



New IBM BladeCenter S and IBM BladeCenter S Express

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At a glance

The new BladeCenter S can bring the benefits of BladeCenter outside of the data center.

It features:

- Two 950-watt/1450-watt power supplies for power redundancy; additional power supply options available (Express model comes with four 950-watt/1450-watt power supplies standard)
- Four hot-swap fan packs standard
- Two optional Disk Storage Modules for HDDs, six 3.5-inch SAS/SATA drives each
- Support for common I/O switches as other BladeCenter chassis
- One Advanced Management Module with built-in KVM support standard
- IBM Director and Storage Configuration Manager (SCM), which supports blades and HDDs in the BladeCenter S chassis
- Ability to integrate Ethernet networking
- CD-RW/DVD-ROM media tray standard
- Support for up to six BladeCenter HS20, HS21, HS21 XM, HC10, LS20, LS21, and LS41 blades

Overview

Extending the benefits of BladeCenter® outside of the data center

- Integrates servers, storage, networking, I/O, and applications into a single chassis
- Uses standard office power plugs with 100 / 240 V, so you do not need a data center to take command of your data
- Offers flexible, modular technology that integrates Intel® and AMD Opteron processor-based blade servers supporting a wide range of operating systems
- Comes with management tools that are open and easily integrated, allowing you to focus on your business, not your IT
- Helps build greener IT infrastructures with powerful IBM Cool Blue technology, and a portfolio of products and tools to help you plan, manage, and control power and cooling
- Includes Storage Configuration Manager V1.1, which enables the user to configure storage options in the BladeCenter S.

IBM services and support

- ServerProven® compatibility testing and Web support
- Three-year, on-site¹, limited warranty²

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IBM sends a technician after attempting to diagnose and resolve the problem remotely.

Note: All statements regarding IBM's plans, directions, and intent are subject to change or withdrawal without notice. Any reliance on these statements of general direction is at the relying party's sole risk and will not create liability or obligation for IBM. Consult the IBM Sales Manual, or your IBM marketing representative or reseller, for the most current information regarding IBM products.

Key prerequisites

- BladeCenter HS20, HS21, HS21 XM, HC10, LS20, LS21, and LS41 blades. Note: The BladeCenter S chassis currently intends to support the BladeCenter JS21 blade for AIX® and Linux™ on POWER applications.
- Power source.
- Monitor, USB keyboard, and USB mouse.
- Network switch module.
- Rack.

Product Number

For details, refer to the Product number section in this announcement.

Planned availability date

December 18, 2007:

- IBM BladeCenter S
- IBM SCM V1.1 and Director 5.20.2

AP distribution

Country/Region	Announced
ASEAN*	Yes
India/South Asia**	Yes
Australia	Yes
People's Republic of China	Yes
Hong Kong S. A. R. of the PRC	Yes
Macao S. A. R. of the PRC	Yes
Taiwan	Yes
Korea	Yes
Japan	Yes
New Zealand	Yes

* Brunei Darussalam, Indonesia, Cambodia, Lao People's Democratic Republic, Malaysia, Philippines, Singapore, Thailand, Vietnam

** Bangladesh, Bhutan, India, Sri Lanka, Maldives, Nepal, Afghanistan

Description

Related options

- IBM BladeCenter S 6-Disk Storage Module (43W3581)

- IBM BladeCenter S 950W/1450W Auto-Sensing Power Supplies 3 and 4 (43W3582)
- IBM BladeCenter S Serial Pass-thru module (43W3583)

IBM Director and SCM

IBM Director and Storage Configuration Manager (SCM) are available for easy installation and management of blades and HDDs for storage in BladeCenter S. Downloads are available at

<http://www-03.ibm.com/systems/management/director/index.html>

Product positioning

The BladeCenter S chassis can hold up to 6 blade servers, and up to 12 hot-swap 3.5-inch SAS or SATA disk drives in just 7U of rack space. It can also include up to four 950-watt / 1450-watt power supplies. The BladeCenter S offers the necessary I/O network switching, power, cooling, and control panel information to support the individual servers.

The IBM BladeCenter S is one of five chassis in the BladeCenter family. The BladeCenter S provides an easy IT solution to the small and medium office and to the distributed enterprise.

Product number

Description	Mach type	Model	Feature number
8886-AC1	8886	AC1	
Offload Manufacturing to Guadalajara HVEC	8886	AC1	1768
Offload Manufacturing to RTP HVEC	8886	AC1	1769
Offload Manufacturing to ISTC	8886	AC1	1770
Capacity Scheduling Service	8886	AC1	1772
Custom SLA Scheduling Service	8886	AC1	1796
Custom Asset Tagging -- Standard	8886	AC1	2200
Custom Asset Tagging -- Standard	8886	AC1	2201
Custom Media Shipgroup	8886	AC1	2206
Request for Global Trade Number (UPC or EAN)	8886	AC1	2207
Custom Software/Firmware Setting -- Standard	8886	AC1	2208
Custom Software/Firmware Setting -- Enhanced	8886	AC1	2209
Custom Labeling	8886	AC1	2220
Custom Palletization	8886	AC1	2221
Request for a new Vendor Logo Hardware	8886	AC1	2247
Request for an existing IBM Feature	8886	AC1	2248
Request for an existing Public RPQ	8886	AC1	2249
BladeCenter Chassis Configuration	8886	AC1	2300
Rack Installation 1U Component	8886	AC1	2306
Department of Defense UID Label	8886	AC1	2320
Brocade 4Gb 10-port SAN Switch Module for IBM eServer(R) BladeCenter	8886	AC1	3207
Nortel 10Gb Uplink Ethernet Switch Module for IBM BladeCenter	8886	AC1	3210
Nortel Networks L2/L3 Copper Gb Ethernet Sw Mod for IBM BladeCenter	8886	AC1	3212
Nortel Networks L2/L3 Fiber Gb Ethernet Sw Mod for IBM BladeCenter	8886	AC1	3213
IBM BladeCenter Optical Pass-thru Module	8886	AC1	3218
IBM BladeCenter Copper Pass-thru Module	8886	AC1	3219
Server Connectivity Module for IBM BladeCenter	8886	AC1	3220
IBM BladeCenter Optical Pass-thru Module SC Cable	8886	AC1	3221
IBM BladeCenter Optical Pass-thru Module LC Cable	8886	AC1	3222
IBM BladeCenter Copper Pass-thru Module Cable	8886	AC1	3223
IBM 10GbE 850nm Fiber XFP Transceiver (SR)	8886	AC1	3231
IBM 10GbE 1310nm Fiber XFP Transceiver (LR)	8886	AC1	3232
IBM Short Wave(R) SFP Module	8886	AC1	3238
Cisco Systems 4Gb 10-port Fibre Channel Module	8886	AC1	3241
QLogic 10-port 4Gb SAN Switch Module for IBM	8886	AC1	3243
QLogic 4Gb Intelligent Pass-thru Module for IBM	8886	AC1	3245
Cisco Systems 4Gb Short-wave Length SFP Module	8886	AC1	3261

for IBM BladeCenter			
Cisco Systems 4Gb Long-wave Length SFP Module for IBM BladeCenter	8886	AC1	3262
IBM BladeCenter SAS Connectivity Module	8886	AC1	3267
Rack location U01	8886	AC1	3722
Rack location U02	8886	AC1	3723
Rack location U03	8886	AC1	3724
Rack location U04	8886	AC1	3725
Rack location U05	8886	AC1	3726
Rack location U06	8886	AC1	3727
Rack location U07	8886	AC1	3728
Rack location U08	8886	AC1	3729
Rack location U09	8886	AC1	3730
Rack location U10	8886	AC1	3731
Rack location U11	8886	AC1	3732
Rack location U12	8886	AC1	3735
Rack location U13	8886	AC1	3736
Rack location U14	8886	AC1	3737
Rack location U15	8886	AC1	3738
Rack location U16	8886	AC1	3739
Rack location U17	8886	AC1	3740
Rack location U18	8886	AC1	3741
IBM 500 GB DUAL PORT HS SATA HDD FOR IBM SYSTEM X 2m, 16A/100-250V, C19 to IEC 320-C20 Rack Power Cable	8886	AC1	3743
750GB Dual Port SATA Hot Swap Option	8886	AC1	3744
300GB 15K 3.5" Hot-Swap SAS HDD	8886	AC1	3746
73GB 15K 3.5" SAS Hot-Swap HDD	8886	AC1	3748
146GB 15K 3.5" SAS Hot-Swap HDD	8886	AC1	3749
UltraSlim Enhanced CD-RW/DVD-ROM Combo	8886	AC1	4156
IBM CX4 1.5 Meter Cable	8886	AC1	4540
IBM CX4 3.0 Meter Cable	8886	AC1	4541
Cisco Systems 4Gb Short-wave Length 4-pack SFP Modules	8886	AC1	4542
IBM BladeCenter S 6-Disk Storage Module	8886	AC1	4545
BladeCenter S Serial Pass-thru Module	8886	AC1	4546
Base Hardware	8886	AC1	4547
IBM BladeCenter S 950W/1450W Auto-Sensing Power Supply (optional)	8886	AC1	4548
2.5m, 16A/100-240V, C19 to IEC 320-C20 Rack Power Cable	8886	AC1	4558
DRAWER FACTORY INTEGRATED IN RACK #1	8886	AC1	4651
DRAWER FACTORY INTEGRATED IN RACK #2	8886	AC1	4652
DRAWER FACTORY INTEGRATED IN RACK #3	8886	AC1	4653
DRAWER FACTORY INTEGRATED IN RACK #4	8886	AC1	4654
DRAWER FACTORY INTEGRATED IN RACK #5	8886	AC1	4655
DRAWER FACTORY INTEGRATED IN RACK #6	8886	AC1	4656
DRAWER FACTORY INTEGRATED IN RACK #7	8886	AC1	4657
DRAWER FACTORY INTEGRATED IN RACK #8	8886	AC1	4658
DRAWER FACTORY INTEGRATED IN RACK #9	8886	AC1	4659
DRAWER FACTORY INTEGRATED IN RACK #10	8886	AC1	4660
DRAWER FACTORY INTEGRATED IN RACK #11	8886	AC1	4661
DRAWER FACTORY INTEGRATED IN RACK #12	8886	AC1	4662
DRAWER FACTORY INTEGRATED IN RACK #13	8886	AC1	4663
DRAWER FACTORY INTEGRATED IN RACK #14	8886	AC1	4664
DRAWER FACTORY INTEGRATED IN RACK #15	8886	AC1	4665
DRAWER FACTORY INTEGRATED IN RACK #16	8886	AC1	4666
DRAWER FACTORY INTEGRATED IN RACK #17	8886	AC1	4667
DRAWER FACTORY INTEGRATED IN RACK #18	8886	AC1	4668
DRAWER FACTORY INTEGRATED IN RACK #19	8886	AC1	4669
DRAWER FACTORY INTEGRATED IN RACK #20	8886	AC1	4670
BLADE FACTORY INTEGRATED IN CENTER #1	8886	AC1	4681
BLADE FACTORY INTEGRATED IN CENTER #2	8886	AC1	4682
BLADE FACTORY INTEGRATED IN CENTER #3	8886	AC1	4683
BLADE FACTORY INTEGRATED IN CENTER #4	8886	AC1	4684
BLADE FACTORY INTEGRATED IN CENTER #5	8886	AC1	4685
BLADE FACTORY INTEGRATED IN CENTER #6	8886	AC1	4686
BLADE FACTORY INTEGRATED IN CENTER #7	8886	AC1	4687
BLADE FACTORY INTEGRATED IN CENTER #8	8886	AC1	4688
BLADE FACTORY INTEGRATED IN CENTER #9	8886	AC1	4689
Rack location U19	8886	AC1	5847
Rack location U20	8886	AC1	5848

Rack location U21	8886 AC1	5849
Rack location U22	8886 AC1	5850
Rack location U23	8886 AC1	5851
Rack location U24	8886 AC1	5852
Rack location U25	8886 AC1	5853
Rack location U26	8886 AC1	5854
Rack location U27	8886 AC1	5855
Rack location U28	8886 AC1	5856
Rack location U29	8886 AC1	5857
Rack location U30	8886 AC1	5858
Rack location U31	8886 AC1	5859
Rack location U32	8886 AC1	5860
Rack location U33	8886 AC1	5861
Rack location U34	8886 AC1	5862
Rack location U35	8886 AC1	5863
Rack location U36	8886 AC1	5864
Customer Solution Center Services	8886 AC1	7831
System x(TM) Order	8886 AC1	7837
Consolidate Shipment	8886 AC1	8031
e1350 Solution Component	8886 AC1	8034
TAA Compliant Order	8886 AC1	8067
General Racking Solution	8886 AC1	8072
Integrate BladeCenter in Manufacturing	8886 AC1	8077
No Publications Selected	8886 AC1	8086
Integrate in manufacturing	8886 AC1	8971
Ship Uninstalled (Safety)	8886 AC1	8972
Preload Specify	8886 AC1	9200
Red Hat Specify	8886 AC1	9202
SuSE Specify	8886 AC1	9203
AIX Specify	8886 AC1	9204
Drop-in-the-Box Specify	8886 AC1	9205
No Preload Specify	8886 AC1	9206

Note: The following systems are GAV.

Description	Machine type	Model	Part number
IBM BladeCenter S	8886	1MA	88861MA
	8886	1MB	88861MB
	8886	1MM	88861MM
	8886	1MK	88861MK
	8886	1MR	88861MR
	8886	1MV	88861MV
IBM BladeCenter S Express	8886	E1A	8886E1A
	8886	E1B	8886E1B
	8886	E1M	8886E1M
	8886	E1K	8886E1K
	8886	E1R	8886E1R
	8886	E1V	8886E1V

Note: The following systems are MTM.

IBM BladeCenter S	8886	1MC	88861MC
	8886	1ME	88861ME
	8886	1MJ	88861MJ
	8886	1MN	88861MN
	8886	1MQ	88861MQ
IBM BladeCenter S Express	8886	E1C	8886E1C
	8886	E1E	8886E1E
	8886	E1J	8886E1J
	8886	E1N	8886E1N
	8886	E1Q	8886E1Q

Description	Part number
IBM BladeCenter S 6-Disk Storage Module	43W3581
IBM BladeCenter S 950W/1450W Auto-Sensing Power Supplies 3 and 4	43W3582
IBM BladeCenter S Serial Pass-thru module	43W3583

Reference information

The BladeCenter S chassis currently intends to support the BladeCenter JS21 blade for AIX and Linux on POWER applications.

Note: All statements regarding IBM's plans, directions, and intent are subject to change or withdrawal without notice. Any reliance on these statements of general direction is at the relying party's sole risk and will not create liability or obligation for IBM.

Trademarks

System x is a trademark of International Business Machines Corporation in the United States or other countries or both.

BladeCenter, ServerProven, AIX, eServer, and Wave are registered trademarks of International Business Machines Corporation in the United States or other countries or both.

Intel is a registered trademark of Intel Corporation.

Linux is a trademark of Linus Torvalds in the United States, other countries or both.

Other company, product, and service names may be trademarks or service marks of others.

Publications

An installation guide, and safety and warranty publications are shipped with each BladeCenter® S system.

PDF publications:

- IBM BladeCenter Type 8886 Planning Guide
- IBM BladeCenter Type 8886 Installation Guide
- IBM BladeCenter Type 8886 Problem Determination and Service Guide
- IBM BladeCenter Type 8886 Warranty and Support Information

The following publication is available immediately:

Title	Order number
BladeCenter Solutions	GMI3-0173

IBM Publications Center Portal

<http://www.ibm.com/shop/publications/order>

The Publications Center is a worldwide central repository for IBM product publications and marketing material with a catalog of 70,000 items. Extensive search facilities are provided, as well as payment options via credit card. A large number of publications are available online in various file formats, which can currently be downloaded free of charge.

On the Web: All IBM BladeCenter Type 8886 product documentation is available in the IBM Systems Information Center. With the IBM Systems Information Center, users can access product documentation for IBM systems hardware, operating systems, and server software. Through a consistent framework, users can efficiently find information and personalize their access to that information. The IBM Systems Information Center is at

<http://publib14.boulder.ibm.com/infocenter/systems>

PDF publications:

- IBM BladeCenter Type 8886 Planning Guide
- IBM BladeCenter Type 8886 Installation Guide

- IBM BladeCenter Type 8886 Problem Determination and Service Guide
- IBM BladeCenter Type 8886 Warranty and Support Information

Displayable softcopy publications: Publications are offered in displayable softcopy form from the IBM BladeCenter Support Web site.

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

- Width: 444.0 mm (17.50 in)
- Depth: 733.4 mm (28.9 in)
- Height: 306.3 mm (12 in)
- Weight:
 - Minimum configuration - 40.82 kg (90 lb)
 - Maximum configuration - 108.86 kg (240 lb)

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

Electrical — BladeCenter S

- 200 to 240 (nominal) V ac; 50 Hz or 60 Hz
- 110 to 127 (nominal) V ac; 50 Hz or 60 Hz
- Input kilovolt-amperes (kVA) (approximately):
 - Minimum configuration: 0.40 kVA (two power supplies)

- Maximum configuration: 3.50 kVA (four power supplies)
- Btu output:
 - Ship configuration — 1365 Btu/hr (400 watts)
 - Full configuration — 11942 Btu/hr (3500 watts)
- Acoustical noise emissions for BladeCenter with six blade servers:
 - 6.3 through 6.9 bels blade dependent (operating)
 - 6.3 through 6.9 bels blade dependent (idling)

Standards: This system supports or complies with the following standards:

- Multiprocessor Specification (MPS) 1.4.
- Hardware-enabled to meet the International Organization for Standardization (ISO) 9241, Part 3.

Equipment approvals and safety

- Japan VCCI, Class A
- Australia/New Zealand AS/NZS CISPR 22, Class A
- IEC-60950-1 (CB Certificate and CB Test Report)
- China CCEE (GB4943-1995)
- Taiwan BSMI CNS13438, Class A

Operating environment

- Temperature:
 - 10.0° to 35.0°C (50° to 95°F) at 0 to 914 m (0 to 3,000 ft)
 - 10.0° to 32.0°C (50° to 90°F) at 914 to 2,133 m (3,000 to 7,000 ft)
- Relative humidity: 8% to 80%
- Maximum altitude: 2,133 m (7,000 ft)
- Electrical power: 3.50 kVA
- Leakage current: 3 mA

Hardware requirements: None

Software requirements: None

Compatibility: The BladeCenter S chassis supports:

- Blades HS20
- Blades HS21
- Blades HS21 XM
- Blades HC10
- Blades LS20
- Blades LS21
- Blades LS41

Note: The BladeCenter S chassis currently intends to support the BladeCenter JS21 Blade for AIX® and Linux™ on POWER applications.

Switches (maximum of three):

- Gigabit Ethernet switch modules from Nortel/Blade Network Technologies
- IBM BladeCenter SAS Connectivity Module
- Fibre Channel SAN switch modules from QLogic, Brocade, and Cisco
- BladeCenter Optical Pass-thru Module
- BladeCenter Copper Pass-thru Module

For detailed information about IBM and non-IBM devices, adapters, software, and network operating systems supported with System x™ servers, visit

<http://www.ibm.com/us/compat>

Contact your IBM representative or IBM Business Partner, or refer to the IBM Sales Manual for information on the compatibility of hardware and software for System x servers. The Sales Manual is updated periodically as new features and options are announced that support these servers.

Limitations: The BladeCenter S chassis uses either 100 to 127 V or 200 to 240 V ac power.

User group requirements: This announcement satisfies or partially satisfies requirements from one or more of the worldwide user group communities. Groups include COMMON, COMMON Europe, Guide Share Europe (GSE), InterAction (Australia/New Zealand), Japan Guide Share (JGS), and SHARE Inc.

Planning information

Customer responsibilities: This product is designated as customer setup. Customer setup instructions are shipped with the product.

Configuration information: A control panel located on the top left of the media tray contains following LEDs:

- Power good
- Blade location
- Over temperature
- Information
- General fault

There are two USB ports and one CD-RW / DVD-ROM on the media tray.

The rear housing contains:

- Four hot-swap, redundant fan pack assemblies in the center, mounted one on top of the other
- Two standard 950-watt/1450-watt power supply modules and module bays for two optional power supply modules on each side of the fan pack assemblies
- One standard management module for KVM/Management

Rack installations: The BladeCenter S chassis 7U rack-drawer enclosure is designed to be installed in a 19-inch rack cabinet designed for 28-inch deep devices, such as the NetBAY42 ER, IBM S2 42U SR, IBM S2 25U SR, or NetBAY11.

If you choose not to use an IBM rack:

- The rack must meet EIA-310-D Standards for mounting flanges and hole locations.
- The front to rear distance of the mounting flanges must be between 698.5 mm and 762 mm (27.5 and 30 inches).
- The thickness of the mounting flanges must be between 1.9 to 3.3 mm.
- The mounting flanges must have either 7.1-mm (.28-in) diameter holes or 9.6-mm (.38-in) square holes on the standard EIA hole spacing.

- The rack must have a minimum depth of 70 mm (2.76 in) between the front mounting flange and inside of the front door for appropriate cooling.
- The rack must have a minimum depth of 157 mm (6.2 in) between the rear mounting flange and inside of the rear door to install the server and make space for cable management.
- The minimum side-to-side clearance in the rack between the front and rear mounting flanges must be 467 mm (18.2 in) to accommodate the width of the server and the slide mounting brackets.
- The minimum side-to-side clearance in the rack between each door and the mounting flanges must be 484 mm (19.1 in) to accommodate the slide mounting brackets.
- The rack should include perforated front and rear doors and must not prevent the flow of cool air into the front or out of the rear and hot air out the rear of the rack (front and rear doors, if present, must be perforated). Stand-alone racks must have side and top panels to prevent the flow of air from the sides, top, or bottom of the rack. All empty EIA space in the rack must be closed off with filler panels to prevent the recirculation of air within the rack.
- The weight-handling capacity of the rack must be sufficient to support the maximum rack configuration, including all servers, external cables, and PDUs.
- The rack must provide proper stabilization so that the rack does not become unstable when servers are pulled out for service.

Power considerations: BladeCenter S chassis comes with two or four 100 to 127 V or 200 to 240 V ac power modules, 950-watt/1450-watt, model dependent. These standard power modules support blade server bays one through six with power redundancy.

Cable orders: Each BladeCenter S chassis can contain several Gigabit Ethernet connections. The RJ-45 connectors provide a 10/100/1000 Base-T interface (either at half or full duplex) for connecting twisted-pair cable to the Ethernet network. Cabling is not included with the server. To connect the Ethernet controller to a repeater or switch, use a UTP cable with RJ-45 connectors at both ends. For 100 Mbps or higher operation, Category 5 cabling must be used. For 10 Mbps operation, Category 3, or better, cabling must be used.

Installability: The BladeCenter S chassis requires approximately 30 minutes for installation. Installation includes unpacking, setting up, and powering on the system. Additional time is required to install an operating system, additional options, or features.

Packaging

Product	Shipment group	Number of boxes
BladeCenter S	System Unit Carton	1
	Contents:	
	BladeCenter S Unit	1
	Publications/CD Package	1
	Rack kit:	1
	Rails	
	Cable management hardware	
	4.3m 110V or 240V power cord	1
	2.5m PDU power cords	1
BladeCenter	Publications/CD Package	1
	Contents:	
	IBM BladeCenter Type 8886 Installation Guide	
	Safety, Contents, and About Your Documentation Flyers	
	Promotional flyers	
	IBM BladeCenter Documentation CD	
	Director CD-ROM	
	SCM Director Flyer	
	Installation Template	
	IBM BladeCenter Type 8886 Warranty and Support Information	

Supplies: IBM BladeCenter S systems can be purchased through dealers around the world.

Security, auditability, and control

This product uses the security and auditability features of host hardware, host software, application software.

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™ 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

To obtain copies of the IBM Statement of Limited Warranty, contact your reseller or IBM.

Warranty period

- Three years
- Optional features — One year

Optional IBM features initially installed in an IBM machine carry the same warranty period as the machine. If installed after the initial machine installation, they carry the balance of the machine warranty or the optional feature warranty, whichever is greater.

Warranty service

If required, IBM provides repair or exchange service depending on the type of warranty service specified below for the machine. IBM will attempt to resolve your problem over the telephone or electronically by access to an IBM Web site. You must follow the problem determination and resolution procedures that IBM specifies. Scheduling of service will depend upon the time of your call and is subject to parts availability. 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- and location-specific information.

The type of service is Customer Replaceable Unit (for example, keyboard, mouse, speaker, memory, or hard disk drive) Service and On-site Service.

Customer Replaceable Unit (CRU) Service: IBM provides a replacement CRU to you for you to install. CRU information and replacement instructions are shipped with your machine and are available from IBM at any time on your request. A CRU is designated as being either a Tier 1 or a Tier 2 CRU. Installation of a Tier 1 CRU is your responsibility. If IBM installs a Tier 1 CRU, at

your request, you will be charged for the installation. You may install a Tier 2 CRU yourself or request IBM to install it, at no additional charge, under the type of warranty service specified below, On-site Service.

Based upon availability, a CRU 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, and 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 have been designated as a Tier 1 CRU:

- Media Tray
- Fan Pack
- Power Supply
- DVD-ROM
- Storage Module
- SAS Connectivity Module
- Ethernet Switch Modules
- Fibre Channel Switch Modules
- SAS/SATA 3.5 in Hard Drive
- Power Cord
- Management Module
- Front Bezel
- Filler, BBU
- Filler, PS
- Filler, Switch
- Filler, Blade
- HDD Filler, 3.5"
- SAS Filler (DSS Filler)

On-site Service: This provides On-site Repair, 9 hours per day, Monday through Friday excluding holidays, NBD response. IBM or your reseller 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. On-site Service is not available in all countries, and some countries have kilometer or mileage limitations from an IBM service center. In those locations where On-site Service is not available, the normal in-county service delivery is used.

International Warranty Service: International Warranty Service (IWS) is available in selected countries or regions.

The warranty service type and the service level provided in the servicing country may be different from that provided in the country in which the machine was purchased.

Under IWS, warranty service will be provided with the prevailing warranty service type and service level available for the IWS-eligible machine type in the servicing country and the warranty period observed will be that of the country in which the machine was purchased.

To determine the eligibility of your machine and to view a list of countries where service is available, visit

<http://www-304.ibm.com/jct01004c/systems/support/supportsite.wss/warrantyform?brandind=5000008>

For more information on IWS, refer to Services Announcement [AA01-3100](#), dated September 28, 2001.

Licensing: Programs included with this product are licensed under the terms and conditions of the License Agreements that are shipped with the system.

Field-installable features: Yes

Model conversions: No

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 Internal Code and Licensed Machine Code: This product does not contain Licensed Internal Code or Licensed Machine Code.

Educational allowance: None

Prices

For all local charges contact your IBM representative.

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