
CONVEX C3800 System Diagnostics V4.2 Release Notice



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**CONVEX
C3800 System Diagnostics V4.2
Release Notice**

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1. Overview

This document is intended to enhance and clarify the existing permanent documentation for this product with information that is up-to-the minute, or was developed too late for inclusion in the permanent documentation. Always refer to this release notice before reporting problems with the CONVEX C3800 System Diagnostics V4.2. Fixes and work-arounds are listed here that may save you time in rediscovering known problems.

The remaining sections in this document describe the contents of this release:

- Section 2 describes the contents of this distribution.
- Section 3 lists all pre-requisite releases.
- Section 4 contains notes and warnings about the use of the software.
- Section 5 contains enhancements to the previous functionality.
- Section 6 describes fixes for previously reported problems.
- Section 7 describes known software problems.
- Section 8 describes known hardware problems.
- Section 9 describes known documentation problems.
- Section 10 contains descriptions of the new documentation.

Appendix A contains instructions for installing this release on a C3800 Service Processor Unit.

2. Contents of this Distribution

The distribution package for this release of CONVEX C3800 System Diagnostics V4.2 consists of this document and distribution media for the software. The specific contents of the software and documentation distribution are described in the following tables:

Table 1: C3800 Series System Diagnostics Media

Item	Quantity	Type	Part Number	Description	Format
1.	1	DAT	760-003615-020	CONVEX C3800 System Diagnostics V4.2	Installsw

Table 2: C3800 Series System Diagnostics Documentation

Item	Quantity	Part Number	Description
1.	1	760-006430-000	CONVEX Processor Diagnostics Manual (C3800 Series)

3. Pre-requisite Releases

C3800 SST Release V3.1.1 (or greater) is required to be installed with CONVEX C3800 System Diagnostics V4.2. The part numbers and tape types for this release is shown in the table below.

Table 3: Pre-requisite Software Releases

Part Number	Description	Type
760-003815-011	V4.0 of C3800 SST (or greater)	DAT

4. Notes and Warnings

Before installing this tape (C3800 System Diagnostics V4.2), C3800 SPUOS version V2.0 must first be installed. C3800 System Diagnostics V4.2 is not compatible with any previous version of C3800 SPUOS.

Do not use STOP-A to abort any process during the install because the file system could be corrupted. If you must abort a process please use Ctrl-C. Using STOP-A anytime is not recommended and should be avoided.

Do not change the SPU date/time while the system is running. This will result in the shutdown of one or more bays. Make sure the system is powered down by the sys_shutdown command before changing the date and/or time on the SPU.

This release requires 38MB of free disk space in the /diag partition. The extract script verifies whether enough disk space exists before copying from the tape onto the disk. If not enough free disk space exists, here are some objects that can be removed (in the order listed) from the /diag directory:

- all core files
- all *.old or *.save files
- all *~ or *- files
- /diag/hw directory
- /diag/scripts directory
- /diag/test directory

All products in the /diag directory (except /diag/cxts) are overwritten when C3800 System Diagnostics are installed. If any files in this directory have been customized they must first be saved on tape and then restored after completion of the install.

The "RPC: Program not registered" messages that appear during a SPU reboot can be ignored. They do not affect the reboot.

The "ia_soft_error_40 not found" error message that may appear during the first SPU reboot following the installation of V4.2 diagnostics can be ignored.

With the V4.2 diagnostic release, all IA boards must be at the same scan ring revision. Currently this implies they must be the same part type, e.g. 500-004244. If they are not, the IA boards will not be initialized correctly, i.e. they will not work.

4.1 Important Changes from the V3.4 Release

The following is a list of changes implemented in the C3800 System Diagnostic Release V3.4. These changes are included as part of the new V4.2 release as well.

1. New versions of the X11 and OSF/Motif code are installed. X11 is still version R5 at patch level 23, and the OSF/Motif version is 1.2.2. No major changes should be apparent except for some font changes and the X-based utilities now execute faster. Files in the current /usr/lib/X11/app-defaults and /usr/lib/X11/bitmaps directories are overwritten with the new versions. Files in these two directories but not in the new release remain intact. However, the old contents of these two directories have been copied to /tmp/X11/app-defaults.old and /tmp/X11/bitmaps.old directories, respectively, so they may be merged in with the new versions.
2. For this release, the new keyswitch software is installed as the default. As before, versions of the software modules supporting both the old and new keyswitches are on the SPU disk. Therefore to install the old keyswitch software execute the `install_old_keyswitch` script. Installation of the new keyswitch software is done by the `install_new_keyswitch` script.
3. The SPU<->BPC communications scheme has changed. The asynchronous scheme used previously is replaced with a bisync protocol scheme (which includes handshaking). This prevents the SPU and BPC from getting out of sync with each other which improves the operation of the entire power system. There is a CDB entry called `power_protocol_enable` which can be used to switch between the two schemes (which should not be done unless there are problems in the bisync protocol). It is defaulted to a 1 which specifies the new bisync protocol scheme and a 0 specifies the asynchronous scheme.
4. The SPU kernel now saves the `hard_err1` and `hard_err2` registers when it processes a hard error interrupt. These values are used by the `hard_logger` when it processes the hard error. Once these values are read from the SPU kernel they are invalidated which means that attempting to read them again (by the `hard_logger`) will fail. Use the `-h` option with the `hard_logger` to force it to read the actual hardware registers.

5. Enhancements

This is the initial release of the CONVEX C3800 System Diagnostics V4.2 and supersedes the release of CONVEX C3800 System Diagnostics V4.0.1. Enhancements to the software provided by this release is broken down into two categories: utilities and test. The following subsections identify the enhancements to the two groups of software.

HIGHLIGHTS:

- New SPU kernel that removes the SunOS NIT utility.
 - Support for the elite 3 disk drive (DKD-505).
 - Support for QSC.
-

5.1 Utility Enhancements

5.1.1 idcfmt

- Support has been added for the elite 3 disk drive (DKD-505).

5.1.2 /mnt/usr/lib/DB_idc

- Added the elite 3 disk drive (DKD-505) entry.

5.1.3 vmunix (SPU kernel)

- The NIT utility has been removed. It was discovered to be a security leak.
-

5.2 Test Enhancements:

None.

5.3 Product Engineering Enhancements:

5.3.1 /diag/scripts/harderr/cu/cu_ndat?_harderr

- Modified to dump the XBAR error state if a CU-XB hard error is detected.

6. Fixes

This is the initial release of the CONVEX C3800 System Diagnostics V4.2 and supersedes the previous release of CONVEX C3800 System Diagnostics V4.1. Problem corrections to the software provided by this release is broken down into two categories: utilities and test. The following subsections identify the problems fixed to the two groups of software.

HIGHLIGHTS:

- New US and SR microcode.
 - Fix for the "crashdump -H" problem.
 - Fix to eliminate problem using the middle mouse button.
-

6.1 Utility Fixes

6.1.1 `cdb_startup/rbcd_b_init`

- Modified to fix an infrequent problem starting the *cdbserver* and *rbserver* processes. This problem occurred only if you exercised the CDB features to their maximum.

6.1.2 `dumplemps`

- Modified to correctly display the bay inlet and outlet temperatures.

6.1.3 `errintd`

- Modified to display certain messages in the ConvexOS Console window. These messages were previously printed only to the `/mnt/errlog` file.

6.1.4 `hard_logger`

- Modified to include the cop information in the hard error output for the IA boards residing in I/O expansion bays.

6.1.5 `/diag/db/ucode_rev_update`

- Updated to reflect the new US and SR microcode versions, 10.72 and 10.10 respectively.
- US microcode version 10.72: (1) changed "mov psw,ak" instruction to fix an ADA performance problem and (2) fixed problem with the idle instruction.
- SR microcode version 10.10: support for the "mov psw,ak" instruction fix in the US microcode.

6.1.6 `/diag/hw/hwdump_scripts`

- The scripts in this directory were csh rather than dsh scripts. This prevented them from executing when "crashdump -H" was executed.

6.1.7 `/users/diagusers/.Xdefaults`

- Modified to disable the click-and-drag feature of the middle mouse button.

6.2 Test Fixes

None.

6.3 Product Engineering Fixes:

None.

7. Known Software Problems

7.1 Utilities

There are no known software problems.

7.2 Test Programs

7.2.1 cpu4331

- Dependent on the oscillator position selected, the timer functions of cpu4331 may not pass. They have been verified at 16.67, but not at 15.5 and 18.

7.2.2 cpu4332

- Dependent on the oscillator position selected, the timer functions of cpu4332 may not pass. They have been verified at 16.67, but not at 15.5 and 18.

7.2.3 cpu4333

- Dependent on the oscillator position selected, the timer functions of cpu4333 may not pass. They have been verified at 16.67, but not at 15.5 and 18.

7.2.4 spu4000

- Testing the connections between an SP board and the rest of the system requires the associated VP board be present.

8. Known Hardware Problems

There are no known hardware problems.

9. Known Documentation Problems

There are no known documentation problems.

10. New Documentation

There is no new documentation for this product.

Installing CONVEX C3800 System Diagnostics V4.2



1. Installation procedure

The install procedure has been modified to allow the CONVEX C3800 System Diagnostics V4.2 tape to be installed while ConvexOS is running. The image is stored on disk until the next time the SPU is rebooted at which time the new system diagnostic software is installed. This image is stored in the /diag/install directory. All files in this directory must not be altered or deleted in any manner otherwise the diagnostic software may be affected.

NOTE: C3800 SPUOS version 2.0 must be loaded before this version of diagnostics is installed. Failure to do this will result in errors when attempting to use.

NOTE: The image size for this release is 38MB. Before performing step 1 as outlined below, please clean up the /diag directory. Perform the "df /diag" command to check the amount of available free disk space in this partition. The script that extracts the image from the DAT tape to the SPU disk verifies that enough disk space is available prior to the actual extract. If enough disk space is not available the script terminates and provides the following error message:

ERROR: /diag does not have enough free space. This release requires a minimum of 38000KB. Please clean up the /diag directory and retry the extract. Terminating the diagnostic extract.

After the image has been stored on disk, there are two conditions from which the diagnostic install can take place. Instance one, is when the ConvexOS is booted and instance two is when ConvexOS is not booted.

Extracting the image from tape and storing on disk takes on the order of 4-5 minutes. The actual diagnostic install which occurs when the workstation is rebooted still requires about 40 minutes to complete.

All "RPC: Program not registered" messages can be ignored during the SPU reboot. These do not affect the installation.

Step 1: Copying image on the SPU disk:

- Become root user by executing the SPU command 'su'
- Place the CONVEX C3800 System Diagnostics V4.2 tape in the DAT drive located in the SPU workstation.
- Execute the SPU command 'installsw -i'

If the error message described above about free disk space in /diag, remove unneeded files in this directory until the required amount of free disk space is available in /diag, and repeat step 1 from the beginning.

The following prompts appear during the installation:

Is this a field production installation? [[y]/n] >

Enter "n" if the system is a not a field production machine.
The default is a field production machine.

1) 60hz

2) 50 hz

Select installation line frequency >

Select the appropriate line frequency.

Step 2: After the image has been copied onto the workstation disk, remove the tape from the DAT tape drive.

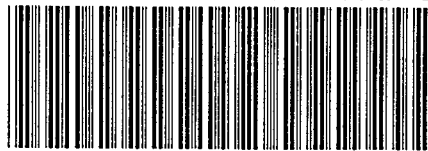
Step 3: ConvexOS is booted:

- If ConvexOS is running, bring it down.
 - To bring ConvexOS down, refer to the System Administrators Manual.
- If the C3800 is powered up, power down the C3800.
 - Execute the SPU command 'sys_shutdown' via the menu by clicking the mouse (or from a dsh window). If you are in doubt that a window is a dsh window, execute the SPU command 'dsh'.
- Become root user by executing the SPU command 'su'
- Execute the SPU command '/etc/reboot'

Step 4: ConvexOS is not booted:

- If the C3800 is powered up, power down the C3800.
 - Execute the SPU command 'sys_shutdown' via the menu by clicking the mouse (or from a dsh window). If you are in doubt that a window is a dsh window, execute the SPU command 'dsh'.
- Become root user by executing the SPU command 'su'
- Execute the SPU command '/etc/reboot'

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