Hardware Information

Managing your server, adapters, and devices

ESCALA POWER5

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Table of Contents

Managing your server, adapters, and devices

Learn about managing servers, adapters, and devices using a console.

Use the following information to assist you in managing your server, adapters, and devices, using a hardware platform console or interface:

- **Managing your server using the Hardware Management Console**
  Learn how to manage your server using the Hardware Management Console.
- **Managing your server using the ASMI**
  The Advanced System Management Interface (ASMI) is the interface to the service processor that allows you to set flags that affect the operation of the server, such as auto power restart, and to view information about the server, such as the error log and vital product data.
- **Managing devices**
  This topic describes the specifications and maintenance of adapters and devices.

Managing your server using the Hardware Management Console

Learn how to manage your server using the Hardware Management Console.

The Hardware Management Console (HMC) uses its network connections to one or more servers or frames (referred to as *managed systems*) to perform various management functions. This topic provides information about how to perform tasks with the HMC to manage the connected systems.

For information about how to perform basic HMC administration tasks, including setting up, installing, and maintaining an HMC, see the Managing the Hardware Management Console (HMC) topic.

For information about partitioning your server using an HMC, see the Partitioning with an HMC topic.

- **What's new**
  Learn about new and improved information in Managing your server using the HMC.
- **Printable PDFs**
  If you prefer a hardcopy version of this information, instructions are provided here on how to print the PDF files.
- **HMC concepts for managing servers**
  Learn about the concepts that you need to know before you use the HMC to work with managed systems.
- **Working with managed systems and frames**
  Learn how to perform actions on the HMC that pertain to the managed system.
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  Learn how to use the Network Manager to manage InfiniBand (IB) networks.
- **Related information**
  Review technical and "how-to" information.

Parent topic: Managing your server, adapters, and devices

What's new

Learn about new and improved information in Managing your server using the HMC.

The following information highlights newly released or improved content for the *Managing your server using the Hardware Management Console* (HMC) topic.

Adding managed systems to the HMC environment
      This information has been improved to take you directly to the information you need to know to add a managed system to your HMC environment depending on your existing network configuration.

Change in parent topic name in the table of contents
      If you use the table of contents to navigate to this topic in the Hardware ESCALA Power5 Hardware Information, note that the name for the parent topic has changed to *Managing your server, adapters, and devices* (adapters has been added to the title).

Parent topic: Managing your server using the Hardware Management Console

Printable PDFs

If you prefer a hardcopy version of this information, instructions are provided here on how to print the PDF files.

To view or download the PDF version of this document, select Managing your server using the Hardware Management Console .

You can also view or download these related topics in the PDF version:

- Managing the Hardware Management Console (2893)
- Partitioning the server:
    - ♦ Partitioning for AIX (486 KB)
    - ♦ Partitioning for Linux with an HMC (419 KB)
    - ♦ Using the Virtual I/O server (1034 KB)
- Working with Power On Demand (1068 KB)
- Customer service, support, and troubleshooting (5200 KB)

Saving PDF files

To save a PDF file on your workstation for viewing or printing:

1. Right-click the PDF link in your browser.
2. Click the option that saves the PDF locally.
3. Navigate to the directory in which you would like to save the PDF file.
4. Click Save.

Downloading Adobe Reader

You need Adobe Reader installed on your system to view or print these PDFs. You can download a free copy from the Adobe Web site (www.adobe.com/products/acrobat/readstep2.html).

Parent topic: Managing your server using the Hardware Management Console

HMC concepts for managing servers

Learn about the concepts that you need to know before you use the HMC to work with managed systems.

The HMC allows you to perform a variety of tasks associated with managing your servers and frames. This information familiarizes you with the HMC concepts that you should know before working with the managed systems.

- **Overview of HMC tasks**
  Learn about the tasks that you can perform using the HMC, the user role needed to perform each task, and the remote command associated with each task.
- **Managed system power-on and power-off modes**
  Learn about the power-on options and the power-off options for a managed system.

- **Managed system states**
  Learn about the operational states that are displayed for managed systems in the HMC.
- **Frame states**
  Learn about the various operational states that are displayed for frames in the HMC.

Parent topic: Managing your server using the Hardware Management Console

Overview of HMC tasks

Learn about the tasks that you can perform using the HMC, the user role needed to perform each task, and the remote command associated with each task.

See the HMC commands topic for HMC command descriptions.

The following tables list all of the tasks that you can perform using the HMC, the user role needed to perform each task, and the remote command associated with each task. Click one of the following links to learn more about the associated task grouping:

- **Managed system profile tasks**
  Learn about the managed-system profile tasks and the roles that can perform them.
- **Managed system tasks**
  Learn about the tasks that enable you to manage your server operations and the roles that can perform these tasks.
- **Logical partition tasks**
  Learn about the logical partition tasks and the roles that can perform them.
- **Power On Demand tasks**
  Learn about the Power On Demand tasks and the roles that can perform them.
- **Virtualization Engine Technologies tasks**
  Learn about Virtualization Engine Technologies tasks and the roles that can perform them.
- **System planning tasks**
  Learn about the tasks associated with creating and deploying a system plan and the roles that can perform them.
- **Utilization data management tasks**
  Learn about the management tasks concerned with the collection of system utilization data and the roles that can perform them.
- **Frame tasks**
  Learn about tasks that you can perform to manage your frames and the roles required to perform them.
- **Service tasks**
  Learn about problem determination tasks and the roles that can perform them.

Parent topic: HMC concepts for managing servers

Managed system profile tasks

Learn about the managed-system profile tasks and the roles that can perform them.

The following table lists the managed system profile tasks, the associated commands, and the user roles necessary to perform them.

Task	Associated command	Roles				
		super administrator	service representative	operator	product engineer	viewer
Activate a system profile	chsysstate	X	X	X	X	
	mksyscfg	X		X		

		super administrator	service representative	operator	product engineer	viewer
Create a system profile on a managed system						
Modify the properties of a system profile	chsyscfg	X		X	X	
Power on a managed system using a system profile	chsysstate	X	X	X	X	
Remove a system profile	rmsyscfg	X		X		
Validate a system profile	chsysstate	X	X	X	X	
View a system profile	lssyscfg	X	X	X	X	X

For more information about system profiles, see System profile. For more information about using the commands, see Using the remote command line.

Parent topic: Overview of HMC tasks

Managed system tasks

Learn about the tasks that enable you to manage your server operations and the roles that can perform these tasks.

The following table describes the managed system tasks, the associated commands, and the user roles necessary to perform them.

Task	Associated command	Roles				
		super administrator	service representative	operator	product engineer	viewer
Add a managed system	mksysconn	X		X	X	
Back up profile data	bkprofdata	X	X	X	X	
Create a network connection with a system	mksysconn	X		X	X	
Enable a remote service session for a logical partition	chsysstate	X	X	X	X	

Enable or disable service processor failover on a managed system	chsyscfg	X		X	X	
Initialize profile data	rstprofdata	X		X		
Migrate logical partition configuration data to a managed system	migrcfg	X		X	X	
Modify the keylock position of a managed system	chsysstate	X	X	X	X	
Modify the properties of a managed system	chsyscfg	X		X	X	
Modify virtual I/O attributes of a managed system	chhwres	X	X	X	X	
Power a managed system on and off	chsysstate	X	X	X	X	
Rebuild a managed system	chsysstate	X	X	X	X	
Recover partition data for a managed system	chsysstate	X	X	X	X	
Remove the network connection to a managed system	rmsysconn	X		X	X	
Request huge-page memory for a managed system	chhwres	X	X	X	X	
Reset the network connection to a managed system	rmsysconn	X		X	X	
Restart a managed system	chsysstate	X	X	X	X	
Restore the hardware	rsthwres	X	X	X	X	

resource configuration of a managed system following a DLPAR task failure						
Restore profile data	rstprofdata	X		X		
Update a password for a managed system	chsyspwd	X				
Update the LIC on a managed system	updlic	X	X		X	
View connections for a managed system	lssysconn	X	X	X	X	X
View the current state of readiness for service processor failover on a managed system	lssyscfg	X	X	X	X	X
View HCA adapter resources of a managed system	lshwres	X	X	X	X	X
View hardware resources of a managed system	lshwres	X	X	X	X	X
View I/O resources of a managed system	lshwres	X	X	X	X	X
View LIC levels accepted on a managed system	lslic	X	X	X	X	X
View LIC levels activated on a managed system	lslic	X	X	X	X	X
View LIC levels that are available to be retrieved	lslic	X	X	X	X	X
View Licensed Internal Code (LIC) levels	lslic	X	X	X	X	X

installed on a managed system						
View managed systems	lssyscfg	X	X	X	X	X
View memory resources of a managed system	lshwres	X	X	X	X	X
View processing resources of a managed system	lshwres	X	X	X	X	X
View reference codes for a managed system	lsrefcode	X	X	X	X	X
View SNI adapter resources of a managed system	lshwres	X	X	X	X	X
View virtual I/O resources of a managed system	lshwres	X	X	X	X	X

For more information about working with your managed system using your HMC, see Working with managed systems and frames. For more information about using commands, see Using the remote command line.

Parent topic: Overview of HMC tasks

Logical partition tasks

Learn about the logical partition tasks and the roles that can perform them.

The following table describes the tasks that you can execute from the HMC to manage logical partitions. This table provides the commands and the user roles necessary to perform the tasks from the remote command line.

Task	Associated command	Roles				
		super administrator	service representative	operator	product engineer	viewer
Activate a logical partition	chsysstate	X	X	X	X	
Change the default partition profile for a	chsyscfg	X		X	X	

logical partition						
Close a virtual terminal session for an AIX, Linux, or Virtual I/O Server partition	rmvterm	X	X	X	X	
Create a logical partition on a managed system	mksyscfg	X		X	X	
Create a logical partition profile on a managed system	mksyscfg	X		X	X	
Create a Virtual I/O Server	mksyscfg	X		X	X	
Issue a command to a Virtual I/O Server	viosvrcmd	X	X	X	X	
Modify memory resources of a logical partition	chhwres	X	X	X	X	
Modify processing resources of a logical partition	chhwres	X	X	X	X	
Modify the properties of a logical partition profile	chsyscfg	X		X	X	
Modify the hardware resource configuration of a logical partition	chhwres	X	X	X	X	
Modify the I/O resources of a logical partition	chhwres	X	X	X	X	
Modify the keylock position on a logical partition	chsysstate	X	X	X	X	
Modify the properties of a logical partition	chsyscfg	X		X	X	

Modify virtual I/O resources of a logical partition	chhwres	X	X	X	X	
Open a virtual terminal session for an AIX, Linux, or Virtual I/O Server partition	mkvterm	X	X	X	X	
Perform a Dynamic Logical Partitioning task	chhwres	X	X	X	X	
Perform a network boot of a logical partition	lpar_netboot	X	X	X	X	
Perform an operator panel function on a logical partition	chsysstate	X	X	X	X	
Remove a logical partition from the managed system	rmsyscfg	X		X	X	
Remove a logical partition profile	rmsyscfg	X		X	X	
Restart a logical partition	chsysstate	X	X	X	X	
Retrieve MAC address and location code for a partition	lpar_netboot	X	X	X	X	
Shut down a logical partition	chsysstate	X	X	X	X	
View HCA adapter resources of a logical partition	lshwres	X	X	X	X	X
View I/O resources of a logical partition	lshwres	X	X	X	X	X
View logical partition profiles	lssyscfg	X	X	X	X	X
View logical partitions	lssyscfg	X	X	X	X	X
View processing resources of a	lshwres	X	X	X	X	X

		super administrator	service representative	operator	product engineer	viewer
logical partition						
View memory resources of a logical partition	lshwres	X	X	X	X	X
View reference codes for a logical partition	lsrefcode	X	X	X	X	X
View SNI adapter resources of a logical partition	lshwres	X	X	X	X	X
View virtual I/O resources of a logical partition	lshwres	X	X	X	X	X

For more information about logical partitions, see Partitioning the server. For more information on using commands, see Using the remote command line.

Parent topic: Overview of HMC tasks

Power On Demand tasks

Learn about the Power On Demand tasks and the roles that can perform them.

The following table lists the Power On Demand tasks, the associated command for each task, and the user roles necessary to perform the task.

Task	Associated command	Roles				
		super administrator	service representative	operator	product engineer	viewer
Activate POD resources	chcod	X				
Deactivate POD resources	chcod	X				
Enter a POD code	chcod	X				
Manage On/Off POD resources	chcod	X				
Manage Reserve POD processors	chcod	X				
Stop Trial POD	chcod	X				
	lscod	X	X	X	X	X

View POD capacity settings for a managed system						
View POD code generation information for a managed system	lscod	X	X	X	X	X
View On/Off POD billing information for a managed system	lscod	X	X	X	X	X
View the POD history log for a managed system	lscod	X	X	X	X	X
View shared processor pool utilization information for Reserve POD	lscod	X	X	X	X	X

For more information about Power On Demand, see Working with Power On Demand. For more information about using the commands, see Using the remote command line.

Parent topic: Overview of HMC tasks

Virtualization Engine Technologies tasks

Learn about Virtualization Engine Technologies tasks and the roles that can perform them.

The following table lists the Virtualization Engine Technologies tasks, the associated commands, and the user roles necessary to perform them.

Task	Associated command	Roles				
		super administrator	service representative	operator	product engineer	viewer
View the Virtualization Engine systems technologies activation history log	lsvet	X	X	X	X	X
Enter Virtualization Engine systems technologies activation	chvet	X				

code						
View information used to generate a Virtualization Engine systems technologies activation code	lsvet	X	X	X	X	X

For more information about creating a Virtualization Engine Technologies environment, see Using a virtual computing environment. For more information about using commands, see Using the remote command line.

Parent topic: Overview of HMC tasks

System planning tasks

Learn about the tasks associated with creating and deploying a system plan and the roles that can perform them.

The following table lists the tasks that you can use when working with a system plan to set up a managed system, the associated commands, and the user roles necessary to perform them.

Task	Associated command	Roles				
		super administrator	service representative	operator	product engineer	viewer
Export a system plan for a managed system	cpsysplan	X				
Import a system plan for a managed system	cpsysplan	X				
List system plans	lssysplan	X				
Remove a system plan for a managed system	rmsysplan	X				
Deploy a system plan to a managed system	deploysysplan	X				
Create a system plan	mksysplan	X				

For information about how to view a system plan before you deploy it, see Deploying a system plan. For more information about using the commands from the HMC command line, see Using the remote command line.

Parent topic: Overview of HMC tasks

Utilization data management tasks

Learn about the management tasks concerned with the collection of system utilization data and the roles that can perform them.

The following table lists the tasks associated with viewing and managing system utilization data, the associated commands, and the user roles necessary to perform them.

Task	Associated command	Roles				
		super administrator	service representative	operator	product engineer	viewer
Change the settings for utilization-data collection for a managed system	chlparutil	X	X	X	X	
Remove the utilization data collected for a managed system	rmlparutil	X	X	X	X	
View utilization data for a managed system	lslparutil	X	X	X	X	X

For more information about using the commands, see Using the remote command line.

Parent topic: Overview of HMC tasks

Frame tasks

Learn about tasks that you can perform to manage your frames and the roles required to perform them.

The following table describes frame tasks, associated commands, and the roles that can perform each task:

Task	Associated command	Roles				
		super administrator	service representative	operator	product engineer	viewer

Add a managed frame	mksysconn	X		X	X	
Create a network connection with a frame	mksysconn	X		X	X	
Force an HMC to release its lock on a managed frame	rmlock	X			X	
Modify the properties of a managed frame	chsyscfg	X		X	X	
Power off all unowned I/O units in a managed frame	chsysstate	X	X	X	X	
Rebuild a managed frame	chsysstate	X	X	X	X	
Reset the network connection to a managed frame	rmsysconn	X		X	X	
Remove the network connection to a managed frame	rmsysconn	X		X	X	
Update a password for a managed frame	chsyspwd	X				
View which HMC owns the lock on a managed frame	lslock	X	X	X	X	X
View managed frames	lssyscfg	X	X	X	X	X
View environmental information for a managed frame	lshwinfo	X	X	X	X	X
View connections for a managed frame	lssysconn	X	X	X	X	X

For more information about using commands, see Using the remote command line.

Parent topic: Overview of HMC tasks

Service tasks

Learn about problem determination tasks and the roles that can perform them.

The following table describes the service tasks that you can perform in the HMC. The associated command and required user role for performing the task are also provided.

Task	Associated command	Roles				
		super administrator	service representative	operator	product engineer	viewer
Activate dedicated service tools (DST) on a logical partition	chsysstate	X	X	X	X	
Clear all partition configuration data on a managed system	lpcfgop	X		X		
Copy a managed system or frame dump from the HMC to DVD or a remote FTP server	cpdump	X	X	X	X	
Disable a remote service session for a logical partition	chsysstate	X	X	X	X	
Dump all logical partition configuration data on a managed system	lpcfgop	X		X		
Dump IOP control storage	chsysstate	X	X	X	X	
Enable a remote service session for a logical partition	chsysstate	X	X	X	X	
Enable or disable service processor failover on a managed	chsyscfg	X		X	X	

system						
Initiate a service processor failover	chsysstate	X	X	X	X	
Launch the Advanced System Management (ASMI) menu	asmmenu	X	X		X	
Modify the state of an LED on a managed system	chled	X		X	X	
Modify the state of a logical partition LED	chled	X		X	X	
Modify Service Agent customer email notification settings	chsacfg	X	X	X	X	
Modify Service Agent FTP firewall settings	chsacfg	X	X	X	X	
Modify Service Agent FTP offload server settings	chsacfg	X	X	X	X	
Perform an operator panel service function on a logical partition	chsysstate	X	X	X	X	
Reset or reload a disk unit IOP	chsysstate	X	X	X	X	
Retrieve a dump from a managed system or frame	getdump	X	X	X	X	
Save and display an image of an HMC window	hmcwin	X	X	X	X	X
Start a dump on a managed system or frame	startdump	X	X	X	X	
Transfer a file from the HMC to a remote system using File Transfer	sendfile	X	X	X	X	X

Protocol						
Update a serviceable event on the HMC	chsvcevent	X	X	X	X	
View available dumps on a managed system or frame	lsdump	X	X	X	X	X
View LED resources of a logical partition	lsled	X	X	X	X	X
View LED resources of a managed system	lsled	X	X	X	X	X
View serviceable events for a managed system	lssvcevents	X	X	X	X	X
View reference codes for a logical partition	lsrefcode	X	X	X	X	X
View reference codes for a managed system	lsrefcode	X	X	X	X	X
View Service Agent customer email notification settings	lssacfg	X	X	X	X	X
View Service Agent FTP firewall settings	lssacfg	X	X	X	X	X
View Service Agent FTP offload server settings	lssacfg	X	X	X	X	X
View managed system or managed frame dumps residing on the HMC	lsdump	X	X	X	X	X
View the current state of readiness for service processor failover on a managed system	lssyscfg	X	X	X	X	X

For more information about service and support, see Overview of service and support. For more information about using commands, see Using the remote command line.

Parent topic: Overview of HMC tasks

Managed system power-on and power-off modes

Learn about the power-on options and the power-off options for a managed system.

This topic describes the power-on options and the power-off options that are available for starting and shutting down a managed system using a console.

The following table describes the power-on options. Power-off options are also available and described in a second table below.

Power-on mode	Description
Partition standby	Use this mode to create and activate logical partitions. When the partition standby power-on is completed, the operator panel on the managed system displays `Partition Standby`, indicating the managed system is ready for you to use the HMC to partition its resources. **Note:** Autostart partitions will not start if you power on using this mode. For more information about logical partitions, see Partitioning the server.
System profile	This option powers on the system according to a predefined set of profiles. **Note:** The profiles are activated in the order in which they are shown in the system profile. For more information about system profiles, see System profile.
Partition autostart	This option activates logical partitions that have been previously designated as autostart. For more information about logical partitions, see Partitioning the server.

For more information about powering on the managed system, see Powering on a managed system.

Use the following power-off options for shutting down a managed system.

Power-off mode	Description
Normal power off	The Normal power off mode shuts down the system's operations in a controlled manner. During the shutdown, programs running active jobs are allowed to perform cleanup (end-of-job processing).
Fast power off	The Fast power off mode shuts down the system by stopping all active jobs immediately. The programs running those jobs are not allowed to perform any cleanup. Use this option when you need to shut down the system because of an urgent or critical situation.

Parent topic: HMC concepts for managing servers

Managed system states

Learn about the operational states that are displayed for managed systems in the HMC.

You can monitor the current state of a system (server or frame) that is connected to the HMC. The state for each system that you are managing is displayed in the Contents area of the HMC window, in the column labeled State.

The following table describes the various states for managed systems. To view the states for frames, see Frame states.

State	Description
Power off	The managed system is powered off.
Operating	The managed system is powered on and functioning correctly.
Initializing	The managed system is powering on.
Error	The managed system's operating system or hardware is experiencing errors. See Correcting the managed system operating state.
Error - Dump in Progress	The managed system has started a system dump. When the dump is complete, see Managing dumps in the Troubleshooting topic.
Error - Terminated	The power-on operation failed.
Incomplete	The HMC failed to get all of the necessary information from the managed system. The managed system is not responding to requests for information. See Correcting the managed system operating state.
Pending Authentication - Password Updates Required	The managed system passwords have not been set. You must set the required passwords for the managed system, to enable secure authentication and access control from the HMC. See Overview of passwords for information about setting the required passwords.
Failed Authentication	The HMC access password for the managed system is not valid. Enter a valid password for the managed system. See Overview of passwords for more information about the HMC access password.
Recovery	The partition data and profile data stored in the managed system is damaged. See Correcting the managed system operating state.
No Connection	The HMC cannot contact the managed system. See Correcting the managed system operating state.
Standby	The managed system was powered on using the partition standby power-on option.

| On Demand Recovery | The anchor card has been replaced; activation codes for Power On Demand must be entered again. |

Frame states

Learn about the various operational states that are displayed for frames in the HMC.

The following table describes the states for frames that the HMC displays in the Contents area under the State label.

State	Description
Starting/Unknown	One of the bulk power assemblies (BPAs) contained in the frame is in the process of starting. The state of the other BPA cannot be determined.
Standby/Standby	Both of the bulk power assemblies (BPAs) contained in the frame are in the standby state. A BPA in the standby state is operating normally.
Standby/Starting	One of the bulk power assemblies (BPAs) contained in the frame is operating normally (in standby state). The other BPA is in the process of starting.
Standby/Not Available	One of the bulk power assemblies (BPAs) contained in the frame is operating normally (in the standby state), but the other BPA is not operating normally.
Pending frame number	A change to the frame number is in progress. No operations can be performed when the frame is in this state.
Failed Authentication	The HMC access password for the frame is not valid. Enter a valid password for the frame. See Overview of passwords for more information about the HMC access password.
Pending Authentication - Password Updates Required	The frame access passwords have not been set. You must set the required passwords for the frame, to enable secure authentication and access control from the HMC. See Overview of passwords for information about setting the required passwords.
No Connection	The HMC cannot connect to the frame.
Incomplete	The HMC failed to get all of the necessary information from the managed frame. The frame is not responding to requests for information. See Correcting the managed system operating state.

Note: For information about the operational states of the managed systems contained in the frame, see Managed system states.

Working with managed systems and frames

Learn how to perform actions on the HMC that pertain to the managed system.

You can use the HMC to communicate with the managed systems and frames in your environment. For example, you can use power-on options to start and shut down your managed systems, and to monitor system states.

Use the information in this topic to learn more about the tasks that you can perform using the HMC to work with the managed system and frames.

- **Powering on and off a managed system**
  Read about how to use the HMC to power on and off a managed system. Also find information about scheduling managed-system power operations.
- **Accessing a managed system**
  Learn how to access a managed system from the HMC after the HMC has been connected to it.
- **Enabling service processor failover**
  Enable a secondary service processor if your managed system's primary service processor fails.
- **Setting huge-page memory values**
  Specify the number of 16-GB pages to allocate to a huge-page memory pool.
- **Virtual operating system consoles**
  Learn how to use virtual operating system consoles on your HMC.
- **Finding and updating managed systems data on the HMC**
  Find and update managed-system information that is displayed on the HMC interface. Also, learn more about working with managed system profile data.
- **Managing frames using the HMC**
  Learn about the tasks that you can use to manage your frames in the HMC.
- **Managing operating systems**
  Understand how you can use the HMC to interact with the operating systems running on the managed systems.
- **Adding managed systems to the HMC environment**
  Understand how to add managed systems to the HMC, so that you can manage them using the HMC interface.
- **Deleting a managed system**
  Disconnect a managed system from the HMC before you physically detach it from the HMC.
- **Moving the managed system from an open network to a private network**
  Learn how to move a managed system that is attached to an HMC on an open network to an HMC that is located on a private network.
- **Servicing the managed system**
  Understand how you can use the HMC to perform service actions.

Parent topic: Managing your server using the Hardware Management Console

Powering on and off a managed system

Read about how to use the HMC to power on and off a managed system. Also find information about scheduling managed-system power operations.

You can use the HMC to control the power on a managed system. The following tasks describe these activities:

Note: For information about the power-on states that display for managed systems in the HMC, see Managed system states.

- **Powering on a managed system**
  Understand how to power on a managed system using the HMC.
- **Powering off a managed system**
  Understand how to use the HMC to power off a managed system.
- **Scheduling power-on and power-off operations for a managed system**
  Use the HMC to schedule power on and off operations for a managed system.

Powering on a managed system

Understand how to power on a managed system using the HMC.

You can use the HMC to power on a managed system and to monitor the power-on state.

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

- super administrator
- service representative
- operator
- product engineer

To power on a managed system, complete the following steps:

1. In the Navigation area, expand the Server and Partition folder.
2. Click the Server Management icon.
3. In the Contents area, select the managed system.
4. From the menu, click Selected > Power On.
5. Select the desired power-on mode and click OK.

For more information about each power-on mode, see Managed system power-on and power-off modes.

Powering off a managed system

Understand how to use the HMC to power off a managed system.

By default, the managed system is set to power off automatically when you shut down the last running logical partition on the managed system. If you set the managed system properties on the HMC so that the managed system does not power off automatically, you must use this procedure to power off your managed system.

Attention: If possible, shut down the running logical partitions on the managed system before powering off the managed system. Powering off the managed system without shutting down the logical partitions first causes the logical partitions to shut down abnormally and can cause data loss.

For more information about shutting down your logical partitions, see the following topics:

- Shutting down AIX
- Shutting down Linux

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

- super administrator

- service representative
- operator
- product engineer

To power off the managed system, complete the following steps:

1. In the Navigation area, expand the Server and Partition folder.
2. Click the Server Management icon.
3. In the Contents area, select the managed system.
4. From the menu, click Selected > Power Off.
5. Select the desired power-off mode and click OK.

For more information about the power-off modes, see Managed system power-on and power-off modes.

Parent topic: Powering on and off a managed system

Scheduling power-on and power-off operations for a managed system

Use the HMC to schedule power on and off operations for a managed system.

You can power your managed system on and off at regular intervals by scheduling an operation using the HMC.

To schedule a power on or off operation for the managed system using your HMC, complete the following steps:

1. In the Navigation area, expand the HMC Management folder.
2. In the Navigation area, click the HMC Configuration icon.
3. In the Contents area, click Schedule Operations.
4. From the list, select the managed system for which you want to schedule an operation and click OK.
5. Select Options > New.
6. In the Add a Scheduled Operation window, select the managed system power operation that you want to perform and click OK.
7. In the appropriate fields, enter the time and date that you want this managed system power operation to occur.
8. If you want this scheduled operation to repeat, click the Repeat tab and select the intervals at which you want the power operation to repeat.
9. When you are finished, click Save.

Parent topic: Powering on and off a managed system

Accessing a managed system

Learn how to access a managed system from the HMC after the HMC has been connected to it.

This topic describes how to access the managed system for the first time, after you have connected the HMC to the managed system and powered on the managed system.

The following topics explain more about accessing your managed system using the HMC.

- Overview of passwords

- Virtual operating system consoles

For more information about connecting the HMC, see Setting up the Hardware Management Console.

For more information about the Advanced System Management Interface (ASMI), see Managing your server using the Advanced System Management Interface.

- **Overview of passwords**
  Describes the passwords that you need in order to access a managed system using your HMC.
- **Changing the managed system's password**
  Update a managed system's password using the HMC.

Parent topic: Working with managed systems and frames

Overview of passwords

Describes the passwords that you need in order to access a managed system using your HMC.

The first time you access a managed system using an HMC, the system prompts you to enter passwords for each of the following:

- Hardware Management Console: HMC access
- Advanced System Management Interface: General
- Advanced System Management Interface: Admin

If all required passwords are not set, the state of the managed system displays *Pending Authentication Password Updates Required* until these passwords are set.

To change the managed system's password, see Changing the managed system's password.

If you are using an HMC to access the managed system before all required passwords have been set, enter the appropriate password for each password that is presented in the Update Password Pending Authentication window. If another HMC subsequently needs access to this managed system, upon attempting to access this HMC the user is presented with the Update Password Failed Authentication window, which will prompt for the HMC access password you entered.

In the event that the HMC access password changes while you are logged in to the managed system, your HMC will discover that it can no longer authenticate after it attempts to reconnect to that managed system. This will result in a state of *Failed Authentication* for that managed system. You will be required to enter the new password before any actions can be performed.

For more information about the Advanced System Management Interface (ASMI), see Managing your server using the Advanced System Management Interface.

Parent topic: Accessing a managed system

Changing the managed system's password

Update a managed system's password using the HMC.

You can use the HMC interface to change a managed system's HMC access password. If you change this password, you must change the password for any other HMCs that connect to this managed system.

The super administrator user role is required to change this password.

To change the managed system's HMC access password, complete the following steps:

1. In the Navigation area, expand the **Server and Partition** folder.
2. In the Navigation area, click the Server Management application icon.
3. In the Contents area, right-click the managed system and then select Update Managed System Password.
4. Type in your current password and new password in the entry fields.
5. Click **OK**.

For information about additional passwords that must be set before you can perform any tasks, see Overview of passwords.

Parent topic: Accessing a managed system

Enabling service processor failover

Enable a secondary service processor if your managed system's primary service processor fails.

You can use your HMC to have your managed system automatically enable a secondary service processor if your managed system's primary service processor fails.

To enable service processor failover, you must be a member of one of the following roles:

- super administrator
- service representative
- operator
- product engineer

To enable service processor failover, complete the following steps:

1. In the Navigation area, expand the **Server and Partition** folder.
2. Click the **Server Management** icon.
3. In the Contents area, right-click the managed system or frame.
4. Select **Status**.
5. In the Service Processor Connection Status window, click **Service processor failover enabled**.
6. Click **OK**.

   In the error log, an informational SRC of B1xxE66C indicates that the primary service processor in the managed system has performed an administrative failover and transferred system management to the secondary service processor. The error log entry that contains this SRC is created in the primary service processor's error log and copied over to the secondary service processor's error log.

- **Initiating a service processor failover**
  Force a failover after enabling the service processor failover mode on your managed system.

Parent topic: Working with managed systems and frames

Initiating a service processor failover

Force a failover after enabling the service processor failover mode on your managed system.

After enabling service processor failover mode on a managed system, you can use your HMC to initiate a failover. This task is useful for forcing a failover to test that the secondary processor is activated during a failover event. The service processor readiness state must be *ready* before you can initiate a failover.

To initiate a service processor failover, you must be a member of one of the following roles:

- super administrator
- service representative
- product engineer

To initiate a service processor failover, complete the following steps:

1. In the Navigation area, expand the **Service Applications** folder.
2. Click Service Focal Point and select Service Utilities from the Tasks list.
3. In the Service Utilities dialog box, select the managed system and click Selected from the Service Utilities menu.
4. Select Service Processor Failover.
5. In the Administrative Processor Failover dialog box, ensure that the service processor failover is enabled and the readiness state is *ready*.
6. Click **OK**.

   In the error log, an informational SRC of B1xxE66C indicates that the primary service processor in the managed system has performed an administrative failover and transferred system management to the secondary service processor. The error log entry that contains this SRC is created in the primary service processor's error log and copied over to the secondary service processor's error log.

Parent topic: Enabling service processor failover

Setting huge-page memory values

Specify the number of 16-GB pages to allocate to a huge-page memory pool.

On managed systems that support huge-page memory, you can use the Hardware Management Console (HMC) to set the value for the huge-page memory pool. You can also specify values for the number of huge pages to allocate to logical partitions.

Using huge pages can improve performance in specific environments that require a high degree of parallelism, such as in DB2 partitioned database environments. You can specify huge-page memory that can be used for the shared-memory buffer pools in DB2. For logically partitioned systems, you can specify the minimum, desired, and maximum number of huge pages to assign to a partition when you create the partition or partition profile. See Creating logical partitions and partition profiles.

To set the huge-page memory values, the system must be in the powered-off state. The new value will take effect when you restart the system.

Use the following information to determine the requirements and appropriate values for your specific application, and to set the huge-page values.

- **Calculating huge-page memory requirements**
  Calculate the value for the number of pages to allocate to a huge-page memory pool.
- **Viewing and setting huge page memory values**
  View and set values for huge-page memory allocation.

Parent topic: Working with managed systems and frames

Calculating huge-page memory requirements

Calculate the value for the number of pages to allocate to a huge-page memory pool.

To use huge-page memory, you must ensure that your system has adequate memory resources to dedicate to the huge-page memory pool. The huge-page memory pool is a region of system memory that is mapped as 16-GB page segments and is managed separately from the system's base memory. Before you can specify the value for huge-page memory, you must determine which applications you are running and what the huge-page requirements are for your applications.

Determining huge-page memory requirements for your application

The huge-page memory pool can be used to enhance performance for DB2 partitioned database environments in AIX operating systems. For DB2 applications, you would typically use huge pages for large DB2 multipartitioned database environments to efficiently support the degree of parallel activity required of shared memory buffer pools. To determine this value, calculate the amount of memory required for the shared buffer pool to support your DB2 applications. Refer to the DB2 recommendations for buffer pool memory for your particular application.

In logically partitioned systems, you can assign huge-page memory when you create the partitions. This value is separate from the value that you specify for the configured-partition memory region. You can specify a minimum, desired, and maximum value. To determine the number of huge pages needed for your logical partitions, see the section below that discusses calculating huge page values.

Note: The huge page memory allocation cannot be changed dynamically. Changing the number of huge pages on the server requires a server reboot, and changing the number of assigned huge pages for a partition requires a partition reboot.

Considerations for calculating the huge page values

The amount of huge-page memory that you can allocate is dependent on the following factors:

- Total amount of licensed memory for your server
- Amount of available memory after configured memory resources are accounted for
- Number of physical IO connections to the server (each IO connection requires memory for the IO tables, which can be distributed among the physical memory regions and reduces the memory available for huge pages)
- Base memory configuration for logical partitions (huge pages are not calculated as part of the configured-partition memory allocation)
- The requirements that define a huge page, that is each huge page requires 16 GB of contiguous real memory and must start on a 16-GB memory boundary

Attention: The server firmware will reduce the huge-page pool size to satisfy some of these dependencies. When this occurs, error log entries are generated to indicate that the huge-page pool size was reduced. The error log reference code is B700 5300. The reference code details will indicate hexadecimal values that indicate why the huge-page pool size could not be satisfied. The following example shows the possible entries and how to interpret the additional words in these entries:

- word 3 = 0x0000000100000106 - huge page pool reduced to satisfy system hardware configuration
    - ♦ word 4 = number of user-configured huge pages
    - ♦ word 5 = number of huge pages that could be provided
- word 3 = 0x0000000100000105 - huge page pool reduced to satisfy the memory configuration of partitions
    - ♦ word 4 = number of huge pages before partitions were created
    - ♦ word 5 = firmware calculated number of huge pages after satisfying partition memory requirements
    - ♦ word 6 = number of huge pages in the pool

Calculating huge-page memory values

To calculate the server memory requirements to support huge pages, use the following steps:

1. Determine the amount of base system memory and round that figure to the next 16-GB value. To determine the base server memory requirements, which includes the POWER hypervisor and partition, but not huge pages, use the LPAR Validation tool (LVT) or System Planning Tool. See Planning for logical partitions for information about using these planning tools.
2. Determine the number of IO connection loops on your system and multiply the number by 16 GB. This calculation is required because the server needs a memory table for each IO connection, and a 16-GB huge page cannot be located where an IO table exists.
3. Take the larger of the values determined in step 1 and step 2. This will be your base memory value.
4. Determine the number of huge pages that will be required for your AIX applications. To determine this value, use the guidelines provided by your application documentation and the AIX Performance Management Guide. Multiply the number of anticipated huge pages by 16 GB. Add this figure to the base figure determined in step 3. The resulting figure provides an estimate of the amount of licensed memory required to satisfy partition and huge-page pool memory requirements for your system.

Parent topic: Setting huge-page memory values

Viewing and setting huge page memory values

View and set values for huge-page memory allocation.

On systems that support huge-page (16 GB) memory allocation, you can view and set the current value in the huge-page memory table. On a new system you must set this value initially to establish the huge-page memory pool. You must set the value when the managed system is in the powered-off state. If this value is already set, you might need to change the value to adjust for performance needs based on the applications that you are running and your partitioning configurations. You can also change the values set for the number of huge pages allocated to your logical partitions.

Use this task to view huge-page values and to set or adjust the number of 16-GB pages for the huge-page allocation according to your needs. Before setting a value, review the information in Calculating huge-page memory requirements.

To view or change huge-page-memory table values, you must be a member of one of the following roles:

- super administrator
- service representative

Note: You must power off the managed system before you can change the huge page memory value for the system. To change the values for logical partitions you must shut down the partition. The new value will take effect when you restart the system.

To view or set huge-page memory values, complete the following steps:

1. In the Navigation area, expand the **Server and Partition** folder.
2. Click the **Server Management** icon.
3. In the Contents area, select the managed system.
4. In the menu click Selected, and choose Properties.
5. In the Managed System Properties dialog box, view the Capabilities information to determine if huge page memory allocation is supported on the managed system. Click the Memory tab to view or

change the huge page memory allocation displayed under Advanced Options. If the information is not displayed in the Advanced Options area, click Show details.

Note: You can view and change the current settings for huge-page minimum, desired, and maximum values for logical partitions by viewing the partition properties. See Modifying partition properties for further details.

Parent topic: Setting huge-page memory values

Virtual operating system consoles

Learn how to use virtual operating system consoles on your HMC.

You can connect to logical partition operating systems, for example to manage resources, by using your HMC interface to open a virtual console window. The following task explains how to verify that consoles are configured.

Parent topic: Working with managed systems and frames

Finding and updating managed systems data on the HMC

Find and update managed-system information that is displayed on the HMC interface. Also, learn more about working with managed system profile data.

This topic describes how to find information about each of the managed systems that are attached to the HMC. Also, learn how to perform tasks to ensure the integrity of the managed system data maintained by the HMC.

- **Viewing information about the managed system**
  View information about the managed system's configuration and capabilities.
- **Viewing resource utilization for a managed system**
  Use this procedure to view the resource utilization data for a managed system using the Hardware Management Console (HMC).
- **Updating managed system or frame information**
  Update the system information for a managed system or frame in the HMC that is in an Incomplete state.
- **Disconnecting another HMC connection**
  Read about how to manually unlock an HMC locked connection to the managed system.
- **Recovering partition data on a managed system**
  Learn how to recover the partition data on your managed system if it becomes corrupted.

Parent topic: Working with managed systems and frames

Viewing information about the managed system

View information about the managed system's configuration and capabilities.

You can view the managed system's configuration and capabilities. To view information about the managed system, expand the Server and Partition folder in the Navigation area. Then, click the Server Management icon. The Contents area expands to show each managed system, which you can then expand to show information about the managed system, including its name, its state, and the operator panel value.

Any user can view managed system properties.

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.

To view the detailed managed system properties, do the following:

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

   The HMC displays the system's name, logical 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 available and assigned processors, memory, I/O drawers and slots, power-on parameters, reference codes, and policy information. The HMC also displays power-on parameters and reference codes for a managed system in the power-off state.

   The Processor tab displays information that is helpful when performing Dynamic Logical Partitioning processor tasks. Use the Processor tab to view processor usage data for partitions and determine whether a processor is assigned to a logical partition. The information in the Processor tab is also helpful when you need to know if processors are disabled and therefore cannot be used by any logical partition.

   The Memory tab shows deconfigured resources, as well as information about available and configured memory. To view or change memory allocation on systems with huge page table support, use the Memory tab and select Show details in the Advanced Options area. To change the requested value for huge page memory, the system must be powered off.

   The information provided in the memory tab (for example, deconfigured resources), along with the information provided on the I/O tab, is useful for planning for processors and dynamic logical partitions.

Parent topic: Finding and updating managed systems data on the HMC

Updating managed system or frame information

Update the system information for a managed system or frame in the HMC that is in an Incomplete state.

Updating, or *rebuilding* a managed system or frame acts much like a refresh of the managed system or frame information. Rebuilding the managed system or frame is useful when the system's state indicator in the contents area of the HMC GUI is shown as *Incomplete*. The Incomplete indicator signifies that the HMC cannot gather complete logical partition, profile, or resource information from the managed system.

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

To update managed system or frame information, you must be a member of one of the following roles:

- super administrator
- service representative
- operator
- product engineer

To update the managed system or frame information, complete the following steps:

1. In the contents area, select the managed system or frame.
2. From the menu, click Selected.
3. Choose from the following options:
   - To rebuild a managed system, click Rebuild Managed System. The current system information displays.

♦ To rebuild a managed frame, click Rebuild Managed Frame. The current system information displays.
4. Click Yes.

Parent topic: Finding and updating managed systems data on the HMC

Disconnecting another HMC connection

Read about how to manually unlock an HMC locked connection to the managed system.

If you have two HMCs connected to the managed system, one HMC temporarily locks the other out while it is performing operations. This action 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 need to manually disconnect the connection to the managed system. Typically, if one HMC has locked the connection, you must unlock it from the other HMC, which then allows other HMCs to communicate with the managed system and run further commands.

To release a lock on a managed system requires the super administrator role.

To unlock an HMC connection, complete the following steps:

1. In the Contents area, select the managed system.
2. In the menu, click Selected.
3. Select Disconnect another HMC. The Disconnect Another HMC window opens.
4. From the list, select the HMC that you want to disconnect, and then click OK.

Parent topic: Finding and updating managed systems data on the HMC

Recovering partition data on a managed system

Learn how to recover the partition data on your managed system if it becomes corrupted.

Through the HMC interface, you can recover partition data on your managed system if the data becomes damaged. This partition data includes information about logical partitions, partition profiles, and system profiles. If the partition data on your managed system becomes damaged, the managed system is in *recovery* state. You can either restore the partition data from a backup file that is saved automatically on your HMC by selecting Restore profile data from the HMC backup data, or clear all partition configuration with Initialize the managed system.

This procedure recovers the partition data in the service processor of your server. To recover the partition data on your managed system, see Restoring profile data.

Note: The HMC might not show *operating* state for the managed system after completing this recovery procedure. After a partition is activated, the managed system will transition to an *operating* state and clear the A700 4091 or C700 4091 SRC.

To recover the partition data on your managed system, you must be a member of one of the following roles:

- super administrator
- operator

To recover the partition data on your managed system, do the following:

1. In the Navigation Area, open Server and Partition.
2. Select Server Management.
3. In the contents area, right-click the managed system whose partition data you want to recover and select Recover Partition Data.
4. Select one of the following:
    - Restore profile data from HMC backup data: This option restores the partition data using the backup file that is saved automatically on the HMC.
    - Initialize the managed system: This option clears all partition configuration data, and can only be used if all partitions are in the *Not Activated* state.
5. Click OK.

Parent topic: Finding and updating managed systems data on the HMC

Managing frames using the HMC

Learn about the tasks that you can use to manage your frames in the HMC.

This topic describes how to perform various tasks related to managing your frame that is connected to the HMC.

- **Adding a frame**
  Use this procedure to add a frame manually to the HMC.
- **Initializing a frame**
  This topic explains how to initialize a frame after a new frame has been added.
- **Modifying information about a frame**
  Change a frame's name and number.
- **Updating frame information**
  Rebuilding the managed frame information for theHMC. This procedure is helpful when clearing an *Incomplete* state.
- **Resetting or removing a frame connection**
  This information explains how to reset the HMC connection to a frame, or remove a locked connection to a managed system.

Parent topic: Working with managed systems and frames

Adding a frame

Use this procedure to add a frame manually to the HMC.

New frames are automatically detected, or discovered, by the HMC when the HMC is configured as a DHCP server. For information about configuring your HMC as a DHCP server, see The HMC as a DHCP server. Upon detection of a new frame, the DHCP server assigns an IP address to the frame. This newly assigned IP address remains static as long as the MAC address remains unchanged. When a frame is replaced, the DHCP server assigns a new IP address and broadcasts an update to all HMCs on the network.

Note: Add a frame by configuring your HMC to automatically detect new frames. Use the instructions provided at the link referenced in the preceding paragraph.

In addition to adding a frame automatically, the HMC allows you to manually add frames to the managed frames of this HMC. You will need to provide the host name and IP address for each frame that you want to add. You can also find a frame on the network within a specified IP address range. The discovery processing time can vary depending on the range of IP addresses that you entered and your network configuration.

To add a frame, you must be a member of one of the following roles:

- super administrator
- operator
- product engineer

To add a frame, complete the following steps:

1. In the Navigation Area, expand the Server and Partition folder.
2. Select Frame Management.
3. Select Add Managed Frame(s). Type the requested information. If you want to find a frame in the network, select Find managed frames and type the IP address range.
4. Click Next.
5. Click Finish.

Parent topic: Managing frames using the HMC

Initializing a frame

This topic explains how to initialize a frame after a new frame has been added.

After you add a frame in the HMC, it must be initialized before it can be detected by the managed system. Initialization of the frame consists of powering on all the I/O drawers followed by powering on all the managed systems that belong to the managed frame. The initialization time might vary depending upon your setup.

To initialize a frame, you must be a member of one of the following roles:

- super administrator
- operator
- product engineer

To initialize a frame, complete the following steps:

1. In the Navigation Area, expand the Server and Partition folder.
2. Select Frame Management.
3. From the menu, click Frame Management.
4. Select Initialize Frame(s).
5. Click Continue.

Parent topic: Managing frames using the HMC

Modifying information about a frame

Change a frame's name and number.

You can view frame information and change the frame name and number.

Any user can view or modify frame properties.

To view and change the frame's properties, complete the following steps:

1. In the Navigation Area, expand the Server and Partition folder.
2. Select Frame Management.
3. In the Contents area, select the frame.
4. From the menu, click Selected.
5. Click Properties. You can also access this option by right-clicking the frame and selecting Properties on the menu.

   By default, you are viewing the General tab that includes the frame name, number, state, type and serial number. To view a list of all the managed systems contained in the frame, use the Managed Systems tab. The information in the I/O Units tab is helpful when you need to know all the I/O Units contained in the frame.
6. Change the frame name and number, if desired.
7. Click OK.

Parent topic: Managing frames using the HMC

Updating frame information

Rebuilding the managed frame information for theHMC. This procedure is helpful when clearing an *Incomplete* state.

Updating, or *rebuilding*, the frame acts much like a refresh of the frame information. Rebuilding the frame is useful when the system's state indicator in the contents area of the HMC GUI is shown as *Incomplete*. The Incomplete indicator signifies that the HMC cannot gather complete resource information from the managed system within the frame.

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

To update frame information, you must be a member of one of the following roles:

- super administrator
- operator
- product engineer

To update the frame, complete the following steps:

1. In the Navigation Area, expand the Server and Partition folder.
2. Select Frame Management.
3. In the Contents area, select the frame.
4. From the menu, click Selected.
5. Click Rebuild Managed Frame. The current frame information displays.
6. Click Yes.

Parent topic: Managing frames using the HMC

Resetting or removing a frame connection

This information explains how to reset the HMC connection to a frame, or remove a locked connection to a managed system.

When you no longer want to manage a frame using the HMC, you can remove the connection. You must remove the connection before you physically disconnect the HMC from the managed frame (or from the network).

In the rare event that the frame is in the *No connection* state, you can recover by resetting the connection with the frame. Reset the connection with the managed frame after you have verified that the network settings are correct on both the HMC and the managed frame. Performing this action will break and reestablish the connection.

To reset or remove a frame connection, you must be a member of one of the following roles:

- super administrator
- service representative
- operator

To reset or remove a frame connection, complete the following steps:

1. In the Navigation Area, expand the Server and Partition folder.
2. Select Frame Management.
3. In the Contents area, select the managed system.
4. In the menu, click Selected.
5. Select Reset or Remove Connection from the menu.
6. Click Remove Connection or Reset Connection.
7. Click OK.

After the frame's logical connection is removed, you can remove the HMC from the network.

Parent topic: Managing frames using the HMC

Managing operating systems

Understand how you can use the HMC to interact with the operating systems running on the managed systems.

You can force some operating systems to shut down or reset using the HMC interface. For more information about these tasks, review the following topics.

- **Resetting the operating system on a partition**
  Restart the operating system when an operating system in a logical partition hangs.
- **Shutting down an operating system**
  This information explains how to shut down an operating system in a logical partition.

Parent topic: Working with managed systems and frames

Resetting the operating system on a partition

Restart the operating system when an operating system in a logical partition hangs.

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

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

- super administrator
- service representative

Note: For logical partitions, use this task only if you cannot restart the logical partition from the command line of the operating system. Using this window to restart an logical partition will result in an abnormal IPL.

To reset the operating system on a logical partition, complete the following steps:

1. In the Navigation Area, expand Server and Partition.
2. Click Server Management.
3. In the Contents area, select the logical partition that is running the operating system that you want to reset.
4. In the menu, click Selected > Restart partition.
5. Select the type of operating system restart.
6. Click Yes.

Parent topic: Managing operating systems

Shutting down an operating system

This information explains how to shut down an operating system in a logical partition.

You can use the HMC interface to perform shutdown operations on a logical partition. You can perform this task only if the operating system that is running on the logical partition supports this function.

Note: If your logical partition is running , shut down the operating system manually through the operating system, if possible. Using the HMC interface to power off the logical partition operating system will cause longer restart times. For more information about shutting down an logical partition, see Shutting down .

To shut down an operating system on a logical partition, complete the following steps:

1. In the Contents area, select the logical partition running the operating system that you want to reset.
2. In the menu, click Selected > Shut Down Partition.
3. Select the type of shutdown that you want to perform.
4. Click OK.

Parent topic: Managing operating systems

Adding managed systems to the HMC environment

Understand how to add managed systems to the HMC, so that you can manage them using the HMC interface.

You can manage multiple systems from a Hardware Management Console (HMC). To add a managed system to the HMC, you must establish a network connection between the HMC and the service processor of the new system. Configuring the HMC to work with the new managed system depends on how you have set up and configured the existing network connections between the HMC and the already-installed managed systems,

including connections to the logical partitions.

For more information about configuring network connections on the HMC, see HMC network connections.

Use the following topics to determine how to add a managed system to your HMC environment based on your existing network configuration. After completing the HMC connection, add the system to your HMC environment by selecting the managed system connection in the HMC GUI and selecting Add managed system from the Selected menu. Follow the instructions in the Add managed system window by specifying the name or IP address of the managed system or specifying a range of IP addresses to find and select the managed system to add. For more information about the Add managed system function, refer to the HMC GUI help.

- **Using an existing private network with the HMC acting as a DHCP server**
  Use a dedicated private network that you already have set up with the HMC acting as a DHCP server to manage your system.
- **Using an existing open network**
  Understand the requirements for using the HMC in a configured open network.

Parent topic: Working with managed systems and frames

Using an existing private network with the HMC acting as a DHCP server

Use a dedicated private network that you already have set up with the HMC acting as a DHCP server to manage your system.

If your existing network is already set up as a "private" dedicated network with the HMC acting as a DHCP server, then you must physically connect to the new system. For more information about physically connecting to a new managed system, see Setting up the Hardware Management Console. If you have an Ethernet switch with available ports connected to the HMC, connect the Ethernet cable from the service processor of the new system to the Ethernet switch. When the connection is made, the HMC automatically detects the managed system and adds it to the Contents area of the HMC interface. Automatic detection does not occur if you removed the managed system prior to its availability.

Parent topic: Adding managed systems to the HMC environment

Using an existing open network

Understand the requirements for using the HMC in a configured open network.

If the HMC was connected to existing managed systems over an "open" (public) network, other types of devices and systems can exist on the network. More specifically, the HMC is not acting as a DHCP server. In this environment, you must take one of the following actions to use the HMC:

- Manually configure the new managed system's service processor with a static (fixed) set of IP parameters using the Advanced System Management Interface.
- Manually configure the IP address of the new system's service processor, if there is an existing DHCP server on the network.

When the connection is made, you can add the managed system by using the Add managed systems function or the **mksysconn** command.

Parent topic: Adding managed systems to the HMC environment

Deleting a managed system

Disconnect a managed system from the HMC before you physically detach it from the HMC.

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

Note: You must delete the managed system from the Contents area before you disconnect the Ethernet or the network-attached cable from the hardware.

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

To delete the managed system from the Contents area, complete the following steps:

1. In the Contents area, select the managed system.
2. From the menu, click Selected.
3. Select Reset or Remove Connection from the menu.
4. Click remove, then click OK.

After the managed system's logical connection is removed, you can remove the managed system from the network.

Parent topic: Working with managed systems and frames

Moving the managed system from an open network to a private network

Learn how to move a managed system that is attached to an HMC on an open network to an HMC that is located on a private network.

You can move a managed system from an open network to a private network. It is recommended that you configure the HMC that is located on the private network as a DHCP server before you attach the new managed system. This configuration will allow the HMC to automatically detect the newly added managed system and assign it a unique IP address.

To perform this operation, you must be a member of one of the following roles:

- super administrator
- service representative
- product engineer

To move the managed system from an open network to a private network, complete the following steps:

1. Configure the HMC that is located on the private network as a DHCP server. For more information, see Configuring the HMC as a DHCP server.
2. Remove the static IP address of the managed system that you want to move using the Advanced System Management Interface (ASMI). For more information about how to use ASMI to configure the HMC as a DHCP server, see Configuring network interfaces.
3. Disconnect the cable of the managed system that you want to move from the HMC that is located on the open network.

4. Connect the cable of the managed system to the HMC located on the private network. Because you previously configured the HMC that is located on the private network as a DHCP server, the newly attached managed system is automatically detected and assigned a new IP address.

Parent topic: Working with managed systems and frames

Servicing the managed system

Understand how you can use the HMC to perform service actions.

The Customer service, support, and troubleshooting topic provides an overview of the elements of the service and support environment. It also describes the different functions and features of the environment and the HMC applications that provide those functions.

Parent topic: Working with managed systems and frames

Using the Network Manager

Learn how to use the Network Manager to manage InfiniBand (IB) networks.

The Network Manager enables you to manage your InfiniBand (IB) network from the Hardware Management Console (HMC).

Use the Network Manager to manage IB switches, update switch software, view network topology information, and view and modify management properties. You must enable the Network Manager from the HMC before you can use it to manage your network.

For information about setting up the HMC in an InfiniBand (IB) network, see Setting up the HMC.

The following topics describe the tasks that you can perform with the Network Manager:

- **Enabling and disabling the Network Manager**
  Enable the Network Manager to manage your InfiniBand (IB) switch network.
- **Viewing switch topology information in an InfiniBand network**
  View information about the switch layout and connectivity in your InfiniBand (IB) network.
- **Viewing server topology information in an InfiniBand network**
  View information about the physical layout of your InfiniBand (IB) network.
- **Viewing logical topology information in an InfiniBand network**
  View information about the logical server layout in your InfiniBand (IB) network.
- **Viewing Network Manager properties**
  View and manage switch information and the properties of the currently enabled Network Manager for your InfiniBand (IB) environment.
- **Viewing the Network Manager log**
  View the Network Manager event log.
- **Updating switch software**
  Use the Network Manager to update the software for all the switches in your InfiniBand (IB) network.

Parent topic: Managing your server using the Hardware Management Console

Enabling and disabling the Network Manager

Enable the Network Manager to manage your InfiniBand (IB) switch network.

Before you can use the Network Manager to manage your InfiniBand (IB) network switches and systems, you must enable it from the HMC. When you enable the Network Manager, it starts discovery and begins providing data about the status of your IB switch network.

Any user can enable or disable the Network Manager.

Note: If you decide to move the Network Manager functions from one HMC host to another HMC host, you must first disable the Network Manager on the first HMC host before enabling it on the second host.

To enable or disable the Network Manager, complete the following steps:

1. In the Navigation area, expand the Switch Management folder.
2. Click Network Manager.
3. In the Network Manager menu, select Enable Network Manager Software.

    To disable the Network Manager, select Disable Network Manager Software.

Parent topic: Using the Network Manager

Viewing switch topology information in an InfiniBand network

View information about the switch layout and connectivity in your InfiniBand (IB) network.

You can view information about the switches in your InfiniBand (IB) network that identifies the physical location and connection activity for all connected switch devices. From within the topology view window, you can access additional menu options for the objects that you select in the list. For example, when you select a switch and then click Selected > Properties, you can view system, subnet manager, and backplane details for that item. For more information about the menu options in the switch topology view, see the online help.

Any user can view the switch topology information.

Note: The Network Manager must be enabled in order for you to access this task in the HMC.

To view the switch topology information, complete the following steps:

1. In the Navigation area, expand the Switch Management folder.
2. Click Network Manager.
3. In the Network Manager menu, select View Switch Topology.

    The HMC displays a table with a list of the switches in the IB network. By default, the information presented shows the switch device name (or identifier), location code, frame information, power on and off status, GUID, port status, and neighboring port (link) information.

    To change the columns displayed in the list of information, click View > Show Columns and select or clear the check box for the columns that you want to designate as the default columns.

Parent topic: Using the Network Manager

Viewing server topology information in an InfiniBand network

View information about the physical layout of your InfiniBand (IB) network.

You can view information about the servers, adapters, and ports in your InfiniBand (IB) network.

Any user can view the server topology information.

Note: The Network Manager must be enabled in order for you to access this procedure.

To view the server topology information, complete the following steps:

1. In the Navigation area, expand the Switch Management folder.
2. Click Network Manager.
3. In the Network Manager menu, select View End-Point Topology.

   The HMC displays a table with a list of the servers in the InfiniBand cluster. By default, the information presented shows the server name, location code, power on/off status, frame/cage information, adapter status, port status, and neighbor port (link) information.

   To change the columns displayed in the list of information, click View > Show Columns and select or clear the check box for the columns that you want to designate as the default columns.

Parent topic: Using the Network Manager

Viewing logical topology information in an InfiniBand network

View information about the logical server layout in your InfiniBand (IB) network.

You can view information about the servers, adapters, ports, and related status for the logical partitions in your InfiniBand (IB) network.

Any user can view the logical topology information.

Note: The Network Manager must be enabled in order for you to access this procedure.

To view the logical topology information, complete the following steps:

1. In the Navigation area, expand the Switch Management folder.
2. Click Network Manager.
3. In the Network Manager menu, select View Logical Topology.

   The HMC displays a table with a list of the servers and partitions in the InfiniBand (IB) configuration. By default, the information presented shows the server name, location code, system or logical partition status, adapter status, type, the GUID, port status, and neighbor port (link) information.

   To change the columns displayed in the list of information, click View > Show Columns and select or clear the check box for the columns that you want to designate as the default columns.

Parent topic: Using the Network Manager

Viewing Network Manager properties

View and manage switch information and the properties of the currently enabled Network Manager for your InfiniBand (IB) environment.

You can view and modify the Network Manager properties and the switch-management properties for your InfiniBand (IB) network. For example, use this procedure to change the Network Manager default name assigned to the managed switches. Using switch names provides a convenient way to keep track of the switches you are managing (particularly when frame numbers or cage numbers are not readily available). You can also change the switch-management priority (change the subnet manager master and succession order), synchronize the switch local time with the HMC time (NTP time is not currently supported), and view the switch topology.

Any user can view the Network Manager properties.

Note: The Network Manager must be enabled in order for you to access this task from the HMC.

To view the properties, complete the following steps:

1. In the Navigation area, expand the Switch Management folder.
2. Click Network Manager.
3. In the Network Manager menu, select View Management Properties.
4. Click the Network Manager tab to view the properties.

    The HMC displays the HMC host name, the IP address, and version number of the currently enabled Network Manager.
5. Click Switch to view and modify information about the switches in your InfiniBand (IB) environment.

Parent topic: Using the Network Manager

Viewing the Network Manager log

View the Network Manager event log.

The Network Manager maintains an event log that you can view to track the Network Manager activities.

Any user can view the event log.

Note: The Network Manager must be enabled in order for you to access this task in the HMC.

To view the Network Manager event log, complete the following steps:

1. In the Navigation area, expand the Switch Management folder.
2. Click Network Manager.
3. In the Network Manager menu, select View Network Manager Event Log.

    The HMC displays the contents of the log file.

Parent topic: Using the Network Manager

Updating switch software

Use the Network Manager to update the software for all the switches in your InfiniBand (IB) network.

You can update multiple switches simultaneously for a single software version, or choose a switch and the version of software to apply for the update of that switch. You can start another switch installation before a switch update procedure that is currently running has finished; however, if both installations run concurrently and contain the same switch, the subsequent installation action might fail.

An Import option allows you to add more software versions from a DVD.

Any user can update the switch software.

Note: The Network Manager must be enabled in order for you to access this task from the HMC.

To update your switch software, complete the following steps:

1. In the Navigation area, expand the Switch Management folder.
2. Click Network Manager.
3. In the Network Manager menu, select Update Switch Software.
4. Select the switches that you want to update.
5. Select the software version to install for the selected switch or switches.
6. Click **OK** to start the software update.

Note: To uninstall the last update, select **Return switch to previous software**.

Parent topic: Using the Network Manager

Related information

Review technical and "how-to" information.

You can view or download the following ESCALA Power5 Hardware Information topics related to the Managing your server using the HMC topic:

- Managing the Hardware Management Console
- Managing your server using the Advanced System Management Interface
- Clustering systems using InfiniBand (IB) hardware
- Partitioning the server
- Working with Power On Demand
- Setting up your server to connect to service and support

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Parent topic: Managing your server using the Hardware Management Console

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