

Hardware Management Console Readme

For use with Version 4 Release 2

Date: October 11, 2004

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Introduction

The information in this Readme contains hints and errata information about the Hardware Management Console. Please consult the HMC's technical support Web site for up to date information.

(<http://techsupport.services.ibm.com/server/hmc>)

All releases of the HMC Version 4.x machine code will manage an iSeries Server, but a pSeries Server requires HMC Version 4.2 (or greater) machine code.

PTF MH00176 (Hardware Start Up Failure) possibly needs to be installed on the V4 R2 HMC

This package addresses the following issues:

A user installs and configures a new HMC. The HMC is delivered preloaded with Version 4 Release 2.1 and at least one eFix applied. The user configures the network and can ping the managed system from the HMC. An attempt to add the managed system appears to hang. The System manager status bar shows "Retrieving Objects" and an hour-glass (wait) cursor is displayed. The managed system never appears in the "Server and Partition: Server Management" window. No error is reported.

The user **may** notice that the command "lshmc -v" returns only one line of output: "vpd=null".

IBM has confirmed this to be a defect that affects some HMCs preloaded with Version 4 Release 2.1. To verify the HMC is experiencing this defect follow these steps:

1. **Open a restricted shell**
Sign on to the HMC. Right click on the desktop, select terminals, rshterm.
2. **Check the Version**
Enter the command **lshmc -V**. Verify the HMC is at Version 4, Release 2.1 and has at least one additional fix applied.
hscpe@i570hmc:~> **lshmc -V**
version= Version: 4
Release: 2.1
HMC Build level 20040908.1
MH00148 : RSCT Security Fix (2004-09-20)
MH00156: 5250proxy Fix (10-13-2004)
MH00157: CallHome Fix (10-12-2004)
3. **cat /etc/inittab**
Enter the command **cat /etc/inittab**. This will list the contents of the **inittab** file.
4. Check for the startHDWR_SVR command.
Check the output of the previous command. Verify that the following line is missing:
"hsv:2345:respawn:/opt/hsc/bin/startHDWR_SVR 1>/dev/null 2>&1"
This line is normally in the section marked in **blue**.

Sample Output:

```
hscpe@rchhmpw5:~> cat /etc/inittab
```

```
#
```

```
# /etc/inittab
```

```
#
```

```
# Copyright (c) 1996-2002 SuSE Linux AG, Nuernberg, Germany. All rights reserved.
```

```
#
```

```
# Author: Florian La Roche <feedback@suse.de>, 1996
```

```
#
```

```
# This is the main configuration file of /etc/init, which
# is executed by the kernel on startup. It describes what
# scripts are used for the different run-levels.
#
# All scripts for runlevel changes are in /etc/init.d/.
#
# This file may be modified by SuSEconfig unless CHECK_INITTAB
# in /etc/sysconfig/suseconfig is set to "no"
#

# The default runlevel is defined here
id:5:initdefault:

# First script to be executed, if not booting in emergency (-b) mode
si::bootwait:/etc/init.d/boot

#SRC: run SRC master in runlevels 2,3,4,5 only
#SRC: SRC subsystems
#SRC:
#SRC: N.B. SRC master MUST be started prior to invoking the rc command
src:2345:respawn:/sbin/srcmstr

# /etc/init.d/rc takes care of runlevel handling
#
# runlevel 0 is System halt (Do not use this for initdefault!)
# runlevel 1 is Single user mode
# runlevel 2 is Local multiuser without remote network (e.g. NFS)
# runlevel 3 is Full multiuser with network
# runlevel 4 is Not used
# runlevel 5 is Full multiuser with network and xdm
# runlevel 6 is System reboot (Do not use this for initdefault!)
#
l0:0:wait:/etc/init.d/rc 0
l1:1:wait:/etc/init.d/rc 1
l2:2:wait:/etc/init.d/rc 2
l3:3:wait:/etc/init.d/rc 3
#l4:4:wait:/etc/init.d/rc 4
l5:5:wait:/etc/init.d/rc 5
l6:6:wait:/etc/init.d/rc 6

# what to do in single-user mode
ls:S:wait:/etc/init.d/rc S
~~:S:respawn:/sbin/sulogin

# what to do when CTRL-ALT-DEL is pressed
# ca::ctrlaltdel:/sbin/shutdown -r -t 4 now

# special keyboard request (Alt-UpArrow)
# look into the kbd-0.90 docs for this
kb::kbrequest:/bin/echo "Keyboard Request -- edit /etc/inittab to let this work."

# what to do when power fails/returns
pf::powerwait:/etc/init.d/powerfail start
pn::powerfailnow:/etc/init.d/powerfail now
#pn::powerfail:/etc/init.d/powerfail now
po::powerokwait:/etc/init.d/powerfail stop

# for ARGO UPS
```

```
sh:12345:powerfail:/sbin/shutdown -h now THE POWER IS FAILING
```

```
# getty-programs for the normal runlevels
# <id>:<runlevels>:<action>:<process>
# The "id" field MUST be the same as the last
# characters of the device (after "tty").
#1:2345:respawn:/sbin/mingetty --noclear tty1
#
#S0:12345:respawn:/sbin/agetty -L 9600 ttyS0 vt102

#
# Note: Do not use tty7 in runlevel 3, this virtual line
# is occupied by the program xdm.
#

# This is for the package xdmsc, after installing and
# and configuration you should remove the comment character
# from the following line:
#7:3:respawn:+/etc/init.d/rx tty7

# modem getty.
# mo:235:respawn:/usr/sbin/mgetty -s 38400 modem

# fax getty (hylafax)
# mo:35:respawn:/usr/lib/fax/faxgetty /dev/modem

# vbox (voice box) getty
# l6:35:respawn:/usr/sbin/vboxgetty -d /dev/ttyl6
# l7:35:respawn:/usr/sbin/vboxgetty -d /dev/ttyl7

# end of /etc/inittab

cims:2345:respawn:/opt/hsc/bin/initCIMOM start 1>/dev/null 2>&1
vts:2345:respawn:/opt/hsc/bin/startServer 1>/dev/null 2>&1
cctl:2345:respawn:/opt/hsc/bin/CommandController start 1>/dev/null 2>&1
#lce:2345:respawn:/opt/hsc/bin/startLCE 1>/dev/null 2>&1
pxy:2345:respawn:/opt/hsc/bin/start5250proxy 1>/dev/null 2>&1
invd:2:once:/usr/sbin/invscoutd
was:2345:once:/opt/bobcat/bin/rc.was >/dev/console 2>&1

ccfw:2345:once:/opt/ccfw/startccfw 1>/dev/null 2>&1

# Start websm refresh server
wsm:2345:once:/usr/websm/bin/wsmrefserver -start
```

PTF MH00159 (Dual 7310CR2 & 5250 Console IP Routing conflict Fixes) must be installed on the V4 R2 HMC

This package addresses the following issues:

- **Dual 7310CR2:**
When there are 2 CR2 HMCs (rackmount) connecting the same managed system, one of the HMC will display the managed system as 'No Connection' state. Also, 'Already Connected' string will be displayed on the Operation Panel Value for that managed system.
- **5250 Console IP Routing Conflict:**
Unable to use HMC 5250 console if HMC is configured to use 10.10.x.x as the IP address. The failure is due to HMC 5250 console also use 10.10.x.x for console tunneling; hence, there is an IP conflict.

PTF MH00156 (5250 Proxy Fix) must be installed on the V4 R2.1 HMC

This package addresses the following issue:

After 2 hours of inactivity on the 5250 console session, it drops and reconnects. Leaving it at console takeover screen. It is due to disabled TCP keepalive packets to the partition while having them enabled to the client emulators.

PTF MH00157 (Call Home Fix) must be installed on the V4 R2.1 HMC

This package addresses the following issue:

Failures when calling home problems to RETAIN or getting fixes from RETAIN. There will be console events for these failures. This is due to an invalid certificate on the HMC

PTF MH00148 (RSCT Security Fix) must be installed on the V4 HMC

This package addresses the following issue:

Arbitrary system files can be overwritten with program trace data via the IBM Reliable Scalable Cluster Technology (RSCT) `ctstrtcasd` command. It may cause data destruction or a denial of service.

Note: CVE Number: CAN-2004-0828 IBM AIX `ctstrtcasd` Local File Corruption Vulnerability

PTF MH00138 (HMC V4R2.0 Update) must be install on the V4R1 HMC or later

This package also includes the following enhancements:

- It supports 160 partitions and 32 managed systems.
- This package contains numerous performance enhancements that are needed for managing large system configurations effectively from an HMC.
- The HMC now supports 16 simultaneous managed system Licensed Internal Code Updates.
- 2x performance improvements.

This package includes fixes for the following HMC functions:

- Capacity On Demand messages are not being posted on remote clients if the domain name is not configured on the local HMC.
- No asynchronous messages are displayed when Trial Capacity On Demand is out of compliance.
- No message is posted when Trial Capacity On Demand is deactivated.
- No Capacity On Demand recovery panel is displayed when the managed system is in On Demand Recovery state.
- No error message is displayed when a second 5250 Console is opened on the same partition.
- Users are unable to perform the Recover Profile Data task from a remote client. The task can be performed through the command line interface or the local HMC console.
- Partition memory configuration may be out of sync if a Dynamic Logical Partitioning move task fails to remove memory from the source partition.
- Partition processing configuration may be out of sync if a Dynamic Logical Partitioning move task fails to remove processing resources from the source partition.
- Prevent IDE controllers and Floppy controllers under an I/O processor to be used in AIX/Linux partitions.
- After a user creates an LPAR, if the LPAR is not included in the user's Managed Resource Role(s), the user won't be able to manage or even view the LPAR in this version of HMC.
- The surveillance error is not generated when an HMC's network connection goes down under a dual HMC environment.
- Unable to collect VPD information to diskette.

- Unable to recognize the fix pack in the CD for managed system licensed internal code update.
- Isrefcode -r sys does not work with users other than hscroot.
- When using the Dynamic Logical Partitioning GUI to change from capped to uncapped sharing mode, the default uncapped weight value of 128 is ignored.
- When changing sharing mode to capped through Dynamic Logical Partitioning, the uncapped weight is not set to 0. This will cause the partition to continue running with the uncapped setting.
- When a user is created through the GUI, the permission of the ssh authorized_keys2 file is incorrect. This causes sshd to ignore any public keys put inside the file. Thus, the HMC always prompts for user ID and password.
- Service events are not generated under a dual HMC environment if the primary HMC has gone offline.

PTF MH00131 (Fix InfoCenter launch) must be install on the V4 HMC

This package includes the fixes for the following HMC function:

- Unable to launch Information Center from HMC, after performing a complete Installation of HMC Version 4 R1.2.

PTF MH00108 (HMC Information Center with de_DE, es_ES, fr_FR, it_IT, pt_BR) must be installed on the V4R2 HMC

This package provides HMC Information Center in following languages:

- German
- Spanish
- French
- Italian
- Brazilian Portuguese

PTF MH00109 (HMC Information Center with cs_CZ, hu_HU, nl_NL, ru_RU, sk_SK) must be installed on the V4R2 HMC

This package provides HMC Information Center in following languages:

- Czech
- Hungarian
- Dutch
- Russian
- Slovak

PTF MH00110 (HMC Information Center with ja_JP, ko_KR, zh_CN, zh_TN) must be installed on the V4R2 HMC

This package provides HMC Information Center in following languages:

- Japanese
- Korean
- Simplified Chinese
- Traditional Chinese

PTF MH00107 (HMC V4R2.0 Update) must be install on the V4R1 HMC

This package includes fixes for the following HMC functions:

- Unable to remove an I/O slot from an I/O pool through profile activation.
- Disallow '-' in the domain name field.
- Under the partition property panel, 'Allow shared processor pool utilization authority' is not correctly reflected.
- Unable to launch platform/service tasks when log compression starts, and at the same time a log comes in.
- The SSH key is not retained after HMC upgrade.

This package also offers various new features and functions. They are mentioned in the "Enhancements and Changes in V4R2" section below.

Hints and Tips

HMC Desktop:

- To launch the browser, right mouse click on the desktop to bring up the menu. Select "Net" and then "Browser".
- To start a restricted shell terminal, right mouse click on the desktop to bring up the menu. Select "Terminals" and then "rshterm".
- Currently, HMC only stores 4 service processor dumps and 4 platform system dumps per managed system.
- Changes of a partition profile do not apply to the partition immediately. The changes will only take effect on the partition when activation is done through the profile.
- If users are interested in keylock positions and SRC values when performing Operator Panel Service Functions through Service Focal Point, they can be viewed from the Server and Partition plugin.
- To view system event logs, you must login as a user with 'hmcpe' role. From Service Applications, select Service Focal Point → Service Utilities → Actions → View Problem Logs.
- HMC can support 4 concurrent licensed internal code updates.

Enhancements and Changes in V4R2

Server and Partition:

- Manage on Demand Activation: Virtual Engine Technologies
- Additional supports for Capacity on Demand (CoD): Capacity Upgrade on Demand for memory, On/Off CoD for memory, Trial CoD for processors and memory, and Reserve CoD for processors
- Virtual I/O server partition: The Virtual I/O Server provides virtual storage and shared Ethernet capabilities to client logical partitions on the system.

HMC Command Line:

- The **lpar_type** partition attribute used in the **lssyscfg** and **mksyscfg** commands has been renamed to **lpar_env**. It also supports a new value of **vioserver** for virtual I/O server partitions.
- The **os_type** partition profile attribute used in the **lssyscfg** command has been renamed to **lpar_env**. It also has a new value of **vioserver** for virtual I/O server partition profiles.
- The **shared_proc_capable** system attribute used in the **lssyscfg** command has been renamed to **micro_lpar_capable**.
- The **cpc** and **cpcpower** values supported for the **-t** option for the **lslic** and **updlic** commands have been renamed to **sys** and **syspower**, respectively.

- The following commands have been added:
 - chsacfg** – changes the Service Agent customer email notification configuration
 - chvet** – performs activation of Virtualization Engine systems technologies on a managed system
 - cpdump** – copies managed system dumps from the HMC to DVD or a remote FTP site
 - lssacfg** – lists Service Agent configuration information
 - lsvet** – lists Virtualization Engine systems technologies information for a managed system
 - viosvr cmd** – issues a command to a virtual I/O server partition
- The **chcod** and **lscod** commands have been enhanced to support the new Capacity on Demand (CoD) functions, including Capacity Upgrade on Demand for memory, On/Off CoD for memory, Trial CoD for processors and memory, and Reserve CoD for processors.
- An option has been added to the **chsysstate** command to recover partition data for a managed system.
- Options have been added to the **chhmc** command to manage Network Time Protocol service.
- An option has been added to the **lshmc** command to display the HMC's BIOS level.
- An option has been added to the **lsdump** command to display managed system dumps that reside on the HMC.
- The default directory for profile data backup files used by the **bkprofdata** and **rstprofdata** commands has been changed to `/var/hsc/profiles/<serial-number>`, where `<serial-number>` is the serial number of the managed system.

Known Issues:

Server and Partition:

- If a checkstop occurs on the managed system and the system recovers, but access to that managed system's virtual terminal is lost, do the following to restore the virtual terminal:
 5. On the HMC, right click on the managed system name that lost the virtual terminal.
 6. From the pop-up menu, select "Reset or Remove Connection".
 7. Then select "Reset Connection" and click OK.
- Dynamic partition configuration for memory move can take a while. During that time, no other operation can be performed.
- When selecting multiple I/O slots for dynamic partition configuration, it will stop on the first failure.
- After configuring your network setting, make sure to reboot your HMC. Otherwise, dynamic logical partitioning for AIX/Linux partitions may not work.
- Capacity On Demand messages are not being posted on remote clients if the domain name is not configured on the local HMC. In order to see the messages, make sure the domain name is configured on the local HMC.
- Users cannot change virtual Opticonnect and HSL Opticonnect settings through the GUI without activating the changes through a partition profile. Users can change the settings dynamically through the command line interface.


```
Usage: chhwres -m <managed system name> -r virtualio --subtype virtualopti -p <partition name> -o s -a virtual_opti_pool_id=[0|1]
```

```
Usage: chhwres -m <managed system name> -r virtualio --subtype hsl -p <partition name> -o s -a hsl_pool_id=[0|1]
```
- Error messages for some Dynamic Logical Partitioning tasks give 'AIX' as the partition type even though it's actually a Linux partition.

- No error message is displayed when a second 5250 Console or virtual terminal is opened on the same partition.
- Users are unable to perform the Recover Profile Data task from a remote client. The task can be performed through the command line interface or the local HMC console.
- Partition memory configuration may be out of sync if a Dynamic Logical Partitioning move task fails to remove memory from the source partition. To sync up the memory configuration, use the command line interface.

Usage: `rsthwres -m <managed system name> -r mem`

- Partition processing configuration may be out of sync if a Dynamic Logical Partitioning move task fails to remove processing resources from the source partition. To sync up the processing configuration, use the command line interface.

Usage: `rsthwres -m <managed system name> -r proc`

Licensed Internal Code Maintenance:

- Users are unable to apply Licensed Internal Code Updates on I/O devices owned by AIX partitions. The work around is to apply the I/O device code update through the standalone Inventory Scout GUI.
- The Help button and '?' do not work on the Licensed Internal Code Update panels.

Service Applications:

- An HSCS0047 error is received when trying to close multiple serviceable events.
- An incorrect message is displayed when forcing a service processor dump in the Powered Off state. The task should not be enabled.

National Language Support:

- Mnemonics are not supported in double byte and ru locales.
- The HMC uses several external components. These components are not developed by the HMC team and are translated as part of a separate translation plan and schedule. The mix of English and translated text is an unavoidable situation and has the potential to occur anytime the HMC is updated or pulls in a new version of an external application that is updated in between its normally scheduled translation cycles.
- Korean input is not supported.
- Traditional and Simplified Chinese input is supported. Press CTRL-Space to switch between English and Chinese input mode. Press CTRL-Shift to select an input method. Press space bar to see more Chinese characters.
- Japanese input is supported. Press Shift-Space to switch between English and Japanese input mode.
- User ID, User information, HMC User password, Partition name, managed system name, profile name and system profile name are in English only.
- IBM275 doesn't work well when connecting from IBM Personal Communications or iSeries Access to an HMC. Use another Brazil codepage. The codepage "IBM930 Japan Katakana" doesn't work well either. Use "IBM930 Japan Katakana Extended" instead.
- An ibm5250 session opened on the HMC locally will be in the same locale as the one that is set for the HMC. To open a session in a different locale, change the HMC locale first, logout, login and then invoke ibm5250. The other option is to connect to the HMC using a remote emulator, e.g. IBM Personal Communications or iSeries Access, in the desired locale.
- Power On/Off Unit function under Service Focal Point -> Service Utilities is in English only.
- The table below indicates which locales are supported and are not supported for each of the 15 languages in which the V4 R1 HMC is currently available.

Note: For each of the locales that is not supported in the V4 R2 HMC the numeric, date, time, calendar and currency formats that are specific to a given locale may not be displayed as expected.

Languages	Supported or Not Supported	Locales
English	Supported:	en_US, en_GB
	Not Supported:	en_GB@euro, en_AU, en_BE, en_BE@preeuro, en_CA, en_HK, en_INe, en_IE, en_IE@preeuro, en_NZ, en_PH, en_PK, en_ZA, en_SG
German	Supported:	de_DE, de_DE@euro, de_CH
	Not Supported:	de_AT, de_AT@euro, de_LU, de_LU@euro
French	Supported:	fr_FR, fr_FR@euro, fr_CH, fr_CA, fr_BE, fr_BE@euro
	Not Supported:	fr_LU, fr_LU@euro
Italian	Supported:	it_IT, it_IT@euro
	Not Supported:	it_CH
Spanish	Supported:	es_ES, es_ES@euro
	Not Supported:	es_AR, es_BO, es_CL, es_CO, es_CR, es_DO, es_EC, es_SV, es_GT, es_HN, es_MX, es_NI, es_PA, es_PY, es_PE, es_PR, es_US, es_UY, es_VE
Brazilian Portuguese	Supported:	pt_BR
	Not Supported:	
Japanese	Supported:	ja_JP
	Not Supported:	
Simplified Chinese	Supported:	zh_CN
	Not Supported:	zh_SG
Traditional Chinese	Supported:	zh_TW
	Not Supported:	zh_HK
Korean	Supported:	ko_KR
	Not Supported:	
Hungarian	Supported:	hu_HU
	Not Supported:	
Dutch	Supported:	nl_NL, nl_NL@euro, nl_BE, nl_BE@euro
	Not Supported:	
Russian	Supported:	ru_RU
	Not Supported:	
Czech	Supported:	cs_CZ
	Not Supported:	
Slovakian	Supported:	sk_SK
	Not Supported:	

HMC Users:

- Users are unable to properly configure a role with only a single partition assigned through the GUI. The work around is to use the command line interface.

Usage: `mkaccfg -t resourcerole -i <config info>`

Miscellaneous Functions:

- Help Search is not supported. However, Find is supported for Help.
- Printing is not supported.
- The numerical keypad on some keyboards doesn't work. Use the normal numerical keys instead.
- When your power5 system is shipped to you it is in a non-HMC managed mode by default. Once you attach and set up an HMC to manage your power5 system, the default non-HMC managed mode is exited. The procedure to return to the default non-HMC managed mode is documented on the InfoCenter website under "Resetting the server to a non partitioned configuration".

The following link will redirect you to the document.

http://publib.boulder.ibm.com/infocenter/eserver/v1r2s/en_US/info/iphbl/iphblresetserver.htm

Security Fixes:

Cert	bug summary
CAN-2004-0183	SECURITY: Second tcpdump ISAKMP remote DOS
CAN-2004-0109 CAN-2004-0181	SECURITY: kernel ISO9660/JFS local privilege escalation
CAN-2004-0174 CAN-2003-0987 CAN-2003-0020 CAN-2003-0993 CAN-2003-0542	SECURITY: apache multiple vulnerabilities
MIT krb5 Security Advisory 2004-001	SECURITY: kerberos aname_to_localname remote root compromise

Upgrading from a V3 HMC to the V4 HMC

Note: If you have a 6578 V3 HMC, it can not be upgraded to V4 HMC. All other 7315 V3 HMCs are supported.

7315 C03 HMC BIOS update (If your HMC model is not a 7315-C03, skip this section):

- If you are updating the HMC on HMC model 7315-C03 hardware, then you must first update the BIOS of that HMC model. The BIOS and install instructions can be obtained from "<http://techsupport.services.ibm.com/server/hmc/corrsrv.html>".
- This BIOS will also ship as part of Feature Code 0960
- We recommend that you upgrade to version V3 R1.0 or higher.
- Run the "Backup Critical Console Data" task before upgrading. Save the data to the DVD. This operation allows you to restore your HMC to the state that was before the update occurred. You can then recover the HMC to the last known state, if the update encounters a problem.
- If you have to recover, reinstall the HMC with the HMC recovery CD that you last used to install the HMC. When used in conjunction with the backup that you saved to the DVD, the HMC will be restored to its last known state.

Upgrade Instructions:

Note: The HMC Recovery software is now a set of 3 CDs .

The "Save Upgrade Data" task does not need to be run prior to upgrading your HMC because the V3 HMC configuration files cannot be migrated to V4 R2.0 HMC configuration files. After you have upgraded from the V3 HMC to the V4 R2.0 HMC you must recreate your HMC configuration.

1. Contact your IBM sales representative to obtain the V4 HMC installation CDs.
2. Reboot your HMC with the first CD inserted in the DVD Ram drive.
3. When asked to perform an Install/Recovery or Upgrade, select Install/Recovery F8.
4. Select F1 on the next screen to confirm.
5. When prompted put in the 2nd CD and hit enter.
6. When prompted put in the 3rd CD and hit enter.
7. The system will process the 3rd CD then reboot again.
8. You should see a graphical login prompt.
9. Next you will need to follow the setup instructions located on the IBM InfoCenter website.

Now you can recreate your HMC configuration. After creating the HMC configuration, you should run the "Backup Critical Console Data" task in order to protect the current V4.2.0 HMC image's customized data from a possible disk failure. Once the "Backup Critical Console Data" task is completed on this new HMC version, you will use the HMC V4 R2.0 Recovery CD's to recover your HMC.

Known issues with the upgrade:

1. V4 HMC function is not supported on the 6578 V3 HMC.
2. HMC configuration data cannot be migrated from the V3 HMC to the V4 HMC.

eServer i5 and p5 Education Available on Resource Link

The following customer courses will be available from Resource Link for the product

Announce on May 4, 2004.

- **How to Use the eServer i5 and p5 Hardware Management Console**
This course explains how to install and configure the Hardware Management Console (HMC) for the Model 520/570. It also covers the HMC's basic operations by exploring the general user interface. Partitioning is discussed in detail, with explanations showing both command line and GUI support.
- **eServer i5 and p5 - Physical Planning for Installation**
This course discusses considerations for the physical planning for installation of eServer Models 520 and 570. It then provides the user with links to obtaining the step-by-step installation procedures.
- **Resource Link Highlights**
This course provides an overall look at the major Resource Link (RL) areas and how to use them; Planning, Education, Library, Forums, Fixes, Problem Solving, Services, Customer Initiated Upgrade, and Tools. It also provides step-by-step procedures in using the Subscription function.

Access to these courses requires a Resource Link user ID and password.

To register for a Resource Link user ID and password:

1. Go to <http://www.ibm.com/servers/resourceLink>
2. Select "Register for a user ID and password"
3. Accept the Security Alerts
4. Select "Customers: you may request a user ID"
5. On the Request a user ID page, fill in an e-mail address and a preferred user ID, then click Submit. A user ID and password will be sent to the e-mail address.

To view a course:

1. Sign in to Resource Link
2. Select Education in the navigation bar on the left
3. From the Education page, select "eServer i5 and p5 courses"
4. Select "How to Use the eServer i5 and p5 Hardware Management Console"
5. Double-click the link to open the course.

Notes:

1. The courses are browser based. For optimal viewing, we recommend Microsoft Internet Explorer 6.0 or higher with your display set at 1024 x 768. To set your display, go to My Computer ==> Display ==> Settings
2. Course pages can be book marked for easy retrieval.
3. Course simulations open in a separate window. Use the X in the upper right corner of the window to close the simulation.
4. If there are QuickTime videos in the course, you need to have the QuickTime viewer installed. A link to the free viewer is on each Resource Link course page and on the Related page within each course.