

StarKeeper[®] II NMS Release 10.0

Release Notes for Core, Graphics, and Co-resident Systems (including the SNMP Proxy Agent Software)

These release notes are for *StarKeeper*[®] II Network Management System (NMS) Release 10.0 Core, Graphics and Co-resident Systems. Information about the *StarKeeper* II NMS SNMP Proxy Agent software is also included. This document is organized as follows:

Section 1	Introduction
Section 2	Features and Enhancements of the latest <i>StarKeeper</i> II NMS
Section 3	Notes and caveats associated with the use of your <i>StarKeeper</i> II NMS system
Section 4	Features, notes and caveats associated with the <i>StarKeeper</i> II NMS SNMP Proxy Agent software

StarKeeper II NMS R10.0 supports the most recent version of BNS-2000; Release 5.0. For additional information regarding *StarKeeper* II NMS supported products or system configurations, please refer to the *StarKeeper* II NMS *Planning Guide*.

CAUTION

Before beginning installation, it is important that you review the **Notes and Caveats for Installation** in section 3 of this document.

1. Introduction

StarKeeper II NMS R10.0 manages, controls, and diagnoses the complete line of BNS-2000, and *Datakit*[®] II Virtual Circuit Switch (VCS) nodes as well as concentrators, servers, bridges, routers, gateways, and other network elements. *StarKeeper* II NMS collects alarm information, billing data, and performance measurements from the network and generates reports on request. Two-way communication between *StarKeeper* II NMS and the network allows one centrally located administrator to manage equipment at many locations.

A *StarKeeper* II NMS Core System is a processor whose primary functions are to establish, monitor, and maintain connections to network elements. A *StarKeeper* II NMS Graphics System is a separate processor that interworks with the Core System, and can run one or more Graphics System applications. A *StarKeeper* II NMS Co-resident System combines the functionality of a Core and Graphics System into one workstation, and is intended for customers with small networks. Throughout this document these processors may be referred to as the Core, Graphics and Co-resident Systems, respectively.

- NOTICE -

As of January 1997, Lucent Technologies has merged *Datakit II VCS* and MPC15 into one BNS-2000 hardware platform. The new name for *Datakit II VCS* is **BNS-2000 VCS**; the new name for the MPC15 is **BNS-2000 MPC**. Ordering will be simplified through the use of one (1) "J" drawing for initial orders. There will be different software for the BNS-2000 and BNS-2000 VCS but one (1) BNS-2000 documentation set that will include the necessary information for the BNS-2000, BNS-2000 VCS, and BNS-2000 MPC. Existing *Datakit II VCS* and BNS-2000 customers will receive the new documentation set when they purchase upgrades.

The BNS-2000 hardware platform will consist of the following options:

- BNS-2000. This is the BNS-2000 M1/M2 cabinet configuration supporting both low-speed (M1) and high-speed (M2) modules. This configuration will require BNS-2000 software.
- BNS-2000 VCS. This is the BNS-2000 VCS M1-only cabinet configuration supporting low-speed (M1) modules. The M1 cabinet will contain clock/repeater modules as opposed to CIM/CTRM modules contained in BNS-2000 M1 cabinets. M2 cabinets are not required. This configuration requires BNS-2000 VCS/*Datakit II VCS* R6.0 software.
- BNS-2000 MPC. This is the BNS-2000 MPC M1 Multipurpose Concentrator cabinet configuration.

All BNS-2000 offerings described above are managed by *StarKeeper II* Network Management System (NMS). (When configuring BNS-2000 VCS, customers should select "*Datakit II VCS*" as the node option.)

2. StarKeeper II NMS Features and Enhancements

2.1 R10.0 Features

StarKeeper II NMS R10.0 marks the completion of our Year 2000 compliance effort. Initial work was performed in *StarKeeper* II NMS R9.0. However, Year 2000 compliant versions of our third party software were not available until more recently.

The main effort of R10.0 was to incorporate the new Year 2000 compliant versions of HP-UX and Informix® into the *StarKeeper* II NMS application. *StarKeeper* II NMS features and functionality remain unchanged in Release 10.0.

2.1.1 Hewlett-Packard Software Updates

StarKeeper II NMS R10.0 provides updates for the following HP software:

- HP-UX 10.20 Core OS
- HP EISA Datakit Software (A.03.20)
- HP Netstation (B.09.01)
- GlancePlus (B.10.20.127)
- HP Maintenance Update Software (V3.0)

2.1.2 Informix Software Updates

StarKeeper II NMS R10.0 provides updates for the following Informix software:

- InformixSE (7.23.UC1)
- InformixSQL (7.20.UC1)
- Informix4GL (7.20.UC1)
- InformixCONNECT (7.23.UC5)

2.1.3 Supported Hardware Platforms

StarKeeper II NMS R10.0 staged systems will be supported on the new HP C200 machines. Release 10.0 upgrades will be supported on HP 715/33, 715/64, 715/75 and 715/100 workstations. These workstations will require a minimum of two HP certified 2-GB disks.

2.2 Pre-R10.0 Features and Enhancements

Since many *StarKeeper* II NMS R10.0 customers will be upgrading from Release 7.0 or Release 8.0, these Release Notes will also provide a summary of features and enhancements of previous releases.

2.2.1 R9.0 Features and Enhancements

2.2.1.1 Year 2000 Support

StarKeeper II NMS R9.0 began the Year 2000 compliance effort through the support of four-digit years in most user-specified date fields. Two-digit years are also supported in an unambiguous way. The following format will be used:

- 00 through 37 - represent years 2000 through 2037
- 70 through 99 - represent years 1970 through 1999
- 38 through 69 - invalid; will be blocked by *StarKeeper* II NMS.

Some report headings will continue to use two-digit years in the date field. These will follow the same format described above.

Billing (call accounting) dates will only be correct when data is received from a Year 2000 compliant node (i.e., BNS-2000 R4 and later, or BNS-2000 VCS/Datakit II VCS R6 and later).

2.2.1.2 Consolidated Software Packaging

The number of orderable *StarKeeper* II NMS software packages has been reduced by incorporating the following changes.

- The *StarKeeper* II NMS Core System Support for SMDS software is now automatically installed as part of the Core System software.
- The *StarKeeper* II NMS SNMP Proxy Agent for SMDS and the SNMP Proxy Agent for Frame Relay packages are combined into one, called the *StarKeeper* II NMS SNMP Proxy Agent. The SNMP Proxy Agent software is optionally installed with the *StarKeeper* II NMS Core System software. All *StarKeeper* II NMS Core System software packages will include the license required to install the SNMP Proxy Agent software.
- The *StarKeeper* II NMS Network Builder Support for SMDS and the *StarKeeper* II NMS Network Builder Support for Frame Relay software packages are now automatically installed as part of the *StarKeeper* II NMS Graphics System software package.
- The *StarKeeper* II NMS Graphics System software package comes with an eight-user license. The single-user version of this software package is no longer available.

2.2.1.3 GUI Interface for Configurator Tool

The *StarKeeper* II NMS Configurator Tool is a PC application used to estimate the computer resources (memory, CPU and disk) required by a computer system running *StarKeeper* II NMS. This tool is packaged with the *StarKeeper II NMS Planning Guide* and can be used to plan for a new *StarKeeper* II NMS machine or to re-engineer an existing *StarKeeper* II NMS machine.

The Configurator Tool user interface was redesigned. Previous versions of the tool had an ASCII character based interface and were run from the MS-DOS mode. The updated version provides a windows based GUI similar to most other PC applications. See the *StarKeeper II NMS Planning Guide* for details.

2.2.1.4 Network Monitor Call Tracing Capability

The Network Monitor application was modified to provide tracing capabilities of existing calls via the "**Monitor: Trace Calls**" form. You must enter various **Trace Call Parameters** and then click on the "Submit" button to initiate the call trace. *To trace calls, you must have an up-to-date configuration database.*

The configuration database is updated through **Performance Reporter**, using the **Administer Update Configuration Data** menu option. Be sure you have entered all trunks correctly on each Core System. Network node names should not be duplicated, or **Trace Calls** may fail.

If a Core System is running a release of *StarKeeper II* NMS prior to R9.0, a shell script (*tracec.sh*) must be added to the Core System in `/usr2/SK/r<x>/bin/skcmds/perf`, where `<x>` is the current release number (i.e. 10.0). The *tracec.sh* script can be found on the Graphics System in `$NM_ROOT/bin`.

2.2.1.5 Transmit Utilization Thresholds Added to Performance Reporter

The Performance Reporter application has been enhanced to include transmit utilization thresholding for trunks, links, and M1 shelves.

2.2.2 R8.0 Features and Enhancements

2.2.2.1 Backup and Recovery of your StarKeeper II NMS Database

The **skbackup** and **skrestore** commands have been enhanced to allow for the use of different hardware options. In addition to the standard tape drive that comes with your hardware configuration, you are given the option of using either an external fast tape drive or a disk-to-disk transfer. Both options require the purchase of additional hardware.

NOTE:

You must perform the installation of the *StarKeeper II* NMS software using the standard tape drive. The fast tape drive can only be used for **skbackup** and **skrestore**.

2.2.2.2 Configuration Data Backup Using skbackup

Due to the importance of backing up network configuration data in a timely fashion, and operational considerations that prevent the frequent stopping of the *StarKeeper II* NMS application, changes have been made to the **skbackup** command processing.

The **skbackup** command now supports the ability to back up configuration data (the **-c** option) while the *StarKeeper II* NMS application is running. The following changes have been made to **skbackup** to support this processing:

- a. **skbackup** accepts a new option, **-f** (force), in conjunction with the **-c** option. When this option is used, configuration data can be backed up with the *StarKeeper II* NMS application running.
- b. When **skbackup** is invoked with the **-c** and **-f** options, and the *StarKeeper II* NMS application is running, **skbackup** will terminate without backing up the data if the **cfg_sync** command is running.

- c. The user will only be prompted for the root password if **skbackup** is invoked with the **-d**, **-p** or **-b** options. Root permission is needed for these options in order to write the INFORMIX system catalogue to tape.
- d. The exit code from **skbackup** is "0" for a successful completion, or "1" for an error in processing.

To support the backup of configuration data in an automated fashion, **skbackup** may now be run as a *cnmsadm* cron entry. These considerations apply to this mode of processing:

- a. If the data is being written to tape, a writable tape must be in the tape drive. No prompting for a tape label is performed; instead, a default tape label is used.
- b. A time stamp message is issued when **skbackup** begins.
- c. If an error occurs during processing, an error message is mailed to the *cnmsadm* user.

As an example of a *cnmsadm* cron entry that runs **skbackup**, this is a sample entry that backs up the configuration files to disk daily at 10 p.m. Note that the command's output is re-directed into a log file:

```
0 22 * * * CNMS_ROOT=/usr2/SK/r10.0 PATH=$PATH:/usr2/SK/r10.0/lib/dbutils /usr2/SK/r10.0/bin/daemon/Cnmsenv skbackup -cH -f >> $HOME/skbackup.log
```

A log file that is created by the above example is not automatically removed. It must be manually removed from the system when it takes up significant disk space.

NOTE: The automatic running of **skbackup** should be scheduled when no other configuration table updates are in progress; these include **cfg_sync**, Network Builder configuration form updates, and configuration updates performed with the **cf** commands on a Core System.

2.2.2.3 Node Names No Longer Updated by *cfg_sync*

The **cfg_sync** command no longer prompts the user to ask whether the node name should be updated. The node name will not be updated by this command.

2.2.2.4 Deletion of Inconsistent SNI Data

The **cfg_sync** command no longer deletes obsolete SNI information from configuration tables.

The capability to delete obsolete SNI data is provided by the **clean_db** command (formerly named **clnp_db**). Use the **help** command for information on the use of **clean_db**.

2.2.2.5 RSPACE Handles Large Databases

RSPACE has been modified to handle large databases. If the procedure determines that there is not enough free space in the */usr2* filesystem to compress the database table, you will be asked for an alternate filesystem to be used as temporary space while the procedure runs. Details can be found in the *StarKeeper II NMS Core System Guide*.

2.2.2.6 *setnode Command*

The **setnode** command will now accept as an argument the name of a node whose administration connection is not monitored by the local Core System in a multi-core environment. For this feature to work, the Core Systems must be connected together with a *StarKeeper II* NMS connection class. To administer this connection use the **cfenter (cf)** command. The Dialstring will be the fully qualified listener address of the remote Core System (e.g. nj/warren/CORE1).

The **setnode** command now uses the same shell, **ksh**, that is used in the standard *StarKeeper II* NMS environment.

2.2.2.7 *Network Builder Service Address Form*

The Network Builder Service Address form now allows "Originating Group Security" to be defined or modified for Speedcalls. In order to take advantage of this new capability, the user must ensure that the node software versions support it. The node versions that support this feature are: BNS-2000 VCS R6.0 (build 56), or higher and BNS-2000 R4.0 (build 58), or higher.

2.2.2.8 *Deletion of Individual Addresses from Screening Tables*

When using the Network Builder application, if you delete an individual address from an SNI, or delete the SNI, you will be asked whether the individual address should be removed from the screening tables. You may indicate either "yes" or "no".

2.2.2.9 *Variable Object Size for Map Editor*

In order to fulfill the customers' need to accommodate more objects on a network map, sets of variable sized map objects have been introduced for map object types that are used most frequently.

2.2.2.10 *Performance Reporter*

Several changes have been made to the Performance Reporter application:

- When selecting reports from the list for printing or deleting, non-contiguous reports in the list may be selected. To do this, depress the keyboard <CTRL> key while selecting each report with the mouse.
- Column headers have a larger font for easier reading.
- The **Transpose** capability has been eliminated from graphs.

3. StarKeeper II NMS Notes and Caveats

3.1 Hardware Configurations

StarKeeper II NMS R10.0 staged systems will be supported on the new HP C200 machines. Release 10.0 upgrades will be supported on HP 715/33, 715/64, 715/75 and 715/100 workstations. These workstations will require a minimum of two HP certified 2-GB disks. Operating system Upgrades on HP 720s and 730s will NOT be supported.

3.2 Installation

Installation procedures for your *StarKeeper* II NMS system can be found in the *Getting Started with StarKeeper II NMS Guide*, which you received with your order. Also included in this guide are procedures for installing two 2-GB disks to your HP 715 workstation. Please follow all instructions in the Getting Started Guide carefully.

3.2.1 HP System Administration

Since *StarKeeper* II NMS R10.0 is running on a new HP-UX software platform, it is strongly recommended that your system administrator receive training on the new operating system. This will ensure that your workstation's operating system is tuned properly and disk utilization is carefully monitored.

3.2.2 Disk Space Requirements for Upgrades

The HP-UX 10.20 operating system and the new Informix software require a substantial amount of free disk space in the root file system for proper installation. The amount of space required will vary from system to system depending on the release from which you are upgrading. It is **very important** to review the disk space requirements that are documented in the *Getting Started with StarKeeper II NMS Guide for Software Upgrade Packages*. Failure to have the correct amount of free space may abort the installation and leave the system unusable. **Always make a full backup of your system before beginning the upgrade** in the event that you need to recover your system.

3.2.3 Listener Address on Staged Systems

During the installation process of your staged system you will need to populate the listener address field through the network information screen. The final installation screen allows you to restart installation (by typing "r"). If you restart the installation, your system will reboot and may return your listener address to its default value; **STAGED**. If this occurs, reenter the correct listener dialstring. The next time you are asked about restarting installation choose to "continue" by pressing a carriage return.

3.2.4 Licensing

The combination of a *serial number, comcode or product name* and a *software key* will be required to license all the *StarKeeper* II NMS R10.0 products. To receive the *software key(s)*, contact 1-800-WE2-CARE (800-932-2273) and provide them the *serial number(s)* and *comcode(s) or product name* which are located on the "Purchase Agreements". You will also be asked to provide administrative information (i.e., name and address of your System Administrator, machine information, etc.) as described on the back of the "Purchase Agreement". The "Purchase Agreements" are included with all staged systems and software packages.

NOTE: For certain software packages, INFORMIX will need to be installed and licensed. The INFORMIX license key(s) to license the INFORMIX products are included in the INFORMIX

documentation package(s) which are included with the *StarKeeper II* NMS order.

3.2.5 Restoring Customized Information After an Upgrade

The installation of *StarKeeper II* NMS overwrites files that may have been customized by the user. The following areas are affected:

1. *cnmsadm/.profile*: If the user has customized the *cnmsadm* login ".profile" file, the changes must be re-done to this file after the upgrade is complete.
2. *cnmsadm* cron entry: If the user has customized this file, the changes must be re-administered after the upgrade is complete.
3. upload cron information: If the user uses upload crons, the Upload Cron utility from *SKsh* must be re-run after the upgrade is complete.
4. threshold values set using the Performance Reporter application: You will need to reset threshold values that were defined in the previous release. The old threshold values can be viewed by editing the file *\$PR_ROOT/etc/thresh/OThvals*.

3.3 Printing

3.3.1 Remote Printing

Printing with the *dkdo* functionality is no longer supported. Beginning with Release 10.0 all remote printing will be performed using the LAN interface.

3.3.2 Drag and Drop Printing

Drag and Drop printing is not supported in Release 10.0. Instead, users must capture the print images and print the captured file using the procedures documented in Chapter 3 of the *StarKeeper II NMS Graphics System Guide*.

3.4 System Backups and Preventive Measures

It is important that your system be re-booted at least once a month to perform system backups and so that a file system check can be performed. File system checks can detect possible file system corruption that could occur due to intermittent hardware failures. A full system re-boot with file system checks every week is an excellent preventive step to avoid problems.

3.5 System Backups should use DDS Certified Tapes

Tapes used for system backups should be DDS certified. Writing to a non-certified tape, using tape compression can cause a write protection error. You can ensure that your tapes are DDS certified by visual inspection. All certified tapes have 4 vertical bars in the top left-hand portion of the tape, directly to the right of the words, "Digital Data Storage"

3.6 Using a 720/730 as a Netstation

StarKeeper II NMS Release 10.0 will not run on your Hewlett-Packard 720 or 730 workstations. These machines may be used as netstations by following the procedure documented in Chapter 2 of the *StarKeeper II NMS Graphics System Guide*.

3.7 Korn Shell

Korn Shell (ksh) is supported as the standard login shell for *cnmsadm* and *ndswadm* users. **NOTE:** The C shell (csh) and Bourne shell (sh) are NOT supported. All Core and Graphics Systems administrators should specify the */usr/bin/ksh* as the default for all their users.

3.8 Root Password Protection

Securing the system from unwanted access to the *root* login is one of the most important steps an administrator can perform. In order for the *root* login to be limited to the Hewlett Packard console, the login must have a password associated with it. If the login does not have a password, root login access through the *Datakit II VCS Fiber Optic Interface* is allowed.

3.9 Operating in Single User Mode within the HP VUE Environment

When you are running VUE on a system with HP-UX 10.20 it is recommended that you exit from the VUE session before performing a "**shutdown 0**", which places you in a single user mode. Prior to running "**shutdown 0**" you must stop the VUE session on the console as follows:

- If you are running VUE, go to the VUE Login Window, select the "Options" button and select the "No Windows" option.
- Login as *root*

You may now continue with the "**shutdown 0**".

3.10 Core System Software

The following notes and caveats pertain to *StarKeeper II NMS Core Systems* as well as to the Core System software component of *StarKeeper II NMS Co-resident Systems*.

3.10.1 New `make_recovery` Command

The *backupSKsys* command had been replaced by a new *make_recovery* command. Refer to the *StarKeeper II NMS Core System Guide* for details.

3.10.2 Scheduling Multiple Uploads

If you are scheduling multiple uploads to occur each evening keep in mind that it is important for each upload to finished before the next begins. Therefore, you should stagger the times between each upgrade. This is not necessary if you are scheduling uploads on ALL systems.

3.10.3 Command Partitioning in the HP VUE Environment

Partitioned users are created to run under the restricted shell, which is not supported under HP VUE. It is therefore not possible for partitioned users to login through VUE. Therefore, if a partitioned user is to login on a terminal with a VUE login screen on the display, the user must first click on the Options button to select the "No Windows" option. After that option is confirmed, the user will see a regular UNIX login prompt replacing the VUE login screen. The user can then login to perform the authorized tasks. This also implies that partitioned users will not be able to use any of the VUE-related graphics capabilities on the terminal. Partitioned users can still login through either "cut-through" or a non-graphics terminal.

3.10.4 Cancel Upload via Cron Interface

If you change a node name, *StarKeeper II NMS* will not let you cancel an upload via the **cron** interface. Therefore, you should either cancel the upload prior to changing a node name, or if you have already changed the node name, you can perform the following steps as a *cnmsadm* user in order for the change to take effect:

1. Execute the command **crontab -l > /tmp/crontab.cnmsadm**
2. Edit the */tmp/crontab.cnmsadm* file and replace the old node name with the new node name entry.

3. Execute the command **crontab /tmp/crontab.cnmsadm**

3.10.5 initdb Message

If you are logged in as a *cnmsadm* user and your root filesystem is full, execution of the **initdb** command may display the following message: **env. variable CNMS_BASE not defined**. Clean up space in the root file system and run the command again.

3.10.6 Quitting Core Reports

When executing the Core System reports (alarm, billing, performance), the reports are paginated. If a user quits the report before it is completed (at a **:** prompt), the following message will be displayed:

```
FORMS statement error number -xxxx
A report output file cannot be written to.
```

This is an INFORMIX problem, and should be ignored.

3.11 Graphics System Software

The following notes and caveats pertain to the *StarKeeper II* NMS Graphics Systems as well as to the Graphics System software component of the *StarKeeper II* NMS Co-resident Systems.

3.11.1 Workstation Administration: Terminating Cut-Through Windows

Please note that when you want to execute a console command through a Cut-Through window you must use "**~ .**" instead of a "**~** ." when ending the console session. This will enable your Cut-Through window to stay up. If you use the "**~** ." to end the console session, it will terminate the Cut-Through window also. In addition, if a Cut-Through user tries to authorize himself on a machine for which the */etc/opt/dk/dksrvtab* file prevents authorization, the Cut-Through window will display the following messages:

```
Circuit Open
Circuit Closed
Command complete.
```

The message "You are not allowed to authorize on area/exchange/host", would otherwise be displayed, will not appear in the Cut-Through window.

3.11.2 Graphics Applications Not Starting Properly

If you attempt to execute a graphics application when the Graphics System software is "shutdown" you may receive no message or a message from the application that may be misleading. When this occurs, the user should ensure *StarKeeper II* NMS is running by following the procedures below:

- For Co-resident Systems, log in as *cnmsadm* and use **SKsh** to start-up the software.
- For Graphics Systems, execute the **\$AP_ROOT/bin/startws** command.

3.11.3 Bulletin Board Application

Occasionally, it is possible to have multiple Bulletin Board Applications running simultaneously on your system. It is suggested that you close all but one occurrence of this application.

3.12 Network Builder Application

3.12.1 Frame Relay

3.12.1.1 Cancel Update During Download

When you submit an update on an FRM or FRM-M2 module, and choose to have the initial service state be "in", the module will start to download. If you cancel the update during the download, it will hang for about 20 seconds and then display the message, "A serious software error has occurred. Network Builder will quit when this notice is dismissed". It is recommended that you do not cancel a submitted update while the FRM or FRM-M2 is downloading.

3.12.1.2 Deleting a PVC

Immediately following a deletion of a PVC, you may receive the warning message, "You made changes to this form. Proceeding will discard these changes." Please disregard this warning.

3.12.1.3 Command Windows

Occasionally, FRM or FRM-M2 command pop-up windows become inactivated when view windows are up at the same time. To remedy the situation, close the view window, close the command pop-up using the menu in the upper left corner of the window and bring up the command window again.

3.12.2 Parallel Session Maintenance Trunks

Changing the "Primary" end of parallel session maintenance trunks through Network Builder will fail if one or more of these trunks is in service. Make sure all parallel trunks are removed from service before initiating the changes through Network Builder.

3.12.3 Connectivity Analysis

When attempting to exit from the Connectivity Analysis tool, you may get a message stating that any previously created designs are not saved. Disregard this pop-up window. Any designs you previously saved will be saved when you exit the application.

3.13 Network Monitor Application

3.13.1 Core-to-Graphics System Connection

If the connection from a Graphics System to a Core System is lost, for example the CPM for that Core is removed from service, the Map Editor process within Network Monitor cannot be started. Currently, no message is displayed in this scenario. If this connection is lost after the Map Editor is started, an "SCP_ABORT" message is displayed in the eventlog. All Map Editor functionality will continue to operate except for editing the scratchpad text.

3.13.2 Synchronizing the Database(s)

After a configuration data synchronization has taken place, you should exit and then re-invoke the **Network Monitor Control Window** so that the newly acquired configuration data is properly displayed.

3.13.3 Administering Top Maps

Occasionally, after editing a top map and saving it, the map may not appear in the **Top Map List**. In such instances, if the Network Monitor application is stopped and restarted, the map will then appear in the list.

3.13.4 Sorting Alarms

Attempting to sort an alarm list with more than 500 alarms may be extremely slow, depending on the system load.

When an alarm list is sorted by network address (primary or secondary), sorting is performed only on the node name portion.

3.13.5 Switch Module Alarms for pre-R5.0 BNS-2000 Nodes

StarKeeper II NMS receives the alarms for the CMA Switch module on pre-R5.0 BNS-2000 nodes with a MODADDR of "A". However, output from any alarm related commands (**alhist**, **alstat**, etc.) will not contain the MODADDR of "A". As a result of this, the alarms coming from the BNS-2000 CMA switch module are displayed on the BNS-2000 shelf maps at the node level, not the module level. Alarm help for the alarm id will assist you in determining if the problem occurred at the module level.

For a standby switch in slot B in a node, if an alarm is generated, it will appear in the Network Monitor list of Node Alarms but not in the Network Monitor list associated with the module in shelf 0.

3.13.6 Changing Regular Trunks to Session Maintenance Trunks

If you change a regular trunk to a session maintenance trunk, you must use the **Network Monitor Map Editor** to delete and re-enter the trunk information on all maps.

3.14 Performance Reporter Application

3.14.1 Reports Timing Out

Reports time out after approximately 15 minutes. This may result in large reports not being completed. It is advised that you either choose a different selection criteria that would narrow the report search, or offload the data to another host for post-processing.

3.14.2 Port Utilization Values on Port Capacity Report

The calculations for the port utilization values for several modules on the **Port Capacity Report** may show a minimal discrepancy when compared to the node's **dmeas** results. *StarKeeper* II NMS and the Datakit II VCS or BNS node calculate port utilization values independently. *StarKeeper* II NMS calculations assume that the measurement interval was an exact hour for *average* utilizations and 5 minutes for the *peak* utilizations. The node calculations are based on the actual measurement interval down to the second. *StarKeeper* II NMS rounds either up or down to the closest percentage point, while the node truncates the digits after the decimal point.

4. StarKeeper II NMS SNMP Proxy Agent

The *StarKeeper II* Network Management System (NMS) SNMP Proxy Agent Release 10.0 software is an optional software application which is now included in all *StarKeeper II* NMS R10.0 Core System software packages. If you choose to install the SNMP Proxy Agent software on your Core or Co-resident *StarKeeper II* NMS system, you will need to license it. The SNMP Proxy Agent Purchase Agreement Certificate, which is required for licensing the software, is also included with the Core System software package.

The SNMP Proxy Agent enables a service provider to provide a Customer Network Management (CNM) Service to their end customers (subscribers). It enables end customers who subscribe to SMDS and Frame Relay services to manage their own private virtual networks by allowing them to use SNMP applications (i.e. SNMP Managers) to monitor the interfaces they use on the public data network.

The SNMP Proxy Agent supports Frame Relay interfaces on the *Datakit*[®] II Virtual Circuit Switch (VCS) and BNS-2000[®] nodes. It also supports SMDS interfaces on the BNS-2000 nodes.

4.1 StarKeeper II NMS Configuration for the SNMP Proxy Agent

The minimum hardware and software configuration required for the operation of *StarKeeper II* NMS R10.0 SNMP Proxy Agent Software is satisfied when you set up your *StarKeeper II* NMS R10.0 Core or Co-resident System according to the requirements specified in the *StarKeeper II NMS R10.0 Planning Guide*. The SNMP Proxy Agent is only supported on the following Hewlett-Packard systems: 715/64, 715/75, 715/100 and C200. It is NOT supported on the HP 715/33.

4.2 SNMP Proxy Agent R10.0 Supported Products

StarKeeper II NMS R10.0 SNMP Proxy Agent supports the following interfaces:

- SMDS Access Interface modules on BNS-2000 R2.0, R3.0, R4.0 and R5.0
- ICI Trunk module on BNS-2000 R2.0, R3.0, R4.0 and R5.0
- Enhanced Frame Relay modules on *Datakit II* VCS R4.0, R5.0; BNS-2000 VCS R6.0; and BNS-2000 R2.0, R3.0, R4.0 and R5.0

4.3 SNMP Proxy Agent Features

The *StarKeeper II* NMS R10.0 SNMP Proxy Agent software supports the following features:

- The SNMP Proxy Agent allows an SNMP Manager to perform the following tasks: retrieve performance measurements, error counts and logs; retrieve configuration information; monitor the current status of an interface; receive traps on changes in the status of an interface; and receive authentication failure traps.
- The *StarKeeper* administrators can administer the SNMP database via a menu driven interface or a Motif Graphical User Interface.

Administrators need to define the network interfaces, Customer Views and Subscribers in the SNMP database for their SNMP operation.

- The SNMP Proxy Agent provides read-only access to most CNM data. Some objects, as defined in the Management Information Base or MIB, can be modified via the SNMP set command.

- The SNMP Proxy Agent supports the following SNMP primitives: **Get Request PDU**; **Get-Next Request PDU**; **Get Response PDU**; **Trap PDU**; **Set PDU**.
- The SNMP Proxy Agent supports **IP address authentication** via *IP address screening* and *Community String validation*.

The SNMP Proxy Agent assures that only those SNMP Managers that are registered in the SNMP database can gain access to the SNMP Proxy Agent.

- The SNMP Proxy Agent supports **Access Control** by allowing SNMP Managers to get information for only those interfaces that have been assigned to them.
- The *StarKeeper* administrator can restrict the number of requests that an SNMP Manager can make to a particular node.
- The SNMP Proxy Agent supports a subset of MIB II Objects. The *system* group, a subset of the *interfaces* group, and the *snmp* group of objects are supported.

The Lucent Enterprises CNM MIBs have been added to this release. These MIBs are identical to the AT&T Enterprises CNM MIBs.

The Lucent Enterprises MIBs identify the SMDS and Frame Relay CNM network management information that an SNMP Manager can access.

- The Lucent Enterprises MIBs files are available with the software and are fully documented in the *StarKeeper II SNMP Proxy Agent Guide*.

4.4 SNMP Proxy Agent Notes/Caveats

4.4.1 Installation

If you are installing the SNMP Proxy Agent software on your system for the first time, or if you are upgrading from an earlier version, please refer to the Installation procedures documented in the *Getting Started with StarKeeper II NMS Guide*.

If you are upgrading from an earlier version (i.e. R7.0, R8.0 or R9.0) to SNMP Proxy Agent R10.0, the SNMP database will automatically be converted and will be available once the new software is started. Please note only configuration information will be available. Any performance data gathered and stored in a *StarKeeper II* NMS database from a previous release will not be available after a *StarKeeper II* NMS conversion.

4.4.2 Motif GUI

In the form titled, **Subscriber Information Administration**, a field exists in the **Authentication** section labeled **Customer View**. There are three push buttons labeled **List ...** one each for **Read**, **Write** and **Trap**. When any of these push buttons is selected, a selection dialog is displayed containing a list of all valid customer views. If the number of Customer Views exceeds a specific amount and a previous release of SNMP Proxy Agent R10.0 was installed on the host before installing the present release, you may have difficulty selecting a Customer View from the list.

If this occurs, execute the following while logged in as *cnmsadm*:

- **exit** out of *sksnmpxadm* (SNMP Proxy Agent GUI)
- **rm \$HOME/.subrc** (answer 'y' to the mode ? prompt)
- execute **sksnmpxadm**

4.4.3 Enhancements/Changes

4.4.3.1 MIB Name Changes

The naming conventions of proprietary MIBs for Customer Network Management have replaced "AT&T" with "Lucent." The old AT&T objects have been deprecated (rather than deleted), so they can still be referenced by customers.

4.4.3.2 Year 2000 Support

The SNMP Proxy Agent software will now handle dates in the year 2000.

4.4.4 Caveats

4.4.4.1 Nodename Changes

If an administrator changes the name of a node within StarKeeper using the **cf** commands, it causes problems with the SNMP Proxy Agent Software. The SNMP software keeps a database that maps *nodename* and *ifindex*. If the nodename changes on the *StarKeeper II* NMS system, SNMP will still try to interact with the old nodename.

Therefore, we do not recommend changing nodenames; however, if this is unavoidable, the following should be done. Each of the *ifindexes* associated with the old nodename should be deleted using the **delete network interface** form available in **sksnmpcf**. Then the *ifindexes* should be re-entered using the correct nodename.

4.4.4.2 StarKeeper Distributed Environment

The SNMP Proxy Agent Software does **not** support the StarKeeper distributed environment. This means that each node which provides SMDS/Frame Relay service, must have its Performance, Administration, and Console connections all on the **same** *StarKeeper II* NMS.