

Table of contents

About the author	2
Introduction	3
Agenda.....	4
Introduction to HMC Code v7.....	5
Remote browser access through a WUI	6
HMC management.....	7
New WUI.....	8
Enabling remote-browser access.....	9
Overview of new Web user interface	10
New user interface – overall structure	11
Quicker access to desired tasks	12
Quicker access to information.....	13
Flexibility — launching tasks.....	14
Reduced task depth	15
Work areas — tables	16
Toolbar features.....	17
Flexibility — filtering columns.....	18
Filtering — sort options	19
Flexibility — users (resources and roles).....	20
Flexibility — custom groups	21
Status overview.....	22
Customizable data replication (call-home configuration)	23
Customizable data replication.....	24
Browser access — SSL security.....	25
monhmc command	26
HMC management.....	27
HMC management — disconnect	28
HMC management — manage users and tasks	29
System Planning Tool (SPT).....	30
System reference-code (SRC) lookup	31
Licensed Internal Code updates	32
Summary.....	33
Resources.....	34
Trademarks and special notices	35

About the author

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Introduction

Welcome to this online course, entitled "Hardware Management Console (HMC) Code version 7."

This course focuses on the Hardware Management Console (HMC), a member of the IBM® Systems Director platform management family. Systems Director provides IT professionals with the tools that they need to better coordinate and manage all of their virtual and physical resources in the data center.

The main functions of the HMC are to perform logical partitioning (LPAR) functions, service functions and various system-management functions. V7 of the HMC provides a Web browser-based user interface that presents a tree-style navigation model of hierarchical views of system resources and tasks. This interface uses drill-down and launch-in-context techniques to enable direct access to hardware resources and task-management capabilities. It also shows views of system resources and provides tasks for system administration.

Agenda

- Introduction to HMC Code v7
- New Web user interface
- Quicker access
- More flexibility
- Status overview
- Replication
- Security
- monhmc command
- HMC management
- System Planning Tool
- System reference-codes
- LIC updates

Agenda

This course introduces you to the latest, and much improved, HMC Code version 7. You will learn about its new Web-user interface and the quicker and more flexible access that it provides. You will see an example of its status-overview pane. You will understand its replication and security features. There is also an explanation of the monhmc command, which provides dynamic-management views of the HMC and system activity. Finally, you will learn about the System Planning Tool (SPT), system reference-codes (SRCs) and Licensed Internal Code (LIC) updates.

Introduction

- **New Web-based user interface (WUI)**
- **New ease of use and flexibility**
- **Support for POWER6 and POWER5 systems**
 - Runs on existing HMCs (Machine Type 7310)
 - POWER5 systems need GA7 (SF240) firmware
- **HMCs shipped with POWER6 systems have new machine type**
 - 7042-C0x and 7042-CRx (desktop or rack-mounted)
 - 7042 is preloaded with HMC Code v7
- **More capabilities with POWER6**
 - Supports POWER6 functions, such as LPAR migration
- **HMC Code v7 – new release**
 - Supported on existing 7310 models of HMC
- **Upgrade of existing HMC**
 - Order FC 0962 and update MCRSA maintenance support

Note: After installation from DVD media, there is a required fix - MH01015.

Introduction to HMC Code v7

HMC Code version 7 (HMC Code v7) is an entirely new release of the HMC code. Even the manner in which you access it has changed. To remotely access older versions of the HMC code (versions 4, 5 and 6), a special Java™ technology-based client program (called *Web-based System Manager*, or *WebSM*) was needed. WebSM is no longer required with HMC Code v7, which requires only a standard, supported Web browser (either Mozilla Firefox or Microsoft® Internet Explorer). This means that you do not have to install a client application to access the HMC code remotely.

HMC Code v7 delivers new ease of use and more user flexibility, as is discussed later in this course.

HMC Code v7 runs on IBM HMCs with Machine Type 7310 and supports IBM POWER5™ and POWER6™ processor-based systems. In fact, this latest HMC version enables significant new functions that are related to the new POWER6 processor (including support for LPAR migration).

POWER5 processor-based systems must have the GA7 (SF240) firmware installed to run HMC Code v7. HMCs that ship with POWER6 models have a new 7042 Machine Type, which is preloaded with HMC Code v7. If you need to upgrade your HMC to accommodate HMC Code v7, you can do this by ordering FC 0962 — you must also update the MCRSA maintenance support.

You can upgrade earlier HMC models (shipped with POWER5 code) to support POWER6 systems. Here is the HMC download support site:
<https://www14.software.ibm.com/webapp/set2/sas/f/hmc/home.html>

Note: After installing the DVD media, you also need to install a required fix, MH01015.

Remote browser access through a WUI

- Quicker access
 - To desired tasks
 - To information
- Flexibility
 - Launching tasks
 - Filtering columns
 - Sort options
 - User resources and roles
 - Custom groups
 - Customizable data replication
- Reduced task depth
- Work area
 - Tables (sorting and sizing)
- Toolbar features
- Status overview
- SSL security
- Access to online help
- monhmc command

Remote browser access through a WUI

It is possible to access the new HMC Code v7 through remote graphically based browser access to enjoy simplified operations and redesigned panels. Task navigation is easier with more consistent task placement and categorization as well as the display of additional information in the main resource views. In addition, the HMC user interface provides powerful table functions with filtering, sorting and customization of views on a per-user basis.

HMC Code v7 makes it easier than ever to get help for running the HMC. At the pre-login window, click **view the online help**.

The WUI uses certificate-based SSL security for encrypted communications.

There is also a new monhmc command that allows you to monitor HMC subsystems and system resources — through a dynamic, real-time view.

HMC management

- › Disconnecting
- › Users and tasks
- › System Planning Tool (SPT)
- › System reference code (SRC) lookup
- › Licensed internal code updates

HMC management

There is now a Disconnect feature that allows you to disconnect from the HMC temporarily, instead of having to log off. When you choose the logoff option, all of the currently running tasks for you are ended. Alternatively, if you select the disconnect option, all currently running tasks for you continue to run without interruption. When you log back into the HMC, you have the option of either returning (reconnecting) to that previously disconnected session or starting a new session.

A User task management option displays all users who are currently logged on to the HMC and which tasks they are running. A user with *hmcsuperadmin* privileges can cancel the running tasks of other users and can also log off other users on the system.

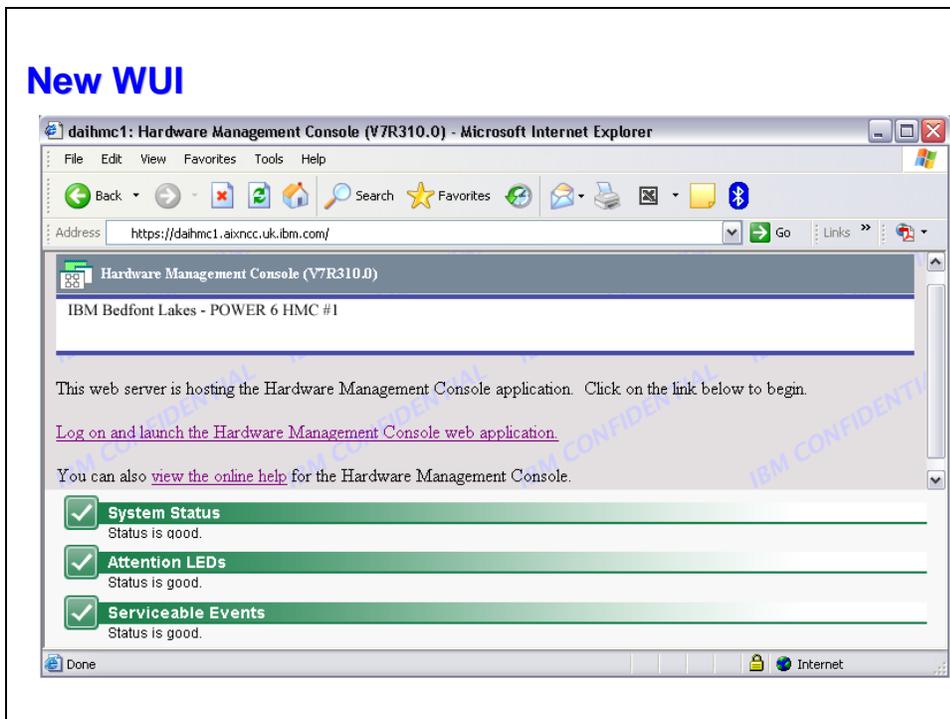
A System Planning Tool (SPT) Web site (ibm.com/systems/support/tools/systemplanningtool) is available to assist you in system planning, design and validation, as well as to provide a system-validation report that reflects system requirements that do not exceed system recommendations.

The SRC is a sequence of data words (codes) that:

- Identifies the system's status
- Describes a detected failure of the hardware, LIC or software
- Lists the unit that reports the failure, as well as its location

It is possible to update the HMC LIC status by using a wizard.

New WUI

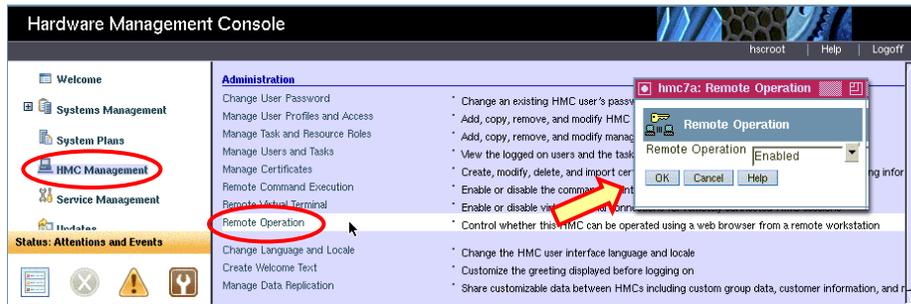


New WUI

This screen capture shows the Web page that contains the link to log on to the HMC. From this panel, you can also view the online help and the summarized HMC status information.

Enabling remote-browser access

- Enable remote access by using the physical HMC interface
- HMC firewall – Port 443 enabled (Secure Remote Web access)



Note: There is no line-mode command to enable remote-browser access.

Enabling remote-browser access

The *HMC to remote users* connection provides authorized remote users with access to HMC functions. Remote users can access the HMC in the following ways:

- Using the remote operation to access all the HMC GUI functions remotely
- Using secure shell (SSH) to access the HMC command-line (CL) functions remotely
- Using a virtual-terminal server for remote access to virtual LPAR consoles

By default, remote-browser access to the HMC is disabled. This task allows you to easily enable remote-browser access.

The HMC uses the following IP addresses to contact IBM service and support when it is configured to use Internet SSL connectivity:

- 129.42.160.48
- 129.42.160.49
- 207.25.252.200
- 207.25.252.204

Overview of the new Web user interface

Online Information Additional related online information.

- IBM System Support Support and technical information for IBM Systems.
- HMC Support Support and technical information for the HMC.
- Education and Tutorials Course materials for training and updating HMC skills.

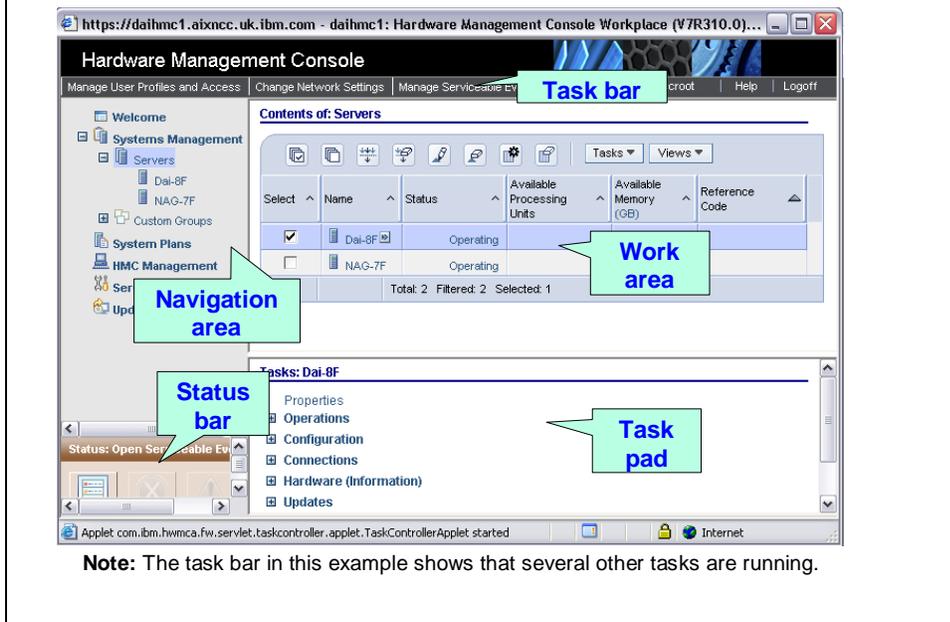
Overview of new Web user interface

The new WUI includes three sources of reference material to assist the user. These include the following material:

- *IBM System p Operations Guide for the Hardware Management Console and Managed Systems*
- *Hardware Management Console Readme* document
- Online information

You can also visit <https://www14.software.ibm.com/webapp/set2/sas/f/hmc/v7310notice.html> for more information on HMC Code v7.

New user interface – overall structure



New user interface – overall structure

The new HMC graphical interface is shown in this screen capture. Located across the top of the workplace window, the banner identifies the product and logo. It is optionally displayed and you can set it by using the Change User Interface Settings task.

The WUI has five primary panes:

Task bar: Located below the banner, the task bar displays the name of any tasks that are running, the user ID used to log in and online-help information. It also provides the ability to log off or shut down the console.

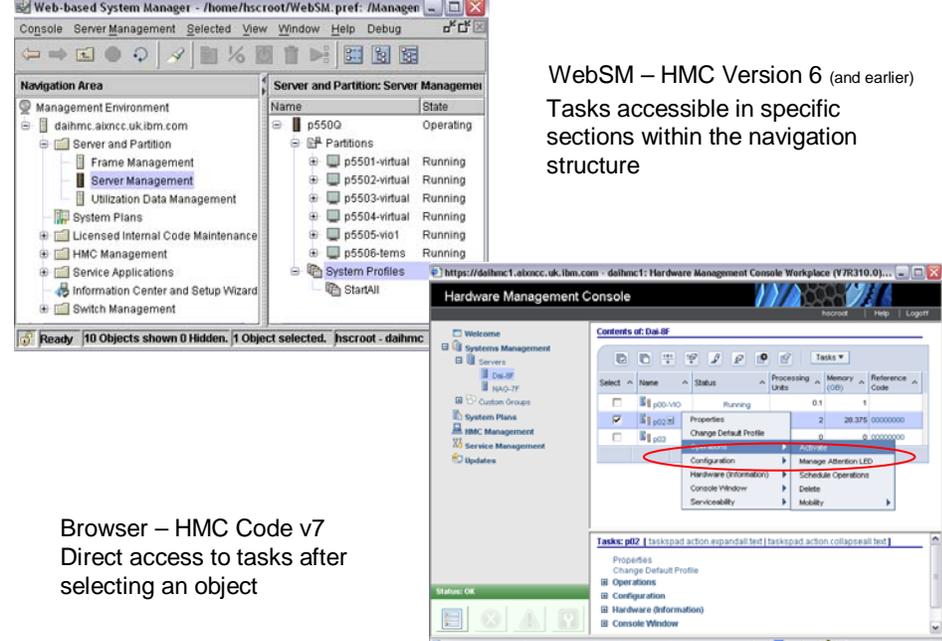
Navigation area: In the left portion of the window, the navigation pane contains the primary navigation links for managing your system resources and the HMC. The items are referred to as *nodes* and include: Systems Management, System Plans, HMC Management and Service Management.

Work area: In the right portion of the window, the work pane displays a table of information based on the current selection from the Navigation pane or Status pane. For example, when you select **Welcome** in the Navigation pane, the content for the Welcome window is displayed in the Work pane. Similarly, selecting an object displays a configurable table in the work pane.

Status bar: The Status bar, in the bottom-left portion of the window, provides visual cues of the current overall system status, including managed system resources and the HMC. It also contains a status overview icon that you can select to display more detailed status information in the Work pane. The icons, text and color of the Status bar indicate the overall status.

Task pad: The tasks listed in the tasks pad change as selections are made in the work area.

Quicker access to desired tasks



The screenshot displays two windows. The top window, 'Web-based System Manager', shows a navigation tree on the left with 'Server Management' selected. The main pane shows a table of partitions for server 'p550Q', all in a 'Running' state. The bottom window, 'Hardware Management Console', shows a table of objects for 'Disk 02'. The 'p02' object is selected, and a context menu is open over it, with 'Manage Attention LED' circled in red. Below the table is a 'Tasks' section with a list of actions for the selected object.

WebSM – HMC Version 6 (and earlier)
Tasks accessible in specific sections within the navigation structure

Browser – HMC Code v7
Direct access to tasks after selecting an object

Quicker access to desired tasks

The System Management pane contains a tree view of managed resources. Resources can include servers, partitions, frames and customer groups. Most of the activities that you can control for the managed system fall within the following categories: powering on and off, activating, shutting down and restarting partitions, viewing properties and so on. Each managed server is represented as a tree that includes the defined partitions.

When you activate the system profile, the managed system attempts to activate each partition profile in the system profile in the order that you specify.

Quicker access to information

Example :

- HMC and system-firmware updates
- WUI shows the current code levels

Hardware Management Console

Updates

HMC Code Level

Version: 7 Build Level: 20070529.1 Serial Number: 85BE31A
Release: 3.1.0 Base Version: V7R3.1.0 Model Type: 7310C04
Service Pack: 0 BIOS: 2BKT39AUS
Additional Info: MH01015: Required fix for HMC V7R3.1.0 (05-29-2007)

Update HMC

System Code Levels

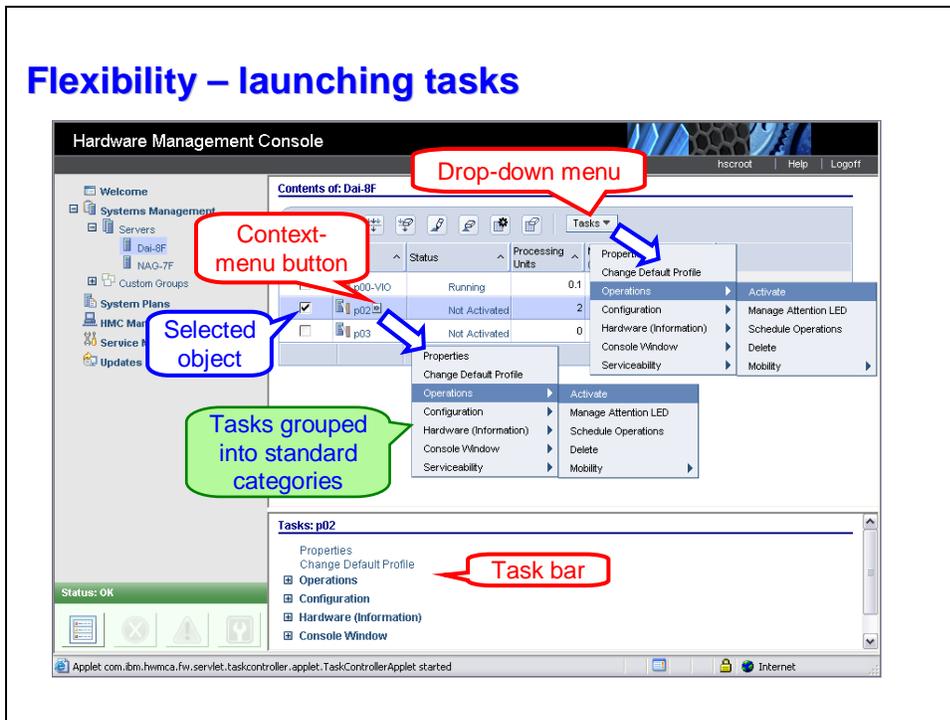
Select	Name	Status	Activated Level	EC Number	Deferred Level
<input type="checkbox"/>	Dai-8F	Standby	42.0	EM310	None
<input type="checkbox"/>	NAG-7F	Standby	42.0	EM310	None

Total: 2 Filtered: 2 Selected: 0

Quicker access to information

The HMC provides quick and easy access to system information. For example, you can check the update level for the HMC and system firmware by clicking **Updates**. As this screen capture shows, the HMC WUI presents you with the current code levels.

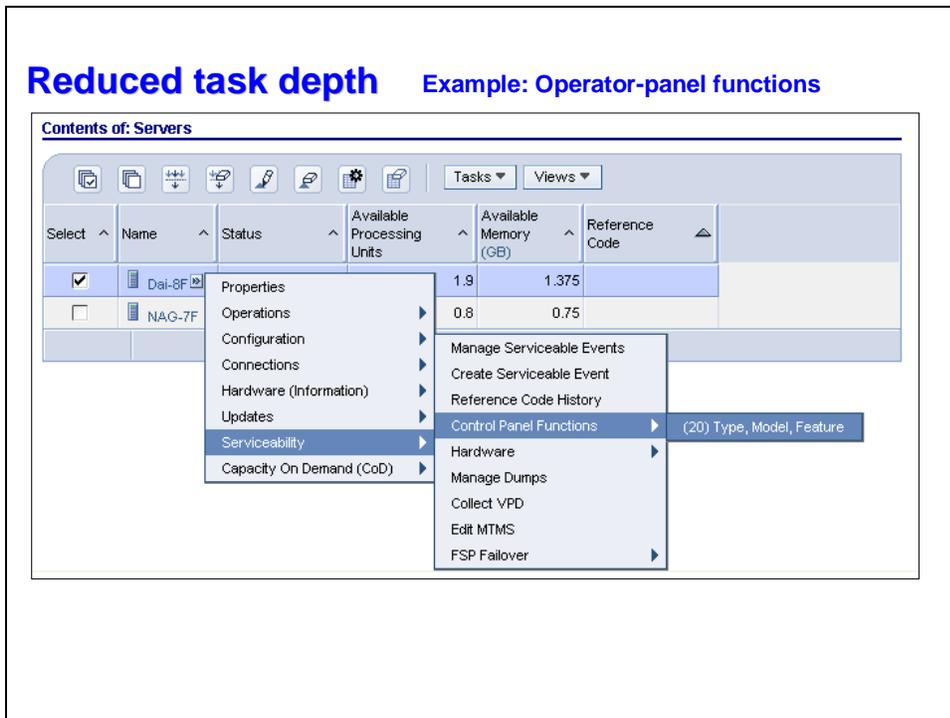
Flexibility – launching tasks



Flexibility — launching tasks

This screen capture illustrates the flexibility provided by the HMC in managing your system resources. Its highly graphical nature provides you with drop-down menus and context-sensitive menu buttons (that are based on the particular object that you have selected to view). You can also see tasks that are grouped into standard categories, and the task bar keeps you informed of the systems and tasks that you are monitoring and the activities that are running.

Reduced task depth Example: Operator-panel functions



Reduced task depth

HMC Code v7 provides a simpler, faster way to view tasks. It reduces the drill-down depth that is necessary to get to a particular task. For example, look at the screen capture shown here to understand the contrast in effort that is required to view the operator-panel functions.

In the older WebSM-based HMC version, from the navigation area, you had to complete the following six steps:

1. Open the **Service Applications** folder.
2. Select the service focal point.
3. In the contents area, select **Service Utilities**.
4. In the Service Utilities window, select the **system**.
5. Click **Selected**.
6. Then, click **Operator Panel Service Functions**.

In the new HMC WUI, there are only two steps:

1. Select **Server**.
2. Click the **arrow** button to launch the **Context** menu.

Work area — tables

The screenshot shows a table titled "Contents of: 9111-10DE9BC" with a toolbar and a list of items. The table has columns for Name, Processing Units, Memory (MB), Active Profile, Type, and Reference Code. Annotations point to various UI elements: "Toolbar" points to the top toolbar; "Item selection" points to a checkbox in the "Select" column; "Shift-select to select a range" is text next to the "Item selection" annotation; "Click to sort" points to the "Active Profile" column header; "Column sizing" points to the vertical line between the "Active Profile" and "Type" columns; "Scrolling" points to the vertical scrollbar on the right; and "Summary" points to the "Summary" row at the bottom of the table.

Select	Name	Processing Units	Memory (MB)	Active Profile	Type	Reference Code
<input type="checkbox"/>	Appserver-1	0			AIX or Linux	00000000
<input type="checkbox"/>	Appserver-2	0			AIX or Linux	00000000
<input type="checkbox"/>	Database-1	0			AIX or Linux	00000000
<input type="checkbox"/>	Database-2	0	0		AIX or Linux	00000000
<input type="checkbox"/>	Development	0	0		AIX or Linux	00000000
<input type="checkbox"/>	EdgeServer	0	0		AIX or Linux	00000000
<input type="checkbox"/>	p5201	0.2	2,048	normal	AIX or Linux	
<input type="checkbox"/>	p5202-VIO	0.2	2,048	normal	Virtual I/O Server	00000000
<input type="checkbox"/>	Production	0	0		AIX or Linux	00000000
<input type="checkbox"/>	Test-1	0	0		AIX or Linux	00000000
<input type="checkbox"/>	Test-2	0	0		AIX or Linux	00000000
<input type="checkbox"/>	Summary	0	0		Virtual I/O Server	00000000

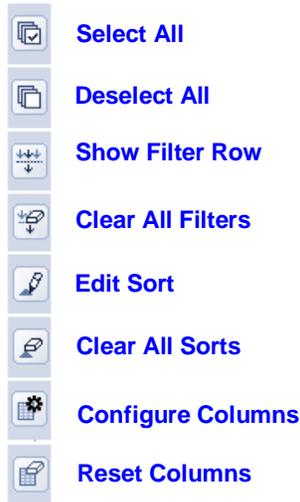
Total: 13 Filtered: 13 Selected: 0

Work areas — tables

In this screen capture, you can see that the HMC Code v7 WUI allows you to select or clear items. You can invoke filtering and sorting and can display columns in an ordered manner.

The next chart explains the details shown here.

Toolbar features

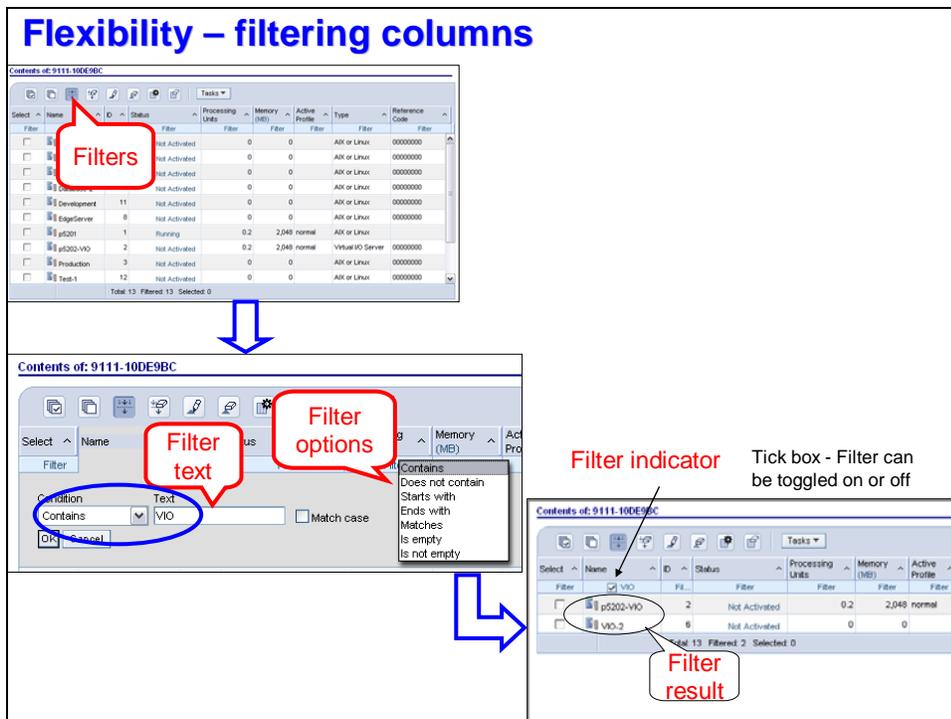


Toolbar features

The toolbar for HMC Code v7 include the following features:

- **Select All:** Selects all of the items that are shown in the current table view.
- **Deselect All:** Deselects all of the items that are shown in the current table view.
- **Show Filter Row:** Filters the items according to specified text. The filtering text can be delimited by the following filters: Contains, Does not contain, Starts with, Ends with, Matches, Is empty, Is not empty.
- **Clear All Filters:** Removes all filters that have been used to select items.
- **Edit Sort:** Allows for the specification of up to three sort fields. Some of the manners for sorting items include the following: ascending or descending, name, ID, status, processing units, memory, active profile, type, reference code, processor, service partition, configured and default profile.
- **Clear All Sorts:** Removes all sorting specifications that have been used to select items.
- **Configure Columns:** Select which columns to display (for example: name, ID, status, processing units, memory, active profile, type, reference code, processor, service partition, configured and default profile).
- **Reset Columns:** Resets the column order, visibility and width.

Note: Between sessions, these settings are preserved for each user ID.



Flexibility — filtering columns

This series of three screen captures shows how to filter columns when searching for items.

After you click **Filters** button (shown in the top-left screen capture), you can choose conditional selections that are based on the table contents (see the bottom-left screen capture). The results are shown in the screen capture presented on the bottom-right side of this chart.

Note: You can toggle the filter to be on or off on this panel, which allows you to view the items in a filtered or unfiltered manner.

Flexibility – sort options

The figure illustrates the HMC sorting process through three sequential screenshots:

- Top-left screenshot:** Shows a table titled "Contents of: 9111-10DE9BC" with columns: Name, ID, Status, Processing Units, Memory (MB), Active Profile, Type, and Reference Code. A red callout labeled "Sort" points to a button in the top toolbar.
- Bottom-left screenshot:** Shows a "Sort" dialog box. The "First Sort" dropdown is set to "Processing Units" and the direction is "Descending". A red callout labeled "Sort on multiple columns" points to the dropdown menu. Another red callout labeled "Sort fields" points to the list of available fields.
- Bottom-right screenshot:** Shows the table after sorting. The "Processing Units" column is circled in blue. Red arrows labeled "Sort indicators" point to the small upward and downward arrows in the column headers.

Name	ID	Status	Processing Units	Memory (MB)	Active Profile	Type	Reference Code
Appserver-1	9	Not Activated	0	0		ABX or Linux	00000000
Appserver-2	10	Not Activated	0	0		ABX or Linux	00000000
Database-1	4	Not Activated	0	0		ABX or Linux	00000000
Database-2	5	Not Activated	0	0		ABX or Linux	00000000
Development	11	Not Activated	0	0		ABX or Linux	00000000
EdgeServer	8	Not Activated	0	0		ABX or Linux	00000000
p5201	1	Running	0.2	2,048	normal	ABX or Linux	00000000
p5202-VIO	2	Not Activated	0.2	2,048	normal	Virtual IO Server	00000000
Production	3	Not Activated	0	0		ABX or Linux	00000000
Test-1	12	Not Activated	0	0		ABX or Linux	00000000

Filtering — sort options

This series of three screen captures shows how to use the HMC sorting feature when searching for items.

After you click the **Sort** button (shown in the top-left screen capture), you can sort on multiple columns and fields (see the bottom-left screen capture). The results are shown in the screen capture presented on the bottom-right side of this chart.

Flexibility – users (resources and roles)

The image displays four screenshots from the HMC configuration interface:

- Top Left:** "Add Role" dialog. "Role name" is "720ops". "Based on" is "AllSystemResources". "Available Objects" includes "Managed System Tower", "CEC Management", and "All Logical Partitions". "Current Objects" includes "Managed System Tower" and "Logical Partition Tower". A red callout points to "AllSystemResources" with the text "Selected resources".
- Bottom Left:** "Add Role" dialog. "Role name" is "operator". "Based on" is "hmcoperator". "Available Tasks" includes "WUJ Permission", "Frame", "Managed System", "Logical Partition", and "HMC Console". "Current Tasks" includes "WUJ Permission", "Managed System", "Power On/Managed", "Logical Partition", "Activate Partition", "Close VTerm", "Open VTerm", and "Shutdown Partition". A red callout points to "hmcoperator" with the text "Selected tasks".
- Top Right:** "Add User" dialog. "User ID" is "operator". "Description" is "ops". "Password" and "Confirm password" are filled. "Enforce strict password rules" is unchecked. "Select Managed Resource Roles" includes "720ops" (checked) and "AllSystemResources". "Select Task Roles" includes "hmcoperenp", "hmcviewer", "hmcoperator", "hmcpe", and "operator" (checked). A blue callout points to "operator" with the text "Add user ID with selected roles". A red callout points to "720ops" with the text "Resource role". A red callout points to "operator" with the text "Task role".
- Bottom Right:** "Hardware Management Console" main interface. A blue arrow points to the "Add Users" button in the bottom left corner.

User sees only the selected LPARs and selected tasks for those LPARs

Flexibility — users (resources and roles)

HMC Code v7 provides flexibility in assigning resources, roles and tasks to various users. Ultimately, users can only see the particular LPARs, tasks and resources that are given to them.

Flexibility – custom groups

Hardware Management Console

Welcome

Systems Management

- Servers
 - 9111-10DE9BC
 - Tower-10033EA
- Custom Groups
 - All partitions
 - All objects
 - Dai**
- System Plans

Contents of: Dai

Select	Name	Status	Server	Processing Units	Memory
<input type="checkbox"/>	p5201	Running	9111-10DE9BC	0.2	2
<input type="checkbox"/>	VIOS_v13_RAID5	Not Available	Tower-10033EA	0	0
<input type="checkbox"/>	Development	Not Activated	9111-10DE9BC	0	0

Total: 3 Filtered: 3 Selected: 0

(above example shows LPARs from two servers)

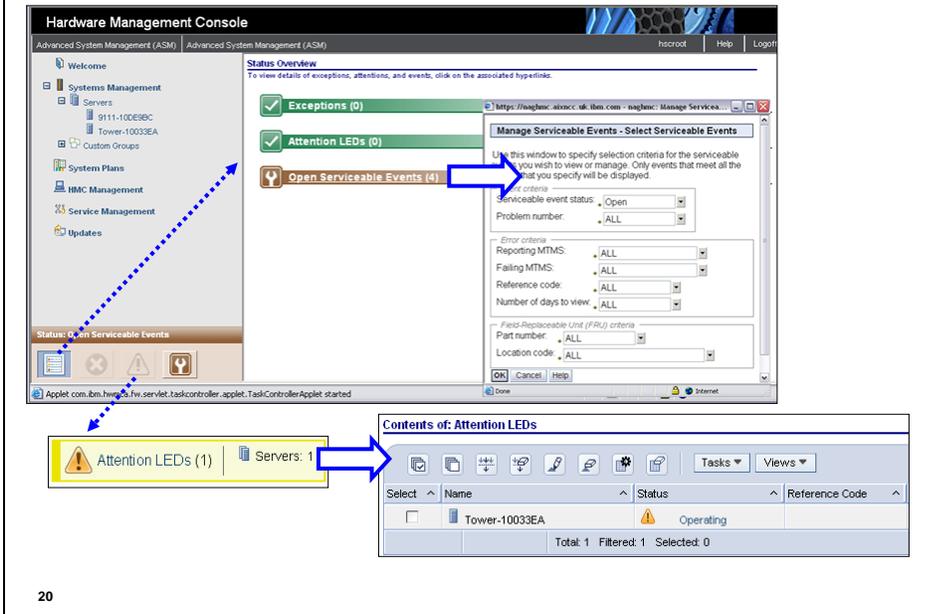
- **Create groups of objects**
(for example, systems and LPARs)
 - Group by location, business function or department
 - Add LPARs from one or more systems
- **Add LPARS from one or more systems**
 - Default groups (showing all partitions or all objects)

Flexibility — custom groups

Custom groups comprise logical collections of objects. You can report the status on a group basis, allowing you to monitor your system in a way that you prefer. You can also nest groups (a group contained within a group) to provide hierarchical or topology views.

You can create other groups, delete groups, and add or delete users to (or from) groups by using the Manage Custom Groups task.

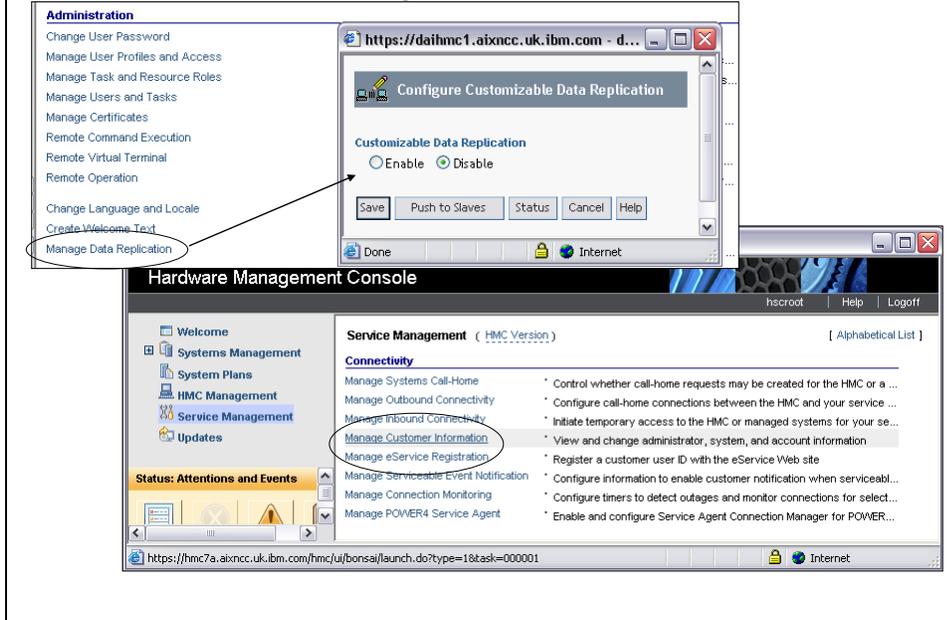
Status overview



Status overview

The **Status** bar (shown in the bottom-left portion of this screen capture) provides visual indicators of the current overall status of the system. This screen capture also contains a status-overview icon that you can select to display more detailed status information in the work pane.

Customizable data replication (call-home configuration)

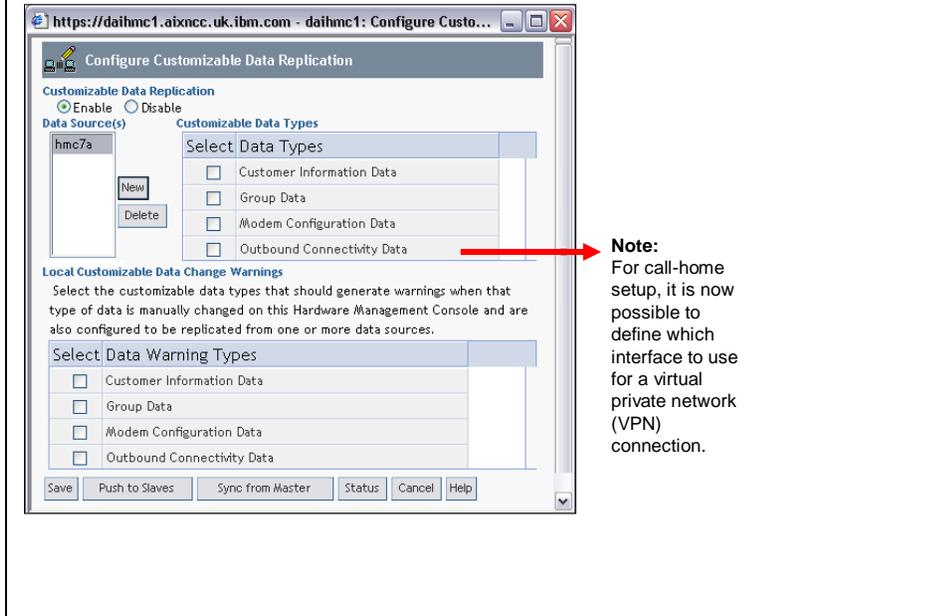


Customizable data replication (call-home configuration)

This task enables or disables customized data replication. Customized data replication allows another HMC to obtain customized console data from, or send data to, this HMC.

The customizable data-replication service provides the ability to configure a set of HMCs to automatically replicate any changes to certain types of data so that the configured set of HMCs automatically keeps this data synchronized — without manual intervention.

Customizable data replication



Customizable data replication

You can configure the following types of data for automatic replication:

Customer-information data

- Administrator information (such as: customer name, address, telephone number)
- System information (such as: administrator name, address, telephone of your system)
- Account information (such as: customer number, enterprise number, sales branch office)

Group data

- All user-defined group definitions

Modem configuration data

- Configuration of modems for remote support

Outbound connectivity data

- Configuration of the local modem to RSF
- Enablement of an Internet connection
- Configuration to an external time source

Browser access – SSL security

The screenshot shows a browser window with the address bar containing `https://daihmcc1.aixncc.uk.ibm.com`. The page title is "Hardware Management Console (V7R310.0) Logon". Below the title are fields for "Userid:" and "Password:" with "Logon", "Cancel", and "Help" buttons. A status bar at the bottom shows "Local intranet".

Overlaid on the browser is a "Warning - Security" dialog box. It asks: "Do you want to accept the certificate from web site 'daihmcc1.aixncc.uk.ibm.com' for the purpose of exchanging encrypted information?" The publisher is listed as "Unknown issuer". The dialog notes that the certificate is not from a trusted company but is still valid. It includes a "Caution" message: "Caution 'daihmcc1.aixncc.uk.ibm.com' asserts that this content is safe. You should only accept this content if you trust 'daihmcc1.aixncc.uk.ibm.com' to make that assertion." Buttons for "Yes", "No", "Always", and "More Details" are at the bottom.

Another window titled "daihmcc1: Certificate Management" is shown below. It has a menu with "Create", "Selected", and "Advanced". The "Advanced" menu is open, showing options: "Delete and Archive Certificate", "Work with Archived Certificate", "Import Certificate", and "View Issued Certificates". The "Import Certificate" option is circled in red. Below the menu is a table with columns for "Select Property", "Version", and "Serial Number". The "Serial Number" column contains the value "138204698581275793102348818914608451396".

By default, the HMC issues the SSL certificate.

The administrator can import certificates from a certificate authority (CA).

Browser access — SSL security

The import-certificate option allows you to import a certificate from media or a remote file system.

Select the location of the certificate to import. After the certificate has been uploaded, you must apply the certificate and restart the console.

You can import the certificate and apply it by clicking **HMC Management -> Manage Certificates -> Advanced -> Import Certificate.**

monhmc command

```
monhmc -s { hmcsvr | rmc } [-n <interval count>]
monhmc -r { disk | proc | mem | swap } [-n <interval count>]
```

monhmc -r disk

```
Every 4.0s: MONHmc disk          Sun Jun  3 00:01:57 2007
```

Filesystem	1K-blocks	Used	Available	Use%	Mounted on
/dev/sda2	16121184	3455832	11846440	23%	/
tmpfs	512464	0	512464	0%	/dev/shm
/dev/sda3	6040320	2208708	3524772	39%	/var
/dev/sda7	8056524	521292	7125980	7%	/dump
/dev/sda8	202284	16428	175416	9%	/extra

monhmc -s rmc

```
Every 4.0s: MONHmc rmc          Sun Jun  3 00:01:09 2007
```

```
Tasks: 6 total, 0 running, 6 sleeping,  0 stopped,  0 zombie
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
5824	root	17	0	58276	6016	4324	S	0.0	0.6	2:17.52	rmcd
5941	root	17	0	14204	3856	2876	S	0.0	0.4	0:00.01	IBM.ERrmd
5869	root	16	0	34724	6232	4772	S	0.0	0.6	0:00.30	IBM.ServiceRMd
5955	root	19	0	11976	3832	3136	S	0.0	0.4	0:00.01	IBM.CSMAGentRMd
5963	root	16	0	72308	6312	5004	S	0.0	0.6	0:00.33	IBM.LparCmdRMd
5982	root	16	0	22664	5872	4188	S	0.0	0.6	0:10.74	IBM.DMSRMd

monhmc command

The **monhmc** command provides a dynamic, real-time view of HMC-related subsystems and system resources. You use the AIX **top**, **watch** and **df** commands to implement the monhmc command. Also, you need to ensure that a pseudo-tty device is allocated when using the SSH to log in to the HMC.

Here is an explanation of the flags that you can use with the monhmc command:

- s** This flag specifies the HMC subsystem to monitor. Valid values are *hmcsvr* for HMC server processes and *rmc* for resource-monitoring and control (RMC) processes.
- r** This flag specifies the HMC system resource to monitor. Valid values are *disk* for filesystem disk-space usage, *proc* for processor usage, *mem* for memory usage, and *swap* for swap-space usage.

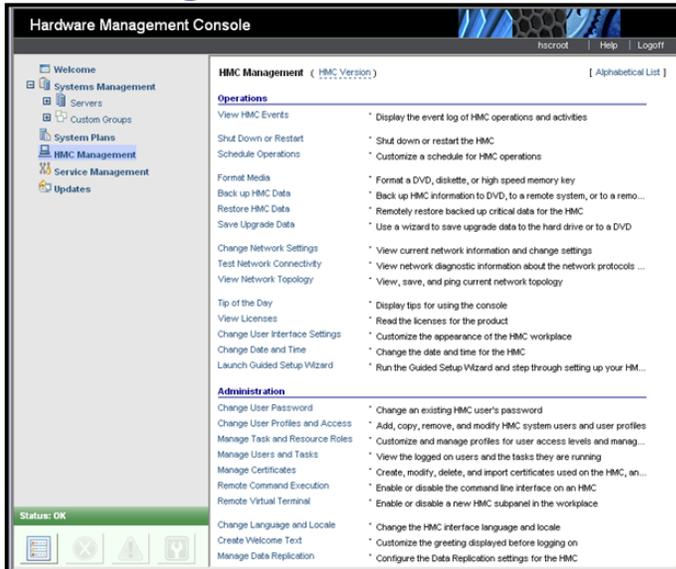
(**Note:** Either the -s or -r option is required; however, they are mutually exclusive.)

- n** This flag specifies the interval (in seconds) between updates. The default value for this option is four seconds. If you specify an interval of zero, statistics are displayed only one time, and this command exits. If you specify any other interval or omit this option, statistics are updated every interval seconds. This command runs until interrupted with Ctrl-c.

- help** This flag displays the help text for the monhmc command and then exits.

The top of this chart shows one example of using the monhmc command — it monitors HMC processor usage and updates the statistics every 10 seconds. The bottom of this chart shows another example of using the monhmc command — it displays the RMC subsystem statistics one time.

HMC management



HMC management

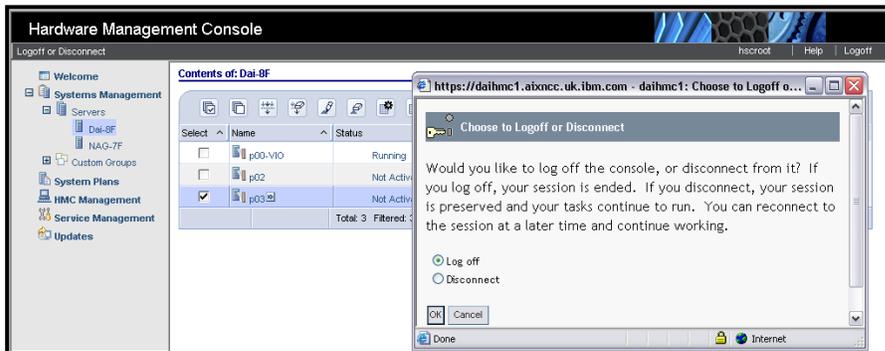
This task contains a categorized or alphabetical view of HMC management tasks and their descriptions. These tasks are used for setting up the HMC, maintaining its internal code and securing the HMC.

To display the tasks in the Work pane, perform the following steps:

1. In the navigation pane, select the **HMC Management** node.
2. From the work pane, select the task that you want to perform. By default, a categorized listing of the tasks appears. The categories include operational tasks and administrative tasks.

HMC management – disconnect

- Logoff or disconnect
- Disconnect preserves active tasks



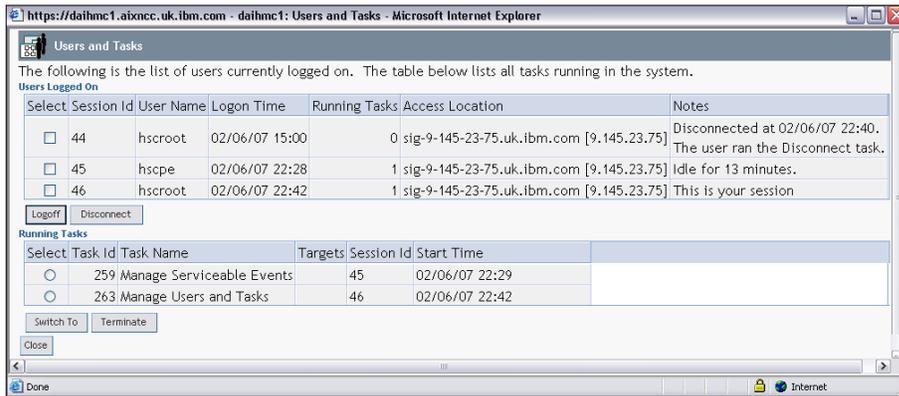
HMC management — disconnect

In HMC Code v7, you can remain in the GUI session across logins, as shown in this screen capture.

If you want to preserve your session, click **Disconnect**. After disconnecting from the session, you can reconnect to the session by selecting it.

HMC management – manage users and tasks

- View logged-on users
- Logoff or disconnect users
- Switch to other tasks or end tasks that are running



HMC management — manage users and tasks

This task views the users who are currently logged on, as well as the tasks they are running. To use this function, select **HMC Management -> Manage Users and Tasks**.

System Planning Tool (SPT)

Create a system plan:

- Hardware configuration
- LPAR profiles



Creates:

System plan

- That can be loaded onto the HMC
- **Configuration file**
- That can be loaded into eConfig

Load a system plan:

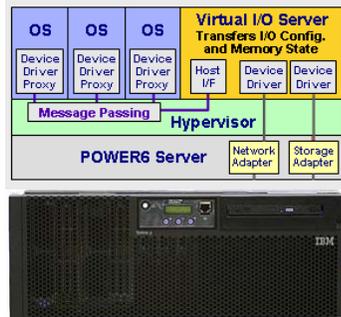
- Onto the HMC



New commands include:
defsysplanres - defines a resource to be used to deploy system plans

Deploy a system plan

- Configures LPARs



Tip: Specify customer-specified placement (CSP) to have the adapter and device placement as defined by the system plan

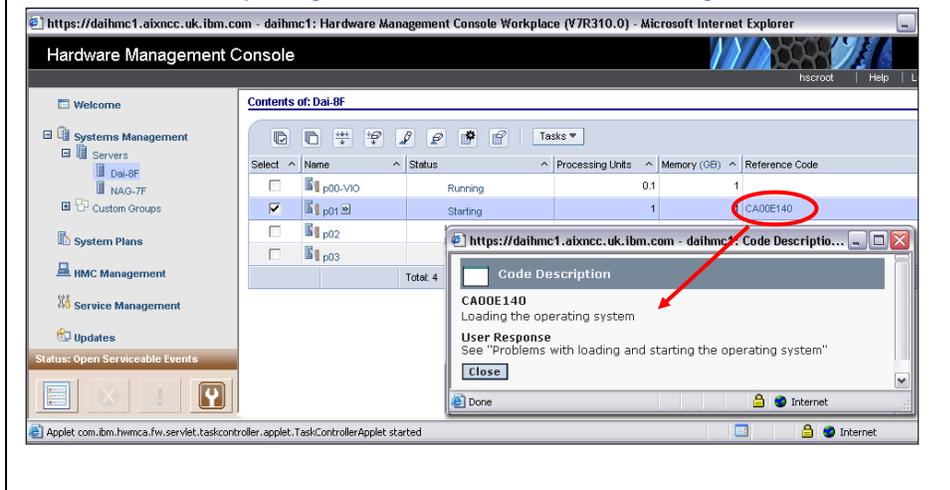
System Planning Tool (SPT)

The System Planning Tool (SPT) helps you design logically partitioned systems and replaces the LPAR Validation Tool (LVT). SPT creates a system plan that is saved as a sysplan file. A system plan can relate to one or multiple systems, each with a unique system name.

On an HMC running the version 7 release 3.1 code level, an item in the left navigation frame (called *System Plans*) contains the GUIs to manage system plans on the servers. You can access these GUIs directly from the HMC or remotely (by using the browser-based client that connects to the HMC) by clicking the **System Plans** task in the navigation area.

System reference-code (SRC) lookup

- Ability to look up the 8-digit reference codes
- Most codes are listed at GA1
 - Later, many 4-digit codes will be converted to 8-digit codes



System reference-code (SRC) lookup

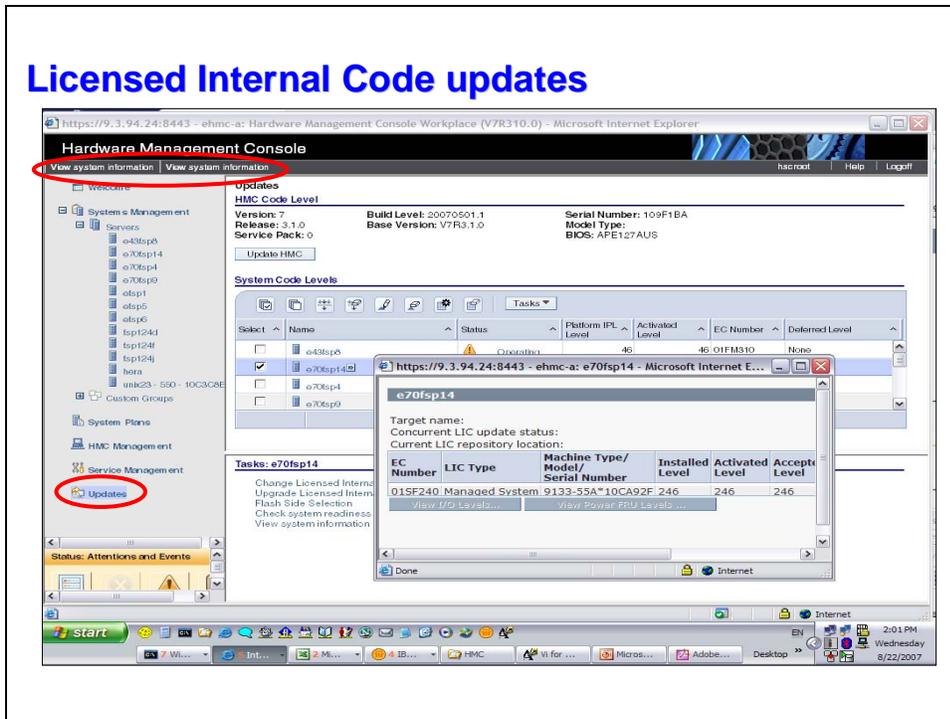
There is a single repository for all system reference codes (SRCs) and progress codes for POWER6 processor-based systems. The SRC is a sequence of data words (codes) that:

- Identifies the system's status
- Describes a detected failure of the hardware, LIC or software
- Describes the unit that reports the failure, as well as its location

You can view SRCs on the system's control panel or as a message on the system console. You can also view SRCs from the following three panels on the HMC:

- The Managed Serviceable Events overview display
- The Reference code column of the Server display
- The Reference Code History display

Licensed Internal Code updates



Licensed Internal Code updates

The *Updates* tasks allow you to perform a guided update of the managed system, power and I/O LIC.

On this screen capture, you can see the current LIC level in *View system information* task.

Summary:
Hardware Management Console (HMC) Code version 7



Summary

This course focused on the Hardware Management Console (HMC) Code v7 — the latest release of this system-management offering that assists IT professionals in better coordinating and managing all of their virtual and physical resources in the data center.

HMC Code v7 uses a Web browser-based user interface (instead of a WebSM interface) with a tree-style navigation model to provide 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. It provides views of system resources and provides tasks for system administration.

HMC Code v7 provides increased flexibility, quicker access to important information, and greater control over user access, among other improved functions.

Resources

- IBM System p and AIX Information Center
<http://publib.boulder.ibm.com/infocenter/pseries/index.jsp>
- IBM Publications Center
www.elink.ibm.link.ibm.com/public/applications/publications/cgibin/pbi.cgi?CTY=US
- AIX on IBM PartnerWorld®
ibm.com/partnerworld/aix
- IBM Redbooks®
www.redbooks.ibm.com
 - Hardware Management Console V7 Handbook
www.redbooks.ibm.com/abstracts/sg247491.html
- System p Installation and Configuration Guide for the Hardware Management Console Version 7 Release 3.1.0 Maintenance Level 0 (SA76-0084-01)
ibm.com/support/docview.wss?uid=isg277fa534519003434852572e3002e6213
- Tutorial: Using the Hardware Management Console (HMC) Web-based Interface
ibm.com/servers/resourcelink/lib03030.nsf/pagesByDocid/6DC24478DD66D14C852572E3005A70B3?OpenDocument
- System Planning Tool (SPT)
ibm.com/systems/support/tools/systemplanningtool
- HMC V7R3.1.0 support notice
<https://www14.software.ibm.com/webapp/set2/sas/f/hmc/v7310notice.html>

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