HP Patch/iX

Welcome to the MPE/iX 5.5 training for HP Patch/iX, formally known as PatchManager/iX. This document should serve only as a training material and was not designed to be a users manual. To install patches using HP Patch/iX refer to the manual entitled HP 3000 System Software Installation and Maintenance Manual HP Part Number 30216-90223.

You will need to set aside about 3 to 4 hours to complete this material.

Chapters of this Material

- Introduction
- HP Patch/iX Basics
- Creating a Patch Installation Tape (Phase I)
- Installing the Patches (Phase II)
- Viewing Detailed Patch Information
- Customizing the Set of Patches
- Error Handling in HP Patch/iX
- Recovering from HP Patch/iX Errors
- Patch Reports

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Introduction

This document will describe the use of the HP Patch/iX utility, and give pointers on how to get the most out of the new utility. It should serve as a training guide and not as a users manual. To install patches using HP Patch/iX refer to the manual entitled HP 3000 System Software Installation and Maintenance Manual HP Part No. 30216-90223. HP Patch/iX is a new patching utility from Hewlett-Packard that is included on the 5.5 release of the MPE/iX operating system. It supports the installation of PowerPatch patches, reactive patches, and an EXPRESS release (PowerPatch + Subsystem retrofit). It is not used for system installation, update, and add-on, which are still installed via HPINSTAL or AUTOINST. There are several key reasons to use HP Patch/iX instead of AUTOPAT or AUTOINST for your patching needs.

HP Patch/iX allows:

- Qualification of all patches in the set (including reactive patches), reducing the chance of a patch backing out a previously installed patch.

- Both reactive and PowerPatch patches to be installed simultaneously.
- Customization of the patches delivered on the PowerPatch tape.
- Creation of the patch installation tape while users remain on the system.
- Creation of a CSLT only when necessary.

In this class you will learn how to take advantage of these and other key HP Patch/iX features to improve the patch process in your environment.

Changes in Patch Delivery

When introduced, HP Patch/iX and its catalog will be delivered on every patch tape. There will also be additional patch files delivered for use by HP Patch/iX. Two of these files are the GENxxxxx and REFxxxxx files, where xxxxx is the last 5 characters of the patch ID. The GENxxxxx file will be a binary file that contains information such as patch component checksums, patch supersedes, patch-to-patch dependencies, and product dependencies. This information will allow HP Patch/iX to make recommendations about whether the patch can/should be installed on your system. The REFxxxxx file is an ASCII text file that contains information about the patch, such as General Release(GR) text and Special Instructions (SI) text. This file is used by HP Patch/iX to give you detailed information about the patch.

These information files are important because in the near future you will be able to download patches electronically or receive them via e-mail, and then use HP Patch/iX to install them. By choosing electronic patch delivery you will have direct access to many patches, but not necessarily know what is best for your system. The information files will help HP Patch/iX make recommendations, and help you to understand the impact of the patches you are installing on your system.

Separating Management and Installation

HP Patch/iX was designed to have two distinct phases that can be performed at different times.

Phase I of HP Patch/iX is the patch management phase, and is performed using a screen based management interface that can be run with users on the system. All activities are performed in a staging area where copies of the system software are modified. The output of the Phase I process is a tape that can be used at some later time to install the patches.

Phase II is the patch installation phase, and must be performed at the system console. In many cases users must be logged off the system and the network must be brought down. This phase is designed to mimic the old AUTOINST/HPINSTAL interface to provide a simple approach to installing the patches, with minimal operator training. Phase II may or may not require a system update depending on the set of patches. It will typically involve updating the system, re-running HP Patch/iX to restore the patch store files, and stream any patch installation jobs.

The expectation is that phase I can be performed with users on the system during normal business hours, while phase II is performed at night or on the weekend during the systems scheduled downtime period. This two phased approach has several key benefits:

- By doing setup, patch qualification, library modification, and tape creation while the system is available to users, downtime required to apply a set of patches is reduced.
- By allowing reactive patches and PowerPatch patches to be managed and applied simultaneously, downtime is reduced significantly over the old double update approach.
- If a problem occurs during any point through tape creation the system and users are not affected. The system manager has time to determine the problem, without worrying about the system being down.
- The actual installation from the patch tape is a simple process that in many businesses could be handled at night by an operator.

HP Patch/iX Basics

HP Patch/iX is a screen based utility that guides you through the patch management process, but allows you a great deal of flexibility in the selection of patches. There are four types of screens you will see in HP Patch/iX:

- Menu Screen - A menu screen allows you to scroll up/down among the menu items using the up/down arrow or j/k keys and press the Return Key to select the menu item.
- Selection Screen - A selection screen presents a number of items with a mark-box next to each item that allows you to mark the item for some action. The type of mark depends on the screen.
- Information Screen - Information screens are scrollable screens filled with written information. There are no selection activities in information screens, they are provided to convey information.
- Help Screen - Help screens are a specific type of information screen designed to provide help information about a screen, or if an error has occurred, provide cause and action text for the error that has occurred.

The following diagrams provide examples of the various types of screens. Below each screen will be a description of each of the major components in the screen.

HP Patch/iX Menu Screens

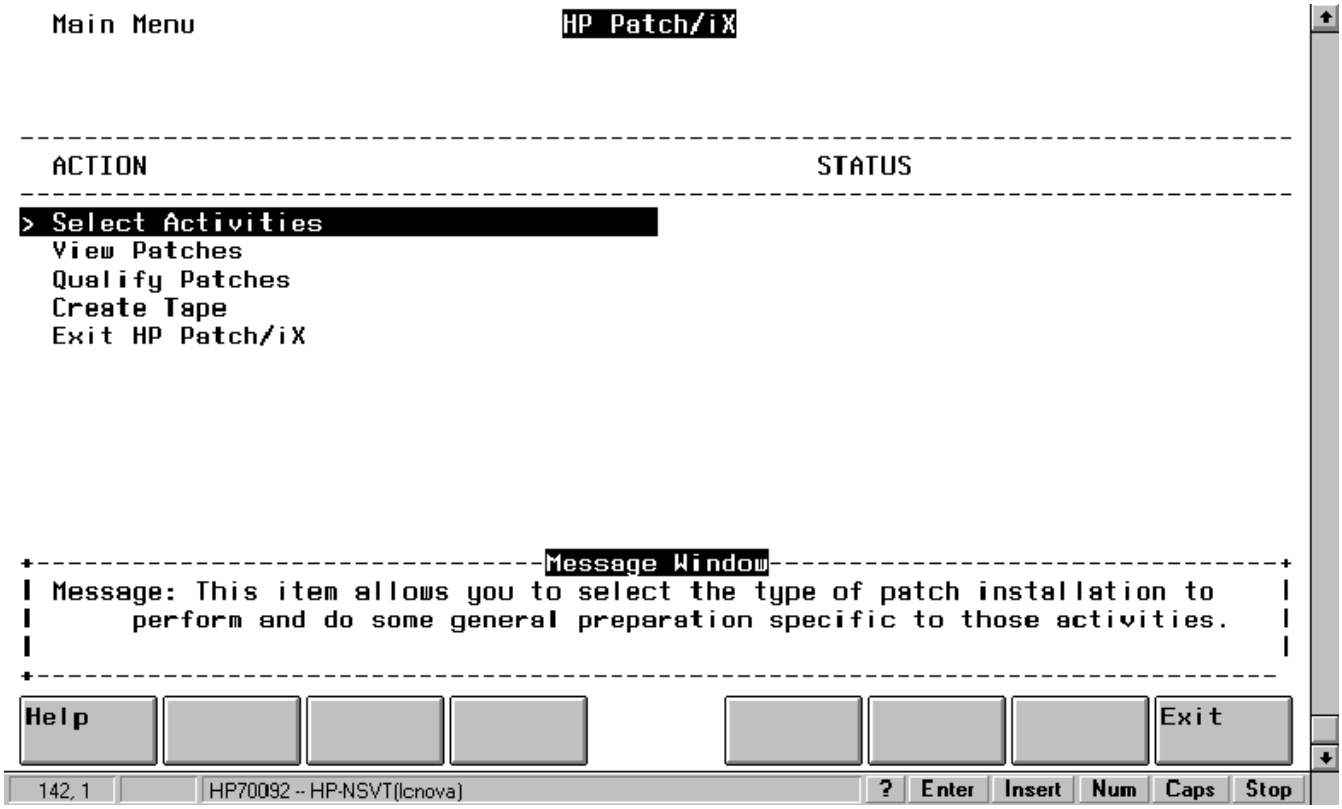

Figure 2-1. HP Patch/iX Menu Screen

Figure 2-1 is an example of a Menu Screen. A Menu Screen contains five main areas:

- Screen Hierarchy - This area displays a tree of your path, from the Main Menu, to the current screen. Note: The screen above is the top level screen so there is only one entry: Main Menu.
- Menu Title Bar - This area provides column titles for the menu items. In the menu title bar contains an ACTION column and STATUS column.
- Menu Items - This area contains a list of menu items. The current item will always be highlighted. You can scroll through the items using the up/down arrow or j/k keys, and select the highlighted item using the Return key.
- Message Window - The message window is a small window that is present on menu screens to provide additional information about the highlighted item.
- Function Keys - The function keys are labeled with the available functions for the screen. In Menu Screens this typically includes Help [f1] and Previous Menu [f8]. Note: The above screen displays the Main Menu so Exit is displayed for [f8] instead of Previous Menu.

HP Patch/iX Selection Screens

Another type of HP Patch/iX screen is the Selection Screen.

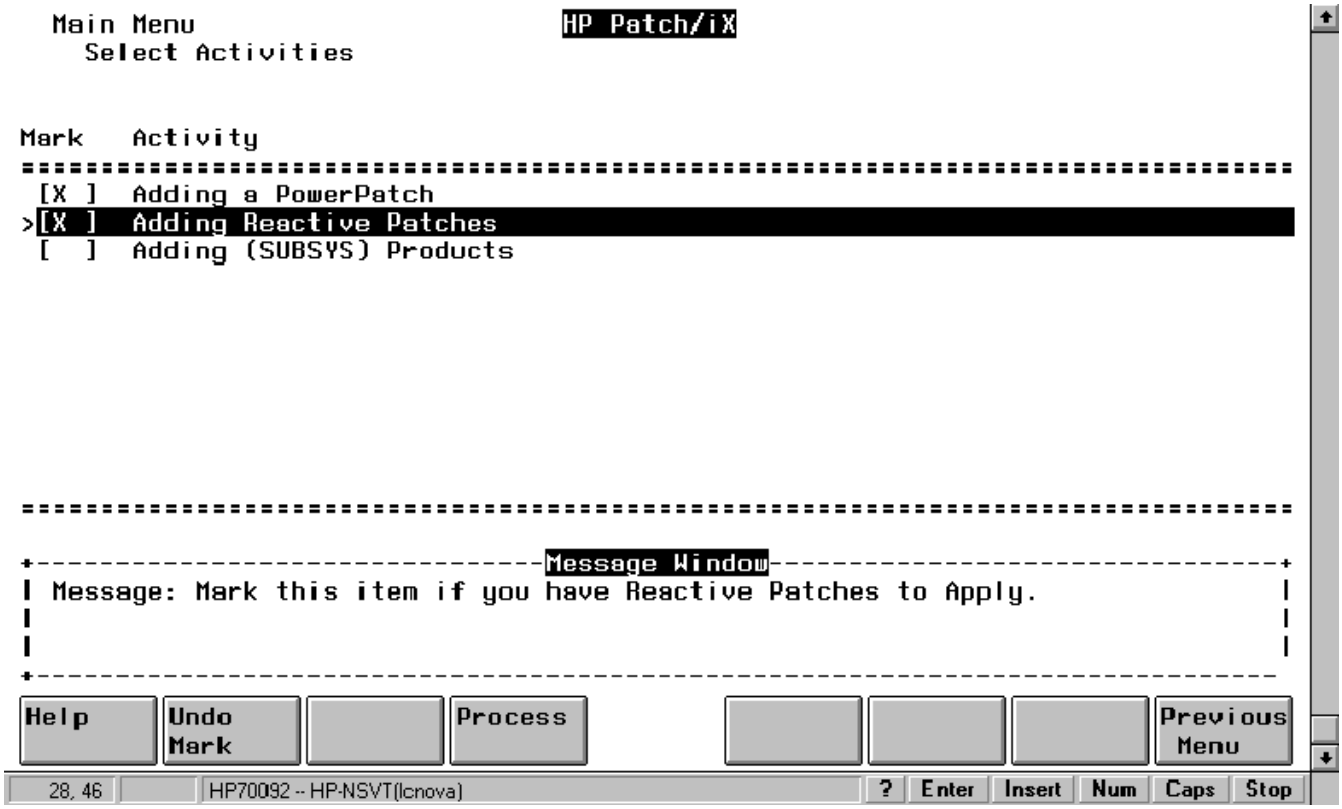

Figure 2-2. HP Patch/iX Selection Screen

There is a slight difference between a Selection Screen and a Menu Screen see Figure 2-2. In a selection screen you mark items in the list by highlighting the item and pressing specific labeled function keys. When you are satisfied with the selected items you then press the Process [f4] function key to process the marked items. The items that appear in a Selection Screen are:

- Screen Hierarchy - This area displays a tree of your path, from the Main Menu, to the current screen. The above screen shows that we are currently in the Select Activities screen, under the Main Menu.
- Item Title Bar - This area provides column titles for the selectable items. The above title bar contains the Mark column and Activity column.
- Selection Value - This is the current value of the selection, which appears in the mark box. The value will depend on the selection window. For example, in an X is used to denote the item is selected. We will see later that the Patch Qualification selection screen uses V for veto, and F for force.
- Selectible Items - Each row is a selectable item, that can be marked by highlighting the item using the up/down arrow or j/k and pressing the Mark/Undo Mark [f2] function key.
- Message Window - The message window is a small window that is present on Selection Screens to provide additional information about the highlighted item.
- Function Keys - The function keys are labeled with the available function from the screen. In Selection Screens this typically includes Help [f1], Process [f4], and Previous Menu [f8].

HP Patch/iX Information Screens

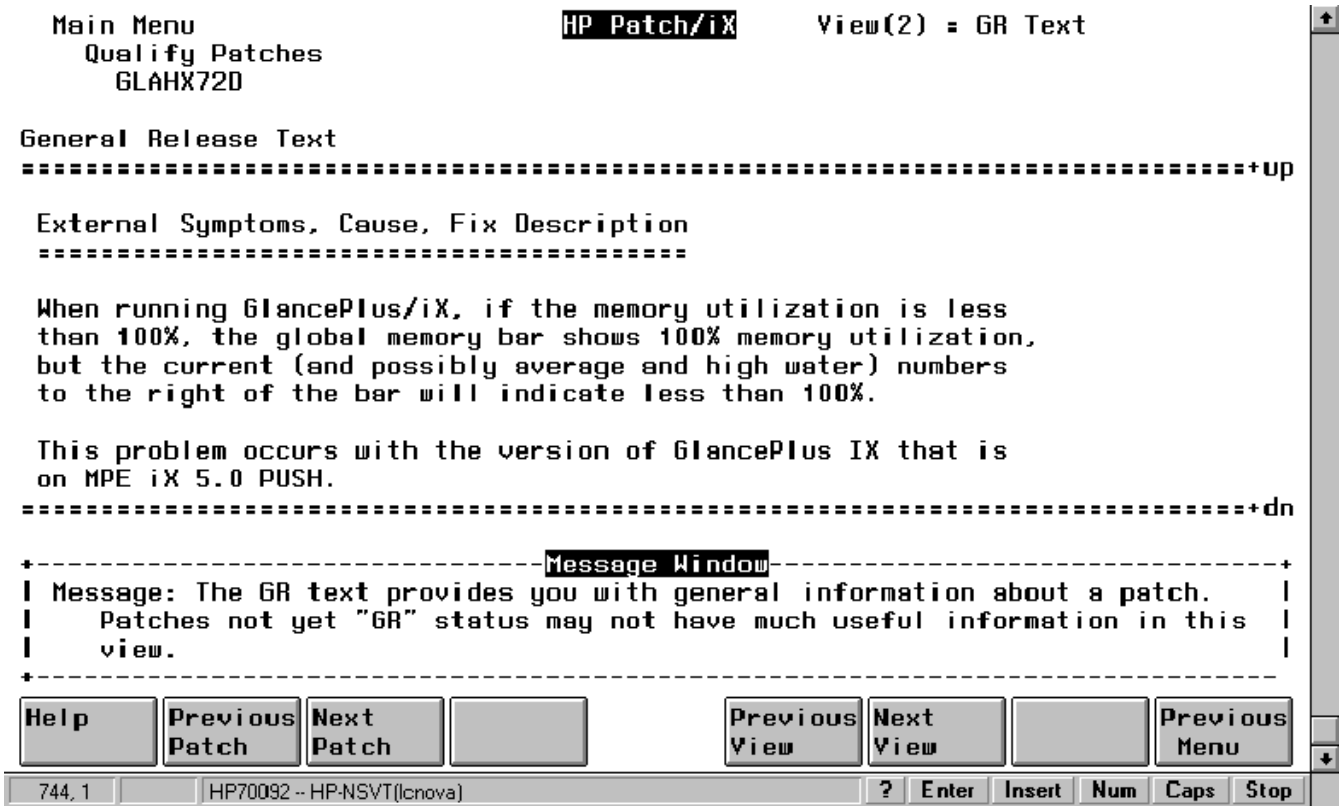

Figure 2-3. HP Patch/iX Information Screen

Figure 2-3 presents an example information screen. The items that appear in an Information Screen are:

- Screen Hierarchy - This area displays a tree of your path, from the Main Menu, to the current screen. In the current screen is the patch GLAHX72D, which was selected from the Qualify Patches screen, which was selected from the Main Menu.
- Current View Number - This is the number of the current view. Each view has a number associated with it to provide a direct method of accessing the view. To access a view by its number press the number key associated with the view.
- Current View Name - The information viewer is used to display patch information. There are many types of information available about a specific patch. You can type the view number to go directly to a view, or use the Previous View [f5] and Next View [f6] function keys.
- Information Title - The information title is a header for the scrolling information window that describes the information that is shown in the Scrollable Information Window.
- Scrollable Information Window - This window in the middle of the screen is delineated by rows of equal signs. The top boundary will end in "+up" if you can scroll up. The bottom boundary will end in "+dn" if you can scroll down.

Scrolling is accomplished using the up/down arrow or j/k keys (for single line scrolling), and the [Page Up] [Page Down] keys (for page scrolling).

- Message Window - The message window will describe the type of information that is provided by the current view.

HP Patch/iX Help Screens

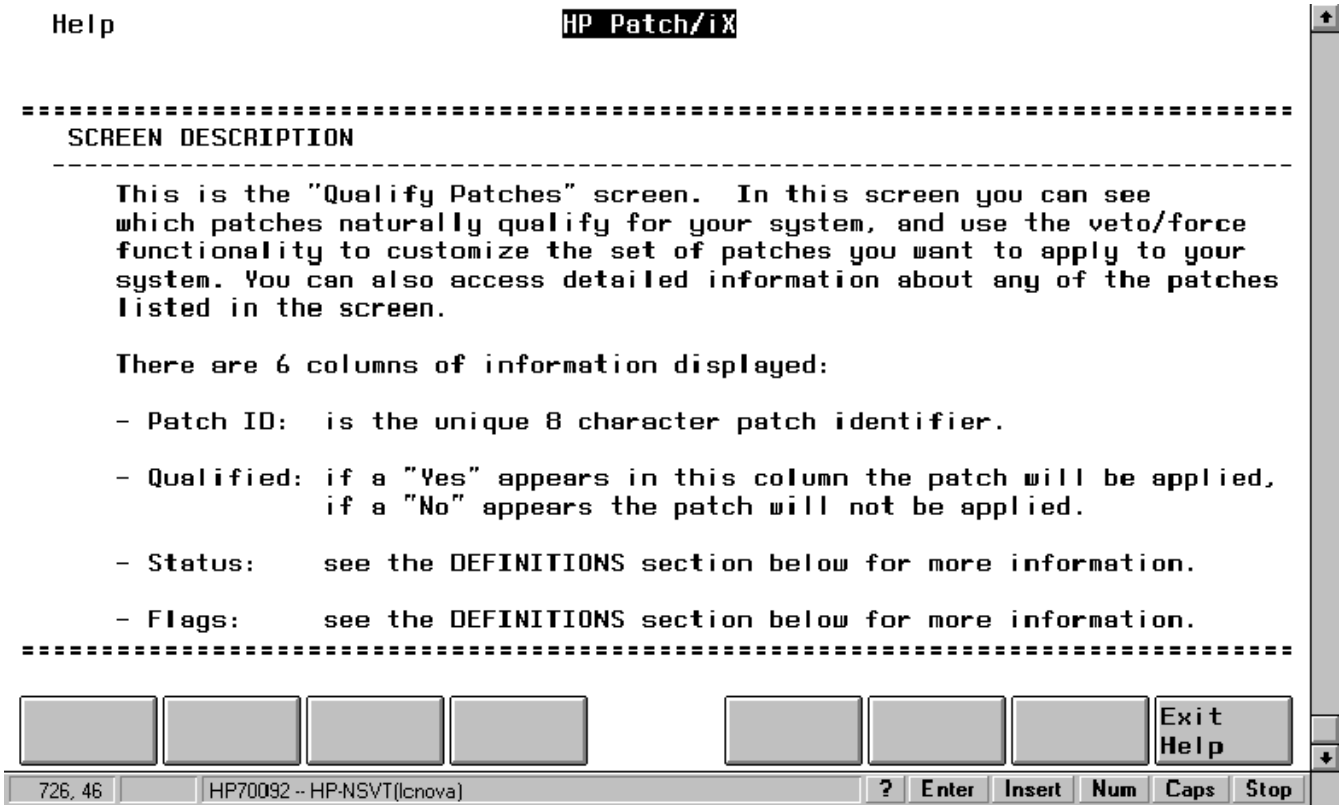

Figure 2-4. HP Patch/iX Help Window

The final type of HP Patch/iX screen is the Help Screen, see Figure 2-4. A Help Screen can be opened from any window by pressing the [f1] function key. The help screen has a scrollable information window much like the Information Screen, but has no message window or available views.

Other features of HP Patch/iX Interface

Information Windows

Information windows will pop-up on the screen occasionally and are used to provide you with feedback about some activity. If the activity will take some time to complete the

information window may provide an estimate of how long the activity will take. HP Patch/iX does not expect any user input when an information window is displayed.

Prompt Windows

Prompt windows are one mechanism HP Patch/iX uses to get user input. Prompt windows will appear and clearly state what information must be entered by the user. This could be the LDEV number of a tape device, or the name of the user running HP Patch/iX

Error Windows

Error Windows appear when HP Patch/iX encounters an error. This type of window is discussed in detail in the section entitled Error Handling in HP Patch/iX.

Message Window

Message windows have already been introduced as a constant member of most HP Patch/iX screen types. Message windows provide helpful descriptions about the contents of the screen.

Message Window with Heart-beat

When HP Patch/iX is performing some internal processing it will sometimes show a heart-beat in the message window. This heart-beat is a procession of dots that appear between angled brackets (i.e. <..... >). The dots only display activity and not progress, and thus may fill the space between brackets many times.

Message Window with Progress Meter

In some cases the percentage of completion of the task can be determined by HP Patch/iX. In these cases HP Patch/iX will present a progress meter in the Message Window. A progress meter is a progression of horizontal bars between square brackets (i.e. [||||]). When the space between brackets is filled the activity is complete.

Phase I: Creating a Patch Installation Tape

Running HP Patch/iX

You can install HP Patch/iX by restoring it and its catalog from the patch tape with the following command:

```
:FILE PPT; DEV=TAPE
:RESTORE *PPT; PATCH@.INSTALL.SYS;SHOW
```

When HP Patch/iX is installed on the system you will run it by logging into the system as MANAGER.SYS in the INSTALL group and typing PATCHIX. It is recommended that this be done on a terminal other than the console. (RCE's should also note that Patch/iX does not work correctly with the workstation terminal emulator hp2392 - the hpterm emulator works OK).

```
:HELLO MANAGER.SYS,INSTALL
:PATCHIX
```

After a brief initialization phase you will see the login screen (see Figure 3-1 below). The purpose of this screen is to get the name of the person running HP Patch/iX so that the name can be logged with the patches that are installed.

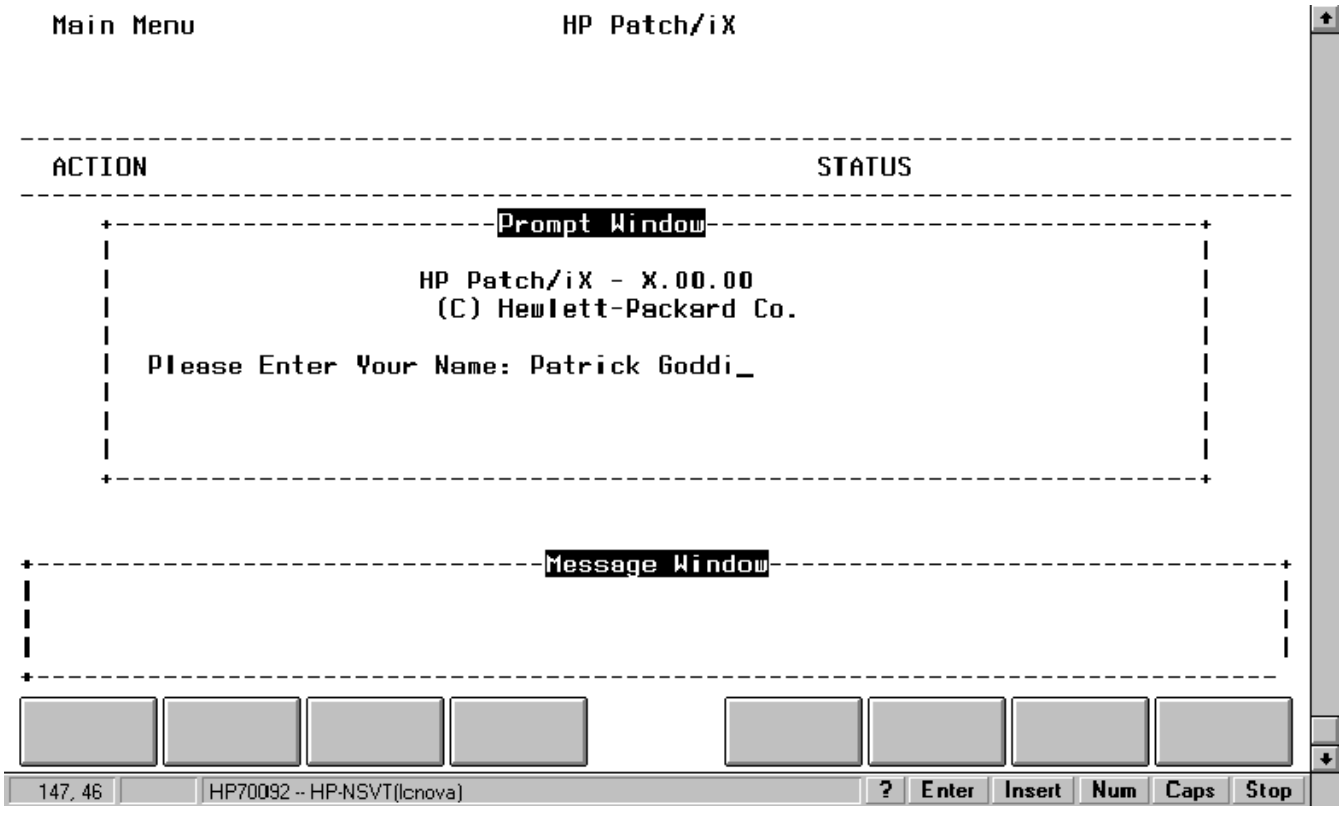

Figure 3-1. HP Patch/iX Login Screen

After you enter your name, and verify that it was entered correctly the Main Menu screen will be displayed.

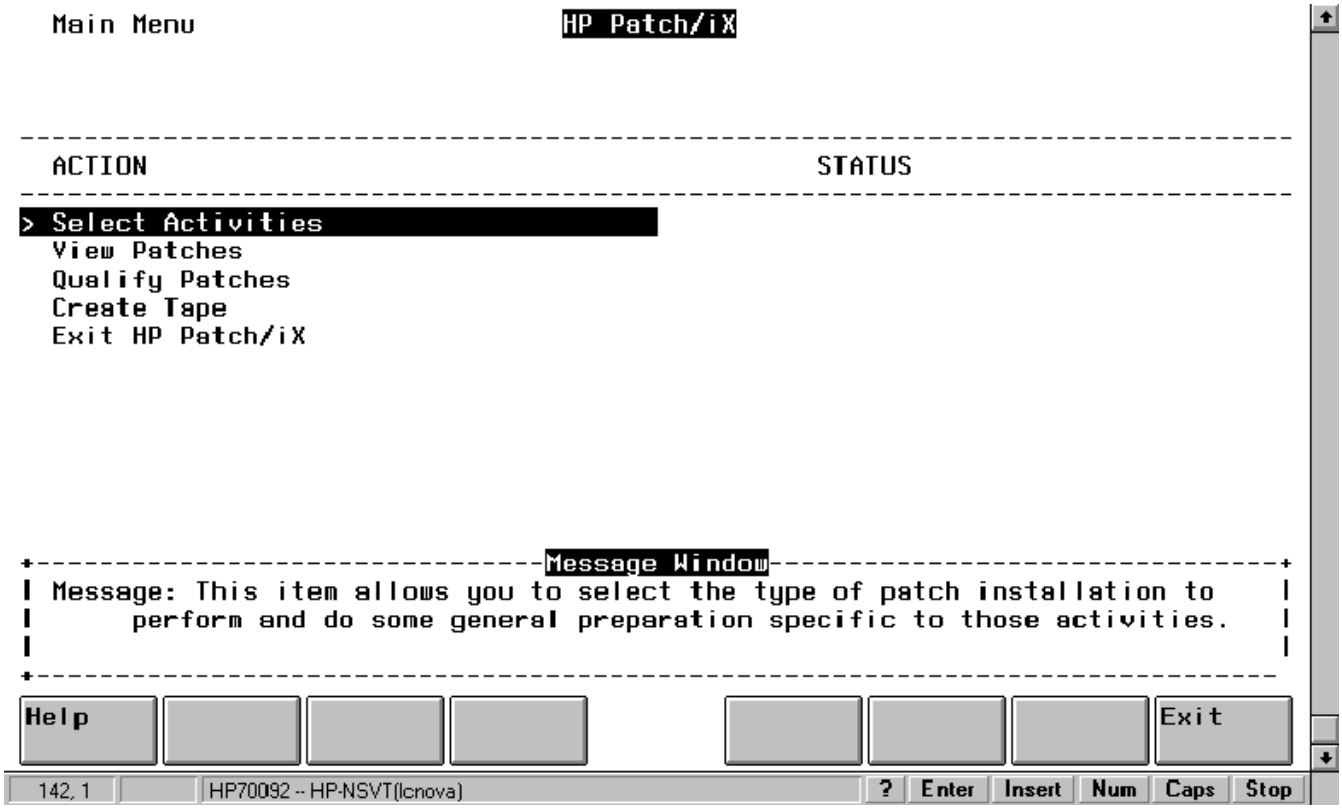

Figure 3-2. HP Patch/iX Main Menu Screen

The HP Patch/iX Main Menu screen, shown in Figure 3-2, has five items that are typically performed in order. The definitions of each of the menu items are as follows:

- Select Activities - This menu item will allow you to select the types of activities you plan to perform, and have HP Patch/iX setup the environment for those activities. There are three primary activities (Adding a PowerPatch, Adding Reactive Patches, Adding a SUBSYS retrofit).
- View Patches - This menu item allows you to view information about installed patches, and the patches and products that are currently setup for installation on the system.
- Qualify Patches - This menu item allows you to qualify the set of available patches, and view information about the patches. It also gives you control over the set of patches to be installed using the Veto/Force functionality.
- Create Tape - This menu item allows you to create the patch installation tape. This may be a CSLT/Store tape that requires a system update, or a Store-only tape, that does not require a system update. Whether an update is or is not required depends on the set of patches.
- Exit HP Patch/iX - This menu item allows you to exit from HP Patch/iX

Selecting the Appropriate Patching Activities

The first step in the patch management task is to select the type of patching you will be performing, and have HP Patch/iX prepare the system.

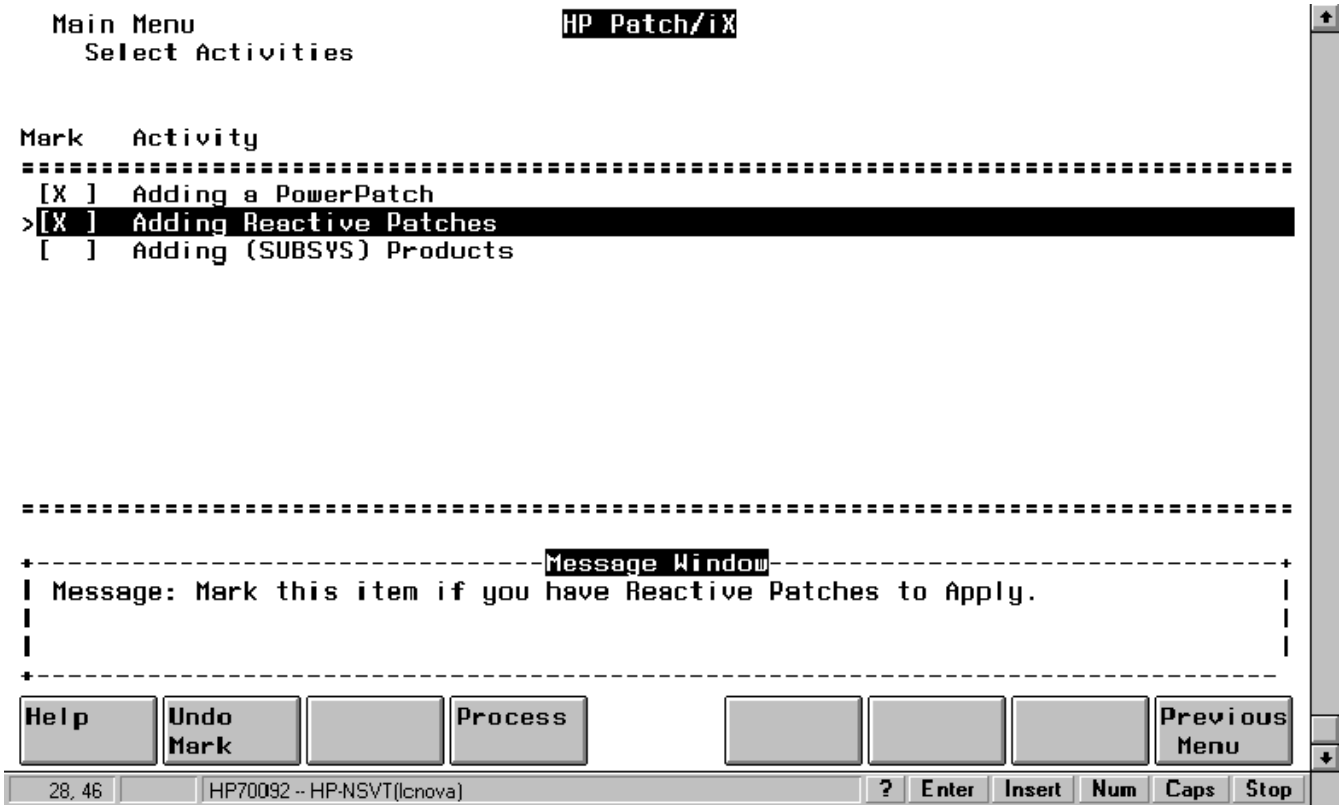

Figure 3-3. HP Patch/iX Select Activities Screen

To select the patching activities you plan to perform highlight the Select Activities menu item and press the Return Key. The Select Activities screen will be displayed (see Figure 3-3 above). There are three activities currently supported from HP Patch/iX:

- Adding a PowerPatch - Hewlett-Packard creates a bundle of MPE/iX patches about every four to six months called PowerPatch. This bundle allows you to install many general release (GR) patches at one time. This technique, often called proactive patching, allows you to apply fixes before ever experiencing the problem.
- Adding Reactive Patches - Reactive patches are individual patches that you may have received from the Hewlett-Packard Response Center to fix a problem you have experienced. You may in the future receive these patches through e-mail, or download them from the World-Wide Web (WWW).
- Adding (SUBSYS) Products - If you received a product update that includes a PowerPatch tape and a SUBSYS tape, then this is the activity you would choose. When this activity is selected the Adding a PowerPatch activity is automatically selected also. This type of product release is sometimes called an Express release.

An Express release is a release of a new product that has both SUBSYS and PowerPatch components.

Warning: There is a difference between a SUBSYS add-on of a normal Hewlett-Packard product and a Hewlett Packard product released through the Express Release process. If you receive a SUBSYS without a PowerPatch then this is a normal add-on and you must use the AUTOINST tool to install the SUBSYS. HP Patch/iX allows the installation of an Express Released product which is a PowerPatch with some SUBSYS components. HP Patch/iX requires files from the PowerPatch tape to apply SUBSYS components. A PowerPatch is required in an Express release because the new product has caused a SUBSYS retrofit, this means the SUBSYS has changed in some way and the information about the SUBSYS retrofit is delivered on the PowerPatch tape in the form of several files (FILEINFO, PRODINFO, DEPINFO, FINxxxxx, DINxxxxx, PINxxxxx).

Mark the activities that you plan to perform then press the Process [f4] key to process your choices.

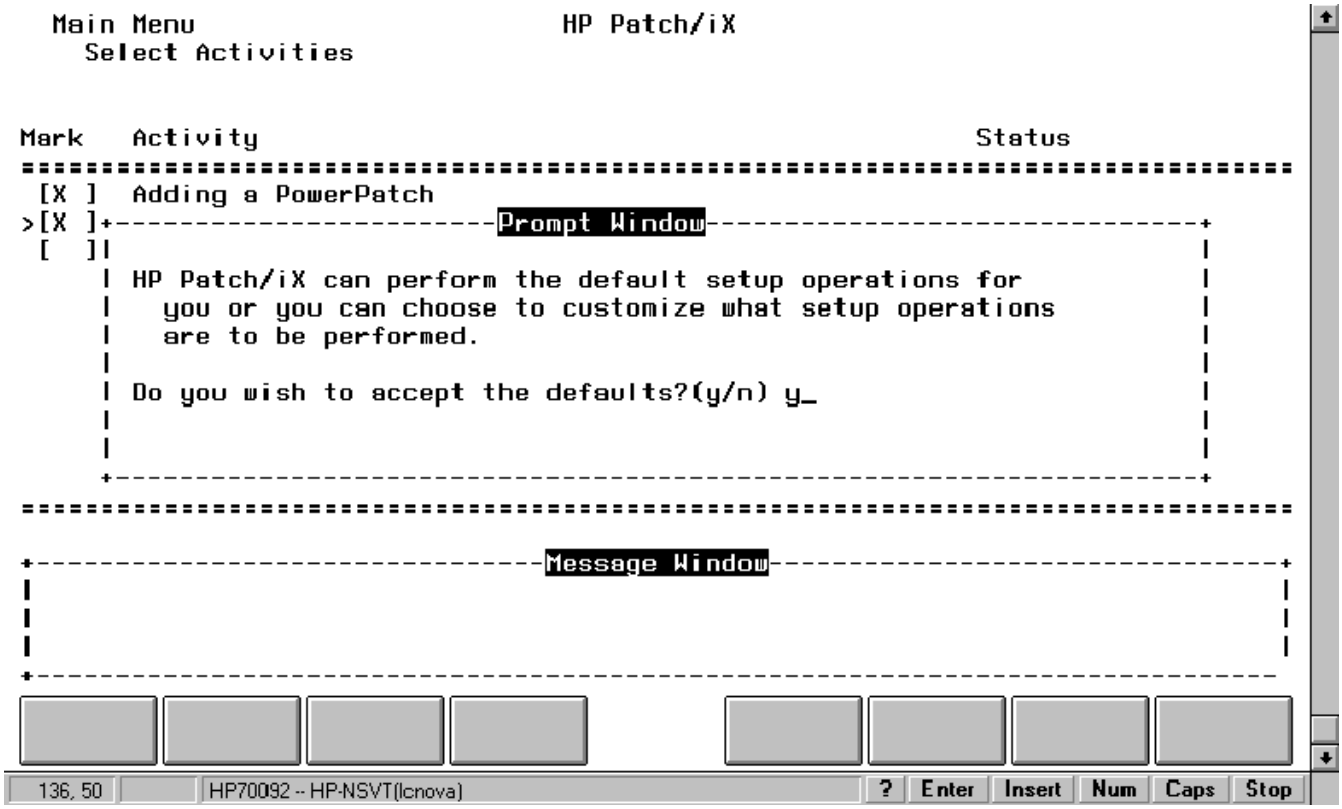

Figure 3-4. HP Patch/iX verifies the start of the default setup of system.

HP Patch/iX will prompt you about performing the default setup operations. Respond Yes to the prompt (see Figure 3-4 above).

Note: If you respond No then HP Patch/iX will present the Customize Activities screen in edit mode, which allows you to unmark activities that you do not want to perform. This

can be useful if you have already setup the system by restoring or downloading patches, but can result in errors if you fail to properly set up the environment.

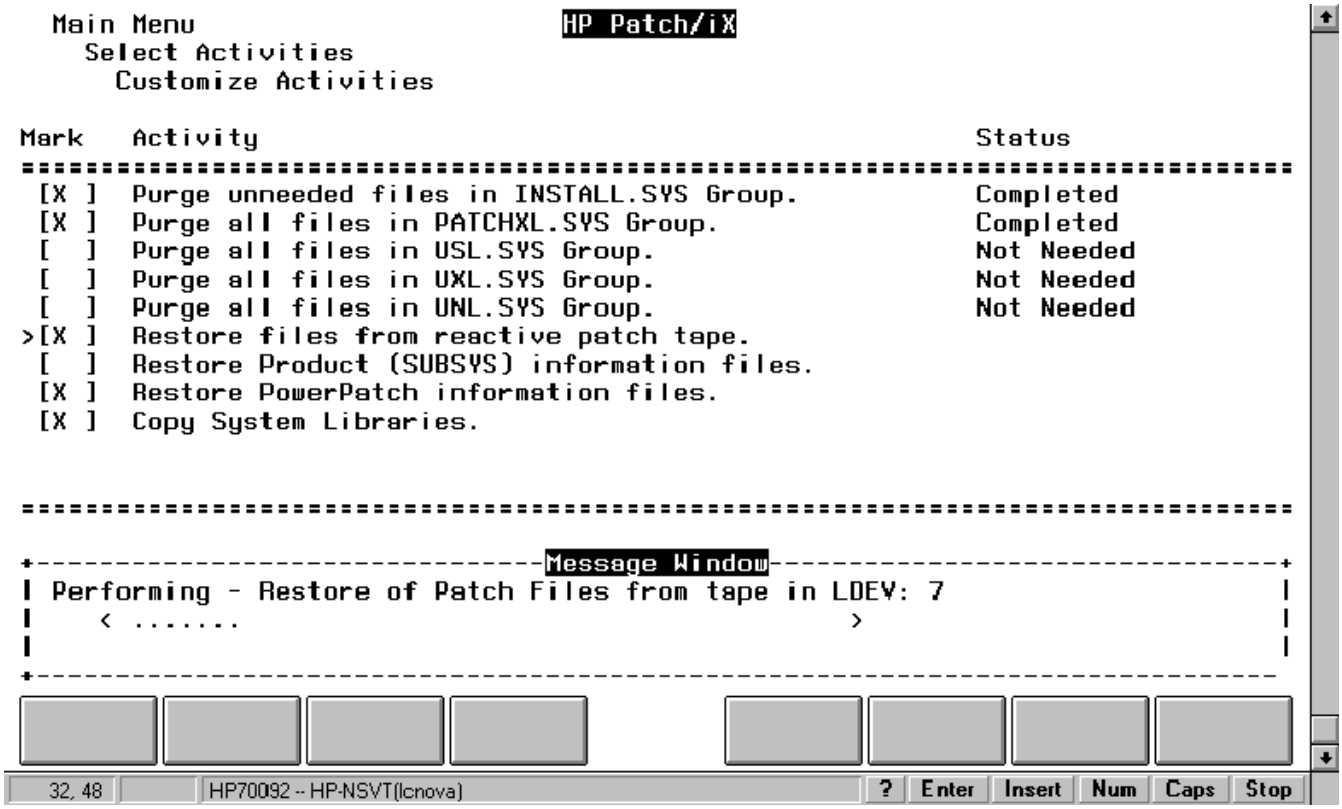

Figure 3-5. HP Patch/iX performing setup activities

When you choose to have HP Patch/iX perform the default setup operations HP Patch/iX will automatically start the setup of the system based on your selection of activities (see Figure 3-5 above). All of the possible setup activities are listed on the Customize Activities screen, with an [X] marking all that will be performed for the marked activities.

As each activity is performed HP Patch/iX will update the status column of the activity. Some activities require user input, and prompt windows will pop-up occasionally requesting information such a tape LDEV numbers. When the setup activities are completed successfully HP Patch/iX will return to the Main Menu. The status column for the Select Activities menu item will be updated to reflect your selection (see Figure 3-6 below).

View Patches

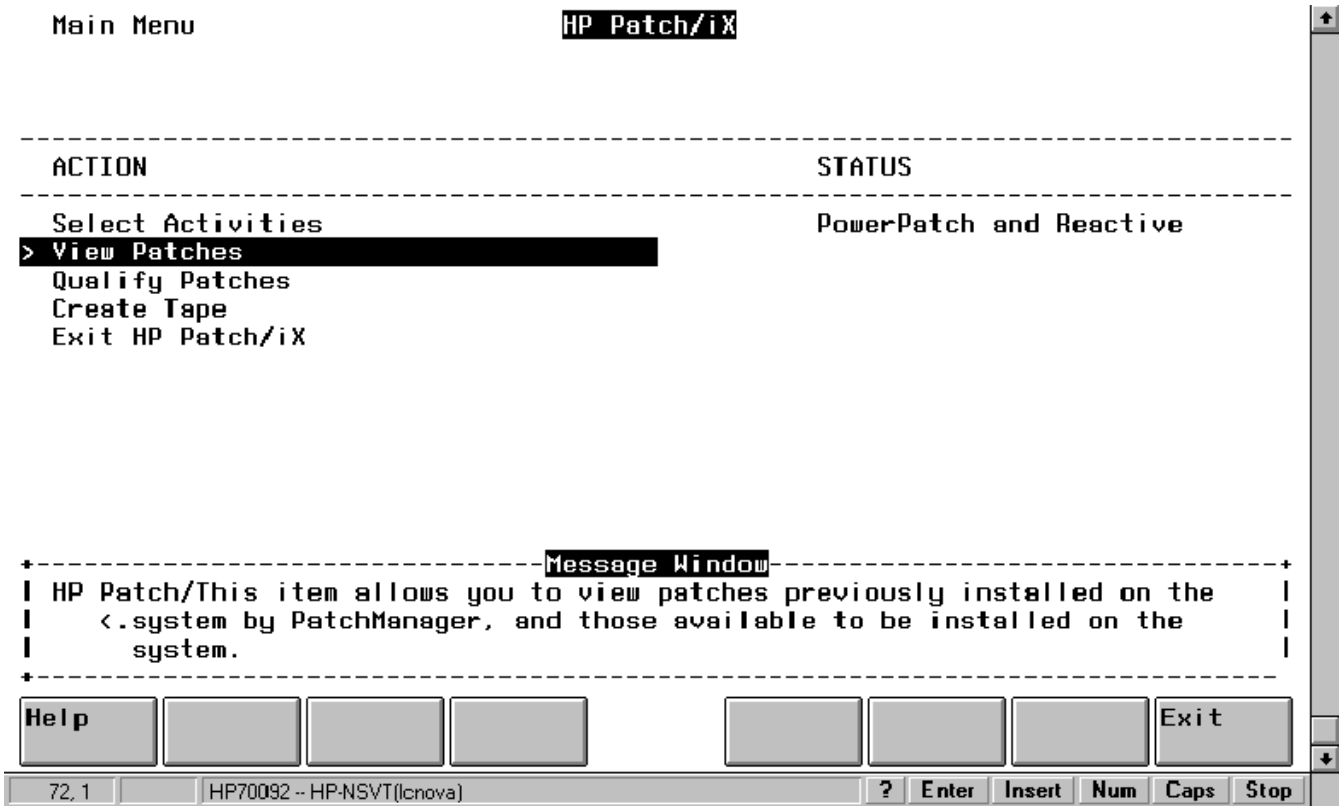

Figure 3-6. HP Patch/iX Main Menu after Select Activities completes

You can enter the View Patches screen if you want to see a list of the patches installed on the system, or the patches that came from the patch tape and are available for installation. If you are adding-on Product (SUBSYS) components the list of products found on the SUBSYS tape can also be displayed from this screen.

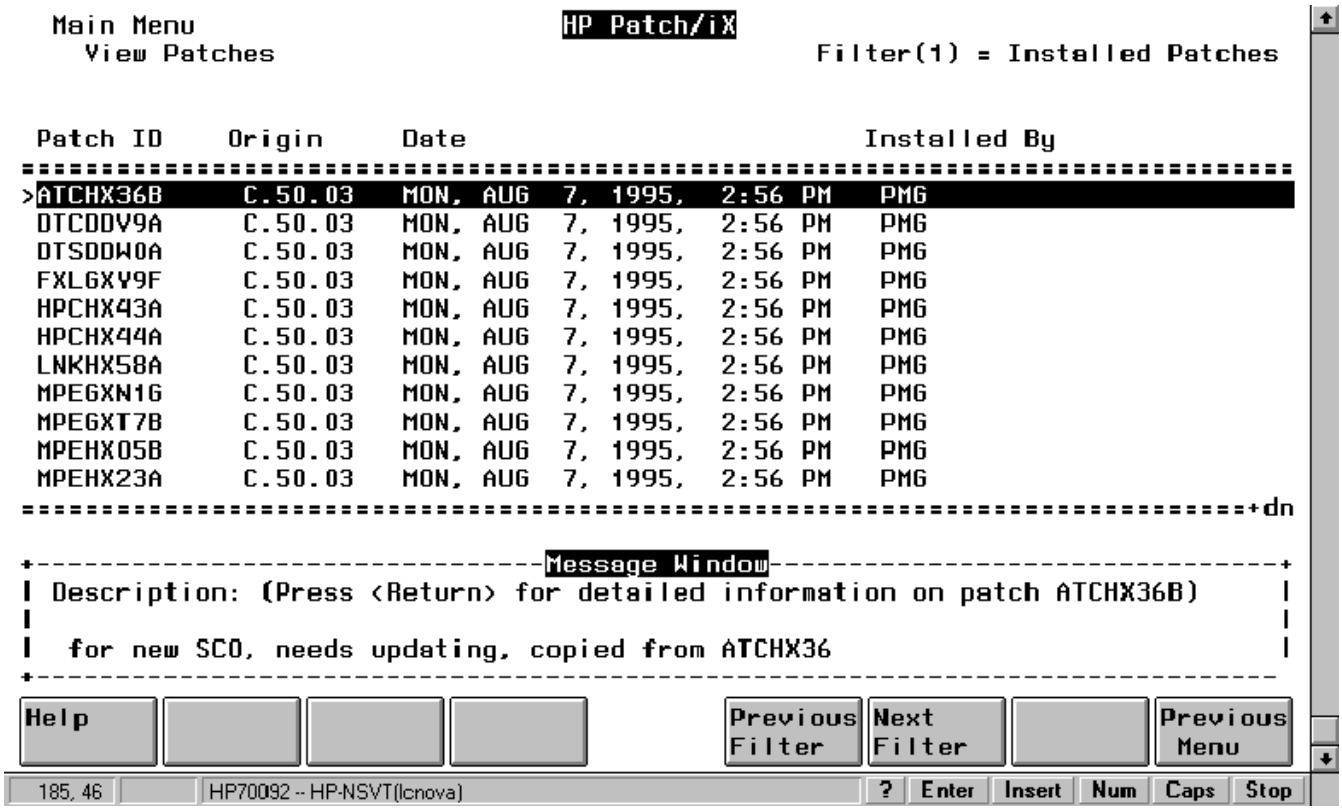

Figure 3-7. Viewing installed patches from the View Patches screen

View(1) = Installed Patches: An alphabetically sorted list of installed patches, the date of installation, the name of the person who installed it and the source of the patch. An example of an Installed Patches view screen is shown in Figure 3-7 above.

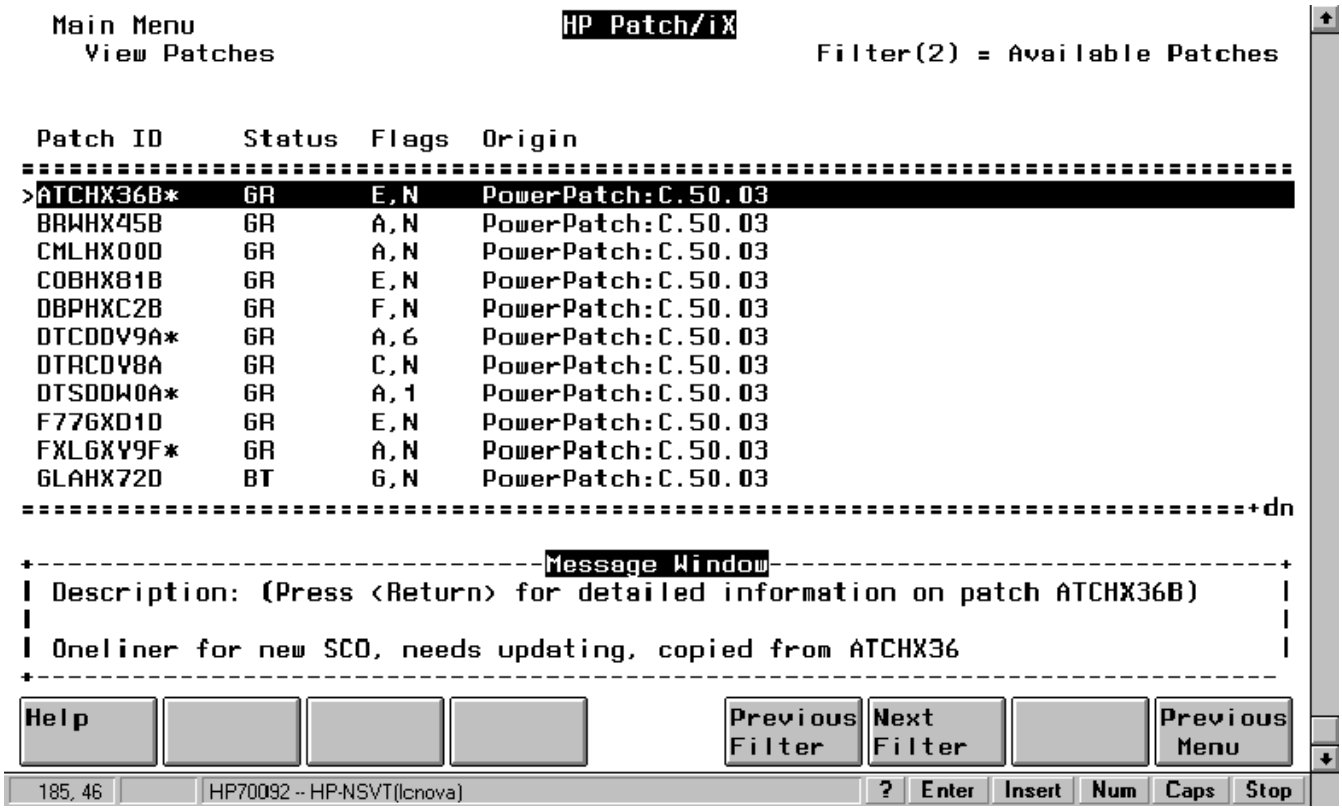

Figure 3-8. Viewing available patches from the View Patches screen

View(2) = Available Patches: An alphabetically sorted list of patches, the status of the patch, the recommendation/criticality flag values for the patch, and the source of the patch. An example of an Available Patches view screen is shown in Figure 3-8 above.

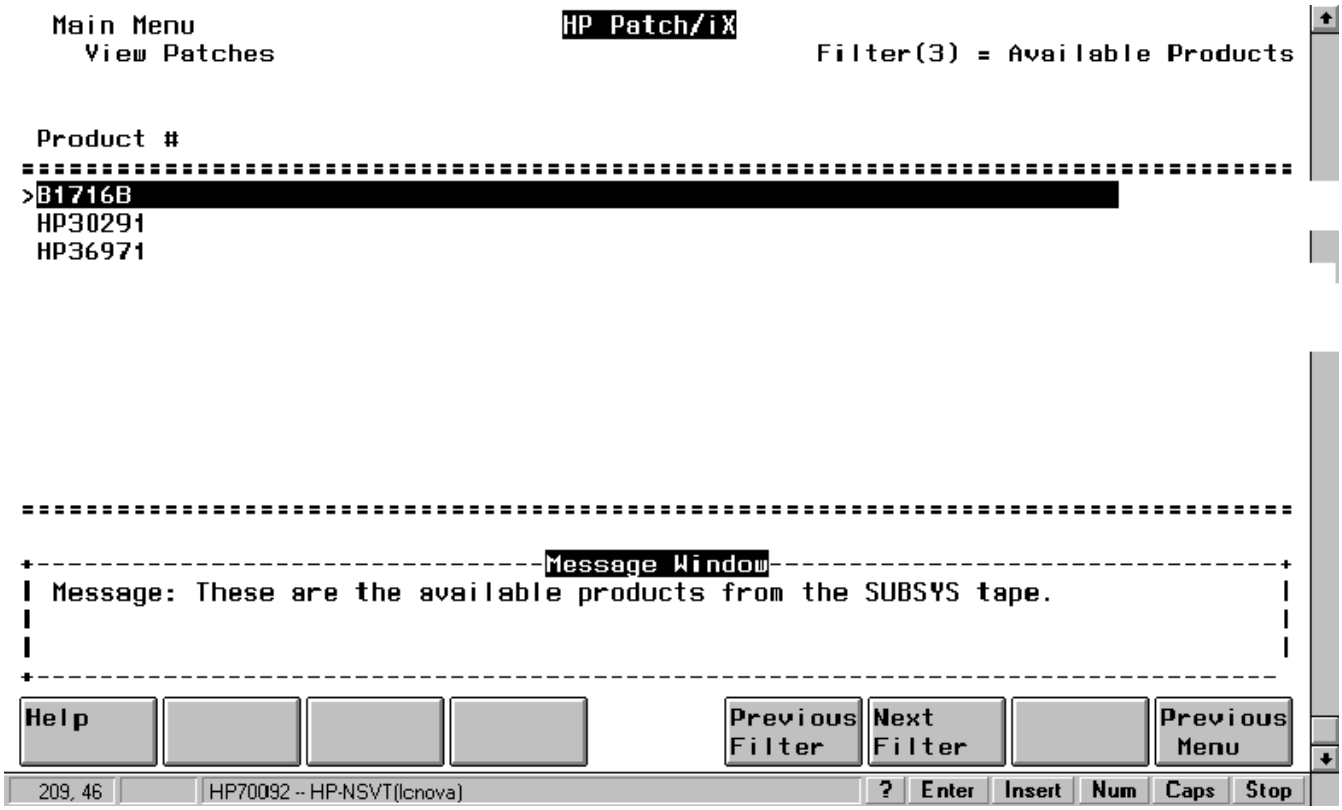

Figure 3-9. Viewing available products from the View Patches screen.

View(3) = Available Products: The product number of each product on the SUBSYS tape. An example Available Products view screen is shown in Figure 3-9 above.

Note: The installed patches information is only available for HP Patch/iX installed patches at this time. HP Patch/iX logs information about the installed patches to a binary file (PMSWINFO.PUB.SYS). This file is the source of the list of installed patches (but is not used in the qualification stage). HP Patch/iX also logs ASCII information to the file HPSWINFO.PUB.SYS as do all of the other installation and patching tools.

Qualifying Patches For Your System

The next step in the patch management process is to qualify the set of patches for your system.

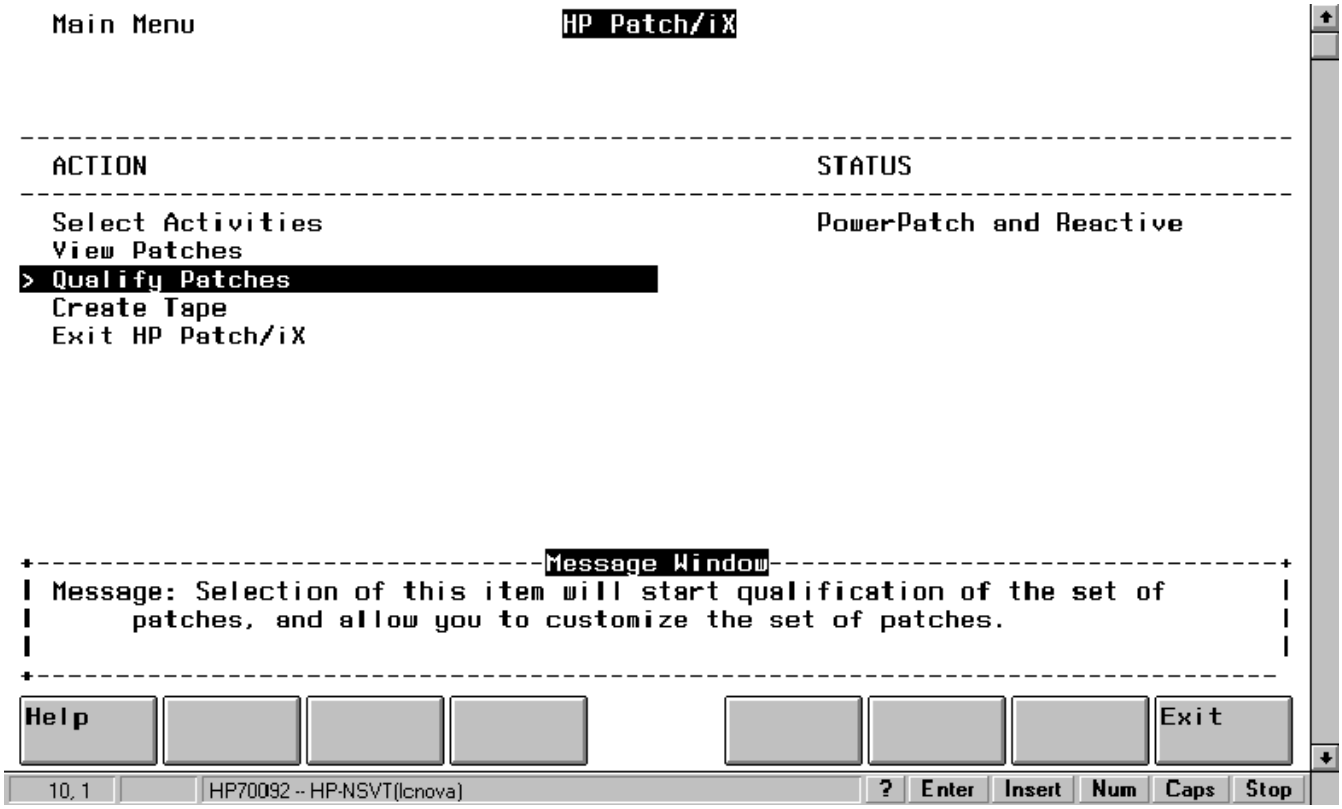

Figure 3-10. HP Patch/iX Main Menu before qualifying patches.

Figure 3-10 (above) shows the HP Patch/iX screen after the Select Activities step is complete, and before the Qualify Patches step is started. Highlight the Qualify Patches menu item and press the [Return] Key. The first step in the qualification process is what we call a full qualification. A full qualification does the following:

- Analyzes each patch to make sure that all dependent patches are present on the system.
- Analyzes each patch to make sure there isn't already a newer patch on the system.
- Analyzes each patch that has multiple versions present in the patch set, and only qualifies the newest version.
- Analyzes each patch to determine what family of patches the patch belongs to and only qualifies the newest member of the family. The supersedes tree discussed later will show you how to analyze a patch family.
- Analyze each patch to make sure that the patch isn't already installed. **Note:** in some cases patches are reinstalled. See What is Patch-on-Patch ?.

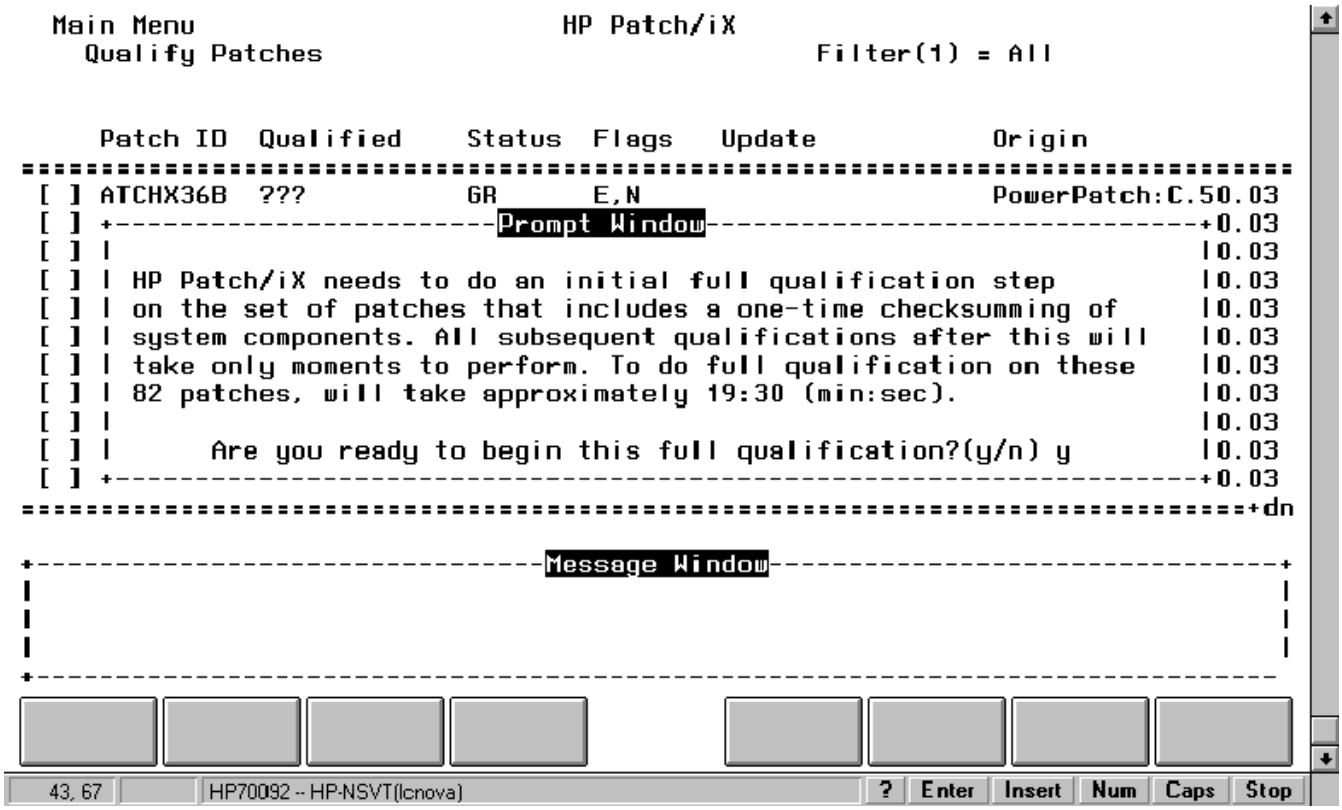

Figure 3-11. HP Patch/iX patch Qualification Prompt

Before starting this qualification step HP Patch/iX prompts you for a verification of the start of qualification. This prompt provides you with an estimate of how long it will take to do the qualification for the number of patches in the set. In the example shown in Figure 3-11 above, there are 82 patches in the patch set. The estimate is based on a complex analysis of the patch components. Some patches take longer to qualify than others based on the number and type of components in the patch. For a more detailed description of patch qualification see the section entitled Customizing Patches.

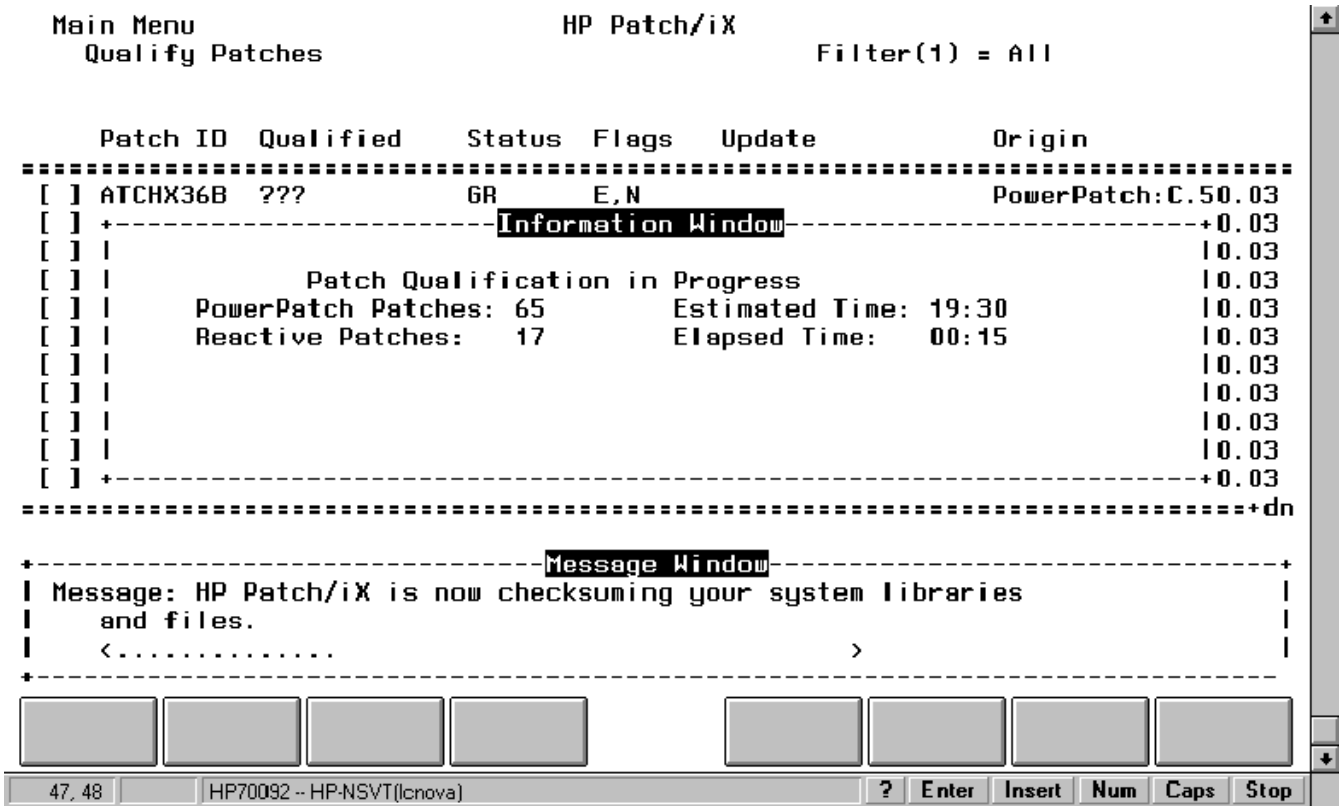

Figure 3-12. HP Patch/iX Patch Qualification Status

When you reply Yes to the prompt HP Patch/iX will display a status window that provides estimated and elapsed time for patch qualification (see Figure 3-12 above). The message window provides a description of the current internal activity and a heart-beat.

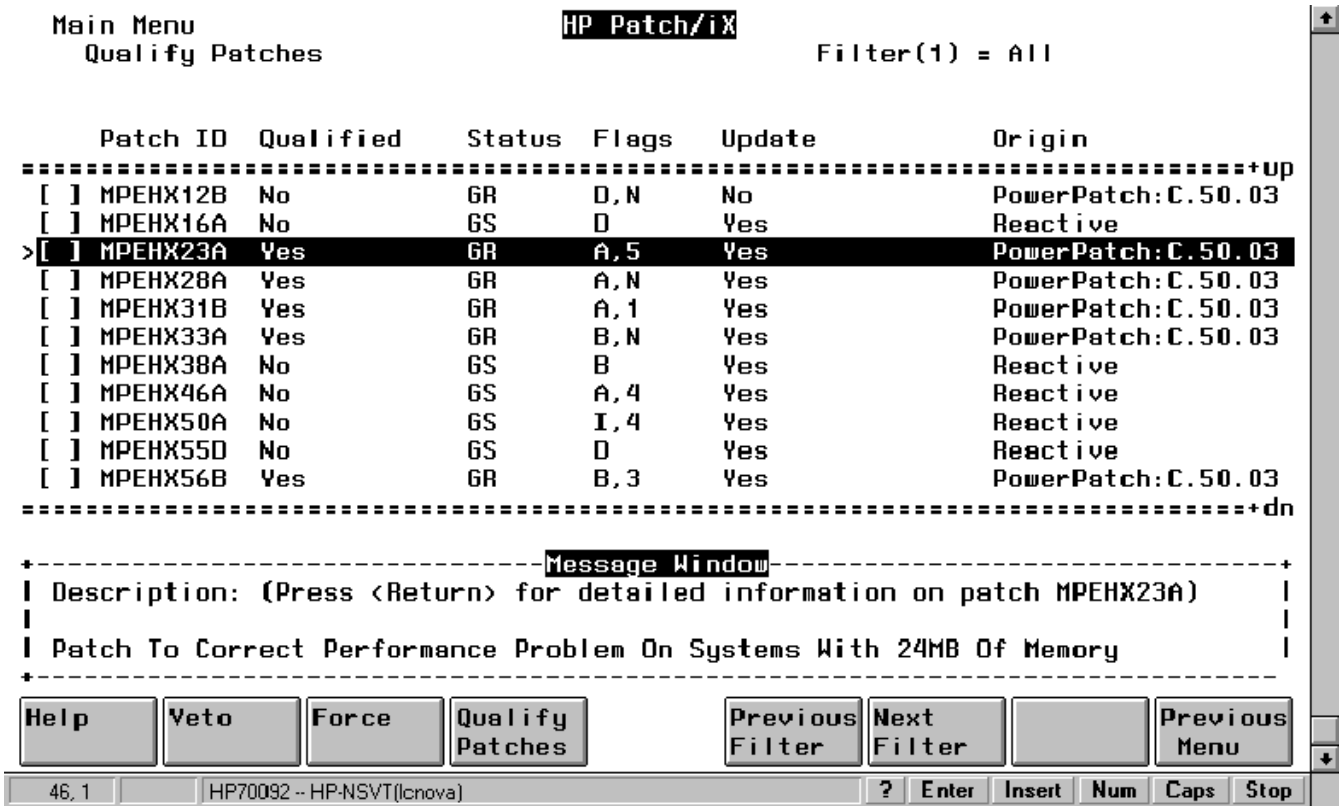

Figure 3-13. HP Patch/iX provides a list of patches

When qualification is complete a list of the available patches will be displayed in a scrollable Selection Screen along with information about the patch status. HP Patch/iX will display the following information about each patch (as in Figure 3-13 above):

- Patch ID - An 8 character ID, where the first three characters identifies the product type, the next 5 characters are a unique identifier for the patch, and the last character is the version character for the patch. There can be multiple versions for a patch, and the newest version will have the highest alphabetic character (i.e. B is a newer version of the A patch).
- Qualified - This field tells you weather the patch qualifies for installation on your system.
- Status - This field tells you the current status of the patch. The most common status values for a patch are General Release (GR) and Beta (BT).
- Flags - This field has two values separated by a comma. The first value is the patch recommendation, the second value is the patch criticality. Definitions for these values will be described later in the Viewing Detailed Patch Information section.
- Update - This field tells you whether or not an update from CSLT is required to install the patch. A value of Yes means that the patch requires a system update from the patch installation tape created by HP Patch/iX.
- Origin - This field tells you weather the patch came from the PowerPatch tape or from a reactive patch tape.

The Message Window displayed at the bottom of the screen displays the one-line description for the highlighted patch. You can use the up/down arrow or j/k keys (for single line scrolling) and [Page Up][Page Down] keys (for page scrolling) to scroll through the list of patches.

If you want additional information about a patch, highlight the patch and press the [Return] key. To get the detailed information screen for the patch. For more information about available detailed patch information see the section entitled Viewing Detailed Patch Information.

From the Qualify Patches screen you can also customize the set of patches by using the Veto/Force functionality provided by HP Patch/iX. To learn how to customize the set of patches using the Veto/Force feature refer to the section entitled Customizing the Set of Patches.

When you are satisfied with the set of patches press the Previous Menu [f8] key to return to the Main Menu. The status column for the Qualify Patches menu item will be updated to show the number of qualified patches (see Figure 3-14 below).

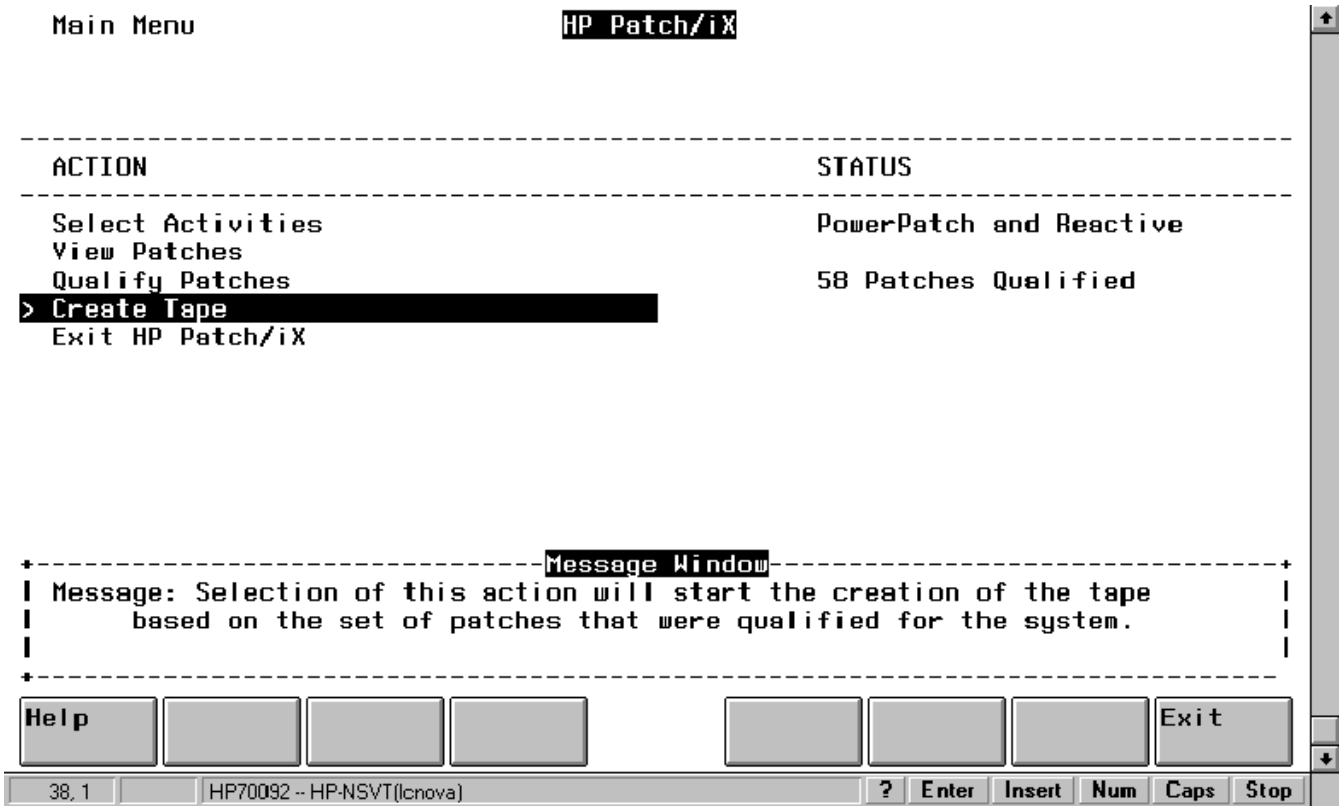

Figure 3-14. Main Menu after Qualify Patches is completed

Creating a Patch Installation Tape

Now that you have qualified the patches for your system you are ready to create the patch installation tape. In some cases this will be a simple store of files to the tape, in many cases this will require library components to be added to the staged libraries (copies of SL, XL and NL.PUB.SYS) and a CSLT to be created.

There are several steps that are performed at this time:

- Setting up for Create Tape Phase.
- Restore Patches from the PowerPatch Tape (if PowerPatch option)
- Modifying the Libraries (if CSLT required)
- Create a New Start PME (if CSLT required)
- Create the Tape (either CSLT/Store or Store-Only)

Each of these steps will be described briefly in the next few sections.

Setting up for Create Tape Phase

When you enter the Create Tape screen HP Patch/iX needs to perform some initial setup activities. The bulk of the processing that is done is the creation of the TMPSTR files. These are indirect files that are component buckets for the various operations that are performed later. The output of this process is the following files:

- TMPSTR00 - Intrinsic patches
- TMPSTR01 - contains the list of patch files to restore from the PowerPatch tape. HP Patch/iX only restores the components of qualified patches so as to minimize the amount of disk space needed.
- TMPSTR02 - This file contains a list of all of the store files that will be added to the STORE portion of the CSLT/STORE or STORE-ONLY patch installation tape. The format is: temporary filename = target filename:creator
- TMPSTR03 - This file contains the target file name for every file in the store component of the patch installation tape.
- TMPSTR04 - This file contains a list of every segment to be added/replaced or deleted from the SL. The format is: temporary USL file name, target segment RP/AD/PU
- TMPSTR05 - This file contains a list of every SOM to be added/replaced in or deleted from the XL. The format is: temporary UXL file name, target SOM RP/AD/PU
- TMPSTR06 - This file contains a pointer to an OS SOM replacement file. It will only be present if there is an OS SOM replacement in the set of patches.
- TMPSTR07 - This file contains a list of the relinker patches for the OS SOM.
- TMPSTR08 - This file contains a list of the SOMs (other than the OS SOM) to be added/replaced or deleted in the NL. The format is: temporary filename, SOM name RP/AD/PU
- TMPSTR09 - This file is used for patches that require a change to SYSFILEP.
- TMPSTR11 - This file contains a list of binary patches to be applied using the SOMPATCH utility.

These files will be used during the steps leading up to the creation of the patch installation tape.

Note: If only a STORE tape is required (i.e. no CSLT and UPDATE) then HP Patch/iX will skip to the Create the Tape item.

Restore Patches from the PowerPatch Tape

If a PowerPatch is not being applied then the first step in the Create Tape screen (see Figure 3-15 below) will be skipped. This is the item that restores the patch files (listed in TMPSTR01) from the PowerPatch tape.

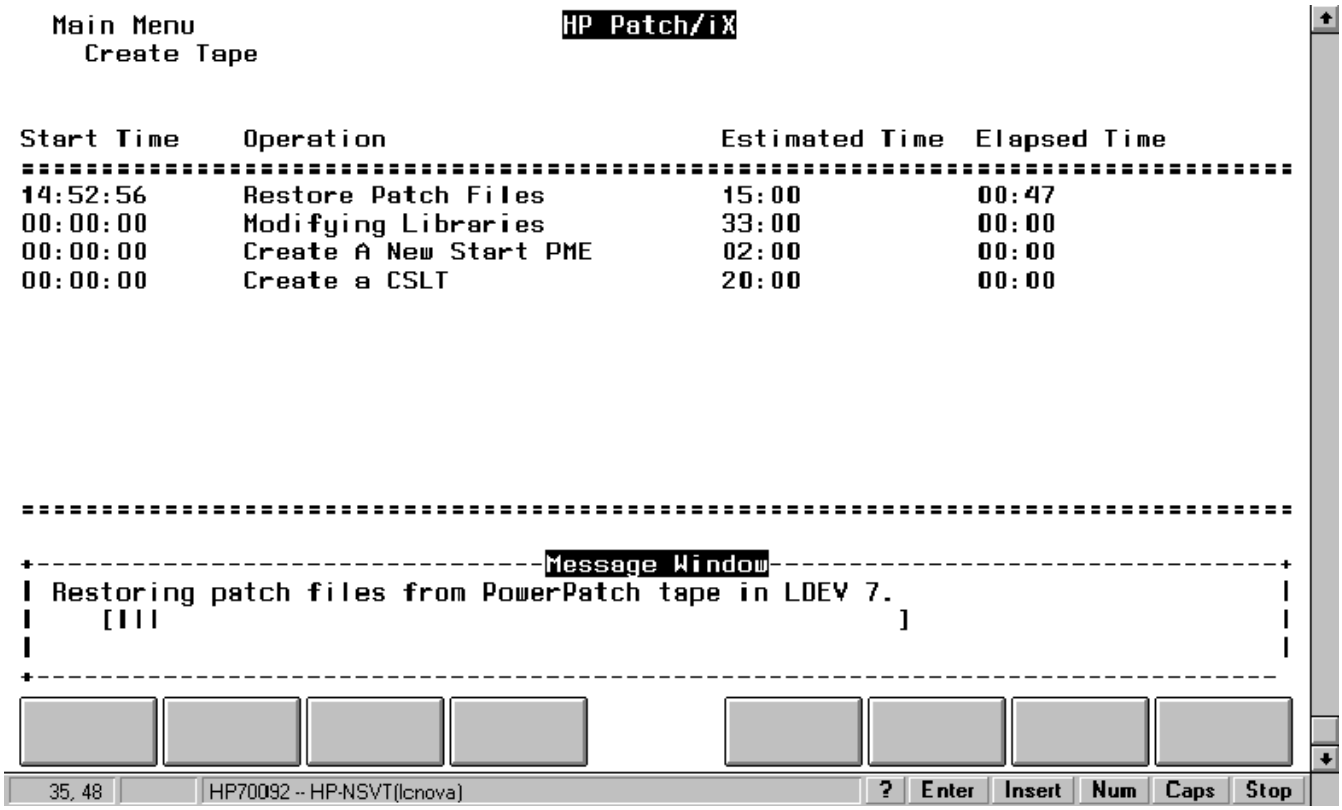

Figure 3-15. HP Patch/iX Create Tape Screen

This step is only performed if a PowerPatch is being applied. During the Select Activities stage only the patch information files were restored. The actual patch files are not restored until the Create Tape phase. This allows HP Patch/iX to only restore the patches that are qualified for your system. Since a PowerPatch tape could contain thousands of files, many that are not applicable to your system, this process helps save time and disk space. HP Patch/iX will verify the LDEV (or device class) that was entered earlier and restore the files for you.

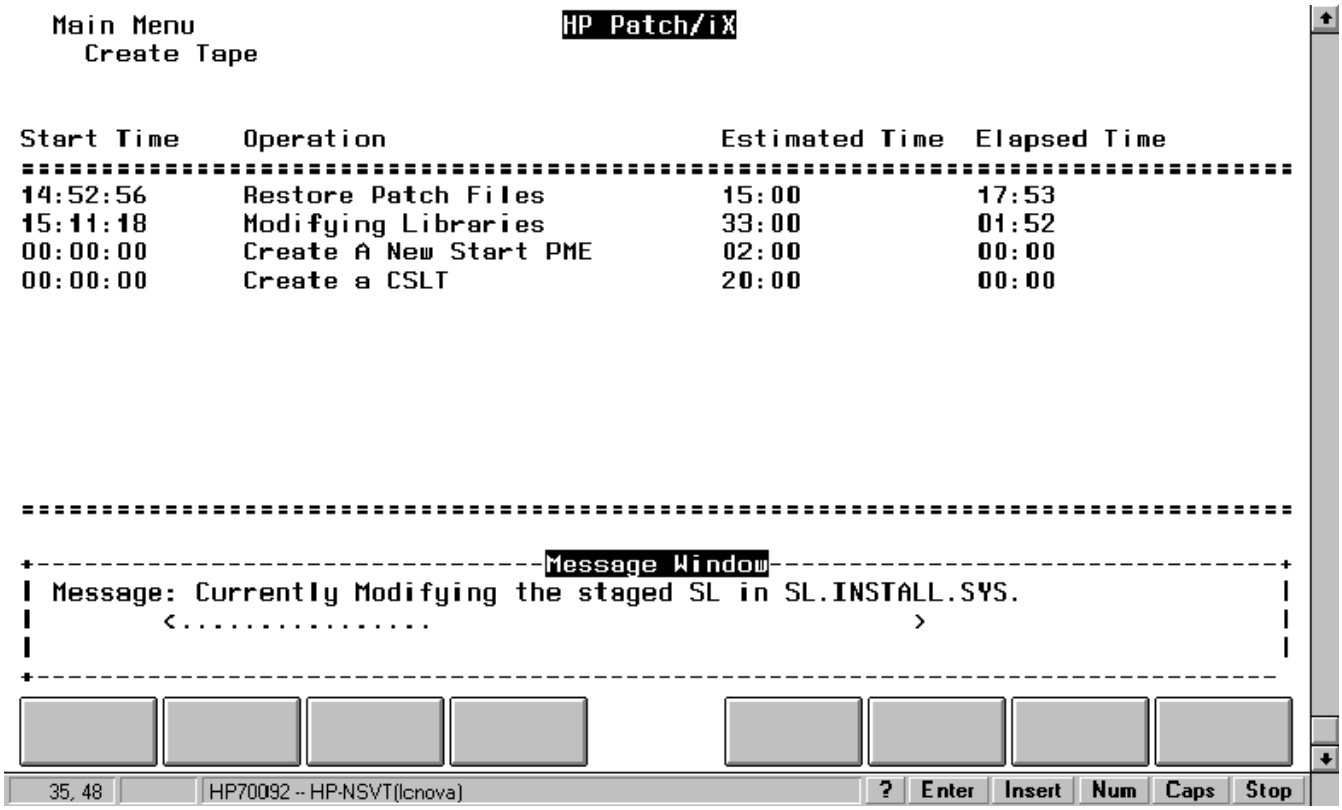

Figure 3-16. HP Patch/iX Modifying the System Libraries

Modifying the Libraries

HP Patch/iX will modify the staged copies of the system libraries (see Figure 3-16 above). This includes applying SEGMENT/SOM replacements, relinker patches, and binary patches. The current operation being performed will be displayed in the MESSAGE window at the bottom of the screen. The TMPSTR00, TMPSTR04, TMPSTR05, TMPSTR06, TMPSTR07, TMPSTR08, and TMPSTR11 files created earlier are used during this phase of Patch/iX.

Create a New Start PME

Next HP Patch/iX will create a new start image from the modified NL.

Create the Tape

Finally HP Patch/iX will start the creation of the tape. This is either a CSLT/STORE tape or a STORE-ONLY tape. The store files that are placed on the tape are the files listed in the TMPSTR02 file created earlier by HP Patch/iX. When the tape is successfully created HP Patch/iX will return to the Main Menu. The status of the Create Tape menu item will be updated to read either CSLT/Store Tape Created or STORE-Only tape created.

Exiting HP Patch/iX

Once the tape is successfully created HP Patch/iX will return you to the Main Menu and highlight the Exit HP Patch/iX menu item. You have successfully completed phase I, the

patch management phase and can exit by pressing the [Return] Key. The patch installation tape can be removed from the drive until you are ready to install the patches.

Phase II: Installing the Patches.

If HP Patch/iX created a CSLT you will need to update from the CSLT. HP Patch/iX will tell you on exit whether a CSLT is required.

Update Required:

If a CSLT is required the screen will look like the following after exiting HP Patch/iX:

```
 Note: An update IS required to install this set of patches.  You must:

 1) Prepare this system for an update from the CSLT/STORE tape.

 2) Update with the CSLT/STORE tape created by HP Patch/iX.

 3) Rerun HP Patch/iX to complete the second phase of  the installation
    (restoring of files and streaming I-Files).

 Please follow the instructions in your users manual for each of these
steps.
```

The preparation for the update from the CSLT is just like with AUTOINST and PowerPatch, follow the users manual entitled HP 3000 MPE/iX System Software Installation and Maintenance Manual HP Part Number 30216-90223.

After the update you will rerun HP Patch/iX. Unlike AUTOINST, HP Patch/iX will verify that the UPDATE has occurred. If it hasn't it will give an error message. HP Patch/iX verifies the update by bringing in a special VUF file from the CSLT (PATCHVUF.PUB.SYS). The value in the file is only significant to HP Patch/iX, which creates a random number, places it in the file on the CSLT, and looks to make sure it is on the system after the update.

When you rerun HP Patch/iX it will ask whether you wish to continue the previous run. Answer Yes. If you accidentally answer No then exit and rerun with an info="phase2" parameter. **Note:** If you ever forget what the legal parameters are try an info="?" parameter. This will provide a list of the legal info parameters.

Update Not Required

If an update is not required then the message printed to the screen upon exit will be:

```
 Note: An update is NOT required to install this set of patches.  You
must:

 1) Prepare this system for phase II of HP Patch/iX.  This may include
logging users off the system.  This is necessary because files will be
restored during by HP Patch/iX and cannot be busy.

 2) Rerun HP Patch/iX to complete the second phase of the installation
(restoring of files and streaming I-Files). Please follow the
instructions in your users manual for each of these steps.
```

When you rerun HP Patch/iX it will ask whether you wish to continue the previous run. Answer Yes. If you accidentally answer No then exit and rerun with an info="phase2" parameter. **Note:** If you ever forget what the legal parameters are try an info="?" parameter. This will produce an error, but will provide a list of the legal info parameters.

Viewing Detailed Patch Information

You can often successfully install patches without ever knowing what they are intended to fix, or how they will change your system software. If you are interested in understanding more about the patches you are installing HP Patch/iX provides extensive information about the patches.

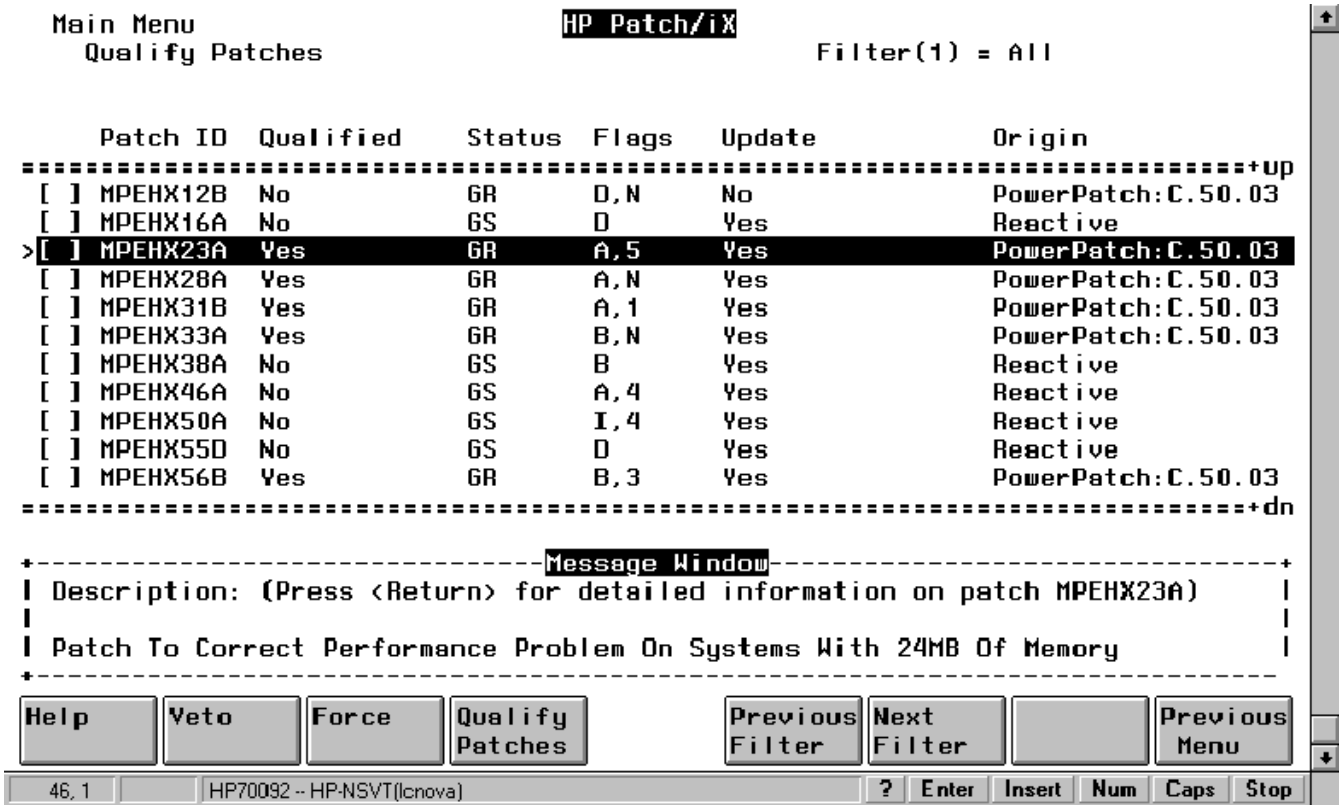

Figure 5-1. List of patches after patch qualification completed.

In the Qualify Patches screen (see Figure 5-1 above) you can get a quick view of all the patches. It will tell you:

- which ones qualify for your system,
- what the current patch status is,
- what the recommendation and criticality flag values are,
- whether the patch requires an update from CSLT,
- and the origin of the patch.

HP Patch/iX also provides a one-line patch description for the currently highlighted patch in the message window. Definitions for some of these fields are provided below.

The status of a patch tells you what phase of the patch lifecycle the patch is currently in. Common values are:

- BT (Beta patch) is a patch status that signifies that the patch is not yet released to the general public. These types of patches are available to specific customers who request the patch and are willing to accept the risk of a patch that has not been installed on many customer systems.
- GR (General Release) is a patch status that signifies that the patch is released for general distribution. A BT patch that has been successfully used on a number of customer systems will eventually become a GR patch.
- GS (General Supersede) is a patch that has been superseded by a newer patch. The newer patch thus contains this patch. When a patch becomes GS it is generally no longer distributed, but may be in some rare cases.

The flags column of the Qualify Patches screen contains two values separated by a comma. These values are the recommendation and criticality (recommendation, criticality) for the patch.

The Hewlett-Packard Patch Recommendations are as follows:

- A - FOS patch that is recommended for installation on all systems.
- B - FOS patch that is recommended for installation only if the problem is likely to be experienced.
- C - FOS enhancement with a hardware dependency.
- D - FOS enhancement with a software dependency.
- E - Product (Subsystem) patch that should be applied if the product is installed.
- F - Product (Subsystem) patch that should be installed only if the problem is likely to be experienced and the product is installed.
- G - Product (Subsystem) enhancement released as a patch.
- H - Limited release patch that may become GR.
- I - Site-specific patch that will never become GR.
- J - Other

The patch criticality values are as follows:

- 1 - System may experience a system failure without this patch.
- 2 - System may experience deadlock or hang without this patch.
- 3 - Data loss or corruption may be experienced without this patch.
- 4 - Program abort may occur without this patch.
- 5 - Gradual loss of memory objects, virtual memory or other performance degradation may occur without this patch.
- 6 - Other - see the GR text information for a description.
- N - Not a critical patch.

If you are curious to understand more about a patch, HP Patch/iX provides you with a great deal of information about a patch. To get detailed information select a patch from

the Qualify Patches screen and press the [Return] Key. **Note:** some information is available about the patches from the View Patches screen, but much of it is static information that does not consider your environment.

The detailed information screen has several information views that are available. Each view has a number associated with it as follows:

You can select a view by typing the view number, or pressing the Previous View [f5] and Next View [f6] buttons. For more information about the type of information available see the section entitled Viewing Detailed Patch Information.

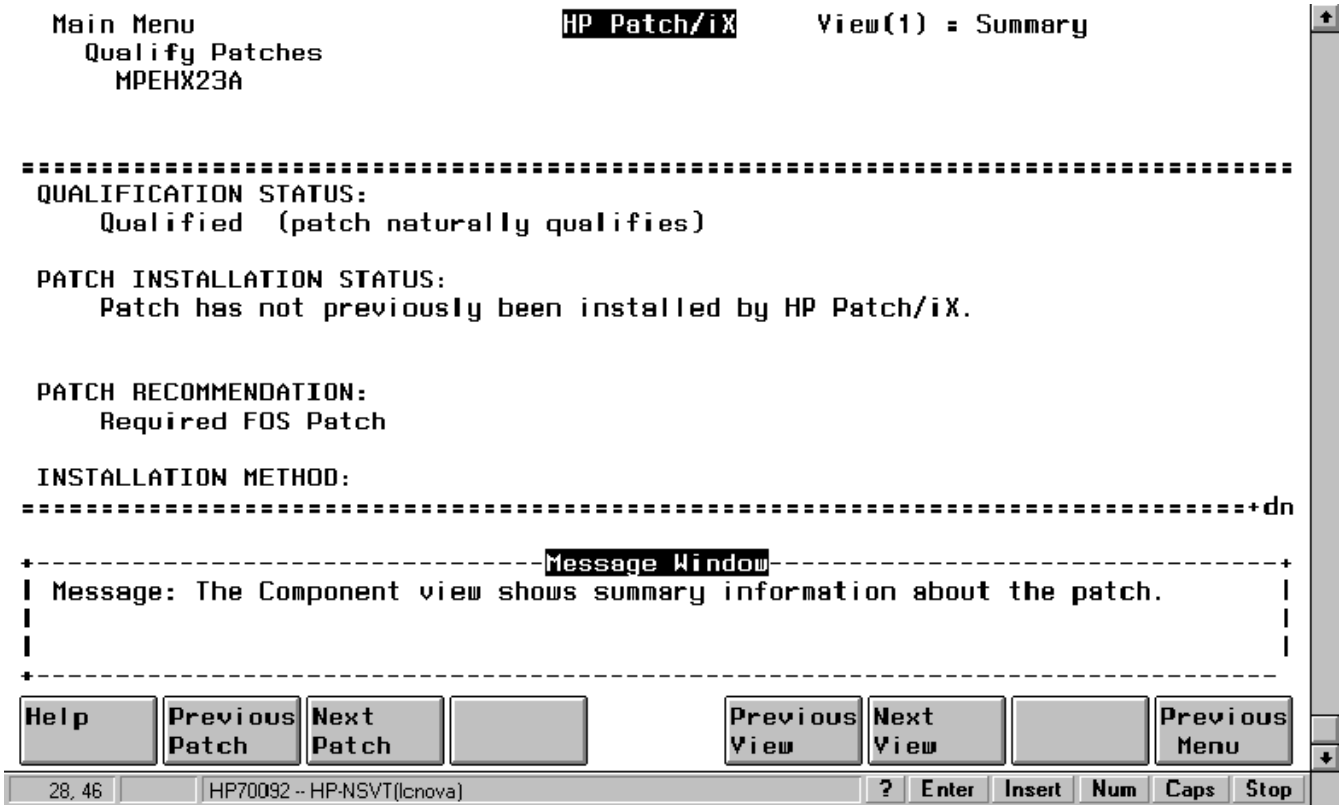

Figure 5-2. Patch detail, Summary View.

View(1) = Summary: Describes the basic properties of the patch and provides additional details about the qualification results. Figure 5-2, above, provides an example of the Summary view of the patch detail for MPEHX23A. This view tells you the basic properties of the patch. The information available in this view is as follows:

- The qualification status of the patch.
- Whether or not the patch is already installed on the system (and if a re-install is required).
- The Hewlett-Packard patch recommendation.
- The patch installation requirements (i.e. whether an update from CSLT is needed.)
- The patch criticality value.

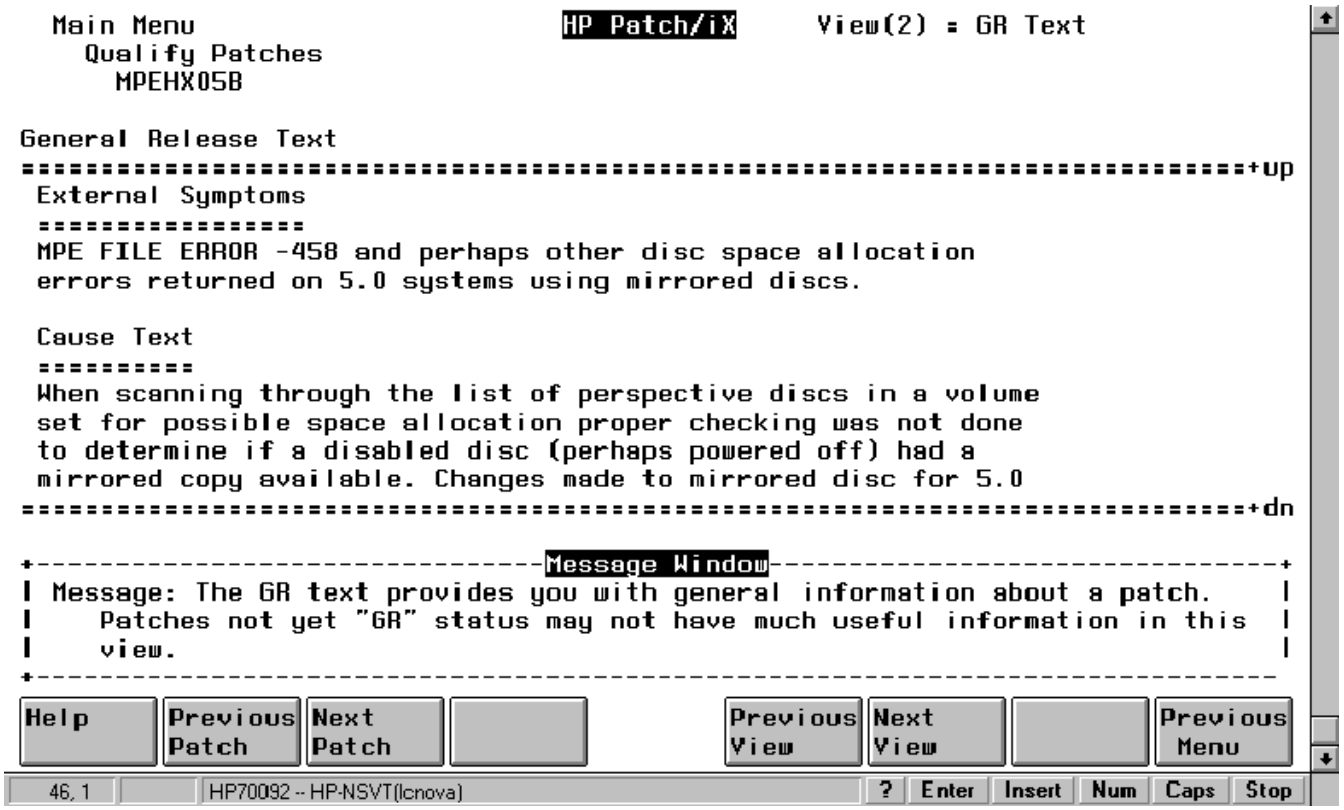

Figure 5-3. Patch detail, GR Text View

View(2) = GR Text: Provides the General Release text for the patch (see Figure 5-3 above). General release text provides information about the problem the patch was intended to fix. The major information sections in the GR Text view are:

- Known Conflicts - This includes a list of other patches known to have conflicts with this patch.
- Patch-to-Patch Dependencies - This section lists any patches that the current patch requires in order to be successfully installed. This information is also available through the View(9) = Patch Dependencies view.
- External Symptoms, Cause, and Fix Text - This section lists any external symptoms that might be experienced because of the problem the patch is intended to fix. It also may describe the cause of the problem and what is needed to fix the problem.
- Customer Environment Changes - This section describes any changes a customer may experience in their environment due to the installation of the patch.
- Hardware Dependencies - This section describes any hardware configurations that are expected for the patch to work.
- Software Product/Application Dependencies - This section describes the products that are required to be installed for the patch to work properly.

- Product Version Information - This provides the version of the product being patched.
- Dump Analysis Text - This is text related to a dump that is sometimes useful in understanding the problem the patch was intended to fix. It is not required reading in order to understand the patch.

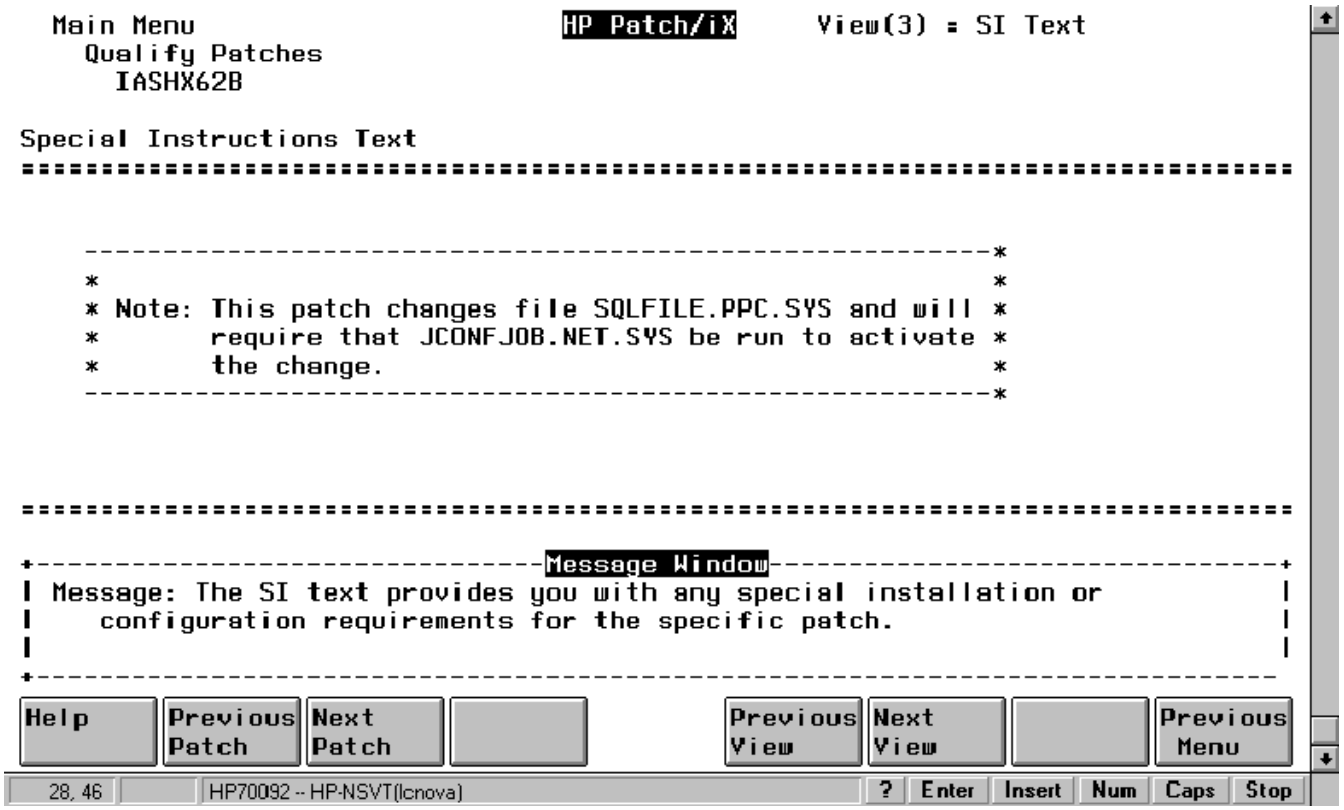

Figure 5-4. Patch detail, SI Text View.

View(3) = SI Text: Provides information about additional required installation steps beyond the normal installation steps (see Figure 5-4 above). Typically this is running a specific product configuration utility after the normal installation steps are completed. HP Patch/iX generates a report SITEXT.INSTALL.SYS that contains the special instructions text for the patches that qualified.

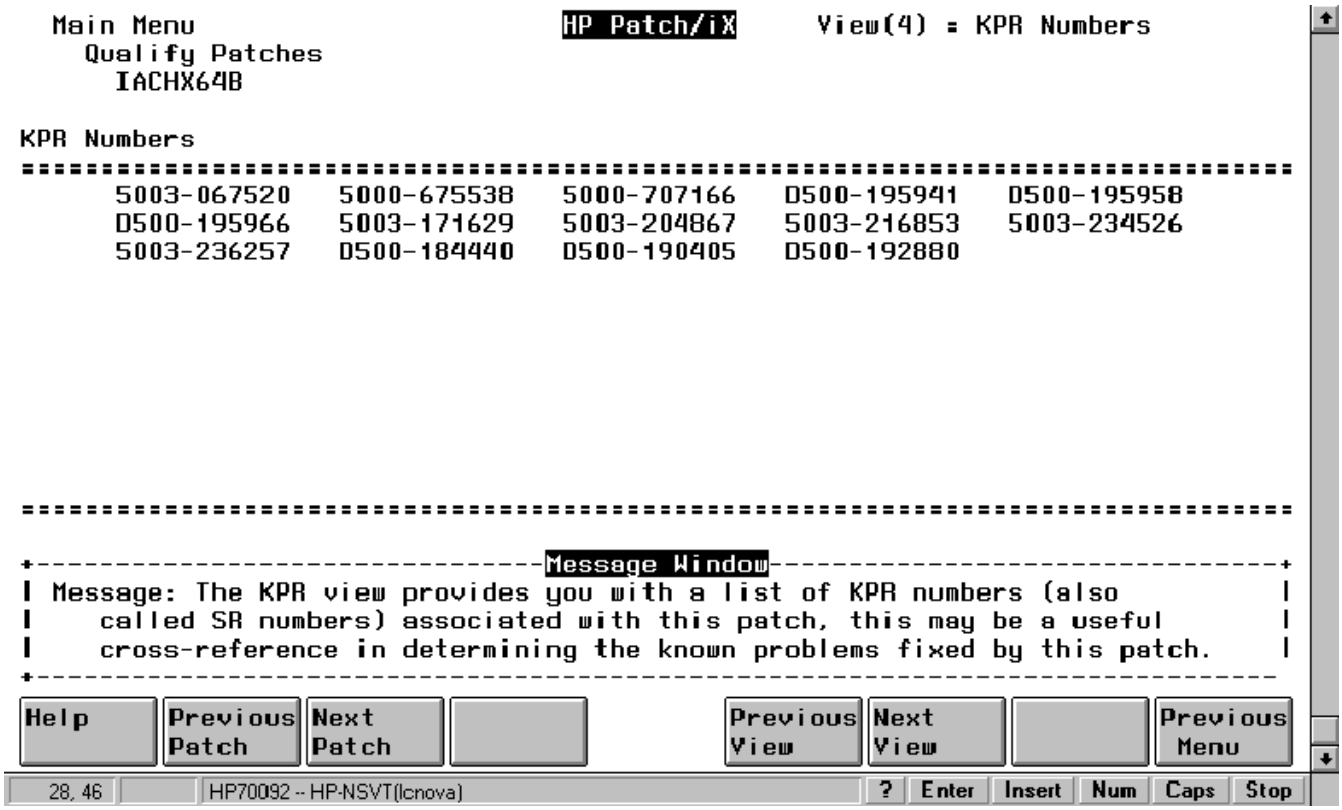

Figure 5-5. Patch detail, KPR Numbers

View(4) = KPR Numbers: Provides a list of Known Problem Report numbers for known problems the patch is intended to fix (see Figure 5-5 above). KPRs are also known as Service Requests (SR).

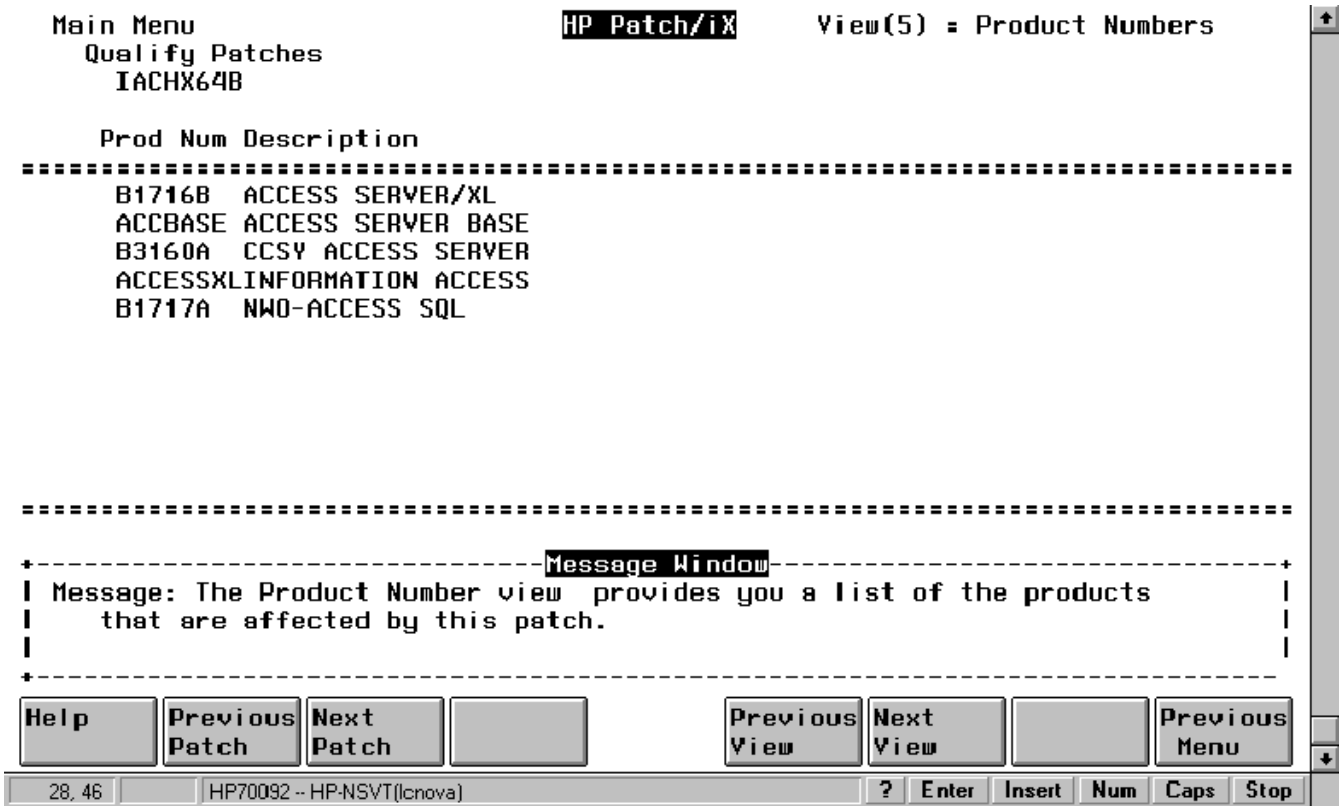

Figure 5-6. Patch detail, Product Numbers

View(5) = Product Numbers: Provides you with a list of products that are affected by the patch (see Figure 5-6 above).

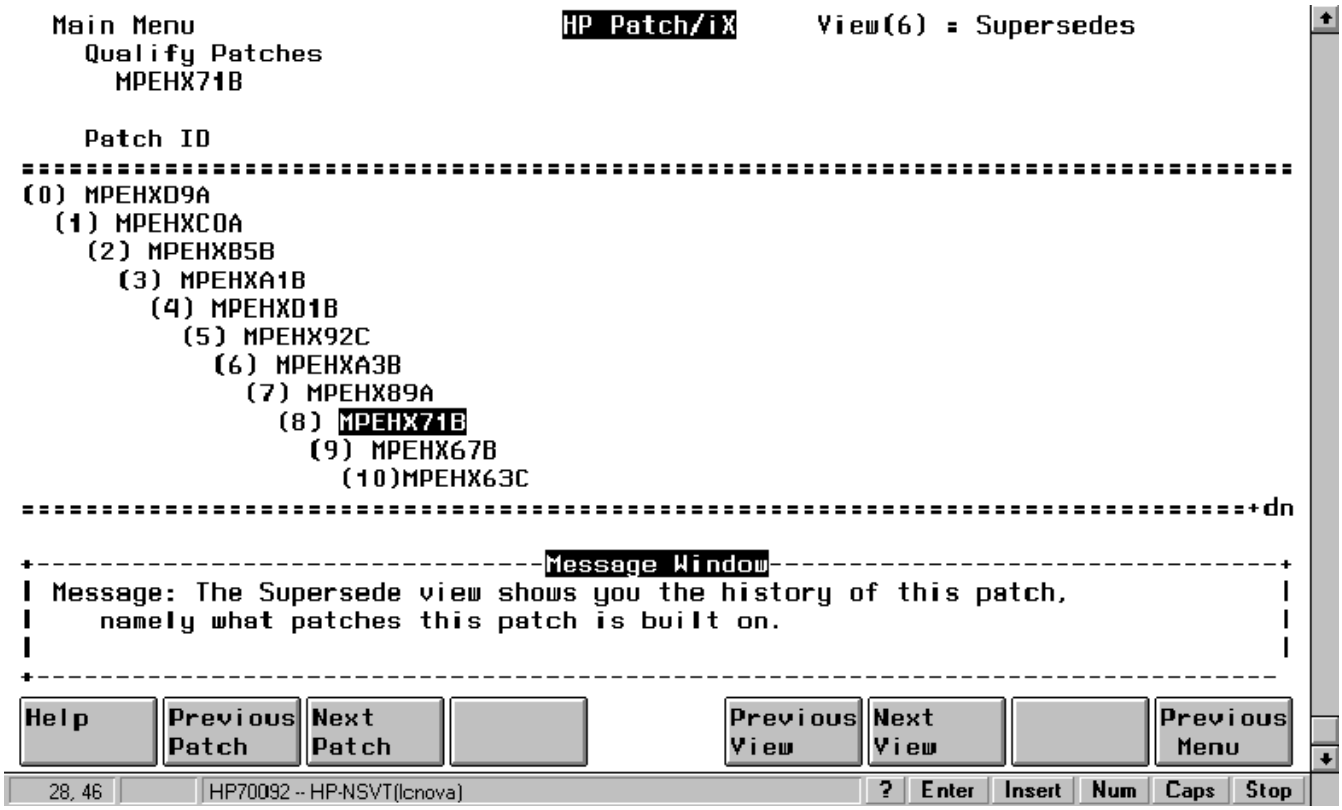

Figure 5-7. Patch detail, Supersedes Tree.

View(6) = Supersedes: Provides a patch supersede tree (see Figure 5-7 above). When a patch is created it is often built on a previous patch, and therefore includes the previous patch in it. It is said to supersede the previous patch. The current patch will be highlighted in the patch supersedes tree.

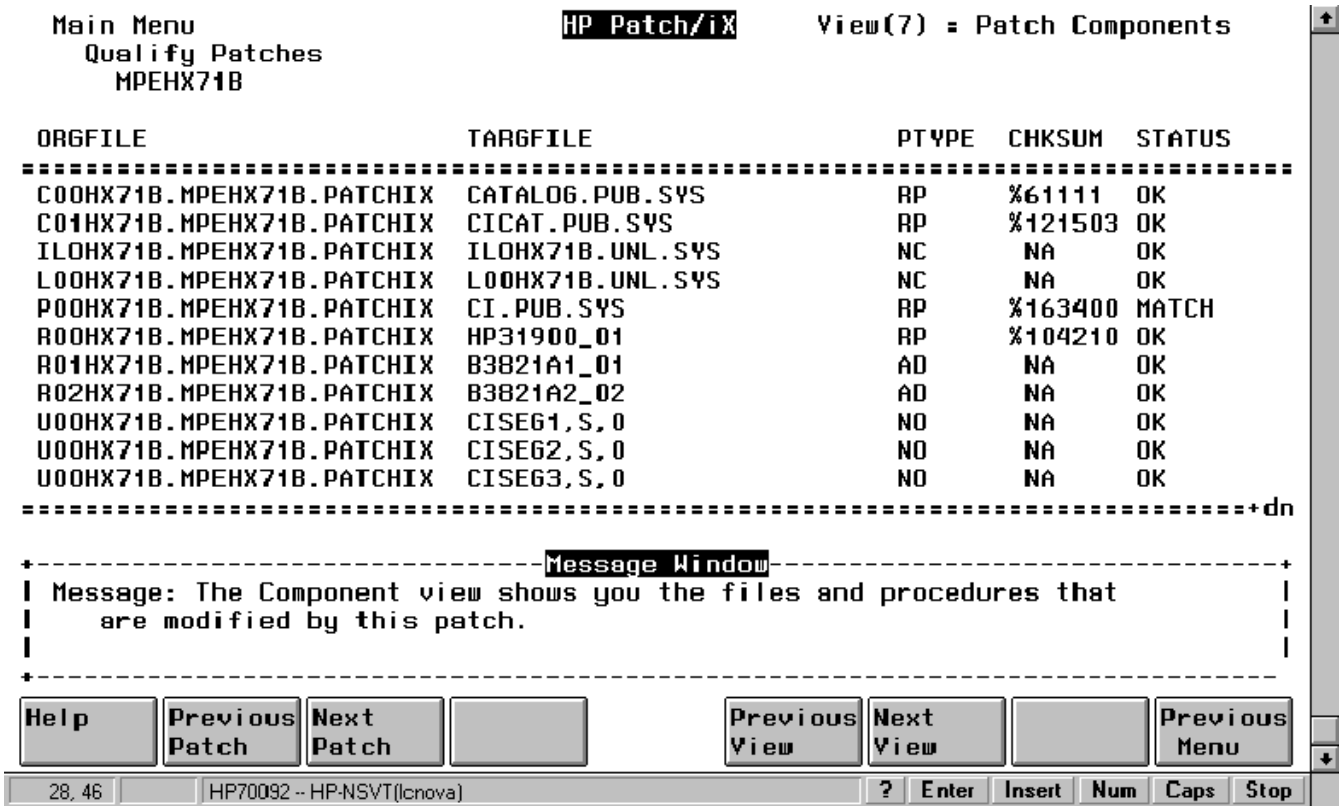

Figure 5-8. Patch detail, Component Information

View(7) = Patch Components: Provides a list of components that are contained in the patch, and will provide component checksum status if the view was opened under the Qualify Patches screen (see Figure 5-8 above).

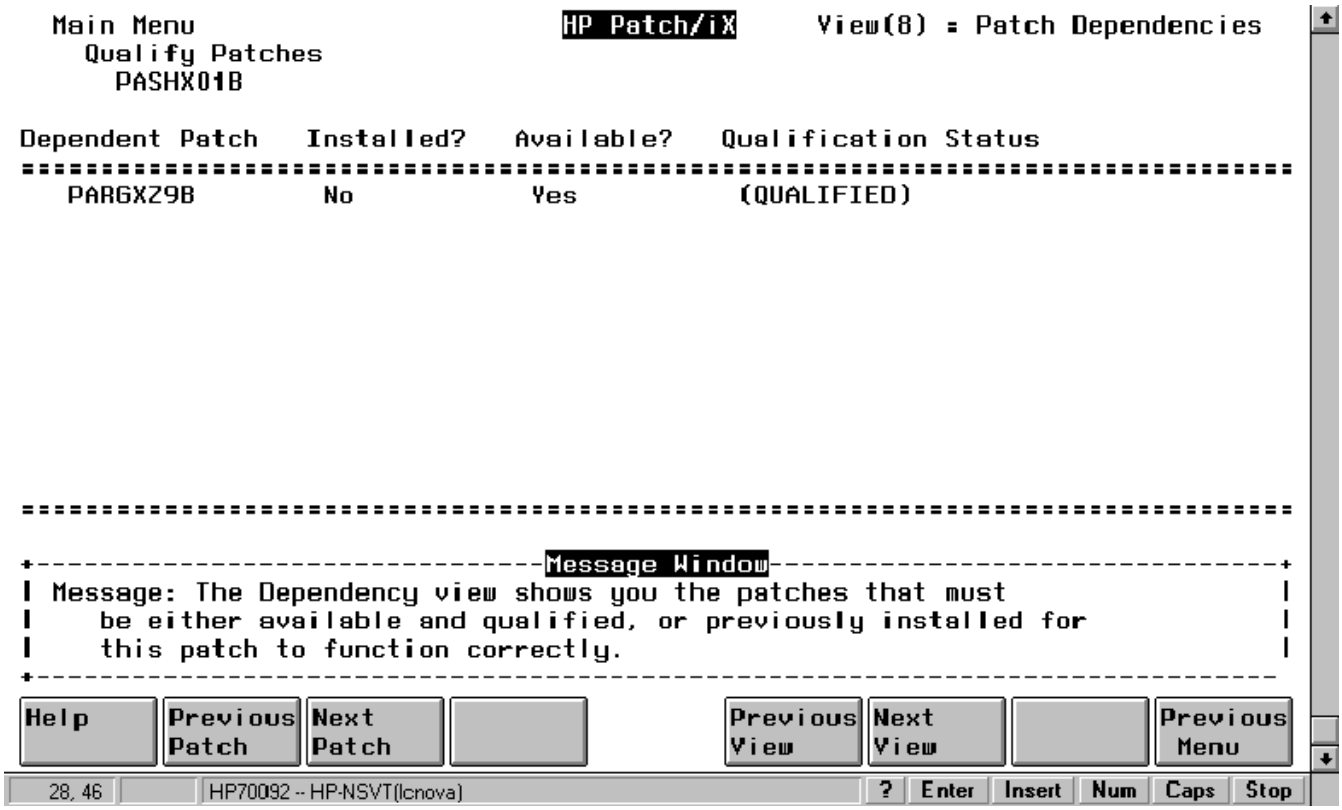

Figure 5-9. Patch Detail, Patch Dependency View

View(8) = Patch Dependencies: Provides a list of the patches that must be present for this patch to successfully install on the system (see Figure 5-9 above). All the dependent patches must be present and qualify in order for the patch to be installed.

Customizing the Set of Patches

Patch Qualification

In the past only PowerPatch patches went through some sort of qualification on your system. This was because the AUTOINST tool performed limited patch qualification. The AUTOINST tool could not qualify and install reactive patches however. The patch qualification phase of HP Patch/iX is responsible for determining which patches can/should be installed on your system. HP Patch/iX performs a more robust qualification than is available with AUTOINST. HP Patch/iX references three types of information when determining whether a patch qualifies:

- The current software components on the system (new with reactive patching).
- Information about the set of installed patches (new with HP Patch/iX).
- Information about the set of available patches (new with HP Patch/iX).

To qualify a patch for your system, HP Patch/iX:

- Analyzes each patch to make sure that all dependent patches are present on the system.
- Analyzes each patch to make sure there isn't already a newer patch on the system.
- Analyzes each patch that has multiple versions present in the patch set, and only qualifies the newest version.
- Analyzes each patch to determine what family of patches the patch belongs to and only qualifies the newest member of the family. The supersedes tree discussed later will show you how to analyze a patch family.
- Analyze each patch to make sure that the patch is not already installed. Note: in some cases patches are reinstalled. See Patch-on-Patch described next.

What is Patch-on-Patch ?

In the past with AUTOINST all patches that qualified for the system were applied even if they were previously installed . HP Patch/iX will recognize if a patch was previously installed with HP Patch/iX and in most cases will not reapply the patch. In some cases a patch will be marked as a reworked patch, and HP patch/iX will reapply the patch. This typically means that the patch changed in some important, but indiscernible way, and HP Patch/iX will reapply the patch just in case the installed version was the older (non-reworked) version. You can always veto a patch that you feel has already been applied.

Why does a patch fail to qualify ?

There are many reasons a patch will fail to qualify. To determine why a patch failed to qualify highlight the patch in the Qualify Patches screen and press the [Return] Key.

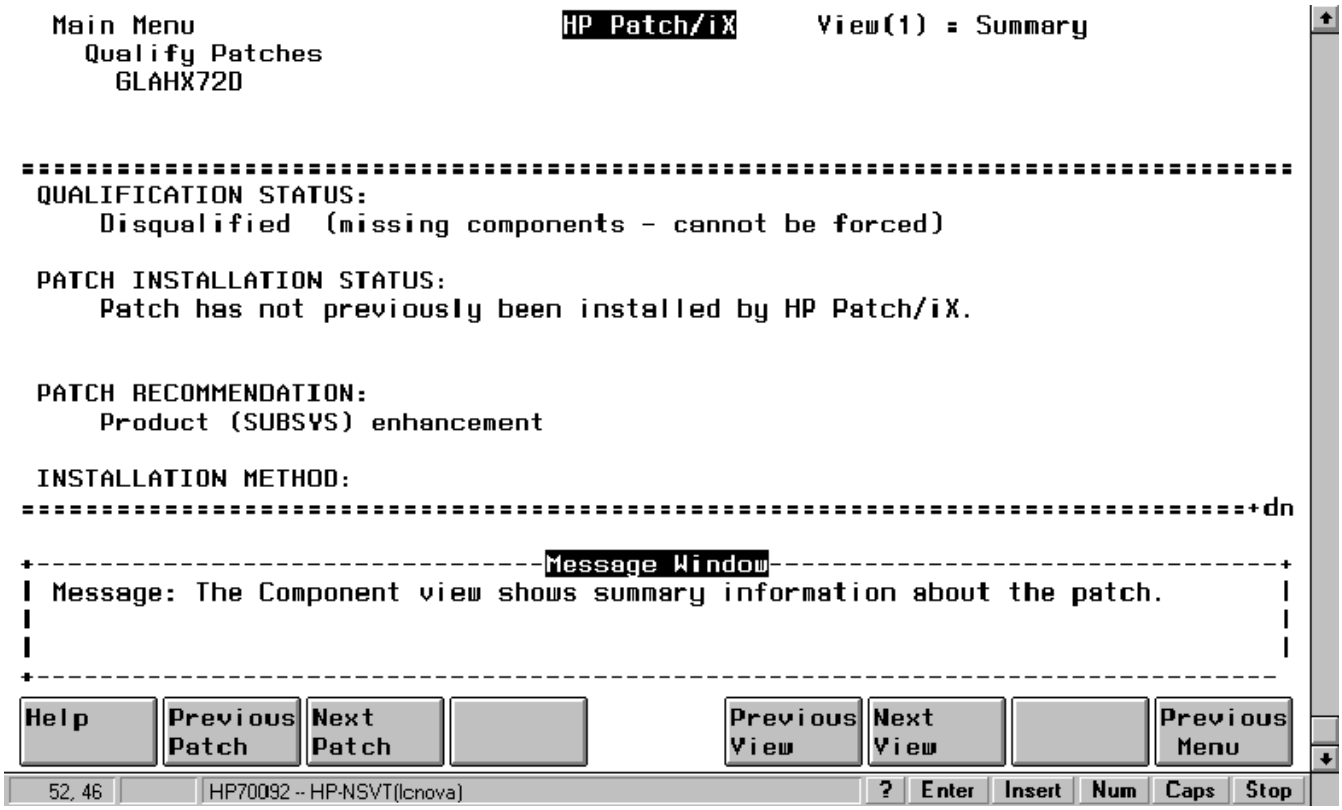

Figure 6-1. Patch summary view of detailed patch information

The summary view of the detailed patch information screen for the patch will display the patch QUALIFICATION STATUS (see Figure 6-1 above). Next to the qualification status, in parenthesis, will be the reason for the disqualification. The following sections will describe each of the possible reasons and how to get more information about why the patch failed to qualify.

(patch naturally qualifies)
This signifies that the patch qualifies for the system without being forced.

(patch naturally disqualifies - force not recommended)
This signifies that HP Patch/iX has determined that this patch should not be applied to the system, and that forcing the patch on is discouraged by Hewlett-Packard.

(dependent product installed - cannot be vetoed)
If you are installing an Express release, which has both SUBSYS and PowerPatch components, you may see this status. It means that the current patch is required for the associated product (SUBSYS) component to function properly. These types of patches cannot be vetoed because it would leave the product only partially installed.

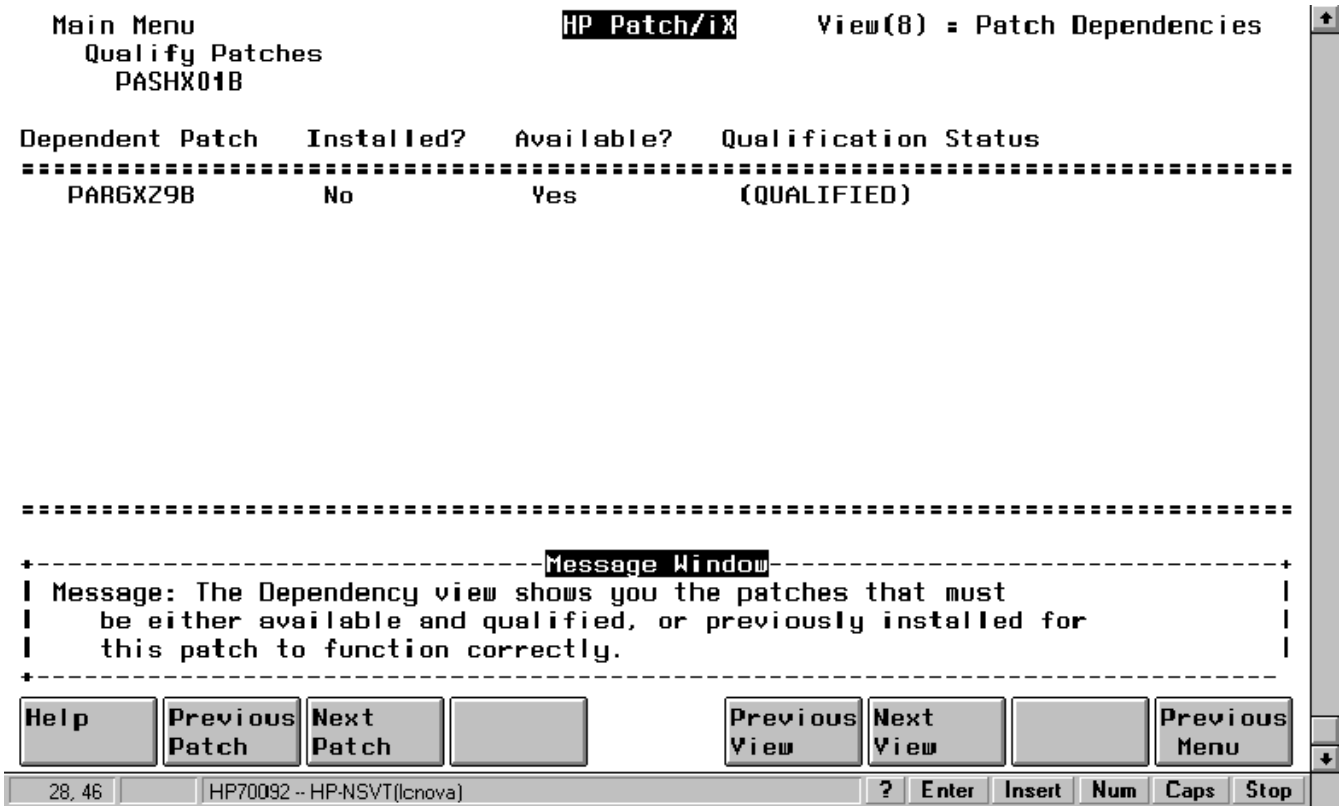

Figure 6-2. Patch detail, patch dependencies view

(patch dependency disqualifies)
This signifies that the patch has some dependency on another patch that has not qualified for the system. To determine what the dependent patches are and their current qualification status choose the View(8) = Patch Dependencies view (see Figure 6-2 above).

(enhancements must be forced)
A FOS enhancement is a release of new operating system functionality in the form of a patch. This is often a way to deliver support for new peripherals. Many of our customers have been unhappy with having enhancements put on their system automatically, because they can cause time consuming re-configuration. For this reason HP Patch/iX will by default disqualify enhancements, that were delivered on the PowerPatch. If you determine that you want the functionality you can choose to force the patch to qualify.
Note: if the patch that contains the enhancement was delivered reactively then it will automatically qualify for the system.

(a newer version of patch was detected)
If a newer version of the patch is available in the set of available patches. The version ID of a patch is the last character in the 8 character patch id. For example, the patch MPEHX12B is a newer version of the patch MPEHX12A. To force this type of patch you must first veto the newer version of the patch, then force this version of the patch.

(a newer patch was detected)
When a patch is built for MPE/iX, the patch will often be built on fixes made for previous patches. This technique makes sure that applying the newer patch will not cause a problem that was fixed by an earlier patch. This new patch is said to supersede the older patches it was built on. All of the patches in the Supersede tree are referred to as a patch family. Often the older patches will be reclassified as General Superseded (GS) and no longer be available, but if you are applying a PowerPatch with reactive patches then patches on the PowerPatch tape may have been superseded since its release.

(patch cannot be qualified)
This signifies that parts of the patch are missing, and therefore the patch cannot be qualified. This may be one or more of the patch information files. This status only applies to reactive patches.

(patch does not match environment)
This status value means that HP Patch/iX has determined that the version of the operating system does not match the version the patch was designed for. This status only applies to reactive patches.

(missing components - cannot be forced)
This signifies that the patch could not be qualified because HP Patch/iX could not find certain components on your system. This typically means that the product the patch is intended to fix is not installed on the system. This message only applies to PowerPatch patches.

(missing components)
This signifies that the patch could not be qualified because HP Patch/iX could not find certain components on your system. This typically means that the product the patch is intended to fix is not installed on the system. This message only applies to reactive patches.

(vetoed)
The status means that the patch is marked for veto.

(veto overridden by qualifier)
This status means that the user attempted to veto a patch but HP Patch/iX refused to allow the patch to be vetoed. The most common cause of this is an attempt to veto a patch that is needed for a SUBSYS product that is being added. Another common cause is due to selecting to veto a patch that is required by another patch that is being forced on.

(forced)
This status means that the patch is marked for force.

(force overridden by qualifier)
This status means that the user marked the patch for force but the patch still does not

qualify. This can be caused by an attempt to force a patch that cannot be forced. Another common cause is an attempt to force an older patch without first vetoing the newer patch.

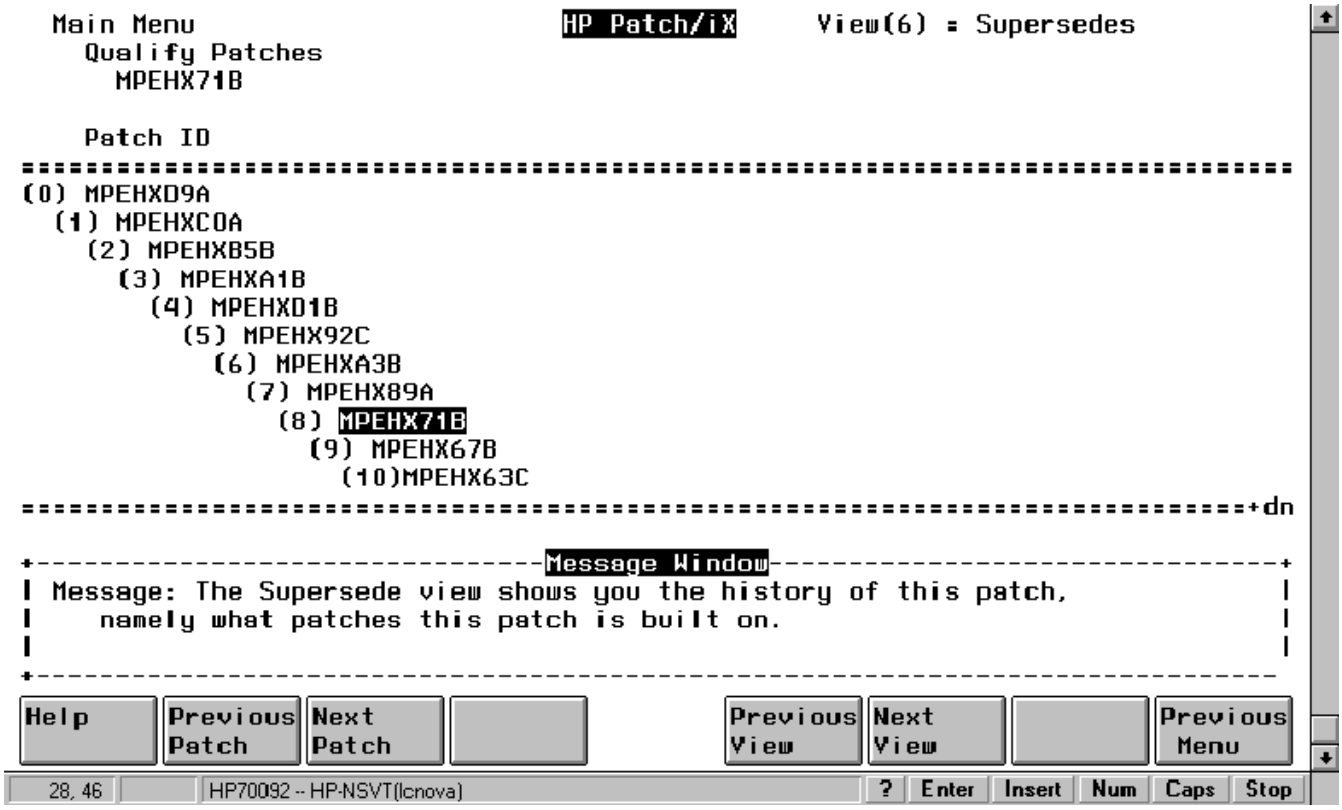

Figure 6-3. Supersedes tree for patch MPEHX71B

With the introduction of HP Patch/iX all patches will contain supersede information that HP Patch/iX will use to determine what the newest patch is dynamically. All older patches in the set of available patches will be disqualified with the status (a newer patch was detected). To determine which patch is the newer patch choose the View(6) = Supersedes view. The highlighted patch in the tree is the current patch. The top patch in the tree is the newest patch in the patch family.

Patch Veto

Under some circumstances HP Patch/iX may qualify a patch for your system that you do not want installed. This may be a patch that you feel introduces risk when the problem is not likely to be encountered, or causes a need for an update, when all the other patches do not require an update. HP Patch/iX will allow you to veto most patches in the set of available patches.

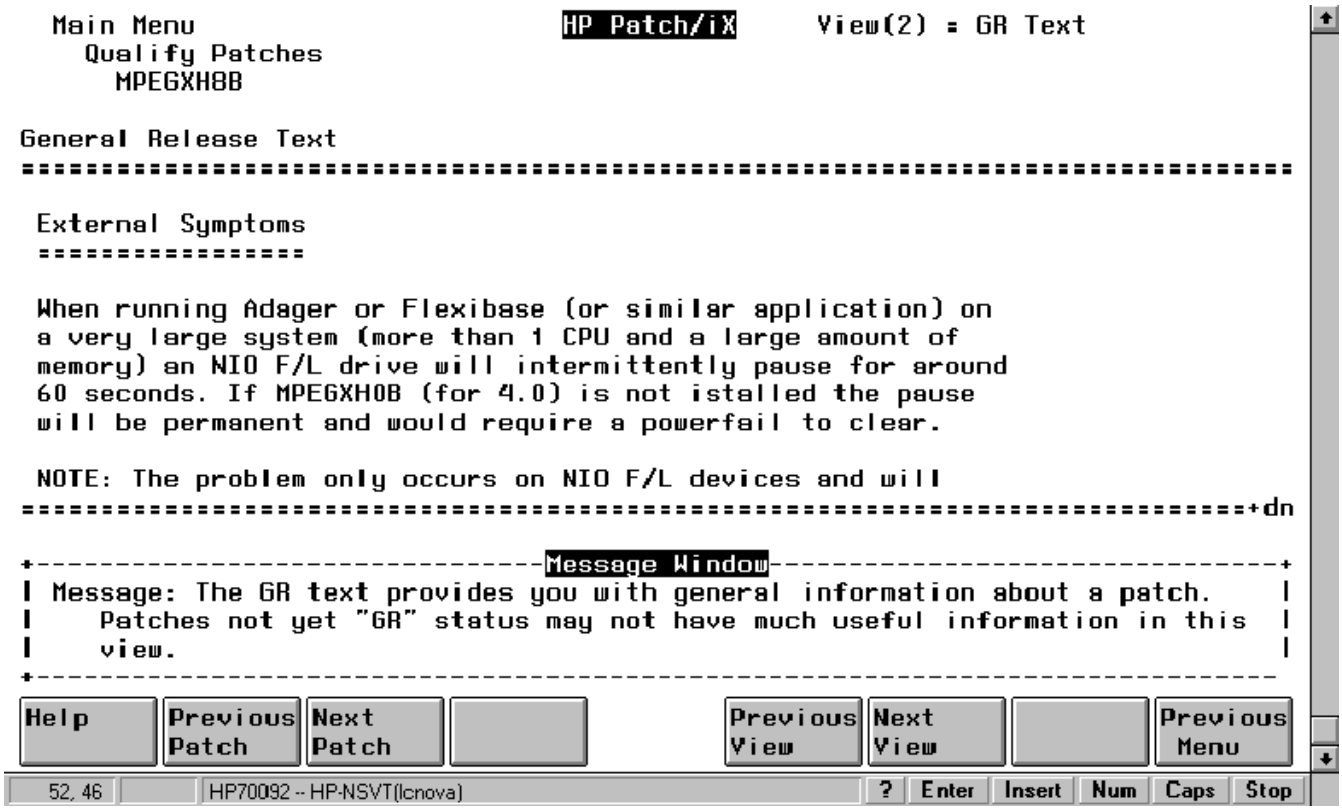

Figure 6-4. General Release Text for MPEGXH8B

Consider the example where the patch MPEGXH8B is delivered on the PowerPatch tape. From viewing the General Release (GR) text shown in you determine that the patch is designed to fix a problem experienced on large systems with multiple CPUs. Since your system is a mid-sized single CPU system you decide that adding this patch is not necessary.

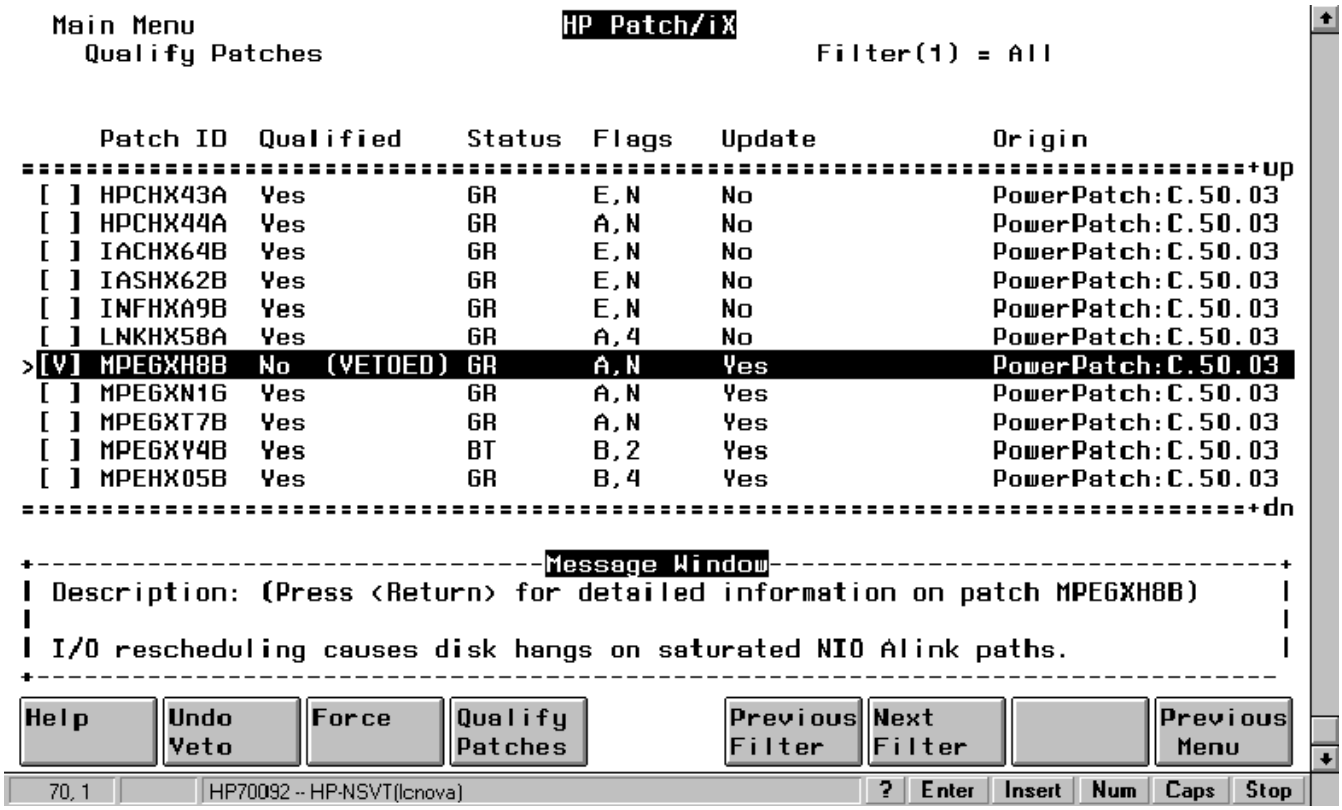

Figure 6-5. Qualify Patches Screen

To remove this patch from the list of qualified patches you return to the Qualify Patches screen (see Figure 6-5 above) and Veto the patch by pressing the Veto [f2] or V key. Next you press the [f4] key to re-qualify the changes since the last qualification. The patch qualification status should change to No. If the status changes to No, all patches that depend on this patch for installation will also be set to No. If not then check for the description of (veto overridden by qualifier) in the previous section.

Patch Force

In some cases HP Patch/iX may disqualify a patch that you feel should be installed on your system. For this reason HP Patch/iX provides the Force functionality. The most common use of the Force functionality is to force enhancements on the system. Remember that enhancements are disqualified by default if they came from a PowerPatch tape.

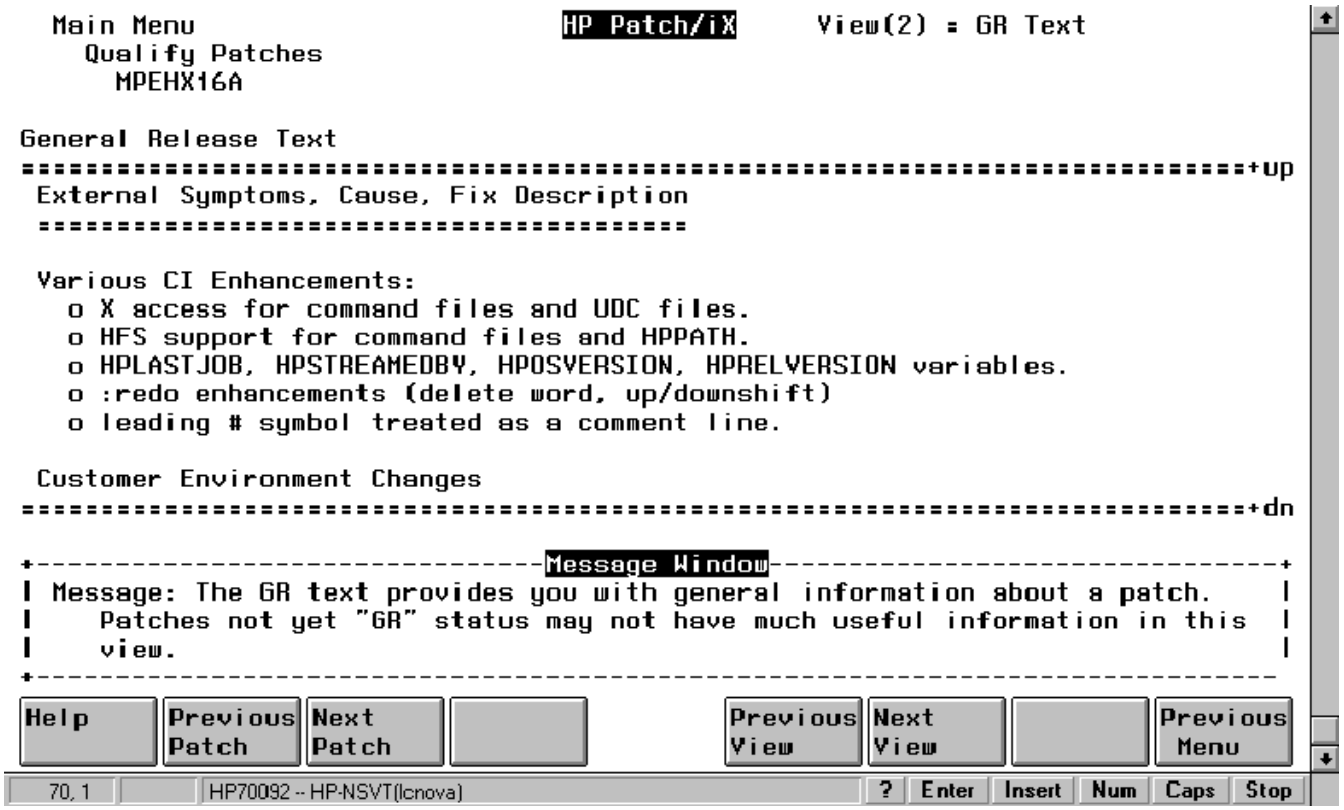

Figure 6-6. General Release text describing the enhancements in MPEHX16A

You should read the General Release (GR) text (see Figure 6-6 above) to determine what functionality the enhancement is providing. If the enhancement provides new functionality you desire or supports a new peripheral you plan to install then you probably want to force the patch on the system. Return to the Qualify Patches screen where you will be able to force the enhancement patch on the system.

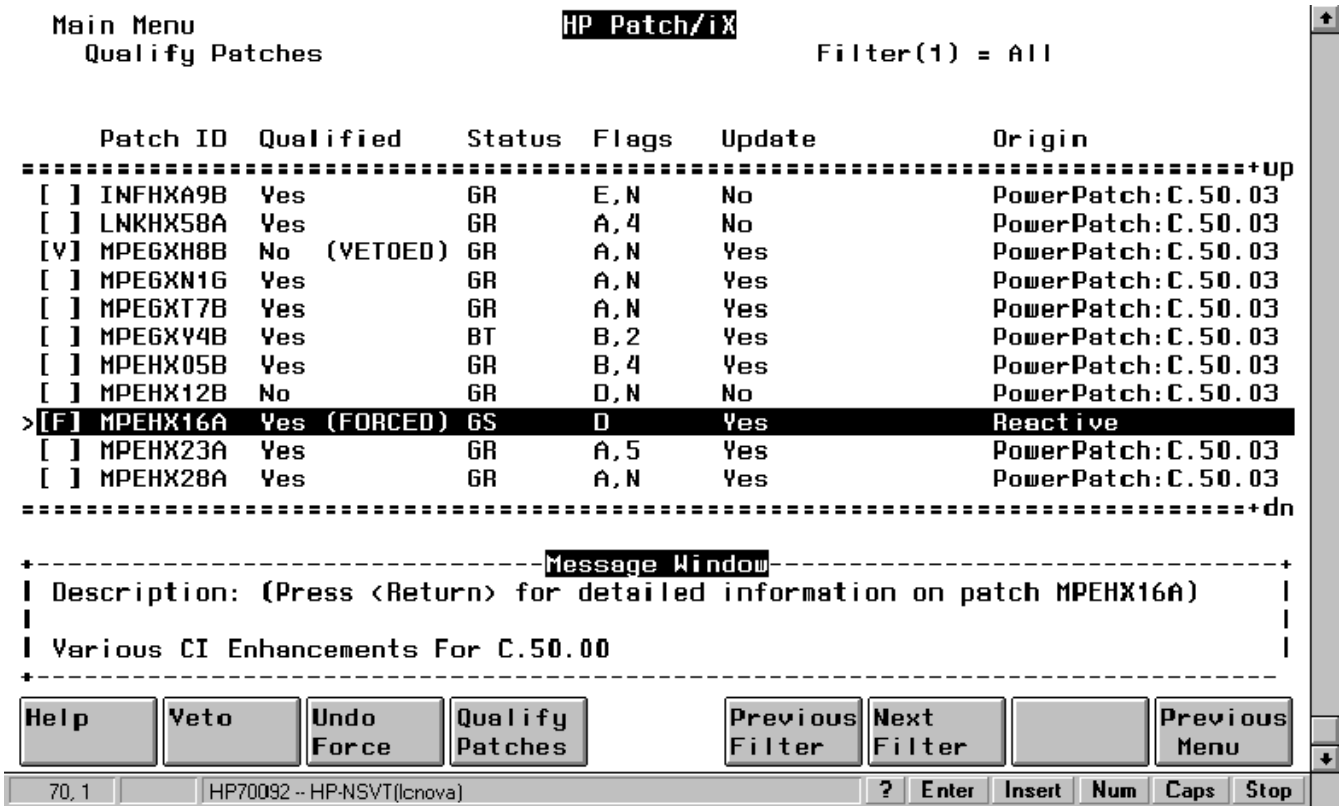

Figure 6-7. After forcing the enhancement MPEHX16B

To force the enhancement to qualify, highlight the patch and press the Force[f3] or F key. Then press the [f4] key to re-qualify the changes since the last patch qualification. The resulting patch list is shown in above in Figure 6-7.

Patch Requalification

Every time you make some change using the Force, Undo Force, Veto, or Undo Veto functionality you will need to re-qualify the set of patches. You can save the re-qualification until you have forced and vetoed several patches or do it right away. To see what changes in qualification status have occurred you can use the filter functionality of the Qualify Patches screen. Press the 4 key to see the list filtered by the Filter(4) = Difference filter. This process filters out all patches except those that changed qualification status in the last re-qualification.

Patch List Filters

In the Qualify Patches screen you have a number of filters you can select to customize the list of patches that are displayed. The current filter is displayed in the upper right hand corner. You can use the[f5][f6] keys to select the previous and next filters respectively, or access the filters directly using their filter number.

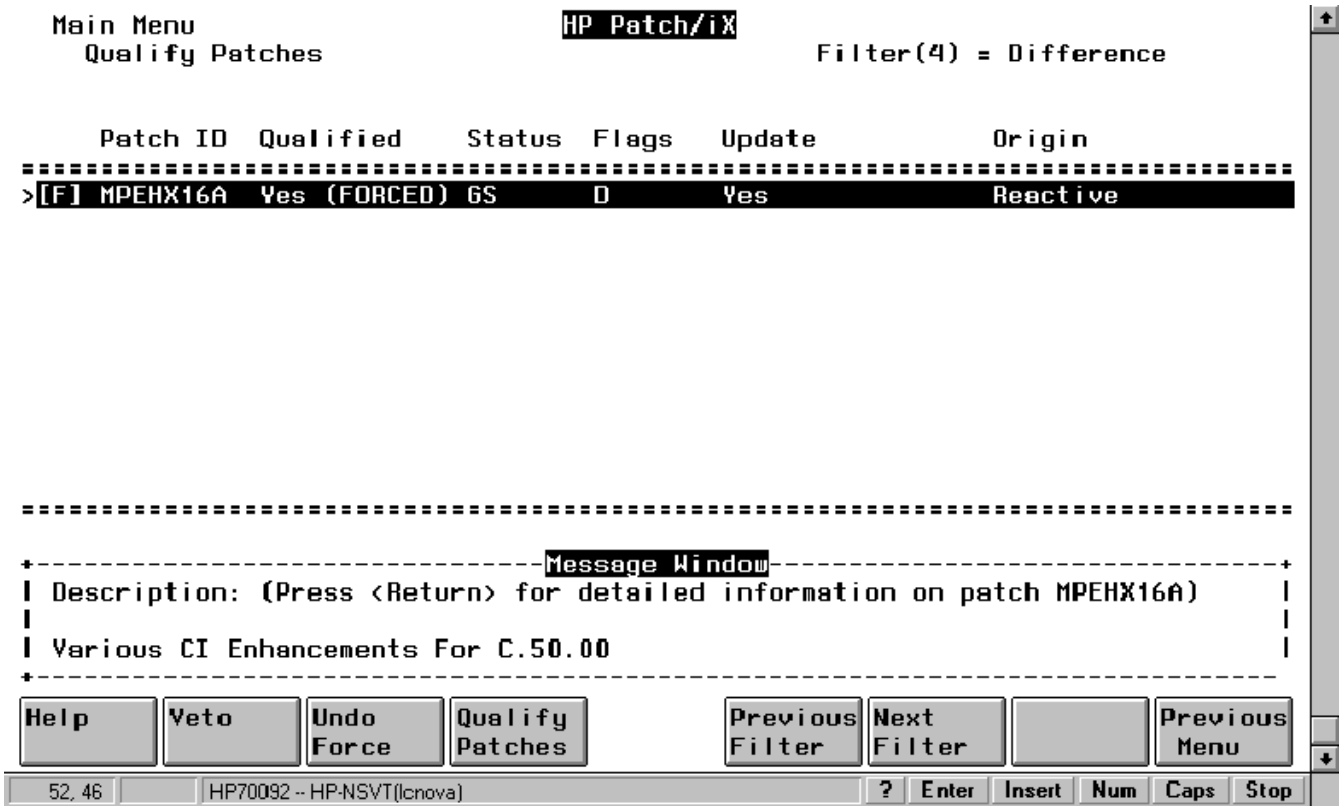

Figure 6-8. The difference filter showing changes in last re-qualification.

Figure 6-8 (above) shows the difference filter, which allows you to see the changes caused by the last re-qualification. The filters that are available are:

Filter(1) = All

This filter shows all available patches.

Filter(2) = Qualified

This filter shows only the patches that qualify for the system.

Filter(3) = Disqualified

This filter shows only the patches that do not qualify for the system.

Filter(4) = Difference

This filter shows that patches that changed qualification status as a result of the last re-qualification. This is a quick way to determine any secondary effects caused by a veto or force. For example vetoing a patch will disqualify any other patches that have the vetoed patch in their list of dependent patches. Forcing a patch forces all of its dependent patches.

Filter(5) = Vetoed

This filter shows all patches currently marked for veto, whether the veto worked or not.

Filter(6) = Forced

This filter shows all patches currently marked for veto, whether the force worked or not.

Error Handling

When HP Patch/iX experiences an error it displays an error window that gives a short description of the error.

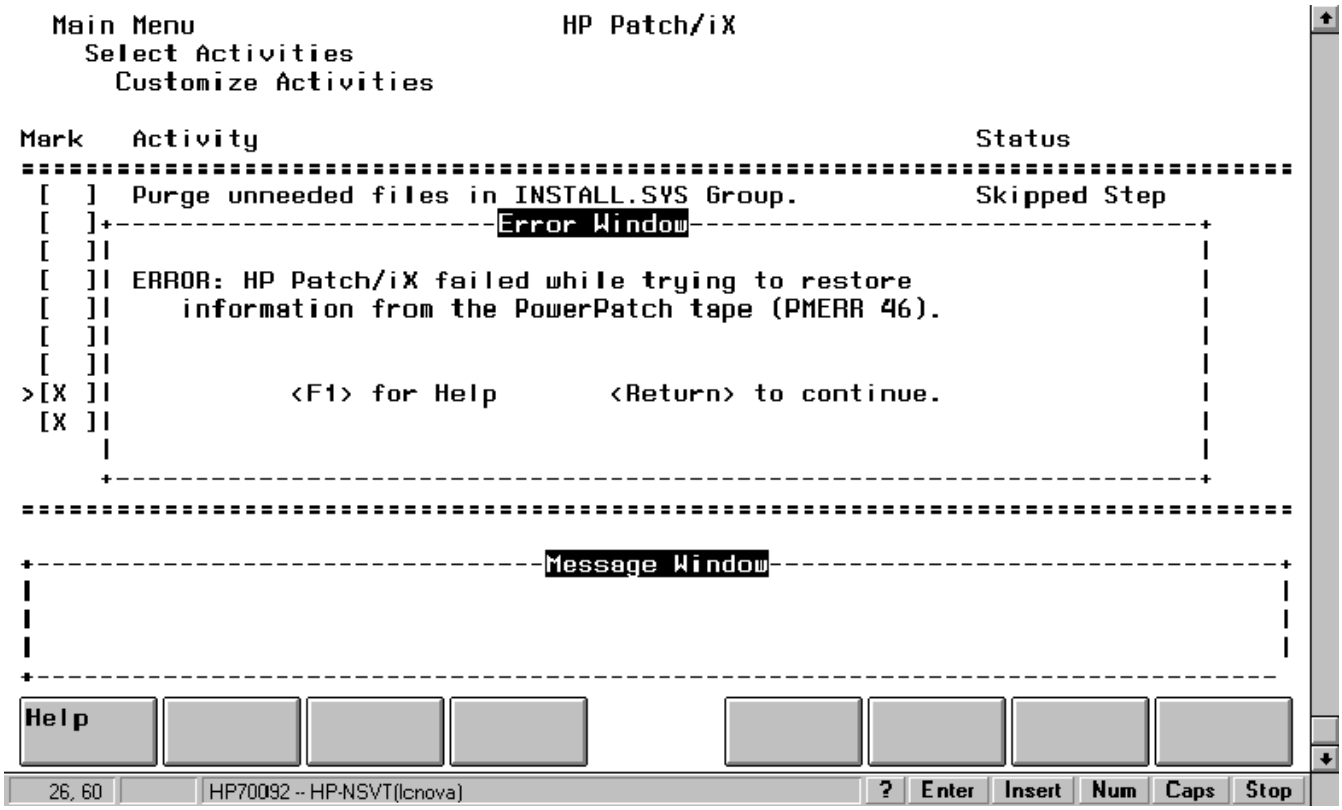

Figure 7-1. HP Patch/iX Error Message Prompt

You can press the [Return] key to continue, or the [f1] key to get the Error Help window (see Figure 7-1 above).

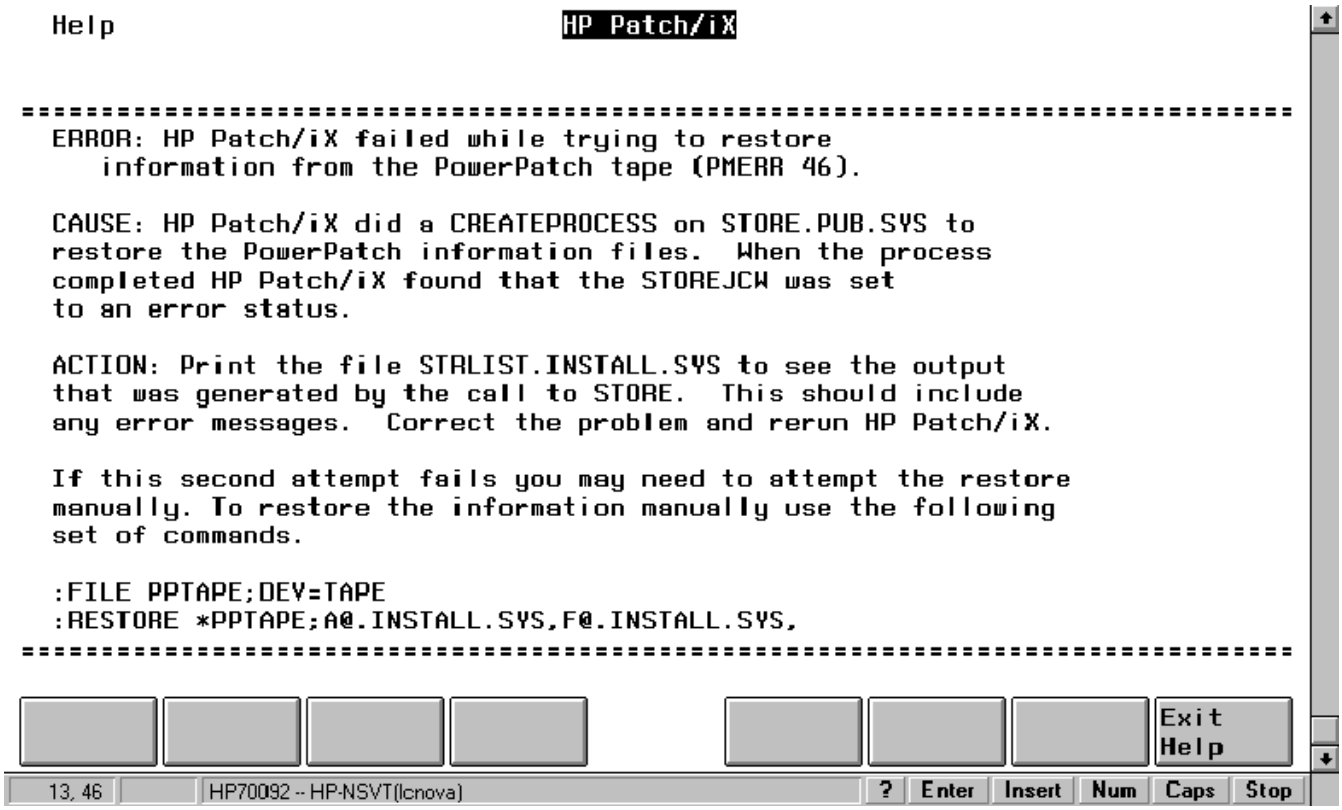

Figure 7-2. HP Patch/iX Error Help Screen

The Error Help window provides a scrollable window that gives cause and action text for the error (see Figure 7-2 above).

There are three error levels in the HP Patch/iX utility.

- Warning Level - warnings are given if a condition exists that could hinder your ability to complete the task. An example of a warning condition is if the patch reference file (REFxxxxx) is missing or corrupt. This file is not required for HP Patch/iX to complete successfully, but may hinder your ability to understand the purpose of the patch. If a warning is encountered HP Patch/iX will display a Warning window, but allow you to continue with the task.
- Error Level - When HP Patch/iX encounters an error condition it displays an Error Window. This window provides a brief description of the error. Some errors are recoverable, while others are fatal. An example of a recoverable error is the selection of an option that is not available at the time, an example of a non recoverable error is insufficient disk space available to complete the activity.
- Fatal Error - When HP Patch/iX experiences a fatal error it will terminate gracefully. It first provides the Error Window, then once you acknowledge the Error Window, it displays the Fatal Error window. The Fatal Error window informs you the HP Patch/iX will terminate and gives you some instructions on how to recover once you have resolved the problem.

When a fatal error is encountered HP Patch/iX will prompt with the fatal error prompt. When you acknowledge the error by pressing the [Return] Key HP Patch/iX will exit gracefully. Upon exit it will print important error information to the terminal window. If HP Patch/iX experienced an installation tools library error it will also print the error message associated with that error.

```
************** INTERNAL ERROR MESSAGE ******************
HP Patch/iX experienced the following library status
RL STATUS.SUBSYS = INSTALLATION TOOLS LIBRARY
RL STATUS.ERROR = 643
The associated error from the catalog is as follows:
Unable to initialize environment for patch installation  (INSTERR #263)

************ HP Patch/iX ERROR MESSAGE **************
ERROR: HP Patch/iX failed to setup for patch management (PMERR 74).

CAUSE:  HP Patch/iX attempted to performed a number of setup tasks that
are required to successfully qualify a set of patches and create a
CSLT.  One of these operations failed.

ACTION: Review PMLOG.INSTALL.SYS for errors.  It will display the
errors that occurred, along with cause and action text.  These errors
are written as they are encountered so they will become more generic
with each message.
Often failures during setup are related to either the failure to
restore a set of files from tape, or missing files that HP Patch/iX
expects to find.  These types of error are often related to an attempt
to customize the setup activities.  Rerun HP Patch/iX and allow HP
Patch/iX to perform the default setup activities for the selected
patching task.

Patch management was NOT successfully completed.

** EXITING HP Patch/iX **
```

HP Patch/iX is built on a common installation tools library. This means that aside from its window handling routines it calls library routines and system utilities for qualifying patches, modifying system libraries, and creating the tape. HP Patch/iX logs information about the run including error messages to the file PMLOG.INSTALL.SYS. The error messages printed in this file may also point to other log files that are used by these other routines or utilities. The set of potential log files are as follows:

- PMLOG.INSTALL.SYS - This is the first place to look for information about the last run of HP Patch/iX. It contains the users choices, information about operations that were performed and errors that were experienced. The errors may point to some of the other log files if HP Patch/iX thinks that additional information may exist in the other file.

- PATCHAUD.INSTALL.SYS -This is the logfile for the common installation tools library routines used for patch qualification activities. It contains extensive (and often hard to understand) information about the patch qualification results.
- AUTOLOG.INSTALL.SYS - A log file of most of the activity carried out by calls to the common installation tools library from the Create Tape screen. This file has all OCT, LINK EDIT, SOMPATCH, BUILDINT, and ABLDINTX output. This file can be checked for error messages that occur during the Create Tape screen of HP Patch/iX. This file is used in conjunction with the log file INLOG.INSTALL.SYS.
- INTLOG.INSTALL.SYS - A log file of most of the activity carried out by calls to the common installation tools library from the Create Tape screen. Whereas AUTOLOG contains the output of stand alone utilities, INTLOG contains the output from the common installation tools library itself. This file can be checked for error messages that occur during the Create Tape screen of HP Patch/iX. This file is used in conjunction with the log file AUTOLOG.INSTALL.SYS.
- LOGFILE.INSTALL.SYS - This is a generic logfile that is used for some of the more common installation tools library routines. It is also used for the library routines that handle any SUBSYS product processing.
- STRLIST.INSTALL.SYS - HP Patch/iX does a CREATEPROCESS on STORE under several circumstances. The output of the STORE/RESTORE operation will be logged in this file.
- HPINSTFL.INSTALL.SYS - This file is only used by the Phase II run of HP Patch/iX. This phase includes the restore of files from the (HP Patch/iX) created installation tape and the streaming of installation files.
- TMPSCAUD.INSTALL.SYS - This is also used for the logging of activities related to the creation of the TMPSTRxx files that occurs when the user first enters the Create Tape screen.

Recovering from Errors

In many cases HP Patch/iX allows you to recover from errors at a place close to where the error occurred. HP Patch/iX maintains a binary recovery file called PMRECOVR.INSTALL.SYS that contains information about the last run of the tool. When you restart HP Patch/iX, it will look for this file, and if found, ask you whether you want to recover. If you respond Yes HP Patch/iX will restore the environment from this file. It will also tell you where you last left off.

```
:PATCHIX
HP Patch/iX has found a recovery file.
Do you wish to resume with the previous HP Patch/iX session?(y/n)y
```

HP Patch/iX will startup and recover the previous environment. When the recovery is complete it will display a prompt window that will describe how to continue.

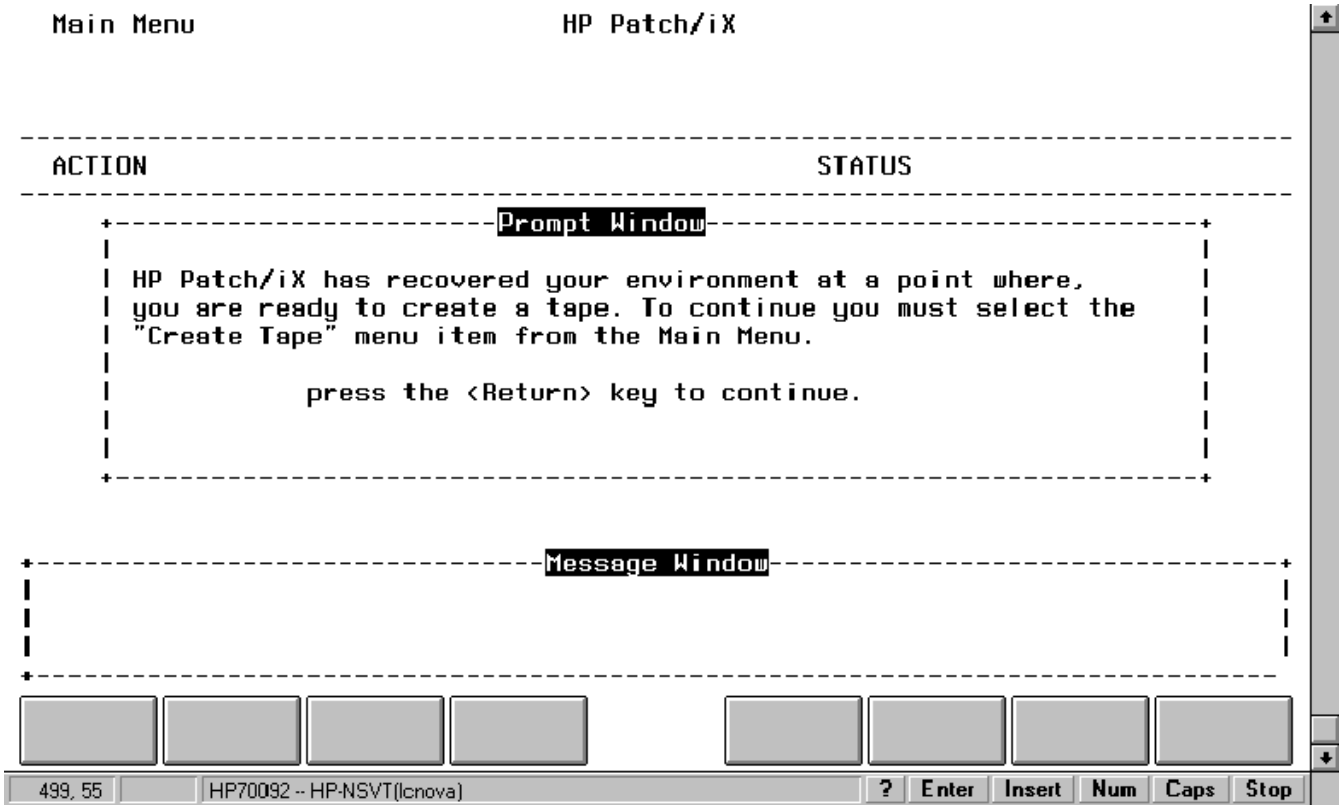

Figure 8-1. HP Patch/iX Recovery Prompt

Figure 8-1 (above) shows a prompt that describes that HP Patch/iX is ready to continue with the creation of the tape. You can press [Return] to continue and HP Patch/iX will display the Main Menu, with the recommended item highlighted.

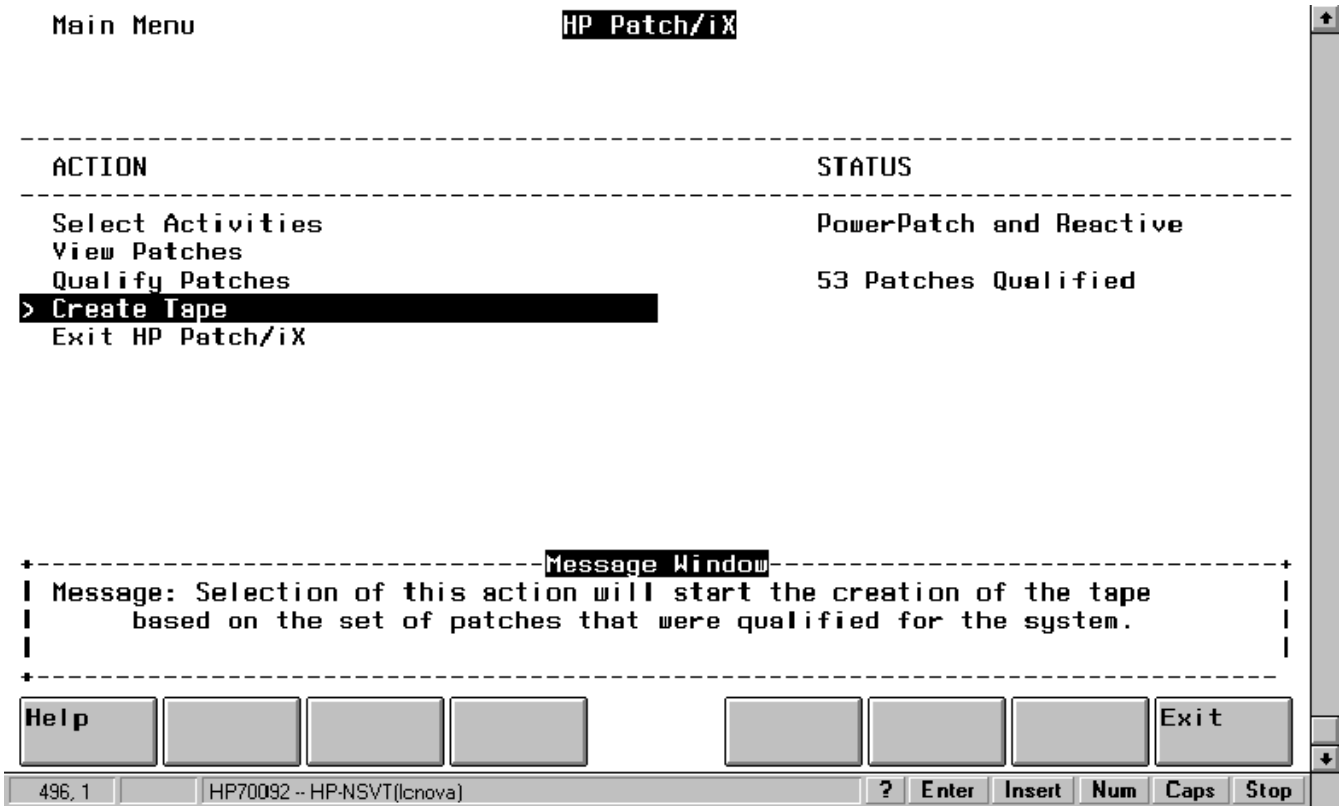

Figure 8-2. HP Patch/iX Main Menu before tape creation.

HP Patch/iX allows you control over how to continue. You can choose to continue from where you left off or select any of the previous menu items to start at an earlier step. For example if a patch had a problem being added to the NL, you could choose to restart, select the Patch Qualification menu item, Veto the patch, and then start the Create Tape phase again. If on the other hand the problem was caused by a bad tape that you have replaced, then you would want to start where you left off in the Create Tape screen. If you go back through qualification then all the steps in the Create Tape screen will be done again, if you go to Create Tape immediately then HP Patch/iX will continue where it left off, since no changes were made (see Figure 8-2 above).

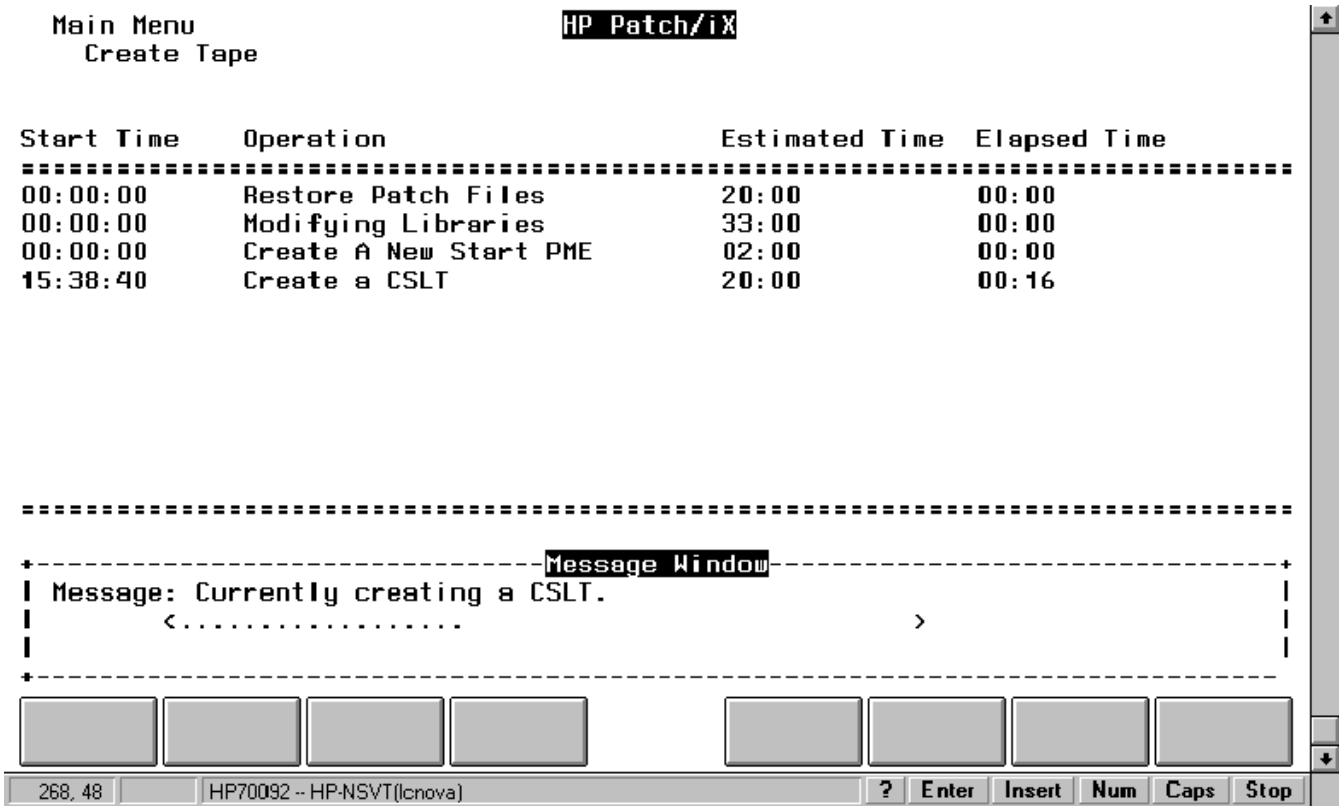

Figure 8-3. HP Patch/iX resuming at tape creation after an error.

When starting Phase II HP Patch/iX will prompt you, asking if you are ready to begin phase II. If you accidentally answer No, you can exit HP Patch/iX and restart with the info parameter "phase2", and HP Patch/iX will recover from the phase2 recovery file P2RECOVR.INSTALL.SYS. It will then start the phase II installation process.

Handling Recovery

Phase I Recovery Files

PMRECOVR.INSTALL.SYS

The PMRECOVER file is a binary byte-stream file that contains all of the global variables and state information that pertains to a particular run of HP Patch/iX. This file is opened when HP Patch/iX is invoked and remains open while HP Patch/iX is running. HP Patch/iX updates this file whenever a major milestone is completed so that the user doesn't have to perform that operation again if a problem is encountered.

PTCHLIST.INSTALL.SYS

If the user has done patch customization using VETO and FORCE a file called PTCHLIST is created to contain the customizations. Each record contains the customization type and patchid for each customized patch. For example:

V MPEFX92A
F MPEGX67A
F MPEGX98A
If a fatal error is experienced later and the user enters the "Qualify Patches" screen again then HP Patch/iX will use this information to automatically customize the list of patches. This feature saves the user the time required in remembering what customizations where made. The user then can always remove any customizations that were made.

Phase II Recovery Files

PMRECOVR.INSTALL.SYS

This file was described above, but is used when starting HP Patch/iX to determine whether this is a phase II run.

P2RECOVR.INSTALL.SYS

It was found that some users may accedentally answe "No" to the question of whether they are ready to start "Phase II of HP Patch/iX." With this HP Patch/iX would purge the PMRECOVR file and start at the beginning of phase I. To allow the user to recover from this case HP Patch/iX creates a backup of PMRECOVR (to P2RECOVR) when exiting phase I if the user completed tape creation successfully. Thus in the aformentioned case, the user could exit the "Main Menu" and run HP Patch/iX again with the "PHASE2" info parm and HP Patch/iX would use this P2RECOVER file to start phase 2.

HPINSTFL.INSTALL.SYS

HPINSTAL and AUTOINST use the HPINSTFL file for recovering from a program terminate. HP Patch/iX uses this file in the same way as HPINSTAL for phase II. It is actually using the same code with a few changes for the HP Patch/iX pass. This file will be the file used for recovery by the pm_phase2() procedure in the RL. When an error, such as a failed IHF-file, occurs in phase II the pm_phase2() (ODRIVER) procedure will return an error to the DoPhase2() (PMINTERN) function. HP Patch/iX will then terminate with an error message. This is very similar to the behavavior in HPINSTAL. If the user restart HP Patch/iX, then HP Patch/iX will recognize that the error occurred somewhere in the middle of pm_phase2() and will recall pm_phase2() and let it handle the problem of where to recover from. The pm_phase2() procedure will rely on the HPINSTFL file do determine what the next operation should be, much like HPINSTAL recovery today.

HP Patch/iX Reports

HP Patch/iX creates two reports when it completes phase I successfully. These reports are:

Special Instructions

This report has the special instructions for each patch that was placed on the patch installation tape. The report is saved as SITEXT.INSTALL.SYS. This text will be formatted with the patches listed alphabetically. A block of Special Instructions text will follow the Patch ID. Only those patches that had special instructions will be listed in the special instructions report.

Patch Report

HP Patch/iX creates a generic report that contains information about the qualification status of the patches. This report is broken into four sections:

- Patches that qualified.
- Patches that disqualified.
- Patches that were vetoed.
- Patches that were forced.

The Patch Report is saved in the file PMREPORT.INSTALL.SYS.

HPSWINFO File

There is a software information file (called HPSWINFO.PUB.SYS) that is found on all MPE/iX system. This file contains information about the SUBSYS and POWERPATCH revision numbers. These are located in line 4. Please do not modify the first twenty lines of this file, they are used by all of the installation tools. HP Patch/iX write patch information to the HPSWINFO file according to a standard established by AUTOINST and AUTOPAT. This standard is necessary to maintain compatibility with predictive support software routines that may be used by Hewlett-Packard to determine the patches that are installed on the system.