



Centricity™ RA600 Service Manual

RadWorks Release 6.0

**FP10516
Revision 2**

**Published—August 2002
Do not duplicate.**

© GE Medical Systems *Information Technologies*, 2002, All rights reserved

Regulatory Requirements

This product complies with the regulatory requirements of the following:

- ◆ Medical Device Quality Systems Regulation, FDA (Food and Drug Administration, Department of Health and Human Services, USA).
- ◆ Underwriters' Laboratories, Inc. (UL), an independent testing laboratory.
- ◆ Canadian Standards Association (CSA).
- ◆ International Electrotechnical Commission (IEC), international standards organization, when applicable.
- ◆ General Electric Medical Systems is ISO 9001 and EN 46001 certified.
- ◆ The original document was written in English.

This equipment generates, uses, and can radiate radio frequency energy. The equipment may cause radio frequency interference to other medical and non-medical devices and radio communications. To provide reasonable protection against such interference, this product complies with emissions limits for a Group 1, Class A Medical Devices Directive as stated in EN60601-1-2. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment is found to cause interference (which may be determined by turning the equipment on and off), the user (or qualified service personnel) should attempt to correct the problem by one or more of the following measure(s):

- ◆ reorient or relocate the affected device(s)

-
- ◆ increase the separation between the equipment and the affected device
 - ◆ power the equipment from a source different from that of the affected device
 - ◆ consult the point of purchase or service representative for further suggestions

The manufacturer is not responsible for any interference caused by using other than recommended interconnect cables or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the users' authority to operate the equipment.

To comply with the regulations on electromagnetic interference for a Class A FCC Device, all interconnect cables to peripheral devices must be shielded and properly grounded. Use of cables not properly shielded and grounded may result in the equipment causing radio frequency interference in violation of the FCC regulations.

Do not use devices which intentionally transmit RF Signals (Cellular Phones, Transceivers, or Radio Controlled Products) in the vicinity of this equipment as it may cause performance outside the published specifications. Keep the power to these type devices turned off when near this equipment.

The medical staff in charge of this equipment is required to instruct technicians, patients, and other people who may be around this equipment to fully comply with the above requirement.



- This Service Manual is available in english only.
 - If a customer's service provider requires a language other than English, it is the customer's responsibility to provide translation services.
 - Do not attempt to service the equipment unless this service manual has been consulted and is understood.
 - Failure to heed this warning may result in injury to the service provider, operator or patient from electric shock, mechanical or other hazards.
-



- Ce Manuel de maintenance n'est disponible qu'en anglais.
 - Si le technicien du client a besoin de ce manuel dans une autre langue que l'anglais, c'est au client qu'il incombe de le faire traduire.
 - Ne pas tenter d'intervention sur les équipements tant que le manuel Service n'a pas été consulté et compris.
 - Le non-respect de cet avertissement peut entraîner chez le technicien, l'opérateur ou le patient des blessures dues à des dangers électriques, mécaniques ou autres.
-



- Dieses Kundendienst-Handbuch existiert nur in englischer Sprache.
 - Falls ein fremder Kundendienst eine andere Sprache benötigt, ist es Aufgabe des Kunden für eine entsprechende Übersetzung zu sorgen.
 - Versuchen Sie nicht, das Gerät zu reparieren, bevor dieses Kundendienst-Handbuch nicht zu Rate gezogen und verstanden wurde.
 - Wird diese warnung nicht beachtet, so kann es zu Verletzungen des Kundendienst-technikers, des Bedieners oder des Patienten durch elektrische Schläge, mechanische oder sonstige Gefahren kommen.
-



- Este Manual de Servicio sólo existe en inglés.
 - Si algún proveedor de servicios ajeno a GEMS solicita un idioma que no sea el inglés, es responsabilidad del cliente ofrecer un servicio de traducción.
 - No se deberá dar servicio técnico al equipo, sin haber consultado y comprendido este manual de servicio.
 - La no observancia del presente aviso puede dar lugar a que el proveedor de servicios, el operador o el paciente sufran lesiones provocadas por causas eléctricas, mecánicas o de otra naturaleza.
-

ATENÇÃO

- Este Manual de Assistência Técnica só se encontra disponível em Inglês.
- Se qualquer outro serviço de assistência técnica, que não a GEMS, solicitar estes manuais noutra língua, é da responsabilidade do cliente fornecer os serviços de tradução.
- Não tente reparar o equipamento sem ter consultado e compreendido este Manual de Assistência Técnica.
- O não cumprimento deste aviso pode por em perigo a segurança do técnico, operador ou

AVVERTENZA

- Il presente manuale di manutenzione è disponibile soltanto in inglese.
- Se un addetto alla manutenzione esterno alla GEMS richiede il manuale in una lingua diversa, il cliente è tenuto a provvedere direttamente alla traduzione.
- Si proceda alla manutenzione dell'apparecchiatura solo dopo aver consultato il presente manuale ed averne compreso il contenuto.
- Non tenere conto della presente avvertenza potrebbe far compiere operazioni da cui derivino lesioni all'addetto alla manutenzione, all'utilizzatore ed al paziente per folgorazione elettrica, per urti meccanici od altri rischi.

警告

- ・このサービスマニュアルには英語版しかありません。
- ・GEMS以外でサービスを担当される業者が英語以外の言語を要求される場合、翻訳作業はその業者の責任で行うものとさせていただきます。
- ・このサービスマニュアルを熟読し理解せずに、装置のサービスを行わないで下さい。
- ・この警告に従わない場合、サービスを担当される方、操作員あるいは患者さんが、感電や機械的又はその他の危険により負傷する可能性があります。

注意:

- 本维修手册仅存有英文本。
- 非 GEMS 公司的维修员要求非英文本的维修手册时，客户需自行负责翻译。
- 未详细阅读和完全了解本手册之前，不得进行维修。
- 忽略本注意事项会对维修员，操作员或病人造成触电，机械伤害或其他伤害。

Revision History

Rev	Date	Author	Reason For Change
0	3/2002	WB	Initial release for Centricity RA600
1	4/2002	SA/WB	Add work group server, streaming video, Europe's dongle replacement procedure, revised initial powerup config., Flat panel display coverage & other miscellaneous minor fixes
2	8/2002	DB/SA/ WB	Add RA600 Identification & Connectivity list to Chp. 1, revise monitor calibration CNF006, change streaming video SW013 and Static frame capture SW007 to point to kit doc, add software patch installation SW014.

Table of Contents

CHAPTER 1 INTRODUCTION	11
CHAPTER 2 INSTALLATION STEERING GUIDE	25
CHAPTER 3 HARDWARE INSTALLATION	28
IST 001 (A+) 2048 x 2506 Portrait Monitor Interconnections	29
IST 002 (A) 1728 x 2304 Portrait Monitor Interconnections	33
IST 003 (B) 1200 x 1600 Portrait Monitor Interconnections	37
IST 004 (B+) 1536 x 2048 Flat Panel Portrait Monitor Connections	41
IST 005 (C) 1280 x 1024 Landscape Monitor Interconnections	45
IST 006 Site Configuration Forms	49
IST 007 Adaptec SCSI Card Installation	53
IST 008 Installing Frame Grabber Board	55
IST 009 Optional Internal Hard Drive Connect & Configure	57
IST 010 Installing Additional RAM Modules In CPU	81
IST 011 Installing Global Modem	86
IST 012 Installing Barco 3MP2FH Video Board	88
IST 013 Installing RAID Unit	92

CHAPTER 4 SOFTWARE CONFIGURATION 95

CNF 001 Initial Power Up and Software Configuration96

CNF 002 Configuring System IP Address, Subnet Mask or Default Route/Gateway 101

CNF 003 Changing Host/Computer Name103

CNF 004 Adding/Configuring TCP/IP Printer105

CNF 005 VNC Server Installation and Configuration107

CNF 006 Monitor Calibration with Barco Tool (MediCal Pro)109

CNF 007 Configuring Barco 3MP2FH Video Driver135

CNF 008 RAID System Recovery and Configuration143

CNF 009 Configuring Workgroup Server & Client System151

CHAPTER 5 FUNCTIONAL CHECK 161

VF 001 Functional Checks / Setup Completion162

VF 002 Saving/Restoring System and User Settings165

VF 003 Customer Turnover173

CHAPTER 6 SOFTWARE PROCEDURES 175

SW 001 Restoring RA600 Original System Configuration177

SW 002 Installing Centricity RA600 Software180

SW 003 (C, 2C) Matrox Video Board Driver Installation188

SW 004 (A+,A,B) Dome Video Board Driver Installation193

SW 005 Removing Applications Software197

SW 006 Single Media Archive (SMA) Install, Configure & Test199

SW 007	Installing Foresight Static Frame Capture Software (Refer to Kit document FP10621)	207
SW 008	Common Windows 2000 Procedures	208
SW 009	Changing DOME Display Font Size	223
SW 010	Installing Film Digitizer SCSI Software	224
SW 011	Installing Work Group Server on RA600	228
SW 012	Installing an RA600 Work Group Client	230
SW 013	Install & Setup of Streaming Video Capture System (Refer to Kit document FP10621)	232
SW 014	Installing Centricity RA600 Software Patch	233

CHAPTER 7 TROUBLESHOOTING 234

TSG 001	Telneting to a Workstation	236
TSG 002	Workstation Directory Tree	238
TSG 003	Troubleshooting Network Problems	239
TSG 004	Using The VGA Service Monitor	241
TSG 005	Stop a Software Process	243
TSG 006	Display Windows 2000 System Logs	244
TSG 007	Display Centricity RA600 Application Logs	245
TSG 008	Display IP/Netmask/Default Route Configuration Settings	246
TSG 009	Display Loaded Drivers	247
TSG 010	Display System Services	248
TSG 011	Display System Hardware & Software Configuration	249
TSG 012	Display OS Version	250

TSG 013	Display Application Software Version	251
TSG 014	Workstation Application Problem Solving	252
TSG 015	Connect Frame Grabber to Monitor that has no pass-through	255
CHAPTER 8 DISASSEMBLY & REASSEMBLY PROCEDURES		257
DR 001	Video Board Switch Settings	258
DR 002	PC Port Connection Diagram	260
DR 003	Replace-Configure PERC 3/DC RAID controller board	262
DR 004	Replacement of 221S RAID Unit Components	264
CHAPTER 9 RENEWAL PARTS		265
CHAPTER 10 SUGGESTED MAINTENANCE		275
MNT 001	Scheduled Maintenance	276

1

Introduction

Section 1: Introduction

Throughout this manual the common term Workstation is used to refer to the Centricity RA600 Workstation which represents the installed configuration of monitor(s) and computer.

Section 2: Chapter Descriptions

Shown below is a summary of the chapters in this book and a description of each chapter.

- | | |
|-----------|--|
| Chapter 1 | Introduction. This chapter contains information about the workstation, a list of related manuals and a summary of what is in each chapter. |
| Chapter 2 | Service/Installation Steering Guide. This chapter presents an overview of what is required for a complete installation. |
| Chapter 3 | System Installation. This chapter contains the job cards needed to perform the installation, configure purchasable options, and post-installation activities. |
| Chapter 4 | Software Configuration. This chapter contains an introduction and the job cards needed to configure the software. |
| Chapter 5 | Functional Check. This chapter contains job cards for verifying proper system function. |

- Chapter 6 **Software Procedures.** This chapter contains job cards for performing common procedures, such as software loads, installs, and the day-to-day procedures needed for Windows NT operation and administration.
- Chapter 7 **Troubleshooting.** This chapter includes a troubleshooting chart to help isolate problems and contains job cards for querying the system to display parameters and information about running processes, logs, software version, etc.
- Chapter 8 **Disassembly/Reassembly.** This chapter contains job cards for disassembly and reassembly.
- Chapter 9 **Renewal Parts.** Workstation replaceable parts list and part numbers.
- Chapter 10 **Suggested Maintenance.** Suggested maintenance procedures to be performed every six months.

Section 3: Related Documentation

Here is a list of documents related to the Centricity RA600 workstation.

Item	GE Document Number	Document Name
1	FP10515	Centricity RA600 Workstation Pre-Installation Manual
2	OI10091	Centricity RA600 / RadWorks 6.0 User's Guide
3	Dell™ Online Documentation - supplied on CD-ROM with Dell 1400 (Dell P/N 19FCD)	PowerEdge 1400 User's Guide PowerEdge 1400 Installation and Troubleshooting Guide

Section 4: Centricity RA600 Workstation Standard Configuration

The standard Centricity RA600 Workstation configuration consists of:

- A computer, mouse, keyboard, and associated cabling.
- Either of one or two or four portrait monitors (A+, A, or B models), or one or two landscape monitors (C models).
- A VGA service monitor for system maintenance tasks.

Illustration 1-1 shows a workstation configuration with two Barco CRT portrait monitors and the service monitor.

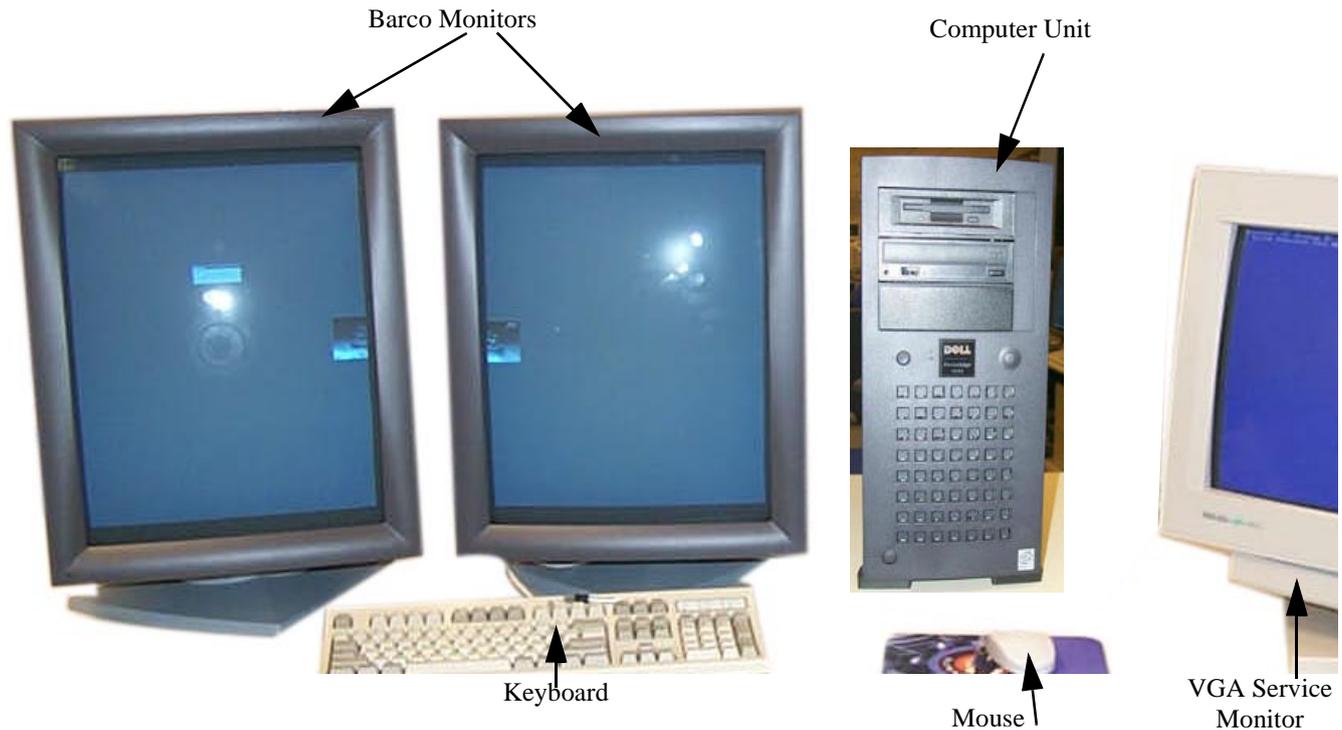


Illustration 1-1: Centricity RA600 showing BARCO monitors & service monitor

4-1 Computer Configuration

Hardware Items	
Item	Description
Hard disk storage	36 GB SCSI disk drives
RAM	512 MB or 1 GB RAM with optional upgrade to 2 GB
Internal CD-ROM	Speed: 20/48x (minimum)
Internal floppy disk	3.5"
Network Interface Connector	RJ45 connector
Video board(s)	One or two video boards depending upon the number of video monitors being used. (See appropriate job card in Chapter 3 for cabling and the location of video board in Computer Unit.)
Keyboard	Standard 104 key
Mouse	2-button with scrolling wheel.

4-2 Monitor Configurations

These are the monitors used with the Centricity RA600.

Model Type	Type	Resolution	Refresh Rate	Video Board
Barco A+ Model (Portrait)	Monochrome CRT	2048 x 2560	71 Hz	MD5
Barco A Model (Portrait)	Monochrome CRT	1728 x 2304	69 Hz	MD4
Barco B Model (Portrait)	Monochrome CRT	1200 x 1600	75 Hz	MD2

Model Type	Type	Resolution	Refresh Rate	Video Board
Barco B+ Model (Portrait)	Monochrome flat panel	1536 x 2048	59 Hz	3MP2FH
C Model (Landscape)	Color CRT or flat panel	1280 x 1024	85 Hz (75 Hz for flat panel)	Matrox G450

4-3 Service Monitor

The service monitor is used to run diagnostic tests on the A+, A, B and B+ model workstations.

Model Type	Type	Resolution	Refresh Rate	Video Board
VGA Service Monitor	Color	640 x 480	default	onboard VGA

4-4 Software Items

Software Items Installed	
Item	Description
Windows 2000 (with SP2)	Operating System
Centricity RA600	Application Software

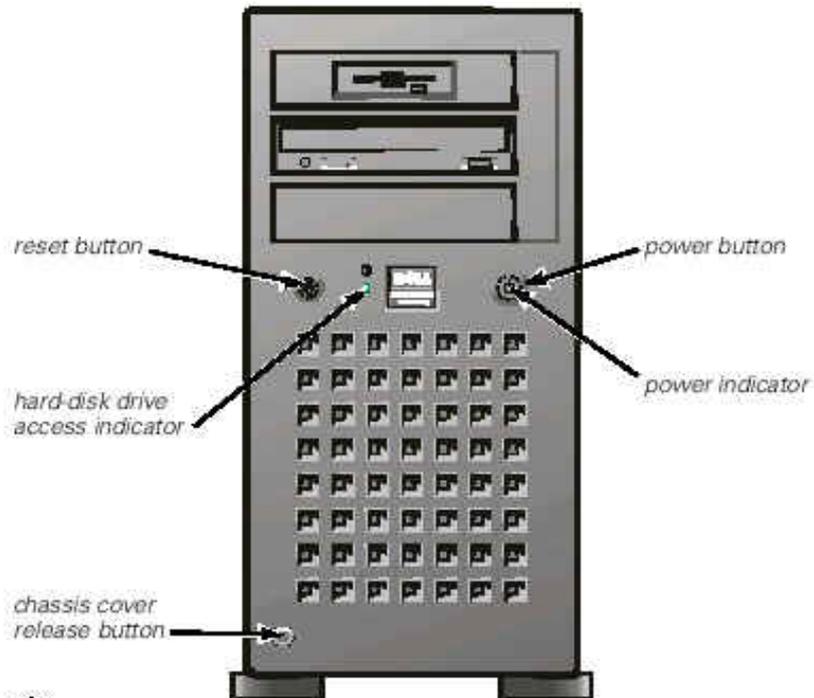


Illustration 1-2: Computer Unit, Front View

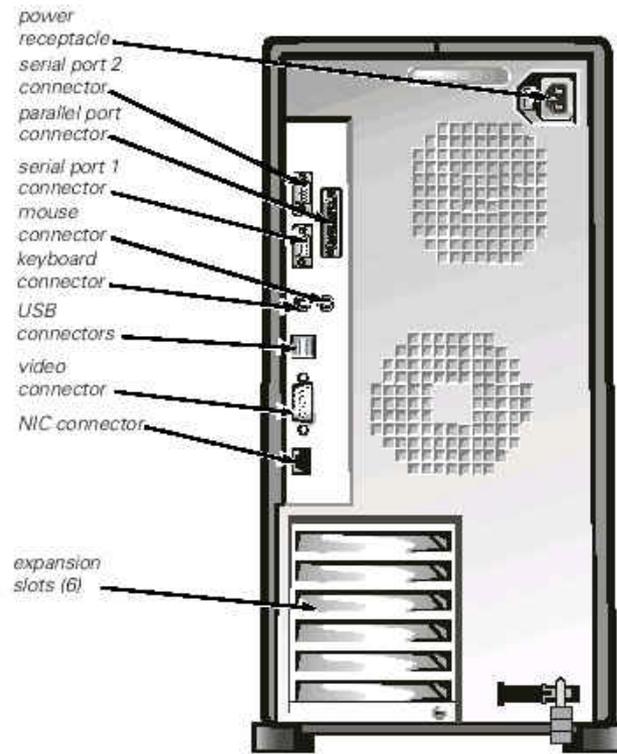


Illustration 1-3: Computer Unit, Rear View

Section 5: List of Abbreviations

The following abbreviations and terms are used throughout this manual.

Abbreviation/Term	Definition
CPU	Refers to the Computer Unit, (Central Processor Unit)
IP	Internet Address, (Internet Protocol)

Abbreviation/Term	Definition
NTFS	The system hard drive, (New Technology File System)
SMPTE	A test pattern displayed on a monitor, (Society of Motion Picture and Television Engineers)
Tech Support	Technical Assistance offered by the GE Remote On-Line Center. Centricity RA600 Tech Support by the On-Line Center at 800-321-7937 or International at 414-896-5659.
LHS	Left Hand Side
RHS	Right Hand Side

Section 6: Safety Precautions



Caution

When removing and replacing circuit boards, be sure to use the recommended wrist-grounding strap to prevent static electricity from destroying components.



Caution

The maximum ambient magnetic field allowable for installing the Centricity RA600 workstation is 1 gauss to ensure proper operation.

Section 7: Centricity RA600 Workstation Virus Protection

Under normal usage conditions, the Centricity RA600 Workstation should not be susceptible to virus attacks. Normal usage conditions are defined as the Centricity RA600 Workstation being used only to view/process DICOM images, not as an internet access point. The machine will be most secure when set up with limited access and secure user account names and passwords. Only trained GE personnel and system administrators should add, modify, or delete pre-approved content on the workstation computer, minimizing virus vulnerability.

If desired, anti-virus software can be installed on the workstation by customer designated system administrators as an additional precaution. GE Medical Systems has verified that the system can operate while anti-virus "live protection" software is running, but does not endorse any specific anti-virus software vendor. However, the anti-virus software **MUST NOT** be configured to periodically scan all drives, particularly partitions where the Centricity RA600 database and/or images are stored. If database or archive storage partitions are scanned for viruses, system performance will be severely degraded.

Section 8: Dell Service Strategies

8-1 Service Strategy for Dell Equipment

The local site FE (Field Engineer) will do the installation of all Centricity RA600 Workstation components (including Dell CPU/Server). When the customer calls into GE CARES, the ROC (Remote Online Center) will investigate the service call and determine if it's related to the Dell equipment. If it is, the ROC will contact Dell and deploy the necessary Dell FE and replacement part (**PLEASE NOTE—GEMS GPO will NOT be supporting spare parts for the Dell CPU/Server**). If the ROC does not identify the root of the problem to be Dell-related, the local FE will be dispatched.

While on site, if the local FE identifies the problem to be Dell-related, he/she will call the ROC for support. The ROC will then contact Dell for problem resolution. Dell will provide 3 years of "Same Day, 4-Hour Response Service". This will include Parts & Global Service. There are a limited number of remote locations that Dell will not guarantee the 4 hour response time.

If the Dell Service contract is no longer valid (after 3 years of purchase or if the FE violated the contract), the local FE and ROC will follow the same process of Dell Support at a billable rate.

8-2 T3 Replacement for Dell CPU

If the Dell 1400 CPU requires replacement, the defective CPU must be returned to the Global Parts Inventory. The FE is responsible for removing any physical upgrades (e.g. additional RAM modules, hard drives, SCSI boards, Barco video boards, frame grabber board, etc.) from the defective CPU for use on the replacement CPU.

8-3 Dell Equipment Warranty/Contract Transfer

The FE must transfer the Warranty/Contract to Dell Europe or Asia if he/she is installing a piece of U.S.-purchased Dell hardware in one of those areas. **If this is not done, the Warranty/Contract will**

not be valid outside the US. This transfer may take up to 3 weeks. If service needs to be done before the transfer, please contact the EMEA Program Manager at Dell for an immediate transfer.

EMEA Program Manager
Global Segment
Tel: +44 (0) 1344 748931
Fax: +44 (0) 1344 748953
Mobile: +44 (0) 802 594845

The warranty transfer can be done on the internet by going to: http://www.dell.com/html/us/global/prem_page/tag_trans_form.htm which will display the Unit Location Transfer Form. The following information will be required to fill out the Transfer Form:

Unit Information (all)

Unit Service Tag Number
Country where system was originally purchased

New Location Information (all)

Name (of contact person for Dell service)
Organization
Street Address
City
State/Province
Zip/Postal code
Country where system will reside
Work Phone
e-mail

Current Service Level (choose one)

Parts Only
Return-to-Base
Collect and Return
Next Business Day (NBD) On-Site

Section 9: RA600 Site Identification and Remote Connectivity Information

GE CARES Information

Item Name	Number
Facility Name	
System Location (Bldg, Floor, etc.)	
System ID [Too generic? What ID?]	
Primary Field Engineer Name	
Primary Field Engineer Phone	
Customer Contact Name	
Customer Contact Phone	

Hardware Information

Item Name	Number
CPU Type (Mfr., Model, Service Nol, etc.)	
RAM amount	
Hard Disk Size	
RAID Unit (Mfr., Model, Size)	

Software Information

Item Name	Number
Centricity RA600 Software Version No.	
Centricity RA600 Dongle/License Serial No.	

Item Name	Number
-----------	--------

Windows 2000 Registration ID No.

Centricity RA600 Networking Information

Item Name	Number / Value
-----------	----------------

IP Address

MAC Address

Subnet Mask

AE Title

Internet Connection Gateway Address

Remote Connectivity Software Installed
(VNC, PC Anywhere, etc.)

VPN Connection Available for GE Service?
(If yes, type and connection info)

Dial -In 56KB Modem Phone No.

RadWorks Installed Options

Item Name	Data / Value
-----------	--------------

Multi-monitor (Yes/No)

Type of Monitor(s)

Single Media Archive (SMA) Installed? Y/N

Item Name	Data / Value
Archive Module	
Digitizer (Y/N)	
Digitizer ID (Mfr, Model, S/N)	
QC Module (Y/N)	
Dicom print option (Y/N)	
Dicom printer (Mfr, Model, S/N)	
Integration module (Y/N)	
Other	

Modalities Connected to the RA600/RadWorks System

(Indicate direct/remote connection & if remote, type of wide-area network (WAN) used: POTS, DSL, cable, etc.)

Modality Type	Description	IP Address	S.M.	GW	Port	AE Title

2

Installation steering guide

Section 1: Introduction

This chapter provides directions on how to install and update software in the Centricity RA600 Workstation.

Section 2: Steering Flowchart

Illustration 2-1 on page 27 is an overall process steering diagram for installing the Centricity RA600 Workstation.

Section 3: Installing Options

Table 2-1 lists the procedures for installing optional items in the Centricity RA600 Workstation.

Optional Item	Physical Installation	Software Install/ Configure
Additional RAM Module(s)	IST 010	N/A RAM is automatically recognized at bootup.
Optional Hard Drive(s)	IST 009	OS configure in Chapter 2, IST 009

Optional Item	Physical Installation	Software Install/ Configure
Video Board	N/A	Driver for C monitor SW 003 Driver for A, A+, B, SW 004 Driver for B+ CNF 007
Frame Grabber board (I-Color Static Frame Capture System)	IST 008	FP10621 (kit document)
Single Media Archive CD-R	IST 007 (SCSI board)	SW 006
Film Digitizer (Lumisys, Howtek, Vidar)	IST 007 (SCSI board)	SW 010
Global Modem	IST 011	N/A
Barco 3MP2FH Video Board	N/A	CNF 007
Barco's MediCal Pro monitor calibration software	N/A	CNF 008
RAID & Work Group Server	IST 013	SW 011, CNF 009
Work Group Client	N/A	SW 012, CNF 009
I-Color Streaming Video Capture System	IST 008	FP10621 (kit document)

Table 2-1: Optional Device Installation

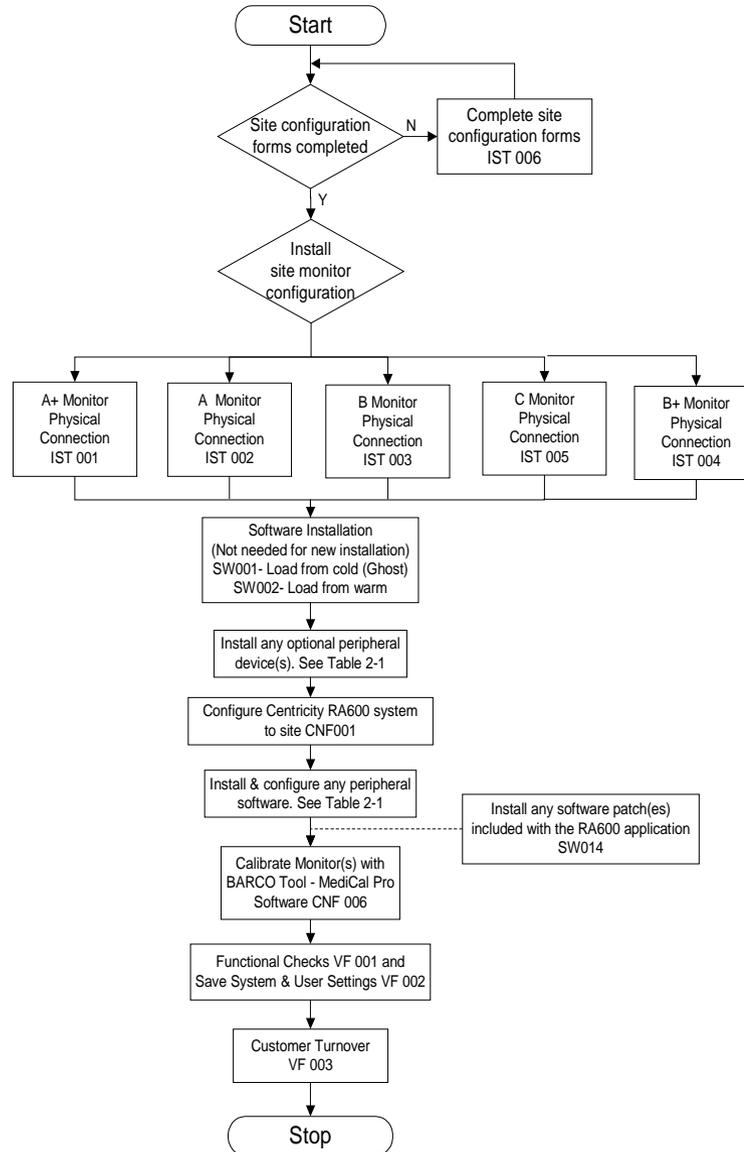


Illustration 2-1: Installation Flowchart with Ghost Load/ Load From Cold / Load From Warm

3

Hardware Installation

Section 1: Summary of Job Cards

Job Card No	Hardware Installation Job Card Title
IST 001	(A+) 2048 x 2506 Portrait Monitor Interconnections
IST 002	(A) 1728 x 2304 Portrait Monitor Interconnections
IST 003	(B) 1200 x 1600 Portrait Monitor Interconnections
IST 004	(B+) 1536 x 2048 Flat Panel Portrait Monitor Connections
IST 005	(C) 1280 x 1024 Landscape Monitor Interconnections
IST 006	Site Configuration Forms
IST 007	Adaptec SCSI Card Installation
IST 008	Installing Frame Grabber Board
IST 009	Optional Internal Hard Drive Connect & Configure
IST 010	Installing Additional RAM Modules In CPU
IST 011	Installing Global Modem
IST 012	Installing Barco 3MP2FH Video Board
IST 013	Installing RAID Unit

■ IST 001 (A+) 2048 x 2506 Portrait Monitor Interconnections

Section 1: INTRODUCTION

This job card contains the instructions for connecting the components comprising the Centricity RA600 Workstation. Monitor cabling diagrams are provided to show the connection of two or four Barco monitors to the appropriate video board slot positions at the rear of the computer housing.



Caution

The maximum magnetic field allowable for installing the Centricity RA600 Workstation is 1 gauss to ensure proper operation.

Section 2: Prerequisites

The site must be prepared for installation of the workstation. Refer to the *Centricity RA600 Workstation Pre-Installation Manual* for detailed information.

- ◆ The appropriate line voltage, line frequency, and power supply line cords.
- ◆ Ethernet connection.
- ◆ Appropriate furniture for the Workstation (i.e. desk, chair, etc.).

Section 3: Cabling

Table 3-1 lists the part numbers of interconnecting cables used during installation. Refer to *Illustration 1-3* to see where various connectors are located on the computer housing.

3-1 Components Used During Installation

Cable Part No.	From	To	Cable Detail
N/A	CPU	Keyboard	Integrated Keyboard Cable
N/A	CPU	Network	10/100 BaseT Patch Cable
4363099	CPU - Video Board.	Monitor Cable	Monitor Cable to CPU
N/A	CPU	Mouse	Integrated Mouse Cable
4363149	CPU	Power Outlet	Power Connection, USA
4363149	Monitor(s)	Power Outlet	Power Connection, USA
N/A	CPU VGA port	VGA Monitor	Service Monitor Tool

Table 3-1: Items used for installation of 2048 x 2506 workstation

The Centricity RA600 Workstation should already be configured as per the factory settings. Also, the operating system software and applications software are installed at the factory. The person installing the workstation must physically interconnect workstation cables, and then configure the system using site-specific information (i.e. IP address).

3-2 Line Voltage Selection

Line voltage selection is automatic for the workstation, monitors and most of the peripherals.

3-3 Power Connections

Power cables must be fitted with proper plugs for the country where the workstation is installed. A distribution strip is supplied with the system.

3-4 Network Connection

The ethernet network connections are made via hubs or switches.

3-5 Keyboard & Mouse Connections

Connect the mouse and keyboard to the computer housing.

3-6 Monitor Connections

Connect the monitors as shown in appropriate cabling illustration (two or four monitors).

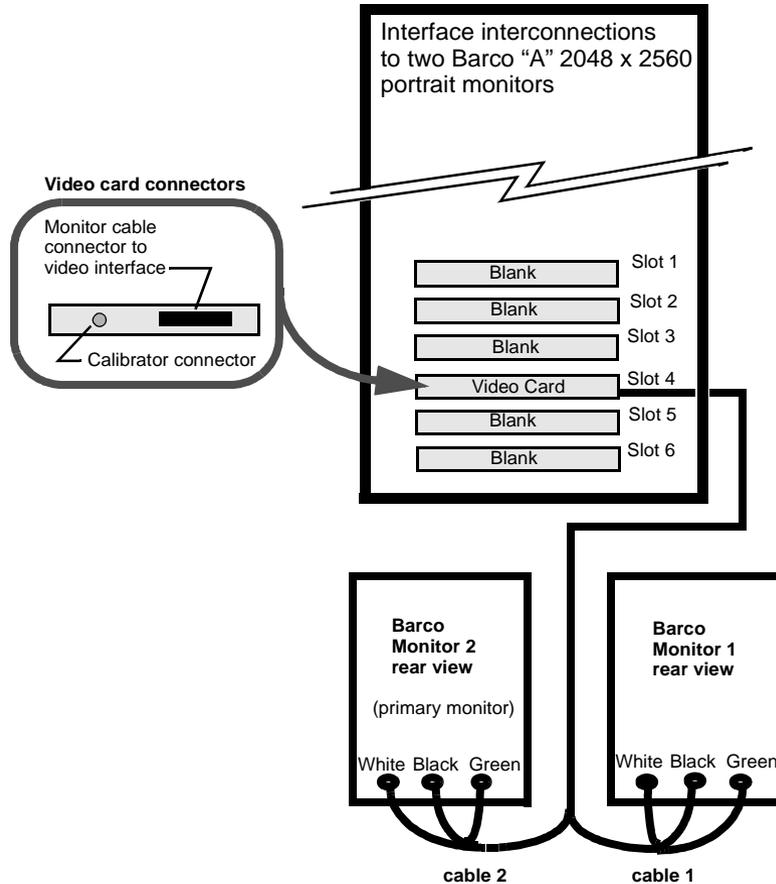


Illustration 3-1: Interconnecting two barco monitors to workstation

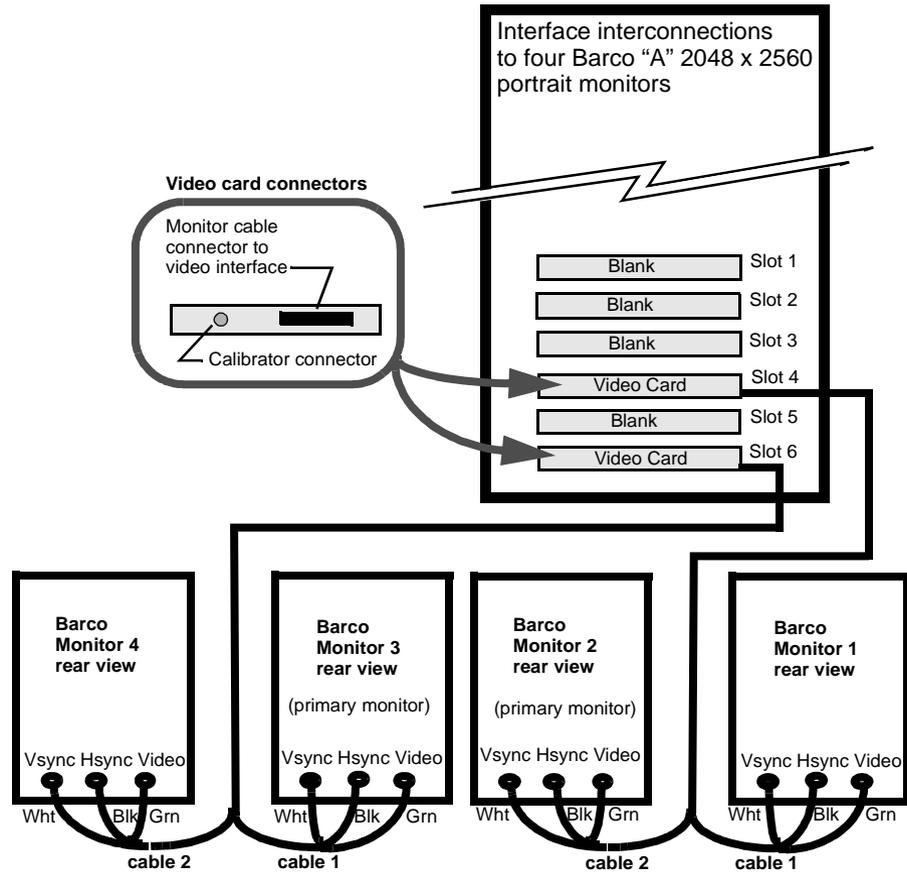


Illustration 3-2: interconnecting four barco monitors to workstation

■ IST 002 (A) 1728 x 2304 Portrait Monitor Interconnections

Section 1: INTRODUCTION

This job card contains the instructions for interconnecting the Workstation to other equipment and components as part of the installation. Monitor cabling diagrams are provided to show the interconnection of two or four Barco monitors to the appropriate video board slot positions at the rear of the computer housing.



Caution

The maximum magnetic field allowable for installing the Centricity RA600 Workstation is 1 gauss to ensure proper operation.

Section 2: Prerequisites

The site must be prepared for installation of the workstation. Refer to the *Centricity RA600 Workstation Pre-Installation Manual* for detailed information.

- ◆ The appropriate line voltage, line frequency, and power supply line cords.
- ◆ Ethernet connection.
- ◆ Appropriate furniture for the Workstation (i.e. desk, chair, etc.)

Section 3: Cabling

Table 3-2 lists the part numbers of interconnecting cables used during installation. Refer to *Illustration 1-3* to see where various connectors are located on the computer housing.

3-1 Components Used During Installation

Cable Part No.	From	To	Cable Detail
N/A	CPU	Keyboard	Integrated Keyboard Cable
N/A	CPU	Network	10/100 BaseT Patch Cable
4363102	CPU - Video Board	Monitor Cable	Monitor Cable to CPU
N/A	CPU	Mouse	Integrated Mouse Cable
4363149	CPU	Power Outlet	Power Connection, USA
4363149	Monitor(s)	Power Outlet	Power Connection, USA
N/A	CPU VGA port	VGA Monitor	Service Monitor Tool

Table 3-2: Items used for installation of 1728 x 2304 workstation

The Centricity RA600 Workstation should already be configured as per the factory settings. Also, the operating system software and applications software are installed at the factory. The person installing the workstation must physically interconnect workstation cables, and then configure the system using site-specific information (i.e. IP address).

3-2 Line Voltage Selection

Line voltage selection is automatic for the workstation, monitors and most of the peripherals.

3-3 Power Connections

Power cables must be fitted with proper plugs for the country where the workstation is installed. A distribution strip is supplied with the system.

3-4 Network Connection

The ethernet network connections are made via hubs or switches.

3-5 Keyboard & Mouse Connections

Connect the mouse and keyboard to the computer housing.

3-6 Monitor Connections

Connect the monitors as shown in appropriate cabling illustration (two or four monitors).

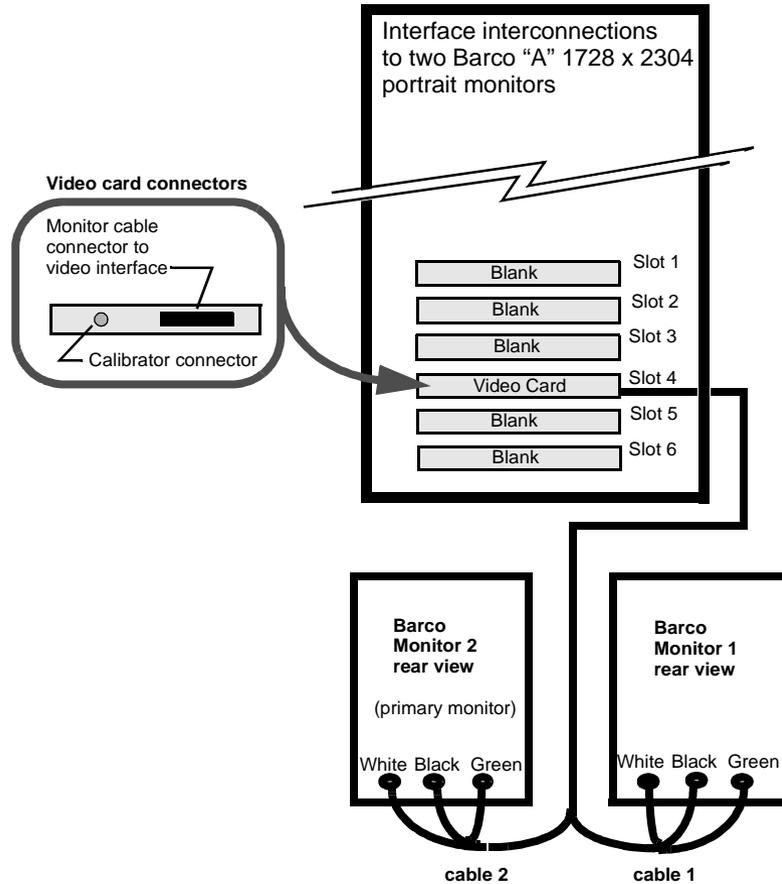


Illustration 3-3: Connecting two barco 1728 by 2304 monitors to workstation

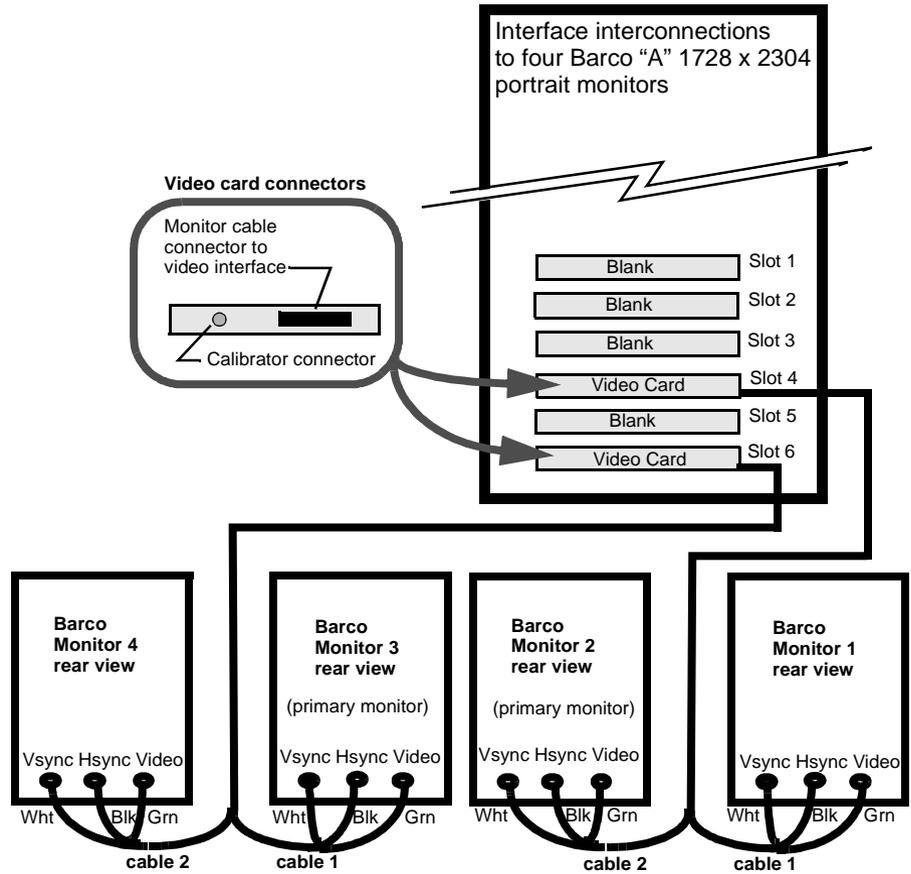


Illustration 3-4: Connecting four barco 1728 by 2304 monitors to workstation

■ IST 003 (B) 1200 x 1600 Portrait Monitor Interconnections

Section 1: INTRODUCTION

This job card contains the instructions for interconnecting the workstation to other equipment and components as part of the installation. Monitor cabling diagrams are provided to show the interconnection of two or four "B" monitors to the appropriate video board slot positions at the rear of the computer housing.



Caution

The maximum magnetic field allowable for installing the GE Centricity RA600 Workstation is 1 gauss to ensure proper operation.

Section 2: Prerequisites

The site must be prepared for installation of the workstation. Refer to the *Centricity RA600 Workstation Pre-Installation Manual* for detailed information.

- ◆ The appropriate line voltage, line frequency, and power supply line cords.
- ◆ Ethernet connection.
- ◆ Appropriate furniture for the Workstation (i.e. desk, chair, etc.).

Section 3: Cabling

Table 3-3 lists the part numbers of interconnecting cables used during installation. Refer to *Illustration 1-3* to see where various connectors are located on the computer housing.

3-1 Components Used During Installation

Cable Part No.	From	To	Cable Detail
N/A	CPU	Keyboard	Integrated Keyboard Cable
N/A	CPU	Network	10/100 BaseT Patch Cable
4363107	CPU - Video Board	Monitor Cable	Monitor Cable to CPU
N/A	CPU	Mouse	Integrated Mouse Cable
4363149	CPU	Power Outlet	Power Connection, USA
4363149	Monitor(s)	Power Outlet	Power Connection, USA
N/A	CPU VGA port	VGA Monitor	Service Monitor Tool

Table 3-3: Items used for installation of 1200 x 1600 workstation

The Centricity RA600 Workstation should already be configured as per the factory settings. Also, the operating system software and applications software are installed at the factory. The person installing the workstation must physically interconnect workstation cables, and then configure the system using site-specific information (i.e. IP address).

3-2 Line Voltage Selection

Line voltage selection is automatic for the workstation, monitors and most of the peripherals.

3-3 Power Connections

Power cables must be fitted with proper plugs for the country where the workstation is installed. A distribution strip is supplied with the system.

3-4 Network Connection

The ethernet network connections are made via hubs or switches.

3-5 Keyboard & Mouse Connections

Connect the mouse and keyboard to the computer housing.

3-6 Monitor Connections

Connect the monitors as shown in appropriate cabling illustration (two or four monitors).

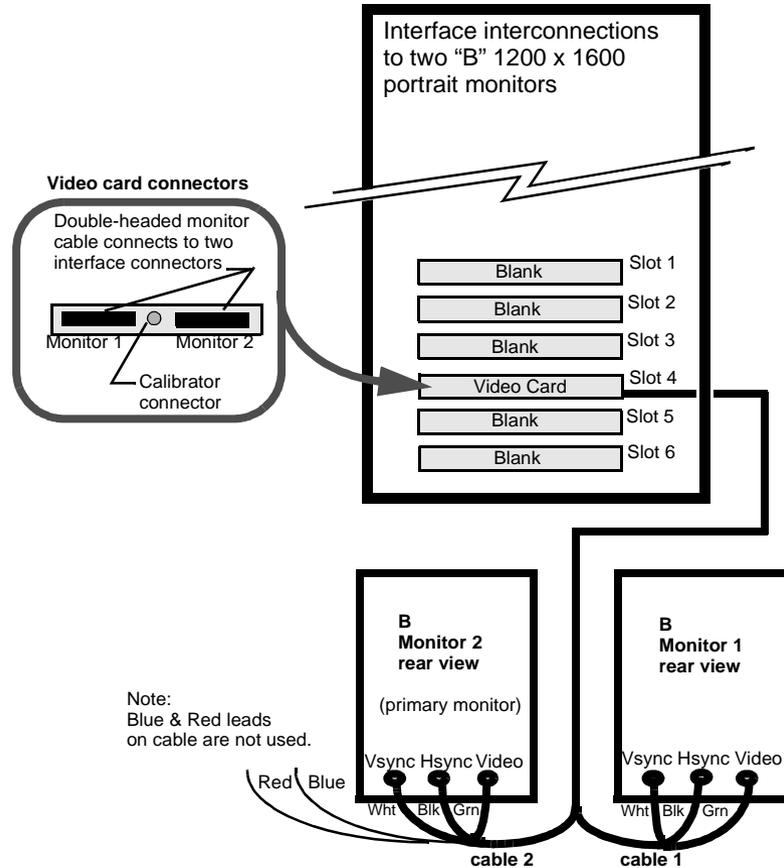


Illustration 3-5: connection of two "B" monitors to workstation

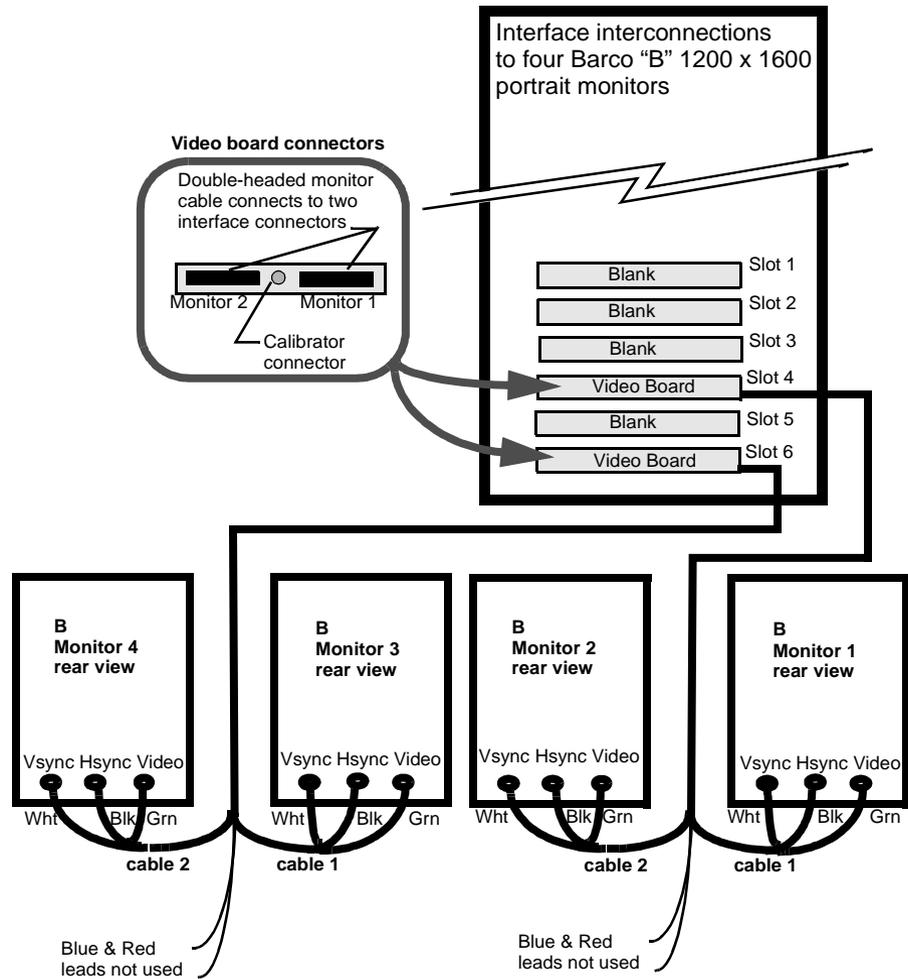


Illustration 3-6: connection of four "B" monitors to workstation

■ IST 004 (B+) 1536 x 2048 Flat Panel Portrait Monitor

Connections

Section 1: INTRODUCTION

This job card contains the instructions for interconnecting the workstation to other equipment and components as part of the installation. Monitor cabling diagrams are provided to show the interconnection of two or four B+ monitors to the appropriate video board slot positions at the rear of the computer housing.



Caution

The maximum magnetic field allowable for installing the GE Centricity RA600 Workstation is 1 gauss to ensure proper operation.

Section 2: Prerequisites

The site must be prepared for installation of the workstation. Refer to the *Centricity RA600 Workstation Pre-Installation Manual* for detailed information.

- ◆ The appropriate line voltage, line frequency, and power supply line cords.
- ◆ Ethernet connection.
- ◆ Appropriate furniture for the Workstation (i.e. desk, chair, etc.).

Section 3: Cabling

Table 3-4 lists the part numbers of interconnecting cables used during installation. Refer to [Illustration 1-3](#) to see where various connectors are located on the computer housing.

3-1 Components Used During Installation

Cable Part No.	From	To	Cable Detail
N/A	CPU	Keyboard	Integrated Keyboard Cable
N/A	CPU	Network	10/100 BaseT Patch Cable
N/A	CPU - Video Board	Monitor	Provided with monitor
N/A	CPU	Mouse	Integrated Mouse Cable
4363149	CPU	Power Outlet	Power Connection, USA
N/A	Monitor(s)	Power Outlet	Provided with monitor

Table 3-4: Items used for installation of B+ workstation

The Centricity RA600 Workstation should already be configured as per the factory settings. Also, the operating system software and applications software are installed at the factory. The person installing the workstation must physically interconnect workstation cables, and then configure the system using site-specific information (i.e. IP address).

3-2 Line Voltage Selection

Line voltage selection is automatic for the workstation, monitors and most of the peripherals.

3-3 Power Connections

Power connection is behind the top rear panel of the B+ monitor. Power cables must be fitted with proper plugs for the country where the workstation is installed. A distribution strip is supplied with the system.

3-4 Network Connection

The ethernet network connections are made via hubs or switches.

3-5 Keyboard & Mouse Connections

Connect the mouse and keyboard to the computer housing.

3-6 Monitor Connections

The monitor video connections are behind the top rear panel of the B+ monitor. A faring in the panel provides outlet for the video and power cables.

Connect the monitors as shown in appropriate cabling illustration (two or four monitors).

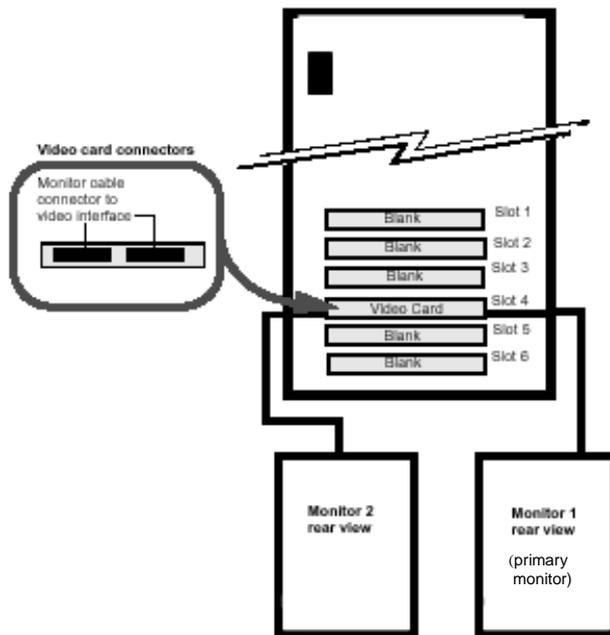


Illustration 3-7: connection of two "B+" monitors to workstation

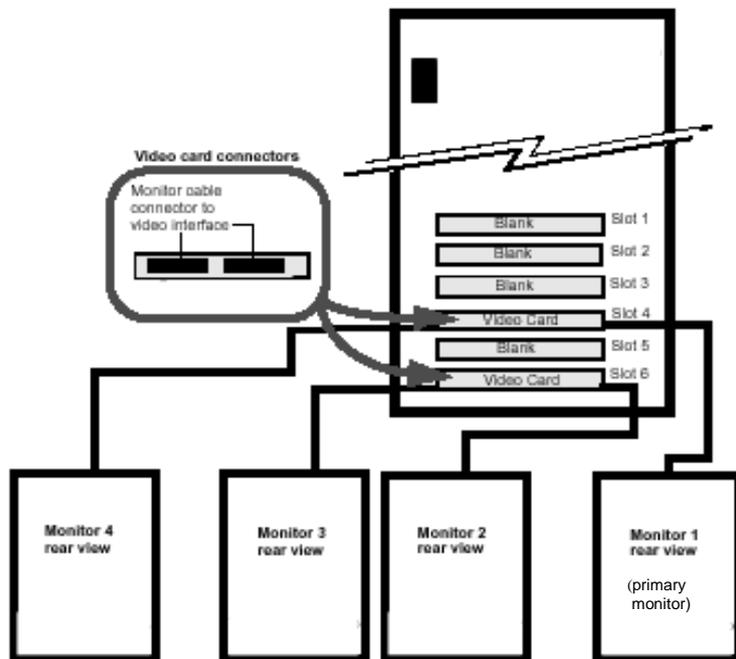


Illustration 3-8: Connection of four "B+" monitors to workstation

■ IST 005 (C) 1280 x 1024 Landscape Monitor Interconnections

Section 1: Introduction

This job card contains the instructions for interconnecting the Workstation to other equipment and components as part of the installation. Monitor cabling diagrams are provided to show the interconnection of one or two landscape monitors to the appropriate video board slot positions at the rear of the computer housing.



Caution

The maximum magnetic field allowable for installing the Centricity RA600 Workstation is 1 gauss to ensure proper operation.

Section 2: Prerequisites

The site must be prepared for installation of the workstation. Refer to the *Centricity RA600 Workstation Technical Reference Manual* for detailed information.

- ◆ The appropriate line voltage, line frequency, and power supply line cords.
- ◆ Ethernet connection.
- ◆ Appropriate furniture for the Workstation (i.e. desk, chair, etc.).

Section 3: Cabling

Table 3-5 lists the part numbers of interconnecting cables used during installation.

Refer to [Illustration 1-3](#) to see where various connectors are located on the computer housing. Refer to included manufacturer's documentation for access to flat panel connectors.

3-1 Components used During Installation

Cable Part No.	From	To	Cable Detail
N/A	CPU	Keyboard	Integrated Keyboard Cable
N/A	CPU	Network	10/100 BaseT Patch Cable
436115	CPU - Video Board.	Monitor Cable	Monitor Cable to CPU
N/A	CPU	Mouse	Integrated Mouse Cable
4363149	CPU	Power Outlet	Power Connection, USA
4363149	Monitor(s)	Power Outlet	Power Connection, USA
N/A	CPU VGA port	VGA Monitor	Service Monitor Tool

Table 3-5: Items used for installation of 1280 x 1024 workstation

The Centricity RA600 Workstation should already be configured as per the factory settings. Also, the operating system software and applications software are installed at the factory. The person installing the workstation must physically interconnect workstation cables, and then configure the system using site-specific information (i.e. IP address).

3-2 Line Voltage Selection

Line voltage selection is automatic for the workstation, monitors and most of the peripherals.

3-3 Power Connections

Power cables must be fitted with proper plugs for the country where the workstation is installed. A distribution strip is supplied with the system.

3-4 Network Connection

The ethernet network connections are made via hubs or switches.

3-5 Keyboard & Mouse Connections

Connect the mouse and keyboard to the appropriate receptacles on the computer housing.

3-6 Monitor Connections

Connect the monitors as shown in appropriate cabling illustration (one or two monitors). If the video card has two connectors, connect the primary monitor to connector 1. Make the monitor connections according to included manufacturer's documentation.

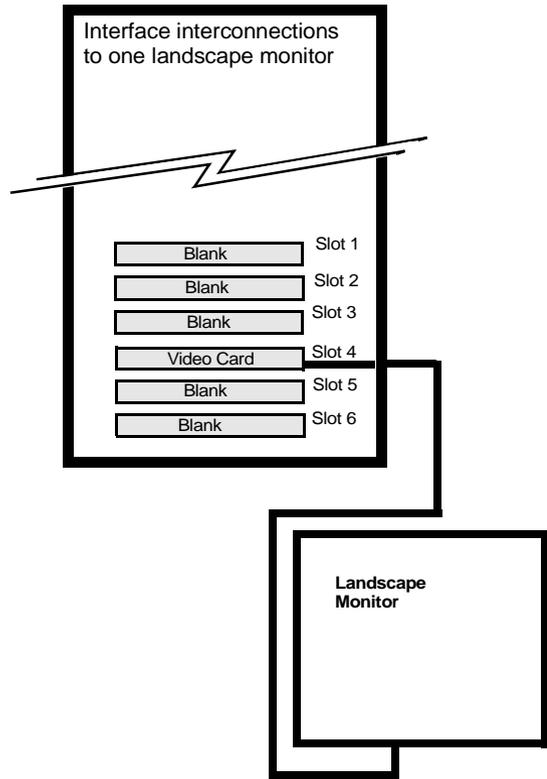


Illustration 3-9: connection of one landscape monitor

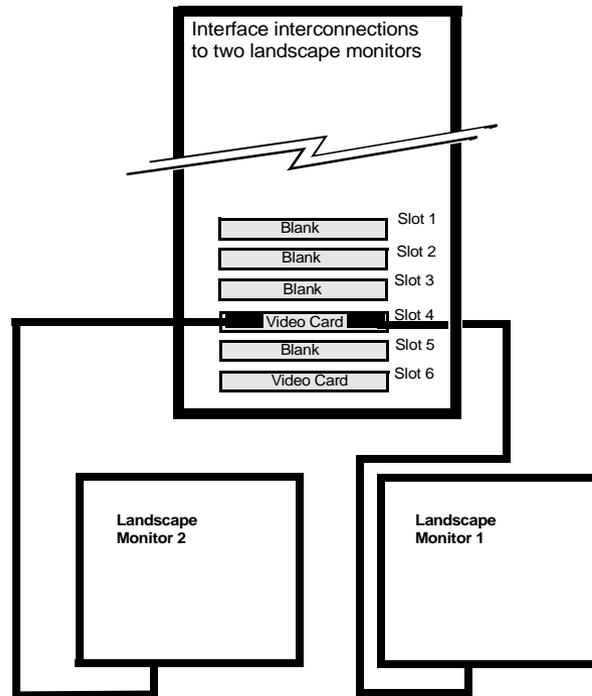


Illustration 3-10: connection of two landscape monitors

3-7 Video Board Driver Installation

Refer to job card [SW 003](#) in chapter 6 for C monitor video board driver installation instructions.

■ IST 006 Site Configuration Forms

Section 1: Introduction

This job card identifies what customer site specific data is necessary to configure the Centricity RA600 Workstation.

Section 2: Procedure

2-1 Complete Data Sheet Information

Complete the [Workstation Installation Worksheet](#) on [page 50](#) and the [Example Site Data Sheet](#), on [page 52](#) and leave it attached in the site's service manual. Update these forms for each new option or software release installation.

***Note:** Photocopy the forms for use on all workstations, as required.*

Section 3: Required Data Definitions

A blank and an example site data sheet are at the end of this job card. Complete a site datasheet per the example site data sheet.

Required Information	Answers To OS Configuration Questions
Hostname	Operator configurable Normally supplied by the network administrator.

Required Information	Answers To OS Configuration Questions
IP Address	As supplied Normally supplied by the network administrator.
Subnet mask (netmask)	As supplied Normally supplied by the network administrator.
Default Gateway	As supplied Normally supplied by the network administrator.
Time zone	Select as applicable. Double click on task bar clock to change settings.
Date and time	Select as applicable. Double click on task bar clock to change settings.
Root Password	As set by GEMS Field Service.

Table 3-6: Site Specific Data

Section 4: Workstation Installation Worksheet

Workstation Installation Worksheet	
Machine Type:	Intel CPU
Serial Number:	
System ID:	
Internet Address:	
Netmask: (subnet)	

Workstation Installation Worksheet

Root Password:

Hospital Name:

User's Interface Language:

Application Support
Telephone:

Miscellaneous:

Initial Software Revision:

Software Upgrade Revision:

Miscellaneous:

Workstation Installation Worksheet

Software Upgrade Revision: _____

Miscellaneous: _____

Section 5: Example Site Data Sheet

Hospital Name:	Phone: ____-____-____	F.D.O.: _____-_____
Your Name:	Phone: ____-____-____	Ext.: _____ Aspen: _____
Hospital Network Administrator:	Phone: ____-____-____	InSite Mdm Ph: ____-____-____

***Complete a separate sheet for each workstation on the FDO ***

Workstation configuration information:	Example	Definition
Station location	View Room 2106	Description/local identifier/room number for this system
Hostname	SCD132	Hostname: (Maximum of 14 letters & number)
Workgroup	Centricity RA600	
IP Address	3.28.75.132	Internet (IP) address: Assigned unique number that identifies this station in a network.
Subnet Mask (Netmask)	255.255.255.252	Netmask: A number used by software to identify the subnet field of a network address.
Default Route	3.28.75.3	Default route: a route (IP address) that is used to communicate to an unknown subset.
This station Options. (Required on a multi-station FDO):		Passwords
Display Type	A+,A,B,C	Administrator Password: CANa1 (if assigned)
Number Of Monitors	1,2,4	Centricity RA600 Password: Radworks

■ IST 007 Adaptec SCSI Card Installation

Section 1: Introduction

This job card describes how to install an Adaptec SCSI controller card in the Centricity RA600 Workstation computer.

Section 2: Tools REquired

- ◆ 5 mm cross-head screwdriver
- ◆ 5 mm flat-head screwdriver
- ◆ Grounding wristband

Section 3: Materials Required

- ◆ Adaptec AHA-2930U SCSI Card
- ◆ 50-Pin SCSI Interface Cable

Section 4: Prerequisites

- ◆ Centricity RA600 Workstation with Windows 2000 Pro installed per GEMS specification.

Section 5: Procedure

Note: *The components used in the workstation are static sensitive. Observe static precautions when performing this procedure.*

1. Power off the system.
2. Remove the left-hand half of the workstation case.
 - Slide the rear padlock hasp toward the chassis center and press the release button on the lower front of the bezel and remove the left side of the case.
 - For detailed removal instructions, refer to the Dell Online Documentation, Dell PowerEdge System Documentation, Dell PowerEdge 1400, PowerEdge 1400 Installation and Troubleshooting Guide, Checking Inside the Computer.
3. Locate an available PCI slot for the Adaptec AHA-2930U SCSI card.

Note: *Be sure to observe proper ESD safety precautions when inserting the SCSI card.*

4. Install the Adaptec AHA-2930U SCSI card into the PCI slot.
5. Replace the workstation case cover.
6. Connect one end of the 50-Pin SCSI Interface cable to the SCSI card connector at the rear of the computer and the other end to the SCSI peripheral device. Refer to the device User's Manual for detailed instructions.
7. Power-on the system.
8. The Windows 2000 operating system provides plug & play recognition and driver selection for the Adaptec AHA-2930U SCSI Card.

Note: *If the system does not recognize the card or otherwise indicates driver problems, install the driver supplied with the card per the installation instructions provided.*

■ IST 008 Installing Frame Grabber Board

Section 1: Introduction

This job card describes how to install the a frame grabber board into the Centricity RA600 Workstation.

Section 2: Tools Required

- ◆ 5 mm cross-head screwdriver
- ◆ 5 mm flat-head screwdriver
- ◆ Grounding wristband

Section 3: Procedure



Caution

The components inside the workstation computer case may be damaged by static electricity. Observe standard grounding precautions for handling static-sensitive components when performing this procedure.

1. Power off the system.
2. Remove the left-hand half of the Dell 1400 computer case.
 - Slide the rear padlock hasp toward the chassis center and press the release button on the lower front of the bezel and remove the left side of the case.
 - For detailed instructions, refer to the Dell Online Documentation, Dell PowerEdge System Documentation, Dell PowerEdge 1400, PowerEdge 1400 Installation and Troubleshooting

Guide, Checking Inside the Computer. The Dell Online Documentation CD is shipped with each Dell 1400 CPU.

Note: *Be sure to observe proper ESD safety precautions when inserting the frame grabber board.*

3. Insert the frame grabber board into an available PCI slot.
4. Replace the workstation case cover.
5. Power-on the system.
6. When Windows 2000 requests a driver for the frame grabber board, insert the Foresight Imaging CD and follow the instructions for installing the appropriate driver.
7. Refer to job card [SW 007 - Installing Foresight Static Frame Capture Software](#) (Refer to Kit document [FP10621](#)) on [page 207](#) and install the frame grabber software.

■ IST 009 Optional Internal Hard Drive Connect & Configure

Section 1: Introduction

This job describes how to connect an additional 36GB internal hard drive to a Centricity RA600 Workstation.

Section 2: Tools REquired

- ◆ Philips head #2 screw driver
- ◆ Medium slotted head screw driver
- ◆ Grounding wristband

Section 3: Materials Required

- ◆ Optional Hard Drive Installation Kit

Section 4: Procedure

Note: *The components used in the workstation are static sensitive. Observe static precautions when performing this procedure.*

4-1 Physical Installation of Hard Drive

This procedure describes how to install the optional hard drive in the Dell 1400 computer chassis.

1. Unpack optional hard drive and mounting screws and retain packing material until installation is validated.
2. Configure the hard drive as SCSI drive 2 by placing a jumper plug across pins 5 & 6 on the 28-pin connector at the front of the drive. Refer to [Illustration 3-11](#), following.

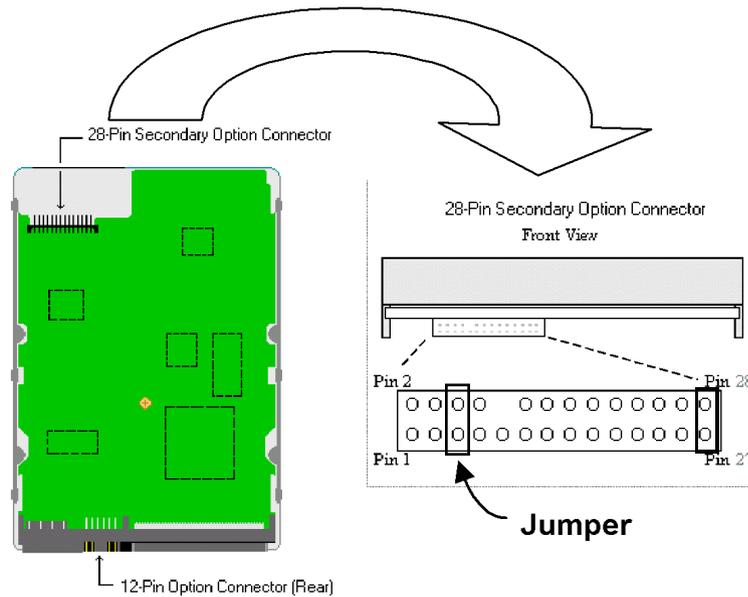


Illustration 3-11: Hard Drive Jumper configuration

3. Power down the processor and unplug the power cord.

4. Open CPU case by removing side access panel.

Release and remove the side access panel (use the release switch (padlock hasp) on lower rear panel and the push-button in front. Refer to [Illustration 3-12](#) and on-line CPU documentation, as necessary.



Illustration 3-12: Side Access Panel Release

5. Identify and disconnect ribbon data cable going to existing CPU hard drive.
6. Disconnect power connector from existing hard drives.

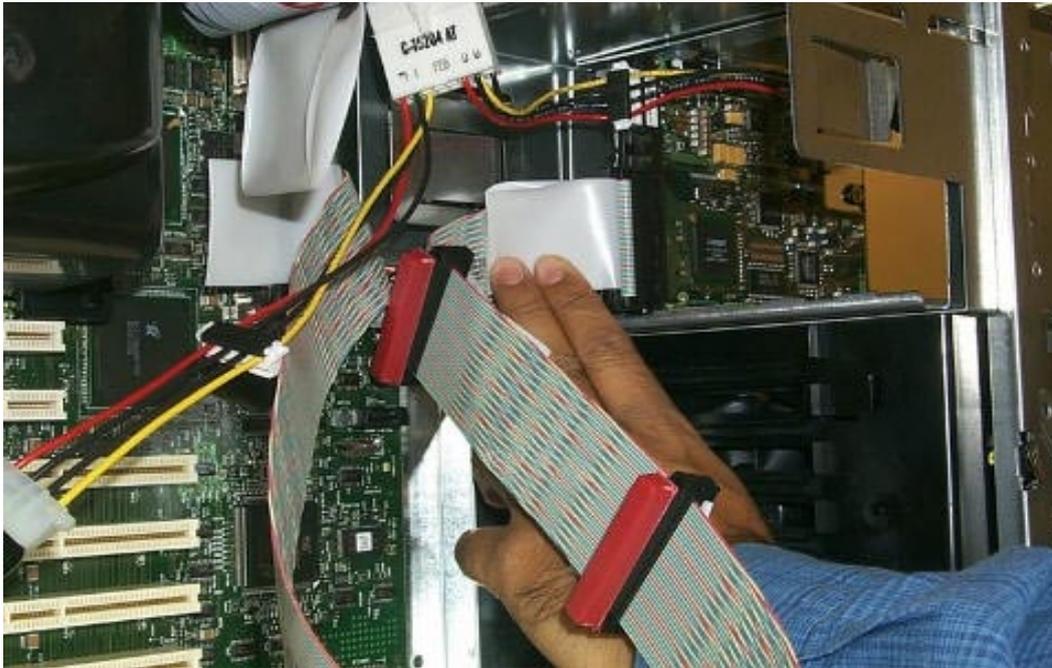


Illustration 3-13: Hard Drive Connector

7. Remove Dell 1400 front panel by pressing down release button inside top of case and pulling front panel away and then up from chassis.

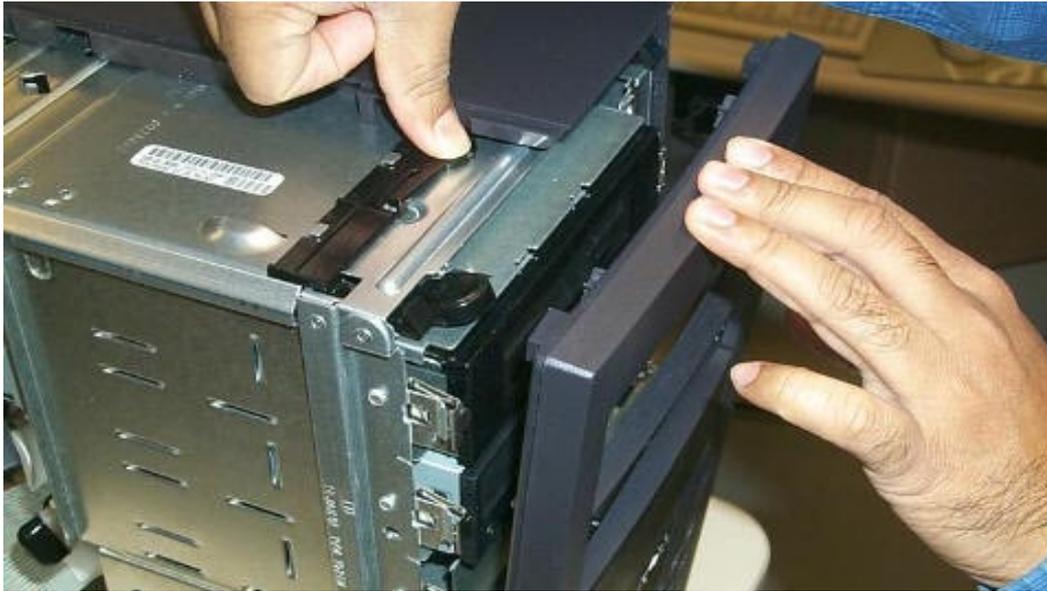


Illustration 3-14: Front Panel Release

8. To access hard drive cage in CPU chassis,
 - Pull out and down on the handle of the drive bay door on the front of the chassis until the cage front is about 1 inch out of the bay (Illustration 3-15),



Illustration 3-15: Hard Drive Cage Access

- Then slide out the cage from the chassis to access the drive mounting screws on the top and bottom of the cage (Illustration 3-16).



Illustration 3-16: Slide out hard drive cage

9. Fit the new drive into a vacant area of the hard drive cage, oriented the same as the existing drive, with the connectors facing inward toward the center of the case.

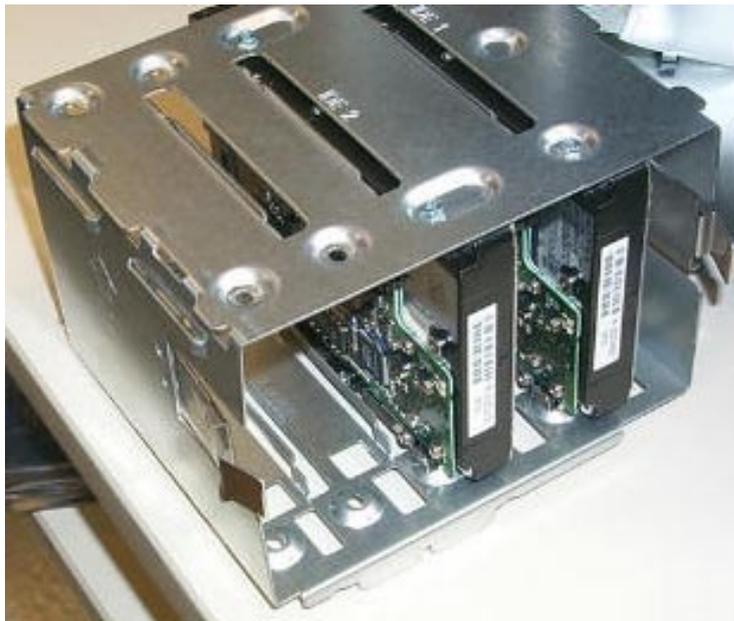


Illustration 3-17: New Drive Installed In Cage

10. Mount the new drive to the drive cage with the four screws provided.
11. Slide the drive cage back into CPU chassis.
12. Pull up the drive bay door up and in to its locked position.
13. Connect the data ribbon cable to old and new drives.
14. Connect a power connector from the CPU power supply to each of the hard drive's power connectors.

15. If necessary, connect the system keyboard, mouse, and monitor to the appropriate connectors at the rear of the CPU chassis.
16. Power up the CPU and note that the operating system recognizes the new drive. If the new drive is not listed during the power up display sequence, power down the CPU, reseal the cable connections and try again. If the system won't recognize the new hard drive when connected to any of the ribbon cable connectors, abort the installation and order a new hard drive from GPO.
17. When the operating system recognizes the new hard drive it can then be configured.
18. Replace the front and side covers on the CPU case when the new drive is shown to be operating as desired.
19. This completes the physical installation of the optional hard drive.

4-2 Configuring the New Hard Drive in the System



Caution

It is strongly advisable to back up any data on existing hard drives before proceeding to the next level.

Note: *Volume Set cannot be created on a partition that contains system files.*

1. At the Windows 2000 desktop, navigate to **Start > Programs > Administrative Tools > Computer Management** and select **Disk Management**.
2. Note that the Write Signature and Upgrade Disk Wizard that the Disk Administrator recognizes that a new disk has been connected since the administrator program was last executed. Click **Next**.
3. In the Select Disk to Write Signature window, note that Disk 1 is selected by default. Click **Next**.

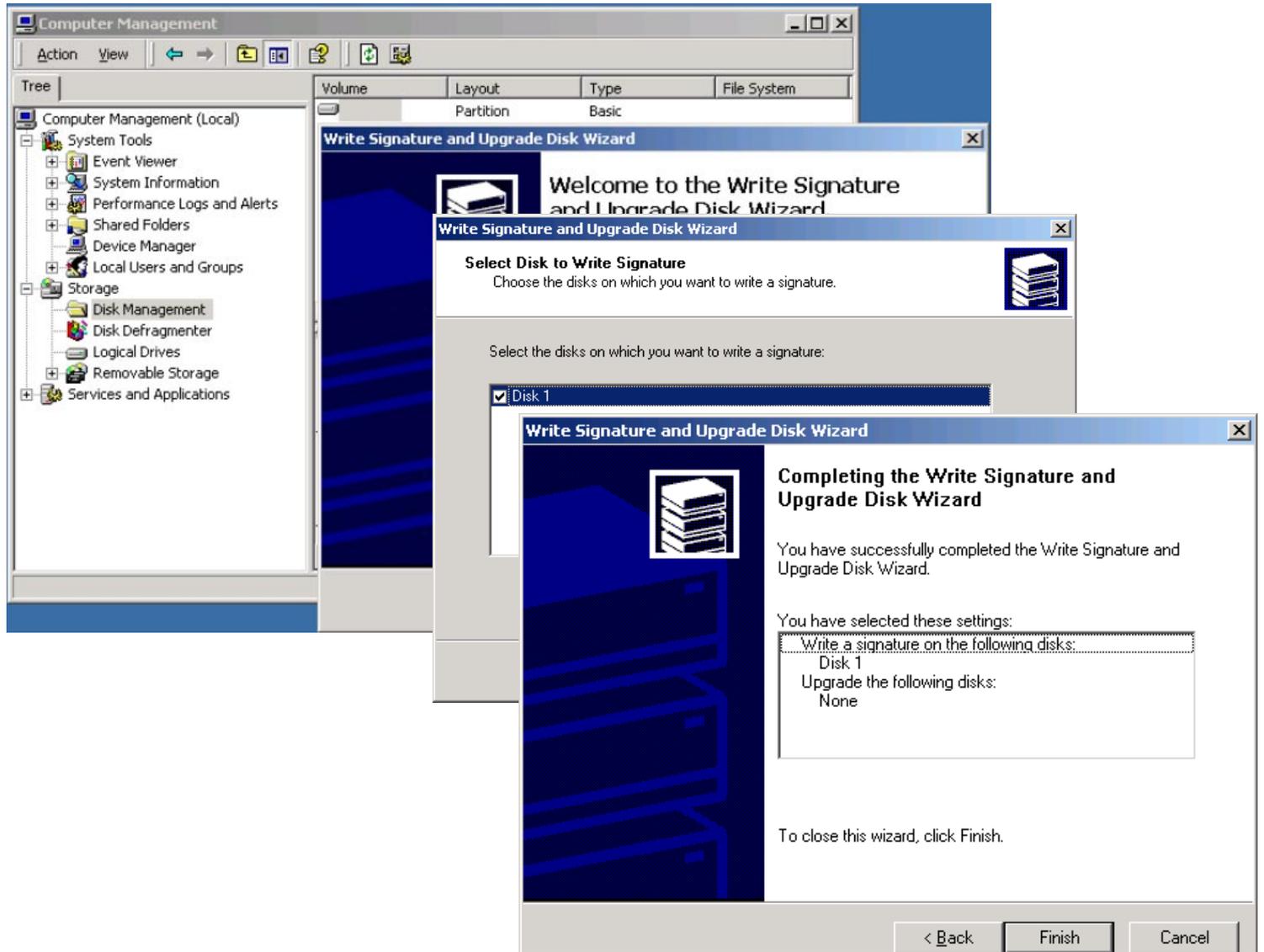


Illustration 3-18: Write signature to new disk

- In the Completing the Write Signature... window, review the summary of your selections and click **Finish**.
Note how the Computer Management window shows the new disk in the lower right pane.

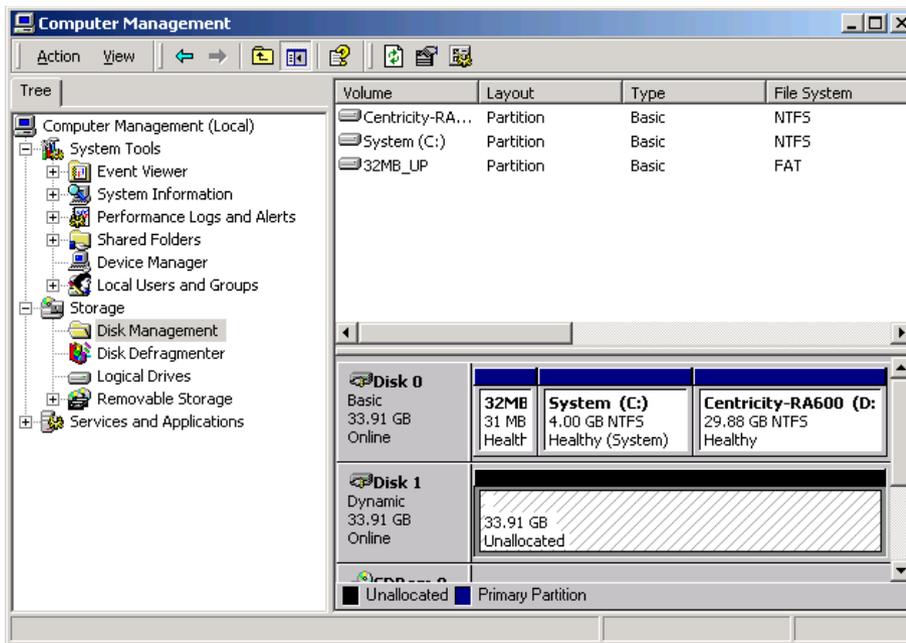


Illustration 3-19: New Disk 1 with written signature in Disk Management

- Right-click on the **Centricity RA600 D:** drive area and select **Extend Volume...** from the pop-up menu; then click **Next** on the Extend Volume Wizard Welcome window.

Note: If, instead of the Extend Volume Wizard welcome, you get an error message like that in Illustration 3-21, then click **OK** and skip to section 4-3; else continue with the following step.

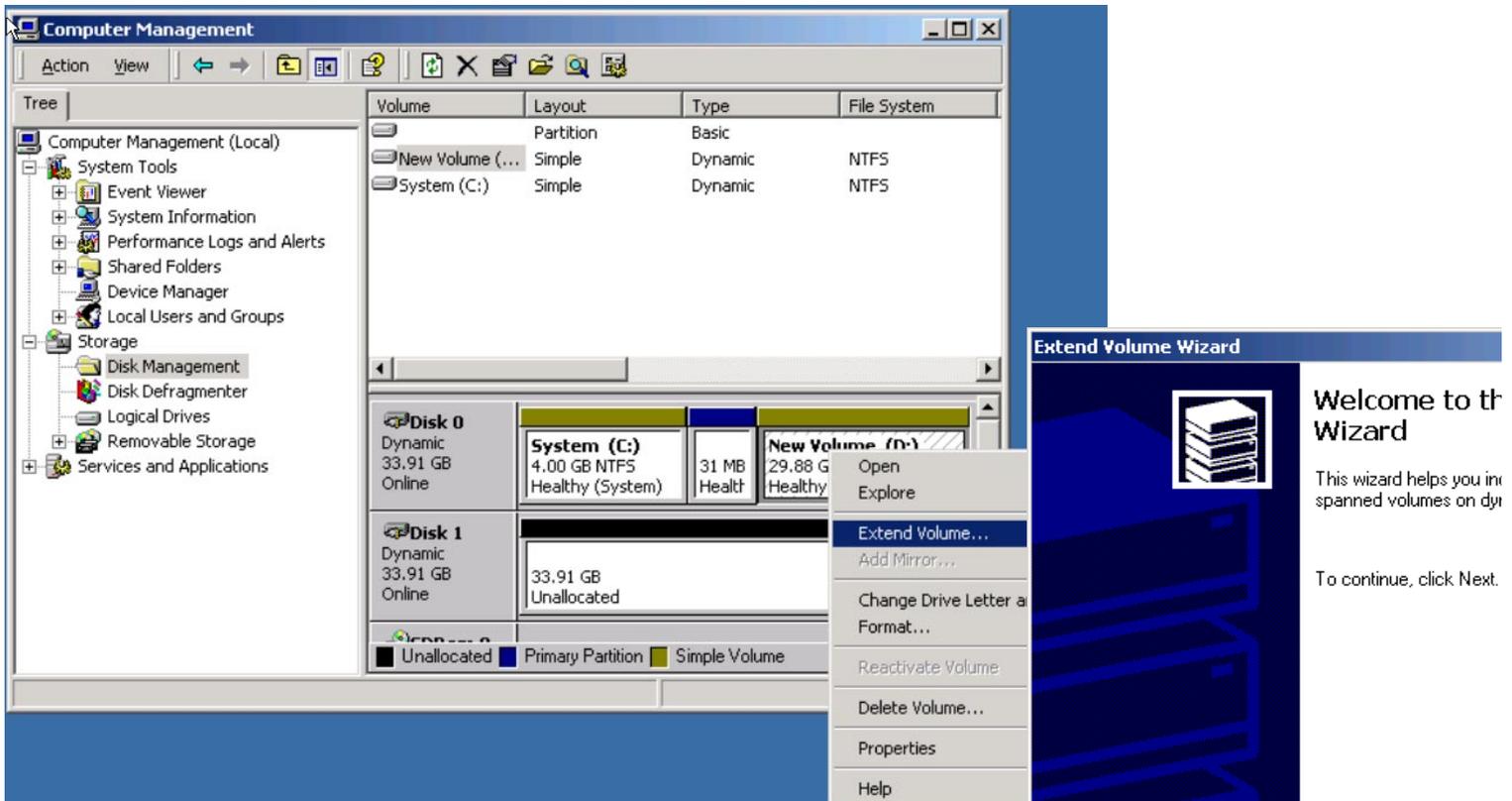


Illustration 3-20: Starting Extend Volume wizard

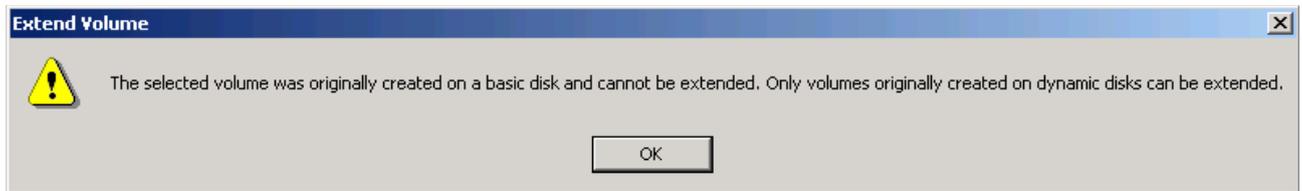


Illustration 3-21: Can't extend a volume originally created on basic (vis-a-vis dynamic) disk.

6. Highlight **Disk 1** in the All Available dynamic disks list and click **Add>>** to move this available space to the Selected dynamic disks list. Leave the default Sizes info set at Maximum and click **Next**.

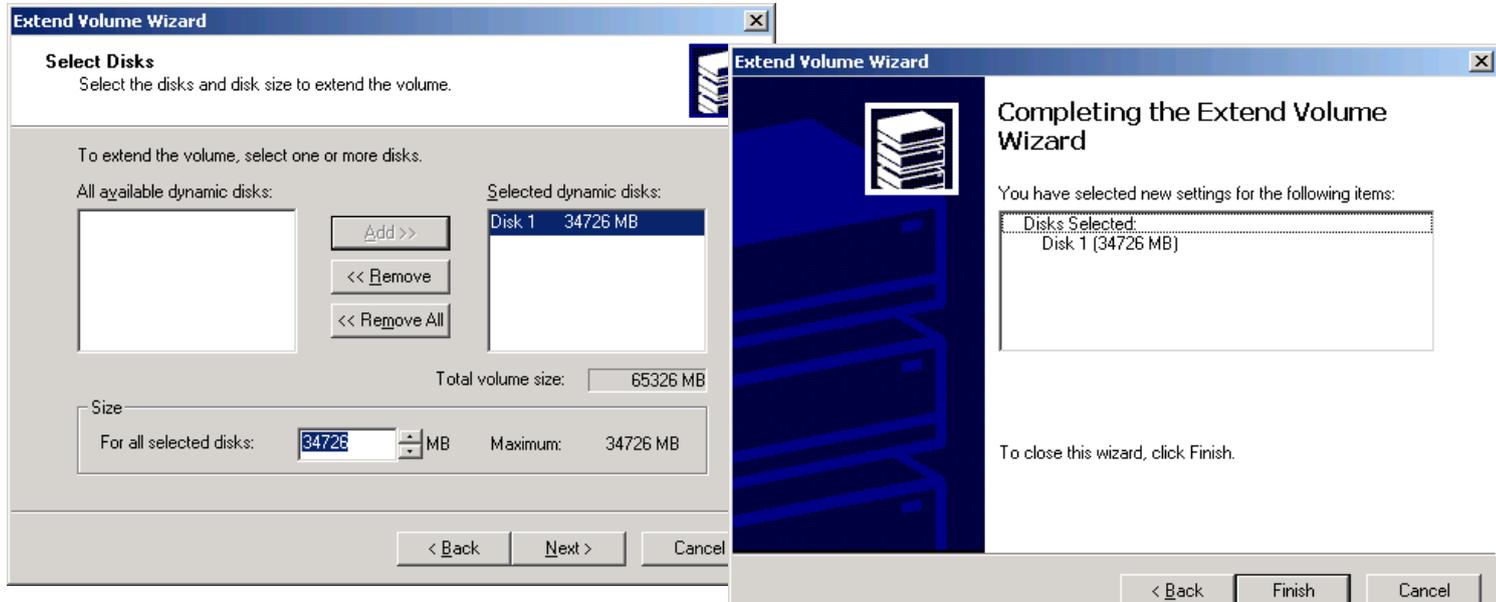


Illustration 3-22: Using & finishing Extend Volume wizard

7. In the Completing the Extend Volume Wizard window, click **Finish**.
Note, in the Disk Management display, that both the existing and extended disk areas are now designated D:

4-3 Workaround for Extending a Volume Created on a Basic (non-dynamic) Disk.

Windows 2000 does not allow extending a volume that was created on a Basic disk. The workaround is to create a standalone new dynamic disk, transfer all existing data from the old to the new disk, delete the old disk, and then extend the new disk onto the old disk space.

Note: Perform steps 1 thru 5 of section 4-2, then continue with this procedure.

1. Right-click on the unallocated Disk 1 area and select **Create Volume...** from the popup menu. Click **Next** on the Welcome window of the Create Volume Wizard.

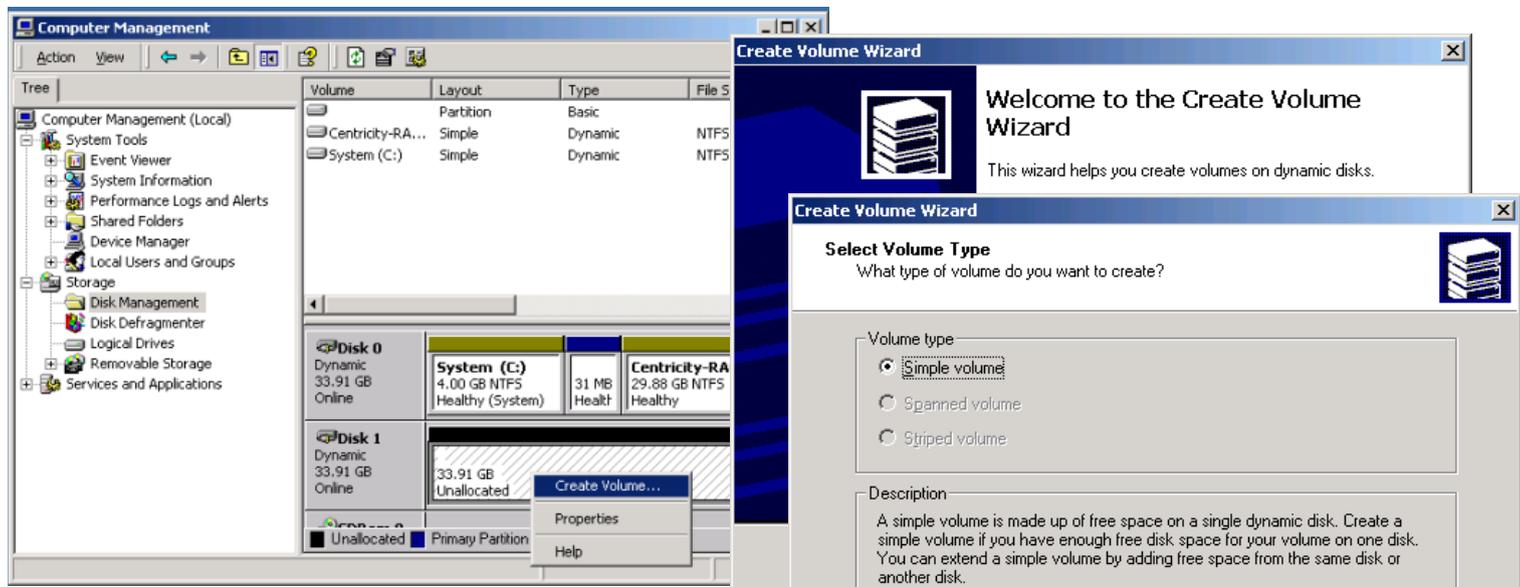


Illustration 3-23: Create Volume Wizard

2. In the Select Volume Type window, click **Next** to accept the default.

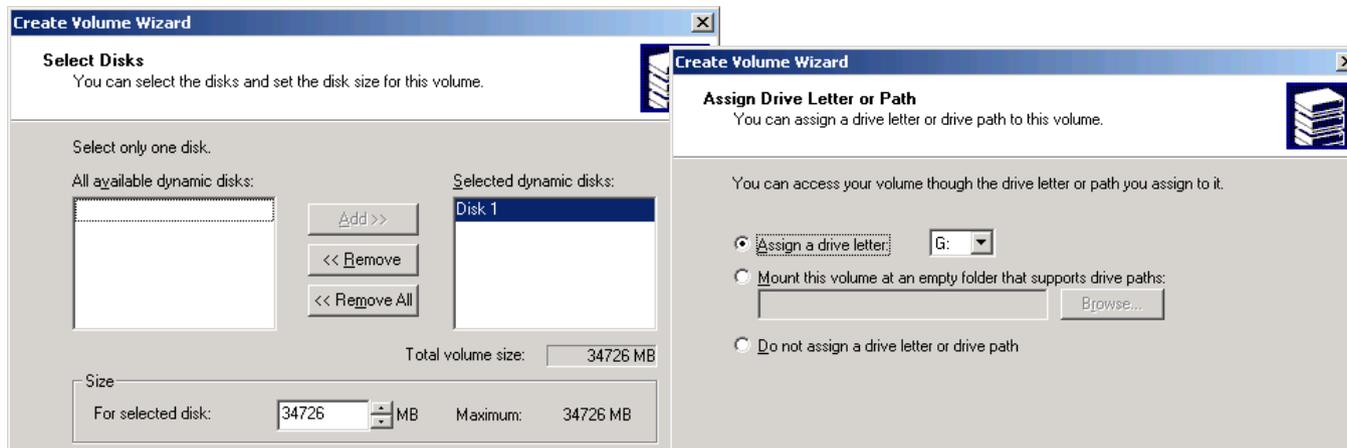


Illustration 3-24: Select Disk & Assign Drive Letter for Volume

3. In the Select Disks window, high-light **Disk 1** in the All available dynamic disks list and click **Add>>** to move it to the Selected dynamic disks list it for the volume. Leave the default values in the Size selection and click **Next**.
4. In the Assign Drive Letter or Path window, select the **Assign a drive letter** radio button and select **G:** from the letter list; then click **Next**.

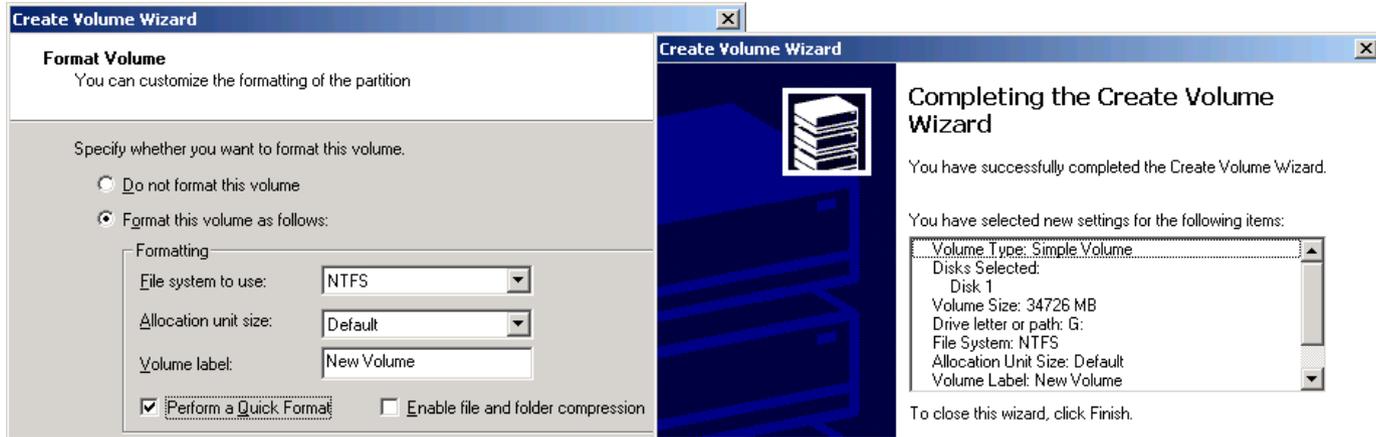


Illustration 3-25: Formatting & Finishing the Created Volume

5. In the Format Volume window, select the Format this volume as follows radio button and select the following Formatting parameters:
 - a. File system to use: Select **NTFS**
 - b. Allocation unit size: Leave **Default**
 - c. Volume label: **New Volume**
 - d. Check the **Perform a Quick Format** check box.
 - e. Click **Next**.
6. In the Completing the Create Volume window, review the volume selections, use the **Back** button to make any necessary corrections and then click **Finish**. Note the appearance of the new Disk 1 volume in the Computer Management window.

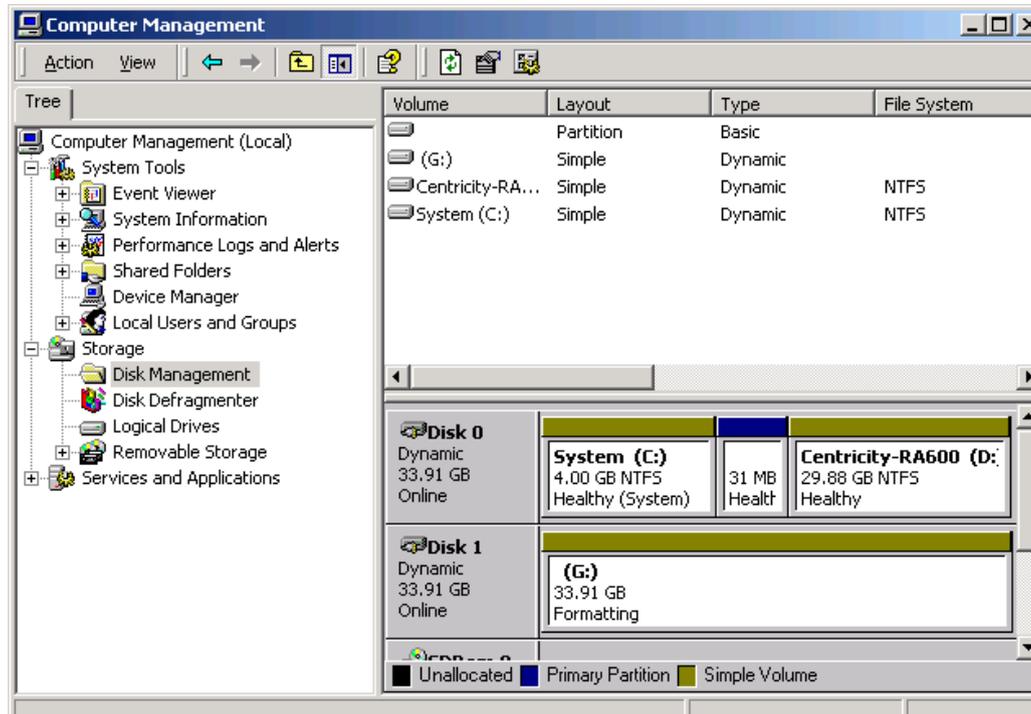


Illustration 3-26: Computer Management view of new Disk 1 volume

7. Copy the contents of the D: drive to the G: drive as follows:
 - a. Right-click on the D: area of Disk 0 and select **Open** from the popup menu.
 - b. Right-click on the G: area of Disk 1 and select **Open** from the popup menu.
 - c. Select the entire contents of D: in the D: drive window and copy it to the drive G: window.



Caution

Ensure that all of the D: drive data is copied or it will be lost in the next steps.

- d. Close both the D: and G: windows.
8. Right-click on the D: area of Disk 0 and select **Delete Volume...** from the popup menu.

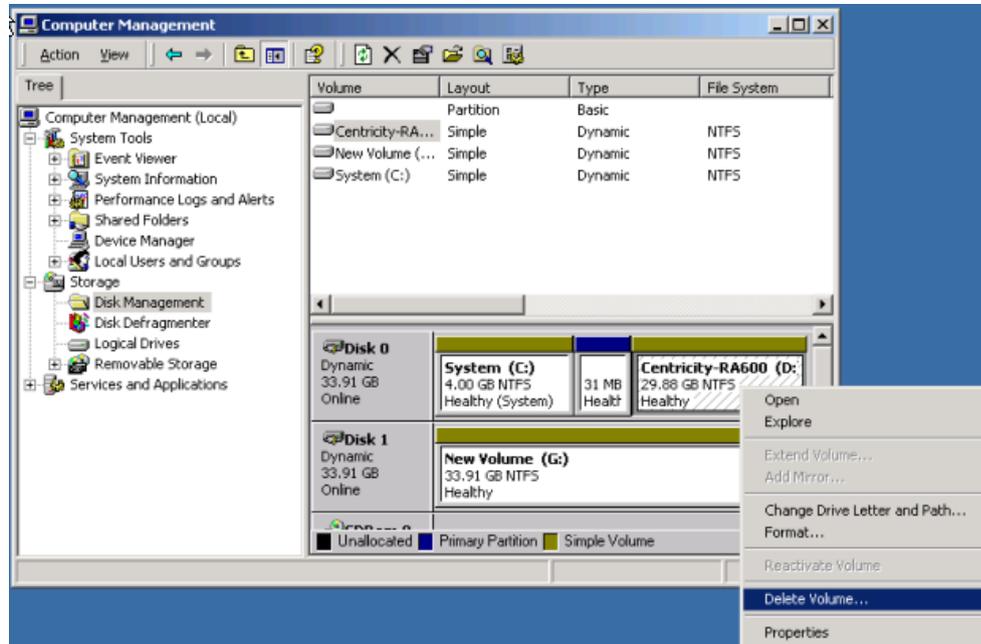


Illustration 3-27: Deleting the D: volume

9. When the **Are you sure...** caution appears in the Delete simple volume popup, click **Yes**.
10. When the Disk Management popup asks **Do you want to continue?** click **Yes**.
Note that, following volume deletion, the former D: drive area now appears as Unallocated space.



Illustration 3-28: Clicking through warnings

11. Right-click on the G: drive area and select **Extend Volume...**

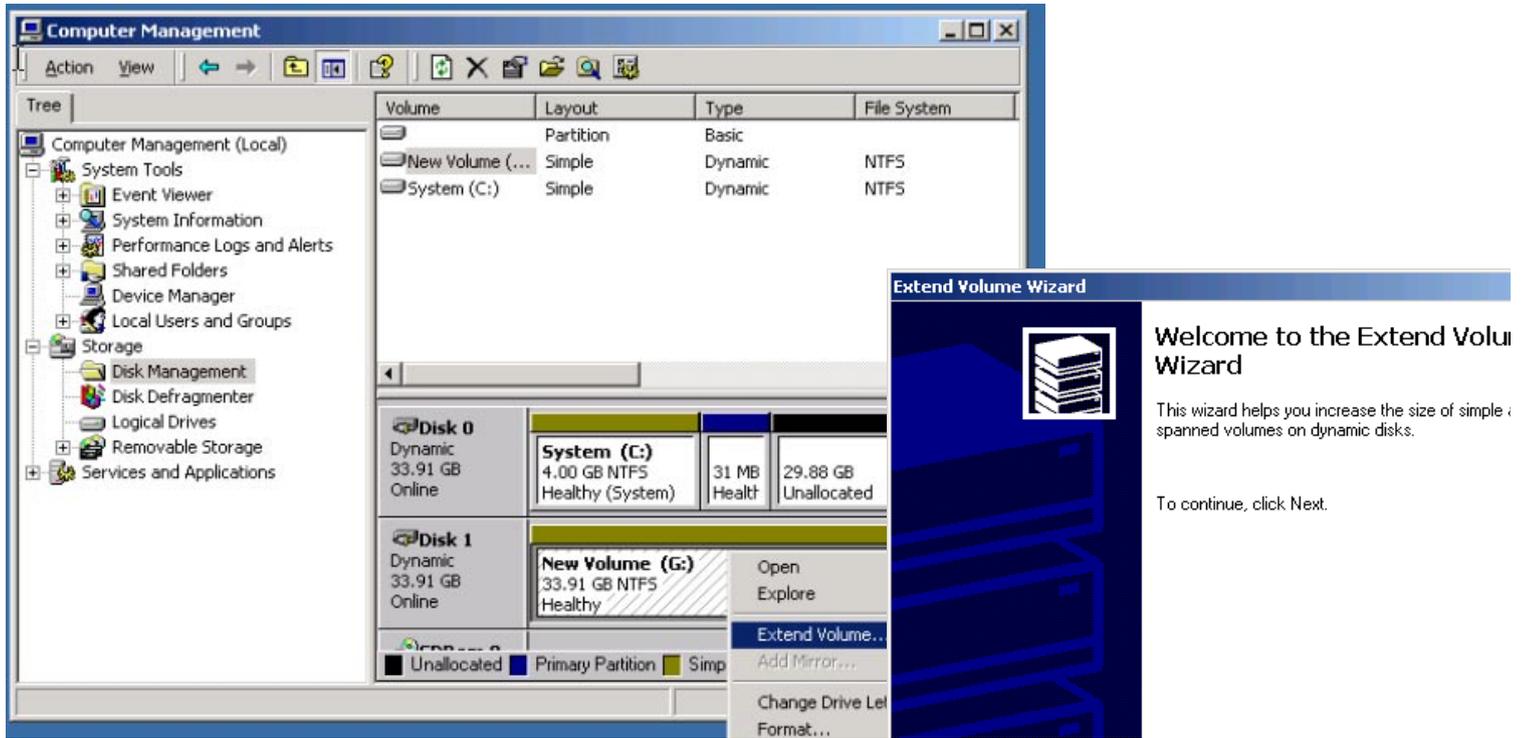


Illustration 3-29: Extending the G: Drive

12. Click **Next** in the Welcome to the Extend Volume Wizard window.

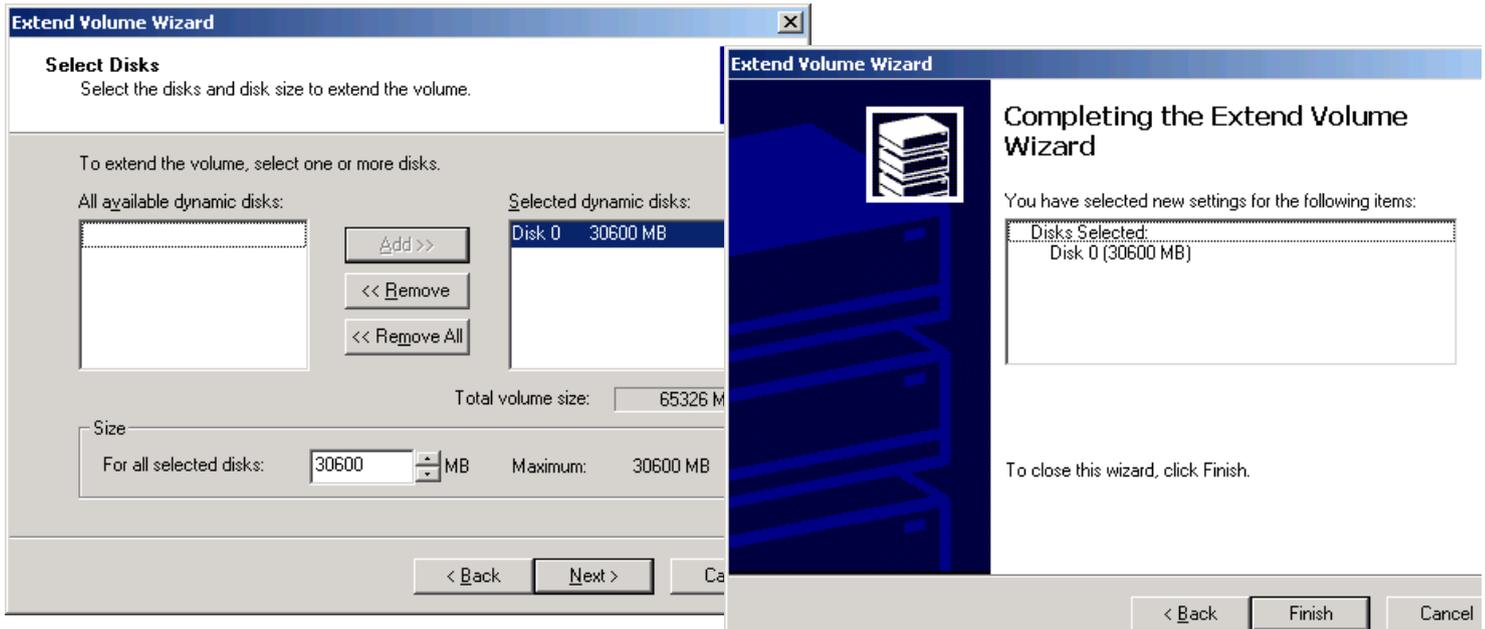


Illustration 3-30: Finish G: Volume Extension

- 13. In the Select Disks window, select **Disk 0** in the All available dynamic disks field and then click **Add>>** to select this space for extension of G: . Leave the Size values at default (maximum) and click Next.
- 14. In the Completing the Extend Volume Wizard window, click **Finish** to complete the G: extension. Note that the former D: drive area now is labeled G:

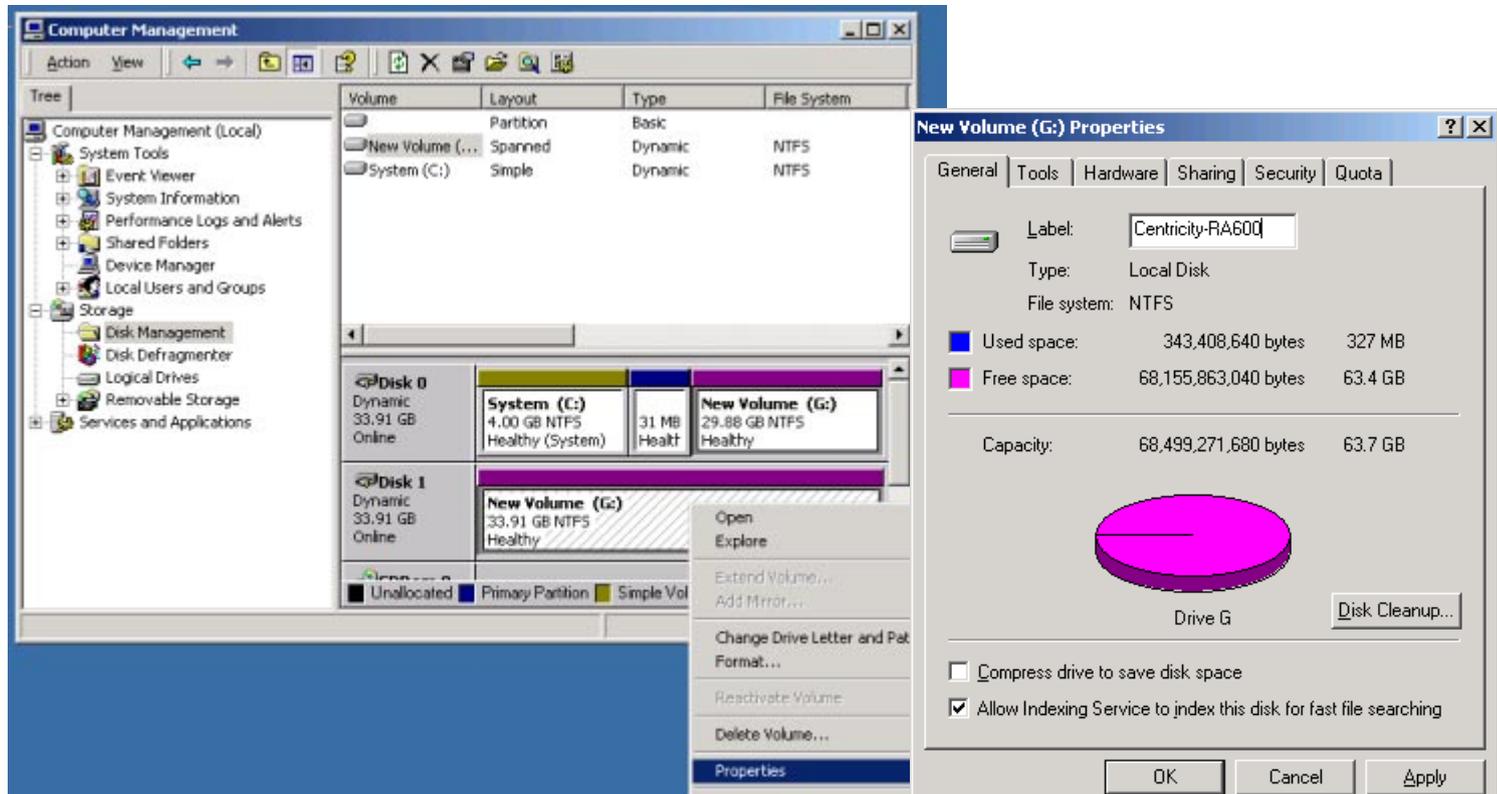


Illustration 3-31: Name the new extended volume.

15. Name the newly extended volume as follows:

- a. Right-click on the Disk 1 New Volume area and select **Properties** from the popup menu.
- b. On the General tab of the New Volume Properties window, enter **Centricity RA600** in the Label field and click **OK**. Note the new name now appears on both areas of the new volume. Verify that the total capacity of the extended drive is as expected.

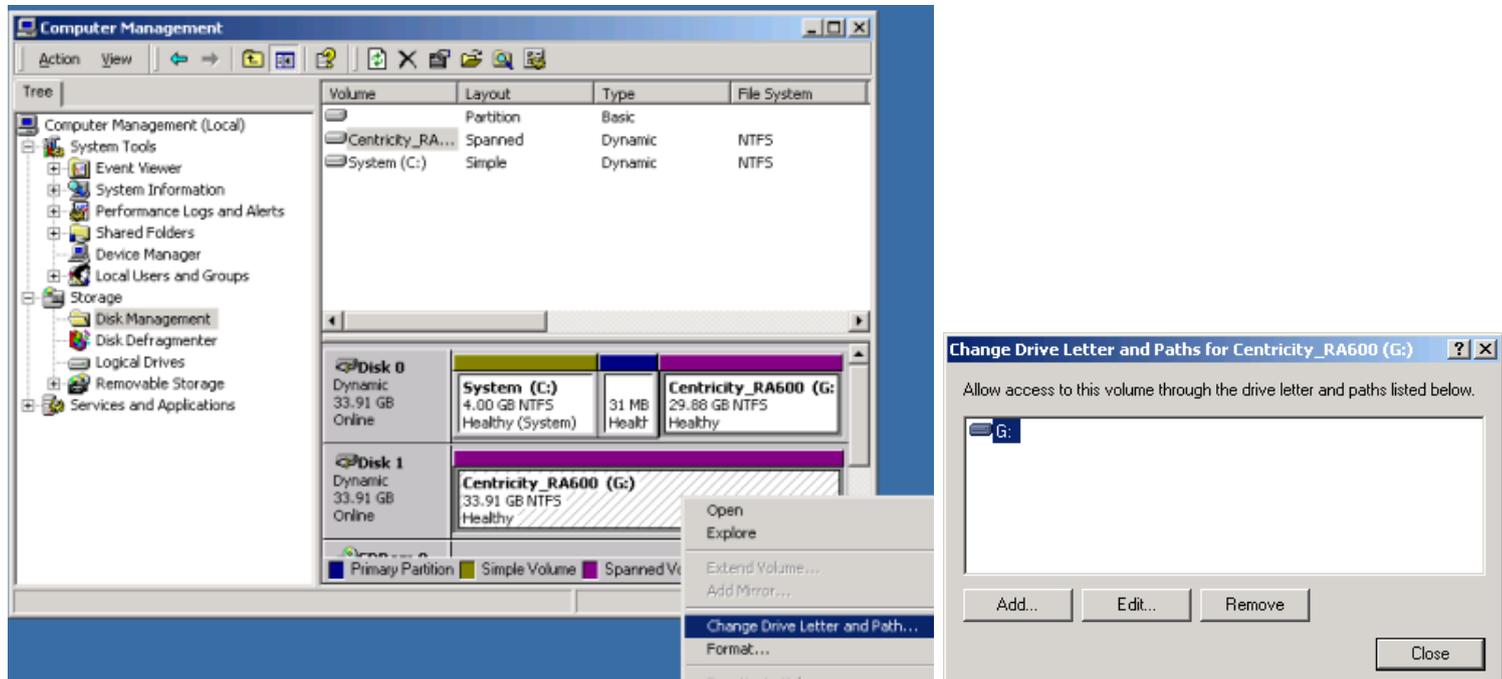


Illustration 3-32: Changing the drive letter of the new volume

16. Change the drive letter of the new volume to D: as follows:

- a. Right click on the new volume area and select **Change Drive Letter and Path...** from the popup menu.
- b. In the Change Drive Letter... window, highlight the **G:** drive and click **Edit**.

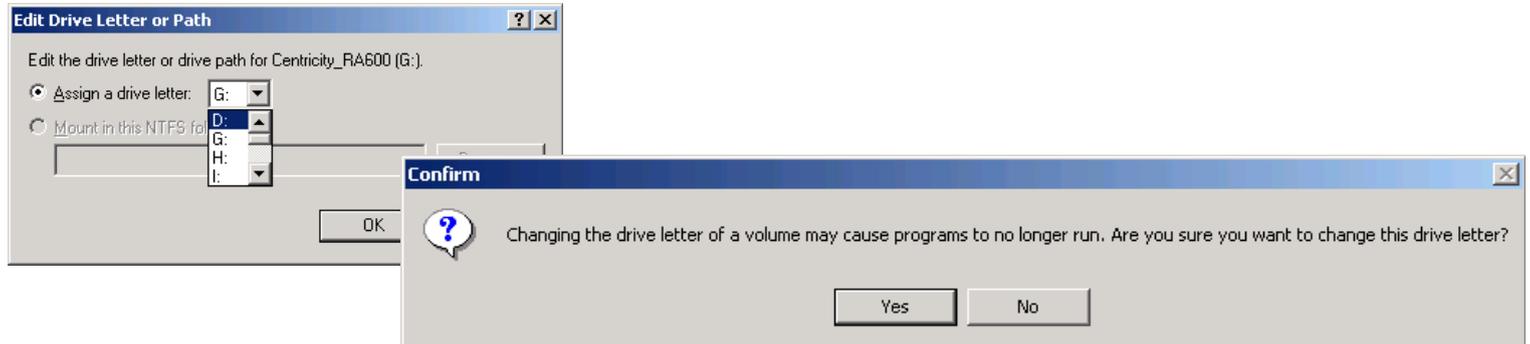


Illustration 3-33: Complete the drive letter change

- c. In the Edit Drive Letter.. window, select the **Assign a drive letter** radio button and highlight **D:**, then click **OK**.
- d. In the Confirm popup, click **Yes**.
Note in the Disk Management console display, that the new drive is now designated D:

17. Close out of the Disk Management window.

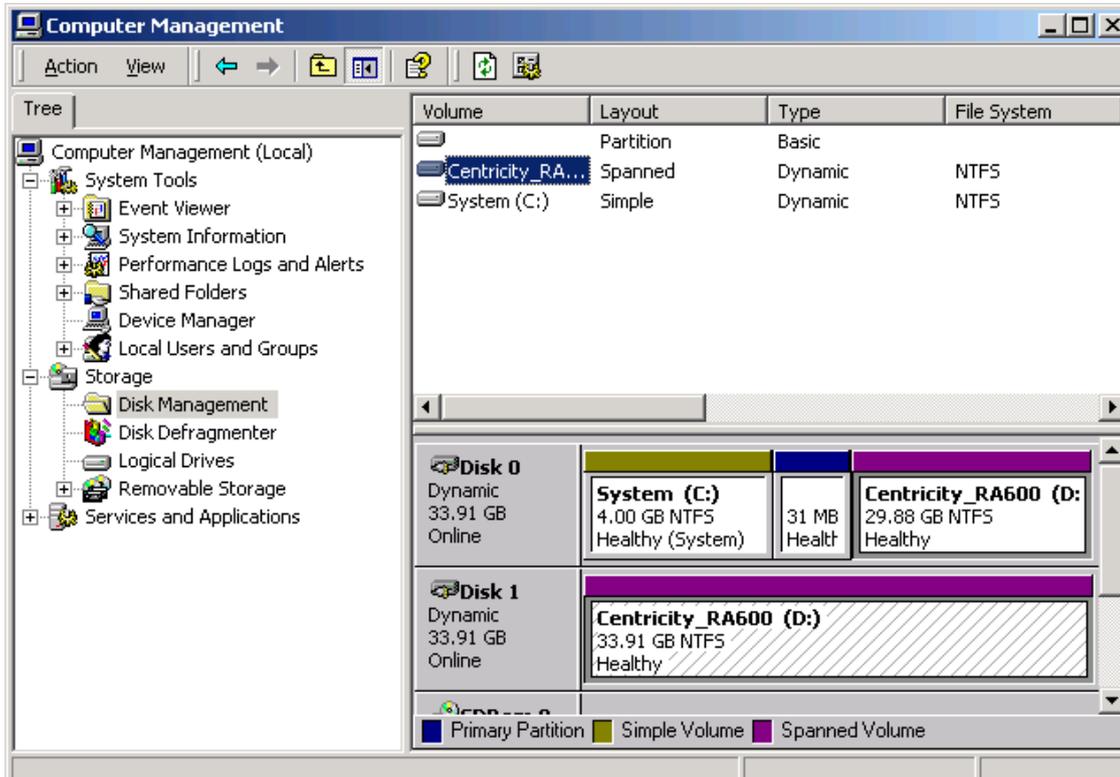


Illustration 3-34: The extended D: drive

- 18. Use the Windows 2000 Explore function to verify that the **Database** folder and its subdirectories/files are present as before the installation.

■ IST 010 Installing Additional RAM Modules In CPU

Section 1: Introduction

This job card describes how to install additional RAM module(s) in the Dell 1400 in the following anticipated situations:

- ◆ Adding 1, 2, or 3 additional 512MB RAM module(s) to a Dell 1400 CPU that has 512MB RAM.

Minimum RAM for a Centricity RA600 CPU is 512MB.

Section 2: Prerequisites:

- ◆ A properly installed and configured Dell PowerEdge 1400 CPU with Windows 2000 Pro installed and running.
- ◆ The RAM upgrade kit with the RAM modules to be added.

Section 3: Tools Required

- ◆ Grounding wristband

Section 4: Procedure



Caution

The RAM modules and other components in the Dell 1400 may be damaged by static electricity. Observe standard grounding precautions for handling static-sensitive components when performing this procedure.

1. Unpack optional RAM module(s) and retain packing material until installation is validated.
2. Power down CPU and disconnect power cord from the receptacle on the rear of the Dell 1400.
3. Open CPU case by removing the side access panel.
4. Remove the left-hand half of the workstation case.
 - Slide the rear padlock hasp toward the chassis center and press the release button on the lower front of the bezel and remove the left side of the case. Refer to [Illustration 3-35](#)
 - For detailed removal instructions, refer to the Dell Online Documentation, Dell PowerEdge System Documentation, Dell PowerEdge 1400, PowerEdge 1400 Installation and Troubleshooting Guide, Checking Inside the Computer. The Dell Online Documentation CD is shipped with each Dell 1400 CPU



Illustration 3-35: Side Access Panel Release.

5. Identify the CPU power supply at the top rear of the chassis. Press the Release tab at the lower rear corner and rotate it up and away from the system board. The power supply mounting bracket has detents to hold it up while accessing the system board.

6. Identify RAM module locations (DIMM A thru DIMM D). See [Illustration 3-36](#).

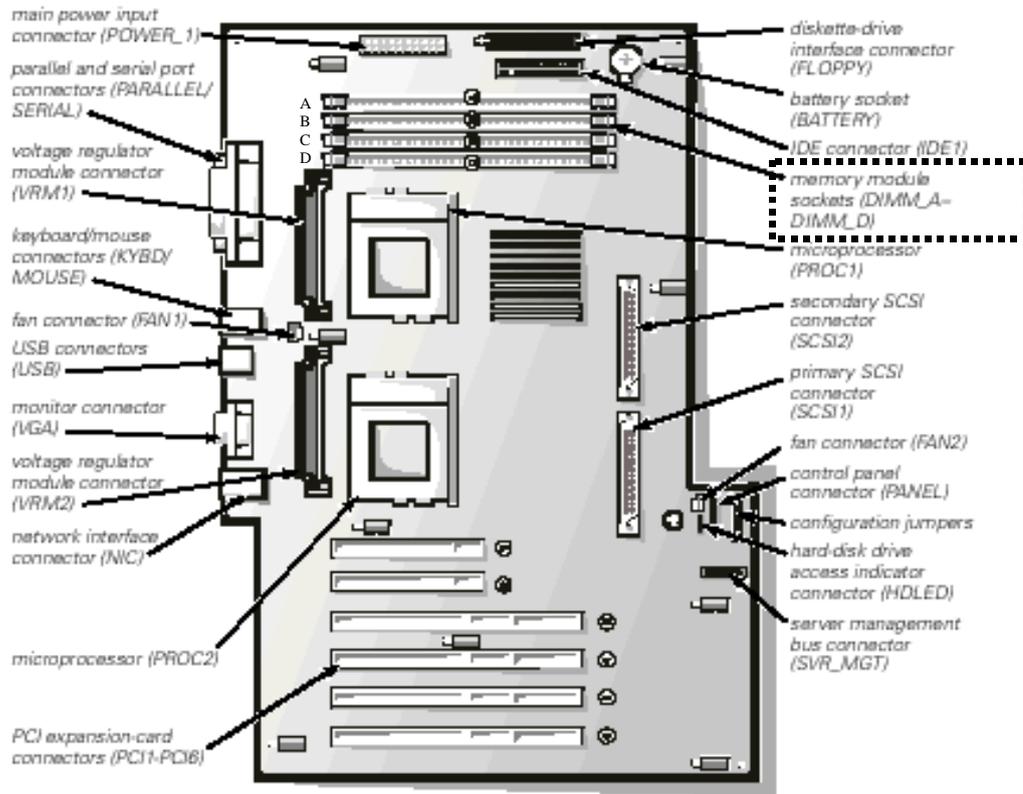


Illustration 3-36: DIMM Module Location on System Board.

7. Mount the additional RAM module(s) into open memory locations. For optimal memory operation, start from location A (closest to the top edge of the system board) and work downwards to D, leaving no unoccupied locations between installed modules.

Note: *There are no system requirements for the placement or the order of the RAM modules.*

8. Rotate the power supply back down to its operating position and reconnect the CPU power cord.
9. Power up the CPU. The system will recognize the additional RAM, however no user intervention is required.
10. When reboot is complete, on the Windows desktop, right-click on the **My Computer** icon and select **Manage**.
11. In the Computer Management console window.
 - a. Click to expand the **System Interface** folder.
 - b. Click on **System Information**.
 - c. Click on **System Summary**. Refer to [Illustration 3-37](#).
 - d. Check to make sure that the value for **Total Physical Memory** is correct according to the post-upgrade number of RAM modules installed (e.g. Two 512MB RAM modules ~ 1.2 GB RAM).
 - e. Close out of the Computer Management console window.

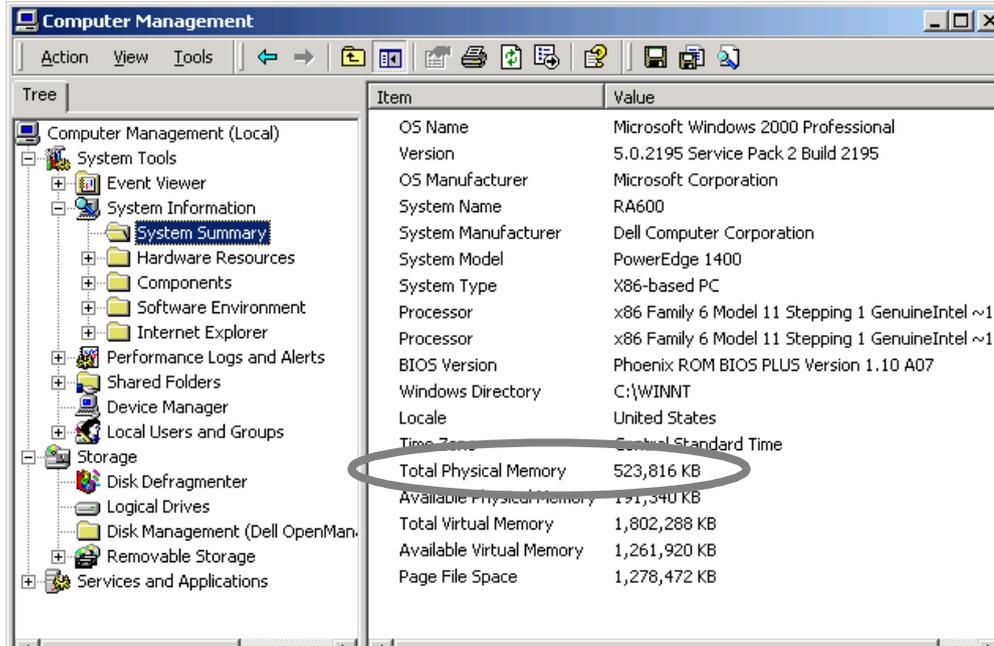


Illustration 3-37: Checking System RAM Recognition.

12. If the system does not recognize the new RAM module(s),

- a. Power down the CPU,
- b. Disconnect the power cord
- c. Release and raise the power supply
- d. Reseat the RAM modules, and repeat steps 8 through 11.

13. When the new RAM is acknowledged by the CPU, replace the side cover on the CPU case. This completes the installation and setup for the optional RAM module(s).

■ IST 011 Installing Global Modem

Section 1: Introduction

This job card describes how to install the GE global modem.

Section 2: Material Required

GE Global Modem Kit, including

- ◆ DB24M-to-DB9F serial cable and
- ◆ Modem kit (Includes modem, universal power supply, phone cables, customer property label, phone company adapter kit, adhesive foot pads, and Velcro mounting tape strips).

Section 3: Prerequisites

Different countries have different requirements for how modems must function. Therefore, before you use the modem in a given country,

- ◆ you must first verify that it is approved for use in that country and
- ◆ you must configure the modem to match the defaults of the country in which you will use it.

To find these conditions, go to the modem supplier's GEMS support web site at www.MultiTech.com/support/gems/

Note: *The Global Modem driver is factory loaded and configured to operate through the COM1 port.*

Section 4: Procedure

1. Unpack the Global Modem Kit and retain packing material until installation is validated.
2. Power off the CPU.
3. Connect the serial cable from the COM1 port of the CPU to the modem.
4. Connect the power cord from the modem to the local power outlet.
5. Connect the telephone cable from the modem to the local communication outlet.
6. Set the modem power switch to **ON**.
7. Power up the CPU
8. Perform a functional check of the modem according to the application it is designed to be part of. If the computer is in as-shipped condition, all necessary software should be in place for full modem functionality.
Only if necessary, perform the VNC (modem remote access software) configuration according to job card [CNF 005](#) on [page 107](#).

■ IST 012 Installing Barco 3MP2FH Video Board

Section 1: Introduction

This job card describes how to install the Barco 3MP2FH video controller board for the Barco 3M pixel flat panel monitor in the Dell 1400 computer.

Section 2: Material Required

- ◆ Barco 3MP2FH video controller board
- ◆ Dell 1400 Computer

Section 3: Prerequisite



Caution

Wear a protective ESD strap during installation or handling of the board. Electrostatic charges can damage the board.

Section 4: Procedure

1. Unpack the 3MP2FH and retain packing material until installation is validated.
2. Power off the CPU.

4-1 Hardware Setup

Note: Prior to installing your 3MP2FH board(s) in your PC please take a few minutes to familiarize yourself with both the board and the PCI slots in your computer.

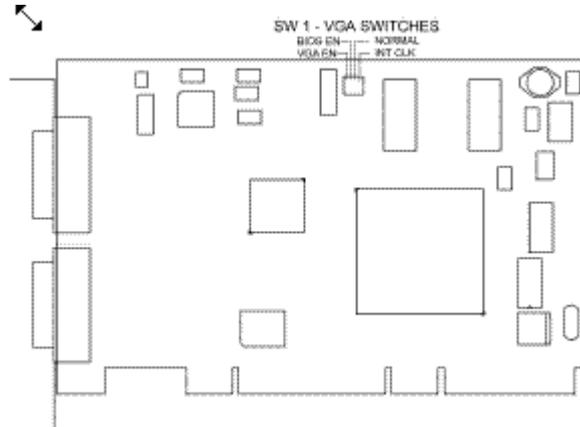


Illustration 3-38: 3MP2FH Switch Locations

There are four switches located at SW1 on the 3MP2FH. The following table shows their locations and briefly describes their functions and default states.

Switch	Function
VGA EN	Enables VGA on the Primary Head (default is ON)
BIOS EN	Allows the system BOIS to read the Video BIOS (default is ON)
NORMAL	Controls Board State (default is ON)
INT CLK	Internal Clock (default is ON)

The switches are in the ON position when the white slider switch is positions towards the top of the board

Table 3-7: Switch settings for BarcoMed 3MP2FH

Prior to installing the BarcoMed 3MP2FH, check the setting of the VGA switches on the graphics board. By default, VGA should be enabled on the primary card. If installing 2 cards in the system, make sure that the VGA EN option on the 2nd card is set to OFF.

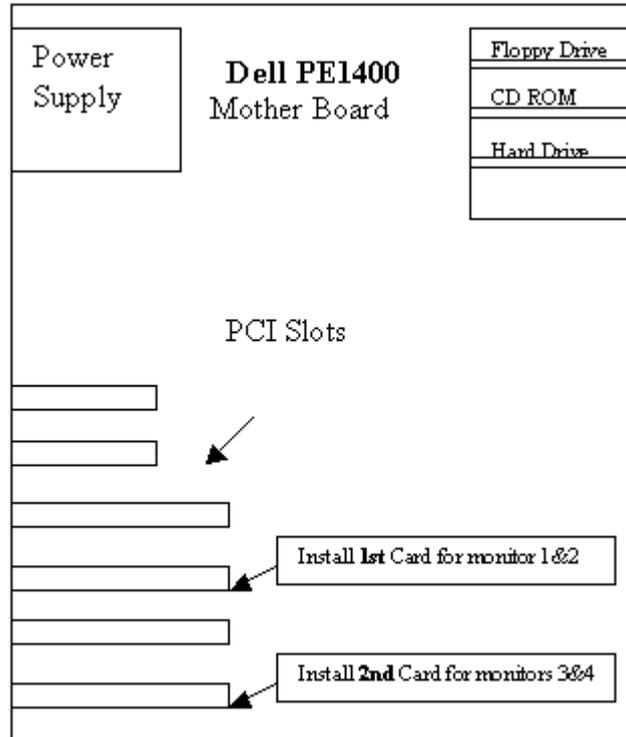


Illustration 3-39: PCI Slots for video cards

Figure 2 illustrates the correct slots location for 3MP2FH cards.

4-2 Installing the BarcoMed 3MP2FH Graphics Controller

Install the 3MP2FH into your computer following these steps:

1. Turn off the power to your computer and disconnect the power cord.
2. Remove the chassis cover according to the manufacturer's instructions. Be sure to observe safety warnings.
3. Install the first card in 3rd slot from bottom and the 2nd card in the bottom slot. Be sure that the board is seated firmly in the slot. See [Illustration 3-39](#) for correct location.
4. Secure the card to the chassis with the PC's I/O panel mounting screw, and replace the chassis cover.
5. Connect the primary display (left-most display in a linear configuration, top-most in a vertical configuration) to the uppermost connector on the 3MP2FH (the output farthest from the motherboard – "VID 1" in figure 3) using the provided DVI cable. Connect the secondary display to the other connector on the board in the same manner used for the primary display.

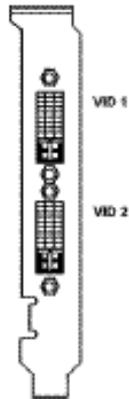


Illustration 3-40: Video Outputs for 3MP2FH

6. Reconnect the power cord, turn on the power, and boot the system as usual.

■ IST 013 Installing RAID Unit

Section 1: Introduction

This job card outlines how to install the RAID storage unit (Dell PowerVault 221S) with Centrality RA600 (Dell 1400 platform) Work Group Server. The RAID unit is intended to be the primary short-term image storage repository for the RA600 with Workgroup Server option.

For more detailed information on setting up the RAID unit, refer to the Dell Online Documentation provided on CD-ROM with the Dell PowerVault 221S RAID unit. This information is also available on the Dell website at www.support.dell.com/docs under Systems > PowerVault Storage > 220/221 S ~ Storage Systems > <language choice> > Installation & Service Guide > Service Information for Technicians.

Section 2: Items Required

- ◆ Dell 1400 PowerEdge computer with Color monitor, keyboard and mouse
- ◆ Dell PowerVault 221S with two connecting SCSI cables

Section 3: Procedure

1. Unpack and identify the system components:
 - Dell 1400 PowerEdge computer with keyboard, mouse and power cord
 - Color monitor with power cord and monitor connector cable
 - Dell PowerVault 221S RAID unit with two power cords and two SCSI-type cables.

When making cable connections, refer to the Dell connector illustrations that follow this procedure.

2. Connect the monitor cable between the monitor and the video controller.

3. Connect the two SCSI type cables between the RAID unit and the SCSI controller card (in one of the expansion slots in the computer):
 - Connect one cable between SCSI connector A on the RAID unit and SCSI connector 0 on the PERC 3 SCSI controller board in the computer.
 - Connect the other cable between SCSI connector B on the RAID unit and SCSI connector 1 on the PERC 3 SCSI controller board in the computer.
4. Set the Bus Configuration switch for split-bus configuration (middle position).
5. Connect the keyboard and mouse to the computer.
6. Connect the computer power cord from the computer to a compatible power outlet.
7. Connect the two RAID power cords from the RAID unit power supply modules to compatible power outlets.
8. Power up the RAID unit.
9. Power up the computer according to the Initial Power Up job card, [CNF 001](#).
10. When Power up is complete, double-click on **My Computer** in the Dell 1400 desktop and look for the RAID unit represented as a hard disk [**RA600_wgs(F:)**].
If the RAID unit does not appear, reboot the computer one more time.
11. Configure the RAID unit per job card [CNF 008](#).

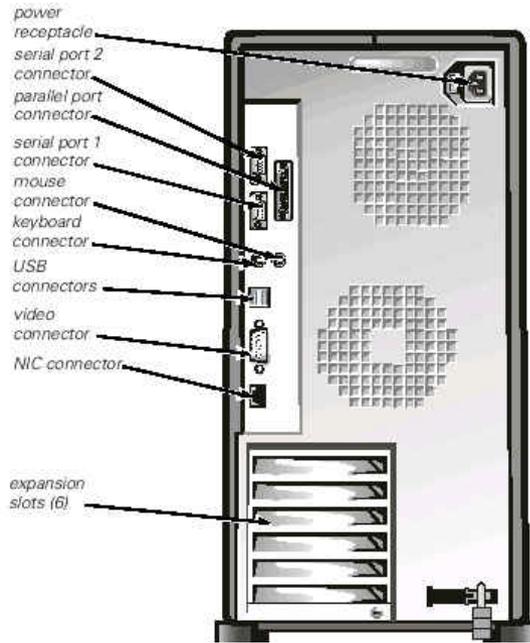
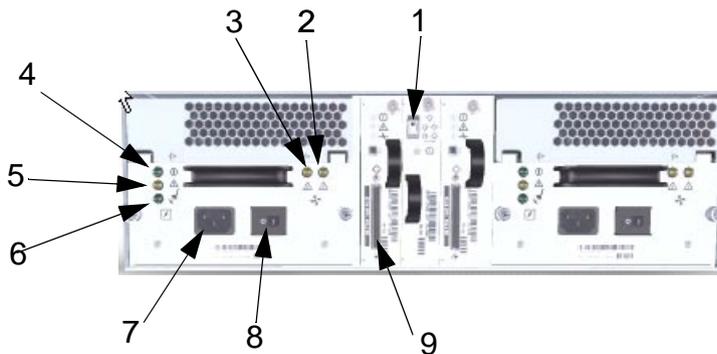


Illustration 3-41: Dell PowerEdge 1400 unit rear view - connectors



- 1 Bus config. switch - Set to middle pos.
- 2 Fan B fault
- 3 Fan A fault
- 4 Power supply status
- 5 Power supply fault
- 6 AC status
- 7 AC connector
- 8 Power supply on/off switch
- 9 SCSI connector

Illustration 3-42: Dell PowerVault 221S RAID unit rear view

4

Software Configuration

Section 1: SUMMARY OF job cards

This section of the service manual covers common procedures for the workstation. Some procedures are duplicated here from other sections for ease of use.

Job Card No.	Software Configuration Job Cards
CNF 001	Initial Power Up and Software Configuration
CNF 002	Configuring System IP Address, Subnet Mask or Default Route/Gateway
CNF 003	Changing Host/Computer Name
CNF 004	Adding/Configuring TCP/IP Printer
CNF 005	VNC Server Installation and Configuration
CNF 006	Monitor Calibration with Barco Tool (MediCal Pro)
CNF 007	Configuring Barco 3MP2FH Video Driver
CNF 008	RAID System Recovery and Configuration
CNF 009	Configuring Workgroup Server & Client System

■ CNF 001 Initial Power Up and Software Configuration

Section 1: Introduction

This job card covers configuring the workstation OS software using customer site specific data. Refer to the forms in [CNF 005](#) on [page 107](#) for the customer information.

The workstation has the OS software and the application software installed at the time of manufacturing.



Caution

On A+, A, and B systems, no boot information is displayed on screen until windows has booted to a point where the video drivers have started. Boot time before the video is displayed, is approximately two minutes. Resetting the system during boot time may cause future boot problems. If you need to see boot information, connect a VGA monitor to the onboard (motherboard) VGA port.

Note: *Important site-specific identification and connectivity values for the system must be recorded in Chapter 1, Section 9 to facilitate ROC support of the site and to complete the installation process. Filling in this data as it is collected will avoid lost time re-collecting it later.*

Section 2: Items Required

The following items are needed at the initial system power up:

- ◆ A VGA service monitor for A, A+, B, and B+ monitor configurationis
- ◆ Windows 2000 Registration ID Number
- ◆ RA600 License File
- ◆ Site-specific configuration information

- ◆ System must be connected to a live network.
The RA600 license file requires an active network communication. If the network is not available, you must disable MediaSense before installation. A registry key setting has been provided for disabling MediaSense. It is in **c:\Service\DisableDHCPMediaSense.reg**
Double click on that file to disable MediaSense.

Section 3: Procedure

3-1 Power Up Workstation

1. Connect and power on the workstation system in the following order:
 - a. VGA monitor (if system is a A, A+, B or B+)
 - b. System Monitor(s)
 - c. Computer

Note: *The workstation has been configured with default information during the manufacturing process. The workstation will need to be configured for site specifics.*

2. After reboot is complete, when the Windows 2000 Welcome window appears, click **Next**.
3. Click **Yes** to the license agreement window.
4. Select regional settings on the next window and click **Next**.
5. On the following window, enter the owner and organization name and click **Next**.
6. In the following window, enter product key from the Recovery (Ghost image) CD cover and click **Next**.

7. Enter the computer name and click **Next**.

Note: *The preceding name entry opportunity does not appear for a Workgroup Server. Refer to SW 011, on page 228.*

8. Enter the current Date and Time information and click **Next**.
The system proceeds with installation and then automatically reboots.
9. When the automatic reboot is complete, log in as **administrator**. The initial password for administrator is CANa11.
10. When the TCP/IP Configuration window pops up, choose
 - a. whether you want a specific or automatically supplied IP address: select the appropriate radio button. If specific, enter the IP address, Subnet Mask, and Default Gateway addresses in the fields provided
 - b. whether you want a specific or automatically supplied DNS server: select the appropriate radio button. If specific, enter the address of the server and an alternate, if desired.
 - c. If the computer is to be a member of a domain or workgroup, select the appropriate radio button and enter the domain/workgroup server name. For domain members a password must be entered.
11. Click **OK**.
12. Only for A, A+, B and B+ monitor configurations, perform the following steps (for other configurations, skip to step 13):
 - a. Right click on the desktop and select **Properties**.
 - b. In the Display Properties window, select the **Settings** tab
 - c. Right click on the monitor **2** rectangle and select **Primary**.

- d. Right click on the monitor **1** rectangle and deselect **Attached**.
 - e. Click on the **Apply** button. The display switches to the primary monitor.
 - f. Click **OK** to close the Display Properties window.
- 13.** For C monitors and 18" flat panel monitors perform the following steps (for demo units only, simply click OK & go to section 3-2):
- a. Right click on the desktop and select **Properties**.
 - b. In the Display Properties window, select the **Settings** tab.
 - c. Click **Advanced**.
 - d. In the Monitor Display Properties window set the **Refresh Frequency** rate to **85** Hz for a C monitor or to **75** Hz for an 18" flat panel, then click **OK** to close the Display Properties window.

3-2 Install Centricity RA600 License File

1. Locate the Centricity RA600 Configuration floppy (license file diskette).
2. Copy the RA600 license file into the **d:\AMI_60\bin** folder (where d: is the installation drive).
3. Remove the blank license.dat file from the d:\AMI_60\bin folder, if present.
4. Rename the RA600 license file (e.g. 2x20020712007_.dat) to **license .dat**.
5. In the d:\AMI_60\bin folder, execute the **RunLCfg.exe** program. In the resulting License Configuration popup window, check that the radio button selected in the Product Type group matches the item following **Feature** on the license file sheet provided with the license diskette. (e.g. Standard, Diagnostic, etc.)
6. Click **Test** and note that the resulting message says that the test succeeded.

7. Close the License Configuration window.

3-3 Install Application Software Patch

Examine the installation package for any software update patch CD for the RA600 program. When any such patch is included, install the patch at this point per job card [SW 014](#).

3-4 Initialize MediCal Pro Software

1. Launch MediCal Pro software by clicking **Start > Programs > MediCal Pro > MediCal Pro**.
2. Enter the license code when prompted.
The license code can be found inside the MediCal Pro package, on the back of the CD case.
3. Set up and configure the MediCal Pro software according to job card [CNF 006 - Monitor Calibration with Barco Tool \(MediCal Pro\)](#).

Note: *The MediCal Pro software is not intended for use with C monitors. The software can be used to check C monitor calibration but since C monitor brightness and contrast controls are available on the front of the monitor, no assurance is possible that the settings will remain (manually) unchanged between calibrations*

3-5 Initialize Centricity RA600 Software

Launch the RA600 software by double clicking the icon next to the **Start** button or by selecting **Start > Programs > Centricity RA600 > Centricity RA600**.

■ CNF 002 Configuring System IP Address, Subnet Mask or Default Route/Gateway

Section 1: Introduction

This job card explains how to change the title items or add a subnet mask or default route from the local workstation to a gateway device. The gateway may be required when the network changes and TCP/IP information is required to pass through a network routing device. A default route must be added to tell the workstation how to get to other devices on the other side of the routing device.



Caution

Caution must be used when adding default routes. An incorrect route entry could cause loss of network communications for the workstation that the default route was added to.

Section 2: Prerequisites

The IP address of the default routing device.

Section 3: Procedure

3-1 Set IP Address & Subnet Mask

1. Select **Start > Settings > Control Panel > Network and Dial-up Connections..**
2. Right click on **Local area connections** and select **Properties.**
3. Select **(TCP/IP)** and click on **Properties**

4. In the popup window, choose
 - a. whether you want a specific or automatically supplied IP address. If specific, you must enter the IP address, Subnet Mask, and Default Gateway addresses in the fields provided
 - b. whether you want a specific or automatically supplied DNS server. If specific, enter the address of the server and an alternate, if desired.
5. Click **OK** twice and close the Network and Dial-up Connections window.
6. Reboot the computer for the changes to take effect.

■ CNF 003 Changing Host/Computer Name

Section 1: Introduction

This job card provides instructions for properly changing the host / computer name.

Section 2: Prerequisites



Caution

All computer names must be unique. Having two workstations with the same hostname can slow workstation response or cause workstations to be inoperable.

***Note:** Changing the computer name requires re-establishing its passwords in the domain (if it is a member of one) and also re-establishing its membership in any workgroups you want it to remain a member of. Be prepared to take care of these items.*



Caution

Do not perform this procedure on Workgroup Server. Instead, refer to SW 011, on page 228

Section 3: Procedure

3-1 Enter Computer Identification

1. Right click on **My Computer** and select **Properties**.
2. Select the Network Identification tab and click the **Properties** button.

3. In the Identification Changes popup window, enter the desired **Computer name** in the field provided.

Note: *The computer name must be unique on the LAN.*

The preferred naming convention for the Centricity RA600 workstations is RWDxxx, where xxx is the last three numbers of the IP address. (RWD = RadWorks Display.

4. Click **OK** to close the Identification Changes window and **OK** to close the System Properties window.

■ CNF 004 Adding/Configuring TCP/IP Printer

Section 1: Introduction

This job card provides instructions for properly configuring the use of a TCP/IP printer for use with the application software. TCP/IP printers are paper based printers used for such things as printing reports and work lists.

Section 2: TOOLS REQUIRED

Windows 2000 CD-ROM.

Section 3: PREREQUISITES

- ◆ Workstation integration completed.
- ◆ Workstation operating system software installed and configured.
- ◆ Workstation application software installed and configured.
- ◆ TCP/IP printers are on the network and pingable.
- ◆ Printer network name and/or IP address or printer manufacturer and model.

Section 4: Procedure

1. Log in as **administrator**. There may be no password set at this time. If a password has been set it could be: **(CANa11)**.

2. Click **Start > Settings > Printers > Add Printer**
The Add Printer wizard initiates.
3. Click **Next** in the Welcome window and follow the wizard instructions to add the printer.
4. When prompted,
 - a. Enter the name and/or IP address of the printer
 - b. Select this printer as the default printer.
 - c. Designate whether the printer is to be shared
5. When the wizard installation completes, print a test page to check the connection and installation and click **Finish** on the wizard.

■ CNF 005 VNC Server Installation and Configuration

Section 1: Introduction

This job card Describes how to install and configure the VNC software to receive incoming support calls from the GEMS Remote Online Center.

Section 2: Prerequisites

- ◆ VNC is installed on the workstation or available on Centricity RA600/RadWorks 6.0 Utility/Driver CD-ROM.
- ◆ Workstation user login name and password.

Section 3: Procedure

3-1 VNC Server Installation and Configuration

1. Power up the CPU and log into the work station as **administrator**.
2. Place the Utility/Driver CD-ROM in the CD-ROM drive and access **VNC>VNCForWindows**.
3. Run **setup.exe**.
4. Click **O.K.** at the **Install** window.
5. Click **Next** at the **Welcome** window.
6. Click **Yes** at the **Software License Agreement** window.

7. Click **Next** to choose the default install location.
8. Click **Next** to select the default program folder.
9. Click **Finish** to complete the installation.
10. Select **Start>Program>VNC>Administrative Tools>Install Default Registry Settings**.
11. Select **Start>Program>VNC>Administrative Tools>Install WinVNC Services**.
12. Only if the workstation includes A and B monitors, ensure that the **Palette Options** is set for **Dynamic Gray Palette** as follows:
 - a. Select **Start>Settings>Control Panel>Display**.
 - b. Select **DOME** tab.
 - c. From the **Palette Options** drop-down window, elect **Dynamic Gray Palette**.
 - d. Select **OK**.
13. Restart the CPU.
14. At reboot, click **O.K.** on the **WinVNC Error** window.
15. Enter Password: **2getin** and click **OK**. Leave other items at default settings.
Now system is ready to get remotely connected.
16. Use the **VNC Viewer** to connect to the remote machine.

■ CNF 006 Monitor Calibration with Barco Tool (MediCal Pro)

Section 1: Introduction

This job card describes how to set up Barco's MediCal Pro software and perform calibration on Barco and non-Barco monitors. The procedure here is an outline guide. For more detailed instructions, consult the Medical Pro User's Guide provided with the software.

Note: *A screen sensor (puck) is needed to perform calibration on most monitors (K2020JB for serial port connection, K2020JC for USB). The B+ flat panel has a built in sensor & does not need a puck.*

Section	Medical Pro Procedures
2	System Setup Procedure
3	Individual Maintenance Tasks with MediCal Pro
4	Troubleshooting Unsatisfactory Calibration

Note: *The MediCal Pro software is not intended for use with C monitors. The software can be used to check C monitor calibration but since C monitor brightness and contrast controls are available on the front of the monitor, no assurance is possible that the settings will remain (manually) unchanged between calibrations.*

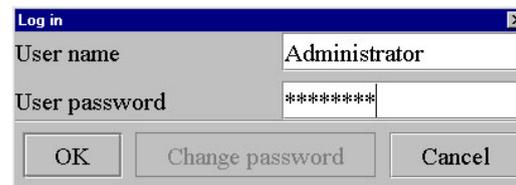
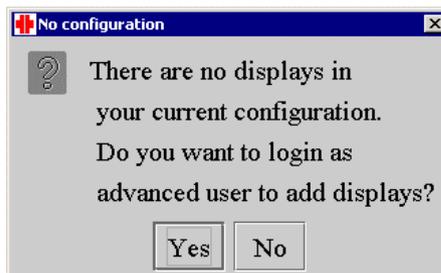
Section 2: Prerequisites

- ◆ RA600 system software is in factory-installed configuration, including Windows 2000 operating system and Medical Pro calibration software.

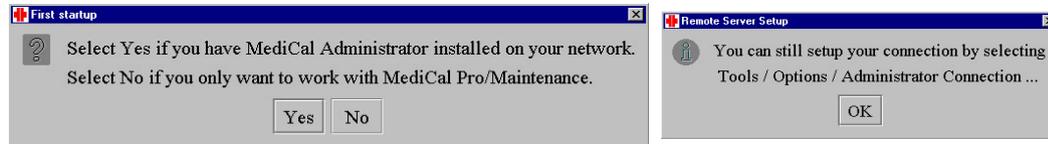
- ◆ RA600 video card(s) properly installed and configured.
- ◆ RA600 system monitors have been connected to the monitor controller card(s) per the applicable IST job card in Chapter 2.

Section 3: System Setup Procedure

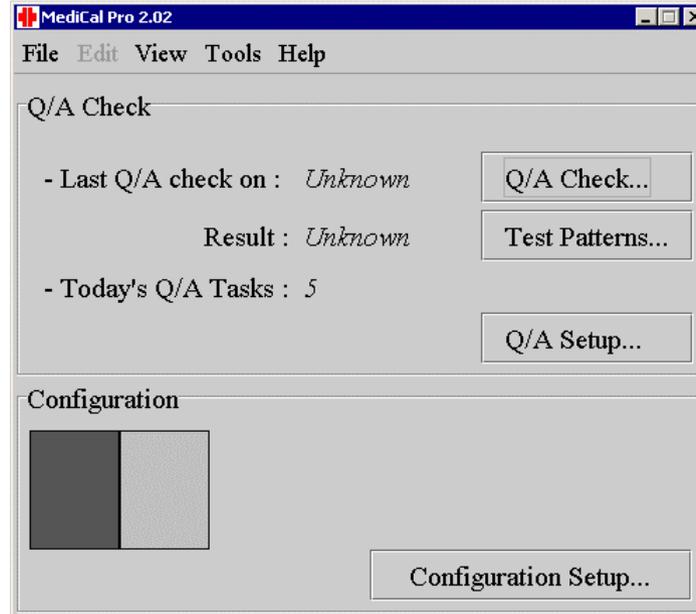
1. Medical Pro software is pre-installed for your turnkey RA600 system. You may have to initialize it if you are using it for the first time. Refer to job card [CNF 001](#), section 3-4.
2. Connect the Barco CRT displays to the PC box with serial data cables (this is not required for Barco flat panels). The left-most display in should be connected to the PC serial port and any other display(s) positioned to the right should be daisy chained from the left-most (“out” data connector of left monitor to “in” data connector of right monitor).
3. Except for certain Barco monitors (those with built-in screen sensors), connect the screen sensor puck to the first monitor to be calibrated. On Barco A & B CRT monitors, the puck connection point may be under the center of the screen frame. For other monitors, connect the sensor according to the monitor manufacturer instructions.
4. Start the MediCal Pro application by selecting **Start > Programs > MediCal Pro > MediCal Pro. 2.01**.
5. You are asked to go to advanced mode since you have no displays yet. Select **Yes** and enter “**advanced**” in the User password field of the Log in pop-up. Select **OK**.



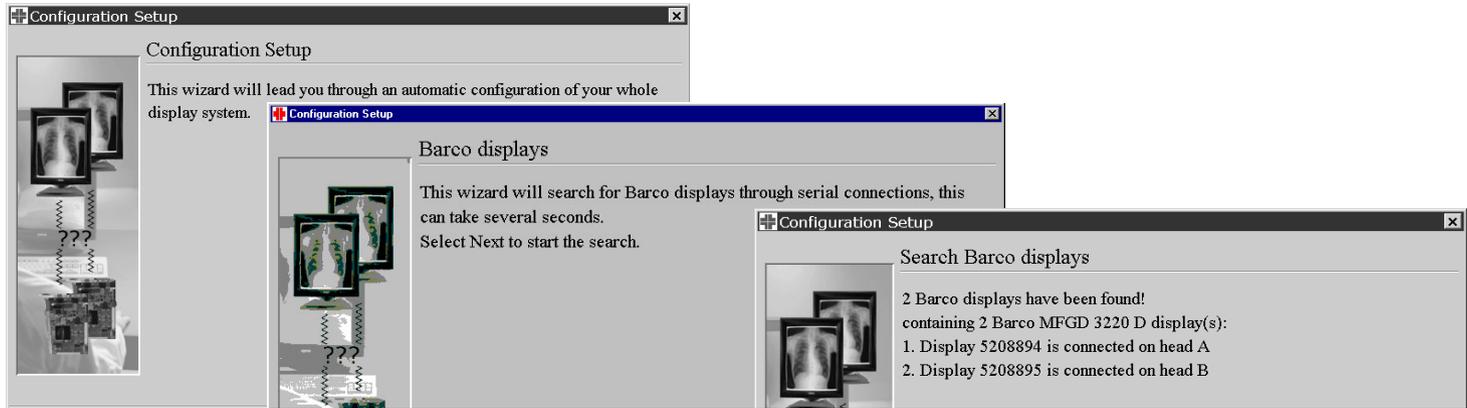
- A message box may appear, asking you for a connection to MediCal Administrator. This is a separate Barco network administration program for monitor calibration. Select **No** if you do not use this program. An additional message then appears, describing where to find this connection later; click **OK**.



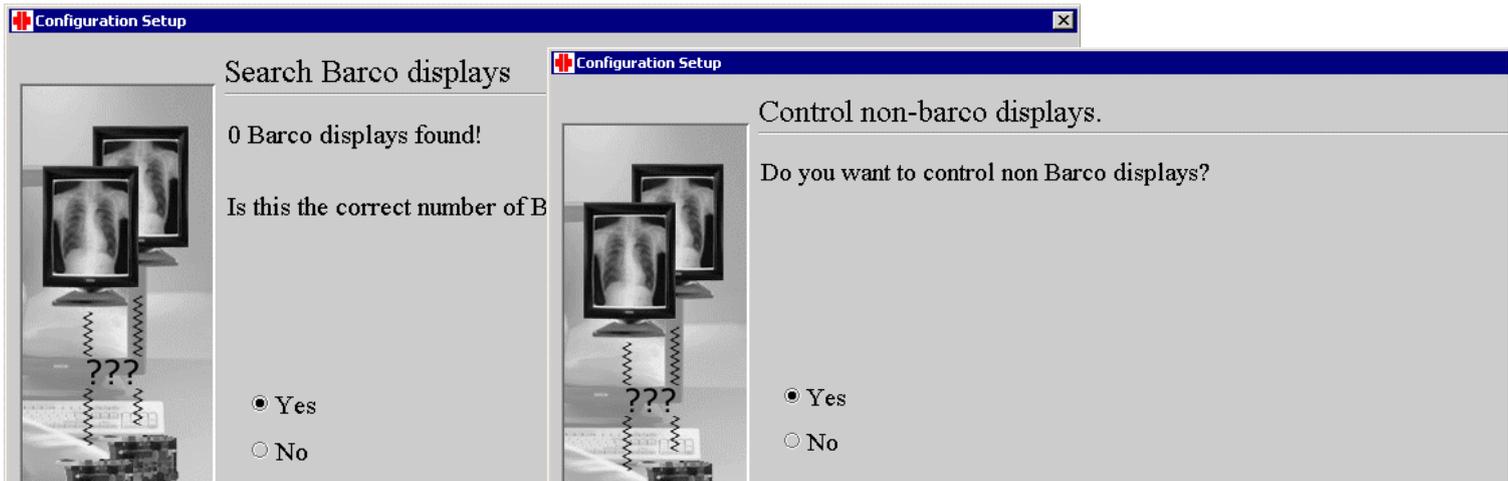
- The following initial configuration window appears (example shown is for a “dual head” card which controls one or two monitors). Click on **Configuration Setup...** to start the configuration wizard..



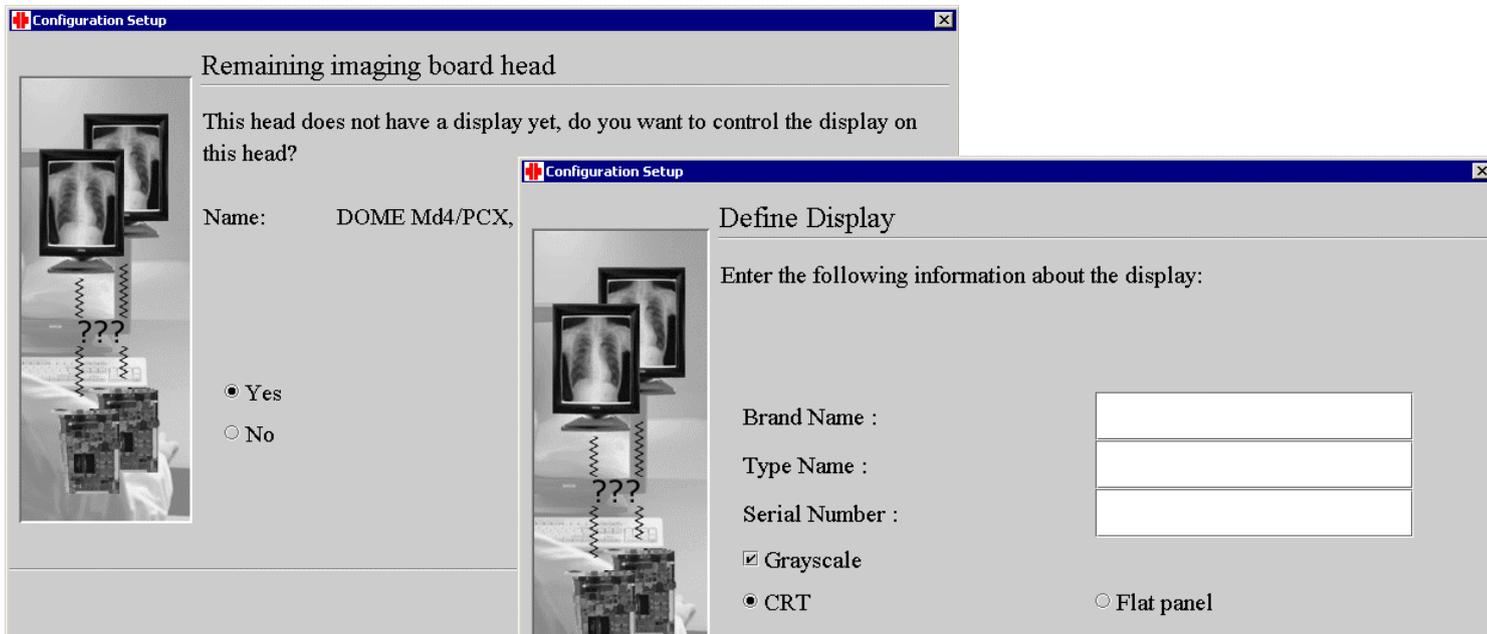
- Click **Next** twice to start the wizard searching, first for Barco monitors, i.e. Barco display controller card(s). The wizard reports its findings: If a Barco card is installed, the number of displays connected is reported and wizard asks if this is correct. If it is correct, click **Yes**.



9. If the number found does not match your configuration, click **No** and follow the troubleshooting directions of the wizard (check cable connections, etc.) until all the Barco displays are found.
10. If the display is not Barco, the wizard reports 0 found and asks if this is correct. Click **Yes** twice to start the wizard searching for non-Barco display(s). The wizard again reports findings and asks if this is correct. If not, click **No** & troubleshoot per the wizard screen instructions.

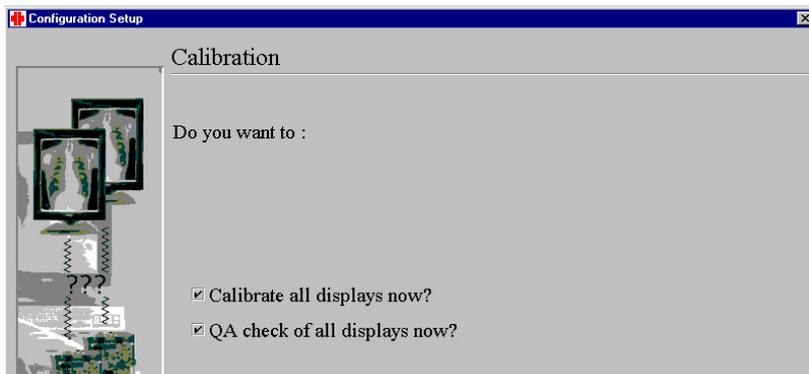


- For the first non-Barco display found, the wizard terms it a “Remaining imaging board head” and asks if you want to control a display on this head. Click **Yes** and enter the requested information about the display connected, then click **Next**.



- Follow the wizard's direction until all displays have been found and all requested info entered.
- When the Define Heads screen appears, follow the on-screen instructions to match the display with the proper display controller. When the blinking display appears, the goal is to select the Head of the blinking display and the number of the head shown in a square on the right bottom of every controller (head).

- 14. When the Calibration screen appears, you can select to calibrate and do a Q/A check immediately. Select **Next** to continue.

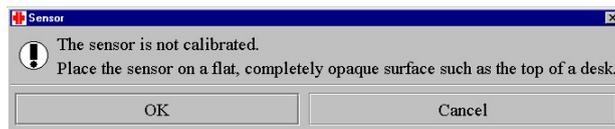


- 15. When the following screen appears, you can select to calibrate and do a Q/A check immediately. Check both boxes and select **Next** to continue. Click Finish to finish the wizard and wait. The calibration should start.



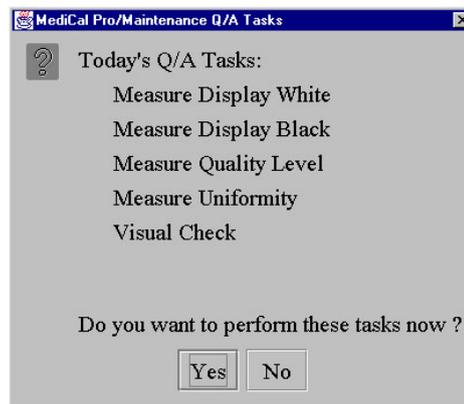
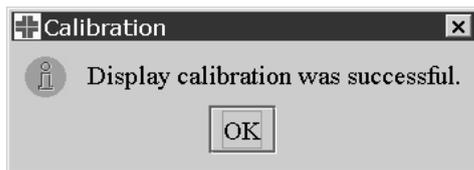
16. For a B+ flat panel monitor, the process is entirely automated because it has a built-in screen sensor.

For other monitor types, follow the on-screen instructions to connect the screen sensor to the workstation computer. The first time the process uses the sensor you will receive the message to put the sensor on the table for a black calibration:



During calibration, you should use the ambient light shield of the sensor. At a subsequent step, you are asked to remove the sensor and then add it back

17. After each monitor calibration completes, click **OK** to the pop-up “calibration was successful” dialog box. After calibrating all displays, the Q/A Check is started; you should see the MediCal Pro/Maintenance Q/A Tasks dialog box:

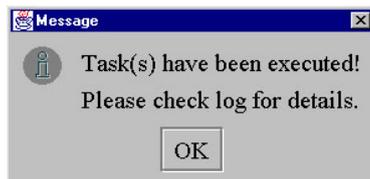


18. Click **Yes** to start the Q/A Check and follow the steps on the screen. For the B+ flat panel monitor, most steps will be automated except for the Visual Check judgement calls. Other monitors will require use of the screen sensor.

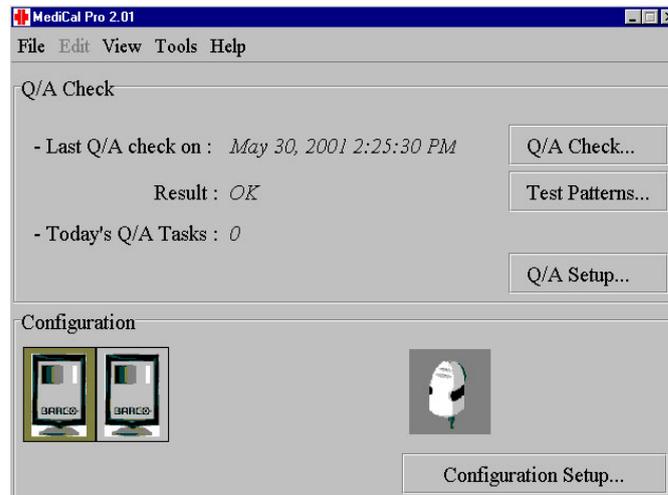
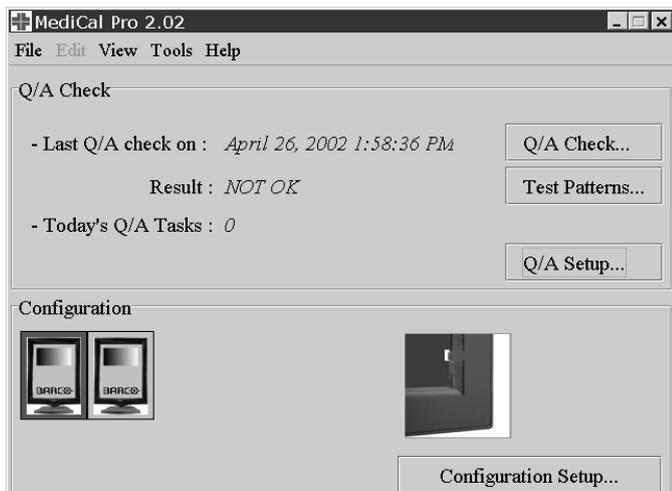
19. For measuring the uniformity of your display, you can remove the shield of your sensor, place it on the highlighted patch and press the **enter** key on the following message.



20. After finishing all Q/A tasks, you should see following message:



21. Now your main view should look like one of the examples below. The left-hand screen is from a dual B+ flat panel monitor test result with at least one test failed. The right-hand screen is for a dual monitor requiring the screen sensor that passed all tests.:



22. Notice the graphic representation in the lower right-hand corner that shows the screen sensor used in the test. Close MediCal Pro now.

Note: - For 2 megapixel grayscale displays, the white is set to 65 fL, the black to 0.2 fL (DICOM as display function with Ambient Light Correction).
- For 4 or 5 megapixel grayscale displays, white is set to 85 fL, black to 0.2 fL (DICOM as display function with Ambient Light Correction).
- You can check these settings by right-clicking on a display and selecting Presets; there you will see the target definitions.
- For non-Barco color displays, enter VALID data for the display brand name, type and serial number. The white and black is measured on the next calibration (same display function DICOM with Ambient Light Correction).

Section 4: Individual Maintenance Tasks with MediCal Pro

4-1 Q/A Check

1. To execute all due tasks for today, go to **Start > Programs > MediCal Pro > MediCal Pro. 2.01.**
2. Select **Q/A Check** in the main window.
3. A message appears; select **Yes** to execute all due tasks for today and follow the instructions for each individual task. Select **No** to skip the execution of the tasks. If there are no tasks to be executed today, you are informed of this.

Note: You can see the total result in the main window or look up individual results by selecting Q/A Setup.

4-2 Just do a Visual Check

1. If you want to execute a visual check (ignoring if it is due or not), go to **Start > Programs > MediCal Pro > MediCal Q/A Visual Check**.
2. Follow each step on the screen until the application closes.

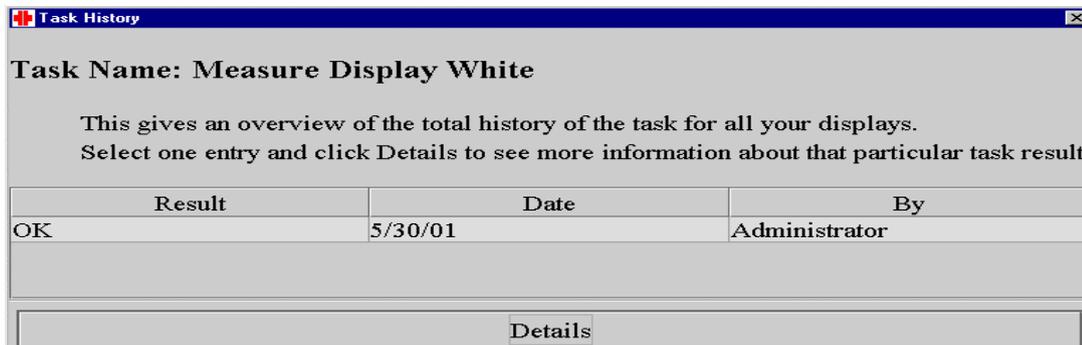
4-3 Run an individual task

1. To run an individual task, start the MediCal Pro application by selecting **Start > Programs > MediCal Pro > MediCal Pro. 2.01**.
2. Select “Q/A Setup” to have an overview of the available Q/A Tasks. Select the task you would like to run by clicking on it. Right-click on the task and select “**Run Now**” in the popup menu to execute that particular task. Follow further instructions until the execution of the task ends.
3. The result of the execution is displayed in the “Last Result” column of the Q/A setup view.

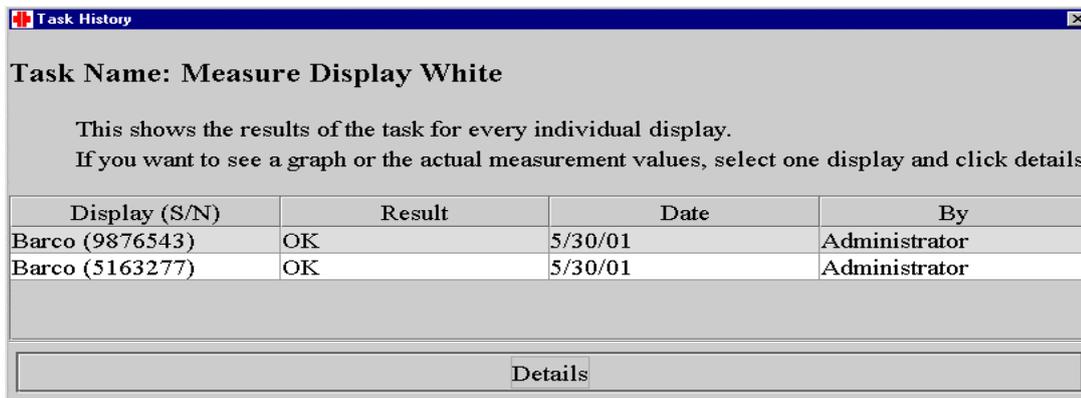
4-4 Look up histories of executed tasks

1. If you want to view the history of a task, select **Start > Programs > MediCal Pro > MediCal Pro. 2.01**).
2. Select “**Q/A Setup**”. You now see the available tasks. Select the task for which you would like to see the history. Right-click on it; a popup menu appears. Select “**History...**” to bring up the history of results for that task.

3. You now see an overview of the total history of the selected task for all your displays. The results are sorted according to their execution time. The top result is the most recent. Select a particular result and click on “**Details**” for more information about the task result.

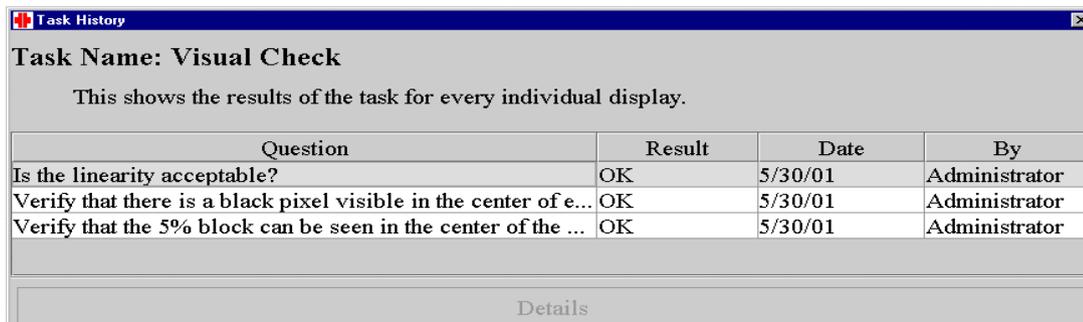


4. The following view shows the different displays in your display system to which this task result applies. Further details (a graph or a number of measurement values) can be reached by selecting a display and choosing “**Details**”. The information is applicable for the selected display.



4-5 Look up detailed results of a Visual Check task

1. Go to the history of the visual check task for a certain display as explained in the section “Look up histories of executed tasks”.
2. When the detailed information for a particular result on a display is chosen, the task history shows the following view. It contains an overview of the different questions of the visual check with the answers next to it in the “**Result**” column.



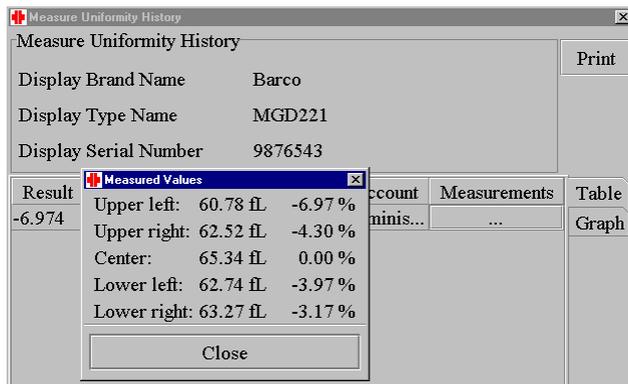
The screenshot shows a window titled "Task History" with a close button in the top right corner. Below the title bar, the text "Task Name: Visual Check" is displayed. Underneath, a descriptive sentence reads: "This shows the results of the task for every individual display." Below this text is a table with four columns: "Question", "Result", "Date", and "By". The table contains three rows of data. At the bottom of the window, there is a button labeled "Details".

Question	Result	Date	By
Is the linearity acceptable?	OK	5/30/01	Administrator
Verify that there is a black pixel visible in the center of e...	OK	5/30/01	Administrator
Verify that the 5% block can be seen in the center of the ...	OK	5/30/01	Administrator

4-6 Look up the values for the result of a Measure Uniformity task

1. Go to the history of the Measure Uniformity task for a certain display as explained in the section “Look up histories of executed tasks”.
2. When looking for details on the results of a display, the task history shows the following Measure Uniformity History. It contains with the results for the indicated display on the Measure Uniformity task.

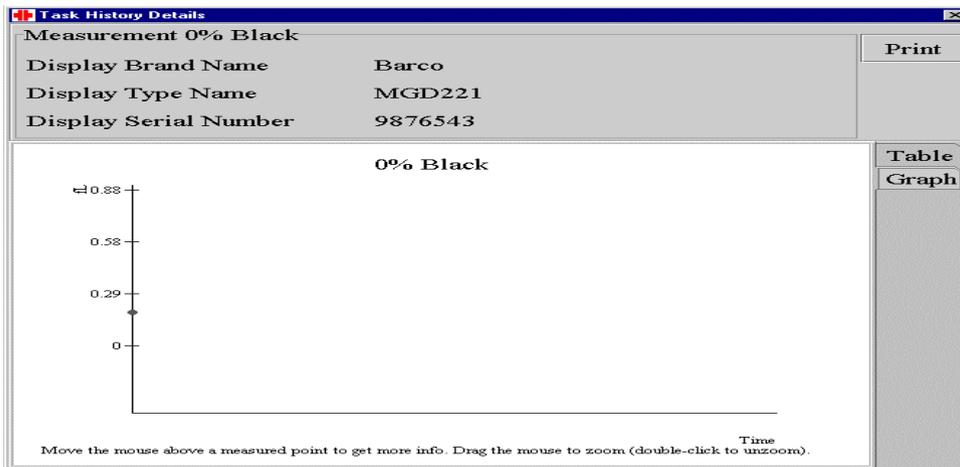
- Click on the unnamed button below Measurements to see the measurement values for a particular result. A window shows up with the measured values of the uniformity task.



4-7 Look up detailed results of a measurement task

- Go to the history of one of the measurement tasks (Measure Display White, Measure Display Black, Measure Quality Level) for a certain display as explained in the section "Look up histories of executed tasks".

- Once you are in the task history details of that task for a certain display, you can view a graph of all the results of that task or you can view this information in a table format. See the illustrations below for a preview of what you can expect of these views.



Task History Details

Measurement 0% Black

Display Brand Name: Barco

Display Type Name: MGD221

Display Serial Number: 9876543

Reference value

0.2 fL

0% Black	Date	Sensor Serial Number	Account
0.181	5/30/01	003483	Administrator

Print

Table

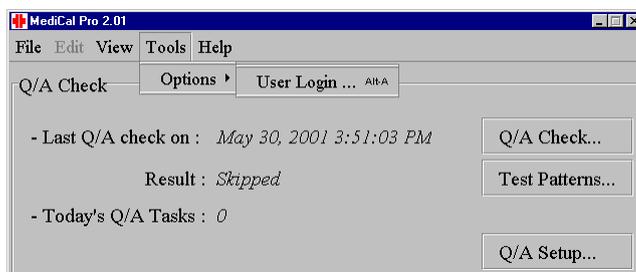
Graph

Section 5: Troubleshooting Unsatisfactory Calibration

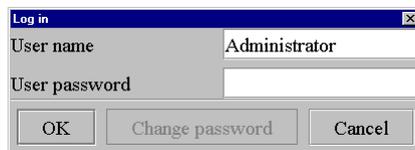
5-1 Measure Display White / Measure Display Black / Measure Quality Level is 'WARNING' or 'NOT OK'.

In case one of the results of a measurement task has an insufficient result, it is recommended that you recalibrate the display for the task that had poor results. See the sections “*Look up histories of executed tasks*” and “*Look up detailed results for a measurement task*” for finding the display with the poor result. Follow the procedure described below.

1. You need to be logged in as an advanced user. If you are not yet in advanced mode (your configuration is not visible at the bottom of the main window), you need to log in again. Go to **Tools > Options > User Login...** in the menu. The login window appears.

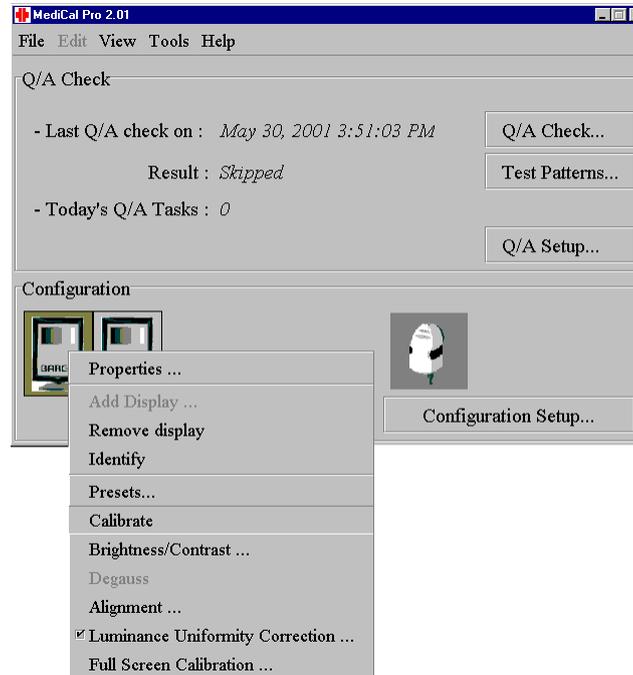


2. Leave the user name as it is and type “**advanced**” as user password. Press **OK**. The advanced view of MediCal Pro appears with the configuration of your displays.



3. To calibrate a display, right-click on the picture of a display. Select “**Calibrate**” in the popup menu and follow the instructions for the calibration of the display. When the calibration finishes, you can calibrate another display if necessary.

Note: Make sure the display you calibrate is the right one! Compare the serial number of the display found in the task history with the serial number of the display you are about to calibrate. This serial number can be retrieved via the “**Properties**” option in the popup menu of the display.

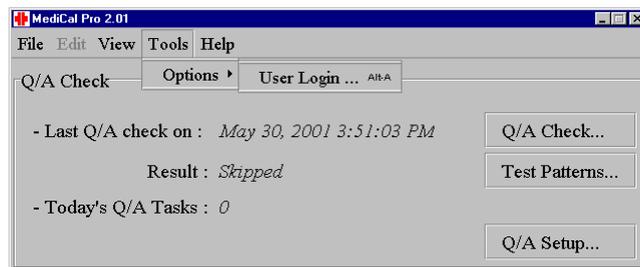


4. Finally, when the displays are calibrated again, retry the tasks with poor results. (See section “*Run an individual task*” for more information about executing a single task.)

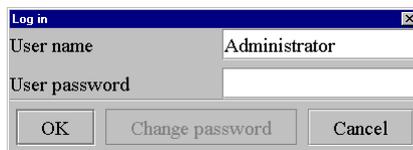
5-2 Measure Uniformity Task is ‘WARNING’ or ‘NOT OK’

1. In case a result of the Measure Uniformity task is unsatisfying, find out which display is causing the problem. See section “*Look up histories of executed tasks*” if you need more information about retrieving detailed information on task results.
2. Once you know which display is responsible for the problem, you should check if the LUC option (Luminance Uniformity Correction) of that display is enabled. Follow the instructions below to find the LUC setting.

- You need to be logged in as an advanced user. If you are not yet in advanced mode (your configuration is not visible at the bottom of the main window), you need to log in again. Go to **Tools > Options > User Login ...** in the menu. The login window appears.

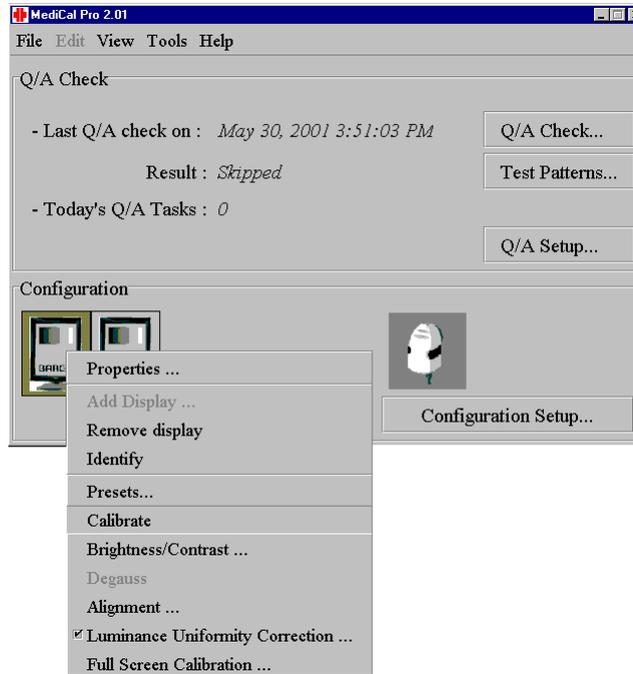


- Leave the user name as it is and type **“advanced”** as user password. Press **OK**. The advanced view of MediCal Pro appears with the configuration of your displays.



- To check the setting of the LUC of a display, right click on the picture of a display. Make sure the option **“Luminance Uniformity Correction...”** is selected (The box in front of the option is checked).
If the LUC was already enabled, do a Full Screen Calibration on this display. Select **“Full Screen Calibration”** in the same popup menu and follow the instructions of the calibration.
If the LUC was disabled, enable it now. Calibration is not necessary.

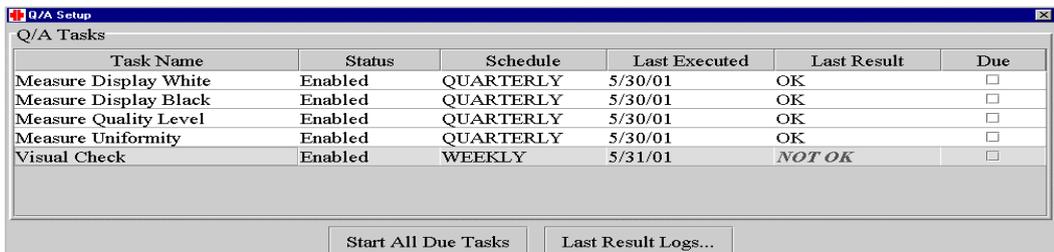
Note: *Make sure the display you operate on is the correct one! Compare the serial number of the display found in the task history with the serial number of the display you are manipulating in the configuration view. This serial number can be retrieved via the **“Properties...”** option in the popup menu of the display.*



5-3 Visual check is 'NOT OK'

When there is a problem with the visual check, the first thing you should do is find out which part of the visual check is causing this problem. Follow the steps below to have a detailed analysis of the problem; if you already know which part of the visual check is problematic you can go to the appropriate troubleshooting item.

1. In the Q/A section, the visual check task will state its last result is “NOT OK”.

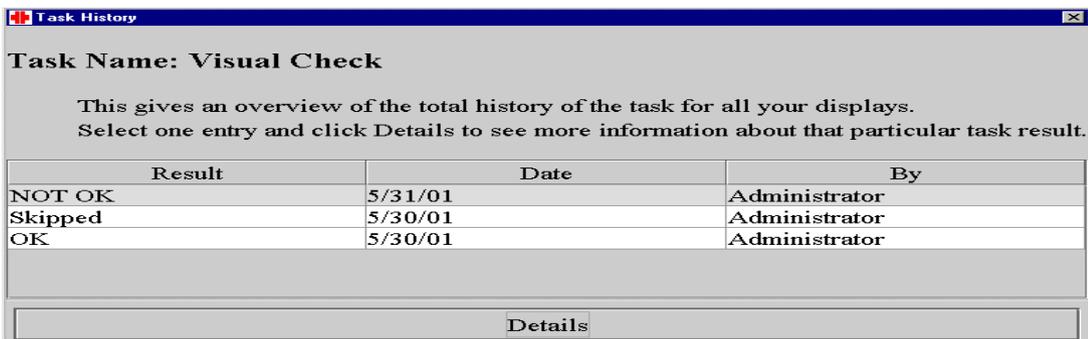


The screenshot shows a window titled "Q/A Setup" with a sub-header "Q/A Tasks". It contains a table with the following data:

Task Name	Status	Schedule	Last Executed	Last Result	Due
Measure Display White	Enabled	QUARTERLY	5/30/01	OK	<input type="checkbox"/>
Measure Display Black	Enabled	QUARTERLY	5/30/01	OK	<input type="checkbox"/>
Measure Quality Level	Enabled	QUARTERLY	5/30/01	OK	<input type="checkbox"/>
Measure Uniformity	Enabled	QUARTERLY	5/30/01	OK	<input type="checkbox"/>
Visual Check	Enabled	WEEKLY	5/31/01	NOT OK	<input type="checkbox"/>

Below the table are two buttons: "Start All Due Tasks" and "Last Result Logs..."

2. Go to the history of the Visual Check task. (See the section “Look up histories of executed tasks” if you need help on this).
3. You should see an overview of the results for the Visual Check task, where the last result (the top one) is “NOT OK”. Select this result and click “**Details**” to get detailed information.



The screenshot shows a window titled "Task History" with the following content:

Task Name: Visual Check

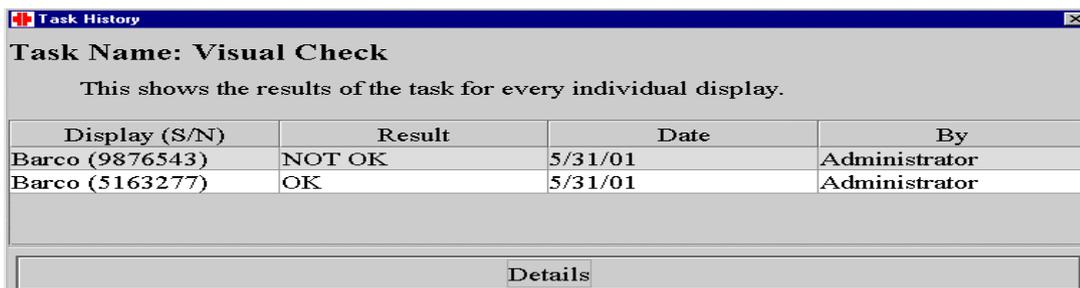
This gives an overview of the total history of the task for all your displays.
Select one entry and click Details to see more information about that particular task result.

Result	Date	By
NOT OK	5/31/01	Administrator
Skipped	5/30/01	Administrator
OK	5/30/01	Administrator

At the bottom of the window is a button labeled "Details".

4. The last result of the visual check task is visualized according to the displays in your display system. If one or more displays had a negative result for the visual check task, you should see

it here. Select the display (you can only select one display at a time) where the result is “NOT OK” and click “**Details**”.



Task History

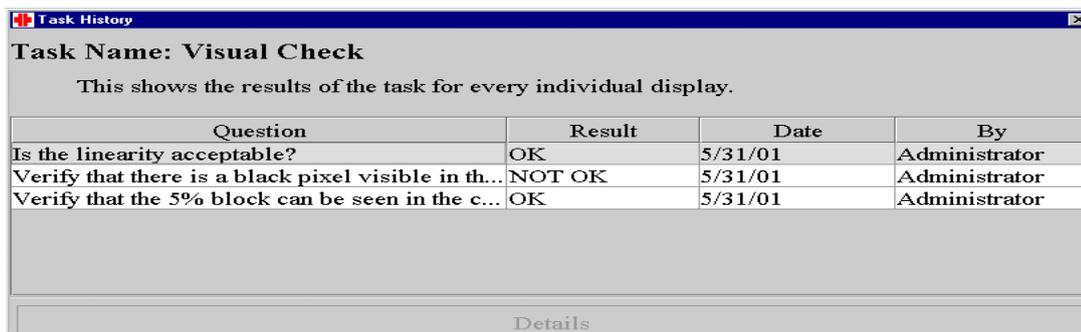
Task Name: Visual Check

This shows the results of the task for every individual display.

Display (S/N)	Result	Date	By
Barco (9876543)	NOT OK	5/31/01	Administrator
Barco (5163277)	OK	5/31/01	Administrator

[Details](#)

5. The different questions of the visual check task are displayed with the corresponding answer next to it. Here you will see what exactly caused the ‘NOT OK’ result of your visual check.
 - a. If ‘NOT OK’ is next to the question “Verify that the 5% block can be seen in the center of the 0% block and that the 95% block can be seen in the center of the 100% block?”, then the SMPTE test pattern was not displayed correctly. See the corresponding item for troubleshooting.
 - b. If ‘NOT OK’ is next to the question “Is the linearity acceptable?”, then there is a problem with the linearity. See the corresponding item for troubleshooting.
 - c. If ‘NOT OK’ is next to the question “Verify that there is a black pixel visible in the center of each #?”, then there is a problem with the focus. See the corresponding item for troubleshooting.



Task History

Task Name: Visual Check

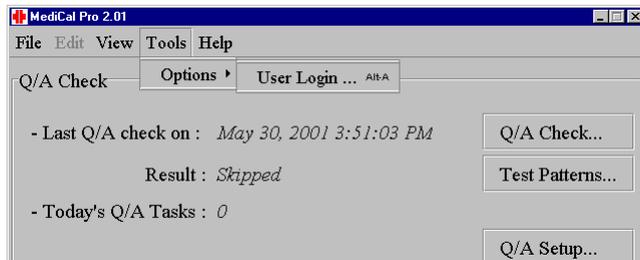
This shows the results of the task for every individual display.

Question	Result	Date	By
Is the linearity acceptable?	OK	5/31/01	Administrator
Verify that there is a black pixel visible in th...	NOT OK	5/31/01	Administrator
Verify that the 5% block can be seen in the c...	OK	5/31/01	Administrator

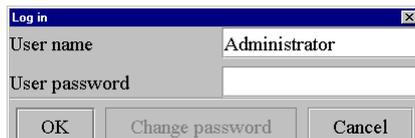
[Details](#)

5-4 Visual check – SMPTE test pattern ‘squares not visible’ problem

1. In case the squares of the SMPTE test pattern are not visible on a certain display, you should recalibrate that display. Follow the procedure described below.
2. You need to be logged in as an advanced user. If you are not yet in advanced mode (your configuration is not visible at the bottom of the main window), you need to log in again. Go to **Tools > Options > User Login...** in the menu. The login window appears.

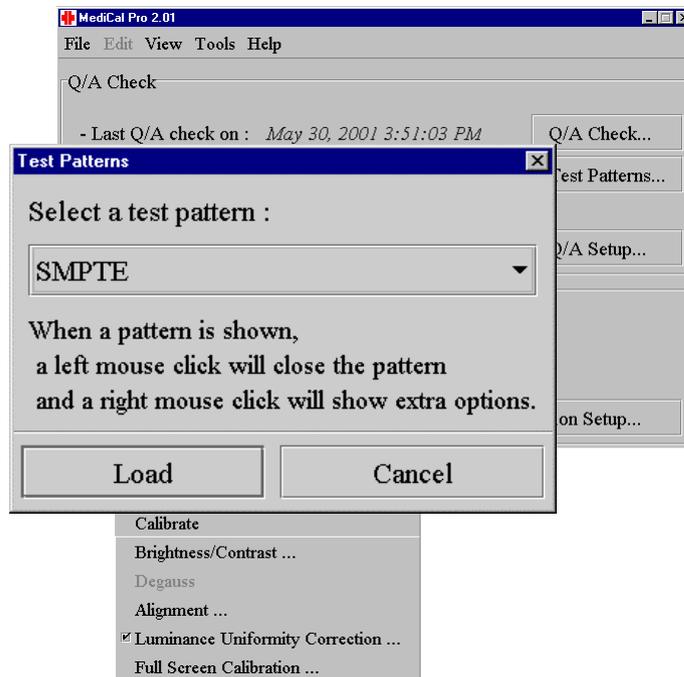


3. Leave the user name as it is and type “**advanced**” as user password. Press **OK**. The advanced view of MediCal Pro appears with the configuration of your displays.



4. To calibrate a display, right-click on the picture of a display. Select “**Calibrate**” in the popup menu and follow the instructions for the calibration of the display. When the calibration finishes, you can calibrate another display if necessary.

Note: Make sure the display you calibrate is the right one! Compare the serial number of the display found in the task history with the serial number of the display you are about to calibrate. This serial number can be retrieved via the “**Properties**” option in the popup menu of the display.

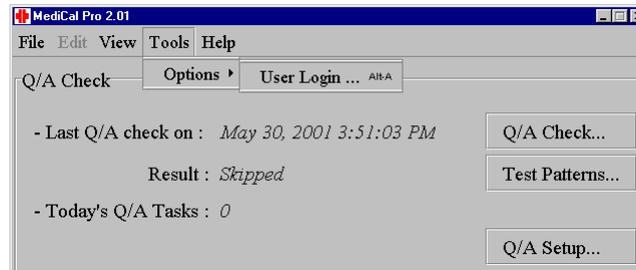


5. When the display is calibrated again, retry the visual check task and verify that the squares of the SMPTE test pattern are visible now (See section “*Run an individual task*” for more information about executing a single task). You can also check this without executing the task by choosing “**Test Patterns**” in the main view. A window with available test patterns shows up. Select “SMPTE” from this list and click “**Load**”. The SMPTE pattern is displayed on the selected display of your configuration. Right-click on the test pattern for a popup

5-5 Visual check – linearity problem

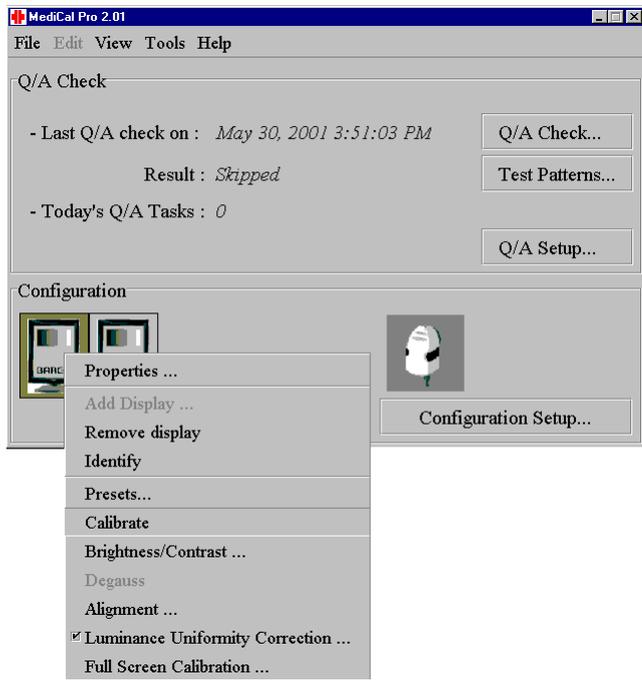
1. In case the linearity of the display is problematic, it is recommended that you adjust your display with the use of the alignment tool. Follow the procedure described below.

2. You need to be logged in as an advanced user. If you are not yet in advanced mode (your configuration is not visible at the bottom of the main window), you need to log in again. Go to **Tools > Options > User Login...** in the menu. The login window appears.

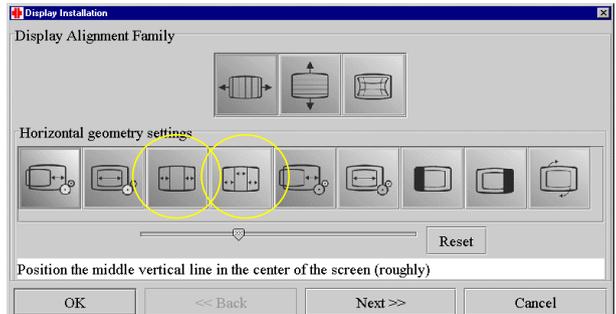


3. Leave the user name as it is and type **“advanced”** as user password. Press **OK**. The advanced view of MediCal Pro appears with the configuration of your displays.
4. To start the alignment tool for a display, right-click on the picture of the display. Select **“Alignment...”** in the popup menu.

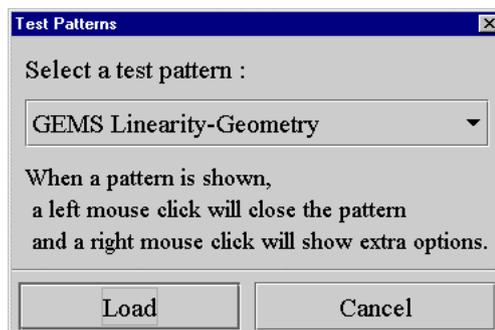
Note: Make sure the display where you do an alignment is the right one! Compare the serial number of the display found in the task history with the serial number of the display you are about to align. This serial number can be retrieved via the **“Properties”** option.



The display alignment tool shows on the display. Use the indicated tools for horizontal and vertical geometry settings to adjust the alignment of the display (see picture below). For further information on using the alignment tool, refer to the user manual for MediCal Pro.



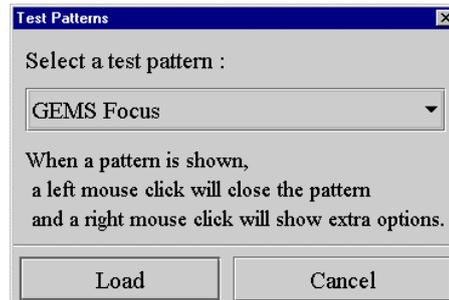
- When the alignment of the display is adjusted, retry the visual check task and verify that the linearity has improved (See section “Run an individual task” for more information about executing a single task). You can also check this without executing the task. Choose “**Test Patterns...**” in the main view. A window with available test patterns shows up. Select “**GEMS Linearity-Geometry**” from this list and click “**Load**”. The linearity pattern is displayed on the selected display of your configuration. Right-click on the test pattern for a popup menu with further actions for this pattern.



5-6 Visual check – focus problem

- The focus problem cannot be solved with the current version of MediCal Pro. It is recommended that you consult a service technician with a version of MediCal Maintenance to adjust the focus of your display.
- When the focus of the display is adjusted, retry the visual check task and verify that the focus has improved (See section “Run an individual task” for more information about executing a single task). You can also check this without executing the task. Choose “**Test Patterns...**” in the main view. A window with available test patterns shows up. Select “**GEMS Focus**” from this list and click “**Load**”. The focus pattern is displayed on the selected display of your

configuration. Right-click on the test pattern for a popup menu with further actions on this pattern.



■ CNF 007 Configuring Barco 3MP2FH Video Driver

Section 1: Introduction

This job card describes how to install and configure the Barco 3MP2FH video controller board driver for the Barco 3M pixel flat panel monitor.

Section 2: Material Required

- ◆ Dell 1400 computer with 3MP2FH video board installed.
- ◆ Barco Coronis 3 Mpixel flat panel display(s).
- ◆ Power and video connector cables for the flat panel displays
- ◆ CD containing video driver for the 3MP2FH video board

Section 3: Prerequisites

- ◆ 3MP2FH video board must be installed in the Dell 1400 computer per IST 0012.
- ◆ Power cable(s) connected to standard 110 Vac outlet(s)
- ◆ Video cable(s) connected between the 3 Mpixel flat panel and the video driver board.

Section 4: Procedure

4-1 Reinstalling or Updating your BarcoMed Drivers

To reinstall your current BarcoMed Display Driver or install a new version of the BarcoMed Display Driver follow the steps below:

1. Right click on the desktop and select **“Properties”**. Select the **“Settings”** tab. Now select the **rectangle** that represents the BarcoMed 3MP2FH Imaging Board whose driver you wish to reinstall or update.
2. Click on the **“Advanced”** Button.
3. Select the **“Adapter”** tab and then click on the **“Properties”** button.
4. Select the **“Driver”** tab and then click on the **“Update Date Driver”** button. The “Upgrade Device Driver” Wizard will start. Click **“Next”** to continue.
5. Select the radio button beside “Display a list of the known drivers for this device so that I can choose a specific driver”. Click **“Next”**.
6. In the “Hardware Type” page of the wizard, highlight **“Display Adapters”** and then click **“Next”**.
7. In the “Select a Device Driver” page of the wizard click **“Have Disk”**. Insert your CORONIS Driver Media or browse to the location of your driver and Click **“OK”**.
8. Select “BarcoMed 3MP2FH “ in the “Select a Device Driver” window. Click **“Next”**.
9. The “Start Device Driver Installation” dialog box will appear. Click **“Next”**.
10. Windows will warn you that a digital signature was not found. Click **“Yes”** to continue the installation.
11. When the drivers are installed, click **“Finish”** on the update driver wizard and click **“Close”** on the properties page for the device. Reboot your system when asked, even if you are reinstalling or updating the drivers for multiple BarcoMed 3MP2FH boards in yoursystem .
12. Boot normally and log on using an account with administrator privileges.

4-2 Setting the Resolution of Your CORONIS Display Panel

1. To set the resolution for your CORONIS display panel(s), right click on the desktop and select “**Properties**”. Select the “**Settings**” tab. Now select the **rectangle** that represents the BarcoMed 3MP2FH Imaging Board you are working with. **SPECIAL NOTE:** If you are using the VGA capabilities of your BarcoMed 3MP2FH Imaging Board, the resolution for that board will still be set to a VGA resolution of “640 x 480” pixels. If the BarcoMed 3MP2FH Imaging Board is not running VGA, the device may not be enabled yet. To enable the device check the “Extend my Windows desktop onto this monitor” **checkbox**. Click the “**Apply**” button.
2. Click on the “**Advanced**” Button.
3. Select the “**Adapter**” tab and then click on the “**List All Modes...**” button. Select the resolution and refresh rate that your CORONIS display panel supports from the dialog box and click “**OK**”.

Note: *Note: The number of heads that the imaging board can support will multiply the X resolution of your mode.*

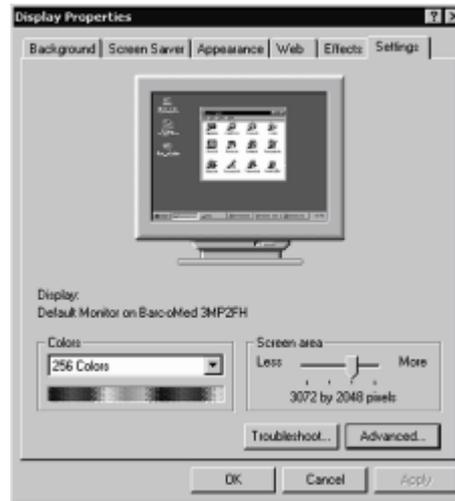
For example: The BarcoMed 3MP2FH Imaging Board supports two CORONIS display panels. If the resolution of each display is 2048 x 1536, Windows 2000 will display the resolution as 4096 x 1536. If necessary you can change the number of display panels later by using the Barco Metheus Configuration Tab.

Click “**OK**” on the bottom of the Adapter Control Panel. If the “**OK**” button on the bottom of the Adapter Control Panel is not visible, press “**CTRL**+“**Enter**” to select “**OK**”.

4. Click “**OK**” in the “Windows will now apply your new desktop settings” dialog box. Your high resolution display(s) should now synchronize and display the Windows desktop.
5. Click “**Yes**” when asked, “Your desktop has been reconfigured. Do you want to keep these settings?”

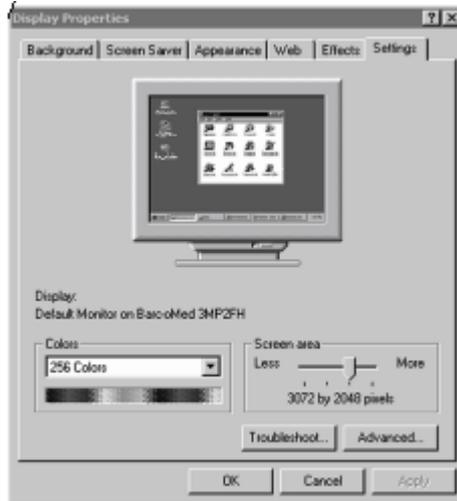
Repeat steps 1 – 5 for each monitor/display panel on all the BarcoMed Imaging Boards installed in your system.

The system shown in the following screen capture has one BarcoMed 3MP2FH Imaging Boards installed and no 3rd party VGA card. Your configuration may look different. This example shows Windows 2000 Display Properties Control Panel after the drivers have been installed and the resolution set.



4-3 Installing DualView under Windows 2000

DualView allows a dual head graphics board to display two separate desktops, one for each monitor instead of a single virtual desktop that spans across both monitors. Figure 6 below illustrates the difference between running without and with DualView enabled under Windows 2000. DualView is a feature that is supported by Windows XP. However, BARCO has provided a means for the user to enable this functionality while running Windows 2000.



In the system shown in the screen capture preceding, there is one BarcoMed 3MP2FH Imaging Board installed with Dual View disabled and no 3rd party VGA card. Your configuration may look different.



In the system shown in the preceding screen capture, there is one BarcoMed 3MP2FH Imaging Board installed with Dual View with Dual View enabled. Rectangles “1” and “2” represent the two CORONIS displays of a single board/dual head installation. Your configuration may look different.

DualView can be installed with CORONIS on a BarcoMed 3MP2FH by following the steps listed below.

1. Follow the instructions in the section “**Initial BarcoMed Display Driver Installation**” to install the BarcoMed 3MP2FH driver for each 3MP2FH graphics board installed in the system.
2. Double-click the “**Add/Remove Hardware**” icon in the Microsoft Control Panel. The “**Add/Remove Hardware Wizard**” appears.
3. Click “**Next**”.
4. In the “Choose a Hardware Task” page of the wizard select the radio button beside “**Add/Troubleshoot a device**”, and click “**Next**”. Windows will now search for a new Plug and Play hardware device to install. When Windows fails to find a new Plug and Play hardware device, the “Choose a Hardware Device” page of the wizard will appear.
5. Select “**Add a new device**”, and click “**Next**”.
6. In the “Find New Hardware” page of the wizard select the radio button beside “**No, I want to select the hardware from a list**” and click “**Next**”.
7. In the “Hardware Type” page of the wizard, highlight “**Display Adapters**” and then click “**Next**”.
8. In the “Select a Device Driver” page of the wizard select “**BARCO Metheus**” in the Manufacturers column and “**BarcoMed 3MP2FH**” in the Models column. Click “**Next**”.
9. The “Start Hardware Installation” dialog box appears. Click “**Next**”.
10. Windows will warn you that a digital signature was not found. Click “**Yes**” to continue the installation.

11. When the drivers have finished copying, click “**Finish**” on the “Completing Found New Hardware Wizard” page to complete the installation.
12. Windows may now prompt you to reboot your system. Click “**Yes**”. Boot normally and log on using an account with administrator privileges.

Repeat steps 1 – 12 above for each 3MP2FH board for which you want to have the DualView feature enabled.

4-4 Setting the Resolution of Your CORONIS Panel with DualView enabled

Once you have completed the installation of the separate screens with DualView, you need to set the resolution for each display. Both screens of each imaging board cannot be enabled at the same time unless their display properties match.

1. To set the resolution for your CORONIS display panel(s) under DualView, right click on the desktop and select “**Properties**”. Select the “**Settings**” tab (see figure 5 earlier in this chapter). Now select the **rectangle** that represents the BarcoMed 3MP2FH Imaging Board you are working with.

Note: *If you are using the VGA capabilities of your BarcoMed 3MP2FH Imaging Board, the resolution for that board will still be set to a VGA resolution of “640 x 480” pixels. If the BarcoMed 3MP2FH Imaging Board is not running VGA, the device may not be enabled yet. To enable the device check the “Extend my Windows desktop onto this monitor” checkbox. Click the “Apply” button.*

2. Detach one of the displays by right clicking on it and deselecting “**Attached**”. Click the “**Apply**” button.

Note: *Since Windows 2000 will not let you detach the primary display, you may need to temporarily make another display the primary display.*

3. For the display which is still attached click on the “**Advanced**” Button.

4. Select the “**Adapter**” tab and then click on the “**List All Modes...**” button. Select the resolution and refresh rate that your CORONIS display panel supports from the dialog box and click “**OK**”.

Note: *In the Adapter box, the Adapter string shows if this display is the First View or the Second View on the Imaging Board. Please make a note of this, so that you can arrange the displays in the correct order later.*

5. Drag the heads into the proper position in the window on the “**Settings**” tab, so that the arrangement in the window on the “**Settings**” tab matches the physical arrangement of your configuration.
6. Click “**OK**” on the bottom of the Adapter Control Panel. If the “**OK**” button on the bottom of the Adapter Control Panel is not visible, press “**CTRL**”+“**Enter**” to select “**OK**”.
7. Click “**OK**” in the “Windows will now apply your new desktop settings” dialog box. Your high resolution display(s) should now synchronize and display the Windows desktop.
8. Click “**Yes**” when asked, “Your desktop has been reconfigured. Do you want to keep these settings?” To set the resolution of the Second View for you CORONIS display panel, bring up the “**Display Properties Control Panel**” again and select the “**Settings**” tab.
9. Attach the display you detached in step 2 above, by right clicking on it and selecting “**Attached**”.
10. Now repeat steps 3 – 8 above for this display.

If you are using a Quad Head Configuration repeat all of the above steps for the two displays on the second imaging board.

Note: *After installing DualView use the Barco Metheus Configuration Control Panel to verify or change your system settings.*

■ CNF 008 RAID System Recovery and Configuration

Section 1: Introduction

This job card outlines how recover the RAID system and restore it to its original, factory-shipped configuration. Performing his procedure should normally be necessary only if the RAID system has been corrupted or a component has failed because the factory-built unit comes preloaded with the necessary software.

Section 2: Prerequisites

- ◆ Windows 2000 Server registration ID number.
- ◆ Video cable is properly connected between the computer and the monitor.
- ◆ Centricity RA600 Workgroup Server Recovery CD-ROM set is available
- ◆ Centricity RA600 license file diskette is available

Section 3: Procedure

3-1 Restoring Original System Configuration



Caution

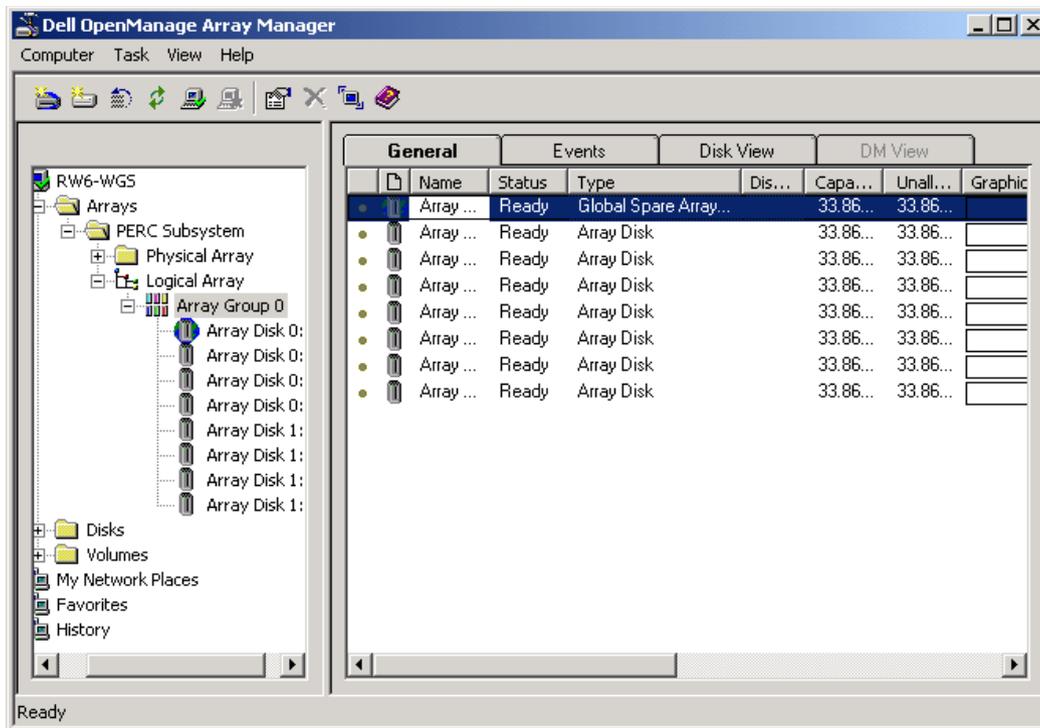
All data and programs on the system disk will be erased.

1. Gather all necessary data before proceeding. Examine the computer to obtain its currently assigned IP Address and computer name. Write this information down so that it will be available during configuration.
2. Locate the computer name, if necessary, by right-clicking on the Network Neighborhood icon and selecting Properties. The Computer Name is shown on the Identification tab.
3. Place the Centricity RA600 Recovery CD-ROM disk 1 into the CD-ROM drive.
4. Restart the workstation.
5. The workstation will boot and the CD-ROM is auto-mounted.
6. Press the **C** key to continue.
7. Press the **Y** key.
8. Press **Yes** to answer Partition size correct?
9. When screen asks whether to Proceed with disk load?, change the answer to **Yes**. The disk load will take approximately 10 minutes
10. When prompted, insert Disk 2 of the set into the CD-ROM drive.
11. When prompted, remove CD from CD-ROM drive and reboot the computer.
After reboot is complete, perform the initial power up procedure, job card [CNF 001](#).
12. Delete the Ghost image rev icon that appears in the center of the monitor screen.
13. Click on the **My Computer** icon and ensure that the RAID unit appears as drive **RA600 WGS(F:)**.
14. Reset all site-specific information for the workstation computer, such as IP address, modality interfacing, etc.

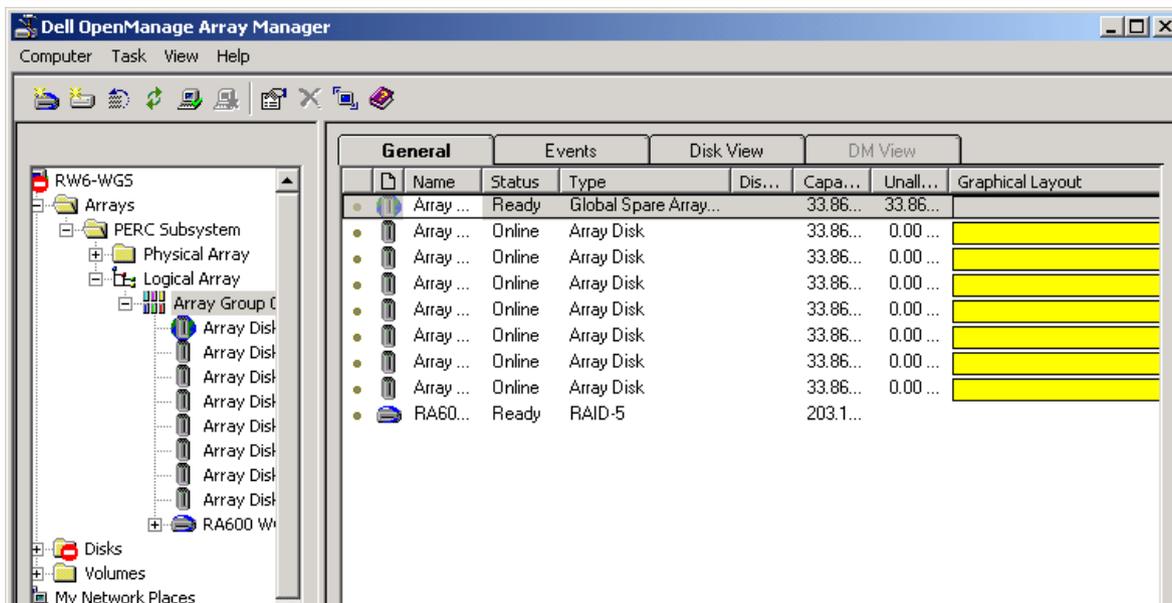
15. Check to see if AMI_60 folder is present on RA600 WGS(F:) drive. If not, copy it from c:\RW_Backup folder to (F:) drive and select to share the AMI_60 folder.
16. Copy RA600 license file to the Bin folder.
17. Start the Centricity RA600 application and check that it is working.
18. Use Windows Explorer to find and delete the following folder: **c:\RW_BackUp**.

3-2 Configuring the RAID Management System

1. Select **Start > Programs > Dell OpenManage Applications > Array Manager > Array Manager Console**.
2. In left pane of Dell Open Manager window, navigate to **<computer name> Arrays > PERC Subsystem > Logical Array > Array Group 0**.
3. In right-hand pane, highlight **Array Disk 0:0**



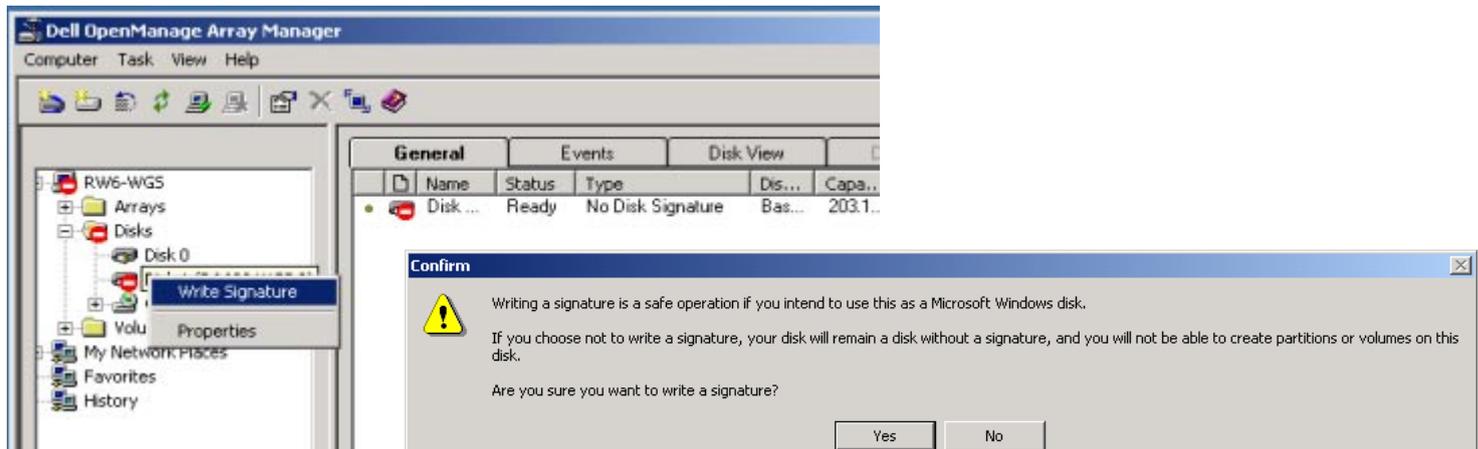
4. From the Task menu, select **Assign Global Hotspare**.
5. In right -hand pane, note that Array Disk 00 is now called **Spare Array Disk** in the **Type** column.



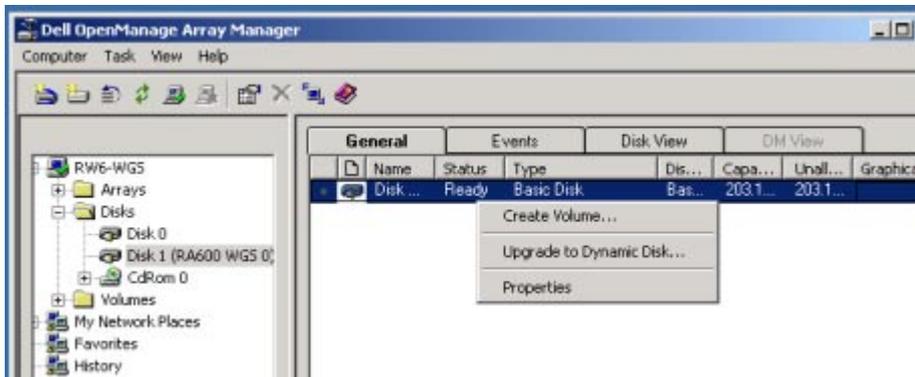
6. High-light **Logical Array > Array Group 0**.
7. From the Task menu, select **Create Virtual Disk...**
8. In the resulting initial wizard window, click **Next**.
9. In the following wizard window, click **Next** to accept defaults.
10. In the following wizard window, leave all defaults except select **RAID 5** from the **Type** pulldown menu and then click **Next**.
11. In the following wizard window, click **Next** to accept default.
12. In the final wizard window, click on **Finish**.

3-3 Initializing the RAID

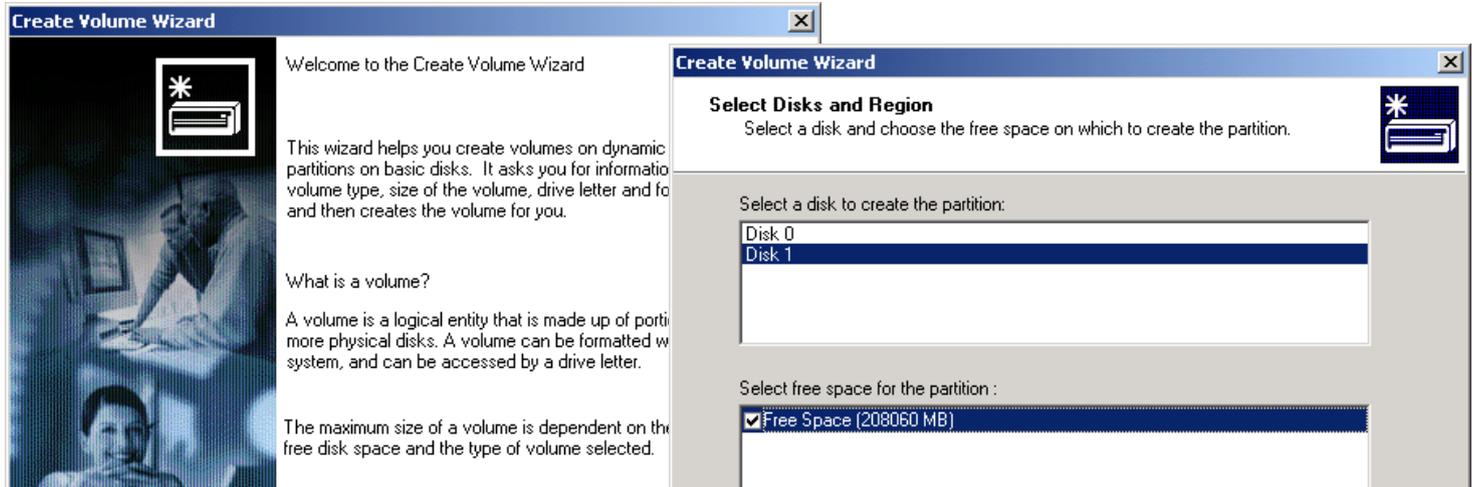
1. Select **Programs > Dell OpenManage Applications > Array Manager > Array Manager Console.**



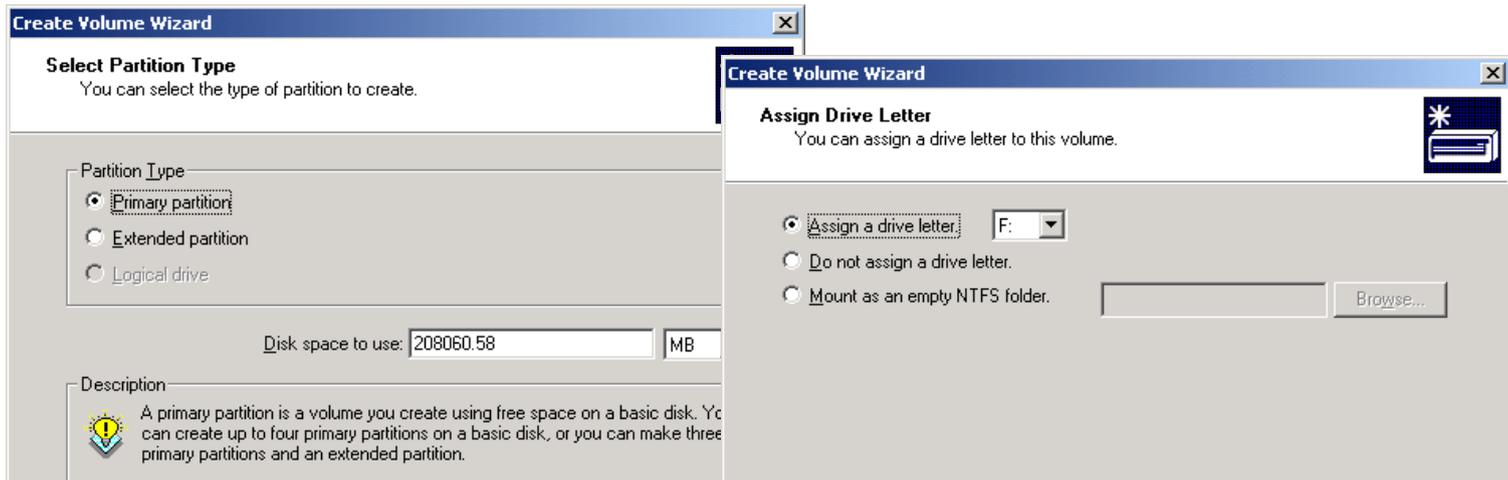
2. Right click on **Disk 1** in the left-hand pane, select **Write Signature**, and click **Yes** to confirm.



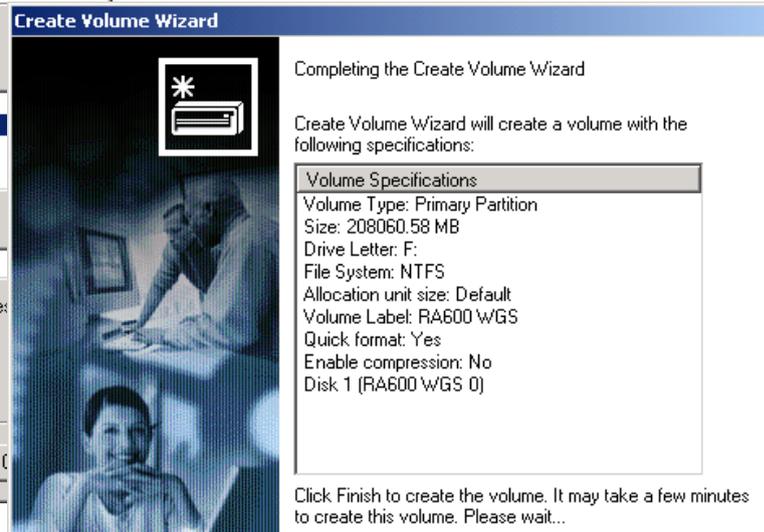
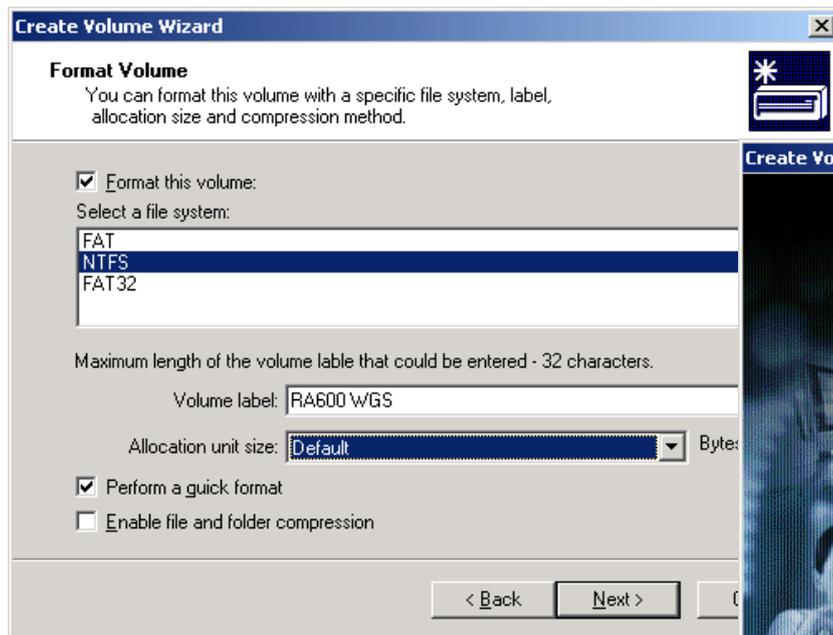
3. Right click on **Disk 1** and select **Create Volume...**



4. Click **Next** in the Welcome window of the Create Volume Wizard.
5. Select **Disk 1**, Select **Free Space**, and then click **Next**.



6. Select **Primary Partition**, accept the default value of **Disk space to use** (maximum), then click **Next**.
7. Select **Assign a drive letter**, select **F**, and click **Next**



8. Check the **Format this volume** checkbox, select **NTFS** file system, enter a Volume label of **RA600 WGS**, check the **Perform Quick Format** checkbox, then click **Next**.
9. Review the Volume Specifications and then click **Finish** to complete volume creation. This completes volume creation.

■ CNF 009 Configuring Workgroup Server & Client System

Section 1: Introduction

This job card outlines how to configure the RA600 Workgroup server and client installation after installation per job cards [IST 013](#), [SW 011](#) and [SW 012](#).

Section 2: Prerequisites

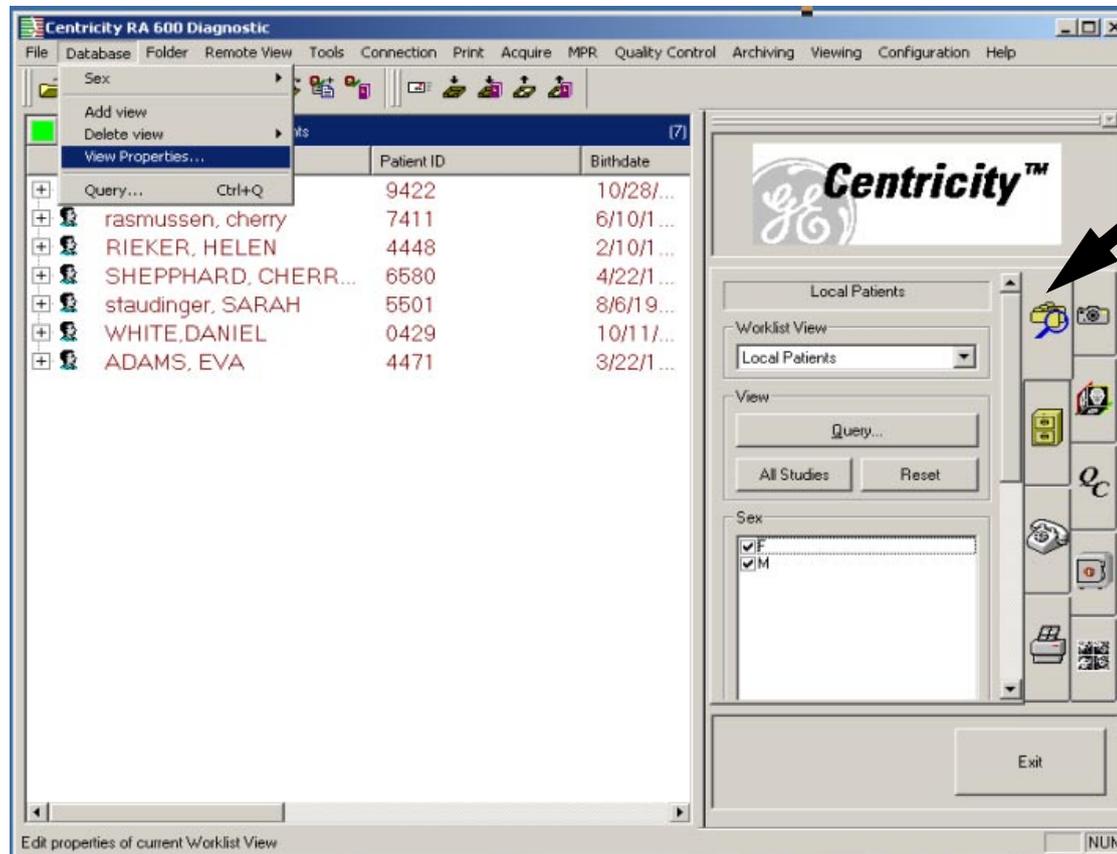
- ◆ Windows 2000 Server OS is loaded on the computer.
- ◆ Video cable(s) properly connected between the computer and the monitors(s).
- ◆ The RA600 Workgroup server and client installed per job cards [IST 013](#), [SW 011](#) and [SW 012](#).

Section 3: Procedure

3-1 Disallow Empty Database Query

The following setting is meant to avoid hanging up the system for a long time period if a user should mistakenly query the database with no criteria when the database is very large.

1. Start the Centricity RA600 program and wait for the operator console to display.



2. Click on Data Selector tab in the Tooltab guide (see arrow in preceding screen capture).
3. For each worklist name in the Worklist View pull-down list,
 - a. Select the worklist name.
 - b. Click the **Properties** button.

- c. Uncheck the **Allow Empty Query** checkbox.
- d. Click **OK**.

When the empty query option has been disallowed for all worklists, proceed to the next Configuration process.

Configure View

Description: Today Refresh time: 0 Minutes

List: Today Lock update

Reconnect time: 15 Seconds

Sort

None Allow Sort

Keep last sort

Initial Define...

Query

Initial Define...

Allow Query

Allow Empty Query Fields...

Filters

Field	Allow ch...	Initial value
Modality	Yes	
Origin	Yes	
Folder	Yes	

Add Delete Edit

Fonts Make default

Item	Field	Value
Worklist item		
Patient item		
Study item		
Series item		
Image item		
Result item		
Interpretation item		

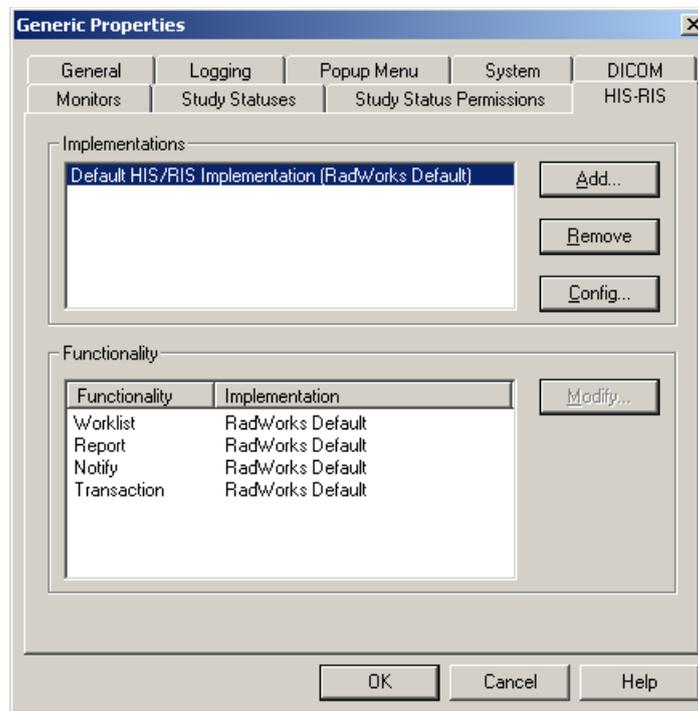
Up Down

Add Delete Edit Font

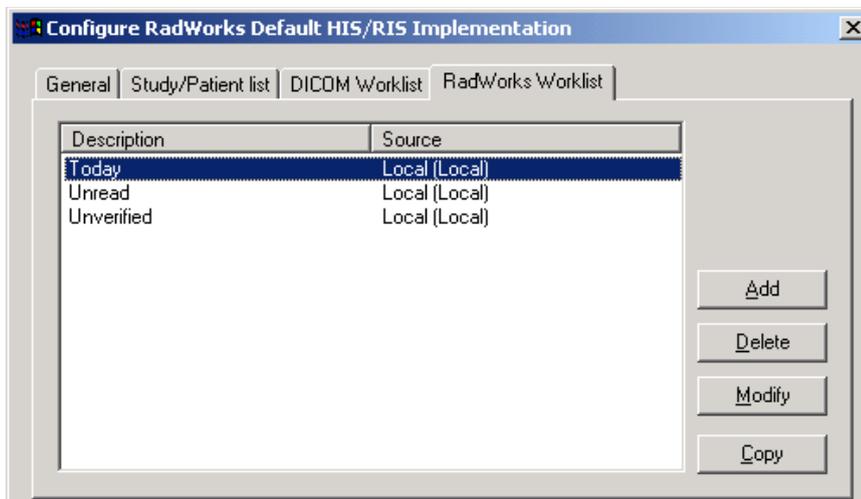
OK Cancel Help

3-2 Initial settings for the Workgroup Server and for each Client Machine

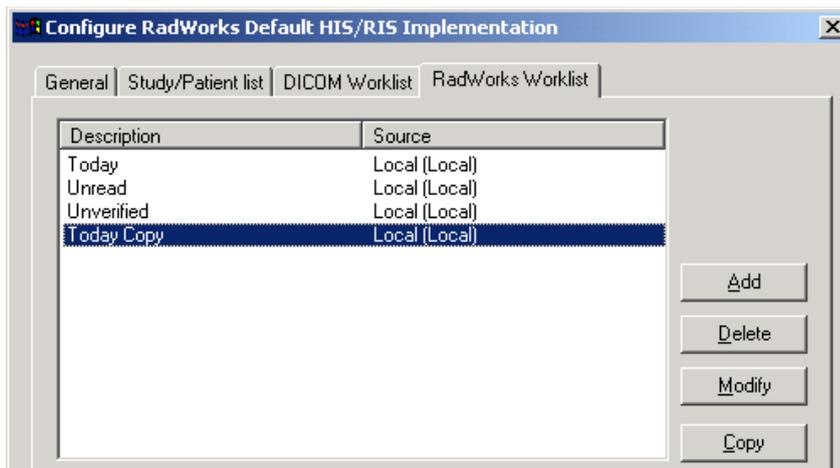
1. In the Centricity RA600 console, select **Configuration > Generic Properties > HIS-RIS**



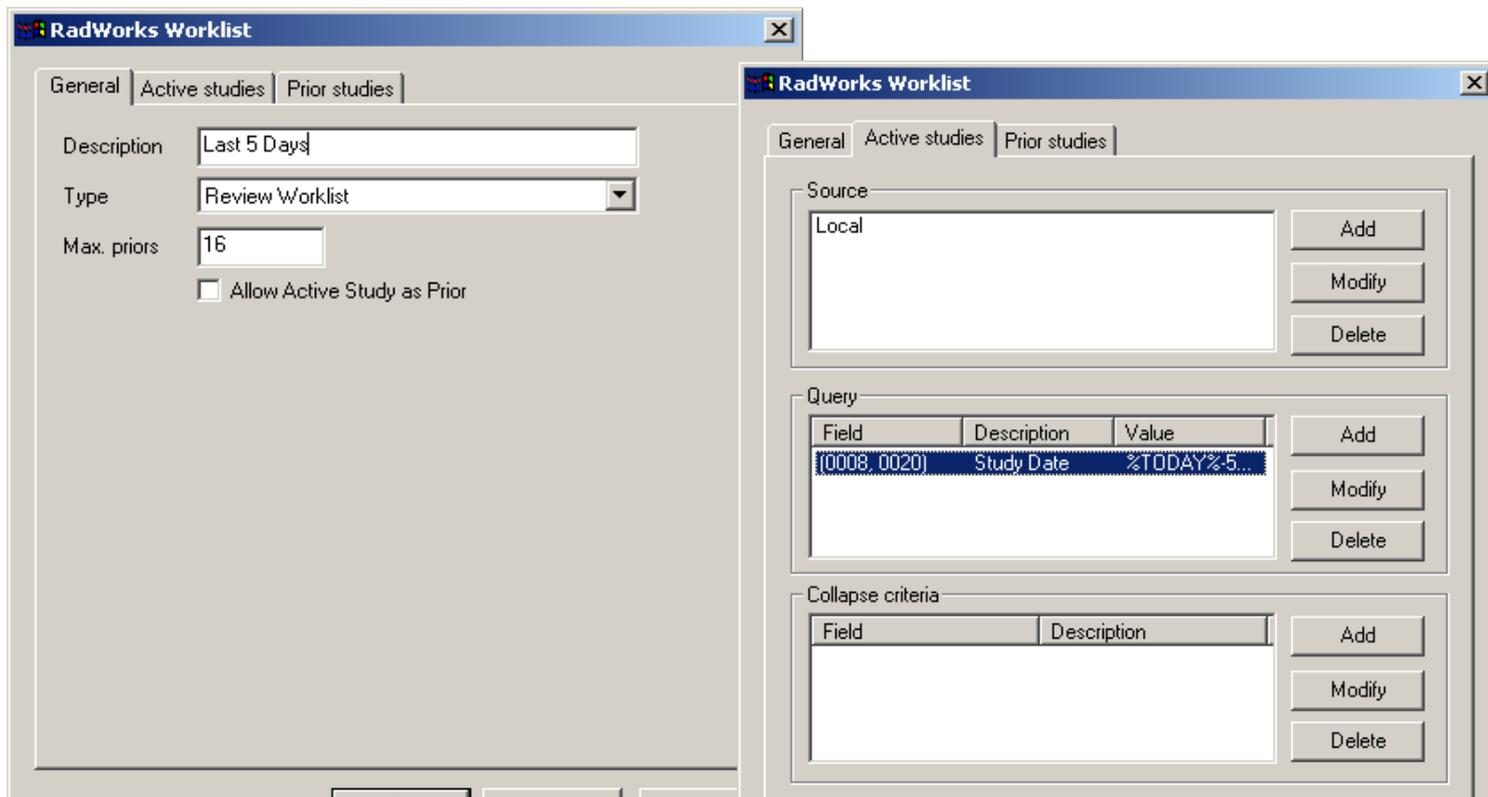
2. Highlight **Default HIS/RIS Implementation...** and click on the **Config...** button.
3. Select RadWorks Worklist tab.
4. Highlight **Today** and click on the **Copy** button.



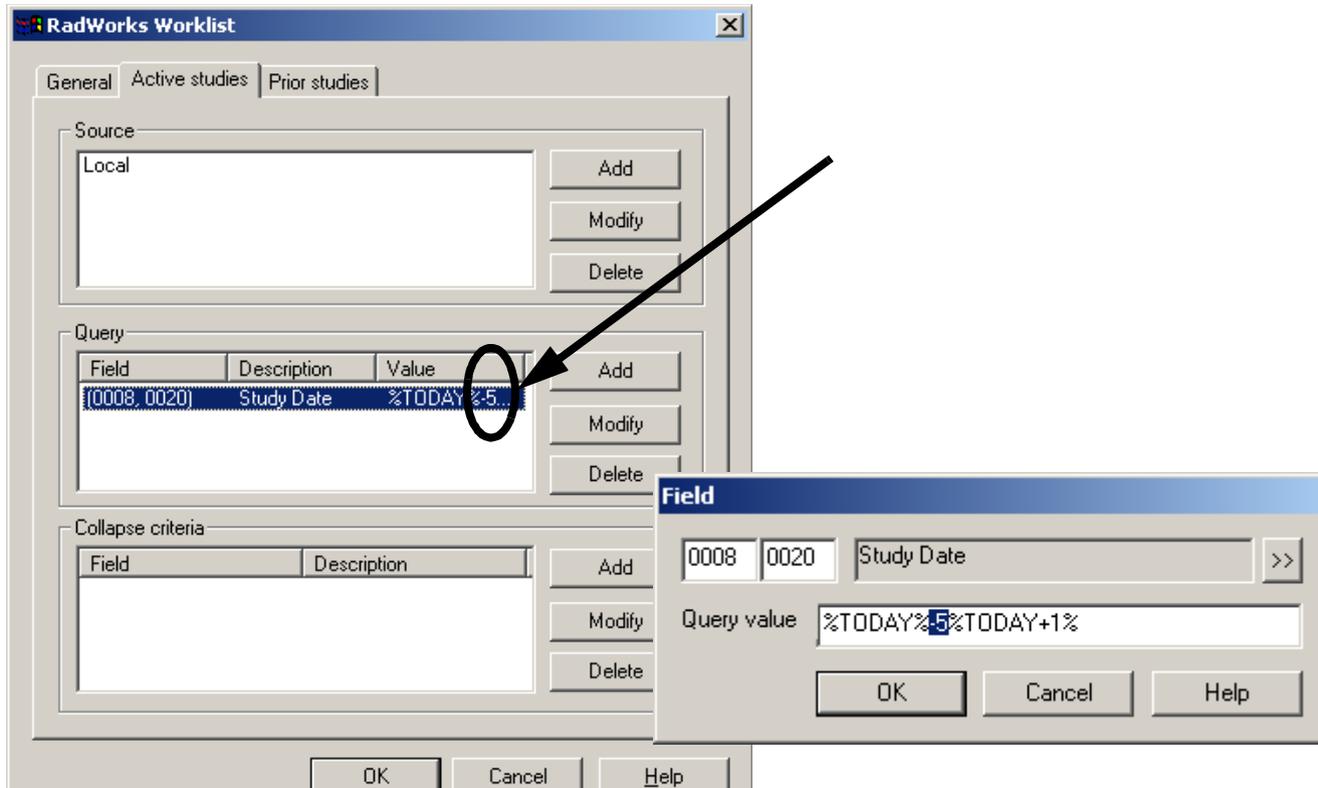
5. Select Today Copy and click on **Modify**.



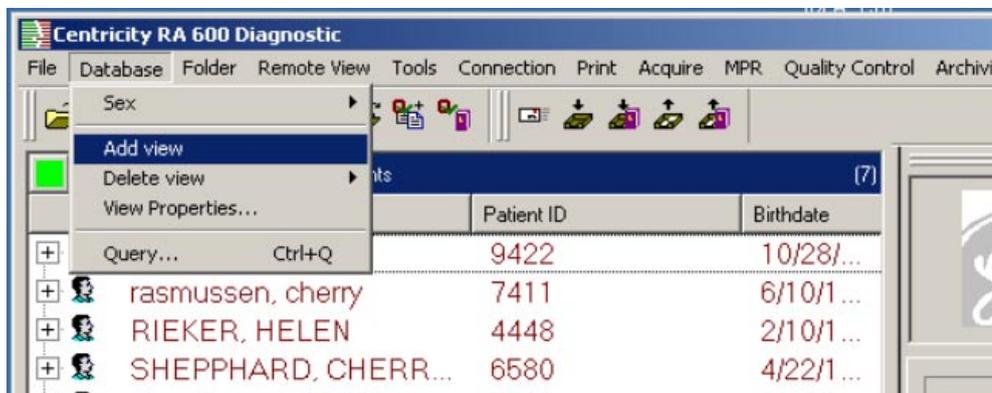
6. Enter the new worklist name of **Last 5 Days** into the Description field.



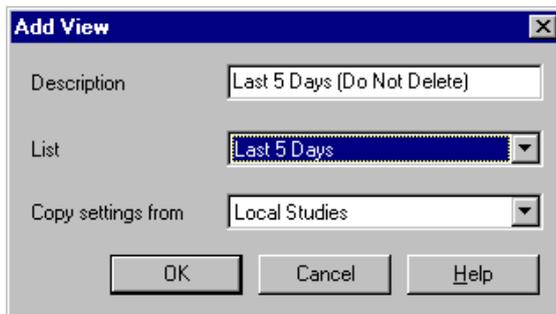
7. On the Active studies tab, Query group, select StudyDate in the Description column, modify the first limit by appending minus five (- 5) at the end of the limit as shown below:



8. Close all open windows, then close and restart the Centricity RA600 program.
9. Add a new worklist called "Last 5 Days" as follows:
 - a. From the Database menu, select the Add View.

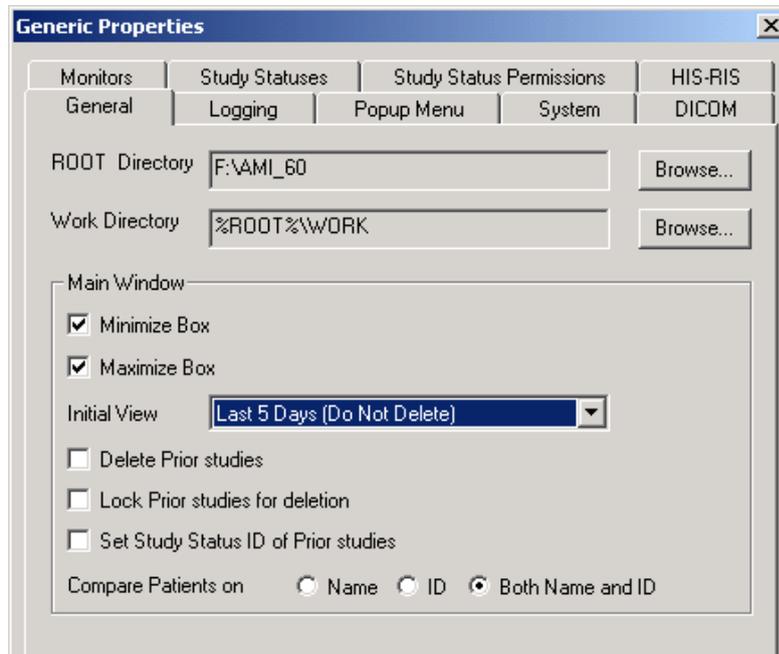


- b. In the Add View window, make the following entry in the Description field:
Last 5 Days [Do Not Delete]

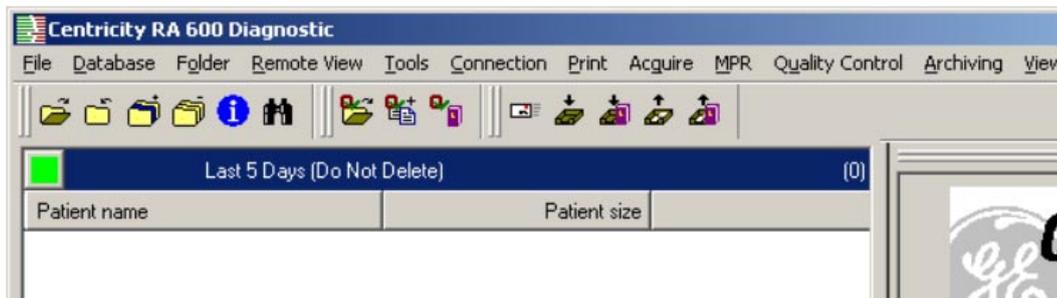


- c. In the List pull-down list, select **Last 5 Days**.
- d. In the **Copy Settings from** field, ensure that the **Local Studies...** item is selected
- e. Click **OK**.

10. At the Centricity RA600 Console, select **Configuration > Generic Properties** and then select the **General** tab.
11. In the **Initial View** window pulldown list, select the **Last 5 Days [Do Not Delete]** item and then click **OK**.



12. Close and restart the Centricity RA600 program.
13. In the Centricity RA600 console, ensure that the program has opened with the initial worklist display of **Last 5 Days [Do Not Delete]**.



3-3 Workgroup Server and ASP

If this Workgroup server is to be used in an ASP (Application Service Provider) environment, configure Centricity RA600 Workgroup Server according to the ASP workflow environment.

3-4 Put Workgroup Server Machine Name in Client Hosts File

The clients require an entry for their server in the client machine hosts file (C:\WINNT\system32\drivers\etc\hosts)

This is mandatory if the client and the server are not on the same network or subnet. This also allows easier switching to a back-up server. The hosts file can be edited to temporarily change the IP address for the server to the IP for the back-up server.

```

# Copyright (c) 1993-1999 Microsoft Corp.
#
# This is a sample HOSTS file used by Microsoft TCP/IP for Windows.
#
# This file contains the mappings of IP addresses to host names. Each
# entry should be kept on an individual line. The IP address should
# be placed in the first column followed by the corresponding host name.
# The IP address and the host name should be separated by at least one
# space.
#
# Additionally, comments (such as these) may be inserted on individual
# lines or following the machine name denoted by a '#' symbol.
#
# For example:
#
#       102.54.94.97       rhino.acme.com           # source server
#       38.25.63.10      x.acme.com                # x client host

```

5

Functional Check

Section 1: Summary of Job Cards

Job Card No.	Functional Check Job Card Title
VF 001	Functional Checks / Setup Completion
VF 002	Saving/Restoring System and User Settings
VF 003	Customer Turnover

■ VF 001 Functional Checks / Setup Completion

Section 1: Introduction

This job card finishes the required system configurations before turnover to the customer. This procedure will:

- ◆ Test to verify valid network connections.
- ◆ Set the administrator password.
- ◆ Launch the application program and check functionality

Section 2: Prerequisites

- ◆ Workstation integration completed.
- ◆ Workstation operating system software installed and configured.
- ◆ Workstation application software installed and configured.
- ◆ Monitors calibrated.

Section 3: Procedure

1. Login as **administrator**.
No password is set at this time. If a password has been set it could be: (CANa1).
2. Press the **Enter** key.

3-1 Verify Ethernet Connection

1. Click on **Start > Programs > Accessories > Command Prompt**.
2. Execute the **ping** command with the IP address of a workstation on the network.

Example:

```
ping 3.28.75.100 [Return]
```

You should see a response from the ping if the Ethernet connection is good.

```
Pinging 3.28.75.100 with 32 bytes of data:
```

```
Reply from 3.28.75.100 : bytes=32 time<10ms TTL=255
```

```
Reply from 3.28.75.100 : bytes=32 time<10ms TTL=255
```

```
Reply from 3.28.75.100 : bytes=32 time<10ms TTL=255
```

```
Reply from 3.28.75.100 : bytes=32 time<10ms TTL=255
```

The command should not time-out with no response indicated from the workstation.

3-2 Set Correct System Time

1. From Windows, right click on the clock located on the task bar.
2. Select the **Adjust Date/Time** menu option.
3. Click the **Time Zone** tab and set appropriately.
4. Click on **Apply**.
5. Select the **Date & Time** tab and set the time and date appropriately.

6. Click on **OK** to apply the changes.

3-3 Set The Administrator's Password

1. Press the **Ctrl - Alt - Delete** keys.
2. Select **Change Password**.
3. Set the new password to CANa1 in the New Password field and Confirm Password fields. That is (Capital C, A, N, then lowercase letters: a, l, then the number 1).
4. Click **OK** when done, then **Cancel**.
5. Select **Start > Shut Down**
6. Select **Log off <User>** and click **OK**.
7. Login as different user when the Windows login screen is displayed.

3-4 Application Software Checkout

1. Login to the system with the correct username and password.
2. Launch Centricity RA600 and note that the Data Selector comes up in the control console.
3. Select and double-click to display an image.

3-5 System and User Settings Backup Check (after final configuration)

1. Ensure both system and user's settings are backed up according to the [VF 002](#) procedure.

■ VF 002 Saving/Restoring System and User Settings

Section 1: Introduction

This job card describes how to start and use the RadWorksSettings tool to manage the RA600 system settings and user profile settings. Only a system administrator may manage the system settings. Either an administrator or the user may manage the settings for a specific user.

Section 2: Items Required

- ◆ A formatted diskette (only if settings are to be stored offline)

Section 3: Prerequisites

- ◆ Centricity RA600 must be installed and running.OS is loaded.
- ◆ System monitor(s), keyboard and mouse must be functional and monitor(s) powered on.
- ◆ All system and user settings have been completed

Note: *Only the correct drivers will successfully install with a particular video board. Be sure the correct board installed before proceeding with the following procedure.*

Section 4: Procedure

4-1 Start Settings Application

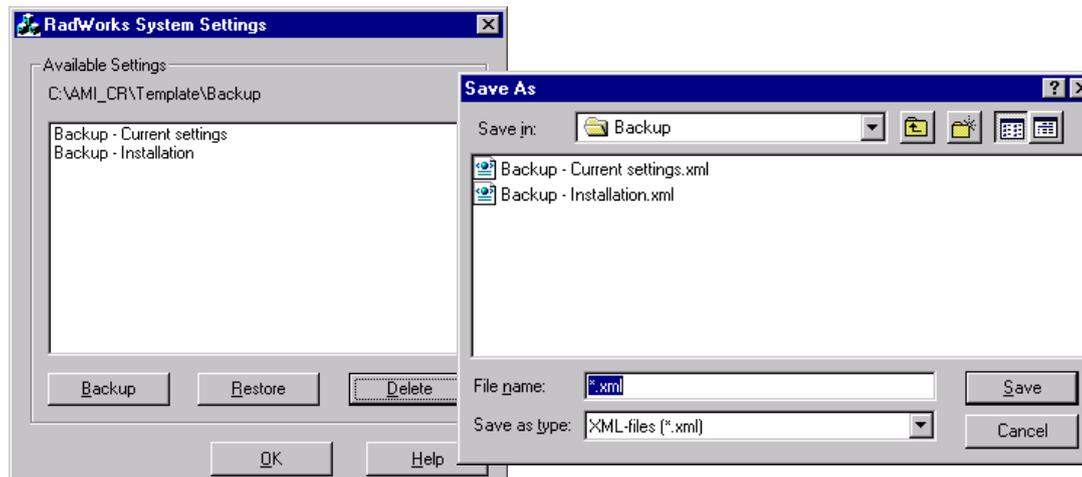
1. Locate and launch the RadWorksSettings.exe program. The program should be located at **D: > AMI_60 > bin > RadWorksSettingsTool.exe**.



2. The Settings tool initial window appears.

4-2 Backing Up System Settings

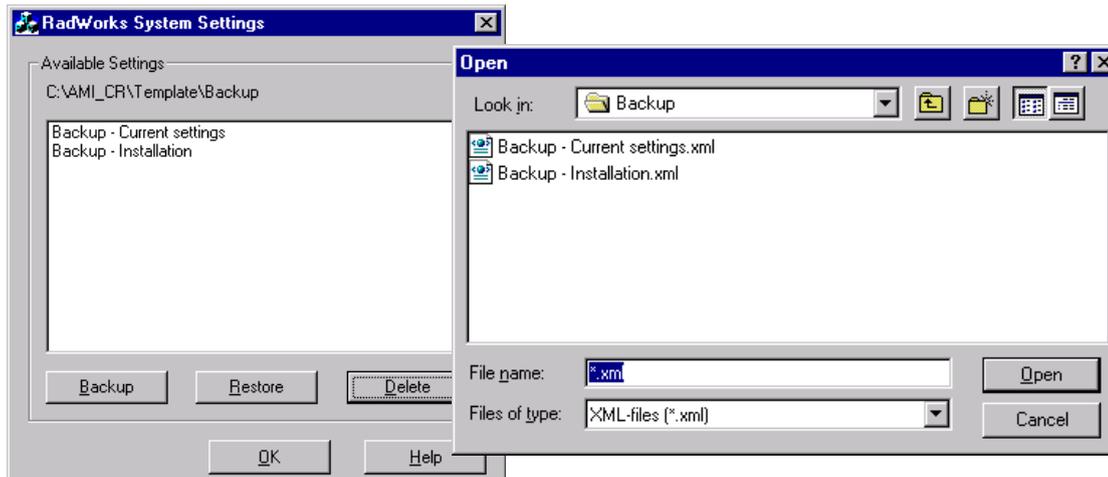
1. Log on to the system as **administrator**, start the Settings application and click the **RadWorks System** button.



2. In the RadWorks System Settings window, click the **Backup** button.
3. In the Save As window, enter a name for the backup file and click **Save** to save the available system files to the default Backup folder, else first navigate to the preferred backup device and/or folder and then click **Save**.
4. Click **OK** to close the RadWorks System Settings window.

4-3 Restoring System Settings

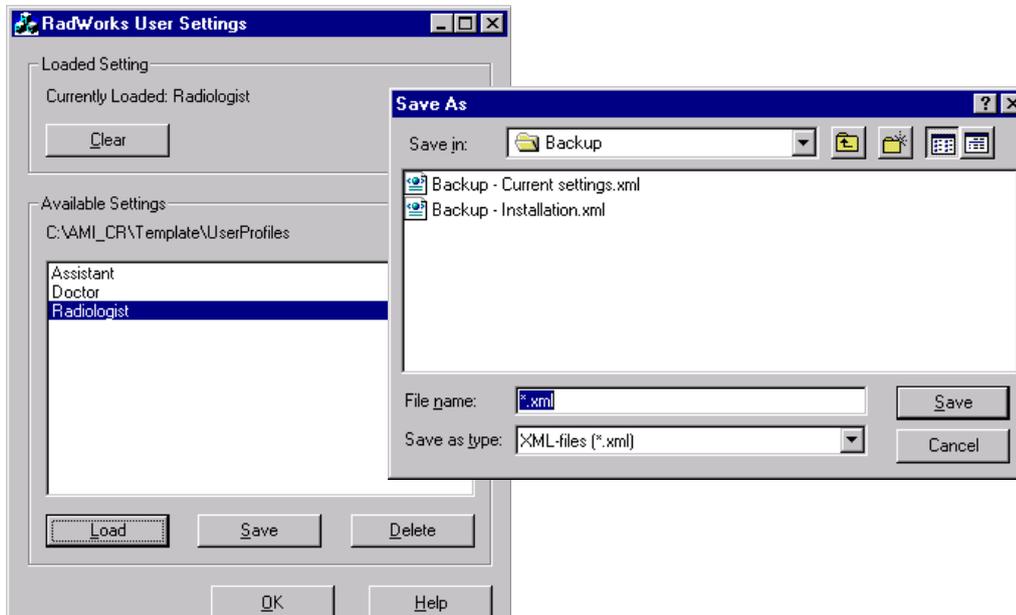
1. Log on to the system as **administrator**, start the Settings application and click the **RadWorks System** button.



2. In the RadWorks System Settings window, click the **Restore** button.
3. In the Open window, select the files you wish to restore and click **Open** to restore those system files from the default Backup folder, else first navigate to the preferred backup device and/or folder, select the desired files there and then click **Open**.
4. Click **OK** to close the RadWorks System Settings window.

4-4 Backing Up User Settings

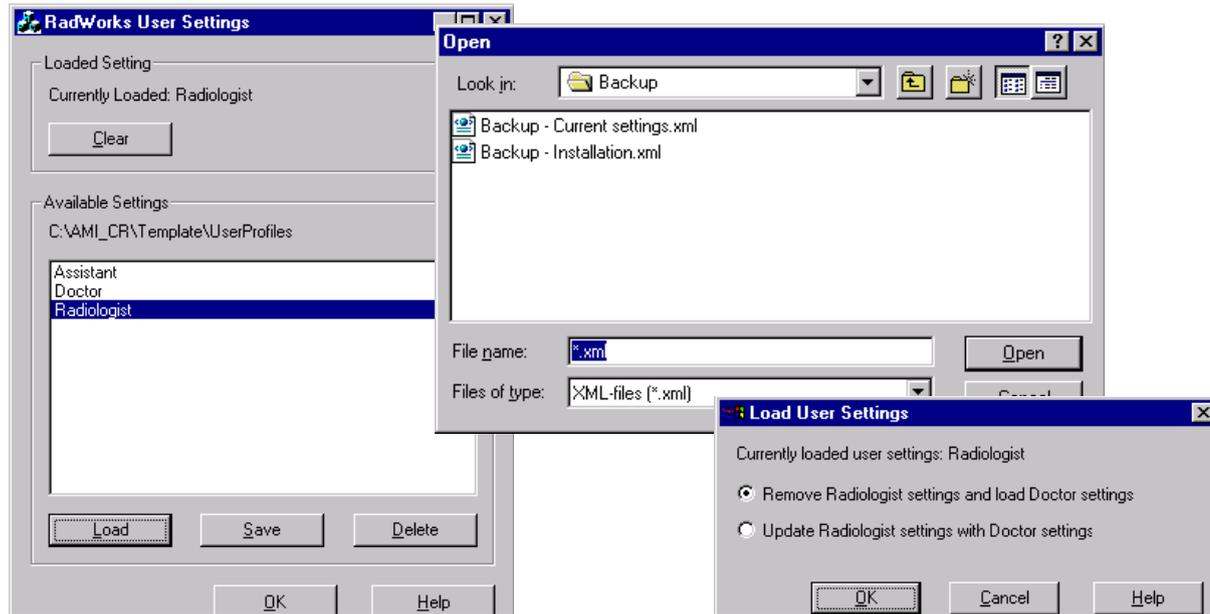
1. Log on to the system under your user ID and password (or as **administrator**), start the Settings application and click the **RadWorks User** button



2. In the RadWorks User Settings window, highlight your assigned user profile name and click **Save**. An administrator may select any of the Available Settings profile names for saving.
3. In the Save As window, enter a name for the backup file and click **Save** to save the available system files to the default Backup folder, else first navigate to the preferred backup device and/or folder and then click **Save**.
4. Click **OK** to close the RadWorks System Settings window.

4-5 Backing Up User Settings

1. Log on to the system under your user ID and password (or as **administrator**), start the Settings application and click the **RadWorks User** button

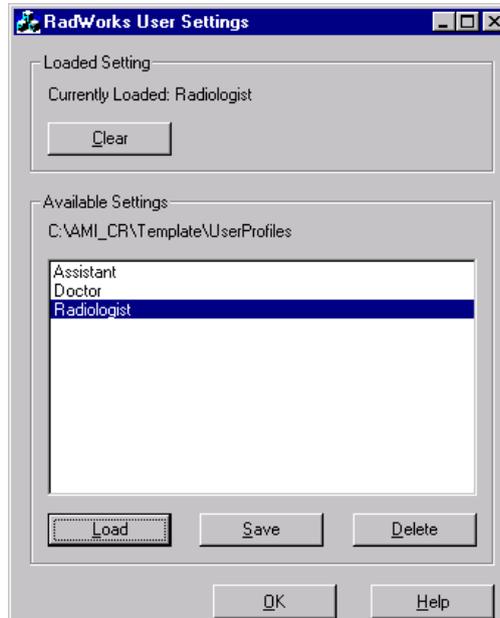


2. In the RadWorks System Settings window, click the **Load** button.
3. In the Open window, select the files you wish to restore and click **Open** to restore those system files from the default Backup folder, else first navigate to the preferred backup device and/or folder, select the desired files there and then click **Open**.
4. For an administrator only, this Open window may be used to select a new User profile to change an existing user profile. The system offers two options:
 - a. Replace the existing profile with the new selection
 - b. Update the existing profile with the settings of the new selectionSelect the desired option and click **OK**.

5. Click **OK** to close the RadWorks User Settings window.

4-6 Clear User Settings

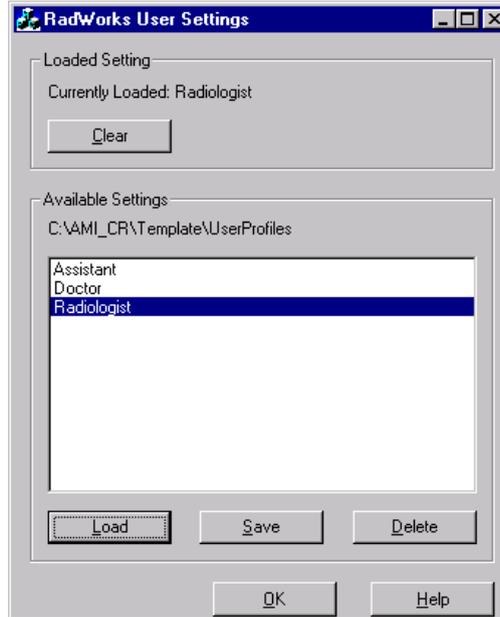
1. Log on to the system under your user ID and password (or as **administrator**), start the Settings application and click the **RadWorks User** button



2. In the RadWorks User Settings window, click the Clear button. This remove all settings for the current user. The next time the current user logs into the system, no settings will be loaded and the options for a new user will be presented (as in section 4-8).
3. Click **OK** to close the RadWorks System Settings window.

4-7 Delete User Settings Profiles

1. Log on to the system under your user ID and password (or as **administrator**), start the Settings application and click the **RadWorks User** button

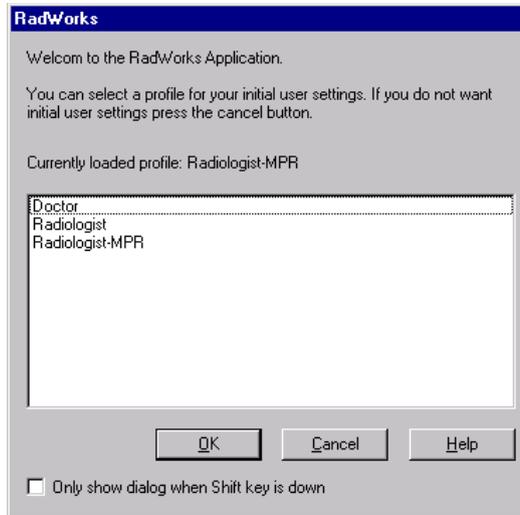


2. In the RadWorks User Settings window, select the desired settings file and click the **Delete** button. This will remove only that settings file for the current user. Confirm the deletion in the popup confirmation dialog box.
3. Click **OK** to close the RadWorks System Settings window.

4-8 Choose User Profiles Running Centricity RA600

◆ Prerequisite: RA600 newly installed

1. User starts the RA600 application for the first time.
2. The initial use dialog box pops up to present the user with default user profiles.



3. The user may
 - a. select one of the listed profiles and click **OK** (this loads the selected profile) or
 - b. click **Cancel** to reject the defaults and build his own custom profile from scratch (this loads the system defaults).
 - c. For either of the above choices, the user may also check the **Only show dialog when Shift key is down** check box. When this box is checked, this initial dialog box will henceforth only appear if the Shift key is held down when RA600 is started.

The RA600 console launches.

■ VF 003 Customer Turnover

Section 1: Introduction

This procedure ensures that the installation of the workstation is complete and ready to turn over to the customer.

Section 2: Prerequisites

- ◆ Workstation integration completed.
- ◆ Workstation operating system software installed (factory completed) and configured as appropriate with site specific data.
- ◆ Workstation application software installed (factory completed) and configured as appropriate with site specific data.
- ◆ All calibrations completed as appropriate.
- ◆ Ensure that the site-specific remote connectivity information is complete in Section 9 of Chapter 1. Telephone the ROC to deposit this information in their installed base data repository.

Section 3: Procedure

All tasks on the following checklist must be performed prior to turning the workstation over to the customer.

Note: *Photocopy this datasheet for use on all workstations, as required.*

Check off	Task Completed
	Ensure fans and other devices are clear of foreign bodies and functional.
	Confirm images can be displayed on the graphical user interface.
	Monitor(s) calibrated per procedure.
	If applicable. default route information is added.
	If applicable. verify that images sent to the printer(s) print correctly.
	The workstation configuration data has been backed up to the 3.5" diskette and stored away.
	Ethernet pings performed.
	Administrator password is set.
	Save System & User settings & show customer where they are saved
	Instruct customer in use of Settings Tool to save & restore System and User settings

Customer turnover completed by: _____ **Date Completed:** _____

6

Software Procedures

Section 1: SUMMARY OF job cards

Below is a list of all job cards that need to be completed to perform one of the load or update tasks. The steering for installation is Illustration 2-1 on page 27 .

Job Card No.	Software Procedure Job Card
SW 001	Restoring RA600 Original System Configuration
SW 002	Installing Centricity RA600 Software
SW 003	(C, 2C) Matrox Video Board Driver Installation
SW 004	(A+,A,B) Dome Video Board Driver Installation
SW 005	Removing Applications Software
SW 006	Single Media Archive (SMA) Install, Configure & Test
SW 007	Installing Foresight Static Frame Capture Software (Refer to Kit document FP10621)
SW 008	Common Windows 2000 Procedures
SW 009	Changing DOME Display Font Size
SW 010	Installing Film Digitizer SCSI Software

Job Card No.	Software Procedure Job Card
SW 011	Installing Work Group Server on RA600
SW 012	Installing an RA600 Work Group Client
SW 013	Install & Setup of Streaming Video Capture System (Refer to Kit document FP10621)
SW 014	Installing Centricity RA600 Software Patch

■ SW 001 Restoring RA600 Original System Configuration

Section 1: Introduction

This job card describes how to restore the RA600 system disc to its original, factory-shipped configuration.

Section 2: Items Required

- ◆ Centricity RA600 Recovery CD-ROM
- ◆ Windows 2000 registration ID number
- ◆ Centricity RA600 license file diskette available
- ◆ MediCal Pro registration ID number

**Caution****All data and programs on the system disc will be erased.**

Section 3: Prerequisite

- ◆ A VGA service monitor (for any systems with A, A+ and B monitors) is required for all sites at this time. Connect the service monitor to the computer motherboard Video connector.
- ◆ Gather all necessary data before proceeding. If baselining an existing system, first examine it to obtain its currently assigned IP Address and Workstation Name (computer's name). Write this information down so that it will be available during configuration. If the Site Configuration Forms

for an existing workstation are available, verify them against the workstation and then use them as a reference when configuring the workstation during the baselining process.

- ◆ If one exists, the configuration floppy may be used if the saved data is not suspect. Otherwise, simply note the workstation's IP Address and Workstation Name, etc., for use when manually configuring the workstation.
- ◆ If the RadWorks Settings tool was used to save settings, locate the save location and retrieve the settings files. Refer to job card VF 002.
- ◆ New workstations will require that an IP Address and Workstation Name be supplied by the hospital's IS or Network personnel. If you are assigning the workstation name, use existing naming conventions, such as PLT001.

Section 4: Procedure

1. Place the **RA600 Workstation Recovery CD-ROM** (1of 2) into the CD-ROM drive.
2. Restart the workstation.
3. The workstation will boot and the CD-ROM is auto-mounted.

Note: *For A, A+ and B-type systems, the boot information will appear only on the VGA service monitor that is required for this procedure.*

4. Press the **C** key to continue.
5. Press the **Y** key.
6. Press **Yes** to answer Partition size correct?
7. When screen asks whether to **Proceed with disk load?**, switch the answer to **Yes**.
The disk load will take approximately 10 minutes

8. Insert **RA600 Workstation Recovery CD-ROM** (2of 2), when prompted.
9. When the “Clone complete” message appears, remove (2of 2) CD from CD-ROM drive and reboot the computer.
10. After reboot is complete, when the Windows 2000 Welcome window appears, perform job card CNF 001, [Initial Power Up and Software Configuration](#) on page 96.

■ SW 002 Installing Centricity RA600 Software

Section 1: Introduction

This job card describes how to install the RA600 software on a new workstation hardware platform. There are several options that may be installed with the RA600 software. Please refer to the pertinent job cards in this manual or to the *RadWorks Technical Reference Manual (FP10123)* for installation instructions.

Section 2: Items Required

- ◆ Centricity RA600 CD-ROM.
- ◆ RA600 license file diskette

Section 3: Prerequisite

- ◆ System must be up and running under Windows 2000 OS.
- ◆ If used, the license file must be available on diskette or where it can be reached by a browser.
- ◆ RA600 license file requires an active network communication. If the network is not available, you must disable MediaSense before installation. A registry key setting has been provided for disabling MediaSense. It is in **c:\Service\DisableDHCPMediaSense.reg**
Refer to Section 4-2 for specific directions on defining the value assigned to this key.

Section 4: Procedure

4-1 Typical Installation

1. Place the **RA600 CD-ROM** into the CD-ROM drive. When the CD-ROM self-loads and the **Welcome to ... Setup** screen appears, click **Next**.

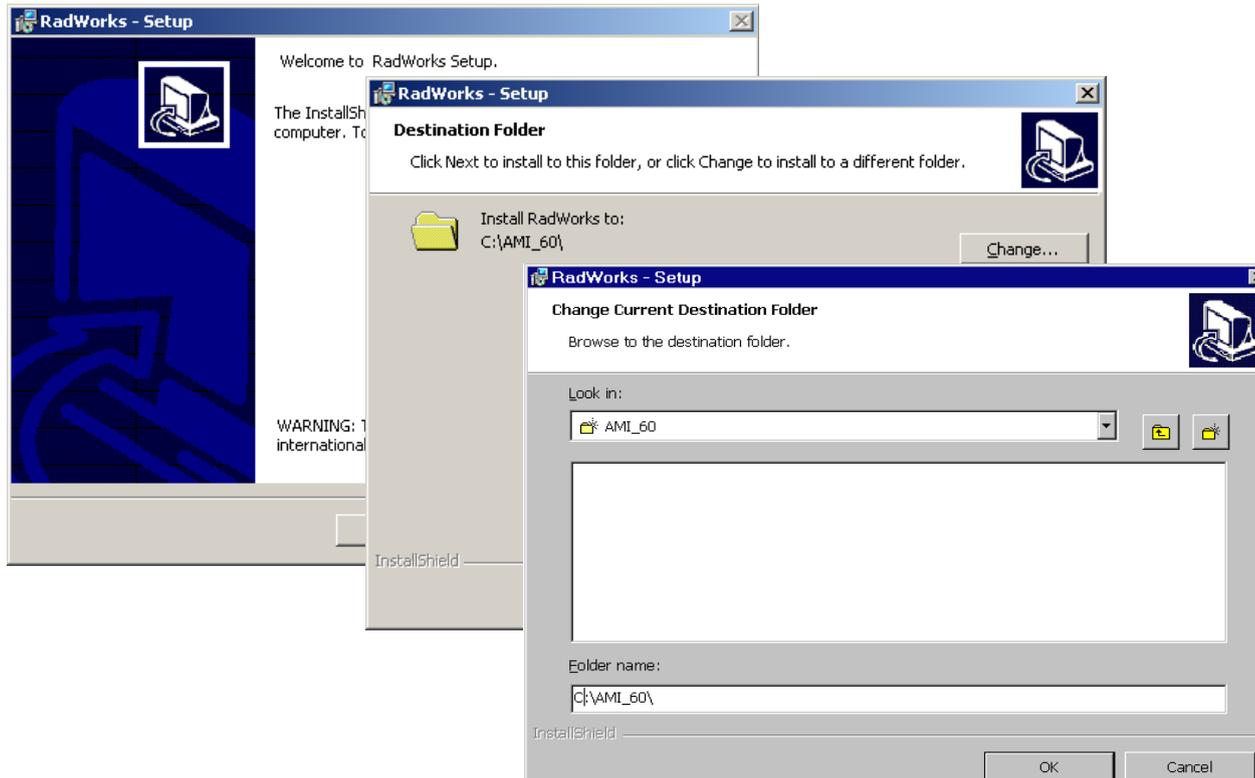


Illustration 6-1: Install to folder D:\ami_60\

2. When the Destination Folder screen appears with a C:\ drive location specified, click **Change**.
3. When the **Change Current Destination Folder** screen appears, type **D:\AMI_60** in the **Folder Name** field, then click **OK**.

4. Note that the **Destination Folder** screen now shows the just-entered folder name in the **Install RadWorks to** location.
Click **Next**.

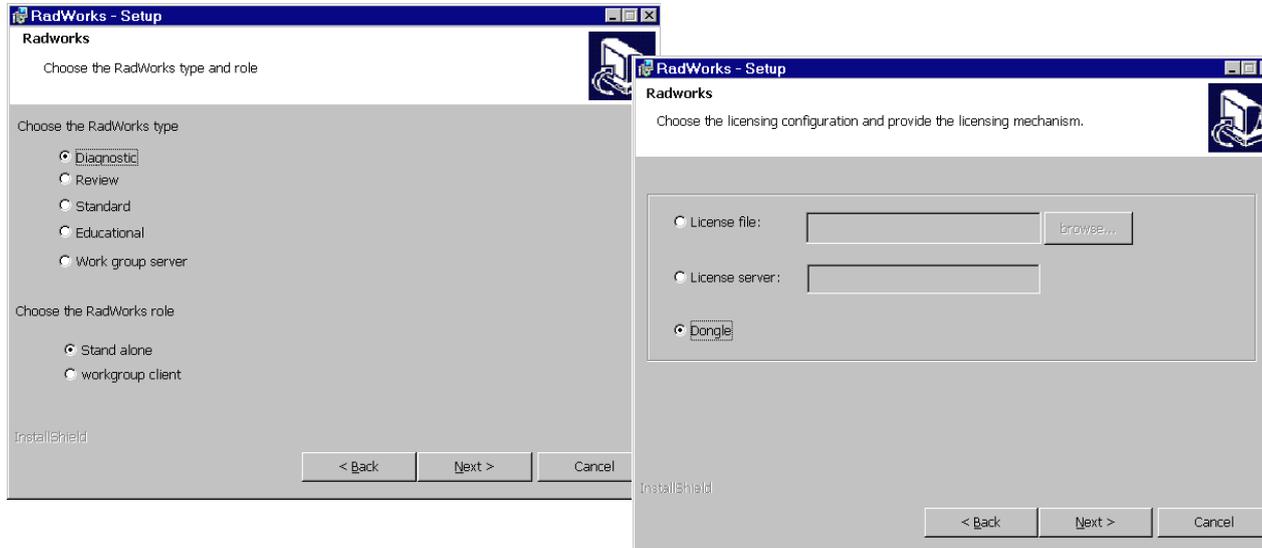


Illustration 6-2: Choose Installation Type and RadWorks Role

5. RadWorks - Choose the RadWorks type and role:

- a. Click the proper radio button(s) to choose the installation type according to the functions purchased for this workstation: **Diagnostic**, **Review**, **Standard**, **Educational** and whether or not this workstation will be a **Workgroup server**
- b. Click the proper radio button(s) to choose the workstation role:
If the Workstation was designated a Workgroup server, then click the **workgroup client** -
The workstation must also be a client of of it's own workgroup.
If the workstation was not designated a Workgroup server, click **Stand alone**.
- c. Click **Next**.

6. RadWorks - Choose the licensing configuration and provide the licensing mechanism:
 - a. Click on the **license file** radio button.
 - b. For the license file choice only, type in the location of the license file in the field provided or click on **Browse** to navigate to the license file location.
 - c. Close the browse window, if used, ensure the license file field now shows the correct location (illustration example shows c:\license.dat), and click **Next**.

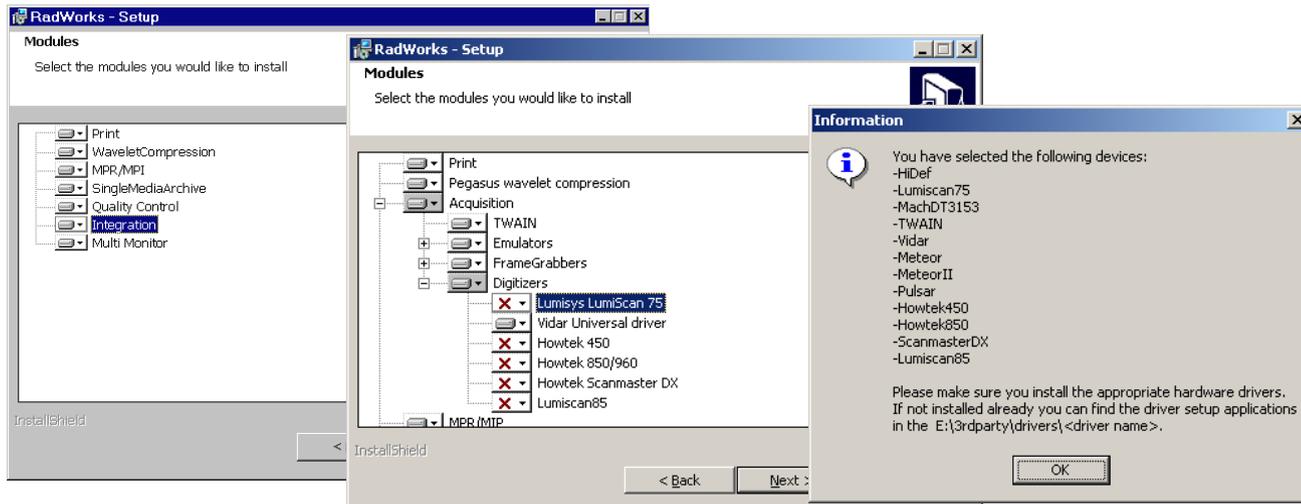


Illustration 6-3: Specify Optional Modules

7. **Modules:**
 - a. Highlight any optional program module(s) purchased for this workstation.
 - b. Only if Acquisition is selected, select the type of acquisition modules from the expansion tree and then the make-model of the device(s), where appropriate, and then click **Next**
8. When the Information window pops up with a list of your selections, check that they are correct and click **OK**.

9. If the devices are not correct click **Back** on the next screen to make corrections and then proceed. If the list shows the correct choices, continue to the **Transmit** screen.

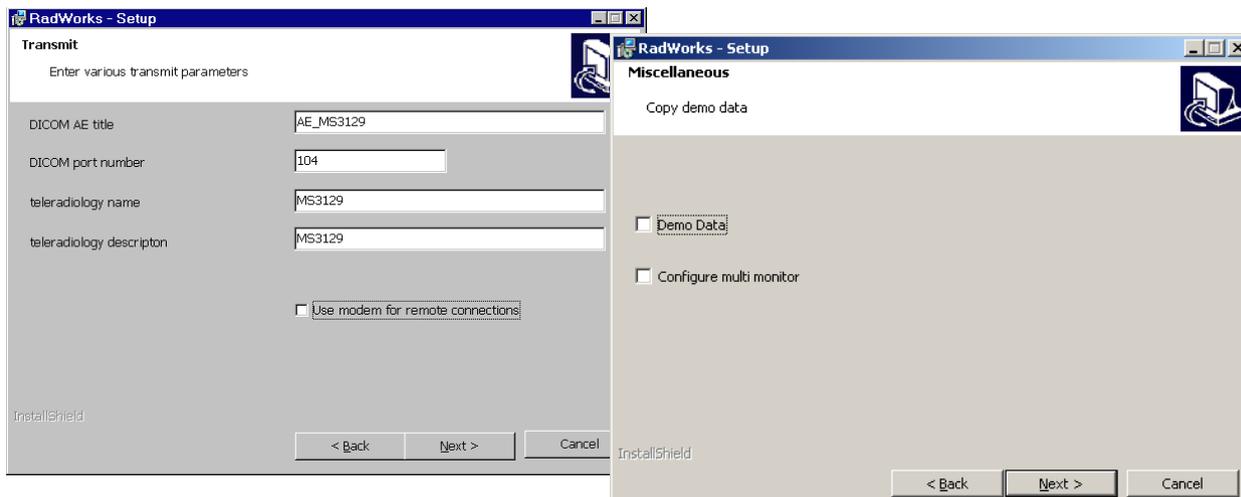


Illustration 6-4: Specify Transmit Parameters and Miscellaneous Install Items

10. Transmit:

Enter the image/data transmission location data for this workstation in the local network.

- a. **DICOM AE title:**
- b. **Dicom port number:**
- c. **teleradiology name:**
- d. **teleradiology description:**
- e. If appropriate, check the **Use modem for remote connections** checkbox.
- f. Click **Next**

- 11.** In the **Miscellaneous** screen:

- a. Check all the additional items you want to include with the installation on this workstation:
Demo Data and/or **Configure multimonitor**.
- b. Click **Next**

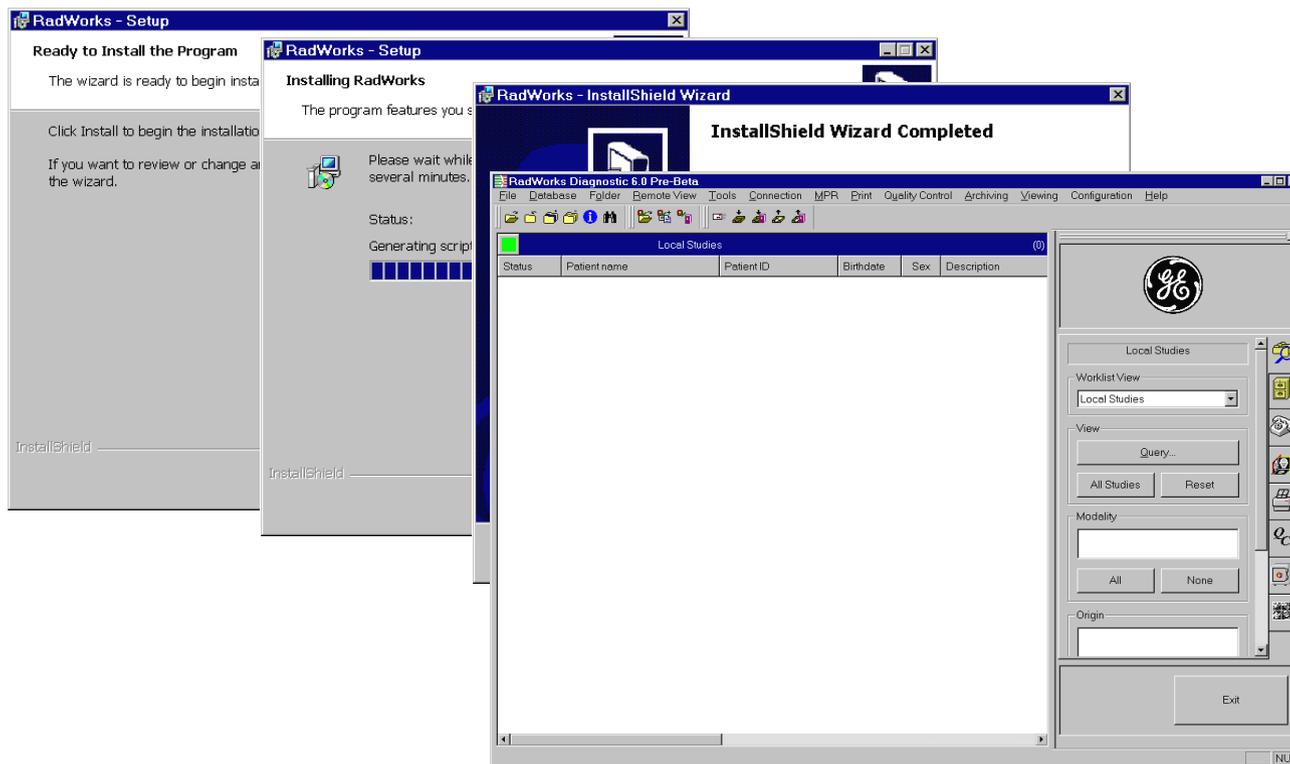


Illustration 6-5: Choose Demo Data (or not) and Complete Installation

12. In the **Ready to Install the Program** screen, click **Install**. Note that the **Installing RadWorks** screen appears and installation begins.
13. When the Installshield Wizard Completed screen appears, click **Finish**.

Note: Only if the Single Media Archive (SMA) is included with this installation, the VOB software install wizard will appear. Follow the wizard's instructions and use defaults to install this option.

14. Check for any RA600 software patch(es) included with the application. If any are present, install the patch(es) at this time according to the release notes included on the patch CD.
15. Double-click on the desk-top RadWorks icon to ensure that the program starts.

4-2 Disabling Media Sense



Caution

Using Registry Editor incorrectly can cause serious problems that may require you to reinstall your operating system. Microsoft cannot guarantee that problems resulting from the incorrect use of Registry Editor can be solved. Use Registry Editor at your own risk.

For information about how to edit the registry, view the "Changing Keys and Values" Help topic in Registry Editor (Regedit.exe) or the "Add and Delete Information in the Registry" and "Edit Registry Data" Help topics in Regedt32.exe.

Note: You should always back up the registry before you edit it. If you are running Windows NT or Windows 2000, you should also update your Emergency Repair Disk (ERD).

To prevent your network adapter from detecting the link state:

1. Use Registry Editor (Regedt32.exe) to view the following key in the registry:
HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\Tcpip\Parameters
2. If not already present, add the following registry value:
Value Name: DisableDHCPMediaSense
Data Type: REG_DWORD -Boolean
Value Data Range: 0, 1 (False, True) Default: 0 (False)

Description:

This parameter controls DHCP Media Sense behavior. If you set this value data to 1, DHCP, and even non-DHCP, clients ignore Media Sense events from the interface. By default, Media Sense events trigger the DHCP client to take an action, such as attempting to obtain a lease (when a connect event occurs), or invalidating the interface and routes (when a disconnect event occurs).

3. Restart your computer.

■ SW 003 (C, 2C) Matrox Video Board Driver Installation

Section 1: Introduction

This job card describes how to install the driver for the Matrox G450 video board for the C, 2C, or 18" flat panel (1x or 2x) monitor.

Section 2: Items Required

- ◆ Centricity RA600 Tools CD-ROM
- ◆ One or two C monitor(s) or 18" flat panel .

Section 3: Prerequisites

- ◆ OS is loaded.
- ◆ Video boards are properly installed in the workstation.
- ◆ Video cables are properly connected.
- ◆ Monitors connected and powered on.

Section 4: Procedure

1. Locate and launch the Setup.exe program for the Matrox_G450. The program should be located at **C: > Drivers > Matrox_G450 > Setup.exe**.

Note: The Setup.exe program is also available in a Win2K > Drivers folder on the Utility Tools CD-ROM (PIN 2309786).

2. In the first setup window, select the language desired for the installation instructions and click **Next**.
3. In the second setup window ensure that the devices supported by this driver include the G450 and click **Next**.
4. In the third setup window, check the **Add extra "Dual Head Multi-Display" support** checkbox and click **Next**.



Illustration 6-6: Initial Matrox Setup Windows

5. In the fourth setup window, ensure that the selections about to be installed are correct and click **Next**.
6. When the "Files have been copied" message appears in the fifth setup window, click **Next**.
7. In the sixth setup window, check the **Restart my computer...** checkbox and click **Finish**.



Illustration 6-7: Final Matrox Setup Windows

8. When the system reboots, a Matrox icon appears in the clock tray of the windows 2000 taskbar. Click on the Matrox icon and choose **Display Properties** from the popup menu.
9. On the Display Properties window, click the **Advanced...** button to bring up the Plug and Play Monitor and Matrox G400/450 Properties window and select the **Dual Head** tab.
10. Expand the **Features** folder by clicking on the + box and highlight the **DualHead Multi-display** item.
11. Click on the **Change Settings** button to bring up the DualHead Multi-display window and make the following selections:
 - a. Check the Use **DualHead Multi-display** checkbox if 2 monitors will be used.
 - b. Select the **Same resolution and color palette for both displays** radio button.
 - c. Select the side-by-side relationship for the second monitor by clicking on the monitor 2 button to the right of the monitor 1 icon. The right-hand monitor 2 button now appears depressed.
 - d. Click the **OK** button to close the DualHead Multi-display window.

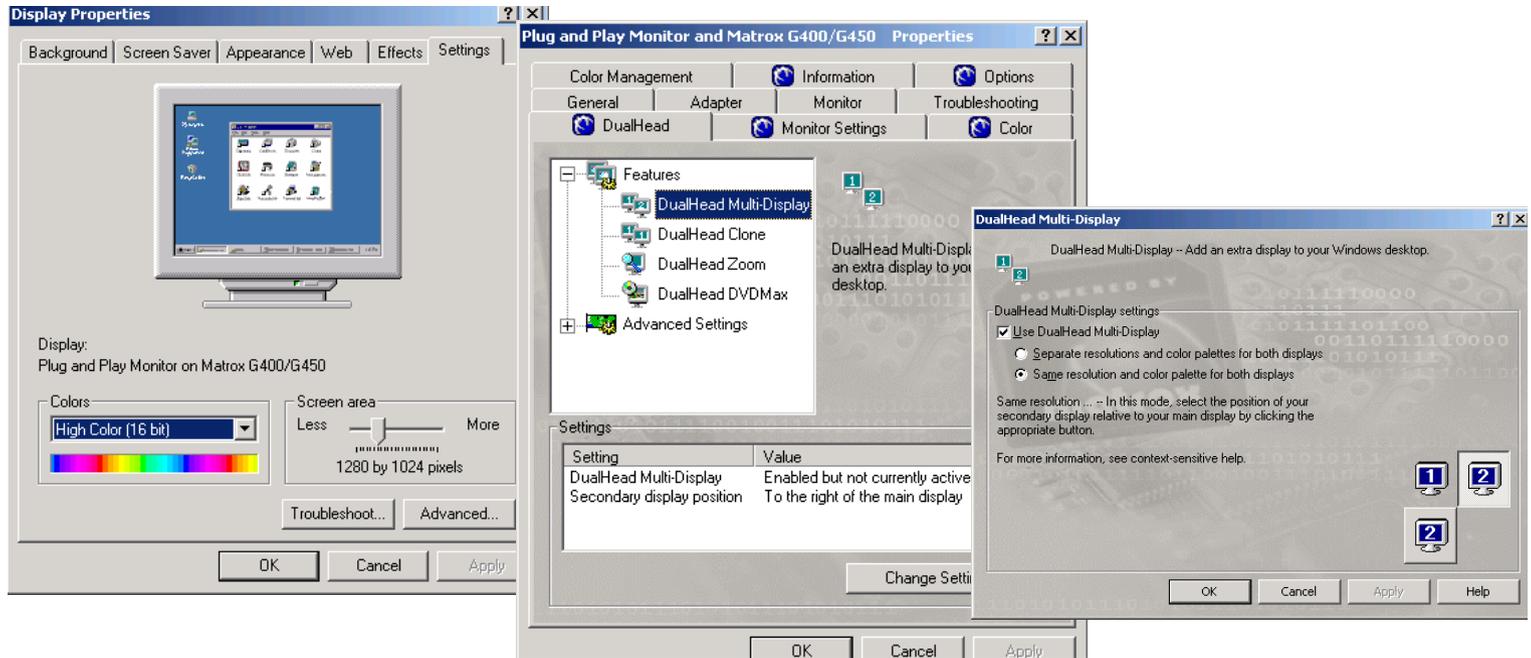


Illustration 6-8: Start Matrox properties selection.

12. Select the Adapter tab and make the following selections:

- a. Click the **List all modes** button to bring up the List all modes window.
- b. For a 1C, single color monitor configuration, highlight **1280 x 1024, High Color (16 bit), 85 Hertz**
- c. For an 18" 1x flat panel monitor configuration, highlight **1280 x 1024, High Color (16 bit), 60 Hertz**
- d. For a 2C, side-by-side, dual color monitor configuration, highlight **2560 x 1024, High Color (16 bit), 85 Hertz**

- e. For an 18" 2x flat panel monitor configuration, highlight **2560 x 1024, High Color (16 bit), 60 Hertz**
- f. Click **OK** to close the List all modes window.

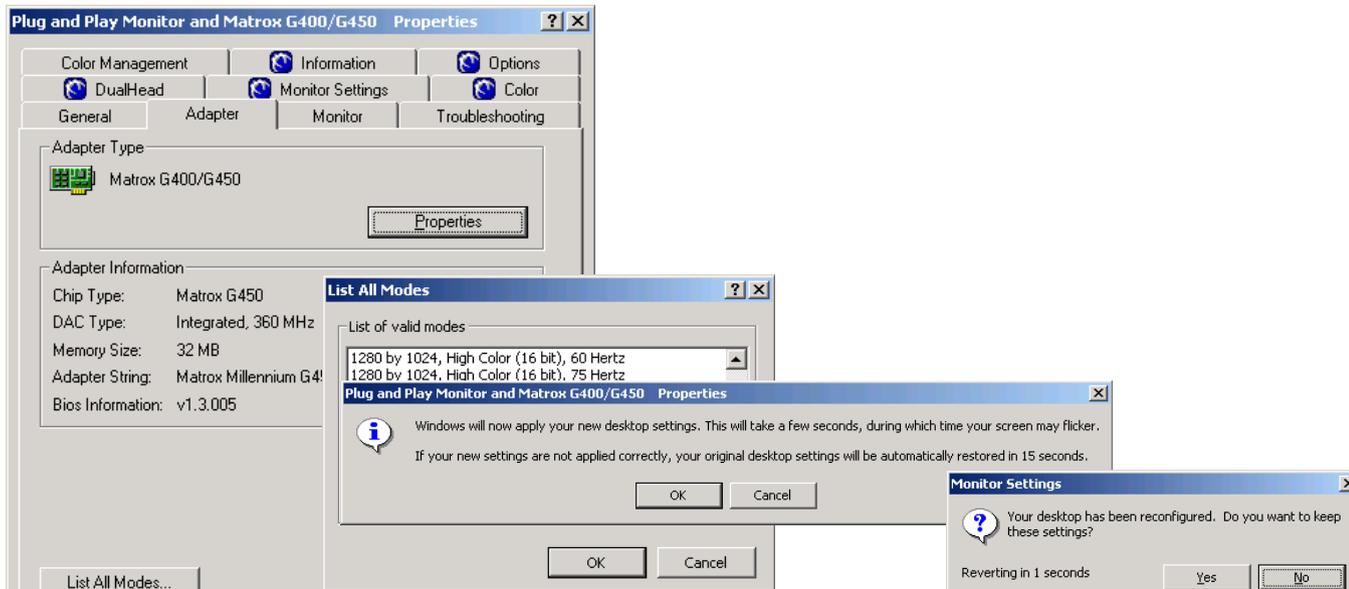


Illustration 6-9: Finish Monitor and Matrox properties selection

- 13. On the Plug and Play... window click the **Apply** button.
- 14. On the Windows will now apply your new desktop settings... popup, click **OK**.
- 15. On the Monitor Settings popup, click **Yes**.
- 16. Click **OK** to close the Plug and Play... window.
- 17. Click **OK** to close the Display Properties window.

■ SW 004 (A+,A,B) Dome Video Board Driver Installation

Section 1: Introduction

This job card describes how to install the driver for the A+, A, and B monitor video board (Dome Md2, Md4, Md5).

Section 2: Items Required

- ◆ Centricity RA600 Tools CD-ROM
- ◆ A VGA service monitor.

Section 3: Prerequisites

- ◆ OS is loaded.
- ◆ Video board switch settings are set correctly.
- ◆ Video boards are properly installed in the workstation.
- ◆ Video cables are properly connected.

Note: *Only the correct drivers will successfully install with a particular video board. Be sure the correct board is installed before proceeding with the following procedure.*

Section 4: Procedure

1. If not already done, power on the workstation.
2. Log in as user: **Administrator**. There may be no password set at this time. If a password has been set it could be: (CANa1).
3. Navigate to **C:\Drivers** and choose the appropriate folder for your display(s). The MD4 and MD5 boards use the same folder.
4. Within the folder, double click on the **Setup.exe** program and follow the setup instructions provided to install the drivers.
5. When driver files have been installed, reboot when prompted.
6. Log into the system as **Administrator**. There may be no password set at this time. If a password has been set it could be: (CANa1).
7. Click **OK** on the invalid display settings window and skip to step 11.
8. Click on **Start > Settings > Control Panel**.
9. Double click the **Display** icon in the Control Panel.
10. Select the **Settings** tab in the Display Panel.
11. Change the resolution and frequency settings for your video adaptor care as indicated in the chart below. The DPI values are not needed at this point, however, they are listed below for reference.

Config	Video Adaptor	Resolution	Refresh Rate	DPI
A+	MD5 PCX	2048 x 2560 See Note	71 Hz	168
A	MD4 PCV	1728 x 2304 See Note	68 Hz	144

B	MD2 PCI	1200 x 1600 See Note	75.5 Hz	103
---	---------	-------------------------	---------	-----

NOTE: All settings need to be set individually for each monitor. In addition to this resolution setting, monitor 1 should be set as *Primary Monitor* and *Extend Windows Desktop* box should be checked, monitor 2 & 3 & 4 (if applicable) should be attached and *Extend Windows Desktop* box should be checked

Table 6-1: RA600 Workstations Resolution and Frequency Settings

Note: You might have to execute the following test a second time if the monitor was blank initially.

12. Click the **Test** button and then click **OK**. Check that the Hi-Res monitors display the test pattern.

Note: A test pattern should be displayed on monitor one. If not, check the settings, connections, and power. Repeat the test until a test pattern is displayed. Click on **Yes**.

13. Click **OK** to make the changes permanent and then click **Yes** to restart the workstation.
14. Reboot the Workstation, re-login as **Administrator** and return to the **Display Panel**.
15. Select the **DOME** tab from the Display Panel.
16. Configure the Panel as listed below:
 - a. Select **Dynamic Gray** (from the palette option drop box).
 - b. Select the appropriate resolution that matches that as configured in the Settings table, above.
 - c. Select the correct monitor refresh rate that matches that as configured In the Settings table, above.

- d. Select the appropriate number of screens.
 - e. Select the correct monitor orientation (side by side or left/right). A set of icons will display showing the number of monitors and their respective orientation. The monitor layout is self explanatory. A 4A will have the 4x1 configuration depicted with 4 portrait monitors across by 1 monitor high.
 - f. Select (check on) **Pedestal**.
 - g. Ensure that **Sync on Green** and **Composite Sync** are NOT checked.
 - h. Ensure that **Disabled Direct Draw** and **Disable Red & Blue** are NOT checked.
 - i. Click **OK** to make the changes permanent.
 - j. Click **OK** to test the new settings.
 - k. Click **OK** to accept the new settings or wait 15 seconds and **OK** will be selected automatically.
 - l. Click **Yes** to reboot the workstation.
17. The VGA service monitor is no longer required and may be powered off and removed from the workstation.

■ SW 005 Removing Applications Software

Section 1: Introduction

This job card describes how to remove the Workstation applications.

Section 2: Prerequisites

- ◆ OS is loaded.
- ◆ Video board(s) switch settings are set correctly.
- ◆ Video board(s) are properly Installed in the workstation.
- ◆ Video cable(s) properly connected.
- ◆ Video board driver installed.

Section 3: Procedure

1. Login as user: **Administrator**. There may be no password set at this time. If a password has been set it could be: (CANal1).
2. Select **Start > Settings > Control Panel > Add Remove Programs**.
3. Click on the **RadWorks Workstation (RA600)** software package.
4. Click on **Remove**.

5. Confirm the deletion of the application.
6. Ignore any warnings about shared programs.

■ SW 006 Single Media Archive (SMA) Install, Configure & Test

Section 1: Introduction

This job card describes how to install, configure, and use the Single Media Archive CD-RW drive. The integrated

VOB software enables the SMA function

Section 2: Items Required

- ◆ Centricity RA600 Application CD-ROM and any included software patch(es).
- ◆ Approved SMA Read-Write drive with power and signal cables.
- ◆ Writable CDs approved for use with the SMA drive.

Section 3: Prerequisites

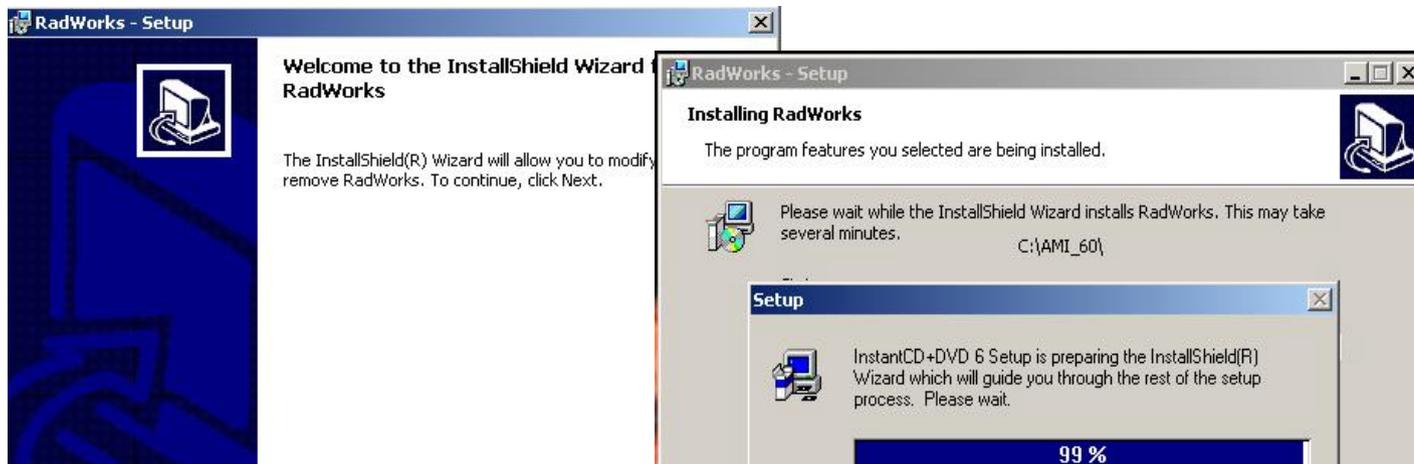
Installation of SMA is part of the RA600 installation. The prerequisites are therefore the same as job card [SW 002](#), plus the following:

- ◆ SMA Read-Write drive must be connected to the RA600 computer according to the drive manufacturer's directions.

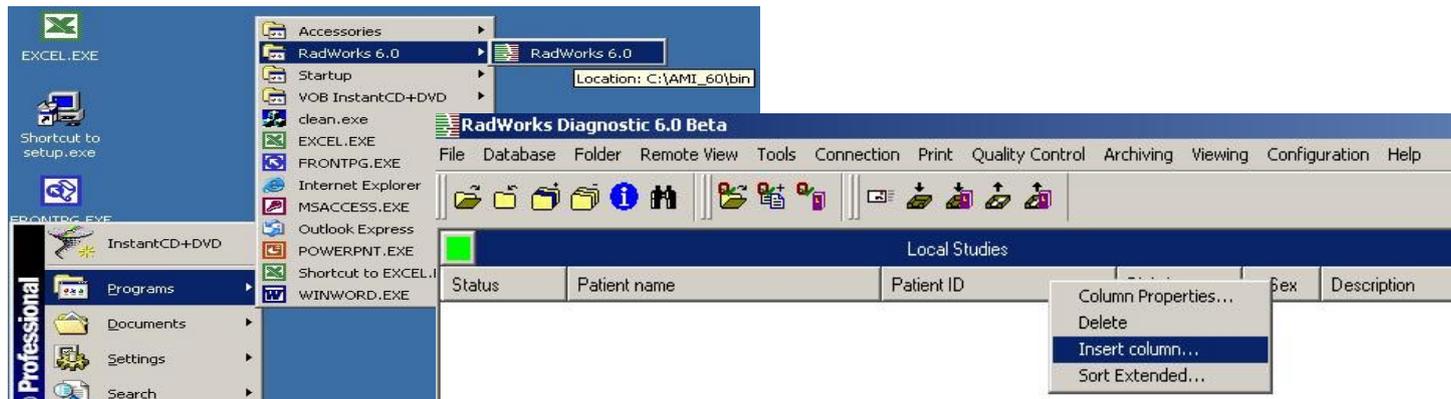
Section 4: Procedure

1. Run the RA600 installation, enabling the SMA module in the process.

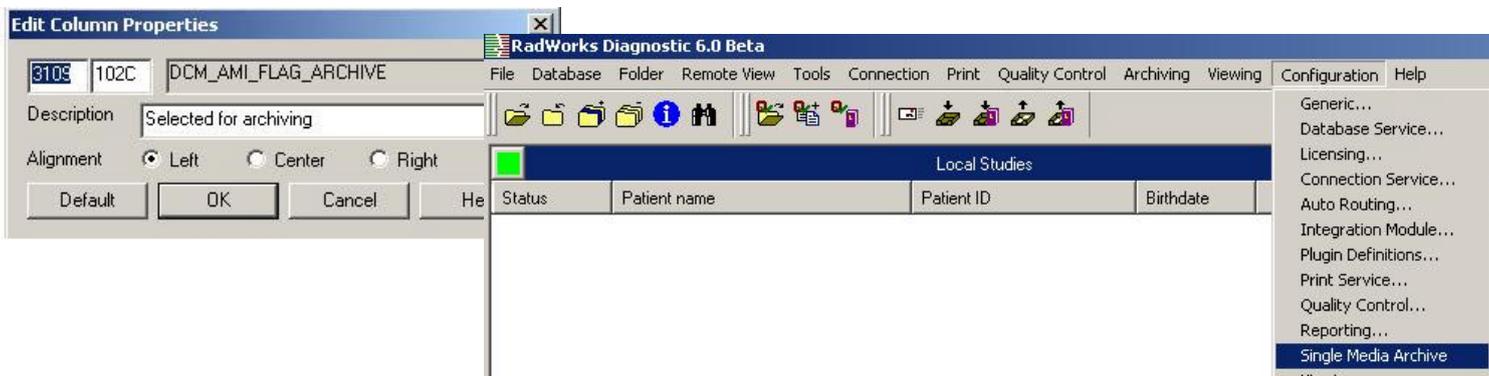
2. Check for any RA600 software patch(es) included with the RA600 application. If any are present, install the patch(es) at this time according to the release notes included on the patch CD.



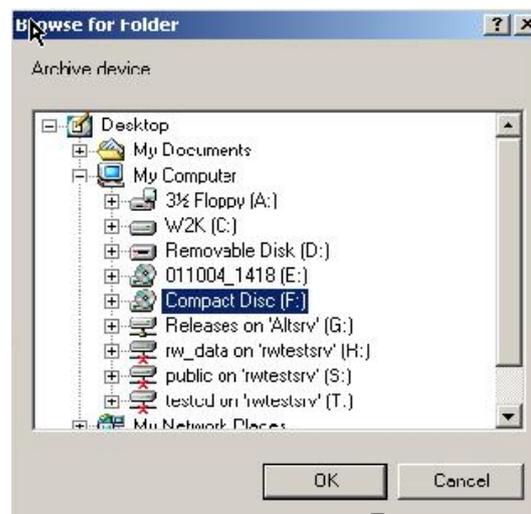
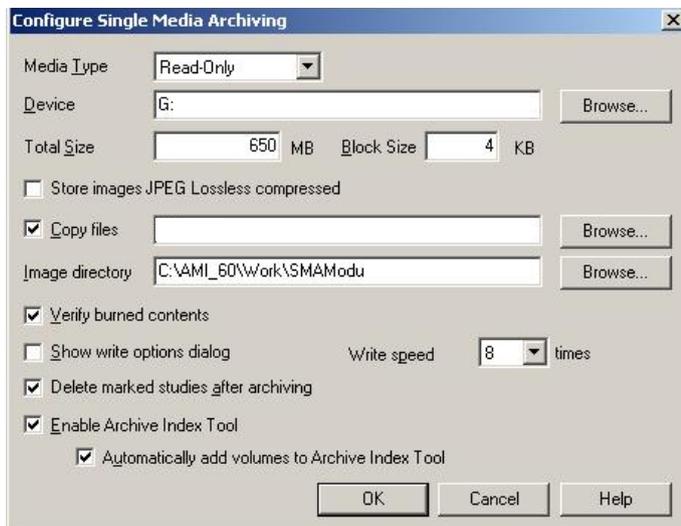
3. Start the RadWorks (RA600) application.
4. To add a new column to the data selector for the SMA, right click on the column heading to the right of where you want to insert the new column and select **Insert column..**



5. In the Edit Column Properties dialog box make the new column properties **3109 102C - Selected for archiving** and click **OK**.



6. Click the **Configuration** menu in the RadWorks (RA600) application and choose **Single Media Archive**.



7. In the Configure Single Media Archiving dialog box,

- a. For the Media Type, select Read Only from the drop down list.
- b. For the Device selection, click the **Browse** button and navigate to the CD write device. Highlight the device and click **OK**.
- c. For the Total Size field, enter the size of the CD capacity that will be used in the device, e.g. 650 or 700 MB.
- d. If you want to add some files (e.g. cdviewer) check the **Copy files** checkbox and browse to the folder where the files are located. Highlight the desired file(s) and click **OK** on the Browse dialog box.
- e. For the Image directory field, browse the directory where images will be temporarily held while they are burned onto the CD, highlight that directory and click **OK**.
- f. Check the **Verify burned contents checkbox** if you want the system to do verify the SMA CD write process.
- g. Check the **Delete marked studies after archiving** checkbox only if you want to delete the studies from the RadWorks (RA600) short-term storage after they are written to the SMA CD.

***Note:** Additional configuration items are shown in the following graphic.*

Configure Single Media Archiving

Media Type: Read-Only

Device: G: [Browse...]

Total Size: 650 MB Block Size: 4 KB

Store images JPEG Lossless compressed

Copy files [C:\Temp] [Browse...]

Image directory: [C:\AMI_60\Work\SMAModu] [Browse...]

Verify burned contents

Show write options dialog Write speed: 8 times

Delete marked studies after archiving

Enable Archive Index Tool

Automatically add volumes to Archive Index Tool

[OK] [Cancel] [Help]

Add Volume

Type: CD-ROM

Name: RADWORKS 6.0 Volume 1

Label: Radworks

Serial Number: 2587239795

Verification Number: 00011127-01208418-001150FE

Storage Place: RAD CD Juke Box

Last Verification: 11/28/2001

State: Present

Notes: Tested Successfully

Description: Standard data set

[OK] [Cancel] [Help]

Exit application

The application must be restarted to obtain the default window positions

[OK]

Add volume

Volume successfully added!

[OK]

If you check this checkbox the VOB writing settings dialog will popup during the Archiving process. The Write speed drop down box will be disabled.

You can configure the device write speed by using this drop down box.

By checking this checkbox the Archive Index Tool will be enabled. You have to restart RadWorks; some new buttons are present on the Archiving tab after the restart.

After a successful verification the volume will automatically be added to the Archive Index Tool!

h. Click **OK** to complete the SMA configuration.

8. To test the SMA installation first select some studies in the RadWorks Data Selector for writing to the SMA. Either

- a. Select the studies by highlighting them in the Data Selector and then selecting **Select for Archiving** on the RadWorks Archiving menu.
or
- b. Right click on the desired study and select **Archiving > Select for Archiving** on the popup menu.

Local Studies (50)					
Patient ID	Birthdate	Sex	Selected for archiving	Description	
P0105	12/15/1...	M		Head	
P0208	2/21/19...	F		Spine fracture	
P0221	11/30/1...	M		Bronchi stenosis	
P0123	2/3/197...	M		Head	
P0110	8/10/19...	F	Archive	Head	
P0104	9/9/193...	M	Archive	Brain	
P0112	5/15/19...	F	Archive	Thorax	
P0197	1/2/195...	F	Archive	MIP renal arteries	
P0124	3/21/19...	M	Archive	Left wrist	
P0118	2/28/19...	M	Archive	Thorax	
P0101	8/28/19...	F	Archive	Brain	
P0103	1/1/196...	M		Fracture radius	
P0301	3/28/19...	F		Colour Doppler Ultrasour	

Note that the selected studies become marked with **Archive** in the **Select for Archiving** column of the Data Selector.

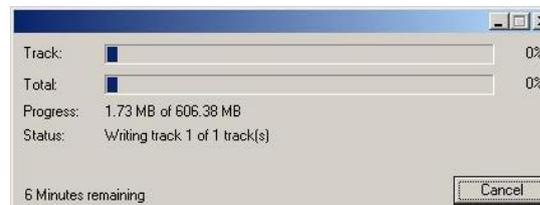
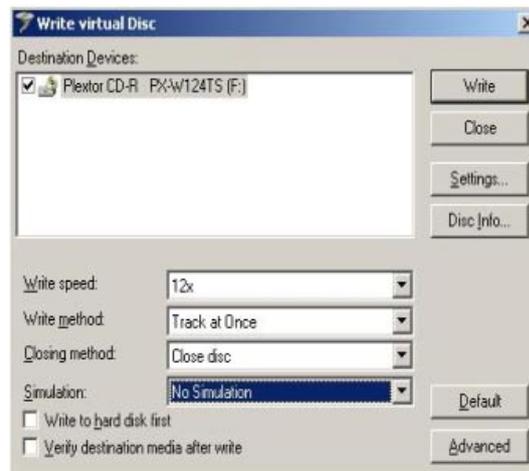
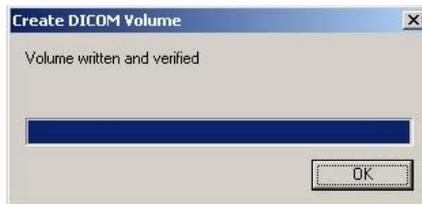
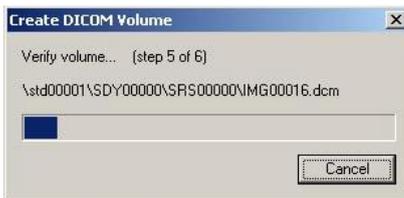
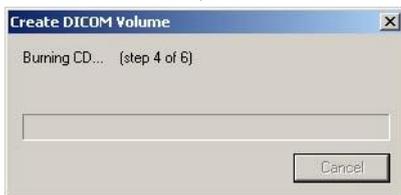
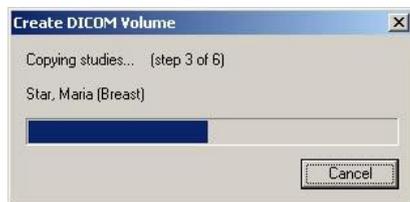
9. When all the desired studies have been selected for archiving, first ensure a writable CD is in the drive.
The approximate number of disks required to store the selected studies is shown in the **Est. number of disks** field on the Archive tab to the right of the Data Selector.

Refer to the Centricity RA600 / RadWorks 6.0 User Guide, OI10091, for information on using the Archive Index Tool.



10. Start the write operation either
- by clicking the **Local Database > Create Volume** button on the Archive tab to the right of the RadWorks Data Selector
 - or
 - by selecting **Archiving > Create Volume with marked studies** from the RadWorks menu bar.

Once the write process starts, the following popup windows describe the process:



■ SW 007 Installing Foresight Static Frame Capture Software (Refer to Kit document FP10621)

As of Revision 2, this job card is a placeholder for the kit document to ensure instruction sync with the kit.

The kit and kit document are updated independently of this manual by vendor Foresight Imaging.

■ SW 008 Common Windows 2000 Procedures

Section 1: Introduction

This job card describes commonly used Windows 2000 Pro procedures.

In the following sections, “local” means “physically in front of” the workstation console, while “remote” means electronically connected through the network to the workstation.

Section	Topic
2-1	Booting Workstation from a Power Off Condition
2-2	Shutdown Workstation Operating System
3-1	Changing to a Different Login Account
3-2	Log into OS using the Administrator Account
4-1	Reset System - when hard blocked
4-2	Shut Down System — from Command Prompt
4-3	Reboot System — from Command Prompt
5-1	Changing Date / Time
5-2	Remove Programs Using the Add / Remove Program Dialog
5-3	Auto Hiding the Windows Task Bar
5-4	Setting Screen Saver Password
5-5	Changing Background on Desktop

Section	Topic
5-6	Changing the Capacity of the Recycling Bin
5-7	Renaming Desktop Icons
5-8	Changing Mouse Sensitivity
5-9	Changing OS Passwords
5-10	Changing Mouse Properties Right Handed / Left Handed
7-1	Viewing Contents of a Floppy Disk
7-2	Viewing Contents of Internal Hard Disk
7-3	Kill Workstation Application Locally — Workstation Application Blocked, Windowing System OK.
7-4	Workstation Information
7-5	Viewing Windows 2000 IP Configuration
7-6	Using Windows Help Files
7-7	Locating Files Using The Search Utility
7-8	Removing Shortcut From Desktop
7-9	Removing Items From The Recycle Bin
7-10	Removing The Entire Contents Of Recycle Bin
7-11	Displaying “Available Space” on Hard Drive
7-12	Displaying “Available Space” on Floppy Drive
7-13	Changing File Or Folder Properties

Section	Topic
8-1	Displaying Application Programs
8-2	Starting Application Programs
8-3	Changing Screen Saver Properties (wait value)

Table 6-2: Common Windows 2000 Procedures List

Section 2: Startup / Shutdown

2-1 Booting Workstation from a Power Off Condition

Note: *System will take about two minutes to boot, if using portrait monitors, no video will be displayed until the system has booted.*

1. Verify the power is applied to the monitor (the on/off switch is located on the lower rear side of the Barco monitor).
2. Verify that power is applied to the workstation (the on/off switch is located on the center right front of the CPU tower).
3. With the power applied to all the peripheral devices and to the workstation, the workstation will self boot the operating system (Windows 2000).

2-2 Shutdown Workstation Operating System

1. Click on **Start**.
2. Click on **Shut Down**.

3. Select **Shut Down** from the list provided and click **OK**.
4. If the user needs to login with an alternate userid after rebooting the system, press CTRL + ALT + DEL to log onto the system.

Section 3: Login / Logout

3-1 Changing to a Different Login Account

1. Click on **Start**.
2. Select **Shut Down**.
3. Select **Log off <User>** and click **OK**.
4. Login as different user when the Windows login screen is displayed.

3-2 Log into OS using the Administrator Account

1. At the Windows Workstation login screen press **Ctrl - Alt - Del**
2. Enter the user name of **Administrator**.
3. Type in the Administrator password **CANa11**.

Section 4: Shutdown and Reboot Workstation

4-1 Reset System - when hard blocked

Locally “hard blocked” and unable to login to system from a remote terminal.

Note: *Hard blocked refers to a system which is totally locked up. The only recourse is a reset.*

1. Press the reset button located on the front of the CPU.

4-2 Shut Down System — from Command Prompt

1. Select **Start > Programs > Accessories > Command Prompt**, type **shutdown /L** hostname.
(ex. shutdown /L SCD132)
2. Confirm the shutdown.

4-3 Reboot System — from Command Prompt

1. Select **Start > Programs > Accessories > Command Prompt**, type **shutdown /L** hostname **/R** (ex. shutdown /L SCD132 /R).
2. Confirm the reboot.

Section 5: OS - Config

5-1 Changing Date / Time

Note: *This procedure only covers changing the date and time, not their format(s). This procedure cannot be performed as User IIS.*

1. Right click the **Task Bar** (grey area next to the **Start** button)
2. Select **Adjust Date/Time**.
3. Check the **Show Clock** check box (if not done so already), and click **OK**.

4. The clock appears in a popup dialog box.
5. Set the Date /Time and Time Zone accordingly and click **OK**.

5-2 Remove Programs Using the Add / Remove Program Dialog

Note: For instructions on removing applications software see SW 005 - Removing Applications Software.

1. Click on **Start**.
2. Select **Settings**.
3. Select **Control Panel**.

Note: Only programs that were designed for Windows can be removed by using the Add/Remove Programs function. For all other programs, check the program's documentation to determine which files should be removed.

4. Double-click on **Add / Remove Programs**.
5. Select the program you wish to remove and click **Remove**.

5-3 Auto Hiding the Windows Task Bar

1. Select **Start > Settings > Taskbar & Start Menu**.
2. Uncheck **Always on top**.
3. Check **Auto hide**.

4. Uncheck **Show small icons in Start menu**.
5. Check **Show clock**.

5-4 Setting Screen Saver Password

1. With the right mouse button, click on the desktop.
2. Select **Properties**.
3. Click on the **Screen Saver** tab.
4. Select a screen saver, if necessary and check the **Password protected** check box.
5. Click **OK** (screen saver password = iis user password).

5-5 Changing Background on Desktop

1. Using the right mouse button, click on the desktop.
2. Select **Properties**.
3. Click on the **Background** tab.
4. Select the background.
5. Click **OK**.

5-6 Changing the Capacity of the Recycling Bin

1. Right click on the **Recycling Bin** icon on the desktop.
2. Select **Properties**.

3. Click on the **Global** or **[C:]** tab.
4. Drag the slide bar to the appropriate level and click **OK**.

5-7 Renaming Desktop Icons

1. Right click the mouse button on the icon to be renamed.
2. Select **Rename**.
3. Enter a new name for the icon.
4. Press **Enter**.

5-8 Changing Mouse Sensitivity

1. Select **Start > Settings > Control Panel**.
2. Double-click on the **Mouse** icon.
3. Select **Motion** tab.
4. Slide the motion bar to the desired speed for the mouse.
5. Click **OK**.

5-9 Changing OS Passwords

1. Select **Start > Settings > Control Panel > Users & Passwords**.
2. Select the desired user name from the list provided.
3. Click **Set Password**.

4. Type the new password.
5. Type the new password in the confirm box
6. Click **OK** twice and close the control panel.

5-10 Changing Mouse Properties Right Handed / Left Handed

1. Select **Start > Settings > Control Panel**.
2. Double-click on the **Mouse** icon.
3. Select right handed or left handed radio button (as appropriate).
4. Click **OK**.

Section 6: Remote Access

Section 7: Service Tools

7-1 Viewing Contents of a Floppy Disk

1. Insert the floppy diskette into floppy drive.
2. Double-click on the **My Computer** icon on the desktop.
3. Click on the **3.5" Floppy (A:)** icon.

7-2 Viewing Contents of Internal Hard Disk

1. Double-click on the **My Computer** icon on the desktop.
2. Double-click on the **(C:)** or **(D:)** icon.

7-3 Kill Workstation Application Locally — Workstation Application Blocked, Windowing System OK.

Application blocked refers to an application which is totally locked up. The only recourse is as follows:

1. Press **Ctrl - Alt - Delete** at the same time.
2. Click on **Task Manager**.
3. Select the process that is not responding.
4. Click on **End Task**.

7-4 Workstation Information

For displaying workstation site configuration, refer to [TSG 011 - Display System Hardware & Software Configuration](#) on page 249.

For changing workstation site configuration settings, refer to [CNF 002 - Configuring System IP Address, Subnet Mask or Default Route/Gateway](#) on page 101.

7-5 Viewing Windows 2000 IP Configuration

Select **Start > Programs > Accessories > Command Prompt**, and type the command **ipconfig /all**

Example response:

```
Windows 2000 IP Configuration
Host Name . . . . . : RAD4A
Primary DNS Suffix . . . . . :
```

```
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : Yes
WINS Proxy Enabled. . . . . : No
DNS Suffix Search List. . . . . : iis.med.ge.com
Ethernet adapter Local Area Connection:
    Connection-specific DNS Suffix . . : iis.med.ge.com
    Description . . . . . : Intel 8255x-based PCI
Ethernet Adapter (10/100)
    Physical Address. . . . . : 00-B0-D0-79-FD-EC
    DHCP Enabled. . . . . : Yes
    Autoconfiguration Enabled . . . . : Yes
    IP Address. . . . . : 3.28.77.180
    Subnet Mask . . . . . : 255.255.252.0
    Default Gateway . . . . . : 3.28.78.254
    DHCP Server . . . . . : 3.28.73.209
    DNS Servers . . . . . : 3.28.73.209
                            3.20.66.50
    Primary WINS Server . . . . . : 3.28.73.150
    Secondary WINS Server . . . . . : 3.20.68.10
    Lease Obtained. . . . . : Thursday, January 25, 2001
12:20:38 AM
    Lease Expires . . . . . : Thursday, February 01,
2001 12:20:38 AM
```

7-6 Using Windows Help Files

1. Select **Start > Help**.
2. Click on the **Index** tab, and enter the word / subject that you need help with.
3. Click on **Display**.
4. Click on the **X** when finished with the help.

7-7 Locating Files Using The Search Utility

1. Select **Start > Search**.
2. Click on **for Files or Folders**.
3. In the “Search for files or folders named” field, in the name that needs to be located.
4. Click on **Search Now**.

7-8 Removing Shortcut From Desktop

1. Click on the desktop **Shortcut** icon to be removed.
2. Right click on the shortcut icon.
3. Select **Delete**.
4. Click **Yes** to send the shortcut to the recycling bin.

7-9 Removing Items From The Recycle Bin

1. Double-click on the **Recycle Bin** icon on the desktop.
2. Click on the item(s) to be removed (item will be permanently removed from system).
3. Select **File**.
4. Select **Delete**.
5. Click **Finish**.

7-10 Removing The Entire Contents Of Recycle Bin

1. Double-click on the **Recycle Bin** icon on the desktop
2. Select **File**.
3. Select **Empty Recycle Bin** (items will be permanently be remove from system).
4. Click **Yes** to removing the recycling bin contents

7-11 Displaying “Available Space” on Hard Drive

1. Double-click on the **My Computer** icon on the desktop.
2. Click on the **C:** icon. The approximate free space is shown.
3. For more disk information, the **File** menu.
4. Click on **Properties**.

7-12 Displaying “Available Space” on Floppy Drive

1. Double-click on the **My Computer** icon on the desktop.
2. Click on the **3.5” Floppy (A:)** icon.
3. Select **File**.
4. Click on **Properties**.

7-13 Changing File Or Folder Properties

1. Double-click on the **My Computer** icon on the desktop.
2. Right click on drive (A: or C:).

3. Select the file or folder for which you want to change properties.
4. Select appropriate attributes.
5. Click **OK**.

Section 8: Applications

8-1 Displaying Application Programs

1. Click on **Start**.
2. Click on **Programs**.

8-2 Starting Application Programs

1. Click on **Start**.
2. Click on **Programs**.
3. Click on the appropriate program. Some programs listed may have additional programs under the programs listed.

8-3 Changing Screen Saver Properties (wait value)

1. Right click on the desktop.
2. Select **Properties**.
3. Click on the **Screen Saver** tab.

4. Select a screen saver, if none is currently selected, and then use the up/down arrow in the **Wait** field to change the time. The screen saver will be activated when there is no keyboard activity for the time indicated in the **Wait** field.

■ SW 009 Changing DOME Display Font Size

Section 1: Introduction

This job card outlines how to change the size of the type font used with the DOME drivers supplied with some of the Centricity RA600 systems.

Section 2: Prerequisites

- ◆ Latest DOME Video Driver must be installed

Section 3: Changing DOME Display Font Size

1. Right click on a blank screen area of the Dome display desktop and select **Properties**.
2. Select the Settings tab and click the **Advanced** button.
3. On the General tab of the Dome...Properties popup window, select the desired font size change; to Large, Small or Custom.
4. Click **OK** to close the news window that the change will take place after Windows is restarted.
5. Click **Yes** to the Are you sure... question popup.
6. Click **Yes** to the question popup about Use of existing files on the hard disk for the change (unless you're sure of another source).
7. Save and close application programs and then click **Close** to close the properties window.
8. If you're ready for the change, click **Yes** to the Do you want to reboot now... question.

■ SW 010 Installing Film Digitizer SCSI Software

Section 1: Introduction

This job card outlines installation and set-up of the software for a film digitizer as a SCSI device.

Section 2: Items Required

Centricity RA600 (RadWorks 6.0) CD

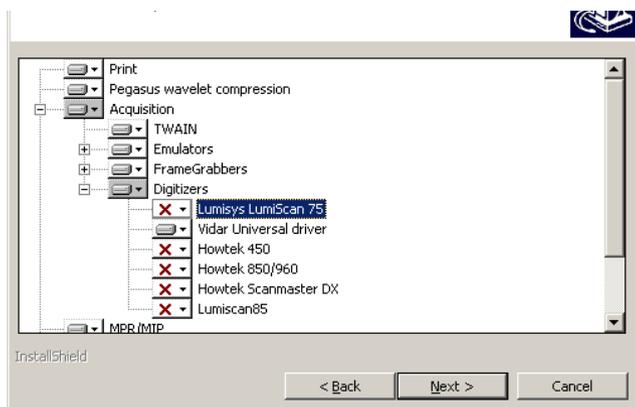
Section 3: Prerequisites

- ◆ Ensure that the RA600 workstation has been installed with both hardware and software configured to GE specification. The RadWorks Acquisition module must be installed as part of the RA600 (RadWorks 6.0) application.
- ◆ Ensure that proper SCSI ID has been set on the device interface card, if necessary. Refer to manufacturer's documentation for details.

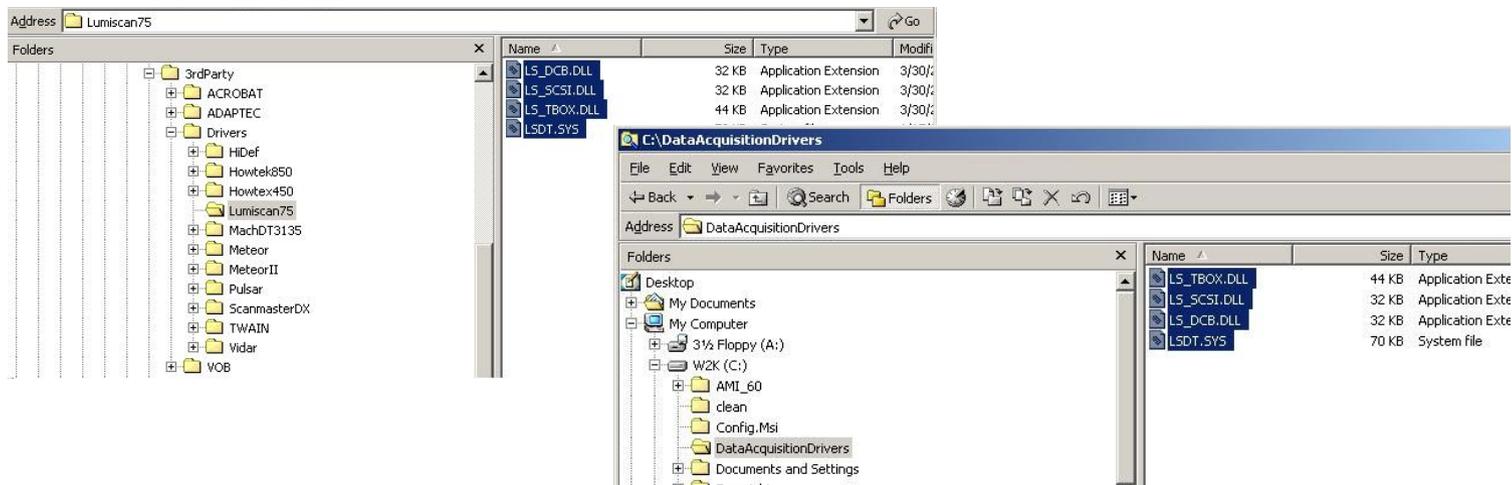
Section 4: Procedure

1. Power up the RA600 workstation and, from the Windows 2000 desktop, log in as the **Administrator** (need administrator privileges to load software).
2. Click **Start > Settings > Control Panel > Add/Remove Software**.
3. Select the RadWorks 6.0 program and click the **Change** button.
4. Click **Next** in the Welcome window of the RadWorks Setup wizard.

5. In the Program Modification window, select the **Modify** radio button.
6. In the Custom Setup window, double click the **Acquisition** module, select the desired digitizer (e.g., Lumiscan 75, Howtek, 450) and click **Next**.
7. In the Ready to Modify the Program window, click **Install**.
8. If an Information window appears with the name of the device(s) you selected, click **OK**.
9. The wizard then installs a modification to complete the task.
In the Wizard completed window, click **Finish**.

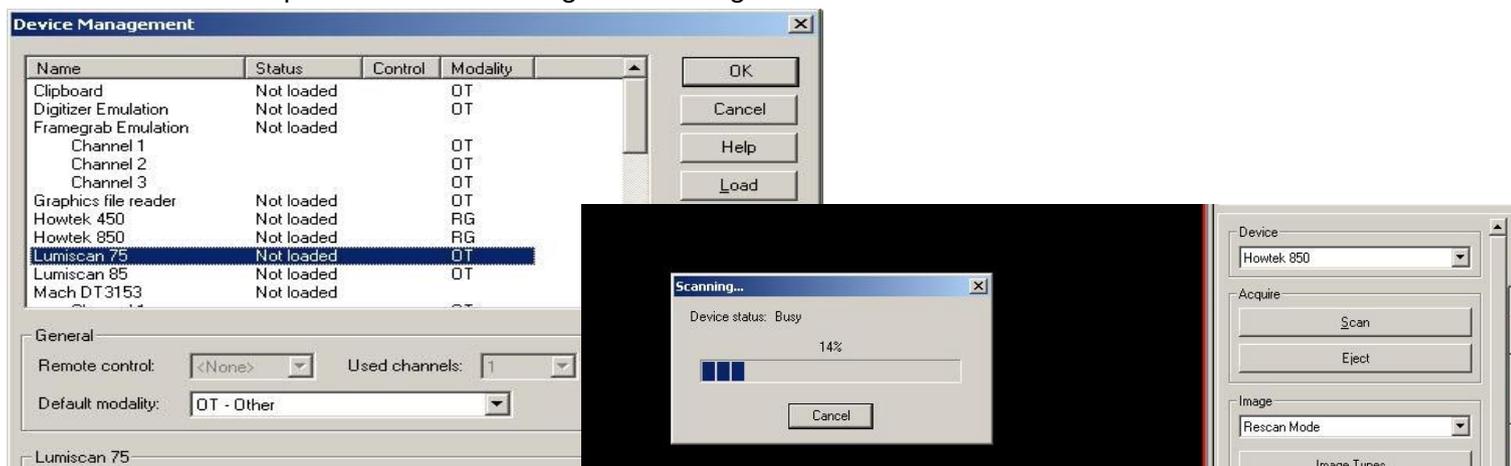


10. Click Finish to exit the wizard
11. Open the RA600 program and check for the presence of the acquisition module and the new digitizer device.



12. When the setup sequence completes successfully, copy the driver software of the digitizer from the RA600 (RadWorks 6.0) CD (\3rdparty folder) into the manually created DataAcquisitionDrivers folder on the same root as the AMI software (usually D:\). For an automated install, specify a typical install to the above-named folder for a SCSI-type scanner.
13. Reboot the workstation.

14. Start the RA600 (RadWorks 6.0) application and click **Acquire > Device** on the menu bar to open the Device Management dialog box



15. Select the digitizer device and click **Load** to load the device.
16. If you want to make this device a default device, select the device and click **Activate**.
17. Click **OK** to close the Device Management window.
The configuration of the RadWorks Acquisition Module for the digitizer is now complete. Test the configuration by using RA600 (RadWorks) to scan films.

■ SW 011 Installing Work Group Server on RA600

Section 1: Introduction

This job card outlines how to install & configure the Centricity RA600 Workgroup Server on the Dell 1400 workstation. The Workgroup Server allows sharing of image files (and other files with clients in a work group relationship).

Section 2: Items Required

- ◆ Dell 1400 PowerEdge computer
- ◆ PowerVault 201S RAID Unit
- ◆ Centricity RA600 CD-ROM
- ◆ Centricity RA600 Patch CD-ROM, if applicable
- ◆ Centricity RA600 Workgroup Server license

Section 3: Prerequisites

- ◆ Windows 2000 Server OS is loaded on the computer.
- ◆ Video cable is properly connected between the computer and the monitor.
- ◆ Dell Power Vault RAID is connected and configured with Dell 1400 (See job cards [IST 013](#) & [CNF 008](#))

Section 4: Procedure

Note: DO NOT CHANGE THE COMPUTER NAME OF THIS SYSTEM.

By changing the Computer Name, Centricity RA600 Workgroup Server becomes un-operational.

In any event, if the Computer Name must be changed, the ROC should be notified and the Registry Keys need to be edited. It is strongly advised that a Windows 2000 server expert should edit these Registry Keys. If you are not familiar with the Registry Keys setting, please do not attempt this step otherwise this entire system may become un-operational.

- ◆ Search the Registry Keys and replace all instances of \\RW_WGS\ with the new Computer Name.

4-1 Installing Workgroup Server on Centricity RA600

Note: *You must install the Workgroup Server before installing any of the Workgroup Clients.*

Note: *During the install make sure you create the same default user on the Workgroup Server and all Clients.*

1. Power up the RA600 workstation and, from the Windows 2000 desktop, log in as the **Administrator** (need administrator privileges to load software).
2. Install (or reinstall, if applicable) the RA600 software as described in job card [SW 002](#). When the install wizard asks you to "Choose the Radworks type" be sure to include the **Workgroup server** radio button.
3. When you complete the installation wizard, install at least one client per job card [SW 012](#) and then configure the Workgroup system per job card CNF009.

■ SW 012 Installing an RA600 Work Group Client

Section 1: Introduction

This job card outlines how to install & configure the Centricity RA600 Workgroup client on the Dell 1400 workstation. The Workgroup Server allows sharing of image files (and other files with clients in a work group relationship).

Section 2: Items Required

- ◆ Dell 1400 PowerEdge computer
- ◆ Centricity RA600 CD-ROM
- ◆ Centricity RA600 Patch CD-ROM, if applicable

Section 3: Prerequisites

- ◆ Windows 2000 Server OS is loaded on the computer.
- ◆ Video cable is properly connected between the computer and the monitor.

Section 4: Procedure

4-1 Installing Workgroup Client on Centricity RA600

Note: You must install the Workgroup Server before installing any of the Workgroup Clients.

Note: During the install make sure you create the same default user on the Workgroup Server and all Clients.

1. Power up the Dell 1400 compute and, from the Windows 2000 desktop, log in as the **Administrator** (need administrator privileges to load software).
2. Connect to the Workgroup server via network and access the Centricity RA600 folder.

Note: To provide the optional capability of installing a client (via the network) from the server, do the following (if not already done): If a Centricity RA600 folder is not present on the Workgroup server's "C:" drive, create one and copy all the contents from the root of the Centricity RA600 CD to this folder.

After copying, make this folder Shared on the network.

3. Double click on **D:\Centricity RA600\Release\Setup.exe**
4. Install (or reinstall, if applicable) the RA600 software as described in job card [SW 002](#). When the install wizard asks you to "Choose the Radworks role" be sure to select the **Workgroup client** radio button.
5. When you complete the installation wizard, open the RA600 application and click on the **Help** menu.
6. Click the **Users** option and note that an **Active workgroup clients** window appears, listing the current active workgroup clients.
7. For a new installation, review the system software package for any software patch CD. If a patch is present, install it at this point.
8. Configure each client according to job card CNF009.

■ SW 013 Install & Setup of Streaming Video Capture System (Refer to Kit document FP10621)

As of Revision 2, this job card is a placeholder for the kit document to ensure instruction sync with the kit.

The kit and kit document are updated independently of this manual by vendor Foresight Imaging.

■ SW 014 Installing Centricity RA600 Software Patch

Section 1: Introduction

This job card describes how to install a software patch to the RA600 application software.

Section 2: Prerequisites

- ◆ OS is loaded.
- ◆ Video monitor(s), board(s) and driver(s) are properly Installed & configured in the workstation.
- ◆ Centricity RA600 software application is installed and configured to the site.
- ◆ Software patch CD-ROM is at hand.

Section 3: Procedure

1. Login as user: **Administrator**. There may be no password set at this time. If a password has been set it could be: **CANa11**.
2. Insert the patch CD-ROM into the CD-ROM drive.
3. Navigate to the release notes on the CD-ROM and double click on the file to open it. Read the entire file and follow the instructions to intall the patch.
4. Remove the patch CD-ROM from the CD-ROM drive.

7

Troubleshooting

Section 1: Introduction

The troubleshooting procedures are described in a series of job cards about the different steps, problems encountered with their corrective actions and useful procedures, when installing and using the workstation.



Caution

Corrective action should be made by authorized and qualified personnel only.

Section 2: Summary of Job Cards

Job Card No.	Troubleshooting Job Card
TSG 001	Telneting to a Workstation
TSG 002	Workstation Directory Tree
TSG 003	Troubleshooting Network Problems
TSG 004	Using The VGA Service Monitor
TSG 005	Stop a Software Process
TSG 006	Display Windows 2000 System Logs

Job Card No.	Troubleshooting Job Card
TSG 007	Display Centricity RA600 Application Logs
TSG 008	Display IP/Netmask/Default Route Configuration Settings
TSG 009	Display Loaded Drivers
TSG 010	Display System Services
TSG 011	Display System Hardware & Software Configuration
TSG 012	Display OS Version
TSG 013	Display Application Software Version
TSG 014	Workstation Application Problem Solving
TSG 015	Connect Frame Grabber to Monitor that has no pass-through

For any troubleshooting procedures in this chapter, always insure that all cable and PCI board connections are properly seated. This basic check should always be performed prior to declaring a part bad and in need of replacement.

Note: *If difficulties arise beyond the scope of site level repairs, please follow normal field escalation procedures. If necessary, contact RA600 (RadWorks) Tech Support at the On Line Center on 800-321-7937 or International on 414-896-2733. Drill down to the RadWorks support line. The direct line has an added advantage that it eliminates several menu choice steps!*

■ TSG 001 Telneting to a Workstation

Section 1: Introduction

This job card provides instructions to telnet into a workstation.



Caution

Be aware that it is possible to render a system inoperable through incorrect use of the telnet access software

Section 2: Procedure

Note: *Telneting in from a Sun system sometimes works best when done from an xterm window.*

```
> telnet 3.231.128.110 (for example, if this were
                       the IP address of a
                       Workstation system)
This copy of the Ataman TCP Remote Logon Services
is registered as licensed to:
    Avnet Computer
Account Name: geservice (root)
Password: 2charGE
```

```
Microsoft(R) Windows NT(TM)  
(C) Copyright 1985-1996 Microsoft Corp.
```

```
c:\>
```

Some "basic" keyboard functions (which may or may not be needed, depending on your terminal type):

```
^H           - Delete the last character typed  
<ESC> - Erase the current line  
^Aa - The next character will be sent as an "Alt" character  
^Ac - The next character will be sent as a control character  
^As - The next character will be sent as a shift character  
^Au - Up Arrow  
^Ad - Down Arrow  
^Al - Left Arrow  
^Ar - Right Arrow
```

The workstation can be rebooted remotely if necessary with the following command:

```
C:\shutdown /r
```

■ TSG 002 Workstation Directory Tree

Section 1: System Files

This section shows an example directory structure for the RA600 (RadWorks) software.

```
c:\Ami_60
+---Bin
+---Connect
    +---Receive
    +---Work
+---CDViewer
    +---CDViewer
+---Colortables
+---Database
    +---Archive
        +---Archive001
        +---Archive002
        +---Archive002a
        +---Archive003
        +---Archive004
        +---Archive005
    +---History
    +---Input
    +---Local
        +---General
    +---Work
+---Log
+---Print
    +---Output
    +---Scripts
    +---Work
+---Registry
+---Samples
    +---Reports
+---Template
    +---User Profiles
+---Utils
+---Work
    +---Common
    +---Viewing
```

Note: Database may be on drive d:\ if optional additional hard drive is present.

■ TSG 003 Troubleshooting Network Problems

Section 1: introduction

This job card is used to verify connectivity of the ethernet network connection.

Section 2: Monitoring Commands

Login as administrator to use the following commands:

- ◆ Ping: connection test

```
# ping 3.28.75.100 [Return]      (IP address)
3.28.75.100 is alive
# ping 3.28.75.132 [Return]     (one's own address)
3.28.75.132 is alive           (Ethernet port test including transceiver.)
```

IP numbers in text are used for example **ONLY**. Use IP numbers for your specific network.

- ◆ Arp: get current IP-to-ethernet address translation of connected machines

```
# arp -a [Return] (Use arp -all for more information.)
Net to Media Table
Device    IP AddressMask  Flags  Phys Addr
-----  -
le0       3.28.75.xxx 255.255.255.252  08:00:20:00:37:24
le0       3.28.75.xxx 255.255.255.252  08:00:20:1d:a4:27
.....
```

- ◆ netstat -rn

- ◆ ipconfig /all
- ◆ For troubleshooting isolation steps, run new CAT 5 cable to eliminate possible cable problems.

■ TSG 004 Using The VGA Service Monitor

Section 1: Introduction

This job card explains using the VGA service monitor to troubleshoot video driver problems.

It is useful when debugging boot problems or performing any low level diagnostics on portrait monitor systems where the Video Drivers have not started. By connecting the VGA monitor to the provided port on the CPU all video display will be directed to the VGA monitor.

However, when Windows NT has booted far enough (usually at the blue screen) the hi-res video drivers (if installed) will be enabled and video will be directed to the portrait monitors. In the event of display problems on the portrait monitors, video can be directed to the VGA display at Windows NT boot by selecting the boot VGA mode from the boot menu.



Caution

If booted into Windows via VGA mode caution should be used if adjusting video settings not to leave them permanently set in VGA mode.

Section 2: Procedure

Connect the VGA monitor cable to the 15 pin on-board VGA port (video connector) located on the back of the CPU.

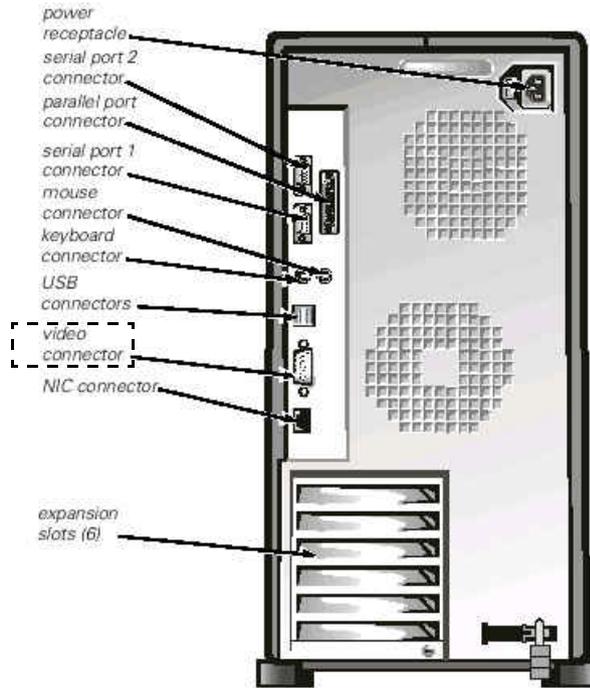


Illustration 7-1: Service Monitor Connection

■ TSG 005 Stop a Software Process

Section 1: Introduction

This job card explains how to display and stop a software process. (If a particular process is thought to be problematic.)

Section 2: GUI Based Procedure

1. Right click the **Taskbar** and select **Task Manager...** to display the current running processes.
2. Select the process to stop and click on the **End Task** button.

■ TSG 006 Display Windows 2000 System Logs

Section 1: Introduction

This job card explains how to display the Windows 2000 System logs. These logs are not stored in ASCII format and thus cannot be read directly from the file. The windows 2000 log files are:

- ◆ System—Drivers and OS level logs.
- ◆ Security—Security and Auditing logs.
- ◆ Application - application related logs, not to be confused with the RA600 (RadWorks) workstation applications log file that is separate. See [TSG 007 - Display Centricity RA600 Application Logs](#) on [page 245](#).

Section 2: Procedure

1. Select **Start > Programs > Administrative Tools > Event Viewer**.
2. The appropriate log file can be selected from the **Log** menu option. This menu item can also be used to clear or save log files to a ASCII file. The **View** menu option can be used to filter the log files.

■ TSG 007 Display Centricity RA600 Application Logs

Section 1: Introduction

This job card explains how to display the RA600 (RadWorks) workstation application logs. The workstation application log file (radworks.log) is an ASCII based log file located in the **c:\ami_60\log** directory (assuming the RadWorks application is installed on the c:\ drive).

Section 2: GUI Based Procedure

1. The text log files: Connect.LOG, Database.LOG, Print.LOG and RadWorks.LOG are located in the LOG subfolder of the AMI_60 folder.
Navigate to this location using Windows explorer.
2. Any ASCII text view program in windows can be used to display the log file, such as notepad, wordpad, etc.

■ TSG 008 Display IP/Netmask/Default Route Configuration Settings

Section 1: Introduction

This job card explains how to display current network configuration settings.

Section 2: Procedure

1. Select **Start > Settings > Control Panel > Network and Dial-up Connections..**
2. Right click on **Local area connections** and select **Properties**.
3. Select **(TCP/IP)** and click on **Properties**
4. In the popup window, view the IP address, Subnet Mask, and Default Gateway addresses

■ TSG 009 Display Loaded Drivers

Section 1: Introduction

This job card explains how to display the drivers currently loaded by the Operating System.

Section 2: Procedure

1. Select **Start > Settings > Control Panel > Administrative Tools > Computer Management > System Tools > Device Manager**

■ TSG 010 Display System Services

Section 1: Introduction

This job card explains how to display the system services being used by the Operating System.

Section 2: Procedure

1. Select **Start > Settings > Control Panel > Administrative Tools > Services**.

■ TSG 011 Display System Hardware & Software Configuration

Section 1: Introduction

This job card explains how to display the current hardware and software configuration of the workstation.

Section 2: GUI Based Procedure

1. Select **Start > Programs > Administrative Tools > Computer Management**
2. .Select appropriate tools and services, as required.

■ TSG 012 Display OS Version

Section 1: Introduction

This job card explains how to display the current OS version.

Section 2: GUI Based Procedure

1. Select **Start > Settings > Control Panel > System**.
2. Select the **General** tab.
The Main Screen will show the OS and its build version, along with any service packs installed.

■ TSG 013 Display Application Software Version

Section 1: Introduction

This job card explains how to display the current software version running on the workstation.

Section 2: Procedure

1. Select **Start > Programs > RadWorks 6.0 > RadWorks 6.0**, or click on the Workstation icon on the desktop. The login prompt for the workstation will display the application title bar.
2. With RadWorks running, click on the **Help** menu and select **About...**
Name and version are displayed for both RadWorks and the operating system.

■ TSG 014 Workstation Application Problem Solving

Section 1: Introduction

This job card presents possible solutions to problems that may be encountered in the use of the Centricity RA600 application software.

Section 2: Problem Resolution

Problem	Possible Solution
1. Can't send images	Make sure you have added a destination. Select Connection>Destinations
2. Don't see all images listed	Make sure that you have not selected a filtered worklist. Worklist View = Local Patients or Local Studies
3. Can't key images in cine mode	Key images can only be identified in manual cine, not auto

Problem	Possible Solution
<p>4. My HPs (hanging protocols) aren't listed in QC (quality control)</p>	<p>Hanging protocols must be established in both the Viewing and Quality Control tabs: Select Viewing>Manage Automated Hanging Protocol... or Quality Control>Manage Automatic Hanging Protocol... HP can be exported to disk from Viewing and imported into QC (or vice versa). <u>Detailed steps for export from Viewing follow:</u></p> <ol style="list-style-type: none"> 1. Select Viewing>Manage Automated Hanging Protocols... 2. In the Name window of the Automated Hanging Protocols Manager (Viewing) window, highlight the desired hanging protocol name and click Export. 3. In the Export Hanging Protocol to XML file window, enter a name for the selected hanging protocol and click Browse. 4. In the popup Save As window, navigate to the location where you want to save the selected hanging protocol and click Save. 5. Click the Export... button to close the Export Hanging Protocol to XML file window and click OK to close the Automated Hanging Protocols Manager (Viewing) window. 6. Check the location of the new XML file. <p>Detailed steps for import to Quality Control follow:</p> <ol style="list-style-type: none"> 1. Select Quality Control>Manage Automated Hanging Protocols... 2. In the Import Hanging Protocol XML file window, first check the Use Automated Hanging Protocol check box, then click on the Import... button. 3. In the Import Hanging Protocol XML file window, click on Browse to find the XML file you want to import. 4. Navigate to the file location and highlight the XML file and then click Open. 5. If desired, enter a new hanging protocol name for the incoming XML file, then click the Import... button. Note that the Import succeeded message appears. 6. Check that the imported hanging protocol name appears in the list in the Automated Hanging Protocols Manager (QC) dialog box.
<p>5. Centricity RA600 won't allow direct view</p>	<p>Check box must be selected for direct view. Select Configuration>Viewing>General and check the Direct View box.</p>
<p>6. Cannot connect to film digitizer</p>	<p>Ensure that you are licensed for the acquisition module and that the digitizer software has been installed and configured.</p>

Problem	Possible Solution
7. Centricity RA600 did not save my worklist	Ensure that you have checked the Automatically save window settings check box. To find this check box select Configuration>Quality Control>General tab.
8. Can't retrieve (import) from query (remote view)	Ensure that your workstation is set up as a destination <u>on</u> the system you are trying to query.

■ TSG 015 Connect Frame Grabber to Monitor that has no pass-through

Section 1: Introduction

This job card provides a procedure to allow capture of frames from a video monitor that does not have both Video In and Video Out connectors.

The Hi Def Accura frame grabber board has 8 channels (CA1 to CA4). To capture monochrome composite video, connect the video source to one of the CA channels. For most situations the video source will come from a video monitor. If the monitor providing the video signal does not have both video IN and video OUT connectors, you must use either a video splitter or the Hi Def Accura board in "video pass-through" mode.

You should never use a BNC T connector to split the video signal into the monitor and the board because this will create ghosting.

The following procedure explains how to set up the Hi Def Accura frame grabber board in "video pass-through" mode.

Section 2: Procedure

1. Turn on the Centricity RA600 workstation power.
2. Remove the left-hand half of the Dell 1400 case to access the Hi Def Accura board:
 - Slide the rear padlock hasp toward the chassis center and press the release button on the lower front of the bezel and remove the left side of the case.
 - For detailed instructions, refer to the Dell Online Documentation, Dell PowerEdge System Documentation, Dell PowerEdge 1400, PowerEdge 1400 Installation and Troubleshooting Guide, Checking Inside the Computer. The Dell Online Documentation CD is shipped with each Dell 1400 CPU.

Note: Be sure to observe proper ESD safety precautions when inserting the frame grabber board.

- Depending on which channel you will use to connect the video IN, set one of the following jumpers.

Video IN	Jumper No.	Jumper Setting	Video OUT
CA1	J3	B	CT1
CA2	J5	B	CT2
CA3	J8	B	CT3
CA4	J10	B	CT4

- Replace the 1400 side cover and restart the Centricity RA600 system.
- Connect the video source to the CA channel you have selected and then connect the corresponding CT channel to the monitor.
- Follow job card [SW 007](#) to install the Imagraph software and configure the channel. The autosync function of the software will automatically detect the channel that has a valid video signal.

Note: For more details on jumper settings refer to the *Hi Def Accura card User Manual, Chapter 2*. This manual may be down loaded from <http://www.foresightimaging.com> or from the ROC website, <Http://e.87.17.176>, under Radworks > drivers > Frame Grabbers.

8

Disassembly & Reassembly Procedures

Section 1: Introduction

This chapter contains information on correct settings of the video boards inside the workstation computer and reference diagrams for rear panel connections to the workstation computer.

The printed circuit boards and hard disk drives contain electronic components that are extremely sensitive to static electricity. Do not touch the components themselves or any metal part. Wear a grounding wrist strap when handling the drive assemblies or boards.

For more detailed information on the Dell computer, refer to the Dell Online Documentation, Dell PowerEdge System Documentation, Dell PowerEdge 1400. The Dell Online Documentation CD is shipped with each Dell 1400 CPU.

Section 2: Summary of Job Cards

Job Card No.	Disassembly/Reassembly Job Cards
DR 001	Video Board Switch Settings
DR 002	PC Port Connection Diagram
DR 003	Replace-Configure PERC 3/DC RAID controller board
DR 004	Replacement of 221S RAID Unit Components

■ DR 001 Video Board Switch Settings

Section 1: Introduction

This job card describes the various video board switch settings. These switches need to be set correctly or the system will not boot.

Section 2: Tools Required

- ◆ 5 mm cross-head screwdriver
- ◆ 5 mm flat-head screwdriver
- ◆ Grounding wristband
- ◆ Small Screwdriver for setting Dip switches
- ◆ Small Needle Nose pliers for removing and installing jumpers

Section 3: Procedure

Video boards should be installed in slots 4 & 6 (use slot 6 for the second board, if applicable)

The following switch settings are used to disable the VGA settings of the Dome (MDxxxx) and Barco (3MP2FH) video boards and must be set correctly for the system to boot. This does not apply to 'C' monitor systems.

Video Board	Dip Switch 1 Settings			
	SW 1	SW 2	SW 3	SW 4
MD5PCX (A+ Dual Output)	On	Off	On	On
MD4PCV (A Resolution)	On	Off	On	On
MD2PCI (B Resolution)	Using Jumper J4 place jumper Over Pins 2-3 (Pin 1 is top pin)			
3MP2FH (1st Board)	On	On	On	On
3MP2FH (2nd Board) if applicable	Off	Off	On	On

■ DR 002 PC Port Connection Diagram

Section 1: Introduction

This job card identifies the onboard ports of the PC.

Section 2: Procedure

Reference [Illustration 8-1](#) below for connections. For more information on how slot positions are assigned to different monitors, refer to [Hardware Installation](#) on [page 28](#).

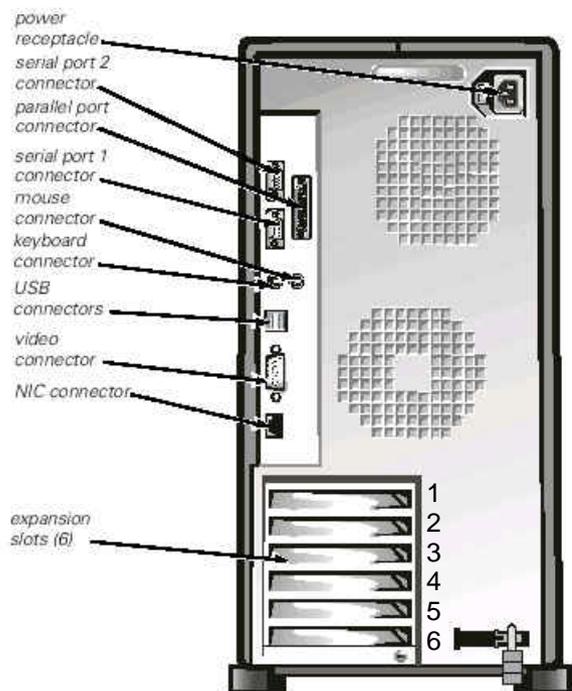


Illustration 8-1: PC Port Connections

■ DR 003 Replace-Configure PERC 3/DC RAID controller board

Section 1: Introduction

This job card describes the replacement and configuration of the PERC 3/DC RAID controller circuit board in the Dell 1400 computer.

Note: *This procedure is necessary only when controller board is faulty.*

Section 2: Items Required

- ◆ The replacement FRU (Field Replaceable Unit) must be available: Dell PERC 3/DC Board
- ◆ Philips screwdrivers (Nos. 1 and 2)
- ◆ Anti-static guard grounding wrist strap

Section 3: Procedure

This procedure outlines the physical replacement of the PERC 3/DC circuit board in the Dell 1400 computer and the configuration of the new board from the system hard disk.

1. Power down the Dell 1400 computer.
2. Power down the Dell RAID unit by turning off both the power switches at the rear of the unit
3. Disconnect the two SCSI cables at the rear of the computer.
4. Open the Dell computer unit (per instructions in the Dell online documentation for the PowerEdge1400), remove the faulty PERC 3/DC board and replace it with the new board.

5. Power up the computer. A mismatch error message will appear during system BIOS bootup.
6. When the mismatch error message appears on the monitor screen, press the <Ctrl>+<M> keys to run the Configuration Utility.
7. In the Management Menu box, use the arrow and Enter keys to select **Configure > View/Add Configuration > View Disc Configuration**.
8. Press **F10** key to initiate autoconfiguration.
9. When the system asks whether to Save Configuration, answer **Yes** (with arrow & Enter keys).
10. Exit the Configuration Utility.
11. Reboot the system when prompted. The mismatch error message should not occur on this boot.
12. Power down the computer and reconnect the two SCSI cables from the RAID unit.
13. Power up the RAID unit (both power switches).
14. Power up the Dell 1400 computer.
15. Double-click on My Computer in the Dell 1400 desktop and look for the RAID unit represented as a hard disk [**RA600 wgs(F:)**].

If the RAID unit does not appear, reboot the computer one more time.

■ DR 004 Replacement of 221S RAID Unit Components

Section 1: Introduction

This job card contains information about replacement of RAID components.

Section 2: Items Required

- ◆ The replacement FRU (Field Replaceable Unit) must be available (Refer to RAID FRU list in Chapter 9)
- ◆ Philips screwdrivers (Nos. 1 and 2)
- ◆ Anti-static guard grounding wrist strap

Section 3: Procedure

All replaceable modules in the Dell PowrVault 221S RAID unit have built-in fault indicator lights. In general a lighted amber indicator indicates a fault condition. For a hard drive, a flashing amber indicator indicates a drive failure.

To avoid data loss in the RAID unit, a hard drive must be prepared for replacement with the array manager software that is provided on the Dell OpenManager software CD.

The Dell documentation for the RAID unit contains all necessary details about diagnosing and repair faults with detailed replacement procedures and illustrations.

The Dell documentation is on the Product Documentation disk provided with the RAID unit. This documentation is also provided on the Dell site:

www.support.dell.com > Reference > User's Guides > Systems > PowerVault Storage > 220/221S ~ Storage Systems > 220S/221S SCSI Storage Systems > <language choice> > Service Manual

9

Renewal Parts

Section 1: INTRODUCTION

This chapter contains the renewal parts lists and procedure for license renewal/replacement.

Section 2: Workstation FRU List

Note: *If the Dell 1400 computer needs replacement, transfer all optional components (e.g. RAM upgrade, Hard drive upgrade, Video & other optiona boards, etc.) from the old to the new computer before returning the old computer for warranty purposes.*

Part No.	FRU	Rep	Description	Qty
2329008	1		Dell 1400 PIII 512MB - Unconfigured, no video board, no software	1
2291997	1		512 MB RAM DIMM 133 Mhz Upgrade	1
2293291	1		36GB Hard Drive Kit - Dell	

Part No.	FRU	Rep	Description	Qty
			workstation display(s)	
4362604	1		Dome Video Board MD5-PCX	2
2295365	1		Dome Video Board MD4(PCI)	2
4356812	1		Dome Video Board MD2(PCL)	1
2328679	1		Barco Coronis 3MP Controller Board - Dual Head	
2334569	1		Matrox Millenium G450 Controller for C/FP Mon. replaces 4362476	
2306872	1		Flat Panel Monitor - NEC	
2328218	1		Barco 3MP Flat Panel Monitor	
4362588	1		A+ Monitor - Portrait GS 2048X2506	4
2260812	1		B Monitor - Portrait GS 1200X1600	2
2260841	1		C Monitor - Landscape 1280X1024	2
2324060	1		Standard 19" Color Monitor	
2333243	1		C Monitor - 21" with grey/black case (Sony P/N CPD-G520P)	
			Cables	
4363107	1		MD5PCX - Video Board to Monitor cable	2
4363099	1		MD4 - Video Board to Monitor cable	2
4363115	1		Video Card to C Monitor cable	2
46-220383P1	2		BNC 75 Ohm cable terminator	5
4363149	2		110v Monitor/Computer power cord	5

Part No.	FRU	Rep	Description	Qty
			Keyboards & mouse	
2300612	1		104 Key, Keyboard (Dell P/N 310-4100)	1
2266207	1		French Keyboard	
2266208	1		Spanish Keyboard	
2266209	1		German Keyboard	
2266210	1		Portugese Keyboard	
2266212	1		Swedish Keyboard	
2266215	1		European Power Cable	
2266211	1		Italian Keyboard	
2266216	1		Italian Power Cable	
2303424	1		Mechanical Serial wheel mouse (Dell P/N 310-3777)	1
			Hi-Res service kit	
2252691	N		3M Disposable ESD Wristband	
4363073	2		VGA Monitor for Service Kit	
			Modem	
2245794	1		Modem	
			Single Media Archive - Plextor	
2266773	1		Adaptec 2930U SCSI Card	1
2274121	N		50 Pin SCSI 2 Interface Cable	1
2334029	1		SMA External Drive	
			HI*DEF Frame Grabber	

Part No.	FRU	Rep	Description	Qty
2270474	1		Foresight Imaging HI*DEF Accura board 016030-200	1
2270476	1		Foresight Imaging 030063 8-channel video cable	1
			iColor Frame Grabber	
2308031	1		Frame Grabber Board - Single frame, color	
2324574	1		Frame Grabber Board - Streaming, color (TIMS)	
2335175	1		S-Video Y/C Adapter for FRMGRB	
2335180	1		25DB to 6BNC Jack 7ft Cable-GRMGRB	
			Work Group Server	
2307368	1		PERC RAID Controller Bd	
2184777-12	1		Standard 17" Monitor for WGS	
2307370	1		1-meter SCSI Cable	
2307365	1		36 gb Disk Drive	
2342020	1		RAID Power Supply Module 460 kW	
2342021	1		Cluster Card (SCSI Management Card)	

Table 9-1: Workstation FRU Lis

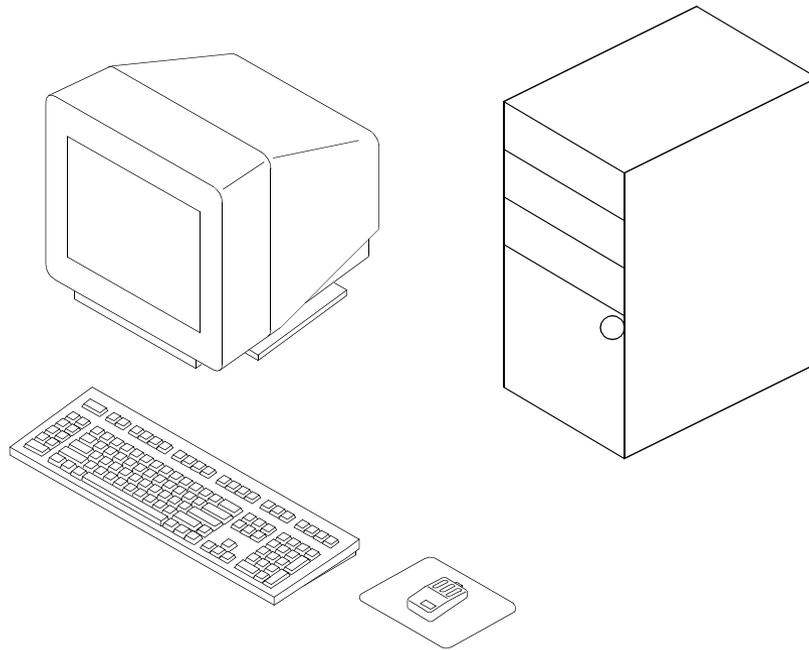


Illustration 9-1: Workstation

Section 3: Centricity RA600 Workstation License Renewal/Replacement Process

This section outlines how to obtain a replacement dongle for RA600(RadWorks) software.

3-1 Overview - Global

Centricity RA600, RadWorks, WebViewer, Centricity Web, Centricity DA210, Enterprise Archive and RadStore software utilize a dongle or a license file to control software feature access. Each dongle or file is coded with the customer's purchased modules and software version and included in the software shipment. If the customer damages or loses this dongle, a replacement dongle can be attained through GE Cares. The dongle is set up as a FRU 1 and is in stock under part number 2253361.

Dongles are coded specifically to a serial number based on the modules and options purchased. A replacement dongle needs to be coded so it gives the customer the same capabilities as their original dongle.

License files are used on some systems instead of a dongle. License files are coded to the MAC address of the primary network adapter in the computer and as such, can not be moved from machine to machine.

To obtain a new code for a replacement dongle or a new license file, the FE should contact the ROC for their pole. In the case where the ROC cannot process the request the FE should contact the assigned service engineer for the product in their pole (see Paragraph 3-5).

The FE must provide the customer name plus the following: either the MAC address for the primary NIC in the subject computer or the serial number of the replacement dongle and the serial number of the dongle that is being replaced, their email address and the FDO number for the system. Additional feature requests MUST be accompanied with an FDO number.

The support engineer will then generate the appropriate code and email it to the FE.

Note: *The FE should expect up to a 1 day turn-around time for this code generation during normal business hours in their pole, Monday-Friday.*

3-2 Installation - Global

The FE attaches replacement dongle to PC and enters the following command at dos prompt:

```
<program installation path>\bin>upgrade "6B 55 22 56 4F 27 43 44 2B 40 40 08 3E 37 3F 3C 33  
3C 3C 37 38 3E BC"
```

Note: *FE must use the provided upgrade code. The code above is an example*

License files are installed by copying the file to the Applicare "BIN" folder on the workstation.

In either case, the FE should then run the license configurator (bin\RUNLCFG.exe) to test the file or dongle.

See the applicable product installation manual for instructions.

3-3 Global Procedure for the FE to request the ROC to provide a license file or a dongle code.

All requests must be handled by the ROC in the requesting pole.

3-3-1 Job to be performed by the FE during a new installation or an upgrade

- ◆ At installation time, the FE records the either dongle serial number or the MAC address in the Service Manual,
- ◆ At installation time, or for every new option or upgrade, the FE records the FDO number in the Service Manual
- ◆ The FE attaches the shipping label in the service Manual

3-3-2 License file failed, or a temporary license file has been shipped (Turnkey system)

- ◆ The FE provides the current FDO number to the ROC, and if applicable all previous FDO numbers
- ◆ The FE provides the MAC address to the ROC
- ◆ Within 1 hour, the ROC sends a e-mail to the FE with the appropriate license file
- ◆ If the FE cannot contact anybody from the ROC, the FE sends an e-mail to the contact identified for their pole (see below), with FDO information and MAC address

3-3-3 The dongle does not work (Software-Only system)

- ◆ The FE provides the current FDO number to the ROC, and if applicable all previous FDO numbers
- ◆ The FE provides the dongle serial number to the ROC
- ◆ Within 1 hour, the ROC sends a e-mail to the FE with the appropriate dongle code

- ◆ If the FE cannot contact anybody from the ROC, the FE sends an e-mail to the contact identified for their pole (see below), with FDO information and MAC address
- ◆ If the Dongle fails to work after a new code is supplied the FE must order a new Dongle (2253361) and then request a code for that dongle.

3-4 Europe-Only Dongle Replacement Procedures

3-4-1 WHERE DONGLES ARE USED / SHIPPED

- ◆ On Radworks 5.1 Turnkey & Software Only systems
- ◆ On RA 600 Software Only systems
- ◆ When an new software module is sold for a Software Only system (Radworks 5.1 or RA 600)

3-4-2 CASE IN WHICH A DONGLE CAN BE REPLACED BY A LICENSE FILE

- ◆ Radworks 5.1 Turnkey systems, damaged or lost dongle

3-4-3 CASE IN WHICH A DONGLE CANNOT BE REPLACED BY A LICENSE FILE

- ◆ Radworks 5.1 and Centricity RA 600, Software Only

3-4-4 PROCESS TO REPLACE A DONGLE BY A LICENSE FILE

Radworks 5.1 Turnkey, damaged dongle

1. GE FE contact the ROC with customer details (Name, Address, FDO), MAC address and registration information (type of software and modules list)
2. ROC generates a temporary license file (1 month) and send it to the FE, or upload it on the system (ROC decision)
3. GE FE sends the damaged dongle to the ROC

4. On reception of damaged dongle, ROC e-mail the permanent license file to FE or upload it on the system (ROC decision)
5. The update of the manufacturing database is done via an automatically generated and distributed e-mail
6. On a quarterly basis, ROC send damaged dongles to manufacturing at Mt Prospect

Radworks 5.1 Turnkey, lost / stolen dongle

1. GE FE contacts the ROC with customer details Name, Address, FDO), MAC address and registration information (type of software and modules list)
2. ROC generates a temporary license file (1 month) and sends it to the FE, or uploads it on the system (ROC decision)
3. FE asks for a Service Quotation to from his ASM (equivalent to the cost of the dongle and 2 visits on site)
4. After approval by the customer of the service quote, ROC e-mails the permanent license file to FE or uploads it on the system (ROC decision)
5. The update of the manufacturing database is done via an automatically generated and distributed e-mail

3-5 Current Service Engineering Contacts

3-5-1 Current Americas Contact

Saeed Alam
Saeed.Alam@med.ge.com

3-5-2 Current Europe Contacts

Jorge Aguirre or
Maurice Robert

Jorge.Aguirre@med.ge.com
Maurice.Robert@med.ge.com

Suggested Maintenance

Section 1: Introductions

This chapter presents job cards related to suggested maintenance procedures for the Centricity RA600 Workstation.

The Centricity RA600 Workstation does *not* require extensive routine hardware maintenance. Reasonable care of its components will help ensure continuous operation.

Section 2: \Summary of Job Cards

Job Card No.	Maintenance Job Card Title
MNT 001	Scheduled Maintenance

■ MNT 001 Scheduled Maintenance

Section 1: INTRODUCTION

This job card contains the list of annual maintenance tasks to perform on the Centricity RA600 Workstation.



Caution

Pay special note to the electrostatic discharge precautions when working inside the Computer chassis. Use a static-discharge, wrist strap when necessary.

- ◆ Do not use any type of abrasive pad, scouring powder, or solvents.

Section 2: Quarterly Tasks

- ◆ Perform the appropriate monitor calibration.

Section 3: Procedure

1. Verify the integrity of the external cable connections to the peripheral devices, including the network connections.
2. Clean the monitor and the keyboard. Use an appropriate Computer Systems cleaning kit to be sure not to scratch the monitor (part no. 46-194427P221).
3. Open the computer case.
4. Clean the inside of the computer housing. Use an appropriate Computer Systems Vacuum Cleaner, such as 46-194427P392.

5. Carefully vacuum out the system, attending to heavy accumulation spots such as the processor area.
6. Before replacing the computer cover visually verify that the cooling fans are working properly.

Note: *The use of compressed air is not recommended. Blowing dust out with a stream of air is not recommended because of the ESD (Electro-Static Discharge) hazards to components, and the dust hazard to the personnel in the area near the cleaning activity.*

7. Proceed to the floppy disk drive head cleaning by means of a 3.5" cleaning diskette. (Local purchase, at computer supply store.) Can be done more often if the floppy disk drive is used regularly by customer.
8. Save the site parameters on a new configuration diskette. On a 6-month scheduled maintenance, this allows you to have your back-up configuration floppy diskette renewed twice a year. The floppy is automatically formatted before saving the configuration data.



GE Medical Systems – Information Technologies

*GE Medical Systems – Information Technologies: Telex 3787371
8200 W. Tower Ave., Milwaukee, Wisconsin, 53201 U.S.A.
(Asia, Pacific, Latin America, North America)*

*GE Medical Systems – Information Technologies GmbH
Munzinger Strasse 3, D-79111, Freiburg, Germany*