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Redpaper

IBM Power Systems: SDMC to HMC Migration Guide (RAID1)

Introduction

In this IBM® Redpaper™ publication we describe how to migrate from the Systems Director Management Console (SDMC), model 7042-CR6 hardware appliance, to the Hardware Management Console (HMC). During the migration of SDMC to HMC, you will perform a standard, from-scratch HMC installation.

The procedures in this paper are supported only on SDMC machines (model 7042-CR6) that are migrated to HMC or that will be migrated to HMC.

This paper is intended for IT professionals, such as IBM clients, IBM Business Partners, information architects, business intelligence administrators, and database administrators.

Before you begin

Before you begin, we suggest that you close all serviceable events as a premigration step:

1. Check for open service events

    a. Verify that all serviceable events reported against each host (managed server) are repaired

    b. Close the serviceable events

2. Upgrade the existing HMC

    If you are co-managing with HMC V7R7.3 and SDMC 6.730, and you want to install the existing SDMC hardware appliance with HMC level V7R7.4 or later (level V7R7.6 is required for RAID1 support), you must first upgrade your co-managing HMC before you convert your SDMC. Disconnect the co-managing HMC from the managed server prior to the HMC upgrade. Do not reconnect the HMC to the managed server until after the SDMC to HMC conversion is complete.

3. Record existing settings

   Use the Preinstallation Configuration Worksheet for the HMC to record the SDMC settings in preparation for reinstalling back to the HMC. The worksheet is available at:

   http://pic.dhe.ibm.com/infocenter/powersys/v3r1m5/index.jsp?topic=/iphai/preins tallationconfigurationworksheet.htm

   Follow these steps to record the existing settings:

   a. Display the current network settings by entering the `lsnetcfg -n` command.

   b. Display and update the current call-home information:

      i. From the Welcome page, click the **Manage** tab, and then click **Service and Support Manager**. Under Setup and Configuration, click **Manage your system contacts**. Record any contact information.

      ii. Under Setup and Configuration, click **Manage settings**, then select the **Connection** tab. Record any proxy settings. This connection type corresponds to the *Secure Sockets Layer (SSL) through the Internet* HMC connectivity type on the worksheet.

4. Review the other settings that you might need to recreate, such as the additional user profiles, task roles, groups (resource roles), scheduled operations, Lightweight Directory Access Protocol (LDAP) or Kerberos settings, and Network Time Protocol (NTP) settings.

Preparing for the migration

Follow these steps to prepare for the migration:

1. Display and record the managed system and frame names by typing the following commands:

   ```
   lssyscfg -r sys -Fname
   lssyscfg -r frame -Fname
   ```

   Use the following examples for the correct syntax:

   ```
   lssyscfg -r sys -Fname
   Server-9119-FHA-SN02A78A0
   lssyscfg -r frame -Fname
   Server-9A01-1000P1P149
   ```

2. Enter the `smcli lssysconn -r all` command, and record the IP addresses for the managed systems and frames.

3. Verify the HMC access password for each managed system and frame by using the `chsyspwd` command and entering the current password as the new password. If no error is reported, you have the correct HMC access password for that system or frame.

   Use the following example to check the HMC access password for a managed system:

   ```
   smcli chsyspwd -t access -m Server-9119-FHA-SN02A78A0 --passwd
   <current-password> --newpasswd <current-passwd>
   ```

Use the following example to check the HMC access password for a frame:

```
smcli chsyspwd -t access -e Server-9A01-1000P1P149 --passwd <current-password>
--newpasswd <current-passwd>
```

> **Unknown password:** If the password is unknown, reset the password using the instructions at:
>
> http://www-912.ibm.com/s_dir/slkbase.NSF/DocNumber/362731655

4. Back up the profile data on the existing SDMC to a USB memory key. Follow these steps, using the SDMC command-line interface (CLI) on the existing SDMC:

   a. Locate the mount point for the USB memory key by entering the `lsmediadev` command.

      If the device is not shown, the SDMC did not detect it. Verify that the device is formatted correctly, or try another type of USB flash media and retry.

      The following example is the output of the `lsmediadev` command. This example shows a USB memory key with a mount point of `/media/vdj1`:

      ```
      lsmediadev
      device=/dev/cdrom,mount_point=/media/cdrom,type=1,description=CD/DVD
      device=/dev/vdj1,mount_point=/media/vdj1,type=3,description=USB flash memory
      device
      ```

   b. Mount the USB memory key using the `mount` command, followed by the mount point that was obtained in Step 4.a. (`/media/vdj1`), for example:

      mount `/media/vdj1`

   c. Back up the profile data for each system to be managed by the HMC. Use the **bkprofdata** command and the system that you recorded in Step 1. on page 2. Follow this system with the path to the USB memory key that you mounted in Step 4.b., for example:

      ```
      bkprofdata -m Server-9119-FHA-SN02A78A0 -f /media/vdj1/02A78A0.backupFile
      ```

   d. Unmount the USB memory key using the `umount` command, followed by the mount point that you obtained in Step 4.a. Wait for the command to return before removing the USB device. Your command will be similar to the following example:

      ```
      umount /media/vdj1
      ```

5. Remove the managed systems and frames from the SDMC that was recorded in Step 1., using the `rmsys` command, for example:

   ```
   smcli rmsys Server-9119-FHA-SN02A78A0
   smcli rmsys Server-9A01-1000P1P149
   ```

Enabling RAID1 (optional) before converting to HMC

Starting with HMC Release V7R7.6, HMC supports an Integrated Mirror (IM) or RAID1 volume on the 7042-CR6 model. If you are converting your SDMC to HMC, you can optionally set up RAID1 mirroring before reinstalling HMC as part of the conversion process.

Deleting the Integrated Striping (IS) volume (RAID0)

To set up an Integrated Management (IM) or RAID1 volume, we first need to delete the previously created Integrated Striping (IS) volume before configuring the Integrated Management (IM) or RAID1 volume.

To delete the IM volume:

1. Power on the HMC appliance.

2. After the selection window is shown during the restart operation, press F1 to go to Setup.

3. Select **System Settings**.

4. Select **Adapters and UEFI Drivers**.

> **Note:** If the Compile the List of Drivers menu is shown, press Enter.

5. Select the **LSI Logic Fusion MPT SAS Driver**.

6. Select the **SAS1064E** driver in the LSI Logic MPT Setup Utility menu.

7. Select **RAID Properties** in the SAS1064E Adapter Properties pane.

8. Select **Manage Array** in the View Array pane.

9. Select **Delete Array** in the Manage Array pane.

10. Select **Y** to delete the array and exit to the Adapter Properties pane.

Setting up the Integrated Management (IM) volume (RAID1)

The following steps guide you through the HMC BIOS to configure the LSI Logic Fusion Adapter for RAID1. If you have just deleted an Integrated Striping Volume, you may be viewing the Adapter Properties window for the LSI Logic MPT Setup Utility and can skip to Step 7.

To configure the LSI Logic Fusion Adapter for RAID1:

1. Power on the HMC appliance.

2. After the selection pane is shown during the restart operation, press F1 to go to Setup.

3. Select **System Settings** → **Adapters and UEFI Drivers**.

> **Note:** If the Compile the List of Drivers menu is shown, press Enter.

4. Select the **LSI Logic Fusion MPT SAS Driver**.

5. Select the **SAS1064E** driver in the **LSI Logic MPT Setup Utility** menu.

6. Select **RAID Properties** in the SAS1064E Adapter Properties pane.

7. Select **Create IM Volume** on the Select New Array Type pane.

> **Note:** This step produces a list of the two hard disk drives (HDDs) that are installed in the HMC appliance. Check for the HDDs, and ensure that they are correctly installed.

8. Use the arrow keys to move to the **RAID DISK** column, and press the space bar to toggle the value to **Yes** for each HDD listed.

9. Set the RAID DISK column value to **Yes**.

> **Note:** The order in which you carry out the next step dictates the primary and secondary drives in the RAID volume.

10. When toggling the first selection (primary drive), you will be asked to delete or migrate existing data; the SAS1064E adapter does not support migration, so select **D – Overwrite existing data** here

11. Select the second (secondary) drive in the same manner.

12. Press C to create the RAID array after toggling the RAID disk to **Yes** for both drives.

13. From the Create and Save New Array menu, select **Save Changes**.

14. **Exit** the menu and press **Enter**.

15. Press Esc to exit **LSI MPT setup utility**.

16. Press Esc to exit the previous menu.

17. Select **Exit the Configuration Utility and Restart**.

18. Enter **Yes** at the prompt, `The action required is stop controller`.

19. Press Esc three times to exit setup.

20. Press **Y** to exit setup completely.

21. Proceed to "Downloading and installing HMC, service pack, and recovery media files" on page 5, ensuring that you install HMC V7R7.6 as the minimum level for RAID1 support.

Downloading and installing HMC, service pack, and recovery media files

To download and install the latest service pack (SP), fixes, and recovery media files, perform the following steps:

1. Open a browser and navigate to IBM Fix Central at

   http://www.ibm.com/support/fixcentral/options

2. Make the following selections:
   – For the Product Group: **Systems**
   – Select from Systems: **Power**
   – For the Product: **Firmware, SDMC, and HMC**
   – For the Machine type-model: Select the machine type and model for one of the systems to be managed by the HMC.

3. Click **Continue**.

4. Click the radio button for the **HMC Firmware** option, and click **Continue**.

5. For the HMC firmware release levels, select at least the minimum supported release of **V7.R7.4.0 (**or **V7.R7.6.0** if adding RAID1 support for your HMC).

6. From the HMC Package Selection, select the **Recovery Image, latest service pack, and available fixes**.

7. Navigate to http://tinyurl.com/7csv2jv to display the instructions for *Reinstalling the HMC machine code* using the Recovery Image media that was obtained in Step 6.

   The address for the instructions is:

   http://publib.boulder.ibm.com/infocenter/powersys/v3r1m5/index.jsp?topic=/p7eav/areavrecoveringthehmc.htm

8. Install the service pack and fixes that were obtained in Step 6. For a description for each service pack and fix, see the instructions available on the IBM Fix Central website at:

   http://www.ibm.com/support/fixcentral/options

Setting up your system

After installing the HMC code, the system reboots. Log on with the default user ID `hscroot` and the password `abc123`. A pane displays asking you to run the setup wizard. Use the HMC worksheet and setup wizard to guide you through the configuration:

1. Set up the network interfaces as they existed in the SDMC. For a private network, configure the same Dynamic Host Configuration Protocol (DHCP) range that you identified in the setup wizard. For a public or open network, configure the same network subnets for managed system connectivity, then connect the systems:

   – If DHCP is configured, the systems automatically display in a few minutes with a `Failed Authentication` state. Enter the HMC access password to clear the state.

   > **Unknown password:** If the password is unknown, use the following link for instructions to reset the password:
   >
   > http://www-912.ibm.com/s_dir/slkbase.NSF/DocNumber/362731655

   – If a public or open network is configured, you must add each system manually, using either the graphical user interface (GUI) or the CLI `mksysconn` command.

2. Verify the partitions and profiles:

   a. Verify that the logical partitions (LPARs) that were running before the migration began are running.

   b. Verify that all profiles are intact and as expected.

   c. Verify that the partition information is intact and as expected. If needed, refer to *Hardware Management Console for pSeries Installation and Operations Guide,* SA38-0590-07 at:

   http://publib.boulder.ibm.com/systems/hardware_docs/pdf/380590.pdf

The team who wrote this paper

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