

About This Book

The *SPARCstation IPC Service Manual* describes how to diagnose system problems by running diagnostics and how to remove and replace field replaceable units (FRUs).

Notes, Cautions, and Warnings



Warning – This equipment contains lethal voltage. Accidental contact can result in serious injury or death.



Caution – Improper handling by unqualified personnel can cause serious damage to this equipment. Unqualified personnel who tamper with this equipment may be held liable for any resultant damage to the equipment.

Individuals who enter this equipment must observe all safety precautions and ensure compliance with skill level requirements, certification, and all applicable local and national laws.

Procedures contained in this document must be performed by qualified service-trained maintenance providers. Only people who have been trained by SUN Microsystems' training facilities (or by SUN Microsystems' affiliates) and have been certified as required by local and national laws are considered qualified.

Note – Before you begin, carefully read each of the procedures in this manual. If you have not performed similar operations on comparable equipment, *do not attempt* to perform these procedures.

Who Should Read This Book

This book is written for Sun Field Service representatives, original equipment manufacturers (OEMs), valued-added resellers (VARs), and other customers with self-maintenance contracts.

What This Book Contains

This book contains four chapters, four appendixes, and a glossary:

- System Overview—Chapter 1
This chapter presents a high-level description of the SPARCstation IPC system, followed by brief descriptions of each subsystem. Read this chapter to gain a general familiarity with the hardware.
- Diagnostics Overview—Chapter 2
This chapter describes the different types of diagnostics and how they are related. This chapter also briefly discusses the Forth Toolkit. Read this chapter to gain general knowledge about the diagnostic and Forth Toolkit tools available to you.
- Preparing to Work on the System—Chapter 3
This chapter explains tools you will need, how to halt the system, how to disconnect the Desktop Storage Packs and the External Storage Module from the system unit, how to remove the system unit's top section, and how to attach a wrist strap to your wrist and to the system chassis. **Read this chapter before replacing any hardware.**
- FRU Replacement—Chapter 4
This chapter explains how to locate, remove, and replace defective field-replaceable units (FRUs) or install new ones. Drawings and callouts are provided to illustrate the process. **Read this chapter before attempting to replace any hardware.**

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- System Specifications—Appendix A
This appendix contains system specifications, including dimensions, electrical and power requirements, and environmental constraints.
 - Illustrated Parts Breakdown—Appendix B
This appendix contains illustrations of global views of the system, part numbers for FRUs, other hardware, and related books.
 - NVRAM Parameters—Appendix C
This appendix contains the Non-Volatile system configuration parameters used during reset.
 - Manufacturing Diagnostics—Appendix D
This appendix contains instructions for using Manufacturing Diagnostics.
 - Glossary
The glossary contains definitions of technical terms, abbreviations, and acronyms.

Before Reading This Book

Before reading this book, you should have performed hardware installation. If you are connecting to a network, you should also be proficient with system administration and networking procedures. If you are not proficient in these areas, please read the following books before attempting to repair your system:

- *SPARCstation IPC Installation Guide*
- *Sun System & Network Manager's Guide*

Typographical Conventions

This book uses a number of typographical conventions:

- *This font* is used for emphasis and for the title of a book. For example:

The heart of the *SPARCstation IPC* is contained in a main chassis or system unit.

SPARCstation IPC Installation Guide

- *This font* indicates text the system displays on the screen.

Syncing file systems... done

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- **This font** indicates characters and words you enter.

Enter **passwd**.

The term “enter” means to type the command indicated and press the Return key. For example, “enter sync” means to type the command indicated and press the Return key.

Related Books

The following books provide additional information that you may need, and are occasionally referenced in this book:

- *Open Boot PROM Toolkit User’s Guide* provides a summary of the Forth Toolkit commands.
- *Introduction to Open Boot 2.0* provides a summary of Forth Toolkit commands for revision 2.0 of the Open Boot PROM.
- *Open Boot 2.0 Command Reference* provides detailed information about revision 2.0 of the Open Boot PROM.
- *Sundiag User’s Guide* provides information about Sundiag, a system exerciser that runs under SunOS. Sundiag displays real-time use of system resources and peripherals.
- *SPARCstation IPC Installation Guide* provides step-by-step instructions on how to install your system’s hardware and software.
- *Sun System & Network Manager’s Guide* provides material of interest to system and network managers. Especially useful are the procedures for halting the system.
- *Sun Diagnostic Executive User’s Guide for the SPARCstations* explains how to run extensive, configurable texts independent of SunOS. The Sun Diagnostic Executive is the tool of choice when you need thorough diagnostics. With the Sun Diagnostic Executive you can determine which field replaceable unit needs to be replaced.
- *Desktop Storage Pack Install Guide* explains how to install and daisy-chain external storage modules.