DIGITAL Remote Server Manager
Installation Guide

Digital Equipment Corporation
Maynard, Massachusetts

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Contents

Tables

Figures

Introduction *1*

About This Guide

The DIGITAL Remote Server Manager (RSM) is a remote server management device that allows a network professional to manage geographically dispersed servers from a central site. The remote server manager consists of the RSM controller and configuration files, installed on a remote server, and the management station software installed in a management station computer. Communication between the remote server and the management station is done via modem.

This guide details the following:

- Introduction and overview of RSM
- Hardware installation
- Configuration and management software installation
- Modem configuration
- Initial configuration and startup
- Troubleshooting
- Hardware specifications
- Modems detail
- Cabling

It is not the intent or purpose of this guide to cover all the possible server system configurations. This guide will enable the RSM user to run RSM on a remote server and the management station using default settings.

Throughout this guide the DIGITAL Remote Server Manager (RSM) controller is referred to as the controller. The server to be controlled and monitored is referred to as the remote server. The computer managing the remote servers is referred to as the management station.

RSM Overview

RSM is a combined solution of hardware and software comprised of an EISA-bus master hardware controller, firmware and a graphical user interface for the end user at the management station.

Hardware Features

The controller is installed on a remote server to:

- Sense internal and external conditions of the server

- Provide access by a designated management station to take control of the server functions if required

- Communicate with the management station

The controller monitors, alerts, and can take control of a remote server. The controller communicates the conditions of the remote server to the management station through a communications port on the remote server. The controller is not dependent on the server power or the server operating system for its basic operation. Basic controller features include:

- Two-way communication between the management station and remote server

- An independent real-time clock (lithium battery)

- Nonvolatile memory for storing updateable firmware, event logs, and customizable monitoring files

- The ability to use external and internal power

- Hard reset of the host server system

- The ability to power the remote server down and power it back up

- The ability to download software on the remote server through the remote diskette control function

Introduction

Integrated Features	Industry-standard 32-bit EISA Bus Master Card (occupies one slot)
	Real-time clock
	80C186EB 16MHz, 16-bit microprocessor
	512KB Static RAM
	256KB Flash ROM (firmware is customer upgradable)
Physical Characteristics	Length: 13.25" (34.04cm)
	Width: 5" (12.7cm) Height: .75" (1.87cm)
	Operating temperature: 20° to 122°F
	Non-operating temperature: 32° to 158°F
External Power Supply	Voltage range: +4.85 to +5.25 volts measured at the controller
	Integrated auxiliary power supply
	Current: 1.0 amps maximum; 0.1 amps minimum
	Power consumption: 10 watts maximum
Additional Hardware Required	Modems at remote server and management station
	ISA video controller
	Reset cable kit

Software Features

The RSM software consists of a graphical user interface that reports the health of the remote servers to the user. The RSM management station software gives the user the following tools:

- Alarms that can be set to occur on out-of-range voltage values, temperature values, server status, and power failures.

- Automated alarm responses to initiate a chain of actions such as dialing a pager or shutting down the system.

- Status reports.

- Event logs for trending and troubleshooting.

- Boot/upgrade or configure remote server from the management station.

- Transfer files to and from the remote server.

- Secure access limited by passwords and dialback to authorized users.

Hardware and Software Requirements

The following sections define the hardware and software requirements of the DIGITAL Remote Server Manager components.

Management Station

The management station must meet the following minimum hardware and software requirements:

- Microsoft Windows NT Version 3.51 or greater

- Intel 486, Pentium or Pentium Pro computer

- Hard disk with 4MB of available space (20 MB recommended)

- 16 MB Memory (32 MB recommended)

- 3.5-inch high-density (1.44 MB) disk drive

- SVGA video adapter

- A buffered serial port with a 16550 UART chip equipped with a RSM supported external modem (refer to Appendix A)

Remote Server

The remote server must meet the following minimum hardware and software requirements:

- Most DIGITAL Servers with EISA capabilities. The server can be running any DIGITAL approved operating system. (GUI-based operating systems cannot take advantage of the remote console feature of RSM.)

- 3.5-inch high-density (1.44 MB) disk drive

- A buffered serial port with a 16550 UART chip equipped with a RSM supported external modem (See Appendix A)

NOTE: DIGITAL Server systems with PCI on-board video controllers in the server are not compatible with the remote console feature of the RSM. An external ISA VGA video controller is required to support the remote console feature.

Compatible Servers

The following servers support the inclusion of an RSM controller.

- DIGITAL Server 5100/5200 series
- DIGITAL Server 7100 series
- DIGITAL Prioris HX 590/590DP Server
- DIGITAL Prioris HX 5100MP Server
- DIGITAL Prioris XL Server
- DIGITAL Prioris HX 6000 Server
- DIGITAL Prioris ZX 5000MP Server
- DIGITAL Prioris ZX 6000MP Server

RSM Options

The following options are available for RSM.

External Modem/Multiplexor Support

DIGITAL has tested and verified specific modems for interoperability, performance, and ease of use with RSM. See Appendix B for details on these modems.

NOTE: DIGITAL provides a modem script file for a select number of modems. If the modem you are using is not one of the supported modems, it will need to be customized.

RSM Kits and Options

The following RSM kits are available.

Option	Description	Part Number
Hardware	Remote Server Manager Hardware (controller, diskette, installation guide)	FR-PCDSC-AA
Software	Remote Server Manager Software (diskette, user guide)	QB-38EAA-SA
Package	Remote Server Manager Package (combined hardware and software kits)	FR-PCDSM-AA
Reset Cable	Jumper cable	FR-PCXCK-AF
Modem	56Kbps external modem	FR-PCXDF-xx
Other	ISA Video Card (if required)	FR-PCXAG-BC

The following additional items are recommended for use with the RSM controller.

Component	Component Details	Purpose
Modems	DTE speed of 300 to 57.6kbps, V.42 error control and bi-directional hardware handshake	Communication link between server management station and controller in the remote server.
Uninterruptable power supply (UPS)	Standard	Backup power for a modem and the controller in case of a power failure.

DIGITAL Support and Warranty

Refer to the warranty information that comes with RSM for detailed information on DIGITAL Remote Server Manager software warranty. This warranty can be increased with support packages available by calling 1-800-DIGITAL.

Controller Description

Figure 1-1 shows the controller layout.

Figure 1-1 Controller Layout
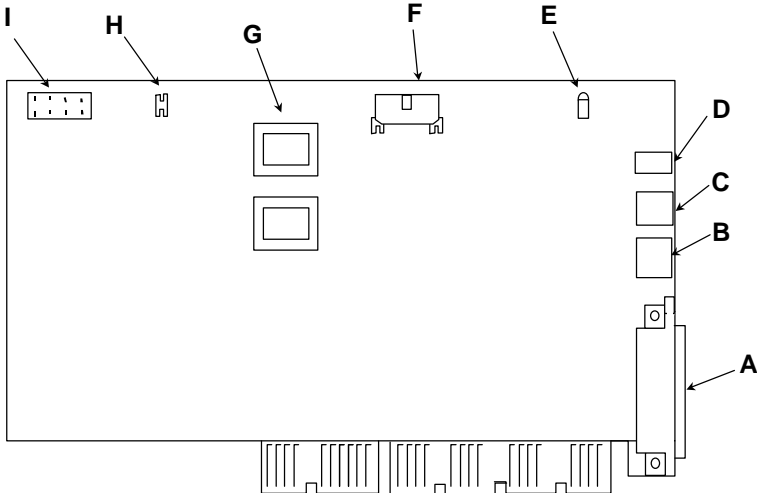
Figure Legend	Component
A	25-Pin RS232 connector
B	Keyboard jumper connector
C	Keyboard input connector
D	External DC power in
E	Diagnostic LED
F	Reset and control cable connector
G	Flash ROM (reference only)
H	Factory use only
I	Factory use only (password reset)

Introduction

Hardware and Software Installation *2*

This chapter describes how to install the controller in the remote server, load the controller configuration files and install the management station software.

Refer to your specific server's documentation for the proper procedures to power down and remove the side panels or covers to access the EISA bus expansion slots.

Hardware Installation Overview

The following hardware installation steps are detailed in this section:

1. Configuring the modem
2. Preparing the remote server
3. Installing the controller in the remote server
4. Connecting the reset cable to the remote server
5. Connecting the keyboard to the controller (if applicable)
6. Connecting the modem to the controller
7. Installing the external power supply and optional UPS
8. Powering up
9. Checking the LEDs
10. Install controller configuration files
11. Install management station software

Configuring the Modem

Before you begin to install the controller into your remote server, initialize the external modem(s) that will be used on the server and the management station.

NOTE: DIGITAL recommends you configure all of the modems for the remote servers at one time. This will ensure consistent modem configuration and reduce the chance of having to troubleshoot modem problems after the full installation is complete.

To configure the remote server modem:

1. With the modem attached to the server, open a terminal server window, access the modem settings file, see your modem documentation for the correct modem configuration file name ans settings.

2. Select the factory default settings. The command is typically "AT&F" or "AT&F0" (Zoom and AT&T respectively).

3. Edit the initialization commands to correspond with the modem you have chosen at the remote server site. Initialization commands for modems approved for RSM are included in the installation diskette and Appendix B of this book.

4. Set up and save the modem settings in the modem's NVRAM both at the managed remote server and the management station. This will ensure that the modem does not default back to initial factory settings in the event of a power loss. This should be done prior to installation.

5. The desired settings for most modems can be entered on a terminal emulator. Set the speed to 38400 bps, hardware handshake, 8 bits and no parity.

The following string can then be added:

```
"ATE0&C1&D2S0=1M0"
```

which on most modems means:

    E0 - no echo

    &C1 - Carrier detect H/W handshake (std RS232)

    &D2 - Data Terminal Ready is controlled by DTE (std RS232)

    S0=1 - allow one ring before answering

    M0 - turn off modem speaker (optional)

To save the settings permanently in most modems, use the following command:

```
"AT&W" or "AT&W0"  (Zoom or AT&T)
```

Save the information by sending the &W string at the end to save to NVRAM in the modem. This will prevent the setup information from being lost if power is removed from the modem.

Preparing the Remote Server

Follow the documentation instructions for each specific remote server to prepare the server prior to installing the RSM controller.

1. Power down the server.

2. Remove the power cord.

3. Remove all covers or side panels as necessary to gain access to the EISA bus expansion slots.

△ *CAUTION: Be sure that the server is fully powered down before you proceed.*

△ *CAUTION: Static electricity can destroy the circuits in the system or controller. DIGITAL recommends using an anti-static strap. Discharge static electricity by touching the metal chassis of the system before touching any other part of the system backplane, main logic board, or the controller.*

Installing the Controller in the Remote Server

Install the controller in the remote server EISA bus slot. DIGITAL recommends using the lowest EISA slot to ease installation of the reset cable, as the controller may block the main logic board connector when installed in other slots. Refer to the server documentation to identify the EISA bus slots. To install the controller:

1. Slide the controller firmly into the backplane.

2. Use the phillips head screw to secure the controller in place as shown in Figure 2-1. Be careful not to overtighten the screw.

Figure 2-1. Controller Installed in EISA Bus Slot
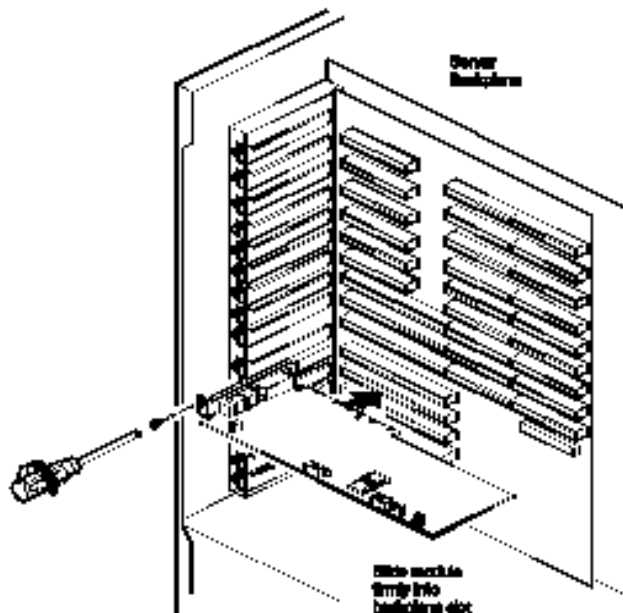
Connecting the Reset Cable to the Remote Server

The reset cable enables the remote server to detect the controller. Connect the reset cable by completing the following steps:

1. Connect the reset cable to connector F on the RSM controller (F, Figure 2-2).

2. Connect the other end of the reset cable to the server's main logic board connector according to the server-reset situation. (Refer to the server documentation for details.)

Refer to the server documentation and the following note for information on setting main logic board jumper or switch for "RSM installed".

Figure 2-2 Connecting the Reset Cable (F)
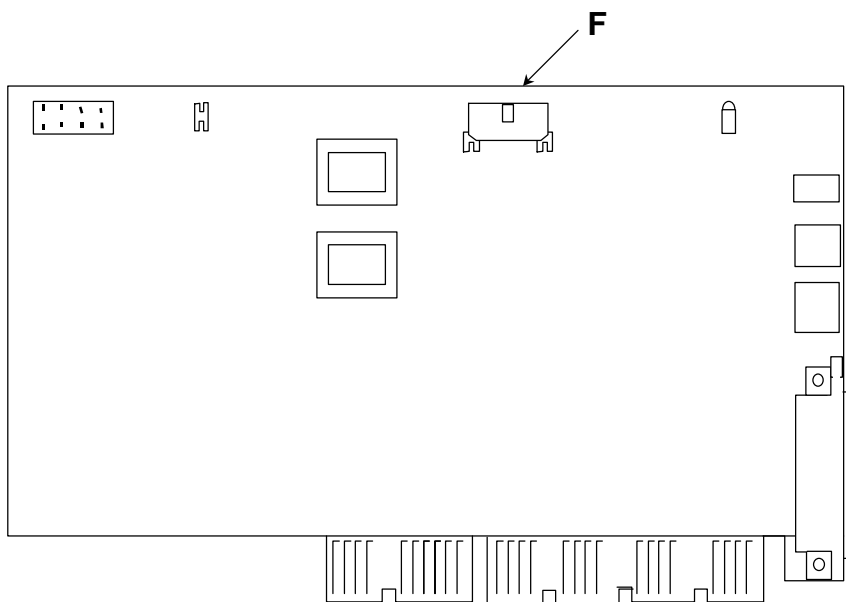
NOTE: The server will not power up, if the jumper on the main logic board marked with "RSM installed" or "DSM installed", is set to ON.

*For example: If J35-SW5 on the main logic board is set to **OFF**, install the reset cable as shown. If J35-SW5 is set to **ON**, connect the RSM reset cable to connector RSM and change the switch position to **OFF** position before installing the cable. See Appendix C for details on your server, or see your server documentation.*

Keyboard Connections

The keyboard can be connected into the controller or directly to the remote server. This choice is dependent upon the hardware keyboard related to your server. If you are using a Windows Enhanced keyboard (Part number PCXLA-NA), you will want to install the keyboard directly into the server. If you are using any other keyboard, you can install the keyboard through the controller. This gives the added functionality of keeping a log of keystrokes made at the remote server.

CAUTION: Installing a Windows Enhanced keyboard into the RSM controller will result in NT Event errors being generated.   It may also cause the keyboard to lock under various conditions.

Connecting the Keyboard to the Controller

Complete the following installation only if you are **not** using a Windows Enhanced keyboard (Part number PCXLA-NA).   To connect the keyboard to the remote server to the controller complete the following steps:

1. Disconnect the keyboard from the server.

2. Connect the keyboard to connector C on the controller (C, Figure 2-3).

3. Connect the 4-pin end of the keyboard jumper cable to the B connector on the controller (B, Figure 2-3).

4. Connect the 6-pin end of the keyboard jumper cable to the keyboard socket on the server.

5. Your server keyboard is now connected to the server through the controller.

Figure 2-3 Connecting the Keyboard to the Controller
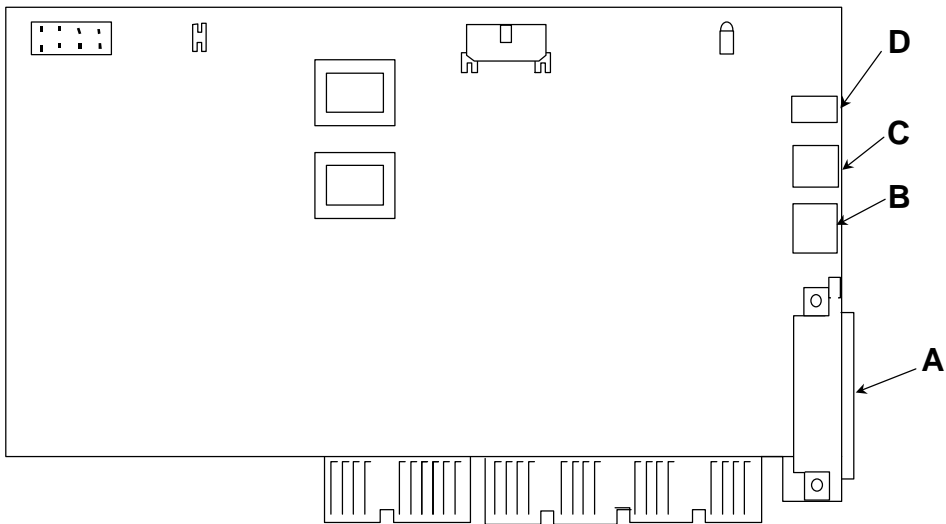
Figure Legend	Component
A	25-Pin RS232 connector
B	Keyboard jumper connector
C	Keyboard input connector
D	External DC power in

Connecting the External Modem to the Controller

To connect the modem to the controller.

1. Connect the 25-pin modem cable to connector A (A, Figure 2-4) on the controller.

2. Connect the other end of the 25-pin modem cable to the 25-pin connector on the external modem.

Figure 2-4 Connecting the Modem Cable to the Controller

Figure Legend	Component
A	25-Pin RS232 Connector
B	Keyboard jumper connector
C	Keyboard input connector
D	External DC Power In

Figure 2-5 shows a typical system installation with a keyboard and a VGA monitor.

Figure 2-5 Minimum Configuration
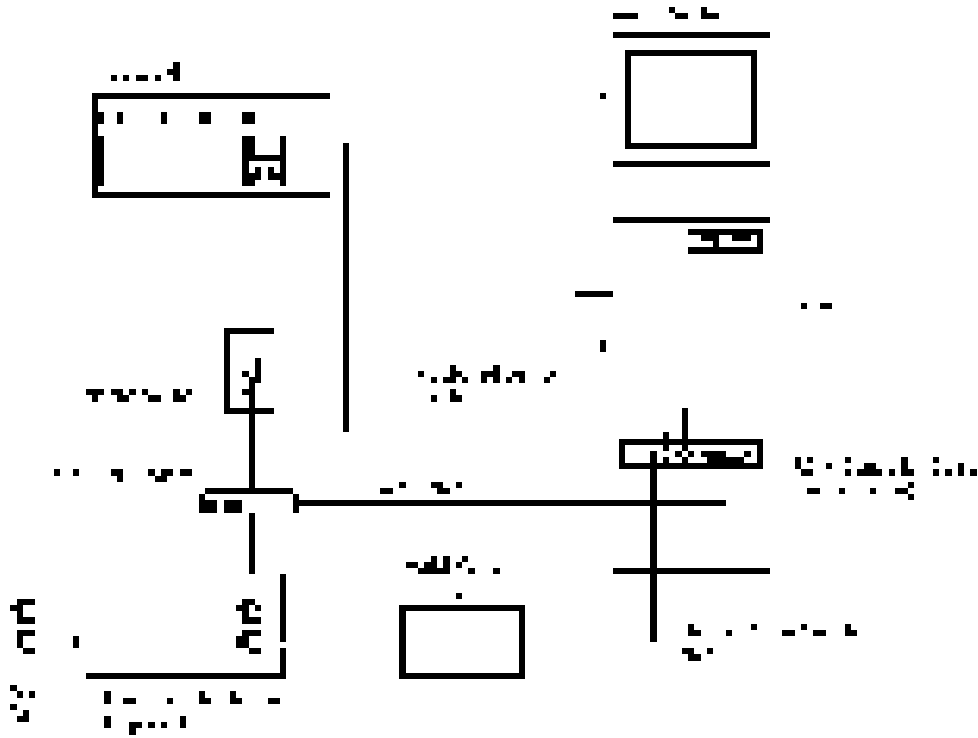
Replacing the Server Cover

Replace the server cover or side panels according to the server documentation directions.

Installing the External Power Supply and Optional UPS

The controller requires an external power source. This is supplied by an external power supply. To get the best benefit of the RSM ability to reset the remote server even when the main power source is unavailable, an uninterruptible power supply should be added.

If the remote server is NOT connected to an uninterruptible power supply (UPS) and you want to maintain communication with the controller during power failures, connect the modem and external power supply ac cords to a UPS.

NOTE: Skip this step if you are installing the controller in a DIGITAL Prioris XL Server.

To connect the external power supply of the controller:

1. Connect the RS232 connector from the external power supply to connector D (D, Figure 2-6) on the controller.

2. Connect the power cord to the external power supply.

3. Insert the power cord plug into a wall receptacle or other AC power source.

Figure 2-6 Connecting the External Power Supply
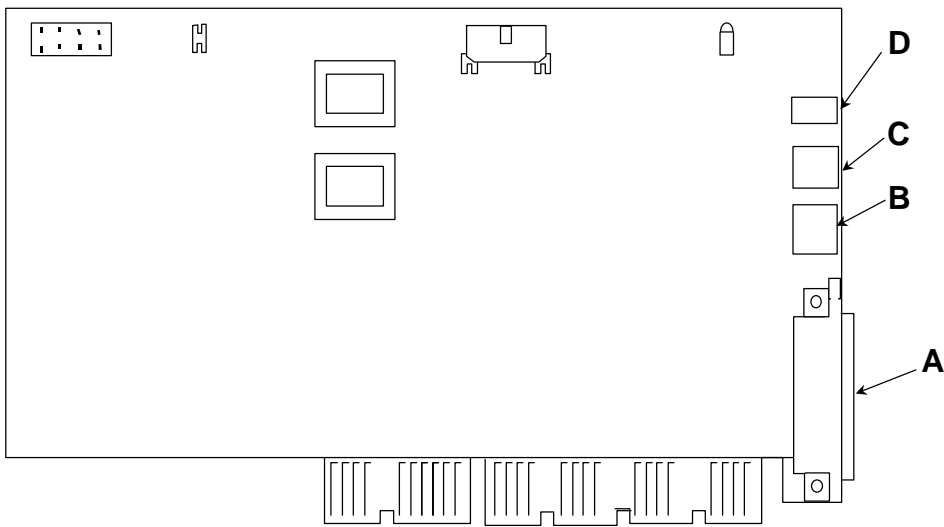
Figure Legend	Component
A	25-Pin RS232 connector
B	Keyboard jumper connector
C	Keyboard input connector
D	External DC power in

Follow the UPS manufacturer instructions to install this option.

Powering On Sequence

After completing hardware installation, power on the remote server in the following order:

1. Power up the modem.

2. Power up the external power supply to supply power to the controller.

3. Power up the remote server.

Use only this sequence to properly initialize the modem with a dialer string that (among other things) initializes Auto Answer.

Checking the LED

Observe the controller's LED while the server powers up. View the LED through the server's vents in the rear of the unit.

- The LED should begin as red.

- Change to orange.

- After no longer than 1 minute, change to a steady green indicating normal operation.

If the LED is not *green*, or the server does not boot, refer to Troubleshooting. Board level diagnostics are available from your DIGITAL representative if required.

Installing RSM Configuration Files

Configuration files are installed after the controller installation is complete. Then the RSM software is loaded on the management station. Both installations are done via diskette.

The RSM configuration file (!dec23f0.cfg) enables the RSM BIOS. The next section details the following steps to install this file:

1. Run the server SCU to recognize the RSM controller.

2. Add the RSM Remote Server configuration information into the remote server's system configuration.

3. Load the RSM software on the management station.

Installing the RSM Configuration File on the Remote Server

To install the configuration files access both the diskette (labeled AK-Q8U3A-CA) in the RSM hardware kit, and the System Configuration Utility included with the server. To install the files:

1. Power up the server. A note displays acknowledging the change in configuration. Press F1 to continue.

2. Insert the System Configuration Utility (SCU) diskette supplied with the server.

3. Choose Configure Computer.

4. The SCU recognizes the controller and the SCU screen prompts for the configuration file (!dec23f0.cfg). Insert the configuration diskette included with the kit, and press the enter key.

   NOTE: The latest configuration file will also reside in the management workstation's RS_MGR directory after the management station software is installed.

5. Select the highest BIOS address available unless there is a conflict with other installed options such as a SCSI adapter or LAN card. The default address should be the highest available.

6. If "No BIOS Address" is selected, you will not be able to place the server in HELD Mode or perform any remote diskette operations. See the *Remote Server Manager Management Station Software User's Guide* for details on HOLD/HELD mode.

7. Accept the configuration and select Save.

8. Select Exit to exit from the SCU.

9. Remove the diskette and reboot the remote server.

NOTE: An IRQ is not required because the controller does not have a NOS driver connection to the operating system. There is no need to add an IRQ number.

Installing the Software on the Management Station

Next, install the RSM management station software on the management station. To install the software, complete the following steps at the management station:

1. Insert Setup disk1 included with your kit into the disk drive and run setup.exe. This runs a traditional windows install program.

2. Confirm the default directory name (RS_MGR).

3. Select OK or press [Enter] after Setup successfully completes.

4. Setup redisplays the Program Manager window and creates a new group window that contains the Remote Server Manager icon.

5. Add the Port Manager icon to the Startup window so that the port manager will start automatically when you log on to your management station.

6. Read the Readme.txt file. Completing a new installation will also result in the following message. It can be ignored for a new installation.

Remote Server Manager Notification

No server definitions were found. New servers may be defined in a Setup window. If servers were defined previously, make sure any files with type ".sdf" are in the same directory as "rs_mgr.exe".

OK
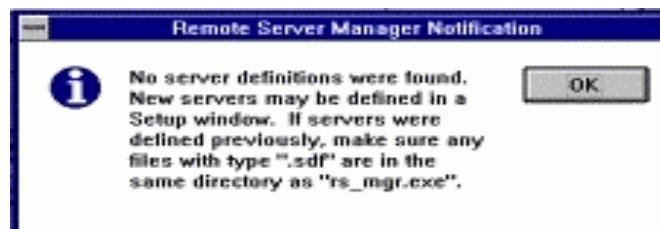
Installing Over Existing Software

The following apply when installing over existing RSM software:

- The port manager file (rs_pm.ini) must be re-configured.

- Additional edits made to the configuration files will be lost, including non-standard modem information.

- Changes made to any of the following files will be overwritten by the new installation: srvm.*, default.*, and example.* (* denotes a wildcard).

Hardware and Software Installation

Software Configuration *3*

This chapter describes how to configure the RSM hardware and software components and open the application. Once the management station has the RSM software installed and the remote servers hardware is installed, the modems can be initialized, and connections to the remote servers can be initiated.

The steps required to configure the management station and the remote server prior to operation are:

1. Edit the NT Control panel communications port con the management station.

2. Edit the port manager configuration file for the remote server modem(s) (rs_pm.ini file).

3. Edit the default.mcr file at the management station to include set up arguments, baud rate, and modem type.

4. Edit the default.scr file(s) at the management station to include modem setup commands.

5. Modify the user preferences.

6. Review the events file at the management station.

7. Edit the remote server's macro file (srvm.mcr) to indicate the management station's modem type, baud rate and remote server's telephone number.

8. Edit the remote servers script file (srvm.scr) to include the initialization sequence of the remote server's modem.

9. Add remote servers to the management station application and add the management station telephone number for receipt of event alerts from the remote servers.

10. Transfer the required setup files to the controller on the remote server.

11. Start RSM.

When opening the RSM management station software for the first time, the application will signal that you have no remote server configurations. Continue on with the initial configuration before entering your server information.

Editing the Port Configuration

The first step is to assign the communication port configuration:

1. Select the NT control panel on the management station.

2. Choose Ports.

3. Choose the port for the servers and click on settings.

4. Set as shown below:

   - 8-bit asynchronous communications with no parity

   - Hardware handshake (flow control)

   - Speed at 38,4000 bps

5. Click on advanced and turn on FIFO.

   - FIFO Enabled

Initializing Communication Ports

Initialize the communication ports by editing the rs_pm.ini file.

1. Open the File Manager on the management station hard drive.

2. Use Notepad to open the rs_pm.ini file in the RS_MGR directory.

3. Replace the default modem type with the sequence that corresponds to your specific modem. The default configuration setup is port 3 for a Hayes Accura or Zoom 56K modem. Enter a port argument line for each RSM port. The correct Port Argument syntax is: port=[modem_type]:options:[server_name]

4. If you have more than one modem type being used on the RSM-driven remote servers, you will need to add different communication ports for each modem type. Use a multiplexor(s) if required to create a sufficient amount of communication ports.

NOTE: You must leave one communication port free to receive event alert messages.

Table 3-1 Port Arguments

Port Argument	Description
Port	RSM port: COM1, COM2, COM3, etc.
Modem_type	Must match the setup entry in the default.mcr file. Leave blank if you connect directly to the serial line using a null modem cable rather than a modem.
Options	Port options (Not available on XL servers): answer (a), originate (o), direct (d), log (l) – the log option is for debugging purposes only.
Server Name	Server name for a server when using a null modem cable for a direct connection. (Case sensitive).

Table 3-2 Modem Type Sequence:

Modem Type	Sequence
Hayes Accura/Zoom 56K external modems	hayes_zoom56:oa
Hayes 14.4 FAX Modem	hayes:oa
ZOOM VFX V32BIS	zoom:oa
ATT DataPort 14.4 FAX Modem	att_dp:oa
ATT Paradyne - COMSPHERE 3820 setups	att_par:oa
Null Modem	:d:harvard

oa = originate answer

Editing the Remote Server Macro File

The remote server macro file (srvm.mcr) creates a connection used to send event alert messages between the remote server and the management station. Here you will enter the management station's dial-up phone number(s).

1. Open the Remote Server Manager by double clicking on the RSM Manager icon.

2. Edit the srvm.mcr file using the menu interface provided by the RSM.

3. Click on the Options window of the window. Choose macros and then open. Click on the srvm.mcr file. The SVRM.MCR screen displays.

Figure 3-1 Options Edit Window


```
─  Macro Definitions: SRVM.MCR                    ▲

      MACROS          ACTIONS IN SELECTED MACRO

   Macro Name            Action              Value

  connect          Speed            38400
  ms1              Script           att_dp
  ms2              <new action>     <new value>
  alert_ms
  alert_dbl
  alert_sec
  alert_retry
  md_hup
   <new macro>
  [Delete] [Insert]     [Delete] [Insert]      [▲]  [▼]

     [  Save  ]      [  Cancel  ]        [  OK  ]
```
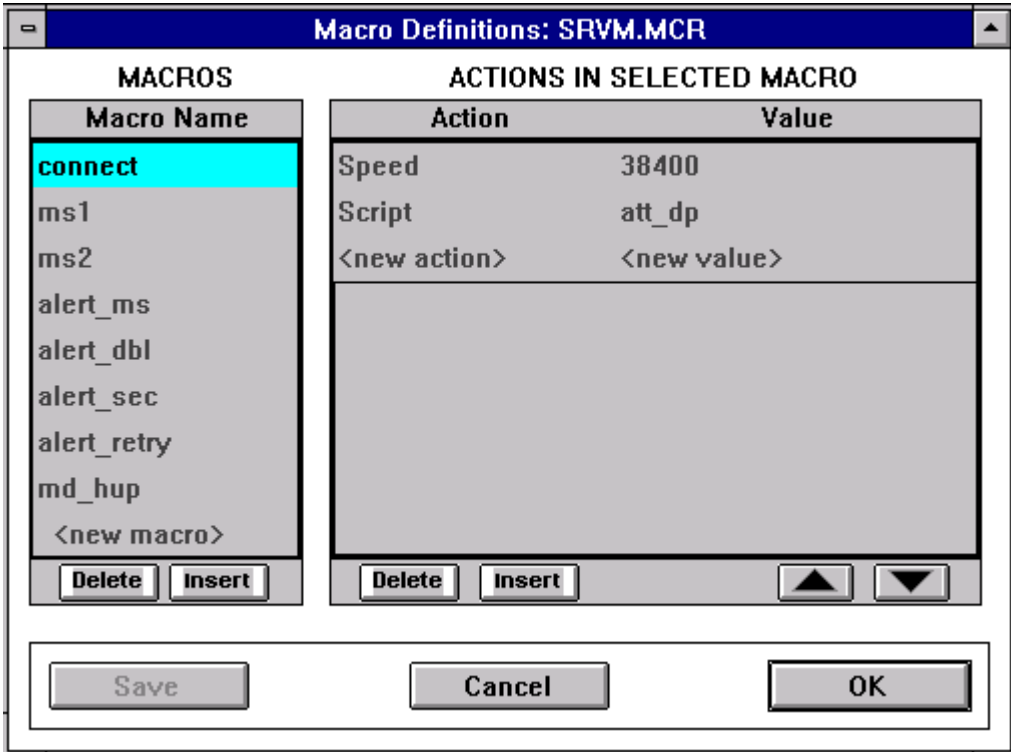
4. Highlight the Connect button and edit the speed as required by your modem. See Appendix B for default modem information.

5. Highlight the macro named ms1 and edit the communication port information and change the telephone number in the 9999999 space of the Action/Value pane to represent management station's phone number. Include area codes and any additional dialing requirements for your specific phone system.

6. Highlight the macro named ms2 add the alternate telephone number in the 9999999 space of the Action/Value pane.

37

Figure 3-2 Editing the Default SRVM.MCR File
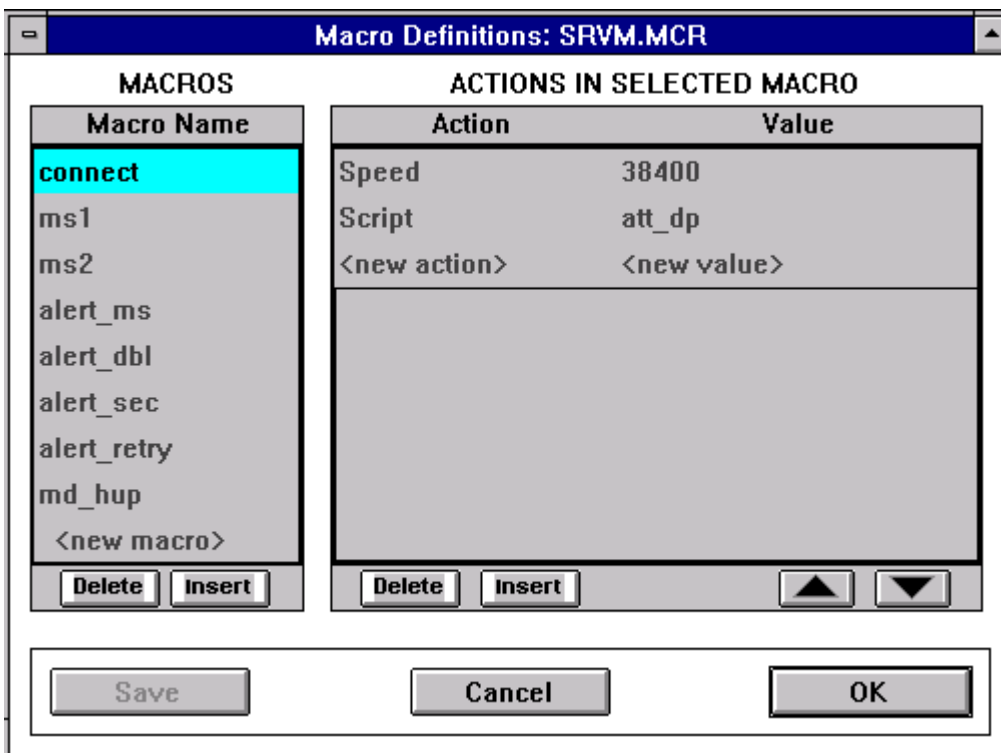
Your settings are now saved on the management station. They will need
to be transferred to the remote server. Transfer of these files is detailed
in Transferring Files, later in this chapter.

Using the Text Editor to Alter the SRVM.MCR File

The Remote Server srvm.mcr file can also be edited using any text editor. The file is located on the management station in the rs_mgr directory. Change the following items listed in this file: Telephone number, modem, and speed.

```
# This is the Remote Server Manager's Macros file.
# Change as needed to specify your server
environment.
# Uncomment the advanced features you want to use.
# Transfer this file to a server as part of setting
up a new server
# or whenever the server environment changes.
```

**# (This file specifies an ATT Dataport modem and a
speed of 38400.)**

```
connect speed=38400  \
script=att_dp
#  dialback \
#  telephone=99999 \
#  include=connect dialback
```

 # Example of how to setup alerts:

```
# The port must be specified with Answer as a Port
option on the
# management station.
ms1 \
   telephone=99999 \
   include=connect
```

**# Example of how to set up alerts with two telephone
numbers:**

```
# This is useful with multiple telephone lines if the
first telephone
# number is busy.
ms2 \
   telephone=99999 \
   include=connect
```

39

Editing the Remote Server Script File

This file contains the communication sequence that sets up communication between the modem, the phone lines and the remote server. The setup information is available in the modem documentation, it is often referred to as the chat protocol. To edit the information:

1. Select Scripts from the Options menu. Then select Open. The Open Script dialog box displays.

2. Select the srvm.scr file name and click OK.

3. The SRVM.SCR screen displays.

4. Make sure the modem type you are using is in the screen attributes section of the window. If not you will need to edit the script file.

5. Save the file.

The Script Name information will reflect the information entered in the rs_pm.ini file. Your required modem type should appear in the script name list. If not, see Appendix B or your modems documentation and add the protocol string to the rs_pm.ini file.

The default default.scr file supports the following modems:

- Hayes Accura 56K External Faxmodem
- Zoom/Faxmodem 56K External Faxmodem
- ATT Paradyne - COMSPHERE 3820 setups
- ATT DataPort 14.4 FAX Modem
- ZOOM VFX V32BIS
- Hayes 14.4 FAX Modem

Figure 3-3 Editing the SRVM.SCR File
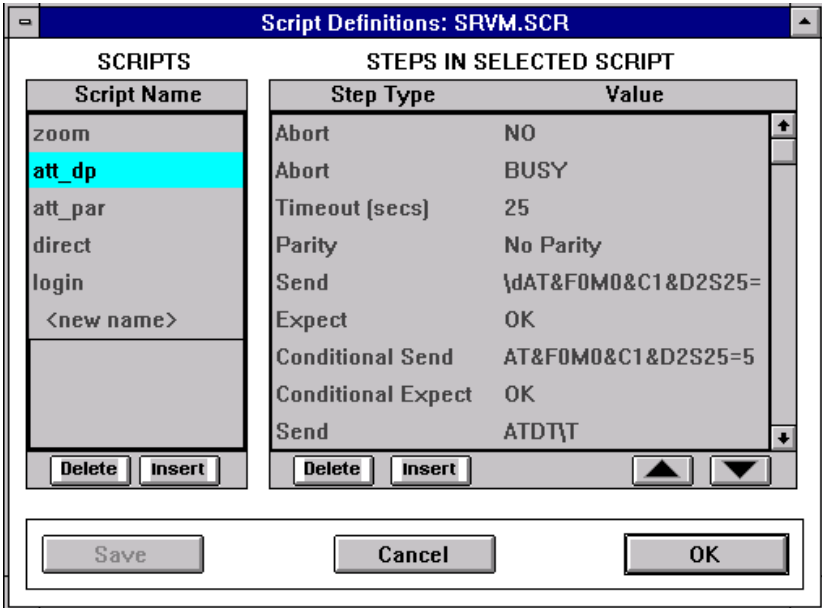
Using the Text Editor to Alter the SRVM.SCR

This file can also be edited using any text editor. The file is located on the Management Station Server in the rs_mgr directory. This file contains the communication sequence that takes place between the modem and the phone lines and computer. The setup information is available in the modem documentation, it is often referred to as the chat protocol. For example, the default settings for a 56K modem is:

```
SCRIPT
# This is an example of a Scripts file.
# It is used to initialize modem setup script:
# Hayes Acura 56 & Zoom 56
hayes-zomm56 ABORT NO ABORT BUSY TIMEOUT \
25 "" P_ZERO "" \dATE0M0&C1&D2S0=1 \

OK-ATE0M0&C1&D2S0=1-OK ATDT\T TIMEOUT 40 CONNECT
```

Editing the Management Station Server Default Macro File

The default.mcr file contains the initialization string that goes with the modem used in the current setup. You are not actually changing anything in this script during setup. Review the script to make sure your chosen modem appears as one of the items in the Macro Name pane.

1. Open the Remote Server Manager by double clicking on the RSM Manager icon.

2. Click on the Options window of the window. Choose macros and then open. Click on the default.mcr file The default.mcr screen displays:

Figure 3-4 Editing the Default.mcr File

.
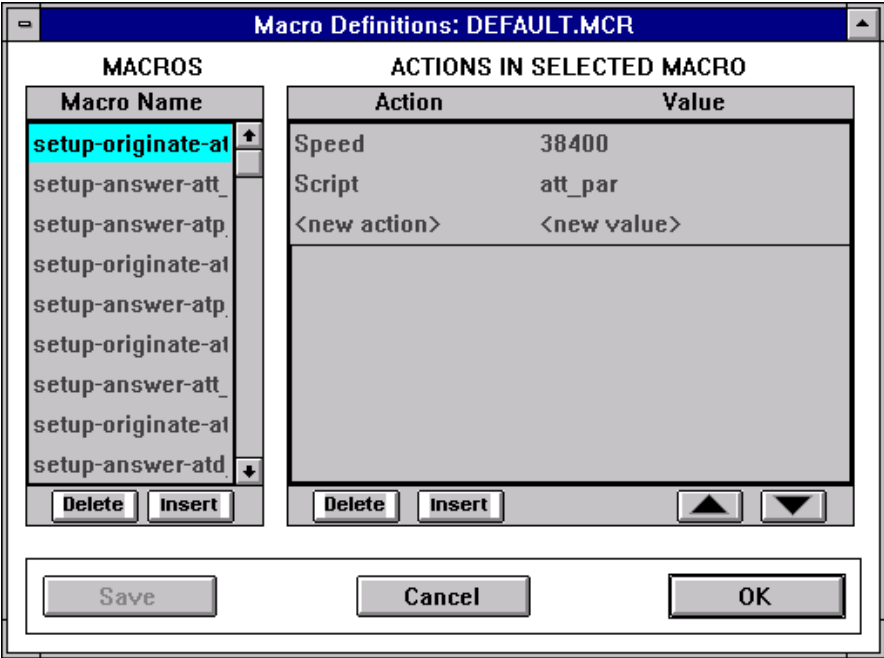
Using the Text Editor to Alter Default.mcr

The default.mcr file can also be edited using the text editor. The file is located on the Management Station Server in the rs_mgr directory

This file contains the initialization string that goes with the modem used in the current setup. For example, the default settings are:

```
MACRO
# This is the file used by the Port Manager and Link
Manager to obtain
# entries referenced either as startup arguments or
from the application
# setup arguments.
# When starting the Port Manager reference these
entries to initialize
# your modem at the appropriate speed
#
# ATT Paradyne - COMSPHERE 3820 setups
# default to 38400 bps
setup-originate-att_par speed=38400 script=att_par
setup-answer-att_par  speed=38400 script=att_par

setup-answer-atp_57 speed=57600 script=att_par
setup-originate-atp_57 speed=57600 script=att_par
setup-answer-atp_19 speed=19200 script=att_par
setup-originate-atp_19 speed=19200 script=att_par
```

Editing the Management Station Server Default Script File

Open the Remote Server Manager by double clicking on the RSM Manager icon. You are not actually changing anything in this script during setup. Review the script to make sure your chosen modem appears as one of the items in the Script Name pane.

1. To review the default.scr file, click on the Options window of the window.

2. Open the default.scr script. file. The DEFAULT.SCR screen displays.

Figure 3-5 Reviewing the DEFAULT.SCR
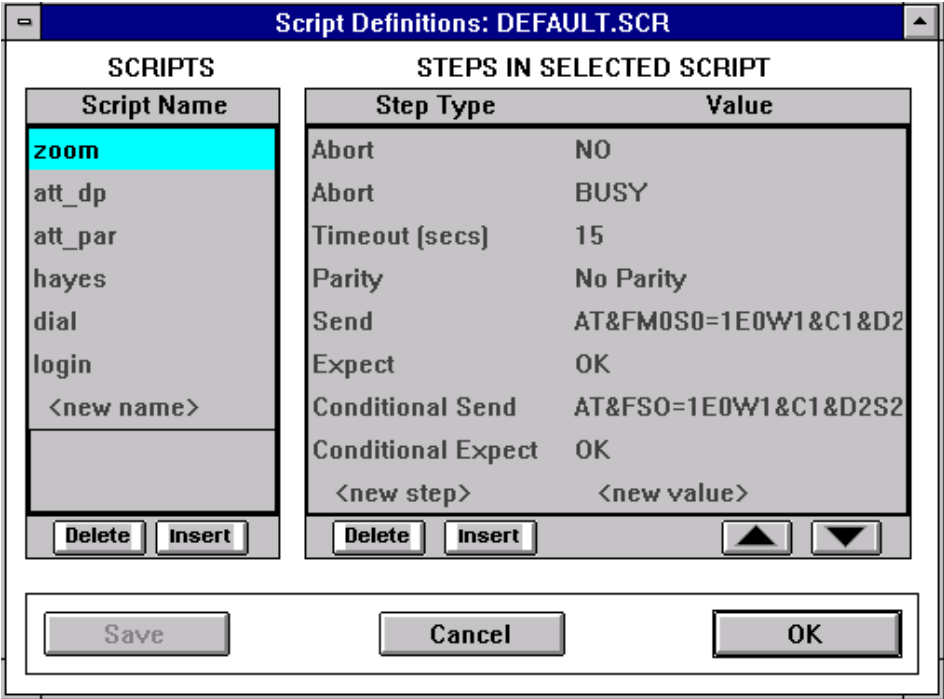
Editing the Events File

The events file is the heart of the RSM. By editing the svrm.evt file or through the management station you can assign the parameters that will trigger the controller to send event alerts back to the management station. To access the events file:

1. Choose Options from the RSM main menu and select Events.

2. Choose the svrm.evt file from the window.

3. The items in the window are editable.

NOTE: For initial installation DIGITAL suggests you leave the default (current) settings. See the Remote Server Manager Management Station Software User's Guide for more information on changing the event file settings.

Figure 3-6 Reviewing the DEFAULT.EVT
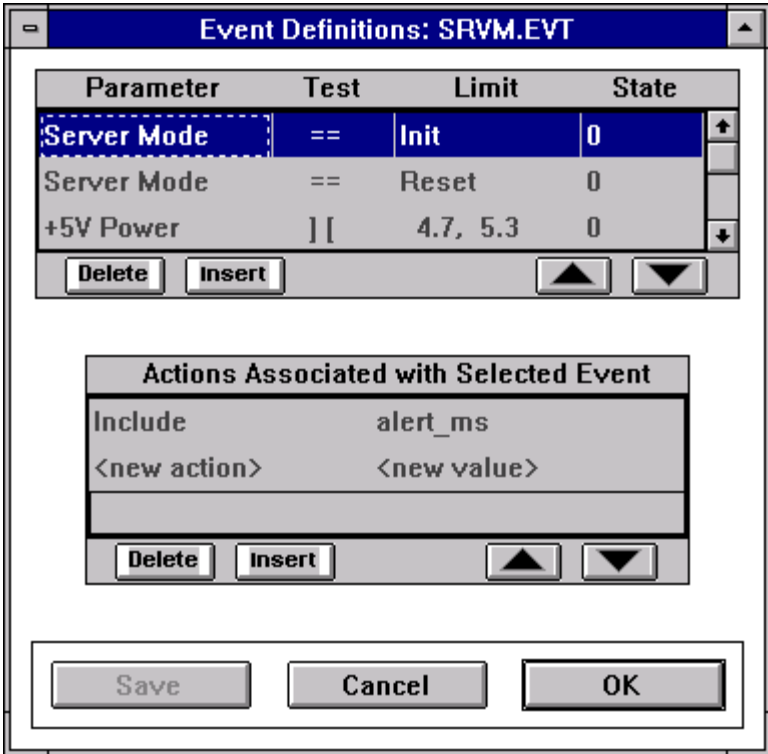
Changing User Settings

You can use the Preferences window to change the main console settings. Changes include display features, security and server attributes.

Choose Preferences from the RSM Main Menu. The Preferences screen appears. Default settings display.

NOTE: The items in the window are editable. For initial installation DIGITAL suggests you leave the default (current) settings.

See the *Remote Server Manager Management Station Software User's Guide* for more information on changing the event file settings.

Figure 3-7 Editing Preferences
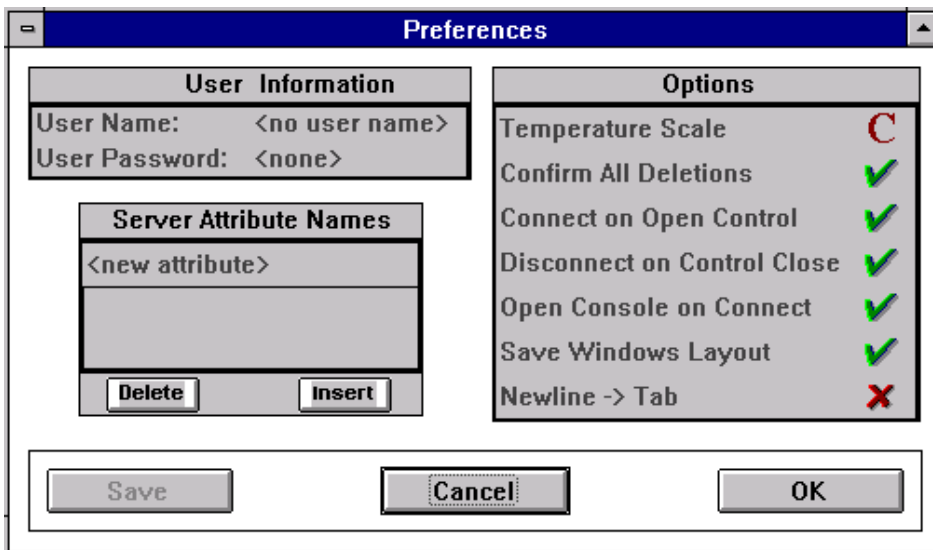
Adding a Pager Number

When using paging information in place of the telephone information
the pager number. All paging systems communicate differently,
therefore test your settings before going to a production setting.

Adding Paging to the srvm.evt File

In the srvm.evt event file add the pager voltage values:

```
0 temperature > 30 power=off
0 server_mode == power_off state=1 log=1
include=alert_beep
1 v_5 > 10 state=0 include=alert_ms
```

Adding Paging to the srvm.mcr File

Change the wait periods in this macro file to enable the phone to wait as
the system picks up the call. The following is only an example. Your
paging service may require different time lapses (more commas etc.).

```
connect_beep speed=38400 script=att_beep
alert_beep stop_on_success=yes stop_on_failure=no
alert stop_on_failure=yes
stop_on_success=no
telephone=1212333444w,,,,,,,1234,,,,111 include
connect_beep
```

Adding Paging to the srvm.scr File

Modify the script file to tell the modem it is not dialing another modem.
Do this by adding a No Wait on Connect to the srvm.scr dialing
instructions and turn on the sound to listen to the modem as it dials.

```
att_beep ABORT NO ABORT BUSY TIMEOUT 120 "" P_ZERO ""
ATM1&C1&D2 OK-ATM1&C1&D2-OK ATDT\T
```

Adding a New Server

Once you have edited the files required to transfer information between the remote server and the management station, it is time to add the names of the remote servers to the management station.

The select window displays the servers that are known to the management station. Add at least one server to test the current settings. You must add a server whose setup corresponds with the files you have just edited.

1. Select Setup New from the Functions menu on the RSM main menu. The Setup for New Server window displays.

2. Enter the appropriate information in each field. Table 3-2 explains the fields of the Server Names and Attributes Window, Connection Actions and Defaults for File Transfers windows that make up the setup screen.

Figure 3-8 Setting up a New Server
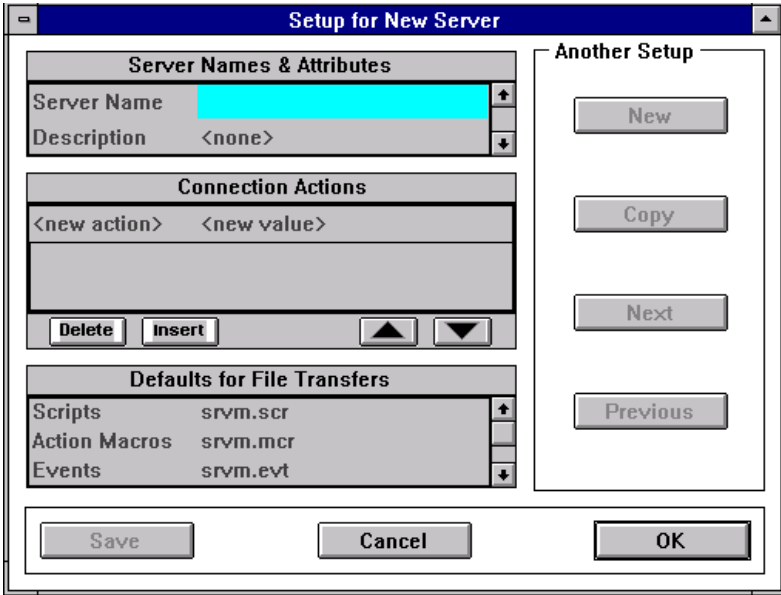
Table 3-2 Server Names and Attributes

Field	Description
Server Name	The unique server name for each remote server. The server name ("jerry" in this example) can be up to eight characters long and is used to associate any particular events and event alerts with the server. If you enter a duplicate server name, RSM displays an error message.
	RSM is case-sensitive. When you enter information in this window, you can define default file names for any management station transfer files, or any server files.
	This name has no bearing on previously assigned server names. DIGITAL recommends using the assigned name, but it is not required.
Description	The description is optional. The description must be less than 64 characters. If you enter a duplicate description, RSM displays an error message.
Time Zone	Time Zone indicates the remote server's time zone. The default is the management station's time zone.
	NOTE: If there is a problem keeping current time between the server and management station in different time zones when running on a Windows NT system, use the standard zone instead of the Windows NT expanded time zone names (for example: Lima, Peru, vs. Eastern time, use Eastern).
	The field "Zone" is a user-defined Server Attribute Value that was entered in the Preferences window. A user-defined value can be entered to facilitate remote server management and operations. If an attribute is not defined (in the Preferences window), this field is blank. A Server Attribute Value can contain a maximum of 30 characters.
Default Console	VGA
System Type	Choose the type of server being managed. Available server types are:
	Intel Server — Supports full RSM functionality
	XL Server 466— Supports full RSM functionality except for cold boot

Connection Actions

The Connection Actions window displays a list of actions used to connect the management station to a remote server. The connection window is blank when doing a direct connect to a new server.

Connection actions are an ordered list of actions that the RSM uses to connect to a remote server. You can enter the connection actions in the Connection Actions window and refer to the RSM default macro and script file entries when using Include or Script Actions respectively.

1. Select <new action> from the Connection Actions pull-down menu.

2. Select telelphone.

3. Select <new action>.

4. Select include=dial.

Software Configuration

Figure 3-9 Adding Connection Actions


```
                           Connection Actions
 Include      ± <new value>
 Include
 Port
 Retry
 Script
 Speed
 Telephone



 Delete    Insert                                        ▲   ▼
```
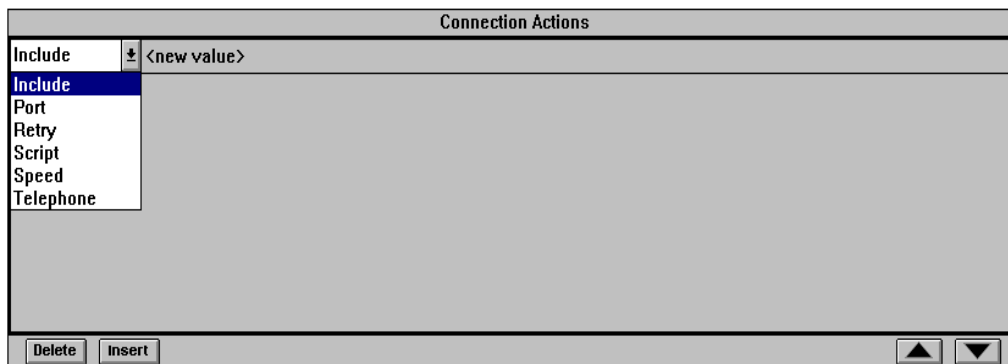
NOTE: *Refer to the default macros file (*default.mcr*), and the default Script file (*default.scr*), in Appendix B for examples of the Modem connection information.*

NOTE: *When using a null modem do not enter any connection actions.*

Telephone and **Include** are the only required fields for initial installation. Table 3-3 lists all the available connection actions.

Table 3-3 Connection Actions Descriptions

Connection Action	Description
Include	Executes a macro from the default macros file (default.mcr) that defines a set of connection actions. Enter a macro name to identify the macro.
Port	Lists the ports supported by RSM. The Port pull-down menu lists the ports that RSM can use and also lists Auto. Auto allows RSM to let the Port Manager choose the next available originating port (default=COM1).
Retry	Automatically attempts to connect a failed connection for the number of iterations specified.
Script	Adds a line in a script file consisting of a dialog of messages to send and expected responses. Enter a name to identify the line, plus an optional file name.
Speed	Displays the serial port baud rates for modem to port connection. Values are: 300, 1200, 2400, 4800, 9600, 14400, 19200, 38400, and 57600 (default=2400).
Telephone	Add the remote server modem telephone number here. Special characters can be included to specify extra features, such as pauses, selecting pulse or tone dialing. The telephone number must include all the digits needed to reach the server through from the management station telephone line.

Setting Defaults for Files Transfers

The Transfer window is used to transfer RSM configuration files from the management station to the remote server. Files can also be transferred from the remote server to the management station.

NOTE: Configuration files refer to the files needed to access and control remote server monitoring and configuration.

Figure 3-10 Reviewing Files for Transfer
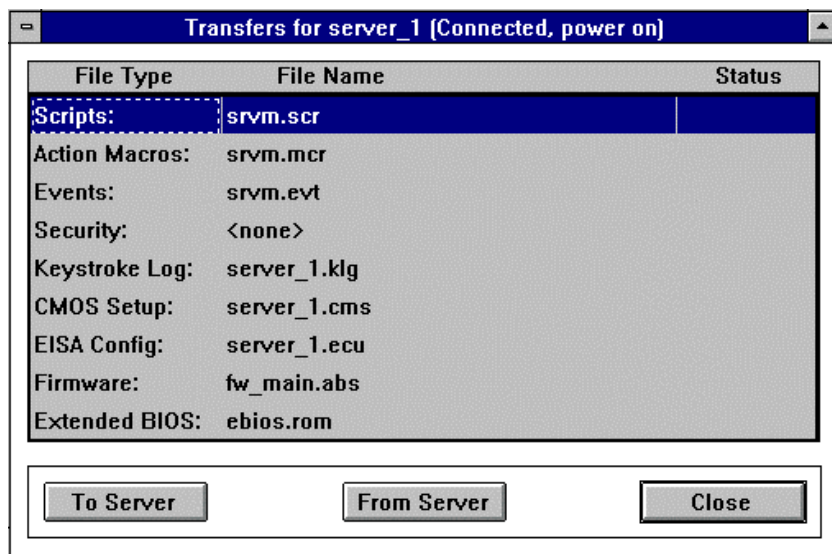
The RSM file names default from the Servers Setup screen. You can modify the default files or enter your own user-defined files and file names.

Table 3-4 describes the default file names and memory options.

Table 3-4 Default Server File Descriptions

Server File or Memory	File Name	Description
Scripts	srvm.scr	Defines the communication dialog used to make a connection between a remote server and a management station, or to send an event alert to a pager.
Action Macros	srvm.mcr	Defines macros that define event and communication actions.
Events	srvm.evt	Defines events and RSM's actions that take place when each event is triggered.
Security	srvm.sec	There is no Security File. Security is optional. You must customize it with Users, Passwords, and Permission Levels.
Keystroke Log	Server.klg	Contains the specific characters typed on the keyboard since the last reset. This file holds up to 128 characters and discards any additional keystrokes beginning with the oldest character. You can transfer the Keystroke Log file to a management station only.
CMOS Setup	Server.cms	Specifies the binary contents of CMOS memory. When you transfer CMOS memory to your management station, RSM copies the entire contents of CMOS setup memory. When you transfer this file to a server, RSM copies everything in CMOS setup memory except the time (Time contains zeros.)
EISA Configuration	Server.ecu	Specifies the binary contents of EISA configuration memory.
Firmware	fw_main.abs	Contains the firmware for the controller.
Extended BIOS	ebios.rom	Contains the BIOS extension program for the controller.

Connecting to a Remote Server

Make the connection to the remote server from the management station application to a remote server by pressing the Connect button on the RSM Select window.

1. Choose the RSM group icon from the Windows NT Program Manager. The RSM program group window displays.

2. Double click the RSM icon. The RSM window displays.

3. Select the Remote Server Management console icon. The Select screen displays.

4. Highlight the server name from the Server Directory.

5. Click the Control button.   The Control window for the highlighted server displays.

Figure 3-11 Selecting a Server

Server	Alert	Session	Last Contact	Description
new			05/24/95 17:03:00	new server name in NYC
new1			05/24/95 15:52:31	called "server_1"
new2				
server_1			05/25/95 09:18:32	Example setup for a server c

Select / **Server Directory**

FILTERS:

Attribute	Test	Value	Keep/Drop Enable
<new filter>			

Delete   Insert   ▲ ▼

Control   Setup   View Status
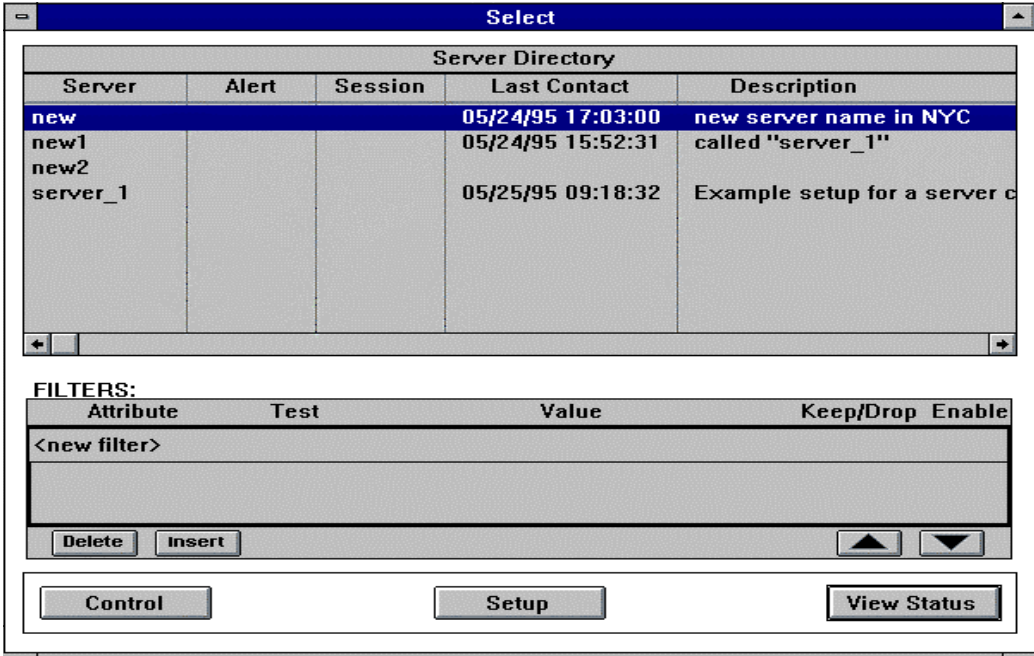
NOTE: Do not double-click the Connect button. The dialog button changes to Abort during the connection process, and the second click aborts the connection process.

Figure 3-12 Connecting to the Server
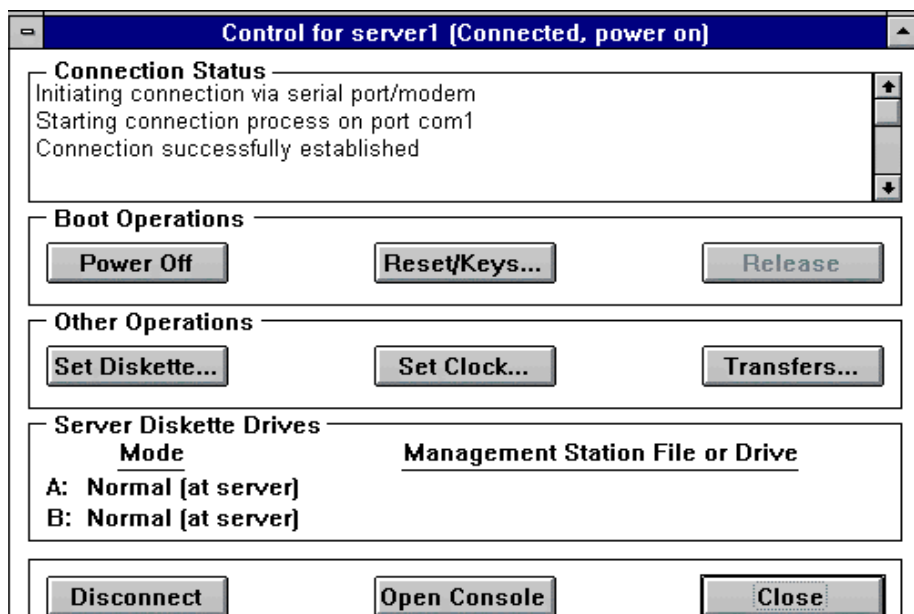
The management station will dial out to the remote server, and attempt to make a connection. Watch the Remote Server Port Manager window or the Connection Status pane for connection status information.

NOTE: If the firmware on the RSM controller is an older version than on the management station, the RSM application automatically updates the firmware during the first connection. The application transfers the new firmware files. Once complete, the remote server is rebooted¾as a result, the connection is lost. When this occurs, reconnect to the remote server.

WARNING: If the remote server modem configuration is incorrect, it could result in the old version of the firmware being deleted from the remote server before the new firmware can be transferred. Call your DIGITAL service representative if you believe this has happened.

Table 3-5 shows the messages that will appear in the Remote Server Port Manager. If you receive a Connected or Connection successfully established message in the Port Manager or Connection Status pane, the remote server is now available for interaction.

Table 3-5 Connection Status Messages

Message	Description
Connection successfully established	Message after a successful connection.
Connection failed due to: xxx	Message after a connection fails.
	xxx lists the reason for the failure. Most failures result from a time-out or carrier failure. Just before a failure message displays, a statement from the Connection script displays explaining where the connection failed.
Connected or Not Connected	Response provided to the management station when in the Setup, Status, Control, Console, and Transfers windows title bar.

Port Manager

The RSM application includes the Port Manager. The port manager is a viewing screen that posts event alerts – messages from the remote servers about their health and well being. This window must be kept open view incoming messages. Messages may be lost if this window is closed.

Transferring Files

Once the files have been edited, and the connection to the remote server has been tested, the remote server files and the event file must be transferred to the remote server's controller.

To transfer files to the remote server, use the Transfer window Default File Names field to enter names for transferable configuration files and memory.

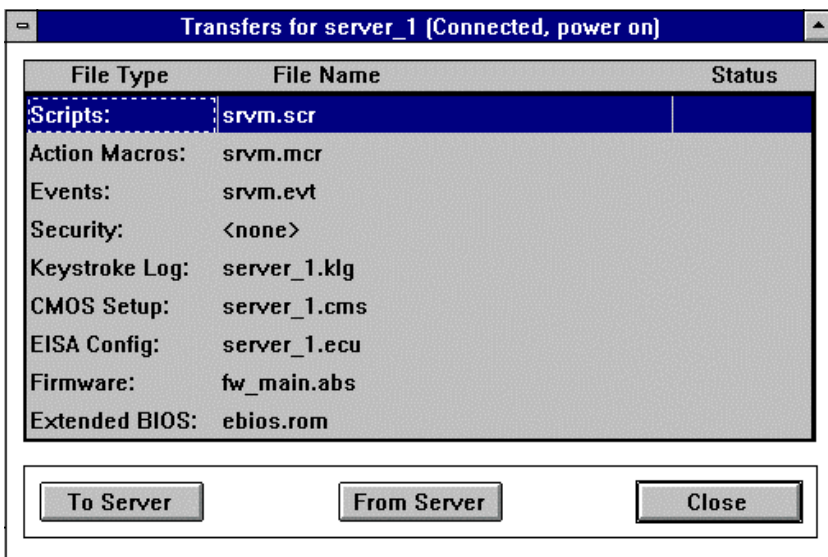*NOTE: This information is stored as files on the management station. On the remote server the information is stored in memory. You can transfer this information to and from the files on the management station and the server's memory (excluding keystrokes).*

The Transfer window is used to transfer configuration files from your management station to the remote server and from the remote server to the management station.

Figure 3-13 Transferring Files

```
┌─────────────────────────────────────────────────────────────────┐
│ [─]          Transfers for server_1 (Connected, power on)    [▲] │
├─────────────────────────────────────────────────────────────────┤
│    File Type          File Name                    Status        │
│ ┌─────────────────────────────────────────────────────────────┐ │
│ │ Scripts:           srvm.scr                                  │ │
│ │ Action Macros:     srvm.mcr                                  │ │
│ │ Events:            srvm.evt                                  │ │
│ │ Security:          <none>                                    │ │
│ │ Keystroke Log:     server_1.klg                             │ │
│ │ CMOS Setup:        server_1.cms                             │ │
│ │ EISA Config:       server_1.ecu                             │ │
│ │ Firmware:          fw_main.abs                               │ │
│ │ Extended BIOS:     ebios.rom                                 │ │
│ └─────────────────────────────────────────────────────────────┘ │
│ ┌──────────────┐      ┌──────────────┐      ┌──────────────┐    │
│ │  To Server   │      │ From Server  │      │   Close      │    │
│ └──────────────┘      └──────────────┘      └──────────────┘    │
└─────────────────────────────────────────────────────────────────┘
```

NOTE: You must be connected to a remote server to make a transfer.

RSM checks to make sure each file exists and is valid (proper directory, opened, etc.) before transferring it to or from a remote server. If you attempt to transfer an Event, Action Macro, Script, or Security file larger than 2K to a server, RSM displays an error message and does not transfer the file.

Transferring a blank Security file to a server disables RSM security. RSM displays a warning message that transferring a blank security file to a server enables all users to perform all RSM functions. Therefore, to enable RSM security, at least one user must have Administrator privileges.

Configuring Multiple Remote Servers

To configure multiple remote servers, repeat the processes described above changing the file names to the names of the servers.   If the servers are identically formatted (using the same modems and operating systems, keyboards) and you want them monitored in the same way, you can use the same configuration files for each of the different remote servers. Use the copy function in the setup window to copy the files you have already edited to the new servers.

RSM does not limit the number of servers to which you can connect. The management station resources do impose a limit on the maximum number of simultaneous connections.

Management station resources that limit telephone connections include the number of telephone lines, RSM's serial ports and/or multiplexors, and modems. If resources are dedicated to RSM when a connection is active or if the phone line is being used for callback when an event occurs, the connection status indicates "waiting for serial port to become available". This mode will continue until event alerts are free or another server disconnects.

Installation Troubleshooting *4*

This section details some of the more common problems that may be encountered with the RSM implementation. It includes troubleshooting for:

- LED status
- General server problems
- Other RSM related errors
- Modems
- Password reset

RSM LED Status

After installing the controller and applying power, observe the LED on the controller through the server vents in the rear of the unit.   If after the completion of the self-test phase (about 30 seconds), the LED is in any state other than a steady *green,* refer to the table below for the possible cause and suggested solution.

Table 4-1 Troubleshooting LEDs

Symptom	Possible Cause	Suggested Solution
Orange	On-board firmware initializing	Wait one minute, then reset the controller. If problem persists, perform reset of customization files.
Red	On-board diagnostic error	Power down and up, following the correct power-up sequence. If failure repeats, replace the controller. Check serial number on card. Controllers ending in -AS have a high rate of failure.

Server Troubleshooting

The following table lists some other possible situations that may occur during installation.

Table 4-2 Server Troubleshooting

Symptom	Possible Cause	Suggested Solution
Server will not power up	RSM switch installed No RSM power	Power up the RSM controller first.
Server will not boot	Reset cable may be incorrectly installed	Check setting of the reset cable.
Cannot dial-up remote server from remote server management station.	Power applied to controller before modem	Repeat the power-on sequence. Also, check modem phones lines and connections.
EISA setup error on server during boot up.	RSM configuration file.	Add RSM configuration file to SCU.

CONTINUED

Symptom	Possible Cause	Suggested Solution
Keyboard not responding: locked	Keyboard controller revision too old.	Keyboard controller should be rev A. Replace keyboard. To keyboard controller revision: Open the RSM software Select server Choose Functions: View Status Review SW Versions at bottom right of screen – f.ww:e.bb.d:k where k=keyboard controller revision.
System crashes when working with timezone fields	The list of Timezones to choose from was simplified and eliminated the bug of crashing on specific Timezones in RSM 1.0.	Install the new version of RSM configuration firmware.
Server Application May Hang After Transfer of Extended BIOS	The Transfer of a new Extended BIOS to the Remote Server Manager controller while the Server is not dormant (i.e. is running programs) may cause erroneous results.	Remote Server Manager Extended BIOS should be transferred when there is no activity on the server. Reset the server.
Server cold boot operations hang	The server setup window has a new attribute Server Type to distinguish the XL Server from others. When used, cold-boot operations will be disabled on that server.	Load new version of RSM firmware (!dec23f0.cfg)

CONTINUED

Symptom	Possible Cause	Suggested Solution
Entries appear in the NT Event Monitor for i8042 when using the DIGITAL Windows Enhanced keyboards. (Part number PCXLA-NA) Another symptom, may be that the keyboard hangs.	The Windows Enhanced keyboards are not compatible with RSM. You have **two** choices for a solution.	**Solution 1:** Replace the keyboard with a Windows Enhanced model (Part number PCXLA-NA), and transfer the RSM firmware file "fw_kmain.abs" to the remote Server. Perform a reset of the firmware on completion of the transfer to insure the newly transferred image is functioning. **Solution 2:** Install the newest firmware setup.exe. The new release disables the keyboard. Re-install the keyboard into the main logic board connector instead of into the RSM since this firmware supports the use of remote console keyboard strokes without the keyboard being connected. <u>Functionality Loss with this solution:</u> - No Keystroke Log - No Keystroke Count - Synchronization of Keyboard LOCK mode with Management Station Keyboard will be lost. Determine which firmware is loaded on the remote server by doing the following: Open RSM software and Select the server. Choose Functions: View Status. Review SW Versions at bottom right of screen f.ww:e.bb.d:k where f.ww = 3.48 = firmware with the ability to interact with the keyboard (create logs etc.) f.ww = 3.49 = firmware without the ability to interact with the keyboard. In this case the keyboard status line item located above the SW Versions should indicate KBD Unplugged.

Other Troubleshooting

Table 4-3 Other Troubleshooting

Error	Description	Possible Solution
Event alerts Arrive With No Tag Value	The Log entries require a numeric tag value that is meant to be used as a sort key or a better determination as to the event that occurred.	Recommendation: Precede the "Send Alert" action with: "log=tag" action.
Connection Status Reports "Failure to authenticate"	If either the User Name or Password is entered in the Preferences window, you can only connect to a Remote Server that has a corresponding entry in its previously transferred Security File.	Clear both fields in your preferences window and try reconnecting again. Consult with your Security Administrator.
Parsing Error Message on Transfer of Event File	The names referenced in the "include" and "script" actions are not checked for validity until the transfer of these files is made to the Remote Server. If there is an inconsistency between the files, a parsing error will be reported at the completion of the file transfer to the Remote Server.	Check consistency between files. Correct any inconsistencies and retransfer the updated files to the remote server.
Closing the Port Manager Forces NT Warning	When closing the Port Manager window, a warning message from NT appears to insure that you really want to close the application.	If you want to close the application, choose the "End Task" push button. If you do not want to close it, choose "Cancel". The "Wait" push button will have no effect on closing the application.

CONTINUED

Error	Description	Possible Solution
Server Screen Saver does not kick in with RSM	To insure RSM keyboard cable connections are in place commands are sent. The NT4.0 Screen Saver takes this as keyboard activity and the screen saver never kicks in.	Use a self imposed screen saver, or turn off the monitor.

Modem Troubleshooting

Table 4-4 Modem Troubleshooting

Modem	Possible Problem
Zoom Modem Firmware Problems	If you are using the Zoom V32 FAX modem make sure you have Revision 1.410A firmware or greater. Issuing the "ATI3" command to your modem from a terminal emulation program can check the firmware revision level. Contact ZOOM Telephonics for more information
Com1 BUSY Remote port manager	May need to update 5 files; default.mcr, default.scr, RS_PM.ini, SRVM.MCR & SRVM.SCR:
	a. Need to make an entry in your default.mcr file for us-robotics. also make the entries look similar to the existing ones.
	b. Add an entry in default.scr for us-robotics. Use Hayes entry as a sample & check your modem manual for proper US Robotics commands.
	c. Change the RS_PM.INI file to have "com1=us-robotics:oa.
	d. Change the SRVM.MCR & SRVM.SCR file in a similar fashion.
	e. After making the connection download the files in step d.

CONTINUED

Modem	Possible Problem
AT Modem does not respond with OK when you enter one of these AT commands: ATE0 - echo off AT&C1 - Carrier follows remote AT&D2 - DTR drop causes hangup ATS0=1 - Auto Answer is on	Override the default value found in the RSM software with a downloaded RSM script file that contains the entry: setup-modem "" P_Zero "" ATXXXXXXXXXX OK where XXXXXXX are the modem commands that carry out the same function as described for your modem type. The only way to get the script loaded is you need to do it via a modem that does connect to the controller or a null modem cable connection.
Modem defaults to initial factory settings.	Modem has not saved settings to NVRAM. Save settings to NVRAM. Some modems do not permit information be saved to NVRAM. One known modem is the Diamond Supra Express 56K.

Password Reset

The controller is shipped from the factory with the security features disabled. Normally the security features on the controller are set from the management station. The security modes and passwords, which are saved in the non-volatile memory on the controller, are restricted to authorized personnel only. Once the access control passwords have been set and locked, the controller cannot be accessed without the proper passwords.

If the passwords have been lost, you can reset the controller to factory settings and delete the compromised event, macro, and script files by doing the following:

1. Power down the server and remove whatever panels or covers you need to access the EISA bus on which the controller has been installed.

2. Locate the controller.

3. Remove the power cable from the controller. (A Prioris XL server does not have a power connector.)

4. Locate connector J10 on the controller. Move the jumper from pin 5 and 6 and place it over pins 9 and 10 as shown below.

front edge of installed board
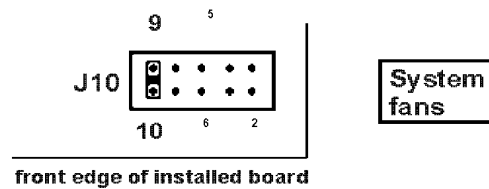
5. Reconnect the power cable to power on the controller. On XL servers, replace any panels or covers that you removed earlier and power on. Before the operating system is loaded, power back down.

6. Observe the LED on the controller. The LED should be a steady green.

7. Disconnect the power cable from the controller. (On Prioris XL servers, remove the panel as in step 1 above.)

8. Remove the jumper from pins 9 and 10. Place it back over pins 5 and 6.

9. Reconnect the power cable, replace any panels or covers that you removed earlier, and return the server to normal service, being sure to follow the power-on sequence shown in Chapter 2.

10. Select no user or password in the preference Window. Refer to the Remote Server Management Station User's Guide to set the password.

11. You must also restore all the customized data in the flash file by downloading the event, script, macro, and security files from the management station.

Hardware Specifications A

Controller Specifications

Table A-1 Specifications

Attribute	Specification
Slot requirement	One industry-standard EISA bus slot
On-board processor	16 MHz 80C186EB
FLASH memory	256 KB
Main memory	512 KB SRAM
Server console monitor and keyboard monitoring	6-pin DIN for keyboard
Internal monitoring sensors	Integrated voltage and temperature
External monitoring sensors	Two inputs: normally open for switch closure
EISA bus signal monitor	Noninvasive monitoring of 16 critical EISA bus signals
Status indicator LED	Red, orange, or green
Serial interface specification	Standard DB25 RS-232, V.24 Baud rate: 300-57.6 Kb (Async)
Operating voltage	5V (+5%, -3%)

CONTINUED

Attribute	Specification
Operating current	2.0 A maximum
Power supply noise/ripple	50 mV maximum p-p
External power	5V (+5%, -3%), 0.5A maximum
Dimensions	12.7 cm (5.00 in) high 1.87 cm (0.74 in) wide 34.04 cm (13.40 in) long
Relative humidity	Operating: 20% to 80% Nonoperating: 5% to 90%
Temperature Range	Operating: 10°C to 40°C (54°F to 104°F) Nonoperating: -10°C to 50°C (14°F to 122°F)
Altitude	Operating: 3,048 m (10,000 ft) Nonoperating: 9,144 m (30,000 ft)

Multiplexors

The number of simultaneous connections depends on the resources available on the management station. These resources include:

- Number of assigned communication ports for RSM originate mode
- Number of telephone lines and modems
- Number of lines supported by the multi-line serial communication card (multiplexor)
- Memory
- CPU speed.

RSM interoperates with most industry-standard multi-channel serial cards with full modem control capability (CTS, RTS, DSR, DTR, RI, DCS, and DCD) and a minimum of 16 bytes of FIFO for line transmitter and receiver. Use any multi-channel cards that have the same characteristics as a NS16550 UART chip.

DIGITAL has tested and verified the following multiplexors with RSM:

Table A-2 Recommended Multiplexors

Manufacturer	Model Number	Number of Lines	Comments
DigiBoard	PC/8e	8	Eight-channel intelligent port communication board for ISA bus.
DigiBoard	EPC/X System	896	Maximum of 64 channels per ISA board using one or multiple EPC/CON-16 concentrators.
			Maximum of 14 concentrators and PORTS modules.

Hardware Specifications

Modem Hints, Tips and Types B

Modem Initialization Strings

Hayes Accura:

```
accura ABORT NO ABORT BUSY TIMEOUT 15 "" P_ZERO ""
AT&FM0&c1&d2S25=5

OK-AT&FM0&c1&d2S25=5-OK
```

U.S. Robotics Courier 28,800 & 14.4 Sportster:

```
usrobot ABORT NO ABORT BUSY TIMEOUT 15 "" P_ZERO ""
AT&F1M0E0V1&C1&D

OK-AT&F1M0E0V1&C1&D-OK
```

Modems Hints, Tips and Types

Multitech 28,800:

```
multi ABORT NO ABORT BUSY TIMEOUT 15 "" P_ZERO ""
ATQ0E1&E1&E4S0=1$SB38400

OK-ATQ0E1&E1&E4S0=1$SB38400-OK
```

Zoom V32bis :

```
zoom ABORT NO ABORT BUSY TIMEOUT 25 ""    P_ZERO ""
dAT&FM0S0=1E0W1&C1&D2

OK-AT&FM0S0=1E0W1&C1&D2-OK ATDT\T TIMEOUT 40 CONNECT
```

ATT DataPort Modem:

```
att_dp ABORT NO ABORT BUSY TIMEOUT 25 "" P_ZERO ""
dAT&F0M0&C1

OK-AT&F0M0&C1-OK ATDT\T TIMEOUT 40 CONNECT
```

ATT Paradyne Comsphere 3820:

```
att_par ABORT NO ABORT BUSY TIMEOUT 25 "" P_ZERO ""
dAT&f0e0m0q2&d2&r0&s1

OK-AT&f0e0m0q2&d2&r0&s1-OK ATDT\T TIMEOUT 40 CONNECT
```

Hayes Acura and Zoom 56K External Faxmodem:

```
hayes-zomm56 ABORT NO ABORT BUSY TIMEOUT \
25 "" P_ZERO "" \dATE0M0&C1&D2S0=1 \

OK-ATE0M0&C1&D2S0=1-OK ATDT\T TIMEOUT 40 CONNECT
```

Modems

DIGITAL has tested and verified the following modems with RSM:

- Hayes Acura 56K External Faxmodem (Model 4703US)
- Zoom/FaxModem extrenal 56K Faxmodem (Model 2849)
- AT&T DataPort 14.4 Modem (V.32bis)
- AT&T Paradyne COMSPHERE 3820 SD Modem (V.32turbo)
- Zoom faxMODEM VFX V.32bis
- Hayes Accura 14.4 + FAX 14.4 external FAX Modem

Most Hayes-compatible modems work with the RSM controller. However, customization of the dialer strings in the *srvm.scr* and *default.scr* files is required.   Refer to your modem documentation for instructions on installing a modem.

Table B-1 External Modem Specifications

Attribute	Specification
Connector	DB25
Protocol	CCITT V.42 (Class 2-4 error control, BTLZ data compression is V.42 bis recommended but not required)

Modems Hints, Tips and Types

RSM Controllers and Cabling *C*

DIGITAL Server Systems

This appendix details the controller installation recommendations and the cabling that may be required for RSM installation.

> **CAUTION**: *DIGITAL Server systems that have PCI on board video controllers in the server are not compatible with the remote console feature of the RSM. An external ISA VGA video controller is required to support the remote console feature.*

Table C-1 Server Controller Installation Recommendations

Server Name	Slot for Installation
DIGITAL Prioris XL Server	Slots 2 through 5.
DIGITAL Prioris HX Server 590/590DP	One of the lower EISA slots and remember to remove jumper J42.
DIGITAL Prioris HX Server 5100MP	One of the lower EISA slots and remember to remove jumper J42.
DIGITAL Prioris HX Server 6000 series	One of the lower EISA slots. Set switch 1 position 5 to OFF
DIGITAL Prioris ZX Server 5000MP	One of the lower EISA slots. Remove Jumper J19 located directly above the RSM control cable on the main logic board daughter card between the fan and front bezel assemblies.
DIGITAL Prioris ZX Server 6000 MP	One of the lower EISA slots and turn switch 5 on the J35 MLB switch block to OFF (down).
DIGITAL Server 7100 Series	One of the lower EISA slots. Remove Jumper J19 located directly above the RSM control cable on the main logic board daughter card between the fan and front bezel assemblies.
DIGITAL Server 5100/5200 Series	One of the lower EISA slots and turn switch 5 on the J35 MLB switch block to OFF (down).

Reset Cable Kits and Installation

Table C-2 Reset Cable Installation and Kit Part Number

Server Name	Kit Part Number	Reset Cable Installation Instructions
DIGITAL Prioris XL Server Series	FR-PCXCK-AB	Connect the reset cable to the controller (**F** on Figure 1-1) and to the pins labeled **RSM Conn (J40)** on the main logic board. This 3-pin connector is located on the right-hand edge of the main logic board directly across from EISA slot 1. Pin 1 is on the left. Refer to the server user's guide if you need further assistance in locating the connector.
DIGITAL Prioris HX Server 590/590DP	FR-PCXCK-AE	Connect the interconnect cable to the controller (**F** on Figure 1-1) and to the 12-pin connector **DSM Conn (J40)** on the main logic board. Also, remember to remove jumper **J42**.
DIGITAL Prioris HX Server 5100MP	FR-PCXCK-AE	Connect the interconnect cable to the controller (**F** on Figure 1-1) and to the 12-pin connector **DSM Conn (J40)** on the main logic board. Also, remember to remove jumper **J42**.
DIGITAL Prioris ZX Server 5000MP Series	FR-PCYCK-AF	Connect the interconnect cable to the controller (**F** on Figure 1-1) and to the 12-pin connector **J18** on the fan and control controller. Also, remember to remove jumper **J19**.
DIGITAL Prioris ZX Server 6000MP Series	FR-PCYCK-AE	Connect the interconnect cable to the controller (**F** on Figure 1-1) and to the 12-pin connector J46 on the main logic board. Also, remember to set switch 5 on the J35 switch block of the MLB to OFF (down).
DIGITAL Prioris HX Server 6000 Series	FR-PCYCK-AE	Connect the interconnect cable to the controller (F on Figure 1-1) and to the 12-pin connector **J29** on the main logic board. Also remember to set switch 1 position 5 to OFF (down).

CONTINUED

Server Name	Kit PN	Reset Cable Installation Instructions
DIGITAL Server 7100 Series	FR-PCYCK-AE	Connect the interconnect cable to the controller (**F** on Figure 1-1) and to the 12-pin connector **J46** on the main logic board. Also, remember to set switch 5 on the **J35** switch block of the MLB to OFF (down).
DIGITAL Server 5100/5200 Series	FR-PCYCK-AE	Connect the interconnect cable to the controller (**F** on Figure 1-1) and to the 12-pin connector **J29** on the main logic board. Also, remember to set switch 1 position 5 to OFF (down).

Pin Assignments

Table C-3 Controller Connectors

Connector	Type
Modem	25-pin D type (male)
Keyboard input	6-pin mini-DIN
Keyboard jumper	4-pin mini-DIN
Reset	12-pin 2x6 array

Table C-4 RS232 Modem Control Port Signals

Pin	In/Out	Function
1		Ground
2	Out	Transmit Data
3	In	Receive Data
4	Out	Request To Send
5	In	Clear To Send
6	In	Data Set Ready
7		Signal Ground
8	In	Carrier Detect
9		Signal Ground
10	Out	Led 0 Driver Output
11	In	Digital External Input 1
12	In	Digital External Input 2
13	Out	Control Output 1
14	Out	Control Output 2
15	In	Transmit Clock Input
16	In	Analog Input
17	In	Receive Clock
18	In	Terminal Data Receive
19		Signal Ground
20	Out	Data Terminal ready
21	Out	Console Data Transmit
22	In	Ring Indicate
23	Out	Terminal Data Transmit
24	Out	Transmit Clock Output
25	In	Console Data Receive

RSM Controllers and Cabling

Table C-5 Controller Keyboard Input Signals

Pin	In/Out	Function
1		Keyboard Data In
2		nc
3		Signal Ground
4	Out	VCC (+5vdc)
5		Keyboard Clock In
6		nc

Table C-6 Controller Reset Signals

Pin	In/Out	Function
1		Signal Ground
2	In	3.3 volt monitoring
3		nc
4		nc
5		Signal Ground
6	Out	Host Server DC Enable L
7	Out	Auxiliary +5V
8		nc
9		Signal Ground
10	Out	Host Server Reset Pulse (Low)
11		Signal Ground
12	Out	Host Server Reset Pulse (Low)

Cable Specifications

Table C-7 RS232 Direct Connect Cables—DB25 to DB9

DB25 Female	DB9 Female
1	gnd
2	2
3	3
4	8
5	7
8	Not used
7	5
6	4
20	1

Table C-8 RS232 Direct Connect Cables—DB25 to DB25

DB25 Female	DB25 Female
1	gnd
2	2
3	3
4	4
5	5
6	6
7	7
8	8
20	20

Index