

# IBM Rack-mounted Hardware Management Console enables control and management of IBM POWER processor-based servers

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# At a glance

The Hardware Management Console (HMC) V7R760 is designed to deliver support for:

- RAID 1, enabling data redundancy and high levels of performance
- Power® servers and management of BladeCenter® power blade servers
- Up to 16 concurrent live partition mobility (LPM) activities with PowerVM®
- Latest web browsers

For ordering, contact your IBM® representative, an IBM Business Partner, or IBM Americas Call Centers at 800-IBM-CALL (Reference: YE001).

#### Overview

The Hardware Management Console (HMC) is updating its underlying appliance hardware to stay current with updates in hardware technology. The 7042-CR6 system is being replaced with the 7042-CR7.

#### RAID 1:

HMCs now offer a high-availability feature. The new 7042-CR7, by default, includes two hard drives with RAID 1 configured. If you prefer not to have RAID 1 enabled on the HMC, you can override it in the ordering system and remove the additional HDD from the order.

RAID 1 is also offered on both the 7042-CR6 and the 7042-CR7 as an MES upgrade option.

RAID 1 uses data mirroring. Two physical drives are combined into an array, and data is striped across the array. The first half of a stripe is the original data; the second half is a mirror (that is, a copy) of the data, but it is written to the other drive in the RAID 1 array.

RAID 1, which requires two physical drives, enables data redundancy.

## **Blade management:**

The HMC gives systems administrators a tool for planning, virtualizing, deploying, and managing IBM Power System servers.

With the introduction of HMC V7R760, the HMC can now manage IBM BladeCenter Power Blade servers. This includes support for dual VIOS, live partition mobility between blades and rack servers, and management of both blades and rack servers from a single management console.

#### Removal of internal modem:

Future releases of the HMC hardware will not offer an internal modem option.

#### New features:

- Updated browser support: With the release of V7R760, the HMC now supports Mozilla Firefox 7 through 10 and Microsoft<sup>™</sup> Internet Explorer 7 through 9.
- Capacity on Demand enhancements: To better support IBM Pooled Capacity on the Power 795 system, you can now order an unlimited amount of CoD days. The previous limit was 9999.

PowerVM management enhancements:

- IBM PowerVM and the HMC now support up to 16 concurrent live partition mobility (LPM) activities.
- You can specify the destination Fibre Channel port for any or all virtual Fibre Channel adapters during a live partition migration.
- You can create up to 20 partitions per processor core.
- During DLPAR add or remove of virtual I/O adapters to or from a VIOS, the HMC now automatically attempts to run the Add/Remove commands (cfgdev/rmdev) on the VIOS. In earlier releases, you would have to manually run these commands on the VIOS.

#### **Supported models:**

HMC V7R760 is the last release to be supported on models 7310-C04, 7315-CR2, and 7310-CR2. Future HMC releases will not be supported on C04 or CR2.

# **Key prerequisites**

A POWER5, or later, processor-based server that supports an HMC

# Planned availability date

November 16, 2012

## Description

Transitioning from SDMC/IVM Management to HMC Management: Transitioning from SDMC management of blades to HMC management of blades simply requires the user to add the blades to the management domain of the new console (HMC). This can be performed without a blade server outage.

The process for converting IVM managed blades to be HMC managed is the same as the process for converting IVM managed rack servers to HMC managed rack servers. When converting from IVM to HMC managed blades, all partitions must be manually reconfigured and a blade server outage is required.

Refer to the Power Systems $^{\text{\tiny{TM}}}$  HW Information Center for more information.

# Accessibility by people with disabilities

A US Section 508 Voluntary Product Accessibility Template (VPAT) containing details on accessibility compliance can be requested at

http://www.ibm.com/able/product\_accessibility/index.html

#### Section 508 of the US Rehabilitation Act

The IBM 7042-CR7 Rack-mounted Hardware Management Console is capable as of September 17, 2010, when used in accordance with IBM's associated documentation, of minimally satisfying the applicable requirements of Section 508 of the Rehabilitation Act, provided the user attaches another system that contains the assistive technology necessary to interact through a command-line interface.

## Statement of general direction

IBM intends to provide an automated process for transitioning from IBM Integrated Virtualization Manager (IVM) managed blades to IBM Hardware Management Console (HMC) managed blades, without a required blade server outage, in a future update to the HMC.

IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion. Information regarding potential future products is intended to outline our general product direction and it should not be relied on in making a purchasing decision. The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code, or functionality. Information about potential future products may not be incorporated into any contract. The development, release, and timing of any future features or functionality described for our products remains at our sole discretion.

## **Product number**

The following are newly announced features on the specific models of the IBM Power Systems 7042 machine type:

Description	MT	Model	Feature
Rack-mount Hardware Management Console	7042	CR7	
RAID 1 Upgrade for CR7	7042	CR7	EB2S
ADDTNL 8GB(1x8GB), 1.333GHz DDR3 LP RDIMMS	7042	CR7	EMO7
RFID Tags for Servers, Compute Nodes, Chassis,			
Racks, and HMCs	7042	CR7	ERF1
HMC CR5/CR6 Redundant Power Supply, 550 W	7042	CR7	EU02

The following are features already announced for the IBM Power Systems 7042 machine type:

Description	MT	Mode I	Feature
Internal Modem Balanced Warehouse Solution Indicator Manufacturing Routing Code for CSC	7042 7042 7042	CR7	0033 0710 0712
Hardware Management Console Licensed Machine Code v7	7042	CR7	0962
US TAA Compliance Indicator	7042	CR7	0983

Modem Cable - US/Canada and General Use Smart Analytics System routing indicator	7042 7042	CR7 CR7	1025 1114
Custom Sarvica Spacify Rochaston Minn USA	7042	CD7	1140
Custom Service Specify, Rochester Minn, USA	7042 7042	CR7	1140
8GB Pluggable USB Memory Option	7042	CR7	1208
ADDTNL 500GB SATA HDD, 2.5" SLIM-HS		CR7 CR7	1998
Widescreen LCD Monitor	7042		3632
IBM T120 Flat Panel Monitor	7042	CR7	3643
IBM T119 Flat Panel Monitor	7042	CR7	3644
IBM T117 Flat Panel Monitor	7042	CR7	3645
1.8 M (6-ft) Extender Cable for Displays (15-pin	70.40	7	4242
D-shell to 15-pin D-shell)	7042	CR7	4242
Extender Cable - USB Keyboards, 1.8M	7042	CR7	4256
One and only one rack indicator feature is require	ed on		
all orders (#4650 to #4666).		<b>-</b>	4650
Rack Indicator- Not Factory Integrated	7042	CR7	4650
Rack Indicator, Rack #1	7042	CR7	4651
Rack Indicator, Rack #2	7042	CR7	4652
Rack Indicator, Rack #3	7042	CR7	4653
Rack Indicator, Rack #4	7042	CR7	4654
Rack Indicator, Rack #5	7042	CR7	4655
Rack Indicator, Rack #6	7042	CR7	4656
Rack Indicator, Rack #7	7042	CR7	4657
Rack Indicator, Rack #8	7042	CR7	4658
Rack Indicator, Rack #9	7042	CR7	4659
Rack Indicator, Rack #10	7042	CR7	4660
Rack Indicator, Rack #11	7042	CR7	4661
Rack Indicator, Rack #12	7042	CR7	4662
Rack Indicator, Rack #13	7042	CR7	4663
Rack Indicator, Rack #14	7042	CR7	4664
Rack Indicator, Rack #15	7042	CR7	4665
Rack Indicator, Rack #16	7042	CR7	4666
RFID Tags for Servers, Blades, BladeCenters,			
Racks, and HMCs	7042	CR7	5524
Full Width Keyboard USB, US English, #103P	7042	CR7	5951
Full Width Keyboard USB, French, #189	7042	CR7	5952
Full Width Keyboard USB, Italian, #142	7042	CR7	5953
Full Width Keyboard USB, German/Austrian, #129		CR7	5954
Full Width Keyboard USB, UK English, #166P	7042	CR7	5955
Full Width Keyboard USB, Spanish, #172	7042	CR7	5956
Full Width Keyboard USB, Japanese, #194	7042	CR7	5957
Full Width Keyboard USB, Brazilian		_	
Portuguese, #275	7042	CR7	5958
Full Width Keyboard USB, Hungarian, #208	7042	CR7	5959
Full Width Keyboard USB, Korean, #413	7042	CR7	5960
Full Width Keyboard USB, Chinese, #467	7042	CR7	5961
Full Width Keyboard USB, French Canadian, #445		CR7	5962
Full Width Keyboard USB, Canadian French, #058		CR7	5963
Full Width Keyboard USB, Belgian/UK, #120	7042	CR7	5964
Full Width Keyboard USB, Swedish/Finnish, #153		CR7	5965
Full Width Keyboard USB, Danish, #159	7042	CR7	5966
Full Width Keyboard USB, Bulgarian, #442	7042	CR7	5967
Full Width Keyboard USB, Swiss/French/German,	70.43	cp.7	F060
#150	7042	CR7	5968
Full Width Keyboard USB, Norwegian,#155	7042	CR7	5969
Full Width Keyboard USB, Dutch, #143	7042	CR7	5970
Full Width Keyboard USB, Portuguese, #163	7042	CR7	5971
Full Width Keyboard USB, Greek, #319	7042	CR7	5972
Full Width Keyboard USB, Hebrew, #212	7042	CR7	5973
Full Width Keyboard USB, Polish, #214	7042	CR7	5974
Full Width Keyboard USB, Slovakian, #245	7042	CR7	5975
Full Width Keyboard USB, Czech, #243	7042	CR7	5976
Full Width Keyboard USB, Turkish, #179	7042	CR7	5977
Full Width Keyboard USB, LA Spanish, #171	7042	CR7	5978
Full Width Keyboard USB, Arabic, #253	7042	CR7	5979
Full Width Keyboard USB, Thai, #191	7042	CR7	5980
Full Width Keyboard USB, Russian, #443	7042	CR7	5981
Full Width Keyboard USB, Slovenian, #234	7042	CR7	5982
Full Width Keyboard USB, US English Euro,	70.43	CD7	FOOR
#103P	7042	CR7	5983
Power Cord 4.3m (14-ft), Drawer to Wall/IBM PDU	70.43	CD7	6450
(250V/10A)  Rower Cord 4 3m (14-ft) Prawer To 05M RDU	7042	CR7	6458
Power Cord 4.3m (14-ft), Drawer To OEM PDU	7042	CD7	6460
(125V, 15A)	7042	CR7	6460

David Cond 4 2 (14 Ct) David La 1/2 [17 David			
Power Cord 4.3m (14-ft), Drawer to Wall/OEM PDU (250V/15A) U. S.	7042	CR7	6469
Power Cord 1.8m (6-ft), Drawer to Wall $(125V/15A)$	7042	CR7	6470
Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU	7012	City	0170
(125V/15A)	7042	CR7	6471
Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU			
(250V/16A)	7042	CR7	6472
Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU		_	
(250V/10A)	7042	CR7	6473
Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU,	7042	CD7	6474
(250V/13A) Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU,	7042	CR7	6474
(250V/16A)	7042	CR7	6475
Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU,	7012	City	0173
(250V/10A)	7042	CR7	6476
Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU,			
(250V/16A)	7042	CR7	6477
Power Cord 2.7 M(9-foot), To Wall/OEM PDU,			
(250V, 16A)	7042	CR7	6478
Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU,	70.43	cp.7	6400
(125V/15A or 250V/10A )	7042	CR7	6488
Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU, (250V/10A)	7042	CR7	6493
Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU,	7042	CKI	0433
(250V/10A)	7042	CR7	6494
Power Cord (9-foot), To Wall/OEM PDU, (250V, 10A)	7042	CR7	6495
Power Cord 2.7M (9-foot), To Wall/OEM PDU,			
(250V, 10A)	7042	CR7	6496
Power Cable - Drawer to IBM PDU, 200-240V/10A	7042	CR7	6577
Power Cord 2.7M (9-foot), To Wall/OEM PDU,	70.40		6651
(125V, 15A)	7042	CR7	6651
Power Cord 2.7M (9-foot), To Wall/OEM PDU, (250V, 15A)	7042	CR7	6659
Power Cord 4.3m (14-ft), Drawer to Wall/OEM PDU	7042	CKI	0033
(125V/15A)	7042	CR7	6660
Power Cord 2.8m (9.2-ft), Drawer to Wall/IBM			
PDU, (250V/10A)	7042	CR7	6665
Power Cord 4.3M (14-foot), Drawer to OEM PDU,			
(250V, 15A)	7042	CR7	6669
Power Cord (6-foot), To Wall (125V, 15A), PT #59	7042	CR7	6670
Power Cord 2.7M (9-foot), Drawer to IBM PDU,	70.43	cn.7	6671
250V/10A Power Cord 1.5M (5-foot), Drawer to IBM PDU,	7042	CR7	6671
250V/10A	7042	CR7	6672
Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU,	7042	CIV	0072
(250V/10A)	7042	CR7	6680
Power Cord (6-foot), To Wall, (250V, 15A)	7042	CR7	6687
Ethernet Cable, 6M, Hardware Management Console			
to System Unit	7042	CR7	7801
Ethernet Cable, 15m, Hardware Management Console	=0.40	<b>-</b>	=
to System Unit	7042	CR7	7802
Mouse - USB, with Keyboard Attachment Cable USB Mouse	7042 7042	CR7 CR7	8841 8845
HMC/Server Order Linkage Indicator	7042	CR7	9069
Order Routing Indicator- System Plant	7042	CR7	9169
Language Group Specify - US English Month Indicator	7042 7042	CR7	9300
	7042	CR7	9461
Day Indicator		CR7	9462
Hour Indicator	7042	CR7	9463
Minute Indicator	7042	CR7	9464
Qty Indicator	7042	CR7	9465
Countable Member Indicator	7042	CR7	9466
Language Group Specify - Dutch	7042	CR7	9700
Language Group Specify - French	7042 7042	CR7	9703 9704
Language Group Specify - German	7042 7042	CR7 CR7	9704 9705
Language Group Specify - Polish	7042 7042		9705
Language Group Specify - Norwegian Language Group Specify - Portuguese	7042 7042	CR7 CR7	9706 9707
Language Group Specify - Portuguese  Language Group Specify - Spanish	7042	CR7	9707
Language Group Specify - Spanish Language Group Specify - Italian	7042	CR7	9708
Language Group Specify - Italian Language Group Specify - Canadian French	7042	CR7	9711
Language Group Specify - Japanese	7042	CR7	9714
Language Group Specify - Traditional Chinese		J,	J. 4 1
(Taiwan)	7042	CR7	9715

Language Group Specify - Korean	7042	CR7	9716
Language Group Specify - Turkish	7042	CR7	9718
Language Group Specify - Hungarian	7042	CR7	9719
Language Group Specify - Slovakian	7042	CR7	9720
Language Group Specify - Russian	7042	CR7	9721
Language Group Specify - Simplified Chinese (PRC)	7042	CR7	9722
Language Group Specify - Czech	7042	CR7	9724
Language Group Specify Romanian	7042	CR7	9725
Language Group Specify - Croatian	7042	CR7	9726
Language Group Specify Slovenian	7042	CR7	9727
Language Group Specify - Brazilian Portuguese	7042	CR7	9728
Language Group Specify - Thai	7042	CR7	9729
Full Width Keyboard USB, US English, #103P	7042	CR7	EK51
Full Width Keyboard USB, French, #189	7042	CR7	EK52
Full Width Keyboard USB, Italian, #142	7042	CR7	EK53
Full Width Keyboard USB, German/Austrian, #129		CR7	EK54
Full Width Keyboard USB, UK English, #166P	7042	CR7	EK55
Full Width Keyboard USB, Spanish, #172	7042	CR7	EK56
Full Width Keyboard USB, Japanese, #194	7042	CR7	EK57
Full Width Keyboard USB, Brazilian	, 0 . 2	City	LICOT
Portuguese, #275	7042	CR7	EK58
Full Width Keyboard USB, Hungarian, #208	7042	CR7	EK59
Full Width Keyboard USB, Korean, #413	7042	CR7	EK60
Full Width Keyboard USB, Chinese, #467	7042	CR7	EK61
Full Width Keyboard USB, French Canadian, #445		CR7	EK62
Full Width Keyboard USB, Belgian/UK, #120	7042	CR7	EK64
Full Width Keyboard USB, Swedish/Finnish, #153		CR7	EK65
Full Width Keyboard USB, Danish, #159	7042	CR7	EK66
Full Width Keyboard USB, Bulgarian, #442	7042	CR7	EK67
Full Width Keyboard USB, Swiss/French/German,			
#150	7042	CR7	ЕК68
Full Width Keyboard USB, Norwegian,#155	7042	CR7	EK69
Full Width Keyboard USB, Dutch, #143	7042	CR7	EK70
Full Width Keyboard USB, Portuguese, #163	7042	CR7	EK71
Full Width Keyboard USB, Greek, #319	7042	CR7	EK72
Full Width Keyboard USB, Hebrew, #212	7042	CR7	EK73
Full Width Keyboard USB, Polish, #214	7042	CR7	EK74
Full Width Keyboard USB, Slovakian, #245	7042	CR7	EK75
Full Width Keyboard USB, Czech, #243	7042	CR7	EK76
Full Width Keyboard USB, Turkish, #179	7042	CR7	EK77
Full Width Keyboard USB, LA Spanish, #171	7042	CR7	EK78
Full Width Keyboard USB, Arabic, #253	7042	CR7	EK79
Full Width Keyboard USB, Thai, #191	7042	CR7	EK80
Full Width Keyboard USB, Russian, #443	7042	CR7	EK81
Full Width Keyboard USB, Slovenian, #234	7042	CR7	EK82
Full Width Keyboard USB, US English Euro,			
#103P	7042	CR7	EK83
S&H - No Charge	7042	CR7	ESC0
S&H	7042	CR7	ESC3

## **Model conversions**

Not applicable

# **Feature conversions**

Not applicable

## **Business Partner information**

If you are a Direct Reseller - System Reseller acquiring products from IBM, you may link directly to Business Partner information for this announcement. A PartnerWorld ID and password are required (use IBM ID).

https://www.ibm.com/partnerworld/mem/sla.jsp?num=112-175

#### **Publications**

IBM Power Systems hardware documentation provides you with the following topical information: system overview; planning for the system; installing and configuring the system; working with consoles, terminals, and interfaces; managing system resources; working with operating systems and software applications; and troubleshooting, service, and support.

You can access the product documentation at

http://publib.boulder.ibm.com/infocenter/powersys/v3r1m5/index.jsp

Product documentation is also available on DVD (SK5T-7087).

## Services

# **Global Technology Services**

IBM services include business consulting, outsourcing, hosting services, applications, and other technology management.

These services help you learn about, plan, install, manage, or optimize your IT infrastructure to be an On Demand Business. They can help you integrate your high-speed networks, storage systems, application servers, wireless protocols, and an array of platforms, middleware, and communications software for IBM and many non-IBM offerings. IBM is your one-stop shop for IT support needs.

For details on available services, contact your IBM representative or visit

http://www.ibm.com/services/

For details on available IBM Business Continuity and Recovery Services, contact your IBM representative or visit

http://www.ibm.com/services/continuity

For details on education offerings related to specific products, visit

http://www.ibm.com/services/learning/index.html

Select your country, and then select the product as the category.

#### **Technical information**

## Specified operating environment

## Physical specifications

• Height: 43 mm (1.7 in)

Width: 440 mm (17.3 in)

Depth: 711 mm (28.0 in)

Weight: 15.9 kg (35.1 lb)

To assure installability and serviceability in non-IBM industry-standard racks, review the installation planning information for any product-specific installation requirements.

#### Operating environment

• Temperature:

- System on: 10 to 35 degrees C (50 to 95 degrees F)
- System off: 5 to 45 degrees C (41 to 113 degrees F)
- Relative humidity:

- System on: 20% to 80% System off: 8% to 80%

· Acoustical noise emissions:

- Idle: 6.1 bels

Operating: 6.1 bels

Maximum altitude: 2,133 m (7,000 ft)

#### Power requirements

 Operating voltage: Sine-wave input (50 or 60 Hz) required; input voltage and frequency ranges automatically selected

 Low range: 100 to 127 V ac - High range: 200 to 240 V ac

 Power source loading: - Minimum: 0.194 kVA

- Maximum: 0.700 kVA

• Thermal output:

- Minimum: 662 Btu/hr (194 watts) Maximum: 2,302 Btu/hr (675 watts)

## Equipment approvals and safety

- FCC Verified to comply with Part 15 of the FCC Rules, Class A
- Canada ICES-003, issue 4, Class A
- UL/IEC 60950-1
- CSA C22.2 No. 60950-1
- NOM-019
- Argentina IEC60950-1

## Hardware requirements

- Each HMC must have access to a display, a keyboard, and a mouse.
- Information regarding supported Linux<sup>TM</sup> distributions on Power Systems servers is available at

## http://www-03.ibm.com/systems/power/software/linux/index.html

- If you need redundant HMC function, the servers can be attached to two separate HMCs to address availability requirements. Environments may include 7310-C05, -C06, -CR3, -CR4, and 7042-C06, -C07, -C08, -CR4, -CR5 as well as 7042-CR6 HMCs. All HMCs must have the same level of HMC Licensed Machine Code.
- Higher availability configurations may require the use of an Ethernet hub. An Ethernet hub will provide a physical connection from the HMC to each server rather than a logical Ethernet connection over a LAN.
- Each console must be configured with feature number 0962.

## Software requirements

The following web browsers have been tested for connection support with the HMC Licensed Machine Code Version 7 Release 7.6.0

- Microsoft Internet Explorer 6.0 through 9.0.
- Internet Explorer 7.0, or later, is required if you are using IPv6 addresses on the network interface over which the browser is connected.

If your browser is configured to use an Internet proxy, then local Internet 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 HMC, enable "Use HTTP 1.1 through proxy connections" under the Advanced tab in your Internet Options window.

#### Limitations

- The HMC is a dedicated-function device used only for the control and service functions of the POWER5, or later, processor-based servers it manages. It is not available for use as a general purpose computing resource.
- An internal modem (#0033) is not allowed for Brazil or Honduras.

The HMC user interface is available in the following languages:

- Brazilian Portuguese
- Catalan
- Czech
- Dutch
- English
- French
- French/Canadian
- German
- Hungarian
- Italian
- Japanese
- Korean
- Polish
- Portuguese
- Russian
- Simplified Chinese
- Slovakian
- Spanish
- · Traditional Chinese

However, integrated Repair and Verify for CRUs is available at this time in English only. Client who want access to the translated services guides will be directed to an external website from their HMC.

If additional assistance is required with interpreting English Repair and Verify:

- Contact the IBM Hardware Support Center (using the method you would normally
  use to obtain support for your hardware), and ask for Hardware Support. Be sure
  to have your HMC machine type and serial number available. Indicate that you
  have problems with translated Repair and Verify.
- An IBM Service Support Representative (SSR) may be dispatched to your site to assist with your Repair and Verify activity.
- The HMC and attached servers may not be accessible to you while the SSR is working.

## **Planning information**

## Cable orders

One Ethernet cable is required to attach the HMC to the system CPC. This cable can be customer-supplied or purchased from  ${\sf IBM}$  .

## Security, auditability, and control

This product uses the security and auditability features of the server operating system. Use of these facilities is optional. For servers with the IBM i operating system, the security measures supplied by IBM i are designed to reduce the risk of users changing or destroying data resources, but do not prevent it. The IBM i security features include the use of passwords, a security option to limit a user to only the functions provided by customer-designed menus, and a security option to limit read/write access for files, libraries, and folders during normal operations. To achieve increased security, the IBM i controls should be combined with physical security, division of duties, and other appropriate measures.

This product uses the security and auditability features of the AIX® 5.2, 5.3, or 6.1 operating system on an AIX partition that the HMC controls.

The HMC network connection to the partitions is based on a component of IBM's Reliable, Scalable Cluster Technology (RSCT) called Resource Monitoring and Control (RMC). The only operations permitted through this connection are hardware error event collection and hardware inventory data collection, dynamic LPAR resource movement coordination for AIX and Linux partitions, and partition shutdown and reboot for AIX and Linux partitions.

The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communications facilities.

#### **IBM Electronic Services**

IBM has transformed its delivery of hardware and software support services to help you achieve higher system availability. Electronic Services is a web-enabled solution that offers an exclusive, no-additional-charge enhancement to the service and support available for IBM servers. These services are designed to provide the opportunity for greater system availability with faster problem resolution and preemptive monitoring. Electronic Services comprises two separate, but complementary, elements: Electronic Services news page and Electronic Services Agent.

The Electronic Services news page is a single internet entry point that replaces the multiple entry points traditionally used to access IBM Internet services and support. The news page enables you to gain easier access to IBM resources for assistance in resolving technical problems.

The Electronic Service Agent<sup>™</sup> is no-additional-charge software that resides on your server. It monitors events and transmits system inventory information to IBM on a periodic, client-defined timetable. The Electronic Service Agent automatically reports hardware problems to IBM . Early knowledge about potential problems enables IBM to deliver proactive service that may result in higher system availability and performance. In addition, information collected through the Service Agent is made available to IBM service support representatives when they help answer your questions or diagnose problems. Installation and use of IBM Electronic Service Agent for problem reporting enables IBM to provide better support and service for your IBM server.

To learn how Electronic Services can work for you, visit

http://www.ibm.com/support/electronic

## **Terms and conditions**

**Volume orders:** Contact your IBM representative.

## IBM Global Financing

Yes

### Warranty period

One year

An IBM part or feature installed during the initial installation of an IBM machine is subject to a full warranty effective on the date of installation of the machine. An IBM part or feature that replaces a previously installed part or feature assumes the remainder of the warranty period for the replaced part or feature. An IBM part or feature added to a machine without replacing a previously installed part or feature is subject to a full warranty effective on its date of installation. Unless specified otherwise, the warranty period, type of warranty service, and service level of a part or feature are the same as those for the machine in which it is installed.

## Warrantv service

If required, IBM provides repair or exchange service depending on the types of warranty service specified for the machine. IBM will attempt to resolve your problem over the telephone, or electronically via an IBM website. Certain machines contain remote support capabilities for direct problem reporting, remote problem determination, and resolution with IBM . You must follow the problem determination and resolution procedures that IBM specifies. Following problem determination, if IBM determines on-site service is required, scheduling of service will depend the time of your call, machine technology and redundancy, and availability of parts. If applicable to your product, parts considered Customer Replaceable Units (CRUs) will be provided as part of the machine's standard warranty service.

Service levels are response-time objectives and are not guaranteed. The specified level of warranty service may not be available in all worldwide locations. Additional charges may apply outside IBM's normal service area. Contact your local IBM representative or your reseller for country-specific and location-specific information.

#### **CRU Service**

IBM provides replacement CRUs to you for you to install. CRU information and replacement instructions are shipped with your machine and are available from IBM upon your request. CRUs are designated as being either a Tier 1 (mandatory) or a Tier 2 (optional) CRU.

## Tier 1 (mandatory) CRU

Installation of Tier 1 CRUs, as specified in this announcement, is your responsibility. If IBM installs a Tier 1 CRU at your request, you will be charged for the installation.

#### Tier 2 (optional) CRU

You may install a Tier 2 CRU yourself or request IBM to install it, at no additional charge.

Based upon availability, CRUs will be shipped for next business day (NBD) delivery. IBM specifies, in the materials shipped with a replacement CRU, whether a defective CRU must be returned to IBM . When return is required, return instructions and a container are shipped with the replacement CRU. You may be charged for the replacement CRU if IBM does not receive the defective CRU within 15 days of your receipt of the replacement.

The following parts have been designated as Tier 1 CRUs:

- AC power cord
- Battery
- Covers, front and side

- Cooling fan
- Disk drive
- Display
- DVD drive cable
- **DVD** Drive
- External cables
- Heat/Fan sink
- Keyboard
- Memory DIMM
- Modem (requires 100 V 240 V)
- Mouse
- PCI adapters
- SAS riser and signal cable
- System bezel
- System labels
- Tape, diagnostics, and firmware media
- USB cable

#### CRU and on-site service

At IBM's discretion, you will receive specified CRU service, or IBM will repair the failing machine at your location and verify its operation. You must provide a suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well lit, and suitable for the purpose.

#### Service level is:

 9 hours per day, Monday through Friday, excluding holidays, next business day response. Calls must be received by 5:00 pm local time in order to qualify for next business day response.

# Non-IBM parts service

#### Warranty service

IBM is now shipping machines with selected non-IBM parts that contain an IBM field replaceable unit (FRU) part number label. These parts are to be serviced during the IBM machine warranty period. IBM is covering the service on these selected non-IBM parts as an accommodation to their customers, and normal warranty service procedures for the IBM machine apply.

# Warranty service upgrades

During the warranty period, warranty service upgrades provide an enhanced level of on-site service for an additional charge. Service levels are response-time objectives and are not guaranteed. See the Warranty services section for additional details.

IBM will attempt to resolve your problem over the telephone or electronically by access to an IBM website. Certain machines contain remote support capabilities for direct problem reporting, remote problem determination, and resolution with IBM . You must follow the problem determination and resolution procedures that IBM specifies. Following problem determination, if IBM determines on-site service is required, scheduling of service will depend upon the time of your call, machine technology and redundancy, and availability of parts.

## Maintenance service options

#### CRU and on-site service

At IBM's discretion you will receive CRU service or IBM will repair the failing machine at your location and verify its operation. You must provide a suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well lit, and suitable for the purpose. The following on-site response-time objectives are available as warranty service upgrades for your machine. Available offerings are:

- 9 hours per day, Monday through Friday, excluding holidays, 4 hour average, same business day response
- 24 hours per day, 7 days a week, 4 hour average response, same day
- 24 hours per day, 7 days a week, 2 hour average response, same day

Customer Replaceable Units (CRUs) may be provided as part of the machine's standard warranty CRU Service except that you may install a CRU yourself or request IBM installation, at no additional charge, under the CRU and on-site service level specified above. For additional information on the CRU service, see the warranty information.

#### **Maintenance services**

If required, IBM provides repair or exchange service depending on the types of maintenance service specified for the machine. IBM will attempt to resolve your problem over the telephone or electronically, via an IBM website. Certain machines contain remote support capabilities for direct problem reporting, remote problem determination, and resolution with IBM. You must follow the problem determination and resolution procedures that IBM specifies. Following problem determination, if IBM determines on-site service is required, scheduling of service will depend upon the time of your call, machine technology and redundancy, and availability of parts. Service levels are response-time objectives and are not guaranteed. The specified level of maintenance service may not be available in all worldwide locations. Additional charges may apply outside IBM's normal service area. Contact your local IBM representative or your reseller for country-specific and locationspecific information. The following service selections are available as maintenance options for your machine type.

## On-site service

IBM will repair the failing machine at your location and verify its operation. You must provide a suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well lit, and suitable for the purpose.

## Service levels are:

- 9 hours per day, Monday through Friday, excluding holidays, next business day response
- 9 hours per day, Monday through Friday, excluding holidays, 4 hour average response, same business day
- 24 hours per day, 7 days a week, 4 hour average response, same day
- 24 hours per day, 7 days a week, 2 hour average response, same day

## Customer replaceable unit (CRU) service

If your problem can be resolved with a CRU (for example, keyboard, mouse, speaker, memory, or hard disk drive), and depending upon the maintenance service offerings in your geography, IBM will ship the replacement CRU to you for you to install. CRU information and replacement instructions are shipped with your machine and are available from IBM upon your request.

Based upon availability, CRUs will be shipped for next business day delivery. IBM specifies, in the materials shipped with a replacement CRU, whether a defective CRU must be returned to IBM. When return is required, 1) return instructions and a container are shipped with the replacement CRU, and 2) you may be charged for the replacement CRU if IBM does not receive the defective CRU within 15 days of your receipt of the replacement.

CRUs may be provided as part of the machine's standard maintenance service except that you may install a CRU yourself or request IBM installation, at no additional charge, under any of the On-site Service levels specified above.

## Non-IBM parts service

Under certain conditions, IBM provides services for selected non-IBM parts at no additional charge for machines that are covered under warranty service upgrades or maintenance services.

This service includes hardware problem determination (PD) on the non-IBM parts (for example, adapter cards, PCMCIA cards, disk drives, and memory) installed within IBM machines and provides the labor to replace the failing parts at no additional charge.

If IBM has a Technical Service Agreement with the manufacturer of the failing part, or if the failing part is an accommodations part (a part with an IBM FRU label), IBM may also source and replace the failing part at no additional charge. For all other non-IBM parts, customers are responsible for sourcing the parts. Installation labor is provided at no additional charge, if the machine is covered under a warranty service upgrade or a maintenance service.

# Warranty service upgrades

## Usage plan machine

No

## IBM hourly service rate classification

Two

When a type of service involves the exchange of a machine part, the replacement may not be new, but will be in good working order.

## Field-installable features

Yes

## Model conversions

Nο

### Machine installation

Customer setup. Customers are responsible for installation according to the instructions IBM provides with the machine.

## Graduated program license charges apply

No

#### Licensed machine code

IBM Machine Code is licensed for use by a customer on the IBM machine for which it was provided by IBM under the terms and conditions of the IBM License Agreement for Machine Code, to enable the machine to function in accordance with its specifications, and only for the capacity authorized by IBM and acquired by the customer. You can obtain the agreement by contacting your IBM representative or visiting

Machine using LMC Type Model: 7042-CR7

IBM may release changes to the Machine Code. IBM plans to make the Machine Code changes available for download from the IBM System P technical support website

http://www14.software.ibm.com/webapp/set2/sas/f/hmc/home.html

If the machine does not function as warranted and your problem can be resolved through your application of downloadable Machine Code, you are responsible for downloading and installing these designated Machine Code changes as IBM specifies. If you would prefer, you may request IBM to install downloadable Machine Code changes; however, you may be charged for that service.

#### Educational allowance

A reduced charge is available to qualified education customers. The educational allowance may not be added to any other discount or allowance.

The educational allowance is 15% for the products in this announcement.

## Prices

## **Product charges**

The following are newly announced features on the specific models of the IBM Power Systems 7042 machine type:

Description	Model Fe Number Nu		/	CSU	RP MES
IBM 7042-CR7					
<u>.</u>	CR7			Yes	
Internal Modem	CR7	0033	Both	Yes	No
Balanced Warehouse So	C	0033	БОСП	163	NO
	CR7	0710	Both	N/A	No
CSC Routing Indicato	r CR7	0712	Initial	Yes	No
HMC LMC v7	CK7	0712	IIIICIAI	163	NO
	CR7	0962	Both	Yes	No
US TAA Compliance Inc	dicator				
03 TAA COMPTTANCE IN	CR7	0983	Both	Yes	No
Modem Cable US/Canad					
Smart Analytics Sys	CR7	1025	Both	Yes	No
Silial C Allalytics 3ys	CR7	1114	Initial	N/A	No
Custom Serv. Specify	, Roch CR7	1140	Both	Yes	No
8GB Pluggable USB Mer			DO CII		
500 2 5:	CR7	1208	Both	Yes	No
500GB SATA HDD, 2.5i	n CR7	1998	Both	Yes	No
NOTE: The monitor or					
Electronic Waste Rec		(15-	to 34-in	ch v	ideo device.)
Widescreen LCD Monito	or CR7	3632	Both	Yes	No
IBM T120 Flat Panel	· · · ·	3032	Both	103	NO
10' -1 1	CR7	3643	Support	Yes	No
19in. Flat Panel Mon	itor CR7	3644	Support	Yes	No
17in. Flat Panel Mon		30.1	Sappor C		
	CR7	3645	Support	Yes	No

6Foot Extend.Cbl for Displays	4242 Bath - Was No
CR7 Extender Cable USB Keybo 1.8M	4242 Both Yes No
One and only one rack indicato	4256 Both Yes No r feature is required on
all orders (#4650 to #4666). No Factory Integration Ind.	
CR7 Rack Indicator, Rack 1	4650 Initial N/A No
CR7 Rack Indicator, Rack 2	4651 Initial N/A No
CR7 Rack Indicator, Rack 3	4652 Initial N/A No
CR7 Rack Indicator, Rack 4	4653 Initial N/A No
CR7 Rack Indicator, Rack 5	4654 Initial N/A No
CR7 Rack Indicator, Rack 6	4655 Initial N/A No
CR7 Rack Indicator, Rack 7	4656 Initial N/A No
CR7 Rack Indicator, Rack 8	4657 Initial N/A No
CR7 Rack Indicator, Rack 9	4658 Initial N/A No
CR7	4659 Initial N/A No
Rack Indicator, Rack 10 CR7	4660 Initial N/A No
Rack Indicator, Rack 11 CR7	4661 Initial N/A No
Rack Indicator, Rack 12 CR7	4662 Initial N/A No
Rack Indicator, Rack 13 CR7	4663 Initial N/A No
Rack Indicator, Rack 14 CR7	4664 Initial N/A No
Rack Indicator, Rack 15 CR7	4665 Initial N/A No
Rack Indicator, Rack 16 CR7	4666 Initial N/A No
RFID Tags for Servers, Blades CR7	5524 Initial N/A No
Full Width Key USB, US English CR7	5951 Support Yes No
Full Width Key USB, French CR7	5952 Support Yes No
Full Width Key USB, Italian CR7	5953 Support Yes No
Full Width Key USB, German/Aus CR7	5954 Support Yes No
Full Width Key USB, UK English CR7	5955 Support Yes No
Full Width Key USB, Spanish CR7	5956 Support Yes No
Full Width Key USB, Japanese CR7	5957 Support Yes No
Full Width Key USB, BrazilianP CR7	
Full Width Key USB, Hungarian CR7	
Full Width Key USB, Korean	5959 Support Yes No
CR7 Full Width Key USB, Chinese	5960 Support Yes No
CR7 Full Width Key USB, French Can	
CR7 Full Width Keyb-USB,Canad Fr	5962 Support Yes No
CR7 Full Width Key USB, Belgian/UK	
CR7 Full Width Key USB, Swedish/Fi	5964 Support Yes No
CR7 Full Width Key USB, Danish	5965 Support Yes No
CR7	5966 Support Yes No

Full Width Key USB, Bulgarian			
CR7 Full Width Key USB, Swiss/Fr/G		Support	Yes No
CR7 Full Width Key USB, Norwegian	5968	Support	Yes No
CR7 Full Width Key USB, Dutch	5969	Support	Yes No
CR7 Full Width Key USB, Portuguese		Support	Yes No
CR7		Support	Yes No
Full Width Key USB, Greek CR7	5972	Support	Yes No
Full Width Key USB, Hebrew CR7	5973	Support	Yes No
Full Width Key USB, Polish CR7	5974	Support	Yes No
Full Width Key USB, Slovakian CR7	5975	Support	Yes No
Full Width Key USB, Czech CR7	5976	Support	Yes No
Full Width Key USB, Turkish CR7	5977	Support	Yes No
Full Width Key USB, LA Spanish CR7		Support	Yes No
Full Width Key USB, Arabic CR7	5979	Support	Yes No
Full Width Key USB, Thai CR7	5980	Support	Yes No
Full Width Key USB, Russian CR7		Support	Yes No
Full Width Key USB, Slovenian CR7	5982	• •	Yes No
Full Width Key USB, US English CR7		• •	Yes No
Pwr Crd 4.3m 14ft Wall IBM PDU CR7		Both	Yes No
Pwr Crd (14FT), Drwr - OEM PDU CR7		Both	
Pwr Crd 4.3m 14ft Wall OEM PDU			Yes No
CR7 Pwr Crd 1.8m 6ft wall 125v/15A		Both	Yes No
CR7 Pwr Crd 2.7m 9ft wall OEM_PDU		Both	Yes No
CR7 Pwr Crd 2.7m 9ft wall OEM PDU	6471		Yes No
CR7 Pwr Crd 2.7m 9ft Wall OEM PDU	6472	Both	Yes No
CR7 Pwr Crd 2.7m 9ft Wall OEM PDU	6473	Both	Yes No
CR7 Pwr Crd 2.7m 9ft Wall OEM PDU	6474	Both	Yes No
CR7 Pwr Crd 2.7m 9ft wall OEM PDU	6475	Both	Yes No
CR7 Pwr Crd 2.7m 9ft wall OEM PDU	6476	Both	Yes No
CR7 Pwr Crd 2.7m 9ft Wall OEM PDU	6477	Both	Yes No
CR7 Pwr Crd 2.7m 9ft Wall OEM PDU	6478	Both	Yes No
CR7 Pwr Crd 2.7m 9ft Wall OEM PDU	6488	Both	Yes No
CR7 Pwr Crd 2.7m 9ft Wall OEM PDU	6493	Both	Yes No
CR7 To Wall/OEM PDU, (250V, 10A)	6494	Both	Yes No
CR7  Pwr Crd 2.7m 9ft Wall 250V,10A		Support	Yes No
CR7		Both	Yes No
Power Cable Drawer to IBM PD CR7		Both	Yes No
Pwr Crd 2.7m 9ft Wall 125V,15A CR7		Both	Yes No
Pwr.Cord(9ft),To Wall/OEM PDU	6650	Both	Yes No
CR7	0039	DO CIT	

Pwr Crd 14ft 4.3m WallOEM_PDU			
CR7 Pwr Crd 2.8m 9.2ft Wall PDU	6660	Both	Yes No
CR7 Pwr Crd 4.3M, Drwr - OEM PDU	6665	Both	Yes No
CR7 Pwr Crd 6-FT, (125V,15A)PT#59	6669	Both	Yes No
CR7 Pwr Crd 2.7M, Drwr - IBM PDU	6670	Support	Yes No
CR7 Pwr Crd 1.5M, Drwr - IBM PDU	6671	Both	Yes No
CR7	6672	Both	Yes No
Pwr Crd 2.7m 9ft Wall OEM PDU CR7	6680	Both	Yes No
Power Cord (6ft),To Wall CR7	6687		Yes No
CR7 Eth Cbl 15M HW Management	7801	Support	Yes No
CR7 Mouse-USB,Black KBD Att C	7802	Both	Yes No
CR7 USB Mouse	8841	Support	Yes No
CR7 HMC/Srv Order Linkage Ind	8845	Both	Yes No
CR7 Order Routing Indicator Syste	9069	Initial	N/A No
CR7	9169	Initial	N/A No
Language Group Spcf-US Eng CR7	9300	Initial	N/A No
Month Indicator CR7	9461	Initial	N/A No
Day Indicator CR7	9462	Initial	N/A No
Hour Indicator CR7	9463	Initial	N/A No
Minute Indicator CR7	9464	Initial	N/A No
Qty Indicator CR7	9465	Initial	N/A No
Countable Member Indicator CR7		Initial	N/A No
Language Group Spcf-Dutch CR7		Initial	N/A No
Language Group Spcf-French CR7		Initial	
Language Group Spcf-German			
CR7 Language Group Spcf-Polish		Initial	
CR7 Lang Group Specify - Norwegian		Initial	N/A No
CR7 Lang.Group Spcf-Portuguese	9706	Initial	N/A No
CR7 Language Group Spcf-Spanish	9707	Initial	N/A No
CR7 Language Group Spcf-Italian	9708	Initial	N/A No
CR7 Langua Gr Speci Canadian Frenc		Initial	N/A No
CR7 Language Group Spcf-Japanese		Initial	N/A No
CR7		Initial	N/A No
Language Group Specify Tr Chin		Initial	N/A No
Language Group Spcf-Korean CR7	9716	Initial	N/A No
Language Group Spcf-Turkish CR7	9718	Initial	N/A No
Language Group Spcf-Hungarian CR7	9719	Initial	N/A No
Language Group Spcf-Slovakian CR7	9720	Initial	N/A No
Language Group Spcf-Russian CR7		Initial	N/A No
Lang Group Spcf Simpl Chinese			

CR7	9722	Initial	N/A No
Language Group Spcf-Czech CR7	9724	Initial	N/A No
Language Group Spcf-Romanian CR7	9725	Initial	N/A No
Lang Group Specify - Croatian CR7	9726	Initial	N/A No
Language Group Spcf-Slovenian CR7	9727	Initial	N/A No
Lang Group Specify - Braz Port CR7		Initial	N/A No
Lang Group Specify - Thai CR7		Initial	N/A No
RAID 1 Upgrade for CR7	EB2S		Yes No
Full Width Key USB, US English CR7		Both	
Full Width Key USB, French			Yes No
CR7 Full WidthKey USB,Italian		Both	Yes No
CR7 Full Width Key USB, German/Aus		Both	Yes No
CR7 Full Width Key USB, UK English		Both	Yes No
CR7 Full Width Key USB, Spanish	EK55	Both	Yes No
CR7 Full Width Key USB, Japanese	EK56	Both	Yes No
CR7 Full Width Key USB, BrazilianP	EK57	Both	Yes No
CR7 Full Width Key USB, Hungarian	EK58	Both	Yes No
CR7 Full Width Key USB, Korean	EK59	Both	Yes No
CR7	EK60	Both	Yes No
CR7	EK61	Both	Yes No
Full Width Key USB, French Can CR7	EK62	Both	Yes No
Full Width Key USB, Belgian/UK CR7	EK64	Both	Yes No
Full Width Key USB, Swedish/Fi	EK65	Both	Yes No
Full Width Key USB, Danish CR7	EK66	Both	Yes No
Full Width Key USB, Bulgarian CR7	EK67	Both	Yes No
Full Width Key USB, Swiss/Fr/G CR7	EK68	Both	Yes No
Full Width Key USB, Norwegian CR7	EK69	Both	Yes No
Full Width Key USB, Dutch CR7	EK70	Both	Yes No
Full Width Key USB, Portuguese CR7	EK71	Both	Yes No
Full Width Key USB, Greek CR7	EK72	Both	Yes No
Full Width Key USB, Hebrew CR7	EK73	Both	Yes No
Full Width Key USB, Polish CR7	EK74	Both	Yes No
Full Width Key USB, Slovakian CR7	EK75	Both	Yes No
Full Width Key USB, Czech CR7		Both	Yes No
Full Width Key USB, Turkish CR7		Both	Yes No
Full Width Key USB, LA Spanish CR7		Both	Yes No
Full Width Key USB, Arabic CR7		Both	Yes No
Full Width Key USB, Thai			
CR7 Full Width Key USB, Russian	EKÖÜ	Both	Yes No

	CR7	EK81	Both	Yes	No
Full Width Key USB, Slo		EV 0.2	Do+h	V05	No
Full Width Key USB, US	CR7 Enalish	EK82	Both	Yes	NO
	CR7	EK83	Both	Yes	No
8GB (1x8GB) Memory					
	CR7	EM07	Both	Yes	No
RFID Tags for Compute N	Nodes				
	CR7	ERF1	Initial	N/A	No
S&H - No Charge					
	CR7	ESC0	Both	Yes	No
S&H					
	CR7	ESC3	Initial	N/A	No
HMC CR7 Redundant Power	^ Su				
	CR7	EU02	Both	Yes	No

#### Alternative and maintenance service

## **Pricing terms**

Prices in the following PDF prices link are suggested list prices on day of announcement for the U.S. only. They are provided for your information only. Dealer prices may vary, and prices may also vary by country. IBM list price does not include tax or shipping and is subject to change without notice.

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