About This Manual

This manual discusses several topics of interest to programmers writing applications for the IRIX™ operating system on Silicon Graphics® computers, including memory management, interprocess communication, models of parallel computation, file and record locking, font access, and internationalization.

What This Manual Contains

This manual contains the following chapters:

- Chapter 1, “Process Address Space,” tells how the virtual address space is created and how objects are mapped into it.
- Chapter 2, “Interprocess Communication,” describes System V and IRIX interprocess communication mechanisms.
- Chapter 3, “Models of Parallel Computation,” gives an overview of the different ways you can specify parallel execution in Silicon Graphics systems.
- Chapter 4, “File and Record Locking,” describes how to lock and unlock files and parts of files from within a program.
- Chapter 5, “Working With Fonts,” discusses typography and font use on Silicon Graphics computers, and describes the Font Manager library.
- Chapter 6, “Internationalizing Your Application,” explains how to create an application that can be adapted for use in different countries.
- Appendix A, “ISO 3166 Country Names and Abbreviations,” lists country codes for use with internationalization and localization.
- Appendix B, “Converting PVM Applications to MPI,” documents the methods of porting a PVM-based application to MPI.

What You Should Know Before Reading This Manual

This manual assumes you are writing an application that executes under IRIX version 6.2 or later, and that you are familiar with the programming conventions of UNIX® in general and IRIX in particular.

All examples are in the C language, although the descriptions are valid for C++ or any other language that provides access to IRIX kernel functions, such as Silicon Graphics Ada95 or MIPSpro Fortran 90.

Other Useful References

In addition to this manual, which covers specific IRIX features, you will need to refer to Silicon Graphics manuals that describe compilers and programming languages. Some of the most useful are listed in Table i.

Table i Books for Further Reading in IRIX Development

Topic	Document Title	Number
Overview of the IRIX library of manuals for developers	*Programming on Silicon Graphics Systems: An Overview*	007-2476-00x
Compiling, linking, and tuning programs in C, C++, or Fortran	*MIPSpro Compiling and Performance Tuning Guide*	007-2360-00x
Writing modules in assembly language.	*MIPSpro Assembly Language Programmer's Guide*	007-2418-00x
C language	*C Language Reference Manual*	007-0701-0x0
C++ language	*C++ Language System Overview*	007-1621-0x0
Fortran language	*MIPSpro Fortran 77 Programmer's Guide* *MIPSpro Fortran 90 Programmer's Guide*	007-2361-002 007-2761-001
Writing real-time applications	*REACT/Pro Real-Time Programmer's Guide*	007-2499-00x
Controlling devices directly	*IRIX Device Driver Programmer's Guide*	007-0911-0x0
Details of the MIPS processor hardware	*MIPS R4000 Microprocessor User's Manual*	MIPS Technologies

Silicon Graphics manuals are usually read online using IRIS Insight. This manual and many of the books in Table i are installed as part of the IRIS Developer's Option (IDO) feature. When the books are installed or mounted on your workstation, use the command *iiv* or double-click the InSight icon.

When the manuals are not accessible to your workstation you can examine or order any Silicon Graphics manual on the World-Wide Web using the following URL: http://www.sgi.com/Technology/TechPubs/

If you do not have Web access, you can order a printed manual from Silicon Graphics by calling SGI Direct at 1-800-800-SGI1 (800-7441). Outside the U.S. and Canada, contact your local sales office or distributor.

You can find additional information about internationalization from X/Open Company Limited. *X/Open Portability Guide*, *Volume 1, XSI Commands and Utilities, Volume 2, XSI System Interface*, and *Volume 3, XSI Supplementary Definitions*. Berkshire, United Kingdom. Prentice-Hall, Inc.

Conventions Used in This Manual

This manual uses the conventions and symbols shown in Table ii.

Table ii Typographical Conventions

Type of Information	Example of Typography
Filenames and pathnames	This structure is declared in */usr/include/sys/time.h*.
IRIX command names and options used in normal text	Update these variables with *systune*; then build a new kernel with *autoconfig -vf*.
Names of program variables, structures, and data types	Global variable *mainSema* points to an IRIX semaphore, which has type *usema_t*.
Names of IRIX kernel functions, library functions, and functions in example code	Use **mmap()** to map an object into the address space, and **munmap()** to remove it.
Names of IRIX reference ("man") pages. You can click on any of these to display the pa	See the plock(2) reference page.

When complete lines of example code or commands are set off from normal text, they are displayed as follows.

```
ipcrm –s semid
```

Parts of the code or command that need to be typed exactly as shown are displayed in a monospaced font. Operands that need to be supplied by you are italicized.