

Firmware on the New POWER HMC

June 2018 | by [Jaqui Lynch](#)

This is the third in a series of articles about updating HMCs. Previous articles covered [upgrading your HMC from 8.8.2 or later](#), and [a closer look at the new HMCv9](#). In this article we look at upgrading the firmware on the new Power Systems HMC. On x86-based HMCs there were Bios updates that were supposed to be installed. For the most part people didn't do these and the readme for the HMC software doesn't mention them. The new Power HMC is a 1U POWER8 server and it needs to have its firmware updated periodically. It's based on the 8001-12C OpenPOWER LC system. Since it's a Linux-only box, this is done differently than firmware on your regular Power Systems server. This is because it is running a different hypervisor.

Firmware Components

There are two components to the firmware. The first piece that needs to be updated is the BMC firmware and the second is the CEC PNOR. The BMC is the baseboard management controller and provides the management and monitoring functions for the boot process and the OPAL hypervisor. It fulfills many of the functions that the ASMI provided on the other Power Systems servers. It can be accessed in several ways – the first is by connecting the BMC port to your network and using IPMI (Intelligent Platform Management Interface) to access it. The second is by using the BMC GUI provided on the HMC GUI. We will do our upgrade using the GUI as it does not require connecting the BMC port to the network which alleviates some security concerns. The CEC PNOR provides the host boot and OPAL (hypervisor for Linux only servers) components. It's upgraded after the BMC firmware. The OPAL hypervisor provides the hardware abstraction and run time services for the HMC software.

Getting the Firmware

The 7063-cr1 arrived at v2.1 of the firmware which was released September 19, 2017. Since then, there have been two more firmware releases with the latest being 2.30 which was released March 13, 2018. It is listed online as: (V2.30/PNOR P8DTU20180105/BMC 1.27).

To download the new firmware to your desktop, go to Fix Central. In order to download the firmware you will need the type (7063) and 7 digit serial number of the HMC. For product group select "Power", then for product select "Power Hardware Management Console", and then "7063-CR1" for the console and lastly "All" for the final selection option. You then click on continue and Fix Central will give you a list of firmware updates. If you then click on the firmware level it will provide you with your download options. I always check the "include prerequisites" box and then finally continue. It now prompts for type and serial number and you enter those and click on continue. You then have to click on "agree" for the terms and conditions and it then provides a list of files.

The primary files you need to download to use the BMC GUI to update the firmware and CEC PNOR for the 2.30 firmware level are: P8DTU20180105_IBM_7063CR1_sign.pnor (32 MB) and SMT_P8_127.bin. You can also download the readme file if you want to. The pUpdate utility is also provided if you want to perform the update out of band by connecting to the BMC over the network. In our case we are using the BMC GUI so we only need the .bin and .pnor files. These get downloaded to your desktop and will be uploaded to the HMC during the update process.

Backups Prior to Upgrading

Prior to performing the firmware update it is a good idea to backup the HMC to a USB stick.

First backup the System Profiles

```
bkprofdata -m systemname -f backup1-may2018
```

The next step is to save upgrade data to disk

```
saveupgdata -r disk
```

And then finally you can backup to the USB stick. Remember to format the USB stick prior to backup. It should be formatted as FAT32.

```
bkconsdata -r usb
```

Updating the firmware

The default username password for the BMC are ADMIN and ADMIN. If you change the password, make a note of it as you will need it in the future. To get to the BMC GUI on a v910 Power HMC you need to use either Google Chrome or Mozilla Firefox as a browser. Login to the HMC on the web and look for the option to "Launch BMC." Once it's launched, you'll login as ADMIN. It will show you the current firmware and some other information similar to the following:

In the above the firmware is at the initial level 1.21 and the PNOR is at a 2017 level. These need to be brought up to date. Across the top there are multiple tabs and one of them is Maintenance. Click on "Maintenance", click on "Firmware update" and then click on "Enter update mode." You'll be prompted again and you click on "Enter Update Mode" and then click on ok when it asks if you really want to do this. You'll now get the "Firmware Upload" box and will need to click on browse to go find the firmware to be uploaded. This is where you will go and find the .bin file you downloaded earlier. Once you see it listed to the left of Browse then click on "Upload Firmware" to upload the firmware. Once the firmware is uploaded you will see a screen that shows what was uploaded and your current level. In order to upgrade the firmware you will need to click on "Start Upgrade".

You'll see the progress updated regularly and when the upgrade is completed you will see a message saying "Upgrade complete. Please wait for 1 minute." Click on OK and you will see the HMC is now rebooting. After the reboot, you can log back in and you will now see the firmware has been updated.

Now go back to the Maintenance tab and then select "PNOR Update." Here you go through the PNOR upload process in the same way you did for the Firmware upload. After the PNOR file is uploaded, it will show you the current and new levels and you will need to click on "Start Upgrade."

Again, you'll see the progress indicator and once the update is complete it will reboot again. After the reboot you will see:

At this point your HMC firmware and CEC PNOR are now up to date. As with all firmware updates, be sure to check the readme prior to performing the update to ensure that the HMC level and the firmware to be updated are a supported combination.

Summary

The new POWER HMC needs to be treated just like any other POWER server that you have in your data center. This means that you need to keep not just the HMC software up to date, but you also need to keep the firmware and CEC PNOR up to date. It's a straightforward process but needs to be added to your regular maintenance window as an additional step in your HMC maintenance planning.

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System

Firmware Revision : 01.21

Firmware Build Time : 20161123

PNOR Build Time : 20171002

CPLD Version : B2.81.01

Firmware Upload

Upgradeable Modules

Module Name ↕	Existing Version ↕	New Version
IPMI_FW	01.21	01.27

- Preserve Configuration**(Unchecking this option will restore the factory default
- Preserve SDR** (Unchecking this option will restore the default of SDR.)

System

Firmware Revision : 01.27

Firmware Build Time : 20170802

PNOR Build Time : 20171002

CPLD Version : B2.81.01

➔ PNOR Upload

Upgradeable Modules

Module Name ↕	Existing Date ↕	New Date ↕
PNOR_FW	20171002	20180105

Start Upgrade

Cancel

PNOR Upload

Upgradeable Modules

Module Name	Existing Date	New Date
PNOR_FW	20171002	20180105

Start Upgrade

Cancel

System

Firmware Revision : 01.27

Firmware Build Time : 20170802

PNOR Build Time : 20180105

CPLD Version : B2.81.01

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Fix Central

<https://www-945.ibm.com/support/fixcentral/>

7063-cr1 HMC announcement

http://www-01.ibm.com/common/ssi/ShowDoc.wss?docURL=/common/ssi/rep_sm/1/877/ENUS7063-h01/index.html&lang=en&request_locale=en

HMC BIOS Updates

<https://www14.software.ibm.com/support/customer/sas/f/hmcl/bios/home.html>

Power HMC Firmware updates

<https://www-945.ibm.com/support/fixcentral/swg/selectFixes?parent=ibm~powerHWmgmtConsole&product=ibm/power/7063CR1&release=MC825&platform=All&function=all>

Power HMC 2.30 Firmware Readme (changes when you select it in Fix Central)

https://delivery04.dhe.ibm.com/sar/CMA/SFA/07gxc/0/7063-CR1_OpenPowerReadme.v1.6.xhtml

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