INTEL CORPORATION
15201 N.W. Greenbrier Parkway
Beaverton, OR 97006
(503) 629-7600

October 16, 1991

Dear iPSC® System Update Customer:

This package contains update 10/16 to Release 3.3 of the iPSC system software. With this software installed on your iPSC® Supercomputer[1], your system is ready for use. Please read through the documentation and distribute it to anyone authorized to use the system.

The Release 3.3 system software runs on iPSC®/2 (with Intel386™-microprocessor-based CX nodes) and iPSC®/860 (with i860™-microprocessor-based RX nodes or with a combination of CX and RX nodes) systems.

Before using your iPSC System:

- **Read this letter completely.**
- **Verify the contents of this package.**
- **Read the *iPSC®/2* and *iPSC®/860 Release 3.3 Update 10/16 Software Product Release Notes.***

Package Contents

Your iPSC system software update 10/16 package is shipped in one box. Please verify that it includes the following items:

Media

iPSC®/2/860 System Software Release 3.3 Update 10/16 cartridge tape (part number 312220-001)

R3.3 Update 10/16 Documentation

iPSC®/2 and iPSC®/860 Release 3.3 Update 10/16 Software Product Release Notes (part number 312246)

If items are missing, or if you have any questions, contact Intel Supercomputer Systems Division immediately. Refer to "Comments and Assistance" for information about how to contact Intel Supercomputer Systems Division.

1. The terms "iPSC Supercomputer" and "iPSC system" refer to any of the following SSD products: iPSC®/2, iPSC®/2S, iPSC®/860, and iPSC®/860S.

What is in This Update?

Release 3.3 Update 10/16 contains iPSC system software for both iPSC/2 and iPSC/860 systems. The iPSC Release 3.3 system software update is an interim release and provides fixes to improve system stability. These fixes are detailed in the *iPSC®/2 and iPSC®/860 Release 3.3 Update 10/16 Software Product Release Notes.*

New Documentation

Refer to the *iPSC®/2 and iPSC®/860 Release 3.3 Update 10/16 Software Product Release Notes.*

Installation

To install iPSC® System Release 3.3 Update 10/16, refer to the installation instructions in the *iPSC®/2 and iPSC®/860 Release 3.3 Update 10/16 Software Product Release Notes.*

NOTE

Adding or removing any boards or components from your iPSC system can damage the system and may invalidate your warranty or maintenance contract. Please contact Intel Supercomputer Systems Division Customer Support for assistance in answering your questions.

Comments and Assistance

Intel Supercomputer Systems Division is eager to hear of your experiences with our latest software product. Please call us if you need assistance, have questions, or otherwise want to comment on your iPSC system.

1-800-421-2823 (Customer Support Response Center)
(44) 793 641 469 (in England)
Your Local Intel Sales Office (in Europe)
support@ssd.intel.com (Internet address)

Intel Supercomputer Systems Division is trying to produce the best documentation for your needs. If you have comments about the iPSC manuals, please fill out and mail the enclosed Comment Card. You can also send your comments electronically to the following address:

techpubs@ssd.intel.com (Internet address)

The Intel Supercomputer Users' Group promotes the exchange of information among users. Intel strongly supports the Users' Group and encourages participation in its activities, which include: Special Interest Groups (SIGs), an annual international users' conference, an e-mail task force, and a "freeware" library of user-contributed software, available electronically to all members of the Intel Supercomputer Users' Group. For membership information contact:

JoAnne Wold (503-629-7737)
joanne@ssd.intel.com (Internet address)

Sincerely,

Elliot Swan

Manager, Technical and Product Marketing
Intel Supercomputer Systems Division

October 1991
Order Number: 312246

iPSC®/2 AND iPSC®/860
RELEASE 3.3 UPDATE 10/16 SOFTWARE
PRODUCT RELEASE NOTES

intel® Corporation

REV.	REVISION HISTORY	DATE
---	Original Issue	10/91

RESTRICTED RIGHTS

Use, duplication or disclosure by the U.S. Government is subject to restrictions as set forth in subparagraph (c) (1) (ii) of the rights in Technical Data and Computer Software clause at 52.227-7013. Intel Corporation, 3065 Bowers Avenue, Santa Clara, California 95051.

Preface

These release notes provide the latest information on the features and installation of Update 10/16 to the Release 3.3 system software for the following Intel Supercomputer Systems Division products: iPSC®/2, iPSC®/2S, iPSC®/860, and iPSC®/860S. In the remainder of these release notes, the term "iPSC system(s)" is used to refer to these products.

These release notes assume that you have programming experience and are familiar with the C or Fortran language and the UNIX operating system.

For more information, refer to the Release 3.3 Update 10/16 system software customer letter that accompanied your software.

Organization

Chapter 1	Describes the software improvements contained in Update 10/16 of Release 3.3 system software.
Chapter 2	Provides system software installation information.

Notational Conventions

This manual uses the following notational conventions:

Bold Identifies command names and switches, system call names, reserved words, and other items that must be used exactly as shown.

Italic Identifies variables, filenames, directories, processes, user names, and writer annotations in examples. Italic type style is also occasionally used to emphasize a word or phrase.

`Plain-Monospace`
Identifies computer output (prompts and messages), examples, and values of variables. Some examples contain annotations that describe specific parts of the example. These annotations (which are not part of the example code or session) appear in *italic* type style and flush with the right margin.

Bold-Italic-Monospace
Identifies user input (what you enter in response to some prompt).

`Bold-Monospace`
Identifies the names of keyboard keys (which are also enclosed in angle brackets). A dash indicates that the key preceding the dash is to be held down *while* the key following the dash is pressed. For example:

`<Break>` **`<s>`** **`<Ctrl-Alt-Del>`**

[ ] (Brackets) Surround optional items.

... (Ellipsis dots) Indicate that the preceding item may be repeated.

| (Bar) Separates two or more items of which you may select only one.

{ } (Braces) Surround two or more items of which you must select one.

Applicable Documents

For more information, refer to the following manuals:

iPSC® System Manuals

(NEW) *Intel® Supercomputer Systems Division System Log Book*
311927-003
Provides forms on which to keep system maintenance logs.

(NEW) *iPSC® System Technical Documentation Guide*
312026-002
Describes the technical documentation that supports the iPSC System and tells how to use the various documents.

(REV) *iPSC®/2 and iPSC®/860 C Commands and Routines Quick Reference*
311610-004
Summarizes all C routines and commands for the iPSC system.

iPSC®/2 and iPSC®/860 C Language Reference Manual
311567-004
Describes the Green Hills C compiler for the iPSC/2 and iPSC/860 systems.

(REV) *iPSC®/2 and iPSC®/860 Fortran Commands and Routines Quick Reference*
311615-004
Summarizes all Fortran routines and commands and for the iPSC system.

(REV) *iPSC®/2 and iPSC®/860 Hardware Installation Manual*
311461-003
(Replaces 311461-001 and 313990-001)
Describes installation and powering up of all iPSC system configurations.

(NEW) *iPSC®/2 and iPSC®/860 Interactive Parallel Debugger Commands Quick Reference*
312042-001
(Replaces 311798-001)
Summarizes all iPSC system IPD commands.

(NEW) *iPSC®/2 and iPSC®/860 Interactive Parallel Debugger Manual*
312043-001
(Replaces 311569-002 and 311826-001)
Tells how to use IPD, the iPSC system concurrent debugger.

iPSC®/2 and iPSC®/860 Math Libraries Reference Manual
311868-001
Describes the math libraries available on the iPSC system.

(NEW) *iPSC®/2 and iPSC®/860 Network Queueing System Manual*
312061-002
Tells how to use the network queueing system software.

(REV) *iPSC®/2 and iPSC®/860 Programmer's Reference Manual*
311708-004
(Replaces 311071-003, 311019-003, and 311831-001)
Provides detailed information on all C and Fortran routines and commands for the iPSC system.

(REV) *iPSC®/2 and iPSC®/860 Site Preparation Guide*
312028-001
Tells the customer how to prepare a site for the installation of an iPSC system.

iPSC®/2 and iPSC®/860 System Acceptance Test User's Guide
311870-001
Tells how to use the System Acceptance Test.

PSC®/2 and iPSC®/860 System Administrator's Guide
311014-006
(Replaces 311842-001 and 311833-001)
Describes the system administration tasks related to operating and maintaining an iPSC system.

iPSC®/2 and iPSC®/860 User's Guide
311532-007
Overviews the iPSC system, including hardware and software architectures. Tells how to develop and run programs.

iPSC®/2 Fortran Language Reference Manual
311020-004
Describes the Green Hills Fortran compiler for the iPSC/2 system.

iPSC®/2 Simulator Manual
311534-003
Tells how to use the iPSC/2 Simulator for software development.

(NEW) *iPSC®/860 Basic Math Library User's Guide*
312128-001
Describes the basic linear algebra subroutines for the iPSC/860 systems.

(NEW) *iPSC®/860 C Compiler User's Guide*
312130-001
(Replaces 312006-001)
Describes the C cross-compiler and compiler driver for iPSC/860 systems.

(NEW) *iPSC®/860 Fortran Compiler User's Guide*
312131-001
(Replaces 312006-001)
Describes the Fortran cross-compiler and compiler driver for iPSC/860 systems.

(NEW) *iPSC®/860 Parallel Performance Analysis Tools Manual*
312139-001
Tells how to use the performance analysis software for the iPSC/860 system.

Intel® Manuals

UNIX System V Release 3.2 TCP/IP Administrator's Guide and Reference
465728-001
(Replaces Excelan TCP/IP documentation)
Describes TCP/IP Network administration.

UNIX System V Release 3.2 TCP/IP Programmer's Guide and Reference
465729-001
(Replaces Excelan TCP/IP documentation)
Describes the TCP/IP Network programming environment and provides information on programming tools.

UNIX System V Release 3.2 TCP/IP User's Guide and Reference
465727-001
(Replaces Excelan TCP/IP documentation)
Describes the TCP/IP Network programming environment and provides user information.

i860™ 64-Bit Microprocessor Assembler and Linker Reference Manual
240436-003
Tells how to use the i860 microprocessor assembler and linker. When you order this manual, you also receive the following manuals:

i860™ 64-Bit Microprocessor Object File Utilities Reference Manual
464410-002
Provides reference information for using the i860 microprocessor object file utilities.

i860™ 64-Bit Microprocessor Simulator and Debugger Reference Manual
240437-003
Describes the i860 microprocessor debugger and simulator.

i860™ 64-Bit Microprocessor Programmer's Reference Manual
240329-002
Tells how to use the i860 microprocessor.

UNIX Release R3.2 Manuals Literature Kit, UNXSYS386R3.2
Consists of the following documents:

(NEW) *UNIX System V Integrated Software Development Guide*
465274-001
Supplies information needed to write application software and installable drivers for new hardware additions for UNIX.

(NEW) *UNIX System V Introduction to UNIX System V*
465273-001
Introduces you to UNIX System V Release 3.2 on PC AT compatible computers using Intel386™ and Intel486™ microprocessors.

(NEW) *UNIX System V Network Programmer's Guide*
465282-001
Describes the UNIX System network programming environment, and provides detailed descriptions of programming tools.

(NEW) *UNIX System V Programmer's Guide, Vol. I*
465277-001
Describes the UNIX System programming environment, and provides detailed descriptions of programming tools.

(NEW) *UNIX System V Programmer's Guide, Vol. II*
465278-001
Describes the UNIX System programming environment, and provides detailed descriptions of programming tools.

(NEW) *UNIX System V Programmer's Reference Manual*
465276-001
Contains descriptions of commands, system calls, subroutines, libraries, file formats, macro packages, and character set tables.

Improvements in Update 10/16 1

Introduction

The following software improvements are included in Release 3.3 Update 10/16.

1. **bootcube panics reduced**
   Fixes have been made to the DCM driver to reduce panics during the bootcube process.

2. **`Commser not responding` messages reduced**
   This message occurred on the SRM as a result of *commser* sending cube information to the cube for process logging. The communications server has been updated to prevent this problem. This fix may cause process logging information to be out of order in the process log file.

3. **multiple file servers no longer created on the SRM**
   Multiple file servers attached to the same cube no longer occur. This problem may have caused output to go to the wrong window.

4. **losing a cube partition problem reduced**
   The NX operating system has been updated to minimize this problem.

5. **off loading the *loader* process**
   The *loader* functionality is now supported in the library, therefore, the SRM can now directly load a cube without going through the *loader*. This reduces the amount of *loader* hangs and it also supports loading files from NFS mounted file systems.

6. **killcube no longer hangs when deleting the loading of a large file**
   Several problems that caused killcube to hang have been fixed.

7. **CFS tape problems fixed**
   The following CFS tape problems have been fixed:

   - Improved ***<Cntrl-C>*** handling during tar operations.

- The end of device is now detected properly.
- The tape device cannot be opened more than once at the same time.
- The tape open connection errors generated during a tar have been cured.

8. **Large programs can now be profiled**
   prof860 can now be used to profile programs larger than 128K bytes.

9. ***prof860* profiling information is dumped properly**
   Under some circumstances the *prof860* profiling information was deleted. This problem has been fixed.

10. **TCP/IP panics eliminated**
    The TCP/IP driver has been fixed to eliminate panics.

11. **Reduced `Commser not responding` message on remote host**
    The **getcube** command has been improved for the Remote Host *commser* to reduce occurrences of the message **`Commser not responding`** on the Remote Host.

12. **Remote Host no longer creates duplicate cubes**
    The *commser* has been fixed so it no longer creates duplicate cubes on the SRM using Remote Host.

13. **Duplicate *commsers* eliminated on Remote Host**
    The remote host used to create duplicate *commsers*. This problem has been fixed.

14. **Remote Host application no longer hangs on small message**
    Remote host applications used to hang while receiving a message if the message was smaller than the receiving buffer. This problem has been fixed.

Software Installation 2

Introduction

This chapter describes how to install the Release 3.3 Update 10/16 software. If you have any questions, please contact SSD Customer Support Response Center:

1-800-421-2823 (Customer Support Response Center)
(44) 793 641 469 (in England)
Your Local Intel Sales Office (in Europe)
support@ssd.intel.com (Internet address)

Installing The Release 3.3 System Software Update

NOTE

You *must h*ave the iPSC System Software Release 3.3 and Update 5/91 installed on your system. If you are using iPSC/860 software, the iPSC/860 portion of the Release 3.3 Extension Software must be installed before you install the iPSC System Software Update tape. If you reinstall any of these packages, you must also reinstall the update. See the *iPSC®/2 and iPSC®/860 Release 3.3 Software Product Release Notes* for information on how to install these packages. If you have Update 9/16 installed, you must remove it with the ***removepkg*** command prior to installing Update 10/16.

Installation Time:	Approximately 40 minutes.
Installation Medium:	1 cartridge tape labeled "iPSC®/2/860 System Software Release 3.3 Update 10/16" (part number 312220-001)
Information you need:	*root* password.

1. Login as *root.*
2. Execute the following to put the SRM in the maintenance mode:

   shutdown -is -g0 -y

   The SRM displays the following message:

   ```
   Type Ctrl-d to proceed with normal startup
   (or give root password for system maintenance):
   ```

3. Enter the root password. The SRM displays the following message:

   ```
   Entering System Maintenance Mode
   ```

4. Mount the *usr* partition:

   ```
   /etc/mount /dev/dsk/0s3 /usr
   ```

   The SRM displays the following message:

   ```
   mount -f s51K /dev/dsk/0s3 /usr
   ```

5. Enter the *displaypkg* command to display the software packages that are currently installed on the SRM. You will be updating only those packages.
6. Enter ***installpkg***
7. When the following message appears:

   ```
   Are you installing from tape (y/n)?
   ```

   Enter *y*.

8. When the following message appears:

```
Insert Installation Tape in drive and press <RETURN>.
```

Insert the installation tape labeled "iPSC®/2/860 System Software Release 3.3 Update 10/16" into the tape drive (label up, exposed tape to the left; push until the tape cartridge locks into place).

9. Press **<Enter>**. Eventually, the following messages appear:

```
Available Packages:
1.  iPSC T2 TCP - Intel Corp. Update Release 3.0
2.  iPSC S2 System Software Update Release 3.3
3.  iPSC R2 Remote Host Software Update Release 3.3
4.  iPSC E2 i860 Extension Software Upadate Release 3.3
5.  iPSC L2 Compiler Libraries System Update Release 3.3

Do you want to install all of the above packages? <y/[n]>:
```

What you install depends on what you use. Update only those software packages that are currently installed on your SRM.

10. Enter *y* to install all of the update packages.

If you don't want to install all of the packages, press **<Enter>** to accept the default *n*.

The system then prompts you to select the packages to install.

11. Enter *y* for the packages you want and *n* for the ones you don't want.

Once all of the update packages have been installed, the system displays:

```
Press <ESC> to avoid shutdown or press <Enter> to initiate
shutdown.
```

12. Press **<Enter>**.

The system displays the message

```
Reboot the system now
```

13. Enter **<Ctrl-Alt-Del>** to reboot the updated system. When the console login prompt appears, the installation is complete.

14. Enter ***bootcube***

Once the bootcube process is complete, the system is ready to use.

Changes to Remote Host Software

If you have installed Remote Host from the update 10/16 tape, use the following instructions to install the changes to the remote host software.

1. Copy the following files to a user determined directory on the remote host:

   /usr/ipsc/rhost/libhost/_msgdone.c
   /usr/ipsc/rhost/server/commser.c
   /usr/ipsc/rhost/server/srmconnect.c
   /usr/ipsc/rhost/bootcube/rc0

2. On the remote host, login as *root*.

3. Shut down the remote host server by entering the following command:

   ```
   #bootcube -f -D1
   ```

4. Make sure that the *commser* process is no longer active:

   ```
   #ps -ax | grep commser
   ```

5. Kill any remaining *commser* processes.

6. Change directories to the remote host source directory on the remote host.

7. Set the umask to 0:

   ```
   #umask 0
   ```

8. Run *make*:

   ```
   #make
   ```

9. Run *make install*:

   ```
   #make install
   ```

10. Boot the remote host *commser*:

```
#bootcube -f.
```

Once the remote host *commser* boot process is complete, the system is ready to use.

NOTE

Since this update package includes an updated host and node library, your iPSC host and node applications must be re-linked after the update is installed using *-host* and *-node* respectively. Some of the enhancements provided by this update will not be seen unless this is done.

An updated host library for the remote host is also included in this update, therefore, all the remote host applications must be re-linked to this host library.