Hardware Management Console Operations Guide

Version 2.9.0

SC28-6821-00

Level 00a, March 2006

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Note!

Before using this information and the product it supports, be sure to read the information under "Safety and Environmental Notices" on page vii and Appendix F, "Notices," on page F-1.

First Edition (September 2005)

This edition, SC28-6821-00, applies to the IBM® Hardware Management Console Application, 2.9.0.

There may be a newer version of this document in **PDF** format available on **Resource Link™**. Go to *http://www.ibm.com/servers/resourcelink* and click on **Library** on the Navigation bar. A newer version is indicated by a lower-case, alphabetic letter following the form number suffix (for example: 00a, 00b, 01a, 01b).

Contents

Safety and Environmental Notices

Safety Notices

Safety notices may be printed throughout this guide. **DANGER** notices warn you of conditions or procedures that can result in death or severe personal injury. **CAUTION** notices warn you of conditions or procedures that can cause personal injury that is neither lethal nor extremely hazardous. **Attention** notices warn you of conditions or procedures that can cause damage to machines, equipment, or programs.

There are no **DANGER** notices in this guide.

World Trade Safety Information

Several countries require the safety information contained in product publications to be presented in their national languages. If this requirement applies to your country, a safety information booklet is included in the publications package shipped with the product. The booklet contains the safety information in your national language with references to the US English source. Before using a US English publication to install, operate, or service this IBM product, you must first become familiar with the related safety information in the booklet. You should also refer to the booklet any time you do not clearly understand any safety information in the US English publications.

Laser Safety Information

All System z9 and zSeries models can use I/O cards such as PCI adapters, ESCON, FICON, Open Systems Adapter (OSA), InterSystem Coupling-3 (ISC-3), or other I/O features which are fiber optic based and utilize lasers or LEDs.

Laser Compliance

All lasers are certified in the U.S. to conform to the requirements of DHHS 21 CFR Subchapter J for class 1 laser products. Outside the U.S., they are certified to be in compliance with IEC 60825 as a class 1 laser product. Consult the label on each part for laser certification numbers and approval information.

CAUTION:
Data processing environments can contain equipment transmitting on system links with laser modules that operate at greater than Class 1 power levels. For this reason, never look into the end of an optical fiber cable or open receptacle. (C027)

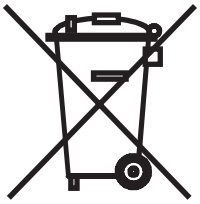
CAUTION:
This product contains a Class 1M laser. Do not view directly with optical instruments. (C028)

Environmental Notices

Product Recycling and Disposal

This unit must be recycled or discarded according to applicable local and national regulations. IBM encourages owners of information technology (IT) equipment to responsibly recycle their equipment when it is no longer needed. IBM offers a variety of product return programs and services in several countries to assist

equipment owners in recycling their IT products. Information on IBM product recycling offerings can be found on IBM's Internet site at *http://www.ibm.com/ibm/environment/products/prp.shtml*.



Notice: This mark applies only to countries within the European Union (EU) and Norway.

Appliances are labeled in accordance with European Directive 2002/96/EC concerning waste electrical and electronic equipment (WEEE). The Directive determines the framework for the return and recycling of used appliances as applicable throughout the European Union. This label is applied to various products to indicate that the product is not to be thrown away, but rather reclaimed upon end of life per this Directive.

In accordance with the European WEEE Directive, electrical and electronic equipment (EEE) is to be collected separately and to be reused, recycled, or recovered at end of life. Users of EEE with the WEEE marking per Annex IV of the WEEE Directive, as shown above, must not dispose of end of life EEE as unsorted municipal waste, but use the collection framework available to customers for the return, recycling, and recovery of WEEE. Customer participation is important to minimize any potential effects of EEE on the environment and human health due to the potential presence of hazardous substances in EEE. For proper collection and treatment, contact your local IBM representative.

注意: このマークは EU 諸国およびノルウェーにおいてのみ適用されます。

この機器には、EU 諸国に対する廃電気電子機器指令 2002/96/EC(WEEE) のラベルが貼られています。この指令は、EU 諸国に適用する使用済み機器の回収とリサイクルの骨子を定めています。このラベルは、使用済みになった時に指令に従って適正な処理をする必要があることを知らせるために種々の製品に貼られています。

Remarque : Cette marque s'applique uniquement aux pays de l'Union Européenne et à la Norvège.

L'étiquette du système respecte la Directive européenne 2002/96/EC en matière de Déchets des Equipements Electriques et Electroniques (DEEE), qui détermine les dispositions de retour et de recyclage applicables aux systèmes utilisés à travers l'Union européenne. Conformément à la directive, ladite étiquette précise que le produit sur lequel elle est apposée ne doit pas être jeté mais être récupéré en fin de vie.

Refrigeration

These systems contain a modular refrigeration unit with R-134A refrigerant and a polyol ester oil. This refrigerant must not be released or vented to the atmosphere. Skin contact with refrigerant may cause frostbite. Wear appropriate eye and skin protection. Modular refrigeration units are sealed and must not be opened or maintained.

Battery Return Program

This product may contain sealed lead acid, nickel cadmium, nickel metal hydride, lithium, or lithium ion battery(s). Consult your user manual or service manual for specific battery information. The battery must be recycled or disposed of properly. Recycling facilities may not be available in your area. For information on disposal of batteries outside the United States, go to *http://www.ibm.com/ibm/environment/products/batteryrecycle.shtml* or contact your local waste disposal facility.

In the United States, IBM has established a return process for reuse, recycling, or proper disposal of used IBM sealed lead acid, nickel cadmium, nickel metal hydride, and other battery packs from IBM Equipment. For information on proper disposal of these batteries, contact IBM at 1-800-426-4333. Please have the IBM part number listed on the battery available prior to your call.

In Taiwan, the following applies:

Please recycle batteries 廢電池請回收

IBM Cryptographic Coprocessor Card Return Program

This machine may contain an optional feature, the cryptographic coprocessor card, which includes a polyurethane material that contains mercury. Please follow Local Ordinances or regulations for disposal of this card. IBM has established a return program for certain IBM Cryptographic Coprocessor Cards. More information can be found at *http://www.ibm.com/ibm/environment/products/prp.shtml*.

برنامج ارجاع كرت IBM Cryptographic Coprocessor

هــذه الماكيــنة قد تحتــوي على خاصــية اختيارية، وهى كــارت
Cryptographic Coprocessor
والتي تحتــوي على مـــادة بولــييوريثيـــن التي تحتــوي على الزئبــق
رجـــــاء اتبــاع القوانيــن أو التعليمــات المحــلية للتخــلص من هــذا الكـــارت .
قامــت شركة IBM باعداد برنامج لارجاع بعض كــروت IBM Cryptographic
Coprocessor

لمزيد من المعلومات، رجاء زيارة الموقع
http://www.ibm.com/ibm/environment/products/prp.shtml

Cable Warning

WARNING: Handling the cord on this product or cords associated with accessories sold with this product, will expose you to lead, a chemical known to the State of California to cause cancer, and birth defects or other reproductive harm. ***Wash hands after handling.***

Preface

This guide helps users of the following processors to understand how to use the Hardware Management Console:

- IBM System z9™ 109 (z9-109)
- IBM @server® zSeries™ 990, 890, 900, and 800 (z990, z890, z900, and z800, respectively)
- Parallel Enterprise Server - Generation 5 and Generation 6 (G5 and G6, respectively)

This guide is available in portable document format (PDF) to view or print from **Resource Link** (*http://www.ibm.com/servers/resourcelink*) and as an online document. The online document can be viewed by double-clicking on the **Books** icon located in the **Views** area of the Hardware Management Console. For more information about online documentation, see "How to Use this Guide" on page xii and "Books" on page 2-59.

The Access Administrator assigns a user ID and user roles to each user of the Hardware Management Console. This guide addresses the functions available for the following default user IDs and predefined roles:

OPERATOR	Operator
ADVANCED	Advanced Operator
ACSADMIN	Access Administrator
SYSPROG	System Programmer
SERVICE	Service Representative

Appendix A, "Hardware Management Console Tasks and Default User IDs," on page A-1 includes all of the tasks that can be initially accessed by any of the five default user IDs. However, the Access Administrator defines the user IDs for each user along with setting a password and assigning managed resource roles and task roles. (See the Customize User Controls, Password Profiles, and User Profiles tasks for more information.)

Note: For problem resolution of the processor cluster or an individual CPC, service representatives should refer to the service documentation provided with the processor or processor cluster that you are servicing. Not all tasks are available for every user ID. Refer to Appendix A, "Hardware Management Console Tasks and Default User IDs," on page A-1 for a list of the specific tasks and the default user IDs associated with them.

The windows represented in this document may or may not represent the exact windows that are displayed for your user ID.

If you have a z9-109, or a z990, or a z890, your processor will operate only in logically partitioned (LPAR) mode. For all other processors listed in the preceding, both LPAR and basic modes are available.

Not all code enhancements described in this guide may be available on your support element. Locate the version of code installed in your support element by looking at the title bar on the Workplace window and then refer to the table on the next page to locate the *Support Element Operations Guide* that matches that version of the code installed in your support element. If your support element does

not show the version of code on the title bar of your workplace, then perform the following procedure on the Hardware Management Console:

1. Open the **Task List** from the **Views** area.
2. Open **Change Management** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Open the group that contains the CPC support element whose system information that you want to display.
5. Drag and drop the selected CPC on **System Information** in the **Change Management** tasks area. The **System Information** window is displayed.

Version Code	EC Number	Order Number
2.9.0	—	SC28-6845-00
1.8.2	—	SC28-6831-01 or SC28-6831-00
1.8.0	—	SC28-6820-01 or SC28-6820-00
1.7.3	—	SC28-6818-01 or SC28-6818-00
1.7.2	—	SC28-6813-00
1.7.1	—	SC28-6811-00
1.7.0	—	SC28-6802-00
1.6.2	—	GC38-0615-00
1.6.1	—	GC38-0607-01 or GC38-0607-00
1.6.0	—	GC38-0608-00
1.5.1	—	GC38-3119-00
1.5.0	—	GC38-3119-00

How to Use this Guide

To view this guide in its online form, open **Books** from the **Views** area by double-clicking on the **Books** icon with the left mouse button. Then double-click on the book icon to open the *Hardware Management Console Operations Guide*. After the guide opens, a list of bookmarks displays on the left-hand side.

These bookmarks display the highest level topics in the order that they appear as chapters in the book. If any of these topics have lower level topics, a **+** is displayed to the left of the higher level topic. To expand the topic, click once on the **+** and the next level will be displayed.

How to Send Your Comments

Your feedback is important in helping to provide the most accurate and high-quality information. Send your comments by using Resource Link at *http://www.ibm.com/servers/resourcelink*. Select **Feedback** on the Navigation bar on the left. Be sure to include the name of the book, the form number of the book, the version of the book,

if applicable, and the specific location of the text you are commenting on (for example, a page number or table number).

What's New in Version 2.9.0

This guide reflects the licensed internal code for the Hardware Management Console Application, Version 2.9.0. You can tell if your Hardware Management Console has this version installed by looking at the title bar on the Hardware Management Console Workplace window. New enhancements to the version code that are described in this guide include:

- **Enhanced security (firewall, certificates)**

  This version of the Hardware Management Console operates as a *closed platform*. A closed platform does not allow you access to the under lying operating platform and you are not allowed to install and run other applications. The closed platform makes it easier to ensure the security and integrity of the Hardware Management Console.

  The access to the Hardware Management Console is provided by an HTML-based user interface, therefore, the current state of the art browser encryption mechanisms can be employed for enhanced security. All remote browser access uses Secure Sockets Layer (SSL) encryption when accessing the Hardware Management Console. Only the local user interface is allowed to make use of non-encrypted access since it is inherently a secure environment.

  Since SSL encryption is required for all remote access to the Hardware Management Console, a certificate is required to provide the keys used for this encryption. The Hardware Management Console provides a self-signed certificate that allows for this encryption to occur. The Certificate Management task is provided on the Hardware Management Console to allow you to manage the certificates used by the Hardware Management Console.

- **Optional full function, multiple user remote access**

  This Hardware Management Console provides only one type of access. This single type of access provides the full complement of tasks and functions to you and makes use of an HTML-based user interface. The local user interface on the console itself is provided using a web browser and this HTML-based user interface, so a local user operates the Hardware Management Console the same way as a remote user. Any number of users can simultaneously use the Hardware Management Console. However, even though the same user interface is used remotely and locally, the same set of tasks are not necessarily provided to both remote and local users. You can see a list of the tasks that cannot be used remotely in Appendix B.

- **Enhanced Linux® installation support on the server**

  This Hardware Management Console allows a user to install an operating system such as Linux from a Hardware Management Console by using a Support Element function to initiate a code load, having the capability to allow access to the Hardware Management Console DVD drive as an install source, and using the Integrated ASCII Console or the operating system messages interface.

- **Optional high-speed internet based ″call-home″ support**

  This Hardware Management Console has the ability to use Internet access to the IBM Service Support System using Secure Sockets Layer (SSL) encryption. Using an internet connection to the IBM Service Support System has the following benefits:
  - Faster than dialing and more reliable
  - Greater number of concurrent connections
  - More data can be sent to the IBM Service Support System.

- **Optional User Interface**

  The HTML-based user interface for this Hardware Management Console provides a more consistent operating paradigm for you, since more and more applications you are using are web-based interfaces.

  This Hardware Management Console also introduces an alternate user interface style. This additional user interface style may be a style that you are already accustomed to, therefore easier for you to issue the tasks for this Hardware Management Console. Your Access Administrator can use the **User Settings** task (**UI Style** tab) to allow users to select the user interface they prefer. Those users can then use the **User Settings** task (**UI Style** tab) to define which user interface style they prefer (classic or tree style).

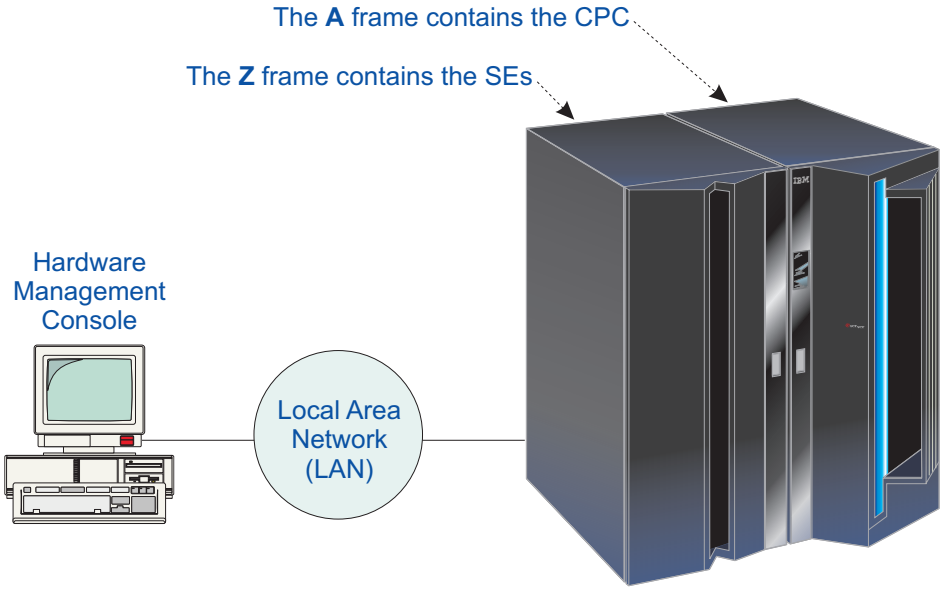
There may be other changes to the licensed internal code that are not described in this guide. For additional information, please refer to the PDFs available on **Resource Link** or the other documents shipped with your processor.

Chapter 1. Introduction

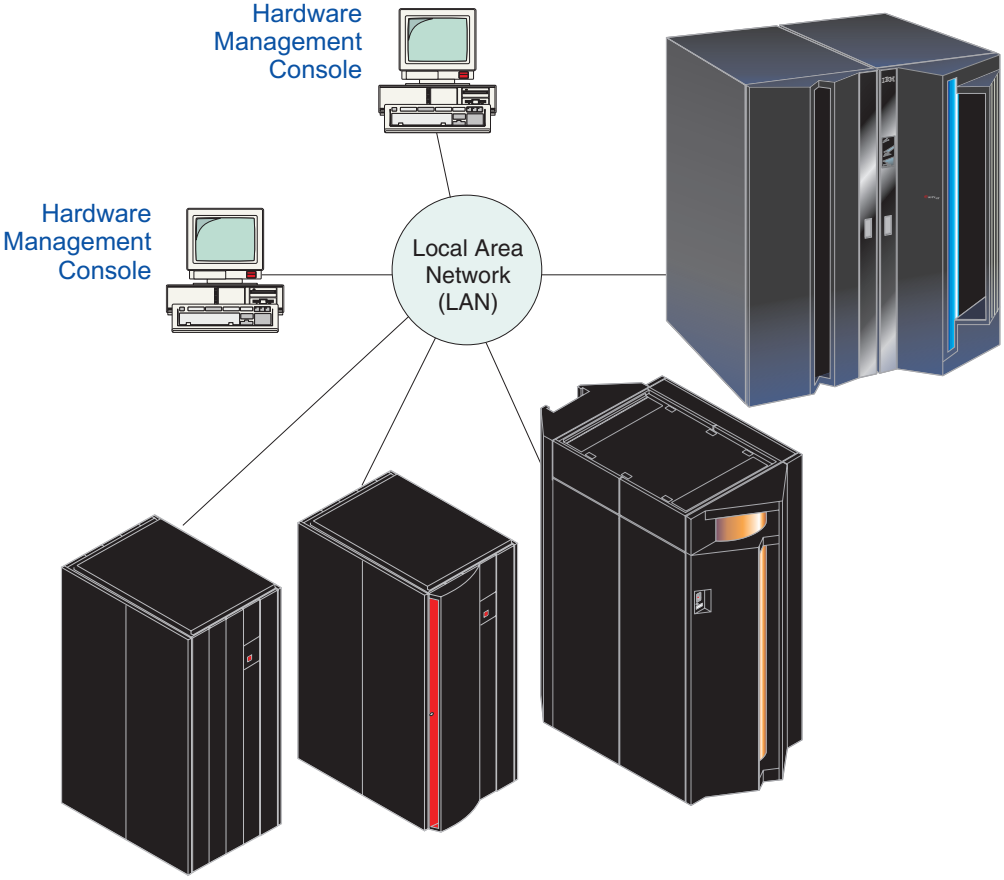
The Hardware Management Console user interface is designed to provide the functions you need through an object-oriented design. Through this design, you can directly manipulate the objects that are defined to the Hardware Management Console, and be aware of changes to hardware status as they are detected.

The Hardware Management Console communicates with each Central Processor Complex (CPC) through the CPC's Support Element (SE). When tasks are performed at the Hardware Management Console, the commands are sent to one or more support elements which then issue commands to their CPCs. CPCs can be grouped at the Hardware Management Console so that a single command can be passed along to as many as all of the CPCs defined to the Hardware Management Console. One Hardware Management Console can control up to 100 support elements and one support element can be controlled by 32 Hardware Management Consoles. Refer to the example below and the example on the next page for typical Hardware Management Console configurations.

Single CPC Environment:



Multiple CPC Environment:

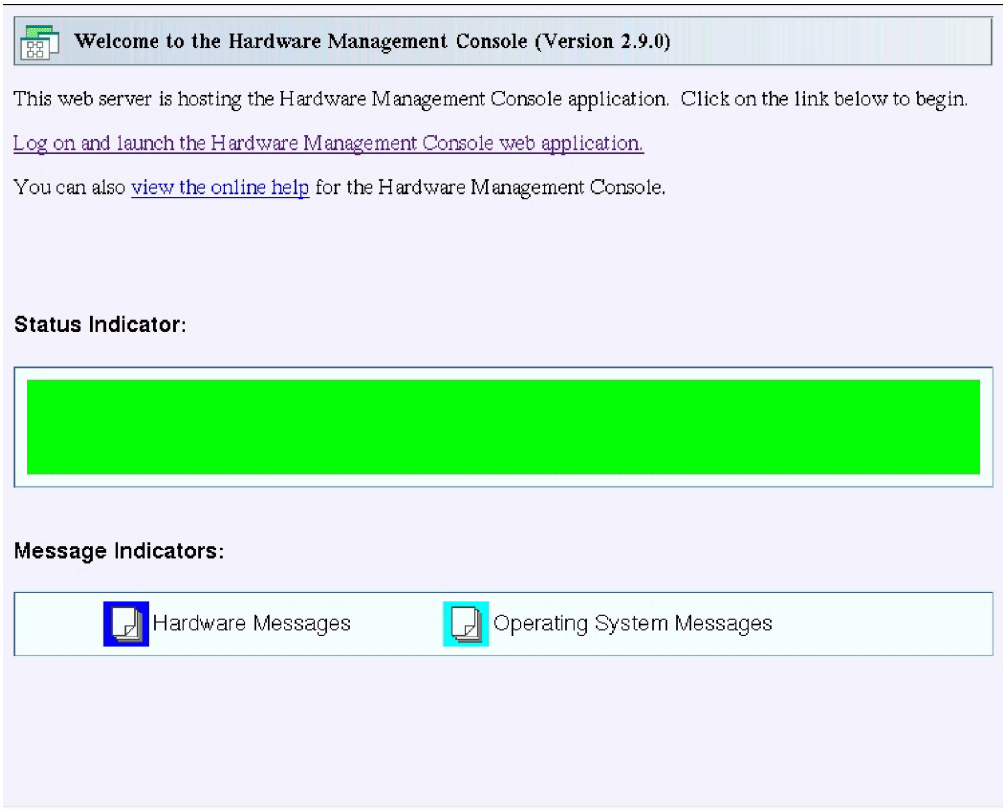


Starting the Hardware Management Console

First, turn on the Hardware Management Console by setting both the display and system units to the *On* position. You should then see the Initialization window containing the IBM Logo and copyright information.

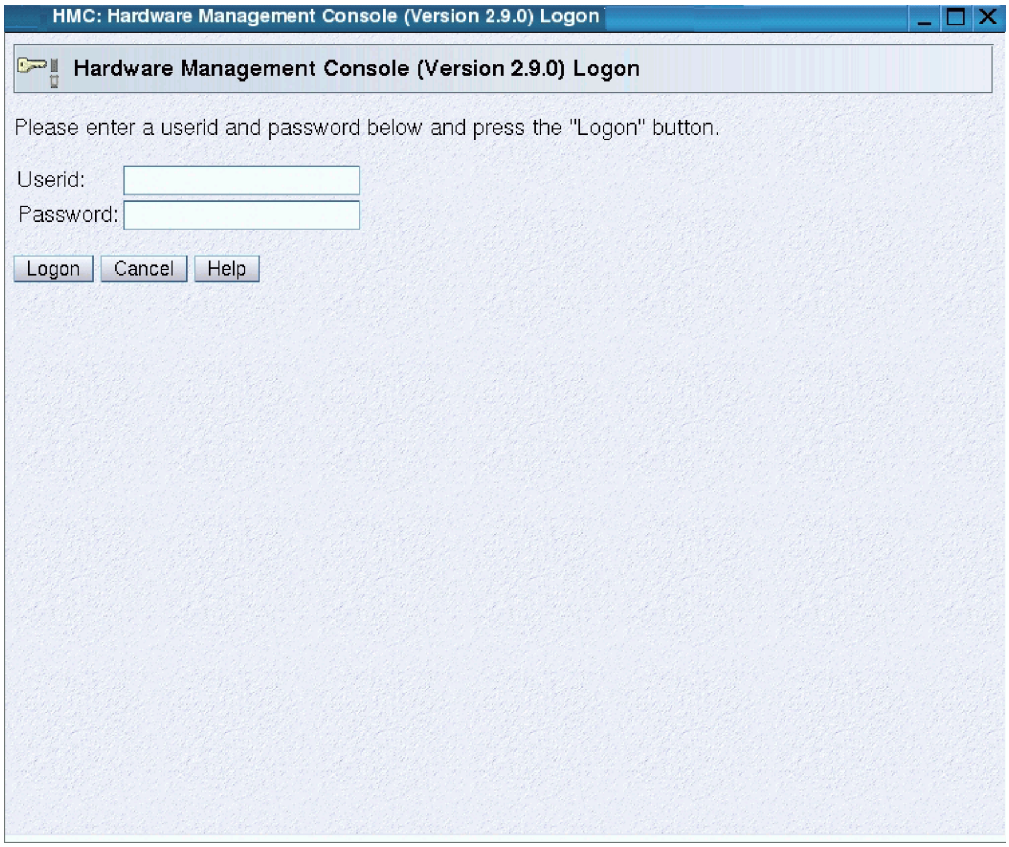
When initialization is complete, the Welcome window is displayed.

Note: The Welcome window contains message icons and a status indicator. A flashing icon is alerting you that a message was logged that may require your attention. You will need to log on to view the message. The status indicator reflects the current overall status of the Defined CPCs and images.



To log on to the Hardware Management Console, click **Log on and launch the Hardware Management Console web application.** from the Welcome window.

The **Logon** window is displayed.



Default user IDs and passwords are established as part of a base Hardware Management Console. The Access Administrator **should assign new user IDs and passwords as soon as the Hardware Management Console is installed** for each user by using the **User Profiles** task from the **Console Actions Work Area**. The default user roles, user IDs, and passwords are:

```
Operator                OPERATOR   PASSWORD
Advanced Operator       ADVANCED   PASSWORD
System Programmer       SYSPROG    PASSWORD
Access Administrator    ACSADMIN   PASSWORD
Service Representative  SERVICE    SERVMODE
```

Note: Letter case (uppercase, lowercase, mixed) is not significant for the user ID or the password.

To log on, enter one of the default user ID and password combinations, or the user ID and password combination assigned to you by your Access Administrator. Then click **Logon**.

After you log on, the Hardware Management Console Workplace window is displayed.

The Hardware Management Console Workplace window lets you work with objects and tasks for your system. Not all tasks are available for each user ID. See Appendix A, “Hardware Management Console Tasks and Default User IDs,” on page A-1 for a listing of each specific task and which default user ID or user IDs the tasks are available for.

If at any time you do not know or remember what user ID is currently logged on to the Hardware Management Console:

1. Click **Console Actions** from the **Views** area.
2. Click **Users and Tasks** from the **Console Actions Work Area**.

   The **Users and Tasks** window displays and shows the current user ID.

User Interface (UI) Styles for the Hardware Management Console

This Hardware Management Console allows you to choose the interface that you want to work in, the **classic style user interface** (which is the default) or the **tree style user interface**.

To set the user interface style for your workplace:

1. Log on the Hardware Management Console using the ACSADMIN default user ID or a user ID that has the predefined Access Administrator roles.
2. Open **Console Actions** from the **Views** area.
3. Open **User Settings** from the **Console Actions Work Area**. The **User Settings** window is displayed.
4. Click the **UI Style** tab. The **User Style Information** window is displayed.
5. Select either **Classic Style** or **Tree Style**, then click **Apply**. You must restart your login session for the interface change to take affect, click **OK**.

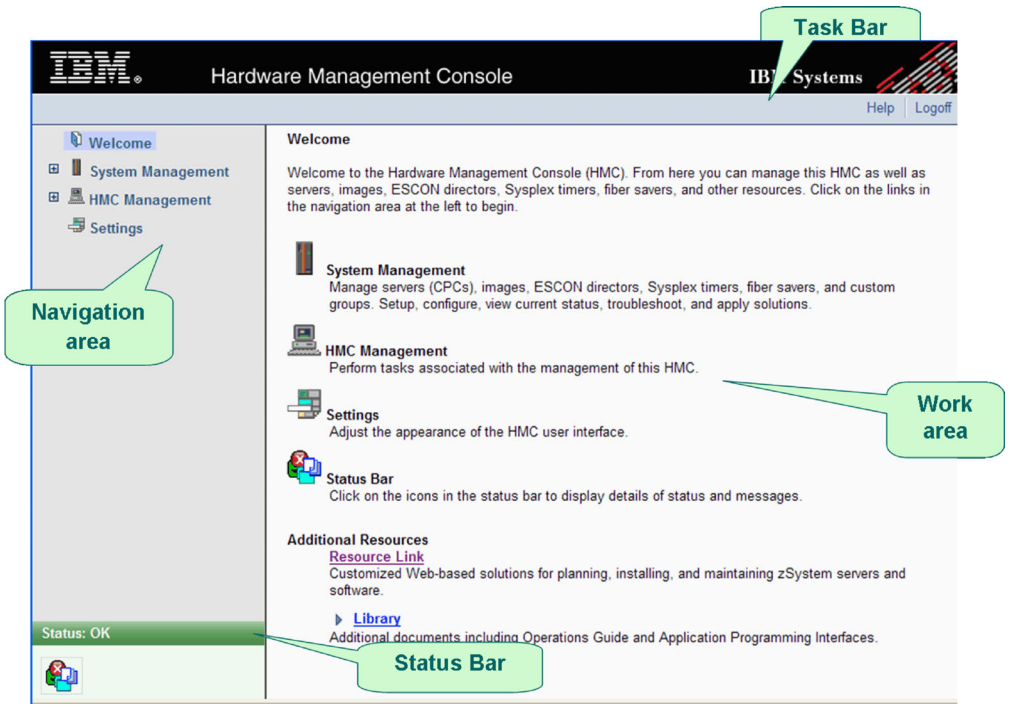
Classic Style User Interface

The **classic style user interface** is the interface that is documented throughout this book to describe the steps needed to perform the tasks. You can work with the objects on the workplace using the mouse to select them. One way to do this is known as the *drag and drop technique*. This involves using the mouse to pick up one or more objects, dragging them to a task, and then dropping them. An alternate method is to left-click an object to select it and double-click the task. (Refer to “Performing a Task” on page 1-14.) These techniques are examples of what is known as *direct manipulation.*

Tree Style User Interface

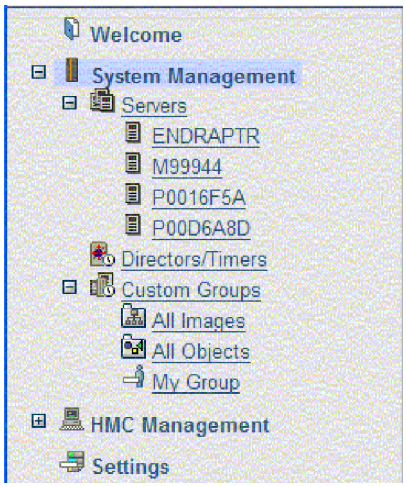
The **tree style user interface** is an additional interface provided with the Hardware Managment Console as an alternative to the classic style interface. The tree style navigation model provides hierarchical views of system resources and tasks using drill-down and launch-in-context techniques to enable direct access to hardware resources and task management capabilities.

The tree style user interface is comprised of several major components: the Banner, the Navigation Area, the Work Area, the Task Bar, and the Status Bar.

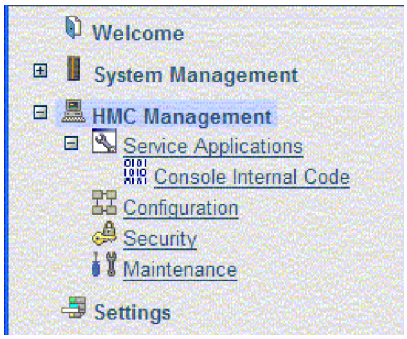


Highlights of the tree style user interface include:

- Hierarchical views of system resources (System Management)

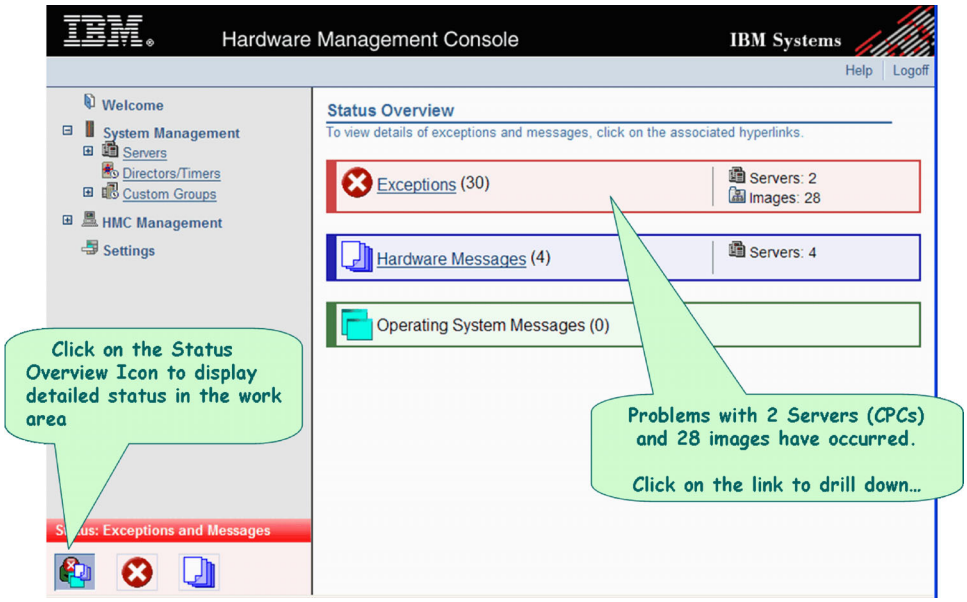


- Categorized views of Hardware Management Console (HMC) tasks (HMC Management)

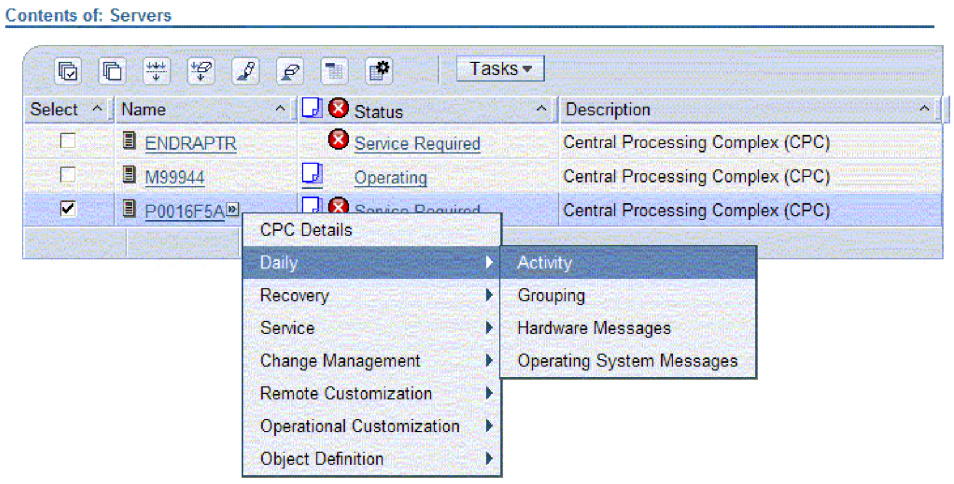


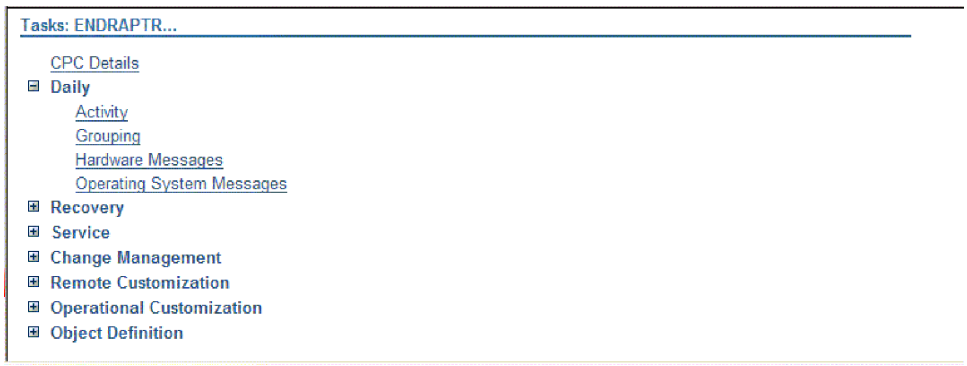
- The Status Bar provides ″at-a-glance″ visual cues of overall status

- The Status Overview window displays detailed overall system status

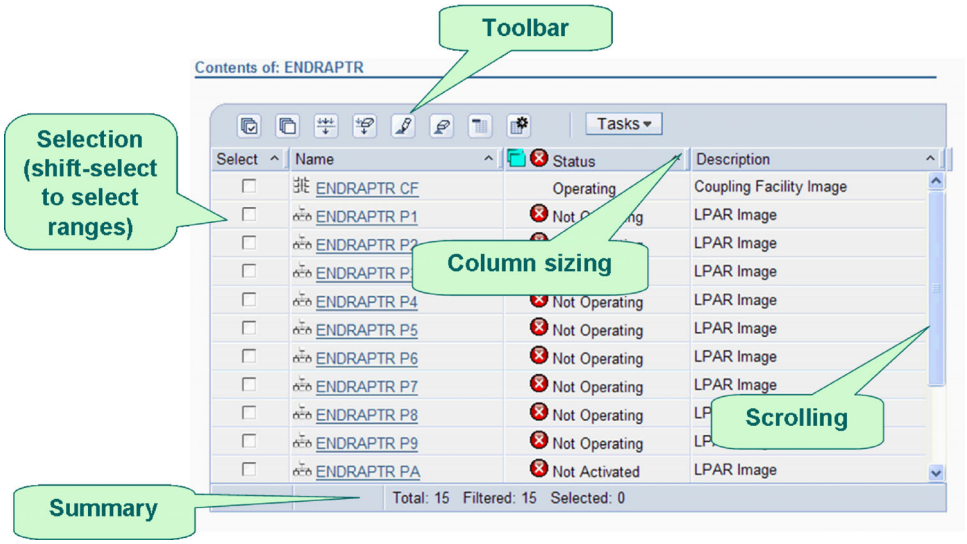


- Context sensitive tasks provided from Context Menus, Drop-Down menus, and an optional Tasks Pad





- Advanced display features within table views include data selection, scrolling, filtering, simple and multi-column sorting, column hiding, and column reordering

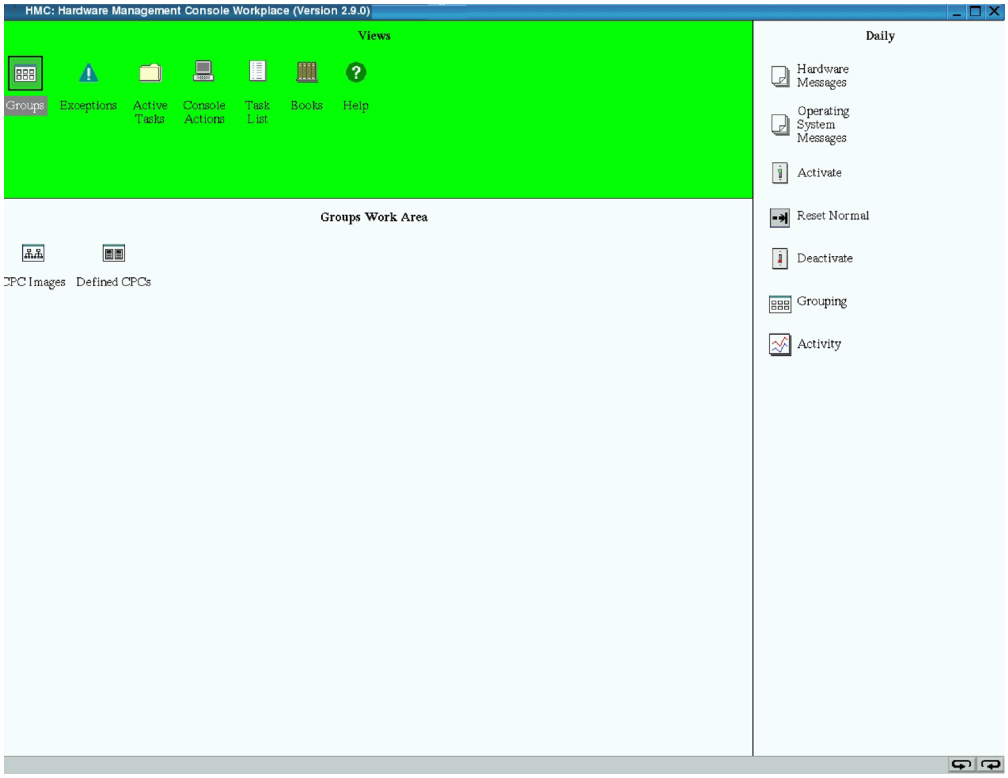


- The Task bar provides a link to each currently running task. Selecting a link will bring a task's window forward and give it focus

Use the online Help to get additional information on using the tree style interface by clicking **Help** in the right hand corner of the tree style interface window.

Hardware Management Console Workplace

The Hardware Management Console Workplace window consists of three areas: a Views area, a Tasks area, and a Work area. The *Views area*, in the upper left portion of the window, contains icons that represent different collections or views of the objects that make up your system. The background color of this area also gives an indication of the status of the system, as described in “Monitoring Your Hardware” on page 1-17. The *Tasks area*, in the right portion of the window, contains icons that represent the operations that you can perform on the objects. The *Work area*, in the lower left portion of the window, is the area of the window that displays either objects or groups, tasks in progress, task lists, tasks for monitoring your Hardware Management Console, or the online books, based on the view that you select. Initially, the objects of the Groups view are displayed in the *Work Area*.



You can resize these three areas of the Hardware Management Console Workplace. For example, if you are currently working in the *Task* area and need additional space to display all of the available tasks, move the mouse pointer over the border that separates the *Task* area from the *Views* and *Work* area until the mouse pointer changes to a double-pointed arrow. When the pointer changes shape, press and hold the left mouse button while dragging the mouse pointer to the left. Release the button and your *Task* area is now larger in size. You can make each of the three areas either larger or smaller.

Until you become familiar with these three areas and all the objects in the workplace, you may want to use *Online help*, by double-clicking on the **Help** icon from the View area. Online help provides extensive, comprehensive information for each workplace object. For more information on using online help, refer to “Help” on page 2-60.

As you become familiar with the workplace, you may want to use *hover help* instead. Hover help is a brief description of an object’s contents, usage, or purpose.

The help is displayed in a compact pop-up window that hovers above the object. You can set hover help either on or off, depending on what you want. Initially, hover help is set off.

To set hover help on for your workplace:

1. Open **Console Actions** from the **View**s area.
2. Open **User Settings** from the **Console Actions Work Area**. The **User Settings** window is displayed.
3. Select the **Controls** tab on the **User Settings** window.
4. Select **Show hover help** (a check mark appears), click **Apply**, then click **OK** to enable hover help.

Note: Hover help is not displayed immediately. The cursor must remain placed on a workplace object (icon) for several seconds to display the help.

Selecting Objects

Selecting objects prepares them for further action. Selecting a Views icon allows you to display the view by pressing **Enter**. The default setting for selecting objects displayed in the Work area is **Single object selection**, however, to select more than one object at a time, allowing you to perform tasks on them as a dynamic group, you can do the following:

1. Open **Console Actions** from the **Views** area.
2. Open **User Settings** from the **Console Actions Work Area**. The **User Settings** window is displayed.
3. Select the **Controls** tab on the **User Settings** window.
4. Deselect **Single object selection** by clicking on the check mark to remove it, click **Apply**, then click **OK** when you are finished with the task.

In the Work area, if the selection of multiple objects is allowed, you can use any of the following methods:

- Click on each object to be selected.
- Select or deselect all objects in a view. To select all objects:
  1. Display the objects you want to select, for example display CPCs or CPC Images in the *Work area*.
  2. Right-click on a spot on the *Work area* without an icon. This displays the menu for the *Work area*.
  3. Click **Select All**.

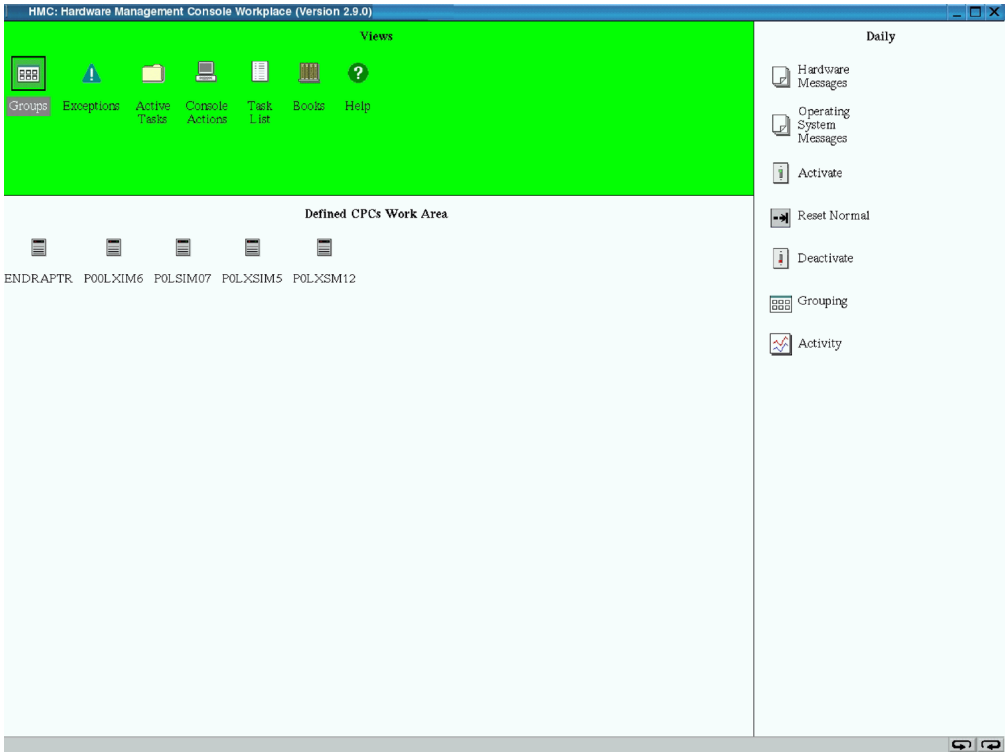
  To deselect all objects: If all objects are selected, simply click on a spot in the *Work area* without an icon. This deselects all objects. (Left-clicking simply deselects all objects; right-clicking deselects all objects and displays the *Work area* menu.)

Clicking objects that are already selected deselects the objects.

Note: There are times when you may only want to work with one object at a time and you do not want to worry that an additional object(s) is selected accidentally. Use the **User Settings** task to make sure the **Single object selection** option is selected (a check mark appears).

Opening an Object

Opening an object in the Work area displays a further level of detail about the object, if available. There are several ways to open an object. One way is to double-click it. The following picture shows a Groups view including Defined CPCs.



Double-clicking any one of the Groups icons in the Groups view results displays icons for the objects (for example, CPCs or CPC Images) that make up that group. The example shows the objects that make up the Defined CPCs group and that are displayed in the Work area after double-clicking the **Defined CPCs** icon.

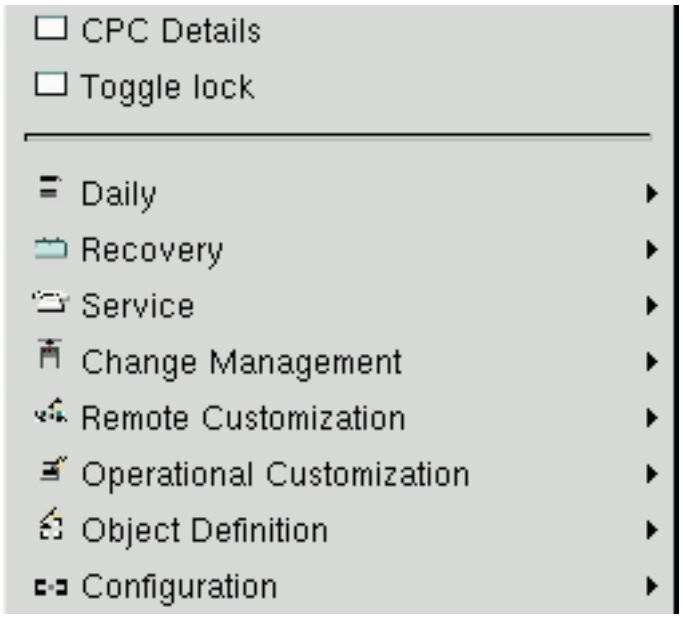
Another way to display the icons that make up the group is to right-click the object (such as **Defined CPCs** or **CPC Images**) and, on the menu that appears, click **Open**.

Displaying CPC or Image Details

After you display the objects that make up a group, you can display information about the object in the group (such as a particular CPC or Image) by double-clicking it. A rectangle of black speckles that twinkle on and off envelops the object, highlighting your selection. Then a window opens that displays the object's current status information and other object details.

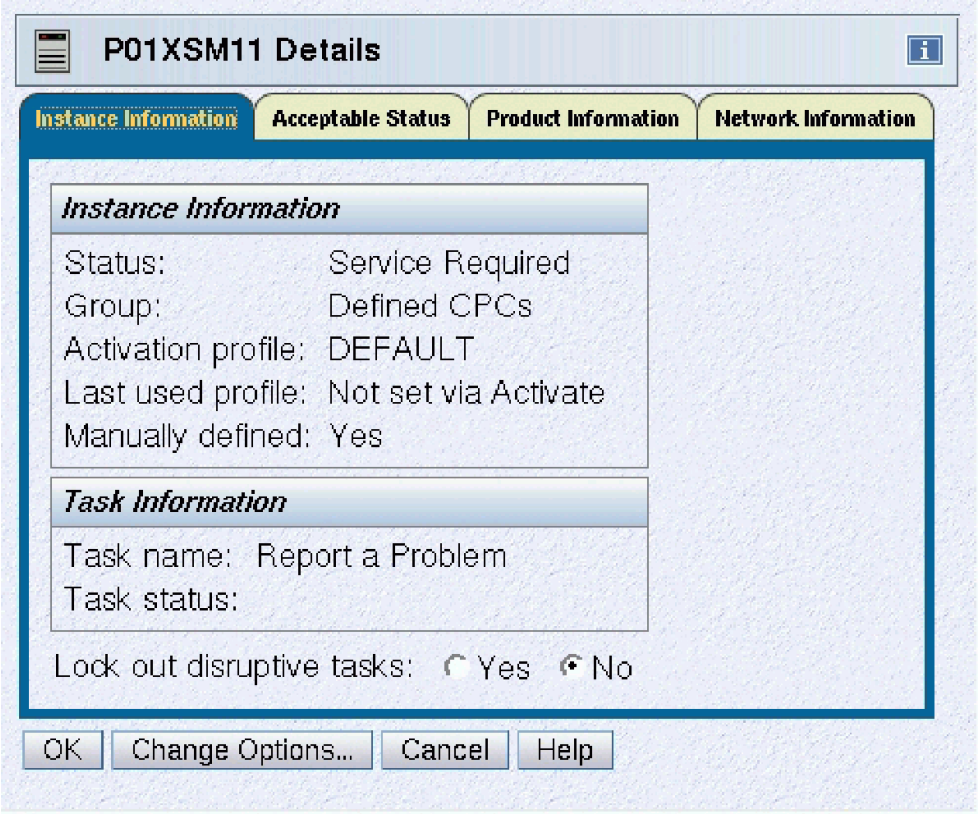
An alternate way to display this information is to right-click the object's icon and then click **CPC Details** or **Image Details**, respectively.)

Right-clicking on an object displays its pop-up menu. The following shows the pop-up menu for a CPC.



Clicking **CPC Details** on this menu displays the details about the object. (Refer to "Performing a Task" on page 1-14 for information about clicking the second set of menu items.)

A sample Details window follows.



The Details window is a window with four tabs:

Instance Information
Includes instance information and task information.

Acceptable Status
Shows the various states and their associated colors and indicates the current state.

Product Information
Shows CPC information and machine information.

Network Information
Shows TCP/IP Interface 0 and TCP/IP Interface 1 information.

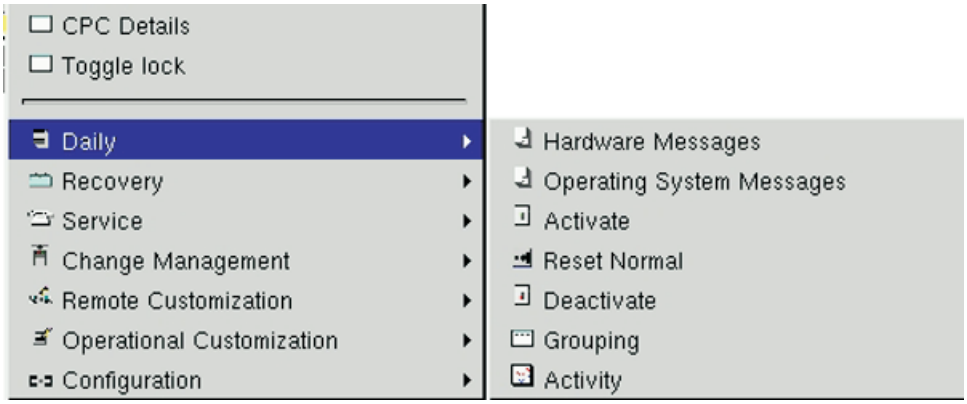
The **Lock out disruptive tasks** selection is under the **Instance Information** tab. The **Change Options...** selection is on every tab. You can click this to display a window allowing you to select a different profile name. The activation profile corresponding to the CPC or Image of the Details window is effective when the **Activate** task is performed on the object.

Alternately, you can lock or unlock an object for disruptive tasks by right-clicking the object and then click **Toggle lock**. This locks the object if it is unlocked or unlocks the object if it is locked. (Refer to “Performing a Task” for information about clicking the second set of menu items.)

Performing a Task

You can perform tasks on any object or group of objects in the Work area. This is done using *direct manipulation*.

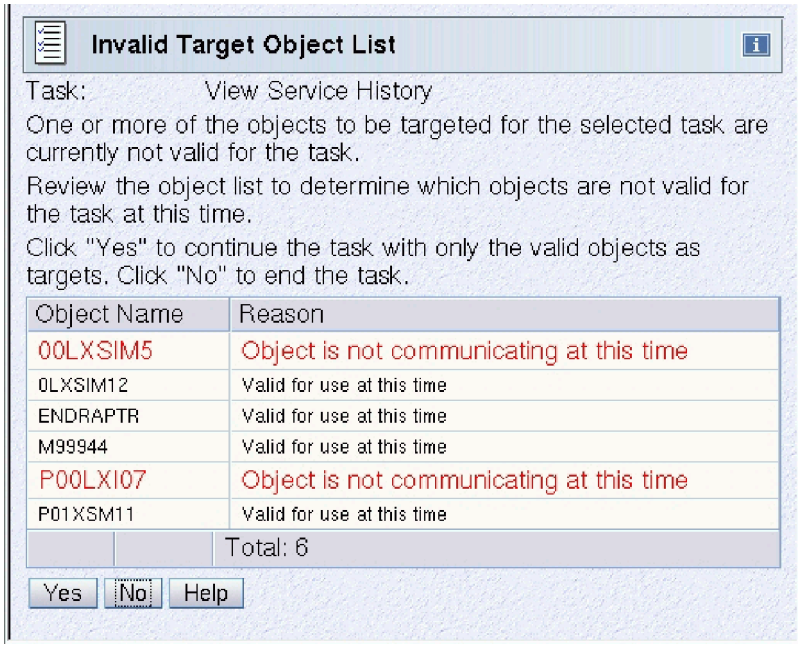
There are several ways to perform direct manipulation. One way is to open an object’s menu by right clicking on it. The previous section explained the **CPC Details** and **Toggle lock** menu entries. Clicking any of the other entries in the menu displays the next level of the menu.



You can click an item on the second menu level to perform that task for the object.

For a single object, you can drag the object with the left mouse button to the appropriate Tasks icon and drop it. Or, you can drag the Tasks icon to the object and drop it.

If you try to use an object that is not valid for a particular task (for example, if the object is the wrong type of object for a task or if the object is busy and the task cannot handle busy objects), the Hardware Management Console presents you with a message window:



For multiple objects, select all the objects you want to perform the task on. Then drag the group by placing the mouse pointer on any one of the selected object's icon, and dragging and dropping the object icon on the task's icon. Or, you can drag the task's icon to any one of the selected objects and drop it.

How to Scroll Selection Lists

Many Hardware Management Console tasks display a selection list so you can select one or more items for the task to process. You can use the page controls at the bottom of the window to scroll the list.

- To select an item in the list, select the checkbox in the **Select** column.
- Click a right-pointing arrow at the bottom of the window to scroll forward one page. Click a left pointing arrow to scroll back one page.
- Alternately, you can type a page number in a field at the bottom of the window and click **Go**.

Object Locking for Disruptive Tasks

Some of the Hardware Management Console tasks are considered *disruptive*. Performing a disruptive task on a CPC or CPC image may disrupt its operation. You may want to lock an object to prevent accidentally performing a disruptive task on it and then unlock the object only when you want to perform a disruptive task on it. The following are considered disruptive tasks:

Daily Tasks: Activate, Reset Normal, and Deactivate

Recovery Tasks: Start, Stop, Reset Normal, PSW Restart, Reset Clear, and Load

Change Management Tasks: Engineering Changes (ECs), Change Internal Code, Single Step Internal Code Changes, Product Engineering Directed Changes, Concurrent Upgrade Engineering Changes (ECs), and Special Code Load

Operational Customization: Change LPAR Controls, Configure Channel Path On/Off, Reassign Channel Path, OSA Advanced Facilities, Enable I/O Priority Queuing, and Change LPAR I/O Priority Queuing

Object Definition Tasks: Change Object Definition and Reboot Support Element

Note: The **Lockout disruptive task** setting only affects operations from the Hardware Management Console workplace that you are currently working at and its web browser. It does not affect any operations at the support element or operations initiated from other Hardware Management Consoles.

You can tell when a CPC or CPC image is locked because a locked CPC's or CPC image's icon has a small yellow lock in the bottom left corner.

The setting of a CPC or CPC image's toggle lock determines whether you can perform a disruptive task on the CPC or CPC image. You can lock an individual object or automatically lock all objects.

To individually lock a CPC or CPC image:

1. Locate the object you want to lock in the Work Area.
2. Right-click on the object's icon.
3. On the menu that appears, click **CPC Details**.
4. The **CPC Details** window opens. You can select **Yes** or **No** for **Lock out disruptive tasks**.

An alternate way to lock (or unlock) an individual CPC or CPC image is to:

1. Locate the object you want to lock in the Work Area.
2. Right-click on the object's icon.
3. On the menu that appears, click **Toggle Lock**. This locks an object that is unlocked or unlocks an object that is locked.

If you try to perform a disruptive task on a locked object, a window is displayed indicating the object is locked. If you need to unlock an object or a group of objects, you must unlock each one individually. To do this:

1. Locate the object you want to unlock in the Work Area.
2. Right-click on the object's icon to open its menu.
3. Click **Toggle lock** to unlock a locked object. (Or you can click **Details...** and then on the **CPC Details** or **Image Details** window that opens, select **No** at **Lock out disruptive tasks**.)
4. Click **OK** to unlock the object.
5. Repeat **steps 1 through 4** for every object you want to unlock.

There is also an automatic way to lock all the CPCs and CPC images that are displayed on the workplace at one time. Unlike the previous two ways for locking an object, using this method can cause the object to be relocked automatically if it was unlocked to perform a task on it. To use this method, you must have a user ID with the predefined user roles of an *Advanced Operator, System Programmer, Access Administrator*, or *Service Representative* for the Hardware Management Console.

1. Open **Console Actions** from the **Views** area.

2. Open **Hardware Management Console Settings** from the **Console Actions Work Area**.
3. Open **Object Locking Settings** from the **Hardware Management Console Settings** work area. The **Locking** window is displayed.
4. Select **Automatically lock all managed objects** or **Relock after a task has been run** or both.

If you want to unlock an object or a group of objects, you still need to follow the previously described unlocking procedure.

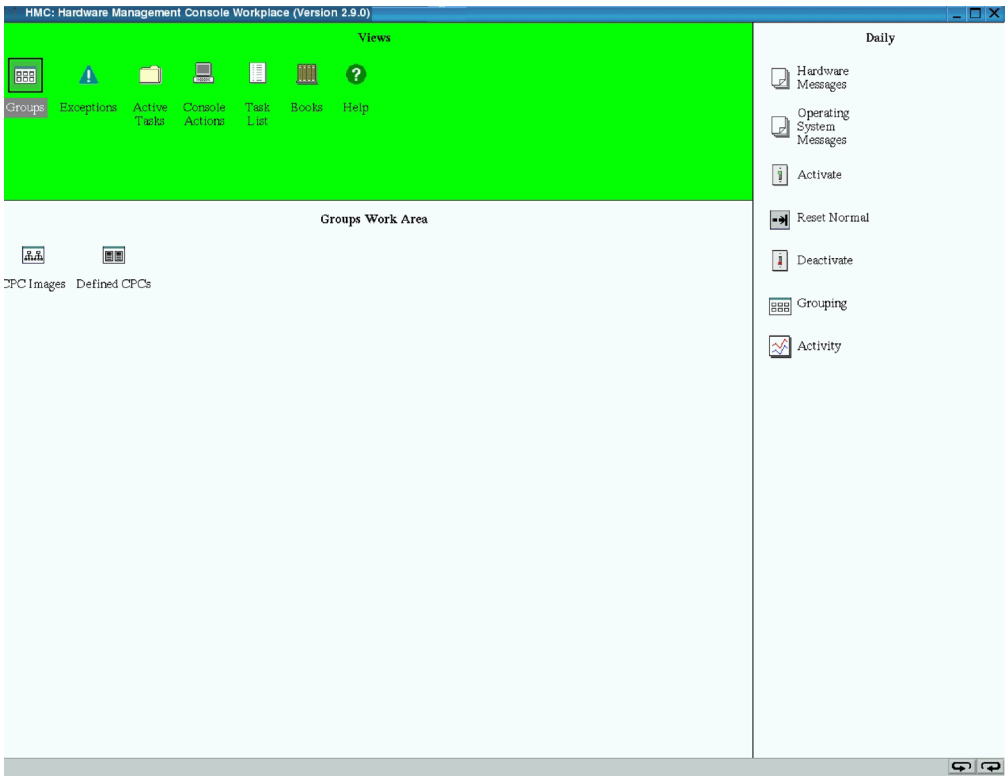
Note: Because there are really many main user interfaces (one for each logged on user), the Hardware Management Console provides object locking capabilities for each user. This means that users have their own individual object locking settings, managed by using the Object Locking Settings, and their own state information for locked objects. In other words, if you lock or unlock an object, it is not locked or unlocked respectively for other logged-on users.

Monitoring Your Hardware

Note: The following description of the use of color is based on a set of default colors that are set up for you initially. You may override the defaults and associate different colors, or use gray patterns instead of color, by using the **User Settings** task. (For more information, refer to “User Settings” on page 2-26.)

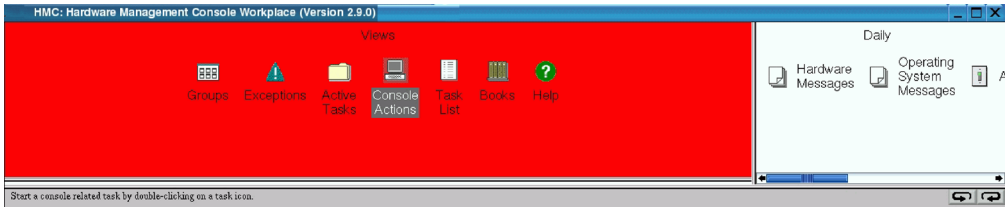
Good or acceptable status for all CPCs and CPC images in the processor cluster is indicated by a green background in the Views area of the Hardware Management Console Workplace window, and by the absence of a red background around the Exceptions icon. Status changes from acceptable to unacceptable, referred to as *Exceptions,* are indicated on the Hardware Management Console Workplace window by a color change from green to red. By default, green indicates good, or acceptable status. Red indicates an exception, or that an object has an unacceptable status.

Messages that may require operator attention are indicated by the blue flashing Hardware Messages icon or by the cyan flashing Operating System Messages icon in the Tasks area. In addition, to indicate which objects have hardware or operating system messages that require operator attention, the CPC or CPC image icon’s background color and its group icon background color will also be blue or cyan.

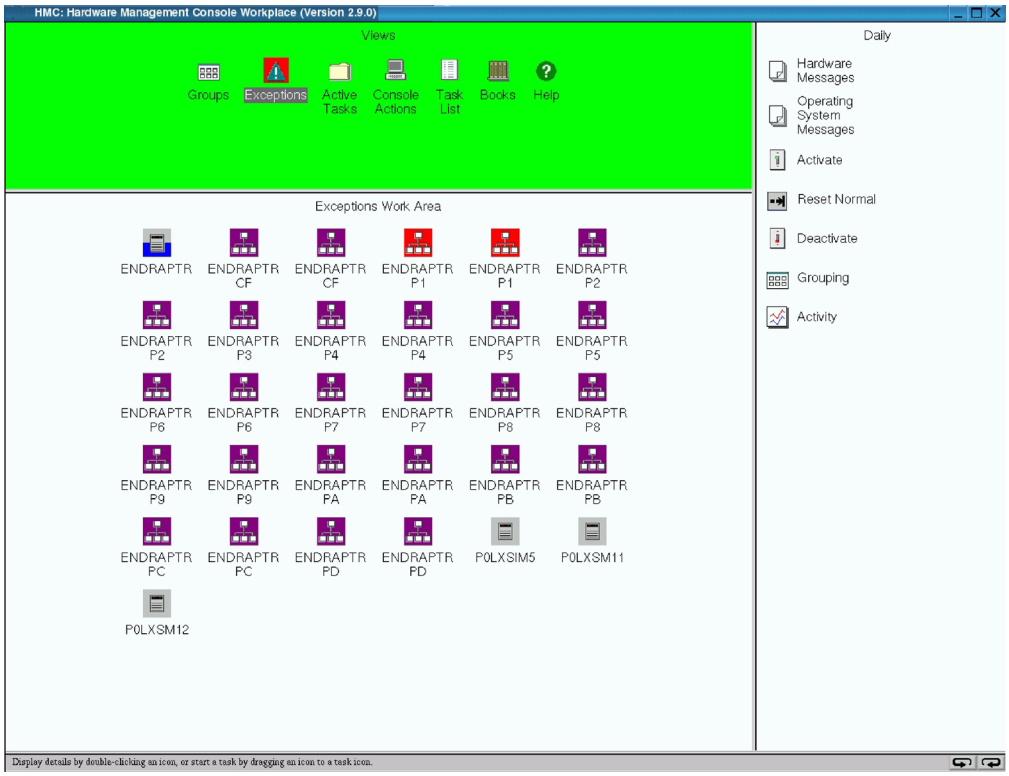


Unacceptable Status

The default acceptable status value is *Operating*. Initially, all other status values are considered unacceptable, unless you select them on the Details window by double-clicking on a CPC or image icon. If an object's status changes to any of the unacceptable values, it is treated as an *Exception* situation. An exception situation is visually indicated by a change of the entire Views area background color from green to red. A background color is also displayed for the CPCs or images that have an unacceptable status, and for any of the groups that contain those CPCs or images. The background color depends on what you have selected on the Details window.



If an exception situation exists, you can open the **Exceptions** group from the Views area to see a subset of only those CPCs or images involved in an exception condition. After you display the Exceptions view, the background of the entire Views area changes back to green, and a red background only remains around the Exception icon, the object icon, and the group icon with the unacceptable status.



This will allow any additional exception situations to be recognized by a color change of the Views area. An exception state will remain until the CPC or image returns to a status that you have indicated as acceptable.

About Activation Profiles

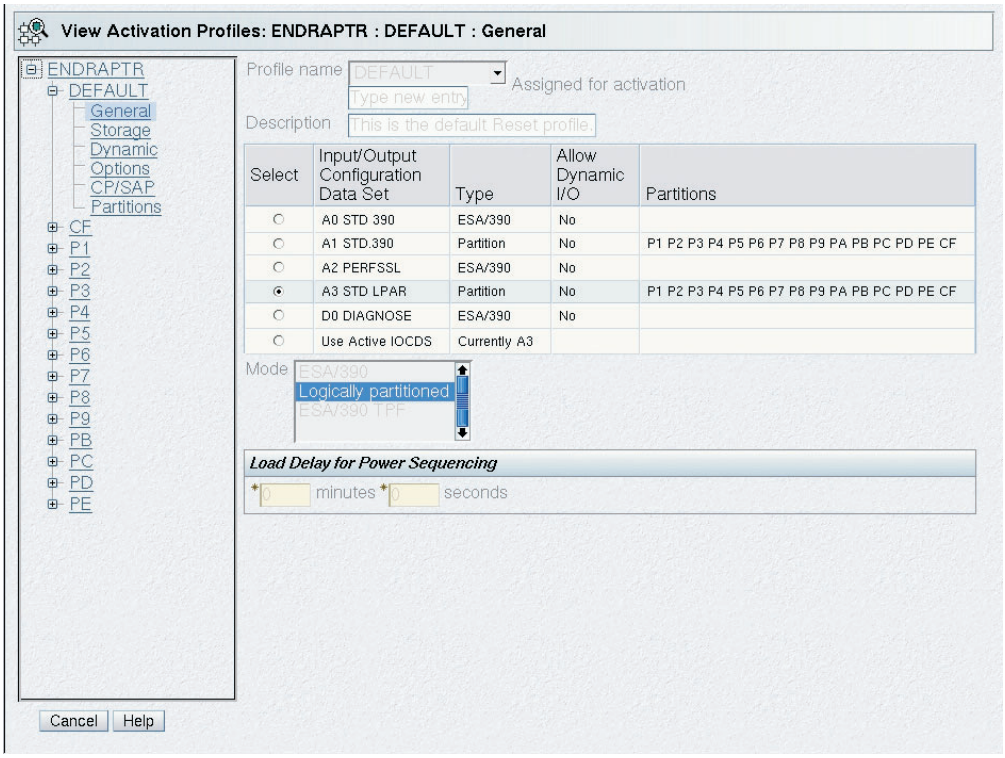
Activation Profiles are required for CPC and CPC image activation. They are used to tailor the operation of a CPC and are stored in the support element associated with the CPC. There are three types of activation profiles:

Reset: Every CPC in the processor cluster needs a reset profile to determine the mode in which the CPC licensed internal code will be loaded and how much central storage and expanded storage will be used. The maximum number of reset profiles allowed for each CPC is 26.

Image: If logically partitioned (LPAR) mode has been selected in the reset profile, each partition has an image profile. The image profile determines the number of CPs that the image will use and whether these CPs will be dedicated to the partition or shared. It also allows you to assign the amounts of central storage and expanded storage to be used by each partition. Depending on the support element model and machine type, the maximum number of image profiles allowed for each CPC can be between 64 and 255.

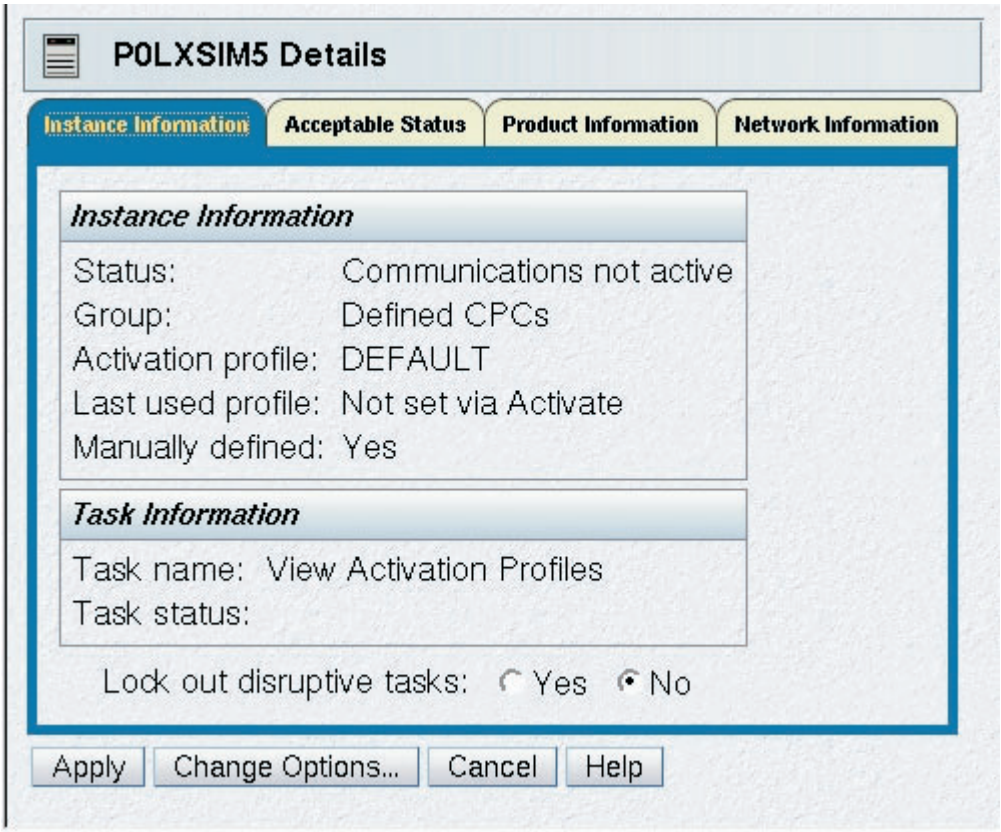
Load: A load profile is needed to define the channel address of the device from which the operating system will be loaded. Depending on the support element model and machine type, the maximum number of load profiles allowed for each CPC can be between 64 and 255.

Default profiles of each of the three types are provided. The default profiles can be viewed, copied to create new profiles, and modified using the **Operational Customization** tasks. (Refer to “Operational Customization” on page 3-43 for more information.)

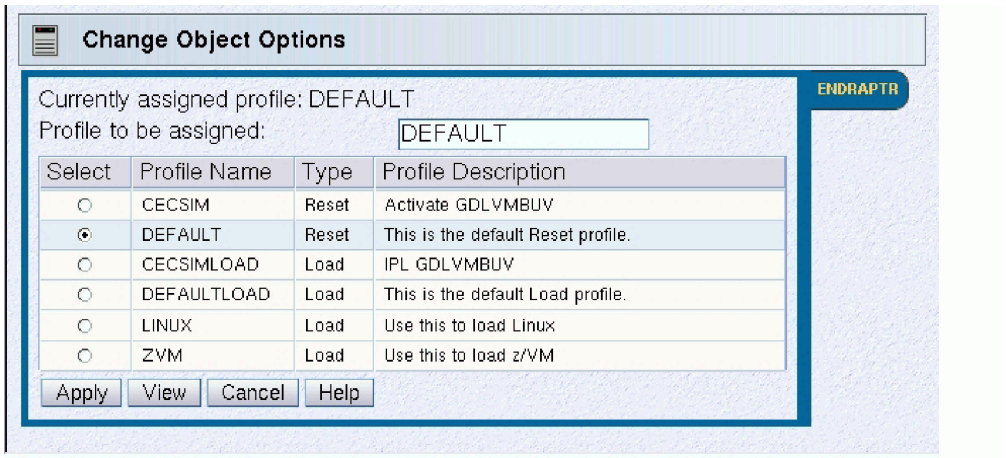


The Activate task will activate the CPC or CPC image. Initially, the Default profile is selected. You may specify an activation profile other than the Default by selecting the desired CPC or CPC image icon in the list.

To display the details of a particular CPC or image, you can right-click it and click **CPC Details**. The **Change Options...** selection is on every window of the Details window; you can click this to display a window allowing you to select a different profile name. (Refer to “Displaying CPC or Image Details” on page 1-12 for more information.)



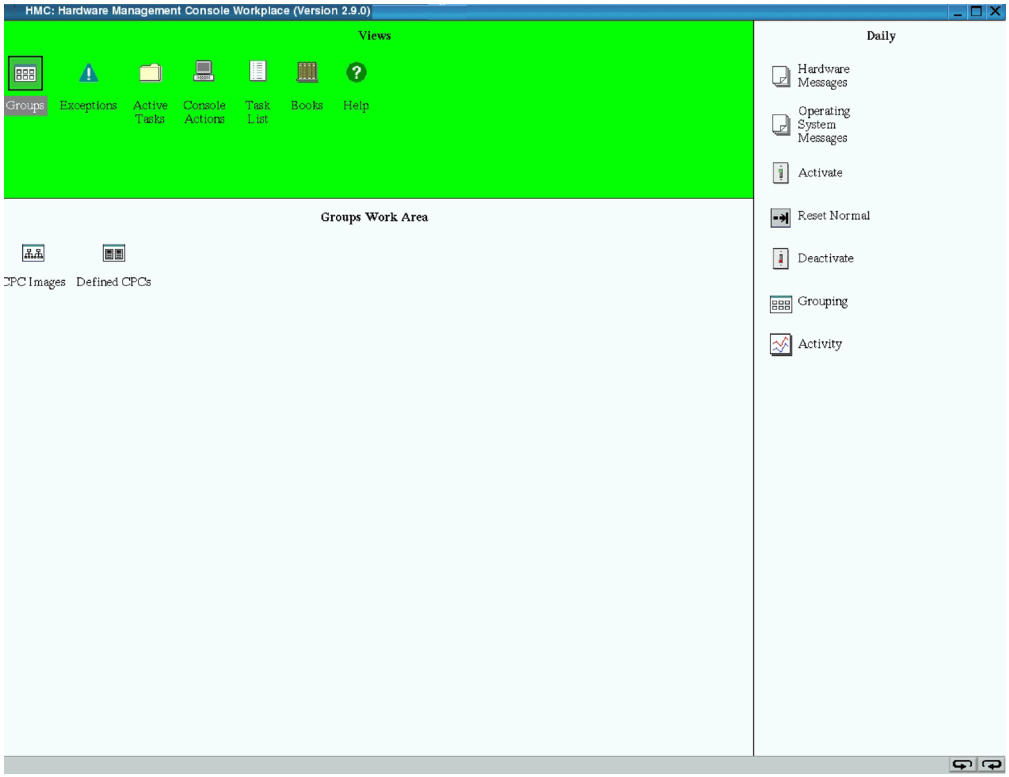
The activation profile corresponding to the CPC or Image of the Details window is effective when the **Activate** task is performed on the object.



Enabling you to associate a profile with a CPC or CPC image within a particular group gives you the capability to have special purpose groups containing the same set of objects. For instance, you may wish to define an Operations group and a Dump group, each containing the same group of CPCs, but each using a different profile to activate the objects within the group. For detailed information on activation profiles, see “Settings for System Operations” in the *Support Element Operations Guide*.

Chapter 2. Views and Work Area

Views of your system's objects are represented in the Views area (in the upper left portion of the window). Each view provides a different way of looking at information related to your system. After you open the Views objects, they are displayed in the Groups Work Area (in the lower left portion of the window) and their contents are available for further action.



The following are represented in the ***Views*** area:

- Groups
- Exceptions
- Active Tasks
- Console Actions
- Task List
- Books
- Help

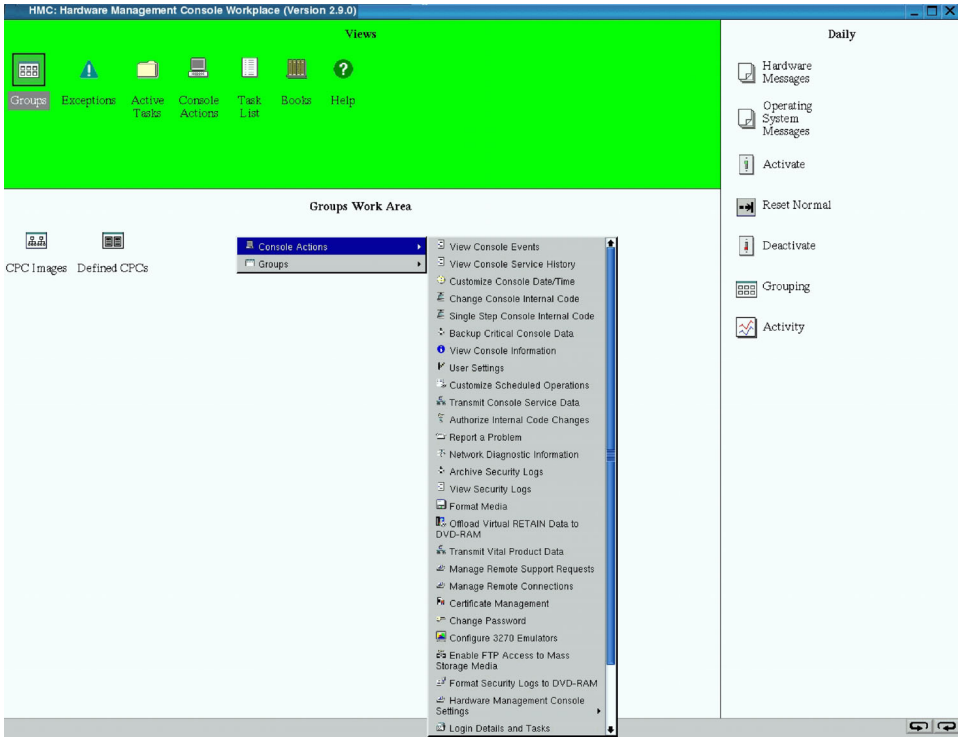
The Groups Work Area, in the lower left portion of the window, displays the objects of your system based on the View that you select. Objects must be displayed in the Groups Work Area before you can perform tasks on them.

You can display a particular View by using any of the following methods:

- Double-clicking on the icon in the Views area that you want
- Selecting the icon in the Views area by clicking on it, then pressing **Enter**.

You can also display two of the choices by opening the pop-up menu. The pop-up menu is a shortcut for navigating the workplace.

1. To open the pop-up menu, click the right mouse button once on any empty area in the Groups Work Area (lower left). This displays a pop-up menu listing:
   - Console Actions
   - Groups



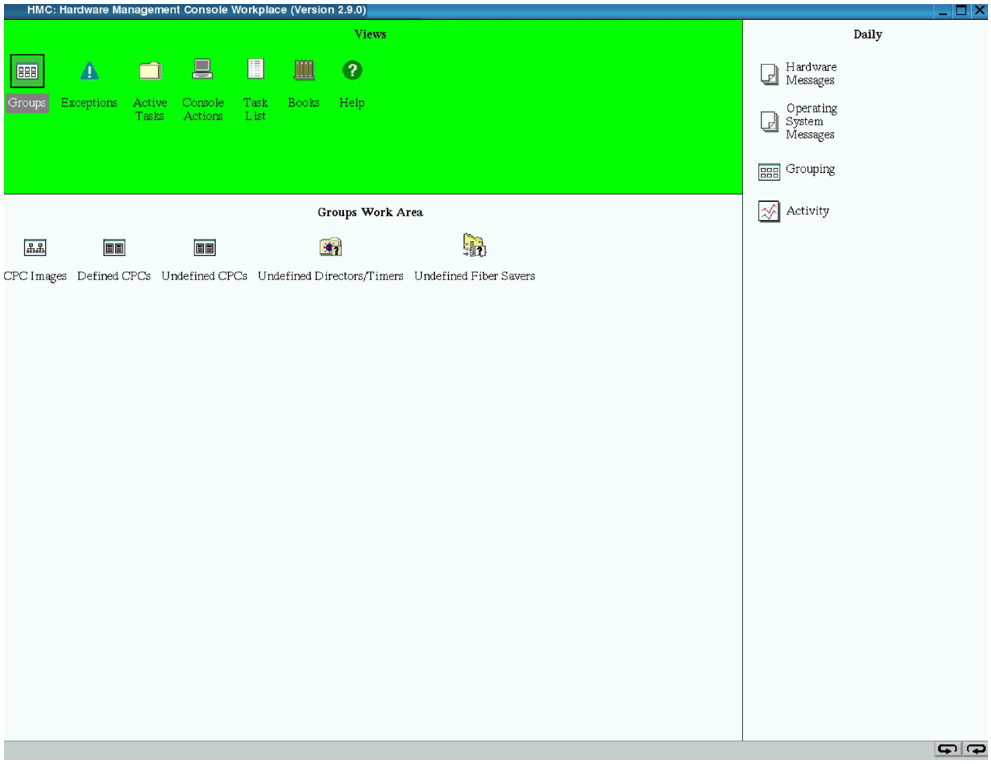
   An arrow to the right of a menu choice indicates additional choices are available on a *cascaded menu*. A cascaded menu provides additional menu choices and may include additional cascaded menus. Each cascaded menu provides a more direct shortcut for locating and opening icons in a particular view.

2. Point to either **Console Actions** or **Groups** to display the choices under each. Under **Console Actions**, the entire list of console actions is displayed: **View Console Events**, **View Service History,** and so forth. Under **Groups**, your choices include groups of objects, such as **Defined CPCs** and **CPC Images**.

   Note: Both listings that appear are based off the assigned task roles and managed resource roles your Access Administrator defined for you. See the Customize User Controls and User Profiles tasks for more information.

3. Click the item of your choice.

Groups



The Groups view is displayed initially when you log on to the Hardware Management Console and is the view that you will use most often to run and monitor your system. Groups, comprised of as few as one object, allow you to activate an object in a particular way via the assignments of a unique set of activation parameters within that group. A different set of parameters, stored in an activation profile, can be assigned to the same object in a different group. A special purpose group can be created for each of the various ways that activate an object.

Initially, the objects that appear in the Groups Work Area are the managed resource roles that were defined for your user ID by your Access Administrator.

You may redisplay the Groups view by double-clicking with the left mouse button on the Groups icon in the Views area. Object icons representing all the system-defined and user-defined groups are displayed in the Groups Work Area.

Groups are comprised of logical collections of like objects. They provide a quick and easy means for performing tasks against the same set of objects more than once without having to select each object every time the task is run. In addition, status is reported on a group basis, allowing you to monitor your system in a way that you prefer.

You can select one of the group icons and perform tasks on the objects in a group by dragging it to a task icon, or by dragging a task icon to one of the group icons.

A Hardware Management Console icon can also be displayed in the Groups Work Area. This icon represents the Hardware Management Console that you are working on and is only displayed when it is needed. If this icon is displayed, Hardware Messages have been logged for the Hardware Management Console.

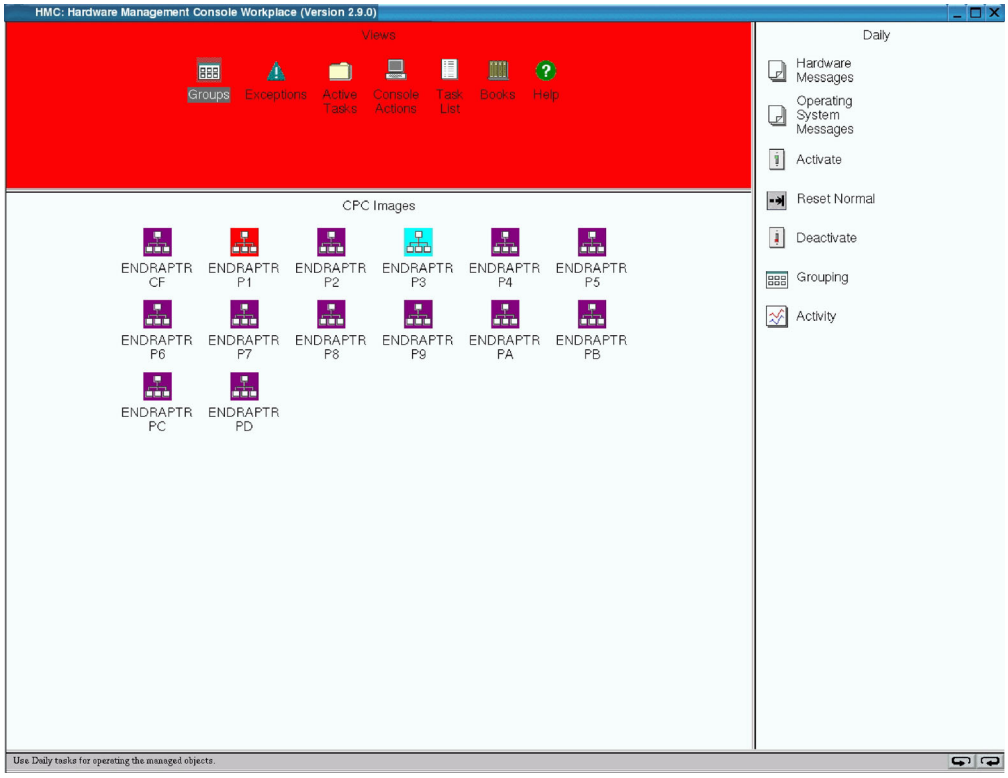
An Optical Network and System I/O icon can also be displayed in the Groups Work Area. This icon represents the fiber optic connections or system I/O devices of your processor cluster and is only displayed when it is needed. If this icon is displayed, Hardware Messages have been logged for the optical network or for any system I/O device reported from a support element configured to this Hardware Management Console.

Seven system-defined groups, *CPC Images*, *Defined CPCs*, *Defined Director/Timer Consoles*, *Defined Fiber Savers*, *Undefined CPCs*, *Undefined Director/Timer Consoles*, and *Undefined Fiber Savers* are provided with your system. These groups consist of all images, CPCs, ESCON® Director and Sysplex Timer® consoles, and 2029 Fiber Savers that make up your processor cluster. It is from these seven system-defined groups that you will create other user-defined groups as you want to work with them.

The following are represented in the ***Groups Work Area:***

- CPC Images
- Defined CPCs
- Defined Director/Timer Consoles
- Defined Fiber Savers
- Undefined CPCs
- Undefined Director/Timer Consoles
- Undefined Fiber Savers
- User-Defined Groups
- Hardware Management Console
- Optical Network and System I/O

CPC Images

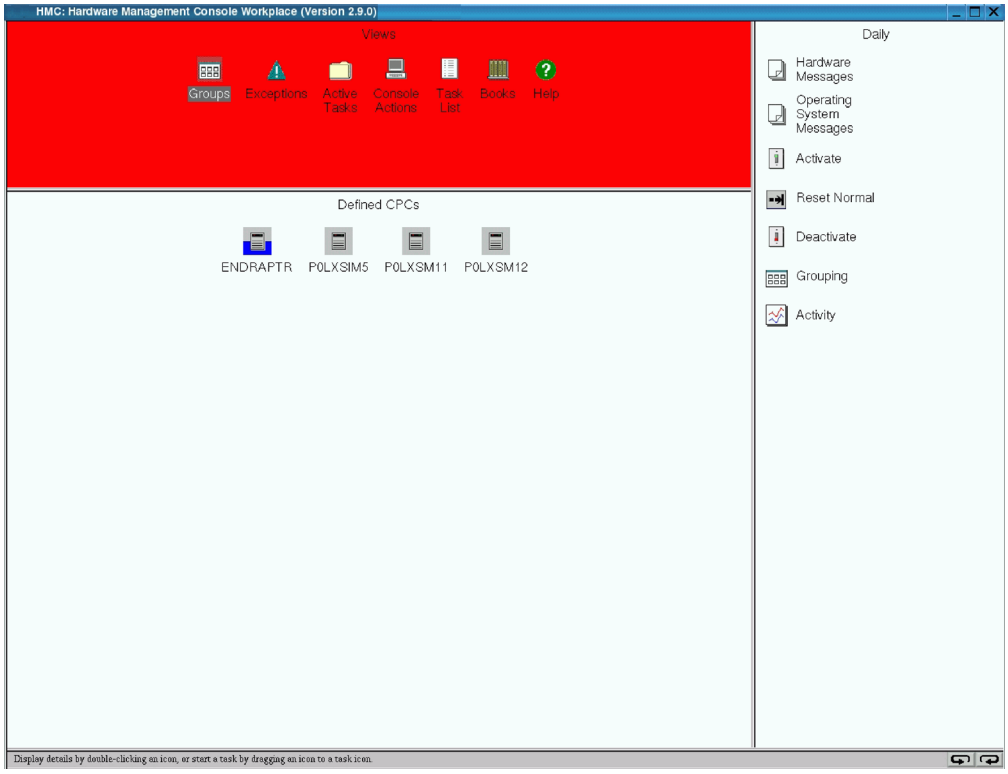


The CPC Images Group displays all images in the processor cluster. An image is either of the following:

- In LPAR mode, a partition where a coupling facility control code (CFCC) or an operating system can be running.
- In non-LPAR mode, the system itself where an operating system can be running.

Note: CPC images will not be displayed if Service Status is enabled for the CPC. For information about Service Status, see “Service Status” on page 3-18.

Defined CPCs



The Defined CPCs group displays all of the CPCs that have been defined to your Hardware Management Console. Tasks cannot be performed on a CPC until it is defined. If a CPC is not defined, it will be a part of the Undefined CPCs group when it is powered on. To define the CPC, see the “Add Object Definition” on page 3-56.

After a CPC is defined, it is removed from the Undefined CPCs group and added to the Defined CPCs group. From the Defined CPCs group, the CPC can be grouped into one or more user-defined groups. A defined CPC will remain as a part of the Defined CPCs group until its definition is removed, regardless of its power state.

There are two types of status messages that can affect the CPC icon in the Defined CPCs work area:
- Degraded
- Service Required.

Degraded displays under the CPC icon name and indicates that although the system is still operating, one or more of the following conditions exist:
- Loss of channels due to CPC hardware failure
- Loss of memory
- One or more books are no longer functioning
- The ring connecting the books is open
- Capacity Backup (CBU) resources have expired
- Processor frequency reduced due to temperature problem
- CPC was IMLed during temperature problem.

To view what conditions caused this message to display on a CPC:
- Double-click on the desired CPC icon. The **Details** window is displayed.
- Click **Degrade reasons...**. The **Degraded Details** window displays the current list of reasons why the selected CPC is degraded.

Service Required displays in the *Status* box on the **Details** window of the CPC. Your CPC is shipped with redundant hardware; that is, you have more than the required number of hardware parts to operate the CPC. When a part fails causing the use of the last redundant part of that type, you now have just the required number of parts to keep the CPC running. By displaying this message, it is a reminder to both you and your service representative that repairs should be made at the earliest possible time before additional parts fail that would now make your CPC non-operating. Some of the conditions that will cause this message to display on the **Details** window are:

- Loss of a Bulk Power Assembly (BPA)
- Loss of communications to the alternate support element
- No more spare Processing Units (PUs)
- Not enough spare PUs to support either Capacity BackUp (CBU) or Disaster Recovery Assurance (if either feature is installed)
- Memory sparing threshold reached.
- Multiple Chip Module (MCM) is defective
- Oscillator card is defective
- ETR card is defective
- The Service Network is in N-mode.

Defined Director/Timer Consoles

This system-defined group contains all Director/Timer consoles defined to the Hardware Management Console whether they were automatically discovered or defined using the Undefined Director/Timer Console template. This group will not appear in the Groups Work Area until you have defined a Director/Timer console. For more information on defining director/timer consoles to the Hardware Management Console, see “Undefined Director/Timer Consoles” on page 2-9.

A *Director/Timer console* is an object that represents either:
- An ESCON Director console
- A Sysplex Timer console.

Defined Director/Timer consoles are objects that have been customized to enable operating the consoles from the Hardware Management Console and are the targets of the following Hardware Management Console tasks:

- *Single Object Operations*. Use this task to operate a defined Director/Timer console from the Hardware Management Console through a web browser. See “Single Object Operations” on page 3-10 for more information.
- *Grouping*. Use this task to create, change, or delete user-defined groups of defined Director/Timer consoles. See “Grouping” on page 3-6 for more information.
- *Object Definition tasks*. Use these tasks to change or remove the object definitions of defined Director/Timer consoles. “Object Definition” on page 3-55 for more information.

Defined Fiber Savers

This group contains all 2029 Fiber Savers defined to the Hardware Management Console using the Fiber Saver Definition template. This group will not appear in the Groups Work Area until you have defined a Fiber Saver object. For more information on defining 2029 Fiber Savers to the Hardware Management Console, see “Undefined Fiber Savers” on page 2-10.

Defined Fiber Savers are objects that have been customized to enable call home support from the Hardware Management Console to the IBM Service Support System (RETAIN®). Because the Hardware Management Console does not have access to the 2029 FRU information, all calls are reported as type 2. The following information about the error is provided:

- Time of failure
- Error identification code
- Description of the error
- Shelf ID
- Shelf slot.

After the Support Center receives the data, they can contact the customer to further isolate the problem before sending a service representative.

For more information on the 2029 Fiber Saver, and especially on ***Shelf Description naming information***, see *2029 Fiber Saver Maintenance Information*, SC28-6807 or *2029 Fiber Saver Planning and Operations Guide*, SC28-6808.

Undefined CPCs

Note: If you cannot access undefined CPCs, contact your Access Administrator.

The Undefined CPCs group displays all of the CPCs in the processor cluster that:

- Are physically installed
- Have their support element powered on
- Have the same Domain Name as the Hardware Management Console
- Have not been defined to your Hardware Management Console.

A CPC in this group must be defined before tasks can be performed on it. Status is not reported for objects in the Undefined CPCs group.

To define CPCs, use “Add Object Definition” on page 3-56.

In addition to Undefined CPCs, this group also contains the **CPC Manual Definition** icon.

CPC Manual Definition

Local Hardware Management Consoles can automatically detect the presence of support elements and automatically set up all the necessary internal configuration information for communication without additional information from the users. For remote Hardware Management Consoles, users must provide additional addressing information to perform this configuration.

Use **CPC Manual Definition** to define a CPC when TCP/IP connectivity exists between the Hardware Management Console and the CPC:

1. Open the **Task List** from the **Views** area.
2. Open **Object Definition** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Open **Undefined CPCs** group.
5. Select **CPC Manual Definition**.
6. Drag and drop **CPC Manual Definition** on **Add Object Definition** in the **Object Definition** tasks area. The **Manual Add Object Definition** window is displayed.

You can connect a remote Hardware Management Console to a support element using TCP/IP through bridges or routers.

- Using **TCP/IP bridges** to interconnect the support element's local LAN to the company's network requires that the support element be a part of a TCP/IP subnet that is the same as the subnet to which the support element is bridged. Therefore, information that must be configured in a remote Hardware Management Console is the TCP/IP address of the target support element.

  The bridge filters must be configured to allow TCP/IP flows to cross the bridge. The bridges must be configured and operational before SEs can be manually defined in the remote Hardware Management Console.

  Note: For ethernet LANs, there are two different types of ethernet formats: Ethernet Version 2 and 802.3. All devices on the ethernet LAN must use the same format. All Hardware Management Consoles and support elements use the Ethernet Version 2 format. If you need to use 802.3 format, contact the IBM Support Center for assistance.
- Using a **TCP/IP router** to interconnect the support element's local LAN to a company's network requires that the support element be on a unique subnet and that the routers in the network know how to deliver packets to that subnet. Therefore, information that is necessary to configure a remote Hardware Management Console to a support element through a TCP/IP network is the TCP/IP address of the support element. The routers must be configured and operational before the remote Hardware Management Console can be configured to connect to the support element.

  If Routing Information Protocol (RIP) packets do not flow from the router to the Hardware Management Console, then the default route will also need to be defined using the Hardware Management Console Settings task. (See "Customize Network Settings" on page 2-49)

  For information about using CPC Manual Definition as the target object for performing the Add Object Definition task, see "Add Object Definition" on page 3-56.

Undefined Director/Timer Consoles

Note: If you cannot access undefined director/timer consoles, contact your Access Administrator.

This system-defined group contains Director/Timer consoles, if any, that can be defined to the Hardware Management Console but currently are not defined to it. The group also contains a template for manually identifying and defining Director/Timer consoles that the Hardware Management Console cannot automatically discover.

A *Director/Timer console* is an object that represents either:
- An ESCON Director console
- A Sysplex Timer console.

Undefined Director/Timer consoles and the Director/Timer Console Manual Definition Template can be targets of the Add Object Definition task only. To define Director/Timer consoles, use "Add Object Definition" on page 3-56.

To locate the Director/Timer Definition Template:

1. Open **Groups** in the **Views** area.

2. Open **Undefined Directors/Timers** in the **Groups Views Area**. The **Director/Timer Definition Template** appears in the **Undefined Directors/Timers Work Area**.

Undefined Fiber Savers

Note: If you cannot access undefined fiber savers, contact your Access Administrator.

This system-defined group contains a template for manually identifying and defining 2029 Fiber Savers. Undefined fiber savers and the Fiber Saver Manual Definition Template can be targets of the Add Object Definition task only.

To define fiber savers:

1. Open the **Task List** from the **Views** area.
2. Open **Object Definition** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Open the **Undefined Fiber Savers** group.
5. Click **Fiber Saver Manual Definition Template**.
6. Drag and drop the template on **Add Object Definition** in the **Object Definition** tasks area. The **IBM Fiber Saver (2029) Manual Add Object Definition** window is displayed.
7. Enter the **TCP/IP address** and the **Community name** in the boxes.
8. Click **Find**.
9. If you get the message that the Fiber Saver was contacted, click **Save** to add the Fiber Saver.
10. After the Fiber Saver is added, click **OK**. The Fiber Saver is now added to the **Defined Fiber Savers** group.

User-Defined Groups

There may be one or more user-defined groups already defined on your Hardware Management Console. You can create others, delete the ones that were created, add to created groups, or delete from created groups by using the Grouping task.

Note: The system-defined groups (Defined CPCs, CPC Images, and Undefined CPCs) cannot be deleted.

To use **Grouping:**

1. Open the **Task List** from the **Views** area.
2. Open **Daily** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Open the group that contains the CPCs or images that you want to group.
5. Select one or more objects.
6. Drag and drop the selected objects on **Grouping** in the **Daily** tasks area.

The **Grouping** window displays to allow you to add the selected object(s) to an existing group, delete the selected object(s) from a group, create a new group, or delete the group. Online Help is available to guide you through completion of this task. For more information about grouping, see “Grouping” on page 3-6.

Hardware Management Console

The Hardware Management Console icon represents the Hardware Management Console that you are using. It only displays in the Groups Work Area when Hardware Messages have been logged for the Hardware Management Console. Messages logged for the Hardware Management Console are messages about the Hardware Management Console and ethernet and token-ring network activity that provide the links to the CPC support elements.

To view these messages, drag the Hardware Management Console icon to any tasks area and drop it on the Hardware Messages icon.

For more information about Hardware Messages, see “Hardware Messages” on page 3-1.

Optical Network and System I/O

The Optical Network and System I/O icon represents messages resulting from the Problem Analysis Focal Point function analysis of errors from either fiber optic connections or system I/O devices.

Fiber optic connections are used by CPCs to communicate with Input/Output (I/O) devices or a coupling facility. Those connections are:

- ESCON - optical I/O connections
- FICON® - optical I/O connections
- FCP - optical I/O connections
- Coupling Facility Channels - optical coupling facility links
- InterSystem Coupling links - optical coupling connections between zSeries servers.

Optical errors are problems that may affect more than one CPC and, therefore, need to be analyzed at a common point (a Problem Analysis Focal Point).

Some system I/O devices, mostly tape and DASD products, report errors to their operating system. If Optical Error Analysis is **Enabled** on the Hardware Management Console, each configured support element will forward reported I/O errors to the Problem Analysis Focal Point where they will be analyzed and possibly reported to the service provider. To enable Optical Error Analysis, see “Customize Console Services” on page 2-47.

To ensure that duplicate problem reporting does not occur, only one Hardware Management Console (of all the Hardware Management Consoles configured to control a support element) should have Optical Error Analysis enabled.

To view the messages related to Optical Network and System I/O, drag the icon to any tasks areas and drop it on the Hardware Messages icon. For more information about Hardware Messages, see “Hardware Messages” on page 3-1.

Exceptions

Display the Exceptions view by double-clicking with the left mouse button on the Exceptions icon in the Views area. Object icons representing all the CPCs and images that are in an exception state, due to an unacceptable status condition, will be displayed in the Exceptions work area. If no CPCs or images are in an exception state, the Exceptions work area will be empty.

You can recognize that an object is in the Exceptions view by one or both of the following visual indicators:

- The entire top Views portion of the Hardware Management Console Workplace window has a background color that indicates that an exception has occurred.
- The background of the Exceptions icon has a background color that indicates that an object has exceptions.

To view the current status and the acceptable status values for any of the objects in the Exception work area, double-click on their icons to display the Details window. To initiate a corrective action, select one or more of the CPC or image icons in the Exceptions work area and perform tasks by dragging them to a task icon, or by dragging a task icon to one of the CPC or image icons.

Note: An object in the Exceptions Work Area will display the activation profile that was last used in the “Activation Profile” field. An activation of an object in the Exceptions Work Area will attempt to activate the object with the last used profile to return it to its previous status. Under some conditions the “Activation Profile” field of an object in the Exceptions Work Area could have no activation profile associated with it. If activation is needed to resolve an exception condition for an object that has no activation profile associated with it, it is recommended that the object be activated from a user-defined group or that an activation profile be selected from the object’s details window.

See “Monitoring Your Hardware” on page 1-17 for more information about Exceptions and the use of color.

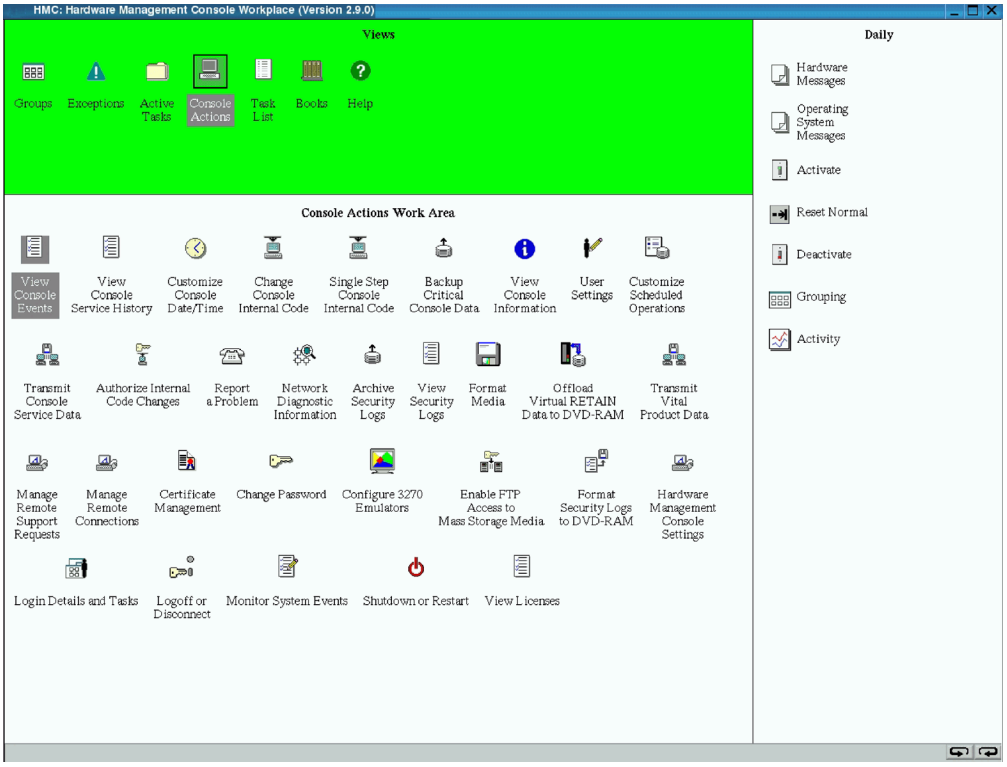
Active Tasks

Display the Active Tasks view by double-clicking with the left mouse button on the Active Tasks icon in the Views area. This view is useful when you have minimized the Progress windows for one or more tasks that are in progress simultaneously. Object icons representing all the tasks that are currently in progress, or those tasks that have completed but whose ending status has not been reviewed, will be displayed in the Active work area.

If there are active icons in the Active Tasks Work Area, you can double-click on them to redisplay the Progress window for that task. When a task completes, the Progress window for that particular task will be automatically redisplayed, allowing you to respond to the final status.

Note: Active icons remain in the Active Tasks Work Area after the task is complete until you redisplay the Progress window and click **OK**. You cannot log off the Hardware Management Console if the Active Tasks Work Area contains minimized progress icons. Before logging off, redisplay each minimized progress window and click **OK** to acknowledge the completion of this task.

Console Actions



Display the Console Actions view by double-clicking with the left mouse button on the Console Actions icon in the Views area. Object icons representing all the actions that can be performed on the Hardware Management Console and its internal code will be displayed in the Console Actions Work Area. These actions are used for setting up the Hardware Management Console, maintaining its internal code, and servicing the Hardware Management Console. Most likely, you will not use these actions on a regular basis.

The following are represented in the ***Console Actions Work Area:***

- View Console Events
- View Console Service History
- Save/Restore Customizable Console Data
- Customize Console Date/Time
- Change Console Internal Code
- Analyze Console Internal Code
- Single Step Console Internal Code
- Backup Critical Console Data
- Perform a Console Repair Action
- View Console Information
- User Profiles
- Customize User Controls
- Password Profiles
- User Settings
- Customize Scheduled Operations
- Transmit Console Service Data

Authorize Internal Code Changes
Domain Security
Installation Complete Report
Report a Problem
View Console Tasks Performed
Network Diagnostic Information
Rebuild Vital Product Data
Archive Security Logs
View Security Logs
Save Upgrade Data
Reassign Hardware Management Console
Enable Electronic Service Agent
Format Media
Offload Virtual RETAIN Data to DVD-RAM
Copy Console Logs to Diskettes
Transmit Vital Product Data
Manage Remote Support Requests
Manage Remote Connections
Certificate Management
Change Password
Configure 3270 Emulators
Copy Support Element Data
Enable FTP Access to Mass Storage Media
Format Security Logs to DVD-RAM
Hardware Management Console Settings
Logoff or Disconnect
Monitor System Events
Shutdown or Restart
Users and Tasks
View Licenses

In addition to these tasks, the Hardware Management Console Settings task includes the following tasks under it:

- Configure Data Replication
- Customize API Settings
- Customize Auto Answer Settings
- Customize Automatic Logon
- Customize Console Services
- Customize Customer Information
- Customize Modem Settings
- Customize Network Settings
- Customize Outbound Connectivity
- Customize Product Engineering Access
- Customize Remote Service
- Object Locking Settings

View Console Events

Note: If you cannot access this task, contact your Access Administrator.

Enables you to view a record of system events occurring on the Hardware Management Console. System events are individual activities that indicate when processes occur, begin and end, succeed or fail.

When an event occurs, the date and time it occurs and a brief description of the event are recorded in the **Console Event Log**. This information is listed on the **View Console Events** window under the **Date**, **Time**, and **Console Event** headings, respectively.

Initially, all events are listed. The events are displayed in descending order, from the most recent event to the oldest event.

Use the options in **View** on the menu bar to change to a different time range, or to change how the events display in the summary.

To view the console events:

1. Open **Console Actions** from the **Views** area.
2. Open **View Console Events** from the **Console Actions Work Area**. The **View Console Events** window is displayed.

Use the online Help to get additional information about reviewing the console events.

View Console Service History

Note: If you cannot access this task, contact your Access Administrator.

Displays the service history log for the Hardware Management Console. The service history is a record of problems occurring on the Hardware Management Console. Service history information is recorded by *Problem Analysis* that starts automatically and identifies the source of a Hardware Management Console problem. Service history entries are displayed with the most recent entry at the top of the record.

To view the console service history:

1. Open **Console Actions** from the **Views** area.
2. Open **View Console Service History** from the **Console Actions Work Area.** The **Service History** window is displayed.

Use the online Help to get additional information about reviewing the service history.

Save/Restore Customizable Console Data

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. You can perform this task only locally, not remotely.
3. If **Customizable Data Replication** is ***Enabled*** on this Hardware Management Console (using the **Configure Data Replication** task), the data specified in this task may change depending on automatic replication from other Hardware Management Consoles configured on your network. For more information on data replication, see “Configure Data Replication” on page 2-45.

Enables you to save the following customizable Hardware Management Console data:

Associated Activation Profiles
Any activation profiles associated with CPC and CPC image objects.

Acceptable Status Settings
Any status settings that are considered acceptable for all types of managed objects.

Monitor System Events Data
Data for the **Monitor System Events** task including:
- The SMTP server and port settings
- The setting for the minimum time between emails
- The event monitors.

Outbound Connectivity Data
Information for dialing out, such as whether to enable the local system as a call-home server, or whether to allow dialing to use the local modem, the dial prefix, and phone numbers.

User Profile Data
User identifications and passwords.

Modem Configuration Data
Dial type (tone or pulse) and other settings such as whether to wait for a dial tone.

Domain Security Data
Security definitions (domain name and password) for your Hardware Management Consoles and CPC support elements in your processor complex.

Object Locking Data
Whether to automatically lock all managed objects or whether to relock after a task runs.

Group Data
All user-defined group definitions.

Account Information Data
Information for a CPC or a group of CPCs which includes physical location and the customer name and address.

After saving this data, you can restore it to the same Hardware Management Console or another Hardware Management Console.

To save or restore your console data:

1. Open **Console Actions** from the **Views** area.
2. Open **Save/Restore Customizable Console Data** from the **Console Actions Work Area**. The **Save/Restore Customizable Console Data** window is displayed.
3. Select the types of customized data and the file where this data is to be saved to or restored from, then click **Save** or **Restore**.

Use the online Help if you need additional information about saving customizable console data.

Customize Console Date/Time

Note: If you cannot access this task, contact your Access Administrator.

Enables you to change the time and date of the battery operated Hardware Management Console clock.

The battery operated clock keeps the time and date for the Hardware Management Console.

Use Customize Console Date/Time:

- If the battery is replaced in the Hardware Management Console.
- If your system is physically moved to a different time-zone.

An attempt will be made every night to synchronize the Hardware Management Console clock with a CPC that has been enabled for time synchronization. If a CPC is enabled for time synchronization by using the Change Object Definition or the Add Object Definition tasks, this console action will cause the Hardware Management Console to update its clock with the time that is set on the CPC support element and keyboard entries will be ignored.

The following list shows the zone correction for some major cities around the world:

City	Direction	Number of Hours Standard Time	Number of Hours Daylight Time
Amsterdam	East	1	2
Anchorage	West	9	8
Berlin	East	1	2
Buenos Aires	West	3	-
Chicago	West	6	5
Denver	West	7	6
London	East	0	1
Los Angeles	West	8	7
New York City	West	5	4
Madrid	East	1	2
Oklahoma City	West	6	5
Paris	East	1	2
Pittsburgh	West	5	4
Rio de Janeiro	West	3	-

Rome	East	1	2
Stockholm	East	1	2
Sydney	East	10	11
Tel Aviv	East	2	3
Tokyo	West	9	-
Toronto	West	5	4
Vienna	East	1	2

For the procedure for changing the Hardware Management Console date and time, see Appendix C, “Changing Your Time-of-Day (TOD) Clock,” on page C-1. You can also use the online Help if you need additional information.

Change Console Internal Code

Note: If you cannot access this task, contact your Access Administrator.

Enables you to specify what you want to do with the internal code changes provided by IBM. This function is used when working with the Licensed Internal Code supplied with the Hardware Management Console. For information on changes to the support element internal code, see “Change Management” on page 3-26.

An IBM service representative will provide new internal code changes and manage their initial use. For internal code changes already stored on your Hardware Management Console hard disk, IBM recommends that you manage these changes only under the supervision of an IBM service representative or with the assistance of your IBM Support Center. Licensed internal code controls many of the operations available on the Hardware Management Console. Internal code changes may provide new operations, or correct or improve existing operations.

Note: Verify that the term **Enabled** appears in the **Change Management Services** field. Change management services must be enabled for you to use options that manage the internal code changes stored on the Hardware Management Console hard disk.

To change the internal code on the Hardware Management Console:

1. Open **Console Actions** from the **Views** area.
2. Open **Change Console Internal Code** from the **Console Actions Work Area**. The **Change Console Internal Code** window is displayed.
3. Select the task you want to perform to the internal code, then click **OK**.

Use the online Help if you need additional information about working with an internal code change.

Analyze Console Internal Code

Note: If you cannot access this task, contact your Access Administrator.

Enables you to install, activate, remove, or edit a Hardware Management Console internal code fix provided by IBM Product Engineering.

To start this task:

1. Open **Console Actions** from the **Views** area.
2. Open **Analyze Console Internal Code** from the **Console Actions Work Area**. The **Analyze Internal Code Changes** window is displayed.

Use the online Help to get additional information on working with an internal code change.

Single Step Console Internal Code

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. You can perform this task remotely only if a DVD-RAM is in the Hardware Management Console DVD drive.

Use this task to retrieve, apply, or remove licensed internal code on the Hardware Management Console. For information on retrieving, applying, or removing licensed internal code to a support element, see “Change Management” on page 3-26.

The purpose of this task is to:

- Determine whether to only apply internal code changes or to retrieve and apply internal code changes.
- Verify the system environment.
- Process a Backup Critical Data function.
- Accept all previously activated internal code changes (optional).
- Exclude the operational internal code changes from becoming permanent.
- Retrieve internal code changes from the IBM Service Support System, if retrieve and apply is the selected operation.
- Connect to the IBM Service Support System and verify the current status of all downloaded internal code changes.
- Install and activate the internal code changes.

To retrieve, apply, or remove licensed internal code on the Hardware Management Console:

1. Open **Console Actions** from the **Views** area.
2. Open **Single Step Console Internal Code** from the **Console Actions Work Area**. The **Single Step Console Internal Code** window is displayed.
3. Select the Single Step Internal Code Change option you want to perform, then click **OK**. (If you do not want to make the operational internal code changes permanent, select **Accept execution phase to be excluded**.)
4. Follow the instructions on the subsequent windows to complete the task.

Use the online Help to get additional information on working with an internal code change.

Backup Critical Console Data

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. The DVD-RAM used for the **Backup Critical Console Data** task must be formatted with a volume label of **ACTBKP**.
3. This task backs up only the critical data associated with Hardware Management Console Application (HWMCA).
4. To back up data stored on each support element, see “Backup Critical Data” on page 3-21
5. If you have performed the Backup Critical Data before using the Hardware Management Console, that DVD-RAM may not work in the Hardware Management Console.
6. You can perform this task remotely only if a DVD is in the Hardware Management Console DVD drive.

This function will back up the data that is stored on your Hardware Management Console hard disk and is critical to support Hardware Management Console operations. You should back up the Hardware Management Console data after changes have been made to the Hardware Management Console or to the information associated with the processor cluster.

Information associated with processor cluster changes is usually information that you are able to modify or add to the Hardware Management Console hard disk. Association of an activation profile to a object, the definition of a group, hardware configuration data, and receiving internal code changes are examples of modifying and adding information, respectively.

Use this task after customizing your processor cluster in any way. A backup copy of hard disk information may be restored to your Hardware Management Console following the repair or replacement of the fixed disk.

To back up console data:

1. Open **Console Actions** from the **Views** area.
2. Open **Backup Critical Console Data** from the **Console Actions Work Area**. The **Backup Critical Data Confirmation** window is displayed.
3. Click **Backup** to begin.
4. When the **Insert DVD-RAM** window displays, insert the backup DVD-RAM in the drive on the Hardware Management Console.
5. Click **OK**. The **Backup Critical Console Data Progress** window is displayed.
6. When backup is complete, click **OK**.

Use the online Help if you need additional information for backing up the Hardware Management Console data.

Perform a Console Repair Action

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. You can perform this task only locally, not remotely.

This task should be the starting point for all Hardware Management Console repairs. You can either repair an open problem or report a repair of a non-detected problem.

To start a console repair action:

1. Open **Console Actions** from the **Views** area.
2. Open **Perform a Console Repair Action** from the **Console Actions Work Area**. The **Perform a Console Repair Action** window is displayed.
3. Select **Repair an open problem** to start a repair or continue a repair of a previously reported problem.

   or

   Select **Report a repair of a non-detected problem** to report to IBM about repairing a problem that was not detected or reported by Problem Analysis.
4. Click **OK** to start the repair.

Use the online Help if you need additional information on starting a repair action.

View Console Information

Note: If you cannot access this task, contact your Access Administrator.

Displays information about the Hardware Management Console and its licensed internal code, such as: the **Type** of machine, **Model number**, and **Serial number** to identify the Hardware Management Console.

Internal Code Change Information lists the engineering change (EC) number and state levels of each set of licensed internal code associated with the Hardware Management Console.

Licensed internal code controls many of the operations available on the Hardware Management Console. Internal code changes may provide new operations, or correct or improve existing operations.

IBM Product Engineering assigns the EC number to a set of licensed internal code. The number identifies the licensed internal code and its purpose.

If a set of licensed internal code is modified, its EC number is supplemented with a state level. A state level distinguishes between different versions of the same set of licensed internal code.

To view the console information:

1. Open **Console Actions** from the **Views** area.
2. Open **View Console Information** from the **Console Action Work Area**. The **System Information** window is displayed.
3. Select a set of licensed internal code from the list.
4. Click **Details...** to view the additional information about internal code state levels.

Use the online Help to get additional information on viewing the Hardware Management Console and its licensed internal code information.

User Profiles

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. If Customizable Data Replication is ***Enabled*** on this Hardware Management Console (using the **Configure Data Replication** task), the data specified in this task may change depending on automatic replication from other Hardware Management Consoles configured on your network. For more information on data replication, see “Configure Data Replication” on page 2-45.

Use this task to manage your system users that log on to the Hardware Management Console. A user profile is a combination of a user ID, permissions, and a text description. Permissions represent the authority levels assigned to the user profile for the objects the user has permission to access.

The user ID and password are used to verify a user’s authorization to log on the Hardware Management Console. The user ID can be 4 to 32 characters in length and can be a combination of letters (a-z) and numbers (0-9). The password is determined by the password rule that is chosen for the user ID. The default choices are *basic*, *strict*, and *standard*, however, other rules may also be available if they were defined in the **Password Profiles** task. All of these rules have their own set of specifications for assigning a password. Your Access Administrator determines what password rule is appropriate for you.

The user profile includes managed resource roles and task roles that are assigned to the user. The *managed resource roles* assign permissions for a managed object or group of objects and the *task roles* define the access level for a user to perform on a managed object or group of objects. You can choose from a list of available default managed resource roles, task roles, or customized roles created by using the **Customize User Controls** task.

See Appendix A, “Hardware Management Console Tasks and Default User IDs,” on page A-1 for a listing of all the Hardware Management Console tasks and the predefined default user IDs that can perform each task.

The default managed resource roles include:
- All Directors/Timers Managed Objects
- All Fiber Saver Managed Objects
- All Managed Objects
- Defined Fiber Saver Managed Objects
- Defined Director/Timer Managed Objects
- Limited Managed Objects

The default task roles include:
- Access Administrator Director/Timer Tasks
- Access Administrator Fiber Saver Tasks
- Access Administrator Tasks
- Advanced Operator Tasks
- Operator Tasks
- Service Fiber Saver Tasks
- Service Representative Tasks
- System Programmer Tasks
- Universal Director/Timer Tasks
- Universal Fiber Saver Tasks

To customize a user profile:

1. Open **Console Actions** from the **Views** area.
2. Open **User Profiles** from the **Console Actions Work Area**. The **User Profiles** window is displayed.
3. Select the type of user ID you want to customize.
4. If you are creating a new user ID, point to **User** on the menu bar and when its menu is displayed, click **Add**. The **Add User** window is displayed.

   or

   If the user ID already exists in the window, select the user ID from the list, and then point to **User** on the menu bar and when its menu is displayed, click **Modify**. The **Modify User** window is displayed.
5. Complete or change the fields in the window, click **OK** when you are done.

This task also allows you to give access to particular user IDs for the Hardware Management Console Web Server. The Web Server is a remote capability that allows you to monitor and/or control defined CPCs, CPC images, or groups from a remote site to a local Hardware Management Console through a Web browser.

To give access to the Web Server:

1. Open **Console Actions** from the **Views** area.
2. Open **User Profiles** from the **Console Actions Work Area**. The **User Profiles** window is displayed.
3. Select the type of user ID you want to give web server access to.
4. If the user ID you want to give access to already exists in the window, select the user ID from the list, and then point to **User** on the menu bar and when its menu is displayed, click **Modify**. The **Modify User** window is displayed.

   or

   If you are creating a new user ID, point to **User** on the menu bar and when its menu is displayed, click **Add**. The **Add User** window is displayed.
5. Click **User Properties...**, the **User Properties** window appears.

6. Select **Allow remote access via the web** and then click **OK**. This user ID now has access to the web server.

   Note: Repeat steps **3** through **6** for each additional user ID you want to give access to the Web Server.

Use the online Help if you need additional information for creating, modifying, copying, or removing a user profile and for remote access to the web.

Customize User Controls

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. If Customizable Data Replication is ***Enabled*** on this Hardware Management Console (using the **Configure Data Replication** task), the data specified in this task may change depending on automatic replication from other Hardware Management Consoles configured on your network. For more information on data replication, see “Configure Data Replication” on page 2-45.
3. Predefined roles (default roles) cannot be modified.

Use this task to define and customize *user roles*. A user role is a collection of authorizations. A user role can be created to define the set of tasks allowed for a given class of user (*task roles*) or it can be created to define the set of managed objects that are manageable for a user (*managed resource roles*). Once you have defined or customized the user roles you can use the **User Profiles** task to create new users with their own permissions.

The predefined managed resource roles include:
- All Directors/Timers Managed Objects
- All Fiber Saver Managed Objects
- All Managed Objects
- Defined Director/Timer Managed Objects
- Defined Fiber Saver Managed Objects
- Limited Managed Objects

The predefined task roles include:
- Access Administrator Director/Timer Tasks
- Access Administrator Fiber Saver Tasks
- Access Administrator Tasks
- Advanced Operator Tasks
- Operator Tasks
- Service Fiber Saver Tasks
- Service Representative Tasks
- System Programmer Tasks
- Universal Director/Timer Tasks
- Universal Fiber Saver Tasks

To customize managed resource roles or task roles:

1. Open **Console Actions** from the **Views** area.

2. Open **Customize User Controls** from the **Console Actions Work Area**. The **Customize User Controls** window is displayed.
3. Select either **Managed Resource Roles** or **Task Roles**.
4. Select the object you want to customize.
5. Click **Edit** to display its menu.
6. Click **Add, Copy, Remove, Modify,** or **Exit** depending on the task you want to perform.

Use the online Help to get additional information for customizing managed resource roles and task roles.

Password Profiles

Note: If you cannot access this task, contact your Access Administrator.

Use this task to create, customize, or verify the password rules assigned to the system users. There are three default password rules that you can choose from if you do not want to create your own. They are basic, strict, and standard.

To customize a password profile:

1. Open **Console Actions** from the **Views** area.
2. Open **Password Profiles** from the **Console Actions Work Area**. The **Password Profiles** window is displayed.
3. You can either create new rules for a password or modify existing ones. Once you have defined the password properties, click **OK** to save the settings.

Use the online Help if you need additional information for creating a password profile.

User Settings

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. Because there are really many main user interfaces (one for each logged on user), the Hardware Management Console provides each user the ability to change settings, such as color or patterns and confirmation settings. In other words, if you change confirmation settings or colors or patterns, this does not cause that same change for other logged-on users.

Enables you to change the confirmation and color or pattern settings based on your preferences. You can choose when confirmation windows are displayed or choose not to display them. You can adjust color settings:

- Modify the default colors (or use gray patterns instead of color) that indicate processor cluster status changes.

- Associate a color or pattern with any of the status values that you indicate as unacceptable, thereby allowing you to distinguish between types of exceptions.
- Change the background color of the Views area for an exception or nonexception situation and change the color associated with pending messages. See “Monitoring Your Hardware” on page 1-17 for more information about status and exception conditions.

You can also enable the user interface style that you want to work with and whether or not you want hover help or single object selection enabled.

To change the confirmation window settings or customize colors:

1. Open **Console Actions** from the **Views** area.
2. Open **User Settings** from the **Console Actions Work Area**. The **User Settings** window displays to allow you to view or change settings.

Use the online Help to get additional information for customizing confirmation windows and color settings.

Customize Scheduled Operations

Note: If you cannot access this task, contact your Access Administrator.

Enables you to:
- Schedule an operation to run at a later time
- Define operations to repeat at regular intervals
- Delete a previously scheduled operation
- View details for a currently scheduled operation
- View scheduled operations within a specified time range
- Sort scheduled operations by date, operation, or console.

You can schedule the times and dates for automatic licensed internal code updates and backup of critical hard disk data for the Hardware Management Console. Using **Customize Scheduled Operations** displays the following information for each operation:
- The processor that is the object of the operation.
- The scheduled date
- The scheduled time
- The operation
- The number of remaining repetitions.

An operation can be scheduled to occur one time or it can be scheduled to be repeated. You will be required to provide the time and date that you want the operation to occur. If the operation is scheduled to be repeated, you will be asked to select:
- The day or days of the week that you want the operation to occur. (optional)
- The interval, or time between each occurrence. (required)
- The total number of repetitions. (required)

The operations that can be scheduled for the Hardware Management Console are:

Accept internal code changes
Schedules an operation to make activated internal code changes a permanent working part of the licensed internal code of the Hardware Management Console.

Backup critical hard disk information
Schedules an operation to make a backup of critical hard disk information for this Hardware Management Console.

Install internal code changes/Activate
Schedules an operation for installing and activating internal code changes retrieved for this Hardware Management Console.

Remove internal code changes/Activate
Schedules an operation for removing and activating internal code changes installed for this Hardware Management Console.

Note: After changes are accepted, they cannot be removed.

Retrieve internal code changes
Schedules an operation to copy internal code changes from a remote service support system to the Hardware Management Console hard disk.

Retrieve internal code changes for defined CPCs
Schedules an operation to copy internal code changes for Central Processor Complexes (CPCs) from a remote support system to the hard disk of the support element for each of the CPCs.

Single step code changes retrieve and apply
Schedules an operation to copy (retrieve) the Hardware Management Console internal code changes to the Hardware Management Console hard disk and then install (apply) the code changes.

Transmit electronic service agent
Schedules a transmittal of the accumulated Electronic Service Agent Input/Output (I/O) error statistics to the Service Agent data collector.

Note: This is automatically scheduled by using the Enable Electronic Service Agent task. Any further changes must use that task too.

Transmit system availability data
Schedules a transmittal of system availability data from the Hardware Management Console to the Product Support System (PSS).

To schedule operations on the Hardware Management Console:

1. Open **Console Actions** from the **Views** area.
2. Open **Customize Scheduled Operations** from the **Console Actions Work Area**. The **Customize Scheduled Operations** window is displayed.
3. Click **Options** to display the next level of menu options:
   - To add a scheduled operation, point to **Options** and then click **New**.
   - To delete a scheduled operation, select the operation you want to delete, point to **Options** and then click **Delete**.
   - To view a scheduled operation, select the operation you want to view, point to **View** and then click **Schedule Details...**.
   - To change the time of a scheduled operation, select the operation you want to view, point to **View** and then click **New Time Range...**.
   - To sort the scheduled operations, point to **Sort** and then click one of the sort categories that appears.

- To return to the Hardware Management Console workplace, point to **Options** and then click **Exit**.

Use the online Help to get additional information for scheduling an operation.

Transmit Console Service Data

Note: If you cannot access this task, contact your Access Administrator.

Provides the ability to send information that is stored on the Hardware Management Console hard disk that can be used for problem determination.

The data may be *traces, logs*, or *dumps* and the destination for the data may be the IBM Service Support System, a diskette, USB flash memory drive, or a DVD-RAM.

Before you can send information to the IBM Service Support System, Phone Server and Remote Service must be *enabled*. To enable remote service, see “Customize Console Services” on page 2-47. To enable telephone server, see “Customize Outbound Connectivity” on page 2-50.

To transmit the console service data:

1. Open **Console Actions** from the **Views** area.
2. Open **Transmit Console Service Data** from the **Console Actions Work Area**. The **Transmit Service Data to IBM** window is displayed.

Use the online Help for additional information about getting selected service data from the Hardware Management Console hard disk and sending it to IBM.

Authorize Internal Code Changes

Note: If you cannot access this task, contact your Access Administrator.

Gives you the option to allow or not to allow the Hardware Management Console to install and activate licensed internal code changes.

To authorize changes to the internal code:

1. Open **Console Actions** from the **Views** area.
2. Open **Authorize Internal Code Changes** from the **Console Actions Work Area**. The **Authorize Internal Code Changes** window is displayed.

Use the online Help to get additional information about enabling or disabling the setting for internal code change authorization.

Domain Security

Note: If you cannot access this task, contact your Access Administrator.

Provides a method for you to maintain the security of a processor complex by controlling the access of the Hardware Management Consoles to the CPC support elements. Hardware Management Consoles can only communicate with CPC support elements that have the same domain name and domain password as the Hardware Management Console. Assigning a unique domain name and password to a Hardware Management Console and the CPCs that are defined to it will isolate those CPCs from any other Hardware Management Console connected to the same Local Area Network (LAN).

To assign a unique domain name and password

1. Open **Console Actions** from the **Views** area.
2. Open **Domain Security** from the **Console Actions Work Area**. The **Domain Security** window is displayed.

Use the online Help to get additional information for assigning a unique domain name and password.

Installation Complete Report

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. You can perform this task only locally, not remotely.

Used by service representatives to report installation information. This information is used by IBM to assess the success of the installation and make improvements in the installation processes. The information can be transmitted directly to IBM Service Support System from the Hardware Management Console or copied to removable media.

The following types of installations should be reported:

- New install
- MES (Miscellaneous Equipment Specification)
- Reinstall
- Patch, Ucode, LIC
- Refresh, PTF
- Discontinue

To report installation information to:

1. Open **Console Actions** from the **Views** area.
2. Open **Installation Complete Report** from the **Console Actions Work Area**. The **Installation Complete Report** window is displayed.

Use the online Help to get additional information for sending installation information to IBM.

Report a Problem

Note: If you cannot access this task, contact your Access Administrator.

Reports problems that occurred on your Hardware Management Console to the IBM Service Support System (for example, the mouse does not work) or lets you test problem reporting.

Submitting a problem is dependent upon whether you have enabled authorized automatic service call reporting. You can do this by using the Customize Remote Service task and selecting **Authorize automatic service call reporting**. If it is enabled and you have a call home server available, it will automatically send the problem to the IBM Service Support System.

If **Authorized automatic service call report** is not enabled, the problem will be logged in the Hardware Messages. You can subsequently send the problem to the IBM Service Support System by selecting the Hardware Management Console from the Groups Work Area, drag and drop the selection on **Hardware Messages** in the task area, click **Details...** in the **Hardware Messages** window where you will get the **Problem Analysis** window to **Request Service**.

To report a problem on your Hardware Management Console:

1. Open **Console Actions** from the **Views** area.
2. Open **Report a Problem** from the **Console Actions Work Area**. The **Report a Problem** window is displayed.
3. Enter a brief description of your problem in the **Problem Description** box and then click **Request Service**.

or

To test problem reporting:

1. Open **Console Actions** from the **Views** area.
2. Open **Report a Problem** from the **Console Actions Work Area**. The **Report a Problem** window is displayed.
3. Select **Test automatic problem reporting** and enter *This is just a test* in the **Problem Description** field.
4. Click **Request Service**.

Use the online Help if you need additional information for reporting a problem or testing if problem reporting works.

View Console Tasks Performed

Note: If you cannot access this task, contact your Access Administrator.

Allows the IBM service representative to review the tasks that have been performed on a Hardware Management Console. This can be very helpful when working with a operator to determine what happened if a problem occurs.

To view all the console tasks performed:

1. Open **Console Actions** from the **Views** area.
2. Open **View Console Tasks Performed** from the **Console Actions Work Area**. The **View Console Tasks Performed** window is displayed.

   This window is divided into two parts. The top part is a rolling display showing the last 100 tasks performed on the Hardware Management Console. The bottom part of the window lists every task that has ever been performed on the Hardware Management Console and the number of times it has been done.

Network Diagnostic Information

Note: If you cannot access this task, contact your Access Administrator.

Displays network diagnostic information for the console's TCP/IP connection.

This task allows you to view information concerning the networking configuration on this Hardware Management Console. There are tabs (Ping, Interfaces, Address, Routes, Address Resolution Protocol (ARP), Sockets, Transmission Control Protocol (TCP), User Datagram Protocol (UDP), Internet Protocol (IP), and Native Connections) to scroll through for information.

This task also allows you to send an echo request (ping) to a remote host.

To view your network information:

1. Open **Console Actions** from the **Views** area.
2. Open **Network Diagnostic Information** from the **Console Actions Work Area**. The **Network Diagnostic Information** window is displayed.

Use the online Help to get additional information on your console's network information.

Rebuild Vital Product Data

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. Do not rebuild the Vital Product Data unless you have been directed by Product Engineering.

Use this task to force a rebuild of the Vital Product Data on the Hardware Management Console. Before a rebuild is done, the current version will be saved.

To rebuild the vital product data:

1. Open **Console Actions** from the **Views** area.
2. Open **Rebuild Vital Product Data** from the **Console Actions Work Area**. The **Rebuild Vital Product Data Confirmation** window is displayed.
3. Click **OK**.
4. After the vital product data is rebuilt, a message displays that the rebuild was successful.
5. Click **OK** to complete the task.

   Note: If a failure occurs, an error will be logged in the default system log.

Use the online Help if you need additional information.

Archive Security Logs

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. The DVD-RAM used for archiving security logs must be formatted with a volume label of **ACTSECLG**.
3. You can perform this task only locally, not remotely.

Use this task to archive a security log for the Hardware Management Console.

To archive a security log:

1. Open **Console Actions** from the **Views** area.
2. Open **Archive Security Logs** from the **Console Actions Work Area**. The **Confirm the Action** window is displayed.
3. Verify the Hardware Management Console shown in the window list is the one whose security log you want to archive.

   Note: Ensure that the DVD-RAM that you will be using for archiving is in the drive.
4. Click **Archive** to start the procedure.

Use the online Help if you need additional information for archiving a security log.

View Security Logs

Note: If you cannot access this task, contact your Access Administrator.

Use this task to view the security log for the Hardware Management Console or a CPC.

To view a security log:

1. Open **Console Actions** from the **Views** area.
2. Open **View Security Logs** from the **Console Actions Work Area**. The **View Security Logs** window is displayed.
3. The window shows the **Security Event** and the **Date** and **Time** it was created.
4. If you need to view an event that does not show on the current screen, click either the **Show Earlier Events** or **Show Later Events**.

Note: Initially, the Hardware Management Console security log is displayed. If you want to view another security log file that was previously archived on a DVD-RAM, insert the DVD-RAM, click **File** on the menu bar, point to **Open Security Log**, and click **New**.

Use the online Help if you need additional information for viewing a security log.

Save Upgrade Data

Note: If you cannot access this task, contact your Access Administrator.

Use this task to save all of the customizable data for your Hardware Management Console to the hard drive or DVD-RAM before performing an Engineering Change (EC) upgrade.

To save the Hardware Management Console customized data to the hard drive:

1. Open **Console Actions** from the **Views** area.
2. Open **Save Upgrade Data** from the **Console Actions Work Area**. The **Save Upgrade Data** window is displayed.
3. Select **Save to hard drive** or **Save to DVD-RAM**. It takes from one to five minutes to save the data.
4. When the data is saved, the **Save upgrade data completed** window is displayed.
5. Click **OK** to end the task.

Use the online Help if you need additional information for saving upgrade data.

Reassign Hardware Management Console

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. You can perform this task only locally, not remotely.

Use this task to reassociate the Hardware Management Console with a different CPC. Diskette data must be obtained prior to starting this task from the **S/390® Special Request** web site. To access the data, enter the following URL:

http://gemserv2.pok.ibm.com/s390req

The S/390 Special Requests home page will display. Click on the **Account Team *initiate a request*** option. Then click the **HMC Move** option from the Request Type pull-down list. Fill in the rest of the information that is needed. After you have your diskette with the required information, continue with this task.

To reassociate this Hardware Management Console:

1. Open **Console Actions** from the **Views** area.
2. Open **Reassign Hardware Management Console** from the **Console Actions Work Area.** The **Reassign HMC Association** window is displayed.
3. Click **OK** to continue. The **Insert Diskette** window is displayed.
4. Insert your reassignment diskette and click **OK**.

Use the online Help if you need additional information for reassigning the Hardware Management Console.

Enable Electronic Service Agent

Note: If you cannot access this task, contact your Access Administrator.

Provides a dialog to enable Electronic Service Agent™ functions and to set up or change certain parameters associated with the function of Electronic Service Agent.

This task is for any z/OS® user that is interested in the Electronic Services for zSeries and for those z/OS users that plan to install the z/OS product ***IBM Electronic Service Agent for IBM zSeries and IBM S/390, Version 1 Release 2 Modification Level 0, program number 5655-F17***. For more information about Electronic Services and Electronic Service Agent see the main web site, *https://www.ibm.com/support/electronic*, and for all documentation you can see the FTP site, *ftp://ftp.software.ibm.com/s390/serviceagent*.

The Electronic Service Agent (program number 5665-F17) may be enabled to collect information from the system environment, including:

- IBM I/O device error data

- IBM software inventory and PTF levels
- Hiper/PE report requests.

When enabled by you, this function collects selected I/O error reports and analyzes them, reporting severe errors and requesting service when appropriate. I/O statistical data and customer system configuration data and system measurement data are transmitted to IBM periodically. IBM maintains the collected data on its servers in support of service related activities and generates information for you to use in helping manage the service and growth of your system. IBM may share the data with our services, support, development, and marketing teams. IBM will ensure that the collected data is available only to those parties who have a legitimate need-to-know.

To enable or disable the Electronic Service Agent function:

1. Open **Console Actions** from the **Views** area.
2. Open **Enable Electronic Service Agent** from the **Console Actions Work Area.** The **Electronic Service Agent License Agreement** window is displayed. You can now either agree with the license and continue with the configuration or disagree and disable the function entirely.
3. If you agree with the terms stated in the license description, click **I Agree**. If you do not agree, the Electronic Service Agent cannot be enabled and the dialog will end.
4. When you agree, the **Data Selection** window is displayed allowing you to:
   - Select the data types that are to be allowed
   - Set the FTP user ID and password that must be used for all z/OS Service Agent transactions to transfer data to this Hardware Management Console

     Note: This dedicated FTP user ID is used only by z/OS Electronic Service Agent clients. It has limited access and can only access dedicated separate partitions and directories on the Hardware Management disk. The dedicated directory is used by z/OS Service Agent clients to temporarily store collected data before it is sent to IBM. Its limited authorization for what it can do only includes transferring data to the Hardware Management disk and getting response files back to the client, with a response message indicating if the data was successfully sent to IBM or not.
   - Set up the necessary local firewall rules to control which external systems are to be allowed FTP access for Electronic Service Agent
   - Set the time of day when the daily transfers of Electronic Service Agent data to IBM are to be initiated.
5. If you elect to add firewall rules for specific z/OS TCP/IP addresses, you must de-select **Allow FTP access from any address** and click **Add** for individual addresses.
6. After all selection and data fields are complete, click **OK** to save the data and complete the enablement of Electronic Service Agent.

You may re-enter or change these selections at any time by executing this function.

In addition to enabling the Electronic Service Agent using this task you may also be interested in setting up a separate LAN connection to be used specifically with the z/OS systems where the Service Agent will be activated. See the Customize Network Settings task for setting up another LAN adapter and IP subnet mask so

you can connect the systems in the network where the Service Agent FTPs data to the dedicated directory of the Hardware Management Console.

Use the online Help if you need additional information for enabling or disabling Electronic Service Agent.

Format Media

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. You can perform this task only locally, not remotely.

Formats a DVD-RAM, diskette, or high-speed memory key.

You can use this task to format the following DVD-RAMs:
- Change Management System Update Level
- Backup/Restore
- Service Data
- Upgrade Data
- Security Log
- Virtual RETAIN

You can also format the following types of diskettes:
- Change Management System Update Level
- User-specified label.

To format a DVD-RAM, diskette, or high-speed memory key:

1. Open **Console Actions** from the **Views** area.
2. Open **Format Media** from the **Console Actions Work Area**. The **Format Media** window is displayed.
3. Select the type of media you want to format, then click **Format**. The **Format Media** progress window is displayed.
4. When the media is formatted, the **Format Media Completed** window is displayed.
5. Click **OK** and then click **Close**.

Use the online Help if you need additional information for formatting a DVD-RAM, diskette, or high-speed memory key.

Offload Virtual RETAIN Data to DVD-RAM

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. You can perform this task only locally, not remotely.

Virtual RETAIN is a set of subdirectories that contain all the files that would have been transmitted to IBM Service Support System (RETAIN) if a connection to IBM Service Support System were available. A subdirectory is dynamically created for each problem reported on a machine that was unable to send data to IBM Service Support System. You can offload the data for a given problem within one of these subdirectories directly to the DVD drive on the Hardware Management Console.

To offload Virtual RETAIN data to a DVD-RAM:

1. Open **Console Actions** from the **Views** area.
2. Open **Offload Virtual RETAIN Data to DVD-RAM** from the **Console Actions Work Area**. The **Virtual RETAIN Data Offload** window is displayed.
3. Select the *problem number* of the subdirectory you want to offload from the list.
4. Load a formatted DVD-RAM into the DVD drive.
5. Click **OK**. The offload process takes several minutes to complete, depending on the size and quantity of the files to be transferred to DVD-RAM.

Use the online Help if you need additional information for offloading Virtual RETAIN data to a DVD-RAM.

Copy Console Logs to Diskettes

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. You can perform this task only locally, not remotely.

Use this task to copy the Hardware Management Console log file (**IQYYLOG.LOG**) to one or more diskettes. You may want to do this for saving or archiving the log file.

To copy the log file to a diskette(s):

1. Open **Console Actions** from the **Views** area.
2. Open **Copy Console Logs to Diskettes** from the **Console Actions Work Area**. The **Copy Log to Diskettes** window is displayed.
3. Insert the diskette into the drive, and click **OK**.
4. Follow the instructions on the subsequent windows to complete the task.

Transmit Vital Product Data

Note: If you cannot access this task, contact your Access Administrator.

Provides a window for you to collect Vital Product Data (VPD) from the Hardware Management Console and to either transmit the data to the IBM Service Support System or to store the information on diskette or Hardware Management Console hard disk.

Note: To transmit the data to the IBM Service Support System, the Hardware Management Console must be enabled for using the Remote Support Facility.

To send vital product data from the Hardware Management Console:

1. Open **Console Actions** from the **Views** area.
2. Open **Transmit Vital Product Data** from the **Console Actions Work Area**. The **Transmit Vital Product Data to IBM** window is displayed.
3. Select the destination you want to transmit to and then click **OK**.

Use the online Help if you need additional information for transmitting VPD data for the Hardware Management Console.

Manage Remote Support Requests

Note: If you cannot access this task, contact your Access Administrator.

View or manage call-home requests that the console has submitted.

To view or manage call-home requests:

1. Open **Console Actions** from the **Views** area.
2. Open **Manage Remote Support Requests** from the **Console Actions Work Area**. The **Manage Remote Support Facility Requests** window is displayed.
3. The window lists active requests (being transmitted) and waiting requests. You can select requests in the lists. You can display options by clicking **Options** on the menu bar. Options permit you to:
   - View all Hardware Management Consoles that are configured as call-home servers for this console
   - Cancel selected requests
   - Cancel all active requests (those being transmitted)
   - Cancel all waiting requests
   - Close the window and exit.

Use the online Help if you need additional information for manually managing remote connections.

Manage Remote Connections

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. The Hardware Management Console's call-home server service must be enabled for you to use this task.

Enables you to manage remote connections. The Hardware Management Console manages remote connections automatically. It puts requests on a queue and

processes them in the order in which they are received. However, this task allows you to manage the queue manually, if necessary. You can stop transmissions, move priority requests ahead of others, or delete requests.

To manage remote connections manually:

1. Open **Console Actions** from the **Views** area.
2. Open **Manage Remote Connections** from the **Console Actions Work Area**. The **Manage Remote Connections** window is displayed.
3. The window lists active requests (being transmitted) and those that are waiting. You can select requests in the lists. You can display options by clicking **Options** on the menu bar. Options permit you to:
   - Prioritize a selected request (move it to the top of the queue)
   - Cancel selected requests
   - Cancel all active requests (those being transmitted)
   - Cancel all waiting requests
   - Hold the queue (puts queue on hold after completing current active request)
   - Release the queue
   - Close the window and exit.

Use the online Help if you need additional information for manually managing remote connections.

Certificate Management

Note: If you cannot access this task, contact your Access Administrator.

All remote browser access to Version 2.9.0 of the Hardware Management Console must use Secure Sockets Layer (SSL) encryption. With SSL encryption required for all remote access to the Hardware Management Console, a certificate is required to provide the keys for this encryption. Version 2.9.0 of the Hardware Management Console provides a self-signed certificate that allows this encryption to occur.

Use this task to manage the certificate(s) used on your Hardware Management Console. It provides the capability of getting information on the certificate(s) used on the console. This task allows you to create a new certificate for the console, change the property values of the certificate, and work with existing and archived certificates or signing certificates.

To manage your certificates:

1. Open **Console Actions** from the **Views** area.
2. Open **Certificate Management** from the **Console Actions Work Area**. The **Certificate Management** window is displayed.
3. Use the menu bar for the actions you want to take with the certificates:
   - To create a new certificate for the console, click **Create**, then select **New Certificate**. Determine whether your certificate will be self-signed or signed by a Certificate Authority, then click **OK**.

- To modify the property values of the self-signed certificate, click **Selected**, then select **Modify**. Make the appropriate changes, then click **OK**.
- To work with existing and archived certificates or signing certificates, click **Advanced**. Then you can choose the following options:
  - Delete existing certificates
  - Work with archived certificates
  - Import certificates
  - View issuer certificates.

4. Click **Apply** for all changes to take effect.

Use the online Help if you need additional information for managing your certificates.

Change Password

Note: If you cannot access this task, contact your Access Administrator.

Allows you to change your password.

To change your password:

1. Open **Console Actions** from the **Views** area.
2. Open **Change Password** from the **Console Actions Work Area**. The **Change Password** window is displayed.
3. Enter your current password and your new password twice, the latter time to confirm it. Then click **OK**.

Use the online Help if you need additional information for changing your password.

Configure 3270 Emulators

Note: If you cannot access this task, contact your Access Administrator.

Use this task to configure the Hardware Management Console to automatically start one or more 3270 emulator sessions when the Hardware Management Console application starts.

A 3270 emulator is an application that allows 3270 terminal emulation from the Hardware Management Console to a host operating system. When configuring a 3270 emulator, you must specify the TCP/IP address of the target system.

To configure 3270 emulator sessions on your desktop:

1. Open **Console Actions** from the **Views** area.
2. Open **Configure 3270 Emulators** from the **Console Actions Work Area**. The **Configure 3270 Emulators** window is displayed.

Use the online Help to get additional information for configuring a 3270 emulator session.

Copy Support Element Data

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. You can perform this task only locally, not remotely.
3. You may need to export IOCDS data to the Hardware Management Console before running this task.

Use this task to transfer the Support Element's upgrade data found on the Upgrade Data diskette, and the Support Element's Input/Output Configuration data that was previously exported to the Hardware Management Console to the Backup Restore DVD-RAM.

1. Open **Console Actions** from the **Views** area.
2. Open **Copy Support Element Data** from the **Console Actions Work Area**. The **Copy Support Element Data** window is displayed.
3. Insert the Upgrade Data diskette into the disk drive, and insert the Backup Restore DVD-RAM into the DVD-RAM drive.

Use the online Help to get additional information for copying support element data to DVD-RAM.

Enable FTP Access to Mass Storage Media

Note: If you cannot access this task, contact your Access Administrator.

Use this task along with the support element **Load from CD-ROM, DVD, or Server** task and by monitoring Operating System Messages to allow your system processor to install software from mass storage media (CD or DVD) located on the Hardware Management Console. See Appendix E, "Installing Software from a Mass Storage Device," on page E-1 for the entire procedure.

To access this task:

1. Open **Console Actions** from the **Views** area.
2. Open **Enable FTP Access to Mass Storage Media** from the **Console Actions Work Area**. The **Enable FTP Access to Mass Storage Media** message window is displayed. To allow FTP access to the mass storage media, click **Yes**.
3. The **Enable FTP Access to Removable Mass Storage Media** window is displayed, specify the TCP/IP address of the system processor that requires access to the Hardware Management Console for the mass storage media.

4. The **Enable FTP Access to Mass Storage Media** message window is displayed, you will use the user ID and password information from the support element **Load from CD-ROM or Server** task.
5. Click **CLOSE** when you no longer need the FTP access and the installation is complete.

Use the online Help if you need additional information for enabling FTP access to mass storage media or see Appendix E, “Installing Software from a Mass Storage Device,” on page E-1.

Format Security Logs to DVD-RAM

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. You can perform this task only locally, not remotely.

Use this task to copy a security log in ASCII format to a DVD-RAM. By offloading the security log to the DVD-RAM, you can use any ASCII editor to view the entire log or print a hardcopy of the log for reference. Before you begin, make sure you have a formatted DVD-RAM *Security Log* (see “Format Media” on page 2-37).

To copy the security log:

1. Open **Console Actions** from the **Views** area.
2. Open **Format Security Logs to DVD-RAM** from the **Console Actions Work Area**.
3. Insert the DVD-RAM into the drive, click **OK**. It may take a few minutes for the security log to be copied. The **Retrieving Security Log** window is displayed.
4. Once the security log is copied, the **Format Security Log to DVD - Success** window is displayed. The file name on the DVD-RAM is the same name as the Hardware Management Console, and the extension is TXT.

Use the online Help if you need additional information for copying a security log to a DVD-RAM.

Hardware Management Console Settings

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. If Customizable Data Replication is ***Enabled*** on this Hardware Management Console, the data specified in this task may change depending on automatic replication from other Hardware Management Consoles configured on your network. For more information on data replication, see “Configure Data Replication” on page 2-45.

The Hardware Management Console Settings task contains a collection of settings-related tasks:

Configure Data Replication
Enable or disable the ability of the Hardware Management Console to act as a server of customizable console data and to indicate whether the Hardware Management Console can accept customizable console data sent by another Hardware Management Console.

Customize API Settings
Enable or disable an SNMP agent, set up a community name file and event notification information.

Customize Auto Answer Settings
Define the login name and password for point-to-point protocol (PPP) dial-up connection to the Hardware Management Console.

Customize Automatic Logon
Enable or disable the automatic logon feature.

Customize Console Services
Enable or disable remote operation, LIC change, and optical error analysis.

Customize Customer Information
Customize company information and account information.

Customize Modem Settings
Configures basic modem settings for remote support.

Customize Network Settings
View and change network information (identification information, LAN adapter information, Domain Name Services (DNS) configuration information). There is also a **Routing** tab on the **Network** notebook window from which you can examine or change information, such **net, host,** or **default** routers, and default gateway information.

Customize Outbound Connectivity
Customize outbound connectivity for the Hardware Management Console to use remote service.

Customize Product Engineering Access
View or change authorization of IBM Product Engineering access to the Hardware Management Console.

Customize Remote Service
Enable remote service requests, authorize automatic service call reporting.

Object Locking Settings
Control which managed objects are automatically locked and whether they are relocked after being used as target objects for a task.

To access the tasks under the Hardware Management Console:

1. Open **Console Actions** from the **Views** area.
2. Open **Hardware Management Console Settings** from the **Console Actions Work Area**. The **Hardware Management Console Settings Work Area** is displayed.

Configure Data Replication

Note: If you cannot access this task, contact your Access Administrator.

Enables or disables customized data replication. Customized data replication lets another Hardware Management Console obtain customized console data from or send data to this Hardware Management Console.

Note: Customizable console data is accepted from other Hardware Management Consoles only after specific Hardware Management consoles and their associated allowable customizable data types have been configured.

To enable customized data replication:

1. Open **Console Actions** from the **Views** area.
2. Open **Hardware Management Console Settings** from the **Console Actions Work Area**. The **Hardware Management Console Settings Work Area** is displayed.
3. Open **Configure Data Replication** from the **Hardware Management Console Settings Work Area**. The **Configure Customizable Data Replication** window displays to allow you to enable or disable customizable data replication.

Use the online Help to get additional information for enabling or disabling customizable data replication.

For more information on customizing console data for data replication, see Appendix D, “Customizable Data Replication,” on page D-1.

Customize API Settings

Note: If you cannot access this task, contact your Access Administrator.

Allows you to control Hardware Management Console Application Programming Interfaces (APIs) access. This access permits applications that were not supplied as part of the Hardware Management Console Application (HWMCA) to communicate with the objects defined to this Hardware Management Console. This task lets you

enable or disable an SNMP agent and set up a community name file and event notification information for an SNMP agent. For more information on APIs, see *Application Programming Interfaces*, order number SB10-7030. An online copy of this book is available under the Books icon in the Views area of your Hardware Management Console workplace.

To customize API settings:

1. Open **Console Actions** from the **Views** area.
2. Open **Hardware Management Console Settings** from the **Console Actions Work Area**. The **Hardware Management Console Settings Work Area** work area is displayed.
3. Open **Customize API Settings** from the **Hardware Management Console Settings**. The **Customize API Settings** window is displayed

Use the online Help to get additional information about customizing API settings.

Customize Auto Answer Settings

Note: If you cannot access this task, contact your Access Administrator.

Configures the settings to allow the Hardware Management Console to automatically answer an incoming telephone call to the attached modem. You define the login name and password to use for a Point-to-Point Protocol (PPP) dial-up connection to a Hardware Management Console. The Hardware Management Console uses the PPP protocol to control which users can establish incoming connections. A user who wants to establish a dial-up connection to call and connect to an Hardware Management Console must use this login name and password when configuring the dial-up client. For example, a user trying to connect to a Hardware Management Console from a Windows® system uses this login name and password, which establishes a Windows Dial-up Networking configuration for calling a particular Hardware Management Console. See “Using Windows XP to Dial to a Hardware Management Console” on page B-6 for more information.

To customize auto answer settings:

1. Open **Console Actions** from the **Views** area.
2. Open **Hardware Management Console Settings** from the **Console Actions Work Area**. The **Hardware Management Console Settings Work Area** is displayed.
3. Open **Customize Auto Answer Settings** from the **Hardware Management Console Settings Work Area**. The **Customize Automatic Call Answer Settings** window is displayed

Use the online Help to get additional information about customizing auto answer settings.

Customize Automatic Logon

Note: If you cannot access this task, contact your Access Administrator.

Provides a window for you to enable or disable the automatic logon feature.

When enabled, the automatic logon feature will log on the Hardware Management Console automatically using the user ID you specify whenever the Hardware Management Console is powered on.

To enable or disable the automatic logon feature:

1. Open **Console Actions** from the **Views** area.
2. Open **Hardware Management Console Settings** from the **Console Actions Work Area**. The **Hardware Management Console Settings Work Area** is displayed.
3. Open **Customize Automatic Logon** from the **Hardware Management Console Settings Work Area**. The **Customize Automatic Logon** window displays to allow you to enable the automatic logon feature and to select the user ID that you want the Hardware Management Console to use when it is powered on.

Use the online Help to get additional information for setting up automatic logon.

Customize Console Services

Note: If you cannot access this task, contact your Access Administrator.

Enables or disables Hardware Management Console services. A Hardware Management Console service is a facility or function of the Hardware Management Console Application that lets the console interact with other consoles and systems. Enabling a service lets the console provide tasks and perform operations associated with the service. Disabling a service prevents the console from providing tasks and performing operations associated with the service. Services include:

Remote operation
Controls whether this Hardware Management Console can be operated using a web browser from a remote workstation. See Appendix B, “Remote Operations,” on page B-1 for more information.

Note: The tasks that require removeable media cannot be performed remotely.

LIC change
Controls whether this Hardware Management Console provides change management operations for its defined objects and for other Hardware Management Consoles.

Optical error analysis
Controls whether this Hardware Management Console analyzes and reports

optical problems for its defined objects. (Optical problems are problems occurring on ESCON or coupling facility channel links.)

To enable or disable Hardware Management Console services:

1. Open **Console Actions** from the **Views** area.
2. Open **Hardware Management Console Settings** from the **Console Actions Work Area**. The **Hardware Management Console Settings Work Area** is displayed.
3. Open **Customize Console Services** from the **Hardware Management Console Settings Work Area**. The **Customize Console Services** window displays to allow you to enable or disable services.

Use the online Help to get additional information for enabling or disabling Hardware Management Console services.

Customize Customer Information

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. If Customizable Data Replication is ***Enabled*** on this Hardware Management Console (using the **Configure Data Replication** task), the data specified in this task may change depending on automatic replication from other Hardware Management Consoles configured on your network. For more information on data replication, see “Configure Data Replication” on page 2-45.

Enables you to customize the customer information for the Hardware Management Console.

The Customize Customer Information window displays the following tabs for providing input:

- Administrator
- System
- Account

To customize your customer information:

1. Open **Console Actions** from the **Views** area.
2. Open **Hardware Management Console Settings** from the **Console Actions Work Area**. The **Hardware Management Console Settings Work Area** is displayed.
3. Open **Customize Customer Information** from the **Console Actions Work Area Hardware Management Console Settings Work Area**. The **Customize Customer Information** window is displayed.
4. Select a tab, then supply the appropriate information in the fields provided. Click **OK** when you have completed the task.

Use the online Help to get additional information about customizing your account information.

Customize Modem Settings

1. If you cannot access this task, contact your Access Administrator.
2. If Customizable Data Replication is ***Enabled*** on this Hardware Management Console (using the **Configure Data Replication** task), the data specified in this task may change depending on automatic replication from other Hardware Management Consoles configured on your network. For more information on data replication, see “Configure Data Replication” on page 2-45.

Configures the basic modem settings for remote support. These settings include:

Dial type
Tone for touch-tone phones or pulse for rotary phones.

Other settings
Sets whether to wait for dial tone, whether to enable a speaker, and any dial prefix (number to dial before dialing external numbers).

To configure the basic modem settings for remote support:

1. Open **Console Actions** from the **Views** area.
2. Open Hardware Management Console Settings from the **Console Actions Work Area**. The **Hardware Management Console Settings Work Area** is displayed.
3. Open **Customize Modem Settings** from the **Hardware Management Console Settings** work area. The **Customize Modem Settings** window displays to allow you to select settings.

Use the online Help to get additional information for configuring the basic modem settings.

Customize Network Settings

1. If you cannot access this task, contact your Access Administrator.
2. If Customizable Data Replication is ***Enabled*** on this Hardware Management Console, the data specified in this task may change depending on automatic replication from other Hardware Management Consoles configured on your network. For more information on data replication, see “Configure Data Replication” on page 2-45.

Allows you to view the current network information for the Hardware Management Console and to change network settings as shown in the following list.

Identification
Contains the host name and domain name of the Hardware Management Console.

Console name
Your Hardware Management Console user name, the name that identifies your console to other consoles on the network. This is the short host name, for example: hmcibm1.

Domain name
An alphabetic name that Domain Name Services (DNS) can translate to the IP address. For example, DNS might translate the domain name www.example.com to 198.105.232.4. (The long host name consists of the console name plus a period plus the domain name, for example: hmcibm1.endicott.ibm.com.)

Console description
This is for customer use only. An example might be: Main Hardware Management Console for customer finance.

LAN Adapters
A summarized list of all (visible) Local Area Network (LAN) adapters. You can select any of these and click **Details...** to launch a window allowing you to change addressing, routing, and other LAN adapter characteristics.

Name Services
The Domain Name Services (DNS) and domain suffix values.

Routing
Routing information and default gateway information.

The **Gateway address** is the route to all networks. The default gateway address (if defined) informs this Hardware Management Console where to send data if the target station does not reside on the same subnet as this Hardware Management Console. This is needed to allow the Hardware Management Console to connect to IBM Service Support System using the internet.

You can assign a specific LAN to be the **Gateway device** or you can choose “any.”

You can select **Enable ’routed’** to start the routed daemon.

To customize the network settings:

1. Open **Console Actions** from the **Views** area.
2. Open **Hardware Management Console Settings** from the **Console Actions Work Area**. The **Hardware Management Console Settings Work Area** is displayed.
3. Open **Customize Network Settings** from the **Hardware Management Console Settings Work Area**. The **Customize Network Settings** window displays to allow you to view or change the network settings.

   Note: Depending on the type of change that you make, the network or console automatically restarts or the console automatically reboots.

Use the online Help to get additional information for customizing the network settings.

Customize Outbound Connectivity

1. If you cannot access this task, contact your Access Administrator.
2. If Customizable Data Replication is ***Enabled*** on this Hardware Management Console, the data specified in this task may change depending on automatic

replication from other Hardware Management Consoles configured on your network. For more information on data replication, see “Configure Data Replication” on page 2-45.

Allows you to customize the means for outbound connectivity for the Hardware Management Console to use to connect to remote service. You can configure this Hardware Management Console to attempt connections through the Internet or through the local modem or both. Remote service is a two-way communication between the Hardware Management Console and the IBM Service Support System for the purpose of conducting automated service operations. The connection can only be initiated by the Hardware Management Console. IBM Service Support System cannot and never attempts to initiate a connection to the Hardware Management Console.

To customize your dial information:

1. Open **Console Actions** from the **Views** area.
2. Open **Hardware Management Console Settings** from the **Console Actions Work Area**. The **Hardware Management Console Settings Work Area** is displayed.
3. Open **Customize Outbound Connectivity** from the **Hardware Management Console Settings Work Area**. The **Customize Outbound Connectivity** window is displayed.
4. Select **Enable local server as call-home server** (a check mark appears) before proceeding with the task.
5. The dial information window displays the following tabs for providing input:
   - Local Modem
   - Internet
   - External Time Source

   Notes:

   a. You must also customize at least one telephone number for calling the IBM Service Support System.

   b. The Hardware Management Console must have a LAN adapter configured with a default gateway that provides access to the Internet.
6. When you complete all the necessary fields, click **OK** to save your changes.

Use the online Help if you need additional information for customizing outbound connectivity information.

Customize Product Engineering Access

Note: If you cannot access this task, contact your Access Administrator.

This task allows you to enable or disable the authorization of IBM Product Engineering access to the Hardware Management Console. Once product engineering is enabled to access the Hardware Management Console you can decide whether or not product engineering can access the system remotely.

With access authority, IBM Product Engineering can log on the Hardware Management Console with an exclusive user identification that provides tasks and operations for problem determination.

Product Engineering access is provided by a reserved password and permanent user identification. You cannot view, discard, or change the password and user identification, but you can control their use for accessing the Hardware Management Console.

To customize product engineering access:

1. Open **Console Actions** from the **Views** area.
2. Open **Hardware Management Console Settings** from the **Console Actions Work Area**. The **Hardware Management Console Settings Work Area** is displayed.
3. Open **Customize Product Engineering Access** from the **Hardware Management Console Settings Work Area**. The **Customize Product Engineering Access** window is displayed.
4. Choose access settings for Production Engineering, then click **Apply**, or click **OK**, to save the settings.

Use the online Help to get additional information for customizing product engineering access to your Hardware Management Console.

Customize Remote Service

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. If Customizable Data Replication is ***Enabled*** on this Hardware Management Console (using the **Configure Data Replication** task), the data specified in this task may change depending on automatic replication from other Hardware Management Consoles configured on your network. For more information on data replication, see “Configure Data Replication” on page 2-45.

Allows you to customize the Hardware Management Console for using remote service. Remote service is two-way communication between the console and the IBM Service Support System (commonly known as RETAIN) for conducting automated service operations. Using remote service reduces the operator interaction needed to complete some service operations and provides some console tasks with another source or destination for sending or receiving service information. The connection can only be initiated by the Hardware Management Console. IBM Service Support System cannot and never attempts to initiate a connection to the Hardware Management Console. Some examples for enabling remote service:

- Lets the Hardware Management Console automatically report a problem and request service through the IBM Service Support System
- Uses the IBM Service Support System as a source for retrieving internal code changes and as a destination for transmitting service data.

When remote service is disabled, error information and requests for service must be done through voice communications.

To configure remote service:

1. Open **Console Actions** from the **Views** area.
2. Open **Hardware Management Console Settings** from the **Console Actions Work Area**. The **Hardware Management Console Settings Work Area** is displayed.
3. Open **Customize Remote Service** from the **Hardware Management Console Settings** work area. The **Customize Remote Service** window is displayed.
4. To enable remote service, select **Enable remote service requests**. Selection this allows the Hardware Management Console to establish remote connections to the IBM Service Support System.
5. To enable automatic service calling, select **Authorize automatic service call reporting**. Selecting this allows the Hardware Management Console to automatically report problems and get service through its remote connection to the IBM Service Support System.
6. After you enable remote service, you must customize the telephone number for calling the IBM Service Support System.
7. When you complete the necessary fields, click **OK** to save your changes.

Use the online Help if you need additional information for setting up remote service.

Object Locking Settings

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. Because there are really many main user interfaces (one for each logged on user), the Hardware Management Console provides object locking capabilities for each user. This means that users have their own individual object locking settings, managed by using the **Object Locking Settings** task, and their own state information for locked objects. In other words, if you lock or unlock an object, it is not locked or unlocked respectively for other logged-on users.

Allows you to control whether managed objects are automatically locked and whether they are relocked after being used as target objects for a task.

To change object locking settings:

1. Open **Console Actions** from the **Views** area.
2. Open **Hardware Management Console Settings** from the **Console Actions Work Area**. The **Hardware Management Console Settings Work Area** is displayed.
3. Open **Object Locking Settings** from the **Hardware Management Console Settings Work Area**. The **Locking** window is displayed.

Use the online Help to get additional information for changing object locking settings.

Logoff or Disconnect

Note: If you cannot access this task, contact your Access Administrator.

Allows you to end the current user session and logs off the Hardware Management Console or to disconnect while your tasks continue running. If you disconnect, you can reconnect at a later time to continue working. However, a disconnected session is eventually ended. (This is because disconnected sessions exist only while the Hardware Management Console application is running. If the Hardware Management Console is restarted or the console is shut down or rebooted, all session information is lost.)

Select the log off operation when you no longer need access to the Hardware Management Console. Logging off the console does not affect the status of CPCs or Images. After you log off or disconnect, the **Welcome to the HMC** window is displayed. If you chose to disconnect rather than logoff, when you logon again, the **Choose a Disconnected Session** window is displayed. You can select the disconnected session to continue working or you can begin a new session. (The number of windows displayed depends on the state of the session when it was disconnected. One of the windows is the main user interface; additional windows are for each task that was running when the session was disconnected.)

To log off or disconnect from the Hardware Management Console:

1. Open **Console Actions** from the **Views** area.
2. Open **Log off or Disconnect** from the **Console Actions Work Area**. The **Choose to Logoff or Disconnect** window displays to let you log off or disconnect.

Use the online Help if you need additional information about logging off the Hardware Management Console or disconnecting from your session.

Monitor System Events

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. For this task, an SMTP email server must be accessible from the Hardware Management Console. (This is because all notifications from this task use email.)

Allows you to create and manage event monitors. Event monitors listen for events from objects the Hardware Management Console manages. There are three types of events:

- Hardware messages
- State changes
- Operating system messages.

When an event is received, the monitor tests it with user-defined time and text filters. If the event passes the tests, the monitor sends email to interested users. The **Monitor System Events** task lets you enable or disable monitors, display or change information about settings such as the SMTP port.

An example of an event monitor you can create is one that listens for hardware messages. You also use the **Monitor System Events** task for pager notification. (Paging services typically support email forwarding to pagers, so no special support for paging is provided.)

An event monitor has the following characteristics:

- Unique name on the Hardware Management Console
- Persistent.
- Enabled or disabled without changing its other characteristics.
- Listens to one or more managed objects.
- Notifies users by email if an event is received from a managed object and it passes through all of the event monitor's filters.
- Contains a regular expression filter that must match the event text for the monitor to notify users.
- Limited by time filters, such as the following:
  - A set of days, for example, Monday through Friday
  - A range of times during the day, for example 8 a.m. through 4 p.m.
  - A range of dates, for example, 2/14/2005 to 2/16/2005.

To create or change an event monitor:

1. Open **Console Actions** from the **Views** area.
2. Open **Monitor System Events** from the **Console Actions Work Area**. The **Event Monitor Summary** window opens to display:
   - **Settings** information, including:
     - SMTP server
     - SMTP port
     - Minimum seconds between emails.
   - **Monitors** information, including:
     - Name
     - Description
     - Enabled status.

   You can view or change settings information. You can enable or disable monitors.
3. To add, edit, or delete an event monitor, select it in the **Monitors** table and click **Add**, **Edit**, or **Delete**, respectively.

Use the online Help if you need additional information about creating and managing event monitors.

Shutdown or Restart

Note: If you cannot access this task, contact your Access Administrator.

Enables you to shut down (power off the console) or to restart the application or the console.

To shut down or restart the application or console:

1. Open **Console Actions** from the **Views** area.
2. Open **Shutdown or Restart** from the **Console Actions Work Area**. The **Shutdown or Restart** window opens.
3. You can select one of the following:
   - Restart application
   - Restart console
   - Power-off/shutdown console
4. Then click **OK** to perform this action.

Use the online Help if you need additional information about shutting down or restarting the Hardware Management Console.

Users and Tasks

Note: If you cannot access this task, contact your Access Administrator.

Allows you to display information such as:
- User you are logged in as
- Time you logged in
- Number of tasks running
- Your access location
- Information about tasks that are running:
  - Task ID
  - Task name
  - Targets (if any)
  - Session ID.

To display the users and tasks currently logged on the Hardware Management Console:

1. Open **Console Actions** from the **Views** area.
2. Open **Users and Tasks** from the **Console Actions Work Area**. The **Users and Tasks** window displays.
3. You can choose to logoff or disconnect from a selected session that is currently running or you can choose to switch to another task or end that task.
4. Click **Close** to end this task.

View Licenses

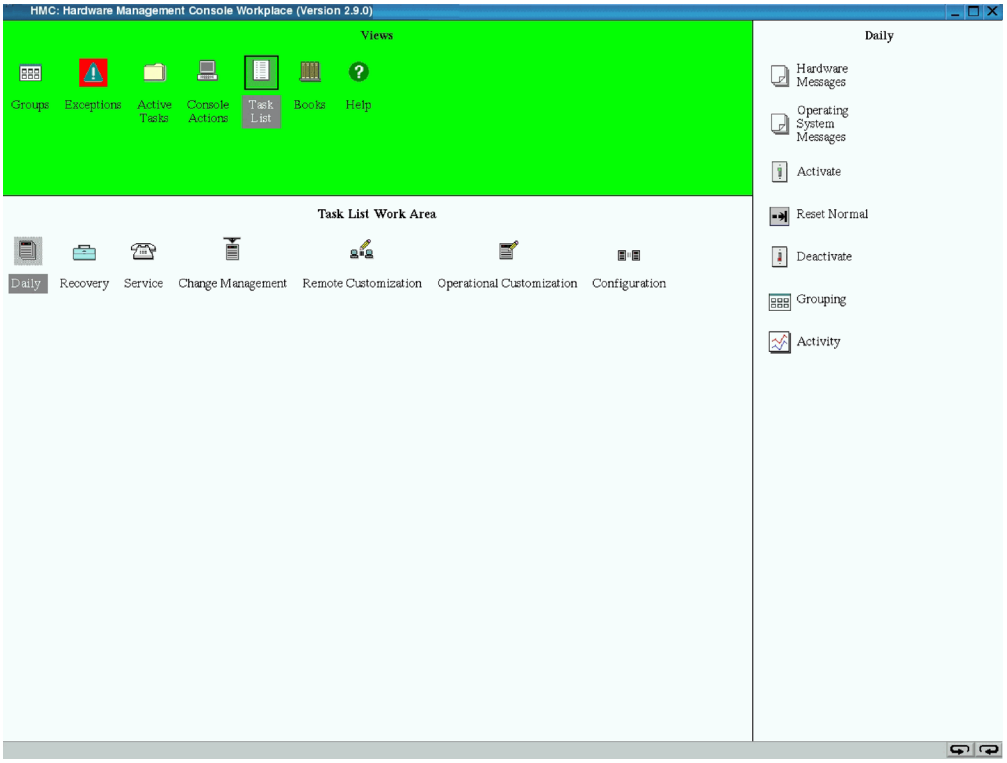
Note: If you cannot access this task, contact your Access Administrator.

Use this task to view the Licensed Internal Code (LIC) that you have agreed to for this Hardware Management Console. This list does not include programs and code provided under separate license agreements.

This task window appears after the initialization window or to view the licenses:

1. Open **Console Actions** from the **Views** area.
2. Open **View Licenses** from the **Console Actions Work Area**. The **View Licenses** window is displayed.
3. You can click on any of the license links to get more information, click **OK** when you are done.

Task List



Display the Task List view by double-clicking with the left mouse button on the Task List icon in the Views area. The Hardware Management Console is initially displayed with Daily tasks icons displayed in the Task area on the right portion of the window.

To change to a different set of tasks, double-click on one of the icons displayed in the Task List Work Area, or click on either the Task Ring Forward button or the Task Ring Backward button until the desired tasks are displayed. The Task Ring buttons are on the bottom right-hand corner of the tasks area.

Note: If the Task Ring buttons do not appear, you can click the **Maximize** button that appears in the top right-hand corner of the window.

The following are represented in the ***Task List Work Area:***
- Daily
- Recovery
- Service
- Change Management
- Remote Customization
- Operational Customization
- Object Definition
- Configuration

See Chapter 3, “Tasks,” on page 3-1 for a description of each available task.

Books

Use **Views** and the work area to open the following online books provided with the Hardware Management Console application.

Hardware Management Console Operations Guide: This online book is the publication you are currently using. It provides information about monitoring your system using the Hardware Management Console.

Programming Interfaces: This online book is publication *Application Programming Interfaces*, order no. SB10-7030. It provides information to customers in developing system management applications that will provide integrated hardware and software system management solutions using the application programming interfaces (thnxs).

Application Programming Interfaces for Java: This online book describes the **com.ibm.hwmca.api** package. The purpose of this package is to allow Java™ applications, local or remote, the ability to exchange data related to the objects that the Console application manages.

Coupling Facility Control Code Commands: This publication is available exclusively as an online book. It provides information about commands you can issue from the support element to coupling facility control code.

Coupling Facility Control Code Messages: This publication is available exclusively as an online book. It provides information about messages sent from coupling facility control code to the support element.

To open an online book:

1. Open **Books** from the **Views** area.
2. In the **Books Work Area,** locate the book you want to open and double-click on the book icon. The book remains open until you close it
3. When you are finished viewing the book, close it by clicking the **X** in the top-right corner.

Support Element Operations Guide: This online book is a publication that provides information about the Support Element Console Application and about using the support element workplace to monitor and operate your system. To open this online book, see “Support Element Operations Guide” on page 3-42.

Help

Provides information about the tasks on the Hardware Management Console. To view all of the online help information:

1. Open **Help** from the **Views** area.
2. The **Help** window appears. On the left side of the window the **Contents** area appears. You can select an item in the Contents and then select a specific task that you are interested in viewing the Help information. As you select a task the help information for that task appears on the right side of the window.

You can also get to the help information for each task by clicking **Help** on the task window you are currently working in. The **Help** window appears with the Contents on the left and the help content on the right.

Chapter 3. Tasks

The Tasks area displays icons representing the tasks that you can perform on objects in your system. The Hardware Management Console Workplace window is displayed initially with icons representing Daily tasks. To change to a different set of tasks, select the Task List icon from the Views Area and double-click on one of the icons displayed in the **Task List Work Area** or click either the Task Ring Forward button or the Task Ring Backward button until the desired tasks are displayed. The Task Ring buttons are on the bottom right-hand corner of the Hardware Management Console Workplace window. If the buttons do not appear, click the maximize button in the top right-hand corner of the window.

The following sets of tasks are represented in the ***Tasks List Work Area:***

Daily
Recovery
Service
Change Management
Remote Customization
Operational Customization
Object Definition
Configuration

Each task list contains the following tasks common to all lists. They are:

- Hardware Messages
- Operating System Messages

Hardware Messages

Displays consolidated hardware related messages for all selected hardware in the processor cluster, including your Hardware Management Console.

When a message is logged, the Hardware Messages icon alternates between a light and dark background. The hardware object (CPC or Hardware Management Console) with a message pending is indicated by a dark background on its object icon. By default, the dark background color of the object icon and the Hardware Messages icon is blue.

A message is a brief, one-line description of an event, such as a report of a Hardware Management Console failure. You can view further explanation and any recommended operator action for a single message by selecting one or more messages and then click **Details...**. The message details and any recommended operator action display, one at a time, for each selected message.

Hardware messages for all of the hardware objects are stored on the Hardware Management Console hard disk in the Message Log File. Because the Message Log File limits the number of messages to five hundred, try to view, act on, and delete messages promptly. Messages received over this limit will cause the oldest messages to be lost. Delete selected messages from the list by clicking **Delete...**. A window displays for confirmation before any messages are deleted.

Note: Some messages are deleted automatically after you view the message details. These messages generally provide information only, and are deleted automatically because no further action is required.

The **Hardware Messages** window will display up to 20 messages for the selected object. If more than one object or a group of objects was selected, a tab on the right side of the window is available for each object. Messages are listed from the oldest to the newest message, with the oldest message displayed at the top of the list. If more than 20 messages have been logged for an object, the newer messages that are not displayed will be retrieved from the Messages Log File and added to the list as the displayed, older messages are viewed, acted on, or deleted.

For information about changing the background color of the object icons to indicate that messages are pending, see “Hardware Management Console Settings” on page 2-44.

To display the **Hardware Messages:**

1. Open **Groups** from the **Views** area.
2. Select the group object that has a blue background.
3. Drag and drop the selected object on **Hardware Messages** in any task area.
4. The **Hardware Messages** window displays.

Online Help is available if you need additional information for viewing or deleting hardware messages.

Operating System Messages

Displays consolidated operating system generated messages for all selected CPC images. The operating system messages are displayed when one or more CPC image objects, or a group of CPC images, is dragged and dropped on the Operating System Messages icon.

Coupling Facility Control Code (CFCC) commands can be sent from the Hardware Management Console to a CF when a CPC image that represents a CF is dragged and dropped on the Operating System Messages icon. To send a command, click **Send Command**.

For more information about the CFCC commands and messages, see the online books, *Coupling Facility Control Code Commands* and *Coupling Facility Control Code Messages*.

To display the **Operating System Messages:**

1. Open **Groups** from the **Views** area.
2. Select the group of CPCs or images that has a cyan background.
3. Drag and drop the selected group on **Operating System Messages** in any task area.
4. The **Operating System Messages** window displays.

Online Help is available if you need additional information for viewing or deleting operating system messages.

Daily

Daily contains the tasks for operating CPCs and CPC images. The following are represented in the ***Daily*** tasks area:

Hardware Messages
Operating System Messages
Activate
Reset Normal
Deactivate
Grouping
Activity

Activate

Note: If you cannot access this task, contact your Access Administrator.

Controls starting up the system including power-on reset, partition activation, and initial program load of your operating system software. Activate is your primary function for CPC or CPC image start up. Activate senses the status of the object, then performs only those actions necessary to get the object to an operational state. For example, if the CPC is already in the power-on reset complete state, Activate skips the power-on reset step and proceeds with the load of the operating system.

If the CPC allows activation to include a power-on and the CPC is powered-off, Activate will power it on from the Hardware Management Console.

The Activate function uses profiles, which contain the parameters needed to put the system in an operational state. The profiles are stored in each CPC support element. A set of default activation profiles are shipped with the CPC. The values contained in these profiles may not be correct for your environment. See “About Activation Profiles” on page 1-20 for a description of activation profiles. See “Customize/Delete Activation Profiles” on page 3-43 for information on creating and modifying activation profiles.

To start activation of a CPC or CPC image:

1. Open the **Task List** from the **Views** area.
2. Open **Daily** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.

   For individual CPCs or images:

   a. Open the group that contains the CPCs or images that you want to activate.
   b. Select one or more objects.

   For a group of CPCs or images:

   a. Select the group of CPCs or images that you want to activate.

Note: Activate is considered a disruptive task. If the object(s) is locked, you must unlock it before continuing. For more information on disruptive tasks, see “Object Locking for Disruptive Tasks” on page 1-15.

4. Drag and drop the selected objects on **Activate** in the **Daily** tasks area.

   Note: If one or more of the selected CPCs have associated secondary objects (for example, an image or CF), a **Secondary Object Warning for Disruptive Task** message will be displayed with a list of the active secondary objects. Review the list.

5. If you want to review the profile that will be used for activation, click **View Activation Profile**; the **View Activation Profiles** window displays, showing the values that are set.
6. If you want to continue this task, click **Yes**. If you want to end the task, click **No**. If you click **Yes**, the **Activate Progress** window displays indicating the progress of the activation and the outcome.
7. Click **OK** to close the window when the activation completes successfully.

   Otherwise, if the activation does not complete successfully, follow the directions on the window to determine the problem and how to correct it.

Reset Normal

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. The Reset Normal task is only supported for CPC image objects or groups of CPC images.

Terminates any current operations and clears any interruption conditions in a CPC image (except for a coupling facility image). A reset normal does not clear main storage during initialization.

To perform a Reset Normal:

1. Open the **Task List** from the **Views** area.
2. Open **Daily** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.

   For individual CPC images:

   a. Open the group that contains the CPC images that you want to reset.

   b. Select one or more objects.

   For a group of CPC images:

   a. Select the group of CPC images that you want to reset.

   Note: Reset Normal is considered a disruptive task. If the object(s) is locked, you must unlock it before continuing. For more information on disruptive tasks, see “Object Locking for Disruptive Tasks” on page 1-15.

4. Drag and drop the selected objects on **Reset Normal** in the **Daily** tasks area. The **Reset Normal Task Confirmation** window is displayed.
5. Review the information on the window to verify that the object(s) you will reset is the correct one.

If the information is correct, click **Yes**. The **Reset Normal Progress** window displays indicating the progress of the reset and the outcome.

6. Click **OK** o close the window when the reset completes successfully.

   Otherwise, if the reset does not complete successfully, follow the directions on the window to determine the problem and how to correct it.

Deactivate

Note: If you cannot access this task, contact your Access Administrator.

Stops the operating system, deallocates resources, and clears associated hardware for all selected CPCs or CPC images. In addition, if a CPC or a CPC image that represents a non-LPAR system is selected, the deactivate task will perform a power off.

To start deactivation of a CPC or CPC image:

1. Open the **Task List** from the **Views** area.
2. Open **Daily** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.

   For individual CPCs or images:

   a. Open the group that contains the CPCs or images that you want to deactivate.

   b. Select one or more objects.

   For a groups of CPCs or images:

   a. Select the group of CPCs or images that you want to deactivate.

   Note: Deactivate is considered a disruptive task. If the object(s) is locked, you must unlock it before continuing. For more information on disruptive tasks, see “Object Locking for Disruptive Tasks” on page 1-15.

4. Drag and drop the selected objects on **Deactivate** in the **Daily** tasks area.

   Note: If one or more of the selected CPCs have associated secondary objects (for example, an image or CF), a **Secondary Object Warning for Disruptive Task** message will be displayed with a list of the active secondary objects. Review the list.

5. Review the information on the window to verify that the object(s) you will deactivate is the correct one. If you want to continue this task, click **Yes**. If you want to end the task, click **No**. If you click **Yes**, the **Deactivate Task Confirmation** window is displayed.
6. The **Deactivate Progress** window displays indicating the progress of the deactivation and the outcome. Click **OK** to close the window when the deactivation completes successfully.

   Otherwise, if the deactivation does not complete successfully, follow the directions on the window to determine the problem and how to correct it.

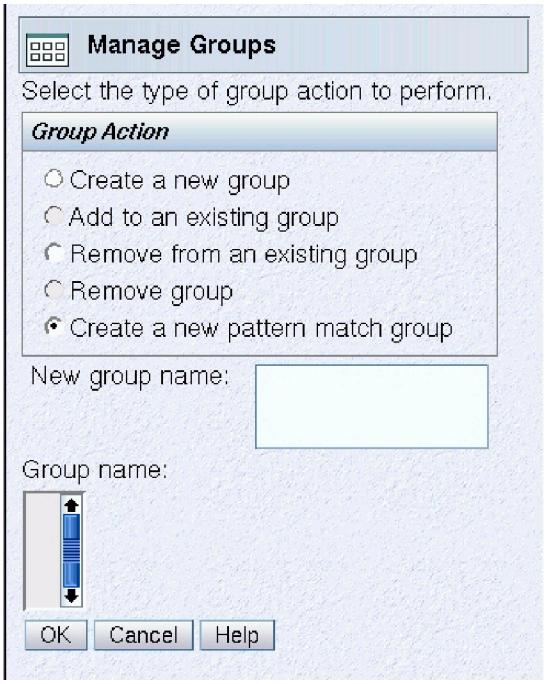
Grouping

Notes:

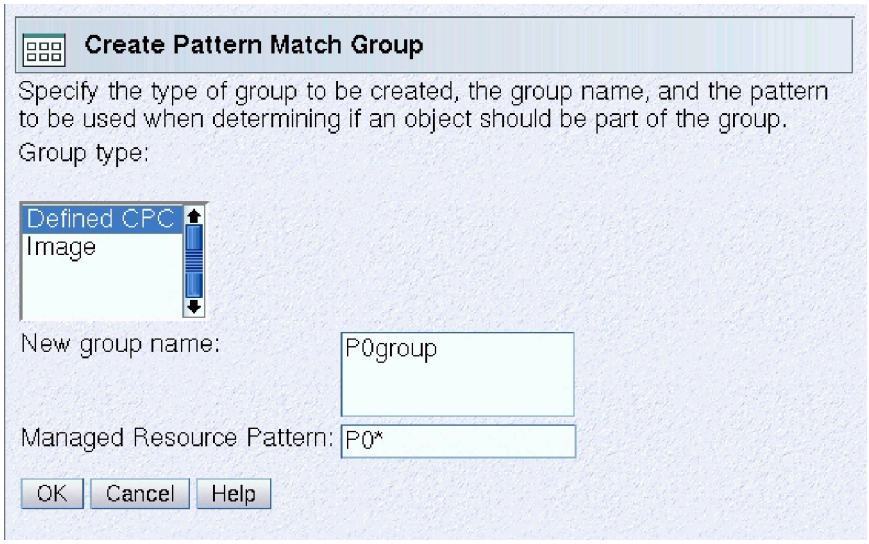
1. If you cannot access this task, contact your Access Administrator.
2. If Customizable Data Replication is ***Enabled*** on this Hardware Management Console, the data specified in this task may change depending on automatic replication from other Hardware Management Consoles configured on your network. For more information on data replication, see “Configure Data Replication” on page 2-45.

Enables you to create, delete, add to, or delete from user-defined groups of objects. When you select one or more CPCs or CPC images and drop them on the Grouping icon, a window is displayed allowing you to specify what type of action you want to take on the group. You may want to create a group when you want to perform the same task on several CPCs or CPC images simultaneously instead of repeating the task on each individual CPC or CPC image. You may also want to create groups when managing multiple sysplexes by creating a group for each sysplex controlled by the Hardware Management Console.

You can also create a *Pattern Match* group. A *Pattern Match* group is a group that contains all managed objects of a given type (CPCs, CPC images, Director/Timer consoles, or IBM Fiber Savers) whose names match a certain pattern (for example, all CPCs starting with P0). To create this CPC group, you would click **Create a new pattern match group** on the **Manage Groups** window, then click **OK**.



Specify *P0.** in the **Managed Resource Pattern** field on the **Pattern Match Grouping** window, specify *P0group* in the **New group name** field, then click **OK**.



You will receive a message that the group has been created and the selected objects have been added to it.

Any new groups that you create will be displayed in the **Groups Work Area** when you select the **Groups** view icon.

To group CPCs or CPC images:

1. Open the **Task List** from the **Views** area.
2. Open **Daily** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Open the group that contains the CPCs or images that you want to group.
5. Select one or more objects.
6. Drag and drop the selected objects on **Grouping** in the **Daily** tasks area. The **Manage Groups** window displays to allow you to add the selected object(s) to an existing group, delete the selected object(s) from a group, create a new group, create a pattern match group, or delete the group. Use the online Help if you need additional information for working with groups.

This task also allows you to group one or more user-defined groups into other groups. You may want to do this if you have many groups in your Groups Work Area and need additional work area space. However, if you group user-defined groups into other groups, you cannot perform any task other than **Grouping** on these groups.

To group groups of user-defined CPCs and/or CPC images:

1. Open the **Task List** from the **Views** area.
2. Open **Daily** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Select one of the groups you want to group together.
5. Drag and drop the selected group on **Grouping** in the **Daily** tasks area. The **Manage Groups** window displays.
6. Select **Create a new group**.
7. Enter a *group name* in the **New group name** field.

8. Click **OK**. A **Create a New Group** window displays stating you successfully created a new group.
9. Click **OK**. The new group is now displayed in the **Groups Work Area**.
10. Select another group that you want to add to the group you just created above.
11. Drag and drop the selected group on **Grouping** in the **Daily** tasks area. The **Manage Groups** window displays.
12. Select **Add to an existing group**.
13. Select the *group name* you created in **step 7** above from the **Group Name** box.
14. Click **OK**. The **Add to an Existing Group** window displays stating you successfully added a group to another group.
15. Click **OK**. The group is no longer displayed in the **Groups Work Area** because it is now part of the group you created in **step 7.**
16. Repeat **steps 10** through **15** for as many groups that you want to add to the new group.

As previously stated, you cannot perform tasks on grouped groups. They can only be performed on the group that contains the individual CPCs or CPC images. You can get access to this group or the individual CPCs or CPC images in the group using either of these methods:

- Double-click the grouped icon in the **Groups Work Area**. This opens up the groups that are nested in the preceding group. Continue double-clicking each nested group until the group that contains the individual CPCs or CPC images is displayed, or
- Open the workplace pop-up menu
  1. Right-click on any empty area in the workplace. This opens the workplace pop-up menu.
  2. Point to **Groups** to open its cascaded menu. Continue selecting each cascaded menu until the individual group that contains the CPCs or CPC images that you want to perform an action on is displayed and click that item.

Activity

Note: If you cannot access this task, contact your Access Administrator.

Displays the system activity for CPCs or a group of CPCs. System activity includes the channel activity and physical processing activity that has been defined in the system activity profiles that are stored in the selected CPCs. For more information about assigning and customizing activity profiles for CPCs, see “Customize Activity Profiles” on page 3-44.

If you select a single object for the task, both a summary window and a details window appear. If you select more than one object, only the summary window is displayed at first.

The Summary window displays the system activity for each object on a single line. The activity displayed as a blue bar is the average of all reported physical processor processing activity for the CPC. The activity displayed as a green bar is

the average of all reported channel activity for the CPC. One or both types of activities can be displayed for the selected objects. A red bar indicates that activity data is not available for the object.

If you selected more than one object, you can double-click on a summary bar for that object to display its details window. This window shows the detailed System Activity Display (SAD) for an object as a rectangular chart.

Available screen space and resources provide a practical upper limit on the number of System Activity displays that can be active at one time. Starting the Activity task when another instance of the task is already running does not stop the previous task instance.

Note: The utilization reported by the **Activity** task for most channel types will agree with the utilization reported by Resource Measurement Facility (RMF™). For fiber channels, however, this task considers the channel to be busy any time an operation is pending, even if the channel is waiting for a device to respond. Whereas, RMF looks at the amount of work done versus the amount of work that could be done by the channel. This means that if you have devices that are relatively slow to respond, leaving the channel waiting for a response but otherwise idle, **Activity** will show a utilization that is significantly higher than that reported by RMF.

To display a CPC(s) activity:

1. Open the **Task List** from the **Views** area.
2. Open **Daily** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.

   For individual CPCs:

   a. Open the group that contains the CPCs with the activity that you want to display.

   b. Select one or more objects.

   For a group of CPCs:

   a. Select the group of CPCs that you want to display.
4. Drag and drop the selected objects on **Activity** in the **Daily** tasks area. After a few seconds, the **System Activity Summary** window is displayed.

Use the online Help to get additional information on monitoring system activity.

Recovery

Recovery tasks are used to recover from a suspected CPC hardware or software error.

The following are represented in the ***Recovery*** tasks area:
- Hardware Messages
- Operating System Messages
- Single Object Operations
- Start All
- Stop All
- Reset Normal
- PSW Restart
- Reset Clear
- Load
- Integrated 3270 Console
- Integrated ASCII Console

Single Object Operations

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. The following steps are used when trying to determine the correct authorization level used for the Single Object Operations session:
   - If the same user ID is defined on the target object, then the authorization level for that user will be used.
   - Otherwise, the authority of the *user mode* that corresponds to the ″most powerful″ task role associated with the user is used. The *user mode* is determined by working back to the predefined task roles associated with the user.
3. Only one direct connection, through this task, can be initiated at a time, and a maximum of four can be active at any one time. Only one Single Object Operations session can be active for any support element.
4. This task can also be performed on a defined Director/Timer.

Creates a direct connection to a single object support element. You may need to connect to an individual support element to investigate and resolve exception situations. After a Single Object Operations session has been established, you can control the input to the support element or just monitor the output of the support element by using the **Session** pull down on the window.

See the *Support Element Operations Guide* for a description of the functions that can be performed using this task.

To establish a support element session from the Hardware Management Console:

1. Open the **Task List** from the **Views** area.
2. Open **Recovery** from the **Task List Work Area**.

3. Open **Groups** from the **Views** area.
4. Open the group that contains the object with the support element that you want to connect to.
5. Select one CPC (or ESCON Timer or Sysplex Timer).
6. Drag and drop the selected object on **Single Object Operations** in the **Recovery** tasks area. The **Single Object Operations Task Confirmation** window is displayed.
7. If you want to continue establishing a session with a single CPC console, click **Yes**.

Use the online Help to get additional information for working with the selected support element.

Start All

Note: If you cannot access this task, contact your Access Administrator.

Ends instruction stop state for selected CPC images (except for a coupling facility image) that were previously stopped. This causes instruction processing to begin.

To start CPC images:

1. Open the **Task List** from the **Views** area.
2. Open **Recovery** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.

   For individual CPC images:

   a. Open the group that contains the CPC image that you want to start.

   b. Select one or more objects.

   For a group of CPC images:

   a. Select the group of CPC images that you want to start.

   Note: Start is considered a disruptive task. If the object(s) is locked, you must unlock it before continuing. For more information on disruptive tasks, see “Object Locking for Disruptive Tasks” on page 1-15.
4. Drag and drop the selected objects on **Start All** in the **Recovery** tasks area. The **Start Task Confirmation** window is displayed.
5. Review the information on the window to verify that the object(s) you will start is the correct one.

   If the information is correct, click **Yes**. The **Start Progress** window displays indicating the progress of the start and the outcome.
6. Click **OK** to close the window when the start completes successfully.

   Otherwise, if the start does not complete successfully, follow the directions on the window to determine the problem and how to correct it.

Use the online Help to get additional information for starting CPC images.

Stop All

Note: If you cannot access this task, contact your Access Administrator.

Places all selected CPC images (except for a coupling facility image) in an instruction stop state. This changes the operational status to **Stopped**.

To stop CPC images:

1. Open the **Task List** from the **Views** area.
2. Open **Recovery** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.

   For individual CPC images:

   a. Open the group that contains the CPC images that you want to stop.

   b. Select one or more objects.

   For a group of CPC images:

   a. Select the group of CPC images that you want to stop.

   Note: Stop is considered a disruptive task. If the object(s) is locked, you must unlock it before continuing. For more information on disruptive tasks, see "Object Locking for Disruptive Tasks" on page 1-15.
4. Drag and drop the selected objects on **Stop All** in the **Recovery** tasks area. The **Stop Task Confirmation** window is displayed.
5. Review the information on the window to verify that the object(s) you will stop is the correct one.

   If the information is correct, click **Yes**. The **Stop Progress** window displays indicating the progress of the stop and the outcome.
6. Click **OK** to close the window when the stop completes successfully.

   Otherwise, if the stop does not complete successfully, follow the directions on the window to determine the problem and how to correct it.

Use the online Help to get additional information for stopping CPC images.

Reset Normal

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. The Reset Normal task is supported only for CPC image objects or groups of CPC images.

Terminates any current operations and clears any interruption conditions in a CPC image (except for a coupling facility image). A reset normal does not clear main storage during initialization.

To perform a Reset Normal:

1. Open the **Task List** from the **Views** area.
2. Open **Recovery** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.

   For individual CPC images:

   a. Open the group that contains the CPC images that you want to reset.

   b. Select one or more objects.

   For a group of CPC images:

   a. Select the group of CPC images that you want to reset.

   Note: Reset Normal is considered a disruptive task. If the object(s) is locked, you must unlock it before continuing. For more information on disruptive tasks, see “Object Locking for Disruptive Tasks” on page 1-15.
4. Drag and drop the selected objects on **Reset Normal** in the **Recovery** tasks area. The **Reset Normal Task Confirmation** window is displayed.
5. Review the information on the window to verify that the object(s) you will reset is the correct one.

   If the information is correct, click **Yes**. The **Reset Normal Progress** window displays indicating the progress of the reset and the outcome.
6. Click **OK** to close the window when the reset completes successfully.

   Otherwise, if the reset does not complete successfully, follow the directions on the window to determine the problem and how to correct it.

PSW Restart

Note: If you cannot access this task, contact your Access Administrator.

Performs a restart operation on the first available central processor(s) of the selected CPC images (except for a coupling facility image).

A restart interruption will store the current program status word (PSW) at real address 8 and fetch a new PSW from real address 0 in central storage.

PSW Restart can be used when the status of the selected object is:

- Operating
- Stopped

To restart a processor:

1. Open the **Task List** from the **Views** area.
2. Open **Recovery** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.

   For individual CPC images:

   a. Open the group that contains the CPC images that you want to perform PSW Restart on.

   b. Select one or more objects.

   For a group of CPC images:

a. Select the group of CPC images that you want to perform PSW Restart on.

Note: PSW Restart is considered a disruptive task. If the object(s) is locked, you must unlock it before continuing. For more information on disruptive tasks, see “Object Locking for Disruptive Tasks” on page 1-15.

4. Drag and drop the selected objects on **PSW Restart** in the **Recovery** tasks area. The **PSW Restart Task Confirmation** window is displayed.
5. Review the information on the window to verify the processor that you will restart is the one you want.
6. If the information is correct, click **Yes** to perform the restart.
7. Click **OK** to close the message when the restart completes successfully.

   Otherwise, if the restart does not complete successfully, follow the directions in the message to determine the problem and how to correct it.

Reset Clear

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. The Reset Clear task is supported only for CPC image objects or groups of CPC images.

Terminates any current operations and clears any interruption conditions in a CPC image (except for a coupling facility image). A reset clear clears main storage and all registers during initialization.

To perform a Reset Clear:

1. Open the **Task List** from the **Views** area.
2. Open **Recovery** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.

   For individual CPC images:

   a. Open the group that contains the CPC images that you want to reset.

   b. Select one or more objects.

   For a group of CPC images:

   a. Select the group of CPC images that you want to reset.

   Note: Reset Clear is considered a disruptive task. If the object(s) is locked, you must unlock it before continuing. For more information on disruptive tasks, see “Object Locking for Disruptive Tasks” on page 1-15.
4. Drag and drop the selected objects on **Reset Clear** in the **Recovery** tasks area. The **Reset Clear Task Confirmation** window is displayed.
5. Review the information on the window to verify that the object(s) you will reset is the correct one.

   If the information is correct, click **Yes**. The **Reset Clear Progress** window displays indicating the progress of the reset and the outcome.
6. Click **OK** to close the window when the reset completes successfully.

   Otherwise, if the reset does not complete successfully, follow the directions on the window to determine the problem and how to correct it.

Load

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. Depending on your machine type, model, and features installed, you can have up to four Load types:
   - Normal
   - Clear
   - SCSI
   - SCSI dump.

   If you have a z800 or z900 with the SCSI IPL feature installed, you must first select **Enable SCSI IPL** on the Options window of the Reset Profile from the **Customize/Delete Activation Profiles** task and then IML the system. Otherwise, the SCSI load or SCSI dump will not work properly. (See "Customize/Delete Activation Profiles" on page 3-43.)
3. For daily or routine loading of images, it is recommended that you customize activation profiles to specify how you want to load images, and then use a profile with the **Activate** task to perform all the operations necessary to make an image operational, including loading it with a control program.
4. Other products and documentation may refer to this operation as an *initial program load (IPL)*.

Load (except for a coupling facility image) causes a program to be read from a designated device and initiates running that program. If the CPC is operating in logically partitioned (LPAR) mode, the logical partition is the target of the load. Otherwise, if the CPC is operating in basic mode, the CPC is the target of the load.

To perform a load:

1. Open the **Task List** from the **Views** area.
2. Open **Recovery** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Open the group that contains the CPC image that you want to load.
5. Select one object.

   Note: Load is considered a disruptive task. If the object(s) is locked, you must unlock it before continuing. For more information on disruptive tasks, see "Object Locking for Disruptive Tasks" on page 1-15
6. Drag and drop the selected object on **Load** in the **Recovery** tasks area. The **Load** window is displayed with the information that was last used when the CPC image was loaded.
7. Review the information in the window to verify that the object you will load is the correct one.

   If the information is correct, click **OK**. The **Load Task Confirmation** window is displayed.
8. To perform the load, click **Yes**. The **Load Progress** window displays indicating the progress of the load and the outcome.

9. Click **OK** to close the window when the load completes successfully. Otherwise, if the load does not complete successfully, follow the directions on the window to determine the problem and how to correct it.

Use the online Help to get additional information for loading a CPC image.

Integrated 3270 Console

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. This task is supported by z/VM® 4.4 or later.
3. One 3270 console is available for each CPC image.
4. This task is supported on all z990 processors and also on z900 and z800 if running at the current Licensed Internal Code levels.

This task provides a 3270 console that can be used with a host operating system without the need for any special connectivity or additional hardware, such as control units or network connections. The Integrated 3270 Console uses the already existing network connection between the Hardware Management Console and the support element, and the connection between the support element and the CPC to connect with the host operating system.

To start the console:

1. Open the **Task List** from the **Views** area.
2. Open **Recovery** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Open the group that contains the CPC Image you want to work with.
5. Select one CPC image object.
6. Drag and drop the selected object on **Integrated 3270 Console** in the **Recovery** tasks area. The **Integrated 3270 Console** window is displayed.

   An `X SYSTEM` indicator will also display in the Status area. If the host operating system is already started, the Integrated 3270 Console task will try to establish communications with it. After the host system responds, the **Integrated 3270 Console** window will be updated with data provided by the host operating system. If the host system is not running or does not support the Integrated 3270 Console, then the **Integrated 3270 Console** window will remain blank.

   If the host system is not running, you can start the system by performing a Load.

   a. Drag and drop the selected object on **Load** in the **Recovery** tasks area. The **Load** window is displayed.
   b. Enter the *load address* of your operating system in the **Load address** box.
   c. Enter the *load parameter* (for example, **SYSG** for zVM4.4) in the **Load parameter** box.
   d. Click **OK**. The **Load Task Confirmation** window is displayed.
   e. Click **Yes**. After **Load** completes, the **Integrated 3270 Console** window will be updated with data provided by the host operating system.

Use the online Help if you need additional information for using the Integrated 3270 Console.

Integrated ASCII Console

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. One ASCII console is available for each CPC image.

This task provides an ASCII console that can be used with a host operating system without the need for any special connectivity or additional hardware, such as control units or network connections. The Integrated ASCII Console uses the already existing network connection between the Hardware Management Console and the support element, and the connection between the support element and the CPC to connect with the host operating system.

To start the console:

1. Open the **Task List** from the **Views** area.
2. Open **Recovery** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Open the group that contains the CPC Image you want to work with.
5. Select one CPC image object.
6. Drag and drop the selected object on **Integrated ASCII Console** in the **Recovery** tasks area. The **Integrated ASCII Console** window is displayed.

   If the Linux operating system is already started, the Integrated ASCII Console task will try to establish communications with it. After the operating system responds, the **Integrated ASCII Console** window will be updated with the Linux Welcome screen.

   If the Linux operating system is not running, you can start the system by performing a Load.

   a. Drag and drop the selected object on **Load** in the **Recovery** tasks area. The **Load** window is displayed.
   b. Enter the *load address* of your operating system in the **Load address** box.
   c. Click **OK**. The **Load Task Confirmation** window is displayed.
   d. Click **Yes**. After **Load** completes, the **Integrated ASCII Console** window will be updated with the Linux Welcome screen.

Use the online Help to get additional information on starting an ASCII console session.

Service

Service tasks are used to analyze suspected hardware errors and report problem data to IBM, backup critical CPC data, and archive security log files. Additional *Service Representative* tasks are available to test the processor cluster hardware and to restore support element licensed internal code.

The following are represented in the ***Service*** tasks area:

- Hardware Messages
- Operating System Messages
- Service Status
- Perform Problem Analysis
- View Service History
- Backup Critical Data
- Restore Critical Data
- Report a Problem
- Transmit Service Data
- Archive Security Logs
- Format Security Logs to DVD-RAM

Service Status

Note: If you cannot access this task, contact your Access Administrator.

Many of the CPC service tasks require that the CPC is first placed in Service Status. Repair and Verify, for example, cannot be run on a CPC until that CPC is placed in Service Status. Setting a CPC to Service Status allows a service representative to perform service tasks on the CPC or support element.

Service Status should be enabled for CPCs that are to be serviced. When in Service Status, the CPC status displayed on its Details window will be Service and no other status will be reported by the CPC until Service Status is disabled. During a service action, status changes (for example, No Power) that would normally cause an exception due to an unacceptable status will not cause an exception when the status is Service. CPC images will not be displayed on the Hardware Management Console when Service Status is enabled for the CPC.

Service status also prevents messages indicating the loss of communication to the support element from displaying while the support element is powered off or during licensed internal code (LIC) load.

To put a CPC in service status:

1. Open the **Task List** from the **Views** area.
2. Open **Service** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Open the group that contains the CPC that you want to put in Service Status.

5. Select one or more objects.
6. Drag and drop the selected objects on **Service Status** in the **Service** tasks area. The **Service Status** window is displayed.
7. Select one or more objects using the check boxes.
8. Point to **Options** from the menu bar and then click **Enable service status**, **Disable service status**, or **Display error message** to enable or disable service status or display error messages, respectively.
9. Click **Save** to save your changes.
10. When you are asked if you are sure you want to save your changes, click **Yes**.

Use the online Help if you need additional information for placing the CPC in service status.

Perform Problem Analysis

Note: If you cannot access this task, contact your Access Administrator.

Manually calls Problem Analysis, which analyzes stored data that is collected from various parts of a processor at the time of an error and determines the type of problem. Problem Analysis then informs the user of the steps that are necessary to resolve the problem.

Problems that are considered to be *hard* errors start Problem Analysis automatically. An example of a hard error is a processor card failure. Results from automatic Problem Analysis are stored under Hardware Messages.

The icon of the CPC that had the hard error and the icon of any group that contains the CPC icon will have a blue background indicating that Problem Analysis results were reported for that CPC.

Problems that can be considered to be *soft* errors require the operator to start Problem Analysis manually, usually after the operating system reports a problem. An example of a soft error is an interface control check (IFCC). When the operator selects a CPC and starts manual Problem Analysis, a window displays with the last 50 IFCCs that occurred.

To start Problem Analysis manually:

1. Open the **Task List** from the **Views** area.
2. Open **Service** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Open the group that contains the CPC that you want to perform Problem Analysis on.
5. Select one object.
6. Drag and drop the selected objects on **Perform Problem Analysis** in the **Service** tasks area. The **Problem Analysis** window is displayed.

Use the online Help for additional information to manually start problem analysis.

View Service History

Note: If you cannot access this task, contact your Access Administrator.

Displays a list of current problems for selected CPCs or a selected group of CPCs. The problems may be opened or closed and will be displayed with the most recent entry at the top of the list.

From the Service History window, you can choose the following menu items:

View

Problem summary
Displays detailed information about the selected problem including machine type, model, and serial number information.

Problem analysis panels
Redisplays the Problem Analysis (PA) windows that were created when the selected problem was originally reported.

Repair information
Displays repair information for the selected problem.

Exit Ends the task and returns to the Hardware Management Console workplace

Close

Selected problem
Changes the current status of the selected problem to closed.

All problems
Changes the current status of all open problems to closed.

Sort

By date
Lists problems in the order of the dates on which problems occurred, starting with the most recent problem.

By system name
Lists problems by the alphabetical order of the names of the objects on which they occurred.

By status
Lists all open problems, followed by all closed problems.

Help Displays task information.

To view the service history:

1. Open the **Task List** from the **Views** area.
2. Open **Service** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.

   For individual CPCs:

   a. Open the group that contains the CPCs with the service history that you want to view.

b. Select one or more objects.

For a group of CPCs:

a. Select the group of CPCs with the service history that you want to review.

4. Drag and drop the selected objects on **View Service History** in the **Service** tasks area. The **Service History** window displays the service history for the CPC(s) that you selected.

Use the online Help for additional information about the problem and the service information on it.

Backup Critical Data

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. The DVD-RAM used for the Backup Critical Data task must be formatted with a volume label of **ACTBKP**.
3. You can perform this task remotely only if a DVD is in the Hardware Management Console DVD drive.

Transfers critical CPC data that is stored on its support element to the Hardware Management Console and copies it to removable media. CPC data should be backed-up when configuration or CPC licensed internal code changes have been made or as a routine preventive maintenance procedure. The stored CPC data can be restored to its support element in the event of a hardware failure by using the **Hard Disk Restore** task.

To backup critical data for a support element:

1. Open the **Task List** from the **Views** area.
2. Open **Service** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.

   For individual CPCs:

   a. Open the group that contains the CPCs that you want to backup.

   b. Select one or more objects.

   For a group of CPCs:

   a. Select the group of CPCs that you want to backup.

4. Drag and drop the selected objects on **Backup Critical Data** in the **Service** tasks area. The **Backup Critical Data Confirmation** window is displayed.
5. If it is not already in place, insert the backup DVD-RAM in the drive on the Hardware Management Console.
6. Click **Backup** to begin.
7. Click **OK**.

Use the online Help if additional information is needed in backing up the support element's critical data.

Restore Critical Data

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. This task is not available for CPCs that were defined using the CPC Manual Definition Template.
3. You can perform this task only locally, not remotely.

Initializes the hard disk, installs the internal code, and restores critical CPC data from removable media to the support element of the selected CPC. The critical CPC data that is restored to the support element is the data that was copied to the removable media by using Backup Critical Data.

To restore data on individual CPC support elements:

1. Open the **Task List** from the **Views** area.
2. Open **Service** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Open the group that contains the CPC with the support element that you want to restore.
5. Select one object.
6. Drag and drop the selected object on **Restore Critical Data** in the **Service** tasks area. The **Backup Critical Data Confirmation** window is displayed.

Use the online Help to get additional information for restoring critical data to a support element.

Report a Problem

Note: If you cannot access this task, contact your Access Administrator.

Use this task to report a problem on the CPC. You should use this task only when there are no Problem Analysis results for the problem.

If Problem Analysis results do exist, report the problem by clicking the **Service** on the **Hardware Messages** window associated with the problem. If Problem Analysis was not invoked automatically, use the **Perform Problem Analysis** task to attempt to resolve the problem without a request for service.

You can also use this task to test problem reporting.

To report a problem on your CPC:

1. Open the **Task List** from the **Views** area.
2. Open **Service** from the **Task List Work Area**.

3. Open **Groups** from the **Views** area.
4. Open the group that contains the CPC that you want to report a problem on.
5. Select the object.
6. Drag and drop the selected object on **Report a Problem** in the **Service** tasks area. The **Report a Problem** window is displayed.
7. Select the type of the problem you have from the list provided and enter a description of the problem in the **Problem Description** box.

   Note: If you are just testing problem reporting, select **Test automatic problem reporting** and enter *This is just a test* in the **Problem Description** box.
8. Click **Request Service**.

Use the online Help if additional information is needed to report the problem and request service.

Transmit Service Data

Note: If you cannot access this task, contact your Access Administrator.

Service data is a set of system information, such as program and event traces, collected by the CPC's support element. When IBM is your service provider for the CPC, service data assists IBM in servicing it.

Sending service data to IBM is necessary only when service data is requested by IBM, usually through either your service representative or the IBM Support Center. Typically, IBM will request service data after a problem is reported if analyzing the service data is necessary to determine the cause of the problem.

You can send service data to IBM either by copying it to a DVD-RAM, diskette, or USB flash memory drive for delivery to IBM, or by transmitting it to IBM through a remote connection to the IBM Service Support System.

To send the support element's service data to IBM:

1. Open the **Task List** from the **Views** area.
2. Open **Service** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Open the group that contains the CPC with the service data that you want to transmit.
5. Select one object.
6. Drag and drop the selected object on **Transmit Service Data** in the **Service** tasks area. The **Transmit Service Data to IBM** window is displayed.
7. Select the data you want to send and click the destination for the data and then click **Send**.

Use the online Help if additional information is needed to send service data.

Archive Security Logs

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. The DVD-RAM used for archiving security logs must be formatted with a volume label of **ACTSECLG**.
3. You can perform this task only locally, not remotely.

Use this task to archive a security log for a CPC. Up to ten CPC security logs can be archived at one time.

To archive a security log:

1. Open the **Task List** from the **Views** area.
2. Open **Service** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Open the group that contain the CPCs whose security logs you want to archive.
5. Select one or more objects.
6. Drag and drop the selected objects on **Archive Security Logs** in the **Service** tasks area. The **Confirm the Action** window is displayed.
7. Verify the CPC(s) shown in the window list is the one whose security log you want to archive.

   Note: Ensure that the DVD-RAM that you will be using for archiving is in the drive.
8. Click **Archive** to start the procedure.

Use the online Help if you need additional information for archiving a security log.

Format Security Logs to DVD-RAM

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. You can perform this task only locally, not remotely.

Use this task to copy a security log in ASCII format to a DVD-RAM. By offloading the security log to the DVD-RAM, you can use any ASCII editor to view the entire log or print a hardcopy of the log for reference. Before you begin, make sure you have a formatted DVD-RAM *Security Log* (see “Format Media” on page 2-37).

To copy the security log:

1. Open the **Task List** from the **Views** area.
2. Open **Service** from the **Task List Work Area**.

3. Open **Groups** from the **Views** area.
4. Open the group that contain the CPC(s) whose security log you want to copy to a DVD-RAM.
5. Select one or more objects.
6. Drag and drop the selected objects on **Format Security Logs to DVD-RAM** in the **Service** tasks area. The **Retrieving Security Log** window is displayed.
7. Insert the DVD-RAM into the drive and then click **OK**. It may take a few minutes for the security log to be copied.
8. Once the security log is copied, the **Format Security Log to DVD-RAM** window is displayed. The file name is the same name as the Hardware Management Console, and the extension is TXT.

Use the online Help if you need additional information for copying a security log to a DVD-RAM.

Change Management

Change Management tasks are used to work with the licensed internal code of support elements in the processor cluster.

Note: Only CPCs that are in the Defined CPCs Group will receive licensed internal code updates. If you intend to update the support element licensed internal code of all of the CPCs in a processor cluster, verify that all of the CPCs are defined to the Hardware Management Console.

The following are represented in the ***Change Management*** tasks area:

- Hardware Messages
- Operating System Messages
- Engineering Changes (ECs)
- Single Step Internal Code Changes
- Retrieve Internal Code
- Change Internal Code
- Product Engineering Directed Changes
- System Information
- Alternate Support Element
- Special Code Load
- Alternate Support Element Engineering Changes (ECs)
- Concurrent Upgrade Engineering Changes (ECs)

Engineering Changes (ECs)

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. The CPC(s) must be placed in Service Status before starting this task.
3. You can perform this task only locally, not remotely.

Use this task to copy base code ECs from the CD to the Hardware Management Console to install on the primary support element of a CPC. You can upgrade the primary support element in either of the following ways:

Upgrade primary SE
Upgrade both the operating system code and the support element function code.

Upgrade primary SE operating system
Upgrade only the operating system code.

To copy ECs to the Hardware Management Console:

1. Open the **Task List** from the **Views** area.
2. Open **Change Management** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.

   For individual CPCs:

   a. Open the group that contains the CPCs to which you want to apply new ECs.

   b. Select one or more objects.

   For a group of CPCs:

   a. Select the group of CPCs to which you want to apply new ECs.

   Note: Engineering Changes (ECs) is considered a disruptive task. If the object(s) is locked, you must unlock it before continuing. For more information on disruptive tasks, see “Object Locking for Disruptive Tasks” on page 1-15.
4. Drag and drop the selected objects on **Engineering Changes (ECs)** in the **Change Management** tasks area. The **Upgrade Engineering Change (EC)** window is displayed.
5. Click the engineering change option you want to perform, then click **OK**. The **Insert the SE-CD** window is displayed.
6. Ensure that the CDROM is in the drive, and click **OK**.

Use the online Help for additional information for working with engineering changes.

Single Step Internal Code Changes

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. Before starting this task, make sure you have a formatted DVD-RAM available for backing up critical data.

Use this task to retrieve, apply, or remove licensed internal code for the support element from the Hardware Management Console.

The purpose of this task is to:

- Determine whether to only apply internal code changes or to retrieve and apply internal code changes.
- Determine if pending internal code changes are disruptive. If so, you can choose to activate the changes concurrently or disruptively.
- Verify the system environment. In the case of a Support Element, it verifies that the Alternate Support Element mirroring operation was successful and that a Service Required state does not exist.
- Process a Backup Critical Data function.
- Accept all previously activated internal code changes (optional).
- Exclude the operational internal code changes from becoming permanent.
- Retrieve internal code changes from the IBM Service Support System.
- Connect to the IBM Service Support System and download any internal code change ***hold*** status for pending internal code changes.
- Connect to IBM Service Support System to see if the status of any existing internal code changes has changed from non-disruptive to disruptive.
- Install and activate the internal code changes.
- Retrieve and apply (or clone) internal code changes to match a save clonable level.
- Receive all code changes for your system regardless of the requirements for installing the next Engineering Change (EC) level.
- Trigger the Alternate Support Element mirroring operation.
- Transmit system availability data to the remote support system.

Certain licensed internal code changes may require the MRU to shut down during the activation of the change. This is normal for these changes. This could cause a slight degradation in system performance during the time the MRU is shut down. After activation is complete, the MRU will be turned on again, and normal performance will be resumed.

To retrieve, apply, or remove licensed internal code for the support element:

1. Open the **Task List** from the **Views** area.
2. Open **Change Management** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.

   For individual CPC support elements:

   a. Open the group that contains the CPCs that you want to work with.

   b. Select one or more objects.

   For a group of CPC support elements:

   a. Select the group of CPCs that you want to work with.

Note: Single Step Internal Code Changes is considered a disruptive task. If the object(s) is locked, you must unlock it before continuing. For more information on disruptive tasks, see “Object Locking for Disruptive Tasks” on page 1-15.

4. Drag and drop the selected objects on **Single Step Internal Code Changes** in the **Change Management** tasks area. The **Apply Single Step Internal Code Changes** window is displayed.
5. Select the Single Step Internal Code Change option you want to perform, then click **OK**. (If you do not want to make the operational internal code changes permanent, select **Accept execution phase to be excluded**.)
6. Follow the instructions on the subsequent windows to complete the task.

This task also allows you to retrieve and apply a previous saved level of internal code (clonable) from the IBM Service Support System. Before continuing with this task, you must have a saved level of internal code stored in the IBM Service Support System. For more information for creating a clonable level of internal code, see the “Define Clonable Internal Code Levels” task in the *Support Element Operations Guide*, SC28-6845.

To retrieve and apply internal code changes to a support element to match a saved clonable level:

1. Open the **Task List** from the **Views** area.
2. Open **Change Management** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Open the group that contains the CPC that you want clone.

   Note: Single Step Internal Code Changes is considered a disruptive task. If the object(s) is locked, you must unlock it before continuing. For more information on disruptive tasks, see “Object Locking for Disruptive Tasks” on page 1-15
5. If you have not already done so, place a formatted DVD-RAM in the drive so that a Backup Critical Data function can be performed.
6. Drag and drop the selected CPC on **Single Step Internal Code Changes** in the **Change Management** tasks area. The **Single Step Internal Code Changes Apply** window is displayed.
7. Select **Retrieve and apply (Clone) internal code changes to match a saved clonable level**, then click **OK**. The **Retrieve Clonable Level Data** window is displayed.
8. Enter the *serial number* of the support element where the internal code was saved from in the **Machine Serial Number** box.
9. Enter the *name* that you gave to the clonable level of internal code in the **Clonable Level Name** box.
10. Enter the *password* that you defined for this clonable level of internal code in the **Clonable Level Password** box, then select **Retrieve Clonable Level Data**. The **Single Step Internal Code Changes Apply Busy** window is displayed while the system is retrieving the data from the IBM Service Support System.
11. Select **Apply Concurrent Internal Code Changes**. The **Single Step Internal Code Changes Progress** window is displayed. Wait for the task to complete; otherwise, follow the instructions on the subsequent windows.

Use the online help to get additional information on working with an internal code change.

Retrieve Internal Code

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. You can perform this task remotely **only** when you are retrieving data from the IBM Service Support System to a selected CPC.

Copies internal code changes from the selected source to a Hardware Management Console work space and distributes updates to the support elements of all of the CPCs defined to the Hardware Management Console. This task is to be used when you are working with internal code changes for the CPC support elements. Changes to the Hardware Management Console internal code are controlled using “Change Console Internal Code” on page 2-19 under Console Actions. This option is not available when a retrieve is already in progress.

You can retrieve internal code changes either to selected CPCs or to all CPCs.

Selected CPCs
Distributes code changes only to selected CPCs.

All CPCs
Distributes code changes to the hard disk of all other Hardware Management Consoles that are connected to the same LAN network as the selected CPCs.

You have retrieve them from the following sources and to the following targets.

Retrieve code changes from diskette
Select this when IBM has delivered the internal code changes to you on a diskette for a CPC support element.

Retrieve code changes from DVD cartridge
Select this when IBM has delivered the internal code changes to you on a DVD-RAM for a CPC support element.

Retrieve code changes from IBM Service Support System to the selected objects
Select this when IBM has notified you that new internal code changes are available through the IBM Service Support System and you want to retrieve the changes to the selected CPC support element.

Retrieve code changes from IBM Service Support System to diskette
Select this when IBM has notified you that new internal code changes are available through the IBM Service Support System and you want to retrieve the changes to diskette.

Retrieve code changes from IBM Service Support System to DVD cartridge
Select this source when IBM has notified you that new internal code changes are available through the IBM Service Support System and you want to retrieve the changes to DVD-RAM.

Note: An IBM service representative will provide new internal code changes and manage their initial use. For internal code changes already stored on your hard disk, IBM recommends that you manage these changes only under the supervision of an IBM service representative or with the assistance of your IBM Service Support System.

Retrieving internal code changes only copies them from the source to the support element hard disk. Retrieved internal code changes do not affect the operation of your processor cluster until you install and activate them using the controls under the Change Internal Code task.

To retrieve internal code for the support element of all defined CPCs:

1. Open the **Task List** from the **Views** area.
2. Open **Change Management** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Select the Defined CPCs.
5. Drag and drop the selected group on **Retrieve Internal Code** in the **Change Management** tasks area. The **Retrieve Internal Code Changes** window is displayed.
6. To specify the scope of the task, click **Selected CPC** or **All CPCs**. This displays the **Retrieve Internal Code Changes** window.
7. Select the source and target of changes being retrieved.
8. Click **Yes** to continue.

Use the online Help to get additional information for retrieving internal code changes.

Change Internal Code

Note: If you cannot access this task, contact your Access Administrator.

Enables you to modify CPC internal code which may provide new operations, or correct or improve existing operations.

You can modify the internal code of:
- All defined CPCs
- All CPCs in a user-defined group
- Selected individual CPC or CPCs.

You can:
- Accept all installed changes that were activated
- Install and activate changes that were retrieved
- Browse system and internal code information
- Remove and activate changes
- Delete all retrieved changes that were not installed.

An IBM service representative will provide new internal code changes and manage their initial use. For internal code changes already stored on your hard disk, IBM

recommends that you manage these changes only under the supervision of an IBM service representative or with the assistance of your IBM Support Center.

Certain licensed internal code changes may require the MRU to shut down during the activation of the change. This is normal for these changes. This could cause a slight degradation in system performance during the time the MRU is shut down. After activation is complete, the MRU will be turned on again, and normal performance will be resumed.

To change the CPC internal code:

1. Open the **Task List** from the **Views** area.
2. Open **Change Management** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.

   For individual CPC support elements:

   a. Open the group that contains the CPCs with the support element internal code that you want to change.

   b. Select one or more objects.

   For a group of CPC support elements:

   a. Select the group of CPCs with the support element internal code that you want to change.

   Note: Change Internal Code is considered a disruptive task. If the object(s) is locked, you must unlock it before continuing. For more information on disruptive tasks, see “Object Locking for Disruptive Tasks” on page 1-15.
4. Drag and drop the selected objects on **Change Internal Code** in the **Change Management** tasks area. The **Change Internal Code** window is displayed.
5. Click the option you want to perform and then click **OK**.
6. Follow the instructions on the subsequent windows to complete the task.

Use the online Help if you need additional information in changing the internal code.

Product Engineering Directed Changes

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. You can perform this task only locally, not remotely.

Enables the service representative to receive temporary licensed internal code fixes when no formal changes are available. This task should be used only when IBM Product Engineering directs you to do so. The following selections are available from the menu:

Retrieve all temporary internal code fixes

Use this selection to retrieve an internal code fix from either a diskette, a DVD-RAM, or a staging area on the Hardware Management Console fixed drive. The fix is then stored on the support elements for the selected CPCs. If retrieved from a diskette or a DVD-RAM, the fix is also stored in a staging area on the Hardware Management Console hard drive.

Note: A set of fixes is stored in the Hardware Management Console fixed drive staging area during a retrieve. This set of fixes is available there for other CPCs until a different set of fixes is retrieved. The fixes may also be placed in the staging area from a remote console.

Activate all temporary internal code fixes
Use this selection to replace the system's existing internal code with the retrieved internal code fixes when the system is activated. This changes the status on the support element **Analyze Internal Code Changes** window.

Deactivate and delete all temporary internal code fixes
Use this selection when a previously activated internal code fix is **not** to be used as a part of a CPC's internal code the next time the system is activated. This changes the status on the support element **Analyze Internal Code Changes** window.

To receive temporary internal code fixes from IBM Product Engineering:

1. Open the **Task List** from the **Views** area.
2. Open **Change Management** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.

   For individual CPC support elements:

   a. Open the group that contains the CPCs with the support element internal code that you want to change.

   b. Select one or more objects.

   For a group of CPC support elements:

   a. Select the group of CPC support elements that contain the internal code that you want to change.

   Note: Product Engineering Directed Changes is considered a disruptive task. If the object(s) is locked, you must unlock it before continuing. For more information on disruptive tasks, see "Object Locking for Disruptive Tasks" on page 1-15.
4. Drag and drop the selected objects on **Product Engineering Directed Changes** in the **Change Management** tasks area. The **Product Engineering Directed Changes** window is displayed.

Use the online Help to get additional information for receiving engineering changes.

System Information

Note: If you cannot access this task, contact your Access Administrator.

Displays information about a selected CPC, such as Type of CPC, and its licensed internal code.

Machine type, **Machine model number**, **Machine serial number**, and **CPC identifier** identify the selected CPC.

Internal Code Change Information lists the part number, engineering change (EC) number and state levels of each set of licensed internal code associated with the support element.

Licensed internal code controls many of the operations available on the support element. Internal code changes may provide new operations, or correct or improve existing operations.

The part number and EC number are assigned to a set of licensed internal code by IBM product engineering. The numbers identify the licensed internal code and its purpose.

If a set of licensed internal code is modified, its EC number is supplemented with a state level. A state level distinguishes between different versions of the same set of licensed internal code.

To view the system information:

1. Open the **Task List** from the **Views** area.
2. Open **Change Management** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.

   For individual CPC support elements:

   a. Open the group that contains the CPC support elements with the system information that you want to display.

   b. Select one or more objects.

   For a group of CPC support elements:

   a. Select the group of CPC support elements with the system information that you want to display.
4. Drag and drop the selected objects on **System Information** in the **Change Management** tasks area. The **System Information** window is displayed.
5. Select the internal code information you want and then click **Details** to view the additional information about this internal code.

Use the online Help if you need additional information about internal code change information.

Alternate Support Element

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. Each CPC must be a model that has both a primary and alternate support element installed and the primary support element cannot be in service mode.
3. The primary support element is scheduled for automatic mirroring at 10 a.m. with a one-hour window for starting the operation. A record is added to the support element's event log to indicate the outcome of the operation.

Use this task to perform any of the following actions for the selected CPC:

- Mirror data from the primary support element to the alternate support element.

- Switch from the primary support element to the alternate support element
- Query whether a switch between support elements can take place.

Mirroring the Primary Support Element Data to the Alternate Support Element

Mirroring support element data copies the data from a CPC's primary support element to its alternate support element. By regularly mirroring support element data, you help ensure the alternate support element will look and work the same as the primary support element in case you need to switch to the alternate support element (for example, because of a hardware failure on the primary support element).

Ordinarily, support element data is mirrored automatically each day, but you can use this task to mirror support element data immediately, at any time, and for any reason. The following are examples of when you would want to mirror support element data instead of waiting for the automatic mirroring default times:

- Licensed internal code changes
- Input/output configuration data set (IOCDS) changes
- Hardware configuration definition (HCD) changes
- Dynamic I/O changes
- Dynamic load address and parameter changes
- LPAR data
- Profile changes
- Lockout disruptive tasks
- Scheduled operations
- Creating, changing, or deleting groups
- Automatic activation.

To mirror the primary support element data:

1. Open the **Task List** from the **Views** area.
2. Open **Change Management** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Open the group that contains the CPC with the support element that you want to mirror.
5. Drag and drop the selected object on **Alternate Support Element** in the **Change Management** tasks area. The **Alternate Support Element** window is displayed.
6. Click **Mirror the Primary Support Element data to the Alternate Support Element**.
7. Click **OK** to begin mirroring.

Use the online Help if you need additional information for mirroring the support element.

Switching to the Alternate Support Element

Do this when you need to switch to the alternate support element when the primary support element fails. When a manual switchover is started, the system checks that all internal code levels are the same and that the CPC is activated. If the switch can be made concurrently, the necessary files are passed between the support elements, and the new primary support element is rebooted. If a disruptive switch is

necessary, the CPC will be powered off before completing the switch. The following are several conditions that will prevent a switchover:

- Mirroring task in progress
- Internal code update
- Hard disk restore
- Engineering change.

The system automatically attempts a switchover for the following conditions:

- Primary support element has a serious hardware problem
- Primary support element detects a CPC status check
- Alternate support element detects a loss of communications to the primary over both the service network and the customer's LAN.

To switch to the alternate support element:

1. Open the **Task List** from the **Views** area.
2. Open **Change Management** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Open the group that contains the CPC with the support element that you want to switch.
5. Drag and drop the selected object on **Alternate Support Element** in the **Change Management** tasks area. The **Alternate Support Element** window is displayed.
6. Select **Switch the Primary Support Element and the Alternate Support Element**.
7. Click **OK** to switch to the alternate support element.
8. A Confirmation window is displayed.

Use the online Help if you need additional information for switching to the alternate support element.

Querying Switch Capabilities between Support Elements

The querying switch capability provides a quick check of the communication path between the support elements, the status of the support elements, and the status of the automatic switch action. You may want to perform this action before attempting to switch to the alternate support element.

To query switch capabilities:

1. Open the **Task List** from the **Views** area.
2. Open **Change Management** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Open the group that contains the CPC with the support element that you want to query.
5. Drag and drop the selected object on **Alternate Support Element** in the **Change Management** tasks area. The **Alternate Support Element** window is displayed.
6. Select **Query Switch capabilities**.
7. Click **OK** to start the query.
8. A confirmation window is displayed.

Use the online Help if you need additional information for querying switching capabilities.

Special Code Load

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. You can perform this task only locally, not remotely.

Use this task when you want to preload a new CPC internal code level on the alternate support element while the remainder of the system is running.

To upgrade to Version Code 1.6.0 or later:

1. Open the **Task List** from the **Views** area.
2. Open **Change Management** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Open the group that contains the CPC with the support element that you want to work with.

   Note: Special Code Load is considered a disruptive task. If the object(s) is locked, you must unlock it before continuing. For more information on disruptive tasks, see “Object Locking for Disruptive Tasks” on page 1-15.
5. Drag and drop the selected object on **Special Code Load** in the **Change Management** tasks area. The **Confirm the Action** window is displayed.
6. Install the support element microcode (CD-ROM) in the Hardware Management Console CD-ROM drive and click **Load**. Follow the rest of the directions shipped with your upgrade package.

Use the online Help if you need additional information for upgrading to the new Version Code.

Alternate Support Element Engineering Changes (ECs)

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. This task is only available on a CPC that has both a primary and alternate support element.
3. You can perform this task only locally, not remotely.

Use this task to upgrade the alternate support element of the selected CPC. Your can perform any of the following options:

Alternate SE MCL apply only
Apply microcode level (MCL) updates obtained from the IBM Service Support System to the alternate support element.

Upgrade alternate SE (Preload)
Upgrade both the operating system and the support element function code to the alternate support element.

Upgrade alternate SE with MCL retrieve and apply
Upgrade both the operating system and the support element function code. Then, apply MCL updates to the alternate support element.

To upgrade the alternate support element:

1. Open the **Task List** from the **Views** area.
2. Open **Change Management** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.

   For individual CPCs:

   a. Open the group that contains the CPCs whose alternate support elements you want to upgrade.
   b. Select one or more objects.

   For a group of CPCs:

   a. Select the group of CPCs whose alternate support elements you want to upgrade.
4. Drag and drop the selected objects on **Alternate Support Element Engineering Changes (ECs)** in the **Change Management** tasks area. The **Upgrade Engineering Change (EC) - Alternate SE** window is displayed.
5. Select the engineering change option you want to perform, then click **OK**. The **Apply Changes Confirmation** window is displayed.
6. The processor or processors to change are listed. Click **OK** to confirm performing the update.

Use the online Help for additional information on upgrading the alternate support element.

Concurrent Upgrade Engineering Changes (ECs)

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. You can perform this task only locally, not remotely.

Use this task to upgrade Engineering Changes (ECs) concurrently for the specified Central Processing Complex.

1. Open the **Task List** from the **Views** area.
2. Open **Change Management** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.

   For individual CPCs:

   a. Open the group that contains the CPCs whose alternate support elements you want to upgrade.
   b. Select one or more objects.

   For a group of CPCs:

a. Select the group of CPCs whose alternate support elements you want to upgrade.

4. Drag and drop the selected objects on **Concurrent Upgrade Engineering Changes (ECs)** in the **Change Management** tasks area. The **Concurrent Upgrade Engineering Change (ECs)** window is displayed.
5. Select one of the actions. If **Preload** is selected, choose a Preload option, then click **OK**. The **Query Function Availability from Last Activate** window is displayed.
6. Click **OK** when you have completed this task.

Use the online Help for additional information on concurrent upgrading of the engineering changes.

Remote Customization

Remote Customization tasks customize the remote capabilities of the CPC support elements in the processor cluster.

The following are represented in the ***Remote Customization*** tasks area:
- Hardware Messages
- Operating System Messages
- Remote Service
- Customer Information
- Support Element Operations Guide

Remote Service

Note: If you cannot access this task, contact your Access Administrator.

Allows you to enable or disable Remote Service for individual CPCs or a group of CPCs. When enabled, error information may be sent by a Hardware Management Console operator or automatically to IBM for analysis and for service call requests. When disabled, error information and requests for service must be done through voice communications.

Authorize automatic service call reporting will send error information and requests for service automatically to IBM without operator intervention.

To customize remote service settings:

1. Open the **Task List** from the **Views** area.
2. Open **Remote Customization** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.

   For individual CPCs:

   a. Open the group that contains the CPCs that you want to use Remote Service for.

   b. Select one or more objects.

   For a group of CPCs:

   a. Select the group of CPCs that you want to use Remote Service for.
4. Drag and drop the selected objects on **Remote Service** in the **Remote Customization** tasks area. The **Remote Service Configuration** window is displayed.
5. To enable remote service, check the **Enable remote service** check box. Checking this box allows the Hardware Management Console to establish remote connections for the CPC(s) to your service provider's remote service support system.

   or

To enable automatic service calling, select the **Authorize Automatic Service Call Reporting** check box. Selecting this box lets the Hardware Management Console automatically report problems and get service for the CPC or CPCs through its remote connection to the Service Support System.

6. Click **OK**.

Use the online Help if you need additional information about remote service for a CPC.

Customer Information

Note: If you cannot access this task, contact your Access Administrator.

Enables you to customize the customer information for a CPC or a group of CPCs.

The Customer Information window displays the following tabs for providing input:
- Administrator
- System
- Account.

If the selected objects do not all have the same customer information, the information displayed on the Customer Information window will be the information that applies to the first selected object. The information for the other objects will be displayed by tabs on the right.

To customize a CPC's customer information:

1. Open the **Task List** from the **Views** area.
2. Open **Remote Customization** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.

   For individual CPCs:

   a. Open the group that contains the CPCs with the customer information that you want to display.
   b. Select one or more objects.

   For a group of CPCs:

   a. Select the group of CPCs that contain the customer information that you want to display.
4. Drag and drop the selected object on **Customer Information** in the **Remote Customization** tasks area. The **Customer Information** window is displayed.
5. Select a tab, then supply the appropriate information in the fields provided. Click **OK** when you have completed the task.

Use the online Help if you need additional information for customizing a CPC's account information.

Support Element Operations Guide

Note: If you cannot access this task, contact your Access Administrator.

Use this task to view the online book for the CPC you are currently working with.

To view the *Operations Guide:*

1. Open the **Task List** from the **Views** area.
2. Open **Remote Customization** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Open the group that contains the CPC whose Support Element Operations Guide you want to view.
5. Drag and drop the selected object on **Support Element Operations Guide** in the **Remote Customization** tasks area. The *Operations Guide* for that CPC is displayed.

Use the online Help if you need additional information for displaying the Support Element Operations Guide.

Operational Customization

Operational Customization tasks are used to display or modify the profiles that make the CPCs operational, set the date and time for automatic licensed internal code to be updated, and set the date and time on the support element(s).

The following are represented in the ***Operational Customization*** tasks area:

- Hardware Messages
- Operating System Messages
- Customize/Delete Activation Profiles
- Customize Activity Profiles
- View Activation Profiles
- Automatic Activation
- Customize Scheduled Operations
- Customize Support Element Date/Time
- Change LPAR Controls
- Configure Channel Path On/Off
- Reassign Channel Path
- OSA Advanced Facilities
- Enable I/O Priority Queuing
- Change LPAR I/O Priority Queuing

Customize/Delete Activation Profiles

Note: If you cannot access this task, contact your Access Administrator.

Enables you to create new activation profiles, customize existing profiles, or delete unwanted profiles that are stored in the CPC support element. An activation profile is required for CPC or image activation and defines the IOCDS, storage sizes, and other parameters that will be available when the object is activated.

The *DEFAULT RESET* and *DEFAULT IMAGE* profiles are the only profiles that can use the same name. All other activation profiles must have unique profile names. For more information on activation profiles, see “Settings for System Operations” in the *Support Element Operations Guide*.

To create new, customize existing, or delete activation profiles:

1. Open the **Task List** from the **Views** area.
2. Open **Operational Customization** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Open the group that contains the CPC or CPC image with the activation profile that you want to work with.
5. Select one or more objects.

6. Drag and drop the selected object or objects on **Customize/Delete Activation Profiles** in the **Operational Customization** tasks area. The **Customize/Delete Activation Profiles List** window is displayed.
7. If you selected more than one object for this task, tabs on the right side of the window allow you work with the objects you want to work with. Select a profile from the list, then click the action you want to perform, such as **Customize**.
8. The **Customize Activation Profiles** window is displayed. This uses a tree view to present the activation profile information.

   The tree view located on the left side of the window includes the CPC that you want to work with and its images, if applicable. You can expand on each of these items by clicking on the square and you can then click on each name for more details or to make appropriate changes to the profile.

Use the online Help to get additional information for working with profiles and see "Settings for system operations" in the *Support Element Operations Guide*.

Customize Activity Profiles

Note: If you cannot access this task, contact your Access Administrator.

Enables you to review system activity profiles for the CPCs you have selected and perform actions on the profiles. You can view an existing profile, make changes to it, delete it, or change the status. You can also specify which profiles are used in the Activity task for reporting activity on CPCs on the Hardware Management Console.

To work with system activity profiles:

1. Open the **Task List** from the **Views** area.
2. Open **Operational Customization** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.

   For individual CPCs:

   a. Open the group that contains the CPCs whose activity profiles you want to work with.

   b. Select one or more objects.

   For a group of CPCs:

   a. Select the group of CPCs whose activity profiles you want to work with.
4. Drag and drop the selected objects on **Customize Activity Profiles** in the **Operational Customization** tasks area. If you select, a single object, the **Customize Activity Profiles for...** window displays. For multiple objects, the **Customize System Activity Profile List** window displays.

   For multiple objects, the information displayed in the Notebook window is the information that applies to the first selected object. The information for the other objects is displayed on the pages that follow and identified by the object names on the page tabs on the right.

Use the online Help to get additional information for working with a CPC's activity profile.

View Activation Profiles

Note: If you cannot access this task, contact your Access Administrator.

Enables you to view the activation profiles that are stored in the CPC support element.

To view a CPC support element profile:

1. Open the **Task List** from the **Views** area.
2. Open **Operational Customization** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Open the group that contains the CPC with the activation profiles that you want to work with.
5. Select one object.
6. Drag and drop the selected object on **View Activation Profiles** in the **Operational Customization** tasks area. The **Customize/Delete Activation Profiles List** window is displayed.

Use the online Help to get additional information for viewing an activation profile.

Automatic Activation

Note: If you cannot access this task, contact your Access Administrator.

Follow your local procedures for recovering from a power outage that is the result of a utility power failure. You may; however, be able to speed recovery from such power outages by enabling *Automatic Activation* for the selected CPC. *Automatic Activation* is a setting that controls whether the selected CPC is activated automatically when power is restored following a utility power failure.

- When automatic activation is *enabled* and a utility power failure occurs, the CPC is activated automatically when the power is restored. The CPC is activated using the same reset profile used most recently to activate the CPC before the power outage.
- When automatic activation is *disabled* (default setting) and a utility power failure occurs, the CPC power remains off when the power is restored. You can activate the CPC manually at any time once the utility power is restored.

To enable or disable automatic activation:

1. Open the **Task List** from the **Views** area.
2. Open **Operational Customization** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.

   For individual CPCs:

a. Open the group that contains the CPCs that you want to automatically activate.
b. Select one or more objects.

For a group of CPCs:

a. Select the group of CPCs that you want to automatically activate.

4. Drag and drop the selected object on **Automatic Activation** in the **Operational Customization** tasks area. The **Automatic Activation** window is displayed.
5. Click **Enable** or **Disable**.
6. Click **Save** to save the setting and close the window.

Use the online Help if you need additional information about automatic activation.

Customize Scheduled Operations

Note: If you cannot access this task, contact your Access Administrator.

Allows you to schedule the times and dates for automatic licensed internal code updates and backup of critical hard disk data for one or more CPC support elements. Calling customize scheduled operations displays all scheduled operations, their scheduled dates and times, the functions, and the numbers of repetitions.

You can schedule an operation to occur one time or to be repeated. You are required to specify the time and date that you want the operation to occur. If the operation is scheduled to repeat, you are asked to select:

- The day or days of the week that you want the operation to occur (optional)
- The interval or time between occurrence (required)
- The total number of repetitions (required).

The operations that can be scheduled on a Hardware Management Console are:

Accept internal code changes
Schedules an operation to make activated internal code changes a permanent working part of the licensed internal code of selected CPCs.

Activate
Makes the installed code changes operational in place of their corresponding licensed internal code. Activating the changes does not permanently modify the internal code and they may be removed until the time that they are accepted. Activating internal code changes that are not concurrent may cause the support element(s) to reload its licensed internal code without warning. If no licensed internal code changes are installed, the CPC will be activated with the current licensed internal code.

Backup critical hard disk information
Schedules an operation to make a backup of critical hard disk information for the selected CPCs.

Deactivate
Stops the operating system, deallocates resources, clears associated hardware and powers off the CPC.

Install internal code changes/Activate
Schedules an operation for installing and activating internal code changes retrieved for the selected CPCs.

Remove internal code changes/Activate
Schedules an operation for removing and activating internal code changes installed for the selected CPCs.

Retrieve internal code changes
Schedules an operation to copy internal code changes from a remote service support system to the Hardware Management Console support element hard disk.

Single step code changes
Schedules an operation to copy (retrieve) the Hardware Management Console support element internal code changes to the Hardware Management Console support element hard disk and then install (apply) the code changes.

Transmit system availability data
Sends service data generated by the selected object to IBM. This data is used to ensure a high level of availability.

To schedule CPC support element operations:

1. Open the **Task List** from the **Views** area.
2. Open **Operational Customization** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.

   For individual CPCs:

   a. Open the group that contains the CPCs that you want customized for a scheduled operation.
   b. Select one or more objects.

   For a group of CPCs:

   a. Select the group of CPCs that you want customized for a scheduled operation.
4. Drag and drop the selected object on **Customize Scheduled Operations** in the **Operational Customization** tasks area. The **Customize Scheduled Operations** window is displayed.
5. You can schedule operations including the following:
   - To add a scheduled operation, point to **Options** and then click **New**.
   - To delete a scheduled operation, select the operation you want to delete, point to **Options** and then click **Delete**.
   - To view a scheduled operation, select the operation you want to view, point to **View** and then click **Schedule Details...**.
   - To change the time of a scheduled operation, select the operation you want to view, point to **View** and then click **New Time Range...**.
   - To sort the scheduled operations, point to **Sort** and then click one of the sort categories that appears.
   - To return to the Hardware Management Console workplace, point to **Options** and then click **Exit**.

Use the online Help to get additional information for scheduling operations.

Customize Support Element Date/Time

Note: If you cannot access this task, contact your Access Administrator.

Enables you to update the date and time of the support element of a single CPC, multiple CPCs, or a group of CPCs that are defined to this Hardware Management Console. The updated date and time can be the date and time that is currently set for the Hardware Management Console or it can be a date and time that you enter.

Note: A CPC that has an operational External Time Reference (ETR) feature cannot have its date and time customized with this task. However, this task will cause the support element to resynchronize its time to that of the ETR.

For a procedure on changing the Support Element date and time, see Appendix C, “Changing Your Time-of-Day (TOD) Clock.”

Change LPAR Controls

Note: If you cannot access this task, contact your Access Administrator.

Allows you to review or change logical processor assignments of logical partitions and the CPC’s settings for processor running time if the selected CPC is operating in logically partitioned (LPAR) mode.

Both the CPC and its logical partitions have control settings. A logical partition’s control settings apply to it only. The CPC’s control settings apply to all of its logical partitions. The control settings are:

Logical processor assignment
Identifies the number of logical processors and type of physical processors assigned to logical partitions and sets processor weights for logical partitions that share central processors.

Processor running time
Controls how the CPC manages logical partition use of shared central processors.

The initial control settings of the CPC and each logical partition are established by the activation profiles used to activate them. Normally after the CPC is activated, changing its control settings requires opening and customizing a reset profile and then using the profile to activate the CPC again. Likewise, after the CPC is activated in LPAR mode, changing the control settings of its logical partition requires opening and customizing their image profile and then using the profile to activate the logical partition. Through this task you can change some of the control settings *dynamically* (new settings take affect without customizing profiles or activating objects).

To change control settings of the CPC and the logical partitions that can be activated on it:

1. Open the **Task List** from the **Views** area.
2. Open **Operational Customization** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Open the group that contains the CPC for which you want to change the control settings.

   Note: Change LPAR Controls is considered a disruptive task. If the object(s) is locked, you must unlock it before continuing. For more information on disruptive tasks, see "Object Locking for Disruptive Tasks" on page 1-15.
5. Drag and drop the selected object on **Change LPAR Controls** in the **Operational Customization** tasks area. The **Change Logical Partition Controls** window is displayed.
6. Review the information displayed in the window. Use the *Processing Weight* and *Capping* field lists and the **Processor running time** area to change one or more control settings.
7. After you have made your changes, click an action to indicate when you want the new settings to take effect.

Use the online Help to get additional information for changing LPAR controls.

Configure Channel Path On/Off

Note: If you cannot access this task, contact your Access Administrator.

Configure on and *configure off* are channel path operations you can use to control whether channel paths are online or on standby in the active input/output (I/O) configuration:

- A channel path is *online* while configured on. It is in the active I/O configuration and it can be used.
- A channel path is on *standby* while configured off. It is in the active I/O configuration but it cannot be used until it is configured on.

If you have experience using other systems, you may have used a CHPID command with ON and OFF parameters to configure channel paths on and off.

You can use the Hardware Management Console workplace to configure channel paths on and off. However, operating systems will not be notified when you use the workplace to configure channel paths on or off. For example, if you configure off a channel path, the operating system running in any image that owns or shared the channel path is not notified, and the next operation from the operating system to the channel path causes an error. It is recommended you use operating system facilities rather than the Hardware Management Console workplace, whenever possible, to configure channel paths on and off.

To use the workplace to configure channel paths on or off:

1. Open the **Task List** from the **Views** area.
2. Open **Operational Customization** from the **Task List Work Area**.

3. Open **Groups** from the **Views** area.
4. Open the group that contains the CPC image whose channel paths you want to configure on or off.

   Note: Configure Channel Path On/Off is considered a disruptive task. If the object is locked, you must unlock it before continuing. For more information on disruptive tasks, see “Object Locking for Disruptive Tasks” on page 1-15.
5. Drag and drop the selected object on **Configure Channel Path On/Off** in the **Operational Customization** tasks area. The **Chpid Configuration On Off** window displays showing the *current state* and *desired state* of each channel path.
6. Use the window list and actions to *toggle* the desired states of channel paths you want to configure on or off.
7. Click **Apply** to make the desired states take effect.

Use the online Help to get additional information for configuring channel paths.

Reassign Channel Path

Note: If you cannot access this task, contact your Access Administrator.

Reassign is a channel operation you can use to perform at once all the following steps necessary to reassign a reconfigurable channel path from its owning logical partition to another logical partition:
- Configuring off the channel path from its owning logical partition, if necessary.
- Releasing the channel path, if necessary.
- Configuring on the channel path to the other logical partition.

To reassign a channel path:
1. Make sure the CPC is in logical partitioned (LPAR) mode.
2. Open the **Task List** from the **Views** area.
3. Open **Operational Customization** from the **Task List Work Area**.
4. Open **Groups** from the **Views** area.
5. Open the group that contains the CPC that you want to reassign.

   Note: Reassign Channel Path is considered a disruptive task. If the object(s) is locked, you must unlock it before continuing. For more information on disruptive tasks, see “Object Locking for Disruptive Tasks” on page 1-15.
6. Drag and drop the selected object on **Reassign Channel Path** in the **Operational Customization** tasks area. The **Reassign Channel Path** window is displayed.
7. In the list, click the channel path identifier to that you want to reassign, then click **Reassign**. The **Select a Partition** window displays showing the channel path that is currently assigned, the owning partition, and a list of logical partitions from which you can select to reassign the channel path.

8. Click the logical partition in the Target Partition window list to which you want the channel path reassigned, then click **Reassign**. The **Confirm the Action** window is displayed.
9. Click **Reassign** to confirm your request to reassign the selected channel path to the target logical partition.

   Note: You may receive an additional warning that the channel path will be released for reassignment if:

   - The partition isolation parameter is enabled.
   - The partition isolation parameter is disabled, but the logical partition to be reassigned was previously configured offline while the partition isolation parameter was enabled.

   Click **Release and Reassign** to confirm the action.
10. After the channel path is reassigned, click **OK** to close the window.

Use the online Help if additional information is needed for reassigning a channel path.

OSA Advanced Facilities

Note: If you cannot access this task, contact your Access Administrator.

The Open Systems Adapter (OSA) is an integrated hardware feature plug-in as a channel card, becoming an integral component of the I/O subsystem, enabling convenient Local Area Network (LAN) attachment. This brings the strengths of the architecture to the client/server environment: security, availability, enterprise-wide access to data, and systems management.

You can use the Hardware Management Console workplace to open a facility for monitoring, operating, and customizing an OSA channel.

To work with an OSA channel:

1. Open the **Task List** from the **Views** area.
2. Open **Operational Customization** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Open the group that contains the CPC whose OSA channel you want to work with.

   Note: OSA Advanced Facilities is considered a disruptive task. If the object is locked, you must unlock it before continuing. For more information on disruptive tasks, see “Object Locking for Disruptive Tasks” on page 1-15.
5. Drag and drop the selected object on **OSA Advanced Facilities** in the **Operational Customization** tasks area. The **OSA Advanced Facilities** window is displayed.
6. If this window lists channels that are not available because they are offline, click **OK**; this displays the next **OSA Advanced Facilities** window.
7. Click the channel ID with which you want to work and then click **OK**. This displays the **Advanced Facilities** window.

8. Click the function of your choice:

   View code level
   Click this to display the channel ID, channel type, and code level for the card.

   Card trace/log/dump facilities...
   Click this to select any of the following actions:
   - Display or alter trace mask
   - Read trace buffer
   - Read log buffer

   Card specific advanced facilities...
   Click this to perform any of the following actions:
   - Enable or disable ports
   - Query port status
   - Run port diagnosis
   - View port parameters
   - View code level
   - Display or alter MAC address
   - Set card mode
   - Display client connections
   - Display active sessions configuration
   - Display active server configuration
   - Panel configuration options
   - Manual configuration options
   - Activate configuration
   - Display activate configuration errors
   - Debug utilities.

   OSA reset to defaults...
   Click this to reset OSA to the default configuration.

   Then click **OK**.
9. The next window that displays depends on your selection.
   - For the **Advanced Facilities** window, click one of tasks; then click **OK**.
   - For the **View Code Level** window, view the code level for the card; then click **OK**.
   - For the **Card Trace/Log/Dump Facilities** window, click one of tasks; then click **OK**.
   - For the **OSA Reset to Default Configuration** window, click **Yes** to reset OSA to the default configuration.

Use the online Help to get additional information for working with OSA Advanced Facilities.

Enable I/O Priority Queuing

Note: If you cannot access this task, contact your Access Administrator.

Allows you to enable or disable global input/output (I/O) priority queuing for the system. Enabling I/O priority queuing allows the system to specify a priority to be

associated with an I/O request at start subchannel time. A range of priorities for a logical partition will be supported. These values will be passed on to the I/O subsystem for use when making query decisions with multiple requests.

To enable I/O priority queuing:

1. Open the **Task List** from the **Views** area.
2. Open **Operational Customization** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Open the group that contains the CPC that you want to enable for priority queuing.

   Note: Enable I/O Priority Queuing is considered a disruptive task. If the object(s) is locked, you must unlock it before continuing. For more information on disruptive tasks, see “Object Locking for Disruptive Tasks” on page 1-15.
5. Drag and drop the selected object on **Enable I/O Priority Queuing** in the **Operational Customization** tasks area. The **Enable I/O Priority Queuing** window is displayed.
6. Click the drop-down menu under Settings to make your selection:

   Enabled
   Activates I/O priority queuing for the CPC.

   Disabled
   Deactivates I/O priority queuing for the CPC.
7. Click **Save** to save the setting.

Use the online Help to get additional information for enabling I/O priority queuing.

Change LPAR I/O Priority Queuing

Note: If you cannot access this task, contact your Access Administrator.

Allows you to review or change the minimum or maximum I/O priority queuing value assignments of logical partitions. These values are passed on to the I/O subsystem for use when queuing decisions with multiple requests. You can dynamically (new settings take effect without customizing profiles or activating objects) change the minimum and maximum values.

To change LPAR I/O priority queuing:

1. Open the **Task List** from the **Views** area.
2. Open **Operational Customization** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Open the group that contains the CPC whose priority queuing value you want to change.

Note: Change LPAR I/O Priority Queuing is considered a disruptive task. If the object(s) is locked, you must unlock it before continuing. For more information on disruptive tasks, see “Object Locking for Disruptive Tasks” on page 1-15.

5. Drag and drop the selected object on **Change LPAR I/O Priority Queuing** in the **Operational Customization** tasks area. The **Change Logical Partition Input/Output (I/O) Priority Queuing** window is displayed. The window lists the I/O priority queuing values for logical partitions defined by this IOCDS.
6. Use the window to dynamically change the minimum and maximum values.

   Note: If global I/O priority queuing is **Enabled**, changes made for the minimum or maximum values will take effect immediately. If the global value is **Disabled**, changes will be saved by the system, but will not take effect until the global value is changed to **Enabled**.
7. Make a selection to indicate what you want to do with the new setting.

Use the online Help to get additional information for changing LPAR I/O priority queuing.

Object Definition

Object Definition tasks are used to define the objects (CPCs, ESCON Directors, Sysplex Timers, or Fiber Savers) that will be available to the Hardware Management Console. A CPC must be defined to a Hardware Management Console before other tasks can be performed on the CPC.

If the undefined CPC ***can*** be automatically discovered by the Hardware Management Console, the CPC will appear in the Undefined CPCs group when the Hardware Management Console is powered on. To define the CPC, use the procedure “Add Object Definition” on page 3-56.

If the undefined CPC ***cannot*** be automatically discovered by the Hardware Management Console, the CPC will not appear in the Undefined CPCs group when the Hardware Management Console is powered on. To define the CPC, see the “Add Object Definition” on page 3-56.

The following are represented in the ***Object Definition*** tasks area:

Hardware Messages
Operating System Messages
Change Object Definition
Add Object Definition
Remove Object Definition
Reboot Support Element

Change Object Definition

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. Changing the name of a CPC will cause its support element to reinitialize, making it unavailable until the reinitialization is complete.
3. Name changes should be communicated with all other operators that perform tasks on that object.
4. An object with a Domain Name that is different from the Domain Name of the Hardware Management Console will not communicate with the Hardware Management Console or appear on any of the Hardware Management Console windows.
5. Alternate support element must be operational and not mirroring to allow change.

Enables you to change the definition of any object that is defined. After the change is complete, the object’s definition will be changed in all groups that contain the object. Each object must have a unique name and TCP/IP address.

To change the definition of a CPC, ESCON Director, Sysplex Timer, or Fiber Saver:

1. Open the **Task List** from the **Views** area.
2. Open **Object Definition** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.

   For individual CPCs:

   a. Open the group that contains the CPCs with the definition that you want to change.

   b. Select one or more objects.

   For a group of CPCs:

   a. Select the group of CPCs with the definition that you want to change.

   Note: Change Object Definition is considered a disruptive task. If the object(s) is locked, you must unlock it before continuing. For more information on disruptive tasks, see “Object Locking for Disruptive Tasks” on page 1-15.
4. Drag and drop the selected objects on **Change Object Definition** in the **Object Definition** tasks area. The **Add or Change Object** window is displayed.

Use the online Help to get additional information for changing a CPC name.

Add Object Definition

Notes:

1. If you cannot access this task, contact your Access Administrator.
2. An object with a Domain Name that is different from the Domain Name of the Hardware Management Console will not communicate with the Hardware Management Console or appear on any of the Hardware Management Console windows.
3. The Add operation will not be successful if a mirroring operation is in progress.
4. Version 2.9.0 supports z9-109, z990, z890, z900, z800, G5, and G6.

Enables you to define a CPC that is currently part of the **Undefined CPCs** group and was automatically discovered by the Hardware Management Console. After a CPC is defined, it is removed from the **Undefined CPCs** and is added to the **Defined CPCs** group. Each object must have a unique name and TCP/IP address.

Use this task also to define an ESCON Director console or Sysplex Timer console that is currently part of the **Undefined Director/Timer Consoles** group or a 2029 Fiber Saver that is currently part of the **Undefined Fiber Savers** group.

To add a CPC, ESCON Director, Sysplex Timer, or Fiber Saver to a defined group:

1. Open the **Task List** from the **Views** area.
2. Open **Object Definition** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Open the **Undefined CPCs** group.
5. Select one or more objects.
6. Drag and drop the selected objects on **Add Object Definition** in the **Object Definition** tasks area. The **Add or Change Object** window is displayed.

You can also use the **Add Object Definition** task to provide the additional addressing information to configure support elements to remote Hardware Management Consoles. At the remote Hardware Management Console:

1. Open the **Task List** from the **Views** area.
2. Open **Object Definition** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Open the **Undefined CPCs** group.
5. Select **CPC Manual Definition**. (See “CPC Manual Definition” on page 2-8 for more information.)
6. Drag and drop **CPC Manual Definition** on **Add Object Definition** in the **Object Definition** tasks area. The **Manual Add Object Definition** window is displayed.
7. Specify the TCP/IP address in the **Addressing Information** field and click **OK**. The Hardware Management Console tries to contact the support element and exchange the remaining information necessary to complete the configuration process.

   Note: The **Manual Add Object Definition** window remains displayed with the last entered TCP/IP address until you have added the appropriate CPCs. When you have completed this task, click **Cancel**.

Use the online Help to get additional information for adding an undefined CPC to the defined CPCs group.

Remove Object Definition

Note: If you cannot access this task, contact your Access Administrator.

Enables you to remove a CPC that is currently part of the **Defined CPCs** group. During definition removal, the **Remove Object Definition Task Confirmation** window is displayed to allow you to continue or quit the Remove Object Definition task.

After a CPC is removed from the **Defined CPCs** group, it is added to the **Undefined CPCs** group. No further action will be possible on that CPC from the Hardware Management Console that removed its definition, status will not be reported, and messages will not be available.

To remove a CPC, ESCON Director, Sysplex Timer, or Fiber Saver from a the defined group:

1. Open the **Task List** from the **Views** area.
2. Open **Object Definition** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.

   For individual CPCs:

   a. Open the group that contains the CPCs with the definition that you want to remove.
   b. Select one or more objects.

   For a group of CPCs:

a. Select the group of CPCs that you want to remove.

4. Drag and drop the selected objects on **Remove Object Definition** in the **Object Definition** tasks area. The **Remove Object Definition Task Confirmation** window is displayed.

Use the online Help to get additional information for deleting a defined CPC.

Reboot Support Element

Note: If you cannot access this task, contact your Access Administrator.

Allows you to reboot the support element of the selected CPC without logging on at the actual support element console. Use this task if you are currently operating from a remote location and the support element is not easily accessible. An example of when you would want to reboot the support element from the Hardware Management Console is after a change has been made to the TCP/IP configuration of the support element.

To reboot the support element:

1. Open the **Task List** from the **Views** area.
2. Open **Object Definition** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Open the group that contains the CPC whose support element you want to reboot.

   Note: Reboot Support Element is considered a disruptive task. If the object(s) is locked, you must unlock it before continuing. For more information on disruptive tasks, see “Object Locking for Disruptive Tasks” on page 1-15.
5. Drag and drop the selected object on **Reboot Support Element** in the **Object Definition** tasks area. The **Reboot Support Element Task Confirmation** window is displayed.
6. Verify that the support element listed is the one you want to reboot.
7. Click **Yes** to reboot the support element.

Use the online Help if additional information is needed for rebooting the support element.

Configuration

Configuration tasks are used to display, transmit, or update the configuration files kept for the CPCs.

The following are represented in the **Configuration** tasks area:
Hardware Messages
Operating System Messages
Transmit Vital Product Data
View Frame Layout
Edit Frame Layout
System (Sysplex) Time

Transmit Vital Product Data

Note: If you cannot access this task, contact your Access Administrator.

Provides a window for you to collect vital product data (VPD) from the support element of all CPCs that are defined to your Hardware Management Console and to either transmit the data to the IBM Service Support System or to store the information on diskette or Hardware Management Console hard disk.

To send vital product data from the support element to the Hardware Management Console:

1. Open the **Task List** from the **Views** area.
2. Open **Configuration** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Select the Defined CPC Group.
5. Drag and drop the Defined CPC object on **Transmit Vital Product Data** in the **Configuration** tasks area. The **Transmit Vital Product Data to IBM** window is displayed.
6. Click the type of vital product data you want to transmit:
   - System (Support Element) vital data
   - Hardware Management Console vital product data
7. Click the destination to which you want to transmit
   - IBM service support system
   - Diskette
   - Hardware Management Console hard disk

   and then click **OK**.

Use the online Help if you need additional information for transmitting VPD data.

View Frame Layout

Note: If you cannot access this task, contact your Access Administrator.

Provides a graphic view of the physical location of the hardware objects that are defined to this Hardware Management Console. Each object is shown with its frame designation and position within the frame. By opening (double-clicking on) the object, additional information is provided:

- Machine type
- Model
- Serial number
- Device location

Objects can be added, removed or moved by a user with service representative authorization by using the Edit Frame Layout task.

To view the location of hardware objects that are defined to the Hardware Management Console:

1. Open the **Task List** from the **Views** area.
2. Open **Configuration** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Drag and drop either Defined CPCs or one or more CPCs in the Defined CPCs group on **View Frame Layout** in the **Configuration** tasks area. (If you use Defined CPCs, the Object Selection window displays, prompting you to select a single CPC on which to perform the task.) After you start the task for a single CPC, the **Edit Frame Layout** window is displayed.

Use the online Help to get additional information for viewing the physical location of objects defined to the Hardware Management Console.

Edit Frame Layout

Note: If you cannot access this task, contact your Access Administrator.

Provides a graphic view of the physical location of the hardware objects that are defined to this Hardware Management Console. Each object is shown with its frame designation and position within the frame. By opening (double-clicking on) the object, additional information is provided:

- Machine type
- Model
- Serial number
- Device location

Edit Frame Layout shows the locations in the frames that are available for adding or moving a device. In addition to adding or moving devices, the service representative can also remove devices or add frames.

To add, remove, or move hardware objects that are defined to the Hardware Management Console:

1. Open the **Task List** from the **Views** area.
2. Open **Configuration** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Drag and drop either Defined CPCs or one or more CPCs in the Defined CPCs group on **Edit Frame Layout** in the **Configuration** tasks area. (If you use Defined CPCs, the Object Selection window displays, prompting you to select a single CPC on which to perform the task.) After you start the task for a single CPC, the **Edit Frame Layout** window is displayed.

Use the online Help if you need additional information to complete this task.

System (Sysplex) Time

Note: If you cannot access this task, contact your Access Administrator.

Use this task to view or setup time synchronization for a server (CPC) using the Sysplex Timer or Server Time Protocol (STP). A *Sysplex Timer* is a device that provides a time source to the time-of-day (TOD) clocks of Central Processor Complexes (CPCs) attached to it and the operating systems or control programs running that server (CPC). *Server Time Protocol* (STP) is a time synchronization architecture designed to provide the capability for multiple servers (CPCs) to maintain time synchronization with each other and to form a Coordinated Timing Network (CTN).

To set up the time source for the CPC:

1. Open the **Task List** from the **Views** area.
2. Open **Configuration** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Drag and drop either Defined CPCs or one or more CPCs in the Defined CPCs group on **System (Sysplex) Time** in the **Configuration** tasks area.

Use the online Help if you need additional information to complete this task.

Appendix A. Hardware Management Console Tasks and Default User IDs

This appendix lists the tasks you can perform using the Hardware Management Console and the predefined default user IDs that are initially associated with that task. You can, however, create customized user profiles which would allow you to have unique user IDs and multiple user roles. The management of these user roles is performed by using the **Customize User Controls** console actions task. The **User Profiles** console actions task provides the ability to define which user roles are to be associated with each specific user ID.

The following table lists the tasks and the corresponding predefined default user IDs that can perform these tasks.

Console Actions	Default User ID				
	OPERATOR	ADVANCED	SYSPROG	ACSADMIN	SERVICE
View Console Events	X	X	X	X	X
View Console Service History	X	X	X	X	X
Save/Restore Customizable Console Data				X	
Customize Console Data/Time	X	X	X	X	X
Change Console Internal Code		X	X		X
Single Step Console Internal Code		X	X		X
Backup Critical Console Data			X		X
Perform a Console Repair Action					X
View Console Information	X	X	X	X	X
User Profiles				X	
Customize User Controls				X	
Password Profiles				X	
User Settings	X	X	X	X	X
Customize Scheduled Operations			X		X
Transmit Console Service Data	X	X	X	X	X
Authorize Internal Code Changes			X		X
Domain Security				X	X
Installation Complete Report					X
Report a Problem	X	X	X		X
View Console Tasks Performed					X
Network Diagnostic Information	X	X	X	X	X
Rebuild Vital Product Data					X
Archive Security Logs			X		X
View Security Logs			X		X
Save Upgrade Data					X
Reassign Hardware Management Console					X
Enable Electronic Service Agent				X	

Console Actions	Default User ID				
	OPERATOR	ADVANCED	SYSPROG	ACSADMIN	SERVICE
Format Media	X	X	X	X	X
Offload Virtual RETAIN Data to DVD-RAM	X	X	X	X	X
Copy Console Logs to Diskettes					X
Transmit Vital Product Data			X		X
Manage Remote Support Requests	X	X	X	X	X
Manage Remote Connections	X	X	X	X	X
Certificate Management			X	X	X
Change Password	X	X	X	X	X
Configure 3270 Emulators			X		
Copy Support Element Data					X
Enable FTP Access to Mass Storage Media			X		
Format Security Logs to DVD-RAM			X		X
Hardware Management Console Settings		X	X	X	X
Configure Data Replication				X	
Customize Remote Service	X	X	X	X	X
Customize API Settings				X	
Customize Auto Answer Settings		X	X	X	X
Customize Automatic Logon				X	
Customize Console Services			X	X	X
Customize Customer Information			X		X
Customize Modem Settings			X		X
Customize Network Settings				X	X
Customize Outbound Connectivity			X		X
Customize Product Engineering Access				X	
Object Locking Settings		X	X	X	X
Users and Tasks	X	X	X	X	X
Logoff or Disconnect	X	X	X	X	X
Monitor System Events			X		
Shutdown or Restart	X	X	X	X	X
View Licenses	X	X	X	X	X

The following table lists the tasks that can be performed on the objects and the corresponding default user IDs.

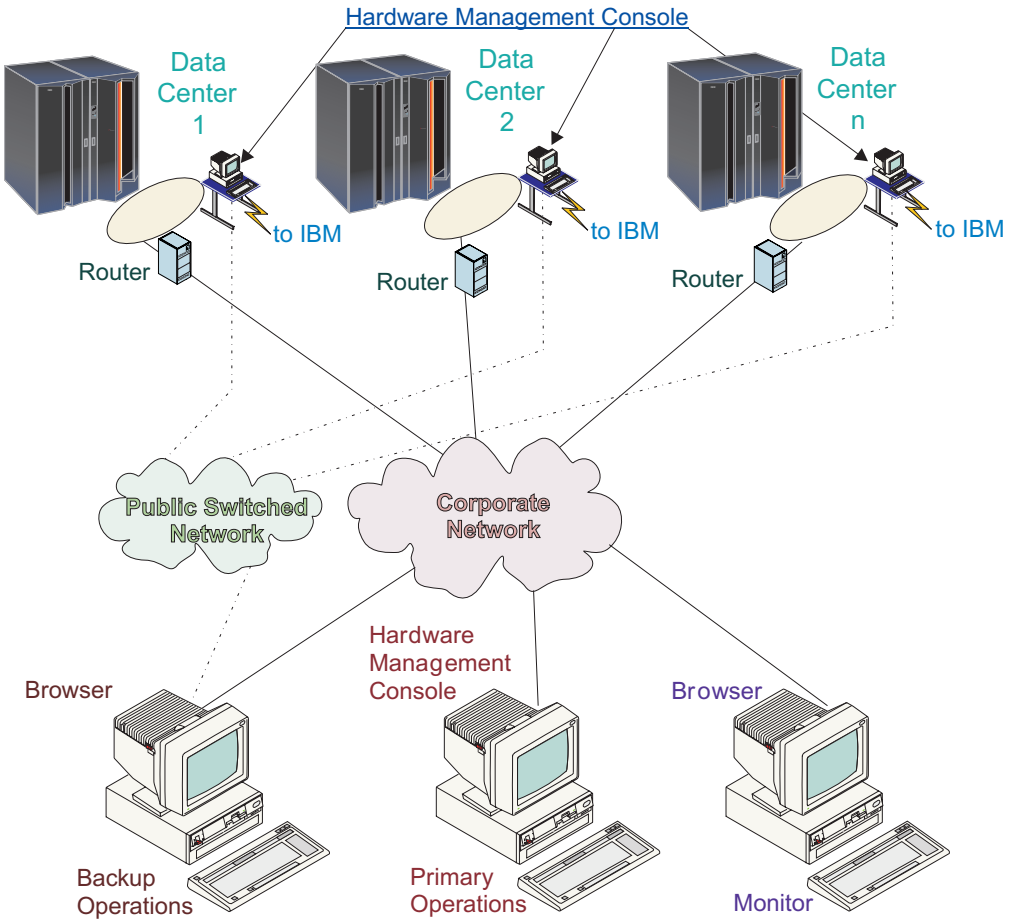
Tasks	Default User IDs				
	OPERATOR	ADVANCED	SYSPROG	ACSADMIN	SERVICE
Daily					
Activate	X	X	X		X
Reset Normal	X	X	X		X
Deactivate	X	X	X		X
Grouping			X	X	
Activity	X	X	X	X	X
Recovery					
Single Object Operations	X	X	X	X	X
Start All			X	X	X
Stop All			X	X	X
Reset Normal	X	X	X		X
PSW Restart		X	X		X
Reset Clear	X	X	X		X
Load	X	X	X		X
Integrated 3270 Console	X	X	X		X
Integrated ASCII Console	X	X	X		X
Service					
Service Status	X	X	X	X	X
Perform Problem Analysis	X		X		X
View Service History	X	X	X		X
Backup Critical Data			X		X
Restore Critical Data					X
Report a Problem	X	X	X		X
Transmit Service Data	X	X	X	X	X
Archive Security Logs			X		X
Format Security Logs to DVD-RAM			X		X
Change Management					
Engineering Changes (ECs)			X		X
Single Step Internal Code Changes		X	X		X
Retrieve Internal Code		X	X		X
Change Internal Code		X	X		X
Product Engineering Directed Changes					X
System Information	X	X	X	X	X
Alternate Support Element			X		X
Special Code Load					X
Alternate Support Element Engineering Change (ECs)			X		X

Tasks	Default User IDs				
	OPERATOR	ADVANCED	SYSPROG	ACSADMIN	SERVICE
Concurrent Upgrade Engineering Changes (ECs)		X	X		
Remote Customization					
Remote Service			X		X
Customer Information			X		X
Support Element Operations Guide	X	X	X	X	X
Operational Customization					
Customize/Delete Activation Profiles			X		
Customize Activity Profiles	X	X	X	X	X
View Activation Profiles	X	X			X
Automatic Activation			X		
Customize Scheduled Operations			X		X
Customize Support Element Date/Time	X	X	X	X	X
Change LPAR Controls			X		X
Configure Channel Path On/Off		X	X		
Reassign Channel Path		X	X		X
OSA Advanced Facilities			X		X
Enable I/O Priority Queuing			X		X
Change LPAR I/O Priority Queuing			X		X
Object Definition					
Change Object Definition				X	X
Add Object Definition				X	X
Remove Object Definition				X	
Reboot Support Element				X	X
Configuration					
Transmit Vital Product Data			X		X
View Frame Layout			X		
Edit Frame Layout					X
System (Sysplex) Time			X		X

Appendix B. Remote Operations

Remote operations are designed for human interaction and use the Graphical User Interface (GUI) used by a local Hardware Management Console operator. There are two ways to perform operations remotely (see the following figure):

- Use a remote Hardware Management Console, or
- Use a web browser to connect to a local Hardware Management Console.



The *remote Hardware Management Console* is a Hardware Management Console that is on a different subnet from the Support Element, therefore the Support Element cannot be autodiscovered with IP multicast.

The choice between a remote Hardware Management Console and a web browser connected to a local Hardware Management Console is governed principally by the scope of control that is needed. A remote Hardware Management Console defines a specific set of managed objects that will be directly controlled by the remote Hardware Management Console, while a web browser to a local Hardware Management Console has control over the same set of managed objects as the local Hardware Management Console. The communications connectivity and communication speed is an additional consideration; LAN connectivity provides acceptable communications for either a remote Hardware Management Console or web browser control, but dial-up connectivity will only work with web browser control; a remote Hardware Management Console cannot connect using dial-up connections.

Using a Remote Hardware Management Console

A remote Hardware Management Console gives the most complete set of functions because it is a complete Hardware Management Console; only the process of configuring the managed objects is different from a local Hardware Management Console (see “Add Object Definition” on page 3-56). As a complete Hardware Management Console, a remote Hardware Management Console has the same setup and maintenance requirements as a local Hardware Management Console. A remote Hardware Management Console needs LAN TCP/IP connectivity to each managed object (Support Element) that is to be managed; therefore, any customer firewall that may exist between the remote Hardware Management Console and its managed objects must permit Hardware Management Console to Support Element communications to occur. A remote Hardware Management Console may also need communication with another Hardware Management Console for service and support. The following table shows the ports a remote Hardware Management Console uses for communications.

Port	Use
tcp 443	Single Object Operations to Support Element and remote browser access
tcp 55555	Hardware Management Console to Support Element commands
tcp 58787	Hardware Management Console to Support Element discovery
udp 9900	Hardware Management Console to Hardware Management Console discovery
tcp 9920	Hardware Management Console to Hardware Management Console commands
ICMP Type 8	Ping to/from Support Element to Hardware Management Console
tcp 4455	Director/Timer communications
tcp 21	Only when Electronic Service Agent or Enable FTP Access to Hardware Management Console Mass Storage Media need to be used

A remote Hardware Management Console needs connectivity to IBM (or another Hardware Management Console that has connectivity to IBM) for service and support. The connectivity to IBM may be in the form of access to the internet (through a company firewall), or a dialed connection through a customer provided switched phone connection using the supplied modem (see “Customize Outbound Connectivity” on page 2-50). A remote Hardware Management Console cannot use the supplied modem for communication with a local Hardware Management Console or a Support Element.

Performance (that is, time to perform an operation) and the availability of the status information and access to the control functions of the Support Element is very dependent on the reliability, availability, and responsiveness of the customer network that interconnects the remote Hardware Management Console with the managed object. A remote Hardware Management Console monitors the connection to each Support Element and attempts to recover any lost connections and can report those connections that cannot be recovered.

Security for a remote Hardware Management Console is provided by the Hardware Management Console user logon procedures in the same way as a local Hardware Management Console. As with a local Hardware Management Console, all communication between a remote Hardware Management Console and each Support Element is encrypted. Certificates for secure communications are provided, and can be changed by the user if desired (see “Certificate Management” on page 2-40

2-40). TCP/IP access to the remote Hardware Management Console is controlled through its internally managed firewall and is limited to Hardware Management Console related functions. Hardware Management Console domain security (see “Domain Security” on page 2-30) may be used to isolate systems on a common LAN or to provide additional security. Individual remote users can be configured to have restricted access in the same way as they may be configured on a local Hardware Management Console.

Using a Web Browser

If you need occasional monitoring and control of managed objects connected to a single local Hardware Management Console, then the web browser is a good choice. An example of using the web browser might be an off-hours monitor from home by an operator or system programmer.

Each Hardware Management Console contains a web server that can be configured to allow remote access for a specified set of users. If a customer firewall exists between the web browser and the local Hardware Management Console, the following table shows the ports a web browser needs for communication to a Hardware Management Console.

Port	Use
tcp 443	Secure browser to web server communication
tcp 9960	Browser applet communication
tcp 9950-9959	Proxy support for Single Object Operation

After a Hardware Management Console has been configured to allow web browser access (see “Customize Console Services” on page 2-47 and “User Profiles” on page 2-23), a web browser gives an enabled user access to all the configured functions of a local Hardware Management Console, except those functions that require physical access to the Hardware Management Console such as those that use the local diskette or DVD media. The user interface presented to the remote web browser user is the same as that of the local Hardware Management Console and is subject to the same constraints as the local Hardware Management Console.

The web browser can be connected to the local Hardware Management Console using either a LAN TCP/IP connection or a switched (dial) network Point-to-Point Protocol (PPP) TCP/IP connection. Both types of connections can only use encrypted (HTTPS) protocols. If a switched connection is to be used, the PPP login name and password must be configured in the local Hardware Management Console (see “Customize Auto Answer Settings” on page 2-46) as well as the remote browser system. Logon security for a web browser is provided by the Hardware Management Console user logon procedures. Certificates for secure communications are provided, and can be changed by the user if desired (see “Certificate Management” on page 2-40).

Performance (that is, time to perform an operation) and the availability of the status information and access to the control functions of the managed objects is very dependent on the reliability, availability, and responsiveness of the network that interconnects the web browser with the local Hardware Management Console. Since there is no direct connection between the web browser and the individual managed objects, the web browser does not monitor the connection to each

Support Element, does not do any recovery, and does not report any lost connections; these functions are handled by the local Hardware Management Console

The web browser system does not require connectivity to IBM for service or support and maintenance of the browser and system level is the responsibility of the customer.

Web Browser Requirements

Hardware Management Console web browser support requires HTML 2.0, JavaScript™ 1.0, Java (JVM), and cookie support in browsers that will connect to it. It is required that the web browser uses the HTTP 1.1 protocol and if you are using a proxy server, the HTTP 1.1 protocol is enabled for the proxy connections. Additionally, pop-ups must be enabled for all Hardware Management Consoles addressed in the browser if running with pop-ups disabled. The following browsers have been tested:

- Microsoft® Internet Explorer 6.0 or later

  Note: If this browser is configured to use an internet proxy, then local intranet addresses should be included in the exception list, consult your network administrator for more information. If you still need to use the proxy to get to the Hardware Management Console, enable **Use HTTP 1.1 through proxy connections** under the **Advanced** tab in your **Internet Options** window.
- Netscape 7.1 or later (with tabbed browsing disabled)
- Mozilla 1.6 or later
- Firefox 1.0 or later.

Getting Ready to Use the Web Browser

Before you can use a web browser to access a Hardware Management Console, you must:

- Configure the Hardware Management Console to allow remote control for specified users.
- For LAN based connections, know the TCP/IP address of the Hardware Management Console to be controlled, and have properly setup any firewall access between the Hardware Management Console and the web browser.
- For switched (dialed) connections, have configured the Hardware Management Console to accept incoming calls and know the PPP login name and password.
- Have a valid user ID and password assigned by the Access Administrator for Hardware Management Console web access.
- If you are using PPP, the Hardware Management Console must not already be configured as part of a 192.168.33.0/24 subnet to prevent routing problems when remote operation is being used.

Configuring the Hardware Management Console for Web Browser Access from LAN or Telephone Connections

1. Log on to the Hardware Management Console with the ACSADMIN default user ID.
2. Open **Console Actions** from the **Views** area.
3. Open **User Profiles** from the **Console Actions Work Area**. The **User Profiles** window is displayed.

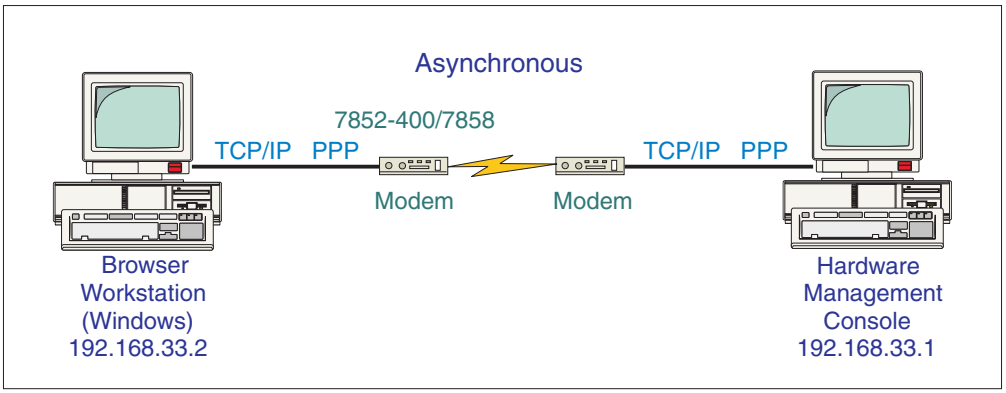
4. For each user that you want to allow web browser access, select the user ID, point to **User** on the menu bar and when its menu is displayed, click **Modify**. The **Modify User** window is displayed.
5. Click **User Properties...** on the **Modify User** window, the **User Properties** window is displayed.
6. Select **Allow remote access via the web**, then click **OK**.
7. Open **Hardware Management Console Settings** from the **Console Actions Work Area**.
8. Open **Customize Console Settings** from the **Hardware Management Console Settings Work Area**. The Customize Console Services window is displayed.
9. Select **Enabled** on the **Remote Operation** selection, click **OK**.

Logging on the Hardware Management Console from a LAN Connected Web Browser

1. Ensure that your web browser PC has LAN connectivity to the desired Hardware Management Console.
2. From your web browser, enter the URL of the desired Hardware Management Console, using the format ***https://xxx.xxx.xxx.xxx***.
3. When prompted, enter the user name and password assigned by your Access Administrator.

Configuring the Hardware Management Console for Web Browser Access via Telephone Connections

The following figure displays the asynchronous PCS connections via modems.



Note: Call home sessions may be deferred while phone line and/or modem are in use.

To use this facility, the Hardware Management Console must be configured to perform remote support facility functions using the asynchronous, TCP/IP connections.

1. Log on to the Hardware Management Console with Access Administrator access.
2. Open **Console Actions** from the **Views** area.
3. Open **Hardware Management Console Settings** from the **Console Actions Work Area**.
4. Open **Customize Auto Answer Settings** from the **Hardware Management Console Settings Work Area**. The **Customize Auto Answer Settings** window is displayed.
5. Verify **Enable automatic call answering** is selected (a check mark appears).
6. Specify a **Modem telephone number**. This is the phone number that must be dialed in order to reach the Hardware Management Console's modem.
7. Specify a **Login name**. This is the login name that must be used from the connecting browser system. It does not have to match any Hardware Management Console default user ID names. (Letters and numbers only, no spaces. This name is case sensitive and must be four to eight characters in length).
8. Specify a **Password**. This is the password that must be used from the connecting browser. It does not have to match any Hardware Management Console passwords. (Letters and numbers only, no spaces. This password is case sensitive and must be four to eight characters in length.)
9. Respecify your password in the **Confirm password** field, then click **OK**.
10. Log off the Hardware Management Console.

Using Windows XP to Dial to a Hardware Management Console

1. Click **Start** and point to **Control Panel**. (Or you may have to point to **Settings** then **Control Panel**, depending how you are set up.) The **Control Panel** window is displayed.
2. Click **Network Connections** icon, the **Network Connections** window is displayed.

3. On the left side of the window, select **Create a new connection** under **Network Tasks**. The **New Connection Wizard** window is displayed, click **Next** to continue.
4. Select **Connect to the network at my workplace**, click **Next** to continue.
5. Select **Dial-up connection**, click **Next** to continue.
6. Specify a *descriptive name* for the Hardware Management Console that will be the target for this connection (for example, PRODUCTIONHMC) in the **Company Name** field, click **Next** to continue.
7. Specify the *telephone number* used to dial the Hardware Management Console in the **Phone number** field, click **Next** to continue.
8. Specify the **User name** and **Password** that you used in the **Customize Auto Answer Settings** task.
9. The **Completing the New Connection Wizard** window is displayed and the name of the connection you just created is displayed.
10. Click **Finish** to save this connection definition. The **Connect *xxxx*** window is displayed (where ***xxxx*** is the name you just defined for the connection).
11. Click **Properties**. The ***xxxx* Properties** window is displayed (where ***xxxx*** is the descriptive name you defined for your connection).
12. Select the **Networking** tab.
13. Ensure that only the **Type of dial-up server I am calling** is **PPP**.
14. Ensure that the only protocol checked in **This connection uses the following items** is **Internet Protocol (TCP/IP)**, click **OK**.
15. The **Connect *xxxx*** window is displayed, click **Dial** to initiate the connection.

Logging on the Hardware Management Console Using a Defined Dial Connection Entry

1. Click **Start**, point to **Settings**, then to **Network Connections**, and then to the descriptive name of the Hardware Management Console you want to connect with. The **Connect with *xxxx*** window displays.
2. Enter a **User Name** and **password** that exactly matches the **Login Name** and **password** that was entered in the **Customize Auto Answer Settings** dialog on the Hardware Management Console.
3. Click **Dial** to establish a dial connection.
4. Start your web browser (for example, Internet Explorer) using your normal procedures.
5. Enter ***https://192.168.33.1*** as the target URL and press **Enter**.

Appendix C. Changing Your Time-of-Day (TOD) Clock

Your operating system time is set and updated by the CPC Time-of-Day (TOD) clock. This clock is set either to your local time or to the Coordinated Universal Time (UTC).

The Hardware Management Console can set its own time zone using the **Customize Console Date/Time** task. However, the Hardware Management Console will synchronize its time with the Support Element that has been defined as a master time source (see “Add Object Definition” on page 3-56 and “Change Object Definition” on page 3-55 to **Enable for time synchronization**). When the Hardware Management Console does this, it will convert the Support Element’s time from the Support Element’s time zone to its own time zone. It will not change its own time zone. For example, the Support Element is on the New York time zone and the Hardware Management Console is in Chicago, then when the Support Element is set to 9:00am, the Hardware Management Console will be set to 8:00am.

The following procedures are used for changing your TOD clock depending on whether or not a time source (such as ETR or STP) has been enabled.

Setting the Hardware Management Console Date and Time

If the Hardware Management Console was set up to use the CPCs Support Element as a time source (see “Add Object Definition” on page 3-56 and “Change Object Definition” on page 3-55 to **Enable for time synchronization**), then it will automatically be updated to the new date and time. If not, use the following steps to set the Hardware Management Console TOD clock.

1. Open the **Console Actions** from the **Views** area.
2. Open **Customize Console Date/Time**.
3. The **Customize Console Date and Time** window is displayed. Verify the time, date, and time zone. If it is correct, click **Cancel**. If a correction is needed, enter your changes and click **Customize**.
4. Click **OK**.
5. The **Customize Console Date and Time** window redisplays. Click **Cancel** when this task is complete.

Setting the Support Element Time Zone

When the time zone is changed at the time source, each CPC is notified of the change and the operating system adjusts its time zone to that of the time source. Because there was no change to the Coordinated Universal Time (UTC), the Support Element(s) is not notified of a change.

To update the Support Element(s) clock with the new time zone, use the following steps:

1. Open the **Task List** from the **Views** area.
2. Open **Recovery** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Open the group that contains the object with the support element that you want to connect to.
5. Select one CPC.

6. Drag and drop the selected CPC on **Single Object Operations** in the **Recovery** tasks area. The **Single Object Operations Task Confirmation** window is displayed.
7. If you want to continue establishing a session with a single CPC console, click **Yes**. The **Primary Support Element** window is displayed.
8. Open **Console Actions** from the **Views** area.
9. Open **Customize Support Element Date/Time** from the **Console Actions Work Area**.
10. The **Customize Support Element Date and Time** window displays the current support element clock, date, time, and time zone. Enter the new information, then click **Use New Time...**.
11. The **Customize Support Element Date and Time Confirmation** window is displayed, then click **Yes**.
12. The **Customize Support Element Date/Time Progress** window is displayed.

    Then the message "System (Sysplex) time is in use. Your input will not be used to set the battery operated clock." displays in the status field.

    This message means that the Support Element detected an active time source and updated its date, time, and time zone to match that of the time. Click **OK**.

Setting the Support Element Time

This section describes the actions to take when setting the time depending on whether or not a time source (such as ETR or STP) is enabled.

Time Source Enabled

Attention: Issuing a set time on a Sysplex Timer (9037) may cause any running operating systems to enter a disabled wait state. Consult your operating system documentation for details.

If the ETR, which uses the Sysplex Timer (9037), is installed in the processor complex, the time, date, and offset from the Sysplex Timer will be used to set the time-of-day in all attached CPCs. If you need to correct the time, change the time at the ETR.

If Server Time Protocol (STP) is enabled in the CPC, the time, date, and offsets from the current time server will be used to set the time-of-day. If you need to correct the time-of-day, adjust the time at the current server.

Time Source not Enabled

The Support Element(s) contain a battery operated TOD clock. The CPC TOD clock will be set using the Support Element TOD when the system is activated.

Use the following steps to correct the date or time in the Support Element(s):

1. Open the **Task List** from the **Views** area.
2. Open **Operational Customization** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Select the **Defined CPCs** icon or the **individual CPC** icons.
5. Drag and drop the icon(s) on **Customize Support Element Date/Time** in the **Operational Customization** tasks area.

6. The **Customize Support Element Date and Time** window displays the current Hardware Management Console clock, date, time, and time zone. Enter the new information, then click **Use New Time...**.
7. The **Customize Support Element Date and Time Confirmation** window displays. Click **Yes**.
8. The **Customize Support Element Date/Time Progress** window is displayed. Click **OK** to continue with the task.

Attention: The following steps will disrupt the operating system if it is running, and should only be performed if the CPC TOD needs to be updated now.

Note: These steps assume that the activation profiles have been set up for each CPC.

Use the following steps to correct the CPC TOD:

1. Open the **Task List** from the **Views** area.
2. Open **Daily** from the **Task List Work Area**.
3. Open **Groups** from the **Views** area.
4. Select the **Defined CPCs** icon or the **individual CPC** icons.
5. Drag and drop the icon(s) on **Activate** in the **Daily** tasks area.
6. Click **Yes** on the **Activate Task Confirmation** window.
7. The **Activate Progress** window is displayed. Once Activate is complete, click **OK**.

Appendix D. Customizable Data Replication

Notes:

1. Customizable Data Replication is only available on Hardware Management Consoles at Version code 1.8.0 and later.
2. Before enabling this replication service, you may want to save your original data settings in case you need to restore these settings at a future time. See "Save/Restore Customizable Console Data" on page 2-17.

The Customizable Data Replication service provides the ability to configure a set of Hardware Management Consoles to automatically replicate any changes to certain types of data so that the configured set of Hardware Management Consoles automatically keep this data synchronized without manual intervention.

The following types of data can be configured:

- Object instance data
  - Acceptable status settings for all types of managed objects
  - Associated activation profile settings for CPC and CPC image objects defined in the Customize/Delete Activation Profiles task.
- Group information
  - All user-defined group definitions.
- Status colors/patterns, confirmations, controls, and user interface styles defined in the User Settings task:
  - All settings (color or gray patterns)
  - Any confirmation settings
  - Controls such as displaying hover help or single object selections
  - Defining the user interface style: classic or tree-style
- User profile information:
  - Customized User IDs defined in the User Profiles task
  - Customized user managed resource roles and task roles defined in the User Profiles task
  - Password profile information defined in the Password Profiles task
  - Logon session properties
  - Remote access using a web browser
- Customer information defined in the Customize Customer Information task:
  - Administrator information (customer name, address, telephone number, etc.)
  - System information (administrator name, address, telephone of your system)
  - Account information (customer number, enterprise number, sales branch office, etc.)
- Customized remote information defined in the Customize Remote Service task:
  - Enablement of remote service
  - Enablement of automatic service call
  - Service telephone number configuration.
- Monitoring system events data defined in the Monitor System Events task:
  - SMTP server and port setting
  - Minimum time between emails setting
  - Event monitors.

The Customizable Data Replication service can be enabled for the following types of operations:

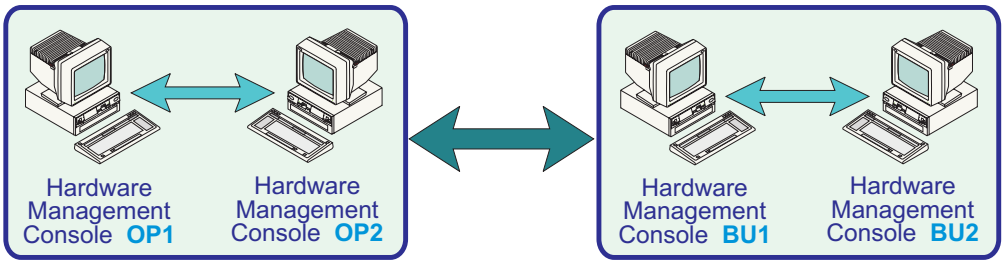
- **Peer-to-Peer** (see "Example 1: Peer-to-Peer Replication" on page D-3.)

Provides automatic replication of the selected customized data types between peer Hardware Management Consoles. Changes made on any of these consoles are replicated to the other consoles.

- **Master-to-Slave** (see “Example 2: Master-to-Slave Replication” on page D-5.)

  Provides automatic replication of the selected customized data types from one or more designated master Hardware Management Consoles to one or more designated slave Hardware Management Consoles. Changes made on a master(s) console are automatically replicated to the slave console(s).

Example 1: Peer-to-Peer Replication

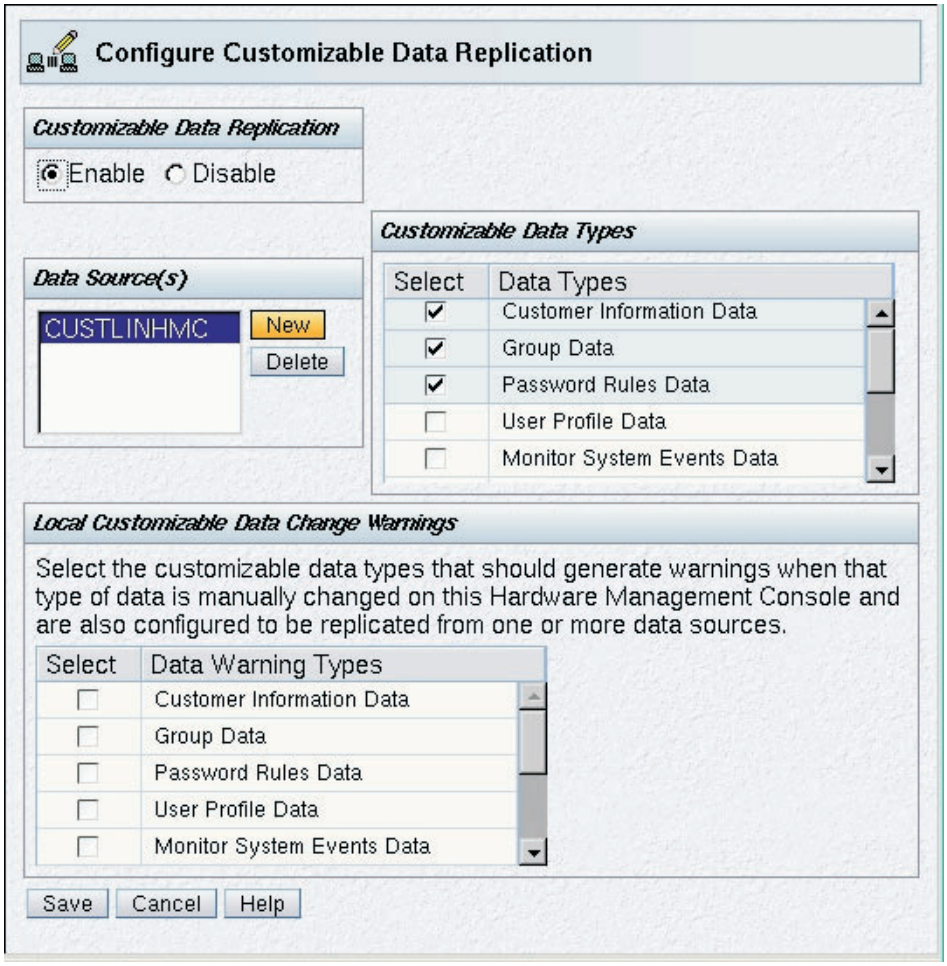


1. Log on the Hardware Management Console using the ACSADMIN default user ID or a user ID that has Access Administrator roles.
2. Open **Console Actions** from the **Views** Area.
3. Open **Hardware Management Console Settings** from the **Console Actions Work Area**. The **Hardware Management Console Settings** work area is displayed.
4. Open **Configure Data Replication** from the **Hardware Management Settings** work area. The **Configure Customizable Data Replication** window is displayed.
5. Select **Enabled** in the **Configure Data Replication** box.
6. Click **Save**. The **Configure Customizable Data Replication** window is displayed.
7. Click **New** under **Data Source(s)**. The **Configure New Replication Source** window is displayed.
8. Select a *Hardware Management Console* to be used as a data source from the **Discovered Console Information** list, and click **Add**.

   or

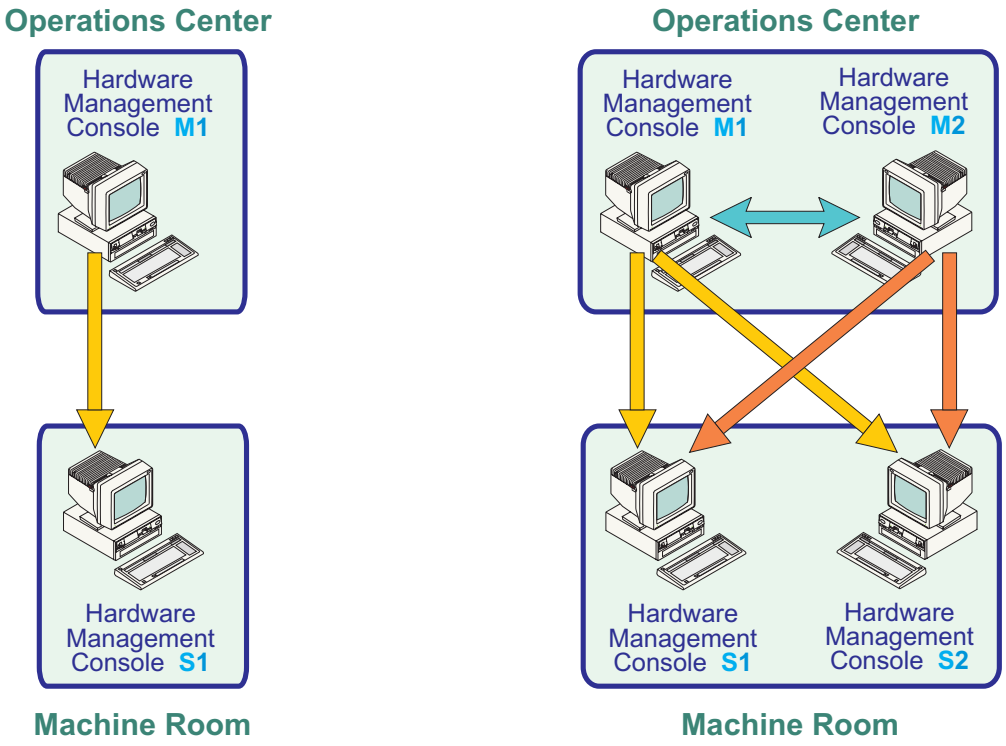
   Enter the *TCP/IP address* of the Hardware Management Console to be a used as a data source in the **TCP/IP Address Information** field, and then click **Find**.

   Note: Hardware Management Consoles ***must be*** at Version code 1.8.0 or later.
9. The **Configure Customizable Data Replication** window redisplays.



10. Select the types of data from the **Customizable Data Types** list that you want to replicate from a peer Hardware Management Console currently selected under **Data Source(s)**.
11. Click **Save**.
12. If the **Configure Console Data Replication Warning** window displays, click **OK**.
13. Click **OK** to close the **Configure Customizable Data Replication** window.
14. Repeat **steps 1** through **13** on each of the Hardware Management Consoles you want to act as peers with one another.
15. Once communication is established between the Hardware Management Consoles, the requested types of customizable data are automatically replicated from one Hardware Management Console to the other immediately following the change in the data itself.

Example 2: Master-to-Slave Replication



Setting up a Master Console(s):

1. Log on the Hardware Management Console using the ACSADMIN default user ID or a user ID that has Access Administrator roles.
2. Open **Console Actions** from the **Views** area.
3. Open **Hardware Management Console Settings** from the **Console Actions Work Area**. The **Hardware Management Console Settings** work area is displayed.
4. Open **Configure Data Replication** from the **Hardware Management Settings** work area. The **Configure Customizable Data Replication** window is displayed.
5. Click **Enabled** in the **Customizable Data Replication** box.
6. Click **OK** to close the **Configure Customizable Data Replication** window.

   Note: If you want to configure additional master consoles, see “Example 1: Peer-to-Peer Replication” on page D-3.

Setting up the Slave Console(s):

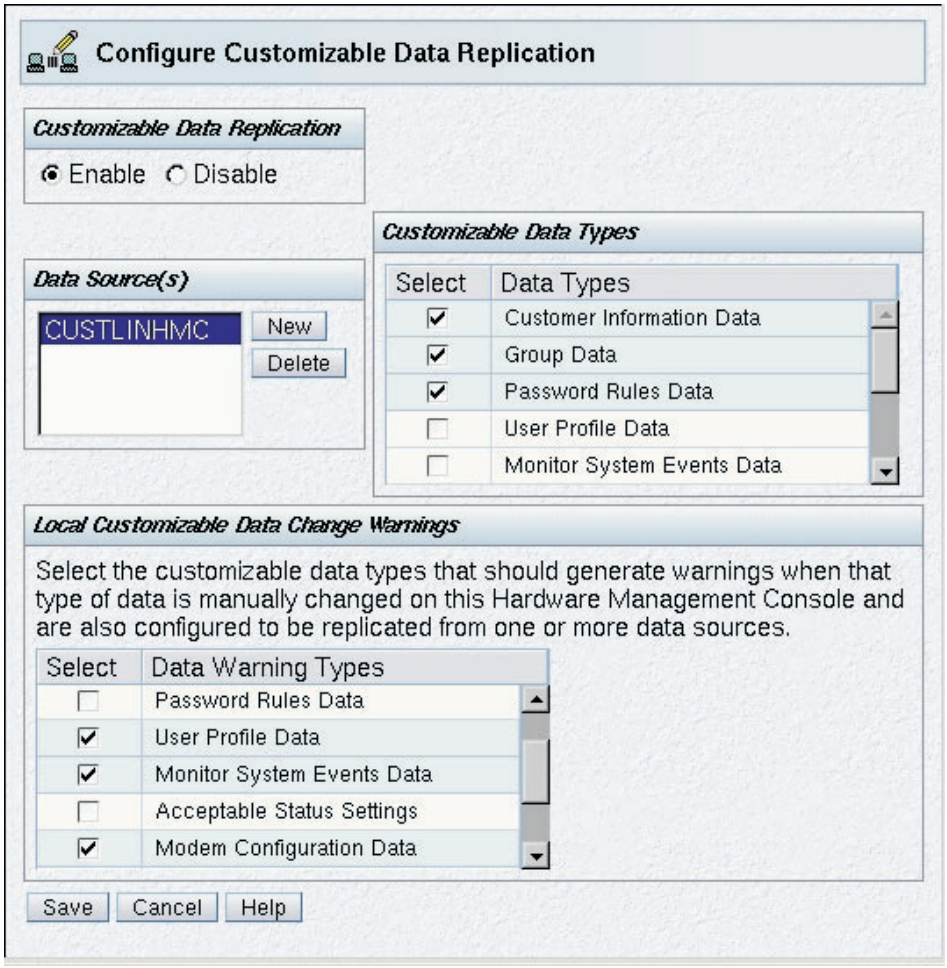
1. Log on the Hardware Management Console using the ACSADMIN default user ID or a user ID that has Access Administrator roles.
2. Open **Console Actions** from the **Views** area.
3. Open **Hardware Management Console Settings** from the **Console Actions Work Area**. The **Hardware Management Console Settings** work area is displayed.
4. Open **Configure Data Replication** from the **Hardware Management Settings** work area. The **Configure Customizable Data Replication** window is displayed.
5. Click **Enabled** in the **Customizable Data Replication** box.

6. Click **Save**. The **Configure Customizable Data Replication** window is displayed.
7. Click **New** under **Data Source(s)**. The **Configure New Replication Source** window is displayed.
8. Select a *Hardware Management Console* to be used a master data source from the **Discovered Console Information** list, then click **Add**.

   or

   Enter the *TCP/IP address* of the Hardware Management Console to be a used as the master data source in the **TCP/IP Address Information** field, then click **Find**.

   Note: Hardware Management Consoles ***must be*** at Version code 1.8.0 or later.
9. The **Configure Customizable Data Replication** window redisplays.



10. Select the types of data from the **Customizable Data Types** list that you want to accept from the Hardware Management Console currently selected under **Data Source(s)**.

    Note: When configuring a Hardware Management Console as a slave, you should check the types of customizable data from the **Local Customizable Data Change Warnings** list that should generate warnings to a user when manual changes are made to that data on this Hardware Management Console.

11. Click **Save**.
12. If the **Customizable Console Data Replication Warning** window displays, click **OK**.
13. Click **Save** to close the **Configure Customizable Data Replication** window.
14. Repeat **steps 1** through **13** on any additional Hardware Management Consoles that you want to configure as a slave.
15. Once communication is established between all of the Hardware Management Consoles, the master console(s) remains synchronized with each other, providing redundancy in the event that one of the master consoles becomes unavailable. The slave console(s) are kept synchronized with whichever master console provides the data to them first.

Data Replication

As data is replicated from one Hardware Management Console to another, an internal level indicator for the data being replicated is incremented each time the data is altered on the data source. Each Hardware Management Console keeps track of the level indicator for each type of data and will not accept data from a data source when the level indicator is not greater than that on the receiving Hardware Management Console.

If for some reason there is a need to force the replication of data from one or more data sources and the level indicator on the receiving Hardware Management Console is greater than that of the data sources, do the following:

1. Log on the Hardware Management Console using the ACSADMIN default user ID or a user ID that has Access Administrator roles.
2. Open **Console Actions** from the **Views** area.
3. Open **Hardware Management Console Settings** from the **Console Actions Work Area**. The **Hardware Management Console Settings** work area is displayed.
4. Open **Configure Data Replication** from the **Hardware Management Console Settings** work area. The **Configure Customizable Data Replication** window is displayed (**Enabled** should be selected).
5. Deselect all the data types from the **Customizable Data Types** list on the **Configure Customizable Data Replication** window.

   Note: If you just want to reset the level indicator for a particular data type, just deselect that data type.
6. Click **Save** to remember the changes.
7. Click **OK** to save the configuration changes and close the **Configure Customizable Data Replication** window.
8. Start the **Configure Data Replication** task again by repeating **step 4**.
9. Select the types of data from the **Customizable Data Types** list that were just deselected in **step 5**.
10. Click **Save** to remember the changes.
11. Click **OK** to save the configuration changes and close the **Configure Customizable Data Replication** window.

Note: Deselecting and then reselecting the data types resets the internal level indicators for the specified types of data and forces replication of the data from the data sources.

Appendix E. Installing Software from a Mass Storage Device

This appendix describes the procedure for installing an operating system (such as, Linux or z/VM) from a mass storage device to your system processor that does not have a CD or DVD drive attached to it. Using the **Enable FTP Access to Mass Storage Media** console action task on the Hardware Management Console, the **Load from CD-ROM, DVD, or Server** CPC Recovery task on the support element, and monitoring the **Operating System Messages** will assist you in accessing this software.

Before you begin, you need to know the IP addresses of the following:

- The system processor you want to install the software on.
- The Hardware Management Console you will be getting the software from.

  To locate this IP Address:

  1. Open **Hardware Management Console Settings** from the **Console Actions Work Area**.
  2. Open **Customize Network Settings** from the **Hardware Management Settings Work Area**.
  3. Click **LAN Adapters** tab. The **LAN Adapters** table is displayed. From the list of LAN adapters, note the IP address of the network adapter that connects the processor to the Hardware Management Console.

Perform the following Hardware Management Console steps:

1. If you have not already done so, log on the Hardware Management Console using the SYSPROG default user ID or a user ID that has been assigned System Programmer roles.
2. Insert the CD or DVD that contains the operating system you want installed on your processor.
3. Open **Task List** from the **Views** area
4. Open **Recovery** from the **Task List Work Area**.
5. Open **Groups** from the **Views** area.
6. Open **Defined CPCs**. Open the group that contains the object with the support element that you want to connect to.
7. Select one CPC.
8. Drag and drop the selected object on **Single Object Operations** in the **Recovery** tasks area. The **Single Object Operations Task Confirmation** window is displayed.
9. To continue establishing a session with a single CPC console, click **Yes**. The **Primary Support Element Workplace** window is displayed.
10. Open the **Task List** from the **Views** area in the **Primary Support Element Workplace**.
11. Open **CPC Recovery** from the **Task List Work Area**.

    The CPC Recovery task list contains the **Load from CD-ROM, DVD, or Server** task that you will start.
12. Open **Groups** from the **Views** area.
13. Open **Images** from the **Images Work Area**.
14. Drag and drop the selected Image on the **Load from CD-ROM, DVD, or Server** task to start it. The **Load from CD-ROM, DVD, or Server Task Confirmation** window is displayed.
15. Click **Yes** to continue. The **Load from CD-ROM or Server** window displays.

16. Select **Hardware Management Console CD-ROM / DVD** and specify a **File location** as required for your load media on the **Load from CD-ROM or Server** window.
17. Click **OK** and perform the operation.
18. When the above steps are completed go back to the **Hardware Management Console Actions Work Area**.
19. Open **Console Actions** from the **Views** area.
20. Open **Enable FTP Access to Removable Mass Storage Media** from the **Console Actions Work Area**. The **Enable FTP Access to Mass Storage Media** message window is displayed. To allow FTP access to the mass storage media, click **Yes**.
21. The **Enable FTP Access to Removable Mass Storage Media** window is displayed.
22. Specify the TCP/IP address of the processor that you want the software to be sent to, then click **Enable**. The **Enable FTP Access to Mass Storage Media** message window is displayed. Minimize this window, you will need the information in step **20**.
23. Use **Operating System Messages** or the appropriate interface to continue the loading.
24. Click **OK** to close the window when installation is complete.

    or

    a. Click **Exchange Media** on the **Enable FTP to Mass Storage Media** window to insert the next CD or DVD.
    b. Repeat step **a** until all media has been read, then click **CLOSE** on the **Enable FTP to Mass Storage Media** window when you are finished.

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Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. IBM is not responsible for any radio or

television interference caused by using other than recommended cables and connectors, by installation or use of this equipment other than as specified in the installation manual, or by any other unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1)this device may not cause harmful interference, and (2)this device must accept any interference received, including interference that may cause undesired operation.

Canadian Department of Communications Compliance Statement

This Class A digital apparatus complies with Canadian ICES-003.

Avis de conformlté aux normes du ministère des Communications du Canada

Cet appareil numérique de la classe A est conform à la norme NMB-003 du Canada.

The United Kingdom Telecommunications Act 1984

This apparatus is approved under General Approval number NS/G/1234/J/100003 for indirect connections to public telecommunications systems in the United Kingdom.

European Union (EU) Electromagnetic Compatibility Directive

This product is in conformity with the protection requirements of EU Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility. IBM cannot accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of non-IBM option cards.

EC Declaration of Conformity (In German)

Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) vom 18. September 1998 (bzw. der EMC EG Richtlinie 89/336).

Dieses Gerät ist berechtigt, in Übereinstimmung mit dem Deutschen EMVG das EG-Konformitätszeichen - CE - zu führen.

Verantwortlich für die Konformitätserklärung nach Paragraf 5 des EMVG ist die IBM Deutschland GmbH, 70548 Stuttgart.

Informationen in Hinsicht EMVG Paragraf 4 Abs. (1) 4:

Das Gerät erfüllt die Schutzanforderungen nach EN 55024 und EN 55022 Klasse A.

EN 55022 Klasse A Geräte müssen mit folgendem Warnhinweis versehen werden: ″Warnung: dies ist eine Einrichtung der Klasse A. Diese Einrichtung kann im Wohn-bereich Funkstörungen verursachen; in diesem Fall kann vom Betreiber verlangt werden, angemessene Maßnahmen durchzuführen und dafür aufzukommen.″

Anmerkung:
Um die Einhaltung des EMVG sicherzustellen, sind die Geräte wie in den IBM Handbüchern angegeben zu installieren und zu betreiben.

Taiwan Class A Compliance Statement

WARNING: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user will be required to take adequate measures.

警告使用者:
這是甲類的資訊產品，在
居住的環境中使用時，可
能會造成射頻干擾，在這
種情況下，使用者會被要
求採取某些適當的對策。

Japan Class A Compliance Statement

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