IBM Hardware Management Console for pSeries Operations Guide

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SA38-0590-01

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Before using this information and the product it supports, read the information in Appendix A, “Notices” on page 115 and product warranties included with your system.

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Contents

About This Book

This book provides information to operators and system administrators on how to use an IBM Hardware Management Console for pSeries (HMC) to manage a system. It also discusses the issues associated with the planning and implementing of partitioning.

ISO 9000

ISO 9000 registered quality systems were used in the development and manufacturing of this product.

Online Publications

IBM @server pSeries publications are available online. To access the online books, visit our Web site at: http://www.ibm.com/servers/eserver/pseries/library/hardware_docs/

Highlighting

The following highlighting conventions are used in this book:

Bold	Identifies commands, subroutines, keywords, files, structures, directories, and other items whose names are predefined by the system. Also identifies graphical objects such as buttons, labels, and icons that the user selects.
Italics	Identifies parameters whose actual names or values are to be supplied by the user.
`Monospace`	Identifies examples of specific data values, examples of text similar to what you might see displayed, examples of portions of program code similar to what you might write as a programmer, messages from the system, or information you should actually type.

Related Publications

The following publications contain related information:

- The documentation shipped with your managed system contains detailed planning, installation, and option information.
- The managed system's user's guide, which contains user information for the managed system connected to your HMC.
- The *AIX 5L Version 5.1: AIX Installation in a Partitioned Environment* guide, order number SC23-4382, contains information about installing, managing, and maintaining the AIX 5L operating system in a partitioned environment.
- The *Site and Hardware Planning Information*, order number SA38-0508, contains information to help you plan the installation of your machine.
- The @server *pSeries Electronic Service Agent for eServer pSeries User's Guide*, order number LCD4-1060, provides detailed information about the Service Agent application.

- The *Hardware Management Console for pSeries Maintenance Guide*, provides information about servicing your HMC, and includes diagnostic and error information.
- The *PCI Adapter Placement Reference*, order number SA38-0538, provides information about where to place an adapter in your managed system.

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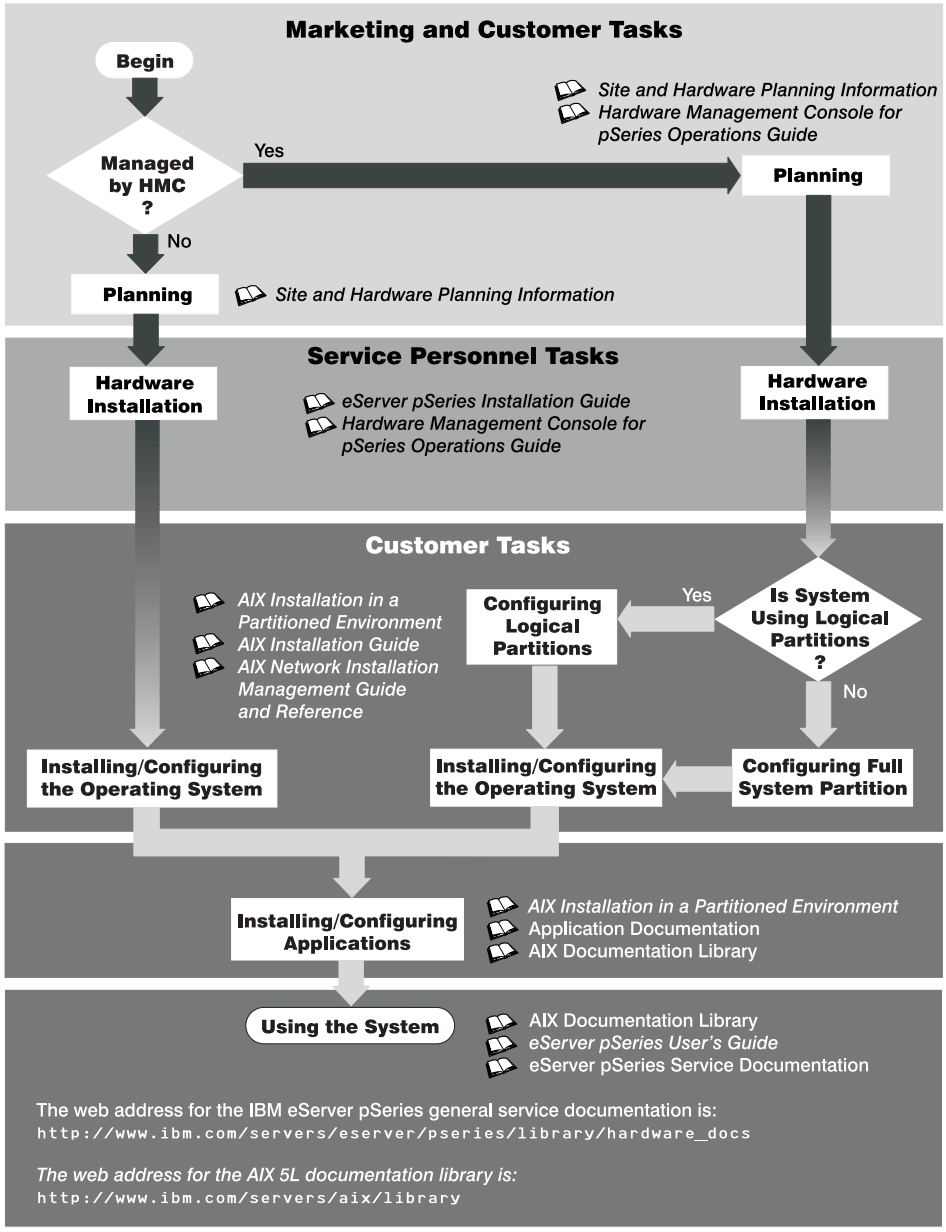
Chapter 1. Reference Materials

This chapter helps you get started with installing and configuring the @server pSeries environment. The following information is included in the chapter:

- @server pSeries Roadmap
- Documentation Overview - Brief description of the printed and softcopy documentation shipped including targeted audience

The @server pSeries Roadmap helps you locate marketing, service, and customer task information. The roadmap guides you through the tasks and the publications that document those tasks.



Documentation Overview

This section provides descriptions and target audience information for the eServer pSeries and AIX 5L documentation libraries. Some of the documentation may only be available in printed form or in softcopy form. Based on the documentation content, the books are divided into the following categories: **Planning**, **Installing and Configuring**,

and **Using the System**.

Table 1. Planning

Documentation Title	Description	Audience	Type
Site and Hardware Planning Information	Contains information to help plan for site preparation tasks, such as floor-planning, electrical needs, air conditioning, and other site-planning considerations.	Marketing, system administrators	softcopy
Hardware Management Console for pSeries Operations Guide	Provides information on how to configure and use a Hardware Management Console (HMC). Logical partition (LPAR) tasks, such as configuring and managing partitions on multiple host servers, are included.	System administrators	printed and softcopy

Table 2. Installing and Configuring

Documentation Title	Description	Audience	Type
@server pSeries Installation Guide	Provides information on how to install system hardware, cable the system, and verify operations.	Service personnel	printed and softcopy
Hardware Management Console for pSeries Operations Guide	Provides information on how to configure and use a Hardware Management Console (HMC). Logical partition (LPAR) tasks, such as configuring and managing partitions on multiple host servers are included.	System administrators	printed and softcopy
AIX Installation in a Partitioned Environment	Provides information on how to install, AIX in the operating system in an LPAR environment.	System administrators	printed and softcopy
AIX 5L Installation Guide	Provides information on how to install, manage, and maintain the AIX 5L operating system.	System administrators	printed and softcopy
AIX 5L Network Installation Management Guide and Reference	Provides information about using Network Installation Management (NIM) to install the AIX 5L operating system.	System administrators	printed and softcopy
PCI Adapter Placement Reference	Outlines system-specific PCI adapter slot placement and adapter support configurations.	Service personnel	printed
AIX 5L Version 5.1C Release Notes	Provides late-breaking information for a specific AIX release.	System administrators	printed and softcopy
AIX 5L Documentation CD	AIX documentation library (system management guides, user guides, application programmer guides, commands and files references, AIX man pages, and so on).	System administrators	softcopy

Table 3. Using the System

Documentation Title	Description	Audience	Type
Hardware Management Console for pSeries Operations Guide	Provides information on how to configure and use a Hardware Management Console (HMC). Logical partition (LPAR) tasks, such as configuring and managing partitions on multiple host servers, are included.	System administrators	printed and softcopy
@server pSeries User's Guide	Provides using, problem determination, and service processor information.	System administrators	printed and softcopy
@server pSeries Service Guide	Contains MAPs, removal and replacement, error code, and parts information to help diagnose and repair the system. Also contains MAPs that are not common to all systems.	Service personnel	printed and softcopy
Diagnostic Information for Multiple Bus Systems	Combines operating instructions for hardware diagnostic programs with common MAPs and SRNs (Service Request Numbers).	Service personnel	printed and softcopy
PCI Adapter Placement Reference	Outlines system-specific PCI adapter slot placement and adapter support configurations.	Service personnel	printed
Hardware Management Console for pSeries Maintenance Guide	Contains MAPs, removal and replacement, error code, and parts information to help diagnose and repair the system.	Service personnel	printed and softcopy
Adapters, Devices, and Cable Information for Multiple Bus Systems	Provides information about adapters, devices, and cables that are attached to or used within the system.	System administrators	printed and softcopy
System Unit Safety Information	Contains the English version of safety notices, as well as translations of those safety notices into other languages.	System administrators, service personnel	printed and softcopy
AIX 5L Documentation CD	AIX documentation library (system management guides, user guides, application programmer guides, commands and files references, AIX man pages, and so on).	System administrators	softcopy

Chapter 2. Introducing the Hardware Management Console

The IBM Hardware Management Console for pSeries (HMC) included with your system provides you with features never before available on the IBM pSeries line of servers.

The HMC uses its connection to one or more systems (referred to in this book as *managed systems*) to perform various functions, including the following:

- Creating and maintaining a multiple-partitioned environment
- Displaying a virtual operating system session terminal for each partition
- Displaying virtual operator panel values for each partition
- Detecting, reporting, and storing changes in hardware conditions
- Powering managed systems on and off
- Acting as a service focal point for service representatives to determine an appropriate service strategy

Managed System Operations

Partitioning provides users with the ability to configure a single computer into several independent systems. Each of these systems, called *partitions*, is capable of running applications in its own independent environment. This independent environment contains its own operating system, its own set of system processors, its own set of system memory, and its own I/O adapters.

The HMC allows you to perform many hardware management tasks for your managed system, including configuring logical and affinity partitions. You can choose to operate your managed system as a single server, or you can choose to run multiple partitions.

You can choose among the following types of partitioning: affinity partitioning, logical partitioning, and the Full System Partition.

Partitioning

Logical partitioning has no limitations to the number of hardware resources that are contained in a partition. A partition could have any number of installed processors assigned to it, limited only by the total number of installed processors. Similarly, a partition could have any amount of memory, limited only by the total amount of memory installed. I/O adapters are physically installed in one of many I/O drawers in the system. However, with logical partitioning, any I/O adapter in any I/O drawer can be assigned to any partition.

Some systems have the ability to create affinity partitions. An *affinity partition* is a partition with a close physical proximity to each of its resources. Hardware resources for affinity partitioning, with the exception of I/O, are defined by the HMC. When creating an affinity partition, the HMC automatically determines which system resources are to be grouped together and allows you to choose which type of grouping you want. The HMC then creates a profile for each affinity partition and a system profile that contains the affinity partitions for the managed system.

The operating system running in a partition is completely independent of any other operating system running in another partition. Operating system levels in each partition do not need to be the same, nor do the application levels.

By using partitions, for example, a company can test its program on one partition while developing the same program on another, all at the same time, all by using the same system. This ″same system″ partitioning method is more cost-effective, potentially eliminating the need for a separate test system.

For more information about partitions and their capabilities, see Chapter 3, “Partitioning” on page 9.

Service Focal Point

Service representatives use the Service Focal Point application to start and end their service calls and provide them with event and diagnostic information. The HMC can also automatically notify service representatives of hardware failures by using a feature called *Service Agent*. You can configure the HMC to use Service Agent’s call-home feature to send event information to your service representative.

The HMC must have a LAN connection to each partition (including the Full System Partition, if used) to collect partition errors.

The Service Focal Point application must be configured so that the proper information is sent. For more information, see Chapter 17, “Service Focal Point” on page 101.

Getting Started

Your HMC has been installed by a service representative and is ready for use. Use the steps in this section to start using your HMC.

Change the Keyboard Settings

During the system boot, you are prompted to change the keyboard settings. If you do not take any action, this prompt times out in 30 seconds and defaults to an English keyboard setting. If you only want to use an non-English keyboard setting, you can select the language you want and disable this prompt for future sessions.

Log in to the HMC

The HMC is shipped with a predefined user ID and password. Both the user ID and password are case-sensitive and must be typed exactly as shown. This default user ID and password are as follows:

- ID: **hscroot**
- Password: **abc123**

This hscroot user ID is a member of the System Administrator role. When the console is powered on for the first time, use this user ID to log in. For more information about user management and roles, see Chapter 11, “User Management” on page 53.

After you power on your HMC, the HMC login window displays, and prompts you to enter your user ID and password.

Change the Predefined hscroot Password

To restrict access, change the predefined hscroot password immediately. To change the predefined hscroot password, do the following:

1. In the Navigation area (the area on the left side of the screen), click the **User** icon.
2. In the Contents area (the area on the right side of the screen), right-click the **hscroot** icon.
3. Select **Change Password**.
4. Type the new password in the first field.
5. Confirm the new password by typing it again in the **Retype new password** field.

Change the Predefined Root-User Password on the HMC

The HMC is shipped with the following predefined root-user password:

passw0rd

The root-user ID and password cannot be used to log in to the console. However, the root-user ID and password are needed to perform some maintenance procedures.

To change the root-user password, do the following:

1. In the Navigation area (the area on the left side of the screen), select the **User** icon.
2. In the Contents area (the area on the right side of the screen), right-click the **root** icon.
3. Select **Change Password**.
4. Type the new password in the first field.
5. Confirm the new password by typing it again in the **Retype new password** field.

Create Users

After you have logged in and changed both passwords, you are ready to create additional HMC users. The additional users can be assigned different roles to control their access to different HMC tasks. For more information about user management and roles, see Chapter 11, “User Management” on page 53.

Chapter 3. Partitioning

Partitioning your system is similar to partitioning a hard drive. When you partition a hard drive, you divide a single physical hard drive so that the operating system recognizes it as a number of separate logical hard drives. You have the option of dividing the system's resources by using the HMC to partition your system. On each of these divisions, called *partitions*, you can install an operating system and use each partition as you would a separate physical system.

Types of Partitions

The HMC allows you to use two types of partitions: logical partitions, and the Full System Partition.

Logical Partitions

Logical partitions are user-defined system resource divisions. Users determine the number of processors, memory, and I/O that a logical partition can have when active.

Affinity Partitions

Some systems are equipped to use affinity partitions. An affinity partition is a special type of Logical Partition. Affinity partitions are divisions of system-defined resources that have a close physical proximity to each other. When you decide to create an affinity partition, the system determines the number of processors and memory that a partition can have, but the user determines the I/O requirements for each of these partitions.

Full System Partition

A special partition called the *Full System Partition* assigns all of your managed system's resources to one large partition. The Full System Partition is similar to the traditional, non-partition method of operating a system. Because all resources are assigned to this partition, no other partitions can be started when the Full System Partition is running. Likewise, the Full System Partition cannot be started while other partitions are running.

The HMC allows you to easily switch from the Full System Partition to logical partitions. The actual setup of the operating system in a partition may require some careful planning to ensure no conflicts exist between the two environments.

Benefits of Partitioning

Partitioning provides greater flexibility when deploying multiple workloads on servers, providing better management, improved availability, and more efficient use of resources.

- **Consolidate Servers**: A server with sufficient processing capacity that is capable of being partitioned can address the need for server consolidation by logically subdividing the server into a number of separate, smaller systems. In this way, application-isolation needs can be met in a consolidated environment, with the additional benefits of reduced floor space, a single point of management, and easier redistribution of resources as workloads change.

- **Merge Production and Test Environments**: Partitioning enables separate partitions to be allocated for production and test systems, eliminating the need to purchase additional hardware and software. When testing has been completed, the resources allocated to the test partition can be returned to the production partition or elsewhere as required. As new projects are developed, they can be built and tested on the same hardware on which they will eventually be deployed.
- **Consolidate Multiple Versions of the Same Operating System**: A single system can have different versions of the operating system installed to accommodate multiple application requirements. Furthermore, a partition can be created to test applications under new versions of the operating system *prior* to upgrading the production environments. Instead of having a separate server for this function, a minimum set of resources can be temporarily used to create a new partition where the tests are performed. When the partition is no longer needed, its resources can be incorporated back into the other partitions.
- **Consolidate Applications Requiring Different Time Zone Settings**: Partitioning enables multiple regional workloads to be consolidated onto a single server. The different workloads can run in different partitions, with different operating systems, as well as with different time and date settings. For example, workloads for operations based in San Francisco and New York can run in different partitions on a single server. The evening batch workload, maintenance, or upgrade for the New York operation does not affect those of the San Francisco operation.

Managing a Partitioned System

Using the HMC to manage your pSeries partitioned system, different managed-object types exist within the user interface. You can perform management functions by selecting the appropriate object type and then selecting an appropriate task. The main types of objects are managed systems, partitions, and profiles.

Managed Systems

Managed systems are the systems that are physically attached to and managed by the HMC. The HMC can perform tasks that affect the entire managed system, such as powering the system on and off. You can also create partitions and profiles within each managed system. These partitions and profiles define the way that you configure and operate your partitioned system.

Partitions

Within your managed system, you can assign resources to create partitions. Each partition, whether it is an affinity partition or logical partition, runs a specific instance of an operating system. The HMC can perform tasks on individual partitions. These tasks are similar to those you can perform on traditional, non-partitioned servers. For example, you can start the operating system and access the operating system console.

Because the HMC provides a *virtual terminal* for each partition, a terminal window can be opened for each console. This virtual terminal can be used for software installation, system diagnostics, and system outputs. The managed system firmware and device drivers provide the redirection of the data to the virtual terminal. For more information about the virtual terminal window, see Chapter 14, “Virtual Terminal Window” on page 87.

Profiles

A profile defines a configuration setup for a managed system or partition. The HMC allows you to create multiple profiles for each managed system or partition. You can then use the profiles you created to start a managed system or partition in a particular configuration.

You can create the following types of profiles:

Partition Profiles

A partition does not actually own any resources until it is activated; resource specifications are stored within partition profiles. The same partition can operate using different resources at different times, depending on the profile you activate.

When you activate a partition, you enable the system to create a partition using the set of resources in a profile created for that partition. For example, a logical partition profile might indicate to the managed system that its partition requires 3 processors, 2 gigabytes of memory, and I/O slots 6, 11 and 12 when activated.

You can have more than one profile for a partition. However, you can only activate a partition with one profile at a time. Additionally, affinity partitions and logical partitions cannot be active at the same time.

When you create a partition profile, the HMC shows you all the resources available on your system. The HMC does *not*, however, verify if another partition profile is currently using a portion of these resources. For example, the HMC might show 16 processors on your system, but does not notify you that other partitions are using nine of them. You can create two partition profiles, each using a majority of system resources. If you attempt to activate both of these partitions at the same time, the second partition in the activation list fails.

System Profiles

Using the HMC, you can create and activate often-used collections of predefined partition profiles. A collection of predefined partition profiles is called a *system profile*. The system profile is an ordered list of partitions and the profile that is to be activated for each partition. The first profile in the list is activated first, followed by the second profile in the list, followed by the third, and so on.

The system profile helps you change the managed systems from one complete set of partitions configurations to another. For example, a company might want to switch from using 12 partitions to using only four, every day. To do this, the system administrator deactivates the 12 partitions and activates a different system profile, one specifying four partitions.

When you create a group of affinity partitions, the HMC automatically creates a system profile that includes all of the affinity partitions that you created.

Chapter 4. Preparing for Partitioning

This chapter helps you prepare for a multiple-partitioned environment.

Partitioning Requirements

Before you start using partitioning, you must determine the following:

- Your resources for each partition
- The operating system host name for each partition
- The partition you want to use for service actions

Assignable Resources for Logical Partitioning

For logical partitions, you must assign resources by creating partition profiles. Use the following guidelines for assigning resources in logical partition profiles.

Processors

Each processor installed and configured on your system can be individually assigned to a logical partition. You must assign at least one processor to each logical partition.

Memory

The HMC can assign memory to a logical partition in increments of 256 MB, with a minimum of 1 gigabyte (GB) per partition.

Because partitioning your system requires some memory overhead, use the following guidelines when you are planning to create partitions:

- Start all the partitions that are greater than 16 GB in size *before* starting all the partitions that are less than or equal to 16 GB in size. If you activate a partition that is greater than 16 GB last, it may not start.
- If all your partitions are greater than 16 GB in size, start the largest partition last. Use the following table to determine the maximum number of partitions greater than 16 GB in size that can be activated based on your memory configuration.

You can also use the following table to determine how many partitions you can create with the memory amount installed on your machine:

Total Memory (in GB)	Approximate Memory Overhead (in GB)	Approximate Usable Partition Memory (in GB)	Maximum Number of Partitions <=16GB and >16GB
8	.75 to 1	7 to 7.25	6 and 0
16	.75 to 1	15 to 15.25	14 and 0
24	1 to 1.25	22.75 to 23	16 and 0
32	1 to 1.25	30.75 to 31	16 and 0
48	1.25 to 1.75	46.25 to 46.75	16 and 1
64	1.5 to 2	62 to 62.5	16 and 2

Total Memory (in GB)	Approximate Memory Overhead (in GB)	Approximate Usable Partition Memory (in GB)	Maximum Number of Partitions <=16GB and >16GB
96	2 to 2.5	93.5 to 94	16 and 4
128	2.5 to 3.5	124.5 to 125.5	16 and 6
192	3.5 to 4.5	187.5 to 188.5	16 and 10
256	5 to 6	250 to 251	16 and 14

The preceding memory considerations are useful when you record the amount of memory you have used in Appendix C, “Logical Partitioning Resource Tracking Worksheet” on page 121.

I/O Devices

I/O is assignable to a given partition on a PCI adapter-slot basis.

Because each partition requires its own separate boot device, the system must have at least one boot device and associated adapter per partition.

Each partition should have one network adapter, although this is not mandatory. In addition to providing a network connection, the connection is also needed to provide the capability for HMC service functions. For more information, see “Customizing Network Settings” on page 26.

For more information about a specific device and its capabilities, see the documentation shipped with that device. For a list of supported adapters and a detailed discussion about adapter placement, refer to the *PCI Adapter Placement Reference*, order number SA38-0538.

Assignable Resources for Affinity Partitioning

You will need to assign I/O resources to your affinity partitions by creating partition profiles.

Processors and Memory

Unlike logical partitions, the HMC pre-allocates processors and memory to affinity partitions. You can choose to create either 4-processor affinity partitions or 8-processor affinity partitions. If you have 32 processors on your system, choosing a 4-processor group allows you to create up to eight affinity partitions. Likewise, an 8-processor group allows you to create up to four affinity partitions. You cannot define 4-processor groups and 8-processor groups at the same time.

I/O Devices

Like logical partitioning, the user allocates I/O to each affinity partition. I/O is assignable to a given partition on a PCI adapter-slot basis.

Because each partition requires its own separate boot device, the system must have at least one boot device and associated adapter per partition.

Each partition should have one network adapter, although this is not mandatory. In addition to providing a network connection, the connection is also needed to provide the capability for HMC service functions. For more information, see “Customizing Network Settings” on page 26.

For more information about a specific device and its capabilities, see the documentation shipped with that device. For a list of supported adapters and a detailed discussion about adapter placement, refer to the *PCI Adapter Placement Reference*, order number SA38-0538.

Giving Your Partition a Host Name

Each partition, including the Full System Partition, must have a unique host name that can be resolved. Host names cannot be reused between the Full System Partition and the logical partitions. If the host name of the partition must be changed, before changing the host name of the partition, do the following:

1. Run the following command: **/usr/sbin/rsct/bin/runact -c IBM.ManagementServer SetRTASPollingInterval Seconds=0** (Skip this step if the AIX level is below 51D.)
2. Run the following command: **/usr/sbin/rsct/bin/lsrsrc IBM.ManagementServer Hostname**

   The output displayed will be similar to the following: (If the partition is managed by multiple HMCs, there may be multiple entries, since each HMC has its own entry.)

   ```
   resource 1: Hostname = "hmc1.mydomain.mycompany.com"
   ```
3. For each entry, remove the resource using the host name shown. For each entry, remove the resource using the host name shown. For example, type the following: **/usr/sbin/rsct/bin/rmrsrc -s’Hostname = ″hmc1.mydomain.mycompany.com″’ IBM.ManagementServer**. You can verify that all entries have been removed by performing Step 2 again.
4. Run the following command: **/usr/sbin/rsct/bin/rmcctrl -z**
5. Change the host name of the partition.
6. Once the host name has been changed, run the following command: **/usr/sbin/rsct/bin/rmcctrl -A**

Once the host name of the partition is changed, you may need to update the Network Settings on the HMC. This will be the case if a ″short″ partition name is used or if a DNS server is not used. See “Customizing Network Settings” on page 26 to determine if any additional changes are needed.

Setting Up Service Authority

A service representative may install a firmware update on the managed server. Firmware updates are done at the system level, not on a per-partition basis. A firmware update can be performed from a partition that is running AIX or from the service processor menus.

When partitions are being created, it is recommended that one partition be given service authority. Service technicians use the partition designated as having service

authority to perform system firmware updates and set other system policy parameters without having to power off the managed system. All other partitions must be shut down before the firmware update is initiated.

The partition that has service authority must also have access to the firmware update image. If the firmware update image is going to be read from diskettes, the diskette drive must be assigned to the partition that has service authority. If you are downloading the firmware update from the network, download it to the partition that has service authority.

For more information about how to set service authority on a partition, read “Setting Service Authority” on page 81.

If you powered on with the Full System Partition, you do not have to take additional steps to prepare for firmware updates.

Operating States

In the HMC Contents area, an operating state is indicated for the managed system.

Operating States for Managed Systems

The following operating states apply to the managed system itself.

State	Description
Initializing	The managed system is powered on and is initializing.
Ready	The managed system is powered on and operating normally.
No Power	The managed system is powered off.
Error	The managed system’s operating system or hardware is experiencing errors. For recovery information, see Appendix E, “Error Messages and Recovery Information” on page 147.
Incomplete	The HMC cannot gather complete partition, profile, or resource information from the managed system. For recovery information, see Appendix E, “Error Messages and Recovery Information” on page 147.
No Connection	The HMC cannot contact the managed system. For recovery information, see Appendix E, “Error Messages and Recovery Information” on page 147.
Recovery	The partition and profile data stored in the managed system must be refreshed. For recovery information, see Appendix E, “Error Messages and Recovery Information” on page 147.

State	Description
Incompatible	Your managed system's service processor level is higher than your HMC's code level. For recovery information, see Appendix E, "Error Messages and Recovery Information" on page 147.

Partition Operating States

The following operating states apply to the logical partition you have created.

State	Description
Ready	The partition is not active but is ready to be activated.
Starting	The partition is activated and is undergoing booting routines.
Running	The partition has finished its booting routines. The operating system might be performing its booting routines or is in its normal running state.
Error	This partition failed to activate due to a hardware or operating system error. For recovery information, see Appendix E, "Error Messages and Recovery Information" on page 147.
Not Available	This partition is not available for use. Reasons can include: • The managed system is powered off. • The Full System Partition is not available when the managed system is powered on with the Partition Standby power-on option. • Logical partitions are not available when the managed system is powered on with the Full System Partition power-on option. • Affinity partitions are not available when the managed system is powered on and non-affinity partitions are activated first. • Non-affinity partitions are not available when the managed system is powered on and affinity partitions are powered on first. For recovery information, see Appendix E, "Error Messages and Recovery Information" on page 147.
Open Firmware	The partition was activated by a profile that specified an OPEN_FIRMWARE boot mode.

Chapter 5. User Environment

This chapter discusses the user environment and Hardware Management Console (HMC) applications.

Using the Login Window

The HMC provides a predefined user ID called *hscroot*. The hscroot password is **abc123**. This hscroot user ID is a member of the System Administrator role. When the console is powered on for the first time, use this user ID to log in. After you are logged in, you can create additional users.

After you power on your HMC, the HMC login window displays first, and prompts you to enter your user ID and password.

Service representatives may request that you create a special user ID that has the Service Representative role, enabling them to log in to perform service functions. For more information about creating users and assigning roles, see Chapter 11, “User Management” on page 53.

Logging Out

This task allows you to log out of the HMC interface.

To log out of the HMC interface, do the following:

1. In the main menu, select **Console**.
2. Select **Exit**. At this point, you can choose to save the state of the console for the next session by clicking the box next to the option.
3. Select **Exit Now**.
4. When you exit from your HMC session, you can choose to shut down, reboot, or log out of your session. The following is a description of each option:

   Shutdown
   Powers off the HMC system

   Reboot
   Shuts down the HMC system and then reboots it to the Login prompt

   Logout Returns the user to the Login prompt without shutting down the HMC system

Using the Two-Button Mouse

If you have a two-button mouse, click both buttons at the same time to emulate the center mouse button.

HMC System Management Environment

The HMC system management environment allows you to manage your managed systems. The HMC interface is based on the AIX Web-based System Manager.

When you log in to the HMC, the HMC management window opens, and the management environment is already selected. This window is divided into the Navigation area and the Contents area.

The panel on the left (the Navigation area) displays a hierarchy of icons that represent collections of systems, individual systems, managed resources, and tasks. Each Navigation area folder identifies a collection of related applications. Each icon in these folders identifies an application. At the highest point, or *root* of the tree, is the Management Environment. The Management Environment contains one or more host system applications that are managed by the console. Each system application contains its own collection of applications that contain managed objects, tasks, and actions for a related set of system entities or resources.

The panel on the right (the Contents Area) displays results based on the item you select in the Navigation area. When you click on an application in the Navigation area, the Contents area displays the tasks you can perform using that application.

Each HMC contains the following set of application groups:

- System Manager Security
- Server and Partition
- HMC Maintenance
- Service Applications

Each HMC contains the following set of application icons:

- System Manager Security
- Server Management
- System Configuration
- Users
- Software Maintenance
- Inventory Scout Services
- Service Agent
- Service Focal Point
- Problem Determination

Using Multiple HMCs

You can use one HMC to view and manage other HMCs by adding the additional HMCs to the Navigation area.

You can also connect two HMCs to the same managed system. In this configuration, either HMC can perform tasks on that managed system. For more information about using multiple HMCs, see Chapter 10, “Using Two HMCs Connected to One Managed System” on page 51.

HMC Application Overview

This section provides an overview of each application’s functions. For detailed information, see the chapter that discusses each application.

System Manager Security

System Manager Security provides for the secure operation of the HMC in client-server mode. System Manager Security is based on Public Key Encryption, the Secure Socket Layer (SSL) protocol, and the Pluggable Authentication Module (PAM) authentication policy method. In the System Manager Security operation, the managed machines are servers and the managed users are clients.

Communication between the servers and clients is done over the SSL protocol, which provides server authentication, data encryption, and data integrity. The client manages the server using an account on that system and authenticates to the System Manager server by sending the user ID and password.

For more information about using this application, see Chapter 8, “Security” on page 41.

Server and Partition

The Server and Partition application folder contains the Server Management application.

Server Management

The Server Management application manages all partition-related activities. Use the Server Management application to create, maintain, activate, and delete partitions. You can also use this application to power managed systems on and off.

For more information about using this application, see Chapter 13, “Server Management Tasks” on page 73.

HMC Maintenance

The HMC Maintenance application folder contains applications related to setting up and maintaining the HMC environment.

System Configuration

The System Configuration application allows you to set the console's date and time, enter and check HMC network information, view console events, and schedule routine backups.

For more information about using this application, see Chapter 6, "System Configuration" on page 25.

Users

The Users application controls user access to the HMC. You can assign one role to each user you create. Different roles allow the user to perform different tasks in the HMC environment.

For more information about using this application, see Chapter 11, "User Management" on page 53.

Software Maintenance

The Software Maintenance application allows you to save and back up important HMC-related information, format removable media, as well as install corrective fixes and patches.

For more information about using this application, see Chapter 15, "HMC Software Maintenance" on page 91.

Service Applications

The service applications folder contains applications used to service both the HMC and managed system.

Inventory Scout Services

Inventory Scout Services is a tool that surveys the managed system for hardware and software information. This tool also provides a customized report indicating the latest microcode level. Inventory Scout Services helps users to keep track of software updates and patches on managed systems.

For more information about using this application, see Chapter 9, “Inventory Scout Services” on page 47.

Service Agent

The Service Agent application accepts hardware errors from the Service Focal Point. Service Agent reports serviceable events, assuming they meet certain criteria for criticality, for service without requiring customer intervention.

Service Agent enables the following:

- Automatic problem analysis
- Problem-definable threshold levels for error reporting
- Automatic problem reporting; service calls can be placed without customer intervention
- Automatic customer notification
- Network environment support with minimum number of telephone lines for modems

For more information about using this application, see Chapter 16, “Service Agent” on page 95.

Service Focal Point

Service representatives and system administrators use Service Focal Point to view operating system error logs.

For more information about using this application, see Chapter 17, “Service Focal Point” on page 101.

Problem Determination

Service representatives have access authority to use this application to view and diagnose HMC problems. This application is available to service representatives *only*.

HMC Management Window

The HMC menu bar on the HMC management window displays all of the operations performed on the console and managed objects. The menus are organized as follows:

Console Menu

The Console Menu contains choices that control the console. It allows you to:

- Add and remove host systems from the management environment, including other HMCs
- Save console preferences
- Specify whether to automatically attempt to log in to a host with a stored password
- View the console session log
- Exit the console

Object Menu

The name of the Object Menu changes to indicate the type of resource managed by the current application you have selected. For example, when you select the **Partition Management** application, the Object Menu title becomes Partitions. The Object Menu contains general choices and actions for an application that do not require you to select specific object actions. Typically, actions for creating new resource objects are located in the Object Menu. When a new application is selected, the contents of the Object Menu are updated.

Selected Menu

The Selected Menu contains those actions for an application that require you to select which managed objects an action is to apply to, such as **Open**, **Properties**, **Copy**, **Delete**, or **Start**. When you select a new managed object, the contents of the Selected Menu are updated.

View Menu

The View Menu contains choices for navigating, such as **Back**, **Forward**, and **Up One Level**. It also includes choices for customizing the console in the **Show** submenu. For example, you can select to show or hide the tool bar and status bar. The View Menu includes options that control how objects are presented. For example, if the application provides a choice of views, such as *Large Icon*, *Small Icon*, *Details*, and *Tree*, these choices are listed here. If the application only supports a single view, no view choices are listed. When an application is displaying an icon or *Details* view, the View Menu includes choices for sorting and filtering the container.

Window Menu

The Window Menu contains actions for managing sub-windows in the console workspace. **New Window** creates a new console sub-window in the workspace. Other choices control how all console sub-windows are presented.

Help Menu

The Help Menu lists user-assistance choices. You can view help contents and search for help on a particular topic.

Chapter 6. System Configuration

The System Configuration application allows you to set the Hardware System Console's (HMC) date and time, enter and check network information, view console events, and schedule backups.

Setting and Viewing the Console Date and Time

Any user role can view the console date and time. To update the console date and time, you must be a member of one of the following roles:

- Advanced Operator
- System Administrator
- Service Representative

The battery-operated clock keeps time and date for the HMC. You might need to set the console date and time under the following circumstances:

- If the battery is replaced in the HMC
- If your system is physically moved to a different time zone

To customize your console date and time, do the following:

1. In the Navigation area, click the **System Configuration** icon.
2. Click **Customize Console Date / Time**.
3. Click on the month shown in the **Date** field to change the month. Similarly, click the day or year shown in the **Date** field to change the values.
4. Click on the hour, minute or second shown in the **Time** field to change the values.
5. From the list, select the region and city closest to your location, and click **OK**.

To view the clock's currently set time, click the **Refresh** button.

Enabling Remote Virtual Terminal Connections

With HMC Release 2 Version 1.0 or higher, remote virtual terminal connections are disabled by default. This section describes how to enable remote virtual terminal connections.

To enable remote virtual terminal connections, you must be a member of the System Administrator role.

To enable remote virtual terminal connections, do the following:

1. In the Navigation area, click the **System Configuration** icon.
2. In the Contents area, click **Enable/Disable Remote Virtual Terminal Connections**. The Enable Remote Virtual Terminal window displays.
3. Click the **Enable remote virtual terminal connections** box.
4. Click **OK**.

Customizing Network Settings

While the HMC conducts most of its management function through the direct serial connections to the managed systems, connecting the HMC to your network provides you with additional remote management capabilities. It also significantly enhances service and maintenance for partitioned systems.

Enabling the HMC network connection allows you to take advantage of the following HMC capabilities:

- **Remote Management**: You can access the HMC user interface remotely from a Web-based System Manager graphical user interface client. Both the Web-based System Manager client and server are provided with the AIX base operating system can be installed in any AIX operating system. The client is also available in a standalone version that can be installed on a number of platforms. To manage a system remotely, you can start the client on a remote system, enter the HMC host name or IP address, and provide a valid HMC user ID and password. After you complete these steps, the HMC user interface options display in the user interface, just like they would on the HMC itself.

  The HMC also provides you with some basic command line functions for managing systems and partitions. With a network connection, you can connect to the HMC and issue these command functions remotely, either manually or as part of an automated script. For more information about the high-level command line, see Chapter 18, “Using the Command Line” on page 111.

- **Service Functions**: To configure your network to allow network connections between the HMC and the partitions in the managed systems, plan to include network adapters in each partition. While you need only a single network adapter in a partition to handle both management functions and general-purpose networking, you can also use separate adapters if you want to keep these functions separate, or you can put them on separate networks.

  If the network connections are available:

  – The partitions automatically forward hardware service events to the HMC for collection in the Service Focal Point and for automatic dispatch of service through Service Agent (if enabled). Without these connections, service events are reported and logged only within the individual partitions that observe them, which can delay reporting and fixing the problem.

  – You can use the Inventory Scout application to collect hardware and microcode information from the partitions to the HMC, to build a complete picture of the hardware inventory in a partitioned system. The Inventory Scout application then sends this hardware configuration information to IBM to assist in accurate hardware-upgrade planning. Inventory Scout also enables you to check for available updates to the versions of system firmware and adapter microcode that are currently installed in your systems and partitions.

Using Network Adapters to Communicate with Partitions

After a partition has been started, it uses the network adapter to communicate with the HMC. Both the HMC and the partition must be configured so that they can use the network adapters to communicate with each other. The AIX partition must be configured to identify the HMC (or HMCs) on the network. It is recommended that the network be

configured using a Domain Name Service (DNS) server and each partition be identified using a fully qualified host name. This identification ensures uniqueness of all the partitions and the HMC in the network. Fully qualified host names cannot be more than 100 bytes in length.

The HMC and partitions can also be configured using a ″short″ host name where the domain name is not defined. This is typically done in a private or test network. If the HMC is defined using a ″short″ host name, you must perform extra network configuration steps to ensure that the partitions and the HMC communicate correctly. For information on modifying the HMC host name on the partitions, see the *AIX 5L Version 5.1 AIX Installation in a Partitioned Environment* guide, order number SC23-4382.

On the HMC, in order to communicate with a partition that is not identified on the network by a fully qualified host name or if DNS is not being used, the host name of the partition must be entered in the network settings of the HMC. If you use short host names rather than fully qualified host names, make sure that those host names are unique and that the mappings to IP addresses are specified correctly. The HMC provides an interface for updating the **/etc/hosts** file. For instructions on adding partitions to the HMC **/etc/hosts** file, see “Setting Host Names” on page 28.

The HMC can communicate to partitions that use DNS, fully qualified host names, and short host names. The following examples illustrate possible situations:

- If the partition is specified using a fully qualified host name (for example: `host123.mydomain.mycompany.com`), the HMC must enable the use of a DNS server or must specify the fully qualified host name in the local **/etc/hosts** file. For instructions on adding partition names to the HMC **etc/hosts** file, see “Setting Host Names” on page 28.
- If the partition is specified using a short host name (for example: `host123`), the HMC must specify the short host name in the local **/etc/hosts** file and ensure that the short host name is located before the fully qualified host name, if the fully qualified host name is also specified in the **/etc/hosts** file. For instructions on adding partition names to the HMC **/etc/hosts** file, see “Setting Host Names” on page 28.

Note: Changes made to your HMC’s network settings do not take effect until you reboot the HMC.

To customize network settings, you must be a member of one of the following roles:

- Advanced Operator
- System Administrator
- Service Representative

Setting the IP Address

To customize your HMC’s IP address, do the following:

1. In the Navigation area, click the **System Configuration** icon.
2. In the Contents area, click **Customize Network Settings**. The Network Configuration window displays.

3. Click the **IP Address** tab.
4. Type TCP/IP and gateway information as appropriate. For questions about your network and how it is configured, see your network administrator.
5. Click **OK** if you are finished customizing the network.

   Note: Changes made to your HMC's network settings do not take effect until you reboot the HMC.

Setting Domain Names

You can change the default domain names and enter your own.

To set a domain name, do the following:

1. In the Navigation area, click the **System Configuration** icon.
2. In the Contents area, click **Network Configuration**. The Network Configuration window displays.
3. Click the **Name Services** tab.
4. The system displays the default domain name as `localdomain`. Replace this name with your network information as appropriate.

   Note: Do *not* assign the `localhost.localdomain` with an IP address other than the loopback `127.0.0.1`.

   For questions about your network and how it is configured, see your network administrator.
5. Click **OK**.

Setting Host Names

You can change the **/etc/hosts** file yourself by clicking on the **Host** tab. This window allows you to type a local host name you want to store in the **/etc/hosts** file.

To set a host name in the **/etc/hosts** file, do the following:

1. In the Navigation area, click the **System Configuration** icon.
2. In the Contents area, click **Network Configuration**. The Network Configuration window displays.
3. Click the **Host** tab.
4. Enter your Host name information as appropriate.
5. Click **OK**.

For more information about setting host names, see Chapter 7 in the *AIX 5L Version 5.1: AIX Installation in a Partitioned Environment* guide, order number SC23-4382.

Adding and Changing IP Addresses and Host Names

You can add to and change the **/etc/hosts** file yourself by clicking on the **Hosts** tab. This window allows you to add any IP address or host names you want to store in the **/etc/hosts** file.

To add or change a host name in the **/etc/hosts** file, do the following:

1. In the Navigation area, click the **System Configuration** icon.
2. In the Contents area, click **Network Configuration**. The Network Configuration window displays.
3. Click the **Hosts** tab.
4. Click **New** or **Change**.
5. The Host Entries window opens. In the first field, type the IP address you want to add or change.
6. In the second field, type the host name or names you want to associate with the IP address you typed in the first field. If you enter multiple host names, separate them by spaces and list the primary host name first. Enter multiple host names when you want to identify a machine by both its fully-qualified host name and its short host name. For example, if your domain is `mycompany.com`, then for some IP address you might enter `myname.mycompany.com somename`.
7. Click **OK**.

The **/etc/hosts** file is updated with your new information.

Setting Routing Information

You can add, change, or delete routing information.

To set routing information, do the following:

1. In the Navigation area, click the **System Configuration** icon.
2. In the Contents area, click **Network Configuration**. The Network Configuration window displays.
3. Click the **Routing** tab.
4. Select **New**, **Change**, or **Delete**.
5. Type the gateway information in the fields as appropriate. For questions about your network and how it is configured, see your network administrator.
6. Click **OK**.

Setting Device Attributes

You can select a speed and duplex mode for an Ethernet adapter.

To set device attributes, do the following:

1. In the Navigation area, click the **System Configuration** icon.
2. In the Contents area, click **Network Configuration**. The Network Configuration window displays.
3. Click the **Device Attributes** tab.
4. Select the speed and duplex mode for your adapter. For more information about your adapter's speed and mode, read the documentation that was provided with your adapter.
5. Click **OK**.

Scheduling Backups

This option enables you to schedule the time and dates for backing up critical console information. When you schedule a backup operation, the information is saved on a formatted DVD-RAM disk on your HMC. Each time this data is saved, old data is replaced with the more recent data. If you do not want older information overwritten, insert a new DVD-RAM disk in the HMC's drive each time you perform a backup.

For more information about critical console data, see Backing up Critical Console Data on page 91.

To schedule a backup of console data, you must be a member of one of the following roles:

- Advanced Operator
- System Administrator

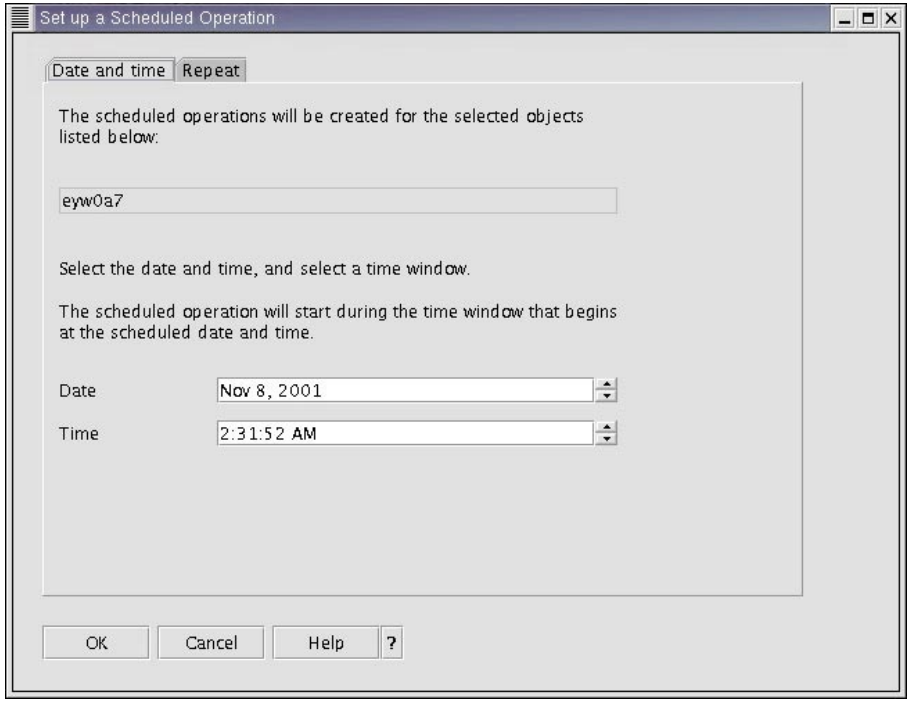
Scheduling a Backup Operation

You can schedule a backup to occur once, or you can set up a repeated schedule. You must provide the time and date that you want the operation to occur. If the operation is scheduled to repeat, you must select how you want this backup to repeat (daily, weekly, or monthly).

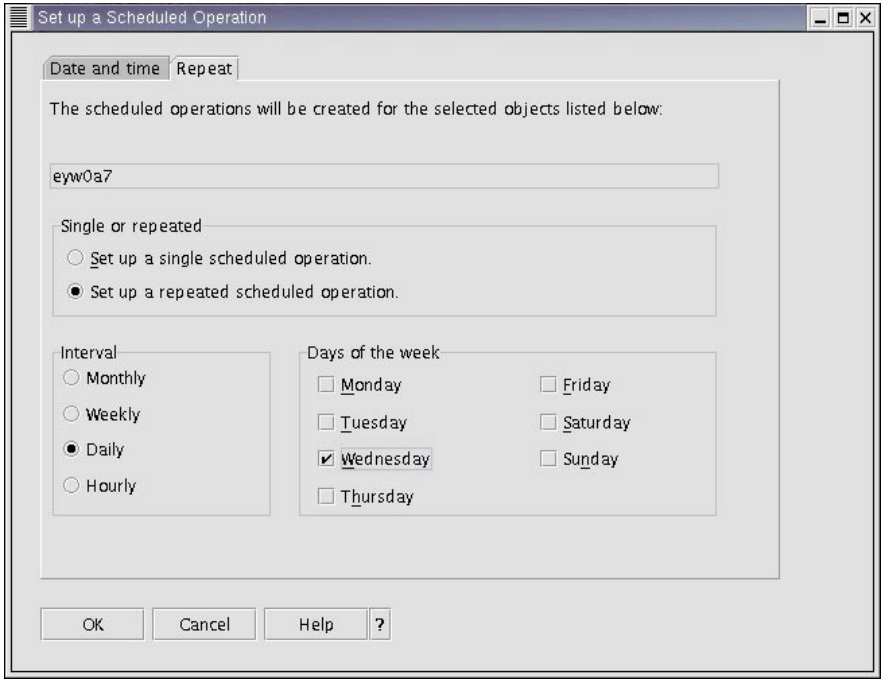
To schedule a backup operation, do the following:

1. In the Navigation area, click the **System Configuration** icon.
2. In the Contents area, click **Scheduled Operations**.
3. In the menu, click **Options**.
4. Select **New**.
5. After selecting **New**, select **Back up Critical Console Data** from the menu. The scheduling window displays.

6. In the appropriate fields, enter the time and date that you want this backup to occur.

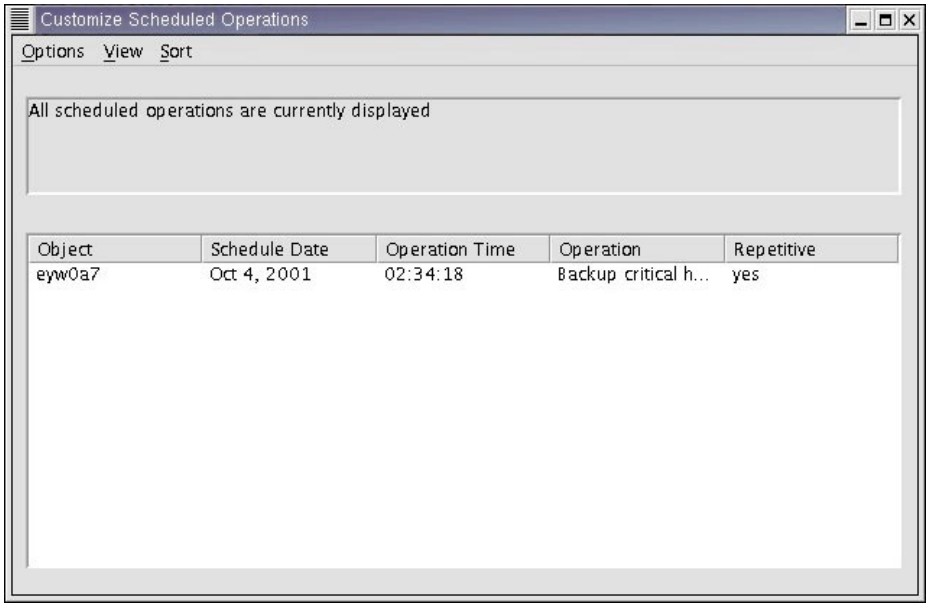


7. If you want this scheduled operation to repeat, click the **Repeat** tab and enter the intervals at which you want the backup to repeat. You can schedule backup operations to repeat at monthly, weekly, daily, or hourly intervals. If you select Daily intervals, you can select the individual day of the week you want the backup to occur. If you want to repeat a scheduled operation daily or hourly, you can also specify the days of the week on which you want this operation to occur. In the following example, the user wants the backup to occur every Wednesday:



8. Click **OK** when you are finished setting the backup time and date.

After you have defined a scheduled backup operation, a description of the operation displays in the Scheduled Operations window. This window looks similar to the following:



Reviewing an Existing Scheduled Operation

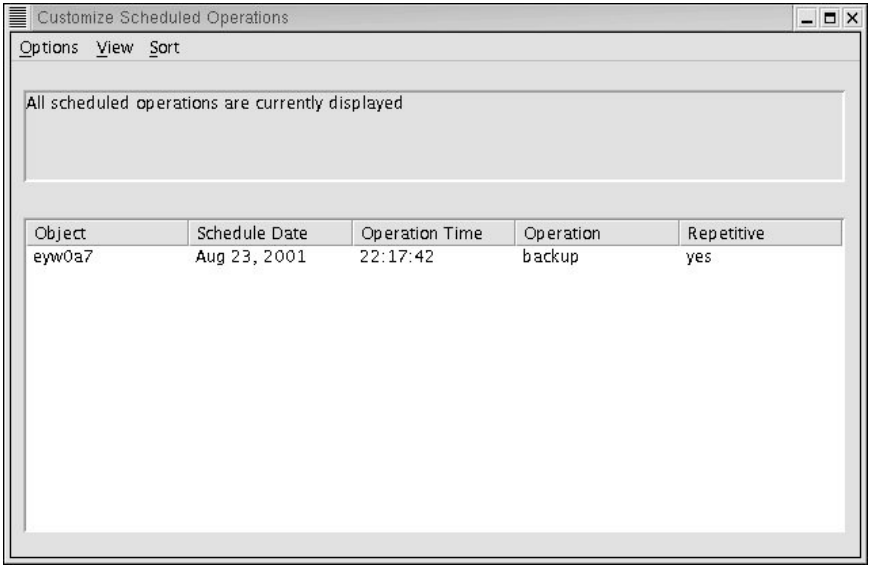
You can use the HMC to review an existing scheduled operation that you have created.

To review an existing operation, you must be a member of one of the following roles:

- Advanced Operator
- System Administrator

To review an operation you have already created, do the following:

1. In the Navigation area, click the **System Configuration** icon.
2. In the Contents area, click **Scheduled Operations** from the menu to display a list of scheduled operations. The Scheduled Operations window looks similar to the following:



Filtering Your View

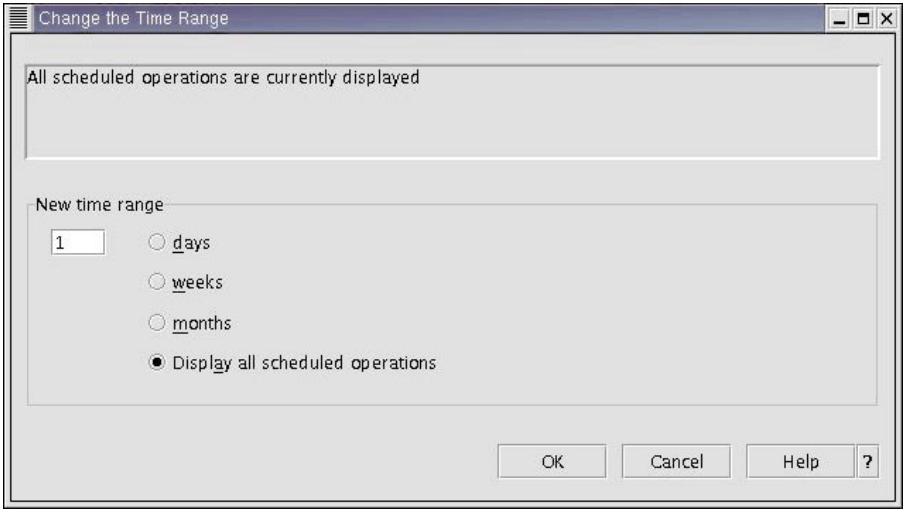
You can view the duration of the backup tasks you scheduled and filter the tasks you want to view.

To modify what you want to view, you must be a member of one of the following roles:

- Advanced Operator
- System Administrator

To view the time range of a scheduled backup, do the following:

1. Select the operation you want to view.
2. From the menu, select **View**.
3. Select **New Time Range**. The Change Time Range window opens. The Change Time Range window looks similar to the following:



4. After filtering the time range information you want to view, click **OK**.

Viewing Console Events

To see a log of recent HMC activity, you can view console events. Each event has an associated time stamp. The following is a sample of the events recorded:

- When a partition was activated
- When a system was powered on
- When a partition was shut down
- Results of a scheduled operation

To view console events, you must be a member of one of the following roles:

- System Administrator
- Advanced Operator
- Service Representative

To view console events, do the following:

1. In the Navigation area, click the **System Configuration** icon.
2. In the Contents area, select **View Console Events**.

Testing Network Connectivity

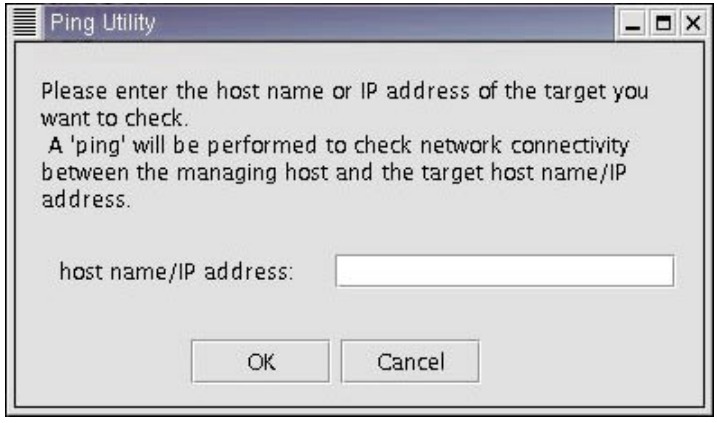
This option enables you to verify that you are properly connected to the network.

To test network connectivity, you must be a member of one of the following roles:

- Advanced Operator
- System Administrator
- Service Representative

To test network connectivity, do the following:

1. In the Navigation area, click **System Configuration**.
2. In the Contents area, click **Test Network Connectivity**.
3. A window similar to the following displays:



   Type the host name or IP address of the system to which you are attempting to connect.
4. Click **OK**.

Enabling and Disabling Remote Commands

This option provides the ability to run commands remotely through the **rexec** command or the **ssh** command.

To enable or disable remote commands, you must be a member of one of the following roles:

- Advanced Operator
- System Administrator
- Service Representative

To enable or disable remote commands, do the following:

1. In the Navigation area, click **System Configuration**.
2. In the Contents area, click **Enable / Disable Remote Command Execution**.
3. Select the appropriate box.
4. Click **OK**.

Chapter 7. Remote PC Client

You can access your HMC remotely by installing and configuring the PC client on your PC. This chapter discusses how to install the remote PC client and PC client security.

Minimum Recommended System Requirements for PC Client

If you are planning to use a PC to run the Web-based System Manager's PC Client application, you must have the following:

- 60 MB of free disk space on the default drive for temporary use during the installation procedure
- 50 MB of free disk space on the drive you plan to use to install the Web-based System Manager's PC Client application
- PC Processor speed of at least 500 MHz
- 256 MB of memory

Installation Requirements to Support PC Client and PC Client Security

The following table identifies the requirements for installing Web-based System Manager PC Client on a PC platform:

Netscape Communicator	• Netscape Communicator must be version 4.7 or 4.7x. • Java plug-in must be version 1.3.0_X. (Netscape Communicator 6.0 is not supported.)
Internet Explorer	• Internet Explorer must be version 5.0 or later. • Java plug-in must be version 1.3.0_X.

This version of InstallShield does not support Java plugin 1.3.1_X.

Installing Web-based System Manager Remote PC Client and PC Client Security

This section describes how to install both the Remote PC Client and PC Client Security.

Installing the Remote PC Client

To install Web-based System Manager PC Client from an HMC system installed with Release 2 Version 1 of HMC, do the following:

1. Type the following web address in the PC web browser:

   host name `/pc_client/pc_client.html`where *host name* is the name of the HMC system.
2. Click **Proceed to Start**.
3. Grant permission to temporarily install and run Java for use by the InstallShield installation wizard by clicking the appropriate button.

4. The PC Client Installer window opens. Choose the location you want to install the PC client and click **Next**.
5. If a panel is displayed stating that the selected installation directory does not exist, click **Yes** to create the directory.
6. A confirmation window opens, showing the installation location, the package being installed, and the approximate size of the installation package. Press **Next**.
7. A status window opens, showing that the installation completed successfully. Click **Finish** to close the window.

Installing Security Features for the Remote PC Client

To install Web-based System Manager PC Client Security from an HMC system installed with Release 2 Version 1 of HMC, do the following:

1. Enter the following web address in the PC web browser:

   hostname/`pc_client/pc_client_security.html`

   where *hostname* is the name of the HMC.
2. At the Web-based System Manager screen, click **Proceed**.
3. Grant permission to temporarily install and run Java for use by the InstallShield installation wizard by clicking the appropriate button.
4. When the PC Client Security Installer window opens, click **Next**.
5. Choose the location you want to install the PC Client Security.

   Note: You must install PC Client Security in the same location where you installed the PC Client.

   Click **Next**.
6. A confirmation window opens, showing the installation location, the package being installed, and the approximate size of the installation package. Press **Next**.
7. If a panel is displayed stating that a JVM is being installed and asking if you want to overwrite the directory, click **Yes**.
8. A status window opens, showing that the installation completed successfully. Click **Finish** to close the window.

Configuring PC Client Security

To establish secure connections in PC Client mode, you must copy the Certificate Authority's **SM.pubkr** public key file to the **codebase** directory in the location where you installed PC Client.

For more information about copying this key file, see "Distribute the Certificate Authority's Public Key to Your Clients" on page 43.

Chapter 8. Security

System Manager Security ensures that HMC can operate securely in the client-server mode. Managed machines are *servers* and the managed users are *clients*. Servers and clients communicate over the Secure Sockets Layer (SSL) protocol, which provides server authentication, data encryption, and data integrity. Each HMC System Manager server has its own private key and a certificate of its public key signed by a Certificate Authority (CA) that is trusted by the System Manager clients. The private key and the server certificate are stored in the server's private key ring file. Each client must have a public key ring file that contains the certificate of the trusted CA.

Define one HMC as a Certificate Authority. You will use this HMC to generate keys and certificates for your HMC servers and client systems. The servers are the HMCs you want to manage remotely. A unique key must be generated and installed on each server. You can generate the keys for all your servers in one action on the CA and then copy them to diskette, install them at the servers, and configure the servers for secure operation.

The client systems are the systems from which you want to do remote management. Client systems can be HMCs, AIX, or PC clients. Each client system must have a copy of the CA's public key ring file in its System Manager codebase directory. You can copy the CA public key ring file to the diskette on the CA and copy it from the diskette to each client.

To use the System Manager Security application, you must be a member of the System Administrator role.

This chapter describes tasks associated with System Manager Security.

Configuring HMC System Manager Servers and Clients for Secure Operation

The following steps are required to configure HMC System Manager servers and clients for secure operation.

Configure One HMC as a Certificate Authority

Define one HMC as a Certificate Authority (CA) to generate keys and certificates for your HMC servers and clients.

A Certificate Authority verifies the identities of the HMC servers to ensure secure communications between clients and servers. To define a system as a Certificate Authority, you must be logged in as the hscroot user at the machine being defined as the internal Certificate Authority. This procedure defines a system as an internal Certificate Authority for HMC security and creates a public key ring file for the Certificate Authority that you can distribute to all of the clients that access the HMC servers.

To configure a system as a Certificate Authority, do the following:

1. In the Navigation area, click **System Manager Security**.
2. In the Contents area, select **Certificate Authority**.
3. In the System Manager Security: Certificate Authority window, select **Configure This System as a Certificate Authority**. You can also select **Configure...** from the Certificate Authority menu.
4. Use the wizard panels to complete the task.

Generate Private Key Ring Files for the HMCs That You Want to Manage Remotely

After you define the internal Certificate Authority, you can use the CA to create the private key ring files for the HMCs that you want to manage remotely.

Each HMC server must have its private key and a certificate of its public key signed by a Certificate Authority that is trusted by the HMC clients. The private key and the server certificate are stored in the server's private key ring file.

To create private key ring files for your servers, do the following:

1. In the Navigation area, select **System Manager Security**.
2. In the Contents area, select **Certificate Authority**.
3. In the System Manager Security: Certificate Authority window, select **Generate Servers' Private Key Ring Files**. You can also select **Generate Keys...** from the Certificate Authority menu.
4. In the **Password** window, type the certificate authority private key file password. This password was created when the system was configured as the Certificate Authority.
5. Click **OK**.
6. In the Generate Server's Private Key Ring Files window, use the help to guide you through completing the task. To view help in the windows, click **Help** to open the Help window, then move the cursor over the item for which you want to display help.
7. Click **OK** when you are finished.

Install the Private Key Ring Files and Configure Your HMC Servers as Secure System Manager Servers

After you generate the private key ring files for your HMC servers, you can copy them to a diskette and install them on the servers.

Copying Server Private Key Ring Files to Diskette

This procedure copies the servers' private key ring files to a **tar** diskette so that you can install them on your servers.

To copy the servers' private key ring files to a diskette, do the following:

1. In the Navigation area, select **System Manager Security**.
2. In the Contents area, select **Certificate Authority**.

3. In the System Manager Security: Certificate Authority window, select **Copy Servers' Private Key Ring Files to Diskette**. You can also select **Copy Servers' Keys...** from the Certificate Authority menu.
4. When the Copy Server's Private Key to Diskette dialog displays, insert a diskette. To view help in the dialog, click Help to open the Help window, then move the cursor over the item for which you want to display help.
5. Click **OK** to copy the servers private key ring files.

Installing the Private Key Ring File on Each Server

This procedure installs a server's private key ring file from a **tar** diskette.

Install the private key ring files from the **tar** diskette onto each server. Repeat the following steps for each server for which you generated a private key ring file.

To install a server's private key ring file, do the following:

1. In the Navigation area, select **System Manager Security**.
2. In the Contents area, select **Server Security**.
3. In the System Manager Security:Server Security window, select **Install the private key ring for this server**. You can also select **Install Key...** from the Server Security menu.
4. In the Install Private Key Ring File window, select **tar diskette** as the source for the server private key ring files. Insert the diskette containing the server's key into the diskette drive.
5. Click **OK**.

Use the **help** to guide you through completing the task. To view help in the dialog, click Help to open the Help window, then move the cursor over the item for which you want to display help.

Configuring a System as an HMC Secure Server

Configure the system as a secure server. Repeat the following steps for each server on which you installed a private key ring file.

To configure a server as a secure server, do the following:

1. In the Navigation area, select **System Manager Security**.
2. In the Contents area, select **Server Security**.
3. In the System Manager Security:Server Security window, select **Configure this system as a secure HMC server**. You can also select **Configure...** from the Server Security menu.
4. Use the wizard panels to complete the task.

Distribute the Certificate Authority's Public Key to Your Clients

Each client must have a copy of the Certificate Authority's public key ring file (**SM.pubkr**) installed in its System Manager codebase directory.

The public key ring file can be copied from the CA to a **tar** diskette or as a PC DOS file, then copied from the diskette onto each client.

Copying the Certificate Authority's Public Key Ring File to Diskette

Note: To copy the the certificate authority's public key ring file to diskette, have a DOS-formatted diskette available for use.

To copy the Certificate Authority's public key ring file to diskette, do the following on the CA system:

1. In the Navigation area, select **System Manager Security**.
2. In the Contents area, select **Certificate Authority**.
3. In the System Manager Security:Certificate Authority window, select **Copy this Certificate Authority's Public Key Ring File to Diskette**. You can also select **Copy out CA Public Key...** from the Certificate Authority menu.
4. When the Copy CA Public Key to Diskette window opens, insert a diskette.
5. Select the type of client to which you want the public key ring file to be copied. Selecting **HMC or AIX client** writes the file to a **tar** diskette. Selecting **PC client** writes the file to diskette in DOS file format. Use the help to guide you through completing the task. To view help in the dialog, click Help to open the Help window, then move the cursor over the item for which you want to display help.
6. Click **OK** to copy the public key ring file.

Copying Another Certificate Authority's Public Key Ring File from Diskette to an HMC Client

All clients must have a copy of the Certificate Authority's public key ring file (**SM.pubkr**) installed in its System Manager codebase directory.

To copy a Certificate Authority's public key ring file from diskette to an HMC client, do the following on each HMC that you want to use as a client for remotely managing HMCs:

1. In the Navigation area, select **System Manager Security**.
2. In the Contents area, select **Certificate Authority**.
3. In the System Manager Security:Certificate Authority window, select **Copy another Certificate Authorities Public Key Ring File from diskette**. You can also select **Copy in CA Public Key...** from the Certificate Authority menu.
4. When the Copy CA Public Key from Diskette window opens, insert the tar diskette that contains the copied Certificate Authority's public key ring file.

   To view help in the dialog, click **Help** to open the Help window, then move the cursor over the item for which you want to display help.
5. Click **OK** to copy the public key ring file.

To copy a Certificate Authority's public key ring file from a tar diskette to an AIX client, use the **tar** command to extract the **SM.pubkr** file to the **/usr/websm/codebase** directory.

To copy a Certificate Authority's public key ring file from diskette to a PC Client, use a DOS **copy** command to copy the **SM.pubkr** file into the codebase directory in the location where you installed PC Client.

Viewing Configuration Properties

After the security configuration has been completed, you can view the properties of the Certificate Authority (CA) and of any server.

To view CA properties, do the following:

1. In the Navigation area, select your local host.
2. Underneath the local host, click the **System Manager Security** icon.
3. Click **Certificate Authority**.
4. Select **Properties**.
5. Type the password.

Note: This window provides read-only information for the CA.

To view a server's properties, do the following on the server:

1. In the Navigation area, select your local host.
2. Underneath the local host, click the **System Manager Security** icon.
3. Click **Server Security**.
4. Select **View properties for this server** from the task list.

Note: This window provides read-only information for the server.

Configure Object Manager Security

You can configure Object Manager Security to switch between plain sockets and SSL protocols.

To configure Object Manager Security, do the following:

1. In the Navigation area, select your local host.
2. Underneath the local host, click the **System Manager Security** icon.
3. Click **Object Manager Security**.
4. Select **Configure Object Manager Security**.
5. Select a socket mode.
6. Click **OK**.

Note: This window provides read-only information for the certificate authority (CA).

Chapter 9. Inventory Scout Services

Inventory Scout Services is an AIX tool that surveys managed systems for hardware and software information.

You can use the HMC to perform Inventory Scout Services tasks. The Navigation area contains an application icon for Inventory Scout Services. Click this icon to open a window that allows you to choose from the following tasks:

- Inventory Scout Profile Configuration
- Conduct Microcode Survey
- Collect VPD Information
- Restart Inventory Scout Daemon

Perform each of these tasks by entering information into one or more windows.

Configuring the Inventory Scout Services Profile

This wizard helps you set up Inventory Scout Services for each system managed by the HMC, and for each logical partition running an instance of AIX. All partitions must be configured in order to conduct microcode surveys or collect VPD.

To set up Inventory Scout Services for each managed system and partition, you must be a member of one of the following roles:

- System Administrator
- Advanced Operator
- Service Representative

Notes:

- When the partition password is requested in this wizard, use the Inventory Scout User ID on the AIX images.
- The default listening port for Inventory Scout Services is 808.
- If a system has been powered on using the Full System Partition power-on option, configure the Full System Partition to use Inventory Scout Services.

To set up Inventory Scout Services for each managed system and partition, do the following:

1. In the Navigation area, double-click the **Inventory Scout Services** icon.
2. In the Contents area, click **Inventory Scout Profile Configuration**.
3. From the list, select a managed system.
4. Click **Next**.
5. From the list, select the partition you want to configure.
6. Click **Next**. The next window identifies the selected partition.
7. Type the following:

- Partition password (this password is the `invscout` password)
- Inventory Scout listening port
- IP address of the AIX partition

8. To configure additional partitions, you can click either the **Next** or **Previous** buttons.

   OR

   Click **Done** to complete the partition configuration and return to the previous panel.

Conducting Microcode Surveys

To conduct microcode surveys, you must be a member of one of the following roles:

- System Administrator
- Advanced Operator
- Service Representative

To conduct microcode surveys, do the following:

1. In the Navigation area, double-click the **Inventory Scout Services** icon.
2. In the Contents area, click **Conduct Microcode Survey**.
3. From the list, select the name of the managed system for which you want to collect the microcode data.
4. Click **Next**.
5. The wizard requests confirmation of the managed system, and then prompts you to insert a blank, DOS-formatted diskette into the HMC diskette drive. Put the diskette in the drive and then click **Finish**.
6. When you complete this task, Inventory Scout collects the microcode data for the specified managed system into a file. This file is then copied to the diskette in the specified drive.

Collecting Vital Product Data Information

Use this option to collect the Vital Product Data (VPD) for the specified managed system into a file.

To collect the managed system's VPD, you must be a member of one of the following roles:

- System Administrator
- Advanced Operator
- Service Representative

To collect the managed system's VPD, do the following:

1. In the Navigation area, double-click the **Inventory Scout Services** icon.
2. In the Contents area, click **Collect VPD information**.
3. From the list, select the name of the managed system for which you want to collect the Vital Product Data.
4. Click **Next**.

5. The wizard requests confirmation about the managed system, and then prompts you to insert a blank, DOS-formatted diskette into the HMC diskette drive.
6. Click **Finish**. The file containing the VPD is then copied to the diskette in the specified drive.

Restarting Inventory Scout Services

Select this option to restart the Inventory Scout Services daemon on the HMC. If the daemon stops running, or if you need to stop and then restart the daemon, use this task to start the daemon. If the daemon is already running, this task stops the daemon, and then restarts it.

To restart the Inventory Scout daemon, you must be a member of one of the following roles:

- System Administrator
- Advanced Operator
- Service Representative
- Operator

To restart the Inventory Scout daemon, do the following:

1. In the Navigation area, double-click the **Inventory Scout Services** icon.
2. In the Contents area, click **Restart Inventory Scout Daemon**.
3. Click **Restart**.

Chapter 10. Using Two HMCs Connected to One Managed System

This chapter describes how to perform operations on two HMCs connected to one managed system.

Each system that supports a Hardware Management Console has two serial port connections, so that you may optionally attach a second HMC to the same system. The benefits of using two HMCs are as follows:

- Ensures that access to the HMC management function capabilities are not interrupted
- Ensures access if the network is down

Working with Two HMCs

In configurations with two HMCs, both HMCs are fully active and accessible at all times, enabling you to perform management tasks from either HMC at any time. There is no primary or backup designation.

To avoid basic conflicts, mechanisms in the communication interface between HMCs and the managed systems allow an HMC to temporarily take exclusive control of the interface, effectively locking out the other HMC. Usually this locking is done only for the duration of time it takes to complete an operation, after which the interface is available for further commands. HMCs are also automatically notified of any changes that occur in the managed systems, so the results of commands issued by one HMC are visible in the other. For example, if you select to activate a partition from one HMC, you will observe the partition going to the `Starting` and `Running` states on both HMCs.

The locking between HMCs does not prevent users from running commands that might seem to be in conflict with each other. For example, if the user on one HMC selects to activate a partition, and a short time later, a user on the other HMC selects to power off the system, the system will power off. Effectively, any sequence of commands that you can do from a single HMC is also permitted when your environment contains redundant HMCs. For this reason, it is important to carefully consider how you want to use this redundant capability to avoid such conflicts. You might choose to use them in a primary and backup role, even though the HMCs are not restricted in that way.

The interface locking between two HMCs is automatic, is usually of short duration, and most console operations wait for the lock to release without requiring user intervention. However, if one HMC experiences a problem while in the middle of an operation, it may be necessary to manually release the lock. For more information on this task, see “Releasing an HMC Lock on the Managed System” on page 213.

Other Considerations for Redundant HMCs

Because authorized users can be defined independently for each HMC, determine whether the users of one HMC should be authorized on the other. If so, the user authorization must be set up separately on each HMC.

Because both the HMCs provide Service Focal Point and Service Agent functions, connect a modem and phone line to only one of the HMCs, and enable its Service Agent. To prevent redundant service calls, do not enable Service Agent on both HMCs.

Perform HMC software maintenance separately on each HMC, at separate times, so that there is no interruption in accessing HMC function. This situation allows one HMC to run at the new fix level, while the other HMC can continue to run at the previous fix level. However, the best practice is to move both HMCs to the same fix level as soon as possible.

Chapter 11. User Management

This chapter discusses how an HMC system administrator can manage users and assign roles. To use the User Management application, first determine who will use the HMC. Next, you can assign a role to that user to limit access. For example, you can create general users and assign operator roles to these users so that they can perform basic HMC tasks.

Note: You must create a user named `hscpe` so that your software support representative has access to perform fixes on the HMC code. This user name is reserved for your support representative and is considered a ″hidden″ role. Do not assign the `hscpe` user name to one of your users. For more information about creating users and assigning roles, see “Creating a User” on page 58.

Overview of Roles

Each HMC user can be a member of one of five different roles. Each of these roles allows the user to access different parts of the HMC. The user roles specified by the HMC are as follows:

- System Administrator
- Advanced Operator
- Service Representative
- Operator
- User Administrator

Each role is described as follows:

System Administrator
The System Administrator acts as the root user, or manager of the HMC system. The System Administrator has unrestricted authority to access and modify most of the HMC system.

Advanced Operator
An Advanced Operator can perform some partition or system configuration and has access to some user-management functions.

Service Representative
A Service Representative is an employee who is at your location to install or repair the system.

Operator
An Operator is responsible for daily system operation.

User Administrator
A User Administrator can perform user-management tasks, but cannot perform any other HMC functions.

Roles and Tasks

The following table lists all roles and the tasks available to each:

Task	System Administrator	Advanced Operator	Service Representative	Operator	User Administrator
Problem Determination					
Problem Determination tasks are only available to product support engineers.					
Software Maintenance					
Back up Critical Console Data	X	X	X	X	
Format DVD for HMC Backup	X	X	X	X	
Install Corrective Service	X		X		
Save Upgrade Data	X	X			
System Configuration					
Update HMC Date and Time	X	X	X		
Customize HMC Network Settings	X	X	X		
Schedule Operations	X	X			
View Console Events	X	X	X		
Check Network Connectivity	X	X	X		
User Management Tasks					
Create Users	X				X
Modify Users	X				X
View User Information	X				X

Task	System Administrator	Advanced Operator	Service Representative	Operator	User Administrator
Delete Users	X				X
Change User Password	X				X
Managed System Tasks					
Open Terminal Session	X	X	X	X	
Close Terminal Session	X	X	X	X	
Release Lock on Managed System	X	X	X		
Power On Managed System	X	X	X	X	
Power Off Managed System	X	X	X		
Delete Managed System	X				
View Managed System Properties	X	X	X	X	X
Modify Managed System Policies	X	X			
Rebuild HMC Software Connection	X	X	X	X	X
Back up Profile Data	X	X	X		
Restore Profile Data	X	X	X		
Remove Profile Data	X	X	X		
Initialize Profile Data	X				

Task	System Administrator	Advanced Operator	Service Representative	Operator	User Administrator
System Profile Tasks					
Create System Profile	X	X			
Modify System Profile	X	X			
View System Profile	X	X	X	X	X
Activate System Profile	X	X	X	X	
Delete System Profile	X				
Copy System Profile	X	X			
Partition Tasks					
Create Partition	X	X			
Setup Affinity Partition	X	X			
View Partition	X	X	X	X	X
Modify Partition	X	X			
Update Affinity Partition	X	X			
Activate Partition	X	X	X	X	
Delete Partition	X				
Remove Affinity Partition	X	X			
Reset Operating System	X	X	X		
Open Terminal Session	X	X	X	X	

Task	System Administrator	Advanced Operator	Service Representative	Operator	User Administrator
Close Terminal Session	X	X	X	X	
Partition Profile Tasks					
Create Partition Profile	X	X			
View Partition Profile	X	X	X	X	X
Copy Partition Profile	X	X	X		
Delete Partition Profile	X				
Activate Partition Profile	X	X	X	X	
Modify Partition Profile	X	X			
Change Default Profile	X	X			
Service Focal Point Tasks					
Enable or Disable Call Home	X	X	X	X	
Enable or Disable Extended Error Data Collection	X	X	X	X	
Select Serviceable Events	X	X	X	X	
Inventory Scout Services Tasks					
Configure Profile	X	X	X		
Conduct Microcode Survey	X	X	X		
Collect VPD Information	X	X	X		

Task	System Administrator	Advanced Operator	Service Representative	Operator	User Administrator
Restart Inventory Scout Daemon	X	X	X	X	
Service Agent Tasks					
Register and Customize Service Agent	X	X	X	X	X
Stop Service Agent	X	X	X	X	X
Change Modes	X	X	X	X	X
Start Processes	X	X	X	X	X
Stop Processes	X	X	X	X	X

User Management Tasks

You can perform the following tasks using the Users application:

Creating a User

This process allows you to create a user.

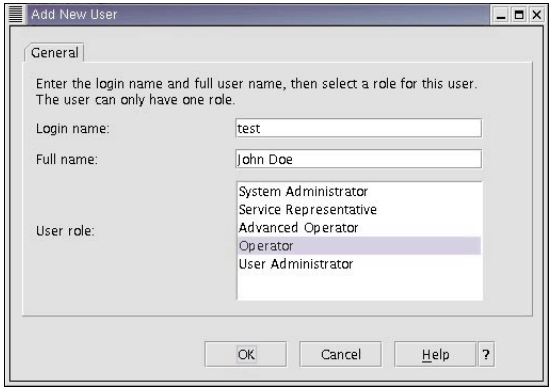
To create users, you must be a member of one of the following roles:

- System Administrator
- User Administrator

To create a user, do the following:

1. In the Navigation area, select the **Users** icon.
2. Select **User** from the menu.
3. Select **New**.
4. Select **User** from the cascade menu.
5. In the **Login Name** field, type the login name.
6. In the **Full Name** field, type the full name (optional).
7. To select a role for your new user, click an item in the role list.

In the following example, User *test* has been created for *John Doe*. He has been assigned the *Operator* role.



8. Click **OK**. The Change User Password window opens.
9. In the first field of the Change User Password window, type the user's password.
10. Type the same password again in the **Retype new password** field.
11. Click **OK**.

The new user displays in the Contents area.

Note: It is strongly recommended that you create a user named `hscpe` for software fixes and updates from your software support representative. Support representatives may need to log in to your HMC using this user name when they are analyzing a problem.

Editing User Information

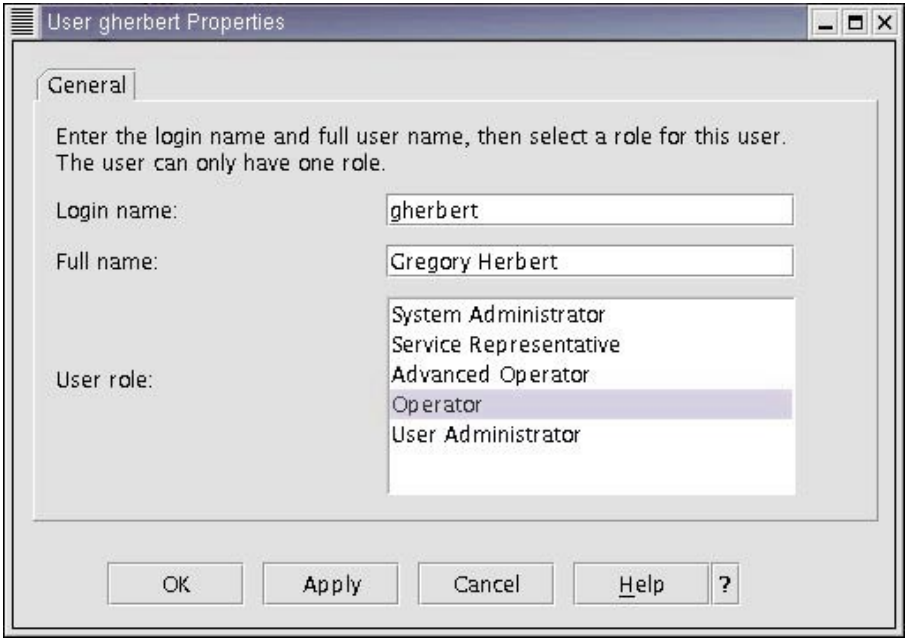
To edit user information, you must be a member of one of the following roles:

- System Administrator
- User Administrator

To edit user information, do the following:

1. In the Navigation area, select the **Users** icon.
2. In the Contents area, right-click the appropriate User icon.
3. Select **Properties**.

4. Edit the user's base information (Login name, Full name, and User role). In the following example, the user `Gregory Herbert` has been given the *Operator* role:



5. Click **OK**. The Change User Password window opens.
6. Type the user's password in each field.
7. Click **OK**.

Viewing User Properties

Sometimes it is useful to review a user's definitions to make sure you have correctly configured the user's access. For more information about roles and access, see "Roles and Tasks" on page 54.

To view user definitions, you must be a member of one of the following roles:

- System Administrator
- User Administrator

To view a user's definitions, including the assigned Login name, Full name, and User role, do the following:

1. In the Navigation area, select the **Users** icon.
2. In the Contents area, right-click the appropriate User icon.
3. Select **Properties**.

At this point, you can also edit any user information.

Deleting a User

To delete a user, you must be a member of one of the following roles:

- System Administrator
- User Administrator

To delete a user from the system, do the following:

1. In the Navigation area, select the **Users** icon.
2. In the Contents area, right-click the appropriate User icon.
3. Select **Delete.**
4. Click **OK** to confirm that you want to delete this user.

The user is removed from the contents area and no longer has access to the HMC management environment. Some reserved users cannot be deleted.

Changing Passwords

To change user passwords, you must be a member of one of the following roles:

- System Administrator
- User Administrator

To change a user's password, do the following:

1. In the Navigation area, select the **Users** icon.
2. In the Contents area, right-click the appropriate User icon.
3. Select **Change Password**.
4. Type the new password in the first field.
5. Confirm the new password by typing it again in the **Retype new password** field.
6. Click **OK**.

Chapter 12. Basic System Management Tasks

This chapter describes how to perform system management tasks.

Managing the System

You can perform the tasks discussed in this chapter when the managed system is selected in the Contents area. The HMC communicates with the managed system to perform various system management, service, and partitioning functions. Systems connected to an HMC are recognized automatically by the HMC.

You can connect up to two HMCs to each managed system by using the serial cable that was provided with the HMC. You can also manage multiple systems with one HMC. For more information about using two HMC connected to one managed system, see Chapter 10, “Using Two HMCs Connected to One Managed System” on page 51.

To view more information about the managed system, click on the **Partition Management** icon in the Navigation area. The Contents area expands to show information about the managed system, including its name, its state, and the operator panel value.

To expand your view of the managed system’s properties, click the plus sign (+) next to the managed system’s name to view its contents.

In the Contents area, you can also select the managed system by right-clicking on the managed system icon to perform the following:

- Power the managed system on or off
- View the managed system’s properties
- Open and close a terminal window
- Create, restore, back up, and remove system profile data
- Rebuild the managed system
- Release the HMC lock on this managed system
- Delete the managed system from the HMC graphical user interface

You can also access these options by clicking on the managed system and then clicking **Selected** on the menu.

Powering On the Managed System

You can use your HMC to power on the managed system.

To power on the managed system, you must be a member of one of the following roles:

- System Administrator
- Advanced Operator
- Operator

- Service Representative

To power on the managed system, do the following:

1. In the Navigation area, click the **Partition Management** icon.
2. In the Contents area, select the managed system.
3. In the menu, click **Selected**.
4. Select **Power On**.

   You are asked to select a power-on mode from the following:

   - Partition Standby
   - Full System Partition
   - System Profile

   The next section discusses each of these power-on modes.

Note: You must power off your managed system to switch between using the Full System Partition and using either logical or affinity partitions.

Partition Standby

The Partition Standby power-on option allows you to create and activate logical partitions. When the Partition Standby power-on is completed, the operator panel on the managed system displays `LPAR...`, indicating the managed system is ready for you to use the HMC to partition its resources.

Note: The Full System Partition is listed as *Not Available* because the managed system was powered on using the Partition Standby option.

For more information about partitions, see Chapter 3, “Partitioning” on page 9.

Full System Partition

The Full System Partition power-on option allows you to use all of the system’s resources on one operating system after the system has been powered on. This is the traditional single-system method of using your system’s resources.

The physical operator panel on your managed system displays progress codes when you boot the system to this mode.

If you select the Full System Partition option, you can then select one of the following profiles:

Power On Normal
: This profile boots an operating system from the designated boot device.

Power On SMS
: This profile is similar to Power On Diagnostic Stored Boot List Profile, except the system boots using the default boot list that is stored in the system firmware.

Power On Diagnostic Stored Boot List

This profile causes the system to perform a service mode boot using the service mode boot list saved on the managed system. If the system boots AIX from the disk drive and AIX diagnostics are loaded on the disk drive, AIX boots to the diagnostics menu.

Using this profile to boot the system is the preferred way to run online diagnostics.

Power On Diagnostic Default Boot List

This profile boots to the System Management Services (SMS) menus. The SMS menus include:

- Password Utilities
- Display Error Log
- Remote Initial Program Load Setup
- SCSI Utilities
- Select Console
- MultiBoot
- Select Language
- OK Prompt

For more information about SMS menus, see the *PCI Adapter Placement Reference*, order number SA38-0538.

Power On Open Firmware OK Prompt

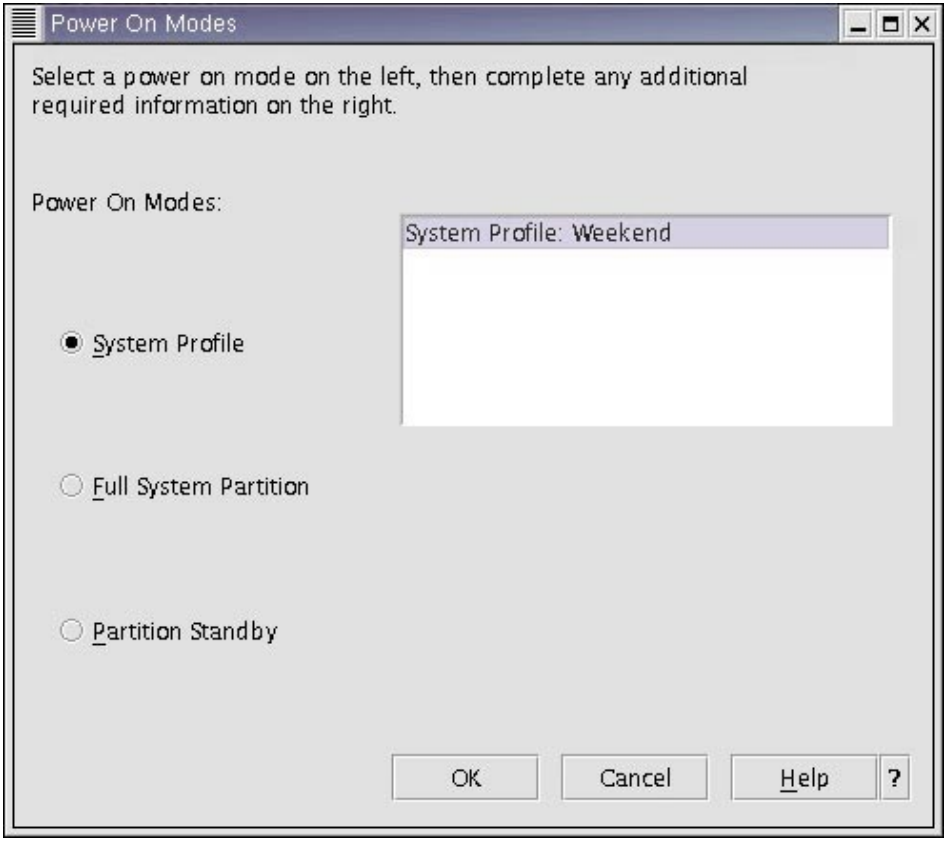
This profile is used only by service representatives to obtain additional debug information. When this selection is enabled, the system boots to the open firmware prompt.

To learn more about these power-on options, see the service documentation for your managed system.

For more information about the Full System Partition, see “Full System Partition” on page 9.

System Profiles

The System Profile option powers on the system according to a predefined set of profiles. In the following example, the user is powering on using a predefined system profile named *Weekend*:



Note: The profiles are activated in the order in which they are shown in the system profile.

For more information about system profiles, see “Profiles” on page 11.

Powering Off the Managed System

You can also use your HMC to power off the managed system. Ensure that all partitions have been shut down and their states have changed from *Running* to *Ready*.

To shut down a partition, do the following:

1. Open the partition’s virtual terminal window.
2. Log in to the operating system that is installed on that partition.
3. Run the **shutdown** command.

To power off the managed system, you must be a member of one of the following roles:

- System Administrator
- Advanced Operator
- Service Representative

To power off the managed system, do the following:

1. In the Contents area, select the managed system.
2. In the menu, click **Selected**.
3. Select **Power Off**.

When you power off the managed system, each partition associated with that managed system also powers off.

Viewing Managed System Properties

To view your managed system's configuration and capabilities, use the properties window.

Any user can view managed system properties.

To view your managed system's properties, do the following:

1. In the Contents area, select the managed system.
2. In the menu, click **Selected**.
3. Select **Properties**.

   If you have powered on your system using the Full System Partition option, the HMC displays the system's name, partition capability, state, serial number, model and type, and policy information. A system that is powered on using the Partition Standby option displays this information, as well as partition processor, memory, I/O drawers and slots, policy information, and partition assignment, if applicable. Use the Policy tab to:

   - Power off the managed system after all the partitions are powered off.
   - Set the Common Service Processor Surveillance Policy. The Common Service Processor (CSP) Surveillance Policy is a program that monitors the managed system. If the CSP does not detect the HMC, it logs an error to the CSP error log. If the policy is not enabled, the CSP does not log an error when the managed system is not detected.

Managing Profile Data

You can back up, restore, initialize, and remove profiles that you have created. This section describes each of these options.

Backing Up Profile Data

To back up profile data, you must be a member of one of the following roles:

- System Administrator

- Advanced Operator
- Service Representative

To back up profile data, do the following:

1. In the Contents area, select the managed system.
2. From the menu, choose **Selected**.
3. From the menu, select **Profile Data**.
4. From the menu, select **Backup**.
5. Type the name you want to use for this backup file.
6. Click **OK**.

Restoring Profile Data

Selecting this menu item restores profile data to the system from the local file system.

To restore profile data, you must be a member of one of the following roles:

- System Administrator
- Advanced Operator
- Service Representative

To restore profile data, do the following:

1. In the Contents area, select the managed system.
2. From the menu, choose **Selected**.
3. From the menu, select **Profile Data**.
4. From the menu, select **Restore**.
5. Select the profile information you want to restore from the list of backup files.
6. Select a restore option from the following list:

Full restore from selected backup file
This option restores all profile data using your backup file *only*. Profile modifications performed after the selected backup file was created will be lost.

Backup priority - merge current profile and backup
This option merges the stored backup with recent profile activity. If information conflicts, the stored backup data is restored over the recent profile activity.

Managed system priority - merge current profile and backup
This option merges recent profile activity with the stored backup. If information conflicts, the recent profile activity is restored over the stored backup data.

Initializing Profile Data

When you initialize profile data, you return the HMC to its original state. After you perform this task, any profiles that you created are erased.

To initialize stored profile data, you must be a member of one of the following roles:

- System Administrator
- Advanced Operator

To initialize profile data, do the following:

1. In the Contents area, select the managed system.
2. From the menu, choose **Selected**.
3. From the menu, select **Profile Data**.
4. From the menu, select **Initialize**.

Removing Profile Data

To remove stored profile data, you must be a member of one of the following roles:

- System Administrator
- Advanced Operator

To remove stored profile data, do the following:

1. In the Contents area, select the managed system.
2. From the menu, choose **Selected**.
3. Select **Profile Data**.
4. Select **Remove**.
5. Select the profile data that you want to remove.
6. Click **OK**.

Deleting the Managed System from the Contents Area

If you no longer want to manage a particular system, you can delete it from the Contents area.

Note: Do not disconnect the serial cable from the hardware before you delete the managed system from the Contents area.

To delete the managed system from the Contents area, you must be a member of the System Administrator role.

To delete the managed system from the Contents area, do the following:

1. In the Contents area, select the managed system.
2. In the menu, click **Selected**.
3. Select **Delete** from the drop-down menu.
4. Click **Yes** to delete the managed system from the Contents area.
5. Disconnect the serial cable from the managed system.

The managed system's icon is removed from the Contents area, and the connection is broken between the HMC and the managed system.

Rebuilding the Managed System

Rebuilding the managed system acts much like a refresh of the managed system information. Rebuilding the managed system is useful when the system's state indicator in the Contents area is shown as *Recovery*. The Recovery indicator signifies that the partition and profile data stored in the managed system must be refreshed.

This operation is different from performing a refresh of the local HMC panel. In this operation, the HMC reloads information stored on the managed system.

Any user can rebuild the managed system.

To rebuild the managed system, do the following:

1. In the contents area, select the managed system.
2. In the menu, click **Selected**.
3. Select **Rebuild Managed System**.

After you select **Rebuild Managed System**, current system information displays.

Releasing an HMC Lock on the Managed System

Perform this task only if you have two HMCs connected to your managed system and one of the HMCs is not responding. For more information, see "Releasing an HMC Lock on the Managed System" on page 213.

Resetting the Operating System on a Partition

The HMC enables the operating system on a partition to be reset when errors are encountered in the operating system. The system can undergo either a soft or hard reset, as follows:

Soft Reset

Soft reset actions are determined by your operating system's policy settings. Depending on how you have configured these settings, the operating system might do the following:

- Perform a dump of system information
- Restart automatically

For more information about configuring your operating system's policy settings, refer to your operating system documentation.

Hard Reset

A hard reset virtually powers off the system.

Attention: Issuing a hard reset forces termination and can corrupt information. Use this option *only* if the operating system is disrupted and cannot send or receive commands.

To reset the operating system, you must be a member of one of the following roles:

- System Administrator
- Advanced Operator
- Service Representative

To reset the operating system on a partition, do the following:

1. In the Contents area, select the partition running the operating system you want to reset.
2. In the menu, click **Selected**.
3. Select **Operating System Reset**.

Chapter 13. Server Management Tasks

This chapter provides information about the partition management tasks you can perform.

To activate more than one partition, you must power on your managed system using the Partition Standby power-on option. For more information about power-on options, see “Powering On the Managed System” on page 63.

Creating Partitions

This section describes how to create logical partitions. Before creating partitions, read the system-resource planning information in Appendix B, “Planning for Logical Partitioning” on page 117.

To create partitions, you must be a member of one of the following roles:

- System Administrator
- Advanced Operator

Preparing Your System For Partitioning

To prepare your system for partitioning, do the following:

1. Log in to the HMC.
2. In the Navigation area, click the console’s icon to expand the tree.
3. In the Navigation area, click the partition management icon underneath the managed system to select your preferred partition environment. The Contents area now lists the available managed systems.
4. In the Contents area, select the managed system for which you want to configure partitions.
5. With the managed system selected in the Contents area, choose **Selected** from the menu.

   If your managed system is currently powered on using the Partition option, continue with step 10.

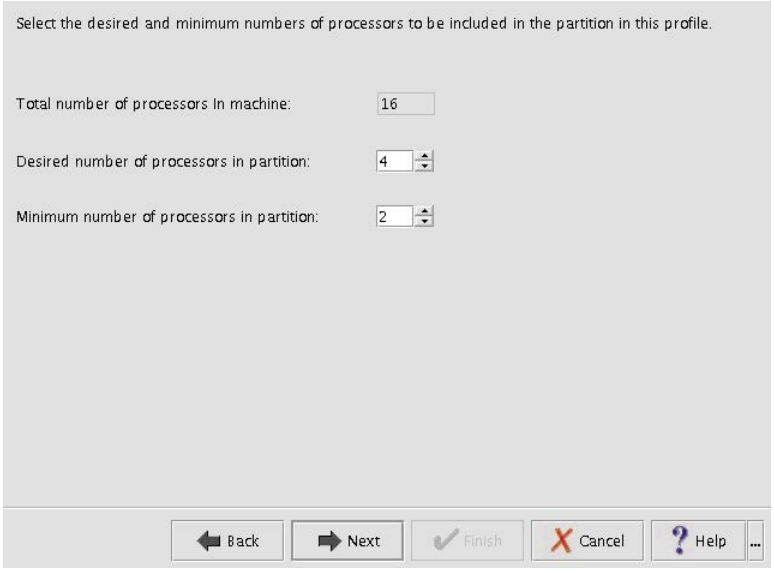
   If your managed system is currently powered off, continue with the next step.
6. Select **Power On**.
7. Select **Partition Standby** as a power-on option.
8. Click **OK** to power on the managed system. In the Contents area, the managed system’s state changes from *No Power* to *Initializing . . .* and then to *Ready*. When the state reads *Ready* and the virtual Operator Panel Value reads *LPAR . . .* , continue with the next step. For more information about managed system states, see “Managed System Operating States” on page 207.

Creating Logical Partitions

1. In the Contents area, select the managed system.
2. From the selected menu, select **Create**.

3. Select **Logical Partition**. The Create Logical Partition and Profile wizard opens.
4. In the first window of the Create Logical Partition and Profile wizard, provide a name for the partition profile that you are creating. Use a unique name for each partition that you create. Names can be up to 31 characters long.
5. Click **Next**.
6. Type the name of the profile you are creating for this partition.
7. Click **Next**.
8. Select the desired and minimum number of processors. The HMC shows you the total amount of processors configured for use by the system, and prompts you to enter your *desired* and *minimum* processor amounts for this partition profile.

   Desired amounts are used if they are available at the time of activation. Minimum amounts define the processors you require for this partition. If these processors are not available at the time you attempt to activate the profile, the partition does not activate. In the following example, the user requires 2 processors at a minimum and desires 4, if they are available.



9. Click **Next**.
10. Select the desired and minimum number of memory. The HMC shows you the total amount of memory configured for use by the system, and not the amount that is currently available. The HMC prompts you to enter your *desired* and *minimum* memory amounts for this partition profile. Desired amounts are used if they are available at the time of activation. Minimum amounts define the memory amounts you require for this partition. If the minimum memory amount is not available at the time you attempt to activate the profile, the partition does not activate.

    Enter the amount of desired and required memory in 1 gigabyte (GB) increments and 256 megabyte (MB) increments. You must have a minimum of 1 GB for each partition.
11. Click **Next**.

12. The left side of the new window displays the I/O drawers available and configured for use. To expand the I/O tree to show the individual slots in each drawer, click the icon next to each drawer. Because the HMC groups some slots, if you attempt to assign a member of one of these ″grouped″ slots to a profile, the entire group is automatically assigned. Groups are indicated by a special icon named **Group_XXX**.

    Click on the slot for details about the adapter installed in that slot. When you select a slot, the field underneath the I/O drawer tree lists the slot's class code and physical location code.

    Note: The slots in the I/O Drawers field are not listed in sequential order.

13. Select the slot you want to assign to this partition profile and click **Add**. If you want to add another slot, repeat this process. Slots are added individually to the profile; you can add slots one at a time, unless they are grouped. Minimally, add a boot device to the **required** list box.

    If you want to install an operating system on this partition using the managed system's CD-ROM drive, assign the CD-ROM to this partition profile.

14. Click **Next**. This window allows you to set service authority and boot mode policies for this partition profile. If you want to

15.

    If you want this partition to be used by service technicians to perform system firmware updates and set other system policy parameters, select the **Set Service Authority** check box .

    Select the boot mode that you want for this partition profile.

16. Click **Next**. This window supplies you with summary information about this partition.

17. Review the information to ensure that you have the appropriate resources assigned to this partition.

18. If you want to change the configuration, click **Back**. Otherwise, click **Finish** to create the partition and profile.

19. The new partition, along with the default profile you just created, displays underneath the Managed System tree in the Contents area.

20. After you have created a partition, you must install an operating system on the partition. To install an operating system on the partition, refer to the installation information shipped with your operating system.

    Note: If you want to use the managed system's CD-ROM to install operating systems on your partitions, it is recommended that you create at least two profiles for each partition. Create one profile that has the managed system's CD-ROM assigned to it, and another profile without the managed system's CD-ROM. Using this method, you can free the managed system's CD-ROM by shutting down the profile that has the CD-ROM and activating the profile that does not have the CD-ROM. For more information about creating partition profiles, see “Creating Additional Partition Profiles” on page 80.

Creating Affinity Partitions

Depending on your managed system's configuration, you may be able to create a special group of logical partitions called affinity partitions. The process of creating a group of affinity partitions is similar to the process of creating logical partitions. The only difference is that the system does the processor and memory assignment for you.

To determine if your managed system is capable of running affinity partitions, check your managed system's properties. For more information about viewing your managed system's properties, see "Viewing Managed System Properties" on page 67.

Before creating partitions, read the system-resource planning information in Appendix B, "Planning for Logical Partitioning" on page 117.

To create an affinity partition, do the following:

1. In the Contents area, select the managed system.
2. From the selected menu, select **Affinity Logical Partition**.
3. Select **Create**. the **Affinity Partition Setup** wizard opens.
4. In the first window of the Create Affinity Partition wizard, select the type of affinity partition you want to create.
5. Click **OK**.
6. In the second window of the Create Affinity Partition wizard, type a name for the first affinity partition that you are creating. Use a unique name that is up to 31 characters long.

   In the second field, type a name for the default profile.

   Then select which boot mode this affinity partition will use when you activate it.

   Select the **Set Service Authority** check box if you want this partition to be used by service representatives to perform system firmware updates and set other system policy parameters.

   Enter this information for each of the affinity partitions you want to create. To select another affinity partition, click on the appropriate ALPAR tab on the top of the window.
7. Click **Next**.
8. The left side of the new window now displays the I/O drawers available and configured for use. To expand the I/O tree to show the individual slots in each drawer, click the icon next to each drawer. Because the HMC groups some slots, if you attempt to assign a member of one of these ″grouped″ slots to a profile, the entire group is automatically assigned. Groups are indicated by a special icon named **Group_XXX**.

   Click on the slot for details about the adapter installed in that slot. When you select a slot, the field underneath the I/O drawer tree lists the slot's class code and physical location code.

   Note: The slots in the **I/O Drawers** field are not listed in sequential order.
9. Select the slot you want to assign to this default affinity profile and click **Add**. If you want to add another slot, repeat this process. Slots are added individually to

the profile; you can only add slots one at a time, unless they are grouped. Minimally, add a boot device to the **required** list box.

If you want to install an operating system on this partition using the managed system's CD-ROM drive, assign the CD-ROM to this partition profile.

10. Perform steps 13-16 for each **ALPAR** tab shown at the top of the screen.
11. If you want to change the configuration for any affinity partition, click **Back**. Otherwise, click **Finish** to create the group of affinity partitions.
12. The new affinity partitions, along with the default profiles you just created, display underneath the Managed System tree in the Contents area. A System Profile is also created and is displayed underneath the managed system tree.
13. After you have created a partition, you must install an operating system on the partition. To install an operating system on the partition, refer to the installation information shipped with your operating system.

    Note: If you want to use the managed system's CD-ROM to install operating systems on your partitions, it is recommended that you create at least two profiles for each partition. Create one profile that has the managed system's CD-ROM assigned to it, and another profile without the managed system's CD-ROM. Using this method, you can free the managed system's CD-ROM by shutting down the profile that has the CD-ROM and activating the profile that does not have the CD-ROM. For more information about creating partition profiles, see "Creating Additional Partition Profiles" on page 80.

Updating Affinity Partitions After Adding or Removing Managed System Resources

To update affinity partitions after a service representative has added or removed resources on the managed system, you must be a member of one of the following roles:

- System Administrator
- Advanced Operator

To update affinity partitions after adding or removing managed system resources, do the following:

1. In the Contents area, select the managed system.
2. From the selected menu, select **Affinity Logical Partition**.
3. Select **Update**.
4. Add or remove affinity partitions as appropriate. For more information about adding new affinity partitions, see "Creating Affinity Partitions" on page 76. If you have removed resources from your managed system, the HMC lists the affinity partitions associated with the removed resources. Click **OK** to remove these affinity partitions.

Activating Partitions

To activate a partition, select the partition itself, which automatically activates the default partition profile.

If the required resources you specified when you created the partition exceed the amount of available resources, this partition does not activate. All resources currently not being used by active partitions are considered available resources. It is important that you keep track of your system's resources at all times. Use Appendix B, "Planning for Logical Partitioning" on page 117 to help you with this task.

To activate partitions, you must be a member of one of the following roles:

- Operator
- Advanced Operator
- System Administrator
- Service Representative

Activating a Specific Partition Profile

To activate a partition profile, do the following:

1. In the Contents area, select the partition profile you created.
2. On the menu, click **Selected**.
3. Select **Activate**.
4. The profile name is highlighted. Click **OK** to activate the partition profile. If you want to activate a different profile, select another profile in the list and then click **OK**.

Activating a Partition without Selecting a Specific Partition Profile

To activate a partition without selecting a specific partition profile, do the following:

1. In the Contents area, select the partition.
2. On the menu, click **Selected**.
3. Select **Activate**.
4. The default profile name is highlighted. Click **OK**. If you want to activate a different profile, select another profile in the list and then click **OK**.

Reactivating a Partition with a Partition Profile

Reactivating a partition with a different profile requires shutting down the operating system that is running in that partition and activating another profile.

To reactivate a partition with a partition profile, you must be a member of one of the following roles:

- Operator
- Advanced Operator
- System Administrator
- Service Representative

To reactivate a partition with a different profile, do the following:

1. In the Contents area, select the partition for which you want to change profiles.
2. Open a terminal window for that partition to look at the operating system. To learn more about opening a terminal window, read "Opening a Virtual Terminal Window" on page 88.

3. Run an appropriate **shutdown** command. The system shuts down the operating system, and the partition's state changes from *Running* to *Ready* in the Contents area.
4. In the Contents area, select the new partition profile you want to activate for that partition.
5. In the menu, click **Selected**.
6. Select **Activate**.

Deleting Partitions

To delete a partition, the managed system must be powered on using the Partition Standby power-on option. If you delete a partition, all of the profiles associated with that partition are also deleted. The partition is also automatically deleted from all system profiles.

You can delete partitions if you are a member of the System Administrator role.

Note: You cannot delete an activated partition.

To delete a partition, do the following:

1. Select the partition from the Contents area.
2. In the menu, click **Selected**.
3. Select **Delete**.

For information about deleting a partition *profile*, see "Deleting Partition Profiles" on page 83.

Deleting Affinity Partitions

To delete a group of affinity partitions, you must be a member of one of the following roles:

- System Administrator
- Advanced Operator

To delete a group of affinity partitions, do the following:

1. In the Contents area, select the affinity partition group you want to remove.
2. From the selected menu, select **Affinity Logical Partition**.
3. Select **Delete**.
4. After confirming that the affinity partitions listed are the ones you want to remove, click **OK**. The affinity partitions are removed from the Contents area.

Resetting the Operating System

When a partition is running an operating system and the system hangs, use the HMC to restart the operating system.

Attention: This operation can corrupt data. Perform this procedure *only* after you have attempted to restart the operating system manually.

Soft and Hard Resets

You can perform either a ″hard″ and ″soft″ resets.

- Soft reset actions are determined by your operating system's policy settings. Depending on how you have configured these settings, the operating system may:
  - Perform a dump of system information
  - Restart automatically

  For more information about configuring your operating system's policy settings, refer to its supporting documentation.
- A hard reset acts as a virtual powering off of the system. Issuing a hard reset forces termination, and can corrupt information. Use this option only if the operating system is disrupted and cannot send or receive commands.

To restart the operating system, you must be a member of one of the following roles:

- System Administrator
- Advanced Operator
- Service Representative

To reset the operating system you have installed on a partition, do the following:

1. In the Contents area, select the partition you want to reset.
2. In the menu, click **Selected**.
3. Select **Operating System Reset**.
4. Decide if you want a hard or soft reset. Select the appropriate check box and click **Yes**.

Managing Partition Profiles

A partition profile defines the set of resources that you need to create a partition. You can create more than one partition profile for a partition, but you can *activate* only one partition profile for a partition.

When you create a partition profile, the HMC shows you all the resources available on your system. The HMC does not, however, check to see if another partition is currently using a portion of these resources. For example, the HMC might show 16 processors on your system, but will not indicate that other partitions are using nine of them. You can conceivably create two partition profiles, each using a majority of system resources. However, you can do this only if you do not intend to use them at the same time. If you attempt to activate both of these partition profiles, the second activation attempt will fail.

Creating Additional Partition Profiles

To create partition profiles, you must be a member of one of the following roles:

- System Administrator
- Advanced Operator

To create a partition profile, do the following:

1. In the Contents area, select the *partition* for which you want to create a profile. If you select the managed system, you create a new partition, not a profile.
2. In the menu, click **Selected**.
3. Select **Create**.
4. Select **Profile** from the menu.

You can now begin to assign resources to the new partition profile. This partition profile does not take effect until you use it to activate the partition.

Viewing Partition Profile Properties

You can view partition profile information from your HMC. Depending on your access levels, you can also restore, back up, and remove this data from the local file system.

Any user can view profile properties.

To view a partition profile's properties, do the following:

1. In the Contents area, select the profile.
2. In the menu, click **Selected**.
3. Select **Properties**.

Setting Service Authority

Service representatives use the partition designated with service authority to perform system firmware updates. If you set service authority for one partition, a service representative can use this partition to perform system updates without having to power off the managed system.

To set service authority, you must be a member of one of the following roles:

- Advanced Operator
- System Administrator

To set service authority, do the following:

1. In the Contents area, select the profile.
2. In the menu, click **Selected**.
3. Select **Properties** to open the Properties window.
4. Click the **Other** tab.
5. Click **Set Service Authority**.
6. Click **OK**.

Copying Partition Profiles

The HMC allows you to copy the contents of a profile that you have already created. For example, you might decide that you need a partition profile that is similar to one that you have already created, but with a small change in resource allocation.

To copy partition profiles, you must be a member of one of the following roles:

- System Administrator
- Advanced Operator
- Service Representative

To copy a profile, do the following:

1. In the Contents area, select the existing profile that you want to copy.
2. In the menu, click **Selected**.
3. Select **Copy**.
4. Type a unique name for the new copy.
5. Click **OK**.

Changing Default Partition Profiles

When you create a partition, the HMC requires that you create at least one profile called the *default profile*. In the Contents area, the default profile is represented by an icon that looks similar to the following illustration:

The HMC activates the default profile unless you specify that it activate a different partition profile as the default.

To change default profiles, you must be a member of one of the following roles:

- System Administrator
- Advanced Operator

To change the default partition profile, do the following:

1. In the Contents area, select the partition that you want to change.
2. In the menu, click **Selected**.
3. Select **Change Default Profile**.
4. Select the profile that you want to make the default profile from the list.

Understanding Partition Boot Errors

If a partition is in an error state after you attempted to activate it, you can perform this task to determine the boot error value, which indicates why the boot failed.

For more information about boot error values, see “Boot Error Values” on page 212.

To review a partition boot error, you must be a member of one of the following roles:

- System Administrator
- Advanced Operator
- Service Representative

To review a partition boot error, do the following:

1. In the Contents area, right-click the partition that is in the *Error* state.
2. Select **Read Boot Error Value**. A window opens that gives you more information about why the boot failed.

Deleting Partition Profiles

To delete partition profiles, you must be a member of the System Administrator role.

To delete a partition profile, do the following:

1. In the Contents area, select the profile.

   Note: Be sure to select the profile and not the partition itself, to avoid deleting an entire partition.
2. In the menu, click **Selected**.
3. Select **Delete**.

Managing System Profiles

System profiles are a collection of one or more partition profiles. When you activate a system profile, you also activate each associated partition profile. You can use a system profile at any time, including when you power on the managed system.

For more information about partition profiles, see “Managing Partition Profiles” on page 80.

Creating System Profiles

To create system profiles, you must be a member of one of the following roles:

- System Administrator
- Advanced Operator

To create a system profile, do the following:

1. In the Contents area, select the managed system.
2. On the menu, click **Selected**.
3. Select **Create**.
4. Select **System Profile**.
5. Name the system profile and select the available partition profiles that you want to add to the new system profile.
6. Click **Add** for each selected partition profile.
7. Click **OK**.

Viewing System Profile Properties

Any user can view system profile properties.

To view the properties of the system profile, do the following:

1. In the Contents area, select the system profile.
2. On the menu, click **Selected**.
3. Select **Properties**.

Modifying System Profile Properties

To modify system profiles, you must be a member of one of the following roles:

- System Administrator
- Advanced Operator

To modify system profiles, do the following:

1. In the Contents area, select the system profile you want to modify.
2. On the menu, click **Selected**.
3. Select **Properties** from the cascade menu.
4. Change the system profile information as appropriate.

Copying System Profiles

Because some system profiles are complex, the HMC allows you to copy the contents of a profile you have already created.

To copy system profiles, you must be a member of one of the following roles:

- System Administrator
- Advanced Operator

To copy a profile, do the following:

1. In the Contents area, select the existing profile that you want to copy.
2. On the HMC menu, click **Selected**.
3. Select **Copy**.
4. In the Copy Profile window, type the new profile name.
5. Click **OK**.

Deleting System Profiles

To delete a system profile, you must be a member of the System Administrator role.

To remove a system profile, do the following:

1. In the Contents area, select the system profile.
2. On the menu, click **Selected**.
3. Select **Delete**. The **Delete System Profile** window opens. Click **Yes** to delete the profile.

Activating System Profiles

To activate system profiles, you must be a member of one of the following roles:

- System Administrator
- Advanced Operator

- Operator
- Service Representative

To activate a system profile, do the following:

1. In the Contents area, select the system profile.
2. On the menu, click **Selected**.
3. Select **Activate**.

Activating System Profiles When Other Partition Profiles Are Running

To activate a system profile, shut down the operating system for any active partition, so that the partition's state changes from *Running* to *Ready*.

Powering On Using a System Profile

You can power on your managed system by using a predefined system profile. To learn more about powering on using a system profile you have already created, read "System Profiles" on page 66.

Chapter 14. Virtual Terminal Window

Because the physical serial ports on the managed system can only be assigned to one partition, the virtual terminal implementation enables an AIX system console to be accessed on logical partitions that have no physical serial port assigned. A telnet connection directly to the partition is not sufficient, because AIX needs a console for restarts, installations, and for some service functions.

One virtual terminal window is available for each partition. Likewise, one virtual terminal window is available for each managed system.

The communication link between the HMC and the managed system is an RS-232 serial line running at 19,200 bits per second. All terminal sessions send and receive data on this shared serial line.

The virtual console is a terminal with limited function. After you create a partition and configure its operating system, the typical operating system connection method is through a serial port, telnet, or rlogin. The virtual terminal is meant to be used for support and service. Performance cannot be guaranteed due to the limited bandwidth of the serial connection. For optimum performance, install additional serial adapters on the HMC for production use.

The virtual terminal supports the following:

- AIX system-management applications such as **smitty**.
- Other curses-driven applications.
- Standard POSIX line-discipline behaviors, so that applications that use serial ports do not need to be rewritten. However, some General Terminal Interface characteristics are not applicable.
- The ability to open a maximum of six virtual terminals simultaneously on the HMC

The virtual console terminal emulator emulates a vt320 terminal. The terminal is an adaptation of the IBM Host On-Demand terminal emulator.

As a limited function terminal, the virtual terminal does not support the following:

- Printing to a virtual terminal
- Transparent print services
- Modem connection for the virtual console port
- Real-time applications

The tty that is configured on the AIX Virtual TTY Adapter is predefined as a vt320. To set the terminal type on a virtual console session, use the following AIX command:

```
export TERM=vt320
```

Virtual Terminal Windows on a Full System Partition

For a Full System Partition, the output of the S1 serial port is redirected, or *wrapped* to the virtual console window. When the S1 serial port is wrapped, the output of any command is directed from the S1 serial port to the virtual console terminal. If you close the virtual console window on the managed system, normal function is restored to the S1 serial port.

When the managed system is in the *No Power* state, you can access the service processor configuration menus from this console session.

Opening a Virtual Terminal Window

To open a virtual terminal window, you must be a member of one of the following roles:

- Operator
- Advanced Operator
- System Administrator
- Service Representative

You can have only one virtual terminal window per partition open at a time.

To open a virtual terminal window, do the following:

1. Click the plus sign (**+**) next to the managed system in the Contents area to expand the tree.
2. Select a partition underneath the managed system.
3. Select **Open Terminal Window**. A virtual terminal window opens on your HMC desktop.

Opening Virtual Terminal Windows on a Partition

One terminal session is available for each defined partition. You can also open a terminal session for a managed system, but there is no interaction with the managed system after the partition has been powered to the *Running* state. The S1 serial port is not wrapped when the managed system is partitioned.

A terminal window can be opened at any time, regardless of the state of the partition, similar to powering on or off a tty terminal. The virtual terminal window is blank until the partition is activated.

Managing AIX Device Drivers on Partitions

When you activate AIX in a partition, the operating system loads a device driver that emulates a serial port device driver. AIX considers this device driver to be a serial device adapter. For example, the following command:

```
lsdev -C | grep sa
```

Returns output similar to the following:

```
Virtual console serial adapter
A tty device is assigned to that adapter.
```

To install and boot, the AIX operating system requires a virtual terminal window. On installation, AIX prompts you to select a serial port from which to install. This port becomes the default console port unless you change it.

One difference between the virtual terminal window device driver and a normal window is that the virtual terminal window does not have to be opened in order to boot the AIX operating system. You can boot all 16 partitions simultaneously without opening a virtual terminal window, provided that the profiles' boot mode is set to **Power On Normal**.

Installing AIX on a Full System Partition

If you install AIX for a Full System Partition, select the S1 serial port as the console. The virtual terminal window device driver installs, but it does not load. If you then choose to boot the installed disk in a partition, one of the following may occur:

- If the S1 serial port is assigned to the partition you want to boot, the S1 serial port continues to have the AIX console assigned to it. If you open the virtual console port, the screen may remain blank, because no virtual terminal window device has been enabled for that port.

  To get a login to that port, use SMIT or Web-based System Manager to configure and enable a tty on the virtual terminal serial adapter. Another option is to assign that port as the AIX console. The following AIX commands are helpful when assigning the port:

  – The **lscons** command tells you which port the console is assigned to.
  – The **chcons** command allows you to permanently switch the default console to another serial port.
  – The **swcons** command allows you to temporarily switch the console to another port.
- If the S1 serial port is not assigned to that partition, AIX recognizes the missing console and displays prompts on all valid console devices, including the virtual console driver. If no console is selected within 30 seconds, AIX continues to boot without a console. If the console prompt times out, the virtual terminal window may remain blank until a console is defined.

Installing AIX on a Partition

If you install AIX in a partition that has the native serial adapter as one of its resources, the installation terminal is the default AIX console. If the virtual terminal is the console and the disk is booted for a Full System Partition, the virtual console device driver is not loaded.

To install AIX on a partition, do the following:

1. Open a virtual terminal window on the managed system so the S1 serial port is wrapped to that terminal. Because the original console is now no longer available, you have 30 seconds to select the S1 port as your console. Otherwise, that port may appear to hang.

2. Use the **chcons** command to change the console to avoid the 30-second timeout if you plan to use the Full System Partition with an operating system that was installed in a logical partition.

If you install AIX in a partition that does *not* have the native serial adapters as one of its resources, the device driver for the built-in serial adapter is not installed in that partition. AIX does not install device support for a physical device unless the device is present at the time of installation. Do not attempt to boot that image as a Full System Partition until you first install the correct device support.

The following steps describe one method of adding device support:

1. Add the native serial adapter and the CD device to your partition profile.
2. Boot the partition with the new resources.
3. Run the following command to add the device support:

   ```
   cfgmgr -i /dev/cd0
   ```

Copying and Pasting Within a Virtual Terminal

Copying and pasting is supported within a virtual terminal session only. To copy and paste in a virtual terminal, do the following:

1. Use the mouse to draw a box around the text you want to copy.
2. Press and hold the Ctrl key and then press the Insert key to copy the text.
3. Press and hold the Shift key and then press the Insert key to paste the text.

Closing a Virtual Terminal Window

There are two ways to close a virtual terminal. The preferred, usual method of closing a terminal window is to click on the **X** in the upper-right corner of the terminal window. This action removes the window from the HMC desktop and closes the connection. Any user can close a terminal window in this way.

You can also force a virtual terminal window to close in the following situations:

- The terminal is open on another HMC and you want to turn off that session.
- The terminal has been opened by another HMC.

To force a virtual terminal window to close you must be a member of one of the following roles:

- Operator
- Advanced Operator
- System Administrator
- Service Representative

To force a terminal window to close, do the following:

1. Select the managed system from the Contents area.
2. Select **Close Terminal**.

Chapter 15. HMC Software Maintenance

The Software Maintenance application allows you to back up critical console information and upgrade information to your HMC's DVD-RAM. This chapter describes how to back up and save critical console data. Information about formatting removable media and installing corrective fixes is also provided. To open the Software Maintenance application, click the **Software Maintenance** icon in the Navigation area.

Backing up Critical Console Data

Using your HMC, you can back up important data, such as:

- User-preference files
- HMC platform-configuration files
- User information
- HMC log files

The Backup Critical Console Data function saves the HMC data stored on your HMC hard disk to the DVD-RAM and is critical to support HMC operations. Back up the HMC after you have made changes to the HMC or to the information associated with partitions.

To back up critical console data, you must be a member of one of the following roles:

- System Administrator
- Advanced Operator
- Operator
- Service Representative

To back up critical console data, do the following:

1. In the Navigation area, click the **Software Maintenance** icon.
2. In the Contents area, select **Backup Critical Console Data**.
3. Select **Backup** to store your critical console data on the DVD-RAM.
4. Click **OK**.

Saving Upgrade Data

Perform this task to store system information in preparation for an HMC upgrade. When you complete this process, the HMC saves configuration data that includes the following:

- System preferences
- Profile information
- Service Agent files
- Inventory Scout Services files

You can save this information to the hard disk.

To save upgrade data, you must be a member of one of the following roles:

- System Administrator
- Advanced Operator

To save upgrade data, do the following:

1. In the Contents area, select **Save Upgrade Data**.
2. Select how you want to store this data:
   - If you have the appropriate authority and choose **Save to DVD**, insert the backup read/write DVD into the DVD-RAM drive and click **OK**.
   - If you choose **Save to hard drive**, follow the onscreen instructions to store the upgrade data on the console's hard drive.

Installing Corrective Service

This task allows you to update the level of code on the HMC. Corrective fixes are available through ftp and CD-ROM.

Note: Because the HMC is a closed system, you cannot load additional applications on your Hardware Management Console. All the tasks you need to maintain the managed system, the underlying operating system, and the HMC application code are available by using the HMC's management applications.

To install a corrective fix, you must be a member of one of the following roles:

- System Administrator
- Service Representative

To install a corrective fix, do the following:

1. In the Navigation area, click **Software Maintenance**.
2. In the Contents area, click **Install Corrective Service**. The Install Corrective Service window opens.
3. Do one of the following:

   If you have a corrective fix on removable media, insert the media in the appropriate drive and click **Apply corrective service from removable media**.

   OR

   If you want to download the fix from a remote site and have the necessary information from your support representative, click **Download corrective service from remote system, then apply downloaded service file**. Then type the site, patch file, ID, and password information in the appropriate fields. This information is available from your support representative.
4. Click **OK**.

Formatting Removable Media

You must format removable media before it can be used.

To format removable media, you must be a member of one of the following roles:

- System Administrator
- Advanced Operator
- Operator
- Service Representative

To format the removable media, do the following:

1. In the Contents area, select **Format Removable Media**.
2. Insert the media, either diskette or DVD-RAM, into its appropriate drive.
3. Click **Continue** to format the media.

Chapter 16. Service Agent

The Service Agent application monitors your pSeries server for hardware errors. It reports detected errors, assuming they meet certain criteria for criticality, to IBM for service without requiring customer intervention.

This chapter provides an introduction to the Service Agent application. For a more detailed discussion of Service Agent and its various functions, see the *Electronic Service Agent for pSeries Hardware Management Console User's Guide*, order number SC38-7107.

To access the Service Agent application, click the **Service Agent** icon in the Navigation area.

Note: Service Agent is *not* a replacement for the pSeries Maintenance Package. Use Service Agent as an additional service tool for the server.

IBM uses Service Agent to do the following:

- Analyze problems automatically
- View hardware event logs

Any user can access Service Agent.

Overview of Service Agent

You can use the Service Agent application to define machines. After machines are defined, they are registered with the IBM Service Agent Server (SAS). During the registration process, an electronic key is created, which becomes part of your resident Service Agent program. This key is used each time Service Agent places a call for service. The IBM Service Agent Server verifies the current customer service status from the IBM entitlement database. If you are entitled for customer service, the service call is placed.

Service Agent provides early warning notification of upcoming warranty or maintenance agreement expiration by sending renewal reminders at 90, 60, and 30 days prior to expiration. This feature can be activated after you register with IBM.

Service Agent reports information to IBM to help with problem resolution. In some cases, this information may be used by IBM for other purposes. This information consists of the problem or error information itself as well as Vital Product Data (VPD) or Inventory data.

In the event that the user is concerned about whether the information to be sent to IBM is sensitive, you can review the actual data by using either the Service Agent user interface or from the command line using file display programs. If, after reviewing the data and determining you do not want Service Agent to send data, you can use either of the following methods to prevent data from going to IBM.

- Within Service Agent, turn off the VPD gathering feature. This action prevents VPD from being gathered and sent to IBM.

OR

- After registering, turn off the modem itself and configure the Service Agent Notification process to use e-mail to notify a help desk or have the help desk monitor Service Agent (in real time) using the Service Agent Alerts function. When Service Agent detects an error, you can then call IBM manually (instead of having Service Agent call).

For a more detailed description of Service Agent and its configuration possibilities, see the *Electronic Service Agent for pSeries Hardware Management Console User's Guide*, available on the Web at the following location: ftp://ftp.software.ibm.com/aix/service_agent_code/7040HMC-SAUG.pdf .

Configuring and Using Service Agent

The user interface is divided vertically into two panes, a navigation pane on the left and a detail viewing pane on the right.

The buttons at the top of the navigation pane are called *category selectors*. Each category determines the type of information that is displayed in the detail window to the right. The top buttons (located in the Menu bar) are the **File** and **Help** buttons.

The bottom of the navigation pane contains two buttons labeled **Add** and **Delete**. These buttons are enabled, in Properties category view only, when they apply to the item selected. For example, you cannot add or delete when the Error view category is selected. If you want to delete a machine, you must switch to the Properties category first.

For more information about how to configure and use Service Agent, read the *Electronic Service Agent for pSeries User's Guide*, available on the web at **ftp://ftp.software.ibm.com/aix/service_agent_code/7040HMC-SAUG.pdf** .

To access the Service Agent application, click on the **Service Agent** icon in the Navigation area.

Registering and Customizing the Service Agent User Interface

To start the Service Agent user interface, click **Service Agent UI - Registration/Customization**.

Any user role can make an HMC report to another gateway HMC.

To make an HMC report to another gateway HMC, do the following:

1. Read and accept the License Agreement.
2. Type `password` for the initial password prompt. The password is the case-sensitive and must be typed exactly as shown.

3. Type the required contact and gateway information in each field.
4. Click **Continue**.
5. In the Service Agent user interface, select the **Network** icon.
6. Click the **Add** button.
7. Select **Child**.
8. From the menu, select **Machines**.
9. Type the client information.
10. In the **node name** field, make sure that entries match the client host name.
11. On the client system, select **Change SA Mode**.
12. Change the mode to **Client**.
13. Type the client and gateway names.
14. Click **OK**.

Verify that the client is reporting to the gateway by clicking the **License Status** icon.

Stopping the Service Agent User Interface

Perform this task if the user interface does not respond. You can close the Service Agent interface by selecting **File** and then **Exit** from the Service Agent user interface menu.

Any user role can stop the Service Agent user interface.

To stop the active Service Agent user interface, in the Contents area, click **Stop Service Agent UI**.

Starting Service Agent Processes

When you activate the Service Agent processes, all other menu options become active as well.

Any user role can start the Service Agent processes.

To start the Service Agent Processes, in the Contents area, click **Start SA Process**.

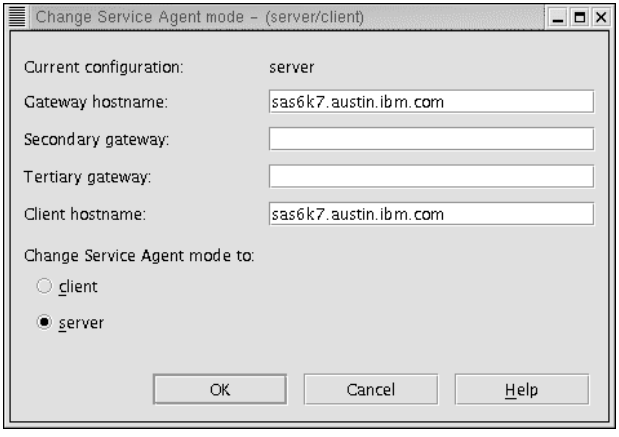
Changing the Service Agent Mode

An HMC can be configured to report to another HMC. When you change the Service Agent mode, the actual call home is performed through the second HMC, therefore necessitating only one modem for a group of HMCs. Service Agent refers to the HMC with a modem as a *gateway* and the HMCs reporting errors as Service Agent *clients*.

Any user role can change the Service Agent mode.

To change the Service Agent mode, do the following:

1. On the gateway HMC, open the Service Agent user interface.
2. In the Service Agent user interface, do the following:
   a. Click the **Network** icon.
   b. Click **Add**.
   c. Select **Child**.
   d. Select **Machines**.
   e. Type the client information. The **Node Name** and **User** entries must match the client host name.
3. On the client system, select **Change SA Mode**. The Change Service Agent Mode window opens and looks similar to the following:



4. Change the mode to **Client**.
5. Enter the **Client host name** and **Gateway host name** as appropriate.
6. Click **OK**.

Use the Service Agent user interface to ensure that the Client is reporting to the Gateway. To do this, expand the **Network** application and then click the **License Status** icon.

Stopping Service Agent Processes

This operation prevents all call-home functions.

Any user role can stop the Service Agent processes.

To stop all the Service Agent processes, in the Contents area, click **Stop SA Process**.

Service Agent Status Indicators

The status section in the Contents area displays the current status of all Service Agent processes as follows:

SA Mode
Indicates whether the primary server is a gateway server or a client server.

Gateway Machine
Displays the name of the gateway machine. On a gateway machine, the primary server and the client name are the same.

Secondary Server
Displays the server you have configured to be the secondary server.

Tertiary Server
Displays the server you have configured to be the tertiary server.

Client Name
Displays the name of the client and matches the node name that you entered using the Service Agent interface.

Service Agent Status
Displays whether the Electronic Server System (ESS) or the On Demand Server (ODS) applications are currently running.

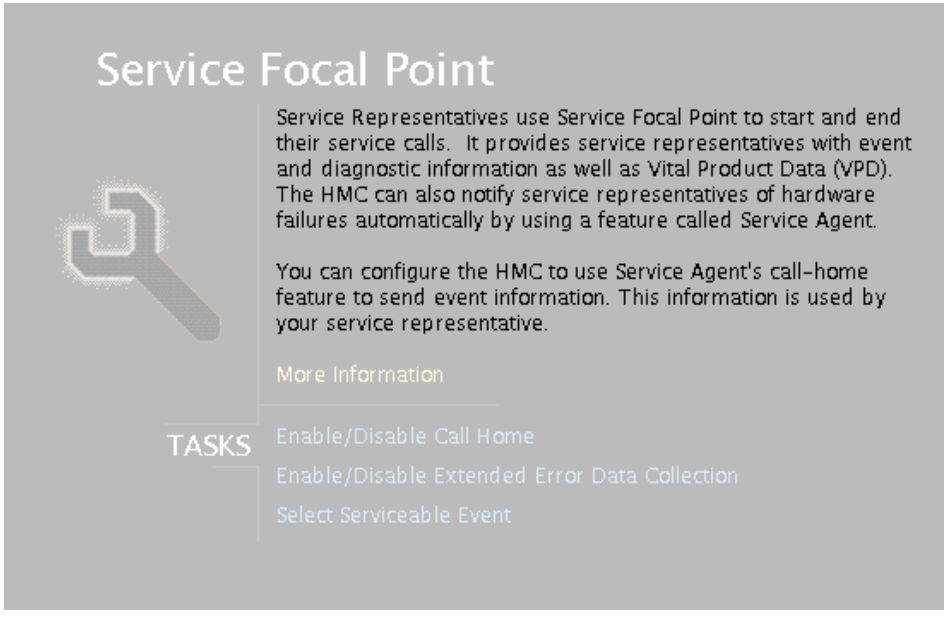
Chapter 17. Service Focal Point

Service representatives use the HMC as the starting point for all service issues. The HMC groups various system management issues at one control point. From this control point, service representatives use the Service Focal Point application to determine an appropriate service strategy.

Traditional service strategies become more complicated in a partitioned environment. Each partition runs on its own, unaware that other partitions exist on the same system. If one partition reports an error for a shared resource such as a managed system power supply, other active partitions report the same error. Service focal point enables service representatives to avoid long lists of repetitive call-home information. Service Focal Point recognizes that these errors repeat, and the application filters them into one error code for the service representative to review.

Errors that require service are reported to the HMC as *serviceable events*. Because the HMC stores these serviceable events for 90 days and then discards them, it is important to have the partition and HMC date and time set correctly. For instance, if the date on a partition's software is set 90 days *behind* the HMC's set time, the serviceable events reported from this partition are immediately discarded. For more information about setting the HMC's date and time, see "Setting and Viewing the Console Date and Time" on page 25. To set the partition's date and time, see the documentation provided with the operating system that is running on that partition.

The following is an example of the Service Focal Point application's main screen in the Contents area:



Getting Started

When you are setting up Service Focal Point, keep the following in mind:

- If the **/var** file system is full (either on the HMC or partitions), it can prevent Serviceable Events from being reported to the HMC.
- If the time configured on a partition is 90 days older than time configured on the HMC, Sserviceable events cannot be reported.
- Verify that the HMC hostnames are defined. For more information on using fully qualified and short hostnames, see “Setting Host Names” on page 28.
- Verify that the HMC and managed system are on the network and that DNS is working correctly when being used. To do this, telnet to partitions from the HMC using the partitionsÆ hostname. You can also verify that partitions are set up properly for service focal point by running the following command:

  ```
  /opt/hsc/bin/lspartition -debug
  ```

  and checking the **Active** flag. For example, the `lspartition -all` command shows a partition with host name `hmc1.yourdomain.yourcompany.com` and LParID=001 as:

  ```
  Hostname: ehmc55.austin.ibm.com
  IPAddr: x.x.xxx.xxx
  LParID:<001>
  Active:<1>
  OSType:<>
  OSVers:<>
  ```

- If you need to add or change a partition name, see “Giving Your Partition a Host Name” on page 15.

Automatic Call-Home Feature

You can configure the HMC to automatically call an appropriate service center when it identifies a serviceable event.

To enable or disable the call-home feature, you must be a member of one of the following roles:

- System Administrator
- Service Representative
- Advanced Operator
- Operator

To enable or disable the call-home feature for one or more systems, do the following:

Note: It is strongly recommended that you not disable the call-home feature. When you disable the call-home feature, serviceable events are not automatically reported to your service representative.

1. In the Navigation area, select the **Service Focal Point** icon.
2. In the Contents area, select **Enable / Disable Call Home**.

3. The **Enable / Disable call home** window displays a list of managed systems. Click on the managed system you want to enable or disable.
4. Click **Enable** to enable call-home for the selected system, or click **Disable** to disable call-home for the selected system.
5. Click **OK**.

Extended Error Data Collection

This feature allows you to enable or disable extended error data (EED) collection in one or more managed systems.

The following types of EED can be activated and deactivated independently:

- Central Service Processor (CSP) EED. CSP EED describes the current partition status on the managed system.
- Operating System (OS) EED. OS EED is the data collected from the partition that is experiencing problems.

EED is collected automatically for each serviceable event on a partition. The most recent serviceable event's EED is retained until a new serviceable event occurs. If EED collection is enabled on the HMC, the EED collected on a partition is transferred to and stored on the HMC's hard drive. You can store up to 20 sets of serviceable-event EED on the HMC's local file system at any given time.

To enable or disable extended error-data collection, you must be a member of one of the following roles:

- System Administrator
- Service Representative
- Advanced Operator
- Operator

To enable or disable extended error-data collection, do the following:

1. In the Navigation area, select the **Service Focal Point** icon.
2. In the Contents area, select **Enable / Disable Extended Error Data Collection**.
3. The Enable / Disable Extended Error Data Collection window displays a list of systems. The window also lists each system's error class, state, and type. Click the system for which you want to enable or disable extended error-data collection.
4. Click **Enable** to enable extended error-data collection for the selected managed system, or click **Disable** to disable extended error-data collection for the selected managed system.
5. Click **OK**.

Working With Serviceable Events

You can view, add, or update serviceable event information, including error details.

Viewing Serviceable Events

To view serviceable events, you must be a member of one of the following roles:

- System Administrator
- Service Representative
- Advanced Operator
- Operator

To view a serviceable event, do the following:

1. In the Navigation area, select the **Service Focal Point** icon.
2. In the Contents area, click **Select Serviceable Event**.
3. Designate the set of serviceable events you want to view by selecting the failing system's name, the error class, the serviceable event status, and the number of days to view. Click **OK** when you are finished.
4. The Serviceable Event Overview window opens, and the entries displayed are ordered by time stamp. Each line in the Serviceable Event Overview window corresponds to one error within a serviceable event. Information provided includes the following:
   - Event status
   - Original time stamp
   - Failing device name
   - Failing machine type/model/serial number
   - Error class
   - Descriptive error text

   You can sort events by time stamp or status.

When you select a line in the Serviceable Event Overview window, all lines in the same serviceable event are selected. To open the Serviceable Event Details window for the selected event, select the event and then click **Event Details**.

Viewing Serviceable Event Details

To view serviceable event details, do the following:

1. Perform the steps in "Viewing Serviceable Events".
2. The Serviceable Event Details window opens, showing extended serviceable event information. The Serviceable Event Detailed Attributes table includes the following information:
   - Status
   - Earliest original time stamp of any managed object
   - AIX error log
   - Should this error ever get called home?
   - Error was called home
   - Pointer to extended error data collection on the HMC

The lower table displays all of the errors associated with the selected serviceable event. The information is shown in the following sequence:

- Failing device system name
- Failing device machine type/model/serial
- Error class
- Descriptive error text

Viewing Serviceable Event Error Details

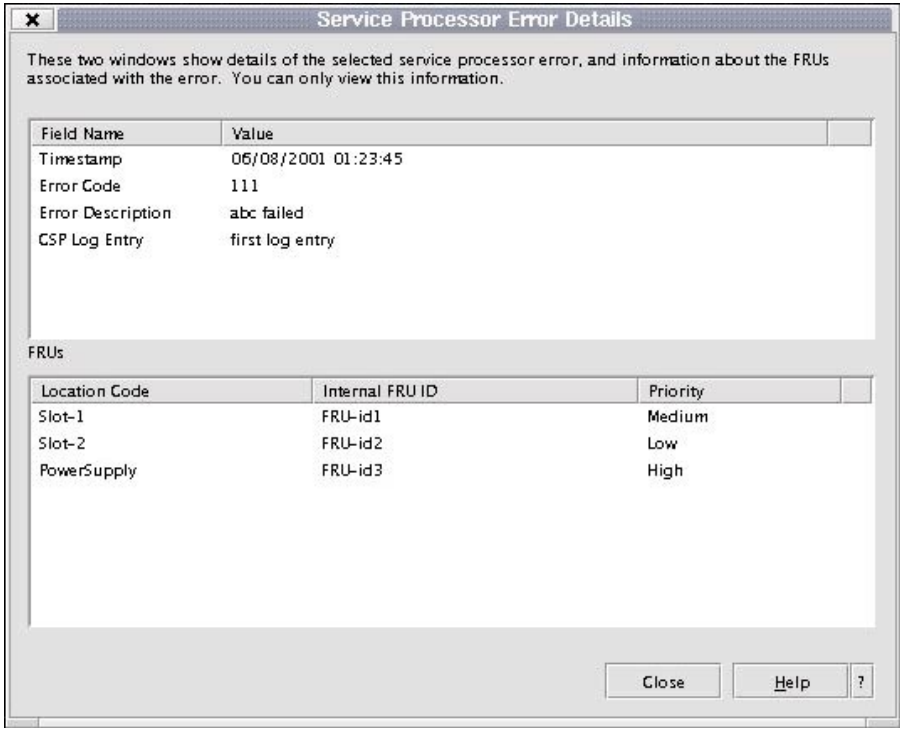
To view serviceable event error details, do the following:

1. Perform the steps in “Viewing Serviceable Event Details” on page 104.
2. Select an error in the lower table and click **Error Details**.

Viewing Service Processor Error Details

To view service processor error details, do the following:

1. Perform the steps in “Viewing Serviceable Event Error Details”.
2. If the serviceable event error details you are viewing are for a service processor-class error, the lower table on the resulting window contains service processor errors. Select a service processor error from the lower table and click the **Service Processor Error Details** button to see further details. A window similar to the following displays:



Saving and Managing Extended Error Data

To save extended error data, do the following:

1. In the Navigation area, select the **Service Focal Point** icon.
2. In the Contents area, click **Select Serviceable Event**.
3. Perform the steps in “Viewing Serviceable Event Details” on page 104.
4. Designate the set of serviceable events you want to view by selecting the failing system’s name, the error class, the serviceable event status, and the number of days to view. Click **OK**.
5. Double-click the serviceable event, or select it and click **Event Details** from the menu.
6. Click **Save EE Data**.

   Note: To save extended error data for only *one* error associated with the serviceable event (rather than for the entire serviceable event), select the error from the lower table and then click **Error Details**. In the next menu, click **Manage EE Data**.

Viewing and Adding Serviceable Event Comments

To add serviceable event comments, you must be a member of the Service Representative role.

To add comments to a serviceable event, do the following:

Note: You cannot edit or delete previous comments.

1. In the Navigation area, select the **Service Focal Point** icon.
2. In the Contents area, click **Select Serviceable Event**.
3. Perform the steps in “Viewing Serviceable Event Details” on page 104.
4. Designate the set of serviceable events you want to view by typing the failing system’s name, the error class, the serviceable event status, and the number of days to view. Click **OK**.
5. Double-click the serviceable event, or select it and click **Event Details** from the menu.
6. Select the error to which you want to add comments to and click **Comments...**. If you want to close the event and add comments, click **Close Event** from this window. The Serviceable Event Comments window opens.
7. Type your name and add comments as appropriate. You can also review previous comments, but you cannot edit this information.
8. If you clicked **Comments** on the Serviceable Event Details window, clicking **OK** commits your entry and returns you to the Serviceable Event Details window.

If you clicked **Close Event** on the Serviceable Event Details window, clicking **OK** commits all changes and opens the Update FRU Information window. For more information about updating field replaceable units, see “Updating Field Replaceable Unit (FRU) Information” on page 107.

Closing a Serviceable Event

To close a serviceable event, do the following:

1. In the Navigation area, select the **Service Focal Point** icon.
2. In the Contents area, click **Select Serviceable Event**.
3. Perform the steps in “Viewing Serviceable Event Details” on page 104.
4. Designate the set of serviceable events you want to view by typing the failing system’s name, the error class, the serviceable event status, and the number of days to view. Click **OK**.
5. Double-click the serviceable event, or select it and click **Event Details** from the menu.
6. Select the error to which you want to add comments and click **Comments...**.
7. Click **Close Event** from this window. The Serviceable Event Comments window opens.
8. Type your name and add comments as appropriate. You can also review previous comments, but you cannot edit this information.
9. If you clicked **Comments** on the Serviceable Event Details window, clicking **OK** commits your entry and returns you to the Serviceable Event Details window.

Note: You must close a serviceable event after it has been serviced to ensure that if a similar error is reported later, it is called home. If an old problem remains open, the new similar problem is reported as a duplicate. Duplicate errors are neither reported nor called home to a service center. Close a serviceable event when the partition that reports the error is active. Closing the event causes the new status of the serviceable event to be properly sent to the partition.

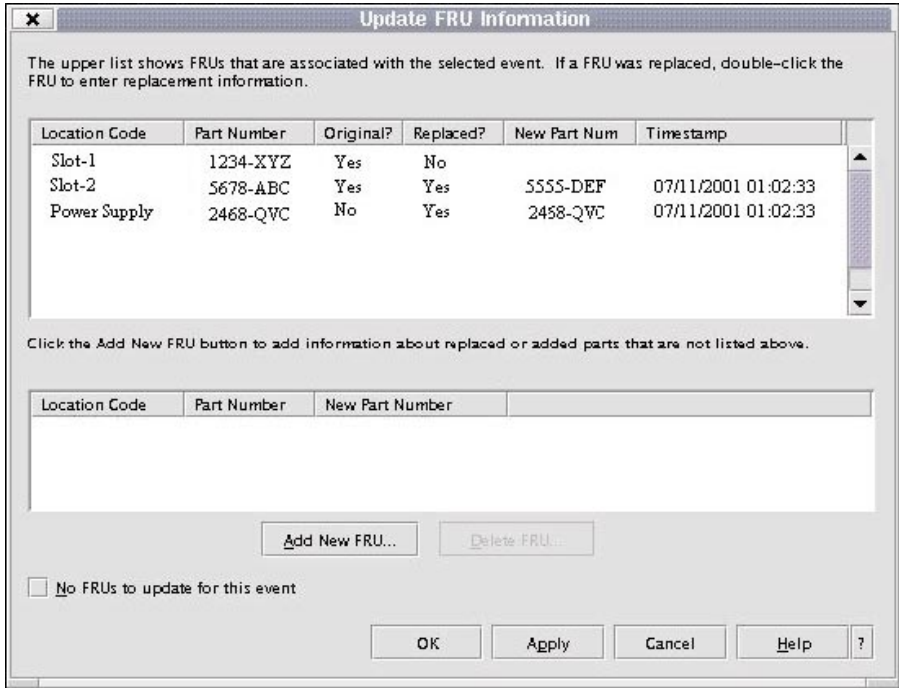
Updating Field Replaceable Unit (FRU) Information

This task allows you to update the FRU information you changed or modified as a result of this serviceable event.

To update FRU information, do the following:

1. In the Navigation area, select the **Service Focal Point** icon.
2. In the Contents area, click **Select Serviceable Event**.
3. Perform the steps in “Viewing Serviceable Event Details” on page 104.
4. Specify the set of serviceable events you want to view by typing the failing system’s name, the error class, the serviceable event status, and the number of days to view. Click **OK**.
5. Double-click the serviceable event, or select it and click **Event Details** from the menu.

6. Click **FRU Information...** . A window similar to the following opens:



In this example, three parts are involved in this serviceable event. The system recommended that the part in `Slot-1` be changed (`Original=Yes`), but the representative decided not to change the part. The HMC also recommended that the part in `Slot-2` be changed, and the part was replaced by a part, although one with a different part number. The part in `PowerSupply` was not in the initial recommendation for replacement, but was replaced with a part with the same part number.

The lower table shows any parts that you have replaced or added during your current update session but that have not been committed to the serviceable event. The changes from the lower table are committed by clicking the **OK** or **Apply** button.

Replacing an Existing FRU

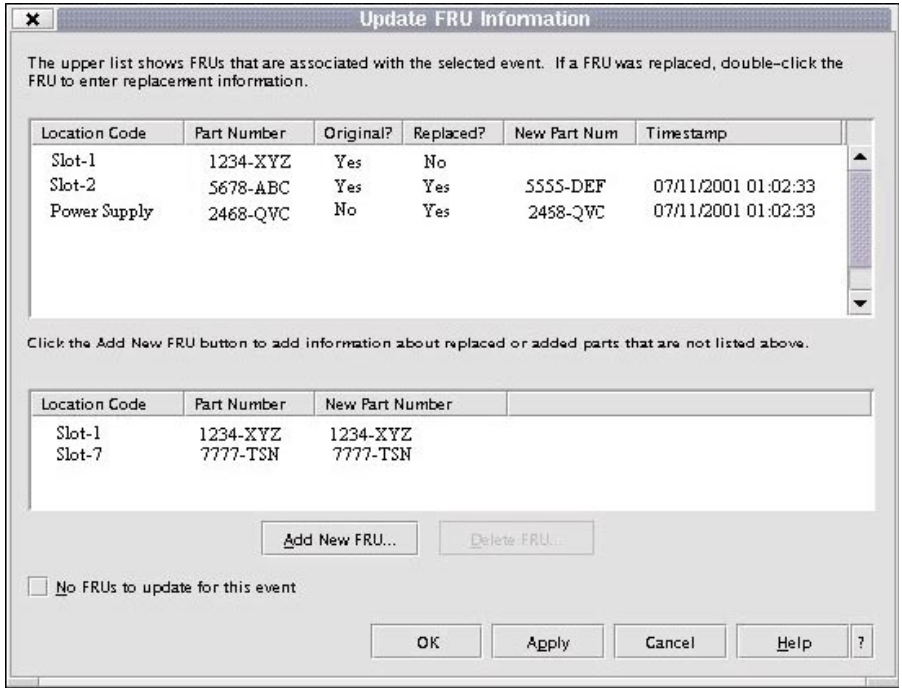
To replace a part already listed for this serviceable event, do the following:

1. Perform the steps in “Updating Field Replaceable Unit (FRU) Information” on page 107.
2. In the upper table, double-click the part you want to replace.
3. If the FRU has a new part number, type it in the **New FRU Part Number** field.
4. Click **Replace FRU**. The Update FRU Information window displays the FRU replacement information in the lower table. Click **OK** or **Apply** to commit the changes to the serviceable event.

Adding a New FRU

You can add a part to the serviceable event that was not listed in the upper table of the **Update FRU Information** window. To add a new FRU for this serviceable event, do the following:

1. Perform the steps in "Updating Field Replaceable Unit (FRU) Information" on page 107.
2. Click **Add New FRU to List**.
3. Type the FRU's location code and its part number in the appropriate fields.
4. Click **Add to List**. The Update FRU Information window opens and displays the newly added FRU in the lower table, as shown in the following example.



5. Click **OK** or **Apply** to commit these changes to the serviceable event.

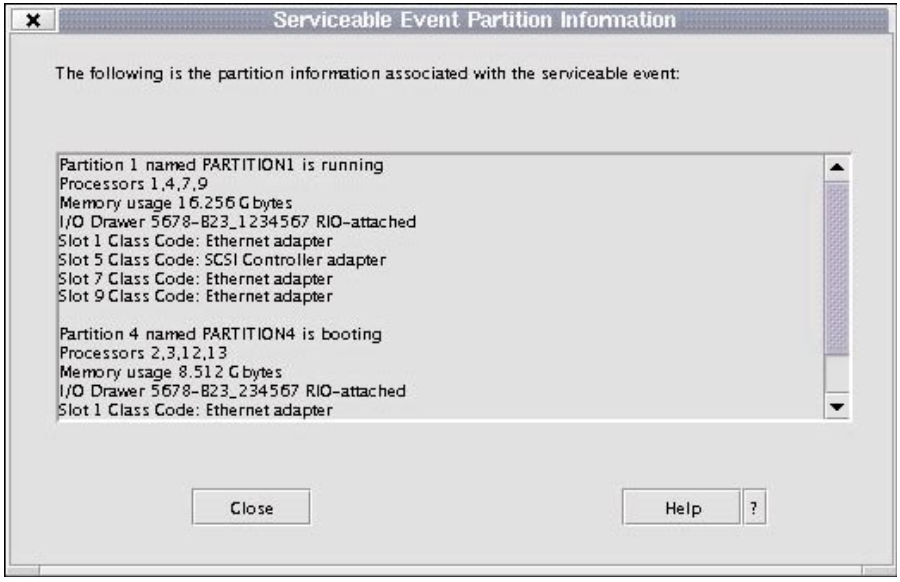
   Note: After you click **OK** or **Apply**, you cannot change this information. If you clicked the **Close Event** button in the Serviceable Event Details window, then clicking **OK** also completes the close dialog and changes the status of the serviceable event to *Closed*.

Viewing Serviceable Event Partition Information

You can view partition information associated with this serviceable event. This information includes each affected partition's state and resource use.

1. In the Navigation area, select the **Service Focal Point** icon.
2. In the Contents area, click **Select Serviceable Event**.
3. Perform the steps in "Viewing Serviceable Event Details" on page 104.

4. Specify the set of serviceable events you want to view by typing the failing system's name, the error class, the serviceable event status, and the number of days to view. Click **OK**.
5. Double-click the serviceable event, or select it and click **Event Details** from the menu.
6. Click **Partition Info...**. A window similar to the following opens:



Chapter 18. Using the Command Line

This chapter describes the remote commands that you can run to perform HMC functions.

High-Level Command Line

You can perform basic HMC functions remotely by using a command line. These commands are located in the **/opt/hsc/bin** subdirectory. To enable or disable remote commands, see “Enabling and Disabling Remote Commands” on page 38.

Use the flags in the order shown in this table.

Command	Flags	Function
power_on_cec	-c *"managed system"* -m full | lpar -b *boot setting* where boot setting = norm | dd | sms | of | ds | std Use the Standby (std) boot setting when booting to Partition (lpar) mode. Use the other five boot settings when booting to Full Machine Partition (full) mode: Normal (norm), Diagnostic Default Boot List (dd), SMS (sms), OpenFirmware OK Prompt (of), and Diagnostic Stored Boot List (ds).	Powers on a managed system; -m starts it in either full or partition mode.
power_off_cec	-m *"managed system"*	Powers off a managed system
get_cec_state	-m *"managed system"*	Returns the current state of a managed system
get_cec_mode	-m *"managed system"*	Indicates whether the managed system is in full mode or partition mode
get_op_panel	-m *"managed system"*	Displays contents of operator panel LED for the managed system specified
query_cecs	(none)	Returns the user-defined names of all the systems managed by the HMC. Returns *"managed system"* in the following format, name_type-model (for example, server_7017–S90)

Command	Flags	Function
start_partition	-p *"partition name"* -f *"profile name"* -m *"managed system"*	Starts a partition with a given profile
reset_partition	-m *"managed system"* -p *"partition name"* -t < reset type > where < reset type > = < hard | soft >	Performs a hard or soft reset of the operating system loaded on a partition
get_partiton_state	-m *"managed system"* -p *"partition name"*	Returns the current state of a partition
get_op_panel	-m *"managed system"* -p *"partition name"*	Displays operation panel LED contents for the specified partition
query_partition_names	-m *"managed system"*	Returns the names of all defined partitions on a managed system
query_profile_names	-m *"managed system"* -p *"partition name"*	Returns profile names for that partition or managed system
get_cec_mtms	-m *"managed system"*	Returns the machine type and serial number in the following format: *machinetype_serialnumber*
get_cec_version	-m *"managed system"*	Returns the managed system's supported version.

Examples of Command Line Scripts

You can run the HMC's high-level commands that reside on the server from any client PC. The following examples use the **ssh** and **rexec** clients available with the OpenSSH protocol network connectivity suite:

For the examples, assume the following:

- The host name is **myclient**
- The login name is **user**
- The HMC server is **hmc.mydomain.com**
- The HMC server has a user called **hmcuser** who has permission to run high-level commands.

Example 1

```
[user@myclient user]$ ssh -l hmcuser hmc.mydomain.com /opt/hsc/bin/query_cecs
hmcuser@hmc.mydomain.com's password:
Property File Name : null
Using default configuration settings.
```

```
Managed Systems :
-----------------
Managed System 1
```

Example 2

```
[user@myclient user]$ rexec -l hmcuser -p mypassword hmc.mydomain.com /opt/hsc/bin/query_
Property File Name : null
Using default configuration settings.
Managed Systems :
-----------------
Managed System 1
```

In the preceding examples, the **ssh** method is recommended over the **rexec** method, because the **ssh** method transports a secure cleartext copy of `hmcuser's` password across the network.

Appendix A. Notices

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Appendix B. Planning for Logical Partitioning

This chapter helps you plan for allocating your system resources using logical partitions. The basic, intermediate, and advanced partitioning scenarios outline a few of the ways you can use your HMC to create partitions, partition profiles, and system profiles.

Basic Logical Partition Planning

In basic logical partition planning, you will be creating a simple division of the resources in the system into the standard set of partitions you want to run, and then creating standard partition profiles that define those per-partition resource allocations. Start with basic partition planning, because you can add advanced configurations later. The following examples illustrate how a user might go through this process.

In this example, Company A decides to divide its server into two partitions, one for production use and one as a test environment. Company A orders a system with 16 processors and 16 GB of memory, and one I/O drawer. They have network adapters installed in slots 3 and 7, and the integrated SCSI-3 controllers connected to disks in the I/O drawers.

Because Company A uses most of its computing resources for production workload, they want their production partition to normally be much larger than their test partition. Because approximately 1 GB of memory will be used for system memory overhead (see “Memory” on page 13), they assign 14 processors with 13 GB of memory to the production partition, and 2 processors with 2 GB to the test partition. To set up these partitions, the system administrator does the following:

1. Powers on the system to Partition Standby.
2. Selects to create a new partition and names it *Production*.
3. Creates a default profile and names it *Normal Production*.
4. Selects 14 for both the Minimum and Desired number of processors, because the company wants the production partition to always have the full complement of processors.
5. Selects 13 GB as both the Minimum and Desired amount of memory for the same reason.
6. Selects the network adapter in slot 3, an integrated SCSI device, the SCSI adapter with the CD-ROM drive, and any other needed I/O adapters for this partition.
7. Selects **Normal** boot mode.
8. Saves this profile.
9. If the company wants to install an operating system over a network from a Network Installation Management (NIM) server, the system administrator creates a second similar partition profile named *SMS Production*. In this case, the system administrator selects **SMS** boot mode, so that the partition stops in System Management Services firmware menus and allows network boot parameters to be set up.
10. At this point, the system administrator has created the partition and at least one profile, so the system administrator selects to activate the *Production* partition

using either the *Production* profile (to install from CD-ROM) or the *SMS Production* profile (to set up the network boot parameters and install from the network).

11. Performs the AIX installation.
12. Selects again to create a new partition and names it *Test*.
13. Creates a default profile and names it *Normal Test*.
14. Sets Minimum number of processors to 1 and Desired number of processors to 2, because this is only a test partition.
15. Sets Minimum memory to 1 GB and Desired memory to 2 GB.
16. Selects the network adapter in slot 7 and a different integrated SCSI device.
17. Selects the SCSI adapter with the CD-ROM, if needed.
18. If this is the only SCSI/CD-ROM in the system configuration, the system administrator may have to reactivate the *Production* partition with a profile that does not contain that SCSI adapter.
19. Selects **Normal** boot mode.
20. Saves this profile.
21. Creates another profile for SMS mode.
22. Activates the partition and installs an operating system.

Company A now has the *Production* and *Test* partitions running and ready for use.

Intermediate Logical Partition Planning with Alternate Partition Profiles

Intermediate partition planning assumes that you have already completed some basic planning. In this level of planning, determine whether there are circumstances in which you might want to run the partitions you have already defined with more or fewer resources, or to run them in different modes, and then create additional partition profiles that define those alternate settings. Profiles are similar to scripts, in that you can have multiple profiles for each partition.

In our example, after Company A has been running its *Production* and *Test* partitions for a while, they decide that they need to give the *Test* partition a full stress test, and running it with a full workload. They can prepare for this by setting up alternate partition profiles for these partitions. For example, they might want to create a profile for the *Test* partition that is automatically assigned all processors and memory resources that are available at the time of activation. This means that if the *Production* partition is shut down, all of the resources are allocated to the *Test* partition. To do this, the system administrator does the following:

1. Creates a new partition profile for the *Test* partition, and names it *Full Stress*.
2. Sets Minimum number of processors to 1 and Desired number of processors to 16.
3. Sets Minimum memory to 1 GB and Desired memory to 15 GB.
4. Selects the standard network adapter and integrated SCSI device.
5. Selects **Normal** boot mode.
6. Saves this partition profile.
7. Selects to activate the *Test* partition with the *Full Stress* partition profile.

8. If the *Production* partition is not running, the *Test* partition is assigned 16 processors and 15 GB of memory. If the *Production* partition is already running, the *Test* partition is assigned 2 processors and 2 GB of memory.

If the *Production* partition must be kept running, but there are time periods where it needs only 8 processors, the administrator could likewise create an alternate profile for the *Production* partition. For example, the system administrator might create a *Non-Peak* profile that requests only 8 processors and a reduced amount of memory.

In another example, the administrator may want to set up a special profile for the *Production* partition that boots the partition into Service mode for running the AIX hardware diagnostics package. To do this, the administrator does the following:

1. Creates a new profile for the *Production* partition and names it *Diagnostics*.
2. Sets Minimum number of processors and Desired number of processors to 14.
3. Chooses to set Minimum and Desired memory to 1 GB, because very little memory is required to run diagnostics.
4. Selects the standard set of I/O devices for this partition.
5. Selects **DIAG_DEFAULT** boot mode.
6. Saves this partition profile.

If the system administrator suspects a hardware problem in that partition, this *Diagnostics* partition profile can be used to boot the partition into Service mode and run diagnostic analysis, or allow authorized service representatives to do the same.

Advanced Logical Partition Planning Using Multiple System Profiles

In advanced partition planning, the objective is determine whether there are circumstances in which you might want to run a completely different set of partitions, or the same partitions with different set of configurations. Using system profiles, you can capture these combinations as an overall system configuration definition, and activate the system into exactly that configuration. Each combination of partition profiles specified in a system profile must be carefully planned to ensure that the total set of resources required does not overlap across partitions or exceed what is available in the system. Otherwise, some partitions may fail to start when that system profile is activated.

In the preceding example, Customer A might want to go back and forth between the configuration in which they are primarily running production workload, and in which they are running stress tests on the *Test* partition. To do this, the administrator does the following to create two different system profiles:

1. Creates a new system profile and names it *Standard Production*.
2. Selects the *Production* partition and the *Normal Production* partition profile and adds the partition and profile to the *Standard Production* system profile.
3. Selects the *Test* partition and the *Normal Test* partition profile and adds the partition and profile to the *Standard Production* system profile.
4. Saves the *Standard Production* system profile.
5. Creates another new system profile and names it *Testing*.

6. Selects the *Production* partition and the *Non-Peak* profile and adds the partition and profile to the *Testing* system profile.
7. Selects the *Test* partition and the *Full Stress* profile and adds the partition and profile to the *Testing* system profile.
8. Saves this system profile.

After these profiles are defined, the operator uses a single command or the user interface to activate the full system by specifying one of these profiles, and thereby starts the specified partitions with the specified profiles.

In another example, Company A may want to run a certain job once a month. Because it involves sensitive data, they do not want to run it in either the *Production* or *Test* partition. To do this, they might want to create a third partition, along with partition profiles, using methods similar to those already described. They may choose to run it during a period where the *Production* partition is at non-peak workload, and run it in place of the *Test* partition. To do this, the administrator does the following:

1. Creates a new system profile and names it *End of Month*.
2. Selects the *Production* partition and the *Non-Peak* partition profile and adds the partition and profile to the *End of Month* system profile.
3. Selects the *Monthly Job* partition and the *Normal Monthly Job* partition profile and adds the partition and profile to the *End of Month* system profile.
4. Saves this system profile.

The system can then be activated into this mode with a single command or user interface action.

Appendix C. Logical Partitioning Resource Tracking Worksheet

To activate a collection of partition profiles at one time, create a system profile. Complete a table for each system profile you want to activate at one time.

Be sure that the partition combination you create does not use more resources than you have configured on your managed system.

Partition Properties

Use this worksheet to record the names of each partition you created, and include the number of processors and memory you have allocated. For more information about verifying resources, see “Viewing Managed System Properties” on page 67.

Sample Partition Properties Worksheet

Partition Name	Profile Name	Minimum Number of Processors	Minimum Memory Size (In GB)
Production	Normal Production	14	*13*
Test	Normal Test	1	*1*
Totals		15	14*
Total Installed		15	15

* The memory allocation total should leave enough room for the various system overheads of memory usage. See “Memory” on page 13 for more information about system memory usage.

Partition Name	Profile Name	Number of Processors	Memory Size
Totals			*
Total Installed			

* The memory allocation total should leave enough room for the various system overheads of memory usage. See “Memory” on page 13 for more information about system memory usage.

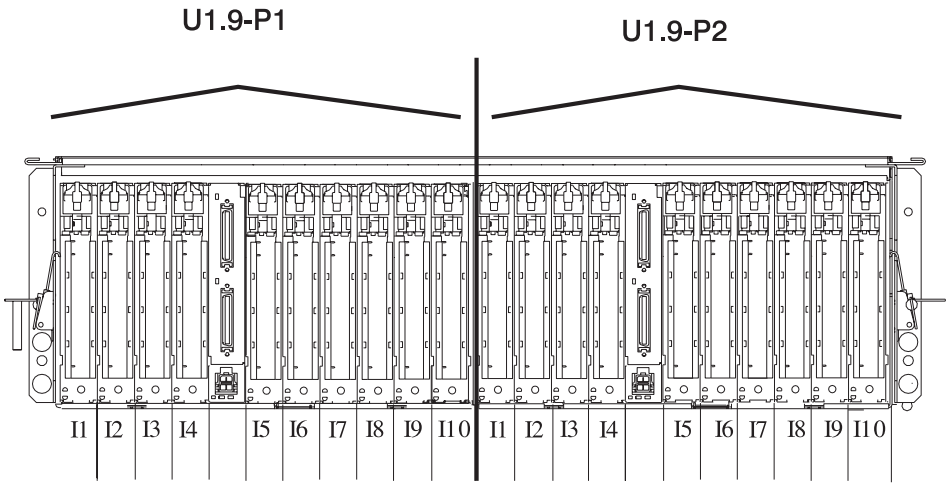
I/O Properties

Use this section to keep track of the I/O installed on your managed system.

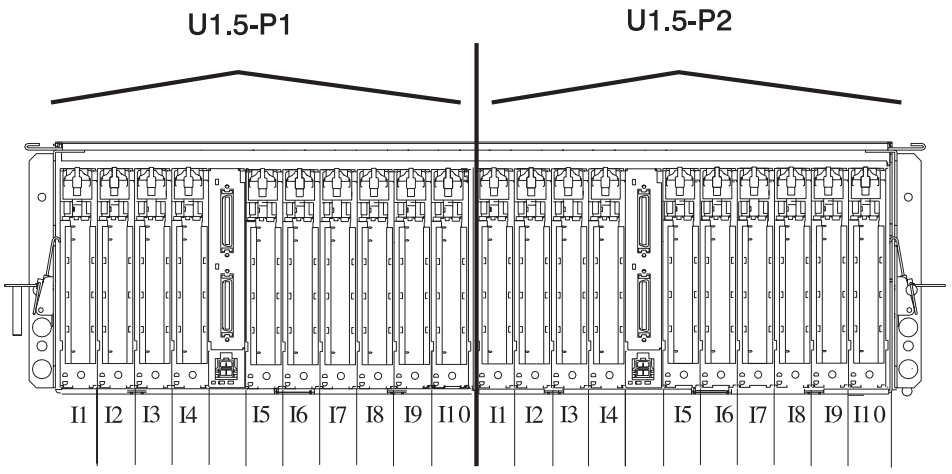
I/O drawers can be installed in different locations. Choose a worksheet for each I/O drawer in your configuration based on the location code for that drawer and use the following worksheet to record usages.

Sample I/O Drawer Resource Worksheet

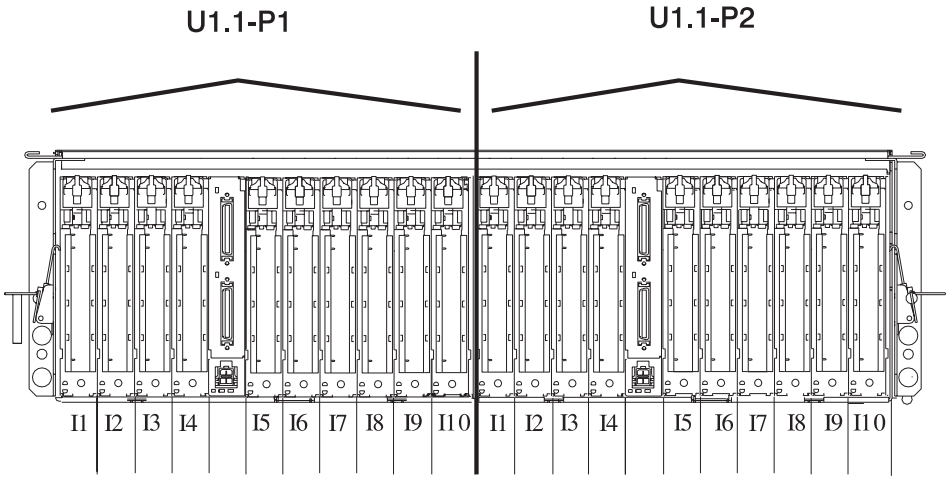
I/O Drawer Location and Serial Number	Adapter Physical Location	Adapter Type	Partition Assignment	Other Information
U1.1 Serial Number 1234567	P1/Z1	*Integrated SCSI*	*1*	*4–pack 1*
	P1/Z2	*Integrated SCSI*	*2*	*4–pack 2*
	I1	*Ethernet*	*1*	*IP=9.53.2.2*
	I2	*Fibre Channel*	*1*	
	I3	*Empty*	*NA*	
	I4	*Ethernet*	*2*	*IP=9.53.2.3*
	I5	*Empty*	*NA*	
	I6	*SCSI*	*1, 2, 3, 4, or 5*	*CD, Tape*
	I7	*Empty*	*NA*	
	I8	*SSA*	*5*	
	I9	*Ethernet*	*5*	*IP=9.53.2.4*
	I10	*Empty*	*NA*	


U1.9-P1
U1.9-P2
I1
I2
I3
I4
I5
I6
I7
I8
I9
I10
I1
I2
I3
I4
I5
I6
I7
I8
I9
I10

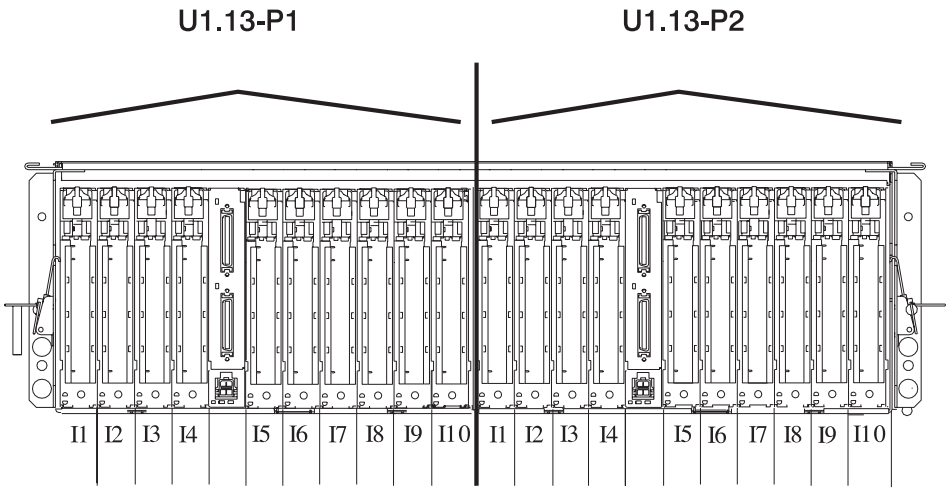
I/O Drawer Location and Serial Number	Adapter Physical Location	Adapter Type	Partition Assignment	Other Information
U1.9 Serial Number _____	P1/Z1			
	P1/Z2			
	I1			
	I2			
	I3			
	I4			
	I5			
	I6			
	I7			
	I8			
	I9			
	I10			
	P2/Z1			
	P2/Z2			
	I1			
	I2			
	I3			
	I4			
	I5			
	I6			
	I7			
	I8			
	I9			
	I10			


U1.5-P1
U1.5-P2
I1
I2
I3
I4
I5
I6
I7
I8
I9
I10
I1
I2
I3
I4
I5
I6
I7
I8
I9
I10

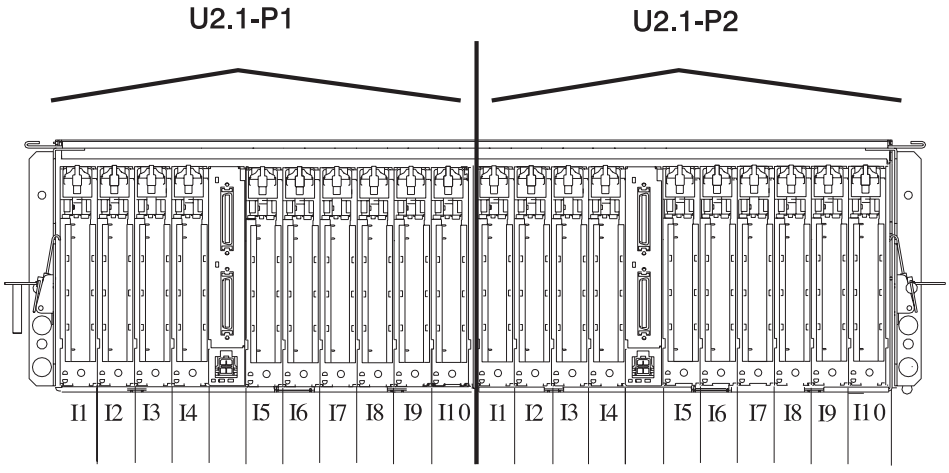
I/O Drawer Location and Serial Number	Adapter Physical Location	Adapter Type	Partition Assignment	Other Information
U1.5 Serial Number _____	P1/Z1			
	P1/Z2			
	I1			
	I2			
	I3			
	I4			
	I5			
	I6			
	I7			
	I8			
	I9			
	I10			
	P2/Z1			
	P2/Z2			
	I1			
	I2			
	I3			
	I4			
	I5			
	I6			
	I7			
	I8			
	I9			
	I10			


U1.1-P1
U1.1-P2
I1
I2
I3
I4
I5
I6
I7
I8
I9
I10
I1
I2
I3
I4
I5
I6
I7
I8
I9
I10

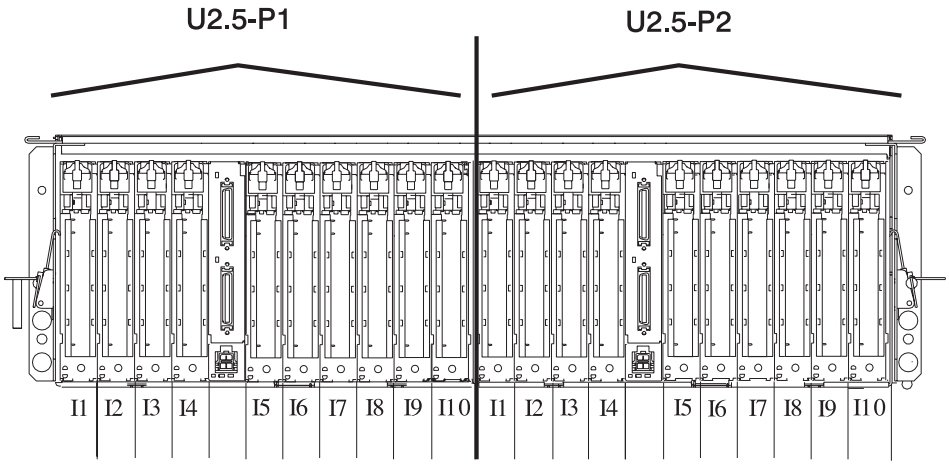
I/O Drawer Location and Serial Number	Adapter Physical Location	Adapter Type	Partition Assignment	Other Information
U1.1 Serial Number _____	P1/Z1			
	P1/Z2			
	I1			
	I2			
	I3			
	I4			
	I5			
	I6			
	I7			
	I8			
	I9			
	I10			
	P2/Z1			
	P2/Z2			
	I1			
	I2			
	I3			
	I4			
	I5			
	I6			
	I7			
	I8			
	I9			
	I10			


U1.13-P1
U1.13-P2
I1
I2
I3
I4
I5
I6
I7
I8
I9
I10
I1
I2
I3
I4
I5
I6
I7
I8
I9
I10

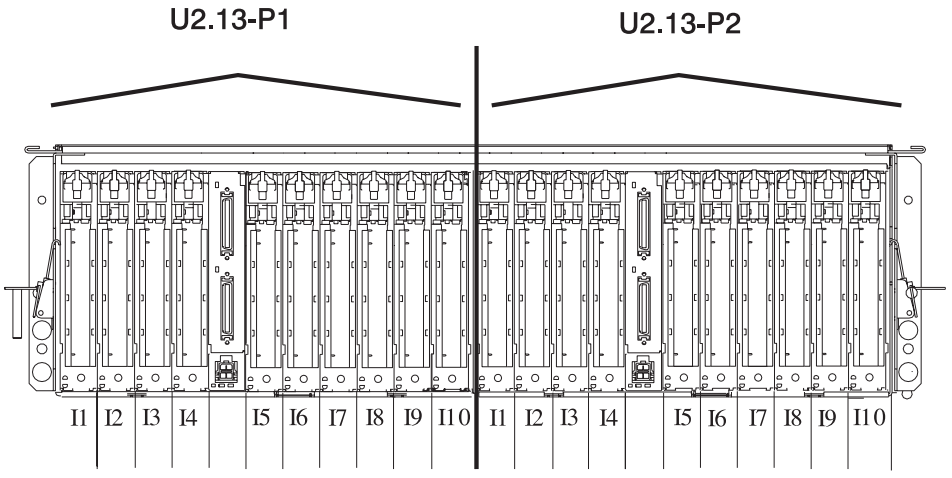
I/O Drawer Location and Serial Number	Adapter Physical Location	Adapter Type	Partition Assignment	Other Information
U1.13 Serial Number _____	P1/Z1			
	P1/Z2			
	I1			
	I2			
	I3			
	I4			
	I5			
	I6			
	I7			
	I8			
	I9			
	I10			
	P2/Z1			
	P2/Z2			
	I1			
	I2			
	I3			
	I4			
	I5			
	I6			
	I7			
	I8			
	I9			
	I10			


U2.1-P1
U2.1-P2
I1
I2
I3
I4
I5
I6
I7
I8
I9
I10
I1
I2
I3
I4
I5
I6
I7
I8
I9
I10

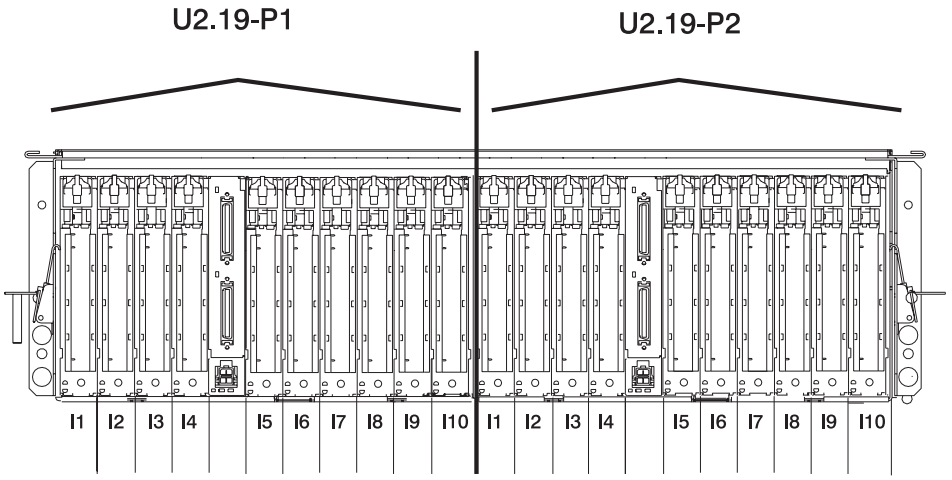
I/O Drawer Location and Serial Number	Adapter Physical Location	Adapter Type	Partition Assignment	Other Information
U2.1 Serial Number _____	P1/Z1			
	P1/Z2			
	I1			
	I2			
	I3			
	I4			
	I5			
	I6			
	I7			
	I8			
	I9			
	I10			
	P2/Z1			
	P2/Z2			
	I1			
	I2			
	I3			
	I4			
	I5			
	I6			
	I7			
	I8			
	I9			
	I10			


U2.5-P1
U2.5-P2
I1
I2
I3
I4
I5
I6
I7
I8
I9
I10
I1
I2
I3
I4
I5
I6
I7
I8
I9
I10

I/O Drawer Location and Serial Number	Adapter Physical Location	Adapter Type	Partition Assignment	Other Information
U2.5 Serial Number _____	P1/Z1			
	P1/Z2			
	I1			
	I2			
	I3			
	I4			
	I5			
	I6			
	I7			
	I8			
	I9			
	I10			
	P2/Z1			
	P2/Z2			
	I1			
	I2			
	I3			
	I4			
	I5			
	I6			
	I7			
	I8			
	I9			
	I10			


U2.13-P1
U2.13-P2
I1
I2
I3
I4
I5
I6
I7
I8
I9
I10
I1
I2
I3
I4
I5
I6
I7
I8
I9
I10

I/O Drawer Location and Serial Number	Adapter Physical Location	Adapter Type	Partition Assignment	Other Information
U2.13 Serial Number _____	P1/Z1			
	P1/Z2			
	I1			
	I2			
	I3			
	I4			
	I5			
	I6			
	I7			
	I8			
	I9			
	I10			
	P2/Z1			
	P2/Z2			
	I1			
	I2			
	I3			
	I4			
	I5			
	I6			
	I7			
	I8			
	I9			
	I10			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U2.19-P2
I1
I2
I3
I4
I5
I6
I7
I8
I9
I10
I1
I2
I3
I4
I5
I6
I7
I8
I9
I10

I/O Drawer Location and Serial Number	Adapter Physical Location	Adapter Type	Partition Assignment	Other Information
U2.19 Serial Number _____	P1/Z1			
	P1/Z2			
	I1			
	I2			
	I3			
	I4			
	I5			
	I6			
	I7			
	I8			
	I9			
	I10			
	P2/Z1			
	P2/Z2			
	I1			
	I2			
	I3			
	I4			
	I5			
	I6			
	I7			
	I8			
	I9			
	I10			

System Profiles

Use this section to keep track of the resources in the system profiles you have created.

Sample System Profile Worksheet

System Profile Name: *Production Schedule*		
Activation Times: *Monday through Friday, 8AM to 5PM*		
Partition Name	**Number of Processors**	**Memory Size**
Partition 1: *Payroll*	*2*	*4 GB*
Partition 2: *Web Server*	*4*	*4 GB*
Partition 3: *Production*	*16*	*32 GB*
Partition 4: *Test*	*2*	*1 GB*
Partition 5: *Database*	*8*	*20 GB*
Partition 6:		
Partition 7:		
Partition 8:		
Partition 9:		
Partition 10:		
Partition 11:		
Partition 12:		
Partition 13:		
Partition 14:		
Partition 15:		
Partition 16:		
Totals*	*32*	*61 GB*
Total Installed	*32*	*64 GB*

* The memory allocation total should leave enough room for the various system overheads of memory usage. See “Memory” on page 13 for more information about system memory usage.

System Profile Worksheet

System Profile Name:		
Activation Times:		
Partition Name	**Number of Processors**	**Memory Size**
Partition 1:		
Partition 2:		
Partition 3:		
Partition 4:		
Partition 5:		
Partition 6:		
Partition 7:		
Partition 8:		
Partition 9:		
Partition 10:		
Partition 11:		
Partition 12:		
Partition 13:		
Partition 14:		
Partition 15:		
Partition 16:		
Totals*		
Total Installed		

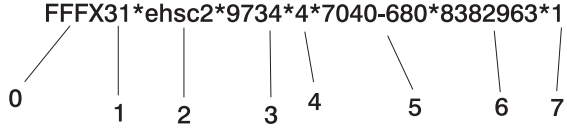
* The memory allocation total should leave enough room for the various system overheads of memory usage. See “Memory” on page 13 for more information about system memory usage.

Appendix D. Remote Connections

You can open a virtual terminal to a partition remotely for maintenance purposes. This appendix describes how to connect to your HMC remotely.

Using Scripts to Connect Remotely

The following script demonstrates one method for connecting to the HMC remotely using telnet. To connect to the virtual terminal without using the HMC Terminal Emulator, you must first build a connect string. The following is an example of an ASCII string that is sent to the HMC terminal server to establish a connection:



0: FFFX Start of string indicator.

FFFX - connect and issue terminal open command

FFFF - connect but assume terminal is already open

1: 31 Count in integer ASCII. The number of characters that follow the `*` character that follow the start of string indicator. In the above example, count from `e` in `ehsc2` to the end of the string.

2: ehsc2
Host name or IP address of the HMC workstation.

3: 9734 Port number of control element. In this example, `9734` is the port number.

4: 4 Partition slot number. `0` is used to open a terminal on the managed system in both Partition Standby and Full System Partition modes. You can access the service processor menus from partition 0.

Slots 1 to 16 are valid in Partition Standby mode only.

View the partition's properties to determine the partition slot number for a partition.

5: 7040-680
Machine type and model of the managed system. Use the managed system's properties panel to get the machine type and model. Do not use the user-assigned managed system name.

6: 382963
Serial number of the managed system. Use the HMC's properties panel to get the managed system serial number.

7: 1 TTY's session number.

After the connect string is built, you can connect to the HMC terminal server through a socket on port 9735. After the connection is made, the connect string is sent to the virtual terminal server.

You must set the telnet mode to `character`. To write the `ctrl ]` character into a script, you must use the sequence `ctrl v ctrl ]`.

To end the session, do one of the following:

- Press ctrl]

OR

- Click **Telnet** and then select **quit**.

The following script is then executed:

`script_name` *`hostname port partition`* `machine_type/model*serial session_id`

where:

- *hostname* = hostname of the HMC
- *port* = fixed at 9734
- *partition* = the ID of the partition, ranging from 000 to 016

The following example shows how you can use a script to connect to a remote system:

```
#!/usr/bin/expect -f

system "echo [string length $argv]"
system "echo [lindex $argv 0]"
system "echo [lindex $argv 1]"
system "echo [lindex $argv 2]"
system "echo [lindex $argv 3]"
system "echo [lindex $argv 4]"

spawn telnet [lindex $argv 0] 9735

expect "Escape"


# Note that the \r is not included in the send count
send -- "FFFX[string length $argv]*[lindex $argv 0]*
[lindex $argv 1]*[lindex $argv 2]*[lindex $argv 3]*[lindex $argv 4]\r"

sleep .5

# note: enter ^] using the sequence ctrl v ctrl ] on a unix system.
send -- "^]\r"


sleep .5

expect "telnet"
```

```
send -- "mode character\r"

interact
```

Appendix E. Error Messages and Recovery Information

The following tables contain information about error messages that can be displayed by the hardware management console during system configuration and operations.

Use this chapter to learn more about a specific error or information message. The table also includes recovery information (if applicable) to help you determine a recovery strategy.

Console Events Error Codes	Message	Recovery Action
HSCE2066	A scheduled backup of critical console data failed with a return code of {0}.	The possible return code values are: • 4 - A return code of 4 indicates the removable media could not be mounted. Recovery Action - Verify that the media is inserted properly in the drive and try the operation again. • 5 - A return code of 5 indicates that the removable media is write protected. Recovery Action - Remove the write protection and try the operation again. • Any value except 4 or 5- Internal HMC Error Recovery Action: 1. Perform Backup Critical Data task. 2. Call for HMC software support.

Inventory Scout Error Codes	Message	Recovery Action
HSCI0100	No managed systems were detected that are attached to this system console.	None
HSCI0101	No partitions have been defined for this managed system.	None
HSCI0102	A blank or invalid entry was entered in the partition password field.	Enter a valid password value.
HSCI0103	A blank or invalid entry was entered in the listening port field.	Enter a valid port value.
HSCI0104	A blank or invalid entry was entered in the IP address field.	Enter a valid IP address value.
HSCI0110	The Inventory Scout command completed successfully.	None

Inventory Scout Error Codes	Message	Recovery Action
HSCI0111	The Inventory Scout command request failed	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. Call for HMC software support.
HSCI0112	The removable media cannot be mounted. Please make sure the media is inserted properly in the drive and retry the operation	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. Call for HMC software support.
HSCI0113	The media specified is write protected. Please adjust the media and retry.	Remove the write protection and try the operation again.
HSCI0114	The Inventory Scout request failed. Ensure the removable media is properly inserted in the drive.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. Call for HMC software support.
HSCI0115	An error occurred while copying the Inventory Scout data. Verify that a blank formatted diskette is inserted properly in the drive and retry the operation.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. Call for HMC software support.

Inventory Scout Error Codes	Message	Recovery Action
HSCI0116	An error occurred while compressing the Inventory Scout data. Please retry the operation.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. Call for HMC software support.
HSCI0117	An error occurred while trying to unmount the media.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. Call for HMC software support.
HSCI0118	The Inventory Scout daemon was restarted successfully.	None
HSCI0119	The Inventory Scout daemon could not be restarted.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware to determine if there is a hardware problem. 4. Call for HMC software support.
HSCI0120	The internal managed system name is malformed. Please exit this task and retry the operation.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. Call for HMC software support.

Inventory Scout Error Codes	Message	Recovery Action
HSCI0121	The Inventory Scout request failed. An error occurred while copying data to removable media.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. Call for HMC software support.

Inventory Scout Error Codes	Message	Recovery Action
HSCI0122	The system partition(s) did not respond to query attempts.	1. Check that the HMC host name and the host name of the partition is fully qualified domain name (not a short host name). If they are not, this must be corrected for remote security to work. 2. Verify the network routing is set up so the HMC can reach the partition and vice versa via ping. If one or both cannot be reached from the other, correct the routing. 3. Check to make sure **/var** is not full on the partition - that will prevent certain processes from running correctly. 4. Verify that the filesets • **rsct.core** • **csm.client** • **devices.chrp.base.ServiceRM** have been installed properly on the AIX partitions 5. Login to one of the partitions and issue the following command: `lssrc -s ctcasd` . If the output shows ctcasd is inoperative, run an `ls -l` command on the **/var/ct/cfg/** directory. If the files **ct_has.pkf** and **ct_has.qkf** are zero-length, there was an (AIX) install configuration problem. These zero-length files should be removed and then issue the command `startsrc -s ctcasd`. If the `startsrc -s ctcasd` command does not work, the AIX lpp may not have been installed. 6. If the output is still blank, rebooting the HMC should clear the problem. After the reboot occurs, wait at least 10 minutes before trying again, to make sure all the partitions have resynchronized their information with the HMC. 7. If the problem persists, contact your software service support representative.

Profile Data Error Codes	Message	Recovery Action
HSCL0001	There is no more space for a new profile name. Reuse profile names being used by other profiles or remove the profiles that are no longer needed.	No more space for a new profile name is available. Reuse the profile names that are already used by other profiles, or remove the profiles that are no longer needed. Follow the procedures in this book to perform this action.
HSCL0002	Too many drawers are being used in profiles. Remove the drawers that no longer exist or are not needed.	Remove the drawers that no longer exist or are no longer needed. Follow the procedures in this book to perform this action.
HSCL0003	The profile data save area is full. Remove any profiles that are no longer needed.	Remove the profiles that are no longer needed. Follow the procedures in this book to perform this action.
HSCL0004	A profile with name {0} already exists in the partition with ID {1} in profile data of the managed system. Provide another name for this profile.	Rename the profile to names that are not already in use in this partition. Follow the procedures in this book to perform this action.
HSCL0005	Cannot find information regarding profile data of the managed system. Execute a rebuild managed system operation.	1. Perform a rebuild managed system operation. 2. If the problem persists, contact your software service support representative.
HSCL0006	The managed system's profile data has been corrupted. You must either restore or reinitialize the profile data.	You must either restore or initialize the profile data. Follow the procedures in this book to perform this action.
HSCL0007	The profile data of the managed system cannot be accessed or modified. Execute a rebuild managed system operation	1. Perform a rebuild managed system operation. 2. If the problem persists, contact your software service support representative.
HSCL0008	Could not construct or initialize profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in "Rebuild Managed System Indicated" on page 209 to perform this action.
HSCL0009	Could not construct or initialize the profile data from the backup file, {0}. Repeat the operation.	Repeat the operation. Follow the procedures in this guide. If the problem persists, call for HMC software support..
HSCL000B	Could not get the activated LPAR profile from the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in "Rebuild Managed System Indicated" on page 209 to perform this action.

Profile Data Error Codes	Message	Recovery Action
HSCL000C	Could not get the activated system profile from the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL000D	Could not get all the system profiles from the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL000E	Could not get the default LPAR profile from the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL000F	Could not get the default system profile from the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL0010	Could not get the LPAR profiles for the partition from the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL0011	Could not get the LPAR profiles at this partition from the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL0012	Could not get the system profile from the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL0013	Could not remove the LPAR profile from the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL0014	Could not remove the system profile from the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL0015	Could not save the LPAR profile to the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL0016	Could not save the system profile to the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.

Profile Data Error Codes	Message	Recovery Action
HSCL0017	Could not create the LPAR profile in the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL0018	Could not create the system profile in the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL0019	Could not set the activated LPAR profile in the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL001A	Could not set the activated system profile in the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL001B	Could not set the default LPAR profile in the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL001C	Could not set the default system profile in the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL001D	Could not clean up the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL001E	Could not update the profile data cache. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL001F	Could not check for duplicate LPAR name. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL0020	Could not remove the LPAR profile from the system profile content in the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL0021	Could not add the LPAR profile to the system profile in the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.

Profile Data Error Codes	Message	Recovery Action
HSCL0022	Could not get the partition name from the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL0023	Could not get all the partition names from the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL0024	Could not set the partition name in the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL0025	Could not build the profile data from the local file, {0}. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL0026	Could not write the data to the managed system. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL0027	Could not backup the profile data to a file. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL0028	Could not read profile data from the managed system. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL0029	Could not delete profiles at the partition with ID of {0} in the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL002A	Could not modify the system profiles containing the LPAR slot ID of {0} in the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL002B	Could not do a priority restore on the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL002C	Could not merge the profile information in profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.

Profile Data Error Codes	Message	Recovery Action
HSCL002D	Could not merge partition name data in the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL002E	Could not merge default and activated list data in profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL002F	Could not merge drawer and profile infomation data in profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL0030	Unable to initialize the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL0031	The profile data has been cleared. Either restore or reinitialize the profile data save area.	Perform restore profile data task or reinitialize the profile data.Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL0032	Could not set the system profile’s user defined name to the profile data. Perform a Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL0033	This managed system version, {0}, is unknown to HMC. Update to an HMC release that can handle this version of managed system.	1. Perform the rebuild managed system operation. 2. If the same error occurrs, update to an HMC release that can handle this version of managed system. 3. If you are not sure what version to use, contact software support.
HSCL0034	The levels of managed system and profile data area are not matching up. Managed system version: {0}, profile data area version: {1}. Upgrade the managed system version Cannot restore profile data with 2 different versions of profile save data″to proper level″	1. Perform the rebuild managed system operation. 2. If the same error occurrs, please update the managed system to a proper version. 3. If you are not sure what version to use, contact software support.
HSCL0035	Cannot restore profile data with 2 different versions of profile save data.	1. Perform the operation again. 2. If the same error occurrs, restore using another profile data file.

Profile Data Error Codes	Message	Recovery Action
HSCL0036	Migrate profile data failed.	1. Perform the operation again. 2. If the problem persists, contact your software service support representative.
HSCL0037	This level of profile data, {0}, is unknown to this HMC. Please update to an HMC version that can handle this level of profile data.	1. Perform the operation again. 2. If the problem persists, update to an HMC version that can handle this level of profile data. 3. If you are not sure what version to use, contact software support.
HSCL0038	Creation of affinity logical partition profiles failed in profile data save area.	1. Perform the rebuild managed system operation. 2. Retry the operation again. 3. If the problem persists, contact your software service support representative.
HSCL0039	Deletion of affinity logical artitions failed in profile data save area.	1. Perform the rebuild managed system operation. 2. Retry the operation again. 3. If the problem persists, contact your software service support representative.
HSCL003A	Removal system profiles failed at profile data save area.	1. Perform the rebuild managed system operation. 2. Retry the operation again. 3. If the problem persists, contact your software service support representative.
HSCL003B	Setting of partition information failed in profile data save area.	1. Perform the rebuild managed system operation. 2. Retry the operation again. 3. If the problem persists, contact your software service support representative.
HSCL003C	Retrieval of all affinity logical partition information failed in profile data save area.	1. Perform the rebuild managed system operation. 2. Retry the operation again. 3. If the problem persists, contact your software service support representative.

Profile Data Error Codes	Message	Recovery Action
HSCL003D	Retrieval of parition information failed in profile data save area.	1. Perform the rebuild managed system operation. 2. Retry the operation again. 3. If the problem persists, call for HMC software support.
HSCL003E	Cannot build LPAR information from profile data save area when the managed system is not LPAR capable.	The capabilities of your managed system are listed onthe Machine tab of the property panel.
HSCL003F	Cannot build affinity logical partition information from profile data save area when the managed system is not Affinity LPAR capable.	The capabilities of your managed system are listed onthe Machine tab of the property panel.
HSCL0040	No more space for physical location code in the profile data save area.	1. Perform the rebuild managed system operation 2. Retry the operation again. 3. If the problem persists, call for HMC software support.
HSCL0041	Migration of partition information failed in profile data save area	1. Perform the rebuild managed system operation. 2. If the problem persists, call for HMC software support.
HSCL0042	Migration of profile names failed in profile data save area	1. Perform the rebuild managed system operation. 2. If the problem persists, call for HMC software support.
HSCL0043	Migration of default profile list failed in profile data save area	1. Perform the rebuild managed system operation. 2. If the problem persists, call for HMC software support.
HSCL0044	Migration of activated profile list failed in profile data save area	1. Perform the rebuild managed system operation. 2. If the problem persists, call for HMC software support.
HSCL0045	Migration of physical location code information failed in profile data save area	1. Perform the rebuild managed system operation. 2. If the problem persists, call for HMC software support.
HSCL0046	Migration of drawer and profile information failed in profile data save area	1. Perform the rebuild managed system operation. 2. If the problem persists, call for HMC software support.

Profile Data Error Codes	Message	Recovery Action
HSCL0047	Migration of time stamps of profile data save area failed	1. Perform the rebuild managed system operation. 2. If the problem persists, call for HMC software support.
HSCL0048	Migration of checksums of profile data save area failed	1. Perform the rebuild managed system operation. 2. If the problem persists, call for HMC software support.

Managed System Error Codes	Message	Recovery Action
HSCL01F5	Unable to lock the Service Processor. Perform one of the following steps: (1) Check serial cable connection; (2) Check if another Console is communicating with the Service Processor; (3) Perform the Release Lock task; (4) Perform Rebuild task to re-establish the connection.	1. Wait for three minutes and retry the task. 2. If the problem persists, make sure other Hardware Management Consoles and remote login sessions of the Hardware Management Consoles are not performing any task. Then perform the Release Hardware Management Console Lock Task to unlock the service processor, and then try the task again. 3. Rebuild the managed system. Follow the procedures in "Rebuild Managed System Indicated" on page 209 to perform this action. Follow the procedures in this guide. If the problem persists, contact the HMC support organization.
HSCL01F6	Unable to unlock the managed system lock. Perform the Release Hardware Management Console Lock to unlock the managed system.	1. Perform the Release Hardware Management Console lock to unlock the service processor, and try the task again. 2. If the task still fails and a redundant hardware management console is present, turn off the redundant hardware management console power and try the task again. 3. Call for HMC software support.

Managed System Error Codes	Message	Recovery Action
HSCL01F7	Unable to get the current time from the managed system.	1. Try the task again that failed. 2. Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action. 3. Call for HMC software support.
HSCL01F8	This property cannot be altered.	None.
HSCL01F9	Unable to create managed system instance in object manager.	1. Try the task again. 2. Shutdown and restart the hardware management console. 3. Try the task again. Follow the procedures in this guide.
HSCL01FA	The managed system is already powered off.	None.
HSCL01FC	The parameter specified is not valid. Specify a different value.	None.
HSCL01FD	Power on failed. Try again.	Retry the Power On task. If the problem persists, call for HMC software support.
HSCL01FE	The managed system is already powered on.	None.
HSCL01FF	Could not rebuild. Shut down and restart the Hardware Management Console.	1. Before rebooting, try the task that failed again. 2. Reboot the hardware management console. 3. Refer to “Managed System States for the Hardware Management Console” on page 211 and check the state of the managed system. Perform the appropriate actions to recover. 4. Try the task again. 5. Call for HMC software support.

Managed System Error Codes	Message	Recovery Action
HSCL0200	Unable to communicate with Service Processor. Check serial cable connection.	1. Check the serial cable connection from the hardware management console to the managed system. 2. Refer to “Managed System States for the Hardware Management Console” on page 211 and check the state of the managed system. Perform the appropriate actions to put the managed system in the correct state. 3. Call for HMC software support.
HSCL0201	Service Processor Command failed after {0} attempts: Invalid Response.	Wait several minutes and try the task again.
HSCL0202	Service Processor Socket is corrupted.	1. Wait two minutes and retry the command 2. If the command still fails, wait an additional 2 minutes and try again. 3. If both tries fail, rebuild the managed system to re-establish the socket connection. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action, then try the task again. 4. Call for HMC software support.
HSCL0203	Command sent to Service Processor failed. Error Response {0}	1. Try the task again. 2. Refer to “Managed System States for the Hardware Management Console” on page 211 and check the state of the managed system. Perform the appropriate actions to put the managed system in the correct state. 3. Call for HMC software support.
HSCL0204	Command failed. Unknown error.	1. Try the task again. 2. Refer to “Managed System States for the Hardware Management Console” on page 211 and check the state of the managed system. Perform the appropriate actions to put the managed system in the correct state. 3. Call for HMC software support.

Managed System Error Codes	Message	Recovery Action
HSCL0205	The Managed System is in the Error State and is unable to continue with the Recover Partition Data Task.	The recovery partition data task cannot be run until the managed system is no longer in error state. 1. Record the error mesage. 2. Refer to the recovery procedures for the managed system.
HSCL0206	Failed to Power On the Managed System. Unable to continue with the Power On Task	1. Check the operator panel value of the managed system to verify it is in the no power state and that the manged system is not in the error state. 2. Verify that no other task is being performed while executing this task, then retry the task. 3. If problem persists call HMC software support.
HSCL0207	Failed to Power On the Managed System with Partition Standby. Unable to continue with the Recover Partition Data Task.	1. Check the operator panel value of the managed system to verify it is not powered on and that the manged system is not in the error state. 2. Verify that no other task is being performed while executing this task, then retry the task 3. If problem persists call HMC software support.
HSCL0209	Remote virtual terminal sessions are not allowed. Please check the remote virtual terminal settings.	Virtual terminal cannot open remotely at this point. If open virtual terminal remotely is needed, enable your remote virtual terminal setting. Use the **Enable/Disable Remote Virtual Terminal** task in the System Confiuration menu to enable remote connections.

Managed System Resource Error Codes	Message	Recovery Action
HSCL03EA	There is an insufficient number of processors: Obtained - {0}, Required - {1}. Check that there are enough processors available to activate the partition. If not, create a new profile or modify the existing profile with the available resources, then activate the partition. If the partition must be activated with the specified number of processors, deactivate any active partitions using the resource, then activate the partition.	1. Check the managed system properties panel to make sure that enough CPUs are available to activate the partition. 2. If there are not enough CPUs available, then create a new profile or modify the existing profile with the available resources. Then, activate the partition. 3. If the partition must be activated at any cost , then deactivate any running partition that is using the resource and then activate the partition. Follow the procedures in this guide. If the problem persists, call for HMC software support.

Managed System Resource Error Codes	Message	Recovery Action
HSCL03EB	Unable to allocate the I/O slot for activation in {0}. Check that the specified I/O is available to activate the partition. If not, create a new profile or modify the existing profile with the available resources, then activate the partition. If the partition must be activated with these resources, deactivate any running partition(s) using the resource then activate this partition.	1. Check the managed system properties panel to make sure that enough I/O slots are available to activate the partition. 2. If there are not enough I/O slots available, then create a new profile or modify the existing profile with the available resources. Then activate the partition. 3. If the partition must be activated at any cost , then deactivate any running partition that is using the resource and then activate the partition. **Note:** If you have tried to recover using the above actions and you have not been successful, and you must activate the partition, edit the profile for the partition you are activating and remove all slots that are associated with the identified slot's PHB. See the *PCI Adapter Placement Reference*, order number SA38-0538 for information on PHB slot associations.Follow the procedures in this guide. If the problem persists, call for HMC software support.

Managed System Resource Error Codes	Message	Recovery Action
HSCL03EC	There is not enough memory: Obtained - {0}, Required - {1}. Check that there is enough memory available to activate the partition. If not, create a new profile or modify the existing profile with the available resources, then activate the partition. If the partition must be activated with these resources, deactivate any running partition(s) using the resource then activate this partition.	1. Check the managed system properties panel to make sure that enough memory is available to activate the partition. 2. If there is not enough available memory, create a new profile or modify the existing profile with the available resources and then activate the partition. 3. Check the Memory Planning section of the Hardware Management Console's *IBM Hardware Management Console Operations Guide for pSeries* order number, SA38-0590. 4. If the partition must be activated at any cost, deactivate any running partition using the resource and activate the partition. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL03ED	The I/O Drawer specified by this ID cannot be found and may have been deleted from the managed system. Modify the profile.	The I/O drawer defined in the profile may have been removed from the server. Check to verify that the I/O drawers defined in the profile are installed. Then, modify the profile to match the server configuration. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL03EE	The specified slot number cannot be found. Make sure the profile is not using I/O drawer slots that do not exist in the managed system.	An I/O slot defined in the profile may have been removed from the server. Verify that the I/O slots defined in the profile are installed. Then, modify the profile to match the server configuration. Follow the procedures in this guide. If the problem persists, call for HMC software support.

Managed System Resource Error Codes	Message	Recovery Action
HSCL03EF	The number of drawers, slots, and I/O required/desired information stored in the properties do not match. The profile may be corrupted. Perform the Restore Profile Data task.	1. The profile may be corrupted, perform the Restore Profile Data task. 2. If problem persists then delete the profile and create a new profile. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL03F0	Unable to allocate the I/O slot for activation in I/O drawer {0}. Slot {1} is currently being used by another partition. Perform one of the following three actions 1) remove this I/O slot from the profile or 2) change the I/O slot from Required to Desired in the profile or 3) remove the I/O slot from the other partition.	Perform one of the following three actions • Remove this I/O slot from the profile. • Change the I/O slot from Required to Desired in the profile. • Remove the I/O slot from the other partition.
HSCL03F1	Unable to allocate one or more I/O slots. The following slots are in error state: {0} slot {1}. Please complete one of the following actions: Remove this I/O slot from the profile, or change the I/O slot from required to desired in the profile, or reboot the managed system to restore the PCI slots in error to normal state.	Chose one of the following options: 1. Remove this I/O slot from the profile. 2. Change the I/O slot from required to desired in the profile. 3. Reboot the managed system to restore the PCI slots in error to normal state. 4. Consult hardware manuals for managed system to determine the cause of the error state.
HSCL03F2	Unable to allocate the I/O slot for activation in I/O drawer {0}. Slot {1} is not present. Remove this I/O slot from the profile or change the I/O slot from Required to Desired in the profile.	Remove this I/O slot from the profile or change the I/O slot from Required to Desired in the profile.
HSCL03F3	Unable to allocate the I/O slot for activation in I/O drawer {0}. Slot {1} is system deconfigured. Remove this I/O slot from the profile or change the I/O slot from Required to Desired in the profile.	Remove this I/O slot from the profile or change the I/O slot from Required to Desired in the profile.

Partition Error Codes	Message	Recovery Action
HSCL0591	Cannot activate logical partition when an affinity logical partition has already been activated since powering on	Activation of logical partitions is not allowed at this point. If you need to activate this partition, do the following: 1. Power off the managed system. 2. Power on the managed system to partition standby. 3. Retry the activation operation again.
HSCL0592	Cannot activate a 8-processor affinity logical partition when a logical partition or other type of affinity logical partition has already been activated since powering on	Activation of an 8-way affinity logical partition is not allowed at this point. If you need to activate this partition, do the following: 1. Power off the managed system. 2. Power on the managed system to partition standby. 3. Retry the activation operation again.
HSCL0593	Cannot activate a 4-processor affinity logical partition when a logical partition or other type of affinity logical partition has already been activated since powering on	Activation of a 4-way affinity logical partition is not allowed at this point. If you need to activate this partition, do the following 1. Power off the managed system. 2. Power on the managed system to partition standby. 3. Retry the activation operation.
HSCL0594	Managed system is not capable of activating a 4-processor affinity logical partition	The capabilities of your managed system are listed onthe Machine tab of the property panel.
HSCL0595	Managed system is not capable of activating a 8-processor affinity logical partition	The capabilities of your managed system are listed onthe Machine tab of the property panel.
HSCL0596	Cannot activate a Full Machine Partition in a non-SMP capable managed system	The capabilities of your managed system are listed onthe Machine tab of the property panel.
HSCL0597	Cannot activate a logical partition in a non-LPAR capable managed system	The capabilities of your managed system are listed onthe Machine tab of the property panel.
HSCL0598	Cannot activate an affinity logical partition in a non-Affinity-LPAR capable managed system	The capabilities of your managed system are listed onthe Machine tab of the property panel.
HSCL05DD	Unable to get partition state. Repeat the operation.	Repeat the operation. If the problem persists, call for HMC software support.

Partition Error Codes	Message	Recovery Action
HSCL05DE	A partition in the managed system already uses the name {0}. Provide another name for this partition.	Rename the partition to another name that is not yet used by other partitions in the same managed system. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL05DF	The partition is not in a state under which this operation can be performed. Check the state of the partition.	Verify that the operation is allowable under this partition state. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL05E0	The partition {0} is in an undefined state. Rebuild the managed system.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL05E1	Only 16 partitions per managed system can be allocated. There are no more unallocated partitions available. Delete unused or unwanted partitions for this managed system and retry the operation. Partitions in the ready state are currently not in use.	Delete unused or unwanted partitions. Partitions in the ready state are currently not in use. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL05E4	Unable to delete a full system partition. You do not have the necessary permission to delete a full system partition.	You do not have the necessary permission to delete a full system partition.
HSCL05E5	Unable to create partition when the managed system is in {0} state. Make sure that the managed system is in the ready state and was powered on with Partition Standby.	Verify the managed system is in the ready state and in Partition Standby. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL05E6	Partition {0} delete failed. Cannot delete a partition when its state is in {1}. If the partition is not in the ready error state, perform a hard reset operation then delete the partition.	Verify the partition is not in running or booting state. If the state is ready or error state, perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action, then try the task again.
HSCL05E7	The profile you tried to activate does not belong to the partition {0} you specified. Select the correct LPAR profile.	Verify that you selected the correct LPAR profile to activate.

Partition Error Codes	Message	Recovery Action
HSCL05E8	Cannot delete partition {0}. A partition cannot be deleted when the managed system is at the {1} state. Delete the LPAR when the managed system is in the Ready state and in Partition Standby.	If the managed system is in the Ready state and Partition Standby, do a rebuild of the managed system, follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action, and then try the task again. Also refer to partition error message HSCL05H6.
HSCL05E9	Could not activate the partition. Make sure that the partition is not already activated and that the managed system is running.	Verify that the partition is not already activated, and the state and power-on condition of the managed system are correct, try the operation again. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL05EA	Cannot activate the partition when it is in state {0}. Make sure the partition is not running, booting or in the open firmware state.	Verify the LPAR is not in the running, booting, or open firmware state. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL05EB	Could not create partition. Make sure that all requirements are met for creating a logical partition.	Cannot create a partition. To verify that all the requirements for creating a logical partition are met, refer to “Creating Partitions” on page 73. If all requirements are met, do a rebuild of the managed system, follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action, and try the task again. If the failure still occurs, call for HMC software support.
HSCL05EC	Could not delete partition {0}. Make sure that all requirements are met for deleting a logical partition.	Cannot delete a partition. Verify that all the requirements for deleting a partition are met, refer to “Deleting Partitions” on page 79. If all requirements are met, do a rebuild of the managed system, follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action, and try the task again. If it still fails, call for HMC software support.
HSCL05ED	Could not set the properties for partition {0}. Try again	Repeat the operation. If the operation still fails, call for HMC software support. Follow the procedures in this guide. If the problem persists, call for HMC software support.

Partition Error Codes	Message	Recovery Action
HSCL05EE	Could not get the managed system's service processor log entry. Try again	Repeat the operation. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL05EF	This new partition does not have a user defined name. Specify a name for the partition.	Set the user defined name for this partition. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL05F0	Cannot create the partition when the managed system was powered on with {0}. Make sure the managed system is powered on with Partition Standby.	Verify that the managed system is in Partition Standby. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL05F1	Could not delete partition {0}. A partition cannot be deleted when the managed system was power on with {1}. Make sure that the managed system was powered on with Partition Standby.	Verify that the managed system is in running in Partition Standby. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL05F2	No port or session number information for opening a virtual terminal partition on {0} with id {1}. Try again.	1. Wait for two minutes and then try the task again. 2. If the problem persists, refer to "Managed System States for the Hardware Management Console" on page 211 to check the state of the managed system. Perform the appropriate actions to recover. 3. If the operation still fails, call for HMC software support.
HSCL05F3	Could not display the OS reset dialog for partition {0}. Try again.	1. Log off and then log back on to the hardware management console and try the operation again. 2. If this does not correct the problem, call for HMC software support.
HSCL05F4	Could not display the partition activate dialog for partition {0}. Try again.	1. Log off and then log back on to the hardware management console and try the operation again. 2. If this does not correct the problem, call for HMC software support.

Partition Error Codes	Message	Recovery Action
HSCL05F5	Could not display the create partition dialog for the managed system: {0}. Try again.	1. Log off and then log back on to the hardware management console and try the operation again. 2. If this does not correct the problem, call for HMC software support.
HSCL05F6	Could not create the partition on the managed system {0} with partition name {1}. Refresh the interface and check whether the operation was performed. If not, try the operation again.	Check to see if the newly created partition is displayed on the graphical user interface. If not, retry the create partition task and check the graphical user interface again. If the task still fails, log off and log back on to the hardware management console, and try the task again.
HSCL05F7	Could not open the virtual terminal for partition {0} with ID {1}.	1. Refresh the interface and check whether the operation was performed. 2. Reboot the hardware management console, and try the task again. 3. If the operation still fails, call for HMC software support.
HSCL05F8	Could not perform the OS reset {0} reset on partition {1} with ID {2}.	1. Refresh the interface and check whether the operation was performed. If not, try the operation again. 2. If the partition has been reset. (If you performed a soft reset, check to see if the partition rebooted. If you performed a hard reset, verify that the partition state changed to ready.) 3. Retry the OS reset operation. 4. If a hard reset was performed, rebuild the managed system see “Rebuild Managed System Indicated” on page 209 and check the state, see“Managed System States for the Hardware Management Console” on page 211.

Partition Error Codes	Message	Recovery Action
HSCL05F9	Could not delete partition {0}. Refresh the interface and check whether the operation was performed. If not, try the operation again.	1. Check to see if the partition is displayed on the graphical user interface. 2. Retry the delete partition and check the graphical user interface to see if it is updated appropriately. 3. Log off and log back on to the Hardware Management Console. 4. Call for HMC software support.
HSCL058A	Could not activate the partition on partition {0} with ID {1}. Refresh the interface and check whether the operation was performed. If not, try the operation again.	1. Refresh the graphical user interface. 2. Perform a rebuild of the managed system, following the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action 3. Try the task again. 4. Call for HMC software support.
HSCL058B	Could not read the boot error value task on partition {0} with ID {1}. Refresh the interface and check whether the operation was performed. If not, try the operation again.	1. Try the task again. 2. Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action, then try the task again. Follow the procedures in this guide. If the problem persists, call for HMC software support.

Profile Error Codes	Message	Recovery Action
HSCL07D1	This partition profile is currently active in its logical partition and cannot be modified or deleted. To make the profile inactive, perform a hard operating system reset on the partition to bring it to the Ready state, then repeat the operation.	Partition Profiles that are active in a Logical Partition cannot be modified or deleted. Perform a Hard Operating System Reset on the Partition to bring it to the Ready state, at which time the profile will no longer be active. Follow the procedures in this guide. If the problem persists, call for HMC software support.

Profile Error Codes	Message	Recovery Action
HSCL07D2	This partition profile is the logical partition's default profile and cannot be deleted. If you still want to delete it, change the default profile for this logical partition or, if necessary, create another partition profile to be the default profile.	All Logical Partitions must have at least one Partition Profile, which is designated as the Default Profile because it is the Profile implicitly used when the Partition is activated with no Profile specified. If you still wish to delete it, change the Default Profile for this Logical Partition (create another Partition Profile if necessary). Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL07D3	The partition profile could not be found in the Hardware Management Console save area. The Hardware Management Console is either out of sync with the console save area or the console save area has been corrupted. Rebuild this partition profile's managed system.	The two main causes of this condition are: 1. The Hardware Management Console is out of sync with the profile data. 2. The profile data has been corrupted. This might cause the loss of the Partition Profile. Rebuild the Partition Profiles for the managed system. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL07D4	A profile named {0} already exists for this partition in the Hardware Management Console save area. Choose a different name for the new system profile.	All Partition Profiles for a Logical Partition must have unique names. Choose a different name for the new profile. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL07D5	Creation of partition profiles for the full system partition is not allowed. You must use one of the predefined partition profiles for the full system partition.	You must use one of the predefined partition profiles for the Full System Partition. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL07D6	You cannot delete full system partition profiles.	None, follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL07D7	You cannot modify the full system partition profile's properties.	None

Profile Error Codes	Message	Recovery Action
HSCL07D8	Deleting default profile associations within the current context is not allowed.	You can delete the DefaultLparProfile Association only by: 1. Deleting the Partition CIMInstance to which the Association connects. This will also delete the LparProfile CIMInstance to which the Association connects the Partition. 2. Use createInstance to change the DefaultLparProfile Association. This will overwrite the previous Association you intended to delete. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL07D9	Setting a default profile association is only allowed during create.	You can alter the DefaultLparProfile Association only through createInstance, which overwrites the previous association. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL07DA	The partition profile used for the operation cannot be found in the profile data.	Verify that you enter the correct information. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL07DB	An attempt to create a profile failed.	Try the task again.
HSCL07DC	An attempt to modify a profile failed.	Try the task again.

System Profile Error Codes	Message	Recovery Action
HSCL09C6	Could not find the system profile in memory. It may be corrupted. Restore the profile data.	The System Profile may be corrupted. 1. Perform the Restore Profile Data task. 2. If problem persists delete and recreate a new system profile. Follow the procedures in this guide. If the problem persists, call for HMC software support.

System Profile Error Codes	Message	Recovery Action
HSCL09C7	A system profile named {0} already exists for this managed system in the Hardware Management Console save area. Choose a different name for the new system profile.	Every System Profile created for an individual managed system must have a unique name. Choose a different name for the new System Profile. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL09C8	Could not open the Copy System Profile dialog. Try again.	1. Try the task again. 2. Log off the hardware management console, and log back on. 3. Try the task again. 4. If the problem persists, call your HMC software support.
HSCL09C9	Could not copy the system profile {0}. Try again.	1. Try the task again. 2. Log off the hardware management console, and log back on. 3. Try the task again. 4. If the problem persists, call for HMC software support.
HSCL09CA	Could not delete the system profile. Try again.	1. Try the task again. 2. Log off the hardware management console, and log back on. 3. Try the task again. 4. If the problem persists, call for HMC software support.
HSCL09CC	Cannot activate a Full System Partition profile when the managed system is powered on with Partition Standby.	Check the status of the Managed System from the properties panel and verify that the system was powered on as Full System Partition. If not in Full System Partition, switch the managed system from Partition Standby to Full System Partition. To switch these power-on options, turn the power for the managed system off. Then, turn the power on and select Full System Partition during the power-on process.

System Profile Error Codes	Message	Recovery Action
HSCL09CD	Cannot activate user defined partition profiles when the managed system is powered on with Full System Partition.	Check the status of the Managed System from the properties panel and verify that the system was powered-on as Partition Standby. If not in Partition Standby, switch the managed system from Full System partition to Partition Standby. To switch these power-on options, turn the power to the managed system off. Then, turn the power on and select Partition Standby during the power-on process.
HSCL09CE	You cannot have LPAR and affinity LPAR profiles in the same System Profile.	Ensure the System Profile contains only profiles that belong to the same partition type. To determine the partition type, select the logical partition and view its properties.

Operating System Reset Error Codes	Message	Recovery Action
HSCL0DAE	The Hardware Management Console was unable to successfully issue an Operating System Reset request to the managed system or Logical Partition	1. Try the task again. 2. Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action, then try the task again. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL0DAF	A Hard Operating System Reset can be issued only on a logical partition, not on the managed system.	None

Operating System Reset Error Codes	Message	Recovery Action
HSCL0DB0	A Soft Operating System Reset can be issued for the managed system when it is in the Ready state only if it was powered on in Full System Partition.	If the managed system was not powered on in Full System Partition, turn the power off to the managed system, and then turn the power on in Full System Partition. If the managed system is in the No-Power state, perform just the power-on operation. The managed system should transition to the Initializing state then to the Ready state. If the managed system is in the Error state, or No-Communication state, refer to “Managed System States for the Hardware Management Console” on page 211 and check the state of the managed system. Perform the appropriate actions to recover.
HSCL0DB1	A Soft Operating System Reset can be issued for the managed system only if it is in the Initializing or Ready state.	If the managed system is in the No-Power state, apply power to the system. The managed system should transition to the Initializing state then to the Ready state. If the managed system is in an Error state or No-Communication state, refer to “Managed System States for the Hardware Management Console” on page 211 and check the state of the managed system. Perform the appropriate actions to recover.
HSCL0DB2	An Operating System Reset can be issued for a logical partition only if the partition is in the Running or Starting state.	1. Refresh the graphical user interface. 2. Try the task again. 3. Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action, then try the task again. Follow the procedures in this guide. If the problem persists, call for HMC software support.

Virtual Terminal Error Codes	Message	Recovery Action
HSCL0FA1	The managed system's service processor could not open a virtual terminal session.	1. Verify that the managed system is connected and has power. 2. Try the task again. 3. Perform a Rebuild Managed System operation. Follow the procedures in "Rebuild Managed System Indicated" on page 209 to perform this action, then try the task again. 4. If the problem persists, call for HMC software support.
HSCL0FA2	All available virtual terminal sessions have been opened and are in use. To force a new open session, perform a Close Terminal Session operation which frees up the session.	There are no more Virtual Terminal Sessions available to be opened. Perform a Close Terminal Session to forcefully close an open session and free it up to be opened. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL0FA3	Unable to close the virtual terminal session. Issue a Close Virtual Terminal Connection operation.	An internal error occurred while attempting to close the Virtual Terminal Session. Issue a Close Virtual Connection; if this fails, call for HMC software support.
HSCL0FA4	There is no virtual terminal session with session number {0} open.	None

Backup and Restore Error Codes	Message	Recovery Action
HSCL1195	Unable to back up the profile data to the backup file. Try again.	1. Try the task again. 2. Reboot thehardware management console, and then try the task again. 3. Try the task with new media. 4. If the operation still fails, call for HMC software support.
HSCL1196	You do not have read access permission on the backup file, {0}. Try the operation again.	1. Try the task again. 2. If the operation still fails, call for HMC software support.

Backup and Restore Error Codes	Message	Recovery Action
HSCL1197	Unable to read the profile data's backup file, {0}. Try the operation again.	1. Try the task again. 2. Reboot thehardware management console, and then try the task again. 3. If the operation still fails, call for HMC software support.
HSCL1198	Cannot find backup file, {0}, for profile data. Select a valid, existing backup file.	1. Try the task again. 2. If the operation still fails, call for HMC software support.
HSCL1199	A full restore is not permitted when there are logical partitions in the {0} state. A full restore can only be issued when the managed system was powered on with Partition Standby and there are no partitions running, booting, or in the open firmware state.	1. Verify the managed system was powered-on to run in Partition Standby. 2. Try the task again. 3. If the operation still fails, call for HMC software support.
HSCL119A	There was an I/O error while backing up the profile data. Try again.	1. Try the task again. 2. Reboot thehardware management console, and then try the task again. 3. If the operation still fails, call for HMC software support.
HSCL119B	The restore profile data operation failed. Try again.	1. Try the task again. 2. Reboot thehardware management console, and then try the task again. 3. If the operation still fails, call for HMC software support.
HSCL119C	Cannot initialize profile data when a partition is in the {0} state and when the managed system is not powered on with Partition Standby, or when there are partitions running, booting, or in the open firmware state.	Cannot initialize the profile data when managed system is not running logical partitions and in the ready state. Also , there should be no partition in running, booting, or open firmware state. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL119D	Cannot restore the profile data if the managed system is in the {0} state.	1. Verify the managed system is in ready state and running logical partitions or Partition Standby. 2. Try the task again.

Backup and Restore Error Codes	Message	Recovery Action
HSCL119E	Cannot initialize the profile data if the managed system is in the {0} state.	1. Verify the managed system is in ready state and running logical partitions or partition standby. 2. Try the task again.
HSCL119F	The backup file {0} used to restore the profile data is not valid. Its file size ({1}) is not correct. Select a valid backup file.	The backup file selected is not valid. The File may be corrupted. 1. Try the task again. 2. Select another backup file and try the task again. 3. If the problem persists, call for HMC software support
HSCL11A0	Cannot restore the profile data if the managed system is in the {0} state. The managed system must be in the Ready state and powered on with Partition Standby.	1. Verify the managed system is in ready state and running logical partitions or Partition Standby. 2. Try the task again.
HSCL11A1	Cannot initialize the profile data if the managed system is in the {0} state. The managed system must be in the Ready state and powered on with Partition Standby.	1. Verify the managed system is in ready state and running logical partitions or partition standby. 2. Try the task again.
HSCL11A2	Could not display the backup dialog for the managed system: {0}. Try again.	1. Try the task again. 2. Log off the hardware management console, then log back on. 3. Try the task again. 4. Call your software support.
HSCL11A3	Could not back up the profile data for the managed system: {0} to file: {1}.	1. Refresh the graphical user interface. 2. Try the task again. 3. Reboot thehardware management console, then try the task again. 4. If the problem persists, call for HMC software support.
HSCL11A4	Cannot back up profile data to the default backup file name: {0}.	Cannot back up the profile data to the default backup file. Choose a different backup file name. Follow the procedures in this guide. If the problem persists, call for HMC software support.

Backup and Restore Error Codes	Message	Recovery Action
HSCL11A5	Could not display the remove backup dialog for the managed system: {0}. Try again.	1. Try the task again. 2. Log off the hardware management console, and log back on. 3. Try the task again. 4. Call for HMC software support.
HSCL11A6	Could not remove the backup file {0} from the managed system {1}.	1. Refresh the graphical user interface. 2. Try the task again. 3. Reboot thehardware management console, then try the task again. 4. If the problem persists, call for HMC software support.
HSCL11A7	No backup file has been selected for the operation. Select a backup file.	Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL11A8	Could not display the restore profile data dialog for the managed system: {0}. Try again.	1. Try the task again. 2. Log off the hardware management console, then log back on. 3. Try the task again. 4. If the problem persists, call for HMC software support.
HSCL11A9	Could not initialize the profile data task on the managed system {0}. Refresh the interface and check whether the operation was performed. If not, try the operation again.	Refresh the graphical user interface. Check whether the operation has been performed and displays on the graphical user interface. If not, repeat the operation. Follow the procedures in this guide. If the problem persists, call for HMC software support.

Backup and Restore Error Codes	Message	Recovery Action
HSCL11AA	Could not restore the profile data task on the managed system {0} with backup file {1} of {2} option. Refresh the interface and check whether the operation was performed. If not, try the operation again.	1. Refresh the graphical user interface. 2. Try the task again. 3. Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action, then try the task again. 4. If the problem persists, call for HMC software support.
HSCL11AB	Could not display the recover partition data dialog for the managed system {0}.	1. Try the task again. 2. Log off the hardware management console, then log back on. 3. Try the task again. 4. If the problem persists, call for HMC software support.
HSCL11AC	Could not perform the recover partition data task on the managed system {0}.	1. Refresh the graphical user interface. 2. Try the task again. 3. Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action, then try the task again. 4. If the problem persists, call for HMC software support.
HSCL11AD	Could not display the Rebuild the Managed System dialog for the managed system {0}.	None
HSCL11AE	The backup profile data name must start with a numeric or alphabetic character.	Specify the name correctly.
HSCL11AF	The backup profile data name must not contain / \ ’ or ″ characters.	Specify the name correctly.

Utility Class Error Codes	Message	Recovery Action
HSCL138A	Unable to a get the socket connection to the managed system. Shut down and restart the Hardware Management Console.	Shutdown and restart the hardware management console. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL138C	Unable to find the machine type, model, serial number of this HMC.	1. Reboot the hardware management console. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL138D	Could not release the management framework socket.	Reboot the hardware management console,Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL138F	Unable to get the Hardware Management Console hostname. Check the network settings within the system configuration.	Check the network setting under system configuration, then try the task again. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL1390	The managed system is not registered in the management framework. Shut down and restart the Hardware Management Console.	Shutdown and restart the Hardware Management Console. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL1391	The management framework socket is not registered. Make sure to not attempt any operations while the delete, rebuild, or restore profile data tasks are being performed. Perform the Rebuild Managed System task.	1. Make sure to not perform any operation while the Delete, Rebuild and Restore Profile Data tasks are performed. 2. Perform the Rebuild Managed System task. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL1392	The management framework socket is either deleted or changed. Do not perform any operations while the delete, rebuild, or restore profile data tasks are being performed. Perform the Rebuild Managed System task.	Make sure not to perform any operation while the Delete, Rebuild, and Restore Profile Data tasks are performed. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL1393	Unable to load the list of IBM PC product names.	1. Reboot the hardware management console 2. If the problem persists, call for HMC software support.

Utility Class Error Codes	Message	Recovery Action
HSCL1395	Unable to launch the confirmation dialog. Try again.	1. Refresh the graphical user interface. 2. Try the task again. 3. Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action, then try the task again. 4. If the problem persists, call for HMC software support.
HSCL1396	Unable to initialize the HMC-CSP Version compatibility table.	Try the operation again. If it fails, contact HMC Software Support.
HSCL1397	Unable to determine what version of firmware is loaded on the service processor.	Try the operation again. If it fails, contact HMC Software Support.
HSCL1398	Unable to determine what versions of service processor firmware is compatible with this version of the Hardware Management Console.	Retry the operation. If the error persists, contact HMC software support.

CIMOM Error Codes	Message	Recovery Action
HSCL157F	Cannot find an instance of the object specified.	1. Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action, then try the task again. 2. If the problem persists, call for HMC software support.
HSCL1584	You do not have the proper authorization or permission to perform this task. Log in as the proper user and try again.	Login as proper user to perform the task. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL1585	There was an unknown error while querying the object manager database.	1. Try the task again. 2. Reboot the hardware management console 3. If the problem persists, call for HMC software support.

CIMOM Error Codes	Message	Recovery Action
HSCL1586	Cannot find an Instance with object manager of {0}.	1. Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action, then try the task again. 2. If the problem persists, call for HMC software support.

Hardware Management Console Console Error Codes	Message	Recovery Action
HSCL1771	Unable to create console information and set it with the managed system. Perform the Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL1772	Could not set Hardware Management Console information. Perform the Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL1773	Invocation of the Hardware Management Console information method failed. Perform the Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL1774	Unable to get the defined slot number for Hardware Management Console information slots. Perform the Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL1775	Could not get host Hardware Management Console information slot ID. Perform the Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL1776	Could not get the Hardware Management Console information. Perform the Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.
HSCL1777	Failed to construct the Hardware Management Console information string. Perform the Rebuild Managed System operation.	Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action.

Hardware Management Console Console Error Codes	Message	Recovery Action
HSCL177F	Could not delete the Hardware Management Console instance.	1. Perform a Rebuild Managed System operation. Follow the procedures in “Rebuild Managed System Indicated” on page 209 to perform this action, then try the task again. 2. Reboot the hardware management console, and then try the task again. 3. If the problem persists, call for HMC software support.

WEBSM/AUIML Error Codes	Message	Recovery Action
HSCL1965	Unable to determine the Hardware Management Console server’s host name. Check the Hardware Management Console network settings under System Configuration and verify that they are correct.	Check the Hardware Management Console Network Settings under System Configuration and verify the settings are correct, and that you have a valid host name for the hardware management console. Contact your System/Network Administrator for network settings help. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL1966	You must select one profile for powering on the Full System Partition or select Cancel.	Select a profile from the Power-on panel or select Cancel to close the panel.
HSCL1967	You must select one system profile to power on with or select Cancel.	Select a system profile from the panel or select Cancel to close the panel.
HSCL1968	You must select a power on option or select Cancel.	Select either Full System Partition or Partition Standby to turn on the power or select Cancel to close the panel.
HSCL1969	Could not retrieve information from the GUI server. Check your network configuration and connection.	Check the HMC network settings under System Configuration and verify the settings are correct. Follow the procedures in this guide. If the problem persists, contact the HMC support organization.
HSCL196A	Choose a new default profile from the list or select Cancel.	None

WEBSM/AUIML Error Codes	Message	Recovery Action
HSCL196B	The object is not found in the data area. Please refresh the interface.	1. Perform the refresh task. 2. If the problem persists, call for HMC software support.
HSCL196C	Problem obtaining object information. Please refresh the interface	1. Perform the refresh task. 2. If the same error occurrs, then preform the rebuild managed system operation. 3. If the problem persists, call for HMC software support.

User Management Error Codes	Message	Recovery Action
HSCL2329	The following characters cannot be used in the login name: space , : ( ) [ ] ' | & ; * $ ″	Specify a login name using valid characters. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL232A	The user name already exists or may be a user name reserved by the Hardware Management Console. Choose another user name.	User names must be unique. Choose a different user name. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL232B	The user login name cannot be longer than 32 characters. Choose another login name with less than 32 characters.	Choose a new login name that uses less than 32 characters. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL232C	The user must have a role. Select a role from the list.	User must have a role. Choose a role from the menu list. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL232D	Could not modify user's property.	1. Try the task again. 2. If the problem persists, call for HMC software support.
HSCL232E	Could not create user.	Check to see the create command in debug print. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL232F	The Hardware Management Console user cannot be deleted.	None
HSCL2330	The new password and confirmation password do not match. Try again.	New password and confirmation password must match. Enter the new password again.

User Management Error Codes	Message	Recovery Action
HSCL2331	Change user password failed.	1. Try the task again. 2. If the problem persists, call for HMC software support.
HSCL2332	The Hardware Management Console user properties cannot be changed.	Cannot change the Hardware Management Console special user properties. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL2333	Multiple roles are not allowed. Select only one role from the role list.	Select only one role from the role list. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL2334	Cannot create or modify the user due to the following reasons: 1. May not be able to locate the file 'rmcadduser' in /opt/hsc/bin directory. 2. May not be able to locate the file ''ctrmc.acls'' file in /var/ct/cfg directory. 3. Service Focal Point functionality may not be installed.	If the problem persists, call for HMC software support.
HSCL2336	The user name is not valid. The user name cannot start with: space, !, @, #, $, %, ^, &, *, (,), -, +, =.	Specify a user name that contains valid characters. Follow the procedures in this guide. If the problem persists, call for HMC software support.
HSCL2337	Cannot delete the user due to the following reasons: 1. May not be able to locate the file 'rmcremoveuser' in /opt/hsc/bin directory. 2. May not be able to locate the file 'ctrmc.acls' in /var/ct/cfg directory. 3. Service Focal Point functionality may not be installed.	If the problem persists, call for HMC software support.
HSCL251E	Failed to set the 'enable remote virtual terminal' option	1. Retry the operation again. 2. If the problem persists, call for HMC software support.

User Management Error Codes	Message	Recovery Action
HSCL2726	An affinity LPAR configuration already exists. You must remove this configuration before setting up a new affinity LPAR configuration.	1. Check to see if affinity LPARs are displayed on the graphical user interface. If no affinity LPARs can be seen, refresh the console. If the affinity LPARs are still not displayed, rebuild the managed system. 2. Make sure that no affinity logical partitions are in the Running or Initializing state. 3. Remove the existing affinity LPAR configuration. 4. Retry the operation. 5. If problem persists, contact HMC software support.
HSCL2727	The operation failed. It is possible that another user is in the process of creating or updating affinity logical partitions. If this is not the case, restore profile data and retry the operation.	1. Make sure that another user is not in the process of creating or updating affinity LPARs. 2. If another user is not creating affinity LPARs, restore the profile data. Choose the Managed System Priority option, and restore from the file labeled **backupFile**. 3. Retry the operation.
HSCL2728	Your partition names are not all unique. No partitions have been created. Make sure that all partition names are different from each other and those of already created partitions.	Retry setting up an affinity LPAR configuration again, using unique names for every partition, both LPAR and affinity LPAR.
HSCL2729	Affinity LPAR creation failed. Retry the operation.	1. Ensure affinity partitions do not already exist. 2. Retry the operation.
HSCL272A	An error occurred in partition creation. Default profiles and the system profile may have to be created manually. First, rebuild the managed system, and then create items if needed.	1. Rebuild the managed system. 2. You may have to manually create missing items (default profiles, system profile).

User Management Error Codes	Message	Recovery Action
HSCL272B	An error occurred in default profile creation. Default profiles and the system profile will have to be created manually. First rebuild the managed system, and then create the needed items.	1. Rebuild the managed system. 2. Create the missing affinity LPAR default profiles manually. Create a system profile that includes each affinity partition's default profile.
HSCL272D	An error occurred in default profile creation. The system profile will have to be created manually. First rebuild the managed system, and then create the missing system profile.	1. Rebuild the managed system. 2. Create a system profile that includes each affinity partition's default profile.
HSCL272E	An unknown error occurred during partition creation.	Contact HMC software support .
HSCL272F	An error occurred in partition creation. Affinity partitions have been created, but default profiles and the system profile may have to be created manually. First, recover partition data, and then create items if needed.	1. Recover partition data - choose the Restore option. 2. Manually create any missing affinity LPAR items
HSCL2730	Unable to get the resources of the partition since it is not an affinity logical partition	1. Retry the task. 2. Rebuild the managed system.
HSCL2731	The addition of affinity logical partitions exceeds the maximum limit. Delete other partitions and retry the task.	Delete enough logical partitions and then retry the task.
HSCL2734	Cannot create only one affinity logical partition.	The user must create as many affinity LPAR partitions as resources will allow at the same time. To create an affinity LPAR configuration, use the **Affinity Partition** option.
HSCL2735	Cannot delete only one affinity logical partition.	The user must delete all affinity LPAR partitions at the same time. To delete an affinity LPAR configuration, use the **Affinity Partition** option.
HSCL2736	The update operation cannot be performed since there are no affinity logical partitions	1. Refresh the interface and check if affinity logical partitions exist. If so, retry the operation. 2. If the problem persists, call HMC software support.
HSCL2737	The operation failed since the update parameter is invalid.	1. Retry the task. 2. If the problem persists call HMC software support.

User Management Error Codes	Message	Recovery Action
HSCL2738	The operation failed since the cluster size parameter is invalid.	1. Retry the task. 2. If the problem persists call HMC software support.
HSCL2739	The update operation failed since the hardware resources have not changed.	1. If the hardware resources (processor and memory) have changed, retry the task. 2. If the problem persists, call the HMC software support.
HSCL273A	The managed system is not affinity LPAR capable.	None. If you are certain that the managed system is or should be affinity LPAR capable, contact software support.
HSCL273B	The managed system cannot handle the creation of partitions with the specified cluster size.	None. If you are certain that the managed system supports partitions of the specified cluster size, contact software support.
HSCL273C	Affinity LPAR deletion failed. Rebuild the managed system and retry the operation.	1. Rebuild the managed system. 2. Retry the operation. 3. If problem persists, contact software support.
HSCL273D	Deletion of affinity logical partitions failed. Recover partition data and retry the operation.	1. Recover partition data - choose the Restore option. 2. Retry the operation. 3. If problem persists, contact HMC software support.
HSCL273E	Deletion of partition {0} failed. The partition cannot be deleted in the Running or Initializing state. Stop the partition and retry the task.	1. Make sure that all partitions are stopped. 2. Retry the deletion operation.

Platform Management Error Codes	Message	Recovery Action
HSCP0001	The Backup Critical Data request completed successfully.	None
HSCP0002	Please make sure that the media is inserted properly in the drive and retry the operation.	Verify that the media is inserted properly in the drive and try the operation again.
HSCP0003	The Backup Critical Data request failed.	Internal HMC Error Call for HMC software support.
HSCP0004	The media is write protected. Remove the write protection and retry the operation.	Remove the write protection and try the operation again.

Platform Management Error Codes	Message	Recovery Action
HSCP0005	The Backup Critical Data request is in progress. Please wait.	None
HSCP0010	The Format Removable Media request completed successfully.	None
HSCP0011	Please make sure the media is inserted properly in the drive and retry the operation.	None
HSCP0012	The media is write protected. Remove the write protection and retry the operation.	None
HSCP0013	An unknown error occurred. Replace the media and retry the operation.	Replace the media and try the operation again. If the error persists call for HMC software support.
HSCP0014	The Format Removable Media request failed.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the error persists, call for HMC software support.
HSCP0015	Please wait while the media is being formatted.	None
HSCP0020	The Save Upgrade Data request completed successfully.	None
HSCP0021	The Save Upgrade Data request failed.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.
HSCP0022	The Save Upgrade Data request failed. Ensure the removable media is properly inserted in the drive.	Verify the removable media is properly inserted in the drive and try the operation again. If the error persists call for HMC software support.

Platform Management Error Codes	Message	Recovery Action
HSCP0023	The media is write protected. Remove the write protection and retry the operation.	None
HSCP0024	An error occurred while copying the upgrade data. Ensure the removable media is properly inserted in the drive and retry the operation.	Verify the removable media is properly inserted in the drive and try the operation again. If the error persists call for HMC software support.
HSCP0025	An error occurred while compressing the upgrade data. Please retry the operation.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.
HSCP0026	An error occurred while trying to mount the media. Ensure the removable media is properly inserted in the drive.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.
HSCP0027	An error occurred while trying to unmount the media.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.

Platform Management Error Codes	Message	Recovery Action
HSCP0028	An error occurred while creating the list of files to save.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.
HSCP0029	An error occurred while instantiating the save upgrade data target class.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.
HSCP0030	An error occurred while attempting to create the restore trigger file.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.
HSCP0040	The corrective service file was successfully downloaded to this system console. Press OK to continue and install this update.	None
HSCP0041	The corrective service file was successfully applied. Please quiesce the system console and reboot for the changes to take effect.	None
HSCP0042	An unrecoverable error occurred during the corrective service file download. Retry the operation. If the operation fails again, contact your support representative.	Try the operation again. If the error persists call for HMC software support.

Platform Management Error Codes	Message	Recovery Action
HSCP0043	An unrecoverable error occurred during the corrective service installation. Retry the operation. If the operation fails again, contact your service representative.	Try the operation again. If the error persists, call for HMC software support.
HSCP0044	The removable media cannot be mounted. Please make sure the media is inserted properly in the drive and retry the operation.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the error persists, call software support.
HSCP0045	The corrective service data is corrupt. Please ensure the correct media is inserted properly in the drive and retry the operation.	Verify the removable media is properly inserted in the drive and try the operation again. If the error persists, call for HMC software support.
HSCP0046	An error occurred while attempting to remotely connect to the server. Please try the operation again. If the operation fails again, contact your service representative.	Verify that the remote site is operational and try the operation again. If the error persists, call for HMC software support.
HSCP0047	An error occurred while downloading the corrective service file. Please try the operation again. If the operation fails again, contact your service representative.	Verify that the remote site is operational and try the operation again. If the error persists, call for HMC software support.
HSCP0048	An unknown error occurred. Retry the operation. If the operation fails again, contact your support representative.	Try the operation again. If the error persists, call for HMC software support.
HSCP0049	The Install Corrective Service request is in progress. Please wait.	None
HSCP0060	The Customize Date/Time request completed successfully.	None

Platform Management Error Codes	Message	Recovery Action
HSCP0061	The Customize Date/Time request failed.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.
HSCP0070	Please enter an integer value between 1 and 99.	None
HSCP0080	There are no system events.	None
HSCP0081	Unable to display the log data.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.
HSCP0082	Unable to retrieve log data.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.
HSCP0083	An error occurred while processing the exit request.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.

Platform Management Error Codes	Message	Recovery Action
HSCP0090	Cannot check both the 'Export default gateway' and 'Silent' options for 'routed'.	Select either 'Export default gateway' or 'Silent' for the Routed option.
HSCP0091	You may need to reboot for all Network Settings changes to take effect.	Restart the hardware management console.

Service Focal Point Error Codes	Message	Recovery Action
HSCS0001	Unable to access RMC to obtain Serviceable Events.	The HMC could not retrieve the Serviceable Events. Wait and try the previous function again. If error continues, shutdown and restart the HMC. If error persists, call for HMC software support.
HSCS0002	Unable to process request.	The HMC could not process your request. Wait and try the previous function again. If error continues, shutdown and restart the HMC. If error persists, call for HMC software support.
HSCS0003	Unable to update the attribute on the Serviceable Event.	The HMC could not process your request to make changes to the Serviceable Event. Wait and try the previous function again. If error continues, shutdown and restart the HMC. If error persists, call for HMC software support.
HSCS0004	Unable to locate Serviceable Event to update.	The HMC could not locate the Serviceable Event you are trying to view or update. It may have expired or otherwise been closed. Exit the Select Serviceable Event dialog and retry.
HSCS0005	Function Failed: Error occurred attempting to display a Serviceable Event panel.	The HMC was unable to locate or launch a panel you have requested. This is an internal HMC error. 1. Perform Backup Critical Data task. 2. Call for HMC software support.
HSCS0008	Function Failed: An error occurred when retrieving machine names.	Not all functions may be operating. Wait and try the previous function again. If error continues, shutdown and restart the HMC. If error persists, call for HMC software support.

Service Focal Point Error Codes	Message	Recovery Action
HSCS0020	Function Failed: An error occurred when launching Call Home panel.	Not all functions may be operating. Wait and try the previous function again. If error continues, shutdown and restart the HMC. If error persists, call for HMC software support.
HSCS0021	Function Failed: Error occurred getting information to display Call Home Enable/Disable Panel.	Not all functions may be operating. Wait and try the previous function again. If error continues, shutdown and restart the HMC. If error persists, call for HMC software support.
HSCS0022	Function Failed: An error occurred when updating Call Home Enable/Disable settings.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.
HSCS0023	Function Failed: Error occurred processing button for Call Home Enable/Disable Panel.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.
HSCS0024	Function Failed: Error occurred processing Sort for Call Home Enable/Disable Panel.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.

Service Focal Point Error Codes	Message	Recovery Action
HSCS0025	Function Failed: Error occurred processing Double Click for Call Home Enable/Disable Panel.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.
HSCS0030	Function Failed: An error occurred when launching Extended Error Enable/Disable panel.	Not all functions may be operating. Wait and try the previous function again. If error continues, shutdown and restart the HMC. If error persists, call for HMC software support.
HSCS0031	Function Failed: Error occurred getting information to display Extended Error Enable/Disable Panel.	Action: Not all functions may be operating. Wait and try the previous function again. If the error continues, shutdown and restart the HMC. If the error persists, call for HMC software support.
HSCS0032	Function Failed: An error occurred when updating Extended Error Enable/Disable settings.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.
HSCS0033	Function Failed: Error occurred processing button for Extended Error Enable/Disable Panel.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.

Service Focal Point Error Codes	Message	Recovery Action
HSCS0034	Function Failed: Error occurred processing Sort for Extended Error Enable/Disable Panel.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.
HSCS0035	Function Failed: Error occurred processing Double Click for Extended Error Enable/Disable Panel.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.
HSCS0040	New FRU Location Code and Part Number must be entered.	Enter the requested Location Code and Part Number.
HSCS0041	A New FRU Part Number must be entered.	Enter the requested Part Number.
HSCS0042	There was nothing to apply.	There were no changes to the FRU list to be added to the Serviceable Event.
HSCS0043	The No FRUs to Update box was checked but there are updated FRUs in the in the pending table. If there are no FRUs to update, remove the ones from the pending table. If you want to update the FRUs from the pending table, uncheck the check box.	None
HSCS0044	The No FRUs to Update box was unchecked and there are no updated FRUs in the in the pending table. If there are no FRUs to update, check the check box to indicate this.	None

Service Focal Point Error Codes	Message	Recovery Action
HSCS0045	Function Failed: An error occurred when updating FRU information for the Serviceable Event.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.
HSCS0046	Function Failed: An error occurred when attempting to remove an item from the list.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.
HSCS0047	Function Failed: An error occurred when attempting to Close the Serviceable Event	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.
HSCS0048	Function Failed: An error occurred when adding FRU information for the Serviceable Event.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.

Service Focal Point Error Codes	Message	Recovery Action
HSCS0049	Function Failed: An error occurred when processing the panel.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.
HSCS0050	Function Failed: An error occurred when launching panel.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.
HSCS0060	Cannot change state from Unknown for machine	The requested machine state is not allowed at this time. Close and then restart the Enable/Disable panels for updated machine information.
HSCS0061	Insert scratch diskette number {0} of {1}.	Insert a scratch diskette and select the appropriate button.
HSCS0062	Insert DVD cartridge and press the {0} button.	Insert a formatted DVD cartridge and push the appropriate button.
HSCS0063	Save Extended Error Data	No action. This message is used as a title of a status panel to indicate what function is currently being performed.
HSCS0064	No extended error data available.	Select a serviceable event that has extended error data associated with it.
HSCS0065	Error writing to floppy diskette: {0}	Make sure there is a floppy diskette in the diskette drive. Try the operation again.
HSCS0066	Error writing to DVD cartridge: {0}	Make sure there is a formatted DVD cartridge in the DVD drive. Try the operation again.

Service Focal Point Error Codes	Message	Recovery Action
HSCS0067	Error reading extended error data: {0}	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.
HSCS0068	Error creating temporary file: {0}	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.
HSCS0069	Error writing to temporary file: {0}	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.
HSCS0070	Error formatting floppy diskette: {0}	Make sure there is a floppy diskette in the diskette drive. Try the operation again.
HSCS0071	Extended error data has been saved successfully.	None
HSCS0072	The saving of extended error data has been cancelled.	No action. The operation was cancelled as a result of your request.

Service Focal Point Error Codes	Message	Recovery Action
HSCS0080	Error encountered while getting the partition information.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.
HSCS0081	Error encountered while reading the partition information.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.
HSCS0082	Error encountered while getting the extended error data.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.
HSCS0083	Unexpected error encountered while saving the extended error data.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.

Service Focal Point Error Codes	Message	Recovery Action
HSCS0084	Error encountered while attempting to call home with the extended error information.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.
HSCS0085	Error encountered while attempting to call home with the extended error information. The call program returned a value of {0}.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.
HSCS0086	Request to call home the extended error information has been successfully submitted. See the Service Agent application to monitor the progress of the request.	The operation was successful. Use the Service Agent application to monitor the progress of the request.
HSCS0090	Unexpected return code encountered while creating a temporary packaging file: {0}	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.

Service Focal Point Error Codes	Message	Recovery Action
HSCS0096	No items selected when button was pressed.	1. Verify that the removable media is properly inserted in the drive and try the operation again. 2. Try the operation with different media. 3. Run PC Doctor to determine if there is a problem with the hardware. 4. If the problem persists, call for HMC software support.
HSCS0100	Please wait while the extended error data is being saved.	The extended error data is being saved to the appropriate removable media.
HSCS0101	Error writing to DVD cartridge.	Ensure there is a formatted DVD cartridge in the DVD drive. Try the operation again.
HSCS0102	Error unmounting DVD cartridge after writing data successfully.	Ensure there is a formatted DVD cartridge in the DVD drive. Try the operation again.

Virtual Terminal Errors

When using a virtual terminal (VTERM), you might see an error code displayed in the bottom left corner of the VTERM window. The following table lists the error codes and the recovery actions for each.

Virtual Terminal (VTERM) Error Codes	Message	Recovery Action
Comm 654	The virtual terminal server is unable to process this type of request. An unknown error occurred during virtual terminal device-type negotiations.	If the error persists, contact the system administrator for help.
Comm 655	The socket connection to the Virtual Terminal server has been established and the session is waiting for negotiation to finish.	If the error persists, contact the system administrator for help.

Virtual Terminal (VTERM) Error Codes	Message	Recovery Action
Comm 657	The session is in the process of establishing the TCP/IP connection to the virtual terminal server. When you close a session that displays COMM 657, there may be some delay before it closes.	The delay varies. If you are in a hurry, close the browser.
Comm 658	The session is initializing the TCP/IP connection to the HMC.	If the error persists, contact the system administrator for help.
Comm 659	The Virtual Terminal TCP connection to the session has not succeeded or has failed.	The TCP/IP connection to the virtual terminal server could not be established You clicked Disconnect on the Communication menu The virtual terminal server closed the TCP/IP connection either by application control or because it detected an error.

Operating States

In the Contents area, an operating state is listed next to your managed system. Read the next section to learn more about what each of these states mean, and the actions you should take to recover.

Managed System Operating States

These operating states have to do with the managed system itself.

State	Description	Recovery Action
Initializing	The managed system is powered on and is initializing.	Wait for initialization to complete. Initialization can take up to an hour, depending on the managed system's hardware and boot configuration.
Ready	The managed system is powered on and functioning normally.	None
No Power	The managed system is powered off.	None
Error	The managed system's operating system or hardware is experiencing errors.	If the managed system is set up to run as a Full System Partition, the system will also indicate an Error state. Read the managed system operator panel.

State	Description	Recovery Action
Incomplete	The HMC cannot gather complete partition, profile, and resource information from the managed system.	In the Contents area, highlight the managed system icon and select **Rebuild the Managed System** from the menu.
Connectionless	HMC cannot contact the managed system.	Delete the managed system from the Navigation area by, highlighting the managed system icon and selecting **Delete** from the menu. Follow the instructions to delete the managed system from the Navigation area. Next, reconnect to the managed system by checking that the cable connections are secure.
Recovery	The partition and profile data stored in the managed system is corrupted.	In the Contents area, select the managed system icon and choose **Recover Partition Data** from the menu. • If you want to restore the data from a backup, choose **Restore** from the menu. If your system is not currently powered on in Partition Standby, restoring data can take up to an hour. When the data is restored, the managed system powers on to Partition Standby. OR • If you do not want to restore data from a backup source, choose **Initialize** from the menu.
Incompatible	Your managed system's service processor level is higher than your HMC's code level.	Contact your service representative to upgrade your HMC's level so that the levels match.

Partition Operating States

These operating states describe the logical partition you have created.

State	Description	Recovery Action
Ready	The partition is not yet active but is ready for activation.	None
Starting	The partition is activated and is going through its booting routines.	None
Running	The partition has finished its booting routines. The operating system can be performing its booting routines or is in its normal running state.	None

State	Description	Recovery Action
Error	Activation of this partition failed due to a hardware or operating system error.	Select the partition and choose the **Read Boot Error Value** task from the menu to see the reasons for the activation failure.“Boot Error Values” on page 212 You can also try to activate the partition again.
Not Available	This partition is not available for use. Reasons can include: • The managed system is powered off. • The Full System Partition is not available when the managed system is powered on with the Partition Standby power-on option. • Logical partitions are not available when the managed system is powered on with the Full System Partition power-on option. • Affinity partitions are not available when the managed system is powered on and non-affinity partitions are activated first. • Non-affinity partitions are not available when the managed system is powered on and affinity partitions are powered on first.	Turn the power to the managed system on and select either Full System Partition or Partition Standby during the power-on process.
Open Firmware	The partition was activated by a profile that specified an OPEN_FIRMWARE boot mode.	None

Error Recovery Actions

The recovery action for many error messages is to perform a rebuild managed system operation. This section has procedures to help perform a rebuild managed system operation. References to this procedure appears throughout the error messages tables as appropriate.

Rebuild Managed System Indicated

For messages that indicate that a rebuild managed system operation is needed, do the following to be sure that the operation is necessary:

1. Verify you have the correct authority to perform the task that failed.
   - If you do not, log in with the correct user authority and try the task again.
   - If you do have the correct authority, retry the task that failed. If it still fails, continue with step 2 on page 210.

2. Perform the Rebuild Managed System task (see “Steps to Rebuild Managed System”) then retry the failing task. If the task still fails, continue with step 3.
3. Reboot the hardware management console, then verify that the managed system is in Ready state.
   - If the managed system is in Ready state, retry the failing task. If the task still fails, call for HMC software support.
   - If the managed system is in any state other than ready, (for example, not in Connection state, Error state, or another state) refer to “Managed System States for the Hardware Management Console” on page 211 for the recovery procedure for the current state.

Steps to Rebuild Managed System

To rebuild a managed system, do the following:

1. In the hardware management console contents area, select the managed system that you want to rebuild.
2. Select Rebuild Managed System from the Select menu or by clicking the right mouse button in the content area.
3. A confirmation window displays a message asking you to confirm whether you want to perform this task.

   While this task is running, you cannot perform any other hardware management console functions. This task can take up to several minutes to complete.

Steps for Rebooting the Hardware Management Console

To Reboot the hardware management console, do the following:

1. From the Select menu, select **Console**.
2. Select **Exit**.
3. When you exit from your hardware management console session, you can choose to shutdown, reboot, or logout from your session. Using the pulldown bar, select **reboot**.
4. Select **Exit** now. The hardware management console reboots.

Performing a File System Check on HMC Reboot

In the event of an unexpected power loss or if the white reset button on the HMC is pressed, the system runs a file system check (`fsck`) on the next system reboot. If the automatic file system check fails, the HMC prompts the user to enter the HMC’s root password so that is can perform a manual file system maintenance operation. If the following message displays: `Enter the root password or hit Control-D to reboot.`, do the following to recover the HMC:

1. Type the following root password: `passw0rd`
2. To run a file-system check, type `fsck <file system>` where <file system> is the name of the file system that fails the file system check, such as **/** and **/var** in the field. When the checking is done, a prompt window opens.
3. Type `reboot`

   OR

Press Ctrl-D to reboot the HMC interface.

Managed System States for the Hardware Management Console

The states for a managed system that show on the hardware management console are described in the following section. Follow the procedures in this section to attempt to recover management of a system in one of the following states.

No Connection State

The hardware management console has lost contact with the managed system or power to the service processor has been removed.

Check the following:

1. Check the operator panel on the managed system to verify that the power is on.
   a. If the power light indicates that there is no power on the managed system operator panel, refer to the @server *pSeries 690 User's Guide* for problem determination procedures.
   b. Once power is restored, wait 5 minutes for the service processor to re-IPL and the hardware management console to re-establish contact. If the hardware management console can access partitions using a virtual terminal (VTERM) but the state is still "no connection", call for HMC support.
2. If the power indicator is on, wait 5 minutes for the Hardware Management Console to attempt to reestablish contact. The service processor in the managed system may be in the process of turning power on. If partitions no longer respond, the system power is off.
3. From a telnet session from another system, attempt to ping or contact active partitions on this managed system.

   If the partitions are active:

   a. Verify that the serial cable on the Hardware Management Console is firmly connected and that it is not damaged.
   b. Reboot the Hardware Management Console.
   c. Reset the Service Processor.
4. If the managed system is running and restarting the Hardware Management Console did not resolve the problem, call for HMC software support.

Incomplete State

The HMC is unable to collect information required to build a complete representation of the managed system. Do the following:

1. Select **Rebuild Managed System** from the Managed System Task list. If the state goes to Recovery, see the steps for Recovery State. If the state does not go to Recovery, continue with the next step.

   Note: This operation performed in the next step may take up to ten minutes to complete.
2. Reboot the Hardware Management Console. If state goes to recovery, see Recovery State actions.

If the status remains Incomplete, verify whether there is a redundant Hardware Management Console and verify that nobody is entering commands from the alternate Hardware Management Console.

Issue another Rebuild task. If it still fails, go to the next step.

3. Restore the profile data (see task list). The profile data restore task is a full restore from a backup copy.
4. Verify that the Hardware Management Console serial cable is securely attached to the Hardware Management Console and that it is not damaged.
5. Reset the service processor.
6. If the problem persists, call for service.

Recovery State

Profile data stored in the managed server has been cleared or corrupted.

1. Select the Recover partition data from the managed system task list to restore or initialize profile data.
2. If the state changes to incomplete, see “Incomplete State” on page 211 for recovery procedures.
3. If the state changes to No Connection, go to “No Connection State” on page 211 for recovery procedures.
4. If the restore fails, reset the service processor.
5. Clear NMVRAM and retry the recovery partition data task.
6. If the problem persists, call for HMC software support.

Error State

Error state automatically generates a call to the service support center if the function is enabled. If the function is not enabled, call for HMC software support.

Open Firmware State

The partition has been activated and is in the Open Firmware state. You can open a virtual terminal to the partition and enter open firmware commands.

Boot Error Values

The following table contains the boot error values and messages that might be displayed on the hardware management console if a problem occurs during the boot process and initial loading of the console software.

Boot Error Values	Message
0x00	NO_ERROR
0x01	NO_GLOBAL_SERVER
0x02	NO_CONTIGUOUS_PAGE_TABLE_MEMORY
0x03	NO_CONTIGUOUS_REAL_MODE_MEMORY
0x04	NOT_ENOUGH_PARTITION_LOGICAL_MEMORY
0x05	ALL_ASSIGNED_PROCESORS_ARE_NOT_WORKING

Boot Error Values	Message
0x06	NO_PROCESSORS_ASSIGNED
0x07	INVALID_PROCESSOR_ASSIGNED_FOR_ALPAR_PARTITION
0x08	NO_MEMORY_AVAILABLE_FOR_ALPAR_PARTITIONS
0x60	ANOTHER_SERVICE_AUTHORITY_PARTITION_IS_ACTIVE
0x7F	FAIL_TO_BOOT
0x80	I/O_SLOT_ASSIGNMENT_ERROR
0xAC	AIX_OS_TERM_WITH_CRASH_CODE

Releasing an HMC Lock on the Managed System

If you have two HMCs connected to your managed system, one HMC temporarily locks the other out while it is performing operations. This prevents the other HMC from operating on the managed system because simultaneous operations could cause conflicting results. If the interface is locked, most console operations automatically wait for the lock to release. However, in the rare event that an HMC has a problem that prevents the lock from being properly released, you may need to manually unlock the connection to the managed system. Typically, if one HMC has locked the connection, you must unclock it from the other HMC, which then allows other HMCs to communicate with the managed system and issue further commands.

To release a lock on a managed system, you must be a member of one of the following roles:

- System Administrator
- Advanced Operator

To release an HMC lock, do the following:

1. In the Contents area, select the managed system.
2. In the menu, click **Selected**.
3. Select **Release Console Lock**.

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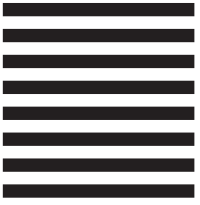

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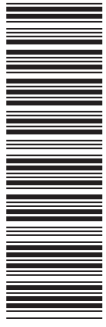

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