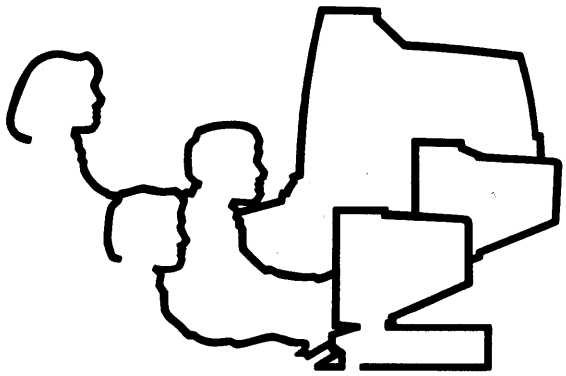

CLIPPER Software Delivery Guide

DSA026330

September 1990

SS01040

DSA02633S (Spine), DSA02633T (Bleed Tabs),

DSA02633C (Quick Reference Card), DIXGDMRS7 (Binder)

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Intergraph Corporation
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Document Conventions

The following conventions and symbols appear in this guide:

- *Workstation* applies to Intergraph's suite of graphics workstations, including InterPros, InterActs, and InterViews. *Server* applies to InterServe processors, which are nongraphics nodes.
- *Key in* means to enter characters at the keyboard and press <Return>.
- For command line input:
  - Command names appear in **bold** type.
  - Filenames appear in *italic* type.
  - Square brackets [ ] indicate an optional argument.
- Various symbols appear in the text. They represent certain keys or cursor buttons as outlined below:

<Ctrl>	Control key
<Ctrl-D>	Unless otherwise noted in the text, you must hold down the <Ctrl> key while pressing the second key.
<Return>	Return key
<Esc>	Escape key

5. **Notes** emphasize important information.

Preface

The *CLIPPER Softwar e Delivery Guide* describes how to install software on Intergraph workstations/servers, as well as other various software delivery issues. The following topics are discussed in this manual:

- Release notes

  Chapter 1 describes special delivery procedures (specific to the current release) that must be followed to upgrade software. In addition, this chapter lists new features for **newprod**, Intergraph's main software delivery utility.

- Delivery source

  Chapter 2 provides step-by-step procedures for creating a delivery source (a workstation/server or VAX used to store products in a deliverable format so that other nodes can connect and install software).

- Instructions for using **newprod**

  Chapter 3 provides detailed instructions for using the **newprod** utility.

- CDROM deliveries

  Chapter 4 provides step-by-step instructions for delivering software from CDROM (the preferred media type).

- Product information files

  Chapter 5 describes several methods that Intergraph provides for obtaining information about software products.

- Remote deliveries

  Chapter 6 describes the **remote_newprod** utility, which enables a system manager to install software on multiple remote systems.

- Customizing **newprod**

  Chapter 7 provides procedures for customizing the **newprod** utility.

- Troubleshooting

  Chapter 8 provides information on common problems that occur during the software delivery process.

A glossary is included to define terms commonly used in this document.

Additional References

AT&T Documents

The following Release 5.3 documents can be purchased individually or in sets from Intergraph:

Title	Doc. No.
AT&T User Guide	DSYS080
AT&T Programming Guide	DSYS084
AT&T Administrator Guide	DSYS082
AT&T User Reference Manual	DSYS081
AT&T User Reference Addendum	DSYS194
AT&T Administrator Reference Manual	DSYS083
AT&T Administrator Reference Addendum	DSYS197
AT&T Programmer Reference Manual	DSYS085
AT&T Programmer Reference Addendum	DSYS195
Release 5.3.1 Release Notes	DSYS187

Intergraph Documents

The following documents pertain to CLIX-based systems only and are also useful reference material. They can be purchased individually or in sets from Intergraph.

Title	Doc. No.
CLIX System Guide	DSYS18510
CLIX System Administrator's Reference Manual	DSYS18310
CLIX Programmer's and User's Reference Manual	DSYS18410
Addendum to CLIX System Guide	DSYS18511
Addendum to CLIX System Administrator's Reference Manual	DSYS18311
Addendum to CLIX Programmer's and User's Reference Manual	DSYS18411
CLIX Permuted Index (Master index to CLIX and AT&T reference manuals)	DSA0274

Ordering and Support Information

To order any of these documents:

- Within the United States contact your customer engineer or sales account representative.
- For International locations, contact the Intergraph subsidiary or distributor where you purchased your workstation.

If you have trouble with the workstation or the procedures described in this guide, contact Intergraph Customer Support at 1-800-633-7248. International customers should contact the Intergraph subsidiary or distributor where the workstation was purchased.

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1 Release Notes for CLIPPER System Software Version 04.00

This chapter contains the following sections:

1.1 Software Upgrade 1-3
1.2 New Features 1-6

CSS is the collection of Intergraph baseline (free) software products. CSS baseline is divided into two categories: *nucleus* and *supplemental*. Nucleus products make up the operating system for Intergraph workstations/servers and should never be removed. Suplemental products are additional applications that Intergraph provides to all workstation customers. These products are not required as part of the Intergraph standard platform; however, you may load and use them if you choose. The following lists all CSS baseline products:

CSS Nucleus

Delivery Tools (DELTOOLS)	SS01040
System V 3.1 File System (SYSTEMV)	SS01044
System V 3.1 Boot Images (UNIXBOOT)	SS01043
CLIPPER Graphics Libraries (ENVIRON_S)	SS01073
Screen Manager (SCREENMGR)	SS01045
DEC VT220 Emulation (VT220)	SS01049
Workstation Network Software (INC)	SS01636
Geometry Pipeline Host Shared Library (GPIPE_S)	SS01080
Workstation Graphic Resources (RESOURCES)	SS01050
Workstation/Server Diagnostics (DIAG)	SS01086
I/Forms Run-Time Package (FORMS_S)	SS01095
RIS Client Support Package (RISCCU)	SN01087
Looking Glass (LOOKING_G)	SS01160 *

* This product may be removed if you do not use it.

CSS Supplemental

Configurable UNIX (UNIXCFG)	SS01113
Rebuild Floppies (REBUILD)	SS01003
Menubuilder (MNUBLD)	SS01048
Symbol Editor (SYM)	SS01091
Intergraph Online News (INTERNEWS)	SS01074
System V 3.1 Online Documentation (SYSVDOC)	SS01017
X Window System (XWINDOW)	SS01096
The X Window Contributed System (XCONTRIB)	SS01197
CLIX Resource Monitor (CRM)	SS01137
Toolbox (TOOLBOX)	SS01132
Network Queuing System (NQS)	SS01126
InterPlot Client Nucleus (IP_CNUC)	SS01154
InterPlot HP-GL Submit (IP_HPSUB)	SS01152
InterPlot Raster Submit (IP_RASSUB)	SS01151
InterPlot ScreenCopy Submit (IP_SCSUB)	SS01150
InterPlot Server Nucleus (IP_SNUC)	SS01127
InterPlot Text MFI (IP_TEXT)	SS01142
InterPlot PC Server Nucleus (IP_PCSNUC)	SS01162
InterPlot ScreenCopy MFI (IP_SCOPY)	SS01141
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Sendmail (SENDMAIL)	SS01093
TCP/IP (TCPIP)	SS01066
Looking Glass on X Windows (LOOKING_X)	SS01161
Optical Disk File System (OD)	SS01085

1.1 Software Upgrade

To upgrade to the current CSS release (04.00), keep the following pointers in mind:

- If you deliver software from CDROM, the CDROM node (the workstation/server to which the CDROM drive is connected) must be upgraded to the 04.00 release and rebooted before any remote nodes running 04.00 CSS can connect (using the **newprod -r** option) and load software.
- CDROM load keys are now included in a database on CDROM Super Pak Disc #1. The **newprod** utility will automatically access these keys and transfer them to the */usr/ip32/deltools/keys* directory on the workstation/server hard disk. You will not be prompted to enter any more load keys (except for additionally-purchased products). To enable this new feature, you must invoke **newprod**, update CSS products on the workstation/server (from Super Pak Disc #1), quit **newprod**, and reboot. This process will ensure that software is in place that supports the new load keys. After the system boots, invoke **newprod** again and update products that require a load key.
- You cannot load any products that require load keys until you have upgraded to CSS 04.00 and rebooted.
- A workstation or server running CSS 04.00 software will not be able to load a product requiring a load key from a previous release. However, you can load a product from a previous release to the CSS 04.00 baseline by requesting a new load key for that product from Intergraph Software Delivery.
- The **remote_newprod** utility will not load (from CDROM) products that require load keys until each remote node has been upgraded to 04.00 CSS (and rebooted).

If you are currently running UNIXBOOT version 02.**.**.** through 03.**.**.**, you are not required to perform any special delivery procedures (other than those mentioned above) to upgrade individual workstations/servers. Simply invoke **newprod**, key in **a** to automatically select all outdated products, and key in **u** to update all selected products. After all products have been updated, reboot the system to activate the new CLIX operating system.

However, if you are currently running a version of UNIXBOOT less than 02.**.**.**, **you cannot upgrade directly to the 04.00 release of CSS.** Instead, you must upgrade to a version of UNIXBOOT (and corresponding CSS) between 02.**.**.** and 03.**.**.** by following these steps:

Note
For instructions on using **newprod**, please refer to Chapter 3.

Caution
Your delivery media must be for UNIXBOOT, version 02.**.**.** through 03.**.**.**.

1. Invoke **newprod**.
2. Select the DELTOOLS products.
3. Key in **u** at the menu to update DELTOOLS. At this point, the procedures will differ, depending on your media type.

   Tape Media

   First, use the steps below to update software on the machine with the local tape drive. Next, move to each remote machine and use the **rtc** command to allocate the tape drive. Then, use the steps below to update software on each remote machine.

   1. After DELTOOLS has loaded, key in **q** to quit **newprod**.
   2. Invoke **newprod** again.
   3. Select UNIXBOOT.
   4. Key in **u** at the menu to update UNIXBOOT.
   5. After the UNIXBOOT product loads, you will be prompted to press **<Return>** to reboot the system.
   6. Proceed to step 4.

   Other Media Types

   Follow these steps to load software from media other than tape:

   1. If you are delivering software from a remote workstation, the DELTOOLS product will not be installed succesfully because it requires the new version of **newprod**, which has not yet been delivered.
   2. Next, select and update UNIXBOOT.
   3. UNIXBOOT contains the new version of **newprod**. After UNIXBOOT loads successfully, press **<Return>** to reboot the system.
   4. Proceed to step 4.

4. After the system boots, log in and invoke **newprod** again.
5. Key in **a** at the menu to automatically select all products that have the "Needs updating" status. Then, select any products that have the "New" status and that you wish to install.
6. Key in **u** at the menu to update all selected products. All products should load successfully now that **newprod** has been updated.
7. Key in **q** to quit **newprod**.
8. Now that you have upgraded to a more recent version of CSS, you may upgrade to 04.00. To do so, change to the new CSS media, invoke **newprod**, key in **a** to automatically select all outdated products, and key in **u** to update all selected products. After all products have been updated, reboot the system to activate the new CLIX operating system.

1.2 New Features

The following changes have been made to **newprod** (Intergraph's main software delivery utility) and the software delivery process:

- The version number of each product (on the media -- not on the hard disk) is now displayed on the **newprod** menu. All CSS product version numbers will begin with "04.00," to help you maintain compatibility between CSS product versions.
- The status descriptions displayed in the **newprod** have changed as follows:
  - *Needs updating* indicates that the product on the local machine is outdated.
  - *System newer* indicates that the product on the local machine is newer than the product on the delivery media or source.
  - *New* indicates the product does not exist on the local machine.
  - *Up to date* indicates that the product on the local machine is current.
  - *Installed* indicates that the product was successfully installed (using **newprod**).
  - *Deliverable* indicates that the product was successfully installed (using **makenode**).
  - *Errors* indicates that the product was not successfully installed (using **newprod** or **makenode**).
- The preview (**p**) interactive option displays a product description for the product at the cursor. No load key is required to display this product description from CDROM. The review (**r**) option still displays the release notes of a product, and still requires a load key to review release notes from CDROM.
- For CDROM deliveries, the delivery date of the CDROM is now displayed at the top of the **newprod** menu.
- For CDROM deliveries, the > character (to the left of a product's status) indicates that the load key required to install the product is present in the */usr/ip32/deltools/keys* directory. Thus, you will not be prompted to enter a load key to install that product.
- A new database containing load keys resides on CDROM Super Pak Disc #1. The keys (alphanumeric character sequences) are copied from the CDROM disc to the */usr/ip32/deltools/keys* directory on the workstation/server hard disk. The **newprod** utility checks this directory for load keys. If the correct keys are present, **newprod** uses them, rather than prompting you to enter load keys.

To enable **newprod** to access the database, you must first update CSS software (from Super Pak Disc #1), quit **newprod**, reboot, and then invoke **newprod** again.

If this is your first Intergraph software delivery, your load keys will not reside in the database, and you will be prompted to key in the load keys during the initial product installation. Refer to your load-key memo for your product load keys. For future software releases, your keys will reside in the database on the CDROM disc.

- CDROM load keys have a new 19-character, case-sensitive format.
- Prompts for loading products from floppy disk have been simplified. You are no longer required to insert floppy #1 in the drive after loading each product file.
- The **newprod** utility can now connect to a TCP/IP-based network delivery source. To do so, use the **newprod -n** command. However, you must first complete the following steps:

  1. Check for the following line in the */etc/services* file on both the client and the server. If the line does not exist, add it.

     ```
     newprod      608/tcp      # Newprod Delivery Server
     ```

  2. Check for the following line in the */etc/inetd.conf* file on both the client and the server. If the line does not exist, add it.

     ```
     newprod stream  tcp  nowait  root  /usr/ip32/deltools/delserve -t
     ```

  3. Signal the **inetd** process with a **-1** signal or reboot the system.

- Software product numbers have changed to a new numbering scheme. Now, the third and fourth digits of all CLIPPER-based product numbers are "01." If you use **remote_newprod**, please be sure to update product numbers in the *.dat* files. In addition, any time you key in a product from the command line, be sure to key in the new number.
- For past software releases, you received a new set of Rebuild floppies with your CSS upgrades. Beginning with this release, you will no longer receive Rebuild floppy disk sets from Intergraph. Thus, be sure to create a set of Rebuild floppies by loading the REBUILD product. Please refer to Chapter 11 in the *CLIPPER System Administrator's Guide* for instructions on creating a Rebuild floppy set.

2 Setting Up the Delivery Source

This chapter contains the following sections:

2.1	Setting Up an Intergraph VAX Delivery Source	2-3
2.1.1	Delivering Workstation/Server Software Products to the VAX	2-3
2.1.2	Initializing VAX-based DELTOOLS	2-3
2.1.3	Initializing Workstation/Server Products	2-4
2.2	Setting Up a Workstation/Server Delivery Source	2-5

Intergraph delivers workstation/server software upgrades on the following media types:

- VAX magnetic tape
- Cartridge tape
- Reel tape
- CDROM

In addition, some software products and product fixes are delivered on floppy disks. You can request a specific media type by calling Intergraph Software Delivery.

After you receive the delivery medium, you must load products from the medium to each Intergraph workstation/server. If you have more than one workstation/server, you can load software (in deliverable format) to a VAX or workstation/server and allow all other workstations/servers in the network to load the products from the VAX or workstation/server. The machine that other nodes load software from is a *delivery source*. This chapter explains how to prepare a delivery source for storing products in deliverable format.

- If you use a VAX or workstation/server as a delivery source, follow the procedures in this chapter to prepare the delivery source.
- If you deliver software from CDROM, you are not required to set up a delivery source to deliver software to multiple nodes, but you may if you wish. Follow steps in this chapter if you wish to prepare a delivery source.
- If you deliver directly from cartridge tape, reel tape, or floppy disk, no setup is necessary. Proceed to Chapter 3, "Delivering Software Using newprod."

2.1 Setting Up an Intergraph VAX Delivery Source

Before you can download product software to the workstation/server from a VAX, you must ensure that the products have been loaded and initialized on the VAX. This section discusses procedures for loading and initializing the workstation/server software products on the VAX. The following steps are required to set up an Intergraph VAX as a delivery source:

1. Deliver workstation/server software products to the VAX.
2. Initialize the VAX-based DELTOOLS product.
3. Initialize all workstation/server products.

The information presented in these VAX setup procedures builds on and refers to the information in the *Intergraph VMS Delivery Guide (DDEL001).* Refer to this guide for complete instructions on making full baseline deliveries to the VAX or for more information on product deliveries.

2.1.1 Delivering Workstation/Server Software Products to the VAX

The first step in setting up a VAX as a delivery source is delivering the workstation/server software products to the VAX.

The information in this section assumes that all baseline products of the VAX/VMS operating system have been delivered to your delivery VAX. If necessary, consult your VAX system manager for assistance in delivering software products to the VAX.

Follow these steps to deliver the workstation/server software products to the VAX:

1. Make an image backup of the VAX disk(s) to which you will be delivering software products.
2. Load the workstation/server software products on the VAX disk from the delivery tapes using the **vaxprod** utility as described in the *Customer Information Packet.*

2.1.2 Initializing VAX-based DELTOOLS

The second step in setting up a VAX as a delivery node is initializing the VAX-based DELTOOLS product. When the VAX-based DELTOOLS product is initialized, the logical name PRO_DD_DELTOOLS is assigned to the DELTOOLS directory ([IGR.DELTOOLS.PRO]) so that DELTOOLS can be accessed by the logical name from this point on.

In the following example and throughout this guide, ZFA0 will be the VAX disk on which software has been loaded. Key in the examples as shown, substituting your VAX disk where required.

Key in the following commands to initialize VAX-based DELTOOLS:

```
$ set def ZFA0:[IGR.DELTOOLS.PRO]
$ @initial
Initialize DELTOOLS
Configure DELTOOLS
DELTOOLS-I-CONFIG_EXIT, operation complete
TYPE OUT PRO_DD_DELTOOLS:VAXPROD.DOC FOR DETAILS OF RUNNING VAXPROD.EXE
DELTOOLS-I-INITIAL_EXIT, operation complete
```

2.1.3 Initializing Workstation/Server Products

The final step in setting up the VAX as a delivery node is initializing all workstation/server products. When these products are initialized on the VAX, the **WS_INITIAL** utility found in *PRO_DD_DELTOOLS* is executed. **WS_INITIAL** will either read the *PRODUCT.DEF* file or execute the *INITIAL.COM* file found in each product's directory. **WS_INITIAL** will then call **WSPROD_ENTRY**, which will enter the product into the product list. This list resides in the *PRO_DD_CFG* directory under the name of either *WS_S.PRODS* or *WS_I.PRODS*.

The following example initializes all CLIPPER workstation products on ZFA3:

```
$ set def pro_dd_deltools
$ @ws_initial ZFA3:[ws_s.*]

Executing the initial.com in ZFA0:[WS_S.ACTEM]...
INITIAL -- ACTEM/CLIPPER WORKSTATION
Reading the product.def in ZFA0:[WS_S.MSTATION]...
Reading the product.def in ZFA0:[WS_S.UNIXBOOT]...
Reading the product.def in ZFA0:[WS_S.CGH]...
```

2.2 Setting Up a Workstation/Server Delivery Source

A workstation or server can be used as a delivery source. This permits other workstations/servers to load products from the delivery source through the network.

To set up an Intergraph workstation/server as a delivery source, load products onto the workstation/server through the **makenode** utility. When products are downloaded through **makenode**, they are automatically initialized.

> **Note**
> Before you load products through **makenode**, upgrade CSS software on the delivery source to version 04.00.

The **makenode** utility is modeled after the **newprod** utility. **makenode** has the same menu interface as **newprod**. **makenode** contains all **newprod** interactive mode options and command-line options except for the following:

- **x** - install script debug
- **y** - accept installation defaults
- **d** - accept installation defaults

Refer to sections 3.4 and 3.5 for information on using **newprod/makenode**'s interactive and command-line options.

The main difference between **newprod** and **makenode** is that products delivered through **newprod** are executable. Products delivered through the **makenode** utility cannot be executed; they are stored in deliverable format. By default, products downloaded through **makenode** are placed in */usr/ws_s*. Each product's status in the **makenode** menu reflects how the software in the **/usr/ws_s** directory compares with the software on the delivery medium.

Follow these steps to use the **makenode** utility to install products from network, floppy disk, or tape:

1. Power up the workstation/server designated as the delivery source.
2. Log in as follows:

```
login: username
$ su
Password:
#
```

3. To invoke the **makenode** utility, key in the following:

```
# makenode
```

4. Respond to the following prompt:

```
Enter source of installation: n)etwork, f)loppy, t)ape, r)emote
cdrom or local c)drom -->
```

Key in **n** to download from a network delivery source.
Key in **f** to download from a floppy disk drive.
Key in **t** to download from a tape drive.
Key in **r** to download from a remote CDROM drive.
Key in **c** to download from a local CDROM drive.

You can key in the first letter of each installation option or the entire word. For example, you can key in **n** or **network** to download from a node connected through the network. **makenode** accepts upper- or lower-case letters.

5. If you are downloading through the network, respond to the following prompts concerning the network address and the *username.password* combination for the node you are connecting to. Then, proceed to step 7.

```
Enter network connect nodename or address (08-00-36-XX-XX-XX)
08-00-36-12-34-56
```

You can enter the network address or nodename at the connect string prompt.

```
Enter "username.password" combination for node "08-00-36-12- 34-56"
→ john.doe
```

If you do not want to display the password, key in *username* followed by a period at the prompt and press **<Return>**. The system will prompt you for a password, and the password does not display as it is keyed in.

6. If you are downloading from tape or floppy disk, respond to the following prompt:

```
Insert a newprod product floppy/tape and press <RETURN>
```

7. At the following prompt, specify the directory to which you will load or press **<Return>** to choose the default directory:

```
A delivery node can have products available from it from several
directories. It is easier to manage when all the products exist in
one directory.

Enter the directory where the products are to be loaded [/usr/ws_s]:
```

The following appears. At this prompt, enter the product list file:

```
When newprod connects to this node to deliver software, it must
download a file that defines which products are available and where
they exist on the delivery node. This file is the product list file.
Newprod looks for this file in the HOME directory of the account
```

```
defined for the username.password in the network connection string,
and if it is not there, then it looks for it in the root directory.

Enter the pathname for the product list file [/ws_s.prods]:
```

8. The Makenode Available Products -- Classifications Menu appears. This menu contains product groups, or *classifications*.

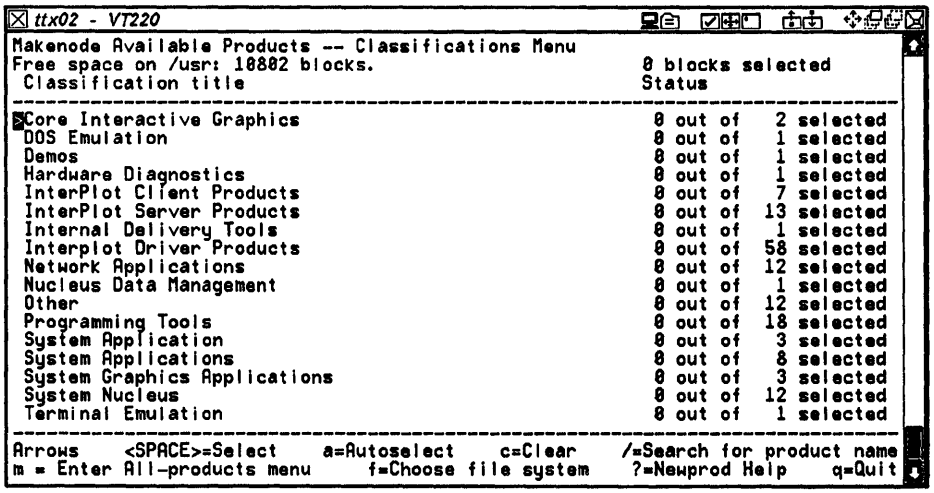

Figure 2-1. makenode Classifications Menu

To enter a classification, use the arrow keys to move the cursor to the classification and press the **<space>** bar. For example, to load nucleus products (products required to run the CLIX operating system), move the cursor to the System Nucleus classification. To enter the desired classification, press the **<space>** bar. The classification submenu appears. A classification submenu lists all products available in that classification.

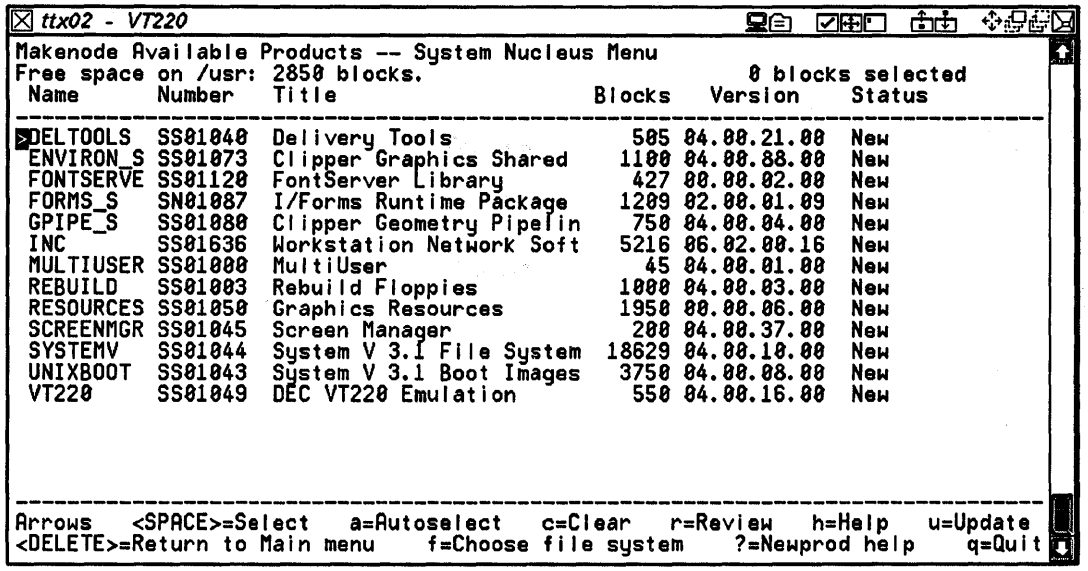

Figure 2-2. makenode Classifications Submenu

9. Two steps are required to load products. You must first *select* products that you want to download. Then, you must issue a command to load the products you selected.

   - To select a product to download, use the arrow keys to move the cursor to the product and then press the **<space>** bar. Notice that the product is now highlighted, or *selected.*
   - To load highlighted products, key in the **u** (update) option. If you decide not to load a highlighted product, move the cursor to that product and press the **<space>** bar. The product will be unhighlighted, or *unselected*, and will not be loaded when the **u** option is keyed in.

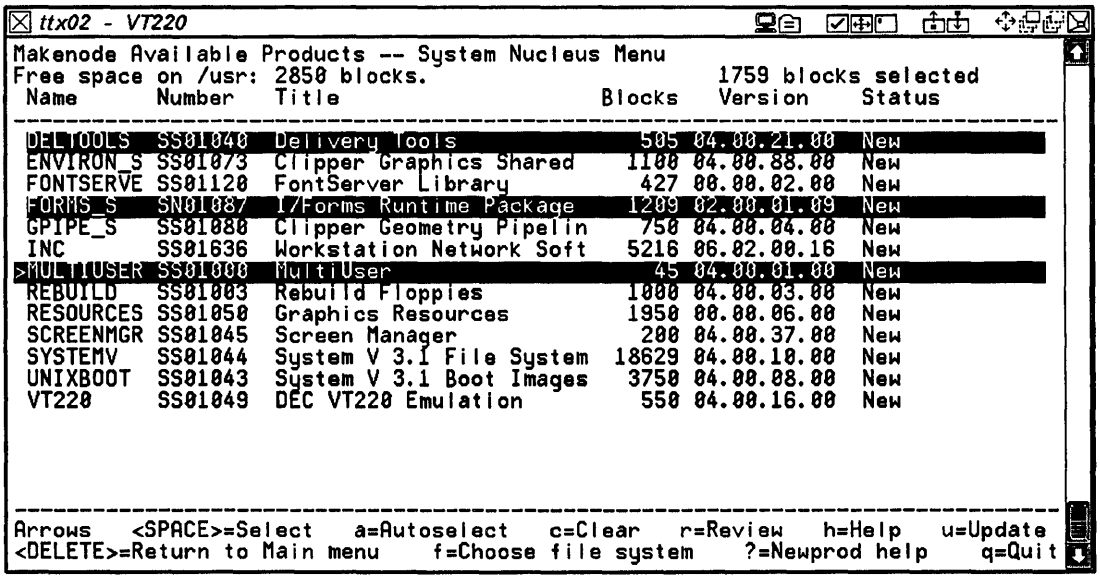

Figure 2-3. Selected Products

The following interactive options are useful when you use **makenode**:

h
This option provides Help for downloading products. Select all products that you want installation instructions for and key in **h**. Instructions for loading these products will display.

f
This option allows you to specify the file system that you will load products to. By default, **makenode** loads products to */usr*. If you would rather load products to */usr2* or another file system that has more free space than */usr*, issue the **f** command. **makenode** prompts you for the file system to which you will download.

m
This option changes menu mode. **makenode** has two menu modes: multi-menu and single-screen. Multi-menu mode has the classifications menu and submenus for each classification; this is the mode you are placed in when you invoke **makenode**. Single-screen mode lists all products on one menu.

a
This option automatically selects all products in all classifications with the status "Needs to be updated" and clears all selected products. This option switches the interface to single-screen mode. To return to multi-menu mode, key in the **m** option.

c
This option automatically clears all selected products in all classifications. All highlighted products become unhighlighted.

/
This option searches for a product. After you key in /, **makenode** prompts for the name of the product that you will search for. From the classifications menu or any submenu, **makenode** will search through all submenus.

10. Select all products that you want to download in deliverable format. Remember, you must download any product that other workstations/servers might want to download.

11. Key in **u** to load all selected (highlighted) products.

12. When all products have been installed, the Available Products Menu appears. Key in **q** to quit **makenode**.

13. Repeat this procedure for all delivery tapes or floppies that you received.

3 Delivering Software Using newprod

This chapter contains the following sections:

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After you set up the delivery source (if required), you are ready to load software using **newprod**. This chapter provides instructions for using **newprod**.

If one of the following circumstances applies to you, you must complete additional steps before you download software using **newprod**:

- You are currently running a version of UNIXBOOT previous to 02.**.**.**.

  If so, refer to Chapter 1 for instructions for upgrading software.

- You are receiving disk media error messages similar to the following:

  ```
  Disk failed: s0u0p07.1 medium error:
  read error at 2933
  ```

  If so, you must rebuild your hard disk. Follow steps in Chapter 11, "Rebuilding and Repartitioning the Hard Disk," in the *CLIPPER System Administrator's Guide* to create current Rebuild Floppy disks, back up files, verify, format, partition, and rebuild your internal workstation/server hard disk before delivering new software products.

- You are making a full hardware and software upgrade from a 32032-based workstation to a CLIPPER.

  If so, refer to the *Upgrading 32032-based Workstations to CLIPPERs* guide that comes with the CLIPPER upgrade package for complete instructions. Information on delivering new software is also provided in this guide.

3.1 newprod Overview

The **newprod** utility is Intergraph's main software delivery utility. **newprod** resides in the */usr/ip32/deltools* directory and is linked to */usr/bin* (so that it can be invoked from any directory).

When **newprod** is invoked, it loads the *ws_s.prods* file (by default) to */usr/tmp*. Then, **newprod** compares the date of each product listed in *ws_s.prods* with the date found in each product's *product.def* file. This comparison determines each product's status on the **newprod** menu. Possible statuses are described in 3.3.1.

To download a product, you must first *select* the product and then key in a command to load all selected products. To select a product, use the arrow keys to move the cursor to the product and press the **<space>** bar. When you attempt to select a product, **newprod** checks the product list file to determine the product's size. If the workstation has enough free space to load the product, the product highlights when you press the **<space>** bar. If the product requires more than the available space, the keyboard beeps and the product is not selected (or highlighted). The amount of free space on the file system to which you are downloading and the total number of blocks required to load selected products are displayed at the top of the menu.

The **u** (update) command loads all selected products. When you key in the update command, **newprod** loads all selected products. When you are downloading multiple products, **newprod** loads the baseline nucleus products before it loads any supplemental products or applications to ensure that the CLIX operating system is installed properly.

For each product, **newprod** loads the *README* file and then invokes the product's install script (*install.sh*). The install script performs the following functions:

- Downloads the product from the delivery source to the */usr/tmp/<product_number>* directory
- Decompresses the product file (if it is in compressed format) and extracts it
- Saves user-specific and user-modified files in the current product directory
- Sets default protections on the files
- Copies startup files
- Adds the product to the workstation pulldown menu, if applicable
- Performs other miscellaneous installation requirements

After the installation script completes, **newprod** resumes control. At that point, **newprod** moves the product from */usr/tmp/<product_number>* to the product directory, which by default, is usually */usr/ip32/<product_name>*. Then, **newprod** looks for, executes, and removes a *postinstall.sh* file (which performs file system clean-up operations) if one exists for the product.

3.2 Invoking newprod

Follow these steps to invoke **newprod**:

> **Note**
> To invoke **newprod** you must have superuser privileges.

1. Key in the following at the superuser prompt to invoke **newprod**:

   # newprod

2. You will be prompted as follows for the installation source:

   ```
   Enter source of installation: n)etwork, f)loppy, t)ape, r)emote
   cdrom or local c)drom →
   ```

   Key in **n** to load from a remote delivery source.
   Key in **f** to load from a local floppy disk drive.
   Key in **t** to load from a local tape drive.
   Key in **r** to load from a remote CDROM drive.
   Key in **c** to load from a local CDROM drive.

   You can key in the first letter of each installation option or the entire word. For example, you can key in **n** or **network** to load from a remote delivery source. **newprod** accepts upper- or lower-case letters.

3. If you are loading from a remote delivery source or CDROM drive, key in the network address or nodename of the delivery source/CDROM drive, followed by a *username* and *password* at the following prompts:

   ```
   Enter network connect nodename or address
   (08-00-36-XX-XX-XX) → 08-00-36-12-34-00
   Enter "username.password" combination for "08-00-36-12-34-00" →
   john.doe
   ```

   If you do not want to display the password, key in *username* followed by a period at the prompt and press **<Return>**. The system automatically prompts for a password, and the password is not displayed as it is keyed in.

4. If you are downloading from tape or floppy disk, respond to the following prompt:

   ```
   Insert a newprod product floppy/tape and press <RETURN>.
   ```

5. The Newprod Available Products -- Classifications Menu appears. Refer to 3.3 for information on the **newprod** menu.

3.3 Using the newprod/makenode Menu

This section provides detailed explanations of using **newprod**'s and **makenode**'s menu. Because both utilities use the same menu, this section uses the term *delivery utility* to represent either **newprod** or **makenode**. When a feature is specific to **newprod** or **makenode**, the utility is named separately.

3.3.1 Product Status

When you invoke the delivery utility, one of four descriptions displays in the **Status** field for each product in the menu. These four descriptions include the following:

- Needs updating
- System newer
- New
- Up to date

A product's status describes how the software on your workstation/server compares with the software on the delivery source. The delivery utility compares the date of the product on the menu with the date of the same product on your workstation/server (in */usr/ip32* for executable products loaded through **newprod** and in */usr/ws_s* for deliverable products loaded through **makenode**). Products are listed alphabetically by product name within each status group.

In addition, the following statuses may appear after you have loaded products:

- Installed (**newprod** only)
- Deliverable (**makenode** only)
- Errors

For example, if you download a product through **newprod**, its status will change to "Installed." If you wish to clear this status so the status that describes whether the product is up-to-date displays, key in **a** (autoselect). The **a** option automatically selects all products with the "Needs updating" status and clears all temporary statuses. Each status is described in the following subsections.

Needs updating

All products with this status appear at the top of the menu. The "Needs updating" status indicates that the date of the product on your workstation/server is older than the date of the same product on the delivery source (VAX, workstation/server, CDROM, tape, or floppy disk). Thus, this product is outdated on your workstation/server. You need to load the product's newer version available on the delivery source.

System newer

Products with this status appear in the menu under products that need updating. The "System newer" status indicates one of the following circumstances:

- The product was previously downloaded from one delivery source and is currently being compared to an older version on another delivery source. The product version on the workstation/server is more recent than the version on the delivery source.
- The product was not initialized on the delivery source (VAX or workstation/server).

In the first case (downloading from multiple delivery sources), you can download a product with the "System newer" status. (You will be loading an older version of that product.) However, first check the *README* file for that product to ensure that no compatibility problems between products exist.

In the second case (the product was not initialized), the system manager should initialize the product on the delivery source before the product is loaded.

Use *one* of the following methods to initialize products on a VAX:

- Initialize all products with the following commands:

  $ set def pro_dd_deltools
  $ @ws_initial ZFA3:[ws_s.*]

- Initialize individual products by issuing the following commands. (In this example, the MicroStation product is initialized.)

  $ set def pro_dd_deltools
  $ @ws_initial ZFA3:[ws_s.mstation]

Use *one* of the following methods to initialize products on a workstation/server:

- Initialize all products with the following command:

  # /usr/ip32/deltools/node/Initial /usr/ws_s/*

- Initialize selected products with the following command. (In this example, the MicroStation product is initialized.)

  # /usr/ip32/deltools/node/Initial /usr/ws_s/mstation

Intergraph initializes all products on delivery CDROM, tape, or floppy disk before shipping. Thus, you do not need to initialize products on these media types.

New

Products with this status appear in the menu after any products with the "System newer" status. The "New" status indicates that this product is available to download but does not exist on the workstation/server. To load products with this status, you must select them and load them to your workstation/server.

Up to date

Products with this status appear at the bottom of the menu. The "Up to date" status indicates that the date for the product on your workstation/server is the same as the date for the product on the delivery source (VAX, workstation/server, CDROM, tape, or floppy disk). Thus, the same product version exists on your workstation/server and the delivery source. Products with this status are already updated and do not need to be downloaded. However, you may download a product with this status (if you wish to respond to installation prompts differently than when you previously installed the product).

Installed

If a product is loaded through **newprod** successfully, the product's status becomes "Installed." When the Available Products Menu appears, the product will be listed in the menu where it was before installation. The next time you invoke the delivery utility, the product will display the "Up to date" status and will be listed at the bottom of the menu with the other up-to-date products.

Deliverable

If a product is loaded through **makenode** successfully, the product's status becomes "Deliverable." When the Available Products Menu appears, the product will be listed in the menu where it was before installation. The next time you invoke **makenode**, the product will display the "Up to date" status and will be listed at the bottom of the menu with the other up-to-date products.

Errors

If a product is not loaded successfully to the hard disk, the product's status will become "Errors." After the product's install script has completed, the message "Unsuccessful installation" appears. If baseline nucleus products are not installed properly, the message "WARNING: Please DO NOT reboot until this product is loaded successfully" displays. When the Available Products Menu reappears, the product will be listed in the menu where it was before you attempted to install it. The next time you invoke the delivery utility, the product will display the status it had before you attempted to load it. You must attempt to load the product again before you can use it because it was not copied to your hard disk.

3.3.2 Available Disk Space

The amount of free disk space (in the base directory) available for loading products is displayed in the top section of all **newprod** or **makenode** menus. In addition, the amount of space required to load selected products is also displayed in the top section of the menu. When you select a product, the number of blocks in the "blocks selected" field increases by the number of blocks required to load the product. As you select products, you can compare the amount of free space to the number of blocks selected. Notice that Figure 3-1 shows 2840 blocks free and 2498 blocks selected.

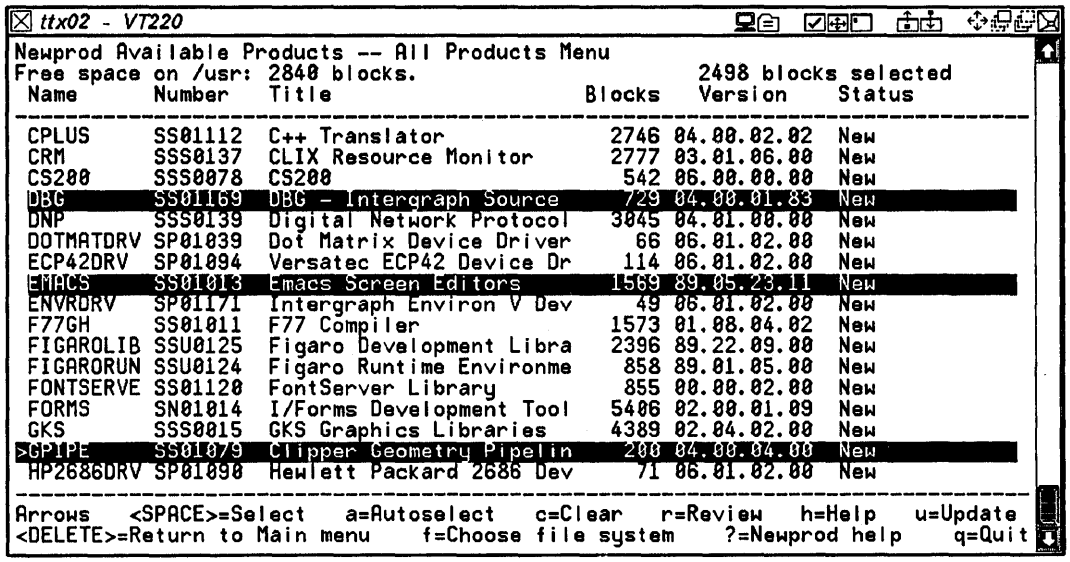

Figure 3-1. Free Space

If you attempt to select a product that requires more than the space available on your workstation/server, the message "Not enough space to load this product" is displayed at the bottom of the screen, and the product remains unhighlighted.

When you select products that have the "Needs updating" status, the number of blocks selected does not increase because the product already resides on the disk. **newprod/makenode** expects the new version of the product to overwrite the old product.

Problems arise when new product versions require more space than old product versions require. You should allow approximately 10,000 extra free blocks when loading up-to-date products to ensure that you do not run out of disk space.

If you run out of disk space while loading products, the console window displays disk error messages. At this point, you should wait until the installation completes, quit **newprod**, free some disk space, invoke **newprod/makenode** again, and reload the product that failed.

The following error message (that displays in the console window) indicates that you are out of disk space on the */usr* file system:

```
Disk Failed s0u0p7.3 no space
```

The following are suggestions for freeing disk space on */usr*. You are not required to perform all or any of them. However, each step will help free disk space on */usr*.

1. Most product installation scripts place products in */usr/tmp* before they are moved to the appropriate product directory. This directory's contents are removed when you reboot. Thus, you can regain disk space by rebooting or removing the contents. To remove the contents of the */usr/tmp* directory, key in the following command:

   # rm -r /usr/tmp/*

2. *core* files can be created through several possible occurrences ranging from machine checks to graphics aborts. Use the **find** command to locate all *core* files on the disk. Any *core* files found will be printed on the screen as they are located. An example of possible output follows:

   # find / -name core -print
   ```
   /usr/ip32/vt200/core
   /usr/john/graphics/core
   ```

3. Delete the *core* files using the **rm** (remove) command as follows:

   # rm /usr/ip32/vt200/core
   # rm /usr/john/graphics/core

4. The file system checker, **fsck,** which checks the file system's connectivity and integrity, places lost files in the *lost+found* directory. The **fsck** program runs automatically when the system boots if the system was not shut down properly. This program finds and stores files not linked orderly in the file system. Remove all files in the *lost+found* directory by keying in the following:

   # rm -r /usr/lost+found/*

> **Note**
> If this command does not remove all of the files in this directory, key in the following to remove (unlink) the */usr/lost+found* directory. Then, you will need to recreate */usr/lost+found* by using the **mklost+found** utility:
>
> **# unlink /usr/lost+found**
> **# cd /usr**
> **# /etc/mklost+found**

5. The following utilities are delivered with the SYSTEMV product. If you do not use any of these utilities (**assist, help,** or **graf**), you can free approximately 8,000 blocks by removing them. Remove these utilities by keying in the following commands:

   # rm -r /usr/lib/assist
   # rm -r /usr/lib/help
   # rm -r /usr/lib/graf

6. The **df** (disk free) command displays free space on all mounted file systems. Key in the **df** command as follows to see how much free space is available on the file system on which you are trying to load products:

   # df

   If you think you have enough free space to load the products you need, or if you can load some products on an alternate file system (besides */usr*), invoke **newprod/makenode** and try again. To load products on an alternate file system (such as */usr2*), use the **f** option in the **newprod/makenode** menu to specify the system you will download to.

7. If you still do not have enough free space for downloading products, remove any personal files and products that you do not need. (Back up these files and products before you remove them.) Refer to Chapter 9, "Backing Up and Restoring Files," in the *CLIPPER System Administrator's Guide* for instructions for backing up files.

   To remove Intergraph products, use the remove shell script as follows:

 # /usr/ip32/deltools/remove

First, the remove shell script prompts you for the file system to reclaim space in, as shown in the following illustration:

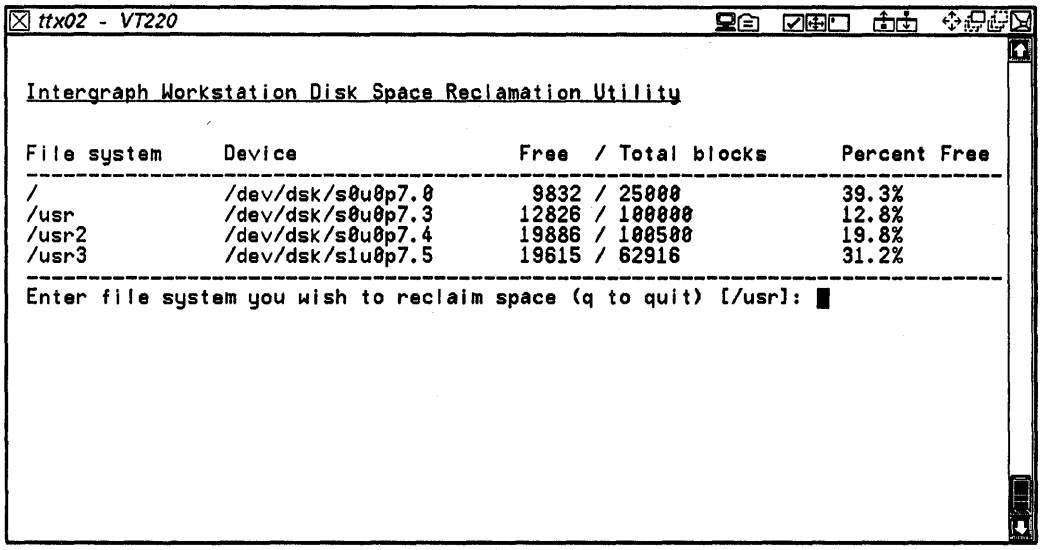

Figure 3-2. Selecting File System to Remove Products From

Once you select a file system, the remove shell script lists products that can be removed. At the prompt, key in the name of any product that you wish to remove. The remove shell script will remove the products, including all related files, from the hard disk.

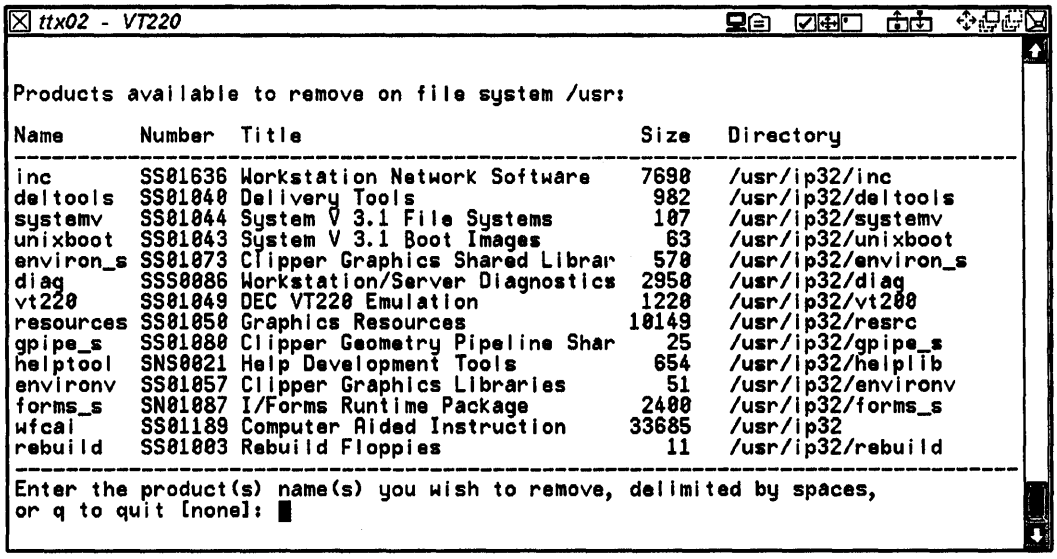

Figure 3-3. Removing Products

Caution

Do not remove any of the following products. These products are collectively called *CLIPPER System Software* (CSS). CSS is the CLIX operating system. You may remove any products **except** these:

Delivery Tools (DELTOOLS)
System V 3.1 File System (SYSTEMV)
System V 3.1 Boot Images (UNIXBOOT)
CLIPPER Graphics Libraries (ENVIRON_S)
Screen Manager (SCREENMGR)
DEC VT220 Emulation (VT220)
Workstation Network Software (INC)
Geometry Pipeline Host Shared Library (GPIPE_S)
Workstation Graphic Resources (RESOURCES)
Workstation/Server Diagnostics (DIAG)
I/Forms Run-Time Package (FORMS_S)
RIS Client Support Package (RISCCU)

The following error message (that displays in the console window) indicates that you are out of disk space on the *root* file system:

```
Disk Failed s0u0p7.0 no space
```

The following are suggestions for freeing disk space on *root*. You are not required to perform all or any of them. However, each step will help free disk space on *root*.

1. Reboot the system (if UNIXBOOT has successfully loaded since the last reboot).
2. Issue the following command to remove the contents of the */tmp* directory:

   # rm -r /tmp/*

3. Issue the following command to remove the contents of the */lost+found* directory:

   # rm -r /lost+found

> **Note**
> If this command does not remove all of the files in this directory, key in the following to remove (unlink) the */lost+found* directory. Then, you will need to recreate */lost+found* by using the **mklost+found** utility:
>
> **# unlink /lost+found**
> **# cd /**
> **# /etc/mklost+found**

3.3.3 Loading Products

Two steps are required to load products. First, you must *select* the product (or products) that you wish to load. Then, you must key in a command to load all selected products.

Selecting/Unselecting Products

To *select* a product, move the cursor to the product and press the **<space>** bar. All selected products are highlighted.

To *unselect* a product that is currently highlighted, move the cursor to that product and press the **<space>** bar.

The following options are useful for selecting and unselecting all products:

- Key in **a** at any **newprod** or **makenode** menu to select all products in all classifications with the "Needs updating" status.
- To unselect all highlighted products in all classifications, key in **c** at any **newprod** or **makenode** menu.

Loading Products

To load all selected (highlighted) products, key in the **u** (update) option from the **newprod/makenode** menu.

3.3.4 Moving in the Menu

This section discusses moving the cursor, changing menu modes, moving between menus, and searching for products.

Moving the Cursor

newprod and **makenode** accept arrow keys, **vi** keystrokes, and **emacs** keystrokes for moving the cursor up and down the product list. The following chart shows these three different methods of moving the cursor up and down a list of products.

Action	Arrow Keys	vi Keystroke	emacs Keystroke
Up a line	Up arrow	k	<Ctrl-P>
Down a line	Down arrow	j	<Ctrl-N>
Back a page	Left arrow	<Ctrl-U>	<Ctrl-Z> or <Esc> V
Forward a page	Right arrow	<Ctrl-D>	<Ctrl-V>
Top of list		T or 1	<Esc> <
Bottom of list		B or G	<Esc> >

Changing Menu Modes

When you invoke **newprod/makenode**, you are placed in multi-menu mode. This menu mode groups products in classes for downloading. If you prefer to see all products listed in one list, you can change to single-screen mode. To move from multi-menu mode to single-screen mode, key in **m** at any **newprod** or **makenode** menu. To return to multi-menu mode, key in **m** again.

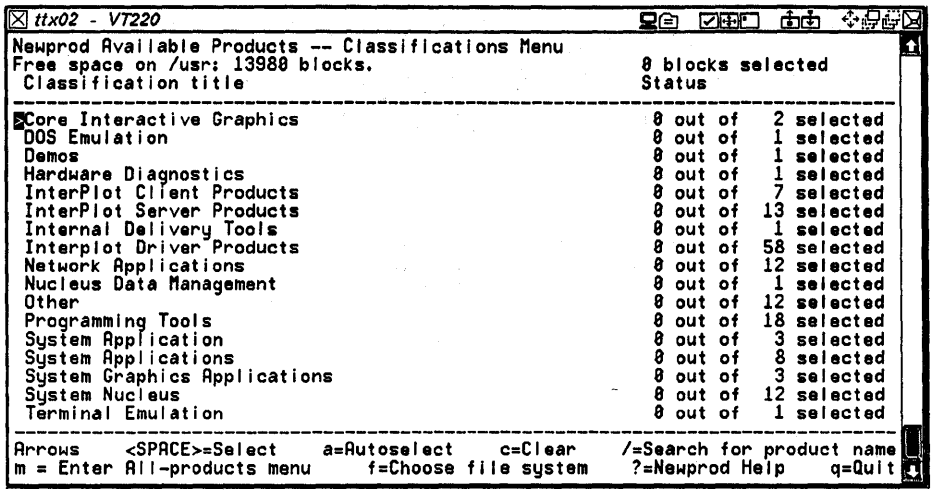

Figure 3-4. Multi-Menu Mode

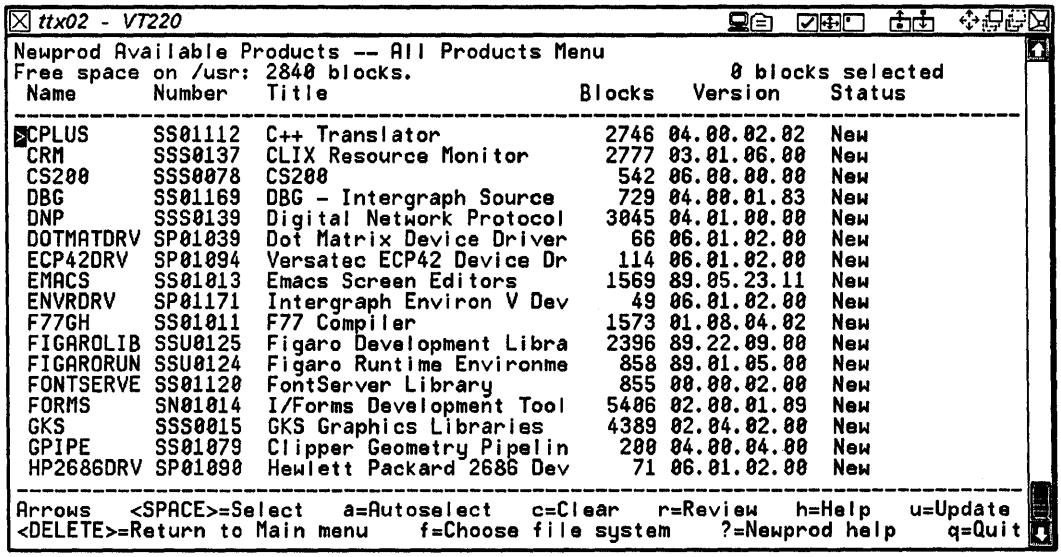

Figure 3-5. Single-Screen Menu Mode

Moving Between Menus

To move from the Classifications Menu to a classification submenu, move the cursor to the submenu you wish to enter and press the **<space>** bar. To exit from a submenu and return to the Classifications Menu, press the **<backspace>** or **<delete>** key.

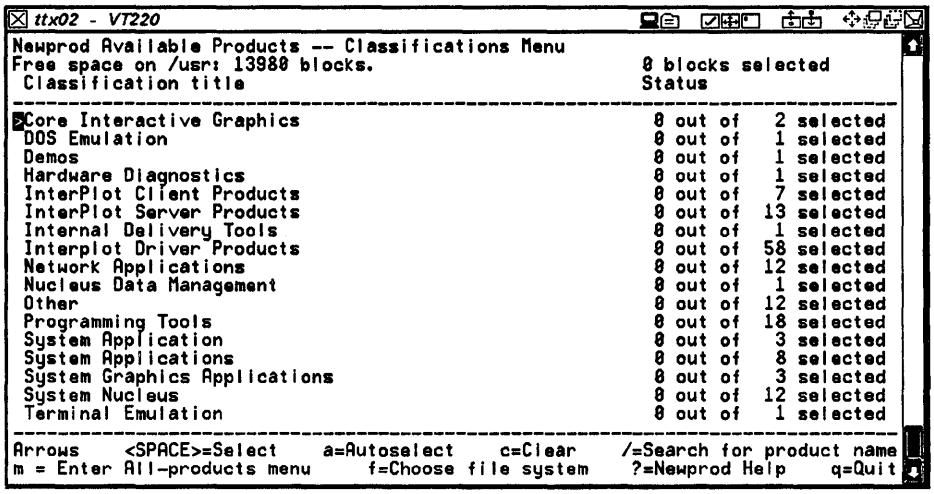

Figure 3-6. newprod Classifications Menu

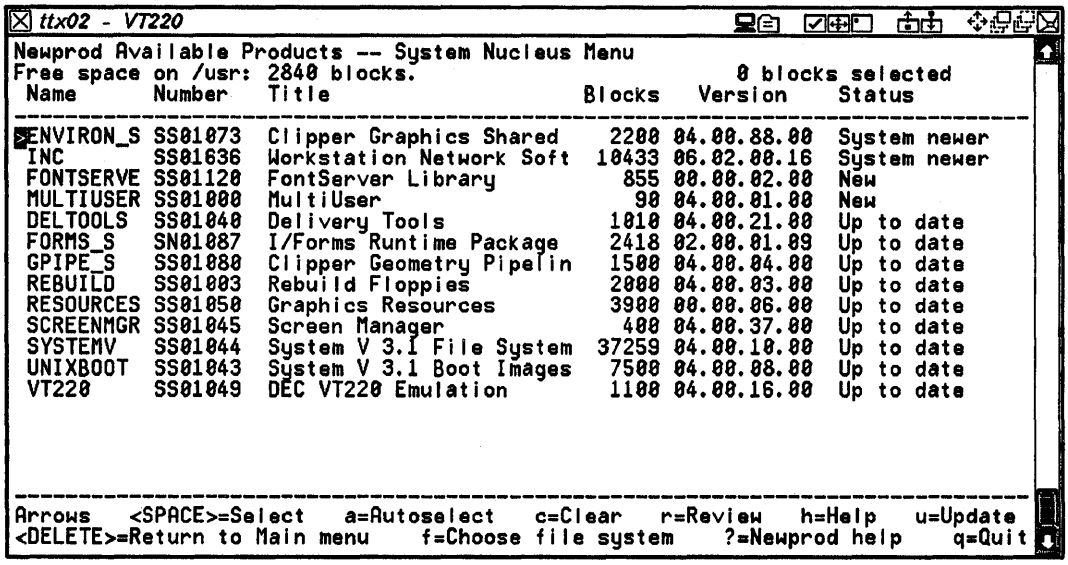

Figure 3-7. newprod Classifications Submenu

Searching for Products

Another way to move through **newprod/makenode** menus is to search for a product. You can key the / (search) command at any **newprod/makenode** menu. You will be prompted for the name of the product to search for. For example, if you are in the classifications menu and search for the **DELTOOLS** product, the search command transfers you to the classification submenu where **DELTOOLS** can be found (Systems Nucleus). The cursor remains on the **DELTOOLS** product. You can also search other submenus from within a submenu.

3.4 Interactive Options

The following options can be executed interactively from any **newprod/makenode** menu.

? Help for interactive options and cursor movement
/ Search for a product
! Escape to shell
a Automatically select all out-of-date products
c Clear all selected products
d Defaults taken previously are accepted automatically (**newprod** only)
e Exit
f Choose file system you will download to
h Help for downloading individual products
m Change menu mode
p Preview a product's *DESCRIPTION* file
r Review the product's *README* file
q Quit
u Update selected products
v Download products in verbose mode
x Display install script while loading product (**newprod** only)
y Defaults taken previously are accepted automatically (**newprod** only)

The following bulleted items are functions that can be accomplished with these interactive options:

- **Help**

  The **?** (**newprod** Help) option lists and states the function of **newprod/makenode** options. From this Help screen, if you press the **<space>** bar, a Help screen for moving the cursor displays.

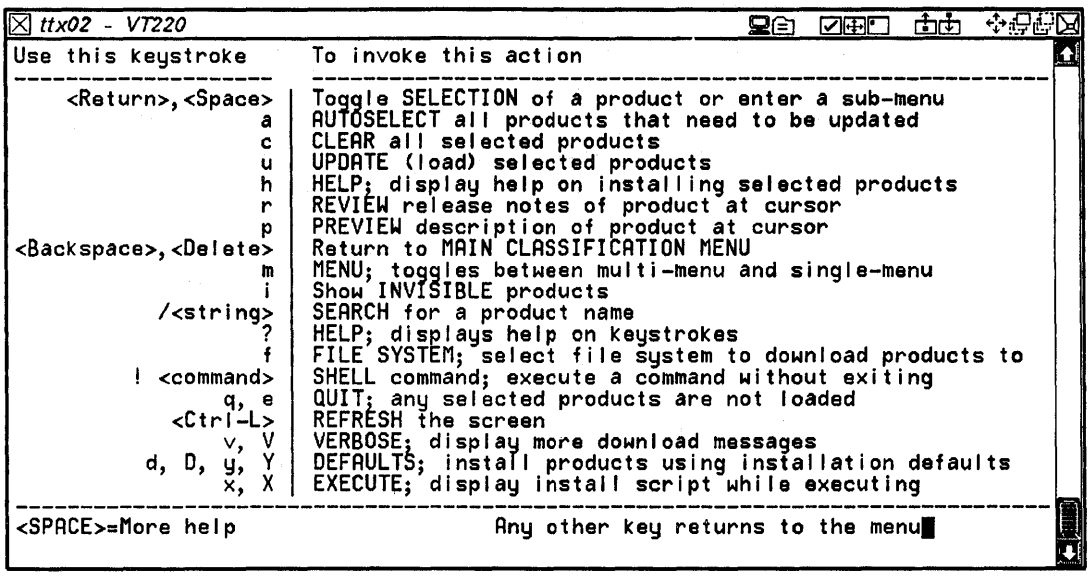

Figure 3-8. Help for Interactive Options

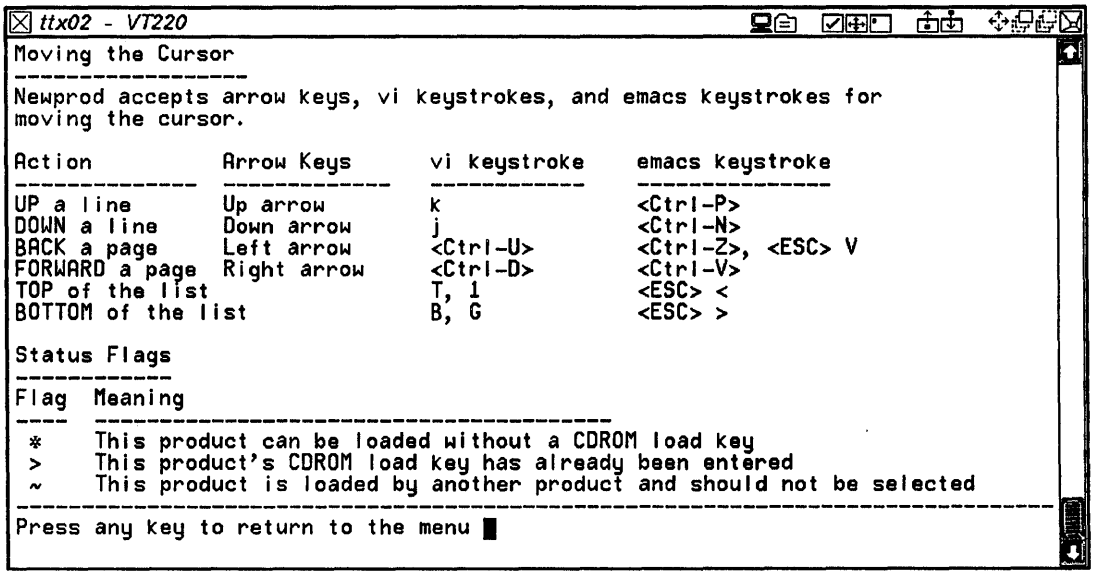

Figure 3-9. Help for Moving the Cursor and Special Characters

The **h** (product Help) option provides Help for downloading selected products. Select all products that you want information on and key in **h**. Information such as product dependencies, the order for loading products, and file system dependencies for those products will display. As the help information file displays, press **<Return>** to access the next page. To return to the menu without reading the rest of the file, key in **q**.

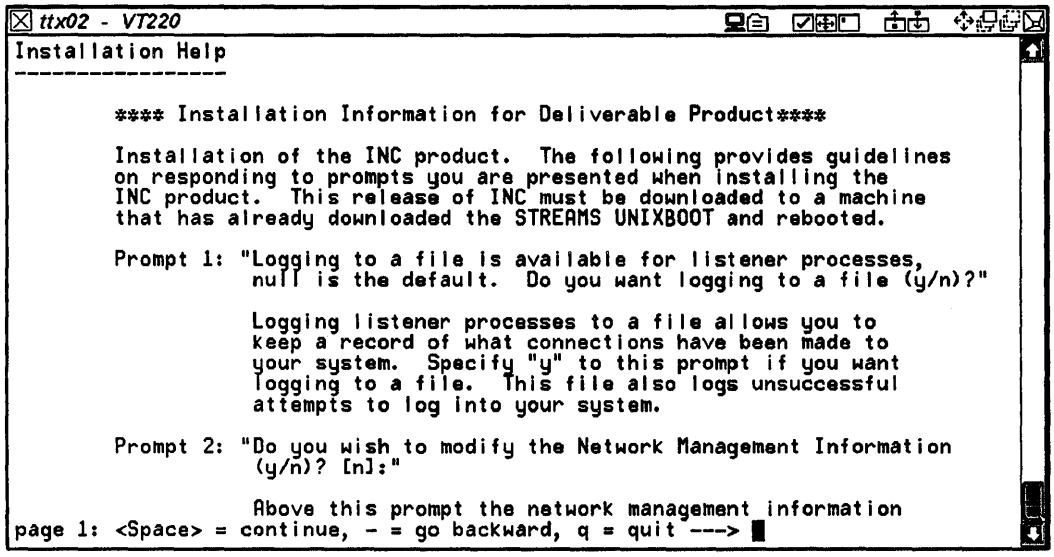

Figure 3-10. Help for Loading Products

- **Product Information**

  The **h** (product Help) option provides Help for selected products. Select all products that you want information on and key in **h**. Information on those products will display. If you deliver software from CDROM, you will be required to have a load key before you can access the help information (for a purchased product). As this information displays, press **<Return>** to access the next page. To return to the menu without reading the rest of the file, key in **q**.

  The **p** (preview) option displays a product description for the product next to the cursor. No load key (for CDROM deliveries) is required to access this information. As the file displays, press **<Return>** to continue to the next page. To return to the menu without reading the rest of the file, key in **q**.

  The **r** (review) option displays the *README* file for the product listed next to the cursor. This file contains product *fixes*, or features added to a product since its last release. If you deliver software from CDROM, you will be

required to have a load key before you can access the *README* file. As the file displays, press **<Return>** to continue to the next page. To return to the menu without reading the rest of the file, key in **q**.

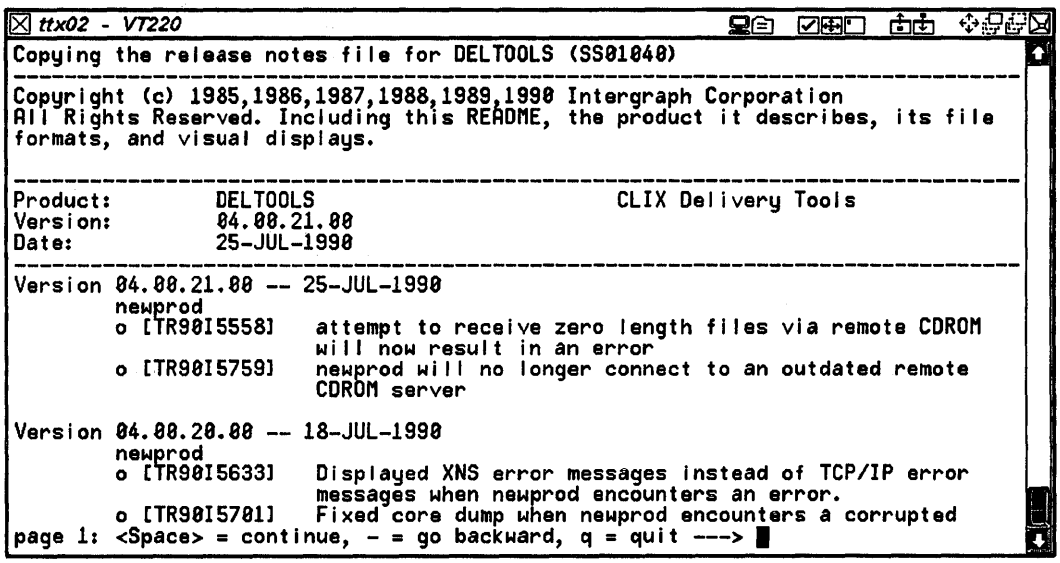

Figure 3-11. Reviewing Product Release Notes

- **Choose Menu Style**

  The **m** (menu) option toggles between multi-menu and single-screen mode. When you invoke **newprod/makenode**, you are placed in multi-menu mode. If you prefer to see products listed on one screen rather than in product classifications, use this option to change menu modes.

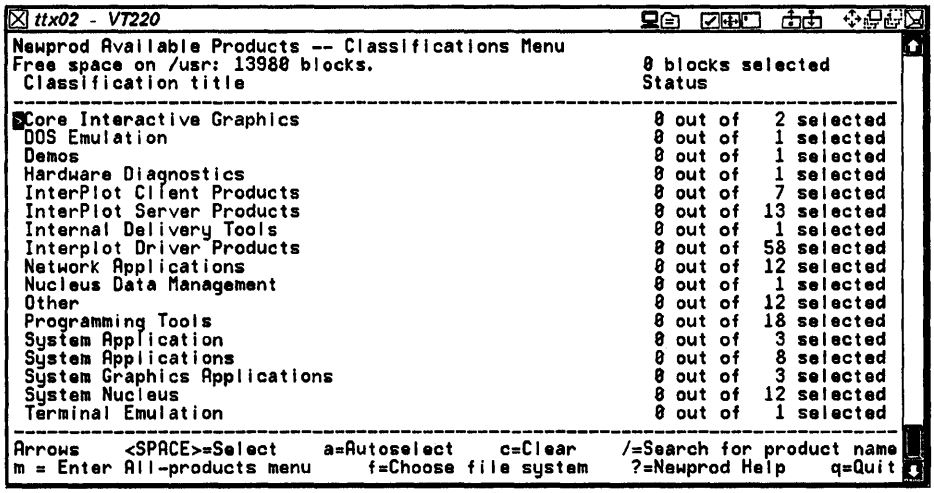

Figure 3-12. Multi-Menu Mode

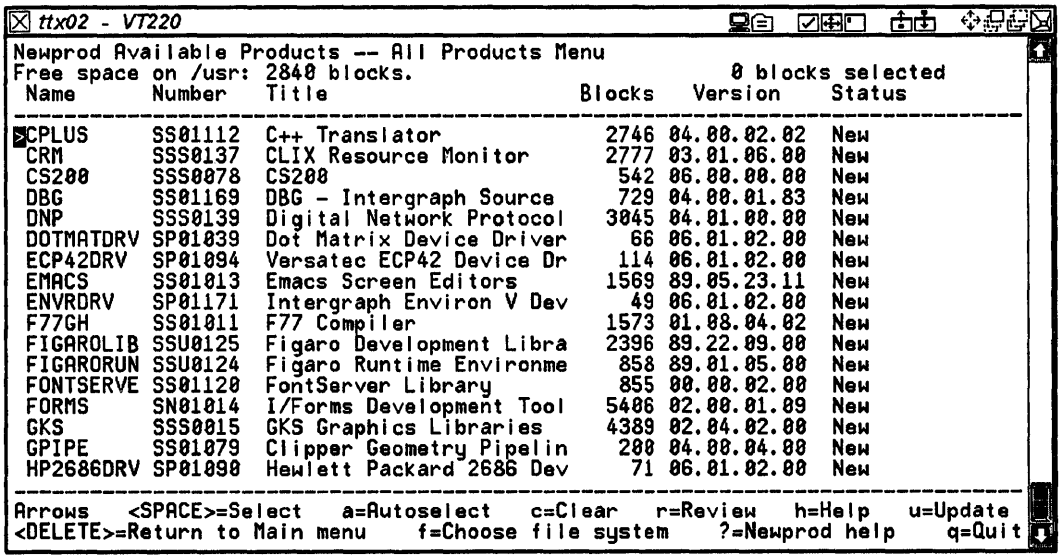

Figure 3-13. Single-Screen Menu Mode

- **Specify File System for Downloading**

The **f** (file system) option allows you to choose the file system to which you will download. Products are ordinarily downloaded to */usr*. Activating this command causes a chart listing the "available file systems to download to" to appear. At the prompt, key in the file system to which you will download.

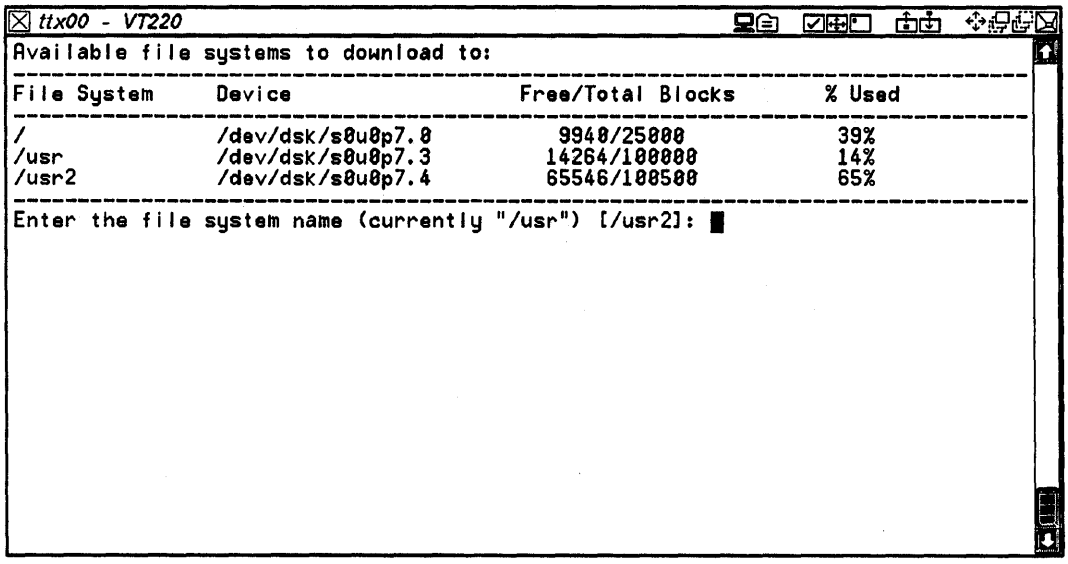

Figure 3-14. File System Menu

When you return to the **newprod/makenode** menu, notice that the chosen file system displays at the top. The free space and status fields reflect the change in file systems. If you have a product loaded on */usr* and you change to */usr2*, this product's status will display as "New" because it does not reside in */usr2*. Products may be loaded to more than one file system, but doing so consumes disk space.

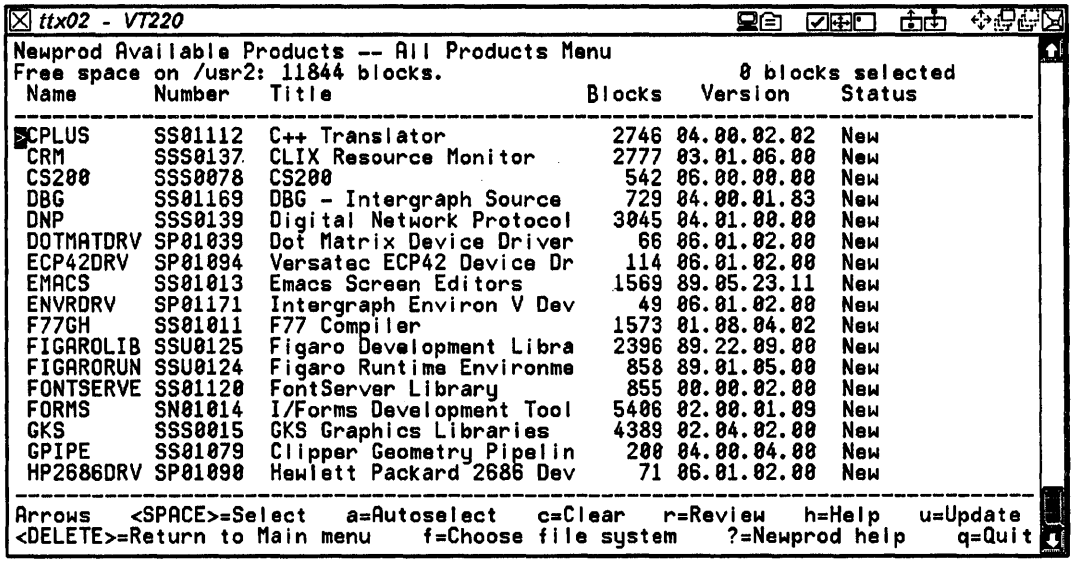

Figure 3-15. Delivering Products to an Alternate File System

newprod/makenode will load the product on the specified file system, but will symbolically link the product to */usr*. The symbolic link will cause the product to appear as though it resides in the */usr* file system. If you list the product directory (in */usr*) with the **ls -l** command, the product directory will point to the directory in another file system where the product actually resides. For example, if you load the Intergraph Online News (INTERNEWS) product on the */usr2* file system, the long listing of the INTERNEWS product in */usr/ip32* appears as follows:

```
lrwxrwx  1 root   sys     15 Mat 13 15:14 news -> /usr2/ip32/news
```

The **l** indicates the symbolic link and the arrow (**->**) indicates the directory to which the file is linked.

- **Execute Shell Commands Inside newprod/makenode**

  The **!** (escape to shell) option allows you to execute a shell command in **newprod/makenode**. When you key in this command, the product menu clears and the `command line?` prompt appears. At this prompt, you may execute shell commands such as **ls** or **df**. You are automatically placed in the */usr/tmp* directory when you escape to the shell. To return to the **newprod** Available Products Menu, press **<Return>** after the prompt.

- **Search for a Product**

  The / (search) option searches for the product name specified. When you key in this command, you are prompted for the name of the product to search for. **newprod/makenode** searches all product classifications until it finds the product specified. The cursor points to the specified product.

- **Select/Unselect Products to be Loaded**

  To load or read a Help screen for a product, you must *select* that product. To select a product, move the cursor to the product and press the **<space>** bar. This action causes the product to highlight. Pressing the **<space>** bar again causes the product to be unhighlighted, or *unselected.*

  The **a** (autoselect) option selects all products (in all classifications) with the "Needs updating" status and clears all previously selected products. If you are in multi-menu mode when you key in the **a** option, **newprod/makenode** switches to single-screen mode and highlights out-of-date products. To return to multi-menu mode, key in **m**. Selected products will remain highlighted when you change menu modes.

  The **c** (clear) option clears (or unselects) all products (in all classifications).

- **Automatically Accept Installation Defaults**

  The **d** or **y** (installation defaults) option toggles between accepting all installation defaults and prompting for information. The default for this command is off (prompting for information). **D** appears at the top of the Available Products Menu when you activate this mode. When you key in this command and download products, you will not be prompted with any questions. Instead, all installation defaults will be accepted. Use this option only if you are sure that the installation defaults are acceptable for your system. For information on responding to product installation prompts, use the **newprod/makenode h** option (Help on loading products).

> **Note**
> The **y** option does not respond to all installation defaults with a "yes." It accepts the default (whether it is "yes", "no", or whatever).

- **Additional Information Displayed During Installation**

  The **v** (verbose) option toggles the verbose mode between on and off; the default is off. Activating this mode causes a **V** to appear at the top of the Available Products Menu. When you download products in verbose mode, messages explaining the steps to install products appear on the screen. If you have problems installing a product, use this option (along with the install script debug option) to determine the problem source.

  The **x** (install script debug) option toggles the install script debug mode between on and off; the default is off. **X** appears at the top of the Available Products Menu when you activate this mode. When you key in this option and download products, the installation script for that product scrolls down the screen as products are installed. If you have problems installing a product, use this option (along with the verbose option) to determine the problem source.

- **Load Products**

  The **u** (update) option loads all selected products to the hard disk.

- **Exit**

  The **e** (exit) or **q** (quit) options exit **newprod** or **makenode.**

3.5 Command-Line Options

The syntax for command-line options is as follows:

 # newprod <*arguments*> <*product numbers*>

Valid **newprod** arguments are listed and described below. In addition, you can substitute **makenode** for **newprod** in all examples in this section except for the **x, y,** and **d** option examples.

Option	*Purpose/Example*
-n	(Network). Allows you to bypass prompts by specifying the node address, username, and password on the command line (**newprod** and **makenode**). **# newprod -n 08-00-36-12-34-00.username.password**
-r	(Remote CDROM). Allows you to bypass prompts by specifying the node address, username, and password on the command line (**newprod** and **makenode**). **# newprod -r 08-00-36-12-34-00.username.password**
-t	(Tape). Allows you to bypass prompts by specifying tape as the installation source on the command line (**newprod** and **makenode**). **# newprod -t**
-c	(CDROM). Allows you to bypass prompts by specifying CDROM as the installation source on the command line (**newprod** and **makenode**). **# newprod -c**
-f	(Floppy). Allows you to bypass prompts by specifying floppy disk as the installation source on the command line (**newprod** and **makenode**). **# newprod -f**
-b	(Base directory). Specifies an alternate file system to install products on (**newprod** and **makenode**). **# newprod -b /usr2**

-F (Configuration file). Specifies the product configuration file. For example, if you have set up a product list file other than *ws_s.prods*, you must use this option to specify this alternate configuration file. If you do not use the **-F** option, **newprod** defaults to *ws_s.prods* (**newprod and makenode**).

```
# newprod -F plotting.prods
```

-l (Long). Displays additional information such as the host directory and workstation/server directory in the Available Products Menu (**newprod** and **makenode**).

```
# newprod -l
```

-p (Page). Displays all products on one long menu. To load products, key in the product numbers at the end of the menu (**newprod** and **makenode**).

```
# newprod -p
```

-R (Review). Allows you to review the release notes for each selected product. The release notes contain product *fixes* or changes since the last release. You must have a load key to review a product. You should review products before you install them (**newprod** and **makenode**).

```
# newprod -R ss01040 ss01044
```

-T (Tape device). Specifies the tape device. The default is **/dev/rmt/0mn**. This device **must** be nonrewindable.

```
# newprod -T /dev/rmt/mt6n
```

-v (Verbose). Displays additional information about the software products as they are loaded (**newprod** and **makenode**).

```
# newprod -v
```

-V (Version). Displays the version numbers of **newprod/makenode** and exits, returning you to the system prompt (**newprod** and **makenode**).

```
# newprod -V
```

-x (Install script). Displays the install script (**newprod** only).

```
# newprod -x
```

-y or -d (Installation default). Loads products and accepts the default response to any installation prompt (**newprod** only).

```
# newprod -y
# newprod -d
```

You can use multiple options on the command line. The following examples use multiple command-line options.

- The following option invokes **newprod/makenode** through the network, connecting to 08-00-36-12-34-00, and specifies to load products on the */usr2* base directory:

  # newprod -b /usr2 -n 08-00-36-12-34-00.username.password

- The following option loads the **SS01040** product from a local CDROM drive and automatically accepts all installation defaults:

  # newprod -c -d SS01040

- The following option loads the **SS01040** product from a remote CDROM drive and automatically accepts all installation defaults. The CDROM drive is connected to a node with the network address 08-00-36-72-90-00:

  # newprod -r 08-00-36-72-90-00 -d SS01040

- The following option displays the *README* files for the **SS01040** and **SS01043** products; the files are read from the delivery node 08-00-36-12-34-00:

  # newprod -n 08-00-36-12-34-00.username.password -R SS01040 SS01043

- The following option invokes **newprod/makenode** from a product tape and loads the product **SS01040** in verbose mode; as the product is installed, the install script will display.:

  # newprod -t -vx SS01040

4 CDROM Software Delivery

This chapter contains the following sections:

4.1	Available Intergraph CDROM Discs	4-3
4.2	Software Delivery	4-4
4.3	The CDROM Menu	4-12
4.4	Load Key Automation	4-15
4.5	runcd Restoration	4-16

Previous chapters described the **newprod** utility and the process of delivering software to Intergraph workstations/servers. However, delivering software from CDROM media differs slightly from delivery from other media types.

This chapter provides information specific to CDROM software deliveries. It lists the CDROM discs available through Intergraph, provides procedures for delivering software from CDROM, describes the CDROM Menu interface, explains the *keys* directory used to store product load keys, and provides procedures for restoring the **runcd** utility.

4.1 Available Intergraph CDROM Discs

Intergraph offers the following CDROM discs:

Super Pak Set. The Super Pak CDROM set consists of two discs that store all Intergraph baseline products and selected application and third-party software. First, you must load products from Disc #1 and reboot because load keys for all purchased (CLIPPER-based maintenance) products reside on Disc #1. After you load products from Disc #1, (and the system has been rebooted) **newprod** will automatically access all load keys, without prompting you.

Electronics Pak. The Electronics Pak disc stores all Electronics application software.

VAX Systems and Applications Software. The VAX Systems and Applications Software disc stores all VAX-based software for the Intergraph VAX.

CDROM software delivery provides an alternative to creating a delivery source: you can deliver straight from the CDROM disc. However, keep in mind that **newprod** can access only one out of a possible four CDROM discs at a time. Thus, you may wish to create a delivery source to avoid switching CDROM discs in and out of the drive and reinvoking **newprod** each time. Section 4.2.2 discusses this issue in more detail.

4.2 Software Delivery

Before you deliver software from CDROM, you **must** complete the following tasks:

- Configure the CDROM drive properly, as described in the *CDROM Drive User's Guide.*
- Read and understand the instructions for inserting the CDROM in the CDROM drive, as described in the *CDROM Drive User's Guide.*
- Read and understand the care and handling instructions on the back of the CDROM case.

> **Note**
> Before you can install any purchased products (products that require load keys), you must invoke **newprod**, update CSS products on the workstation/server (from Super Pak Disc #1), quit **newprod**, and reboot. This process ensures that software is in place that supports the new load key format. After you have rebooted, you may invoke **newprod** again and update products that require a load key.

The following flowchart illustrates the CDROM software delivery process:

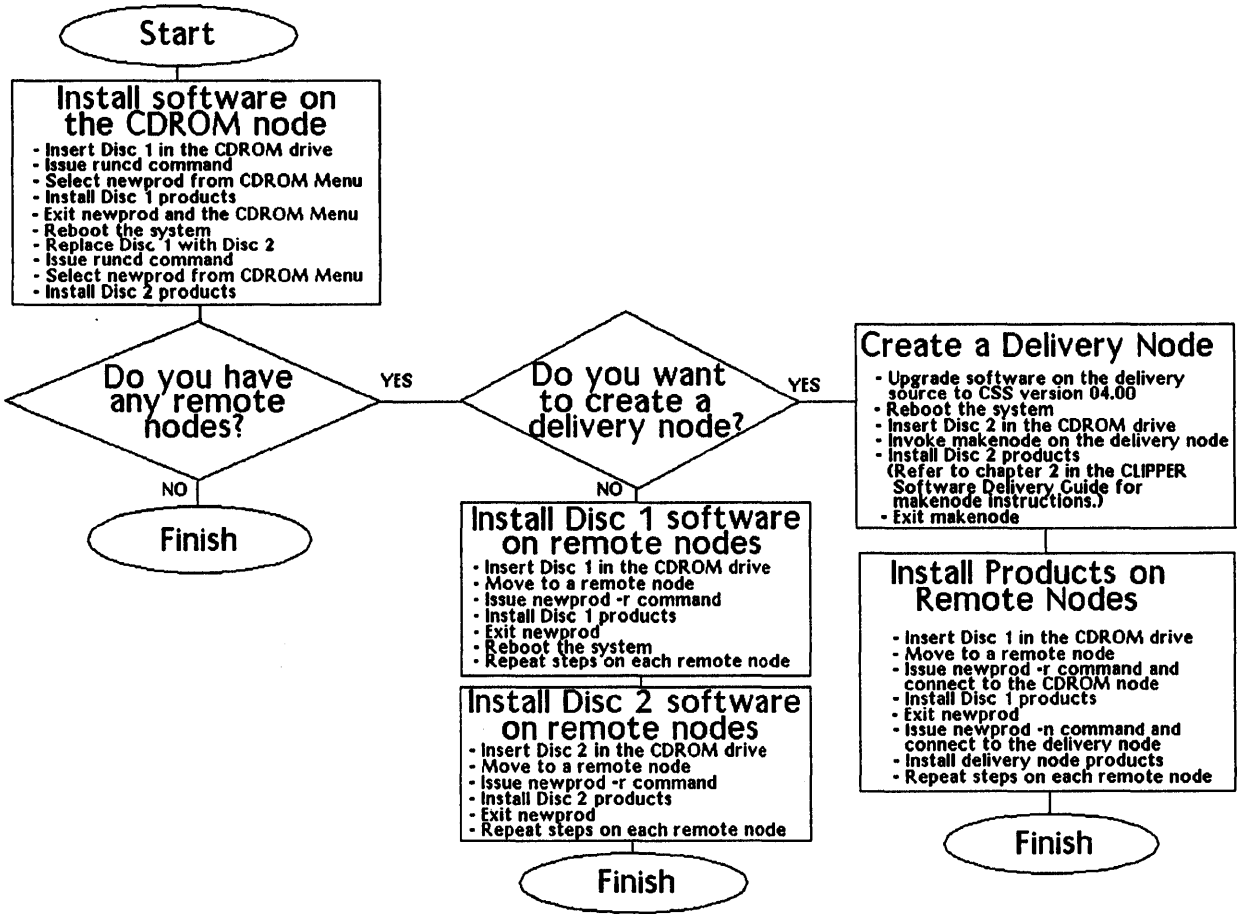

Figure 4-1. CDROM Software Delivery

Step 1: Installing Software on the CDROM Node

The following procedures lead you step-by-step through the software delivery procedure. For additional information on using **newprod**, refer to Chapter 3, "Delivering Software Using newprod."

1. Power up the workstation/server to which the CDROM drive is connected.
2. Log in and access the superuser account as follows:

   login: ***username***
   $ **su**
   `Password:` (password is not displayed as you key it in)
   #

3. **Verify that the network address of the host matches the network address on the load-key memo you received with the delivery CDROM.** Locate this memo and keep it at hand during the software delivery process. This memo lists all available products and their associated load keys. Each memo is specific to one workstation/server and to the delivery date. You will receive a new load key memo with each software delivery. Issue the **netaddr -i** command to ensure that the host's network address corresponds to the network address on your load key memo:

   # **netaddr -i**

   If the output from this command does not match the network address specified on the load-key memo, you are probably logged in to the wrong machine. If you are logged in to the correct machine but a board was changed causing the network address to be different, you will need to contact Intergraph Software Delivery to generate a new set of load keys. The network address on the load-key memo must match the CDROM node's network address, or the load keys will not allow you to install software from CDROM.

4. Insert Super Pak Disc #1 in the caddy. Then, insert the caddy in the CDROM drive.
5. Invoke the **runcd** utility as follows:

   # **runcd**

Note

- If the CDROM is currently mounted (possibly by another user delivering software), **runcd** will not be able to access it until the CDROM has been unmounted.
- If you receive a message saying that **runcd** is not found on your hard disk, refer to 4.5 for instructions on copying **runcd** from the CDROM to your workstation/server.

6. If the CDROM drive has not been configured, the following message will appear:

```
Your CDROM drive has not been configured.  The device file
(/dev/dsk/cdrom) has not been defined.  Please refer to the CDROM
Drive User's Guide for proper configuration procedures.
```

Note
If you did not receive this error message, continue to step 7.

You must configure your CDROM drive before you can load software. Check the DIP switches on the rear of the CDROM drive to ensure that it is configured for SCSI ID 4. If it is, key in the following commands to create and link the device file:

```
# /etc/mknod /dev/dsk/s4u0p0.0 b 72 0
# ln /dev/dsk/s4u0p0.0 /dev/dsk/cdrom
```

If the CDROM drive is not configured for SCSI ID 4, refer to the *CDROM Drive User's Guide*.

7. After **runcd** has been successfully executed, the CDROM Menu appears on the screen. This menu provides the following options:

```
1. View CDROM Software Delivery Documentation
2. Invoke the "newprod" utility for installing software
3. Invoke the "makenode" utility to create a delivery node
4. Set up System V Online Documentation and Intergraph Online News
5. Exit
```

Key in **2** to invoke the **newprod** utility. For more information on using the CDROM Menu, refer to 4.3.

8. The Newprod Available Products -- Classifications Menu appears. You will use the **newprod** utility to install products from the CDROM disc currently mounted in the drive to the CDROM node. Thus, select all products that

you want to install and key in **u** to begin the software installation. Please refer to Chapter 3 for instructions for using **newprod**. In addition, the **newprod** menu documents commands that are available within the **newprod** environment.

Note

- An asterisk (*) symbol to the left of the product status indicates a baseline (free) product. Baseline products do not require a load key for installation.
- A right angle bracket (>) symbol to the left of the product status indicates a purchased product for which a load key is already present on the workstation. You will not be required to supply a load key to load one of these products.
- All other products are purchasable products for which you may or may not have purchased a license. Refer to your load-key memo for a list of products that you have purchased. If you wish to purchase any additional products, contact your Intergraph Sales Representative.

9. If you have received Intergraph software on CDROM in previous releases, your load keys will already reside in a database on the CDROM disc. To access the load keys, you must update CSS nucleus products, reboot, and reinvoke **newprod** to load the purchased products.

Note

A workstation or server running CSS 04.00 software will not be able to load a product requiring a load key from a previous release. However, you can load a product from a previous release to the CSS 04.00 baseline by requesting a new load key for that product from Intergraph Software Delivery.

If this is your first Intergraph software delivery, your load keys will not reside on the CDROM disc. You will receive the following prompt for each purchased product, while products are being installed:

```
Enter the load key for <product_name> (product_#):
```

Refer to your load-key memo for each product's load key. This memo lists load keys as follows:

product number *product name* *load key*

Note

- Each load key is unique to the product, machine, and delivery date of the CDROM. You must use the correct memo for the machine and delivery date.
- Load keys have a new 19-character, case-sensitive format. We apologize for any offensive character strings within a load key.
- Once you load a product that has the key on the CDROM, or once you load a product that you have previously entered a key for, **newprod** stores the key in the */usr/tp32/deltools/keys* directory under the filename of the delivery date (such as 090190). The next time you attempt to load that product (for example, on a remote node), you will not be required to enter the load key.

10. After all products have been successfully installed, press **<Return>** to return to the **newprod** menu. Key in **q** to quit **newprod**. Key in **5** to exit the CDROM menu.
11. Remove Disc #1 and and insert Super Pak Disc #2 in the drive.
12. Invoke **runcd** and enter **newprod**.
13. Install products from Disc #2, as described in steps 5 through 10. (Remember that **runcd** cannot access the CDROM if the CDROM is already mounted.)
14. If you have any remote nodes that you will deliver software to, continue to "Step 2: Determining the Delivery Source." Otherwise, you have completed the software delivery process.

Step 2: Determining the Delivery Source

Next, you must determine whether to load software from a delivery source or directly from the CDROM discs. The following are important considerations:

- Delivering software straight from the CDROM discs saves magnetic disk space (because products on a delivery source are stored in deliverable format as well as executable format).
- Delivering software from a delivery source keeps you from switching CDROM discs when you want to load a product from a disc other than the one in the drive.

Note
If you prefer to create a delivery source, we suggest that you load products from all CDROM discs but one. The one CDROM disc for which you will not load products on the delivery source will remain in the CDROM drive at all times. This strategy prevents you from switching CDROM discs and also saves disk space on the delivery source because you will still be loading software directly from one of the CDROM discs.

For example, you might decide to store products from Super Pak disc 2 and the Electronics Pak disc on the delivery source, and to load products from Super Pak disc 1 straight from the CDROM drive. To load products from Super Pak disc 1, you would connect to the CDROM drive with the **newprod -r** command. To load all other products, you would connect to the delivery source with the **newprod -n** command.

To deliver software straight from each CDROM disc, continue to "Step 3: Installing Software on Remote Nodes."

To create a delivery source, please refer to Chapter 2. Then, follow instructions in Chapter 3 to deliver software to remote workstations/servers.

Step 3: Installing Software on Remote Nodes

Follow these steps to deliver software from a remote CDROM drive:

1. Insert one of the CDROM discs in the CDROM drive.

Note
The CDROM node **must** be upgraded to the 04.00 CSS software.

2. Move to a remote workstation or server that needs to have its software updated.
3. Log in and access the superuser account as follows:

   login: ***username***
   $ **su**
   `Password:` (password is not displayed as you key it in)
   #

4. Invoke **newprod** using the remote CDROM option (**-r**) as follows to connect to the CDROM node:

newprod -r *nodename.username.password*

> **Note**
> - The nodename, username, and password represent the machine to which the CDROM drive is connected.
> - This method of invoking newprod allows you to load products remotely from the CDROM.

5. The Newprod Available Products -- Classifications Menu appears. You will use the **newprod** utility to install products from the remote CDROM to your local node. Thus, select all products that you want to install and key in **u** to begin the software installation. Please refer to Chapter 3 for instructions for using **newprod**. In addition, the **newprod** menu documents commands available within the **newprod** environment.
6. If you have received Intergraph software on CDROM in previous releases, your load keys will already reside in a database on the CDROM disc. To access the load keys, you must update CSS nucleus products, reboot, and reinvoke **newprod** to load the purchased products.

> **Note**
> A workstation or server running CSS 04.00 software will not be able to load a product requiring a load key from a previous release. However, you can load a product from a previous release to the CSS 04.00 baseline by requesting a new load key for that product from Intergraph Software Delivery.

If this is your first Intergraph software delivery, your load keys will not reside on the CDROM disc. You will receive the following prompt for each purchased product, while products are being installed:

```
Enter the load key for <product_name> (product_#):
```

7. When all products have been downloaded, quit newprod by keying in **q**.
8. Reboot the system to activate the new CLIX software.
9. Repeat steps 2 through 8 for each workstation/server in the network.
10. Insert the next CDROM disc in the CDROM drive and repeat steps 2 through 9.
11. After software has been loaded from each CDROM disc onto each workstation/server in the network, you are finished with the software delivery process.

4.3 The CDROM Menu

The CDROM Menu displays when you issue the **runcd** command. This menu contains the following options:

```
1.View CDROM Software Delivery Documentation
2.Invoke the "newprod" utility for installing software
3.Invoke the "makenode" utility to create a delivery node
4.Set up System V Online Documentation and Intergraph Online News
5.Exit
```

Option 1: View CDROM Software Delivery Documentation

When you choose this option, the following information appears on the screen:

```
This menu choice allows you to view CDROM Software Delivery Documentation.
This documentation includes the following topics:

- CDROM terminology
- Delivering software from CDROM
- Understanding and using the newprod/makenode menu
- Using newprod/makenode interactive options
- Using newprod/makenode command-line options
- Automating the load key process

You should be familiar with this information before you attempt to install
software on your workstation/server from delivery CDROM.

Do you wish to view the CDROM Software Delivery Documentation (y/n)? [n]:
```

This documentation contains the information presented in the *CLIPPER Software Delivery Guide*. If you wish to read this online documentation, key in **y** at the prompt. If you do not, key in **n** to return to the CDROM Menu.

Option 2: Invoke the "newprod" utility for installing software

When you choose this option, the following information appears on the screen:

```
This menu choice invokes the "newprod" utility.  The "newprod" utility
installs software products on your workstation/server.

Before you invoke "newprod," have the load key memo for this
workstation/server in hand.  You will be prompted to enter load keys to
install each purchased product.  For instructions on using "newprod,"
refer to the CDROM pamphlet delivered with the delivery CDROM, read the
```

```
CDROM Software Delivery Documentation provided in the CDROM Menu, or refer
to the "CLIPPER Software Delivery Guide."

Do you wish to invoke the "newprod" utility (y/n)? [n]:
```

If you wish to invoke the **newprod** utility, key in **y** at the prompt. If not, key in **n** to return to the CDROM Menu.

Option 3: Invoke the makenode utility to create a delivery node

When you choose this option, the following information appears on the screen:

```
This menu choice invokes the "makenode" utility.  The "makenode" utility
installs software products (in deliverable format) on a workstation/server
that functions as a delivery source.  This process enables other
workstations/servers to download software from the delivery node through a
network.

In the past, if you were loading products from one CDROM drive to multiple
nodes, you were required to use "makenode" to set up a delivery source.
Now, the capability exists to load products directly from a remote CDROM
drive using "newprod" (without creating a delivery source).  Thus, you are
not required to use "makenode" in order to load products to multiple
nodes.

SETTING UP A DELIVERY SOURCE IS NOT REQUIRED IN ANY SITUATION.  DO NOT USE
THIS UTILITY UNLESS YOU WISH TO SET UP A DELIVERY SOURCE.  INSTEAD, USE
THE NEWPROD UTILITY (CHOICE 2).

Before you invoke "makenode," have the load key memo for the
workstation/server in hand.  You will be prompted to enter the load keys
to install each purchased product.  For instructions on using "makenode,"
refer to the CDROM pamphlet delivered with the delivery CDROM, read the
CDROM Software Delivery Documentation provided in the CDROM Menu, or refer
to the "CLIPPER Software Delivery Guide."

Do you wish to invoke the "makenode" utility (y/n)? [n]:
```

If you wish to invoke **makenode**, key in **y** at the prompt. If not, key in **n** to return to the CDROM Menu.

Option 4: Set up System V Online Documentation and Intergraph Online News

When you choose this option, the following information appears on the screen:

```
This menu option saves disk space by providing access to these online
documentation products without having to load them on your hard disk.

This option allows you to access the online documentation as long as the
CDROM device is mounted.  After you choose this option, you must exit the
CDROM Menu and key in the proper commands to read the documentation (see
descriptions below).  Immediately after you exit the CDROM Menu, the CDROM
device is still mounted.  If you issue the runcd command again, runcd
displays an error message because the CDROM device was never unmounted;
then it unmounts the device.  Because the device has been unmounted, the
online documentation is no longer available.  However, you can access the
CDROM Menu again and set up the documentation again.

To access the AT&T System V and CLIX online manuals, key in "nman
<command>."  For example, to access information on the ls command, key in
"nman ls."  Documentation for System V commands such as ls, rm, and mv
exist and can be accessed through the manual pages.

Internews consists of brief documentation on new Intergraph products.  To
read Intergraph Online news (Internews), key in "internews."  A menu
listing the information topics from which to choose appears.

Do you wish to set up the System V Online manuals and Intergraph Online
News (y/n)? [n]:
```

If you wish to set up the online documentation so that you can access it from the delivery CDROM rather than having to load it on your hard disk, key in **y** at the prompt. If not, key in **n** to return to the CDROM Menu.

Option 5: Exit

This option exits the CDROM Menu. It also unmounts the CDROM device unless online documentation was set up (option 4).

4.4 Load Key Automation

Delivering software from CDROM requires a *load key* for each purchased (nonbaseline) product. A load key is a unique alphanumeric character sequence that enables you to install a purchased product from the CDROM. You can find product load keys on the load key memo that you received with the delivery CDROM.

Intergraph created the */usr/ip32/deltools/keys* directory to store product load keys. The **newprod** utility checks this directory for load keys for each release. If load keys are present, **newprod** will access them instead of prompting you to enter the load keys. This section describes the format of the load key files in the */usr/ip32/deltools/keys* directory.

If you have received Intergraph software in previous releases, your load keys will reside in a database on the CDROM disc. During the software delivery process, the keys are copied from the CDROM to the */usr/ip32/deltools/keys* directory, under the filename of the delivery date (for example 090190).

If this is your first Intergraph software delivery, your load keys will not reside on the CDROM, and you will be prompted to enter a load key the first time you load each product. However, when you enter a load key to install a product, **newprod** writes that load key to the appropriate file in the */usr/ip32/deltools/keys* directory. Thus, after you enter a product's load key, you will not be required to enter that load key again on that node.

As stated before, each file in the */usr/ip32/deltools/keys* directory is named after the delivery date of the CDROM. For example, *090190* would be the name for the load key file for a CDROM dated September 1, 1990. The format for all load key files is the product number, one space, and the load key. The following are sample entries:

```
SZU0009 APM04d9kdJW9jPp4sm2
SS01040 HYE9dk4Rh8Mlwp01mee
SS01003 KDSpjdsgkuf77945fsd
```

Note

- Load keys are case-sensitive. Thus, if you key them in, you must key them in exactly as they appear on the memo.
- We apologize for any offensive character strings within a load key.

4.5 runcd Restoration

The **runcd** command is a shell script used to mount a CDROM and initiate the CDROM Menu. To execute this shell script, key in **runcd** at the # prompt. If you receive a message saying that **runcd** is not found on your workstation/server hard disk, follow the steps provided in this section to copy **runcd** from the delivery CDROM to the hard disk.

To execute the **runcd** command, key in the following:

 # runcd

If you receive a message saying that **runcd** was not found on your workstation/server, follow these steps to copy **runcd** from the CDROM to your hard disk:

1. Insert the delivery CDROM in the drive.
2. Create the correct device file. If your CDROM drive is **not** connected to SCSI ID 4, you must create the CDROM drive device file using the **mknod** command. Refer to the *CDROM Drive User's Guide* for the appropriate command line. If your CDROM drive is connected to SCSI ID 4, the device file has already been created. Proceed to step 3.
3. Link the device file (*/dev/dsk/s4u0p0.0*) to the CDROM drive (*/dev/dsk/cdrom*) by keying in the following command line. This example assumes that the CDROM drive is connected to SCSI ID 4. If it is not, substitute the proper device file for */dev/dsk/s4u0p0.0*.

   # ln /dev/dsk/s4u0p0.0 /dev/dsk/cdrom

4. Mount the correct device by keying in the following, where **X** represents the SCSI ID of the CDROM drive:

   # /etc/mount -rf FFS /dev/dsk/sXu0p0.0 /del

5. Copy the **runcd** utility by keying in the following:

   # cp /del/runcd /usr/bin

6. Unmount the CDROM by keying in the following:

   # /etc/umount /del

7. Execute the **runcd** command:

   # runcd

8. Continue the software delivery procedure.

5 Product Information Files

This chapter contains the following sections:

5.1	The dates Utility	5-3
5.2	The README File	5-5
5.3	INTERNEWS	5-6

The **dates** utility, *README* files, and INTERNEWS product are valuable resources for obtaining information about the workstation/server products presently loaded on the workstation/server. Use these files as an information source when you are downloading software. This section provides instructions for using each of these files.

5.1 The dates Utility

The **dates** utility, which resides in */usr/ip32/deltools*, reports the dates and version numbers of software products residing on any file system on the workstation/server. This utility is useful for seeing all products on the hard disk. The information provided is also useful when you call Intergraph Customer Support to report a problem.

This utility extracts information from a file named *ingrconfig* (in */usr/ip32*). The *ingrconfig* file, which is updated each time a product is loaded with **newprod**, stores the product name, number, title, fixes date, and location on the hard disk for each product loaded on the workstation/server.

Note
You can recreate the *ingrconfig* file by running the **Ingrinit** utility. You may wish to do so if you notice that the **dates** command displays multiple versions of one product or if **dates** displays any products in an inconsistent format. To use the **Ingrinit** utility, change to the */usr/ip32/deltools* directory and invoke **Ingrinit** as follows:

```
# cd /usr/ip32/deltools
# ./Ingrinit
This utility initializes the /usr/ip32/ingrconfig file. It does
this by searching all file systems for README or fixes.com files
and then
updates the /usr/ip32/ingrconfig file appropriately.
Are you sure you want to do this (y/n)? [n]: y

Done.
```

The **dates** utility reports the following information for workstation/server software products:

- Product name
- Product number
- Fixes date (the last date the software was changed)
- Version
- Complete product title

To invoke the **dates** utility, key in the following at the $ or # prompt:

$ dates

```
Name        Number     Date           Version    Title
DELTOOLS    SS01040   18-MAY-1989   04.00.15.00 Delivery Tools
INC         SS01363   17-MAY-1989   06.02.00.16 Workstation Network Software
INTERNEWS   SS01074   22-JUN-1989   04.00.01.00 Intergraph On-line News
REBUILD     SS10003   21-JUN-1989   04.00.07.00 Rebuild Floppies - 3.1
RESOURCES   SS01059   10-MAY-1989   01.01.03.00 Graphics Resources
SCREENMGR   SS01045   26-MAY-1989   04.00.37.00 Screen Manager
SYSTEMV     SS01044   11-JUN-1989   04.00.01.00 System V 3.1 File Systems
UNIXBOOT    SS01043   20-JUN-1989   04.00.06.00 System V 3.1 Boot Images
VT220       SS01049   28-MAY-1989   04.00.16.00 DEC VT220 Emulation
```

5.2 The README File

The *README* file is an ASCII file that combines the information from the previous *fixes.com*, *certnote.com*, and *features.com* files into a single product information file. The *README* file for each product is located in the product's directory. All users of a software product should read the *README* file to become more familiar with the product. Production managers should use the information in this file to determine whether the revised software will increase or decrease productivity according to the product changes and open problems.

The *README* file contains the following information about the product:

- Fixes (changes)
- New features
- Open problems
- General comments
- Getting started instructions
- Installation help
- Available documentation

This section provides procedures for accessing *README* files currently on the hard disk.

> **Note**
> In addition, you can access a product's *README* file before you load the product by using the **newprod/makenode r** and **h** options. By having access to a product's *README* file **before** you load a product, you can read about changes to the product and then decide whether you wish to update the product. (For CDROM deliveries, the **r** and **h** options require a load key.) Refer to 3.4, "Interactive Options," for more information on using the **r** and **h** options for **newprod** and **makenode**.

Follow these steps to read a product's *README* file (after the product is loaded on the hard disk):

1. Use the **find** command as follows to generate a list of each *README* file on the hard disk:

   $ find / -name README -print

   A list of directories containing *README* files will display.

2. Use the **pg** command to page through a specific *README* file such as the following:

   $ pg /usr/ip32/vt200/README

5.3 INTERNEWS

The Intergraph Online News (INTERNEWS) product is delivered free-of-charge with each Intergraph workstation/server purchase. However, it is not a nucleus product. (It it not required to run the CLIX operating system.) If you install INTERNEWS, it will be loaded in the */usr/ip32/news* directory. INTERNEWS provides online information about hardware and software products.

Follow these steps to use the **internews** utility:

1. Load the INTERNEWS product using **newprod**. Follow steps in Chapter 3, "Delivering Software Using newprod," to load this product.
2. Use the **cd** command to change to the directory where INTERNEWS is loaded. The following example assumes that the product was loaded in the default directory (*/usr/ip32/news*).

   $ cd /usr/ip32/news

3. Key in the following to invoke INTERNEWS:

   $ internews

4. The Main Topics Section menu appears. This menu contains news topics to choose from. To access a news topic, key in the associated number.
5. When you access a news topic, a list of articles and subtopics appears. Key in the associated number to read specific articles.

6 Delivering Software to Remote Nodes

This chapter contains the following sections:

6.1 Delivering Software to Remote Nodes from a VAX 6-3
6.2 Delivering Software to Remote Nodes from a Workstation/Server Delivery Source 6-5

The **remote_newprod** utility enables system managers to load software products across a network to multiple nodes from a VAX or workstation/server delivery source.

> **Note**
> This utility requires that you accept default responses for all installation prompts. Thus, unless you customize your installation defaults (as described in 7.2), using this utility is not encouraged.

> **Caution**
> For software upgrades that require you to reboot during the installation process, the **remote_newprod** utility is useless. The September 1990 release requires a reboot before any products requiring load keys can be installed. (See Chapter 1 for more information.)

6.1 Delivering Software to Remote Nodes from a VAX

The **remote_newprod** utility resides in the *[IGR.DELTOOLS.PRO]* or *PRO_DD_DELTOOLS* directory for VAX delivery sources.

Follow these steps to use the **remote_newprod** utility to download software from a VAX to one or more remote workstations/servers across a network:

1. Log in to the Intergraph VAX that contains the workstation products to download and create a file called *remote_newprod.dat* in the *DELTOOLS* directory. In this file, key in the following information (using the format shown) on a separate line for each workstation that you will download software to:

   address.username.password <license numbers of products to install or U (default) to update all existing products>

> **Note**
> - The **address** can be substituted with the nodename if the workstation(s) is on the same LAN as the VAX.
> - When listing the products to be updated for each node, separate each product with a space.

   The following are examples of entries in the *remote_newprod.dat* file:

   08-00-36-2b-33-00.root.smith u
   13498.08-00-36-3c-39-00.root.root32 ss01047
   frank.root.password u ss01636 ss01080 ss01011

2. Exit and save the *remote_newprod.dat* file.

3. To invoke this utility, key in the following at the $ prompt:

   $ @remote_newprod

4. Respond to the following prompt:

   ```
   Enter nodename.username.password -->
   ```

   Key in the nodename (or network address if necessary) and a username/password combination for the VAX from which you are delivering the workstation/server products. Then, press **<Return>**.

When the **remote_newprod** utility is invoked, it reads the first line of the *remote_newprod.dat* file, writes a shell script (**remote_newprod.sh**), and sends it through **fmu** to the node listed in the first line of *remote_newprod.dat*. Then, **remote_newprod** executes **remote_newprod.sh** on the node to install or update the software products as specified in *remote_newprod.dat*.

Next, **remote_newprod.sh** writes output describing the installation to a file on the workstation/server called *nodename.nlog*, where *nodename* is the nodename of the workstation/server. When installation completes, **remote_newprod.sh** returns the *nodename.nlog* file to the VAX login directory entered in step 4. The system manager can then read the file on the VAX to check the success of the installation.

While the installation procedure for a workstation/server is in progress, no messages will display on the workstation/server screen. Even though response time may be slower than usual, you can still use the workstation/server.

After initiating the **remote_newprod.sh** shell script on the first node listed in the *remote_newprod.dat* file, **remote_newprod** pauses for 10 minutes before repeating the process for the next workstation/server listed in the *remote_newprod.dat* file. The procedure will be repeated until each workstation/server in the file has been updated.

> **Note**
> The procedure **remote_newprod.com** can be modified if you need to change the pause time.

6.2 Delivering Software to Remote Nodes from a Workstation/Server Delivery Source

The **remote_newprod** utility resides in the */usr/ip32/deltools/node* directory for workstation/server delivery sources.

> **Note**
> The **remote_newprod** utility will not load (from CDROM) products that require load keys until each remote node has been upgraded to 04.00 CSS and rebooted.

Follow these steps to use the **remote_newprod** utility to download software from a workstation/server delivery source to one or more remote workstations/servers across a network:

1. Log in to the workstation/server that contains the products to download and create a file called */usr/ip32/deltools/node/r_newprod.dat*. In this file, key in the following information (using the format shown) on a separate line for each workstation to which you will download software:

   node.username.password <optional products to install or update or U (default) to update all existing products>

> **Note**
> When you list the optional products to be updated for each workstation, separate each product with a space.

   The following is an example of some entries in the *r_newprod.dat* file:

   08-00-36-2b-33-00.root.smith u
   frank.root.password u ss01636

2. Exit and save the *r_newprod.dat* file.
3. Key in the following at the # prompt to invoke the **remote_newprod** utility:

   # cd /usr/ip32/deltools/node
   # ./remote_newprod

4. Respond to the following prompts:

```
Do you want to load the product from remote CDROM (y/n)? [n]:

Enter nodename.username.password of host where products reside:
```

Specify whether you are delivering from remote CDROM, and then key in the *nodename* and a *username/password* combination for the workstation/server from which you are delivering the workstation/server products.

When the **remote_newprod** utility is invoked, it reads the first line of the *r_newprod.dat* file, writes a shell script (**r_newprod.sh**), and sends it through **fmu** to the node listed in the first line of *r_newprod.dat*. Then, **remote_newprod** executes **r_newprod.sh** on the node to install or update the software products as specified in *r_newprod.dat*.

Next, **remote_newprod.sh** writes output describing the installation to a file on the workstation/server called *tmp/nodename.nlog*, where *nodename* is the nodename of the workstation/server. When installation completes, **remote_newprod.sh** returns the *tmp/nodename.nlog* file to the delivery source login directory entered in step 4. The system manager can then read the file on the delivery node to check the success of the installation.

While the installation procedure for a workstation/server is in progress, no messages will display on the remote workstation/server (to which products are being downloaded). Both the delivery source and the remote workstation/server can be used during the remote installation. **remote_newprod** accepts all installation defaults, so no installation prompts will appear on the remote workstation/server's screen during product installation. You can use the delivery source during installation by creating an additional local window.

By default, the **remote_newprod** utility will pause for one hour (3600 seconds, as specified in **remote_newprod**'s predefined shell script variables) before it initiates the **r_newprod.sh** shell script on the next workstation/server listed in the *r_newprod.dat* file. Approximately one hour is required to download all products to a workstation/server. If the product installation process completes in less than one hour, **remote_newprod** still pauses for the entire hour.

You can alter the amount of time the utility pauses by changing the value of the WAIT_TIME variable specified in */usr/lp32/deltools/node/remote_newprod*. You may edit this file to alter any of the shell variables. In this shell script, the shell variables appear as follows:

```
# Shell variable declaration

DATAFILE=r_newprod.dat
SHELLSCRIPT=r_newprod.sh
DEFAULTPROD=u
WAIT_TIME=3600
```

- The DATAFILE variable specifies the file that contains each node to which you will download products. By default, this data file is called *r_newprod.dat*. If you wish to change the name of this file, you may alter this shell variable. If you change this variable, remember to change the

name of the text file that contains each node to which you will download products. **remote_newprod** will not find this file unless the name matches the value of the DATAFILE variable.

- The SHELLSCRIPT variable specifies the shell script that is written and sent to each node in *r_newprod.dat*. By default, this shell script is called **r_newprod.sh**. If you wish to change the name of this shell script, alter this shell variable.
- The DEFAULTPROD variable defines which products (by default) will be updated on each node. This shell variable uses **u** to specify that all out-of-date products will be updated. If you wish to list individual products to be updated rather than all products, change **u** to a list of product numbers (separated by spaces).
- The WAIT_TIME variable specifies the number of seconds that **remote_newprod** will pause before initiating the **r_newprod.sh** shell script on the next node in the *r_newprod.dat* file. The default is 3600 seconds (one hour), which is approximately the time required to download all products to a workstation/server.

7 Customizing newprod

This chapter contains the following sections:

7.1 The newprod Information File 7-3
7.2 The getanswer Utility 7-5

System administrators can customize the **newprod** utility to echo messages to the screen. These messages can inform and remind users of specific delivery procedures. You can cause messages to display before or after installation. You can also monitor deliveries and record downloading information such as the delivery source, time, and user in a system administrative file.

System Administrators can also use the **getanswer** utility to pre-define the default responses to product installation prompts.

This chapter provides suggestions for modifying the **newprodinfo.sh** shell script and also for using the **getanswer** utility to establish system delivery prompt defaults.

7.1 The newprod Information File

The **newprod** utility invokes a shell script called **newprodinfo.sh**. This shell script executes before the **newprod** menu appears and when a user exits **newprod**. The system administrator can modify **newprodinfo.sh** on network hosts so that this shell script contains site-specific information. This file resides in the home directory of the user account that was specified when you connected to the remote node. (For CDROM nodes, **newprodinfo.sh** resides in */del*.)

For example, system administrators can use **newprodinfo.sh** to echo information to users before and after product installation. Common modifications include echoing information about specific products or suggested downloading procedures. **newprodinfo.sh** can also be used to monitor deliveries and record downloading information such as the delivery source, time, and user in a system administrative file.

An example of a modified **newprodinfo.sh** file follows:

> **Note**
> The **newprod** utility, and thus **newprodinfo.sh**, are often executed when only a minimal *root* and */usr* file system exists (such as when you are rebuilding). Therefore, when modifying the **newprodinfo.sh**, be careful not to refer to or call any files or commands in directories that may not be mounted or are nonexistent.

```
# newprodinfo.sh
# This file is a shell script that is invoked by "newprod"
# before and after the newprod dialogue begins.  It
# facilitates communication about "newprod" and any products
# that might be downloaded.  If you are to modify this
# shell script, be aware that it might be invoked when
# there is a minimal root and /usr file system.

case "$1" in
BEGIN)
   echo "
Notice:  You have connected to sys19a to download Intergraph
         workstation software.  Note that in this delivery, the nucleus
         software is not compatible with the old nucleus software.
         Thus, if you load one nucleus product, you must load all of
         them.  Once you load this software, you will not be able to
         return to the old nucleus software unless you rebuild the hard
         disk using old Rebuild floppies!

   "
```

```
   ;;

END)
   echo "
   Remember to read Internews to find out about new product features."
   ;;
esac

exit
```

7.2 The getanswer Utility

The **getanswer** utility is used to define installation prompts on a system. Before you load software, you can make sure that all installation prompts have been properly defined for each system.

The **getanswer** utility is loaded as part of the Delivery Tools (SS01040) product. You do not invoke **getanswer**. Instead, product install scripts use **getanswer** to store your responses to installation prompts in an ASCII file. Products (and installation prompt responses) are added to this file when they are loaded through **newprod**.

Thus, to define the installation prompt defaults for a system, use one of the following methods:

- Invoke **newprod** on the machine for which you wish to define the installation prompt defaults. Install all products, selecting the appropriate responses for installation prompts. Then, **newprod** will automatically write the */usr/ip32/.defaults* file on the system. Any future deliveries to the machine will use the newly defined installation defaults.
- Edit the text file */usr/ip32/.defaults* on the machine for which you wish to define installation prompt defaults. The format for this file is as follows, where the literal # characters are used as field separators for the file:

  ```
  Product_Name#Prompt_Text#Default_Answer
  ```

  The following is a sample */usr/ip32/.defaults* file on a node that has loaded the SYSTEMV, NQS, and INC products:

  ```
  SYSTEMV#Update system files in the root (/) file system (y/n)?#y
  SYSTEMV#Update system files in the usr (/usr) file system (y/n)?#y
  SYSTEMV#Do you want the assist(1) utility?#n
  SYSTEMV#Do you want the help(1) utility?#n
  SYSTEMV#Do you want the graphics(1G) utilities?#n
  NQS#Will this machine be a CLIENT only?#y
  NQS#Do you want the NQS logging process started by default?#y
  NQS#Do you want pconfig#y
  INC#       Do you want the incmond started automatically during
  bootup(y/n)?#n
  INC#         Do you want logging to a File (y/n)?#n
  INC#         Do you wish to modify the Network Management
  Information.(y/n)?#y
  INC#         to inquire about all that are available (y/n)?#n
  ```

  The default answer specified as the last field in the *.defaults* file becomes the new default response for that node. Notice that this example contains default responses for only three products (SYSTEMV, NQS, and INC). Before you can deliver software remotely, you should include all products that you wish to load. Any products not included in this file will use the Intergraph-defined defaults when they are installed.

Note
If you are loading the same products (with the same installation prompt responses) on multiple remote nodes, you may wish to customize the *.defaults* file on one system and then copy that exact file to the other nodes.

8 Troubleshooting

This chapter contains the following sections:

8.1	Installation Problems	8-3
8.2	Disk Space Problems	8-4
8.3	Delivery Source Problems	8-5
8.4	CDROM Problems	8-7
8.5	Tape/Floppy Delivery Media Problems	8-10

This chapter discusses solutions to problems commonly encountered during the software delivery process. Problem areas discussed in this chapter include the following:

- Product installation problems
- Disk space problems
- Delivery source problems
- CDROM problems
- Tape/floppy disk media problems

If you encounter problems that you cannot solve, contact your Intergraph Regional Customer Support Office for assistance.

8.1 Installation Problems

Problem: When you attempt to download products, "disk failed" error messages appear and products are not downloaded successfully.

Solution: The file system to whic you are downloading is probably out of space. Follow guidelines for freeing disk space in 3.3.2.

Problem: When a product is not downloaded successfully, the message "PLEASE DO NOT REBOOT UNTIL YOU HAVE SUCCESSFULLY DOWNLOADED THIS PRODUCT" appears.

Solution: If you receive this message when downloading the **SYSTEMV**, **DELTOOLS**, **UNIXBOOT**, **RESOURCES**, **SCREENMGR**, **VT220**, or **ENVIRON_S** product, you must load these products successfully before you reboot the workstation/server. These products establish the basis for the operating system and the boot-up procedures. If you do not download these products successfully before you reboot, you may reboot the workstation/server on a corrupted operating system, and be forced to rebuild. Please refer to the *CLIPPER System Administrator's Guide* for instructions on rebuilding the hard disk.

Problem: When a product is downloaded unsuccessfully, the message "Installation errors" or "Load errors" displays in the status field for that product.

Solution: To determine the source of the installation problem, download products using the **v** (download products in verbose mode) and **x** (display the install script for the product as it downloads) options. As the product downloads, the verbose messages and the install script display on the screen. Thus, you will see the steps that are failing during installation. After determining the problem, take the necessary steps to correct it. The **v** and **x** options are not valid for the **makenode** utility.

8.2 Disk Space Problems

Problem: A message similar to "Device full, no disk space /dev/dsk/s0u0p7.3" or "Disk failed: no space" appears during software delivery, and products are not loaded successfully.

Solution: If these messages appear during software delivery, you must free disk space. Please refer to 3.3.2, "Available Disk Space" for suggestions for freeing disk space. If these guidelines do not free enough disk space for software delivery, the system manager and/or workstation/server users should review the */usr* directory contents and delete, move, or archive rarely used files.

8.3 Delivery Source Problems

Problem: You cannot download a product with the "System newer" status.

Solution: In this case, the "System newer" status indicates that the product was not initialized on the delivery source (VAX or workstation/server). Before you can download the product, the system manager must initialize the product on the delivery source (VAX or workstation/server).

Use *one* of the following methods to initialize products on a VAX delivery source:

- Initialize **all** products with the following commands:

  $ set def pro_dd_deltools
  $ @ws_initial ZFA3:[ws_s.*]

- Initialize selected products with the following commands. (This example initializes MicroStation.)

  $ set def pro_dd_deltools
  $ @ws_initial ZFA3:[ws_s.mstation]

Use *one* of the following methods to initialize products on a workstation/server delivery node:

- Initialize all products with the following command:

  # /usr/ip32/deltools/node/Initial /usr/ws_s/*

- Initialize selected products with the following command. (This example initializes MicroStation.)

  # /usr/ip32/deltools/node/Initial /usr/ws_s/mstation

> **Note**
> Intergraph initializes all products on delivery CDROM, tape, or floppy disk before shipping. Thus, you do not need to initialize products on these media types.

Problem: You cannot determine whether a workstation/server product was initialized on the delivery source.

Solution: You can use one of two methods to determine whether a workstation/server product was initialized on the delivery source. One method is to check the products listed in the *PRO_DD_CFG.WS_S.PRODS* file (for a VAX delivery source) or the *ws_s.prods* file (for a workstation/server delivery source) to see if that product(s) has an entry. Any product not listed in this file has not been initialized. The second method is to run the **WS_INFO.COM** utility (for VAX) from the *PRO_DD_DELTOOLS* directory or the **Info** utility (for workstation/server delivery sources) from the */usr/ip32/deltools/node* directory. This utility displays a "Needs to be initialized" message if a product needs to be initialized.

8.4 CDROM Problems

Problem: You cannot connect to a TCP/IP-based CDROM node through **newprod**.

Solution: Remote CDROM capability will not be functional over TCP/IP until the 05.00 CSS release.

Problem: When you attempt to connect to a remote CDROM drive, you receive the following error message:

```
Incompatible server: host DELTOOLS needs to be upgraded.
```

Solution: The CDROM node needs to be upgraded to the 04.00 version of CSS.

Problem: When installing purchased products on your workstation/server running a version of CSS previous to 04.00, you receive load key error messages.

Solution: Upgrade your workstation/server to the 04.00 version of CSS, quit out of **newprod**, reboot the system, and invoke **newprod** again before loading any products requiring load keys.

Problem: The **remote_newprod** utility fails when upgrading software to the 04.00 version of CSS.

Solution: The **remote_newprod** utility will not work for workstations/servers loading products requiring load keys unless each node has already been upgraded to 04.00 CSS and rebooted.

Problem: You receive the following error message when invoking **newprod**:

```
/usr/tmp/newprodinfo.sh[34]: /dev/null:restricted
```

Solution: This problem with the new release of ksh will be fixed in the 05.00 CSS release.

Problem: You just rebuilt your workstation/server and cannot access the CDROM to download software.

Solution: When you rebuilt the hard disk, you did not relink the CDROM drive device file to */dev/dsk/cdrom*. Before you can access the CDROM and load software, you must complete the following steps:

1. Insert the CDROM in the caddy and the caddy in the CDROM drive.
2. If your CDROM drive is **not** connected to SCSI ID 4, you must create the CDROM drive device file using the **mknod** command. Refer to the *CDROM Drive User's Guide* for the appropriate command line.

   If your CDROM drive is connected to SCSI ID 4, the device file has already been created. Proceed to step 3.
3. Link the device file (*/dev/dsk/s4u0p0.0*) to the CDROM drive (*/dev/dsk/cdrom*) by keying in the following command line. This example assumes that the CDROM drive is connected to SCSI ID 4. If it is not, substitute the proper device file for */dev/dsk/s4u0p0.0*.

   # ln /dev/dsk/s4u0p0.0 /dev/dsk/cdrom
4. Mount the device by keying in the following:

   # /etc/mount -rf FFS /dev/dsk/s4u0p0.0 /del
5. Copy the **runcd** utility by keying in the following:

   # cp /del/runcd /usr/bin
6. Unmount the CDROM by keying in the following:

   # /etc/umount /del
7. Invoke the **runcd** utility by keying in the following:

   # **runcd**
8. At the CDROM Menu, key in **2** to invoke the **newprod** utility.

Problem: When you attempt to invoke **newprod** to download products from CDROM, you receive the following message:

```
Cannot mount /dev/dsk/cdrom on /del
```

Solution: The CDROM drive was connected correctly but not configured properly. Follow these steps to configure the CDROM drive:

1. If your CDROM drive is **not** connected to SCSI ID 4, you must create the CDROM drive device file using the **mknod** command. Refer to the *CDROM Drive User's Guide* for the appropriate command line.

   If your CDROM drive is connected to SCSI ID 4, the device file has already been created. Proceed to step 2.

2. Link the device file (*/dev/dsk/s4u0p0.0*) to the CDROM drive (*/dev/dsk/cdrom*) by keying in the following command line. This example assumes that the CDROM drive is connected to SCSI ID 4. If it is not, substitute the proper device file for */dev/dsk/s4u0p0.0*.

   # ln /dev/dsk/s4u0p0.0 /dev/dsk/cdrom

3. Mount the device by keying in the following:

   # /etc/mount -rf FFS /dev/dsk/s4u0p0.0 /del

Problem: When you key in **runcd** to initiate the CDROM Menu, the following message appears:

```
runcd: not found
```

Solution: To restore **runcd**, you must copy it from the delivery CDROM to the hard disk by following these steps:

1. Insert the delivery CDROM in the drive.
2. Create the correct device file. If your CDROM drive is **not** connected to SCSI ID 4, you must create the CDROM drive device file using the **mknod** command. Refer to the *CDROM Drive User's Guide* for the appropriate command line.

   If your CDROM drive is connected to SCSI ID 4, the device file has already been created. Proceed to step 3.

3. Link the device file (*/dev/dsk/s4u0p0.0*) to the CDROM drive (*/dev/dsk/cdrom*) by keying in the following command line. This example assumes that the CDROM drive is connected to SCSI ID 4. If it is not, substitute the proper device file for */dev/dsk/s4u0p0.0*.

   # ln /dev/dsk/s4u0p0.0 /dev/dsk/cdrom

4. Mount the correct device by keying in the following:

   # /etc/mount -rf FFS /dev/dsk/s4u0p0.0 /del

5. Copy the **runcd** utility by keying in the following:

   # cp /del/runcd /usr/bin

6. Unmount the CDROM by keying in the following:

   # /etc/umount /del

Problem: During product installation, you receive a message similar to the following:

```
install.sh: getfile: not found
stdin: not in compressed format
Unsuccessful installation
```

OR

```
install.sh: test: argument expected
Unsuccessful installation
```

Solution: Link **newprod** to **getfile** by issuing the following command:

 # ln /usr/bin/newprod /usr/bin/getfile

8.5 Tape/Floppy Delivery Media Problems

Problem: During product installation, you receive a message similar to the following:

```
Products not intended for this workstation
```

Solution: **newprod** is using a configuration file that is not appropriate for the workstation. Invoke **newprod** as follows to specify the appropriate configuration file (*ws_s.prods*):

 # newprod -F ws_s.prods

Problem: You receive the following message during product installation:

```
cpio - out of phase
```

Solution: This error message indicates that you may have a corrupted *.prod* file. Contact Intergraph Software Delivery Support and ask for another delivery tape or floppy of the product that generated this message.

Problem: During the installation process, you receive CRC (Cyclical Redundancy Check) errors.

Solution: The delivery media is bad. Contact Intergraph Software Delivery Support for another delivery tape or floppy of the product that generated this error.

Appendix A: Software Processor Types

To optimize performance on machines with different processor types, Intergraph supplies multiple software product versions. The *software processor number* is a two-digit alphanumeric character sequence that identifies the software product version developed for your hardware. This number consists of the third and fourth digits of a software product number. For example, the software processor type for the following software product number is 01:

SS01636

> **Note**
> The appropriate software version to correspond to your system is automatically delivered.

The following chart provides the software processor types for different Intergraph systems:

System Type	Software Processor Type
VAX	00
CLIPPER	01
32032	02
PC	03
MicroVAX	04

Appendix B: Loading VAX-based Graphics Application Menus

Although Intergraph's main utility for delivering software is **newprod**, the **getmenus** utility is also available. This utility provides a quick method for downloading VAX-based graphics application screen menus to the workstation. Unlike **newprod**, the **getmenus** utility does not require superuser privileges. Therefore, all users can execute it. To use the **getmenus** utility, you must have the InterAct Emulation (Actem) product. The **getmenus** utility does not apply to InterServe processors.

To invoke the **getmenus** utility, key in **getmenus** at the standard System V prompt. The utility first checks to ensure that the Actem product resides on the workstation. If the product exists, **getmenus** prompts the user for the Ethernet connection data (*nodename/number.username.password*). It then prompts for the standard abbreviation of the product whose menus will be downloaded.

The following is an example of using the **getmenus** utility:

```
$ getmenus

Enter the host ethernet connect data sys34a.jane.system

Enter the product name(s) of the menus you wish to load, separated by
spaces ARNU PAGE

Downloading the ARNU menus to /usr/ip32/igds/ARNU
Successful download of the ARNU menus from sys34a
Downloading the PAGE menus to /usr/ip32/igds/PAGE
Successful download of the PAGE menus from sys34a
```

> **Note**
> VAX-based application screen menus can still be downloaded through **newprod**. **getmenus** simply enables users without superuser privileges to download the application screen menus.

Glossary

This glossary defines terms commonly used in this document.

ASCII
Acronym for American National Standard Code for Information Interchange. ASCII is a code that uses seven bits to represent graphic and control characters. Generally, this guide refers to an ASCII file as a text file.

Baseline software
Products that you receive free-of-charge when you purchase an Intergraph workstation or server. There are two categories of baseline products: nucleus and supplemental. Baseline nucleus products must reside on the workstation or server to run the CLIX operating system. Baseline supplemental products are free, but are not required to reside on the workstation/server.

Caddy
The empty CDROM plastic case included with the CDROM drive. You must insert the CDROM in the caddy and insert the caddy in the CDROM drive to be able to access any data.

CDROM
Compact Disc Read Only Memory. The CDROM media stores approximately 600 MB of data. As a result, you will usually load Intergraph software from only a few delivery CDROMs rather than from numerous tapes or floppy disks. Remember, this CDROM is read-only; you cannot overwrite the data on the CDROM.

CDROM drive
A CDROM drive allows you to access information from a CDROM but not write information to it. The CDROM drive should be configured for SCSI ID 4. Refer to the *CDROM Drive User's Guide* for additional information concerning the drive.

CDROM Menu
The menu that appears when you invoke the **runcd** utility. From this menu, you can read documentation on CDROM Software Deliveries, invoke **newprod**, invoke **makenode**, or set up the SYSVDOC and INTERNEWS online documentation products so that they can be read from the CDROM disc.

CDROM node
The Intergraph workstation/server to which the CDROM drive is connected. (Also referred to as the *host*.)

CLIPPER
The main processor for Intergraph workstations/servers.

CLIPPER System Software (CSS)
The baseline software products, which are free to all customers. These products collectively make up the CLIX operating system.

CLIX
CLIPPER UNIX. The operating system that Intergraph workstations/servers run on. Intergraph ported AT&T's UNIX System V operating system version 3.1 to the CLIPPER processor and enhanced it with Berkeley and Intergraph extensions.

CRC error
An error message often associated with bad media.

Delivery source
A workstation/server that stores products in deliverable format. Other workstation/servers download products from the delivery source across the network through the **newprod** utility. To create a delivery source deliver products using the **makenode** utility. You are not required to create a delivery source to load software from CDROM.

Electronics Pak
A CDROM disc that contains electronics application software.

Host
The node to which you connect to perform a network software delivery. For CDROM deliveries, it is often called the CDROM node (the workstation/server to which the CDROM drive is attached).

Install script
The shell script (called *install.sh*) that each product provides for **newprod** to use to allow the product to be downloaded. To view a product's install script, key in **x** at the **newprod** menu before you begin updating products. The install script will display as the product is being downloaded.

Jewel case
The clear plastic case in which the CDROM was delivered. Any time you are not using the CDROM, store it in its jewel case.

Load key
A unique alphanumeric character sequence that enables you to copy the purchased product from the CDROM to the workstation/server hard disk.

Load-key memo
A memo that lists the network address of the workstation/server to which your CDROM drive is connected. It also lists your unique load keys that enable you to download software. You received a load-key memo with your CDROM delivery.

Local CDROM drive
A CDROM drive connected to the workstation/server at which you are currently working. The **newprod** utility provides a special command-line option (**-c**) for installing software from a local CDROM drive.

Local delivery
Delivering software from a local drive, such as a tape, floppy, or CDROM drive.

makenode
A utility that loads software products on a workstation/server so that it can function as a delivery source. This process enables other workstations and servers to download software from the delivery source through a network using **newprod**. Products loaded using **makenode** are not installed; they serve only as a delivery source for other workstations/servers. To install products so they can be executed locally, use the **newprod** utility.

Network address
Each workstation/server has a unique identification number known as its network address. To display this number, key in **netaddr -i** at the System V shell ($ or #) prompt.

Network delivery
Delivering software across a network, such as from a delivery source or a remote CDROM drive.

newprod
Intergraph's main software delivery utility. The **newprod** utility installs software products on your workstation/server so that they can be executed locally.

Nucleus
The group of Intergraph software products that must be installed on your system before you can run the CLIX operating system. These products include UNIXBOOT, DELTOOLS, SYSTEMV, RESOURCES, ENVIRON_S, SCREENMGR, INC, GPIPE_S, VT220, DIAG, FORMS_S, RISCCU, and LOOKING_G.

Purchased products
Intergraph software products for which you must purchase a license to deliver and use. For CDROM deliveries, if you do not have a load key for a particular purchased product, you will not be able to install it, even though it will be listed in the **newprod** menu.

README
An ASCII file that resides in each product directory. This file contains information such as changes to the product, new features, open problems, general comments, instructions for getting started, installation help, and available documentation. You can access this file through the **r** (review) and **h** (help) options on the **newprod** menu.

Remote CDROM drive
A CDROM drive connected to a remote workstation/server. The **newprod** utility provides a special command-line option (**-r**) for connecting to a remote CDROM drive and loading software.

runcd
A utility that mounts the CDROM disc and initiates the CDROM Menu. From this menu, you can read documentation on CDROM Software Deliveries, invoke **newprod**, invoke **makenode**, or set up the SYSVDOC and INTERNEWS online documentation products so that they can be read from the CDROM disc.

Server
An Intergraph nongraphics processor that usually serves as a plot, compute, or communication server node (such as an InterServe).

Software delivery
The process of installing/upgrading software products from either local media or across a network to your local system.

Super Pak
The set of CDROM discs that collectively contain all Intergraph software products except for Electronics software (contained on the Electronics Pak disc) and VAX software (contained on the VAX Systems and Applications disc).

Version number
The number associated with the most recent release of each product.

Workstation
An Intergraph graphics computer, such as an InterPro, InterAct, or InterView.

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