TEAM 6000

Metroplex Network Manager
Release Notes, Version 3.0.0 for HPOV - SUN Solaris / HPUX

086R902-V300, Issue 3 - March 2001

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Section 1 - Solaris

1.0   Overview

These installation and release notes provide new information relevant to this version of the TEAM 6000 software product. This updates the information supplied by the TEAM 6000 Operation Manual. If you require additional details please refer to that manual.

Team 6000 is now supported on the following Solaris platforms: Solaris 2.7 with HPOV 6.1 and Solaris 2.8 with HPOV 6.1. For the latest product information, check the GDC website at **http://www.gdc.com** or contact your GDC field representative.

2.0   Software Reference

Throughout this manual, short forms of the software product names will be used. The following tables provide detailed reference information for all software modules relevant to TEAM 6000 for Solaris installation.

Table 1: Software Reference for Solaris

Item	Part Number/Description	Version / Release
TEAM 6000 Software Product	058U638-C01A	Ver 3.0.0
TEAM 6000 Operation Manual	058R608-V300	Latest issue
Solaris Software Product	S-058U019-C01	Ver 2.7 / Nov 1999
	S-058U020-000	Ver 2.8 / Feb 2000 Ver A
HPOV for Solaris Software Product	Full: 759-065S002 (Enterprise) Entry 759-065S003 (250 Node)	Ver 6.1
Solaris/HPOV Patch Clusters	Ref: Sun / HP websites	
HPOV Network Node Manager Installation Guide	HP J1136-9000	

Table 2: TEAM 6000 Software Packages

Package Name	Description	Version
GDCTeam	GDC TEAM Utilities	Ver 3.0
GDCSelf6	GDC Shelf 6000	Ver 3.0
GDCMp6360	GDC Metroplex 6360	Ver 3-0
GDCMp6441	GDC Metroplex 6441	Ver 3-0
GDCMp6520	GDC Metroplex 6520	Ver 3-0
GDCMp6380	GDC Metroplex 6380	Ver 3-0
GDCMp6521	GDC Metroplex 6521	Ver 3-0

2.1   TEAM 6000 Verification

The TEAM 6000 CD contains the software packages listed in the table above. After installation is completed, these packages should be present on the system at the versions indicated in the table or greater. To verify the presence of the TEAM 6000 packages currently installed type the following command:

`/usr/bin/pkginfo -1` *<PackageName>*

3.0   Improvements Since Last Release

This is the initial release of TEAM 6000 software. This software has been tested to be Year 2000 compliant in accordance to GDC ENG-STD-003. Check GDC's web site at http://www.gdc.com for the latest Year 2000 information. Note the following new information concerning this software:

•   The application is approved for operation on SUN Solaris 2.7, Solaris 2.8, HP OpenView 6.1 and HPUX 11.0 upgrades.

4.0   Corrected Issues

None.

5.0   HP OpenView for Solaris

The following sections describe the current requirements and procedures concerning the HP OpenView for Solaris version of TEAM 6000 software.

5.1   Hardware Requirements

•   SUN ULTRA 5 or greater with a minimum of 96 megabytes of RAM

•   2 gigabytes of hard disk space with 350 megabytes free disk space and 192 megabytes of swap space

•   Minimum disk space requirements:

    `/opt`   75 megabytes

•   The graphics card should support a resolution of 1152x900.

•   CD ROM drive

Note: *96 megabytes of RAM is sufficient to support 1 or 2 users logged into the workstation, running individual OpenView Windows sessions. Reduced performance can occur with additional users accessing the workstation for remote login. To avoid problems, increase RAM based on the expected number of simultaneous users and on the number of TEAM applications in use. Allow 25 megabytes of RAM for each additional user, and 3 megabytes for each TEAM application. You should also adjust swap space to be approximately twice the size of the RAM.*

Note: *For information on hardware requirements for HP OpenView Network Node Manager products, refer to the HP OpenView Network Node Manager Products Installation Guide.*

5.2 Software Requirements

Before installing this version of TEAM 6000, the following software must be installed. Refer to Table 1: Software Reference for Solaris, for detailed identification of all software products discussed below.

- Solaris Software
- HP OpenView for Solaris, Entry *or* HP OpenView for Solaris, Full
- TEAM 6000 software packages

Note: *IMPORTANT - It is highly recommended that the customer download and install the latest SOLARIS PATCH CLUSTER from the following Sun web site: http://sunsolve.sun.com. This will ensure that you have updated the Operating System along with any current fixes to reported problems.*

Note: *IMPORTANT - It is highly recommended that the customer download and install the latest HP OPENVIEW CONSOLIDATED PATCH CLUSTER from the following HP web site: http://ovweb.external.hp.com/cpe/patches. This will ensure that you have updated HP OpenView along with any current fixes to reported problems.*

5.3 First Time Installation

To install the current TEAM 6000 software, perform the following steps. If you are installing the TEAM 6000 software in a Distributed Environment, perform the specialized procedures in the next later sections of this document.

1. Make sure that all users exit HP OpenView for Solaris.

2. Insert the TEAM 6000 Compact Disk into the CD ROM drive.

3. At a shell prompt become super-user by entering the following command:

    `su root`

4. To stop HP Open View daemons, type:

    `opt/OV/bin/ovstop`

5. Start the installation process by entering the following commands:

    `cd /cdrom/cdrom0/solaris`

6. If a version of the TEAM 6000 is already resident on the workstation, or if you are not sure if it is resident, enter the following command before attempting to install the new version:

    `./remove.sh`

    Ignore any error messages that may appear and answer **`y`** for the questions.

7. Continue the installation process by entering the following command:

    ./install.sh

    Answer **y** for the questions. The loading of software will take a few minutes.

8. Start HP Open View daemons by typing: **/opt/OV/bin/ovstart**

9. Type **cd /**

10. Type **eject /**

11. Exit super-user (type **exit**).

12. Remove the CD from the CD ROM drive.

13. Update each HP Open View user's environment by changing your environment
    scripts (with *textedit* or your favorite editor) as follows:

    C (csh) Shell users - add the following lines to #HOME/.cshrc:

    source /opt/OV/bin/ov.envvars.csh

    set path=($path $OV_BIN)

    Bourne (sh) and Korn (ksh) Shell users - add the following lines to #HOME/.profile:

    . /opt/OV/bin/ov.envvars.sh

    PATH=$PATH:$OV_BIN;export PATH

    These updates do not take effect until you log out and log back in.

14. Start HP Openview by typing:

    /opt/OV/bin/ovw &

5.3.1 De-Installation

To remove TEAM 6000 software:

1. Make sure that all users exit HP OpenView for Solaris.

2. Insert the TEAM 6000 Compact Disk into the CD ROM drive.

3. At a shell prompt, become super-user.

4. To stop HPOpen View, type:

    /opt/OV/bin/ovstop

5. Start the removal process by entering the following command:

    cd /cdrom/cdrom0/solaris

    ./remove.sh

6. To start all HP Open View, type

    /opt/OV/bin/ovstart

7. Exit super-user (type **exit**).

8. Remove the CD from the CD ROM drive.

5.3.2 Re-Installation

To re-install TEAM 6000 software, it is necessary to first perform all the steps in the De-installation procedure. This removes all TEAM 6000 packages. You can then repeat the steps of the Installation Procedure described earlier in this chapter. You will not need to repeat the user environment update procedure.

5.4 Installation in a Distributed Environment

The OpenView distributed operating environment uses three categories of workstations: Management Station, Collection Stations, and Management Consoles. No special setup is required for Management Stations and Management Consoles. The following procedure are required for workstations that serve as Collection Stations.

Note: *If additional information on distributed environment installations is desired, refer to the following documents:*
HP OpenView: A Guide to Scalability and Distribution for Network Node Manager
GDC TEAM Core Release Notes

1. Become a super user by typing **su** and supplying the super user password.

2. Setting up environment variables by typing the following commands:

    /usr/bin/sh

    . /opt/OV/bin/ov.envvars.sh

3. Insert the TEAM 6000 CD into the CDROM drive. If not already present, create a **/cdrom** directory now.

4. Type the following command:

    mount /dev/dsk/ct0t2d0 /cdrom

5. Register GDC Trap format by typing the following:

    $OV_BIN/xnmevents -merge

    /cdrom/cdrom0/solaris/shelf6000trapd.conf

6. Start the Event system configurator GUI by typing:

    $OV_BIN/xnmtrap

7. Set up Event Forwarding to the management station, using the GDC and HPOV reference documents listed above to forward the events listed in the table below.

Enterprise Name (ID)	Event Name (Identifier)
gdc_6001(.1.3.6.1.4.1.498.15.2)	mp6001Diversity(.1.3.6.1.4.1.498.15.2.0.1)
gdc_6001(.1.3.6.1.4.1.498.15.2)	mp6001ColdStart(.1.3.6.1.6.3.1.1.5.1)
gdc_6001(.1.3.6.1.4.1.498.15.2)	mp6001WarmStart(.1.3.6.1.6.3.1.1.5.2)
gdc_6001(.1.3.6.1.4.1.498.15.2)	mp6001LinkDown(.1.3.6.1.6.3.1.1.5.3)
gdc_6001(.1.3.6.1.4.1.498.15.2)	mp6001LinkUp(.1.3.6.1.6.3.1.1.5.4)
gdc_6001(.1.3.6.1.4.1.498.15.2)	mp6001Authentication(.1.3.6.1.6.3.1.1.5.5)

A. From the Enterprise Identification pane, select an Enterprise Name

   for example: `gdc_6001`

B. From the Event Identification pane, select an Event Name

   for example: `mp6001Diversity`

C. From the Event Configuration window menu bar, select `Edit->Modify Event`. The Event Configurator/Modify Event dialog box appears.

D. Click on the Forward Event check box to expand the dialog box. The Forwarded Event Destinations pane displays.

E. Type the hostname or IP Address for destination. Destinations are the managements stations to which events will be forwarded.

F. Repeat steps 5A through 5E for each of the events listed in the Event Forwarding table above.

8. When all events are forwarded, click `OK` in the Event Configurator/Modify Event dialog box.

9. At the Event Configuration window, click `File->Save` to save the changes.

10. To cause Openview processes to re-read the trapd.conf file, generate Event by typing:

   `$OV_BIN/xnmtrap -event`

11. Unmount the CDROM by typing:

   `cd /`

   `umount /cdrom`

5.4.1 Updating Distributed Environments

Following the first time installation procedure, you will need to update each HP Open View user's environment by changing your environment scripts (with *textedit* or your favorite editor). The procedures vary depending on the type of window manager being used. The following instructions apply to the Common Desktop Environment, sometimes referred to as the DT desktop window manager.

Use your favorite editor to change environment scripts described in the procedure below. After changes are made, you must logout and login for the changes to take effect.

Common Desktop Environments

1. In order to use the CDE you need to make a change in the **$HOME/.dtprofile** file. First, open and read the **$HOME/.dtprofile** document with your editor

Note: *The lengthy dtprofile document provides information on using the C (csh), Bourne (sh), and Korn (ksh) shells in the CDE.*
*It also cautions against the use of certain terminal commands which can prevent logging in. Commands are generally present in **.login** and **.cshrc** files when using the csh shell, or in **.login** and **.profile files** when using the sh or ksh shells.*

2. After reviewing the dtprofile comments, edit the **$HOME/.dtprofile** file to remove the leading pound sign(s) in the line that contains:

    ### DTSOURCEPROFILE=true

3. If you are using C (csh) Shell you must add the following lines to $HOME/.cshrc

    source /opt/OV/bin/ov.envvars.csh

    set path=($path $OV_BIN)

4. If you are using Bourne(sh) shell or Korn(ksh) shell you must add the following lines to $HOME/.profile

    . /opt/OV/bin/ov.envvars.sh

    PATH=$PATH:$OV_BIN; export PATH

5. Log out and then log back in for these updates to take effect.

Sun Open Windows

1. If you are using C (csh) Shell you must add the following lines to $HOME/.cshrc:

    source /opt/OV/bin/ov.envvars.csh

    set path=($path $OV_BIN)

2. If you are using Bourne(sh) shell or Korn(ksh) shell you must add the following lines to $HOME/.profile:

    . /opt/OV/bin/ov.envvars.sh

    PATH=$PATH:$OV_BIN; export PATH

3. Log out and then log back in for these updates to take effect.

    These updates do not take effect until you log out and log back in.

5.4.2 De-Installation in a Distributed Environment

1. Become a superuser by typing **su** and supplying the superuser password.

2. Setting up environment variables by typing the following commands:

    /usr/bin/sh

    . /opt/OV/bin/ov.envvars.sh

3. Start the Event system configurator GUI by typing:

    $OV_BIN/xnmtrap

4. Undo Event Forwarding according to the list below.

Enterprise Name (ID)	Event Name (Identifier)
gdc_6001(.1.3.6.1.4.1.498.15.2)	mp6001Diversity(.1.3.6.1.4.1.498.15.2.0.1)
gdc_6001(.1.3.6.1.4.1.498.15.2)	mp6001ColdStart(.1.3.6.1.6.3.1.1.5.1)
gdc_6001(.1.3.6.1.4.1.498.15.2)	mp6001WarmStart(.1.3.6.1.6.3.1.1.5.2)
gdc_6001(.1.3.6.1.4.1.498.15.2)	mp6001LinkDown(.1.3.6.1.6.3.1.1.5.3)
gdc_6001(.1.3.6.1.4.1.498.15.2)	mp6001LinkUp(.1.3.6.1.6.3.1.1.5.4)
gdc_6001(.1.3.6.1.4.1.498.15.2)	mp6001Authentication(.1.3.6.1.6.3.1.1.5.5)

A. Use **Edit->Delete->Event** to select each event and delete it.

B. Use **Event->Delete->Enterprise Identifier** to delete the enterprise

C. At the Event Configuration window, save the changes by clicking File->Save.

5.5 Post-Installation Procedure For All Solaris Environments

Once the TEAM 6000 software has been installed in the desired environment, the following procedure must be performed to enable IP Discovery.

1. After completing installation and environment setup, open the root map.

2. At the options pulldown menu, select **Network Polling Configuration: IP**.

3. At the Configuration Area, select **IP Discovery**.

4. Enable the **Discover New IP Nodes** option by selecting its checkbox.

5. Click **OK**. Discovery will begin at once and the Universe map will start to show the discovered shelves.

6.0 Known Issues

- The keyboard **Num Lock** or **Caps Lock** key, if pressed ON will make the mouse buttons and the scroll bars inoperable.

- A general SNMP error may occur if certain configuration changes are attempted when a diagnostic test is in progress. For example, an attempted reconfiguration of a channel card's assigned timeslot is not allowed while the channel is in test, a general SNMP error will result.

- An out of focus problem may exist on a Configuration application when editing the System Name, System Location or System Contact fields. Usually, when changes are entered in these fields, a File->Save selection will cause the new entry to turn white, indicating a pending edit before a Save operation is initiated. If an out of focus event occurs on these fields, the File-Save selection will not mark the field for edit (white) and will send the change to the unit. You need to perform the Save operation to show the field marked for edit (white) and then perform a second Save operation to commit the change to the unit.

- The configuration application may erroneously allow the same time slot to be assigned to two channels. The following sequence allows this to occur:

  A. Two channels are assigned the same time slot on different LIUs.

  B. The LIU is changed on one of the channels, making it the same as the other channel.

  C. Performing a Refresh may then indicate that one of the time slots is OFF.

- On the Metroplex 6001 Error Reports application, changing the interface type results in the Totals screen, after resizing, to contain gray areas. To prevent extra gray areas in the screen, close the Totals screen before changing interface type.

- Some TEAM applications may display meaningless characters in the application window headings. This is due to a font conflict which can be resolved by typing the following on the command line *before* running **ovw**:

      xrdb -merge /opt/OV/bin/gdc_load_resources

- In some TEAM application windows, slight text misalignments may appear. These do not affect the usability or operation of the application.

- On the Front Panel display, some LED labels may appear out of alignment over their associated LEDs. This does not affect the operation of the application.

- In the Configuration application, in order to save changes made to any of the four Alarm masks, you must use the telnet or craft interface. Otherwise, changes will not be saved to the system.

7.0   Operating Guidelines

- Because the read-only maps are not automatically updated, use Map -> Refresh Map to update the maps.

- After an installation of the TEAM software or a reboot of the system, TEAM applications may take up to one minute to start up, due to the loading of the shared libraries.

- After an installation of TEAM software, the user must enable **Discover New IP Nodes** from the root map Options menu in order for shelf discovery to occur.

- In some TEAM applications, the text label associated with the Help link does not display. This does not affect the operation of the Help link.

Section 2 -HPUX

1.0   Overview

These installation and release notes provide new information relevant to this version of the TEAM 6000 software product. This updates the information supplied by the **TEAM 6000 Operation Manual.** If you require additional details please refer to that manual.

Team 6000 is now supported on HPUX 11.0 with HPOV 6.1. For the latest product information, check the GDC website at `http://www.gdc.com` or contact your GDC field representative.

2.0   Software Reference

Throughout this manual, short forms of the software product names will be used. The following tables provide detailed reference information for all software modules relevant to TEAM 6000 for HPUX installation.

Table 1: Software Reference for HPUX

Item	Part Number	Version / Release
TEAM 6000 Software Product	058U738-C01A	Ver 2.1.0
TEAM 6000 Operation Manual	058R694-V210	Issue 1
HPOV NNM Software Product		Rev 6.1
HPUX		Ver 11.0 / November 1999
HPUX and HPOV Patches	Ref: HP website	
HPOV Network Node Manager Installation Guide	HP J1136-9000	Latest Release

Table 2: TEAM 6000 Software Packages

Package Name	Description	Version
GDCTeam	GDC TEAM Utilities	Ver 3.0
GDCSelf6	GDC Shelf 6000	Ver 3.0
GDCMp6360	GDC Metroplex 6360	Ver 3-0
GDCMp6441	GDC Metroplex 6441	Ver 3-0
GDCMp6520	GDC Metroplex 6520	Ver 3-0
GDCMp6380	GDC Metroplex 6380	Ver 3-0
GDCMp521	GDC Metroplex 6521	Ver 3-0

2.1   TEAM 6000 Verification

The TEAM 6000 CD contains the software packages listed in the table above. After installation is completed, these packages should be present on the system at the versions indicated in the table or greater. To verify the presence of the TEAM 6000 packages currently installed type the following command:

```
/usr/sbin/swlist -1 fileset TEAM6000 <PackageName>
```

3.0   Improvements Since Last Release

This is the initial release of TEAM 6000. This software has been tested to be Year 2000 compliant in accordance to GDC ENG-STD-003. Check GDC's web site at http://www.gdc.com for the latest Year 2000 information. Note the following new information concerning this software:

- The application is approved for operation on SUN Solaris 2.7, Solaris 2.8, HP OpenView 6.1 and HPUX 11.0 upgrades.

- Alarm Severity support

- T1 HDSL support

4.0   Corrected Issues

None.

5.0   Hardware Requirements

- HP 9000 series model 700 or greater

- Minimum of 96 Megabytes of RAM and 2 Gigabytes of hard disk space with 350 megabytes free disk space and 500 megabytes of swap space

- Minimum disk space requirements:

    /opt   60 megabytes

- CD ROM drive

Note: *For information on hardware requirements for HP OpenView Network Node Manager products, refer to the HP OpenView Network Node Manager Products Installation Guide.*

6.0 Software Requirements

Before installing this version of TEAM 6000, the following software must be installed. Refer to Table 1: Software Reference for HPUX, for detailed identification of all software products discussed below.

System Software Requirements

- HP OpenView NNM

- HPUX

- The most recent HPUX and HP OpenView patches for these versions

- TEAM 6000 Software Packages

Note: **IMPORTANT** *- It is highly recommended that the customer download and install the latest HP OPENVIEW CONSOLIDATED PATCH CLUSTER from the following HP web site: http://ovweb.external.hp.com/cpe/patches. This will ensure that you have updated HP OpenView along with any current fixes to reported problems.*
Refer to the HPUX web site for updates to the HPUX 11.0 Operating System.

Note: *It is the customer's responsibility to install the listed HP software and patches, and to ensure they are fully operational before loading the General DataComm TEAM applications.*

6.1 First Time Installation

1. Close all HP OpenView and TEAM application windows (if applicable).

2. Make sure that all users exit HP OpenView.

3. Insert the TEAM 6000 Compact Disk into the CD ROM drive.

4. At a shell prompt become super-user by entering the following command:

   su

5. Verify that there is a **/cdrom** directory already present. If not, create it.

6. Enter the following commands:

   csh

   mount /dev/dsk/c0t2d0 /cdrom

   cd /cdrom/hpux

   ./INSTALL*

   The install script will automatically stop HP OpenView background processes by running **/opt/OV/bin/ovstop**. Files will then be extracted from CD to hard disk, an operation that will take a few minutes.

   The script then automatically runs **swinstall**, which displays a graphical user interface for installing the TEAM 6000 software. The window will have "SD Install - Software Selection" in its title bar.

7. Select **GDC_APPS** from the window's scroll-down list and double click on it.

Note: *The displayed version number for GDC_APPS is always OV3.0.0.*

---

8. In the resulting list, highlight the TEAM 6000 applications to be installed.

9. Select **Actions->Mark for Install**.

10. Select **Actions ->Install (analysis)**.

11. Select **OK** in the "Install Analysis" dialog box to proceed.

12. Select **Yes** in the "Confirmation" popup to continue with the installation.

Note: *If the installation stops, displaying an error message, it may be that a GDCTeam utilities application package has been detected on the host that is more recent than the one being installed. To resolve the conflict, consult the first entry in the Log File (as prompted in the error message), then click the Cancel button in the Install Analysis window. From the SD Install window menu bar, select Options ->Change Options. When the Options window appears, scroll to "Autoselect dependencies when marking software" and click the selection box (deselects the option). Then, click **OK**. You can now install software packages selectively. Resume the installation from Step 8 - this time, not selecting GDCTeam. When a Dependency Message Dialog window appears, click OK.*

---

13. When the installation is complete, the **Done** button in the Install window is no longer grayed out. Select **Done** now.

14. At the end, select **File->Exit** in the main "SD Install" window.

The script will automatically run **/opt/OV/bin/ovstart** to start HP OpenView background processes.

15. Exit super-user (type **exit**).

16. Update each HP Open View user's environment by changing your environment scripts (with *textedit* or your favorite editor) as follows:

C (csh) Shell users - add the following lines to #HOME/.cshrc:

> **source /opt/OV/bin/ov.envvars.csh**
>
> **set path=($path $OV_BIN)**
> **xhost +***HostName*

Bourne (sh) and Korn (ksh) Shell users - add the following lines to #HOME/.profile:

> **. /opt/OV/bin/ov.envvars.sh**
>
> **PATH=$PATH:$OV_BIN;export PATH**

These updates do not take effect until you log out and log back in.

17. Unmount the CD ROM by typing:

> **cd /**
>
> **umount /cdrom**
>
> **exit**

18. Remove the CD from the drive, then confirm HP Openview and TEAM processes are running by typing:

> **/opt/OV/bin/ovstatus**

19. If all processes are running, log out from root by typing **exit**

20. Exit super-user (type **exit**).

21. Start HP Openview by typing:

> **/opt/OV/bin/ovw &**

6.2   Post-Installation Procedure For All HPUX Environments

Once the TEAM 6000 software has been installed in the desired environment, the following procedure must be performed to enable IP Discovery.

1. After completing installation and environment setup, open the root map.

2. At the Options menu, select **Network Polling Configuration: IP**.

3. At the Configuration Area, select **IP Discovery**.

4. Enable the **Discover New IP Nodes** option by selecting its checkbox.

5. Click **OK**. Discovery will begin at once and the Universe map will start to show the discovered shelves.

6.3   De-installation

Note: *TEAM 6000 shares the GDCTEAM utilities packages in common with other TEAM applications. Therefore, do not remove GDCTEAM utilities package unless you are certain that there are no other applications installed on the workstation that require it.*

1.   Make sure that all users exit HP OpenView.

2.   Insert the TEAM 6000 Compact Disk into the CD ROM drive.

3.   At a shell prompt, become super-user by typing

    su

4.   Start the removal process by entering the following commands:

    csh

    mount /dev/dsk/c0t2d0 /cdrom

    cd /cdrom/hpux

    ./REMOVE*

    The remove script will automatically stop HP OpenView background processes by running **/opt/OV/bin/ovstop**. The script then automatically runs **swremove**, which opens a window "SD Remove - Software Selection" for removing existing TEAM6000 software.

5.   Select **GDC_APPS** from the window's scroll-down list and double click on it.

6.   Select **Actions->Mark for Remove**.

7.   Select **Actions ->Remove (analysis)**.

8.   Select **OK** in the "Remove Analysis" dialog box to proceed.

9.   Select **Yes** in the "Confirmation" popup to continue with the removal.

10.   Select **Done** in the "Remove Window" dialog box.

11.   At the end select **File->Exit** in the main "SD Remove" window.
      The script will automatically run **/opt/OV/bin/ovstart** to start HP OpenView background processes.

12.   Unmount the CD ROM by typing the commands

    cd /

    umount /cdrom

    exit

13.   Remove the Compact Disk from the CD drive.

14.   Exit as super-user (type **exit**).

15.   To start HP Openview, type:

    /opt/OV/bin/ovw &

6.4   Installation in a Distributed Environment

The OpenView distributed operating environment uses three categories of workstations: Management Station, Collection Stations, and Management Consoles. No special setup is required for Management Stations and Management Consoles. The following procedure are required for workstations that serve as Collection Stations.

Note: *If additional information on distributed environment installations is desired, refer to the following documents:*
HP OpenView: A Guide to Scalability and Distribution for Network Node Manager
GDC TEAM Core Release Notes

1.   Become a superuser by typing **su** and supplying the superuser password.

2.   Set up environment variables by typing the following commands:

   /usr/bin/sh

   . /opt/OV/bin/ov.envvars.sh

3.   Insert the TEAM 6000 CD into the CDROM drive. If not already present, create a **/cdrom** directory now.

4.   Type the following command:

   mount /dev/dsk/ct0t2d0 /cdrom

5.   Register GDC Trap format by typing the following:

   $OV_BIN/xnmevents -merge
   /cdrom/HPUX/"SHELF6000TRAPD.CONF;"/

6.   Start the Event system configurator GUI by typing:

   $OV_BIN/xnmtrap

7.   Set up Event Forwarding to the management station, using the GDC and HPOV reference documents in Table 1 to forward the events listed in the table below.

Enterprise Name (ID)	Event Name (Identifier)
gdc_6001(.1.3.6.1.4.1.498.15.2)	mp6001Diversity(.1.3.6.1.4.1.498.15.2.0.2)
gdc_6001(.1.3.6.1.4.1.498.15.2)	mp6001ColdStart(.1.3.6.1.6.3.1.1.5.1)
gdc_6001(.1.3.6.1.4.1.498.15.2)	mp6001WarmStart(.1.3.6.1.6.3.1.1.5.2)
gdc_6001(.1.3.6.1.4.1.498.15.2)	mp6001LinkDown(.1.3.6.1.6.3.1.1.5.3)
gdc_6001(.1.3.6.1.4.1.498.15.2)	mp6001LinkUp(.1.3.6.1.6.3.1.1.5.4)
gdc_6001(.1.3.6.1.4.1.498.15.2)	mp6001Authentication(.1.3.6.1.6.3.1.1.5.5)

    A.   From the Enterprise Identification pane, select an Enterprise Name

       for example: **`gdc_cmnAlarm`**

    B.   From the Event Identification pane, select an Event Name

       for example: **`mp6000AlarmTrap`**

    C.   From the Event Configuration window menu bar, select **`Edit->Modify Event`**. The Event Configurator/Modify Event dialog box appears.

    D.   Click on the Forward Event check box to expand the dialog box. The Forwarded Event Destinations pane displays.

    E.   Type the hostname or IP Address for destination. Destinations are the managements stations to which events will be forwarded.

    F.   Repeat steps 5A through 5E for each of the events listed in the Event Forwarding table above.

8.   When all events are forwarded, click **`OK`** in the Event Configurator/Modify Event dialog box.

9.   At the Event Configuration window, click **`File->Save`** to save the changes.

10.   To cause Openview processes to re-read the trapd.conf file, generate Event by typing:

    `$OV_BIN/xnmtrap -event`

11.   Unmount the CDROM by typing:

    `cd /`

    `umount /cdrom`

6.4.1 Updating Distributed Environments

Following the first time installation procedure, you will need to update each HP Open View user's environment by changing your environment scripts (with *textedit* or your favorite editor). The procedures vary depending on the type of window manager being used.

Use your favorite editor to change environment scripts described in the procedure below. After changes are made, you must logout and login for the changes to take effect.

<u>Common Desktop Environments (DT desktop manager)</u>

1.   In order to use the CDE you need to make a change in the **`$HOME/.dtprofile`** file. First, open and read the **`$HOME/.dtprofile`** document with your editor

---

Note: *The lengthy dtprofile document provides information on using the C (csh), Bourne (sh), and Korn (ksh) shells in the CDE.*
It also cautions against the use of certain terminal commands which can prevent logging in. Commands are generally present in **`.login`** *and* **`.cshrc`** *files when using the csh shell, or in* **`.login`** *and* **`.profile files`** *when using the sh or ksh shells.*

---

2.   After reviewing the dtprofile comments, edit the **`$HOME/.dtprofile`** file to remove the leading pound sign(s) in the line that contains:

    `### DTSOURCEPROFILE=true`

3. If you are using C (csh) Shell you must add the following lines to $HOME/.cshrc:

   ```
   source /opt/OV/bin/ov.envvars.csh
   set path=($path $OV_BIN)
   xhost +HostName
   ```

4. If you are using Bourne(sh) shell or Korn(ksh) shell you must add the following lines to $HOME/.profile

   ```
   . /opt/OV/bin/ov.envvars.sh
   PATH=$PATH:$OV_BIN; export PATH
   ```

5. Log out and then log back in for these updates to take effect.

HP Visual User Environment (VUE)

1. In order to use the VUE you need to make a change in the **$HOME/.dtprofile** file. First, open and read the **$HOME/.dtprofile** document with your editor.

Note: *The lengthy dtprofile document provides information on using the C (csh), Bourne (sh) or Korn (ksh) shells in the VUE.*
It also cautions against the use of certain terminal commands which can prevent logging in. Commands are generally present in **.login** *and* **.cshrc** *files when using the csh shell, or in* **.login** *and* **.profile files** *when using the sh shells.*

---

2. After reviewing the dtprofile comments, edit the **$HOME/.dtprofile** file to remove the leading pound sign(s) in the line that contains:

   ```
   ### VUESOURCEPROFILE=true
   ```

3. If you are using C (csh) Shell you must add the following lines to $HOME/.cshrc

   ```
   source /opt/OV/bin/ov.envvars.csh
   set path=($path $OV_BIN)
   xhost +HostName
   ```

4. If you are using Bourne(sh) shell or Korn(ksh) shell you must add the following lines to $HOME/.profile

   ```
   . /opt/OV/bin/ov.envvars.sh
   PATH=$PATH:$OV_BIN; export PATH
   ```

5. Type the following commands and verifications:

   A. Type **vrdb -merge /opt/OV/bin/gdc_load_resources**

   B. Verify successful command execution by typing:

   ```
   xrdb -query | grep "OI\*FontSet"
   ```

   C. In response, the following line should display:

   ```
   *OI*FontSet: -misc-fixed-medium-r-semicondensed--13-120-75-c-60-iso8859-1
   ```

6. Log out and then log back in for these updates to take effect.

Note: *If, due to window resources changes, this X resource is lost at any time, repeat this procedure.*

6.4.2 Post-Installation Procedure For All HPUX Environments

Once the TEAM 6000 software has been installed in the desired environment, the following procedure must be performed to enable IP Discovery.

1. After completing installation and environment setup, open the root map.

2. At the Options menu, select **Network Polling Configuration: IP**.

3. At the Configuration Area, select **IP Discovery**.

4. Enable the **Discover New IP Nodes** option by selecting its checkbox.

5. Click **OK**. Discovery will begin at once and the Universe map will start to show the discovered shelves.

6.4.3 De-Installation in a Distributed Environment

1. Become a superuser by typing **su** and supplying the superuser password.

2. Setting up environment variables by typing the following commands:

    /usr/bin/sh

    . /opt/OV/bin/ov.envvars.sh

3. Start the Event system configurator GUI by typing:

    $OV_BIN/xnmtrap

4. Undo Event Forwarding according to the list below.

Enterprise Name (ID)	Event Name (Identifier)
gdc_6001(.1.3.6.1.4.1.498.15.2)	mp6001Diversity(.1.3.6.1.4.1.498.15.2.0.1)
gdc_6001(.1.3.6.1.4.1.498.15.2)	mp6001ColdStart(.1.3.6.1.6.3.1.1.5.1)
gdc_6001(.1.3.6.1.4.1.498.15.2)	mp6001WarmStart(.1.3.6.1.6.3.1.1.5.2)
gdc_6001(.1.3.6.1.4.1.498.15.2)	mp6001LinkDown(.1.3.6.1.6.3.1.1.5.3)
gdc_6001(.1.3.6.1.4.1.498.15.2)	mp6001LinkUp(.1.3.6.1.6.3.1.1.5.4)
gdc_6001(.1.3.6.1.4.1.498.15.2)	mp6001Authentication(.1.3.6.1.6.3.1.1.5.5)

A. Use **Edit->Delete->Event** to select each event and delete it.

B. Use **Event->Delete->Enterprise Identifier** to delete the enterprise

C. At the Event Configuration window, save the changes by clicking File->Save.

7.0   Re-Installation

To re-install TEAM 6000 software, it is necessary to first perform all the steps in the De-installation procedure. This removes all TEAM 6000 packages. You can then repeat the steps of the Installation Procedure described earlier in this chapter.

8.0   Known Issues

- A general SNMP error may occur if certain configuration changes are attempted when a diagnostic test is in progress. For example, an attempted reconfiguration of a channel card's assigned timeslot is not allowed while the channel is in test, a general SNMP error will result.

- An HP OpenView error can occur intermittently when a user double-clicks on the shelf icon, displaying the following error message:

    Background graphic file "/usr/tmp/ShelfName.gif" cannot be loaded for submap ShelfName.

    This causes a fully functional shelfmap to open, but without its background image. To restore the image, close and then re-open the shelf submap.

- An out of focus problem may exist on a Configuration application when editing the System Name, System Location or System Contact fields. Usually, when changes are entered in these fields, a File->Save selection will cause the new entry to turn white, indicating a pending edit before a Save operation is initiated. If an out of focus event occurs on these fields, after a File-Save the field will not be marked for edit (white) and will not be sent to the unit as a change. Perform the Save operation to show the field marked for edit (white) and then perform a second Save operation to commit the change to the unit.

- A Window Manager problem exists when the application screens create submenus that hide the main screen from view. The main screen cannot be brought forward with a simple mouse-click in the title bar. You will need to drag the submenus out of the main screen's area of focus to view it.

- The configuration application may erroneously allow the same time slot to be assigned to two channels. The following sequence allows this to occur:

    A. Two channels are assigned the same time slot on different LIUs.

    B. The LIU is changed on one of the channels, making it the same as the other channel.

    C. Performing a Refresh may then indicate that one of the time slots is OFF.

- On the Metroplex 6001 Error Reports application, changing the interface type results in the Totals screen, after resizing, to contain gray areas. To prevent extra gray areas in the screen, close the Totals screen before changing interface type.

- Some TEAM applications may display meaningless characters in the application window headings. This is due to a font conflict which can be resolved by typing the following on the command line *before* running **ovw**:

    xrdb -merge /opt/OV/bin/gdc_load_resources

- In some TEAM application windows, slight text misalignments may appear. These do not affect the usability or operation of the application.

- On the Front Panel display, some LED labels may appear out of alignment over their associated LEDs. This does not affect the operation of the application.

- In the Configuration application, in order to save changes made to any of the four Alarm masks, you must use the telnet or craft interface. Otherwise, changes will not be saved to the system.

9.0   Operating Guidelines

- Your HPUX workstation should contain the file: /etc/rc.config.d/ov500 with the following information:

  ```
  SHLIB_PATH=/lib:/usr/lib:/opt/OV/lib/teamcore
  export SHLIB_PATH
  ```

  If this information is not present, the GDC background daemons will not start after reboot.

- Because the read-only maps are not automatically updated, use Map -> Refresh Map to update the maps.

- Make sure that the HPUX system application font size is set to 10 pt. This is accomplished via the Font button in the Style Manager via the VUE workspace area. If the font is set larger that 10 pt, some TEAM application windows will not be able to display the entire textual information they contain.

- Due to the loading of shared libraries, TEAM applications may take up to one minute to start up after an install of TEAM software or a reboot of the system.

- For the TEAM 6000 software to function, you must set the values for Timeout and Retries at the SNMP Configuration screen, as shown below:

  Timeouts should be set to **20s**(Default = 0.8s)
  Retries should be set to **3**(Default = 3)

- After an installation of TEAM software, the user must enable **Discover New IP Nodes** from the root map Options menu in order for shelf discovery to occur.

- On the Front Panel display for all applications, the Help link text is not visible. The Help link itself is operational and can be accessed by clicking the lower right corner in the Front Panel displays.

- During installation of the TEAM software, the following error pop-up may appear: **The xterm environment has not been set.** This error will prevent any windows from launching. To correct this, add the following the following command should be added to the **$HOME/.cshrc** file:

  xhost +*HostName*

Section 3 - TEAM Applications and HP OpenView NNM Scalable and Distributed Environments

1.0   Overview

This section briefly discusses the Scalability and Distribution features in NNM and how to integrate/install TEAM applications in a Scalable and Distributed environment. Refer to the HP OpenView Manual, "A Guide to Scalability and Distribution for NNM" for more detailed understanding and concepts.

1.1   Features and Advantages

The Scalable and Distribution features of the HP OpenView NNM provide robust performance over a wide range of network sizes and degrees of complexity.

The Scalable feature gives NNM the potential for handling networks of different sizes in both LAN and WAN environments. To make NNM scalable, the network management work load must be distributed to multiple systems. Then, the Distribution feature improves performance of NNM in large networks by reducing the amount of management traffic over network resources.

Some of the advantages of these NNM features are:

- The Scalable feature of NNM makes it easier to adapt network management for handling new networking landscapes.

- The Distribution feature minimizes the amount of network management traffic. Without this capability, it would be impractical to monitor thousands of nodes from a single workstation.

- Faster response times and better performance as work load is distributed to multiple workstations.

- Shared responsibilities reduces the risk of losing network management data in the event of an unexpected shutdown of the management station.

- One Common network management database (in most cases) for all users, so that modifications of managed nodes would be reflected across the board.

Some drawbacks/trade-offs are:

- Distribution of tasks requires an increased number of computing resources.

- Scalable and distributed environment requires added complexity in setup.

1.2   Theory of Operation

In a Stand-alone environment, all network management tasks are done on a single workstation. In a Distributed environment tasks are handled by multiple workstations: Collection Station (CS), Management Station (MS), Management Console (MC). Depending on network size, structure, geography and trends, one of four deployment models should be chosen: Fully centralized, Centralized hierarchical, Hierarchical, or Co-operative independent.

- Figure 1 demonstrates a Centralized hierarchical model. Refer to the HP OpenView manual for examples of other models and for choosing the model for your needs.

- Figure 2 demonstrates the HP OpenView and TEAM processes and applications that run on the collection station, the management station, and the management console.

1.2.1 The Collection Station

A collection station discovers nodes and forwards this information to the management station. The collection station also monitors (the netmon process) the nodes in its domain and forwards any traps it receives from the managed node (IP device) to the management station. Depending on the number of managed nodes and network structure, there could be more than one collection station. The collection and management stations periodically synchronize node and topology information. Figure 1 shows two collection stations feeding node and topology information to the management station.

1.2.2 The Management Station

The management station processes the node and topology information it receives from the collection stations and stores the information (via ovwdb) in a database. The management station also receives from collection stations the trap information for various managed nodes (ovtrapd process) and stores it. There should only be one management station in a distributed setup so that the node information can be shared by all the users on various management consoles.

1.2.3 The Management Console

The management console is where all the user processes are executed. User interface (application) processes like ovw, xnmevents, xnmsnmpconf are executed here in order to manage the nodes in the management station's database. The Management Consoles should be connected to the Management Station using an Ethernet LAN or a high speed network matching the speeds of LAN. Management Station and the Management Consoles will share the same database by mounting the database over the Network Filing System (NFS).

1.2.4 Permissions

The first network operator to run ovw and launch OpenView screens will have read/write permissions to the database. The rest of the operators will get read-only permissions. Note that read-only screens do not synchronize automatically with changes in network topology or with the addition or deletion of devices to the database. To resynchronize the entire network map, network operators on the management console must manually perform a **Map -> Refresh Map** command. All network operators will be able to perform other TEAM Network Management operations, such as Configuration, Provisioning, Diagnostics. Operators must manage a unit in the shelf from only one workstation at a time.
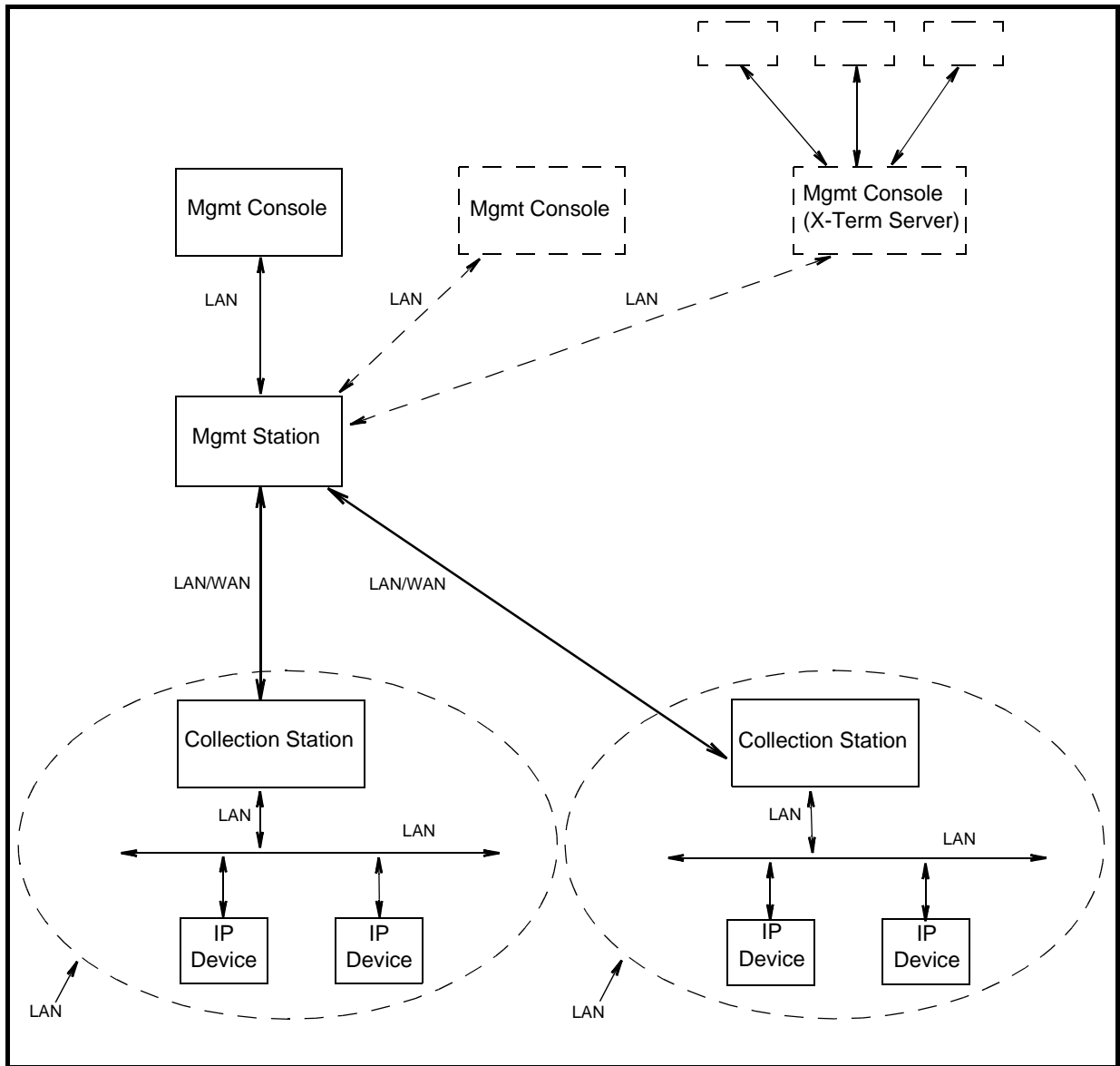
Figure 1: Example of the Centralized Hierarchical Model

1.3   The Distribution of Processes and Applications

The sequence of events that occur end-to-end from the IP node to the management console (Figures 1 and 2) is as follows:

Collection Station(s)

1. `netmon` process begins IP discovery, and populates the local topology database(`ovtopmdb`) with the help of `ovtopmd` process.

2. After the completion of discovery, the topology information is accessible by the management station.

Management Station

3. The management station requests the collection station(s) for topology information via `ovrepld` process.

4. Upon obtaining the topology information (from all collection stations), the management station merges the data into its topology database.

5. Using the data in the topology database, the processes in the management station communicate with each node to update other information necessary to manage the node.

6. Periodically, the ovrepld processes on the collection station(s) and management station synchronize the topology data. Once synchronization is complete, only changes in status and topology get sent to the management station.

Management Console and Management Console X Term Server

7. After the management station is ready with node information, the ovw process can be run.

8. Once ovw is up and running, network management on various nodes can be done.

Note: *When one of the management consoles is also designated as a X-Term Server, X-Terminals (such as Tektronics Graphics terminal) could be setup to display ovw sessions on these terminals. The ovw sessions are actually executed on the management console but displayed on the X-Terminals.*
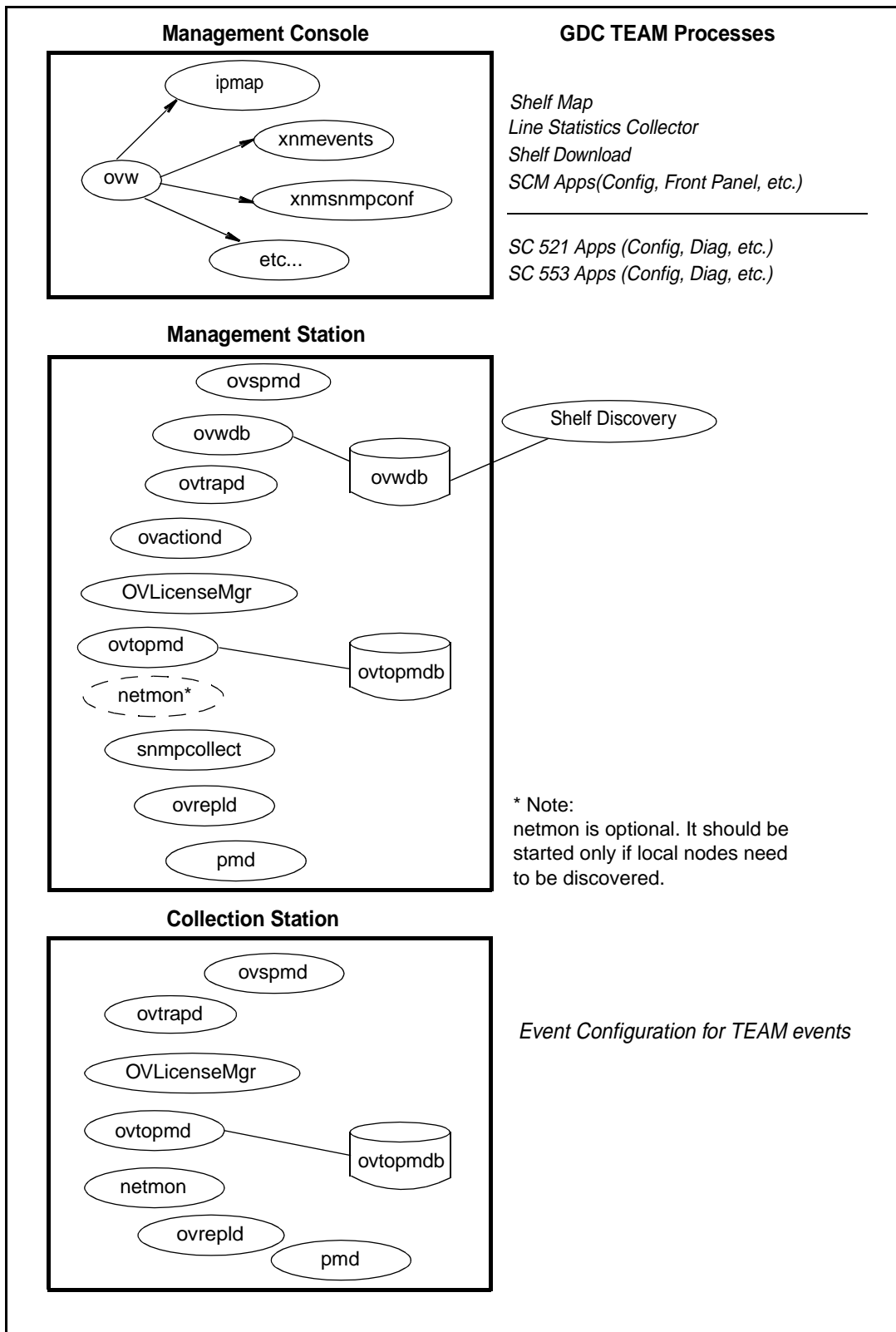
Management Console

GDC TEAM Processes

ipmap

xnmevents

ovw

xnmsnmpconf

etc...

Shelf Map
Line Statistics Collector
Shelf Download
SCM Apps(Config, Front Panel, etc.)

SC 521 Apps (Config, Diag, etc.)
SC 553 Apps (Config, Diag, etc.)

Management Station

ovspmd

ovwdb

ovwdb

Shelf Discovery

ovtrapd

ovactiond

OVLicenseMgr

ovtopmd

ovtopmdb

netmon*

snmpcollect

ovrepld

pmd

* Note:
netmon is optional. It should be
started only if local nodes need
to be discovered.

Collection Station

ovspmd

ovtrapd

OVLicenseMgr

ovtopmd

ovtopmdb

netmon

ovrepld

pmd

Event Configuration for TEAM events

Figure 2: HP OpenView and Team Processes and Applications

2.0   Integrating the TEAM Application in a Distributed Environment

Due to distribution of tasks in a distributed environment, TEAM software products must be installed on the collection station, the management station and the management console in the precise order as described in Sections 2 and 3 of the TEAM Core Release Notes. The following sections describe the dependency tree, discovery, and event handling of GDC devices for TEAM software products.

2.1   TEAM Software Product Dependency

To manage any GDC product using TEAM software, multiple software products are required. Figure 3 shows the dependencies among various products. In the example, the SC521 and SC553 cards along with their associated packages are being managed by TEAM521 and TEAM553. Both TEAM products are dependent upon TEAM Core. Because of this product dependency, TEAM Core must be installed on the workstation *before* installing TEAMSC521, etc.
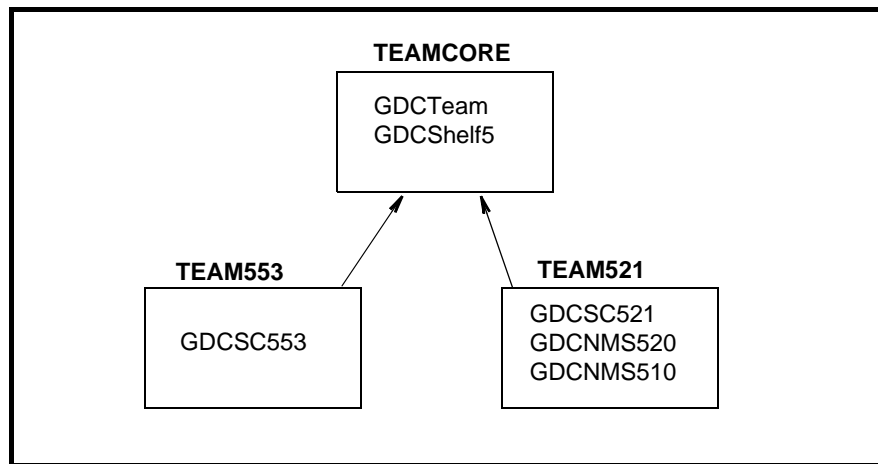
.

Figure 3: TEAM Software Product Dependencies

2.2   Discovery in an HP OpenView Distributed Environment

Once TEAM software is installed and configured in an HP OpenView NNM distributed environment, the system is ready for network management of GDC devices. This begins with the discovery of a GDC device on the management console where it is managed. Some of the typical applications that are executed on the management console are shown in Figure 2. The sequence of events that occur end-to-end is as follows:

1. A GDC device is discovered by a collection station and gets stored in its topology database.

2. This discovery information is requested by the management station in a synchronization cycle of **ovrepld** process.

3. The management station adds the device into its database as a new node.

4. Once a new node gets added on the management station, the **shelf_discovery** gets notified of the change.

5. The **Shelf_discovery** process communicates with the SCM to get the shelf contents and other relevant information and stores the information.

6. After a GDC shelf is discovered, a new shelf gets added to the TEAM universe submap.

7. From this submap various GDC devices can be managed.

2.3   Event Handling

A trap generated from a GDC device arrives at the management console where it is updated. The sequence of events that occur end-to-end is as follows:

A. When SCM is set up to do so, a GDC device sends a trap to the collection station.

B. The collection station then forwards the trap to the management station, where it gets processed by **shelf_discovery** process and notifies the shelfmap process on the management console.

C. The shelfmap process updates the status of the device associated with the event. Note that one process runs for every ovw session.