rp8420 / rp7420 and Server Expansion Unit (SEU) Firmware Update Release Notice V3.2

Contents:

03/17/06

Document Revision 1.0

Caution: Read this document in its entirety prior
to performing Firmware Update Procedures.

Announcements

This release notice provides information and installation/upgrade instructions for the rp8420/rp7420 Firmware Release Version 3.2. This firmware release supports the rp8420 and rp7420 system products. Generally, the only case where this firmware will need to be updated in the field is to update a system to the latest revision of firmware and receive one or more of the fixes available within the new firmware.

System Firmware Features:

The system firmware supports the rp8420 and rp7420 systems with 4.1 PA-8900 PA-RISC processors running up to 1.1GHz.
- Added LAN boot functionality.
- Enabled 4GB FC card (AB378A) support.
- Enabled PCI Error Recovery for HPUX 11i v2 (11.23 HWE0512 or later).
- Pre-enabled Cell On-Line Addition reset

Manageability Firmware Features:

The following new features have been added in the manageability firmware:
- Re-Enabled 100MB MP-LAN

Support for MP master/slave failover has been discontinued. All functionality and any references to MP failover in V3.2 have been removed.

> NOTE: More information is available externally on hp.com:
>
> http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?objectID=c00462190
>
> NOTE: The service note is posted at:
>
> http://snserver.mayfield.hp.com/ServiceNotes/Snwebsite/ClassIssueDetail.asp?ClassIssueId=3717

Firmware Version Information:

COMPONENT	VERSION 1.01 rp8420 and rp7420 Release date: 2/13/2004	VERSION 2.0 rp8420 and rp7420 Release date: 7/23/2004	VERSION 3.0 rp8420 and rp7420 Release date: 4/8/2005	VERSION 3.1 rp8420 and rp7420 Release date: 6/2/2005	VERSION 3.2 rp8420 and rp7420 Release date: 3/17/2006
SUPPORTED PROCESSORS:					
CPU	PA 8800 3.1/3.2 900MHz PA 8800 3.1/3.2 1GHz	PA 8800 3.1/3.2 900MHz PA 8800 3.1/3.2 1GHz	PA 8800 3.1/3.2 900MHz PA 8800 3.1/3.2 1GHz PA 8900 4.1 1.1GHz	PA 8800 3.1/3.2 900MHz PA 8800 3.1/3.2 1GHz PA 8900 4.1 1.1GHz	PA 8800 3.1/3.2 900MHz PA 8800 3.1/3.2 1GHz PA 8900 4.1 1.1GHz
SYSTEM PROGRAMMABLE HARDWARE:					
System Backplane GPM	1.002	1.002	1.002	1.002	1.002
System Backplane FM	1.002	1.002	1.002	1.002	1.002
System Backplane OSP	1.002	1.002	1.002	1.002	1.002
PCI-X Backplane LPM	2.000	2.000	2.000	2.000	2.000
PCI-X Backplane HS	1.000	1.000	1.000	1.000	1.000
Core IO	2.008	2.008	2.009	2.008	2.010
Cell LPM	1.002	1.002	1.002	1.002	1.002
Cell PDHC	1.006	1.007	1.007	1.007	1.010
SYSTEM FIRMWARE:					
Core IO MP	A.005.017	A.005.022	A.006.012	A.006.012	A.007.008
Event Dictionary	N/A	N/A	1.008	1.008	1.010
Cell PDHC	A.003.012	A.003.014	A.003.023	A.003.023	A.003.027
Cell SFW	20.008	21.003	22.002	22.002	23.001
SEU PROGRAMMABLE HARDWARE:					
SEU Backplane GPM	1.002	1.002	1.002	1.002	1.002
SEU Backplane FM	1.002	1.002	1.002	1.002	1.002
SEU Backplane OSP	1.002	1.002	1.002	1.002	1.002
SEU PCI-X Backplane LPM	2.000	2.000	2.000	2.000	2.000
SEU PCI-X Backplane HS	1.000	1.000	1.000	1.000	1.000
SEU FIRMWARE:					
Core IO MP	A.005.017	A.005.022	A.006.012	A.006.012	A.007.008
Event Dictionary	N/A	N/A	1.008	1.008	1.015

Approximate Firmware Update Time:

Entity	Approximate Time each (in minutes) using the applicable FW or OSP utility
FPGA	
Core IO [1]	3
Cell PDHC	10
Firmware	
Master MP	2
Slave MP	16 - 22
Master MP Dict.	1
Slave MP Dict.	2
Cell PDHC	2
SFW	14

1. Remember that there are two CIO files. One for the rp8420 (cio_2.10.0.osp) and one for the rp7420 (matcio_2.10.0.osp). If you attempt to load the wrong one you will get an error message and the update will abort.
2. A fully loaded rp8420 with an SEU could take up to 3.5 hours to update when updating from version 1.01 to 3.2.

Known Problems and Workarounds

1. Immediately after AC power is applied to the system, the power button is not functional. After applying AC power to the system, wait 1 minute after the front panel "MP Present LED" has illuminated before using the system's power button.

2. There is a problem with displaying FRU information for memory. When using the specific command (S), the system displays checksum errors. This problem only occurs with df "s" option, not with the df "d" option. (Dump option has no problem.)

3. Typing "control-s" on the console and then rebooting the system causes the next boot to stall at various places until "control-q" is pressed on the same console session. The user has no indication as to why the system is not booting. Typing "control-q" on the original telnet session, closing the original telnet session, or rebooting the MP corrects the stall. If multiple telnet sessions are present, typing a "control-s" on the active terminal halts output on the active terminal, but the other consoles can gain access to the console and perform a few commands before the stall occurs. Once stalled, recover by typing "control q" on the same console that issued the "control s".

4. During boot-up, there is a delay with communications between the main cabinet MP and the SEU. Wait 10 seconds after the MP prompt appears before executing any MP command directed to the SEU.

5. Booting over Core IO GigE LAN intermittently fails when using a bootp server. Network conditions such as high-traffic can adversely affects the success rate. If booting fails, attempt to boot again. Attempting subsequent boots will generally succeed.

6. During a repair situation of a core I/O; if the replacement part contains MP firmware with A.005.0XX and the card is installed in the Master Core I/O of the SEU, the card's FW can not be updated by the Master Core I/O in the main cabinet that is at A.007.008. To successfully complete the update, workarounds exist; contact the response center for assistance.

Fixes in this Version

SFW Revision 23.001 contains the following fixes (since 22.002):

- At BCH, if the `ser scsi` command was issued prior to a `sea all` command, a U320 SCSI card (A7173A) would not be recognized as a device. Issuing a `ser scsi` command prior to a `sea all` command now works correctly.

- The Echelon data values reported in the MEM_SBE_IN_ECHELON or MEM_MBE_IN_ECHELON (alert level 2 event IDs) did not have the correct values. Firmware was modified to report the correct echelon information.

CORE I/O Manageability Firmware (MP) Revision A.007.008 contains the following fixes (since A.007.002):

NOTE: The MP firmware code is shared between Intel IPF processor (rx8620/rx7620) and PA-RISC processor (rp8420/rp7420) mid-range computing platforms.

- Re-enabled support of 100 MB on MP LAN.

- Prior to MP version A.007.008, in some instances of SEU thermal events or SEU fan failures not all affected Operating Systems were notified of the failure. After the failure the SEU would be shutdown. If the Operating Systems had not been notified they would crash. Notification code was corrected to ensure all Operating Systems are notified.

- A PS command followed by a PE (Power On) command will fail to power on a cell that is not configured as part of a hard partition. PE (Power on) functionality has been updated to correctly power on the cell.

- A cabinet or SEU fan failure was logged properly in the event logs but the OS reported the failure as an intake temperature critical error. The OS now correctly logs the event.

- The `MP:CM> ls` command now correctly reports either 10BT Half Duplex or 10BT Full Duplex for the MP LAN.

- Access to the XD command is now limited to Administrator.

- The PS command output has been modified to identify that VRMs 0 and 1 are integrated into the system backplane.

- The XD command recognized input longer than one character by truncating to the first character. An error message is now displayed upon inputs longer than one character.

- Previously, the MP was not logging proper events for VRMs 2 & 4 Rail Voltage Fault, Overtemp, and PCI Power Supply 1 Power Rail Fault events. The MP code has been updated to properly log these events.

- In the event of an AC brownout on the A1 or B0 power line the event did not indicate the correct power line. The event is now properly recorded.

- Cell unlatch events were always reported as coming from cell 0, regardless of which cell they occurred on. Events now indicate the proper cell.

- When executing PS option T, several tables are output. If a fan fails, the fan status was correctly noted, but the power status did not indicate a problem. The information is now consistent and correctly displayed.

- When Help was displayed and the text was longer than a single screen, some commands were not displayed. All commands are now properly displayed.

- When Help information was requested on the CA Command, it led to unpredictable results in displaying the help menu. The problems occurred both in displaying CA and other subsequent help items that usually worked correctly. The main menu itself was not affected. Information is now correctly displayed.

- The PS command option T did not report a fan failure on a cell board as a fault detected. The fault detection is now displayed.

- When a Master CoreIO is replaced with a new card, or the battery is replaced, the NVRam is cleared. This leads to the complex profile (including the UUID, and some other information) being lost. Information is now properly restored.

- Occasionally the MP logged an incorrect event indicating that a bulk power supply had been removed. The MP no longer erroneously reports that a bulk power supply has been removed.

CORE I/O Event Dictionary 1.015 contains the following additions (since 1.012):

NOTE: The event dictionary is the database used by the firmware (both System and Manageability) for decoding event codes into more descriptive text strings and alert levels. Prior to MP A.006.XXX, this database was embedded within the MP. As a separate file it can now be updated without having to update the MP.

- Additional modifications were made to the Event Dictionary file which ensure corresponding Events that changed in firmware are accurately reported.

CELL PDHC Firmware Revision A.003.027 contains the following fixes (since A.003.024):

NOTE: The PDHC firmware code is shared between Intel IPF processor (rx8620/rx7620) and PA-RISC processor (rp8420/rp7420) mid-range computing platforms.

- A partition with a mixed memory configuration (different DIMM sizes on the same cell) would intermittently hang at "Local Fabric Initialization" when rebooted with the **rr** command. A mixed-memory partition will no longer hang after an **rr** command is issued.

- Cell temperature faults were not correctly reported in the DE command. Cell temperature faults are now correctly reported.

- Data encoded in the CELL_VRM_VOLT_FLT event to indicate which VRM was failing was incorrect. The event now indicates the correct VRM.

- Events indicating Cache Controller Fan issues were previously logged as DNA_FAN_* as a reference. Events now use CC_FAN_* as a reference.

CORE I/O Programmable Hardware Revision 2.010 contains the following fixes (since 2.008)

NOTE: The following improvements affect internal communications only:

- Corrected packet Time-to-Live handling. During intense traffic the Time-to-Live time of the outgoing packet that was already pending in the transmitter was processed clearing the driver state but not clearing the transmitter. The transmitter and driver states are now properly restored.

- Retry logic has been added to resolve CRC error handling.

CELL PDHC Programmable Hardware Revision 1.010 contains the following fixes (since 1.009):

- PDHC was intermittently logging invalid CELL_TYP_MISMATCH_W_SYSFW events during power down. The event is no longer erroneously reported.

Firmware Update Information, Precautions and Warnings

1. Firmware files may be obtained from several locations. When downloading firmware files, all files should be stored in the same location (path). This allows a firmware update of all entities during one firmware update session.

   Note: Always download files to your PC in Binary Mode.

2. Outside the HP firewall, files may be located via a Web browser at:

   Note: The following bundle contains the combined rp8420 / rp7420 firmware files and updated release notes:

   ftp://ftp.itrc.hp.com/firmware_patches/hp/cpu/PF_CRAIMED03210.tar.gz

   And

   ftp://ftp.itrc.hp.com/firmware_patches/hp/cpu/PF_CRAIMED03210.txt

   Inside the HP firewall, the new files are available at:

   Note: The following bundle contains the combined rp8420 / rp7420 firmware files and updated release notes:

   ftp://hpatlse.atl.hp.com/firmware_patches/hp/cpu/PF_CRAIMED03210.tar.gz

   And

   ftp://hpatlse.atl.hp.com/firmware_patches/hp/cpu/PF_CRAIMED03210.text

3. The following tools will be required for firmware updates:

   - Network console connection to a MP console port.
   - Laptop and 9 pin RS-232 serial cable if network console is not available.
   - Windows XP or HP-UX FTP server with firmware file from sites listed above.

   Note: Information about configuring a Windows XP FTP server can be obtained on an internal WTEC website at:

   http://wtec.cup.hp.com/~cpuhw/hppa/rp8400/firmware/ftp-server.doc

4. Do not attempt to update firmware on a partition with the Operating System running. The Firmware Update Utility puts the PA processors into a reset condition, which will cause HP-UX to crash.

5. The Cell PDHC and/or the Cell SFW Firmware will always use the most recent version in either the primary or secondary bank and update the oldest version when running the FW update utility. Therefore, both banks must be at or below the version you wish the system to use.

6. Beginning with Version 3.0, there is a new file which contains the Event Dictionary. In earlier versions, the Event Dictionary was only embedded within the MP file. Creating a separate file now allows the Event Dictionary to be updated independently from the MP. This file MUST be installed AFTER all the installed MPs have been updated to A.06.012.

   · Update all MPs to A.06.012 and reset.
   · Update the Event Dictionary to 1.008 (no reset is required).

7. The terms upgrade and update are used synonymously throughout this document.

8. The acronyms SEU and IOX are used synonymously throughout this document.

System Board Compatibility

The rp8420 and rp7420 systems contain four replaceable boards equipped with flash memory or FPGAs. These include the system backplane, PCI-X backplane, cell(s), and core IO/MP(s).

In the event that board replacement is necessary, it is possible that replacement boards will not be equipped with matching firmware upon arrival. Currently, the rp8420 and rp7420 systems do not support operation with multiple firmware revisions (either within a partition, or across multi-partition machines). Therefore, the new board must be 'upgraded' to match the existing machine firmware version.

Firmware Update Procedures

The instructions documented in this procedure are for updating an rp7420, rp8420, and SEU firmware from v3.1 to v3.2. If updating from versions prior to v2.0, refer to the release notes for that version.

Step 1.   Ensure the Operating System is shutdown, and autoboot and autosearch for all partitions are NOT enabled.

If the Operating System is up, perform a shutdown using the following commands:

```
# setboot -b off
# setboot -s off
# shutdown -h 0
```

Step 2.   Once the server is shutdown, execute the MP:CM> id and cp commands to record the complex identification and partition cell assignment information.

Step 3.   Use the MP:CM> PE command option T or use the on/off switch to power off the cabinet. Then remove and reconnect the attached AC power cords to cycle AC power.

Note: Wait at least ten seconds before installing AC power cords.

Step 4.   After the MP has rebooted, connect to the MP Command Menu and use the MP:CM> PE command option T or use the on/off switch to power on the cabinet. Place each partition at BIB (Boot is Blocked) by issuing the RR (Reset for Reconfiguration) command for each partition. Use VFP to confirm that each partition is at BIB.

Example:

```
MP:CM> RR
```

Step 5. Use the MP command **sysrev** to determine the current revision of firmware installed. The example shown is consistent with V3.1.

Example (rp8420 with SEU):

```
MP:CM> sysrev

   Cabinet firmware revision report

PROGRAMMABLE HARDWARE :

System Backplane :   GPM          FM          OSP
                   -------      -------      -------
                    1.002        1.002        1.002

PCI-X Backplane  :   LPM          HS
                   -------      -------
                    2.000        1.000

Core IO          :  Master       Slave
                   --------      -------
                     2.008        2.008

                     LPM          PDHC
                   -------      -------
Cell 0 :            1.002        1.007
Cell 1 :            1.002        1.007
Cell 2 :            1.002        1.007
Cell 3 :            1.002        1.007


FIRMWARE:

Core IO
  Master       :  A.006.012
  Event Dict.  :          1.008
  Slave        :  A.006.012
  Event Dict.  :          1.008


Cell 0
  PDHC         :  A.003.023
  Pri SFW      :      3.066 (IA)
  Sec SFW      :     21.003 (PA)

Cell 1
  PDHC         :  A.003.023
  Pri SFW      :      3.066 (IA)
  Sec SFW      :     21.003 (PA)

Cell 2
  PDHC         :  A.003.023
  Pri SFW      :      3.066 (IA)
  Sec SFW      :     21.003 (PA)

Cell 3
  PDHC         :  A.003.023
  Pri SFW      :      3.066 (IA)
  Sec SFW      :     21.003 (PA)
```

```
IO Cabinet FPGA and Firmware revision report

System Backplane :        GPM           FM          OSP
                        -------       -------      -------
                         1.002         1.002        1.002

PCI-X Backplane  :        LPM           HS
                        -------       -------
                         2.000         1.000

                         FPGA           MP
                        -------       -------
IOX Master Core IO :     2.008     A.006.012
Event Dict.                                    1.008
IOX Slave  Core IO :     2.008     A.006.012
Event Dict.                                    1.008
```

NOTE: The field "Sec FW" may contain information about the installed IA processor firmware revision. This firmware may be installed because the cell board as it is shipped from the factory is able to support either PA-RISC or Intel processors.

Step 6.   Launch the Onboard Scan Programming (OSP) utility to update the Programmable Hardware (FPGA) components that are changed in version 3.2:

- Cell PDHC FPGA version (s) to 1.010
- Core I/O FPGA version (s) to 2.010

… using the command,

```
MP:CM> osp
```

Enter the following information when prompted (an example of the Onboard Scan Programming Utility screen follows):

```
Enter the Entities to be upgraded (Ex: 2,4,7) : (1)
Enter your user name: (2)
Enter your user password: (3)
Enter the ip address where the FPGA image file can be
found: (4)
Enter the path where the file(s) can be found: (5)
Enter PDHC FPGA image filename: (6)
Enter Core IO FPGA image filename: (7)
Are you sure that you want to continue (Y/N): y
```

(1) Select the appropriate entity/entities to be upgraded by entering each number from the first column of the FW table, separated by commas.
(2) Enter your user name.
(3) Enter account password.

(4) Enter the ip address of the anonymous FTP server where the firmware images reside.

(5) Enter the directory path. For example, "/dist/version3_2" or some other location). Do not list the actual firmware image filename.

(6) Enter the PDHC FPGA filename, "pdhc_1.10.0.osp"

(7)   Enter the Core IO FPGA filename, "cio_2.10.0.osp"

Step 6 Example (rp8420 with SEU)

```
MP:CM> osp

    ***********************************************************************
    *****                                                             *****
    *****              Onboard Scan Programming Utility               *****
    *****                                                             *****
    *****         (C) Copyright 2001 Hewlett-Packard Company          *****
    *****                     All Rights Reserved                     *****
    *****                                                             *****
    *****         THIS PROGRAM IS NOT LICENSED TO CUSTOMERS           *****
    *****                                                             *****
    *****    This program is intended for use by trained HP support   *****
    *****    personnel only.  HP shall not be liable for any damages  *****
    *****    resulting from unauthorized use of this program.  This   *****
    *****    program is the property of HP.                           *****
    *****                                                             *****
    *****                       Version  1.03                         *****
    *****                                                             *****
    ***********************************************************************


                                        Flash      Current
    Number   Cabinet     Name   Partition  Handle   FPGA Version
    ------  ---------  --------  ----------  --------  --------------
        1         0    CIO 0          0      2048       2.008
        2         0    CIO 1          1      2049       2.008
(1)     3        80    CIO 2         -1      2050       2.008
(1)     4        80    CIO 3         -1      2051       2.008
        5         0      GPM          0      2184       1.002
        6         0       FM          0      2192       1.002
        7         0      OSP          0      2232       1.002
        8         0   Pci HS          0      2328       1.000
        9         0  PciXLPM          0      2352       2.000
       10         0   PDHC 0          0      2472       1.007
       11         0   CLPM  0         0      2480       1.002
       12         0   PDHC 1         -1     24732       1.007
       13         0   CLPM  1        -1     24810       1.002
(1)    14         0   PDHC 2         -1     24742       1.007
(1)    15         0   CLPM  2        -1     24820       1.002
(1)    16         0   PDHC 3         -1     24752       1.007
(1)    17         0   CLPM  3        -1     24830       1.002

(1) these entities will only be seen on the rx8620

Enter the Entities to be upgraded (Ex: 2,4,7) : 1,2,3,4,10,12,14,16
Enter your user name: anonymous
Enter your user password: ********
Enter the ip address where the FPGA image file can be found: 192.1.1.1
Enter the path where the file(s) can be found: /dist/version3_2
Enter PDHC FPGA image filename: pdhc_1.10.0.osp
Enter Core IO FPGA image filename: cio_2.10.0.osp
Are you sure that you want to continue(Y/N): y
```

Step 7.   Verify that you have received confirmation that all the FPGAs were
           updated successfully. If any entities failed to update properly do not
           continue until those entities have been successfully updated. A
           successful update returns the following message:

```
OSP has completed successfully for all selected FPGAs.
```

           NOTE: FPGAs updated in step 6 will not show the updated version
           when running the **sysrev** command until AFTER the next AC cycle
           of the server. Once all images are updated, you will be instructed to
           AC cycle the system and verify the versions. Do NOT power cycle the
           system at this time! You could put your system into an unrecoverable
           state.

Step 8.   Turn off 48v power by pressing the front panel power button (and SEU
           power button if applicable) or by using the **MP:CM> PE** command
           option T.

Step 9.   Execute the Firmware Update Utility to update,

                 • Cell SFW version (s) to version 23.001
                 • Cell PDHC version (s) to version 3.027
                 • Core IO MP version (s) to version A.007.008

           … using the command,

```
MP:CM> fw
```

           Enter the following information when prompted:

```
Enter the Entities to be upgraded (Ex: 3,4,10): (1)
Enter your user name: (2)
Enter your user password: (3)
Enter the ip address where the firmware can be found: (4)
Enter the path where the firmware can be found: (5)
Enter the filename of the firmware image for the PDHC: (6)
Enter the filename of the System Firmware image: (7)
Enter the filename of the firmware image for the MP: (8)
Are you sure that you want to continue (Y/N): y
```

           (1) Select the appropriate entity/entities to be upgraded by entering
               each number from the first column of the FW table, separated by
               commas.
           (2) Enter your user name.
           (3) Enter account password.
           (4) Enter the ip address of the anonymous FTP server where the
               firmware images reside.

(5) Enter the directory path. For example, "/dist/version3_2" or some other location). Do not list the actual firmware image filename.
(6) Enter the PDHC filename, "pdhc_A.3.27.0.bin"
(7) Enter the SFW filename, "pinn.bin.23.1.fh"
(8) Enter the MP filename, "mp_A.7.08.0.bin"

Step 9 Example (rp8420 with SEU)

```
MP:CM> fw

    ***********************************************************************
    *****                                                             *****
    *****                  Firmware Update Utility                    *****
    *****                                                             *****
    *****      (C) Copyright 2001 Hewlett-Packard Company             *****
    *****                     All Rights Reserved                     *****
    *****                                                             *****
    *****       THIS PROGRAM IS NOT LICENSED TO CUSTOMERS             *****
    *****                                                             *****
    *****   This program is intended for use by trained HP support    *****
    *****   personnel only.  HP shall not be liable for any damages    *****
    *****   resulting from unauthorized use of this program.  This     *****
    *****   program is the property of HP.                            *****
    *****                                                             *****
    *****                     Version  4.00                           *****
    *****                                                             *****
    ***********************************************************************
                                      Flash        Current
    Number  Cabinet     Name   Partition  Handle  Firmware Version  Comments
    ------  ---------  --------  ---------- --------  ----------------- --------
    (1)  1          0    MP 0        0        0      A.006.012      Master
    (1)  2          0  DICT 0       -1       56         1.008          -
    (1)  3          0    MP 1        1        1      A.006.012      Slave
    (1)  4          0  DICT 1       -1       57         1.008          -
    (3)  5    (2)  8    MP 0        0    32768      A.006.012      Master
    (3)  6    (2)  8  DICT 0       -1    32824         1.008          -
    (3)  7    (2)  8    MP 1        1    32769      A.006.012      Slave
    (3)  8    (2)  8  DICT 1       -1    32825         1.008          -
         9          0  PDHC 0        0      256      A.003.023          -
        10          0   SFW 0        0      320        22.002          -
        11          0  PDHC 1        1      257      A.003.023          -
        12          0   SFW 1        1      321        22.002          -
    (3) 13          0  PDHC 2        0      258      A.003.023          -
    (3) 14          0   SFW 2        0      322        22.002          -
    (3) 15          0  PDHC 3        1      259      A.003.023          -
    (3) 16          0   SFW 3        1      323        22.002          -

Enter the Entities to be upgraded (Ex: 3,4,10):
1,3,5,7,9,10,11,12,13,14,15,16
Enter your user name: anonymous
Enter your user password: ********
Enter the ip address where the firmware can be found: 192.1.1.1
Enter the path where the firmware can be found: /dist/version3_2
Enter the filename of the firmware image for the PDHC:
pdhc_A.3.27.0.bin
Enter the filename of the System firmware image: pinn.bin.23.1.fh
Enter the filename of the firmware image for the MP: mp_A.7.08.0.bin
Are you sure that you want to continue(Y/N): y

**** Firmware Updating MP ****
```

… (Firmware updating progress will be reported) …

NOTE (1): On the rp7420 server the Master MP is MP1.

NOTE (2): When a SEU is connected to an rp8420 system, cabinet id 8 will be assigned to the SEU.

NOTE (3): These entities will only be seen on the rp8420.

Step 10. Ensure the entities selected were updated successfully. A successful update returns the following message:

```
Firmware Update has completed successfully for all entities.
MP:CM>
```

An unsuccessful update results in an error message. If the FTP connection was successful, but the update failed, a warning will be noted for the entity being updated. For example:

```
Firmware Update failed for entity SFW 0.
DO NOT REBOOT SFW 0 until it has been successfully updated!!!
Firmware Update completed with errors.
```

CAUTION: Re-perform the firmware update procedure immediately for all entities failing to update successfully. DO NOT RESET or AC POWER CYCLE until you get a message indicating that all updates have completed successfully.

Step 11. Activate the new Firmware for all updated components by cycling power to the system, following these specific steps:

    a) Cycle AC power to the rp8420 (and SEU if applicable) or rp7420 by removing the AC power cords, waiting approximately 30 seconds and then reinsert the cords.

    b) Wait one minute after the front panel "MP Present LED" is illuminated and then turn on the 48v power by pressing the front panel button (and SEU power button if applicable) or by using the **MP:CM> PE** command option T .

Step 12. Following the AC power cycle, verify the updated firmware to **V3.2** using the **sysrev** command.

Example (rp8420 with SEU):

```
MP:CM> sysrev

       Cabinet firmware revision report

PROGRAMMABLE HARDWARE :

System Backplane :   GPM          FM          OSP
                   -------      -------      -------
                     1.002        1.002        1.002

PCI-X Backplane  :   LPM          HS
                   -------      -------
                     2.000        1.000
```

```
 Core IO            :  Master       Slave
                       --------      -------
                         2.010         2.010

                        LPM           PDHC
                       -------       -------
 Cell 0 :               1.002         1.010
 Cell 1 :               1.002         1.010
 Cell 2 :               1.002         1.010
 Cell 3 :               1.002         1.010


 FIRMWARE:

 Core IO
   Master         :  A.007.008
   Event Dict.    :          1.008
   Slave          :  A.007.008
   Event Dict.    :          1.008


 Cell 0
   PDHC           :  A.003.027
   Pri SFW        :     23.001 (PA)
   Sec SFW        :     22.002 (PA)

 Cell 1
   PDHC           :  A.003.027
   Pri SFW        :     23.001 (PA)
   Sec SFW        :     22.002 (PA)

 Cell 2
   PDHC           :  A.003.027
   Pri SFW        :     23.001 (PA)
   Sec SFW        :     22.002 (PA)

 Cell 3
   PDHC           :  A.003.027
   Pri SFW        :     23.001 (PA)
   Sec SFW        :     22.002 (PA)

 IO Cabinet FPGA and Firmware revision report

 System Backplane :      GPM          FM         OSP
                       -------      -------    -------
                         1.002        1.002      1.002

 PCI-X Backplane  :      LPM          HS
                       -------      -------
                         2.000        1.000

                        FPGA          MP
                       -------      -------
 IOX Master Core IO :    2.010     A.007.008
 Event Dict.                                   1.008
 IOX Slave  Core IO :    2.010     A.007.008
 Event Dict.                                   1.008
```

NOTE: the Event Dictionary (s) may not display the correct revision
for v3.2 until it has been updated separately in the next step.

Step 13. Having verified that all other Firmware components have been updated successfully; execute the Firmware Update Utility to update each Event Dictionary firmware to version 1.015.

```
MP:CM> fw
```

Enter the following information when prompted:

```
Enter the Entities to be upgraded (Ex: 3,4,10): (1)
Enter your user name: (2)
Enter your user password: (3)
Enter the ip address where the firmware can be found: (4)
Enter the path where the firmware can be found: (5)
Enter the filename of the Event Dictionary image: (6)
Are you sure that you want to continue (Y/N): y
```

(1) Select the appropriate entity/entities to be upgraded by entering each number from the first column of the FW table, separated by commas.
(2) Enter your user name.
(3) Enter account password.
(4) Enter the ip address of the anonymous FTP server where the firmware images reside.
(5) Enter the directory path. For example, "/dist/version3_2" or some other location). Do not list the actual firmware image filename.
(6) Enter the Event Dictionary filename, "eventDic_1.15.bin"

Step 13 Example (rp8420 with SEU)

```
MP:CM> fw

    **********************************************************************
    *****                                                            *****
    *****                Firmware Update Utility                     *****
    *****                                                            *****
    *****       (C) Copyright 2001 Hewlett-Packard Company           *****
    *****                 All Rights Reserved                        *****
    *****                                                            *****
    *****       THIS PROGRAM IS NOT LICENSED TO CUSTOMERS            *****
    *****                                                            *****
    *****   This program is intended for use by trained HP support   *****
    *****   personnel only.  HP shall not be liable for any damages  *****
    *****   resulting from unauthorized use of this program.  This   *****
    *****   program is the property of HP.                           *****
    *****                                                            *****
    *****                    Version  4.00                           *****
    *****                                                            *****
    **********************************************************************
                                    Flash        Current
    Number  Cabinet    Name   Partition  Handle  Firmware Version  Comments
    ------  --------- -------- ---------- ------- ----------------- --------
    (1)  1        0    MP 0       0       0       A.007.008         Master
    (1)  2        0    DICT 0    -1       56         1.008            -
```

```
(1)   3          0     MP 1        1         1        A.007.008    Slave
(1)   4          0   DICT 1       -1        57            1.008    -
(3)   5    (2)   8     MP 0        0     32768        A.007.008    Master
(3)   6    (2)   8   DICT 0       -1     32824            1.008    -
(3)   7    (2)   8     MP 1        1     32769        A.007.008    Slave
(3)   8    (2)   8   DICT 1       -1     32825            1.008    -
      9          0   PDHC 0        0       256        A.003.027    -
     10          0    SFW 0        0       320           23.001    -
     11          0   PDHC 1        1       257        A.003.027    -
     12          0    SFW 1        1       321           23.001    -
(3)  13          0   PDHC 2        0       258        A.003.027    -
(3)  14          0    SFW 2        0       322           23.001    -
(3)  15          0   PDHC 3        1       259        A.003.027    -
(3)  16          0    SFW 3        1       323           23.001    -

Enter the Entities to be upgraded (Ex: 3,4,10) :2,4,6,8
Enter your user name: anonymous
Enter your user password: ********
Enter the ip address where the firmware can be found: 192.1.1.1
Enter the path where the firmware can be found: /dist/version3_2
Enter the filename of the Event Dictionary image: eventDic_1.15.bin
Are you sure that you want to continue(Y/N): y
```

NOTE (1): On the rp7420 server the Master MP is MP1.

NOTE (2): When a SEU is connected to an rp8420 system, cabinet id 8 will be assigned to the SEU.

NOTE (3): These entities will only be seen on the rp8420.

Step 14. Ensure the Event Dictionaries selected were updated successfully. A successful update returns the following message:

```
Firmware Update has completed successfully for all entities.
MP:CM>
```

An unsuccessful update results in an error message. If the FTP connection was successful, but the update failed, a warning will be noted for the entity being updated.

Step 15. Use the **sysrev** command to verify all the firmware and all the programmable hardware entities are at the revisions listed below:

```
PROGRAMMABLE HARDWARE :
System Backplane GPM       1.002
System Backplane FM        1.002
System Backplane OSP       1.002
PCI-X Backplane LPM        2.000
PCI-X Backplane HS         1.000
CoreIO Master CIO          2.010
CoreIO Slave CIO           2.010
SEU CoreIO Master CIO      2.010
SEU CoreIO Slave CIO       2.010
Cell 0 LPM                 1.002
Cell 0 PDHC                1.010
```

```
Cell 1 LPM                      1.002
Cell 1 PDHC                     1.010
Cell 2 LPM                      1.002
Cell 2 PDHC                     1.010
Cell 3 LPM                      1.002
Cell 3 PDHC                     1.010

FIRMWARE:
Core IO Master                  A.007.008
Event Dictionary                1.015
Core IO Slave                   A.007.008
Event Dictionary                1.015
SEU Core IO Master              A.007.008
SEU Event Dictionary            1.015
SEU Core IO Slave               A.007.008
SEU Event Dictionary            1.015
Cell 0 PDHC                     A.003.027
Cell 0 SFW                      23.001
Cell 1 PDHC                     A.003.027
Cell 1 SFW                      23.001
Cell 2 PDHC                     A.003.027
Cell 2 SFW                      23.001
Cell 3 PDHC                     A.003.027
Cell 3 SFW                      23.001
```

NOTE: The Cell PDHC and/or the Cell SFW Firmware will always use the most recent version in either the primary or secondary bank and update the oldest version when running the FW update utility. Therefore, both banks must be at or below the version you wish the system to use.

Step 16. Boot HP-UX. Once HP-UX is booted, you may turn autoboot and autosearch back on to the proper settings:

```
# setboot –b on
# setboot –s on
```