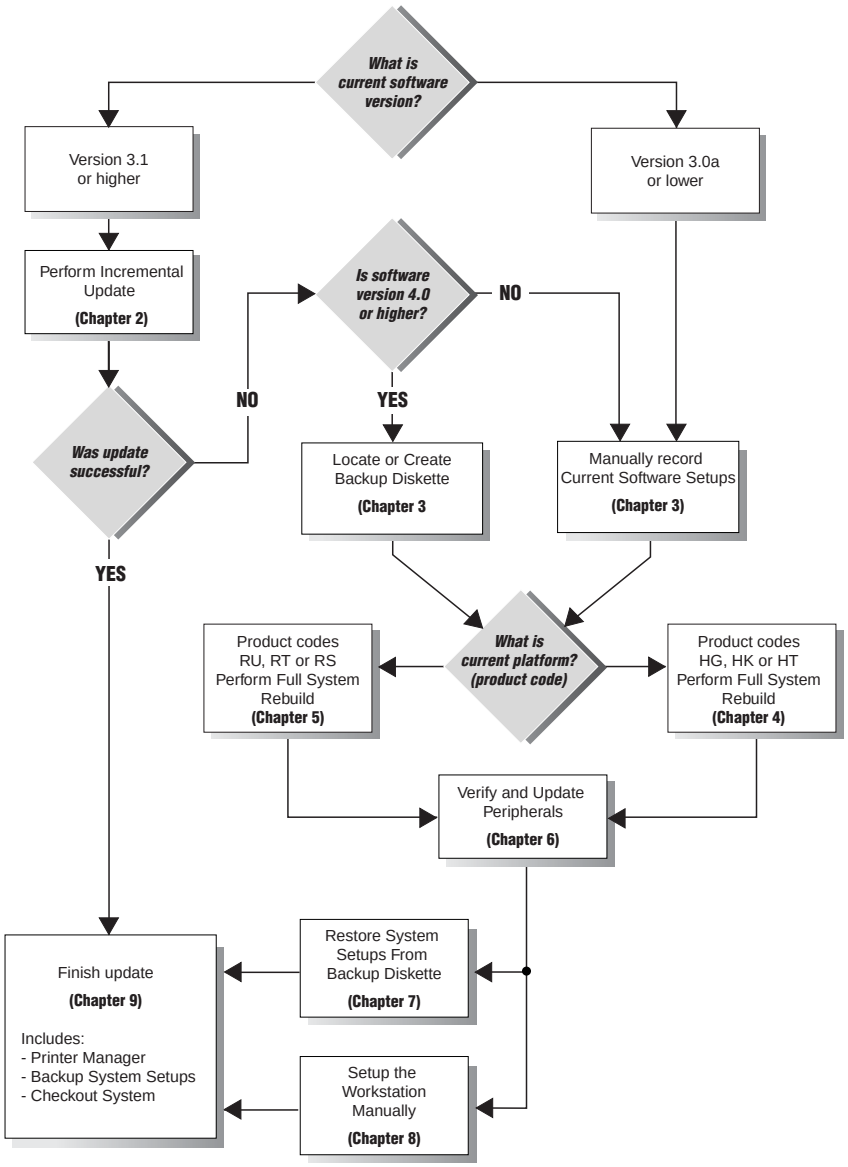
MARS® unity workstation

Version 4 CD-ROM Rebuild Instructions

Software Version 4

PN 408287-060 Revision J



GE Medical Systems
Information Technologies

This manual reflects MARS unity workstation software version 4.

Contents

1 Important Installation Notes

Introduction

Revision History

Each page of the document has the document part number and a revision letter. This letter identifies the document's update level.

Table 1-1. Revision History of PN 408287-060

Revision	Date	Description
A	22 April 1998	Initial release.
B	20 July 1998	Included Lexmark Optra S 1625 network printer information.
C	6 October 1998	Added notes and procedures to inform of potential data loss during incremental upgrades.
D	11 January 1999	Added procedures for installation of MARS ver. 4.1, running on Solaris 2.6
E	3 December 1999	Updates for MARS ver. 4.1a
F	10 April 2000	Updates for Solaris GE_2.6 OS
G	8 May 2001	Updates for 4.1b
H	15 October 2001	Added Lexmark T 522N, HP 4100N, and HP1200 printer information. Also updated the Incremental Update Procedures.
J	29 July 2002	Added SEER Light recorder information.

Installation Notes

Use the enclosed software installation kit and these instructions to incrementally update or completely rebuild a MARS system to version 4 software.

Each field engineer should keep a complete rebuild kit and take it to each MARS site they are updating. Leave the customer kit at the customer site.

An extra CD was included in the Customer Update Kit. Ask the customer to store the extra copy of the MARS CD-ROM in a safe place for future system support.

If upgrading any other hardware, install those upgrades after installing the new version of software.

Carefully follow all the steps in these instructions! Skipping steps may result in incorrect software operation.

Version 2.x or higher software allows for realtime acquisition from more beds than version 1.

If upgrading to version 2.x or higher software, conduct a new site survey to assess the network load affects of any changes.

Before adding any device to a site's enterprise network, discuss network loading and compatibility issues with the site system administrator. See "MARS Pre-Quote and Pre-Installation Guide" (PN 408287-058).

Identify the Workstation Product Code

The CD-ROM rebuild kits are platform specific.

Before you start, identify the product code of the workstation and make sure you are using the correct CD-ROM rebuild kit. See table below.

The product code can be identified from the workstation serial number See, Chapter 3 "Serial Number".

Table 1-2. CD-ROM Rebuild System Requirements

Product Series	Product Code	MARS unity workstation	SUN Platform	Solaris OS	MARS Software	CD-ROM Rebuild Kit
R	RU	MARS 8000	Ultra 60 Creator 3D	Ver. GE_2.6	4.1 4.1a 4.1b	900740-411
	RT	MARS 5000	Ultra 10 Minitower			
	RS	MARS 3000	Ultra 5 Desktop			
H	HK	MARS 8000	Ultra 1 Creator	Ver 2.5	Ver. 4.0a	900740-401
	HG	MARS 8000	SPARCstation 20			
	HT	MARS 5000	SPARCstation 5			

Where required to identify product specific procedures, product codes are identified in parenthesis. For example, "MARS 8000 (RU)" refers to MARS 8000 unity workstation product code RU.

Determine Upgrade Path

There are three paths available depending on the extent of the update or rebuild needed and platform you are running on.

- **Incremental update**

  This installs the MARS software only. It does not include installation of the Solaris operating system. Use this path if you are running MARS version 3.1 or higher and need to upgrade or re-install your MARS software.

MARS version 4.1a software processes faster than MARS version 4.1, therefore always use version 4.1a.

- **CD-ROM rebuild (“H” Series platforms)**

  A full system rebuild. This process installs the SUN Solaris 2.5 operating system and MARS Software Version 4.0a. Use this path if you are running on MARS unity workstation "H" series platforms and you require a complete system rebuild.

  Workstations running MARS software Version 3.0 or lower must use this path.

- **CD-ROM rebuild (“R” Series platforms)**

  A full system rebuild. This process installs the SUN Solaris GE_2.6 operating system and MARS Software Version 4.1b. Use this path if you are running on MARS unity workstation “R” series platforms and you require a complete system rebuild.

Follow the flowchart in "Choosing the Correct Update Procedure"at the end of this chapter.

MARS unity workstation Software Installation Kit

Before you begin, make sure the correct items are included in the MARS unity workstation software installation kit that you received. If not, contact the MARS unity workstation technical support line at:

- 1-800-558-7044 (for calls from within the United States) or
- 1-561-575-5000 ext. 4243 (for international calls).

MARS workstations (“R” Series) Product Codes RU, RT, RS 900740-411

The version 4 CD-ROM rebuild kit for “R” series platforms requires Solaris ver. GE_2.6 and MARS ver. 4.1b and includes the following items:

Description	Part Number	QTY
Boot diskette, Rev A	415718-411	1
Solaris GE_2.6 CD-ROM, Rev. A - English	422502-411	1
MARS Software CD-ROM , Rev. B Version 4.1b	415913-411	1
SEER Software Installation card (1.0g) (included in the Customer Kit as needed)	419919-002	1
Software Activator sheet	N/A	1
System Setup Backup diskette	418422-001	1
Installation instructions	408287-060	1

MARS workstations (“H” Series) Product Codes HK, HG, HT 900740-401

The version 4 CD-ROM rebuild kit for “H” series platforms requires Solaris ver. 2.5 and MARS ver. 4.0a and includes the following items:

Description	Part Number	QTY
Boot diskette	415718-402*	1
Solaris “2.5 CD-ROM - English	415715-251	1
MARS Software CD-ROM Version 4.0a Version 4.0a = 415913-401	415913-401	1
SEER Software Installation card (1.0g) (included in the Customer Kit as needed)	419919-002	1
Software Activator sheet	N/A	1
System Setup Backup diskette	418422-001	1
Installation instructions	408287-060	1

* This boot diskette replaces PN 415718-401 and can be used on all “H” series workstations. The original boot diskette (PN 415708-401) can not be used on systems containing a 4 Gb hard drive(s) or larger.

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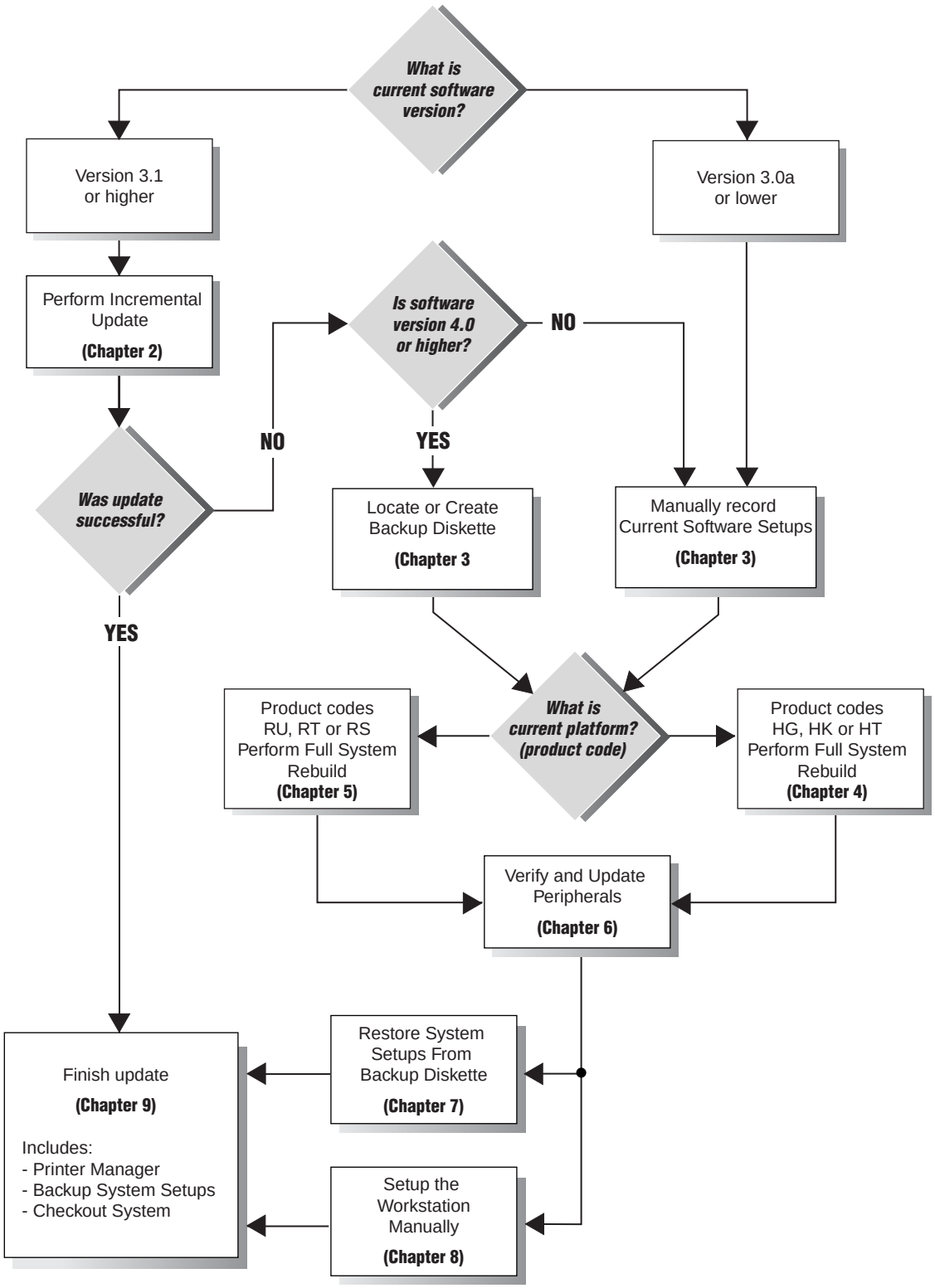
Choosing the Correct Update Procedure

Follow the flowchart to determine the correct procedure to follow to complete the installation of this software version on a workstation.



2 Incremental Update Procedures

Introduction

This chapter provides instructions for performing an incremental update of the MARS software to version 4.

Your workstation must be at software version 3.1 or higher to perform an incremental update.

If your current software version is 3.0a (or lower), go to chapter 3, “Backup or Record System Setups” to manually record or print your system setups before rebuilding software to version 4.

The incremental update will take about two hours.

To verify the current software version:

1. Click *Help* on the menu bar.
2. Click *About*. The version appears on the screen.

IMPORTANT NOTE

LOSS OF DATA (SLOT FILES) MAY OCCUR!

As with any software update, a loss of data is possible. Please refer to the installation notes following.

Before performing this update it is extremely important that all data be edited, printed, stored and/or deleted.

Among the circumstances that can result in the loss of data (slot files):

- updating a system already at version 4.0 or 4.0a.
- unexpected update failures requiring a full disk rebuild or drive replacement.

See “Checking the Slot Set-up” near the end of this chapter to check and verify your slot configuration after the update.

If you have any problems during the update, contact MARS unity workstation technical support at:

- 1-800-558-7044 (for calls from within the United States)

or

- 1-561-575-5000 ext. 4243 (for international calls)

NOTE

CRS (monitoring) acquisition will stop during the software update. It will resume after the update is successfully completed.

Before You Begin

Locate or Create a Backup of the Setups

If the update fails and a full system rebuild becomes necessary, set-up values will be lost and must be reset. For this reason GE Medical Systems *Information Technologies* recommends that a current copy of the system setups be available during the update. If a current copy is not available, create one, following the backup procedure described below.

The MARS backup utility saves the current MARS configuration settings for system, users, menus or applications to a floppy diskette. The restore utility can then be used to restore these settings. Typically, a restore is only needed after a drive rebuild or exchange.

> The backup procedure does not record the setup information for Slots. The Slot setups must be manually recorded.

The admin user should perform a backup of the setups periodically (or whenever any user or setup changes are made) to ensure a current copy of the setups are available if needed.

Backup Procedure

Follow these steps to back up the MARS workstation setups:

1. Log in as admin user.
2. Click *System* on the workstation menu bar. The *System* pulldown menu appears.
3. Click *System Setup*. The *System Setup* pulldown menu appears.
4. Click *Backup and Restore*. The *System Setup Backup/Restore Tool window* appears.
5. Select *Backup System Setups*.
6. Click the *Apply* button. A confirmation window appears.
7. Insert the System Setup Backup diskette.

   > The backup procedure reformats the floppy diskette. This erases ALL the information on the diskette.
   >
   > A separate backup diskette is required for each workstation, and included in each customer update kit.

8. Click *Continue*.

9. A second confirmation window appears. Select *Continue*.
10. When the backup is complete, the message *The backup was successful* appears. Click *OK*.

Power Off the Workstation

Follow these steps to properly power off your workstation:

1. Click *System* on the workstation menu bar. The *System* pulldown menu appears.
2. Click *System Shutdown* on the pulldown menu. The *Confirmation* window appears.
3. Click *System Shutdown* on the pulldown menu. The *Shutdown MARS System? This will take about 20 seconds* window appears.
4. Click *Yes*. After about 20 seconds, the *ok* prompt appear.
5. Once the *ok* prompt appears, turn off the monitor.
6. Turn off any peripheral SCSI device power switches, including:
   - SEER acquisition unit
   - tape acquisition unit
   - DAT drive
7. Turn off the printer.
8. Turn off the workstation. Press the Power switch on the back of the workstation. On the MARS 8000 (RU) workstation the power switch is located on the front of the workstation.

Power On the Workstation

Follow these steps to properly power on your workstation:

1. Turn on the UPS power switch.
2. Turn on any peripheral SCSI device power switches, including:
   - SEER acquisition unit
   - tape acquisition unit
   - DAT drive
3. Turn on the workstation. Press the Power switch on the back of the workstation. On the MARS 8000 (RU) workstation the power switch is located on the front of the workstation.
4. Turn on the monitor power switch.
5. Several screens appear momentarily.
6. Turn on the printer.
7. When the workstation completes the start-up, the *login* window appears.
8. In the *Please enter your user name* text entry box, type **admin** and click the *OK* button. The *Password* window appears.
9. In the *Please enter your password* text entry box, type **admin** and click the *OK* button.
10. Several screens appear momentarily. The *cmdtool* icon appears momentarily in the lower left corner of the monitor. The application software starts and the system screen appears.

Record Current Slot Setup

1. Click *System* on the menu bar.
2. Click *System Setup*.
3. Click *Slots*.
   The *System: Slot Creation Setup* window appears.
4. Record the values of the current slot setups in the following table.

> Loss of data (slot files) may occur during this update. Before continuing with this update make sure that all data has been edited, printed, stored and/or deleted.

Table 2-1. Current slot setup values

		Total Channels	Total Hours	Monitored Channels
	Admitted Beds [1] Monitoring Beds [2]			
	Discharged Beds [1] Acquired beds [2]			
	Analyzed Beds [1]	[1]	[1]	
	24 Hour tapes			
	48 Hour tapes			
	SEER/SEER XT			
	SEER MC 8 Meg			
	SEER MC 20 Meg			
	SEER MC 40 Meg [1]			

Note:
[1] MARS version 4.1, 4.1a, and 4.1b
[2] MARS version 4.0 and below

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Update the Software

Determine MARS Software Compatibility

The CD-ROM containing the MARS sofware is platform specific. Before you start, identify the product code of the workstation and make sure you are using the correct MARS CD-ROM . See Table below.

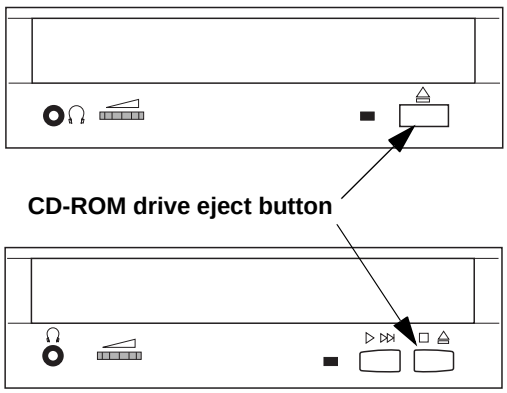
The product code can be identified from the workstation serial number See, Chapter 3 “Serial Number”.

Table 2-2. MARS Software Compatibility

Product Series	Product Code	MARS unity workstation	SUN Platform	MARS Software
R	RU	MARS 8000	Ultra 60 Creator 3D	Ver. 4.1/ 4.1a/4.1b
	RT	MARS 5000	Ultra 10 Minitower	
	RS	MARS 3000	Ultra 5 Desktop	
H	HK	MARS 8000	Ultra 1 Creator	Ver. 4.0a
	HG	MARS 8000	SPARCstation 20	
	HT	MARS 5000	SPARCstation 5	

Insert the MARS Software CD-ROM

1. Check the MARS software version printed on the MARS CD-ROM and make sure it is compatible with the workstation platform it is being installed. See Table above.
2. Press the eject button on the CD-ROM drive, as shown below. The CD-ROM drive is located either on the front or right side of the system box. The CD ROM drive will open. If there is a CD-ROM in the drive, remove it



3. Remove the MARS version 4 software CD-ROM from its case and place it in the CD-ROM drive.
4. Close the CD-ROM drive.

If the workstation…	Then…
has a SEER Acquistion unit with product code **HS**.	go to “Start the Software Update” on page 11.
has a SEER Acquistion unit with product code **B3**. NOTE: Units must have **B3** product code to work with SEER Light.	go to “System Shutdown” on page 9

System Shutdown

Follow these steps to properly power off your workstation:

1. Click *System* on the workstation menu bar. The *System* pulldown menu appears.
2. Click *System Shutdown* on the pulldown menu. The *Confirmation* window appears.
3. Click *System Shutdown* on the pulldown menu. The *Shutdown MARS System? This will take about 20 seconds* window appears.
4. Click *Yes*. After about 20 seconds, the *ok* prompt appear.
5. Once the *ok* prompt appears, turn off the monitor.
6. Turn off any peripheral SCSI device power switches, including:
   - SEER acquisition unit
   - tape acquisition unit
   - DAT drive
7. Turn off the printer.
8. Turn off the workstation. Press the Power switch on the back of the workstation. On the MARS 8000 (RU) workstation the power switch is located on the front of the workstation.
9. Disconnect all SCSI peripheral devices.

Power On the Workstation

Follow these steps to properly power on your workstation:

1. Turn on the UPS power switch.
2. Turn on the workstation. Press the Power switch on the back of the workstation. On the MARS 8000 (RU) workstation the power switch is located on the front of the workstation.
3. Turn on the monitor power switch.
4. Several screens appear momentarily.
5. When the workstation completes the start-up, the *login* window appears.
6. In the *Please enter your user name* text entry box, type **admin** and click the *OK* button. The *Password* window appears.

7. In the *Please enter your password* text entry box, type **admin** and click the *OK* button.
8. Several screens appear momentarily. The *cmdtool* icon appears momentarily in the lower left corner of the monitor. The application software starts and the system screen appears.
9. Go to “Start the Software Update” on page 11

Start the Software Update

1. Click *System* on the menu bar.
2. Click *Software Updates* on the *System* pulldown menu.
3. The Software Update Tool window and the following confirmation window appears:

   About to upgrade to version 4.x
   All applications and data acquisition will stop.
   This will take about 1-2 hours.
   Do you wish to continue?

   > If you wish to cancel updating the software, click *Exit Update*.

4. Click *Continue Update*. The following confirmation window appears:

   Please confirm that you wish to continue with the update.
   If you choose to exit, no change will be made to your system.

   > If you wish to cancel updating the software, click *Exit Update*. No changes will be made to your workstation.

5. Click *Continue Update*. The update begins.
   - If a SEER acquisition unit that requires updating is connected, the user will see the following prompt within 1 minute:

     Please insert the 1.0G Seer Acquisition Card into the Seer Acquisition Unit and then click OK.

     > If no SEER acquisition unit is connected, or if the unit is already at the current version, no prompt will appear.
     >
     > The Seer 1.0G acquisition update card is included in the customer kit depending on which CD-ROM rebuild you are performing

     When the Seer update is complete, the MARS software update program continues.

- The update program will take approximately 5 minutes to verify the current workstation configuration.
- The *Software Update Tool* window opens.
- You can follow the progress of the update by watching the three progress bars and their associated status messages.

> The update program has four phases:
> - Preliminary Phase
> - Remove Phase
> - Install Phase
> - Cleanup Phase

6. After about 1 1/2 hours, the following message appears.

   Successfully completed upgrading to version 4.x
   The workstation needs to be rebooted.
   Click OK to reboot. After the workstation restarts, eject the CD.

If the above message…	Then…
appears	1. Click *OK* to reboot the workstation. 2. Go to the next decision box.
does not appear	the software update failed. Contact MARS unity workstation technical support at: ■ 1-800-558-7044 (for calls from within the United States) or ■ 1-561-575-5000 ext. 4243 (for international calls).

If the workstation…	Then…
has a SEER Acquistion unit with product code **HS** and has a DAT drive.	go to “Update the DAT Drive Software” on page 14
has a SEER Acquistion unit with product code **HS** but does not have a DAT drive.	go to“Set the Maximum Realtime Bed Limit (CRS and Combo)” on page 18
has a SEER Acquistion unit with product code **B3**. NOTE: Units must have **B3** product code to work with SEER Light.	go to “System Shutdown and Reboot” on page 13

System Shutdown and Reboot

Follow these steps to properly power off your workstation:

1. Click *System* on the workstation menu bar. The *System* pulldown menu appears.
2. Click *System Shutdown* on the pulldown menu. The *Confirmation* window appears.
3. Click *System Shutdown* on the pulldown menu. The *Shutdown MARS System? This will take about 20 seconds* window appears.
4. Click *Yes*. After about 20 seconds, the *ok* prompt appears.
5. Connect all SCSI peripheral devices.
6. At the *ok* prompt type **boot**<space>**-r**.
7. Allow the reboot to complete.

If the workstation…	Then…
has a DAT drive.	go to “Update the DAT Drive Software” on page 14
does NOT have a DAT drive..	go to “Set the Maximum Realtime Bed Limit (CRS and Combo)” on page 18

Update the DAT Drive Software

When the workstation reboot is complete, proceed as follows:

Login as admin user

1. In the *Please enter your user name* text entry box, type **admin** and click the *OK* button. The *Password* window appears.
2. In the *Please enter your password* text entry box, type **admin** and click the *OK* button.
3. Several screens appear momentarily. The *cmdtool* icon appears momentarily in the lower left corner of the monitor. The application software starts and the system screen appears.

Open a Command Tool window

4. Using the middle mouse button, click and drag any workstation system icon onto the *System* menu header located in the upper, left-hand corner of the screen.
5. A command tool window opens and the *MARSxx-yyyy#* command prompt appears.
6. Click in the command tool. The cursor moves to the command tool window.

Check the DAT Drive Hardware Version

1. Verify the DAT drive hardware version:

   Type: **inquiry** and press **Enter**.
2. The list of *AVAILABLE DISKS/CDROMS/TAPES* similar to the following appears.

```
                Vendor      Product            Rev     Serial Number

0: c0t0d0      SEAGATE    ST32171W SUN2.1G     7462    97128647
1: c0t1d0      SEAGATE    ST32550W SUN2.16     0488    02183136
2: cot6d0      TOSHIBA    XM5701TASUN12XCD     0997    04/09/97
3: rmt/0cn     ARCHIVE     Python 02635-XXX    5.A0
```

Look for this type of information

3. Locate the DAT drive by looking at SCSI device *rmt/0cn* for one of the following vendor and product:
   - *ARCHIVE Python 02635-XXX*
   - *ARCHIVE Python 03812-XXX*

If the following vendor and product appears…	Then go to…
ARCHIVE Python 02635-XXX	"Check the Current DAT Drive Software Version" on page 15
ARCHIVE Python 03812-XXX	"Remove the MARS Software CD-ROM" on page 17
HPC1537A	"Remove the MARS Software CD-ROM" on page 17

> Do NOT attempt to update the DAT drive software for DAT drives with the following product number:
> - *Python 03812-XXX*

Check the Current DAT Drive Software Version

1. If using product *Python 02635-XXX*, verify that the latest firmware revision *5.A0* appears listed under *Rev*.

> Ensure that *5.A0* appears under the *Rev* column of the above message

If *Rev 5.A0*…	Then go to…
does NOT appear	"Load the New DAT Drive Software" on page 15
DOES appear	"Remove the MARS Software CD-ROM" on page 17

Load the New DAT Drive Software

> Do NOT attempt to update the DAT drive software for DAT drives with the following product number: *Python 03812-XXX or HPC1537A (DDS-3).*

> This procedure will not change or harm the data on the DAT cartridge used.

1. Insert a non-write protected DAT cartridge into the DAT drive.
2. Type **cd<space>/opt/MarsXM/bin** and press **Enter**.

3. Type the following:

> In the following command:
> - the first character of **0cn** is the number zero, not the letter “o”
> - the fourth character of **V5AO** is the capital letter “o”, not the number zero.

./td_load<space>/dev/rmt/0cn<space>V5AO-24.BIN

4. Press **Enter**.
5. A downloading message appears and the DAT cartridge will spin for a few minutes.

> Disregard any SCSI error messages that may appear.

6. When the DAT drive update has completed, the DAT cartridge will automatically eject from the DAT drive and the DAT drive Activity and Warning LEDs will flash repeatedly before going out.

Check the Installation

1. Type **inquiry** and press **Enter**.
2. The following message appears:

   rmt/0cn ARCHIVE Python 02635-XXX 5.A0

If the above message…	Then…
does NOT appear	the software update failed. Contact the MARS unity workstation technical support line at: • 1-800-558-7044 (for calls from within the United States) or • 1-561-575-5000 ext. 4243 (for international calls).
DOES appear	go to “Remove the MARS Software CD-ROM” on page 17

Remove the MARS Software CD-ROM

1. Press the eject button on the CD-ROM drive. The system ejects the MARS software CD-ROM.
2. Remove the MARS software CD-ROM from the CD-ROM drive and place it in its case.
3. Close the CD-ROM drive.
4. Type **exit** and press **Enter**. The command tool window closes.

> Each field engineer should keep a complete rebuild kit and take it to each MARS site they are updating. Leave the customer kit at the customer site.
>
> An extra CD was included in the Customer Update Kit. Ask the customer to store the extra copy of the MARS CD-ROM in a safe place for future system support.

5. Go to “Set the Maximum Realtime Bed Limits.”

Set the Maximum Realtime Bed Limit (CRS and Combo)

Perform an assessment of the load affects that the MARS has on the realtime network (a.k.a. Monitoring, unity network) when:

- installing the system on a new or existing realtime network
- performing a MARS software update to version 2.x or higher
- adding any device to the realtime network
- changing the realtime network layout

Base network assessments on product specification.

The Maximum Realtime Bed Limit is the maximum number of beds the software can acquire from simultaneously without compromising system performance.

The table following contains information about MARS systems and the maximum number of beds that can be acquired in each system.

Review this table to determine if you need to change the bed limit.

Go to "Verify the Maximum Realtime Bed Limit" to check the current *MAXBED* limit

Maximum Realtime Bed Limits

The table below lists current MARS platforms and the maximum realtime bed limit supported for the given RAM and hard disk capacities shown. Grayed areas are options and combinations not supported.

Table 2-3.

MARS model (product code)	SUN Platform	RAM memory[1] Hard disk capacity[2] (minimums)	CRS Only	CRS & Holter (Combo)	Maximum XLT Licenses	Maximum Realtime Bed limit
8000 (RU)	**Ultra 60**	RAM = 512Mb Disk = 9, 18 or 36 Gb	✔	✔	**two**	64
5000 (RT)	**Ultra 10**	RAM =256 Mb Disk = 9 or 20 Gb	✔			48
3000 (RS)	**Ultra 5**	RAM = 128 Mb Disk = 4, 8.4, or 20 Gb				
		RAM =256 Mb Disk = 8.4 or 20 Gb	✔[3]			32
8000 (HK)	**Ultra 1**	RAM =128 Mb Disk - dual 2 GB	✔	✔		64
		RAM = 192 Mb Disk = Dual 2 Gb	✔	✔	**one**	64
		RAM = 64 Mb Disk = Single or Dual 2 Gb	✔	✔		35
8000 (HG)	**SPARC 20**	RAM = 128 Mb Disk = 2 Gb + 1Gb	✔			64
		RAM = 64 Mb Disk = 2 Gb + 1Gb	✔			24
5000 (HT)	**SPARC 5**	RAM = 128 Mb Disk = 2 Gb	✔			48
		RAM = 64 Mb Disk = 2 Gb	✔			35
		RAM = 32 Mb Disk = 2Gb	✔			8

1. To check RAM installed: Click *Help* on menu bar. Click *About*. Click *Hardware 1*. Check *Total Memory.* 65536 KBytes = 64 MB; 131072 KBytes = 128 MB; 262144 Kbytes = 256 MB; 393216 KBytes = 384 MB.
2. To check hard disk capacity: In a command tool window, type **df<space>-ak**. Press **Enter**. Check the following:
   - Ultra 5: if */dev/dsk/c0t0d0s4* = *2236824 xxxxx xxxxx xx% /slots;* hard drive = 4GB
   - Ultra 1: has a */slot2* partition hard drive = dual 2GB
   - SPARC20: if */dev/dsk/c0t3d0s4* ≥ *861214 xxxxx xxxxx xx% /slots*; hard drive = 2GB + 1GB
   - SPARC5: if */dev/dsk/c0t3d0s7* ≥ *192807 xxxxx xxxxx xx% /reports;* hard drive = 2GB
3. Contact GE Medical Systems *Information Technologies* Sales Department for availability.

Verify the Maximum Realtime Bed Limit

To check the realtime bed limit:

1. Log in as admin.
2. Use the middle mouse button to click and drag any system icon onto the *System* menu header located in the upper left corner of the screen.
3. A command tool window opens and the *MARSxx-yyy#* command prompt appears.
4. Type the following command:

   cat<space>/var/MarsXM/system/channels.ini

   Press **Enter**.
5. Check the value for *MAXBEDS:*

If the value for MAXBEDS…	Then…
does not match the value listed in the Maximum Realtime Bed Limit Table	go to “Change the Maximum Realtime Bed Limit” on page 20
matches the value listed in the Maximum Realtime Bed Limit Table	type **exit** to close the command tool window. Go to “Check the Slot Setups” on page 22

Change the Maximum Realtime Bed Limit

If you have trouble with the edit commands, follow the steps in "Restart Editing" to start the process again.

1. Type the following command:

   vi<space>/var/MarsXM/system/channels.ini

   Press **Enter**.
2. Check the value for *MAXBEDS:*

   Use the down arrow key to place the cursor at the beginning of the following line:

   MAXBEDS=24
3. Use the right arrow key to place the cursor on top of the 2 in the line shown above.
4. Press the **X** key two times to erase the number.
5. Type the letter **a** to access the append mode of the editor program.
6. Enter the value from the previous table.

Do not press **Enter**.

7. Press the **Esc** key.
8. Type a colon (**:**).
9. Type **wq**, then press **Enter** to save the changes and exit the editor program.
10. Type:

syncpath<space>simple<space>/var/MarsXM/system/channels.ini

11. Press **Enter**
12. Type **exit** to close the command tool.
13. When complete, go to "Check the Slot Setups"

Restart Editing

> If you have trouble with the edit commands during the proceeding procedure, follow these steps to start the process again

1. Press the **Esc** key to return to the command mode of the editor program.
2. Type a colon (**:**).
3. Type **q!**, then press **Enter** to cancel the changes and exit the editor program.
4. Go to the preceding section, “Change the Maximum Realtime Bed Limit”, and repeat the process.

Slot Setup

Check the Slot Setups

Check the slot setup values as described below to determine whether you need to run slot creation. If the maximum realtime bed limit was changed in the previous section, slot creation must be performed.

1. Log in as admin.
2. Click *System* on the workstation menu bar. The *System* pulldown menu appears.
3. Click *System Setup* on the pulldown menu. The *System Setup* pulldown menu appears.
4. Click *Slots*.
   The *Slot Creation Setup* window appears.
5. Compare the values in the *Slot Creation Setup* window with those recorded earlier.

If you…	Then…
find no discrepancies in the slot setup and will not be changing settings and did not change the maximum bed limit	**No data has been lost and slot creation is not required.** Click *Close*. The *Slot Creation Setup* window closes. Go to chapter 9 “Finishing the Update”.
find discrepancies in the slot setup values and will use the same values recorded earlier	go to “Set Up the Slots (Holter, CRS and Combo)” on page 24 and enter the original settings.
will use different slot settings than those recorded earlier or changed the maximum bed limit	go to “Stop CRS Bed Acquisition” on page 23.

Stop CRS Bed Acquisition

If not using CRS acquisition, go to “Set Up the Slots (Holter, CRS and Combo)”.

The workstation has a limited total amount of disk space. By selecting various combinations of quantities and types of slots, you may use up to the maximum available disk space.

Stop CRS acquisition at the MARS as follows:

Create a Backup Copy of the *Tracked* File

1. Log in as the admin user.
2. Open a command tool window.

   Click the command tool and type:

   cd<space>/var/MarsXM/system and press **Enter**
3. Type the following:

   cp<space>-p<space>tracked<space>tracked.org
4. Press **Enter**
5. Type **exit.**
6. Press **Enter**.
   The command tool closes.

Move All Beds to *Don’t Monitor*

1. Click *System* on the workstation menu bar.
   The *System* pulldown menu appears.
2. Click *System Setup*.
   The *System Setup* pulldown menu appears.
3. Click *Select Bed*.
   The *System*: *Select Beds Setup* window appears listing all care units on the network.
4. Click the name of a care unit.
   The beds of that unit appear in the *Monitor* or *Don’t Monitor* list boxes.
5. Click the bed name in the *Monitor* list.
6. Click the right arrow to move the bed to the *Don’t Monitor* list box.
7. Repeat steps 4 through 6 until all the beds in all the units have been moved to the *Don’t Monitor* list box.
8. When you are finished moving all beds to the *Don’t Monitor* list, click *Ok*.
9. Go to “Set Up the Slots (Holter, CRS and Combo)”.

Set Up the Slots (Holter, CRS and Combo)

When using MARS to MARS communication, the local workstation must be re-configured with the same number of channels and total hours as the target workstation. These settings must match for all data types, such as holter, monitoring and acquired beds.

Determine the Slot Parameters

Before setting up slots, determine what you need for each of the following parameters and record that information in the spaces provided in the following table.

If you are not changing slot settings, use the settings recorded earlier.

		Total Channels	Total Hours	Monitored Channels
	Admitted Beds [1] Monitoring Beds [2]			
	Discharged Beds [1] Acquired beds [2]			
	Analyzed Beds [1]	[1]	[1]	
	24 Hour tapes			
	48 Hour tapes			
	SEER/SEER XT			
	SEER MC 8 Meg			
	SEER MC 20 Meg			
	SEER MC 40 Meg [1]			

Note:
[1] MARS version 4.1, 4.1a, and 4.1b
[2] MARS version 4.0 and below

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Open the *Slot Creation Setup*

1. Log in as the admin user.
2. Click *System* on the menu bar.
3. Click *System Setup*.
4. Click *Slots*. The *System: Slot Creation Setup* window appears.

Set Up the Monitoring/Admitted Bed Slots

1. Click the arrows to set the number of desired slots.
2. Click the arrows to set the number of Total Channels to be monitored.
3. Click the arrow by the *Total Hours* list box to set the number of total hours monitored.

> When entering the number of beds, the software automatically creates at least four slots and reserves them as buffers for discharged patient data for *Monitoring Beds*. In version 4.1/4.1a/4.1b the number of *Discharged Beds* can be adjusted. To see the total number of slots being used, use the *mondman* utility.

4. Select the desired *Monitored Channels* parameters.
   - Click the left or right arrow to add or remove the parameter from the desired list box.

> Based on the number of *Total Channels* selected for *Monitoring Beds*, if a lead fails for more than 10 seconds, the next available parameter in the *Monitored Channels* is displayed.

5. Set the priority of the selected monitored parameters.
   - Click the desired parameter. Click *Up* or *Down* to move the parameter up or down in priority.

Set Up the Acquired/Analyzed Beds

1. Click the arrows to set the number of desired slots.
2. The Monitoring Beds Total Channels and Total Hours values appear for Acquired/Analyzed Beds.

Set Up the Tape, SEER, SEER Light, SEER MC Slots

1. Select the quantities and types of slots desired. For each type of slot, click the arrows to set the number of desired slots.

> If using SEER Light select the SEER MC 40 MB slot.

2. For 24-hour tapes and 48-hour tapes slots, click the *Total Channels* arrow to set the total number of channels acquired.

Create the Slots

1. Click *Apply*.
   The following message appears:
   About to REPLACE the current patient slot files. WARNING! - ALL current patient data will be REMOVED, Continue?
2. Click *Continue*.
   The following message appears:
   Are you SURE you want to REPLACE the current patient slot files. WARNING! - ALL current patient data will be REMOVED, Continue?
3. Click *Continue*.
   The percentage of progress appears in the *Slot Creation Progress* indicator.
4. When the *Slot Creation Progress* indicator reaches 100%, the following message appears:
   Slot creation and channel selection completed successfully. Rebooting the workstation.
5. Click *OK*.
   The workstation will reboot.

If you…	Then…
did not stop CRS acquisition	go to Chapter 9 “Finishing the Update”.
stopped CRS acquisition	go to “Restart CRS Bed Acquisition” on page 26.

Restart CRS Bed Acquisition

If you are using CRS acquisition, the original *Tracked* file must be restored, and CRS bed acquisition must be restarted.

Restore the *Tracked* File from the Backup Copy

1. After the workstation has rebooted, login as the admin user.
2. Open a command tool window.
3. Type the following:

   cd<space>/var/MarsXM/system
4. Press **Enter**
5. Type the following:

   cp<space>-p<space>tracked.org<space>tracked
6. Press **Enter**
7. Type **exit**.
8. Press **Enter**.

Verify that Bed Acquisition has Started

1. Click *System* on the workstation menu bar.
   The *System* pulldown menu appears.
2. Click *System Setup*.
   The *System Setup* pulldown menu appears.
3. Click *Select Bed*.
   The *System: Select Beds Setup* window appears.
4. Click the name of a care unit.
   The beds of that unit should appear in the *Monitor* list box.
5. Repeat step 4 until all the care units have been checked. When you are finished, click *Ok*.

Go to chapter 9, "Finishing the Update".

3 Backup or Record System Setups

Before Beginning

Record Workstation and MARS Setup Information

Before performing a **full rebuild** of the system software, your must

- Record workstation information
- Record or perform a back-up of your system setups

Information on your workstation is available under the *About* window in MARS software or by calculating values from the workstation serial number. You will be asked for this information during the installation of the Solaris operating system software.

Depending on your current software version, you will create a backup diskette of current setups, or manually record them.

- MARS Version 4 (or higher)

  A backup diskette of the current system setups can be created. You will then restore these setups from the diskette after re-installing the system."

  > A version 4 backup diskette may already exist. Check with the site system administrator.

- MARS Version 3.1 (or earlier)

  You must manually record the current system setups before performing a full rebuild of the system software. You will then manually re-configure these settings after re-installing the system software.

Record Workstation Information

Workstation Information Required

The installation process requires information about your workstation.

- Record the following workstation information:
  - Serial number
  - Host name
  - IP address

Follow the procedures listed on the next pages and record your workstation information in the table provided below.

Table 3-1. Workstation Information	
Your Serial Number	__ __ __ __ __ __ __ __ __ __ __
Your Hostname:	MARS___ ___-___ ___ ___ ___
Your IP address	134.236. _____ . _____

Serial Number

The serial number is located on the product label found on the back of the system box.

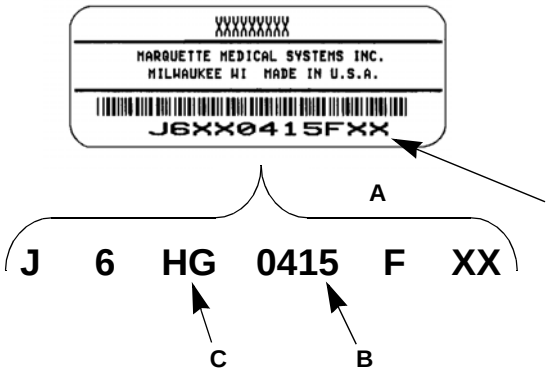


Table 3-2. Equipment Description		
Item	**Name**	**Description**
A	serial number	Contain at least nine characters, including the product serial code and the product code. The last two spaces are optional and may not appear in your serial number.
B	product serial number	Manufacturing number.
C	product code	Two-character product descriptor: R Series • RU = MARS 8000 unity workstation (Ultra 60) • RT = MARS 5000 unity workstation (Ultra 10) • RS = MARS 3000 unity workstation (Ultra 5) H Series • HK = MARS 8000 unity workstation (Ultra 1) • HG = MARS 8000 unity workstation (SPARC 20) • HT = MARS 5000 unity workstation (SPARC 5) • HU = MARS 1000 unity workstation (SPARC 4)

Record your workstation serial number in Table 3-1., "Workstation Information".

If MARS software is…	Then go to …
running	“Workstation Information Using the About Window”
not running	“Workstation Information Using the Serial Number”

Workstation Information Using the *About* Window

If the MARS software is running, open the *About* window and record the workstation *Hostname* and *IP Address*.

1. Click *Help* on the top menu bar in MARS. The *Help* pulldown menu appears.
2. Click *About*. The *About MARS* window appears.
3. Click *Hardware* or *Hardware 1* button. The *Hardware* window appears.
4. Record the information for *Hostname* and *Network Interface* in Table 3-1., "Workstation Information"

   Always use the IP address starting with 134.236. This will be listed as either Network Interface le0 or hme0.

After recording your workstation information, record or back-up your System setups.

If your software version is…	Then go to …
Version 4.0 (or higher)	"Locate or Create Backup Diskette"
Version 3.1 (or earlier)	"Manually Record Current Software Setups"

Workstation Information Using the Serial Number

If the *About* window cannot be used, the hostname and IP address can be calculated using the workstation serial number.

Workstation Host Name

From the workstation serial number recorded previously, calculate your host name.

Your host name is *MARSxx-yyyy* where:

xx = the workstation's two character product code

yyyy = the workstation's 4 digit product serial number

Example of Calculating the Workstation Host Name

If your workstation serial number is D5HG0005F, your workstation host name is MARSHG-0005.

Record your workstation hostname in Table 3-1., "Workstation Information"

> The *MARSxx* portion of the host name must be all capital letters, (i.e. *MARSHT-0123*).

Workstation IP Address

From the workstation serial number recorded previously, calculate your IP address.

- The IP address contains four sets of numbers divided by periods.
- The first set of numbers in the IP address is 134.
- The second set of numbers is 236.
- The third set of numbers is determined by the unit's product code.
- The fourth set of numbers is determined by the unit's product serial number.

Use the table below to determine your workstation's IP address.

Examples of Calculating an IP Address

If using a MARS 8000 unity workstation with a product serial number of B6 HG 0256F, use 134.236.2.6 as your IP address.

If using a MARS 5000 unity workstation with a product serial number of D6 HT 0123F, use 134.236.17.123 as your IP address.

Table 3-3. Determine MARS unity workstation IP Addresses

If the product serial number is between:	The third number in the IP address is:						The fourth number in the IP address is:
	8000 (RU)	5000 (RT)	3000 (RS)	8000 (HK)	8000 (HG)	5000 (HT)	
1 - 250	6	18	34	3	1	17	The product serial number (without the leading zeros)
251 - 500	7	19	35	4	2		The product serial number (without the leading zeros) minus 250
501 - 750	8	20	36	5			The product serial number (without the leading zeros) minus 500
751 - 1000	9	21	37				The product serial number (without the leading zeros) minus 750
1001 -1250	10	22	38				The product serial number (without the leading zeros) minus 1000

Record your workstation IP address in Table 3-1., "Workstation Information".

After recording your workstation information, record or back-up your System setups.

If your software version is…	Then go to …
Version 4.0 (or higher)	"Locate or Create Backup Diskette"
Version 3.1 (or earlier)	"Manually Record Current Software Setups"

Locate or Create Backup Diskette

If your system is currently running version 4 or higher, and you are performing a full software rebuild to version 4 (or higher), a backup diskette of the current MARS software setups is needed.

- If a current System Setup Backup Diskette already exists, locate that diskette.
- If no backup diskette exists, create one now per the following procedures.

Back Up the Setups

The MARS backup utility saves the current MARS configuration settings for system, users, menus or applications to a floppy diskette. The restore utility can then be used to restore these settings. Typically, a restore is only needed after a drive rebuild or exchange.

> The backup procedure does not record the setup information for Slots. The Slot setups must be manually recorded.

The admin user should perform a backup of the setups periodically (or whenever any user or setup changes are made) to ensure a current copy of the setups are available if needed.

Backup Procedure

Follow these steps to back up the MARS workstation setups:

1. Log in as admin user.
2. Click *System* on the workstation menu bar. The *System* pulldown menu appears.
3. Click *System Setup*. The *System Setup* pulldown menu appears.
4. Click *Backup and Restore*. The *System Setup Backup/Restore Tool window* appears.
5. Select *Backup System Setups*.
6. Click the *Apply* button. A confirmation window appears.
7. Insert the System Setup Backup diskette.

> The backup procedure reformats the floppy diskette. This erases ALL the information on the diskette.
>
> A separate backup diskette is required for each workstation, and included in each customer update kit.

8. Click *Continue*.
9. A second confirmation window appears. Select *Continue*.
10. When the backup is complete, the message *The backup was successful* appears. Click *OK*.

> The admin users should perform this backup procedure whenever a user makes any setup changes. Store the backup diskette in a safe place.

Record Slot Setup

The backup procedure does not record the setup information for Slots. Manually record the Slot setups now, if you haven't already done so.

Start System Rebuild

After recording all setup information, start the system rebuild.

If you are running on MARS unity workstation…	Then go to …
product codes RU, RT or RS	**Chapter 5** "Full Software Rebuild (MARS "R" Series Platforms)"
product codes HK, HG or HT	**Chapter 4** "Full Software Rebuild (MARS "H" Series Platforms)"

Refer to Table 3-2., "Equipment Description" to determine your product code from the serial number of the workstation.

Manually Record Current Software Setups

Information To Record

If your system is currently running software version 3.1 or earlier, you must manually record the current MARS software setups before performing a full software rebuild to version 4.

Use the instructions in this section to determine and record the information you will need before installing the software.

- Login as the admin user
- Record the system and user setups applicable to the application(s) (Holter, CRS, Combo) used on the workstation, including:
  - Event Review (Holter, CRS and Combo)
  - Trend Review (Holter and Combo)
  - Episode Review (Holter and Combo)
  - Report Review (Holter, CRS and Combo)
  - Menus (Holter, CRS and Combo)
  - Printer Manager (Holter, CRS and Combo)
  - Select Bed (CRS and Combo)
  - Users (Holter, CRS and Combo)
  - Software Activators (Holter, CRS and Combo)
  - Heart Rate (Holter and Combo)
  - Network Devices (Holter, CRS and Combo)
  - Sites (Holter, CRS and Combo)
  - Slots (Holter, CRS and Combo)
  - UPS Monitoring (Holter, CRS and Combo)

Login as the Admin User

1. In the *Please enter your user name* text entry box, type **admin** and click the *OK* button. The *Password* window appears.
2. In the *Please enter your password* text entry box, type **admin** and click the *OK* button.
3. Several screens appear momentarily. The application software starts and the system screen appears.

Use print_screen to Record System Setups

Use the *print_screen* utility to capture screen images of the system setup information.

1. Using the middle mouse button, click and drag any workstation system icon onto the *System* menu header located in the upper, left-hand corner of the screen.
2. A command tool window opens and the *MARSxx-yyyy#* command prompt appears.
3. Click in the command tool window.
4. Type **print_screen** and press **Enter**.

   There will be a 10 second delay and then three beeps indicating the screen capture is complete. After 20 -30 seconds the screen image will print.

   > To hide the command tool window during the screen capture:
   > - Immediately after pressing enter, left click in the orange tool bar at the top of the MARS window. This will hide the command tool window behind the MARS screen.
   > - After the three beeps have sounded, press *alt + F3.* The command tool window will return to the front.

5. Go to "Record Setup Information". Repeat steps 3 and 4 for each screen image being recorded.

Record Setup Information

Setup information exists for each menu item listed under the system pulldown menu. To access the system pulldown menu:

1. Click *System* on the workstation menu bar. The *System* pulldown menu appears.
2. Click *System Setup* on the pulldown menu. The *System Setup* pulldown menu appears.

3. Record the setup information in the menus items listed below.

> If setting up a Combo system, select a Holter patient.

> A dark, depressed box indicates Selected; a raised, light box indicates Not selected.

System Event Definitions (Holter and Combo)

Record Event Review Definitions

1. Click *Event Review* on the pulldown menu. The *System Event Definitions* window appears.
2. Record the event review information:

Record System Severity

1. Click the *Event Severity* button.
2. The *System Event Severity Setup* window appears.
3. Record the listed events in order.
4. Click *Close*. The *System Event Definitions* window appears.
5. Click *Close*.

System Trend Review Setups (Holter and Combo)

1. Click *Trend Review* on the system pulldown menu. The *Trend Review Setup* window appears.
2. For each of the titles listed in the *Trend Groups* list box, capture the listed trend components in the *Trends in Group* list box.
3. Click *Close*.

System Episode Review Setups (Holter and Combo)

1. Click *Episode Review* on the system pulldown menu. The *Histogram Review Setup* window appears.
2. For each of the titles listed in the *Histogram Groups* list box, record the listed trend components in the *Histograms in Group* list box.
3. Click *Close*.

System Report Review Setups (Holter, CRS and Combo)

1. Click *Report Review* on the system pulldown menu. The *Report Setup* window appears.
2. For each of the titles listed in the *Report Setups* list box, record the report components listed in the *Components in Report list*.
3. Click *Close*.

Menus (Holter, CRS and Combo)

1. Click *Menus* on the system pulldown menu. The *Menu Setup* window appears.
2. For each user listed in the *Menu Setup* list box, record the tool buttons displayed.
3. Click *Quit Menu Editor*.

Printer Manager Setup (Holter, CRS and Combo)

1. Click *Printer Manager* on the pulldown menu. The *Printer Setup* window appears.
2. Record the settings for each of the associated printers.
3. Click *Close*.

Select Beds Setups (CRS and Combo)

1. Click *Select Bed* on the pulldown menu. The *Select Bed* window appears.
2. For each unit listed in the *Units* list box, record the beds listed in the *Monitor* list box.

   An asterisk after a bed name signifies a telemetry bed.

3. Click *Cancel*.

User Information (Holter, CRS and Combo)

1. Click *Users* on the pulldown menu. The *User* window appears.

   The user's password will not be visible.

   When you re-enter the user information, set a password. Notify the user what their new password has been set to.

   The user may then change their own password.

2. Record the settings for each user.
3. When finished recording all of the user information, click *Close*.

   To advance to the next user, click *Next User*.

   To go back to the last user, click *Previous User*.

Software Activator Options (Holter, CRS and Combo)

1. Click *Software Activators* on the pulldown menu. The *Software Activators* window appears.
2. For each software option, record the information.
3. Click *Quit*.

Heart Rate Setups (Holter and Combo)

1. Click *Heart Rate* on the pulldown menu. The *System Heart Rate Setup* window appears.
2. Record the beats listed in the *Beats Included* list box.
3. Click *Close*.

Network Devices Setups (Holter, CRS and Combo)

1. Click *Network Devices* on the pulldown menu. The *Network Devices Setup* window appears.
2. Click the *Advanced Display* button.
3. Click the *All* button.
4. Record the network devices listed.
5. Click *Close*.

Site Setup (Holter, CRS and Combo)

1. Click *Site* on the pulldown menu. The *Site Setup* window appears.
2. Record the site and location information listed.
3. Click *Cancel*.

Record the Slots (Holter, CRS and Combo)

1. Click *Slots* on the pulldown menu. The *Slots Creation Tool* window appears.

> If you get an error, and cannot view the current slot settings, discuss the slot allocation with the customer.

> The size of slot files increased in version 3.1. Therefore, when setting up the system, you may see a decrease in the quantity of slots available.

2. Record the slot information.
3. Click *Cancel*.

UPS Monitoring Status (Holter, CRS and Combo)

1. Record the status of the UPS Monitoring software.
2. Click *Cancel*.

Start System Rebuild

After recording all setup information, start the system rebuild.

If you are rebuilding a MARS unity workstation…	Then go to …
Product codes RU, RT or RS	**Chapter 5** "Full Software Rebuild (MARS "R" Series Platforms)"
Product codes HK, HG or HT	**Chapter 4** "Full Software Rebuild (MARS "H" Series Platforms)"

4 Full Software Rebuild

(MARS “H” Series Platforms)

MARS Platforms Supported

This chapter provides instructions to perform a full rebuild of the MARS software on the following MARS unity workstations.

Table 4-1. MARS “H” Series

(product code)	SUN platform
MARS 8000 (HK)	Ultra 1 Creator
MARS 8000 (HG)	SPARCstation 20
MARS 5000 (HT)	SPARCstation 5

- If your MARS product is not listed in the table above go to Chapter 5 for rebuild instructions for MARS “R” series platforms.
- This rebuild includes installing the Solaris 2.5 operating system and the MARS version 4.0a software.

The full software rebuild takes about 2 hours.

Performing these procedures deletes ALL patient data. Print or save to DAT all desired patient data information before proceeding.

Installing this software version restores all existing system setups and user setups to their factory default settings.

Record this information as described in chapter 3 prior to installing this software version

Installing the Solaris Operating System

Perform a System Shutdown

1. Click *System* on the menubar. The *System* pulldown menu appears.
2. Click *System Shutdown*. The *System Shutdown* window appears.
3. Click *Yes*. After approximately 20 seconds, status messages begin to appear as the system begins to shut down. When completely shutdown, the *ok* prompt appears.

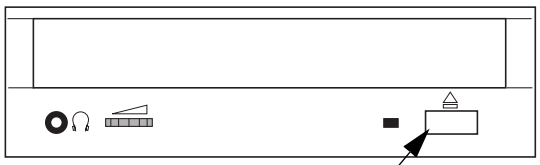
Load the Solaris CD-ROM

Turn on any peripheral SCSI device power switches, including:

- tape acquisition unit
- SEER acquisition unit
- DAT drive

Insert the Boot Floppy and Solaris CD-ROM

1. Insert the boot diskette into the floppy diskette drive.
2. Press the eject button on the CD-ROM drive (as shown below). The CD ROM drive opens. If there is a CD-ROM in the drive, remove it.



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3. Remove the Solaris CD-ROM from its case.

> Check the software version on the Solaris CD-ROM. Install only **Solaris version 2.5** on MARS “H” series workstations. See “Identify the Workstation Product Code” in chapter 1 for more information.

4. Place the Solaris CD-ROM in the CD-ROM drive. Close the CD-ROM drive.

Remove the Network Cables

Disconnect any realtime, non-realtime and enterprise network cables from the rear of the workstation.

Start the Solaris Installation Program

Before starting the Install make sure you have:

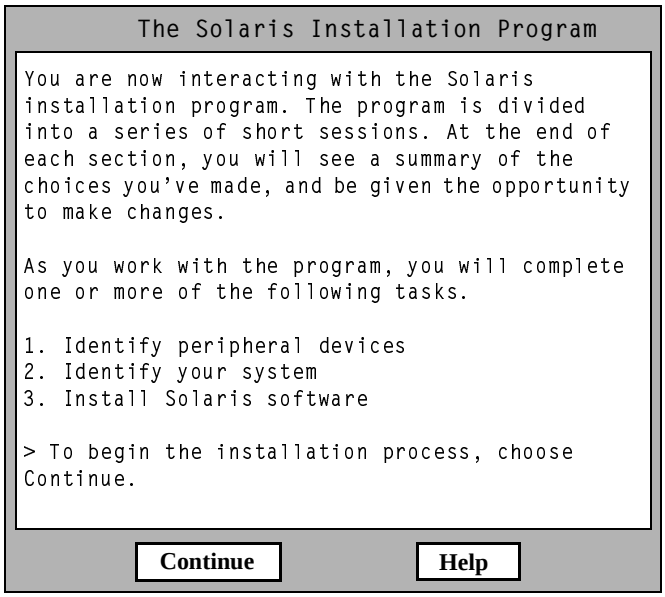
- Installed the boot floppy.
- Installed the CD-ROM.
- Disconnected the workstation from the network.

> When instructions are given for typing a precise text string with one or more spaces, the point where the spacebar must be pressed is indicated as follows:
>
> **<space>**
>
> The purpose of the **< >** brackets is to indicate you press the spacebar when required. Do not type the word space.

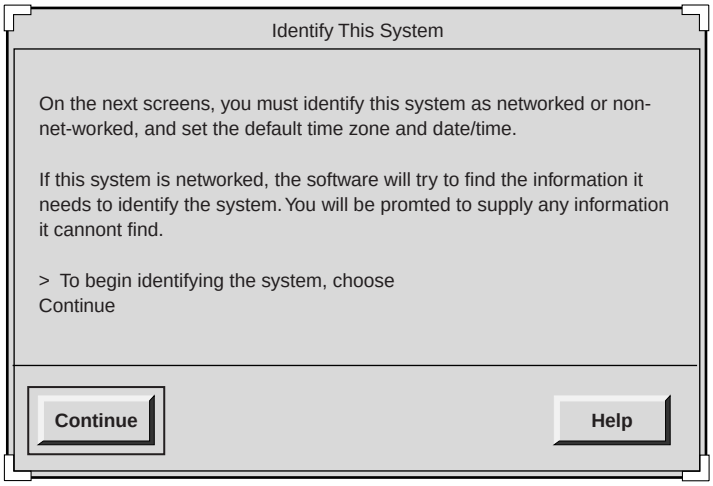
1. At the *ok* prompt, type the following:
   boot <space> cdrom <space> – <space> install

> This command contains a hyphen (–) critical to proper operation.

2. Press **Enter**.
   The screen goes blank and the workstation reboots.The system takes approximately 5 minutes to reboot.
3. After the workstation reboots, the *Solaris Installation Program* window appears.



4. Click *Continue*.
   The *Identify This System* window appears.



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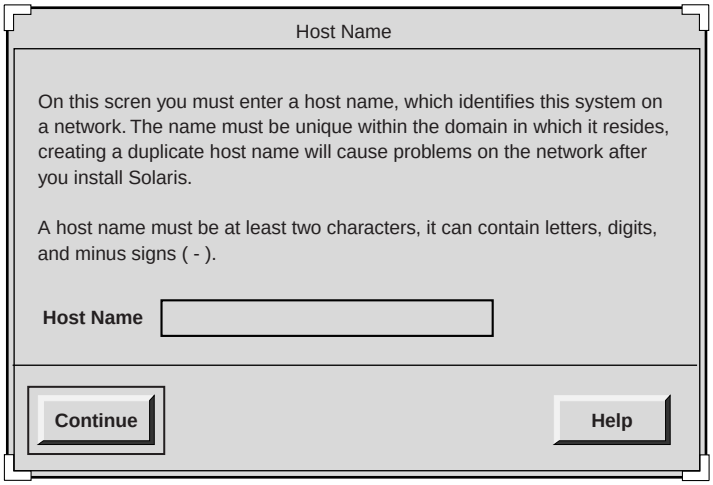
5. Click *Continue* on the *Identify This System* window.
   The *Host Name* window appears.

Set Workstation Identifiers

Set Host Name



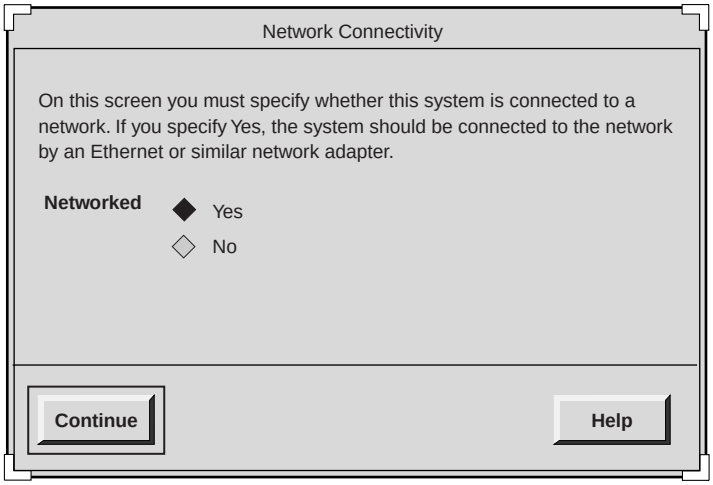
MD1144-693

- Click the *Host name* text entry box.

> The *MARSxx* portion of the host name must be all capital letters.

- Type your host name in the text entry box.
  See “Record Workstation Information” in chapter 3 for more information on finding your host name.
- Click *Continue*.
  The *Network Connectivity* window appears.

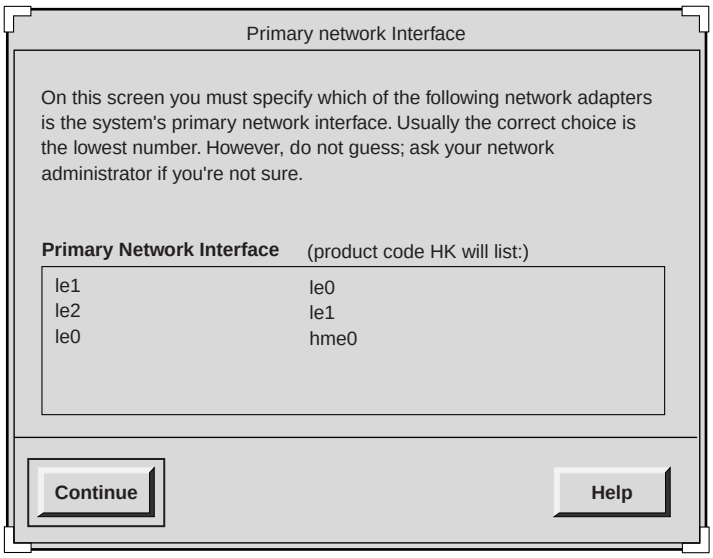
Set the Network Connectivity



MD1144-694

- On the *Network Connectivity* window, click *Continue* to accept the default value of *Yes*.
- The *Primary Network Interface* window appears.

Set Primary Network Interface



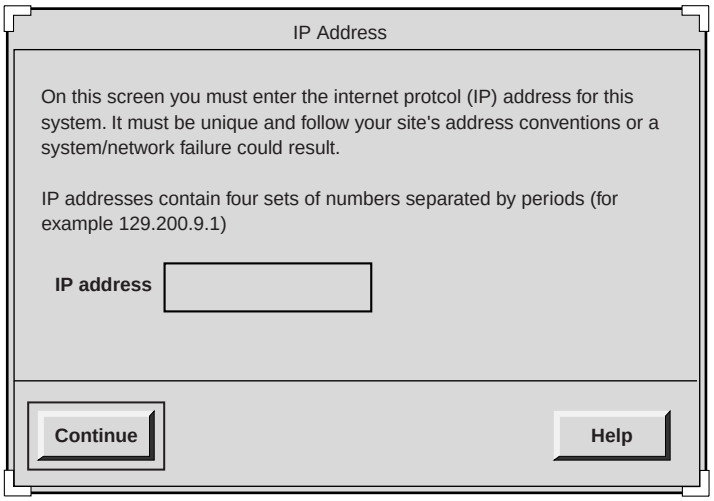
MD1144-695

- Set the primary network interface.

If using a MARS unity workstation product code…	Then click…
HG or HT	*le0*
HK	*hme0*

- Click *Continue*. The *IP Address* window appears.

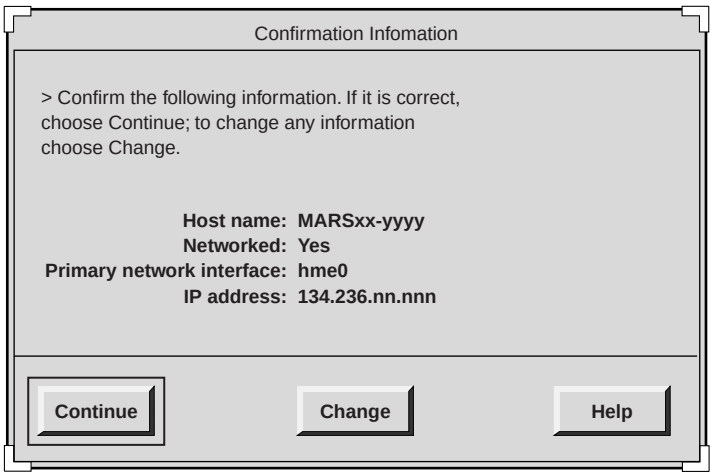
Set IP Address



MD1144-696

- Click the *IP address* text entry box.
- Type the IP address for the unit.
  See “Record Workstation Information” in Chapter 3 for more information on finding the IP address.
- Click *Continue*.
  The *Confirmation Information* window appears.

Confirm Network Settings

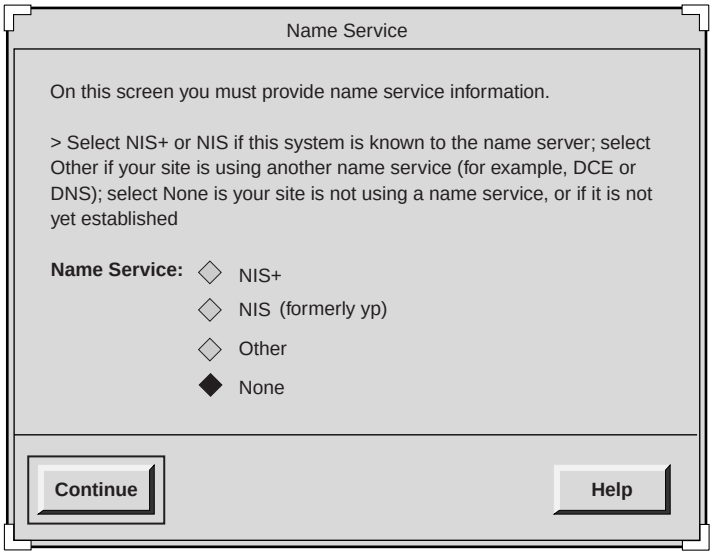


MD1144-697

- Verify the information on the *Confirmation Information* window.

If the information is…	Then…
incorrect	1. Click *Change.* 2. Go back to "Set Host Name".
correct	• Click *Continue* • The *Name Service* window appears.

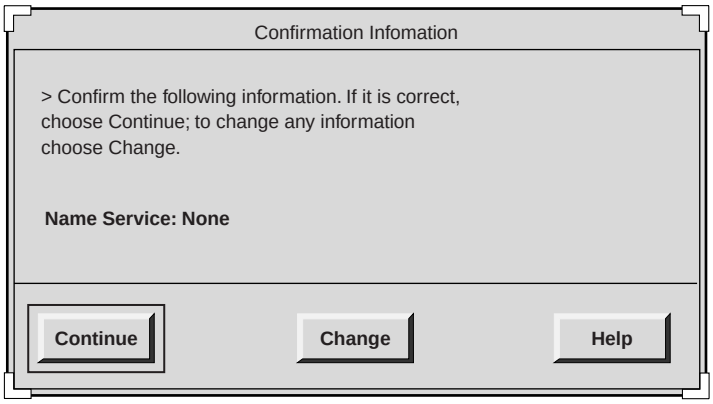
Set Name Service



MD1144-698

- Click *None*.
- Click *Continue*.
  The *Confirmation Information* window appears.

Confirm Network Information

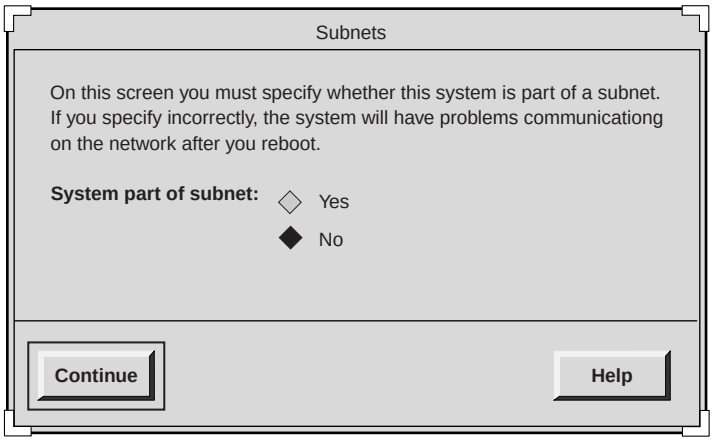


MD1144-699

- Verify the information on the *Confirmation Information* window.

If the information is…	Then…
incorrect	1. Click *Change* 2. Go back to “Set Name Service”
correct	• Click *Continue* • The *Subnets* window appears.

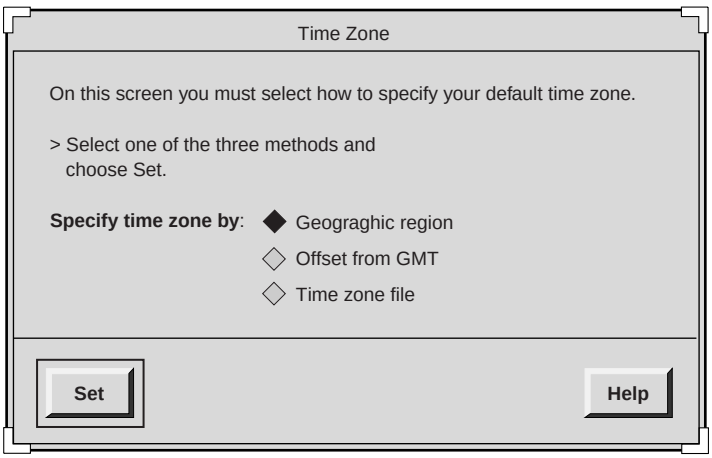
Set Subnet



MD1144-700

- On the *Subnets* window, click *Continue* to accept the default of *No*.
- The *Time Zone* window appears.

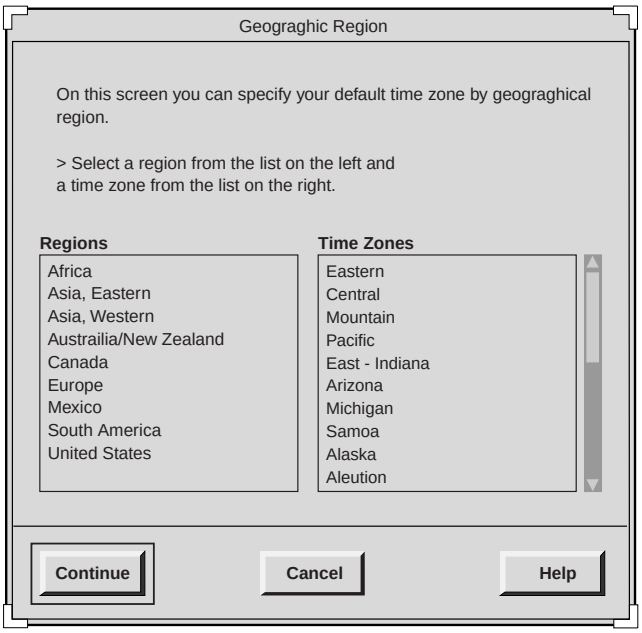
Set Time Zone



MD1144-701

- Click *Set* to accept the default value of *Geographic region* on the *Time Zone* window.
  The *Geographic Region* window appears.

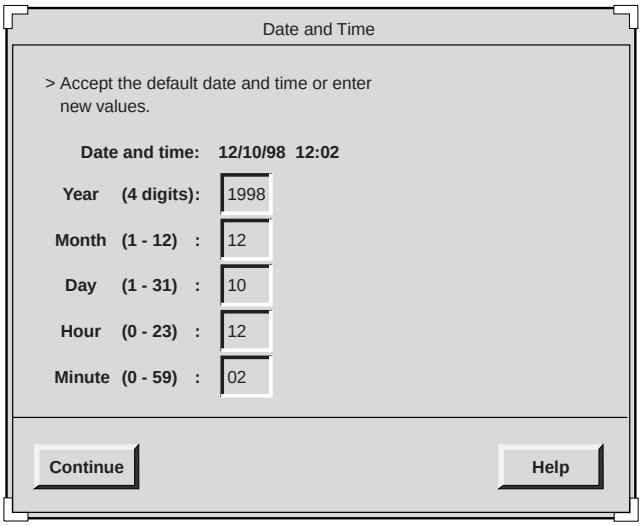
Set Geographic Region



MD1144-702

- Click your region and time zone.
- Click *Continue*. The *Date and Time* window appears.

Set Date and Time

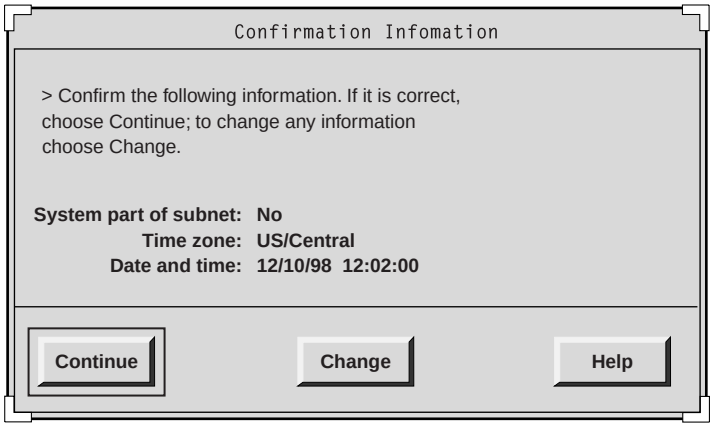


MD1144-703

- Verify the date and time settings on the *Date and Time* window.

If the information is…	Then…
incorrect	1. Click the appropriate text entry box. 2. Type the correct information.
correct	• Click *Continue* • The *Confirm Information* window appears.

Confirm Date and Time Information



MD1144-704

If the information is…	Then…
incorrect	1. Click *Change.* 2. Go back to "Set Subnet"
correct	1. Click *Continue* 2. Go to "Install Solaris Software"

Install Solaris Software

1. The Solaris software begins to install.

> The Solaris software installation takes approximately 30 minutes to complete.

After the Solaris software is installed, the following window appears:

```
On this screen you can create a root password.

A root password can contain any number of characters, but
only the first eight characters in the password are
significant, (For example, if you created “a1b2c3d4e5f6;
as your root password, you can use “a1b2c3d4” to gain root
access.)

You will be prompted to type the root password twice: for
security, the password will not be displayed on the screen
as you type it.

>if you do not want a root password, press RETURN twice.

Root password:

Press Return to Continue.
```

2. Press **Enter** twice

When the *MARSxx-yyyy console login:* prompt appears, the Solaris portion of the installation is complete

Connect the Network Cables

Connect the applicable realtime, non-realtime and enterprise networks. Plug the appropriate lines into their appropriate ports.

Go to "Installing the MARS Software"

Installing the MARS Software

The steps in this section continue from “Installing the Solaris Operating System”.

Insert the MARS CD-ROM

1. At the *MARSxx-yyyy console login:* prompt, type **root** and press **Enter**. The # (root) prompt appears.
2. At the # prompt, type **eject <space> floppy** and press **Enter**. The workstation ejects the boot diskette.
3. Remove the boot diskette.
4. Type **eject <space> cdrom** and press **Enter**. The workstation ejects the Solaris CD-ROM.
5. Remove the Solaris CD-ROM from the CD-ROM drive and place it in its case.
6. Store the boot diskette and the Solaris CD-ROM in a safe place.
7. Type **/etc/init.d/volmgt<space>stop** and press **Enter**. You are returned to the **#** prompt.
8. Remove the MARS CD-ROM from it’s case.

> Check the software version on the MARS CD-ROM. Install only **MARS version 4.0a** on MARS “H” series workstations. See “Identify the Workstation Product Code” in chapter 1 for more information.

9. Place the MARS software CD-ROM in the CD-ROM drive. Close the CD-ROM drive.

Open a Command Tool window

1. Type **/usr/openwin/bin/openwin** and press **Enter**.
   A console command tool window opens and the *Could not start Viewer* message appears.
2. In the *Could not start Viewer* message box, click *Continue*.
   The message box closes and the cursor moves to the console command tool window.
   - You may need to move the cursor around in the *Could not start Viewer* message box in order for the workstation to respond.
3. Click the top border on the upper console [*cmdtool (CONSOLE)*] command tool window behind the *File Manager* command tool window.
   The command tool window moves to the front of the screen.

Open a Xterm Command window

1. Type **cd<space>/var/sadm** and press **Enter**.

> The last character in the following string is the lowercase letter “L”, not the number “1”.

2. Type **xterm<space>-l** and press **Enter**.
   An xterm command tool window opens.
3. Click in the xterm window.
   The cursor moves to the xterm window.
4. Type **csh** and press **Enter**.
   The *MARSxx-yyyy#* prompt appears.

Install the MARS Software

> In the command following:
> - Be sure to type a capital “F” (preceded by a hyphen) after “mount<space>”.
> - The character after “hsfs<space>” is a lowercase letter “o”, not a zero.
> - The character after “/sr” is a zero, not the letter “O”

1. At the *MARSxx-yyyy#* prompt, type the following:

mount<space>-F<space>hsfs<space>-o<space>ro<space>/dev/sr0<space>/mnt

   and press **Enter**.
2. Type **/mnt/profiles/english/install** and press **Enter**.
3. Press **Enter**. The MARS software installation begins to load.

> The MARS software installation takes approximately 2 hours to complete.

When the MARS software installation finishes, the following message appears:

```
**********************************************
*   INSTALLATION CHECKS OK!   *
**********************************************


MARSxx-yyyy#
```

> Contact the MARS unity workstation technical support line if the following message does not appear:
>
> *INSTALLATION CHECKS OK!*

4. Return to the # prompt. Type **exit** and press **Enter**.

> Using the **xterm<space>-l** command logs the user and system responses in a time-stamped file in the */var/sadm* directory.
>
> If errors occurred during installation of the MARS software, they can be reviewed by opening the XtermLog file. At the *MARSxx-yyyy#* prompt, type the following:
>
> **more<space>/var/sadm/XtermLog.***
>
> Press **Enter**.
> To stop viewing the log file, press **CTL+C** or type **q**.

5. Close the xterm window. Type **exit** and press **Enter**.
6. Reboot the workstation. Click in the console command tool window and type **reboot** and press **Enter**. The workstation reboots.
7. In the *Please enter your user name* field, type **admin** and click the *OK* button. The *Password* window appears.
8. At the password prompt, type **admin** and press **Enter**.
   The MARS software starts.

Update and Verify Peripheral Devices

Before removing the MARS CD-ROM it is important to verify and, if necessary, update information for the following:

- UPS
- Tape driver files
- Tape acquisition unit
- SEER acquisition Unit
- DAT drive

Go to Chapter 6 “Updating Peripherals”

5 Full Software Rebuild

(MARS “R” Series platforms)

MARS Platforms Supported

This chapter provides instructions to perform a full rebuild of the MARS software on the following MARS unity workstations.

Table 5-1. MARS “R” Series

(product code)	SUN platform
MARS 8000 (RU)	Ultra 60 3d Creator
MARS 5000 (RT)	Ultra 10 Minitower
MARS 3000 (RS)	Ultra 5 Desktop

- If your MARS product is not listed in the table above go to Chapter 4 for rebuild instructions for MARS “H” series platforms.
- This rebuild includes installing the Solaris GE_2.6 operating system and the MARS version 4.1b software.

The full software rebuild takes about 2 hours.

Performing these procedures deletes ALL patient data. Print or save to DAT all desired patient data information before proceeding.

Installing this software version restores all existing system setups and user setups to their factory default settings.

Record this information as described in chapter 3 prior to installing this software version

Installing the Solaris Operating System

Perform a System Shutdown

1. Click *System* on the menubar. The *System* pulldown menu appears.
2. Click *System Shutdown*. The *System Shutdown* window appears.
3. Click *Yes*. After approximately 20 seconds, status messages begin to appear as the system begins to shut down. When completely shutdown, the *ok* prompt appears.

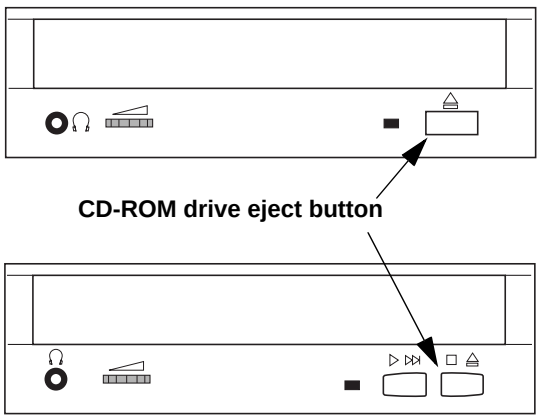
Load the Solaris CD-ROM

Turn on any peripheral SCSI device power switches, including:

- tape acquisition unit
- SEER acquisition unit
- DAT drive

Insert the Boot Floppy and Solaris CD-ROM

1. Insert the boot diskette into the floppy diskette drive.
2. Press the eject button on the CD-ROM drive (as shown below). The CD ROM drive opens. If there is a CD-ROM in the drive, remove it.



MD1144-713

3. Remove the Solaris CD-ROM from its case.

> Check the software version on the Solaris CD-ROM. Install only **Solaris version GE_2.6** on MARS “R” series workstations. See “Identify the Workstation Product Code” in chapter 1 for more information.

4. Place the Solaris CD-ROM in the CD-ROM drive. Close the CD-ROM drive.

Disconnect Network Cables

Disconnect all realtime, non-realtime and enterprise network cables from the rear of the workstation.

Start the Solaris Installation Program

Before starting the Install make sure you have:

- Insert the boot floppy.
- Insert the CD-ROM.
- Disconnected the workstation from the network.

> When instructions are given for typing a precise text string with one or more spaces, the point where the spacebar must be pressed is indicated as follows:
>
> **<space>**
>
> The purpose of the **< >** brackets is to indicate you press the spacebar when required. Do not type the word space.

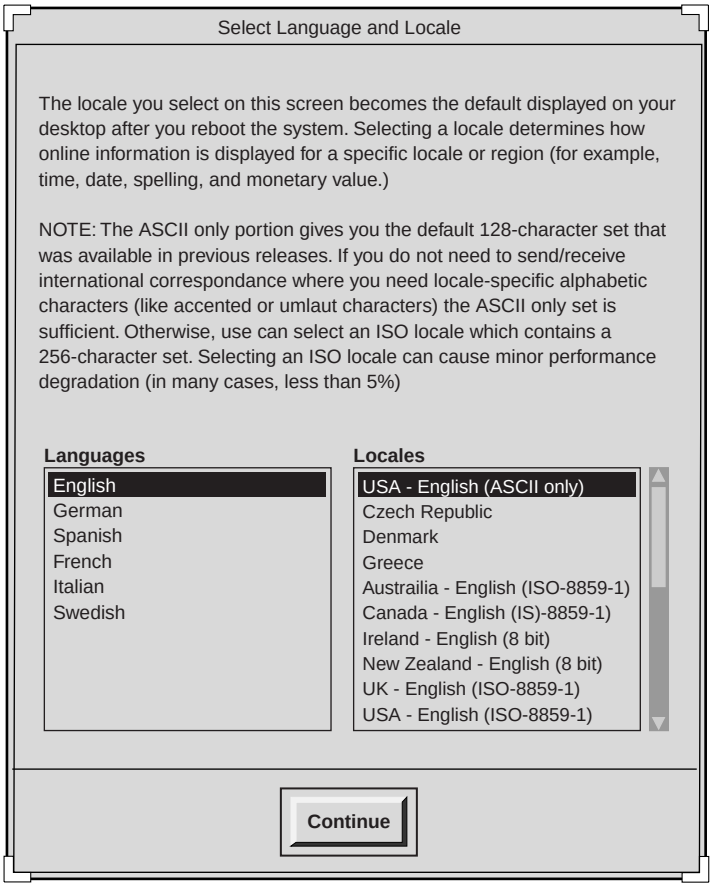
1. At the *ok* prompt, type the following:
   boot <space> cdrom <space> – <space> install

   > This command contains a hyphen (–) critical to proper operation.

2. Press **Enter**.
   The screen goes blank and the workstation reboots.The system takes approximately 5 minutes to reboot.

   Error messages may appear as the system reboots, indicating that network links are down.

3. After the workstation reboots, the *Select Language and Locale* window appears.

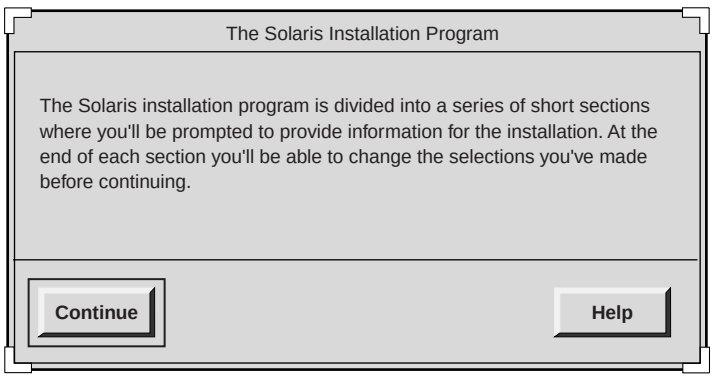


MD1144-705

4. Click *Continue* to accept the default values *English* in the *Languages* menu and *USA - English (ASCII only)* in the *Locales* menu.

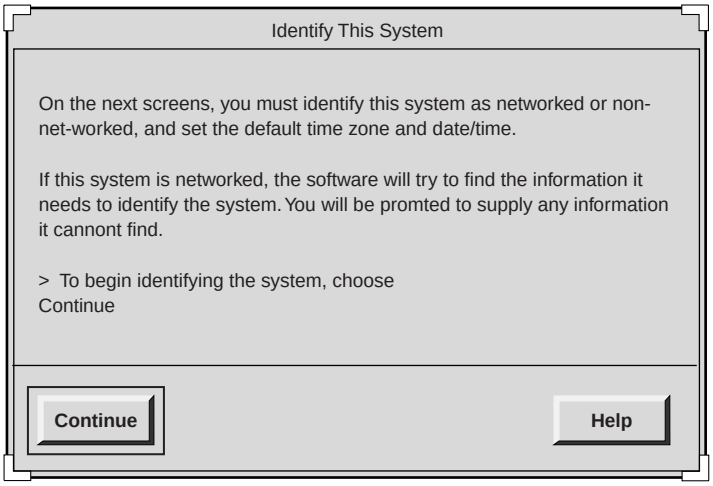
> **Always select English** regardless of your locale. A different language can be selected later through the MARS application.

5. *The Solaris Installation Program* window appears.



MD1144-706

6. Click *Continue*.
   The *Identify This System* window appears.



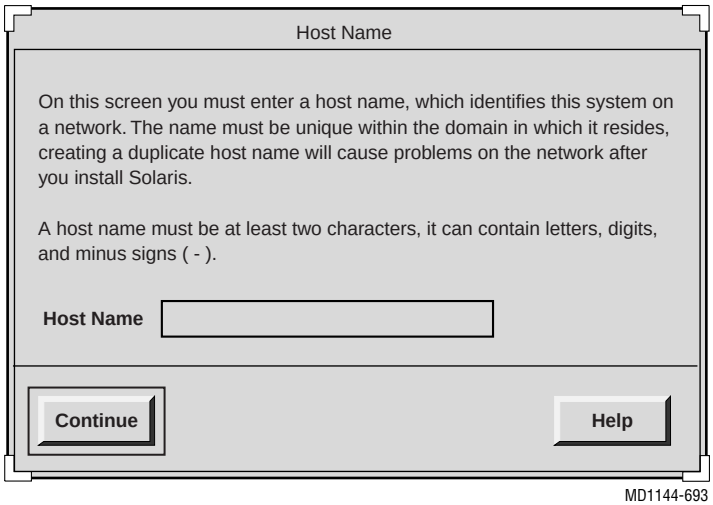
MD1144-692

7. Click *Continue* on the *Identify This System* window.
   The *Host Name* window appears.

8. Go to "Set Workstation Identifiers"

Set Workstation Identifiers

Set Host Name



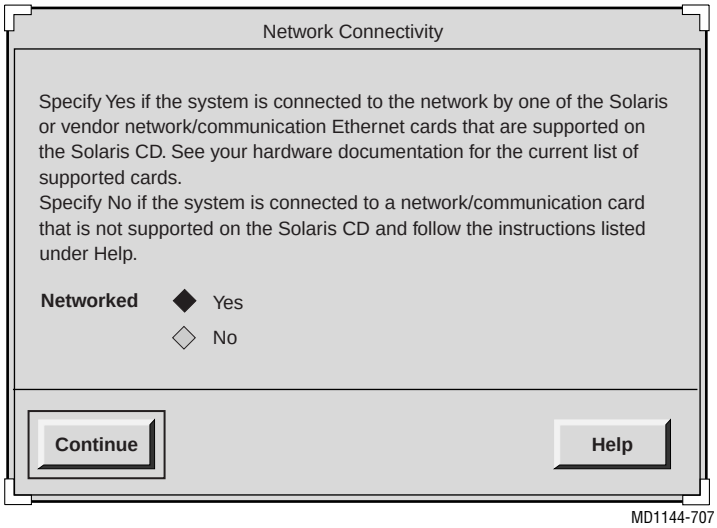
> To correct typing errors, use the **Backspace** key.

- Click the *Host name* text entry box.

> The *MARSxx* portion of the host name must be all capital letters.

- Type your host name in the text entry box.
  See “Record Workstation Information” in chapter 3 for more information on finding your host name.
- Click *Continue*.
  The *Network Connectivity* window appears.

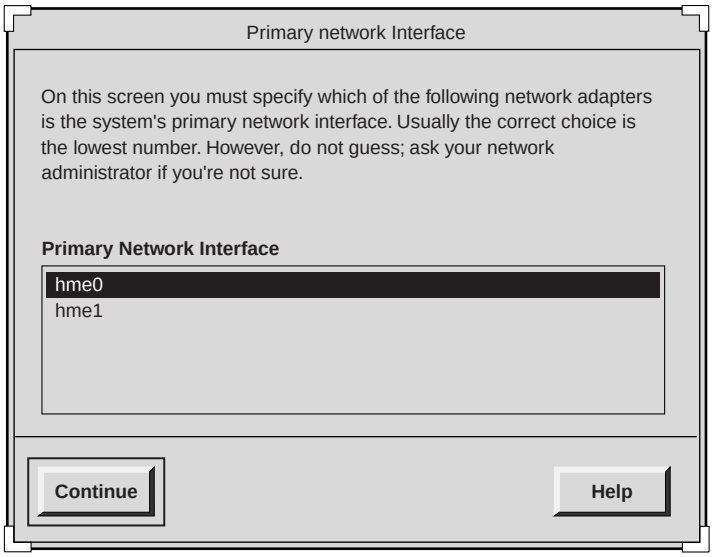
Set the network connectivity



MD1144-707

- On the *Network Connectivity* window, click *Continue* to accept the default value of *Yes*.
  The *Primary Network Interface* window appears.

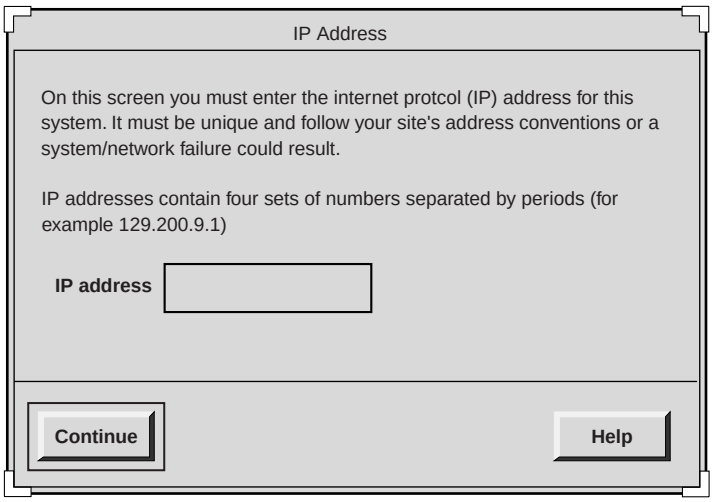
Set Primary network Interface



MD1144-708

- Set the primary network interface on the *Primary Network Interface* window.
  Click *hme0*.
- Click *Continue*.
  The *IP Address* window appears.

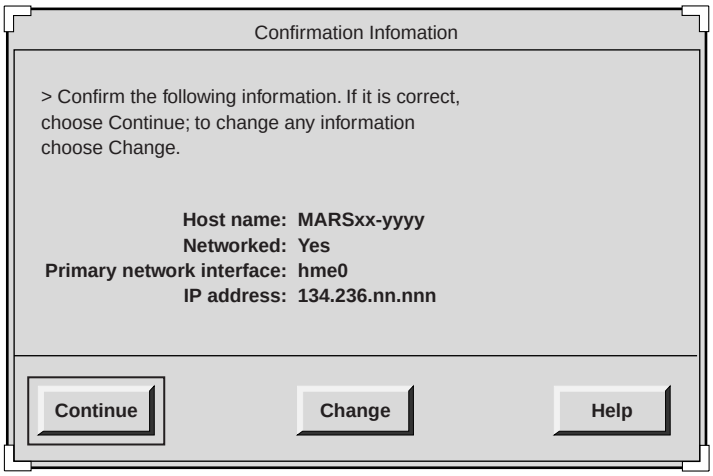
Set IP Address



MD1144-696

- Click the *IP address* text entry box.
- Type the IP address for the unit.
  See “Record Workstation Information” in chapter 3 for more information on finding the IP address.
- Click *Continue*.
  The *Confirmation Information* window appears.

Confirm Network Settings

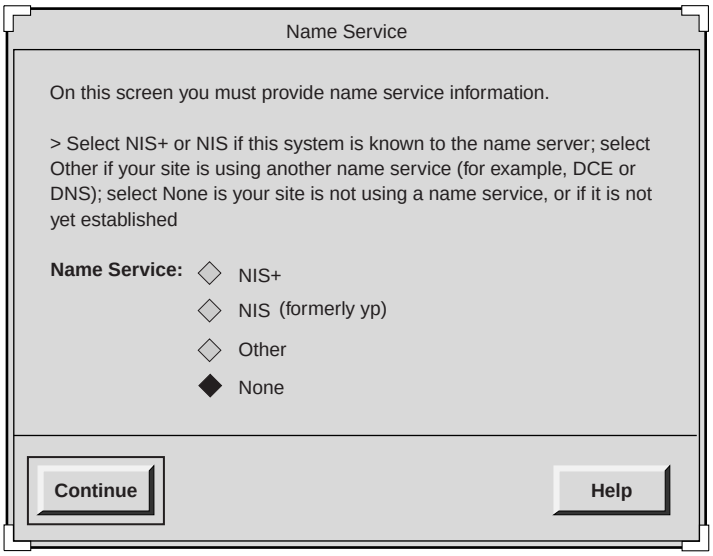


MD1144-697

- Verify the information on the *Confirmation Information* window.

If the information is…	Then…
incorrect	1. Click *Change.* 2. Go back to "Set Host Name".
correct	• Click *Continue* • The *Name Service* window appears.

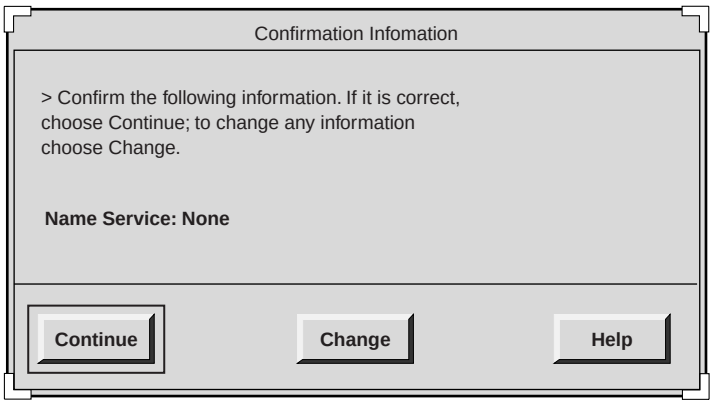
Set Name Service



MD1144-698

- Click *None*.
- Click *Continue*.
  The *Confirm Information* window appears.

Confirm Name Service

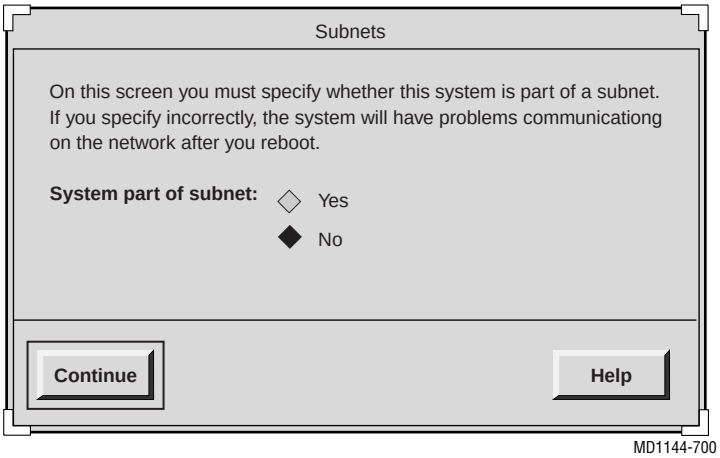


MD1144-699

- Verify the information on the *Confirm Information* window.

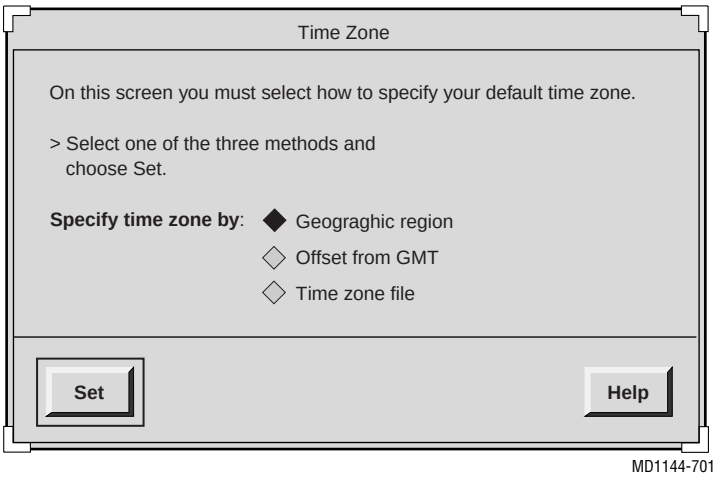
If the information is…	Then…
incorrect	1. Click *Change* 2. Go back to *"Set Name Service"*
correct	• Click *Continue* • The *Subnets* window appears.

Set Subnet



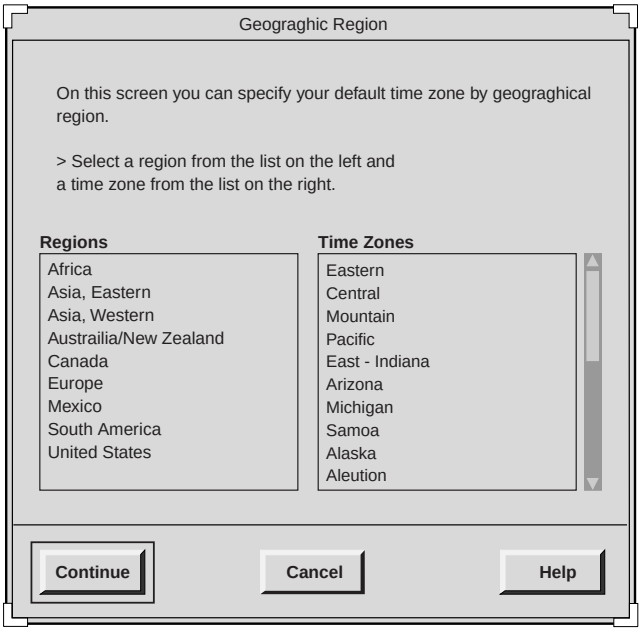
- On the *Subnets* window, click *Continue* to accept the default of *No*.
- The *Time Zone* window appears.

Set Time Zone



- Click *Set* to accept the default value of *Geographic region* on the *Time Zone* window.
  The *Geographic Region* window appears.

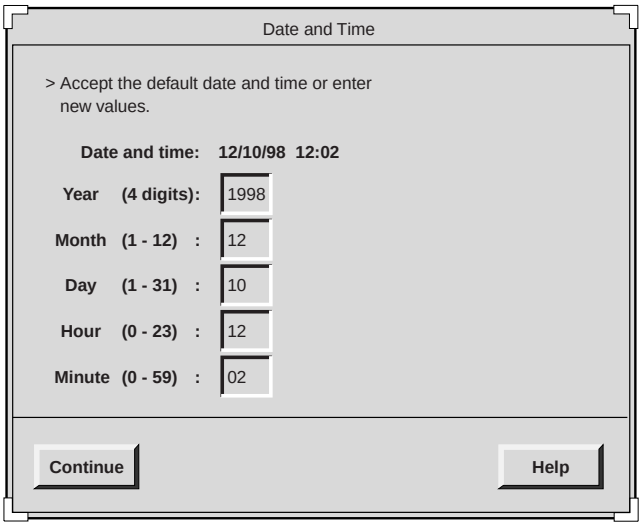
Set Geographic Region



MD1144-702

- Click your region and time zone.
- Click *Continue*.
  The *Date and Time* window appears.

Set Date and Time

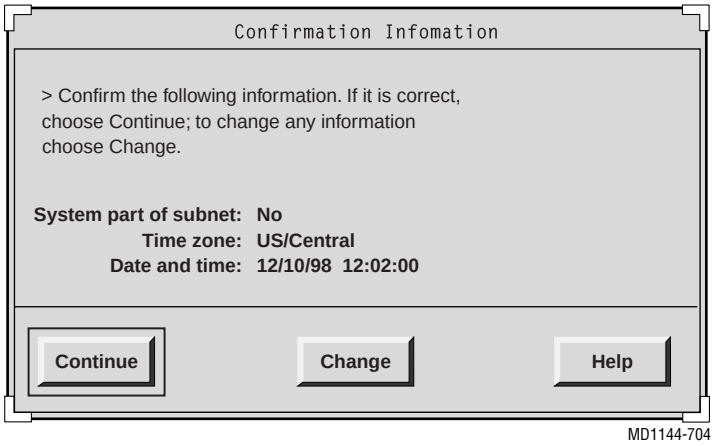


MD1144-703

- Verify the date and time settings in *Date and Time* window.

If the information is...	Then...
incorrect	1. Click the appropriate text entry box. 2. Type the correct information.
correct	• Click *Continue* • The *Confirmation* window appears.

Confirm Date and Time Information



MD1144-704

If the information is…	Then…
incorrect	1. Click *Change.* 2. Go to *Set Subnet*.
correct	1. Click *Continue* 2. Go to "Install Solaris Software"

Install Solaris Software

1. The Solaris software begins to install.

> The Solaris software installation takes approximately 30 minutes to complete.

2. After the Solaris software is installed, the following screen appears

```
On this screen you can create a root password.

A root password can contain any number of characters, but
only the first eight characters in the password are
significant, (For example, if you created “a1b2c3d4e5f6;
as your root password, you can use “a1b2c3d4” to gain root
access.)

You will be prompted to type the root password twice: for
security, the password will not be displayed on the screen
as you type it.

>if you do not want a root password, press RETURN twice.

Root password:

Press Return to Continue.
```

3. Press **Enter** twice

4. The following screen appears:

```
System identification is completed.

************************************************************
This system is configured to conserve energy.
After 30 minutes without activity, the system state will be
saved to disk and the system will be powered off automatically.

A system that has been suspended in this way can be restored
back to exactly where it was by pressing the power key.
The definition of inactivity and the timeout are user
configurable. The dtpower (1M) man page has more information.
************************************************************

Do you wish to accept this default configuration, allowing your
system to its state than power off automatically when it has
been idle for 30 minutes? (if this system is used as a server,
answer n. By default autoshutdown is enabled.) [y,n,?] n
```

Type **n.** Press **Enter**.

5. The following prompt appears on the screen.

```
Autoshutdown has been disabled.

Should the system save your answer so it won’t need to ask
the question again when you next reboot? (By default the
question will not be asked again.) [y,n,?] y
```

Type **y.** Press **Enter**

6. After a few seconds the *MARSxx-yyyy console login:* prompt appears. The Solaris portion of the installation is now complete.

Connect the Network Cables

Connect the applicable realtime, non-realtime and enterprise networks. Plug the appropriate lines into their appropriate ports.

Go to "Installing the MARS Software"

Installing the MARS Software

Select the Desktop Environment

1. At the *MARSxx-yyyy console* login type **root** and press **Enter**.
2. The *Welcome to Solaris* window appears.

MD1144-709

- Click *OK* to accept the *Common Desktop Environment (CDE)* default.
- The CDE desktop appears with several windows and the *Main Control Panel* open.

Disable the Screen Saver

Turn off the screen saver to prevent it from locking during installation of the MARS software. The screen saver will be automatically reset during the MARS software installation.

MD1144-710

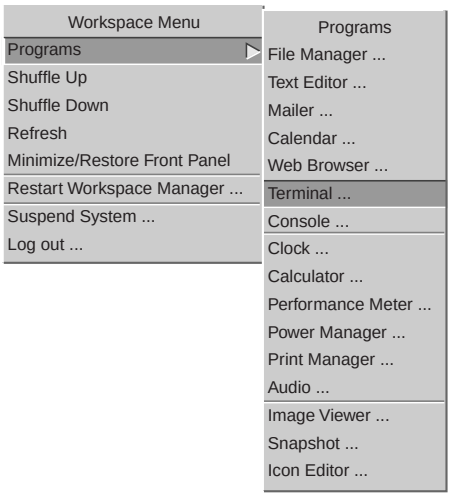
1. Click the *Style Manger* icon located on the *Main Control Panel*. The *Style Manger* control panel opens.

MD1144-711

2. Click the *Screen* icon in the *Style Manager* control panel. The *Style Manager - Screen* window appears.
3. Click both the Screen Saver and Screen Lock to *Off*. Close the *Style Manager - Screen* window and *Style Manager* control panel.

Open a Terminal Window

1. **Right** click anywhere on the blue screen background.
   The *WorkSpace Menu* appears.



MD1144-712

2. Click *Programs.*
   The *Programs* menu appears.
3. Click *Terminal.*
   A *Terminal* window appears

Insert Mars CD-ROM

1. Manually eject the boot diskette by pressing the eject button on the floppy drive. Remove boot diskette.
2. Type **eject cdrom** at the # prompt in the *termina*l window. Remove the Solaris CD-ROM.
3. Store the boot diskette and the Solaris CD-ROM in a safe place.
4. Type **/etc/init.d/volmgt<space>stop** and press **Enter**. You are returned to the # prompt.
5. Remove the MARS CD-ROM from it’s case.

> Check the software version on the MARS CD-ROM. Install only **MARS version 4.1b** on MARS “R” series workstations. See “Identify the Workstation Product Code” in chapter 1 for more information.

6. Place the MARS software CD-ROM in the CD-ROM drive. Close the CD-ROM drive.

Open an Xterm Command window

1. Type **cd<space>/var/sadm** and press **Enter**.

> The last character in the following string is the lowercase letter “L”, not the number “1”.

2. Type **xterm<space>-l** and press **Enter**.
   An *xterm* command tool window opens.

3. Click in the *xterm* window.
   The cursor moves to the *xterm* window.
4. Type **csh** and press **Enter**.
   The *MARSxx-yyyy#* prompt appears.

Using the “xterm<space>-l” command logs the user and system responses in a time-stamped file in the */var/sadm* directory.

Install the MARS Software

1. At the *MARSxx-yyyy#* prompt, type the following:

> - Be sure to type a capital “F” (preceded by a hyphen) after “mount<space>”.
> - The character after “hsfs<space>” is a lowercase letter “o”, not a zero.
> - The characters in the string c0t2d0s0 are zeros not the letter “O”.

If installing on…	Then type…
MARS 8000 (RU)	**mount<space>-F<space>hsfs<space>-o<space>ro<space> /dev/dsk/c0t6d0s0<space>/mnt**
MARS 5000 (RT) MARS 3000 (RS)	**mount<space>-F<space>hsfs<space>-o<space>ro<space> /dev/dsk/c0t2d0s0<space>/mnt**

   Press **Enter**.
2. Type **/mnt/profiles/english/install** and press **Enter**.
3. Press **Enter**. The MARS software installation begins to load.

> The MARS software installation takes approximately 2 hours to complete.

When the MARS software installation finishes, the following message appears:

```
**********************************************
*   INSTALLATION CHECKS OK!   *
**********************************************


MARSxx-yyyy#
```

> Contact the MARS unity workstation technical support line if the following message does not appear:
>
> *INSTALLATION CHECKS OK!*

4. Return to the *MARSxx-yyyy #* prompt. Type **exit** and press **Enter**.

> If errors occurred during installation of the MARS software, they can be reviewed by opening the XtermLog file. At the *MARSxx-yyyy#* prompt, type the following:
>
> **more<space>/var/sadm/XtermLog.***
>
> Press **Enter**.
> To stop viewing the log file, press **CTL+C** or type **q**.

5. Close the xterm window. Type **exit** and press **Enter**.
6. Click in the Terminal tool window. Type **reboot** and press **Enter**. The workstation reboots.

   As the system boots the Solaris CDE desktop will appear momentarily before the *MARSxx-yyyy console login:* appears.
7. In the *Please enter your user name* field, type **admin** and click the *OK* button. The *Password* window appears.
8. At the password prompt, type **admin** and press **Enter**.
   Go to "Update and Verify Peripheral Devices".

Update and Verify Peripheral Devices

Before removing the MARS CD-ROM it is important to verify and, if necessary, update information for the following:

- UPS
- Tape driver files
- Tape acquisition unit
- SEER acquisition Unit
- DAT drive

Go to Chapter 6 “Updating Peripherals”

6 Updating Peripherals

Verifying and Updating Peripherals

Completing the MARS System Installation

After successful installation of the MARS software the following procedures should be performed to verify and update peripheral devices:

- Verify the UPS Software
- Remove the Existing DAT Driver Files
- Configure Token Ring Software (RU, RT, RS only)
- Reconfigure the Kernel
- Update the Tape Acquisition Unit Software
- Update the SEER Acquisition Unit Software

> This applies to SEER Acquisition units with product code **HS**. It requires 1.0G SEER Installation Card included in the update kit.

- Update the DAT Drive Software

The MARS CD-ROM should still be installed in the CD-ROM drive. It includes current device drivers for the Tape acquisition unit and DAT drive.

Verify the UPS Software

Unexpected power failures can severely corrupt the workstation's hard disk drives. Connecting a serial cable between the UPS and the workstation allows the workstation's UPS software to initiate an orderly shutdown if an extended power failure exists.

> Use an UPS and UPS software whenever possible for the most protection of the workstation and its data.

If…	Then go to…
using the UPS serial cable	"Remove the Existing DAT Driver Files" on page 4
NOT using the UPS serial cable	"Turning Off UPS Monitoring" on page 4

Turning Off UPS Monitoring

If you choose not to provide a serial cable connection to the UPS, you must do the following to disable the automatic system shutdown software before proceeding:

1. Click *System* on the workstation menu bar.
   The *System* pulldown menu appears.
2. Click *System Setup* on the pulldown menu.
   The *System Setup* pulldown menu appears.
3. Click *UPS Monitor* on the pulldown menu.
   The *UPS Monitor Tool* window appears.
4. Click the *UPS Monitoring On* box.
   The *UPS Monitoring Off* option appears.
5. Click *Apply*.
   The *UPS Monitor Tool* window closes.

Remove the Existing DAT Driver Files

If the system includes a DAT drive, the existing DAT driver files must be removed following the procedure listed below.

1. Using the middle mouse button, click and drag any workstation system icon onto the *System* menu header located in the upper, left-hand corner of the screen.
   A command tool window opens and the *MARSxx-yyyy#* command prompt appears.
2. Click in the command tool.
   The cursor moves to the command tool window.
3. Type the following:

   unalias<space>rm
4. Press **Enter**.
5. Type the following:

rm<space>/dev/rmt/*

6. Press **Enter**.
7. After deleting all of the existing active tape driver files, the *MARSxx-yyy#* command prompt appears.
8. Type the following:

   alias<space>rm<space>rm<space>-i
9. Press **Enter**.
10. Type **exit** and press **Enter**.
    The command tool window closes.

Configure Token Ring Software (RU, RT, RS only)

The token ring card used on MARS "R" series platforms is software configured. The configuration file is preset at 16 Mbps.

If the MARS "R" series workstation being rebuilt is equipped with a token ring network interface card, refer to the decision table below and follow the procedures indicated.

If running on...	Then...
16 Mbps token ring	no adjustments are necessary. Go to "Reconfigure the Kernel" on page 6
4 Mbps token ring	edit the *trp.conf* file. Go to "Open trp.conf for Edit" on page 5

> The token ring network interface card used on MARS "H" series platforms is set using jumpers located on the card.

Open *trp.conf* for Edit

1. Using the middle mouse button, click and drag any workstation system icon onto the *System* menu header located in the upper, left-hand corner of the screen.
2. A command tool window opens.
3. At the *MARSxx-yyyy#* prompt type:
   vi<space>/kernel/drv/trp.conf

   Press **Enter**
4. The *trp.conf* file opens in the text editor.
5. Go to "Edit trp.conf".

Edit *trp.conf*

> If you make a mistake and need to restart your edits during the following procedure:
> - Press the **Esc** key.
> - Type **:q!** (the colon **:** is part of the command)
> - Press **Enter** to cancel the changes and exit the editor.

1. Press the down arrow key to scroll down through the text of the file until the cursor is at the beginning of the following line:

   ```
   trp0_ring_speed = 16;
   ```

2. Press the right arrow key until the cursor is over the number 1 in the line shown above.
3. Press the **x** key two times to erase the number 16.
4. Type **i** to access the insert mode of the text editor.
5. Type **4**. The line should now read.

   ```
   trp0_ring_speed = 4;
   ```

6. Press the **Esc** key.
7. Type **:wq**, (the colon **:** is part of the command), then press **Enter** to save the changes and exit the editor.
8. Go to "Reconfigure the Kernel".

Reconfigure the Kernel

1. Click *System* on the workstation menu bar.
   The *System* pulldown menu appears.
2. Click *System Shutdown* on the pulldown menu.
   The *Confirmation* window appears.
3. Click *System Shutdown* on the pulldown menu.
   The *Shutdown MARS System? This will take about 20 seconds* window appears.
4. Click *Yes*.
   After about 20 seconds, the *ok* prompt appear
5. At the *ok* prompt, type

   boot<space>-r

   Press **Enter**.
   The workstation boots.
6. Watch for device specific messages as the workstation boots, (i.e., */dev/mei_tape identified*. for workstations with tape acquisition units, etc.).
7. In the *Please enter your user name* text entry box, type **admin** and click the *OK* button.
   The *Password* window appears.
8. In the *Please enter your password* text entry box, type **admin** and click the *OK* button.Several screens appear momentarily.
   The application software starts and the system screen appears.

Update the SCSI Peripherals

The tape acquisition unit, SEER acquisition unit and DAT drive internal software may need to be updated:

1. Using the middle mouse button, click and drag any workstation system icon onto the *System* menu header located in the upper, left-hand corner of the screen.
   A command tool window opens and the *MARSxx-yyyy#* command prompt appears.
2. Click in the command tool.
   The cursor moves to the command tool window.

If the workstation…	Then go to…
does have a tape acquisition unit	"Update the Tape Acquisition Unit Software" on page 8
does have a SEER Acquistion unit with product code **HS**	"Update the SEER Acquisition Unit Software" on page 10.
does have a DDS-2 DAT drive. **DO NOT** update DDS-3 DAT drive.	"Update the DAT Drive Software" on page 12
does NOT have a tape acquisition unit, a SEER acquisition unit or a DAT drive	"Remove the MARS Software CD-ROM" on page 15

Update the Tape Acquisition Unit Software

Follow these steps to verify the current version, and if necessary, update the tape acquisition unit software.

Check the Current Tape Acquisition Unit Software Version

1. At the # prompt, type the following:

   updscsi<space>tapeacq<space>getversion

2. Press **Enter**.

If the following message appears…	Then go to…
updscsi tapeacq getversion GOOD 1.1 or *updscsi tapeacq getversion GOOD 1.1c11*	"Stop the Tape Acquisition Unit process" on page 8
updscsi tapeacq getversion GOOD 1.1d	"Check the New Tape Acquisition Unit Software Version" on page 9, step 4

Stop the Tape Acquisition Unit process

1. Type the following:

   ps<space>-e|grep<space>tape

2. Press **Enter**.
   The process identifier (PID) number and the tape acquisition unit process (*tapedmn*) appear.

3. Type **kill<space>xxx**

   Where **xxx** = the tape acquisition unit PID

4. Press **Enter**.

Load the New Tape Acquisition Unit Software

1. On one line, type the following:

> In the following command, the 11 in 11.bin is the number eleven, not the lowercase letter "L".

updscsi<space>tapeacq<space>install<space>/var/sadm/Mars/MarsTape/11.bin

2. Press **Enter**. The following appears:

updscsi tapeacq install DONE /var/sadm/Mars/MarsTape/11.bin

Restart the Tape Acquisition Unit Process

1. Type the following:

   tapedmn&

2. Press **Enter**.

Check the New Tape Acquisition Unit Software Version

1. At the # prompt, type the following:

   updscsi<space>tapeacq<space>getversion

2. Press **Enter**.
3. The following message appears:

   updscsi tapeacq getversion GOOD 1.1d

If the above message…	Then…
appears	go to step 4
does not appear	the software update failed. Contact the MARS unity workstation technical support line at: • 1-800-282-6297 (for calls from within the United States) or • 1-561-575-5000 ext. 4243 (for international calls).

4. The new tape acquisition unit software has been successfully installed.

If…	Then go to…
using a SEER acquisition unit with **HS** product code	“Update the SEER Acquisition Unit Software” on page 10
using a DAT drive	“Update the DAT Drive Software” on page 12
NOT using a SEER acquisition unit or a DAT drive	“Remove the MARS Software CD-ROM” on page 15

Update the SEER Acquisition Unit Software

> Do not update SEER Acquisition units that have product code B3. These units run 2.0B or greater, and work with SEER Light cards.

Check the Current SEER Acquisition Unit Software Version

1. Verify the current SEER acquisition unit software version. Type the following:

   updscsi<space>seeracq<space>getversion

2. Press **Enter**.

If the following message appears...	Then go to...
updscsi seeracq getversion GOOD 1.0a -or- *updscsi seeracq getversion GOOD 1.0e*	"Load the SEER Acquisition Unit Software" on page 10
updscsi seeracq getversion GOOD 1.0G	"Update the DAT Drive Software" on page 12

Load the SEER Acquisition Unit Software

1. Locate the PID for the carddmn process:

   Type: **ps<space>-e|grep<space>card** and press **Enter**

   You will see the following:

   <xxx 0:00 carddmn>

   Where xxx = the PID

2. Type the following:

   kill<space>xxx

   Where xxx = PID

3. Press **Enter**

4. Insert the 1.0G SEER Installation Card (included in the customer kit) into the SEER acquisition unit SEER data card slot.
   When properly inserted, the **CARD** LED glows and the data card eject switch pops out.

5. Type the following:

   updscsi<space>seeracq<space>reboot

6. Press **Enter**.
   The SEER acquisition unit LEDs flash for several seconds.

7. When SEER acquisition unit LEDs stop flashing, type the following:

updscsi<space>seeracq<space>getversion

8. Press **Enter**.

If the following message appears…	Then…
updscsi seeracq getversion GOOD 1.0a *-or-* *updscsi seeracq getversion GOOD 1.0e*	the software update failed. Contact MMS technical support at: • 1-800-282-6297 (within United States) • 1-561-575-5000 ext. 4243 (international calls).
updscsi seeracq getversion GOOD 1.0G	go to step 9

9. Press the data card eject switch to remove the SEER installation card.

10. Type the following:

    carddmn&

11. Press **Enter**

If…	Then go to…
using a DAT drive	"Update the DAT Drive Software" on page 12
NOT using a DAT drive	"Remove the MARS Software CD-ROM" on page 15

Update the DAT Drive Software

Check the DAT Drive Hardware Version

1. Verify the DAT drive hardware version, Type the following:

   inquiry

2. Press **Enter**.
   The list of *AVAILABLE DISKS/CDROMS/TAPES* similar to the following appears.

```
                Vendor      Product              Rev     Serial Number

0: c0t0d0      SEAGATE    ST32171W SUN2.1G      7462    97128647
1: c0t1d0      SEAGATE    ST32550W SUN2.16      0488    02183136
2: cot6d0      TOSHIBA    XM5701TASUN12XCD      0997    04/09/97
3: rmt/0cn     ARCHIVE     Python 02635-XXX     5.A0
```

Look for this type of information

3. Locate the DAT drive by looking at SCSI device *rmt/0cn* for one of the following vendor and product:

DDS-2 drive

ARCHIVE Python 02635-XXX

ARCHIVE Python 03812-XXX

DDS-3 drive

HP C1537A (Rev L706)

If the following vendor and product appears…	Then go to…
ARCHIVE Python 02635-XXX	“”
ARCHIVE Python 03812-XXX	“Remove the MARS Software CD-ROM” on page 15
HP C1537A	“Remove the MARS Software CD-ROM” on page 15

Do NOT attempt to update the DAT drive software for DAT drives with the following product number:

- *Python 03812-XXX*

Check the Current DAT Drive Software Version

- If using product *Python 02635-XXX*, verify that the latest firmware revision *5.A0* appears listed under *Rev*.

> Ensure that *5.A0* appears under the *Rev* column of the above message.

If *Rev 5.A0*...	Then go to...
does NOT appear	"Load the New DAT Drive Software" on page 13
DOES appear	"Remove the MARS Software CD-ROM" on page 15

Load the New DAT Drive Software

> Do NOT attempt to update the DAT drive software for DAT drives with the following product number: *Python 03812-XXX*

> This procedure will not change or harm the data on the DAT cartridge used

1. Insert a non-write protected DAT cartridge into the DAT drive.
2. Type **cd<space>/opt/MarsXM/bin** and press **Enter**.
3. Type the following:

> In the following command:
> - the first character of **0cn** is the number zero, not the letter "o"
>
> the fourth character of **V5AO** is the capital letter "o", not the number zero

./td_load<space>/dev/rmt/0cn<space>V5AO-24.BIN

4. Press **Enter**.
   A downloading message appears and the DAT cartridge will spin for a few minutes.

> Disregard any SCSI error messages that may appear.

5. When the DAT drive update has completed, the DAT cartridge will automatically eject from the DAT drive and the DAT drive Activity and Warning LEDs will flash repeatedly before going out.

Check the Installation

1. Type **inquiry.**
2. Press **Enter**.
   The following message appears:

   rmt/0cn ARCHIVE Python 02635-XXX 5.A0

If above message…	Then…
does NOT appear	the software update failed. Contact the MMS technical support: • 1-800-282-6297 (within the United States) • 1-561-575-5000 ext. 4243 (international calls).
DOES appear	go to “Remove the MARS Software CD-ROM” on page 15

Remove the MARS Software CD-ROM

1. Eject the MARS software CD-ROM.

If your MARS product code is…	Then…
RU, RT or RS	Manually eject CD-ROM
HK, HG or HT	At the *MARSxx-yyyy#* prompt, type **eject <space> cdrom** and press **Enter**. The system ejects the MARS software CD-ROM.

2. Remove the MARS software CD-ROM from the CD-ROM drive and place it in its case.
3. Close the CD-ROM drive.
4. Type **exit** and press **Enter**.
   The command tool window closes.

> Each field engineer should keep a complete rebuild kit and take it to each MARS site they are updating. Leave the customer kit at the customer site.
>
> An extra CD was included in the Customer Update Kit. Ask the customer to store the extra copy of the MARS CD-ROM in a safe place for future system support.

Restore System Setups

This completes the MARS software installation. Restore system settings.

If you …	Then go to …
have a backup diskette of the system setups	**Chapter 7** "Restore System Setups from Backup Diskette"
manually recorded your system setups	**Chapter 8** "Set up the Workstation Manually"

7 Restore System Setups from Backup Diskette

Restore Setups from Backup Diskette

If you previously created a System Setup Backup diskette (from version 4 or higher) restore the system setups as follows:

1. Log in as admin user.
2. Click *System* on the workstation menu bar.
   The *System* pulldown menu appears.
3. Click *System Setup*.
   The *System Setup* pulldown menu appears.
4. Click *Backup and Restore*.
   The *System Setup Backup/Restore Tool* window appears.
5. Select *Restore System Setups*.
   A confirmation window appears.
6. Insert the diskette that contains the backup information.
7. Select *Continue*.
   A second confirmation window appears.
8. Select *Continue*.
   A third confirmation window appears.
9. Select *Continue*.
   The backup procedure begins.
10. When the backup finishes, the following message appears:

    The restore completed successfully. Rebooting the workstation.
11. Click *OK*.
    The workstation reboots with the restored configuration.

The restore procedure does not restore the setup information for Slots. The Slots must be manually setup and created. If CRS acquisition is running, it must be stopped for all beds before the slot setup procedure can be performed.

Go To "Set Up the Workstation"

Set Up the Workstation

Use the instructions in this section to set up the workstation system information. The following steps are discussed in detail:

> If you need any additional information in setting up the various components of the workstation, see the “MARS unity workstation operator’s manual”.

- Set up the Maximum Bed Limits (CRS and Combo).
- Stop CRS Bed Acquisition.
- Set up the Slots (Holter, CRS and Combo).
- Restart CRS Bed Acquisition

Set the Maximum Realtime Bed Limit (CRS and Combo)

> Perform an assessment of the load affects that the MARS has on the realtime network (a.k.a. Monitoring, unity network) when:
>
> - installing the system on a new or existing realtime network
> - performing a MARS software update to version 2.x or higher
> - adding any device to the realtime network
> - changing the realtime network layout
>
> Base network assessments on product specification.

> The Maximum Realtime Bed Limit is the maximum number of beds the software can acquire from simultaneously without compromising system performance.

The following table contains information about MARS systems and the maximum number of beds that can be acquired in each system.

Review this table to determine if you need to change the bed limit.

Go to "Verify the Maximum Realtime Bed Limit" to check the current *MAXBED* limit.

Maximum Realtime Bed Limits

Table 7-1.

MARS model (product code)	SUN Platform	RAM memory[1] Hard disk capacity[2] (minimums)	CRS Only	CRS & Holter (Combo)	Maximum XLT Licenses	Maximum Realtime Bed limit
8000 (RU)	**Ultra 60**	RAM = 384Mb Disk = 9 , 18, or 36 Gb	✔	✔	**two**	64
5000 (RT)	**Ultra 10**	RAM =256 Mb Disk = 9 or 20 Gb	✔			48
3000 (RS)	**Ultra 5**	RAM = 128 Mb Disk = 4, 8.4, or 20 Gb		**Holter only**		
		RAM =256 Mb Disk = 8.4 or 20 Gb	✔[3]			32
8000 (HK)	**Ultra 1**	RAM =128 Mb Disk - dual 2 GB	✔	✔		64
		RAM = 192 Mb Disk = Dual 2 Gb	✔	✔	**one**	64
		RAM = 64 Mb Disk = Single or Dual 2 Gb	✔	✔		35
8000 (HG)	**SPARC 20**	RAM = 128 Mb Disk = 2 Gb + 1Gb	✔			64
		RAM = 64 Mb Disk = 2 Gb + 1Gb	✔			24
5000 (HT)	**SPARC 5**	RAM = 128 Mb Disk = 2 Gb	✔			48
		RAM = 64 Mb Disk = 2 Gb	✔			35
		RAM = 32 Mb Disk = 2Gb	✔			8

1. To check RAM installed: Click *Help* on menu bar. Click *About*. Click *Hardware 1*. Check *Total Memory.* 65536 KBytes = 64 MB; 131072 KBytes = 128 MB; 262144 Kbytes = 256 MB; 393216 KBytes = 384 MB.
2. To check hard disk capacity: In a command tool window, type **df<space>-ak**. Press **Enter**. Check the following:
   - Ultra 5: if */dev/dsk/c0t0d0s4* = *2236824 xxxxx xxxxx xx% /slots;* hard drive = 4GB
   - Ultra 1: has a */slot2* partition hard drive = dual 2GB
   - SPARC20: if */dev/dsk/c0t3d0s4* ≥ *861214 xxxxx xxxxx xx% /slots*; hard drive = 2GB + 1GB
   - SPARC5: if */dev/dsk/c0t3d0s7* ≥ *192807 xxxxx xxxxx xx% /reports;* hard drive = 2GB
3. Contact GE Medical Systems *Information Technologies* Sales Department for availability.

Verify the Maximum Realtime Bed Limit

To check the realtime bed limit:

1. Log in as admin.
2. Use the middle mouse button to click and drag any system icon onto the *System* menu header located in the upper left corner of the screen.
3. A command tool window opens and the *MARSxx-yyy#* command prompt appears.
4. Type the following command:

   cat<space>/var/MarsXM/system/channels.ini

   Press **Enter**.
5. Check the value for *MAXBEDS:*

If the value for MAXBEDS…	Then…
does not match the value listed in the Maximum Realtime Bed Limit Table	go to "Change the Maximum Realtime Bed Limit"
matches the value listed in the Maximum Realtime Bed Limit Table	type **exit** to close the command tool window. Go to "Stop CRS Bed Acquisition"

Change the Maximum Realtime Bed Limit

If you have trouble with the edit commands, follow the steps in "Restart Editing" to start the process again.

1. Type the following command:

   vi<space>/var/MarsXM/system/channels.ini

   Press **Enter**.
2. Check the value for *MAXBEDS:*

   Use the down arrow key to place the cursor at the beginning of the following line:

   MAXBEDS=24
3. Use the right arrow key to place the cursor on top of the 2 in the line shown above.
4. Press the **X** key two times to erase the number.
5. Type the letter **a** to access the append mode of the editor program.
6. Enter the value from the previous table.

   Do not press **Enter**.
7. Press the **Esc** key.
8. Type a colon (**:**).

9. Type **wq**, then press **Enter** to save the changes and exit the editor program.
10. Type:

syncpath<space>simple<space>/var/MarsXM/system/channels.ini

11. Press **Enter**
12. Type **exit** to close the command tool.

If CRS bed acquisition is...	Then go to...
running	"Stop CRS Bed Acquisition"
not running	"Set Up the Slots (Holter, CRS and Combo)"

Restart Editing

> If you have trouble with the edit commands during the proceeding procedure, follow these steps to start the process again

1. Press the **Esc** key to return to the command mode of the editor program.
2. Type a colon (**:**).
3. Type **q!**, then press **Enter** to cancel the changes and exit the editor program.
4. Go to the previous section, “Change the Maximum Realtime Bed Limit”, and repeat the process.

Stop CRS Bed Acquisition

- CRS acquisition must be stopped for all beds before the slot setup procedure can be performed.
- If **NOT** using CRS acquisition, go to “Set Up the Slots (Holter, CRS and Combo)”.
- The workstation has a limited total amount of disk space. By selecting various combinations of quantities and types of slots, you may use up to the maximum available disk space.

Stop CRS acquisition at the MARS as follows:

Create a Backup Copy of the *Tracked* File

1. Log in as the admin user.
2. Open a command tool window.
3. Click the command tool and type:

   cd<space>/var/MarsXM/system and press **Enter**
4. Type the following:

   cp<space>-p<space>tracked<space>tracked.org
5. Press **Enter**.
6. Type **exit**.
7. Press **Enter**.
   The command tool closes.

Move All Beds to *Don’t Monitor*

1. Click *System* on the workstation menu bar.
   The *System* pulldown menu appears.
2. Click *System Setup*.
   The *System Setup* pulldown menu appears.
3. Click *Select Bed*.
   The *System*: *Select Beds Setup* window appears listing all care units on the network.
4. Click the name of a care unit.
   The beds of that unit appear in the *Monitor* or *Don’t Monitor* list boxes.
5. Click the bed name in the *Monitor* list.
6. Click the right arrow to move the bed to the *Don’t Monitor* list box.
7. Repeat steps 4 through 6 until all the beds in all the units have been moved to the *Don’t Monitor* list box.
8. When you are finished moving all beds to the *Don’t Monitor* list, click *Ok*.

Go to “Set Up the Slots (Holter, CRS and Combo)”.

Set Up the Slots (Holter, CRS and Combo)

When using **MARS to MARS communication**, the local workstation must be re-configured with the same number of channels and total hours as the target workstation. These settings must match for all data types, such as holter, monitoring and acquired beds.

Determine the Slot Parameters

Before setting up slots, determine what you need for each of the following parameters and record that information in the spaces provided in the following table:

		Total Channels	Total Hours	Monitored Channels
	Admitted Beds [1] Monitoring Beds [2]			
	Discharged Beds [1] Acquired beds [2]			
	Analyzed Beds [1]	[1]	[1]	
	24 Hour tapes			
	48 Hour tapes			
	SEER/SEER XT			
	SEER MC 8 Meg			
	SEER MC 20 Meg			
	SEER MC 40 Meg [1]			

Note:
[1] MARS version 4.1, 4.1a, and 4.1b
[2] MARS version 4.0 and below

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Open the *Slot Creation Setup*

1. Log in as the admin user.
2. Click *System* on the menu bar.
3. Click *System Setup*.
4. Click *Slots*. The *System: Slot Creation Setup* window appears.

Set Up the Monitoring/Admitted Bed Slots

1. Click the arrows to set the number of desired slots.
2. Click the arrows to set the number of Total Channels to be monitored.
3. Click the arrow by the *Total Hours* list box to set the number of total hours monitored.

> When entering the number of beds, the software automatically creates at least four slots and reserves them as buffers for discharged patient data for *Monitoring Beds*. In version 4.1/4.1a/4.1b the number of *Discharged Beds* can be adjusted. To see the total number of slots being used, use the *mondman* utility.

4. Select the desired *Monitored Channels* parameters.
   - Click the left or right arrow to add or remove the parameter from the desired list box.

> Based on the number of *Total Channels* selected for *Monitoring Beds*, if a lead fails for more than 10 seconds, the next available parameter in the *Monitored Channels* is displayed.

5. Set the priority of the selected monitored parameters.
   - Click the desired parameter. Click *Up* or *Down* to move the parameter up or down in priority.

Set Up the Acquired/Analyzed Beds

1. Click the arrows to set the number of desired slots.
2. The Monitoring Beds Total Channels and Total Hours values appear for Acquired/Analyzed Beds.

Set Up the Tape, SEER, SEER MC Slots

1. Select the quantities and types of slots desired. For each type of slot, click the arrows to set the number of desired slots.
2. For 24-hour tapes and 48-hour tapes slots, click the *Total Channels* arrow to set the total number of channels acquired.

Create the Slots

1. Click *Apply*.
   The following message appears:
   About to REPLACE the current patient slot files. WARNING! - ALL current patient data will be REMOVED, Continue?
2. Click *Continue*.
   The following message appears:
   Are you SURE you want to REPLACE the current patient slot files. WARNING! - ALL current patient data will be REMOVED, Continue?
3. Click *Continue*.
   The percentage of progress appears in the *Slot Creation Progress* indicator.
4. When the *Slot Creation Progress* indicator reaches 100%, the following message appears:
   Slot creation and channel selection completed successfully. Rebooting the workstation.
5. Click *OK*.
   The workstation will reboot.

If CRS bed acquisition is…	Then go to …
being used	“Restart CRS Bed Acquisition”
not being used	Chapter 9, “Finishing the Update”

Restart CRS Bed Acquisition

> If you are using CRS acquisition, the original *Tracked* file must be restored, and CRS bed acquisition must be restarted.

Restore the *Tracked* File from the Backup Copy

1. After the workstation has rebooted, login as the admin user.
2. Open a command tool window.
3. Type the following:

   cd<space>/var/MarsXM/system
4. Press **Enter**
5. Type the following:

   cp<space>-p<space>tracked.org<space>tracked
6. Press **Enter**
7. Type **exit**.
8. Press **Enter**.

Verify that Bed Acquisition has Started

1. Click *System* on the workstation menu bar.
   The *System* pulldown menu appears.
2. Click *System Setup*.
   The *System Setup* pulldown menu appears.
3. Click *Select Bed*.
   The *System: Select Beds Setup* window appears.
4. Click the name of a care unit.
   The beds of that unit should appear in the *Monitor* list box.
5. Repeat step 4 until all the care units have been checked. When you are finished, click *Ok*.

Go to chapter 9, "Finishing the Update".

8 Set Up the Workstation Manually

Setting Up the Workstation

Introduction

Use the instructions in this chapter to set up the workstation system information from your manual records.

The following steps are discussed in detail:

If you need any additional information in setting up the various components of the workstation, see the “MARS unity workstation user’s guide”.

Refer to the information recorded in chapter 3 when setting up the following workstation settings.

- Set up Software Activators (Holter, CRS and Combo)
- Set up the Maximum Bed Limits (CRS and Combo)
- Set up the Slots (Holter, CRS and Combo)
- Set up Select Bed (CRS and Combo)
- Set up Event Review (Holter and Combo)
- Set up Trend Review (Holter and Combo)
- Set up Episode Review (Holter and Combo)
- Set up Report Review (Holter, CRS and Combo)
- Set up Heart Rate (Holter and Combo)
- Set up the Users (Holter, CRS and Combo)
- Set up the Menus (Holter, CRS and Combo)
- Set up the Sites (Holter, CRS and Combo)
- Set up the Network Devices (Holter, CRS and Combo)
- Set up the printer (Holter, CRS and Combo)

Activator Setup (Holter, CRS and Combo)

Beginning with software version 3.0, the MARS software utilizes activation codes in order to run certain applications. Each application code is unique (based upon application, mode, and host ID). Depending upon the MARS platform (1000, 5000, 8000) various combinations of applications are standard and others are purchased.

The factory ships an activator sheet listing all applications and their unique access codes relevant to your system. This sheet is either in the customer kit or inside the operator manual. Store the sheet in a safe place. It will be used again if the hard drive has to be replaced or rebuilt.

Some features requiring activation, include:

- CRS (select beds)
- Holter Analysis (tape, SEER, realtime)
- Event Review
- Trend Review
- Waveform Measurement (ST analysis)
- Episode Review
- Heart Rate variability (This option is not available in the United States.)
- XLT Network Computer (X-Terminal (one user per license)
- MARS to MARS
- MARS to MUSE

Activating Features

Follow these steps to activate the setup.

1. Locate the activator sheet.
2. Log in as the admin user.
3. Click *System* on the workstation menu bar. The *System* pulldown menu appears.
4. Click *System Setup* on the pulldown menu. The *System Setup* pulldown menu appears.
5. Click *Software Activators* on the pulldown menu. A list of applications appears on the screen.
6. Click an application to view its current mode. A list of available modes for that application displays in the *Change Mode To* list box.

   After clicking on an application, you can view the status of all applications by using the arrow keys to move through the list.
7. Click *Activate* for those applications listed on the activator sheet that are not already activated.
8. Type the access code, located on the activator sheet, in the access code box.

9. Click *Save Changes*.
   - If the code is incorrect or incomplete, an error message appears if the code is incorrect or incomplete.
   - If you want to cancel making a change, click *Discard Changes*. The window re-initializes without saving the changes.
10. Repeat steps 6 through 9 for all applications you need to change.
11. Click *Quit* to close the window.

Set the Maximum Realtime Bed Limit (CRS and Combo)

Perform an assessment of the load affects that the MARS has on the realtime network (a.k.a. Monitoring, unity network) when:

- installing the system on a new or existing realtime network
- performing a MARS software update to version 2.x or higher
- adding any device to the realtime network
- changing the realtime network layout

Base network assessments on product specification.

The Maximum Realtime Bed Limit is the maximum number of beds the software can acquire from simultaneously without compromising system performance.

The following table contains information about MARS systems and the maximum number of beds that can be acquired in each system.

Review this table to determine if you need to change the bed limit.

Go to " Verify the Maximum Realtime Bed Limit" to check the current *MAXBED* limit

Maximum Realtime Bed Limits

Table 8-1.

MARS model (product code)	SUN Platform	RAM memory[1] Hard disk capacity[2] (minimums)	CRS Only	CRS & Holter (Combo)	Maximum XLT Licenses	Maximum Realtime Bed limit
8000 (RU)	**Ultra 60**	RAM = 384Mb Disk = 9, 18, or 36 Gb	✔	✔	**two**	64
5000 (RT)	**Ultra 10**	RAM =256 Mb Disk = 9 or 20 Gb	✔			48
3000 (RS)	**Ultra 5**	RAM = 128 Mb Disk = 4, 8.4, or 20 Gb		**Holter only**		
		RAM =256 Mb Disk = 8.4 or 20 Gb	✔[3]			32
8000 (HK)	**Ultra 1**	RAM =128 Mb Disk - dual 2 GB	✔	✔		64
		RAM = 192 Mb Disk = Dual 2 Gb	✔	✔	**one**	64
		RAM = 64 Mb Disk = Single or Dual 2 Gb	✔	✔		35
8000 (HG)	**SPARC 20**	RAM = 128 Mb Disk = 2 Gb + 1Gb	✔			64
		RAM = 64 Mb Disk = 2 Gb + 1Gb	✔			24
5000 (HT)	**SPARC 5**	RAM = 128 Mb Disk = 2 Gb	✔			48
		RAM = 64 Mb Disk = 2 Gb	✔			35
		RAM = 32 Mb Disk = 2Gb	✔			8

1. To check RAM installed: Click *Help* on menu bar. Click *About*. Click *Hardware 1*. Check *Total Memory.* 65536 KBytes = 64 MB; 131072 KBytes = 128 MB; 262144 Kbytes = 256 MB; 393216 KBytes = 384 MB.
2. To check hard disk capacity: In a command tool window, type **df<space>-ak**. Press **Enter**. Check the following:
   - Ultra 5: if */dev/dsk/c0t0d0s4* = *2236824 xxxxx xxxxx xx% /slots;* hard drive = 4GB
   - Ultra 1: has a */slot2* partition hard drive = dual 2GB
   - SPARC20: if */dev/dsk/c0t3d0s4* ≥ *861214 xxxxx xxxxx xx% /slots*; hard drive = 2GB + 1GB
   - SPARC5: if */dev/dsk/c0t3d0s7* ≥ *192807 xxxxx xxxxx xx% /reports;* hard drive = 2GB
3. Contact GE Medical Systems *Information Technologies* Sales Department for availability.

Verify the Maximum Realtime Bed Limit

To check the realtime bed limit:

1. Log in as admin.
2. Use the middle mouse button to click and drag any system icon onto the *System* menu header located in the upper left corner of the screen.
3. A command tool window opens and the *MARSxx-yyy#* command prompt appears.
4. Type the following command:

   cat<space>/var/MarsXM/system/channels.ini

   Press **Enter**.
5. Check the value for *MAXBEDS:*

If the value for MAXBEDS…	Then…
does not match the value listed in the Maximum Realtime Bed Limit Table	go to "Change the Maximum Realtime Bed Limit"
matches the value listed in the Maximum Realtime Bed Limit Table	type **exit** to close the command tool window. Go to "Set Up the Slots"

Change the Maximum Realtime Bed Limit

> If you have trouble with the edit commands, follow the steps in “Restart Editing” to start the process again.

1. Type the following command:

   vi<space>/var/MarsXM/system/channels.ini

   Press **Enter**.
2. Check the value for *MAXBEDS:*

   Use the down arrow key to place the cursor at the beginning of the following line:

   MAXBEDS=24
3. Use the right arrow key to place the cursor on top of the 2 in the line shown above.
4. Press the **X** key two times to erase the number.
5. Type the letter **a** to access the append mode of the editor program.
6. Enter the value from the previous table.

   > Do not press **Enter**.

7. Press the **Esc** key.
8. Type a colon (**:**).

9. Type **wq**, then press **Enter** to save the changes and exit the editor program.
10. Type:

syncpath<space>simple<space>/var/MarsXM/system/channels.ini

11. Press **Enter**
12. Type **exit** to close the command tool.
13. Go to “Set Up the Slots”.

Restart Editing

1. Press the **Esc** key to return to the command mode of the editor program.
2. Type a colon (**:**).
3. Type **q!**, then press **Enter** to cancel the changes and exit the editor program.
4. Go to the preceding section, “Change the Maximum Realtime Bed Limit”, and repeat the process.

Set Up the Slots

Follow these steps to set up the slots used by the workstation.

> The workstation has a limited total amount of disk space. By selecting various combinations of quantities and types of slots, you may use up to the maximum available disk space.

1. Login as the admin user.
2. Click *System* on the workstation menu bar.
   The *System* pulldown menu appears.
3. Click *System Setup* on the pulldown menu.
   The *System Setup* pulldown menu appears.
4. Click *Slots* on the pulldown menu.
   The *Systems*: *Slots Creation Setup* window appears.

Set Up the Monitoring Bed Slots

1. Click the arrows to set the number of desired slots.
2. Click the arrows to set the number of Total Channels to be monitored.
3. Click the arrow by the *Total Hours* list box to set the number of total hours monitored.

> When entering the number of beds, the software automatically creates four slots and reserves them as buffers for discharged patient data for *Monitoring Beds*. To see the total number of slots being used, use the *mondman* utility.

4. Select the desired monitored parameters.
   - Click the left or right arrow to add or remove the parameter from the desired list box.

> Based on the number of *Total Channels* selected for *Monitoring Beds*, if a lead fails for more than 10 seconds, the next available parameter in the *Monitored Channels* is displayed

5. Set the priority of the selected monitored parameters.
   - Click the desired parameter. Click *Up* or *Down* to move the parameter up or down in priority.

Set Up the Acquired Beds

1. Click the arrows to set the number of desired slots.
2. The Monitoring Beds Total Channels and Total Hours values appear for Acquired Beds.

Set Up the Tape, SEER, SEER MC, and SEER Light Slots

1. Select the quantities and types of slots desired. For each type of slot, click the arrows to set the number of desired slots.

> If using SEER Light select the SEER MC 40 Meg slot.

2. For 24-hour tapes and 48-hour tapes slots, click the *Total Channels* arrow to set the total number of channels acquired.

Create the Slots

1. Click *Apply*.
   The following message appears:
   About to REPLACE the current patient slot files. WARNING! - ALL current patient data will be REMOVED, Continue?
2. Click *Continue*.
   The following message appears:
   Are you SURE you want to REPLACE the current patient slot files. WARNING! - ALL current patient data will be REMOVED, Continue?
3. Click *Continue*.
   The percentage of progress appears in the *Slot Creation Progress* indicator.
4. When the *Slot Creation Progress* indicator reaches 100%, the following message appears:
   Slot creation and channel selection completed successfully. Rebooting the workstation.
5. Click *OK*. The workstation reboots.
6. Login as **admin** at the password text entry box.

Set Up Units and Beds to Acquire Data (CRS and Combo)

Ensure that no systems are used or set up beyond the Maximum Realtime Bed Limit. See “Set the Maximum Realtime Bed Limit (CRS and Combo)”

When selecting beds to acquire data, be aware that the CRS stores data from both hard-wired bedside monitors and telemetry units. You should include every available hard-wired monitor and every telemetry device in your unit when you set up the system.

1. Click *System* on the menu bar.
2. Click *System Setup*. The *System: Select Beds Setup* window appears.
3. Click the name of a care unit to select it.
4. Select a bed. Bed names with an asterisk (*) are telemetry beds

Selecting Beds Using the Mouse

1. Click the bed name in the *Don’t Monitor* list to select it.
2. Click the left arrow to move the name from the *Don’t Monitor* list to the *Monitor* list.
3. Click *OK* when finished choosing beds to be monitored.

Selecting Beds Manually

1. Click in the *2. Type in bed name* text box located under *Manual Entry Procedure.*
2. Type the name of the bed in the text box.
3. Click *Add Bed*.
4. Click *OK* when finished entering beds to be monitored.

Set Up the System Event Definitions and Severity (Holter and Combo)

1. Click *Event Review* on the *System Setup* pulldown menu. The *System: Event Review Definitions* window appears.
2. Set up the system Event Definitions using the information recorded in “Record the System Event Definitions and Severity (Holter and Combo)”.
3. Click the *Save Settings* button.
4. The following message appears:

   Save current settings as System Defaults?
5. Click *Yes*.
6. Click the *Event Severity* button.
7. The *System Event Severity Setup* window appears.
8. Set up the system Event Severities using the information recorded in “Record System Severity”.
9. Use the *Up* and *Down* buttons to set the order as required.

10. Click the *Save Settings* button.
11. Click *Close*.
    The *System Event Definitions* window appears.
12. Click *Close*.

Set Up the System Trend Review Setups (Holter and Combo)

1. Click *Trend Review* on the *System Setup* pulldown menu.
   The *System Trend Setup* window appears.
2. Set up the system Trend Review requirements using the information recorded in "Record the System Trend Review Setups (Holter and Combo)" in chapter 3.
3. Click *Close*.

Set up the System Episode Review Setups (Holter and Combo)

1. Click *Episode Review* on the *System Setup* pulldown menu.
   The *System: Histogram Setup* window appears.
2. Set up the system Episode Review requirements using the information recorded in "Record the System Episode Review Setups (Holter and Combo)" in chapter 3.
3. Click *Close*.

Set Up the System Report Review Setups (Holter, CRS and Combo)

1. Click *Report Review* on the *System Setup* pulldown menu.
   The *Report Setup Tool* window appears.
2. Set up the system Report Review requirements using the information recorded in "Record the System Report Review Setups (Holter, CRS and Combo)" in chapter 3.
3. Click *Close*.

Set Up the System Heart Rate Setups (Holter and Combo)

1. Click *Heart Rate* on the *System Setup* pulldown menu.
   The *System Heart Rate Setup* window appears.
2. Set up the system Heart Rate requirements using the information recorded in "Record the Heart Rate Setups (Holter and Combo)" in chapter 3.
3. Click *Close*.

Set Up the Users (Holter, CRS and Combo)

Create a New User

1. Select *Users* from the *System Setup* menu. The *User* window for the system administrator appears.

1. Select *New User*. A new window appears with *newlogin* in the *Login* field.
2. Select the *First Name* text entry box. Type the user's first name.

3. Select the *Last Name* text entry box. Type the user's last name.
4. Type the new user's name in the *Login* field. This is the name the user must type with logging into the system.
5. Type the new user's password in the first *Password* field.

> Do NOT leave the *Password* field blank. Type a password in the *Password* field.

6. Type the same password in the second *Password* field.

Select the User's Menus

1. The user's menus appear in the *User Menu List*.
2. To add any additional menus, double click on the desired menu in the *Master Menu List* list box. The selected menu appears in the user's *User Menu List* list box.
3. To remove any undesired menu, click on the undesired menu and then click the *Remove Menu From User Menu* List button.

Select the User's Language

1. Click the language you want in the *Language* list box.

   Version 4 only supports English language.
2. Only one language may be assigned to a particular user. However, the user may change their language by themselves when ever they desire by using the *User* window.

Select Auto Recalc Preferences

1. Select *On* or *Off* for *Auto Recalc*.

   For optimum system performance:

   - *Auto Recalc* is *On*, [the default for MARS 8000 (product code HK)]. The system automatically recalculates *Trends* and *Histograms* to reflect the changes.
   - *Auto Recalc* is *Off*, [the default for MARS 8000 (product code HG) and MARS 5000]. The system DOES NOT recalculate *Trends* and *Histograms* as beats are relabeled. Instead, a *Recalc Trends* icon appears at the bottom of the display.

   - To recalculate all *Trends* and *Histograms*, click this icon one time.

Save the User Information

1. Select *Save Changes*.

If you are...	Then go to...
adding more users	“Create a New User”
NOT adding more users	step 2

2. Select *Close*.

Set Up the Sites (Holter, CRS and Combo)

1. Click *Site* on the pulldown *System Setup* menu. The *Site Setup* window appears.
2. Click *Sites* on the pulldown menu.
   The *Site Setup* window appears.
3. Click in the *Site #* text box.
4. Type the site number where the Holter data from this system will be stored on the MUSE system.
5. Click in the *Site Name* text box.
6. Type the name of your facility or hospital.
7. Click the arrow by the *Location #* text box.
8. Click the appropriate number in the pulldown list.
9. Click in the *Location Name* text box.
10. Type your location name.
11. Click *OK*.
    A *Confirmation* window appears.
12. Click *Continue*.
13. Click *OK* when the message about successful completion of the site setup changes occurs.

Set Up the Printer (Holter, CRS and Combo)

The workstation uses either a network printer or a non-network printer.

If using a...	Then go to...
network printer • Lexmark T 522N Network Printer • Lexmark Optra T 610 Network printer • Lexmark Optra S 1625 Network printer • Lexmark Optra S 1650 Network printer • Lexmark Optra Rn+ Network printer • Sun SPARCprinter E	“Configure the Workstation for a Network Printer”
• HP LaserJet 4000N, 4050N, or 4100N (networked) on a MARS RU, RS or RT workstation	“Configure the Workstation for a Network Printer”
• HP LaserJet 4000N, 4050N, or 4100N (networked) on a MARS HK, HG or HT workstation	"Configure the Workstation for Network Printing to HP 4000N, 4050N, or 4100N (HK, HG or HT only)"
non-network printer • Sun SPARCprinter II • HP 1200 (MARS RS and MARS RU workstations only) • HP 2100M • MARS laser printer 6 and 6+ • Marquette 14MB laser printer (HP 4M) • Lasergraph V laser printer (HP 5M) • HP LaserJet 4000N , 4050N or 4100N (parallel)	“Selecting a Printer” in Chapter 9, “Finishing the Update”

Configure the Workstation for a Network Printer

Refer to the printer information gathered in “Network Device Setups” in Chapter 3.

1. Login as **admin**.
2. Click *Network Devices* on the *System Setup* pulldown menu. The *Network Devices Setup* window appears.
3. Click *Printer*.

> On MARS product codes RU, RS and RT two printer selections are available: *Lexmark printer* and *HP printer.* Click the appropriate selection.

4. Click *New*. The addressing information appears.
5. Click in the *Hostname* text entry box.

> The *MARSHH* portion of the host name must be all capital letters.

6. In the *Hostname* text entry box, type the network printer name in the *MARSHH-xxxx* format.

7. Click in the *IP Address* text entry box.
8. Type the network printer IP address Press the **Tab** key to move between the parts of the text entry box.
9. Click in the *Comments* text entry box.
10. Type any location or identifying information about the printer in the *Comments* text entry box.

If connecting printer on...	Then...
MARS non-realtime network	go to step 15.
enterprise network	go to step 17.

11. Click in the *Ethernet Address* text entry box.
12. Type the ethernet address of the printer, placing two characters of the 10 character ethernet address in each portion of the text entry box.
13. Click the applicable printer options. (Use *Tray 2* for the 500 sheet feeder option.)
14. Click the appropriate paper size.
15. Click *Add*. One of the following messages appears:

If connecting printer on...	Then the following message appears...
MARS non-realtime network	*Adding a MARS non-realtime network device with the following parameters (ethernet address and bootp used)*
enterprise network	*Adding an enterprise non-realtime network device with the following parameters (ethernet address and bootp NOT used)*

16. Click *Continue*. The network printer information appears in the *Network Devices Setup* list box.
17. Click *Close*.The *Network Devices Setup* window closes.

Go to chapter 9, "Finishing the Update."

Configure the Workstation for Network Printing to HP 4000N, 4050N, or 4100N (HK, HG or HT only)

On MARS product codes HK, HG and HT, the MARS workstation is configured to use the HP4050N as a network printer using the *jetadmin* utility.

1. Log in as *root* user.
2. At the command line prompt, type **cd /opt/hpnp** and press **Enter**.
3. Type **./jetadmin** and press **Enter**
   The *Main Menu* appears.

4. Type **1** and press **Enter** to select *1) Configuration (super user only)*. The Configuration menu appears.
5. Type **3** and press **Enter** to select *3) Add printer to local spooler*. You are prompted for the IP address of the printer.
6. Type the IP address of the printer and press **Enter**.

   To find the IP address of the printer:

   - Press the Menu button on the printer until *INFORMATION MENU* appears on the printer's display.
   - Press the Item button until *PRINT CONFIGURATION* appears on the printer display.
   - Press the Select button. The message *PRINTING CONFIGURATION* appears as the printer produces a copy of the configuration settings.

   You can then find the printer's IP address on the "EIO 2 - JETDIRECT PAGE" of the printout under "Protocol Information" – "IP Address."

7. A list of Configurable Parameters appears.

   Ensure that the IP address shown is compatible with either the MARS non-realtime network (i.e. 134.236.xx.xx) or the MARS enterprise network. If needed, call Technical Support for assistance.

8. Type **1** and press **Enter** to select *1) Lp destination (queue) name*. You are prompted to enter the lp destination name.
9. Type **HP4000N** (or **HP4050N** for the 4050N or **HP4100N** for the 4100N) and press **Enter**. The list of Configurable Parameters reappears.
10. The *JobMonitor* setting should be *OFF*. If the *JobMonitor* setting is *ON*, type **4** and press **Enter** to change it to *OFF*.
11. Type **6** to select *6) Additional printer configuration*.
12. *Banner Page* should be *OFF*. If *Banner Page* is *ON*, type **5** and press **Enter** to change it to *OFF*.
13. Type **q** and press **Enter**. The *Configuration* menu appears.
14. Type **0** and press **Enter** to configure the printer. The *OK to continue?* prompt appears.
15. Type **y** and press **Enter** to continue. When the HP40x0N printer has been added, the message *Finished adding "HP40x0N" to the spooler* appears.
16. Press **Enter**. The *Configuration* menu appears.
17. Type **q** and press **Enter**. The *Main Menu* appears.
18. Type **q** and press **Enter** to exit.

Go to chapter 9, "Finishing the Update."

9 Finishing the Update

Select the Printer

Selecting the Printer Using *Printer Manager*

When this update is complete, the default printer for each user is set to *None*. To select the printer, follow these steps:

1. Log in as **admin**.
2. Click *System* on the workstation menu bar.
   The *System* pulldown menu appears.
3. Click *System Setup* on the pulldown menu.
   The *System Setup* pulldown menu appears.
4. Click *Printer Manager* on the pulldown menu.
   The *User: Printer Settings* window appears.
   The available printer names appear in the *User: Printer Settings* list box.
5. Click on the printer name. For network printers this will be the printer host name. On parallel printers this will be a general printer name such as *HP* or *SPARCprinterII*.

   > Each user must define the printer they want to use. To define each user's printer, login as that user and perform steps 2 through 5.
   >
   > Do this for every user defined on the system.

6. Click on any installed options for the selected printer.

Table 9-1. Printer Options

Option	Function
Duplex	Determines if printer will print on both sides of the single page. Available only on network printers. Option must be installed during network device setup.
Use Tray 2	Determines if the printer will use paper in the 500-sheet paper tray. Option must be installed during network device setup. Available only on network printers.
A4 Paper	Allows printing to A4 sized paper. In MARS version 4.1/4.1a/4.1b software this selection is no longer required. Printers used with version 4.1/4.1a/4.1b autosense the paper size loaded in the tray.

7. Click *Close*.
   The *User: Printer Settings* window closes.

Back Up the Setups

Introduction

The MARS backup utility saves the current MARS configuration settings for system, users, menus or applications to a floppy diskette. The restore utility can then be used to restore these settings. Typically, a restore is only needed after a drive rebuild or exchange.

The admin user should perform a backup of the setups periodically (or whenever any user or setup changes are made) to ensure a current copy of the setups are available if needed.

Backup Procedure

Follow these steps to back up the MARS workstation setups:

1. Log in as admin user.
2. Click *System* on the workstation menu bar. The *System* pulldown menu appears.
3. Click *System Setup*. The *System Setup* pulldown menu appears.
4. Click *Backup and Restore*. The *System Setup Backup/Restore Tool window* appears.
5. Select *Backup System Setups*.
6. Click the *Apply* button. A confirmation window appears.
7. Insert the floppy diskette where you want to store the backup.

> The backup procedure reformats the floppy diskette. This erases ALL the information on the diskette.
>
> A separate backup diskette is required for each workstation.

8. Click *Continue*.
9. A second confirmation window appears. Select *Continue*.
10. When the backup is complete, the message *The backup was successful* appears. Click *OK*.

> The admin users should perform this backup procedure whenever a user makes any setup changes. Store the backup diskette in a safe place.

Checkout Procedures

The checkout procedures verify that the workstation and its interconnected components function correctly.

Functions Tested

The functions tested include:

- checking the software
- acquiring waveform data from all possible options (i.e., SEER acquisition unit, tape acquisition unit, network acquisition, etc.)
- storing waveform data to any storage devices
- retrieving waveform data from storage devices
- displaying acquired and retrieved waveform data
- printing waveform data
- checking the RSS link

Checkout Procedures Performed

Perform the appropriate checkout procedures for the specific workstation. Follow the steps of the appropriate checkout procedures:

Check Out Software

Test Workstation Shutdown Software

Follow these steps to test the proper operation of the MARS unity workstation shutdown software.

> Power off the MARS unity workstation properly. Failure to do so may result in the loss of data or a system failure.

> During normal operation the MARS unity workstation should not be powered off. It should only be powered off for service.

1. Click *System* on the workstation menu bar.
   The *System* pulldown menu appears.
2. Click *System Shutdown* on the pulldown menu.
   The Confirmation window appears.
3. Click *Yes*.
   The *This will take about 20 seconds* window appears.
4. Click *OK*.
   After about 20 seconds, the *ok* prompt appear.
5. Once the *ok* prompt appears, turn off the monitor and any other peripherals connected to the system.

6. Turn off the Power switch on the back of the workstation. .
   - On the MARS 8000 (RU) workstation the power switch is located on the front of the workstation.

Testing the Workstation Start-up Software

This section tests the workstation start-up software and ability to access the application software. To properly power on the workstation:

> Connect and properly terminate all SCSI devices before powering on the workstation.
>
> Failing to properly connect and terminate SCSI cables may cause corruption of the disk drives or system failure.

1. Turn on the UPS power switch.
2. Turn on the monitor power switch.
3. Turn on any peripheral SCSI device power switches.
4. Turn on the Power On switch on the back of the workstation. Several screens appear momentarily.
   - On the MARS 8000 (RU) workstation the power switch is located on the front of the workstation
5. Turn on the printer.
6. When the workstation completes the start-up, the *login* window appears.
7. In the *Please enter your user name* field, type **mei** and click the *OK* button. The *Password* window appears.
8. In the *Please enter your password* field, type **mei** and click the *OK* button.

Several screens appear momentarily. The *cmdtool* icon appears momentarily in the lower left corner of the monitor. The application software starts and the system screen appears.

Test Software Installation

1. At the workstation application screen, click *Help* on the menu bar. The *Help* pulldown menu appears.
2. Click *About*. The *About* window opens.
3. Click *Software*. The *Software* window opens.
4. Click *Software Check*. The workstation verifies the current version for each of the software packages and the operating system using checksums and rules. This takes about 10 to 20 minutes.
5. Click *Close*. The *Software Check* window closes.
6. Click *Close*. The *Software* window closes.
7. Click *Close*. The *About* window closes.

Test Drive Storage Capacity

Ensure that no disk partitions are at 100% capacity. Follow these steps to test the drive storage capacity.

1. Using the middle mouse button, click and drag any system icon onto the *System* menu header located in the upper left corner of the screen.
2. A command tool window opens and the *MARSxx-yyyy%* command prompt appears.
3. Type **df<space>-ak** and press **Enter**. A listing of the system file partition and their current capacity appears.
4. Verify that no disk partition has reached 100% capacity.

   > The */slots* or */slots2* partition may reach 100% capacity.

5. Close the command tool window.

Check Out Basic System Functionality

Verify the workstation can acquire, display, and print waveform data from all possible methods. Verify that the workstation can print both a full disclosure report and a page from an application tool (i.e., strip, page, or event). For more detailed information, see the “MARS unity workstation operator’s manual”.

Check Out RSS Link

Contact the MARS unity workstation Technical Support Line at 1-800-558-7044 or 1-561-575-5000 ext. 4243 to request a RSS link integrity, security and configuration test.

Have the following applicable information available:

- Marquette serial number (from the back of the system box), host name and IP address for the workstation
- Marquette serial number, host name and IP address for all networked devices, including: display terminals and network printers

Billing Information

Please bill per customer status.