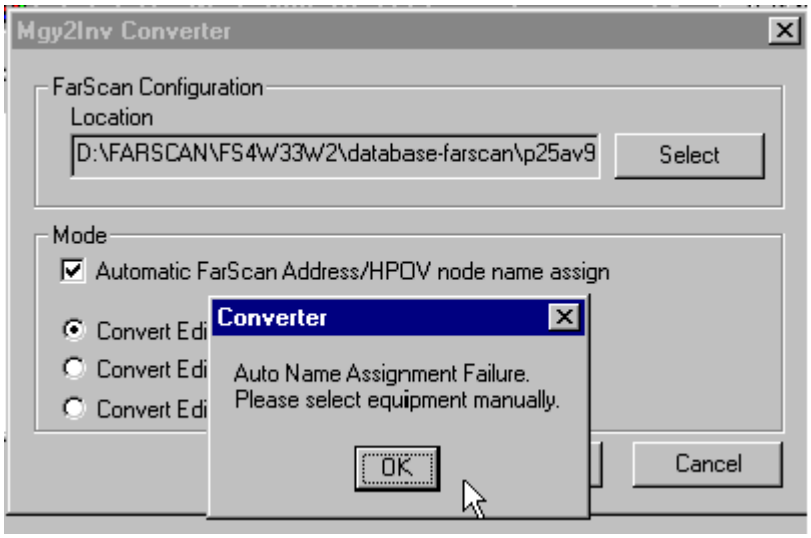
Mgy2Inv Converter



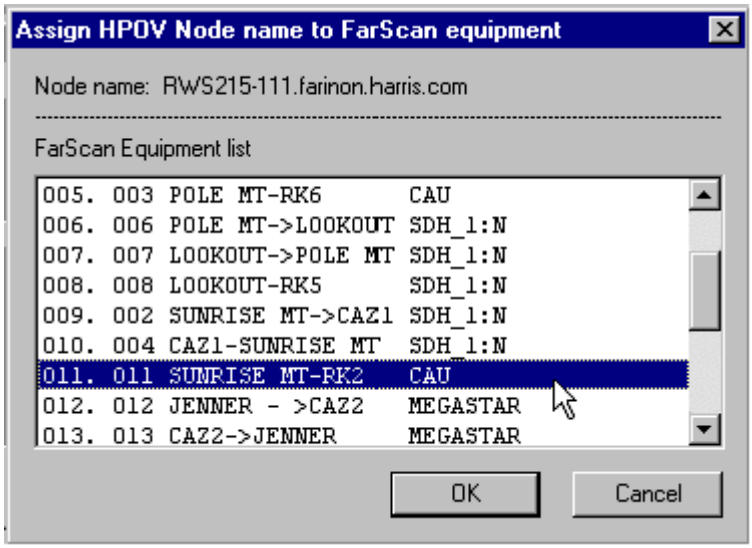
5. The message converter resolves the FarScan Equipment to the StarView node for message transferring. If it cannot, a warning window appears. If you receive the warning window, click **OK** and follow the prompts. Select the

FarScan equipment site that corresponds to the node in StarView. Highlight the correct Equipment in the equipment list and click **OK**. The **EditedMessage Converter** window appears.

Mgy2Inv Converter

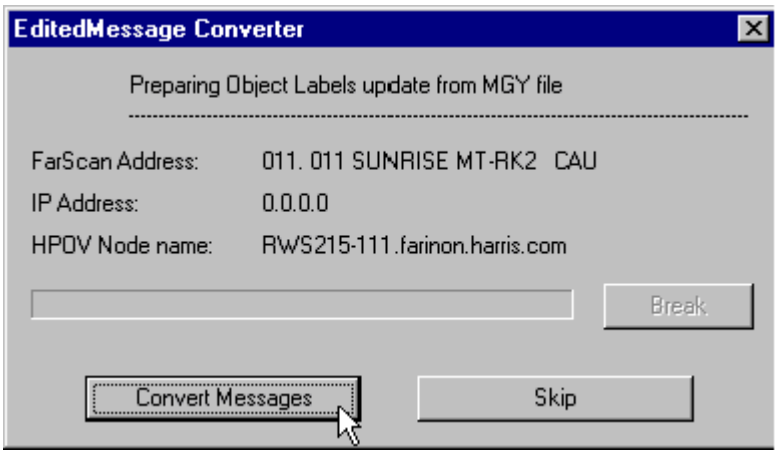


Assign Node to FarScan



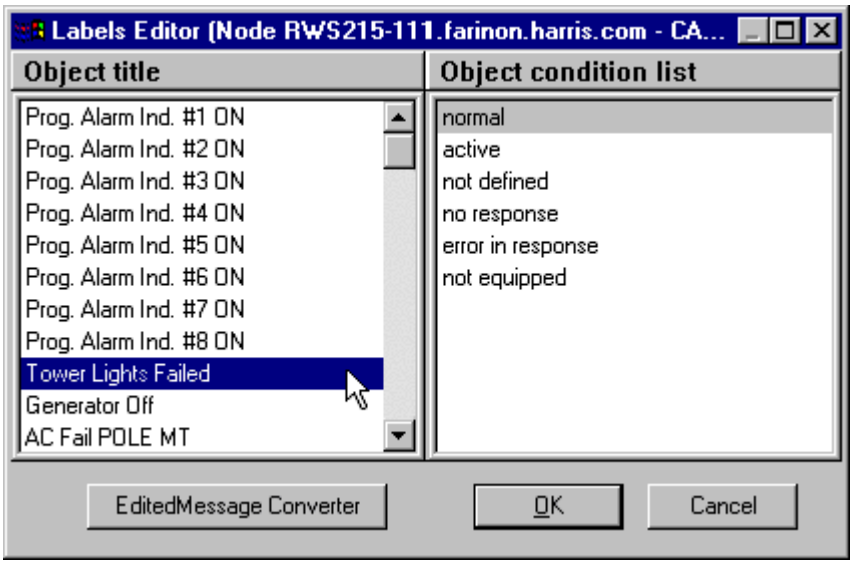
6. The **EditedMessage Converter** window informs the user of the FarScan Address/Site name and the StarView node name that the edited messages are to be transferred to. If the FarScan Equipment to StarView Node name is correct, click the **Convert Messages** button.

EditedMessage Converter



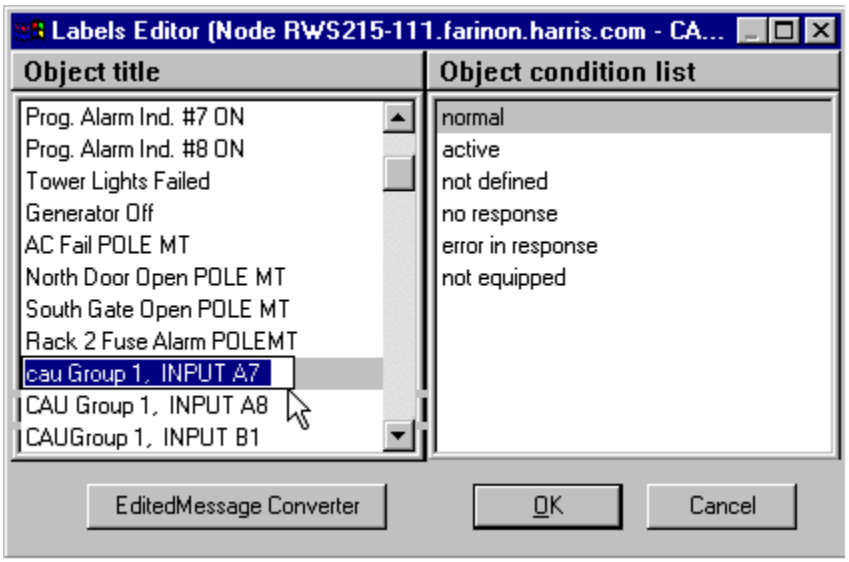
7. It will take a few seconds for the edited messages to be transferred. After the edited messages are transferred, you are shown the list of edited messages. At this time you can review all messages and modify any of the messages (edit the message).

Labels Editor



8. To change the message, highlight the desired message to change and press **Enter**. You can type any message for the object up to 24 characters maximum.

Label Editor - Modify a Label



9. After editing the message, press **Enter** key on the keyboard.

10. After all messages are modified, click **OK**.

This capability allows you to export labels created using FarScan into StarView in an automated fashion. Reproduction of previous edited messages in FarScan and StarView is no longer necessary.

MicroStar PPP Connection Utility (Windows NT)

The MicroStar PPP Connection Utility NT automates the process of Windows NT configuration for direct connection between StarView and the MicroStar radios. This utility contains the following files:

Table 11: MicroStar PPP Connection Utility Components

Utility	Purpose
setup.exe	MicroStar PPP Connection Utility
SCRIPTIT.exe	ScriptIt utility executable file

Table 11: MicroStar PPP Connection Utility Components

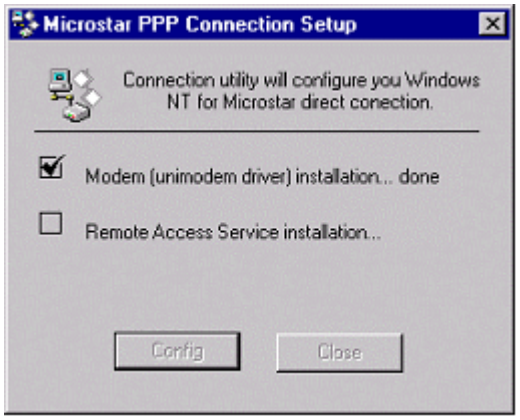
Utility	Purpose
Mdmmicrostar.inf	standard Windows modem installation file for MicroStar direct connection (both COM ports)
RAS_bind.txt	RAS binding script for ScriptIt utility
Phonebook_entry_edit.txt	phone book modification script for ScriptIt utility
Unimodem.inf	default INF file for modem installation to COM ports from command line
unimodem1.inf	default INF file for modem installation to COM1 port only from command line

Please read the installation instructions prior to installing the MicroStar PPP Connection Utility.

For installing MicroStar PPP Connection, you must have Administrator access level and all COM Ports must be disconnected. Ensure all programs that use COM ports are closed before starting this utility

1. Run *setup.exe* using **Add/Remove programs** in Control Panel. When the **MicroStar PPP Connection Window** appears, click the **Config** button. This window displays Windows NT configuration changes and progress.

MicroStar PPP Connection Utility Window



If the Remote Access Service was already installed, the utility requests a Windows restart after installing the modem but before installing the RAS. The user must add the MicroStar modem manually. Click **Add** and then select “MicroStar Network Serial Cable” as the RAS Device.

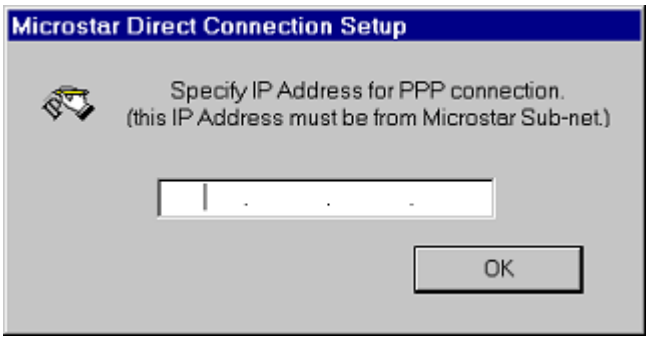
If it is necessary to install the MicroStar modem on the COM Port, which was used by an old RAS device, it must be removed. Highlight the previous RAS device and click the **Remove** button before adding the MicroStar modem.

- For each added device in the **Remote Access Setup** window, configure the "Dial out only" mode by selecting **Configure** and checking the "Dial out only" box.
- Select TCP/IP protocol in Network parameters of this RAS device by selecting **Network** and checking **TCP/IP**.
- Click the **Continue** button to continue with RAS configuration.

2. The Windows NT Configuration windows will be opened and closed. Only execute actions in the following windows:
   - Specify Windows NT CD files location
   - Specify RAS Device and COM port number (and then confirm selection by clicking the **Continue** button)
3. For Windows NT Server only (do not perform this step for Windows NT Workstation), the following steps must be performed manually:
   - For each added device in the **Remote Access Setup** window, configure Dial out only mode by selecting **Configure** and checking the "Dial out only" box.
   - Select TCP/IP protocol in Network parameters of this RAS device by selecting **Network** and checking **TCP/IP**.
   - Click the **Continue** button to continue with RAS configuration.
4. When RAS configuration has completed, the Utility requests a Windows restart.

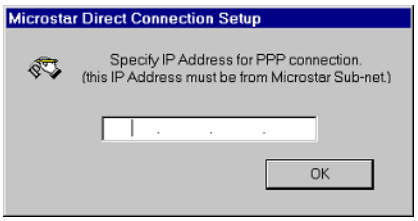
5. After Windows NT restarts, the Utility modifies the "MicroStar" Phone Book Entry. During this modification, specify the IP Address that Windows NT uses for the PPP Connection.

MicroStar Direct Connection Setup Window



6. Select the COM Port for the MicroStar Direct Connection:

PPP Connection



7. At the end of system configuration, a message will appear stating that Windows NT has been configured for MicroStar direct connection. Click **OK**.

Regardless of when connection to MicroStar is made, specify User Name and Password. The User Name is the "PPP Peer ID" and the Password is the "PPP Peer Pswd". The domain field must be empty if the connection is through Dial-up Networking.

You have completed executing the MicroStar PPP Connection Utility setup for Windows NT.

MicroStar PPP Connection Utility (Windows 2000)

The MicroStar PPP Connection Utility automates the process of Windows 2000 configuration for direct connection between StarView and the MicroStar radios. This utility contains the following files:

Table 12: MicroStar PPP Connection Utility Components

Utility	Purpose
setup.exe	MicroStar PPP Connection Utility
SCRIPTIT.exe	ScriptIt utility executable file
Mdmmicrostar.inf	standard Windows modem installation file for MicroStar direct connection (both COM ports)
Phonebook_entry_edit.txtt	phone book modification script for ScriptIt utility
modem_install.txt	modem installation script for ScriptIt utility (both COM Ports)
modem_install_dc.txt	modem installation script for ScriptIt utility (one COM port)
modem_install_singleCOM.txtf	modem installation script for ScriptIt utility (single COM port)

Please read the installation instructions prior to installing the MicroStar PPP Connection Utility.

For installing MicroStar PPP Connection, you must have Administrator access level and all COM Ports must be disconnected. Ensure all programs that use COM ports are closed before starting this utility.

1. Run the setup.exe using Add/Remove Programs in the Control Panel. When the **MicroStar PPP Connection** Utility Window appears, select the **Config** button. The Utility displays the progress of Windows NT configuration changes.

NOTE

If both COM ports are used for Direct Connection, remove one "Communication cable between two computers" for installation of the MicroStar modem. If only one port is used, it is possible to install the MicroStar modem to another port.

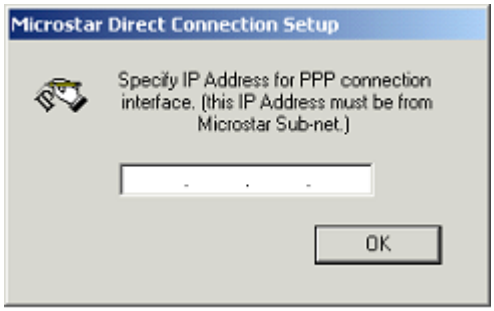
MicroStar PPP Connection Setup for Windows 2000

The Windows 2000 configuration windows are opened and closed automatically. Only execute the actions in these two windows: Windows to request Windows CD file location and Window to request COMM Port Number.

2. When the MicroStar modem is configured, the utility may request a restart of Windows NT. Restart your workstation. If the registry is already configured properly, a restart is not necessary.

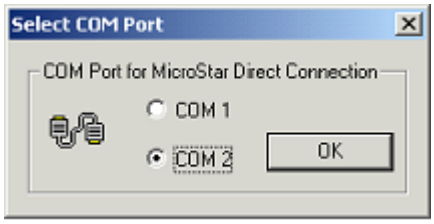
3. After Windows 2000 restart, the utility modifies "MicroStar Phone Book Entry". During this modification, specify the IP Address that Windows NT uses for PPP connection.

MicroStar Direct Connection Setup Window



4. Select COM port for MicroStar Direct Connect.

Select COM Port

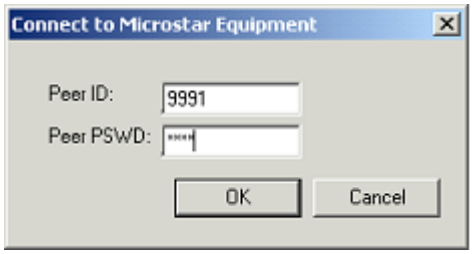


5. At the end of the system configuration modification, the MicroStar PPP Connection Utility displays the following window:

PPP Connection

Regardless of when connection to the MicroStar is made, specify User Name and Password. The User Name is the “PPP Peer ID” and the Password is the “PPP Peer Pswd”. The domain field must be empty if the connection is through Dial-up Networking.

Connect to MicroStar Equipment

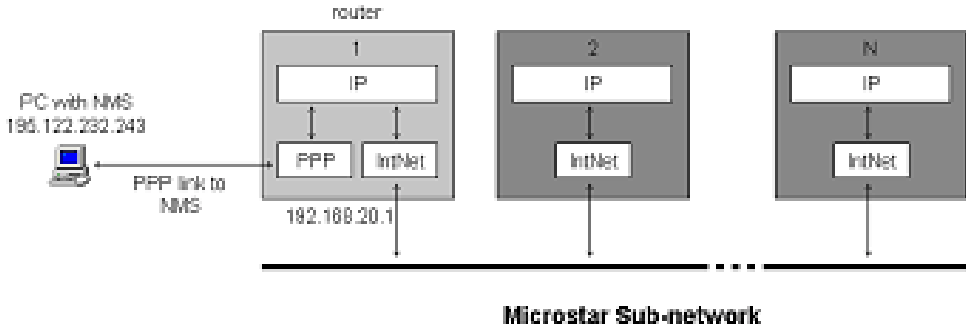


You have completed executing the MicroStar PPP Connection Utility setup for Windows 2000.

MicroStar Direct Connection via RTU Port (Windows NT)

The steps to manually configure MicroStar Direct Connection via the RTU Port on Windows NT require configuration of MicroStar equipment PPP, TCP/IP and SNMP. Windows NT with NMS should be configured for Dial-up networking by using the null modem cable.

MicroStar Sub-network



Note that all IDs, IP addresses, passwords and masks are used as an example in the screen shots to help facilitate configuration.

MicroStar Configuration

1. Using the Windows hyper-terminal tool (in VT-100 mode) connected via the CIT port set the following configuration:

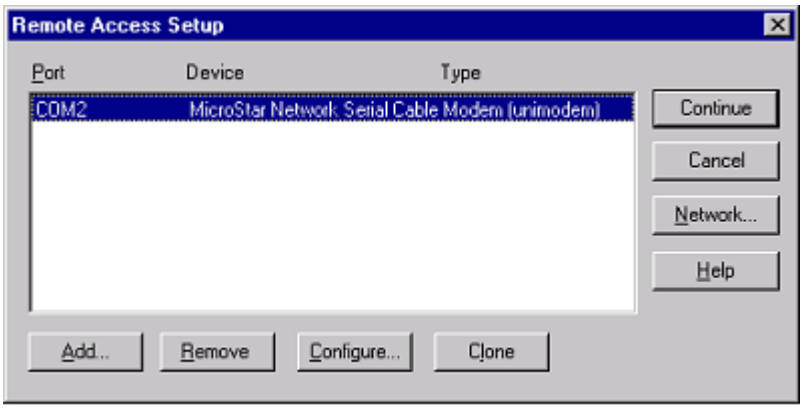
Configuration -> IDU -> RTU Port - ***PPP***
Configuration -> IDU -> RTU Baud - ***38400***
Configuration -> IDU -> INTERNET -> PPP -> PPP Per ID - ***9991***
Configuration -> IDU -> INTERNET -> PPP -> PPP Per Pswd - ***9991***
Configuration -> IDU -> INTERNET -> PPP -> PPP ID - ***9999***
Configuration -> IDU -> INTERNET -> PPP -> PPP Pswd - ***9999***
Configuration -> IDU -> INTERNET -> PPP -> PPP IP Adrs - ***192.168.20.1***
(IP Address of the first radio, use as gateway)
Configuration -> IDU -> INTERNET -> PPP -> PPP IP Mask - ***255.255.255.0***
(IP Mask of the first radio, use as gateway)
Configuration -> IDU -> INTERNET -> TCP/IP -> INTERNET IP Adrs - ***192.168.20.1***
(IP Address of the current radio)
Configuration -> IDU -> INTERNET -> TCP/IP -> INTERNET IP Mask - ***255.255.255.0***
(IP Mask of the current radio)
Configuration -> IDU -> INTERNET -> SNMP -> NMS Adrs - **195.122.232.243**
(IP Address of PC use as NMS)

Windows NT Configuration

1. Select **Network -> Services** from the **Control Panel**. Click **Add** and install Remote Access Service (RAS). RAS allows for installation of a new modem.

2. Install "MicroStar Network Serial Cable" modem by pressing the "Have Disk" button and selecting the *mdmmicrostar.inf* file and add it as a RAS device. The following configuration appears:

Remote Access Setup



Example listing of mdmmicrostar.inf file

```
; Windows Modem Setup File

[Version]
Signature="$CHICAGO$"
Class=Modem
ClassGUID={4D36E96D-E325-11CE-BFC1-08002BE10318}
Provider=%MS%

[ControlFlags]
ExcludeFromSelect=UNIMODEMD94B6060
ExcludeFromSelect=UNIMODEMBABC57FF
ExcludeFromSelect=SERENUM\HAYF0001
ExcludeFromSelect.NT=PNPC032

[Manufacturer]
%M27% = M27

[M27]
%M2702% = M2702, PNPC031

[M2702]
AddReg=All, M2702Reg, 38400, SERIAL

[All]
HKR,,FriendlyDriver,,Unimodem.vxd
HKR,,DevLoader,,*VCOMM
HKR,,PortSubClass,1,02
HKR,,ConfigDialog,,modemui.dll
HKR,,EnumPropPages,,"modemui.dll,EnumPropPages"

; DeviceTypes
[SERIAL]
HKR,, DeviceType, 1, 00

[38400]
HKR,, DCB, 1, 1C,00,00,00, 00,96,00,00, 15,20,00,00, 00,00,
0a,00, 0a,00, 08, 00, 00, 11, 13, 00, 00, 00

[M2702Reg] ; Null-Modem for MicroStar
HKR, Init, 1,, "None"
HKR, Init, 2,, "NoResponse"
HKR, Monitor, 1,, "None"
HKR, Answer, 1,, "None"
HKR, Answer, 2,, "NoResponse"
HKR, Settings, DialPrefix,, "HOST"
HKR,, Properties, 1, 00,00,00,00, 00,00,00,00, 00,00,00,00,
 00,00,00,00, 00,00,00,00, 00,00,00,00, 00,c2,01,00, 00,c2,01,00
HKR, Responses, "~", 1, 02, 00, 00, 00, 00, 00, 00,00,00,00 ;
Host side - the Microstar ready to receive data

[Strings]
MS = "Harris"
M27 = "(Modem for Microstar)"
M2702 = "MicroStar Network Serial Cable"
```

Registry Modification

1. Start Registry Editor (Rededt32.exe).

2. Verify the following keys have their value set to 1.
   - \HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters\IPEnableRouter
   - HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\RasMan\PPP\IPCP\PrioirtyBasedOnSubNetwork

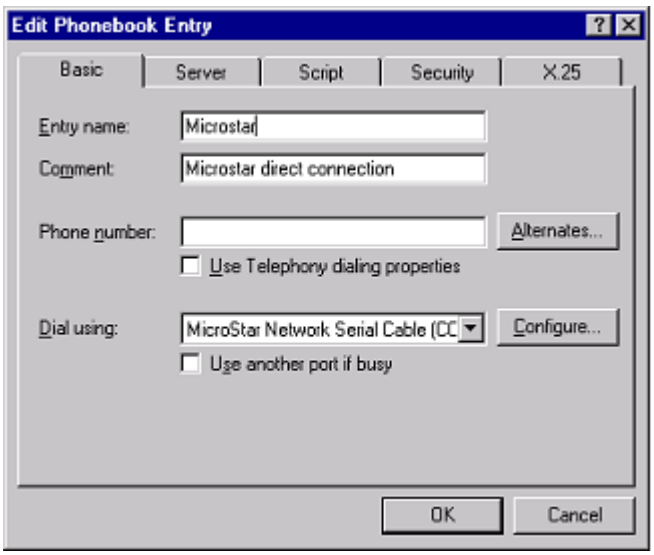
3. Verify the following key has it's value set to 0.
   - \HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\RasApr\Parameters\DisableOtherSrcPackets

4. Exit the Registry Editor. This allows access to the MicroStar from Internet by forwarding IP Packets. For polling MicroStar from a remote host, it is necessary to update routing tables: Gateway for MicroStar IP must be PPP Connection Interface IP.

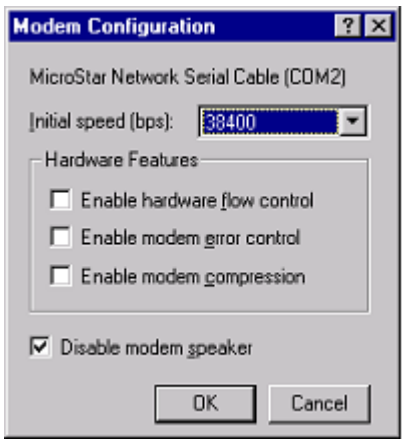
Dial-up Networking Configuration

1. Select **Start -> Programs -> Accessories.** Create first record in the phonebook if it is empty. When **Dial-up Networking** window appears, click the **More** button and select **Edit entry and modem properties...** Modify the configuration as displayed below.

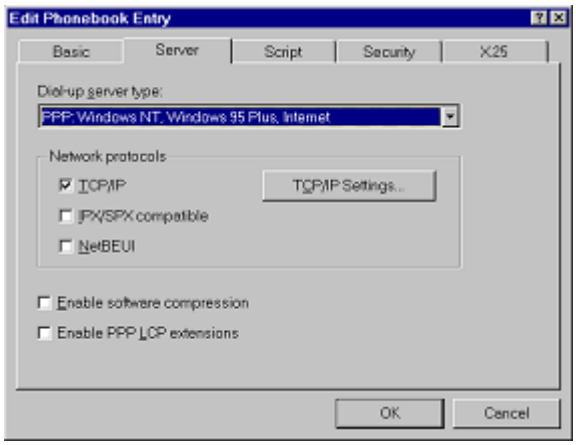
Edit Phonebook Entry - Basic Configuration



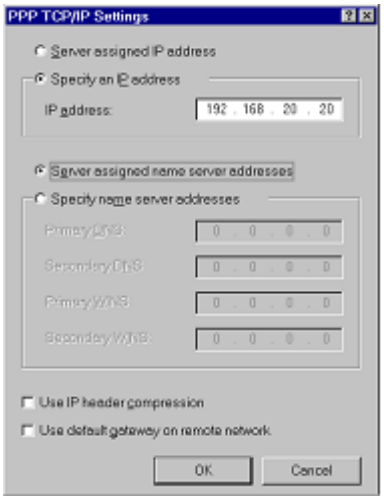
Modem Configuration - Basic Configuration



Edit Phonebook Entry - Server Configuration



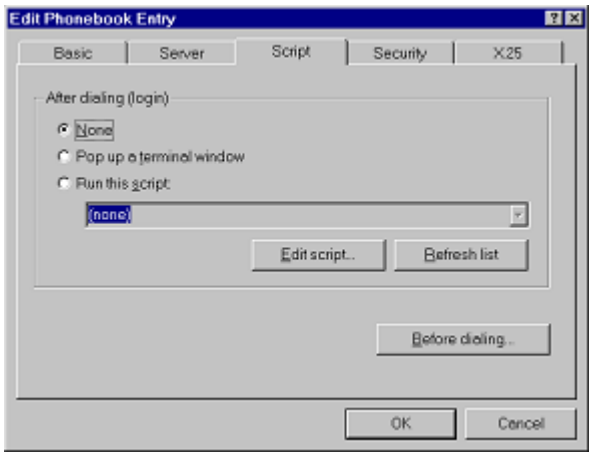
PPP TCP/IP Settings - Server Configuration



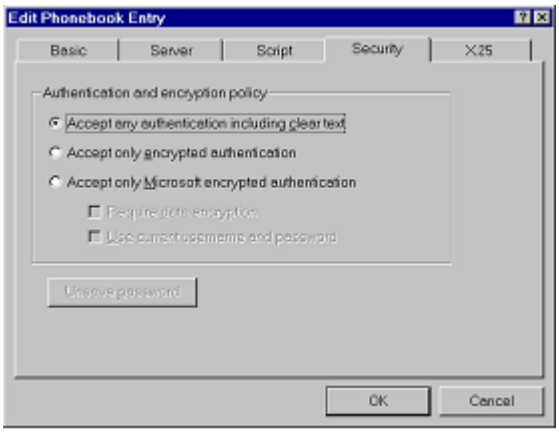
NOTE

Note: IP Addresses specified in the **PPP TCP/IP Settings** window must be from MicroStar subnetwork.

Edit Phonebook Entry - Script Configuration



Edit Phonebook Entry - Security Configuration



PPP Connection

1. Click the **Dial** button on the **Dial-Up Networking** window. The **Connect to MicroStar Plus** window appears.

2. In the **Connect to MicroStar Plus** window, enter the PPP Peer ID in the **User Name** field and the Peer Pswd in the **Password** field. Field Domain must be empty.

Connect to MicroStar Plus

NOTE

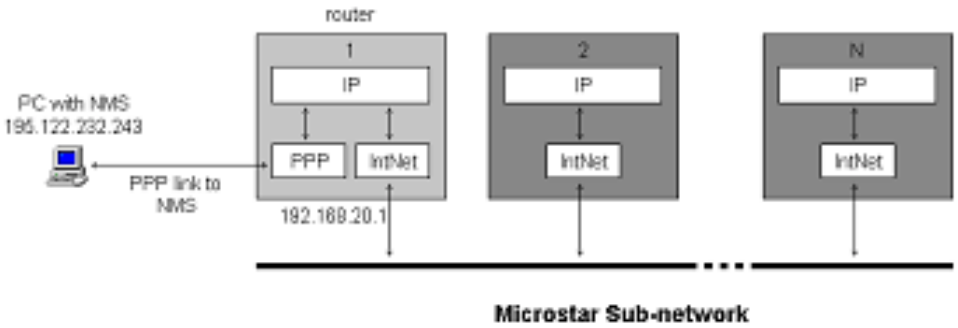
Dial-Up Networking notifies the user of the status of the connection after several seconds. At this point in time, the MicroStar Sub-network is available for SNMP access. The connection can be tested by using a simple *ping* command.

You have completed executing the MicroStar Connection via RTU port for Windows NT

MicroStar Direct Connection via RTU Port (Windows 2000)

The steps to manually configure MicroStar Direct Connection via the RTU Port on Windows NT require configuration of MicroStar equipment PPP, TCP/IP and SNMP. Windows NT with NMS should be configured for Dial-up networking by using the null modem cable.

MicroStar Sub-network



NOTE

All IDs, IP addresses, passwords and masks are used as an example in the screen shots to help facilitate configuration.

MicroStar Configuration

1. Using the Windows hyper-terminal tool (in VT-100 mode) connected via the CIT port set the following configuration:

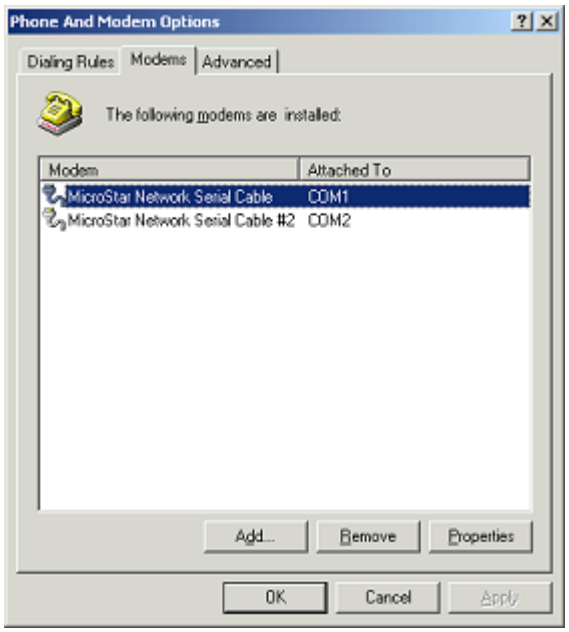
Configuration -> IDU -> RTU Port - ***PPP***
Configuration -> IDU -> RTU Baud - ***38400***
Configuration -> IDU -> INTERNET -> PPP -> PPP Per ID - ***9991***
Configuration -> IDU -> INTERNET -> PPP -> PPP Per Pswd - ***9991***
Configuration -> IDU -> INTERNET -> PPP -> PPP ID - ***9999***
Configuration -> IDU -> INTERNET -> PPP -> PPP Pswd - ***9999***
Configuration -> IDU -> INTERNET -> PPP -> PPP IP Adrs - ***192.168.20.1***
(IP Address of the first radio, use as gateway)
Configuration -> IDU -> INTERNET -> PPP -> PPP IP Mask - ***255.255.255.0***
(IP Mask of the first radio, use as gateway)
Configuration -> IDU -> INTERNET -> TCP/IP -> INTERNET IP Adrs - ***192.168.20.1***
(IP Address of the current radio)
Configuration -> IDU -> INTERNET -> TCP/IP -> INTERNET IP Mask - ***255.255.255.0***
(IP Mask of the current radio)
Configuration -> IDU -> INTERNET -> SNMP -> NMS Adrs - **195.122.232.243**
(IP Address of PC use as NMS)

Windows NT Configuration

1. Select **Phone and Modem Options -> Modems** from the **Control Panel**. Click the **Add** button and install "MicroStar Network Serial Cable" modem by checking the checkbox "*Don't detect my modem; I will select it from a list*". Select the **Have Disk** button and select the mdmmicrostar.inf file.

2. Select OK to close this application.

Phone and Modem Options



Example listing of mdmmicrostar.inf file

```
; Windows Modem Setup File

[Version]
Signature="$CHICAGO$"
Class=Modem
ClassGUID={4D36E96D-E325-11CE-BFC1-08002BE10318}
Provider=%MS%

[ControlFlags]
ExcludeFromSelect=UNIMODEMD94B6060
ExcludeFromSelect=UNIMODEMBABC57FF
ExcludeFromSelect=SERENUM\HAYF0001
ExcludeFromSelect.NT=PNPC032

[Manufacturer]
%M27% = M27

[M27]
%M2702% = M2702, PNPC031

[M2702]
AddReg=All, M2702Reg, 38400, SERIAL

[All]
HKR,,FriendlyDriver,,Unimodem.vxd
HKR,,DevLoader,,*VCOMM
HKR,,PortSubClass,1,02
HKR,,ConfigDialog,,modemui.dll
HKR,,EnumPropPages,,"modemui.dll,EnumPropPages"

; DeviceTypes
[SERIAL]
HKR,, DeviceType, 1, 00

[38400]
HKR,, DCB, 1, 1C,00,00,00, 00,96,00,00, 15,20,00,00, 00,00,
0a,00, 0a,00, 08, 00, 00, 11, 13, 00, 00, 00

[M2702Reg] ; Null-Modem for MicroStar
HKR, Init, 1,, "None"
HKR, Init, 2,, "NoResponse"
HKR, Monitor, 1,, "None"
HKR, Answer, 1,, "None"
HKR, Answer, 2,, "NoResponse"
HKR, Settings, DialPrefix,, "HOST"
HKR,, Properties, 1, 00,00,00,00, 00,00,00,00, 00,00,00,00,
 00,00,00,00, 00,00,00,00, 00,00,00,00, 00,c2,01,00, 00,c2,01,00
HKR, Responses, "~", 1, 02, 00, 00, 00, 00, 00, 00,00,00,00 ;
Host side - the Microstar ready to receive data

[Strings]
MS = "Harris"
M27 = "(Modem for Microstar)"
M2702 = "MicroStar Network Serial Cable"
```

Registry Modification

1. Start Registry Editor (Rededt32.exe).
2. Verify the following keys have their value set to 1.

   \HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters\IPEnableRouter

   HKEY_LOCAL_MACHINE\SYSTEM\ControlSet001\Services\Tcpip\Parameters\IPEnableRouter

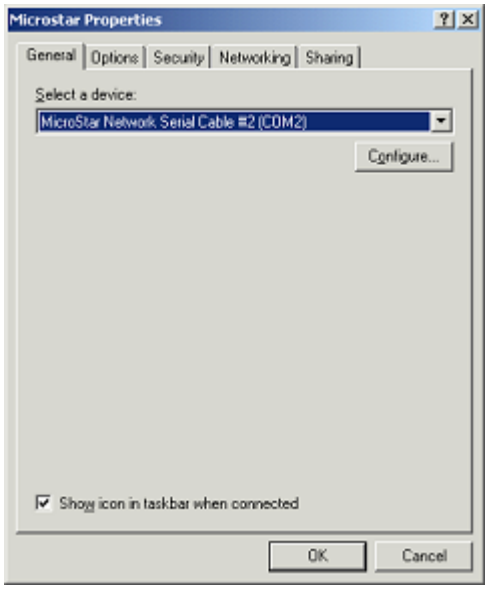
HKEY_LOCAL_MACHINE\SYSTEM\ControlSet002\Services\Tcpip\Parameters\IPEnableRouter

3. Exit the Registry Editor. This allows access to the MicroStar from Internet by forwarding IP Packets. For polling MicroStar from a remote host, it is necessary to update routing tables: Gateway for MicroStar IP must be PPP Connection Interface IP.

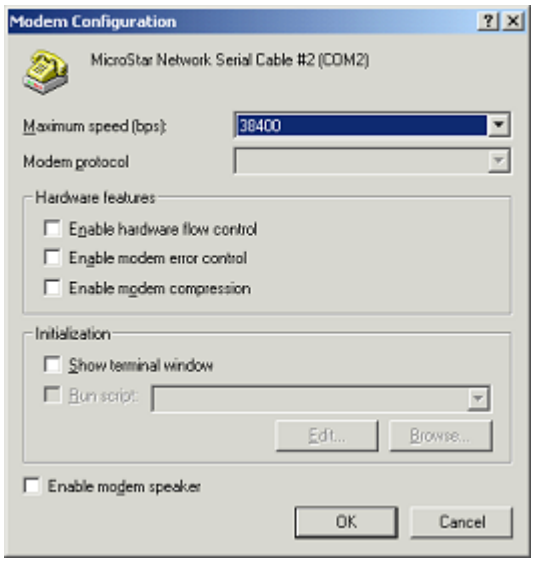
Dial-up Networking Configuration

1. Select **Start -> Programs -> Accessories -> Communications.** Select **Make New Connection.** Select "Connect directly to another computer" in the **Network Connection Type Dialog**. The role of the computer is Guest. Select "MicroStar Network Serial Cable" as device and then enter the name of the new connection.

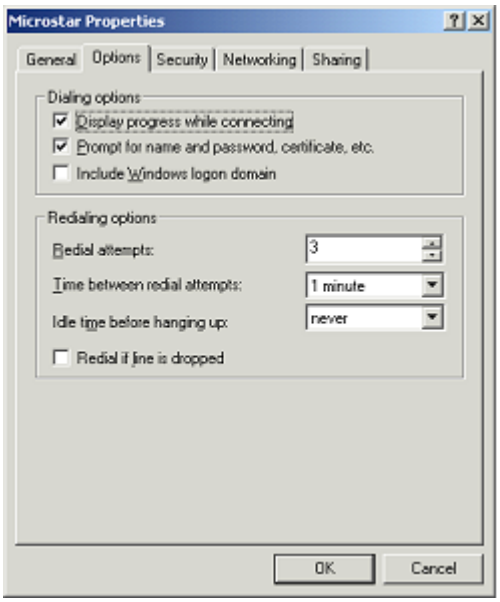
MicroStar Properties - General Configuration



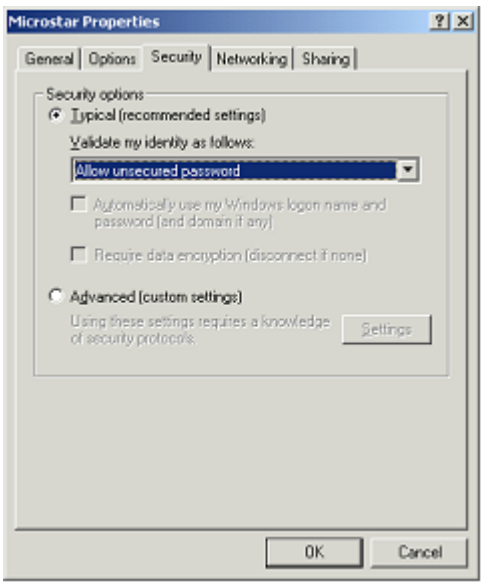
Modem Configuration - General Configuration



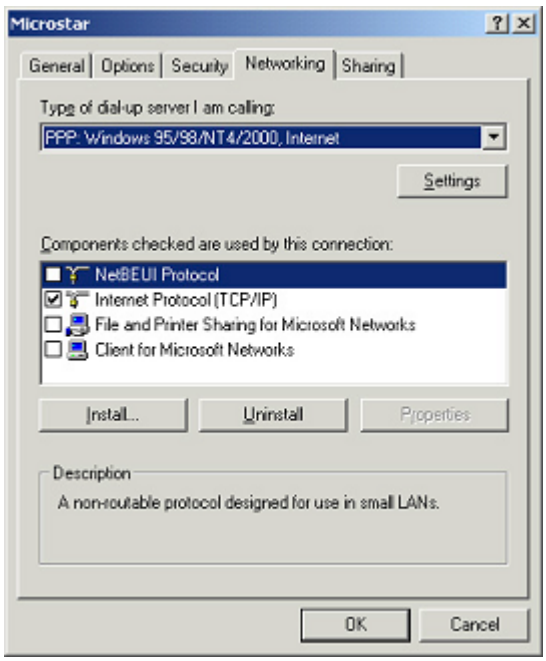
MicroStar Properties - Options Configuration



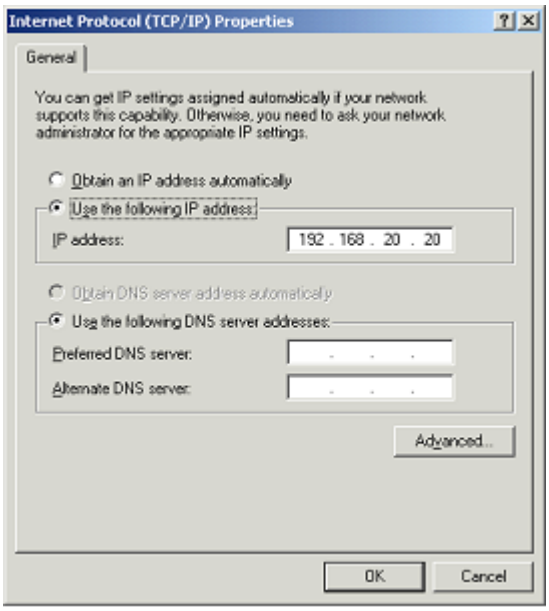
PPP TCP/IP Settings - Server Configuration



MicroStar - Network Configuration



Internet Protocol (TCP/IP) Properties - Network Configuration



NOTE

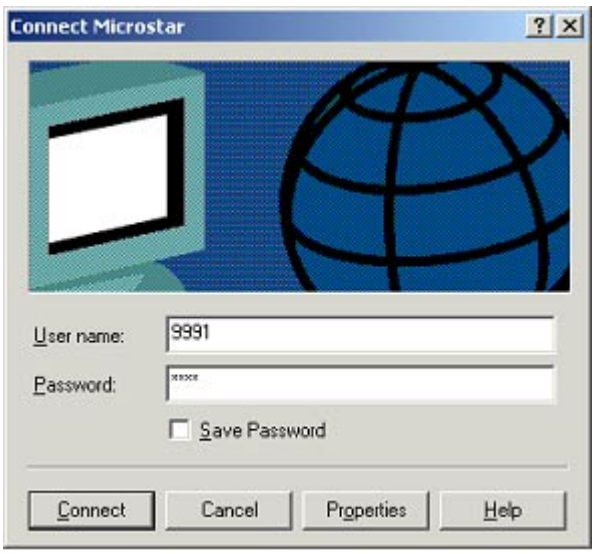
IP Addresses specified in the **Internet Protocol (TCP/IP) Settings** window must be from MicroStar subnetwork.

PPP Connection

1. Click the **Dial** button on the **Dial-Up Networking** window. The **Connect to MicroStar Plus** window appears.

2. In the **Connect to MicroStar Plus** window, enter the PPP Peer ID in the **User Name** field and the Peer Pswd in the **Password** field. Field.

Connect MicroStar



NOTE

Dial-Up Networking notifies the user of the status of the connection after several seconds. At this point in time, the MicroStar Sub-network is available for SNMP access. The connection can be tested by using a simple *ping* command.

You have completed executing the MicroStar Connection via RTU port for Windows 2000.

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