

# DIGITAL StorageWorks

## Installing the EMU Microcode

The microcode resident in the EMU memory controls all the ultra SCSI RAID enclosure (BA370-series) EMU operations. Proper operation of the subsystem requires that all EMUs have the same revision level microcode. Upon system startup, the master EMU polls the expansion EMUs to ensure they have the correct microcode. When the microcodes are a different revision level, the master EMU automatically downloads the microcode over the EMU communications bus.

You always load microcode upgrades from a PC to the *master EMU*. To download the microcode you connect the PC to the *center UART connector* and use a communications program, such as PROCOMM.

---

### Note

---

If you do not use PROCOMM, the prompts, displays, and responses may be different. Refer to the user documentation for the proper procedures.

---

## Prerequisites

You require the following items to update the EMU microcode using the UART connector:

- The EMU microcode file
- A PC
- A communications program such as PROCOMM
- An adapter cable with:
  - A 9-pin RS232 connector
  - An 8-pin RJ45 connector

## Preliminary Procedure

Complete the following procedure prior to starting the installation procedure:

1. Connect the 9-pin connector to a PC COM connector.
2. Connect the 8-pin RJ45 connector to the *master EMU center UART* connector.
3. Configure the communications software parameters as follows:

Parameter	Value
Baud Rate	38,400 Baud
Data Bits	8
Parity	None
Stop Bits	1
Protocol	Raw ASCII
CR/LF Conversion	None
XON/XOFF	None
Connection	Direct (no modem)

4. Insert the microcode disk into the disk drive. Copy the EMU microcode file (filename to be determined) to a PC directory.
5. Start the communications program.

## Preparing the EMU

Complete the following procedure to prepare the EMU for loading the microcode.

1. On the master enclosure, press and hold in the Alarm Control switch while you remove the EMU from the enclosure.  
The PVA audible alarm will “beep” indicating that there is no EMU in the enclosure.
2. Still pressing Alarm Control switch, insert the EMU into the enclosure and firmly seat it. The temperature (amber), power (green), and the eight blower (amber) LEDs will be ON.  
The PVA audible alarm is OFF.
3. Continue to press the Alarm Control switch until:
  - The blower LEDs are OFF.

- The PC monitor displays the message:  
Waiting for receiver ready
4. Release the Alarm Control switch.

## Loading the Microcode

From the PC, initiate the “upload” function by completing the following procedure:

1. When using PROCOMM, press “Page Up”
2. Select “Raw ASCII”
3. Enter microcode path and filename
4. When the EMU microcode download starts, all the blowers LEDs are ON and the PC displays the a series of messages similar to those shown in Table 1.

**Table 1 Typical PC Monitory Display**

Text	Comments
SW 370 EMU (ROM) Version V01.02 Copyright © 1997, Digital Equipment Corporation	EMU successfully completed boot.
+++ Attempting to load FLASH image from UART +++ Download Parameters Raw ASCII, 38400 Baud, 8 data bits, no stop bits	Communications program parameters.
Waiting for receiver ready	All the EMU blower LEDs are ON. Ready to start transfer.
No visible activity for 30—60 seconds	
+++ Loaded image copied to Upper FLASH +++	Communications program has uploaded microcode to EMU
+++ Copying Upper FLASH image to Lower FLASH +++	EMU transferring new microcode.
+++ Lower FLASH is valid +++ +++ Upper FLASH is valid +++	New microcode verification complete.
SW370 EMU (Flash) Version 10.4 SW370 EMU Protocol Version 1.0 Copyright © 1997, Digital Equipment Corporation EMU Hardware Rev 0	EMU initializing.
This is CAB 000 Bus 0 or 1 I/O mod changed, old 0000, new 0002 Bus 2 or 3 I/O mod changed, old 0000, new 0002 Bus 4 or 5 I/O mod changed, old 0000, new 0002 Power OK changed, old 0000, new 0002 Error sum changed, old 0000, new 0002 SubStat 0 changed, old 0000, new 0002 Supplies present change, old 0000, new 0002 All B fans present All A fans present Fan OK changed, old 0000, new 0002 Err sum changed, old 0000, new 0002 Power OK changed, old 0000, new 0002 Power OK changed, old 0000, new 0002	EMU status report.