IBM Power 520 Express Edition: Optimized performance and value on an entry server

At a glance

The Power 520 servers deliver these features and benefits:

- 4.2 GHz POWER6 technology for entry to mid-size businesses
- One- or two-core server offerings to match your business needs
- High reliability
- Ease of installation and use
- Expandability to manage today's and tomorrow's business demands
- Support for IBM i, AIX, and Linux operating systems

For ordering, contact:

Your IBM representative or the Americas Call Centers at

800-IBM-CALL Reference: YE001

Overview

IBM System i™ and System p™ platforms are unifying the value of their servers into a single, powerful lineup of servers based on industry-leading POWER6™ processor technology with support for the IBM i operating system (formerly known as i5/OS™), and AIX® and Linux™ for Power operating systems. This new, single portfolio of Power Systems servers offers industry-leading technology, continued IBM innovation, and the flexibility to deploy the operating system that your business requires.

The Power 520 Express Edition is the entry member of the portfolio, supporting both IBM i 5.4 and IBM i 6.1 (formerly known as i5/OS V5R4 and i5/OS V6R1). Combining industry-leading POWER6 processor technology from IBM with its flagship operating system for small and medium-size clients, the Power 520 servers deliver outstanding performance and value for clients who want to run IBM i applications. These new Power Systems servers offer exceptional reliability, availability, and serviceability (RAS) functions including:

- Highly reliable components for built-in reliability
- Recovery from intermittent errors or failover to redundant components
- Detection and reporting of failures and impending failures
- Hardware that automatically initiates actions to perform error correction, repair, or component replacement

The innovative POWER6 processor within the Power 520 servers delivers outstanding performance for running your IBM i applications. Combined with IBM i 6.1, you can experience significant improvements

in Java™ and WebSphere® applications. Also, the POWER6 architecture with EnergyScale technology includes features that measure the energy use of your system and direct policies toward the energy-efficient operation of the server. The underlying hardware automatically adjusts to deliver the operating solution that you want.

The Power 520 server running the IBM i operating system supports one or two 4.2 GHz POWER6 processor cores and delivers outstanding performance for use as a business-critical application platform or in a high-transaction environment based on the Java platform. The Power 520 is packaged as a deskside or 4U (4 EIA units) rack-mount configuration. It supports IBM i, AIX, and Linux operating systems to broaden the application offerings available and increase the ways you can manage growth, complexity, and risk.

If you are primarily focused on running IBM i applications, or if you own System i servers and plan on migrating to these new POWER6 processor-based servers, the Power 520 is targeted to your needs. The Power 520 i Edition combines POWER6 processor-based server hardware, key system components, and IBM i system software into easy-to-order configurations to get you up and running quickly.

The Power 520 1-way is an affordable and reliable entry server to run your IBM i business applications. It is highly optimized for small business clients and supports up to 16 GB of memory, up to six disk drives, DVD, and tape — all within the single system unit enclosure.

The Power 520 1/2-way gives you more scalability and expandability. It is the ideal package to ensure your Power Systems server can handle business growth. With Capacity on Demand, you can quickly increase processing power when your business requires it. And you can add I/O expansion units and twice the memory of the 1-way, up to 32 GB.

Planned availability dates

- April 18, 2008, except for the following features:
- May 6, 2008:
  - 5616 — GX Dual-port 12x Chan Attch
  - 5796 — PCI-DDR 12X Expansion Drawer
  - 6446 — 12X Short Run 5796 Attach
  - 6457 — 12X Long Run 5796 Attach
  - 7314 — Dual 5796 Unit Enclosure

Note: Features available on May 6, 2008, will require eFW 3.2.2 firmware.

Description

You can order the one-core (1-way) Power 520 Express using 9407-M15 or the two-core (1/2-way) Power 520 using 9408-M25. The second core of the 1/2-way Power 520 is optionally activated using Capacity Upgrade on Demand (permanent processor activation). The POWER6 processor is a 4.2 GHz, one-core 64-bit chip with 4 MB of L2 cache.

Both the one- and two-core Power 520 servers include:

- IBM i user license entitlements
- Full 5250 OLTP capability
- Five PCIe/PCI-X DDR slots
- Up to six hot-swap SAS disk drives in the system unit
- Imbedded SAS disk/tape/DVD controller

- Optional 175 MB write cache with auxiliary write cache protection
- One Integrated Virtual Ethernet (IVE) adapter with up to four ports
- One media bay for a SAS tape drive
- One media bay for a DVD-ROM or DVD-RAM drive
- Redundant, hot-swap power and cooling capability
- EnergyScale technology

In addition, the one-core system features:

- Up to 4300 CPW
- Up to 16 GB of memory

The two-core system features:

- Up to 8300 CPW
- Up to 32 GB of memory
- Option to attach either an HSL/RIO I/O loop or a 12X I/O loop and associated I/O drawers/towers
- Option to attach an SAS or SCSI disk expansion drawer

The Power 520 server, combined with the IBM i 6.1 operating system, supports virtual IBM i partitions, enabling one IBM i partition to host storage for another partition. With this support, additional IBM i partitions for test, development, and production workloads can more easily be created. A new Fibre Channel Adapter that offers enhanced performance with DS8000™ SANs is available for the Power 520 two-core system.

IBM PowerVM delivers advanced virtualization technologies. With PowerVM Standard Edition, the Power 520 server can support up to 10 partitions per core, supporting multiple IBM i, AIX, and Linux operating environments on a single system. The Power 520 can also support multiple shared processor pools, enabling the capping of processor resources on a group of partitions. Virtual I/O Server (VIOS) offers storage and Ethernet virtualization for IBM i, AIX, and Linux partitions on the Power 520 two-core system. In addition, with PowerVM Lx86, you can run 32-bit Linux on x86 applications in Linux environments on the Power 520. IBM PowerVM is a chargeable product.

Express editions

Express editions enable initial ease of ordering and feature a lower price than if you ordered them "a la carte" or build-to-order. Unlike earlier System i editions on POWER4™ and POWER5™ systems, an edition feature is not required for the Power 520 system. Taking advantage of the edition is the only way you can use no-charge features for processor activations and IBM i user license entitlements. The Express editions are available only during the initial system order and cannot be ordered after your system is shipped.

The IBM configurator offers these easy-to-order Express editions that include no-charge activations or no-charge IBM i user entitlements. You can modify the Express Edition configurations to match your exact requirements for your initial shipment — increasing or decreasing the configuration. If you create a configuration that falls below any of the defined minimums, the IBM configurator replaces the no-charge features with equivalent function regular charge features.

One-core Power 520 Express editions: 1-way entry and 1-way growth

To use the no-charge features on your initial order, you must order a minimum of:

- One IBM i processor license
- Five IBM i user entitlements
- 2 GB memory
- Two SAS IBM i disk drives (any size)

For the lower price, one no-charge processor activation and five no-charge IBM i user entitlements are available. The identical set of no-charge features are used for both one-core

Express editions: #6721 and #6725.

#6721 1-way Entry Edition suggested starting configuration:

- One 1-core 4.2 GHz processor card (#5633)
- One 2 GB memory feature (#4521)
- Two 69.7 GB 15k rpm disk drives (#3676)
- One dual-port 1 Gb integrated Ethernet adapter (#5623)
- Two power supplies, 950 watt, base (#7703)
- One PCIe WAN IOA (#2893 or #2894) (country dependent)
- One DVD-ROM (#5756)
- One DASD/media backplane (#8345)
- One 4-mm 36 GB SAS tape drive (#5907)
- Two power cords (6xxx)
- One processor activation (#5676) (no additional charge)
- One server feature #4925
- One IBM i Enablement (#4993)
- Five IBM i user entitlements (no additional charge) (57xx-SSC)
- Five IBM i user entitlements (charge) (57xx-SSC)
- System i Access unlimited users (57xx-XW1)
- WebSphere Development Studio and Rational® development software (V5R4: 5722-WDS, V6R1: 5761-WDS and 5733-RDI)
- PowerVM Standard Edition, or higher
- One year of software maintenance

In addition to the preceding components, the #6725 1-way Growth Edition includes these features as a starting point for easier configuration:

- 2 GB additional memory (one 4 GB feature #4522)
- Two additional disk drives
- One 175 MB write cache (#5679)
- Quad-port IVE (#5624)
- Ten additional IBM i user entitlements (charge) (57xx-SSC)
- 9910 UPS and #1827 cable
- DB2® Web Query (5733-QU2)

Two-core Power 520 Express editions: 1/2-way 30-user, 150-user, and unlimited user

To receive a no-charge feature on the initial order, you must order a minimum of:

- One IBM i processor license
- 30 IBM i user entitlements
- 4 GB memory
- Four SAS or SCSI IBM i disk drives (any size)
- One 175 MB write cache (#5679) for the system unit or one 1.5 GB write cache disk controller (#5583/5782/5778)
- Two power supplies
- PowerVM Standard Edition, or higher

The no-charge feature is one no-charge processor activation. The same single no-charge features are used for all two-core Express editions: #6761, #6762, and #6763. These editions start with the same hardware configuration but offer different numbers of IBM i user entitlements:

- #6761 Express Edition includes 30 IBM i user entitlements.
- #6762 Express Edition includes 150 IBM i user entitlements.
- #6763 Express Edition includes unlimited IBM i user entitlements.

The suggested starting configuration for the 1/2-way Entry Express Editions includes:

- One 2-core 4.2 GHz processor card (#5634)
- One processor activation (#5677) at no charge
- One 8 GB memory feature (#4523)
- Six 69.7 GB 15k rpm SAS disk drives (#3676)
- One 175 MB protected write cache (#5679)
- One Quad-port 1 Gb integrated Ethernet adapter (#5624)
- Two power supplies, 950 watt (#7703)
- One PCIe WAN IOA (#2893 or 2894) (country dependent)
- One DVD-ROM (#5756)
- One DASD/media backplane (#8345)
- One 4 mm 36 GB SAS tape drive (#5907)
- Two power cords (6xxx)
- One GX adapter for 12X I/O loop (#5616)
- One 9910 UPS
- One UPS communication cable (#1827)
- One server feature #4930
- One IBM i Enablement (#4993)
- One IBM i processor enablement (charge) (57xx-SS1)
- PowerVM Standard Edition, or higher
- System i Access unlimited users (57xx-XW1)
- WebSphere Development Studio and Rational development software (V5R4: 5722-WDS, V6R1: 5761-WDS and 5733-RDI)
- DB2 Web Query (5733-QU2)
- One year of software maintenance

Solution Edition

A Solution Edition helps meet the needs of Oracle JD Edwards and SAP application users. Users of JD Edwards' EnterpriseOne and World applications and SAP's mySAP, ERP, BI, CRM, PLM, and SCM can qualify to use this edition.

The Power 520 Solution editions for SAP and Oracle applications require proof of a minimum purchase before the system is shipped from IBM. For details, visit

http://www.ibm.com/systems/i/editions/solutionedition.html

For the validation form and entitlement requirements, visit

http://www.ibm.com/systems/i/editions/validate.html

Power 520 Solution Edition #6766 includes a larger number of no-charge IBM i user license entitlements than the regular Express editions, resulting in a lower initial list price for qualifying clients.

To receive no-charge features on your initial Solution Edition order, your initial order must include a minimum of:

- One IBM i processor license
- 60 IBM i user entitlements
- 4 GB memory
- Four SAS or SCSI IBM i disk drives (any size)
- 175 MB write cache (#5679) for the system unit, or a 1.5 GB write cache disk controller (#5583/5782/5778)
- Two power supplies
- PowerVM Standard Edition, or higher

The no-charge features are one no-charge processor activation and 30 no-charge IBM i user entitlements.

The #6766 1/2-way Solution Edition suggested starting configuration is the same as the 1/2-way Express configurations except that the quantity of IBM i user entitlements is 60.

When you purchase a two-core (9408-M25) Power 520 system with an i Edition, you are entitled to receive a service voucher at no additional charge. Service vouchers deliver the technical leadership and consulting resources that can help you more fully understand and use the latest features and capabilities of the IBM i operating system. The experts will join your team and help get you started on the road to success with your new operating environment. For more information about vouchers, visit

http://www.ibm.com/systems/i/hardware/editions/vouchers.html

Two-core Power 520 Capacity BackUp (CBU) capability

The two-core Power 520 systems' CBU designation can help meet your requirements for a second system to use for backup, high availability, and disaster recovery. It enables you to temporarily transfer IBM i processor license entitlements and IBM i user license entitlements purchased for a primary machine to a secondary CBU system. Temporarily transferring these resources, instead of purchasing them for your secondary system, may result in significant savings. Processor activations cannot be transferred. A CBU option is not offered for the one-core Power 520 (9407-M15).

The CBU specify feature #0444 is available only as part of a new server purchase or during an MES upgrade from an existing CBU system to a 9408-M25. Certain system prerequisites must be met and system registration and approval is required before the CBU specify feature can be applied on a new server.

Standard IBM i terms and conditions do not allow either IBM i processor license entitlements or IBM i user license entitlements to be transferred permanently or temporarily. These entitlements remain with the machine they were ordered for. When you register the association between your primary and on-order CBU system, you must agree to certain terms and conditions regarding the temporary transfer.

After a CBU system designation is approved and the system is installed, you can temporarily move your optional IBM i processor license entitlement and user license entitlements from the primary system to the CBU system when the primary system is down or while the primary system processors are inactive. The CBU system can then better support failover and role swapping for a full range of test, disaster recovery, and high availability scenarios. Temporary entitlement transfer means that the entitlement is a property transferred from the primary system to the CBU system and may remain in use on the CBU as long as the registered primary and CBU systems are in deployment for the high availability or disaster recovery operation.

Systems that can be the primary system for a 9408-M25 are:

- 9409-M50
- 9406-550
- 9408-M25
- 9406-525
- 9406-520 1/2-way

These systems have IBM i software licenses with an IBM i P10 or P20 software tier. The primary machine must be in the same enterprise and country as the CBU system.

Before you can temporarily transfer IBM i processor license entitlements from the registered primary system, you must have more than one IBM i processor license on the primary machine and at least one IBM i processor license on the CBU server. The second processor must be activated on the CBU server to use the transferred entitlement. You can then transfer any IBM i processor entitlements above the minimum one, assuming the total IBM i workload on the primary system does not require the IBM i entitlement that you want to transfer during the time of the transfer. During this temporary transfer, the CBU system's internal records of its total number of IBM i processor license entitlements are not updated, and you may see IBM i license noncompliance warning messages from the CBU system. These warning messages in this situation do not mean you are not in compliance.

Before you can temporarily transfer IBM i user entitlements, you must have more than 30 IBM i user entitlements on the 9406-525 or 9408-M25 primary server and at least 30 IBM i user entitlements on the CBU server. You can then transfer any IBM i user entitlements above the minimum 30, assuming the total IBM i users on the primary system do not require the IBM i entitlement you want to transfer during the time of the transfer. The 9409-M50, 9406-550, and 9406-520 1/2-way do not have user entitlements that can be transferred. However, you can purchase user entitlements for the Power 520 users to run on your new CBU system in blocks of either 10 or unlimited. If you purchase these entitlements when you purchase your 520 CBU system, the price will be discounted.

For example, if you have a 2-core Power 520 (9408-M25) as your primary system with two IBM i processor license entitlements (one above the minimum) and 50 IBM i user entitlements (20 above the minimum), you can temporarily transfer up to one IBM i entitlement and up to 20 user entitlements. During this temporary transfer, the CBU system's internal records of its total number of IBM i processor and user license entitlements is not updated, and you may see IBM i license noncompliance warning messages from the CBU system.

If your primary or CBU machine is sold or discontinued from use, any temporary entitlement transfers must be returned to the machine on which they were originally acquired.

For CBU registration and further details, visit

http://www.ibm.com/systems/power/hardware/cbu

Upgrades

MES upgrades into the 9408-M25 from the 9406-525 and from selected 9406-520 editions are available. They preserve the existing machine serial number. IBM i processor and user license entitlements are also preserved during the upgrade. Upgrade paths into the 9408-M25 from the 9406-520 Value editions, 9406-520 Telephony editions, 9407-515, 9407-M15, or 9405-520 are not available.

MES upgrades into the 9408-M25 from the 9406-520 Enterprise Edition can include a specific number of IBM i user license entitlements at no charge. They must be ordered with the MES upgrade and not as a later MES order. The two-way 9406-520 #7457 and 1/2-way #7736 Enterprise Edition systems can have up to two 10-user blocks, or 20 entitlements. The one-way 9406-520 #7459, #7453, #7455, #7734, and #7735 Enterprise Edition systems can have up to one 10-user block, or 10 entitlements.

If you are upgrading from a 9406-520/525 CBU Edition, and assuming the primary system has not changed from the originally registered primary/secondary pairing, the #0444 CBU Specify code is added to an MES upgrade. This avoids unnecessary registration on the CBU Web site.

Continuance of warranty service level

If you are upgrading to a 9408-M25 from a 9406-520 or -525 system that is still under warranty, you will continue to have the warranty service level of the 9406 for the remainder of the 9406 one-year warranty period. Because the 9408 has 9 x 5 next-business-day base warranty coverage as opposed to the 9406 24 x 7 same-day base warranty coverage, you must sign a separate warranty service upgrade contract to continue 24 x 7 same-day base warranty coverage. Contact your IBM representative or Business Partner for more details.

Power 520 Capacity Upgrade on Demand (CUoD)

CUoD enables you to turn on capacity as your needs grow. You can permanently activate an inactive processor by ordering a #5654 activation feature for your 4.2 GHz 9408-M25 system. After IBM receives your order, an activation code unique to your server is generated. The activation code is mailed to you and also posted at

http://www.ibm.com/systems/power/hardware/cod

Enter the activation code into your server using the hardware management console or the advanced system manager interface, and your newly activated processor is ready to be dynamically allocated when needed.

Adequate operating system processor licenses (IBM i, AIX, or Linux) must be available for all permanently activated processors that have been assigned to a partition or pool.

Detailed information, including step-by-step directions for ordering, enabling, and using CUoD, is available in the Capacity on Demand Planning Guide found at

http://www.ibm.com/systems/power/hardware/cod

Summary of Power 520 configurations

	One-core 520 9407-M15	Two-core 520 9408-M25
Processor	POWER6 4.2 GHz	POWER6 4.2 GHz
Processor cache	4 MB L2	8 MB (4 MB per core) L2
Processor card feature	#5633	#5634
n-way	1-way	1/2-way
CPW	4300	4300/8300
Memory/Main store	1 GB minimum 16 GB maximum	1 GB minimum 32 GB maximum
Disk storage*	140 GB minimum 1.7 TB maximum in system unit*	70 GB minimum 1.7 TB maximum in system unit 78 TB system max
Disk arms*	2 minimum 6 maximum	2 minimum 6 maximum in system unit 278 system maximum
Disk controller *	1 imbedded minimum and maximum	Minimum 1 imbedded Maximum 30 system
Tape drive	0 minimum 1 maximum in system unit 2 system maximum	0 minimum 1 maximum in system unit 18 system maximum
DVD drive	1 minimum 2 system maximum	1 minimum 36 system maximum
HSL or 12X loops	0	0 minimum 1 maximum
HSL I/O drawers/towers	0	0 minimum 6 maximum
12X I/O drawers	0	0 minimum 4 maximum
PCI slots	5 in system unit	5 in system unit 88 system max
Communication lines	2 minimum ** 12 maximum	2 minimum ** 12 maximum in system unit 108 system maximum
LAN ports usable by IBM i	2 minimum 8 maximum	2 minimum 8 maximum in

		system unit 36 system maximum
Maximum twinax devices	0	50
IOP based cards supported (like twinax or older tape)	No	No in system unit Yes in HSL-attached I/O
Windows(R) integration Integrated xSeries(R) Servers	0	Yes, max of 12
Integrated xSeries Adapters	0	Yes, max of 6
iSCSI adapters (PCI-X)	Yes, max of 2	Yes, max of 18
Crypto coprocessor	0	8
Crypto accelerator	0	2
IBM i Software Tier	P05	P10
Server feature	#4925	#4930

* Does not include the option of Fibre Channel attached disk storage via SAN.
** One 2-line WAN adapter in most countries.

Note: Some maximums and combinations of devices may be subject to configuration restrictions.

Memory considerations

Four DDR2 memory DIMM slots with error checking and correcting (ECC) are used in the one- and two-core Power 520 system. Memory DIMMs are plugged in pairs (one memory feature equals two DIMMs). At least one pair of memory DIMMs (one memory feature) is required. Memory features of different sizes cannot be mixed. For example, if one 4 GB memory feature is initially installed, the only future memory addition supported is another 4 GB memory feature (assuming the first 4 GB memory feature is not removed).

The one-core Power 520 (9407-M15) supports 1, 2, 4, and 8 GB memory features. The two-core Power 520 (9408-M25) supports 1, 2, 4, 8, and 16 GB memory features.

Memory GB	Memory Feature	# DIMMs	Maximum GB with 2 features	MHz
1 GB	#4520	2 x 512 MB	2 GB	667
2 GB	#4521	2 x 1 GB	4 GB	667
4 GB	#4522	2 x 2 GB	8 GB	667
8 GB	#4523	2 x 4 GB	16 GB	667
16 GB	#4524*	2 x 8 GB	32 GB*	400

* Only two-core Power 520

PCI slots/GX+ slot

The system unit includes five hot-swap PCI slots:

- Slots 1 and 2 are PCIe x8 2.5 GHz short-length slots.
- Slot 3 is a PCIe x8 2.5 GHz full-length slot.
- Slots 4 and 5 are PCI-X DDR 266 MHz full-length slots.

None of these slots supports an IOP or IOP-based IOA. This means that features such as twinax controllers and tape drives requiring an older IOP-driven controller are not supported on the one-core 520.

The two-core Power 520 has one GX+ slot that shares space with PCIe x8 slot 1. If a GX+ adapter is inserted to attach a HSL/RIO or 12X loop, a PCIe card cannot be placed in slot 1. The GX+ slot is not supported on the one-core Power 520 system.

Additional PCI slots can be added to the two-core Power 520 system (9408-M25) using HSL/RIO-attached I/O towers/drawers or 12X-attached I/O drawers.

SAS disk and SAS disk controller

Six 3.5-inch 15k rpm SAS disk drive bays or disk slots are in the system unit, allowing up to 1.7

TB of IBM i disk storage. SAS disk drives formatted for IBM i are supported in three capacities: 69.7, 139.5, or 283.7 GB. AIX, Linux, or VIOS-formatted SAS drives are also supported in 73.4, 146.6, or 300 GB capacities in the two-core 9408-M25.

The six disk bays are run by the imbedded SAS disk controller. Because the controller is "owned" by one partition, the owning partition needs to virtualize storage controlled by the imbedded disk controller to any secondary partition that needs disk storage from these disks.

Many client environments can improve disk performance of the six SAS drives by using the optional #5679 175 MB write cache. This card has a special slot in the Power 520 and does not require a PCI slot. The 175 MB write cache is protected by a 175 MB auxiliary write cache to help avoid single points of failure that would cause extended outages. The auxiliary write cache comes with #5679 and does not require a PCI slot.

With the #5679 175 MB write cache feature, RAID 5 or RAID 6 disk protection can be implemented for the six drive slots in the system unit. The two-core Power 520 can also use the imbedded disk controller with #5679 write cache to drive up to 12 disk slots in a #5886 EXP 12S. Mirroring protection is available through the operating system. RAID 5 requires a minimum of three drives, and RAID 6 requires four.

The same imbedded controller that runs the disk drives also runs the SAS tape slot and the slimline DVD drive in the system unit. The #5679 write cache is not used in tape or DVD operations.

For a supported Power 520 configuration, IBM i disk drives must be protected by either mirroring or RAID.

#5886 EXP 12S

The #5886 EXP 12S is a 2U (2 EIA) SAS disk drawer in a 19-inch rack. It is attached to an SAS port on the back of the two-core Power 520 system unit via an external SAS cable (#3686 or #3687). It supports up to 12 hot-swap SAS disk drives (#3676/3677/3678 or #3646/3647/3648) and includes redundant power supplies. Its disk controller is the imbedded disk controller in the Power 520 system unit. The #5679 175 MB write cache is a prerequisite to attaching #5886.

Two-core Power 520 I/O loop, drawer, and tower options

The two-core Power 520 system can optionally support one GX+ adapter, enabling you to choose either an HSL/RIO loop (#5614) or a 12X loop (#5616). The one-core Power 520 system does not support attachment of either the HSL/RIO or 12X loop.

A 12X loop can attach up to four #5796 12X I/O enclosures. A HSL/RIO loop can attach up to six HSL/RIO I/O enclosures. 12X cables are used for the 12X loop. HSL/RIO cables are used for the HSL/RIO loop.

The 12X I/O enclosure is the #5796 12X PCI-DDR expansion drawer that contains six full-length PCI-X DDR high-speed slots in a space-efficient package. Because each #5796 takes only half the 19-inch rack width, two #5796 features require only 4U or 4 EIA of 19-inch rack space. Up to two #5796 features can be placed in a #7314 dual 5796 unit enclosure.

Each #5796 takes one of four possible positions per 12X loop. The #5796 attaches to the 12X loop using one of two #5796 12X adapters, one for shorter distances and one for longer distances. You can use the short run adapter #6446 with 12X loops on which all units are contained in the same rack. Use the long run adapter #6457 for units spread across multiple racks. Short run and long run adapters can be mixed on the same loop.

In the following table, Yes indicates that the 12X cable identified in that column can be used to connect the configuration identified to the left.

	12X Cable Options			
	(1)		(2)	
	(#1829)	(#1830)	(#1840)	(#1834)(3)
#5796 to #5796 with Short Run adapter (#6446) in both drawers	Yes	Yes	No	No
#5796 with Short Run adapter (#6446) to #5796 with Long Run adapter (#6457)	Yes	Yes	Yes	No

#5796 to #5796 with Long Run adapter (#6457) in both drawers	Yes	Yes	Yes	Yes
#5796 with Short Run adapter (#6446) to 12X Channel CEC adapter	No	Yes	Yes	No
#5796 with Long Run adapter (#6457) to 12X Channel CEC adapter	No	Yes	Yes	Yes

(1) The 0.6 m 12X cable (#1829) cannot be used to connect to a processor enclosure because of its short length. It is intended for use between two #5796 drawers mounted side-by-side in the same #7314 enclosure or to connect between two #5796 drawers located one beneath the other in a rack.
(2) It is possible in some limited configurations to use the 3.0 m 12X cable (#1840) to locate #5796 drawers in adjacent racks. The cable length requires careful management of each drawer location within the rack. The best choice for connecting a #5796 drawer in an adjacent rack is the 8.0 m 12X cable (#1834).
(3) The 12X cable (#1834) is intended for use when connecting between two modules that are located in adjacent racks. This cable may not be connected to the 12X Short Run adapter (#6446).

The #5796 supports only smart IOAs and does not support an IOP or a card that requires an IOP. The #5796 includes redundant concurrently maintainable power and cooling. The blind swap PCI mechanism allows for PCI card servicing without removing the I/O expansion drawer.

HSL/RIO

The two-core Power 520 system supports HSL I/O enclosures that allow for PCI-X slots and, in some cases, disk slots. These enclosures were previously available on POWER5 systems. The PCI slots are PCI-X slots that support IOPs, not PCI-X DDR slots. These enclosures are:

- #0595/5095 (7 PCI-X slots and 12 SCSI disk slots)
- #5094/5294 (14 PCI-X slots and 15 to 45 SCSI disk slots)
- #5096/5296 (14 PCI-X slots and 0 disk slots)
- #0588/5088 (14 PCI-X slots and 0 disk slots)
- #5790 (6 PCI-X slots and 0 disk slots)

The #0588 and #5088 are withdrawn from marketing but are supported on the two-core Power 520 system. The #5094 and #5294 are not orderable as new I/O enclosures but are supported. The #0595, #5095, #5096, #5296, and #5790 can be ordered as new HSL I/O enclosures for the two-core Power 520.

All of these HSL/RIO I/O enclosures are attached to the two-core Power 520 system via HSL-2 physical ports and run over an HSL-2 interface. I/O units that were attached to earlier systems using the HSL-1 interface (#9877, #9886, #9887, #2886, #2887) must be upgraded before being attached to the two-core Power 520 system. This includes the #0588/5088, which previously had supported the HSL-2 interface only with an RPQ on POWER5 and POWER5+™ systems. You can order the HSL-2 interface as #6417 (MES), or it may have been shipped previously with #9517.

The #5786 EXP24 Disk Enclosure is also supported. This I/O enclosure holds up to 24 internal 15k rpm SCSI disk drives that are run by a disk controller in a PCI slot located in the two-core Power 520 processor, 12X, or HSL enclosure.

Disk and disk controller protection rules

The Power 520 is designed to minimize single points of failure. In order to have an IBM-supported configuration, the following minimum level of integrated disk storage is required:

- All disk drives must to be protected by RAID or mirroring.
- All disk controllers with write cache must be protected by either auxiliary write cache or by mirroring the controller. If SCSI disk controllers such as the 40 MB write cache #5703 or #0628 and the 90 MB write cache #5776, #5737, and #0648 are used, they must be mirrored,

as these cards do not have an auxiliary write cache option.

Note that the optional write cache option for the system unit #5679 includes auxiliary write cache protection.

PCI Express (PCIe) adapters

PCIe adapter slots can support higher speeds and capacities than the PCI-X generation of PCI slots. PCIe and PCI-X slots are physically different. PCIe adapters cannot plug into a PCI-X slot and vice versa. PCIe adapters do not use an IOP.

The Power 520 processor enclosure has three PCIe slots. The following PCIe adapters are available:

- #2893/9693 PCIe 2-Line WAN with Modem (IBM i, Linux)
- #2894/9694 PCIe 2-Line WAN with Modem (CIM) (IBM i, Linux)
- #5773 PCIe 4Gb Fibre Channel Adapter (IBM i 6.1, Linux, AIX)
- #5767 PCIe 1Gb Ethernet UPT 2-Port IOA (IBM i, Linux, AIX)
- #5768 PCIe 1Gb Ethernet Fiber 2-Port IOA (IBM i, Linux, AIX)

The PCIe 2-Line WAN with Modem IOA supports the use of IBM i Operations Console-Direct Attach (commonly called ops console). This IBM i console option uses a special cable #0367 attached to a user-supplied Microsoft® Windows workstation.

IBM i consoles

Select one of the following IBM i consoles:

- Operations console attached via Ethernet port (LAN console) or WAN port (ops console)
- Hardware Management Console (HMC)

A twinax console is not supported unless a HMC is present on the system. A 9944-100 Thin Console is not supported.

Integrated Virtual Ethernet (IVE) daughter card

An IVE daughter card is required on the Power 520 system. This daughter card has a special slot. It does not use a PCI slot. You can select either a #5623 dual-port 10/100/1000 Mb or #5624 quad-port 10/100/1000 Mb card. The Ethernet ports can be virtualized to different partitions offering flexible configuration.

EnergyScale technology

The Power 520 server includes EnergyScale technology that includes power trending, power saving, capping of power, and thermal measurement capabilities.

Additional components

One #7703 950 watt ac power supply is required. Optionally, a second #7703 power supply provides redundancy and allows either power supply to be hot-swapped. Each power supply requires a power cord.

An op panel cable is required. For a deskside system, use #1843. For a rack-mount system, use #1877 to specify a cable.

For a deskside system, include a #7250 deskside specify with a #7224 door feature. For a rack-mount system, include a #7251 rack-mount specify with a #7267 adjustable rails and bezel feature.

Other system components include:

- Two system ports and three USB ports for AIX usage
- Two HMC ports
- Two SPCN ports
- One imbedded service processor
- One DASD/Media backplane (#8345)

The minimum Power 520 system configuration (9407-M15 or 9408-M25) must include:

- One IBM i processor license entitlement and either five IBM i user license entitlements (9407-M15) or 30 IBM i user license entitlements (9408-M25)
- One processor card
- One processor activation
- 1 GB memory
- One power supply
- One power cord
- Two disks (unless a Fibre Channel adapter is used for SAN disk drive attachment)
- One DASD/Media backplane (#8345)
- One operations panel cable
- One IVE daughter card
- One DVD drive
- One WAN adapter
- Rack-mount or deskside features
- IBM i enablement specify
- IBM i console specify
- Server feature
- Language specify

For additional information on the Power 520, visit

http://www.ibm.com/systems/power

Accessibility by people with disabilities

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

http://www-3.ibm.com/able/product_accessibility/index.html

Section 508 of the U.S. Rehabilitation Act

IBM Power Systems models are capable, when used in accordance with IBM's associated documentation, of satisfying the applicable requirements of Section 508 of the Rehabilitation Act, provided that any assistive technology used with the product properly interoperates with it.

Product positioning

The Power 520 Express one-core or 1-way server offers you an affordable and reliable solution if you require an entry server to run your IBM i business applications. The Power 520 one-core, optimized for small business clients, supports up to 16 GB of memory, up to six disk drives, DVD, and tape — all within the single system unit enclosure. The Power 520 one-core offers clients who in the past would have purchased a System i 515 or System i 520 Express a ready-to-run packaged offering.

If you are looking for more scalability and expandability, the Power 520 two-core or 1/2-way is the ideal package to ensure the Power Systems server can handle your business growth. The Power 520 two-core server supports Capacity on Demand to quickly increase your processing power when your business requires it. It also supports adding I/O expansion units and twice the memory of the one-core, up to 32 GB. Clients, who in the past would have purchased a System i 525 or System i 520 Standard, Enterprise, or Solution edition, should consider the Power 520 two-core.

The Power 520 is offered as either a one- or two-core server. The two-core server delivers more

performance and a much greater expandability than the one-core server. Advantages of the two-core server include:

- Double the processors (one-core versus two-core)
- Double the L2 cache (4 MB per core)
- Double the maximum memory (16 GB versus 32 GB)
- Support for an I/O loop and associated PCI slots, disk slots, and other I/O expansion
- Support for additional types of heritage I/O supported by IOP-based cards
- CUoD to permanently activate the second processor
- Upgrade paths from the 9406-520 (specific editions) and 9406-525

The one-core Power 520 has a lower entry price and lower IBM i software tier (P05 as opposed to P10). Choose the one-core Power 520 system where you are comfortable with the performance and growth options within the system unit and where price is a critical part of the purchase decision. Choose the two-core Power 520 system when additional I/O capacity and CPU performance is required now or in the future.

Power 520 system compared to a Power 550 Express system:

The four-core Power 550 (POWER6 9409-M50) delivers higher performance and larger I/O capacities than the Power 520. In addition to larger n-way, memory, and I/O, you benefit from more I/O flexibility. The Power 550 has two I/O loops instead of the one I/O loop offered by the two-core Power 520 (9408-M25). With two loops you can attach more I/O, and you can choose to mirror the I/O at a loop level. You can also more easily transition from existing HSL/RIO I/O to 12X I/O. This means you can choose to use both an HSL/RIO and a 12X loop on the same system. Having both types of I/O loops allows you to migrate existing I/O and invest in the newest I/O drawer technology at the same time. In addition, the Power 550 is a P20 IBM i software tier.

Two-core Power 520 compared to POWER5 systems:

The two-core Power 520 (POWER6 9408-M25) is a follow-on product to the POWER5 9406-525. Although the systems are similar, a number of differences exist, particularly in the area of new technologies.

Similarities between the two-core Power 520 and the 9406-525 include:

- IBM i licensing with user entitlements (same concurrent user definition) and the P10 software tier
- Minimum of 30 and up to an unlimited number of IBM i users
- Support for IBM i 5.4, and later
- Two-core processor, with a minimum of one processor active (1/2-way)
- Either rack-mounted (4U) or in a deskside configuration
- Full 5250 OLTP capability
- Support for the attachment of up to six I/O tower/drawers via one HSL/RIO loop
- Offered in packages with 30, 150, or unlimited IBM i user entitlements
- Model upgrades from POWER5 9406-520 (not including Value or Telephony editions)

Differences include:

- Uses 4.2 GHz POWER6 technology as opposed to 1.9 GHz POWER5+ technology.
- Uses all PCIe and PCI-X DDR slots as opposed to slower PCI-X slots in the system unit. (An IOP or IOP-based adapter card can be placed in an HSL-attached I/O drawer/tower.)
- Can use either a 12X I/O loop or HSL/RIO loop as opposed to only HSL/RIO loop.
- Includes a 175 MB protected write cache disk controller option for the integrated disk controller in the system unit as opposed to 40 MB unprotected write cache.
- Requires that all internal disk controllers with write cache be protected with either auxiliary write cache or be mirrored.

- Can use the new 2U SAS disk drawer for additional internal disk growth as opposed to only SCSI drives in expansion units.
- Supports a half-high SAS tape drive in the system unit as opposed to SCSI tape drive. Note that the SAS tape drive and SCSI tape drive options are different.
- Includes up to four IVE daughter card Ethernet ports as opposed to two integrated Ethernet ports.
- Supports the following:
  - Optional use of an edition package
  - Virtual IBM i partitions
  - Multiple Shared Processor Pools
  - PowerVM Lx86
- Requires PowerVM (previously named Advanced Power Virtualization) for Micro-Partitioning™.
- Includes base warranty of one year with 9 x 5 next-business-day support and customer replaceable unit (CRU) that is upgradable to a higher level of coverage as opposed to 24 x 7 same-business-day support with optional CRU.

One-core Power 520 compared to POWER5 systems

The one-core Power 520 (POWER6 9407-M15) is a follow-on product to the POWER5 9407-515. A number of similarities exist in the overall product offering as well as differences associated with new technologies. Similarities between the 9407-515 and the 9407-M15 include:

- IBM i licensing with user entitlements (same concurrent user definition) and the P05 software tier
- Support for IBM i 5.4, and later
- Either rack-mounted (4U) or in a deskside configuration
- PowerVM required for Micro-Partitioning
- Full 5250 OLTP capability
- No support for the attachment of I/O tower/drawers, but uses the PCI slots and disk slots available in the system unit
- Base warranty of one year with 9 x 5 next-business-day support and CRU that is upgradable to a higher level of coverage

Differences include:

- Uses 4.2 GHz POWER6 technology as opposed to 1.9 GHz POWER5+ technology.
- Includes worldwide option for unlimited IBM i users as opposed to 40 to unlimited users, depending on the country.
- Uses all PCIe and PCI-X DDR slots as opposed to slower PCI-X slots. (Faster 9407-M15 PCI slots do not support the use of an IOP or IOP-based adapter card.)
- Supports the following:
  - Virtual IBM i partitions
  - Multiple Shared Processor Pools
  - PowerVM Lx86
- Supports smart Fibre Channel adapter with IBM i 6.1.
- Uses up to six 15k SAS disk drives of 70, 140, or 284 GB capacities in the system unit as opposed to eight 15k SCSI disk drives of 70 GB capacity.
- Has a 175 MB protected write cache disk controller option for the integrated disk controller as opposed to 40 MB unprotected write cache.
- Supports a half-high SAS tape drive in the system unit as opposed to SCSI tape drive.
- Uses up to four IVE daughter card Ethernet ports as opposed to two integrated Ethernet ports.

- Supports optional use of an edition.

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).

BP Attachment for Announcement Letter 108-230

https://www.ibm.com/partnerworld/mem/sla.jsp?num=108-230

Trademarks

Feature availability matrix

Order codes:

- I — Available on initial orders from the plant only
- M — Available on field upgrade (MES) orders only
- B — Available on both initial and field upgrade orders
- S — Supported for migration only and cannot be ordered

For a complete list of features and feature descriptions by model refer to the online Sales Manual at

http://www-306.ibm.com/common/ssi/OIX.wss

```
         9 9
         4 4
         0 0
         7 8

         M M
         1 2
         5 5
Feature              Description

0003     M M  Notify CSO After Install
0005     M M  Bulk Order Indicator
0006     I I  LPAR Restrict Build Process
0032     B B  Modem
0040     B B  Mirrored System Disk Level
0041     B B  Device Parity Protection-All
0042       B  Mirrored System IOP Level
0043       B  Mirrored System Bus Level
0047     B B  Device Parity RAID-6 All
0092       B  External xSeries(R) Attach
0140     B B  Logical Partitioning Specify
0141       B  HSL OptiConnect Specify
```

0142	B	B	Linux(TM) Partition Specify
0145	B	B	AIX(R) Partition Specify
0205	I	I	RISC-to-RISC Data Migration
0272	I	I	Renovated by IBM
0275	B	B	CSC Specify
0276	B	B	CSC Specify
0277	B	B	CSC Specify
0278	B	B	CSC Specify
0279	B	B	CSC Specify
0280	B	B	CSC Specify
0281	B	B	CSC Specify
0282	B	B	CSC Specify
0290		B	Ext Device Attach Via #5736
0296		B	Custom Data Protection
0299		S	MES Conversion Analysis
0300		B	EXP24 Attach via #5736/#5775
0301		B	EXP24 Attach via #5737/#5776
0302		M	EXP24 Attach via Existing
0308		B	Mirrored System-IOA Level
0310		B	EXP24 Attach via #5739/#5778
0325		S	IPCS Extension Cables for NT
0347	B	B	RAID Hot Spare Specify
0348	B	B	V.24/EIA232 20-Ft PCI Cable
0349		S	V.24/EIA232 50-Ft PCI Cable
0353	B	B	V.35 20-Ft PCI Cable
0354		S	V.35 50-Ft PCI Cable
0356		S	V.36 20-Ft PCI Cable
0359	B	B	X.21 20-Ft PCI Cable
0360		S	X.21 50-Ft PCI Cable
0365		S	V.24/EIA232 80-Ft PCI Cable
0367	B	B	Operations Console PCI Cable
0371	B	B	LC-SC Adapter Kit (50um)
0372	B	B	LC-SC Adapter Kit (62.5um)
0373	I	I	UPS Factory Integration
0374	I	I	HMC Factory Integration
0375	I	I	Display Factory Integration
0376		B	Reserve Rack Space — UPS
0377		B	Reserve Rack Space — HMC
0378		B	Reserve Rack Space — Display
0444		B	CBU Specify
0446		M	512MB DDR Server Memory
0447		M	1GB DDR Server Memory
0456		I	Customer Placement
0469		I	Custom Rack Placement
0533	B	B	V5R4OS, V5R4M5 Machine Code
0534	B	B	i5/OS(TM) V6R1 M0 Machine Code
0551	B	B	19 inch 1.8 Meter Rack
0553	B	B	19 inch 2.0 Meter Rack
0554	S	S	19 inch 0.6 Meter Rack
0555	B	B	19 inch 1.3 Meter Rack
0588		S	PCI-X Expansion Unit in Rack
0595		B	PCI-X Tower Unit in Rack
0599	B	B	Rack Filler Panel Kit
0600	B	B	CCEP
0603		S	Direct Attach-2744
0613		B	Direct Attach-2742
0614		B	Direct Attach-2793
0616		B	Direct Attach-2805
0620		B	Direct Attach-5700
0621		B	Direct Attach-5701
0624		S	Direct Attach-5702
0625		S	Direct Attach-5704
0626		S	Direct Attach-2787
0630	B	B	PCI-X 1Gbps iSCSI TOE-Copper
0631	B	B	PCI-X 1Gbps iSCSI TOE-Optic
0632	B	B	PCI USB 2.0 Adapter
0633	B	B	Graphics Adapter
0635		S	SDLC/X.25 — 2-port Adapter
0645		S	Direct Attach-5712
0646		S	Direct Attach-5716

0647		B	PCI-X Disk/Tape Ctlr No IOP
0694		S	#5094 Equivalent
0696		B	#5096 Equivalent
0719		B	Load Source Not in CEC
0720		B	Load Source in #0595/5095
0721		B	Load Source in #5094/5294
0725		B	Load Source in #5786/5787
0727		I	#5886 Load Source placement
0830		S	#4319 Load Source Specify
0834		S	#4326/#1266 Load Source Spec
0835		B	#4327/#1267 Load Source Spec
0836		B	#4328/#1268 Load Source Spec
0837	B	B	SAN Load Source Specify
0838	B	B	#3676 Load Source Specify
0839	B	B	#3677 Load Source Specify
0840	B	B	#3678 Load Source Specify
0841		B	#4329/#1269 Load Source Spec
0983	I	I	US TAA COMPLIANCE INDICATOR
1025	B	B	Modem Cable – US/Canada
1266		S	35.16GB 15k rpm Disk Unit
1267		B	70.56GB 15k rpm Disk Unit
1268		B	141.12GB 15k rpm Disk Unit
1269		B	282.25GB 15k rpm Disk Unit
1292		B	300GB 15k rpm Disk Unit
1293		S	36.4GB 10k rpm Disk Unit
1294		S	73.4GB 10k rpm Disk Unit
1295		S	146.8GB 10k rpm Disk Unit
1296		S	36.4GB 15k rpm Disk Unit
1297		B	73.4GB 15k rpm Disk Unit
1298		B	146.8GB 15k rpm Disk Unit
1299		S	300GB 10k rpm Disk Unit
1307		B	1.75m HSL-2/RIO-2 Cable
1308		B	2.5m HSL-2/RIO-2 Cable
1311	M	M	System Unique Identifier
1406		S	200V 16A 14-Ft TL Line Cord
1410		S	200V 6-Ft Line Cord
1411		S	200V 14-Ft Line Cord
1412		S	125V 6-Ft Line Cord
1413		S	125V 14-Ft Line Cord
1414		S	200V 6-Ft Locking Line Cord
1415		S	200V 6-Ft Wtrtght Line Cord
1416		S	200V 14-Ft Locking Line Cord
1417		S	200V 14-Ft Wtrtght Line Cord
1422		S	3m IEC 320 C13/14 PDU Cord
1424		S	200V 6-Ft Locking Line Cord
1425		S	200V 6-Ft Wtrtght Line Cord
1426		S	200V 14-Ft Locking Line Cord
1427		S	200V 14-Ft Wtrtght Line Cord
1451	B	B	200V 6-Ft Line Cord
1452	B	B	200V 14-Ft Line Cord
1453	B	B	200V 6-Ft Locking Line Cord
1454	B	B	200V 12A 14-Ft TL Line Cord
1455	B	B	200V 6-Ft Wtrtght Line Cord
1456	B	B	200V 14-Ft Wtrtght Line Cord
1457		S	200V 6-Ft Upper Line Cord
1458		S	200V 6-Ft Upper Locking Cord

1459	B	B	200V 6-Ft Upper Wtrtght Cord
1460		B	3m Copper HSL/RIO Cable
1461		B	6m Copper HSL/RIO Cable
1462		B	15m Copper HSL/RIO Cable
1463		S	2m SPCN Cable
1464		S	6m SPCN Cable
1465		S	15m SPCN Cable
1466		S	30m SPCN Cable
1474		B	6m HSL/RIO to HSL2/RIO2 Cbl
1475		B	10m HSL/RIO to HSL2/RIO2 Cbl
1481		B	1.2m HSL-2/RIO-2 Cable
1482		B	3.5m HSL-2/RIO-2 Cable
1483		B	10m HSL-2/RIO-2 Cable
1485		B	15m HSL-2/RIO-2 Cable
1487		B	3m HSL/RIO to HSL2/RIO2 Cbl
1700		S	IPCS Keyboard/Mouse for NT
1827	B	B	Serial-UPS Conversion Cable
1829		B	0.6 Meter 12X Cable
1830		B	1.5 Meter 12X Cable
1834		B	8.0 Meter 12X Cable
1840		B	3.0 Meter 12X Cable
1843	B	B	Op Panel Cable for Deskside
1850	S	S	VHDCI to P Converter Cable
1851		S	0.6m SCSI P-P Cable
1852		S	2.5m SCSI P-P Cable
1855		S	4-port EIA 232 Cable
1860	B	B	ASYNC Terminal/Prt Cable
1873		B	Dwr to Dwr Serial Cable
1874		B	Rack to Rack Serial Cable
1875	B	B	Serial Port Converter Cable
1877	B	B	Op Panel Cable for Rack-mount
1893		S	36.4GB 10k rpm Disk Unit
1894		S	73.4GB 10k rpm Disk Unit
1895		S	146.8GB 10k rpm Disk Unit
1896		S	36.4GB 15k rpm Disk Unit
1897		B	73.4GB 15k rpm Disk Unit
1898		B	146.8GB Disk Unit
2114	S	S	Ext Diff SCSI y-Cable
2124		B	1m SCSI Cable
2125		B	3m SCSI Cable
2126		B	5m SCSI Cable
2127		B	10m SCSI Cable
2128		B	20m SCSI Cable
2138		B	0.55m SCSI Cable
2737		S	PCI USB 1.1 Adapter
2742		B	PCI Two-Line WAN IOA
2744		S	PCI 100Mbps Token-Ring IOA
2749		S	PCI Ultra Mag Media Ctlr
2757		S	PCI-X Ultra RAID Disk Ctrl
2780		S	PCI-X Ultra4 RAID Disk Ctrl
2787		S	PCI-X Fibre Chan Disk Ctlr
2793		B	PCI 2-Line WAN w/Modem
2805		B	PCI Quad Modem IOA
2843		S	PCI IOP
2844		B	PCI IOP
2847		B	PCI IOP for SAN Load Source
2863	S	S	4-Port X.21 Cable
2864	S	S	4-Port V.35 DTE Cable
2877	B	B	4-Position Int Bus Cable
2893	B	B	PCIe 2-Line WAN w/Modem
2917	B	B	English U/L DBCS
2924	B	B	English
2934	B	B	ASYNC Terminal/Prt Cable
2936	B	B	ASYNC Modem Cable
2943	B	B	8-Port ASYNC Adapter

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2947     S S  PCI Multiprotocol Adapter
2958     B B  Universal Japanese

3578       S  300GB 10K rpm Disk Unit
3585       B  300GB 15k rpm Disk Unit
3646       B  73.4GB 15k rpm SAS Disk Drv
3647       B  146.8GB 15k rpm SAS Disk Drv
3648       B  300GB 15k rpm SAS Disk Drv
3655     B B  SAS HH Cable
3674       B  SAS Cable DASD BP to Bulkhd
3676     B B  69.7GB 15k rpm SAS Disk Drv
3677     B B  139.5GB 15k rpm SAS Disk Drv
3678     B B  283.7GB 15k rpm SAS Disk Drv
3686       B  SAS Cable Sys to Encl 1.5M
3687       B  SAS Cable Sys to Encl 3M
4319       S  35.16GB 10k rpm Disk Unit
4326       S  35.16GB 15k rpm Disk Unit
4327       B  70.56GB 15k rpm Disk Unit
4328       B  141.12GB 15k rpm Disk Unit
4329       B  282.25GB 15k rpm Disk Unit
4430       S  DVD-RAM
4487       S  50GB 1/4-Inch Cartridge Tape
4520     B B  1GB RDIMM Memory
4521     B B  2GB RDIMM Memory
4522     B B  4GB RDIMM Memory
4523     B B  8GB RDIMM Memory
4524       B  16GB RDIMM Memory
4630       S  DVD-RAM
4631       S  DVD-ROM
4633       S  DVD-RAM
4684       B  30GB 1/4-Inch Cartridge Tape
4687       B  50GB 1/4-Inch Cartridge Tape
4690       S  Rack Status Beacon Assembly
4691       S  Rack Status Beacon Cable
4692       S  Junction Box Cable
4693       S  Rack Beacon Junct Box Cable
4746       B  PCI Twinaxial Workstn IOA
4801       S  PCI Crypto Coprocessor
4805       S  PCI Crypto Accelerator
4806       B  PCI-X Crypto Coprocessor
4812       S  PCI Integ xSeries Server
4813       S  PCI Integ xSeries Server
4925     B    1W Server Feat 1x5633
4930       B  1/2W Server Feat 1x5634
4960       S  Cryptographic Accelerator
4963       S  PCI Crypto Coprocessor
4993     B B  i Enablement Specify
5000     I I  Software Preload Required

5001     B B  Customer Solution Center

5002     I I  System i(TM) CDSC-Rochester Mfg

5088       S  PCI-X Expansion Unit
5094       S  PCI-X Expansion Tower
5095       B  PCI-X Expansion Tower
5096       S  PCI-X Exp Tower (no disk)
5108       M  30-Disk Expansion Feature
5115       B  Dual Line Cords – Tower
5116       B  Dual Line Cords – 5294 Tower
5138       B  Redundant Power and Cooling
5160       S  Power Dist Unit 1 Phase NEMA

5294       S  1.8m I/O Tower
5296       S  1.8m I/O Tower (no disk)
5544     B B  Sys Console on OP Console
5550     B B  Sys Console On HMC
5553     B B  Sys Console-Ethernet No IOP
5554       S  Mirror 35GB Disk/Ctlr Pkg
5555       S  Mirror 70GB Disk/Ctlr Pkg
5556       S  Mirror 141GB Disk/Ctlr Pkg
5560       S  Mirror 35GB Drawer Package
5561       S  Mirror 70GB Drawer Package
5562       S  Mirror 35GB Tower Package
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5563		S	Mirror 70GB Tower Package
5580		S	2780 Ctlr w/Aux Write Cache
5581		S	2757 Ctlr w/Aux Write Cache
5582		B	5738 Ctlr w/Aux Write Cache
5583		B	5777 Ctlr w/Aux Write Cache
5590		S	2780 Ctlr w/Aux Write Cache
5591		S	2757 Ctlr w/Aux Write Cache
5614		B	GX Dual-Port HSL-2/RIO-2 Att
5616		B	GX Dual-port 12x Chan Attch
5623	B	B	2-Port 1Gb IVE Daughter Card
5624	B	B	4-Port 1Gb IVE Daughter Card
5633	B		1Core 4.2GHz POWER6(TM) Proc Crd
5634		B	2Core 4.2GHz POWER6 Proc Crd
5651	B		1W Perm Proc Activ for 5633
5654		B	1W Perm Proc Activ for 5634
5676	B		1W Base Perm Proc Activ 5633
5677		B	1W Base Perm Proc Activ 5634
5679	B	B	175MB SAS RAID Enablement
5700		B	PCI 1Gbps Ethernet IOA
5701		B	PCI 1Gbps Ethernet UTP IOA
5702		S	PCI-X Ultra Tape Controller
5703		S	PCI-X RAID Disk Unit Ctlr
5704		S	PCI-X Fibre Chan Tape Ctlr
5706	B	B	PCI-X 1Gbps Ethernet-TX IOA
5707	B	B	PCI-X 1Gbps Ethernet-SX IOA
5712		S	PCI-X Tape Controller
5713		S	PCI-X 1Gbps iSCSI TOE-Copper
5714		S	PCI-X 1Gbps iSCSI TOE-Optic
5715		S	PCI-X Tape/DASD Controller
5717	B	B	1Gb Ethrnet UTP 4-port Adptr
5718		S	10Gbps Ethernet IOA (Short)
5719		S	10Gbps Ethernet IOA (Long)
5721	B	B	PCI-X 10Gbps Ethernet-SR IOA
5722	B	B	PCI-X 10Gbps Ethernet-LR IOA
5723	B	B	2-Port Async EIA-232 PCI IOA
5736		B	PCI-X Disk/Tape Ctlr w/IOP
5737		B	PCI-X Disk Ctlr-90MB w/IOP
5738		B	PCI-X Disk Ctlr-1.5GB w/IOP
5739		B	PCI-X EXP24 Ctlr-1.5GB w/IOP
5740	B	B	1Gbps BaseT Ethernet(4-Port)
5741		B	EXP24 6 Disk Slot Enabler
5742		B	EXP24 6/12 Disk Slot Enabler
5749	B	B	4Gbps Fibre Channel (2-Port)
5756	B	B	DVD-ROM Drive IDE Slimline
5757	B	B	DVD-RAM Drive IDE Slimline
5758		S	4Gbps Fibre Channel (1-Port)
5759	B	B	4Gbps Fibre Channel (2-Port)
5760		B	PCI-X Fibre Chan Disk Ctlr
5761		B	PCI-X Fibre Chan Tape Ctlr
5767	B	B	PCIe 1Gb Ethernet UTP 2Port
5768	B	B	PCIe 1Gb Ethernet Fiber 2Prt
5773	B	B	PCIe 4Gb Fibre Channel 1Port
5774	B	B	PCIe 4Gb Fibre Channel 2Port
5775		B	PCI-X Disk/Tape Ctlr-No IOP
5776		B	PCI-X Disk Ctlr-90MB No IOP
5777		B	PCI-X Disk Ctlr-1.5GB No IOP
5778		B	PCI-X EXP24 Ctl-1.5GB No IOP
5781		B	PCI-X EXP24 Ctlr-1.5GB w/IOP
5782		B	PCI-X EXP24 Ctl-1.5GB No IOP
5783	B	B	PCI-X iSCSI HBA Copper
5784	B	B	PCI-X iSCSI HBA Fiber
5786		B	TotalStorage(R) EXP24 Disk Dwr
5787		S	TotalStorage EXP24 Disk Twr
5790		B	PCI Expansion Drawer
5796		B	PCI-DDR 12X Expansion Drawer
5886		B	EXP 12S SAS Disk Drawer
5907	B	B	36/72GB 4mm DAT72 SAS Tape Dr
6001		B	SPCN Power Cable – 2m
6006		B	SPCN Power Cable – 3m
6007		B	SPCN Power Cable – 15m
6008		B	SPCN Power Cable – 6m
6029		B	SPCN Power Cable – 30m
6068	B	B	Opt Front Door for 1.8m Rack
6069	B	B	Opt Front Door for 2.0m Rack

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6246     B B  1.8m Rack Trim Kit
6247     B B  2.0m Rack Trim Kit
6248     B B  1.8m Rack Acoustic Doors
6249     B B  2.0m Rack Acoustic Doors
6417       M  HSL-2/RIO-G Bus Adapter
6438       B  RIO-2 Remote I/O Loop Adapter
6446       B  12X Short Run 5796 Attach

6455       S  14-Ft 250V/10A Power Cord

6457       B  12X Long Run 5796 Attach
6458     B B  14-Ft Int 250V/10A Pwr Cd
6459       B  12-Ft 250V/10A RA Pwr Cd

6460     B B  14-Ft 125V/15A Power Cord

6469     B B  14-Ft 250V/15A Power Cord
6470     B B  6-Ft 125V/15A Power Cord

6487     B B  6-Ft 250V/15A Power Cord

6492     B B  14-Ft 1PH/48-60A Pwr Cord

6497     B B  6-Ft 250V/15A Power Cord

6498       S  6-Ft 250V/15A Power Cord

6580     B B  Optional Rack Security Kit
6586     B B  Modem Tray for 19-Inch Rack
6598     B B  Disk Slot Filler (Qty 4)

6654     B B  14-Ft 1PH/24-30A Pwr Cord
6655     B B  14-Ft 1PH/24-30A WR Pwr Cord

6671     B B  9Ft IEC 320 C13/14 PDU Cord
6672     B B  5Ft IEC 320 C13/14 PDU Cord

6699       B  RIO-2 Bus Adapter
6721     B    1W Entry Express Edition
6725     B    1W Growth Express Edition
6761       B  1/2W 30 User Express Edition
6762       B  1/2W 150 User Express Editn
6763       B  1/2W Unlim User Express Edit
6766       B  1/2W Solution Edition
6800     B B  PCI 1Gbps Ethernet IOA
6801     B B  PCI 1Gbps Ethernet UTP IOA
6805     B B  PCI 2-Line WAN IOA No IOP
6808     B B  PCI 4-Modem WAN IOA No IOP

6833     B B  PCI 2-Line WAN w/Modem NoIOP

7109     B B  Intelligent PDU Plus
7188     B B  Power Distribution Unit
7204       B  Quantity 150 of #2124
7205       B  Quantity 150 of #2125
7206       B  Quantity 150 of #2126
7207       B  Quantity 150 of #2127
7208       B  Quantity 150 of #2128
7211       S  Quantity 150 of #1299
7213       B  Quantity 150 of #2138
7224     B B  Deskside Cover Set (w/Door)
7250     B B  Model 520 Deskside
7251     B B  Model 520 Rack-mount
7262       B  Quantity 150 of #1292
7267     B B  Bezel/Rails/HW Rack Mt Drwr
7307       B  Dual I/O Unit Enclosure
7311       S  Dual I/O Unit Enclosure
7314       B  Dual 5796 Unit Enclosure
7504       S  Quantity 150 of #4319
7508       S  Quantity 150 of #4326
7509       B  Quantity 150 of #4327
7510       B  Quantity 150 of #4328
7511       B  Quantity 150 of #4329
7512       B  Quantity 150 of #0300
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7513       B  Quantity 150 of #0301
7514       B  Quantity 150 of #5741
7515       B  Quantity 150 of #5742
7516       B  Quantity 150 of #1269
7520       S  Quantity 150 of #1266
7521       B  Quantity 150 of #1267
7522       B  Quantity 150 of #1268
7525       S  Quantity 150 of #1294
7526       S  Quantity 150 of #1295
7527       S  Quantity 150 of #1296
7528       B  Quantity 150 of #1297
7529       B  Quantity 150 of #1298
7703     B B  950W Power Supply
7780     B B  2.0m Rack Side Attach Kit
7801     B B  6m HMC Attachment Cable
7802     B B  15m HMC Attachment Cable
7840     B B  Side-by-Side for 1.8m Racks
7841     B B  Ruggedize Rack Kit
7862       B  Blind Swap Cassette (Long)
7863       B  Blind Swap Cassette (Double)
8131       S  15-Ft Cluster Box Cable
8132       S  9-Inch Cluster Box Cable
8133       B  RJ45 to DB25 Interposer
8345     B B  3.5-inch SAS DASD Cage
8506     B B  PowerVM Standard Edition
8507       B  PowerVM Enterprise Edition
8546       S  Opt Base 1GB Server Memory
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Publications

No publications are shipped with the announced features.

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: 9407-M15 and 9408-M25 system unit

	Width	Depth	Height	Weight
Rack-mounted drawer	440 mm (17.3 in)	538 mm (21.2 in)	173 mm (6.81 in)	34.0 kg (75 lb)
Stand-alone server (with tip foot)	328.5 mm (12.9 in)	628 mm (24.7 in)	540 mm (21.3 in)	40.8 kg (90 lb)
Stand-alone server (without tip foot)	182.3 mm (7.2 in)	628 mm (24.7 in)	540 mm (21.3 in)	37.6 kg (83 lb)

For installation planning information, refer to the planning Web site at

http://publib.boulder.ibm.com/infoc
enter/systems/scope/hw/topic/iphdx/
abstract_site_hw_planning_guide.htm

Operating environment

	9407-M15 and 9408-M25 system unit (two core)
Electrical	
kVA (maximum)	0.794
Rated voltage and frequency	100-127 V ac or 200-240 V ac at 50/60 Hz (+/-0.5)
Power consumption (maximum)	770 watts
Thermal output (maximum)	2628 Btu/hr
Power factor	0.97
Inrush current (maximum)	80 A
Leakage current (maximum)	1.4 mA
Noise level (dBa) (operating)	
Rack drawer	6.5 to 6.9 bels
Rack drawer with acoustic door	6.5 bels
Deskside	6.1 to 6.6 bels
Temperature range	
(operating)	5 to 35 degrees C (41 to 95 degrees F)
(non-operating)	5 to 43 degrees C (41 to 109 degrees F)
Maximum dew point	
(operating)	17 degrees C (62.6 degrees F)
(non-operating)	27 degrees C (80.6 degrees F)
Noncondensing humidity	8% to 80%(1)
Maximum altitude	3048 m (10000 ft)

(1) All tape media used must have a relative humidity range of 20% to 80%.

The appropriate system power cord is added automatically by the configurator based on the country in which the order is placed. For default power cord, other power cord options, and additional technical planning information, refer to the planning Web site at

http://publib.boulder.ibm.com/infoc
enter/systems/scope/hw/topic/iphdx/
abstract_site_hw_planning_guide.htm

Software requirements: IBM 9407 model M15 and 9408 model M25 require IBM i 5.4 with 5.4.5 machine code, or later.

Other operating systems that run on these models are:

- AIX 5L™ for POWER™ Version 5.3 with the 5300-08 Technology Level, or later

- AIX Version 6.1 with the 6100-01 Technology Level, or later
- SUSE Linux Enterprise Server 10 (SLES 10) Service Pack 1 for Power, or later
- Red Hat Enterprise Linux V4.5 for Power, or later
- Red Hat Enterprise Linux V5.1 for Power, or later

PowerVM Standard Edition supports Micro-Partitioning™ and other Power virtualization technologies in order to run multiple operating systems concurrently on a single POWER6 core for the Power 520 and per core concurrently on other POWER6 processor-based systems. If installed, PowerVM licensing is required for all active processors. The Virtual I/O Server (VIOS) and Integrated Virtualization Manager (IVM) features provided with PowerVM Standard Edition are not supported on the 9407-M15. IVM is not supported on the 9408-M25.

Some features may require updates.

For additional prerequisite information, visit

http://www-912.ibm.com/e_dir/eServerPrereq.nsf

Planning information

Cable orders: No cable orders required

Security, auditability, and control

The 9407-M15 and 9408-M25 use the security and auditability features of IBM i. Use of these facilities is optional. 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 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.

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

Volume orders: Contact your IBM representative.

IBM credit corporation financing: Yes

Warranty period: One year

Warranty 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 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. 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- and location-specific information. This product is covered by the following types of service.

CRU and on-site for other selected parts

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 or a Tier 2 CRU.

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

Tier 2 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 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 CRU parts:

- Cache battery
- Covers
- Disk drive backplane
- Disk drive
- DVD drive
- External cables
- Fan
- Fan tray assembly
- Internal cable
- Tape/DVD drive enclosure and backplane
- Memory DIMMs
- Operator panel
- Operator panel cable
- PCI adapters
- Power cord
- Power supply
- Service processor
- Tape drive

- Time of day battery
- Voltage regulator

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.

9 hours per day, Monday through Friday, excluding holidays, next-business-day (NBD) response

Warranty service upgrade: During the warranty period, a warranty service upgrade provides an enhanced level of on-site service for an additional charge. A warranty service upgrade must be purchased during the warranty period and is for a fixed term (duration). It is not refundable or transferable and may not be prorated. If required, IBM will provide the warranty service upgrade enhanced level of on-site service acquired by the customer. Service levels are response time objectives and are not guaranteed.

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.

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. The following service selections are available as a warranty upgrade for your machine.

- IBM on-site repair (IOR), 9 hours per day, Monday through Friday, excluding holidays, 4-hour average, same-business-day response
- IOR, 24 hours per day, 7 days a week, 4-hour average response
- IOR, 24 hours per day, 7 days a week, 2-hour average response

CRU 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 one of the on-site service levels specified above. For additional information on the CRU service, see 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 Web . 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 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- and location-specific 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.

- 9 hours per day, Monday through Friday, excluding holidays, NBD response
- 24 hours per day, 7 days a week

CRU service: If your problem can be resolved with a CRU (for example, HDD, tape drive, or CD), and depending upon the maintenance service offerings in your geography, IBM will ship the 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 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.

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 support

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

IBM Service provides hardware problem determination on non-IBM parts (for example, adapter cards, PCMCIA cards, disk drives, memory) installed within IBM machines covered under warranty service upgrades or maintenance services 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.

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: Yes

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

Graduated program license charges apply: Yes

The following processor groups apply for software with graduated charges.

Machine type	Model/ feature	Edition	Processor group
9407	M15/6721	1W Entry Express Edition	P05
	M15/6725	1W Growth Express Edition	P05
9408	M25/6761	1/2W 30 User Express Edition	P10
	M25/6762	1/2W 150 User Express Edition	P10
	M25/6763	1/2W Unlimited User Express Edition	P10
	M25/6766	1/2W Solution Edition	P10

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 for the customer.

Machine code may sometimes be referred to as "licensed internal code" or "LIC" in documentation or on the machine with which the machine code was delivered. All such code, whether referred to or marked as machine code, Licensed Internal code or LIC is subject to the IBM License Agreement for machine code.

Should it become necessary for IBM to make changes to machine code, IBM will make the changes available at the IBM Power Systems technical support page on ibm.com. If the machine does not function as warranted and your problem can be resolved through your application of machine code changes, you are responsible for downloading and installing the designated machine code changes as IBM specifies. You may request IBM to install machine code changes; however, you may be charged for the installation of such changes.

You can obtain a copy of the agreement at the following Web site or by contacting your IBM

representative.

http://www-1.ibm.com/servers/support
/machine_warranties/machine_code.html

Machines using LMC Type Model

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9407 M15
9408 M25
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Educational allowance: 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

Maintenance services

Description	Feature number	MMMC 24 x 7	MMMC 9 x 5
MT 9407 Model M15		$ 79	
MT 9408 Model M25		79	
Modem	0032	5	$4
PCI-X Expansion Unit in Rack	0588	200	
PCI-X Tower Unit in Rack	0595	229	
1W Server Feat 1x5633	4925	0	
1/2W Serv Feat 1x5634	4930	38	
PCI-X Expansion Unit	5088	200	
PCI-X Expansion Tower	5094	428	
PCI-X Expansion Tower	5095	230	
PCI-X Exp Tower (no disk)	5096	200	
30-Disk Expansion Feature	5108	456	
1.8m I/O Tower	5294	1,767	
1.8m I/O Tower (no disk)	5296	399	
Mirror 35GB Drawer Package	5560	229	
Mirror 70GB Drawer Package	5561	229	
Mirror 35GB Tower Package	5562	229	
Mirror 70GB Tower Package	5563	229	
1Core 4.2GHz POWER6 Proc Crd	5633	0	
2Core 4.2GHz POWER6 Proc Crd	5634	0	
1W Perm Proc Activ for 5633	5651	0	
1W Perm Proc Activ for 5634	5654	0	
1W Base Perm Proc Activ 5633	5676	0	
1W Base Perm Proc Activ 5634	5677	0	
EXP24 6 Disk Slot Enabler	5741	98	
EXP24 6/12 Disk Slot Enabler	5742	98	
TotalStorage EXP24 Disk Dwr	5786	62	
TotalStorage EXP24 Disk Twr	5787	62	
PCI Expansion Drawer	5790	86	
PCI-DDR 12X Expansion Drawer	5796	86	
EXP 12S SAS Disk Drawer	5886	228	
36/72GB 4mm DAT72 SAS Tape D	5907	61	
1W Entry Express Edition	6721	0	
1W Growth Express Edition	6725	0	
1/2W 30 User Express Edition	6761	0	
1/2W 150 User Express Editn	6762	0	
1/2W Unlim User Express Edit	6763	0	
1/2W Solution Edition	6766	0	

Model

Description	Purchase price	CSU
MT 9407 Model M15	$299	Yes

MT 9408 Model M25 299 Yes

Features and specify codes

Description	Feature	Purchase price	CSU
Bulk Order Indicator	0005	$ 0	Yes
LPAR Restrict Build Process	0006	0	N/A
Modem	0032	525	Yes
Mirrored System Disk Level	0040	0	Yes
Device Parity Protection-All	0041	0	Yes
Mirrored System IOP Level	0042	0	Yes
Mirrored System Bus Level	0043	0	Yes
Device Parity RAID-6 All	0047	0	Yes
External xSeries Attach	0092	0	Yes
Logical Partitioning Specify	0140	0	Yes
HSL OptiConnect Specify	0141	0	Yes
Linux Partition Specify	0142	0	Yes
AIX Partition Specify	0145	0	Yes
RISC-to-RISC Data Migration	0205	0	Yes
Renovated by IBM	0272	0	N/A
CSC Specify	0275	0	Yes
CSC Specify	0276	0	Yes
CSC Specify	0277	0	Yes
CSC Specify	0278	0	Yes
CSC Specify	0279	0	Yes
CSC Specify	0280	0	Yes
CSC Specify	0281	0	Yes
CSC Specify	0282	0	Yes
Ext Device Attach Via #5736	0290	0	Yes
Custom Data Protection	0296	0	Yes
MES Conversion Analysis	0299	0	Yes
EXP24 Attach via #5736/#5775	0300	0	Yes
EXP24 Attach via #5737/#5776	0301	0	Yes
EXP24 Attach via Existing	0302	0	Yes
Mirrored System-IOA Level	0308	0	Yes
EXP24 Attach via #5739/#5778	0310	0	Yes
IPCS Extension Cables for NT	0325	110	Yes
RAID Hot Spare Specify	0347	0	Yes
V.24/EIA232 20-Ft PCI Cable	0348	125	Yes
V.24/EIA232 50-Ft PCI Cable	0349	175	Yes
V.35 20-Ft PCI Cable	0353	125	Yes
V.35 50-Ft PCI Cable	0354	175	Yes
V.36 20-Ft PCI Cable	0356	125	Yes
X.21 20-Ft PCI Cable	0359	375	Yes
X.21 50-Ft PCI Cable	0360	175	Yes
V.24/EIA232 80-Ft PCI Cable	0365	200	Yes
Operations Console PCI Cable	0367	125	Yes
LC-SC Adapter Kit (50um)	0371	83	Yes
LC-SC Adapter Kit (62.5um)	0372	83	Yes
UPS Factory Integration	0373	0	N/A
HMC Factory Integration	0374	0	N/A
Display Factory Integration	0375	0	N/A
Reserve Rack Space -- UPS	0376	0	Yes
Reserve Rack Space -- HMC	0377	0	Yes
Reserve Rack Space -- Display	0378	0	Yes
CBU Specify	0444	0	Yes
512MB DDR Server Memory	0446	440	Yes
1GB DDR Server Memory	0447	1,170	Yes
Customer Placement	0456	400	N/A
Custom Rack Placement	0469	500	N/A
V5R4OS, V5R4M5 machine code	0533	0	Yes
i5/OS V6R1 M0 machine code	0534	0	Yes
19 inch 1.8 Meter Rack	0551	2,668	Yes
19 inch 2.0 Meter Rack	0553	3,625	Yes
19 inch 0.6 Meter Rack	0554	1,129	Yes
19 inch 1.3 Meter Rack	0555	1,999	Yes
PCI-X Expansion Unit in Rack	0588	12,000	Yes
PCI-X Tower Unit in Rack	0595	7,195	Yes
Rack Filler Panel Kit	0599	75	Yes
CCEP	0600	0	Yes
Direct Attach-2744	0603	840	Yes

Direct Attach-2742	0613	425	Yes
Direct Attach-2793	0614	585	Yes
Direct Attach-2805	0616	1,600	Yes
Direct Attach-5700	0620	863	Yes
Direct Attach-5701	0621	699	Yes
Direct Attach-5702	0624	658	Yes
Direct Attach-5704	0625	2,646	Yes
Direct Attach-2787	0626	6,200	Yes
PCI-X 1Gbps iSCSI TOE-Copper	0630	1,191	Yes
PCI-X 1Gbps iSCSI TOE-Optic	0631	1,853	Yes
PCI USB 2.0 Adapter	0632	45	Yes
Graphics Adapter	0633	412	Yes
SDLC/X.25 -- 2-port Adapter	0635	1,666	Yes
Direct Attach-5712	0645	587	Yes
Direct Attach-5716	0646	2,267	Yes
PCI-X Disk/Tape Ctlr No IOP	0647	587	Yes
#5094 Equivalent	0694	0	Yes
#5096 Equivalent	0696	0	Yes
Load Source Not in CEC	0719	0	Yes
Load Source in #0595/5095	0720	0	Yes
Load Source in #5094/5294	0721	0	Yes
Load Source in #5786/5787	0725	0	Yes
#5886 Load Source placement	0727	0	N/A
#4319 Load Source Specify	0830	0	Yes
#4326/#1266 Load Source Spec	0834	0	Yes
#4327/#1267 Load Source Spec	0835	0	Yes
#4328/#1268 Load Source Spec	0836	0	Yes
SAN Load Source Specify	0837	0	Yes
#3676 Load Source Specify	0838	0	Yes
#3677 Load Source Specify	0839	0	Yes
#3678 Load Source Specify	0840	0	Yes
#4329/#1269 Load Source Spec	0841	0	Yes
US TAA Compliance Indicator	0983	0	N/A
Modem Cable -- US/Canada	1025	0	Yes
35.16GB 15k rpm Disk Unit	1266	1,199	Yes
70.56GB 15k rpm Disk Unit	1267	999	Yes
141.12GB 15k rpm Disk Unit	1268	1,299	Yes
282.25GB 15k rpm Disk Unit	1269	2,799	Yes
300GB 15k rpm Disk Unit	1292	1,510	Yes
36.4GB 10k rpm Disk Unit	1293	599	Yes
73.4GB 10k rpm Disk Unit	1294	599	Yes
146.8GB 10k rpm Disk Unit	1295	699	Yes
36.4GB 15k rpm Disk Unit	1296	599	Yes
73.4GB 15k rpm Disk Unit	1297	659	Yes
146.8GB 15k rpm Disk Unit	1298	1,299	Yes
300GB 10k rpm Disk Unit	1299	1,599	Yes
1.75m HSL-2/RIO-2 Cable	1307	400	Yes
2.5m HSL-2/RIO-2 Cable	1308	450	Yes
System Unique Identifier	1311	0	Yes
200V 16A 14-Ft TL Line Cord	1406	0	Yes
200V 6-Ft Line Cord	1410	0	Yes
200V 14-Ft Line Cord	1411	0	Yes
125V 6-Ft Line Cord	1412	0	Yes
125V 14-Ft Line Cord	1413	0	Yes
200V 6-Ft Locking Line Cord	1414	0	Yes
200V 6-Ft Wtrtght Line Cord	1415	0	Yes
200V 14-Ft Locking Line Cord	1416	0	Yes
200V 14-Ft Wtrtght Line Cord	1417	0	Yes
3m IEC 320 C13/14 PDU Cord	1422	0	Yes
200V 6-Ft Locking Line Cord	1424	0	Yes
200V 6-Ft Wtrtght Line Cord	1425	0	Yes
200V 14-Ft Locking Line Cord	1426	0	Yes
200V 14-Ft Wtrtght Line Cord	1427	0	Yes
200V 6-Ft Line Cord	1451	0	Yes
200V 14-Ft Line Cord	1452	0	Yes
200V 6-Ft Locking Line Cord	1453	0	Yes
200V 12A 14-Ft TL Line Cord	1454	0	Yes
200V 6-Ft Wtrtght Line Cord	1455	0	Yes
200V 14-Ft Wtrtght Line Cord	1456	0	Yes
200V 6-Ft Upper Line Cord	1457	0	Yes
200V 6-Ft Upper Locking Cord	1458	0	Yes
200V 6-Ft Upper Wtrtght Cord	1459	0	Yes
3m Copper HSL/RIO Cable	1460	450	Yes
6m Copper HSL/RIO Cable	1461	550	Yes

15m Copper HSL/RIO Cable	1462	1,100	Yes
2m SPCN Cable	1463	0	Yes
6m SPCN Cable	1464	0	Yes
15m SPCN Cable	1465	0	Yes
30m SPCN Cable	1466	0	Yes
6m HSL/RIO to HSL2/RIO2 Cbl	1474	650	Yes
10m HSL/RIO to HSL2/RIO2 Cbl	1475	1,200	Yes
1.2m HSL-2/RIO-2 Cable	1481	350	Yes
3.5m HSL-2/RIO-2 Cable	1482	550	Yes
10m HSL-2/RIO-2 Cable	1483	850	Yes
15m HSL-2/RIO-2 Cable	1485	1,100	Yes
3m HSL/RIO to HSL2/RIO2 Cbl	1487	400	Yes
IPCS Keyboard/Mouse for NT	1700	90	Yes
Serial-UPS Conversion Cable	1827	95	Yes
0.6 Meter 12X Cable	1829	350	Yes
1.5 Meter 12X Cable	1830	400	Yes
8.0 Meter 12X Cable	1834	725	Yes
3.0 Meter 12X Cable	1840	475	Yes
Op Panel Cable for Deskside	1843	6	Yes
VHDCI to P Converter Cable	1850	50	Yes
0.6m SCSI P-P Cable	1851	90	Yes
2.5m SCSI P-P Cable	1852	108	Yes
4-port EIA 232 Cable	1855	354	Yes
ASYNC Terminal/Prt Cable	1860	76	Yes
Dwr to Dwr Serial Cable	1873	67	Yes
Rack to Rack Serial Cable	1874	67	Yes
Serial Port Converter Cable	1875	21	Yes
Op Panel Cable for Rack-moun	1877	6	Yes
36.4GB 10k rpm Disk Unit	1893	750	Yes
73.4GB 10k rpm Disk Unit	1894	599	Yes
146.8GB 10k rpm Disk Unit	1895	699	Yes
36.4GB 15k rpm Disk Unit	1896	599	Yes
73.4GB 15k rpm Disk Unit	1897	659	Yes
146.8GB Disk Unit	1898	1,299	Yes
Ext Diff SCSI y-Cable	2114	225	Yes
1m SCSI Cable	2124	125	Yes
3m SCSI Cable	2125	140	Yes
5m SCSI Cable	2126	155	Yes
10m SCSI Cable	2127	210	Yes
20m SCSI Cable	2128	330	Yes
0.55m SCSI Cable	2138	75	Yes
PCI USB 1.1 Adapter	2737	250	Yes
PCI Two-Line WAN IOA	2742	425	Yes
PCI 100Mbps Token-Ring IOA	2744	840	Yes
PCI Ultra Mag Media Ctlr	2749	1,300	Yes
PCI-X Ultra RAID Disk Ctrl	2757	7,200	Yes
PCI-X Ultra4 RAID Disk Ctrl	2780	6,200	Yes
PCI-X Fibre Chan Disk Ctlr	2787	6,200	Yes
PCI 2-Line WAN w/Modem	2793	585	Yes
PCI Quad Modem IOA	2805	1,600	Yes
PCI IOP	2843	1,925	Yes
PCI IOP	2844	2,100	Yes
PCI IOP for SAN Load Source	2847	2,500	Yes
4-Port X.21 Cable	2863	417	Yes
4-Port V.35 DTE Cable	2864	700	Yes
4-Position Int Bus Cable	2877	25	Yes
PCIe 2-Line WAN w/Modem	2893	585	Yes
English U/L DBCS	2917	0	Yes
English	2924	0	Yes
ASYNC Terminal/Prt Cable	2934	37	Yes
ASYNC Modem Cable	2936	61	Yes
8-Port ASYNC Adapter	2943	1,162	Yes
PCI Multiprotocol Adapter	2947	3,021	Yes
Universal Japanese	2958	0	Yes
300GB 10K rpm Disk Unit	3578	1,599	Yes
300GB 15k rpm Disk Unit	3585	1,999	Yes
73.4GB 15k rpm SAS Disk Drv	3646	498	Yes
146.8GB 15k rpm SAS Disk Drv	3647	981	Yes
300GB 15k rpm SAS Disk Drv	3648	1,510	Yes
SAS HH Cable	3655	35	Yes
SAS Cable DASD BP to Bulkhd	3674	80	Yes
69.7GB 15k rpm SAS Disk Drv	3676	498	Yes
139.5GB 15k rpm SAS Disk Drv	3677	981	Yes
283.7GB 15k rpm SAS Disk Drv	3678	1,510	Yes

SAS Cable Sys to Encl 1.5M	3686	90	Yes
SAS Cable Sys to Encl 3M	3687	110	Yes
35.16GB 10k rpm Disk Unit	4319	750	Yes
35.16GB 15k rpm Disk Unit	4326	1,199	Yes
70.56GB 15k rpm Disk Unit	4327	999	Yes
141.12GB 15k rpm Disk Unit	4328	1,299	Yes
282.25GB 15k rpm Disk Unit	4329	2,799	Yes
DVD-RAM	4430	1,600	Yes
50GB 1/4-Inch Cartridge Tape	4487	6,000	Yes
1GB RDIMM Memory	4520	512	Yes
2GB RDIMM Memory	4521	1,024	Yes
4GB RDIMM Memory	4522	2,048	Yes
8GB RDIMM Memory	4523	5,734	Yes
16GB RDIMM Memory	4524	19,661	Yes
DVD-RAM	4630	1,600	Yes
DVD-ROM	4631	600	Yes
DVD-RAM	4633	1,600	Yes
30GB 1/4-Inch Cartridge Tape	4684	4,000	Yes
50GB 1/4-Inch Cartridge Tape	4687	6,000	Yes
Rack Status Beacon Assembly	4690	417	Yes
Rack Status Beacon Cable	4691	10	Yes
Junction Box Cable	4692	10	Yes
Rack Beacon Junct Box Cable	4693	292	Yes
PCI Twinaxial Workstn IOA	4746	750	Yes
PCI Crypto Coprocessor	4801	5,000	Yes
PCI Crypto Accelerator	4805	6,000	Yes
PCI-X Crypto Coprocessor	4806	9,000	Yes
PCI Integ xSeries Server	4812	2,780	Yes
PCI Integ xSeries Server	4813	2,780	Yes
1W Server Feat 1x5633	4925	0	Yes
1/2W Server Feat 1x5634	4930	0	Yes
Cryptographic Accelerator	4960	6,000	Yes
PCI Crypto Coprocessor	4963	5,810	Yes
i Enablement Specify	4993	0	Yes
Software Preload Required	5000	0	N/A
Customer Solution Center	5001	0	Yes
System i CDSC-Rochester Mfg	5002	0	N/A
PCI-X Expansion Unit	5088	12,000	Yes
PCI-X Expansion Tower	5094	15,900	Yes
PCI-X Expansion Tower	5095	7,195	Yes
PCI-X Exp Tower (no disk)	5096	14,500	Yes
30-Disk Expansion Feature	5108	9,000	No
Dual Line Cords -- Tower	5115	3,000	Yes
Dual Line Cords -- 5294 Tower	5116	3,000	Yes
Redundant Power and Cooling	5138	1,350	Yes
Power Dist Unit 1 Phase NEMA	5160	1,000	Yes
1.8m I/O Tower	5294	52,900	Yes
1.8m I/O Tower (no disk)	5296	32,100	Yes
Sys Console on OP Console	5544	0	Yes
Sys Console On HMC	5550	0	Yes
Sys Console-Ethernet No IOP	5553	0	Yes
Mirror 35GB Disk/Ctlr Pkg	5554	14,226	Yes
Mirror 70GB Disk/Ctlr Pkg	5555	18,188	Yes
Mirror 141GB Disk/Ctlr Pkg	5556	27,788	Yes
Mirror 35GB Drawer Package	5560	27,500	Yes
Mirror 70GB Drawer Package	5561	33,900	Yes
Mirror 35GB Tower Package	5562	27,500	Yes
Mirror 70GB Tower Package	5563	33,900	Yes
2780 Ctlr w/Aux Write Cache	5580	6,995	Yes
2757 Ctlr w/Aux Write Cache	5581	7,995	Yes
5738 Ctlr w/Aux Write Cache	5582	6,995	Yes
5777 Ctlr w/Aux Write Cache	5583	6,995	Yes
2780 Ctlr w/Aux Write Cache	5590	6,995	Yes
2757 Ctlr w/Aux Write Cache	5591	6,995	Yes
GX Dual-Port HSL-2/RIO-2 Att	5614	1,500	Yes
GX Dual-port 12x Chan Attch	5616	1,100	Yes
2-Port 1Gb IVE Daughter Card	5623	301	Yes
4-Port 1Gb IVE Daughter Card	5624	528	Yes
1Core 4.2GHz POWER6 Proc Crd	5633	1,536	Yes
2Core 4.2GHz POWER6 Proc Crd	5634	4,577	Yes
1W Perm Proc Activ for 5633	5651	859	Yes
1W Perm Proc Activ for 5634	5654	2,154	Yes
1W Base Perm Proc Activ 5633	5676	0	Yes
1W Base Perm Proc Activ 5634	5677	0	Yes

175MB SAS RAID Enablement	5679	2,500	Yes
PCI 1Gbps Ethernet IOA	5700	863	Yes
PCI 1Gbps Ethernet UTP IOA	5701	699	Yes
PCI-X Ultra Tape Controller	5702	658	Yes
PCI-X RAID Disk Unit Ctlr	5703	1,999	Yes
PCI-X Fibre Chan Tape Ctlr	5704	2,646	Yes
PCI-X 1Gbps Ethernet-TX IOA	5706	999	Yes
PCI-X 1Gbps Ethernet-SX IOA	5707	1,322	Yes
PCI-X Tape Controller	5712	587	Yes
PCI-X 1Gbps iSCSI TOE-Copper	5713	1,191	Yes
PCI-X 1Gbps iSCSI TOE-Optic	5714	1,853	Yes
PCI-X Tape/DASD Controller	5715	658	Yes
1Gb Ethrnet UTP 4-port Adptr	5717	1,099	Yes
10Gbps Ethernet IOA (Short)	5718	5,000	Yes
10Gbps Ethernet IOA (Long)	5719	9,853	Yes
PCI-X 10Gbps Ethernet-SR IOA	5721	4,742	Yes
PCI-X 10Gbps Ethernet-LR IOA	5722	7,999	Yes
2-Port Async EIA-232 PCI IOA	5723	129	Yes
PCI-X Disk/Tape Ctlr w/IOP	5736	587	Yes
PCI-X Disk Ctlr-90MB w/IOP	5737	1,999	Yes
PCI-X Disk Ctlr-1.5GB w/IOP	5738	6,200	Yes
PCI-X EXP24 Ctlr-1.5GB w/IOP	5739	8,500	Yes
1Gbps BaseT Ethernet(4-Port)	5740	830	Yes
EXP24 6 Disk Slot Enabler	5741	499	Yes
EXP24 6/12 Disk Slot Enabler	5742	998	Yes
4Gbps Fibre Channel (2-Port)	5749	3,308	Yes
DVD-ROM Drive IDE Slimline	5756	207	Yes
DVD-RAM Drive IDE Slimline	5757	499	Yes
4Gbps Fibre Channel (1-Port)	5758	2,646	Yes
4Gbps Fibre Channel (2-Port)	5759	3,308	Yes
PCI-X Fibre Chan Disk Ctlr	5760	5,495	Yes
PCI-X Fibre Chan Tape Ctlr	5761	2,646	Yes
PCIe 1Gb Ethernet UTP 2Port	5767	699	Yes
PCIe 1Gb Ethernet Fiber 2Prt	5768	1,322	Yes
PCIe 4Gb Fibre Channel 1Port	5773	1,999	Yes
PCIe 4Gb Fibre Channel 2Port	5774	3,308	Yes
PCI-X Disk/Tape Ctlr-No IOP	5775	587	Yes
PCI-X Disk Ctlr-90MB No IOP	5776	1,999	Yes
PCI-X Disk Ctlr-1.5GB No IOP	5777	6,200	Yes
PCI-X EXP24 Ctl-1.5GB No IOP	5778	8,500	Yes
PCI-X EXP24 Ctlr-1.5GB w/IOP	5781	8,550	Yes
PCI-X EXP24 Ctl-1.5GB No IOP	5782	8,550	Yes
PCI-X iSCSI HBA Copper	5783	999	Yes
PCI-X iSCSI HBA Fiber	5784	1,599	Yes
TotalStorage EXP24 Disk Dwr	5786	5,500	Yes
TotalStorage EXP24 Disk Twr	5787	6,750	Yes
PCI Expansion Drawer	5790	4,100	Yes
PCI-DDR 12X Expansion Drawer	5796	5,000	Yes
EXP 12S SAS Disk Drawer	5886	4,500	Yes
36/72GB 4mm DAT72 SAS Tape D	5907	1,150	Yes
SPCN Power Cable -- 2m	6001	0	Yes
SPCN Power Cable -- 3m	6006	40	Yes
SPCN Power Cable -- 15m	6007	70	Yes
SPCN Power Cable -- 6m	6008	50	Yes
SPCN Power Cable -- 30m	6029	90	Yes
Opt Front Door for 1.8m Rack	6068	450	Yes
Opt Front Door for 2.0m Rack	6069	550	Yes
1.8m Rack Trim Kit	6246	132	Yes
2.0m Rack Trim Kit	6247	158	Yes
1.8m Rack Acoustic Doors	6248	2,700	Yes
2.0m Rack Acoustic Doors	6249	2,700	Yes
HSL-2/RIO-G Bus Adapter	6417	800	Yes
RIO-2 Remote I/O Loop Adaptr	6438	900	Yes
12X Short Run 5796 Attach	6446	575	Yes
14-Ft 250V/10A Power Cord	6455	0	Yes
12X Long Run 5796 Attach	6457	2,500	Yes
14-Ft Int 250V/10A Pwr Cd	6458	0	Yes
12-Ft 250V/10A RA Pwr Cd	6459	0	Yes
14-Ft 125V/15A Power Cord	6460	0	Yes
14-Ft 250V/15A Power Cord	6469	0	Yes
6-Ft 125V/15A Power Cord	6470	0	Yes
6-Ft 250V/15A Power Cord	6487	0	Yes
14-Ft 1PH/48-60A Pwr Cord	6492	200	Yes
6-Ft 250V/15A Power Cord	6497	40	Yes

6-Ft 250V/15A Power Cord	6498	200	Yes
Optional Rack Security Kit	6580	180	Yes
Modem Tray for 19-Inch Rack	6586	250	Yes
Disk Slot Filler (Qty 4)	6598	40	Yes
14-Ft 1PH/24-30A Pwr Cord	6654	200	Yes
14-Ft 1PH/24-30A WR Pwr Cord	6655	200	Yes
9Ft IEC 320 C13/14 PDU Cord	6671	17	Yes
5Ft IEC 320 C13/14 PDU Cord	6672	17	Yes
RIO-2 Bus Adapter	6699	800	Yes
1W Entry Express Edition	6721	0	Yes
1W Growth Express Edition	6725	0	Yes
1/2W 30 User Express Edition	6761	0	Yes
1/2W 150 User Express Editn	6762	0	Yes
1/2W Unlim User Express Edit	6763	0	Yes
1/2W Solution Edition	6766	0	Yes
PCI 1Gbps Ethernet IOA	6800	863	Yes
PCI 1Gbps Ethernet UTP IOA	6801	699	Yes
PCI 2-Line WAN IOA No IOP	6805	425	Yes
PCI 4-Modem WAN IOA No IOP	6808	1,600	Yes
PCI 2-Line WAN w/Modem NoIOP	6833	585	Yes
Intelligent PDU Plus	7109	1,455	Yes
Power Distribution Unit	7188	1,000	Yes
Quantity 150 of #2124	7204	18,750	Yes
Quantity 150 of #2125	7205	21,000	Yes
Quantity 150 of #2126	7206	23,250	Yes
Quantity 150 of #2127	7207	31,500	Yes
Quantity 150 of #2128	7208	49,500	Yes
Quantity 150 of #1299	7211	239,850	Yes
Quantity 150 of #2138	7213	11,250	Yes
Deskside Cover Set (w/Door)	7224	300	Yes
Model 520 Deskside	7250	0	Yes
Model 520 Rack-mount	7251	0	Yes
Quantity 150 of #1292	7262	226,500	Yes
Bezel/Rails/HW Rack Mt Drwr	7267	300	Yes
Dual I/O Unit Enclosure	7307	417	Yes
Dual I/O Unit Enclosure	7311	417	Yes
Dual 5796 Unit Enclosure	7314	525	Yes
Quantity 150 of #4319	7504	112,500	Yes
Quantity 150 of #4326	7508	179,850	Yes
Quantity 150 of #4327	7509	149,850	Yes
Quantity 150 of #4328	7510	194,850	Yes
Quantity 150 of #4329	7511	419,850	Yes
Quantity 150 of #0300	7512	0	Yes
Quantity 150 of #0301	7513	0	Yes
Quantity 150 of #5741	7514	74,850	Yes
Quantity 150 of #5742	7515	149,700	Yes
Quantity 150 of #1269	7516	419,850	Yes
Quantity 150 of #1266	7520	179,850	Yes
Quantity 150 of #1267	7521	149,850	Yes
Quantity 150 of #1268	7522	194,850	Yes
Quantity 150 of #1294	7525	89,850	Yes
Quantity 150 of #1295	7526	104,850	Yes
Quantity 150 of #1296	7527	89,850	Yes
Quantity 150 of #1297	7528	98,850	Yes
Quantity 150 of #1298	7529	194,850	Yes
950W Power Supply	7703	269	Yes
2.0m Rack Side Attach Kit	7780	150	Yes
6m HMC Attachment Cable	7801	12	Yes
15m HMC Attachment Cable	7802	26	Yes
Side-by-Side for 1.8m Racks	7840	500	Yes
Ruggedize Rack Kit	7841	1,500	Yes
Blind Swap Cassette (Long)	7862	35	Yes
Blind Swap Cassette (Double)	7863	50	Yes
15-Ft Cluster Box Cable	8131	50	Yes
9-Inch Cluster Box Cable	8132	33	Yes
RJ45 to DB25 Interposer	8133	100	Yes
3.5-inch SAS DASD Cage	8345	560	Yes
PowerVM Standard Edition	8506	0	Yes
PowerVM Enterprise Edition	8507	0	Yes
Opt Base 1GB Server Memory	8546	730	Yes

Type/model conversions

From Type	From Model	To Type	To Model	Parts returned	Purchase price
9406	520	9408	M25	Yes	$299
9406	525	9408	M25	Yes	299

Conversions

Feature conversions

From	To:	Parts returned	Purchase price
2744	0603	No	$ 0
2742	0613	No	0
6805	0613	No	0
2793	0614	No	0
6803	0614	No	0
6833	0614	No	0
9493	0614	No	0
9793	0614	No	0
2805	0616	No	0
6808	0616	No	0
5700	0620	No	0
6800	0620	No	0
5701	0621	No	0
6801	0621	No	0
5702	0624	No	0
5704	0625	No	0
2787	0626	No	0
5783	0630	No	0
5784	0631	No	0
5712	0645	No	0
5736	0647	No	0
5775	0647	No	0
4326	1266	No	0
4327	1267	No	0
4328	1268	No	0
4329	1269	No	0
1893	1293	No	0
1894	1294	No	0
1895	1295	No	0
1896	1296	No	0
1897	1297	No	0
1898	1298	No	0
3578	1299	No	0
1293	1893	No	0
1294	1894	No	0
1295	1895	No	0
1296	1896	No	0
1297	1897	No	0
1298	1898	No	0
0613	2742	No	0
6805	2742	No	0
0603	2744	No	0
0627	2780	No	0
0626	2787	No	0
0614	2793	No	0
6803	2793	No	0
0616	2805	No	0
6808	2805	No	0
1299	3578	No	0
1266	4326	No	0
1267	4327	No	0
1268	4328	No	0
1269	4329	No	0
4813	4812	No	0
0902	4930	Yes	0
0903	4930	Yes	0
0904	4930	Yes	0
0905	4930	Yes	0
0906	4930	Yes	0

0909	4930	Yes	0
5096	5094	No	3,000
5296	5294	No	24,500
2757	5582	Yes	5,995
2780	5582	Yes	4,995
5580	5582	Yes	4,995
5581	5582	Yes	5,995
5583	5582	No	0
5590	5582	Yes	4,200
5591	5582	Yes	5,200
5738	5582	No	1,995
5777	5582	No	1,995
2757	5583	Yes	5,995
2780	5583	Yes	4,995
5580	5583	Yes	4,995
5581	5583	Yes	5,995
5582	5583	No	0
5590	5583	Yes	4,200
5591	5583	Yes	5,200
5738	5583	No	1,995
5777	5583	No	1,995
2780	5590	No	1,995
8327	5634	Yes	4,577
8330	5634	Yes	4,577
8952	5634	Yes	4,577
8953	5634	Yes	4,577
8954	5634	Yes	4,577
8955	5634	Yes	4,577
7320	5654	No	2,154
8410	5654	No	2,154
0620	5700	No	0
6800	5700	No	0
0621	5701	No	0
6801	5701	No	0
0624	5702	No	0
0625	5704	No	0
0645	5712	No	0
0647	5736	No	0
5775	5736	No	0
5776	5737	No	0
2757	5738	Yes	5,200
2780	5738	Yes	4,200
5777	5738	No	0
5778	5739	No	0
5781	5739	No	0
5782	5739	No	0
5758	5761	No	0
0647	5775	No	0
5736	5775	No	0
5737	5776	No	0
2757	5777	Yes	5,200
2780	5777	Yes	4,200
5738	5777	No	0
5739	5778	No	0
5781	5778	No	0
5782	5778	No	0
5739	5781	No	50
5778	5781	No	50
5782	5781	No	0
5739	5782	No	50
5778	5782	No	50
5781	5782	No	0
0630	5783	No	0
0631	5784	No	0
0620	6800	No	0
5700	6800	No	0
0621	6801	No	0
5701	6801	No	0
0613	6805	No	0
2742	6805	No	0
0616	6808	No	0
2805	6808	No	0
0614	6833	No	0
2793	6833	No	0

```
6803   6833   No              0
7251   7250   No              0
7250   7251   No              0
```

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