HPS Service Pack 5 readme first

IBM pSeries High Performance Switch (HPS) Service Pack 5 requires updates to the Hardware Management Console (HMC), Switch Network Manager (SNM) also referred to as FNM on the HMC, Global Firmware (GFW), Power Thermal Code (ptcode), AIX 5L Version 5.2 and various supporting AIX LPPs.

This document contains general guidelines for upgrading the components listed in Component update/ download information. These guidelines are intended to be a supplement to the other IBM documents referred to in this document.

Currently only the levels listed in Component update/download information are supported with HPS Service Pack 5. Therefore, if you are migrating/installing Service Pack 5, all components should be at the indicated service levels when you are finished. No mixing of Service Pack levels is supported at this time.

↓ Component update/download information

↓ Recommended installation sequence (overview)

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↓ Known problems/workarounds

↓ Service Pack 5 fix list (by component)

Component update/download information

Component	Service pack updates	Download sites
HMC	HMC_Update_R3V2.6.zip Choose version HMC_Update_R3V2.6	HMC corrective service
HMC/SNM (FNM)	APAR IY55133, PTF U497751 Choose "SNM Service Pack 5"	HMC corrective service
GFW	3H040326.img (p690) or 3J040326.img (p655) Select "System" microcode For 7040-681 Version 3 p690 models, choose "version 3H040326". For 7039-651 Version 3 p655 models, choose "version 3J040326".	Microcode download (System)

	Note GFW is available in IBM CORE 3-4 days earlier then the above mentioned website. Please contact your IBM CE for the GFW in IBM CORE if not available on website. For detailed download and unpacking procedures, refer to the Microcode download [Download procedure](#)	
Power Thermal Code	ptcode-1.54.2635-1.i386.rpm (power code is the same for both p690 and p655) Choose "Power Subsystem for 7039-651 (p655) and servers containing the 7045-SW4 (High Performance Switch)". **Note** Thermal Code is available in IBM CORE upto 1 week earlier then the above mentioned website. Please contact your IBM CE for the Power Thermal Code in IBM CORE if not available on website.	[Download microcode (Other)](#)
AIX	The recommended AIX service level for AIX 5L version 5.2 is the 5200-02 Recommended Maintenance package (APAR IY53719).	[pSeries support: Fixes](#)

If you have any of the following AIX LPPs Installed, apply the listed APARs, which are needed for HPS Service Pack 5. They are available from the following location:
[pSeries support: Fixes](#)

A general way to check levels is to run the following command

```
lslpp -l | egrep "vsd|LAPI|HPS|sni|ppe|LoadL|mmfs|rsct|csm
```

and then compare the results to the **Level check** column in the following table.

LPP	Release	Component ID	APAR	Level check
[VSD](#)	410	5765G2602	IY54838	rsct.vsd.rvsd 4.1.0.5
[LAPI](#)	231	5765G2601	IY54839	rsct.lapi.rte 2.3.1.5
[HPS](#)	110	5765G2400	IY54840	devices.chrp.IBM.HPS.rte 1.1.0.5
[LoadL](#)	320	5765E6900	IY54842	LoadL.full 3.2.0.5
[GPFS](#)	210	5765F6400	IY54844	mmfs.base.rte 3.5.0.13
[CSM](#)	132	5765E88AP	IY54845	csm.client 1.3.2.3
[RSCT](#)	232	5765F07AP	IY54846	rsct.basic.rte 2.3.2.2

Recommended installation sequence (overview):

1. Install the HMC base (new installations only).
2. Upgrade the HMC to R3 V2.6 (if necessary).
3. Install the SNM update.zip via the "Install Corrective Service" GUI option, then REBOOT THE HMC (required with Service Pack 5).
4. Disable SNM from the HMC GUI after HMC reboot.
5. For each CEC on which you want to install GFW code, shutdown all partitions except the one with service authority, if using the recommended AIX command line (update_flash) method.
6. Install the appropriate GFW driver on CEC(s).
7. After completion of the GFW install - enable SNM from the GUI.
8. If you installed GFW from AIX command line, for example, using update_flash, then you must Power down the CEC(s) from the GUI -not from the EPO red switch.
9. Power up CEC(s) and activiate partition(s).
10. Install Power Code (ptcode) update on each frame.
11. Install AIX base updates.
12. Install the AIX LPP updates and reboot partition(s)

Installation instructions (detailed)

HMC (HMC_Update_R3V2.6.zip)

NOTE that the HMC code has NOT CHANGED since HPS Service Pack 3. However, R3V2.6 is required with Service Pack 5.

Install the HMC code first by following the instructions in the pSeries High Performance Switch (HPS) Planning, Installation and Service guide (GA22-7951-00) referred to as the HPS guide for the rest of this document. Have your IBM CE download the most recent copy of the HPS guide from IBM CORE to get updated HPS install information. Also you should review the HMC update information on the web page where you downloaded HMC_Update_R3V2.6.zip.

HMC for p690

- For "Code load requirements for existing p690 server frames" please see the section in Chapter 6 titled as such and follow Step 1: p690 HMC code load in the HPS guide.
- For new HMC installation(s) follow the instructions as described in IBM Hardware Management Console for pSeries Installation and Operations Guide.
- Then follow the section in the HPS guide titled "Step 6. Install the Hardware Management Console (HMC)" in chapter 6 and follow the steps until "Step 17. Your System is Now Set Up" in chapter 6 to understand how to connect the rs422/rs232 cables.
- Then go to Step 1: p690 HMC code load in chapter 6 and follow the instructions in order to upgrade your HMC to Service Pack 5 and configure the 8-port/128-port adapters on your HMC.
- Level Check HMC by doing from the HMC GUI top menu bar task "Help" followed by "About Hardware Management Console" and it should show: Release 3, Version 2.6 HMC Build Level 20040113.

HMC for p655

- For "Code load requirements for existing p655 server frames" please go the section in Chapter 6 titled as such and follow Step 1: p655 HMC code load in the HPS guide.
- For new HMC installation(s) follow the instructions as described in IBM Hardware Management Console for pSeries Installation and Operations Guide.
- Then follow the section in the HPS guide titled "Step 6. Install the Hardware Management Console (HMC)" in chapter 6 and follow the steps until "Step 17. Your System is Now Set Up" in chapter 6 to understand how to connect the rs422/rs232 cables.
- Then go to Step 1: p655 HMC code load in chapter 6 and follow the instructions in order to upgrade your HMC to Service Pack 5 and configure the 8-port/128-port adapters on your HMC.
- Level Check HMC by doing from the HMC GUI top menu bar task "Help" followed by "About Hardware Management Console" and it should show: Release 3, Version 2.6 HMC Build Level 20040113.

SNM/FNM for HMC (APAR IY55133, PTF U497751)

Follow the install instructions for this HMC PTF by choosing PTF U497741 on the website http://techsupport.services.ibm.com/server/hmc/corrsrv.html. To Level Check this update please follow the same set of web instructions at the bottom titled "Verify a successful update".

GFW 3H040326.img (p690) or 3J040326.img (p655)

Notes on updating GFW code (system firmware) from the AIX command line

For each CEC on which you want to install the GFW code -

- One partition running AIX must have service authority. Linux does not support microcode download at this time.
- All partitions except the one with service authority must be shut down.
- The partition with service authority must own the device from which the microcode update image will be read.
- It is also recommended that the partition with service authority have a hard disk.
- If the required devices are not in the partition with service authority, the customer or system administrator must reassign the appropriate resources to it. This requires rebooting the partition with service authority.
- If the firmware on a full system partition is being updated, no special steps are required to perform the firmware update using the service aid.
- The update process can take up to 60 minutes, depending on system configuration.
- The system reboots itself during the update process. Since SNM is disabled during this process, the SNI adapter interfaces will NOT be configured when the LPAR(s) reactivate.
- It is recommended that you use the `update_flash -f` command as opposed to the shutdown -Fu method.
- AIX APAR IY49146 is required for update_flash to work correctly.
- update_flash will reboot the CEC(s) and will activate the LPAR(s).
- You may find some more detailed instructions provided on the website with the latest image: http://techsupport.services.ibm.com/server/mdownload2/download.html

To install GFW update from AIX using "update_flash" with a locally available image

A. Disable SNM Software from the SNM GUI Panel.
B. For each CEC on which you want to install the GFW code:
    1. Shutdown all partitions except the one with service authority
    2. In the AIX partition with Service Authority:
        a. Copy the GFW firmware update code(3x040326.img file) to /var
           Where x = H for p690 or J for p655

        b. Enter the following command:
```
/usr/lpp/diagnostics/bin/update_flash -qf /var/3x040326.img
```
     The system will apply the new firmware, reboot, and return to the AIX prompt.
    3. If you use dsh to invoke update_flash then use the -q flag so it does not put out a prompt. For example, dsh /usr/lpp/diagnostics/bin/update_flash -qf /var/3x040326.img
    4. After the LPAR(s) are 'Running', Power OFF the CEC(s) from the GUI
    5. Enable SNM Software from the SNM GUI Panel
    6. Power ON the CEC(s) from the GUI

To install GFW update using Diskette method

For p690 systems follow the instructions in the HPS guide on "Step 3: p690 GFW (system firmware code load)" in chapter 6.

To install GFW update using NIM method

If you're installing GFW microcode on a p655 via NIM then follow the HPS guide Chapter 6 under the section titled "Code load requirements for existing p655 server frames", Step 3. GFW (system firmware) code load.

After installing SPCN (which only takes a couple of minutes) power code download will NOT occur on a HPS system containing either a HPS Switch or HPS Adapter(s). Power code for an HPS System is loaded from the HMC so the 2 hour wait period for GFW install does not apply on an HPS system.

Determining the level of firmware on the processor subsystem

Firmware level is indicated as: 3xyymmdd.img; where x = a firmware designation such as J or H. J = p655 (Regatta IH series), H=p690 (Regatta H series) yy = year, mm = month, and dd = day of the release.

Check the GFW microcode level from a VTERM to the main SP Menu. This should show the correct level 3x040326 on the top line. You can also check the GFW level from the AIX command line on the active LPAR(s):

#lscfg -vp | grep alter | grep "\.3"

You should see:

```
ROM Level (alterable).......3H040326
- OR -
ROM Level (alterable).......3J040326
```

Determining the level of HPS adapter microcode

- The HPS adapter microcode (ucode) is shipped as part of the GFW update image.
- There are two methods to Level Check the ucode:
    ○ To Level Check ucode on the HMC, issue lsadptucode on the command line. The timestamp should be 040227yy where yy can be anything based on your hardware.
    ○ To Level Check ucode from AIX partition, issue:
      /usr/sni/aix52/debugtools/sni_get_ucode_version -l sniz (where z = sni interface number on your system anywhere from 0 thru 7 which can be seen in netstat -in output). The timestamp there should show it being built on 02/27/04.
- **NOTE:** You will need to reinstall the GFW update if you neglected to disable SNM during the GFW update or if you added/replaced an HPS adapter. Otherwise, the HPS ucode may not have been applied correctly. Level Check the ucode as stated in the previous bullets to make sure you do not have to reinstall GFW.

Power Thermal Code: ptcode-1.56.2635-1.i386.rpm:

- Level Check - After successful completion of power code from the HMC GUI Install Corrective Service, you should go to the HMC command line and confirm the success by using the **instfru** command.
- Use **instfru -lp** to list the vports and **instfru -ld -a -v 2635 -p** *xxxxxxxx* (where *xxxxxxxx* = vport name from **instfru -lp**. Repeat the command for every vport. The **instfru -ld** command should indicate that no more fru's are needed to be installed. If there is a discrepancy try reinstalling the power code via the HMC GUI as explained earlier in this paragraph, and if there is still a problem, call IBM Software Service for your next action.
- **Note**: The **instfru** command is an unsupported internal IBM debug tool and should only be used for Service Pack 5 verification of ptcode or under the guidance of IBM support in the future.

AIX:

1. Download and install the recommended AIX 5L version 5.2 Service Level update (IY53719) as listed in [Component update/download information](#).
2. Level Check by running this command on the partitions: **instfix -Ik IY53719**

LPPs:

Download and install the applicable VSD, LAPI, HPS, PPE, LoadL, GPFS, CSM and RSCT PTF updates, as listed in [Component update/download information](#).

Known problems/workarounds

This section describes problems that were not fixed in this Service Pack.

Problem 1: **One Remote Peer node goes to singleton after rebooting all nodes in the RPD**

Component: RSCT 2.3.2

Description: One Remote Peer node goes to singleton after rebooting all nodes in the RPD

Workaround:

Run preprpnode with all interfaces of the singleton node from "Group Leader" node.

1. Identify "Group Leader"
   o Login to a node that is a member of the larger group
   o Issue: lssrc -ls IBM.ConfigRM |grep " GroupLeader"
2. Run preprpnode on Group Leader node
   o Login to Group Leader node
   o Issue: preprpnode ip1 ip2 ip3 # all IPaddresses of the singleton node.
3. Run preprpnode on the "Singleton" node
   o Login to Singleton Node
   o Issue: preprpnode ip1 ip2 ip3 ... # Group Leader ipaddress

Problem 2: **IBM.vsdd dumps core during startup of RVSD**

Component: RSCT 2.3.2

Description: IBM.vsdd dumps core duing startup of RVSD.

Workaround: If IBM.ConfigRM process is not running, simply restart ConfigRM using the following command:
```
startsrc -s IBM.ConfigRM
```

Problem 3-A :

Component: GFW - System Firmware

Systems Affected: This issue affects P690/P690+ and P655/P655+ servers with "sni" adapters and will be fixed in Service Pack 6.

Description:

In Service Pack 5, a Firmware change has been introduced to reset the "Switch Network Interface" (sni) adapters at LPAR termination. This ensures that the adapters' state is cleaned up so on a subsequent LPAR activation they will function normally. As a side effect of this change an AIX Error Report entry is generated for each "sni" adapter present in the Server, for every LPAR. The Error Report entry has the following form:

Label: SCAN_ERROR_CHRP
Class: H
Type: PERM
Resource Name: sysplanar0

Descripton: UNDETERMINED ERROR

These reports after partition reboot should be treated as informational only and should not be taken as actual Hardware failures. However, if real hardware failures are experienced during normal runtime the same Error Report entries are generated and they should be treated as an indication of a real problem and the proper diagnostic and correctional procedures should be followed.

Problem 3-B: MP_Fatal and sni adapter(s) not configured after system reboot

Component: GFW - System Firmware

Systems affected: This issue affects P690/P690+ servers with "sni" adapters and is being investigated.

Descripton:

A second possible side effect of this Firmware change is that on a P690/P690+ server with eight "sni" adapters, if all LPARs are rebooted at the same time then sometimes one or two "sni" adapters may not configure during AIX initialization.

Workaround:

There are two possible workarounds for this.

1. Do not reboot all LPARs simultaneously. If the reboots are spaced out 30 seconds apart then this situation can be avoided.
2. If this situation is encountered after an LPAR reboot then running: `/usr/sbin/cfgmgr` manually should configure the "sni" adapters.

 HPS Service Pack 5 fix list (by component)

LAPI: Abstract
     Change Buffer management environment variables.
     Long LAPI_Msgpoll times
     pt2pt:Assertion failed with shared memory=yes
     code does not initialize properly

Loadleveler: Abstract
     MAX_JOB_REJECT = -1 in config file is being treated as "1"
     Problem resuming a job whose window was used by its preemptor
     DISPATCH TIME MISSING FROM LLQ(CM) AFTER REBOOT
     LOADLEVELER NEGOTIATOR RUNS OUT OF MEMORY AT 512
     THE LOADL API LL_START_JOB() FAILS
     memory errors
     LoadL_master core dumps after recycling the LL daemons
     64-bit pessl job hangs after a restart

Parallel Environment: Abstract

Change Buffer management environment variables.
Include MP_BULK_MIN_MSG_SIZE in POE spellcheck list
NTBL_WINDOW_DATA settings are incorrect in README.ntbl
POE utility mcpscat doesn`t work without -f flag
MPI icccl ic_barrier2 failes in ml0 shared memory 32&64
Cntrl-C to interrupt job left unclean shared segment.

VSD: Abstract

ha.vsd group doesn't recover if rpd is recycled
CVSD vsdvg command errors
nodes crash
panic in vsdkp and BegReq while stress and admin commands

GPFS: Abstract

GPFS missing mmdelvsd - similar function to mmdellv/mmdelnsd
mmcrvsd failed to register 2nd VSD on same hdisk
mmcrvsd fails while making logical volumes with no pvid
Files with extended ACLs rejected on 64bit
DEADLOCK WHEN HSM SERVER ON NODE NFS EXPORTING GPFS
after reboot "Failed to obtain the local environment update lock."
mmdelvsd sym link missing
mmdelvsd does not remove VSD on RPD cluster

RSCT: Abstract

No switch memberships in hagsglsm after a reboot
NetworkID in IBM.NetworkInterface not a Persistent Attribute
RM autostart condition needs to be better
TOPSVCS SCRIPT - ADD EXTRA CHECKING IN TOPSVCS WHEN CALLED BY
RSCT STARTUP SCRIPTS SHOULD NOT SET NETWORK OPTIONS IN EVERY C
ConfigRM core for one node RPD
hags migratestatus callback is not invoked
mkrpdomain cmd containing duplicate nodename hangs
mkrpdomain fails due to unclosed registry table
hung Pending Online after other node hung -rebooted
unable to start rp domain
Perf. Impairment at mk/startrpdomain by excessive usleep
IBM.SENSORRMD BECOMES DEFUNCT PROCESS WHEN THE MONITOR PROCESS
Authentication failing in CSM cluster with nodes on private network
Memory allocation error in ctcasd -> coredump
Assert DispatchControl::RegisterDescriptor()
Fix SIGSEGV problem in error reporting (EMSG137)

CHANGE TO SET STICKY BIT ON /VAR/HA/SOC/HAGS.CLIENTS.
NIM_NETMON_ADAPTER_UNKNOWN passed to send_adapter_status
ConfigRM Core dumps: in strlen () when rsct_rmf::RMError
MAX LIMIT OF CONNECTIONS TO HAEMD NEED TO INCREASED TO 1500
CtSec: compare hostnames w/case insensitive comparison
RSCT STARTUP SCRIPTS SHOULD NOT SET NETWORK OPTIONS IN EVERY

CSM: Abstract

UPDATED_NODES UPDATE_TIME COLUMNS IN /VAR/LOG/CSM/CFMCHANGE.LOG
CSMBACKUP COMMAND DOES NOT DISTINGUISH AIX VS LINUX ENVIRONMENT
CSMRESTORE FAILS ON AIX WHEN DCEM IS INSTALLED
Update csmREADME.src file for AIX 1.3.2.3 ptf

SNM: Abstract

Smash card link port misidentified
IPC1 bit 37 should never be masked
updating fnm snap and startFNMD
update.zip invalid signature file during ICS
Increase script interface timeout
Unknown power error codes reported to SFP
Inconsistent riser unplug reporting to SFP
Report failing device in refcodeExt for VPD Errors
MAC bits 32 to 62 cover port 1 of the adapter chip, not port 0
Do not store blank VPD on vport up/down scenario
Node port error reporting enablement skipped in some CEC boots
Error log entries for switch power off, on
Adjustments for ECRC/Parity Error on a link
hps_check.pl does not scale on very large systems
No TOD Master after CEC reboot
BB200902 calling 2 switches
late to time adapter unrecovery after recable delta download
Event BB30F001 is not being generated by ELA
Disable Link Enable bit when ECRC/Parity on Data error occurs
fnm.snap hangs when hps_check hangs
Network value is not set, breaks Reroute deltas
failure to show active Frames
missing data on End-Point View and Switch Topology

CSS: Abstract

check netid at cfg_init: fail if 0
Err_Type for GENERATED MPF errpt entry
iptrace crashes node with HPS Switch

HMC: Abstract

No change

GFW: Abstract

Release canucode GA 1 2/27 official build
gq pll tune bit 1 set incorrectly for dd2.6 proc @1.9GHz
Support Boot of large image sizes
RH_Field: RIO Port Disable w/ No FRU call
Enhance O.F. build to fail when too many local variables
mismatch between dump data file sizes
Soft reset can crash all partitions and the CEC
ESW DLPAR: problems with H_MIGRATE_DMA on systems EADS-X
Fix CSP reset handling path for health partners
Pass Hypervisor termination errors to OS in subsequent boot
Expurgate SPCN message so as not to scroll out of errlog screen
Canopus LHS FIRMC
MFG: IAP failures detected by Squall from GQ on 1.9 systems
FAST 43 bit enabled
Power code download interruption in warm boot
MFG: Adaptors not supported with 1.9GHz MCMs
HPS MFG ipl fail
New AP tables for 1.3GHz p670 and 1.6GHz Mi
RI bit not used correctly
fix for Healthcare crit sit
SMA: POK requests MP_FATAL for all part terminations
HTH hangs at 624th iteration in flood mode
Wrong H_ call in H_Cache_load.c & H_Cache_store.c(2 problems)
MFG: Third BPD's VPD does not show up in lsvpd
Hitachi found that the AIX location codes of adapters installed
MFG - Callout not provided on sysplanar0
pecan02, typing M from SMS Multiboot Startup menu exits SMS
BVT: Default catch in SMS menus (Regatta)