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@server

iSeries

Add or replace a hardware feature
for a partitioned server

Version 5 Release 2

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Contents

Add or replace a hardware feature

You may need to change one or more hardware features to satisfy capacity and compatibility requirements before upgrading to V5R2 and to the new server. For example, you may have SPD-attached hardware that must either be replaced or converted to PCI-attached hardware before you can upgrade to a new model. You may need to add more memory, or you may have to replace a tape drive that is not compatible with your target server. The unique requirements of the hardware feature will indicate when you change the hardware feature. Some examples are:

- If you have hardware features that will not work with OS/400 V5R2, you will need to replace these hardware features before upgrading the OS/400 release to V5R2.
- If you are adding a hardware feature that will work only with OS/400 V5R2, you will need to upgrade to V5R2 before adding the hardware features.
- If you have hardware features that will not work with the new server model, you will need to replace these hardware features either before, or when you upgrade to the new server.

You may have to change more than one hardware feature. If you plan to upgrade both the OS/400 and the server model, ensure that all your hardware features are compatible with both OS/400 V5R2 and the new server model. You should identify these hardware feature changes when you plan for your upgrade. For

information on hardware features that you may need to replace, see the iSeries Upgrade Planning Web site.

Before you begin these tasks, be sure you have completed the necessary upgrade planning. Then, to change a hardware feature, perform the following tasks:

1. **Prepare to change the hardware feature.**
   Choose the procedure that is appropriate for your environment:
   - For nonpartitioned servers, see Prepare to change the hardware feature.
   - For partitioned servers, see "Prepare to change the hardware feature for a partitioned server".
2. **"Perform the hardware feature change" on page 4.**
   Perform the tasks in this topic to change the hardware feature.
3. **Perform resource management.**
   Choose the procedure that is appropriate for your environment:
   - For nonpartitioned servers, see Perform resource management.
   - For partitioned servers, see "Perform resource management for a partitioned server" on page 4.

To view or download the PDF version of this topic, select one of the following:

- Add or replace a hardware feature (about 75 KB)
- Add or replace a hardware feature for a partitioned server (about 75 KB)

To view or print other topics related to Upgrades, see Print this topic.

Prepare to change the hardware feature for a partitioned server

This topic describes how to prepare for adding or replacing a hardware feature. Before you begin this procedure, be sure you have completed these prerequisite tasks:

- Obtain and review the preventive service planning (PSP) information.
  The PSP document for V5R2 upgrades is SF98166. Review this document for the most current information on conditions that could affect your upgrade.

1

- Review the Memo to Users .
  This document provides information about software and hardware changes that could potentially affect your system operations.

- View the Migration Web site .
  This Web site includes information about the current migration and upgrade paths, a link to relevant Redbooks, and information about converting from SPD to PCI-attached I/O.

- Review the *Performance Capabilities Reference* available on the Performance Management Web site.
  This reference provides information about server performance that is useful for customers who plan to upgrade their servers and software.

- Plan the upgrade.

Then to prepare for adding or replacing a hardware feature, perform the following tasks:

Prepare the server

1. Install fixes (program temporary fixes or PTFs) on all partitions of the server.
   Use the information in this topic to put the fixes on the server before adding or replacing the hardware feature.

2. If you are replacing disk units, you can use the Disk migration while active option of the STRASPBAL (Start ASP Balance) command to reduce the down time associated with removing a disk unit. This option allows you to move data from specified disk units while your server is running.
   For information, see the STRASPBAL (Start ASP Balance) command.

3. Save each partition of the server using GO SAVE option 21 on a tape drive that is compatible with the tape drive on the target server.
   This is vital for recovery should you experience errors when upgrading the server.

   To determine if your tape drives are compatible, see the Storage Solutions Web site .

Document the server

To ensure that the server is fully documented before you add or replace a hardware feature, perform these tasks:

1. If you are changing the disk configuration, follow these steps:
   a. "Print disk configuration status" on page 3 from each partition of the server. Be sure to record the serial number of the load-source disk unit for each partition.
   b. "Print parity set configuration and status" on page 3 from each partition of the server. Be sure to mark each printout for the partition it represents.
      You can use this information to analyze and plan for disk unit configuration and protection. It can also be used to correct any problems that occur during the upgrade.

2. If you are changing a workstation, communications, or LAN, "Display, verify, and print hardware resource information" on page 3 for each partition.
   Use this information to record the hardware resource information so that you can perform the necessary resource management after the hardware feature change is complete.

3. Print the system configuration for logical partitions.
   This gives you specific partition information such as system resources, processors, main memory, and any unique system values associated with partitions.

Now that you have finished preparing for the hardware feature change, your next step is to "Perform the hardware feature change" on page 4.

Print disk configuration status

To print the disk configuration status of your server, you need security officer authority. Complete the following steps to print the disk configuration status:

1. Enter STRSST on a command line to start system service tools (SST). Sign on to SST.

   Note: To use system service tools, you need a valid service tools user ID.
2. Select option 3 (Work with Disk Units) and press **Enter**. The Work with Disk Units display appears.
3. Select option 1 (Display Disk Configuration) and press **Enter**. The Display Disk Configuration display appears.
4. Select option 1 (Display Disk Configuration Status) and press **Enter**.
5. At the Display Disk Configuration Status display, print the disk configuration by pressing the Print Screen key on your keyboard.
6. Page down and repeat until you have printed the entire disk configuration. Ensure that all the disk configuration information is printed.
7. Record the serial number of the load-source disk unit (unit number 1) for each partition on the server.

   Note: If the server is partitioned, repeat steps 1 through 7 for each partition. Be sure to mark each printout for the partition it represents.

Print parity set configuration and status

To print the parity set configuration and status of the server, complete the following steps:

1. Enter STRSST on a command line to start system service tools (SST). Sign on to SST.
   Note: To use system service tools, you need a valid service tools user ID.
2. Select option 3 (Work with Disk Units) and press **Enter**. The Work with Disk Units display appears.
3. Select option 1 (Display Disk Configuration) and press **Enter**. The Display Disk Configuration display appears.
4. Select option 1 (Display Disk Configuration Status) and press **Enter**.
5. At the Display Disk Configuration Status display, select option 5 (Display Device Parity Status) and press **Enter**. The Display Device Parity Status display appears.
6. Print the parity set configuration by pressing the Print Screen key on your keyboard.

7. Page down and repeat until you have printed the entire parity set configuration.

Note: If the server is partitioned, repeat these steps from each partition. Be sure to mark each printout for the partition it represents.

Display, verify, and print hardware resource information

To display, verify, and print the hardware resource information, complete the following steps:

1. At the OS/400 command line, enter the Work with Hardware Products (WRKHDWPRD) command.
2. Select option 4 (Display Description Label Locations) and press **Enter** to display the label information associated with the hardware resources.
3. On the Display Description Label Locations display, verify that the label information about the hardware resources is accurate.
4. Delete the configuration descriptions (also called configuration objects) that are not associated with any physical hardware at this time.
5. Press F17 (Print) to print the description label locations. This information must be given to the service representative.
6. At the OS/400 command line, enter the following commands:

```
DSPHDWRSC TYPE(*LWS) OUTPUT(*PRINT)
DSPHDWRSC TYPE(*STG) OUTPUT(*PRINT)
DSPHDWRSC TYPE(*CMN) OUTPUT(*PRINT)
DSPHDWRSC TYPE(*PRC) OUTPUT(*PRINT)
```

This creates a report of your hardware and configuration objects.

Note: If the server is partitioned, repeat these steps from each partition. Be sure to mark the printout for the partition it represents.

Perform the hardware feature change

This topic describes how to complete the hardware feature change.

Before you begin

Before you begin these tasks, be sure you have performed the necessary upgrade planning and performed the preparation procedure that is appropriate for your environment:
- For nonpartitioned servers, see Prepare to change the hardware feature.
- For partitioned servers, see "Prepare to change the hardware feature for a partitioned server" on page 1.

Install the hardware feature

For any single upgrade order, some of the hardware features may be installed by the service representative and others may be your responsibility to install. Discuss this in advance with the IBM service representative so that you know which, if any, responsibilities are yours, and which are the responsibility of the service representative. If you are responsible for installing this hardware feature, follow the instructions that come with the feature or use the procedure for this feature in Install iSeries features.

Next step

When the hardware feature installation is complete, the next step is to perform the resource management procedure that is appropriate for your environment:
- For nonpartitioned servers, see Perform resource management.
- For partitioned servers, see "Perform resource management for a partitioned server".

Perform resource management for a partitioned server

After you change a hardware feature, you may need to perform the following tasks:
- Assign resources to partitions as necessary.
  For information on assigning resources to a partition, see Perform dynamic movement of resources.
- If you have changed the disk configuration, perform disk unit management to first protect and then configure the disks on your server.
  To do this, you can use the Work with Disk Units option from the Dedicated Service Tools display. To learn how, see Chapter 19. ″Procedures for Configuring Disks and Disk Protection″ of the Backup and

  Recovery Guide .

  Note: Once you have completed your disk configuration, you can remove any unused disk units from the configuration using dedicated service tools (DST). For information, see ″How to Remove a Disk unit from an Auxiliary Storage Pool″ in Chapter 20. ″Working with Auxiliary Storage Pools″ of the Backup

  and Recovery Guide .

Disk units that you remove from the configuration should also be physically removed to prevent them from being added back into the configuration during an IPL.

- Update workstations, communications, removable media, LAN, WAN, or Integrated xSeries Server (IXS) hardware resource names as necessary.
  For information on changing hardware resource names, see the "Fix hardware resource names" topic.
- If you have changed your console type, perform the IPL and resource management tasks in Prepare the partitioned server for production.
- If you have made changes to enable clusters or independent disk pools, use the information in Configure a cluster and Configure independent disk pools.

Congratulations! You have changed your hardware feature. You can now return to the customized upgrade task list or to the complete list of upgrade tasks.

Fix hardware resource names

Following an upgrade or migration, you may have hardware resources that are in different locations than they were on your source server. To fix these hardware resource names, follow these steps:

1. At the OS/400 command line, enter WRKHDWPRD.
2. On the Work with Hardware Products display, select option 5 (Change description label locations) and press **Enter**.
3. Read the information on the Using Change Label Locations display and press **Enter**.
4. Compare the label information on the display with the source server's label locations. Label information matches if the Label column on the display matches that of the source server. Label information does not match if any one of the following is true:
   - The display has label information, but the source server did not have label information in that location.
   - The source server label information does not match the information found in the *Label* column on the display.
   - *NONE appears in the Label column on the display, and there is label information for the source server.
     Note: When *NONE appears in the Label column for a controller or device that was added or upgraded, select option 2 (Change). Then select the correct label description from the list provided. If you experience any problems, call your service provider.
   - *INCORRECT or *INVALID appears in the Label column.
     This means that the type and model number of the hardware resource information does not match the type and model of the configuration description that is currently associated with that resource. The server cannot vary on the configuration description.
   - *INCORRECT — where the physical location is also '**'.
     This identifies a controller or device description that no longer has a valid resource on the server.
5. If there are any locations where the server label information is not the same as the (physical) label, on the Change Description Label Locations display, type 2 in the Opt column for each location that requires a label change. Press **Enter**. The Change Description Label display appears.
   Note: You may make more than one selection at a time, but if More... appears on the bottom of the display, do not press **Enter**. Instead, page forward to select the remaining labels.
6. A list of possible label names is shown. To select the label name (on the display) that matches the label that was on the source server, type 1 in the Opt column for each location that you want to change and press **Enter**.
   Note: If you cannot find the label (on the display) that matches the label on the source server, contact your service representative.
7. If you chose to change more than one label, the Change Description Label display appears for the next label. A message at the bottom of the display indicates whether the previous change was successful.

8. For all the labels that need a change, repeat the previous three steps.

9. After you change the last label, the Change Description Label Locations display appears with the updated information. A message at the bottom of the display indicates whether the last change was successful. If `More...` appears on the bottom of the display, scroll forward to view more information.

10. Press the F17 key on the Change Description Label display to request a printout of the new information for your records.
   Note: The printout will be in the default output queue for your workstation. You can print it later when you vary on your printer devices and start printer writers.

11. Verify that the labels on the printout match the labels in the Label column on your source server. If you find any errors, go back to step 5 (See 5) and repeat the steps.
   Attention: Do not exchange cards for problem analysis purposes. Card and device serial numbers are tied to the server configuration.

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