Release notes for PA0603

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Note: The PA0606 (June 2006) release is skipped. Therefore, there will be no updates in June 2006 for ODE on a HP 9000 machine.

Overview

The Offline Diagnostics Environment (ODE) is a platform that enables you to troubleshoot a system that is not booted to the operating system. ODE can be used to test systems that cannot be tested using the online tools. The offline environment is also useful for some types of testing in which it is not desirable to have to boot the system first, as is often the case in manufacturing applications.

Instructions for installing the LIF-LOAD product

The LIF-LOAD product is a subset of the Offline Diagnostics for the HP-UX 9000 systems. LIF-LOAD is intended to be installed to the boot area of the system disk. It contains the following ODE (Offline Diagnostics Environment) programs:

For 64 bit systems: MAPPER2, IOTEST2, PERFVER2
For 32 bit systems: MAPPER, IOTEST, PERFVER

After LIF-LOAD is installed, you can boot the system disk to the `ISL>` prompt, run the ODE program, and launch the above programs from the `ODE>` prompt.

To access the full set of Offline Diagnostics, you must use this bootable CD. You can boot this CD to the `ISL>` prompt, run the ODE program, and then the full set of ODE programs will be available from the `ODE>` prompt. The `ls` command from the `ODE>` prompt will give you a list of all the supported ODE programs.

To install the LIF-LOAD product to the boot area of the system disk, complete the following instructions:

Note: These instructions are applicable only for HP-UX 9000 systems with 11.x operating system.

1. Log in as superuser.
2. Load the HP 9000 Offline Diagnostics Environment CD to the CD/DVD drive.
3. Create a directory from "/" as a mount point for the CD:
   `mkdir &ltCD mount point directory>`
   For example:

```
mkdir /Offline_CD
```

4. Find the block special device file for the CD/DVD drive. Enter the command the following command to obtain this information:
   `ioscan -fnCdisk`
   For example: (The block special device file for the CD is `/dev/dsk/c0t0d0` in this example) ioscan -fnCdisk

```
       Class     I  H/W Path       Driver S/W State   H/W Type     Description
===================================================================
disk      0  10/0/14/0.0.0  sdisk CLAIMED     DEVICE       TEAC    CD-532E-B
                            /dev/dsk/c0t0d0   /dev/rdsk/c0t0d0
disk      1  10/0/15/1.4.0  sdisk CLAIMED     DEVICE       SEAGATE ST39204LC
                            /dev/dsk/c3t4d0   /dev/rdsk/c3t4d0
```

5. Mount the CD using the CDs block special device file and the directory that you created in step 3:
   `mount &ltblock special device file of CD/DVD drive> &ltCD mount point directory>`
   For example:
   `mount /dev/dsk/c0t0d0 /Offline_CD`
6. Execute the following script from the CD:
   `&ltCD mount point directory> /DOCS/install_lifload.ksh`
   For example:
   `/Offline_CD/DOCS/install_lifload.ksh`

Enhancements

The following enhancements are made in this release:

PCIUTIL

- JAGaf90548
  The PCIUTIL tool is enhanced to support AD193A and AD194A 4Gb FC/GigE Combo Adapters.

MEM2

- JAGaf85269
  The MEM2 tool is enhanced by increasing the speed of its execution. Test section 6, 7, and 8 are made expert level test sections. The default test sections will now include sections 1 to 5, 9 and 10 only. To run the expert level test sections, users must explicitly select them. To execute all the test sections, users must enter the following command at the tool's prompt:
  `MEM2> section all`
  To revert back to the default test sections, users must enter the following command at the tool's prompt:
  `MEM2> section default`
  The revised version of the MEM2 tool that would include these changes is B.02.32.

What Is New In This Release

IOTEST2 COPYUTIL2 DISKEXPT2 DISKUTIL2 DFDUTIL2

- Added support for AD193A and AD194A 4Gb FC/GigE combo Adapters.

MAPPER2

- Added support for AD193A and AD194A 4Gb FC/GigE combo Adapters.
- Added support for AD278A and AD279A 8-port and 64-port serial MUX Adapters.

Defect Fixes

The following defects are fixed in this release:

MAKODIAG

- JAGaf80270
  Section 14 of the MAKODIAG tool does not run on a zx1 based machine. The MAKODIAG tool displays the following error message while running the CPU Data Path Test on section 14:

  ```
  "Not enough memory to run this test.
  Skipping this test for Processor 1

  Not enough memory to run this test.
  Skipping this test for Processor 2

  ..."
  ```

- JAGaf83085
  Section 24 of the MAKODIAG tool hangs on a 64-way HP Superdome system.

PACIODIAG

- JAGaf82277
  The PACIODIAG tool displays error messages without pausing for a PDC call failure while querying for the slot number of a PCI Card. This behaviour is observed on a c8000 machine with firmware version 2.13.

Known Problem for 32-bit Tools

Following lists the known problems for 32-bit tools:

ALL ODE PROGRAMS

- All ODE programs will hang on PCX-U and PCX-U+ based workstations (C160, C180, C200, and C240) with a graphic console if firmware is earlier than IODC 4.1. IODC 4.1 and later will fix this problem.
- After exit from TMMGR to ODE, running any subsequent program may hang the system. The user should use "exit all" to exit TMMGR to ISL and reload ODE to avoid this problem.

ALL 32 BIT PROGRAMS

- Offline diagnostics may not recognize some SCSI disks attached via HP-GSC and HP-HSC cards. For example, MAPPER may fail to recognize a lone AutoRAID Disk Array Model 12H. This problem will be fixed in a subsequent version of the offline diagnostics.
  Following lists the systems and the cards that are affected:
  - D/R-Class: A4107A (HP-HSC card F/W/Diff SCSI-2)
  - K-Class: A2969A (HP-HSC card F/W/Diff SCSI-2)
  - T-Class: A3644A (HP-HSC card F/W/Diff SCSI-2)
  - A-Class: HP-HSC card F/W/Diff SCSI-2

  Temporary fix:
  - Run the `search` command from the Boot Console Handler (BCH) prompt.
  - Run the MAPPER tool or other ODE disk tools as desired.

  For A180 and A180C Servers, the temporary fix will not work. For these servers, complete the following procedure:
  - Boot to the HP-UX prompt.
  - Reboot to ISL.

Run the MAPPER tool or other ODE disk tools as desired.

ASTRODIAG

- At least ONE PCI SCSI card must be placed under each Elroy.
- For B2000, at least ONE PCI SCSI card must be installed in the system to run ALL SECTIONS on ASTRODIAG.

CLKUTIL

- This version of CLKUTIL will not work on a graphics terminal.

DINOTEST

- If section 9 runs, cards on the secondary PCI bus may loose their configuration. When this happens, users must reset the system before booting the OS.

KEYDIAG

- A.00.09: Tested on U2 (Hversion 0x580 K-Class) IOA and not on UTURN (Hversion 0x581 K-Class). Tested UTURN with Hversion 0x580 (K-Class).
  Note: all UTURN IOAs tested contain Hversion 0x580 and not Hversion 0x581.

LANCONFIG

- Does not support C-class workstations on this version.

LASIDIAG

- When executing "sect 32 10;run" (floppy format test), ODE returns HARDWARE ERROR, although there was no errors found. Users must ignore this error message.

SIODIAG

- The message "Test section completed successfully" means that the test section code is complete and has been tested.
- The message "Test section not yet implemented" means that the test section is either not code complete or not completely tested.

TIMIDIAG

- If the system console path is set to the TIMI serial port, execution of TIMIDIAG SECTION 004 (Timi UART test internal and external loopback) will crash the system.
- If the system is booted from either of the Backplane Networking, Backplane ROM or PCMCIA boot devices, execution of TIMIDIAG will crash the system.

TMMGR

- TMMGR is currently only supported when ODE has been booted from the support CD-ROM. If ODE has been booted from tape, diagnostics can be run from the ODE prompt rather than from TMMGR.

Known Problem for 64-bit Tools

Following lists the known problems for 64-bit tools:

ALL ODE PROGRAMS

- All ODE programs will hang on PCX-U and PCX-U+ based workstations (C160, C180, C200, and C240) with a graphic console if firmware is earlier than IODC 4.1. IODC 4.1 and later will fix this problem.
- After exit from TMMGR to ODE, running any subsequent program may hang the system. The user must use the "exit all" command to exit from TMMGR to ISL and reload ODE to avoid this problem.

ALL 64 BIT PROGRAMS

- The class license may not work for some rp8400 systems (HVersion 5E4 and 5E6). The work around is to install the class license from the online diagnostic tools.

DISKEXPT2 DISKUTIL2

- READLOG on a Quantum FIREBALL1050S disk will return a "Device wants to Transfer More Data then Allocated." error message. This is a bug in the disk driver firmware.

ASTRODIAG2

- Return values for each test section are inconsistent. They can cause the diag to return TM_STATUS_FAILED under the wrong circumstances.
  IMPORTANT: PCI-TO-PCI devices are not supported on Shared Slots.
- Interrupt tests (Section 6) are not executed.
- PIO transactions (Section 8) are not executed.

CIODIAG

IMPORTANT: There is no USB Coverage implemented for this release and there are no plans to test the RS232 users port. Only the UPS or Aux port in rp8400 (Keystone) is tested on an external loopback test.

IKEDIAG2

- On rp5470 servers, section 3, subtest 1 & 2 are disabled.
- ON rp5470 servers with 875MHz CPUs, Section 8: Subtest 004 DMA Ext. Interrupt Test fails.

IOTEST2

- IOTEST2 runs very slowly on c8000 machines when USB devices are connected.

MAKODIAG

- Sec 81 fails after several loops when run with other ODE Tools. Workaround : Type "resume" on the prompt to continue with remaining tests.
- Sec 24 hangs on c8000 machines when run with other ODE tools in a loop.
- Section 22 hangs when run immediately after MAPPER2 on HP Superdome systems. Workaround : Unload MAPPER2 by typing "unload MAPPER2" at the prompt before running MAKODIAG.

MAPPER2

- Runs very slowly on c8000 machines when USB devices are connected.
- Does not list MSA1500 devices when connected to A6795A Fibre Channel HBA.
- Does not detect EVA3000 and EVA5000 storage array devices when connected to A6795A Fibre channel controller.

MEM2

- Due to a firmware bug in zx1 based systems, MEM2 currently will detect SBE and pause; however it does not report the correct location of the faulty DIMM.
- Due to a firmware bug in zx1 based systems, MEM2 currently only works when run from disk. If booted from LAN, it will work for the first run as long as the user does not exit back to ISL. If exited, the user needs to reset the server before running MEM2 again.

PLUTODIAG

- Section 5 does not receive any interrupts on Walton Peak.

REODIAG

- Two CPUs end up deconfigured in rp7410 after running section 8. Further investigation in section 8 is needed. Therefore, we temporarily skip the forwarding of interrupt 0 to the processor in section 8.
- Section 11 is not implemented because the PCI Exerciser card HP E2928A is no longer supported.

TOGODIAG

- TOGODIAG takes variable amount of time to load on rp8420 systems. Delay caused by one of PDC calls in getting system information.

Documentation

For the latest and most complete information on ODE refer to the Offline Diagnostics section of Hewlett-Packard's online documentation Web site at:

http://www.hp.com/go/hpux-diagnostics-docs

This site provides manuals, FAQs, and other reference material.

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