IBM System x3690 X5 SMP-capable rack servers support new 4-core, 6-core, and 8-core Intel Xeon EX processors for higher performance

Table of contents

At a glance

New IBM® System x3690 X5 servers incorporate high-performance, 4-core, 6-core, and 8-core Xeon® processors and:

- Up to 32 DIMM slots per chassis delivering up to 512 GB of high-speed, lower-power, PC3-10600 ECC double data rate 3 (DDR3) SDRAM system memory at 1067 MHz
- Optional Emulex 10 Gb Ethernet Integrated Virtual Fabric Adapter
- Four 5.0 Gb PCIE I/O (two x8, two x8 low profile), Gen 2 slots
- Serial Attached SCSI (SAS) controller
- Integrated Broadcom 5709 Dual-port 10/100/1000 Megabit Ethernet
- Up to sixteen 2.5-inch hot-swap bays for flexible installation of HDDs, or twenty-four 1.8-inch SAS SSDs, supporting up to 8 TB[1] internal data storage
- Standard Integrated Management Module
- One 675-watt, voltage sensing, rear access, hot-swap power supplies, up to four hot-swap power supplies optional
- Optional Enhanced SATA CD-RW/DVD-ROM Combo drive
- Eight USB ports, (two can be used for USB keyboard and mouse), SVGA video port, one serial port, and two Gb Ethernet ports per chassis
- Three year limited warranty[3]

For ordering, contact your IBM representative, an IBM Business Partner, or IBM Americas Call Centers at 800-IBM-CALL (Reference: SE001).

Overview

These models of the x3690 X5 servers are powered with 4-core, 6-core, and 8-core Intel® Xeon EX processors.

The x3690 X5 server is a new generation of the Enterprise X-Architecture®, delivering innovation with enhanced reliability and availability features to enable optimal performance for databases, enterprise applications, and virtualized environments.

Potential benefits include:

- Increased performance
- Memory, reliability, and availability
- High performing databases and fast time to value for database workloads with preconfigured database optimized systems
- Up to two sockets and 32 DIMMs in the base system, for larger databases, enterprise, and mission-critical workloads
- Advanced networking capabilities with two Broadcom 5709 1 Gb Ethernet adapters standard in all models, Emulex 10 Gb dual-port Ethernet optional
- Low-power cost-effective memory with Advanced Buffer eXecution chip
- Integrated Management Module (IMM) for enhanced systems management capabilities
- Power management savings
- Four-core, 6-core and 8-core processing performance
- Memory ProteXion with Chipkill™, memory mirroring, memory sparing, Intel SMI Lane Failover, SMI packet retry, SMI Clock failover
- Up to 32 DIMM slots per chassis delivering up to 512 GB of high-speed PC3-10600 1067 MHz double data rate (DDR3) memory, expandable by 100 percent with MAX5
- Serial Attach SCSI (SAS) plus RAID 0, 1, 10 to maximize throughput and ease installation, RAID 5 optional with software
- Up to sixteen 2.5-inch SAS HDDs or 24 1.8-inch SAS SSDs, or a combination of both; up to 8 TB[1] of maximum internal storage system comes standard with one HDD backplane that can hold four 2.5-inch drives, a second and third backplane is optional for additional HDD or SSD
- High-performance integrated dual 1 Gb Ethernet built-in, high-speed networking with support for latest technologies
- Integrated Emulex 10 Gb Dual-port Ethernet Adapter optional
- Integrated Management Module
- 2U rack-optimized, tool-free chassis that strikes the balance between rack density and ease of maintenance
- Rear access power supplies for easy access

Fifth-generation X5 technology features

- New leadership and scaling technology, with memory capacity above and beyond industry standard
- New eXFlash high-IOPS solid-state storage technology for larger, faster databases
- Advanced fifth-generation Chipkill ECC memory controller to help correct single-bit, 2-bit, 3-bit, and 4-bit memory errors
- Memory ProteXion and memory mirroring support
- High performance PCIE Gen 2 (5 GHz) I/O slots
- Hot-swap drive bays and redundant fans to replace select components without powering down the server
- One hot-swap, rear access, redundant power supplies with 220 V ac input, up to four power supplies optional

- Predictive Failure Analysis® (PFA) on processors, memory, fans, power supply, and HDD options to help warn of problems before they occur
- Innovative light path diagnostics and top access design; easy to service and configure

Warranty: Three years, customer replaceable unit (CRU) and on-site[2] service, limited warranty[3]; optional warranty service upgrades available.

[1] When referring to hard drive or tape backup capacity, GB stands for one billion bytes, and TB stands for terabyte, or 1,000 billion bytes. Total user capacity may vary depending on operating environments.

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

[3] For information on the IBM Statement of Limited Warranty, visit

http://www.ibm.com/servers/support/machine_warranties/

Alternatively, this information is also available by contacting your IBM representative or reseller. Copies are available upon request. For the latest information on safe and effective computing, visit

http://www.ibm.com/pc/safecomputing/

Feature exchange

None

Key prerequisites

Refer to the Hardware requirements section for details.

Planned availability date

- August 23, 2010: System x3690 X5 3 year Base Models
- August 30, 2010: IBM x3690 8x 1.8-inch HS SAS SSD Backplane (60Y0360)
- August 30, 2010: Database Optimized Systems

Description

Related options

- Intel Xeon Processor X7560 8C 2.26 GHz 24MB Cache 130w (60Y0311)
- Intel Xeon Processor L7555 8C 1.86 GHz 24MB Cache 95w (60Y0312)
- Intel Xeon Processor X7550 8C 2.0 GHz 18MB Cache 130w (60Y0313)
- Intel Xeon Processor L7545 6C 1.86 GHz 18MB Cache 95w (60Y0314)
- Intel Xeon Processor E7540 6C 2.0 GHz 18MB Cache 105w (60Y0315)
- Intel Xeon Processor E7530 6C 1.86 GHz 12MB Cache 105w (60Y0316)
- Intel Xeon Processor E7520 4C 1.86 GHz 18MB Cache 95w (60Y0317)
- Intel Xeon Processor E6510 4C 1.73 GHz 12MB Cache 105w (60Y0318)
- Intel Xeon Processor X6550 8C 2.0 GHz 18MB Cache 130w (60Y0319)
- Intel Xeon Processor E6540 6C 2.0 GHz 18MB Cache 105w (60Y0320)
- Intel Xeon Processor X7542 6C 2.66 GHz 12MB Cache 130w (60Y0321)
- IBM x3690 X5 16-DIMM Internal Memory Expansion (60Y0323)
- IBM 675W Redundant Power Supply Kit (60Y0327)
- IBM PCIe 2 x8 Adapter Kit (60Y0329)

- IBM PCIe x16 Adapter 3/4 Video (60Y0331)
- IBM PCIe x16 Adapter Full Video (60Y0337)
- IBM 4x 2.5" HS SAS HDD Backplane (60Y0339)
- IBM x3690 X5 PCI-Express (3x8) Riser Card (60Y0366)
- IBM x3690 8x 1.8" HS SAS SSD Backplane (60Y0360)
- IBM 8x 2.5" HS SAS HDD Backplane (60Y0381)
- IBM High Efficiency 675W Power Supply (60Y0332)
- 2.5" SATA single bay (60Y0333)
- ServeRAID™ Expansion Adapter (60Y0309)

These processors support internal processing speeds of up to 2.66 GHz and external processing operations to memory at 1067 MHz. They contain integrated, full-speed, 12 MB, 18 MB or 24 MB level 2 cache and are either a 4-core, 6-core, or 8-core Intel Xeon EX based processor.

Memory Options

- 2GB (1x2GB, Dual Rank x8) PC3-10600 CL9 ECC DDR3-1333 LP RDIMM (44T1481)
- 4GB (1x4GB, Quad Rankx8) PC3-8500 CL7 ECC DDR3 1066MHz LP RDIMM (46C7448)
- 8GB (1x8GB, Quad Rankx8) PC3-8500 CL7 ECC DDR3 1066MHz LP RDIMM (46C7482)
- 16GB (1x16GB, Quad Rankx4) PC3-8500 CL7 ECC DDR3 1066MHz LP RDIMM (46C7483)

These high-speed, DDR3 registered DIMMs are synchronized to the processor. Once addressed, data can be transferred on both edges of the clock signal. This significantly improves performance of the 1066 MHz front-side bus Xeon processor.

Memory Expansion Card (60Y0323) allows you to upgrade your machine with up to 16 memory expansion DIMMs. System memory can be expanded to 512 GB by adding 16 GB PC3-10600 CL4 ECC DDR3 SDRAM RDIMM in each of the 32 DIMM sockets.

Memory ProteXion

- Utilizes unused bits in each memory DIMM (hot-spare bits)
- Doubles the amount of Chipkill memory sustainable per server
- Is included at no additional cost, requires no additional hardware, and works independently of operating system
- Is similar to the "hot-spare" of a DASD array

Memory mirroring:

- Propels Intel-based servers towards continuous operations
- Dramatically helps to increase uptime and allow scheduled maintenance
- Helps provide capability and reliability approaching a mainframe
- Is operating system independent; does not require drivers or operating system support

Chipkill memory:

- Offers integrated XA-64e chipsets for using off-the-shelf DIMMs
- Provides better memory reliability to support in-memory databases
- Increases availability by detecting and helping to correct single-bit, 2-bit, 3-bit, and 4-bit memory errors

IBM Director CD with 20 agent license proofs of entitlement includes support for the IBM System x3690 X5 server.

IBM System x3690 X5 server description

High-performance server subsystems

x3690 X5 servers are high-throughput, scalable SMP-capable 4-core, 6-core, and 8-core Xeon-based new servers. They deliver excellent scalability for adding memory, adapter cards, or multiple processors.

Models are powered with 4-core, 6-core, and 8-core Intel Xeon processors that use 64-byte cache lines. EMT64T architecture supports 64-bit extensions. Two connectors for Xeon MP processors are standard on the system board. High-speed PC3-10600 ECC SDRAM provides excellent processor-to-memory subsystem performance.

The x3690 X5 system architecture is fine tuned and engineered to optimize the powerful Xeon processors. This architecture consists of the following components:

- Four-core, 6-core, and 8-core Xeon processors
- System memory cards with Intel Scalable Memory Buffers
- Intel 7500 host-bridge I/O controllers

Each processor supports four independent buses to the memory, for a total of 16 GB/s of potential memory bandwidth per CPU.

High-availability and serviceability features

Many enterprise on demand environments run around the clock to supply information around the globe. These environments require ruggedly dependable servers designed with features that can tolerate a component failure without total shutdown. x3690 X5 servers pack numerous fault-tolerant and high-availability features into a high-density, rack-optimized package that helps significantly reduce the space needed to support massive network computing operations.

Features include:

- Four 5.0 Gb PCIE I/O (two x8 low profile, two x8 standard) sockets
- Up to 16 Serial Attach SCSI (SAS) HDD bays
- ECC DIMMs combined with an integrated advanced ECC memory controller with fourth-generation Chipkill support to correct many single-bit, 2-bit, 3-bit, and 4-bit memory errors to minimize disruption of service to LAN clients
- Memory ProteXion and memory mirroring
- Memory hardware scrubbing to correct many soft memory errors automatically without software intervention downtime
- PFA on HDD options, memory, processors, power supply, and fans, in conjunction with IBM Director, to help alert the system administrator of an imminent component failure
- Up to four 675-watt power supplies that support typical configuration redundancy or full configurations requiring redundancy when operating with 240 V ac
- Hot-swap, multispeed fans to provide cooling redundancy and enable individual fan replacement without powering down the server, plus one fan in each of the hot-swap power supplies
- Standard IMM enabling diagnostic, reset, POST, and auto recovery functions from remote locations and monitoring of temperature, voltage, and fan speed; alerts generated when thresholds are exceeded without utilizing an I/O slot
- Information LED panel, diagnostics LED panel, and component LEDs for visual indications of system well-being
- Light path diagnostics for an outside view of the potential problem without removing the cover, to help reduce downtime and service costs

- Easy top access to system board, adapter cards, and memory
- CPU failure recovery in SMP configurations, allowing a failed processor to be forced offline, the server rebooted, an alert generated, and operation continued with the working processor

The servers include:

- Up to 2-socket (16-core) SMP operations with powerful 4-core, 6-core, and 8-core Xeon processors
- Up to 16 GB high-speed PC3-10600 DDR3 ECC memory standard, supporting up to 512 GB of system memory per chassis
- Up to four worldwide, voltage-sensing 675-watt, hot-swap power supplies with auto restart, standard
- Sixteen hot-swap drive bays, supporting up to 8 TB of internal data storage (using sixteen 500 GB SAS Hot-Swap HDDs)
- 8 terabytes of external data storage supporting optional storage units, ServeRAID SCSI controllers, and Fibre Channel controllers and storage units

Configurations

XpandOnDemand scalability

- Modular building-block scalability delivers the flexibility to scale to meet your business needs, allowing you to configure your system to optimize for your application needs.

Systems management

x3690 X5 servers feature IBM Director, a powerful, highly integrated, systems-management software solution built on industry standards and designed for ease of use.

With IBM Director, a network administrator can perform the following tasks:

- View the hardware configuration of remote systems in detail
- Monitor the usage and performance of critical components such as microprocessors, disks, and memory
- Centrally manage individual or large groups of IBM and non-IBM, Intel-based servers, desktop computers, workstations, and mobile computers on a variety of platforms

IBM Director provides a comprehensive entry-level workgroup hardware manager. It has the following key features:

- Advanced self-management capabilities for maximum system availability.
- Support for multiple operating systems, including certain versions of Microsoft® Windows® 2003 Server, Windows XP Professional, Red Hat Linux®, SUSE Linux, and Novell NetWare. For a complete list of operating systems that support IBM Director, visit

  http://publib.boulder.ibm.com/infocenter/eserver/v1r2/index.jsp?topic=/diricinfo_5.20/fqm0_r_supported_operating_systems.html

  The list is updated periodically.
- Support for IBM and non-IBM servers, desktop computers, workstations, and mobile computers. (Not all IBM Director features are supported on non-IBM servers.)
- Support for systems-management industry standards.
- Integration into leading workgroup and enterprise systems-management environments.
- Ease of use, training, and setup.

IBM Director also provides an extensible platform that supports advanced servers that are designed to help reduce the total cost of managing and supporting networked systems. By deploying IBM Director, you may achieve reductions in ownership costs through the following potential benefits:

- Reduced downtime
- Increased productivity of IT personnel and users
- Reduced service and support costs

For more information about IBM Director, refer to the CD that comes with the server or the IBM Director documentation on the CD, or visit

http://www.ibm.com/systems/management/director/resources/

IBM Director includes IBM Director Extensions, a portfolio of server tools that integrates into the IBM Director interface and works with the Integrated Management Module, or other systems-management monitoring functions contained in IBM System x® servers. Typical functions and monitoring capabilities can include:

- PFA-enabled critical hardware components
- Temperature
- Voltage
- Fan speed
- Light path diagnostics

The IT administrator gains comprehensive, virtual on-site control of IBM System X5 servers through the ability to remotely:

- Access the server, in many cases regardless of its status
- Inventory and display detailed system and component information
- View server bootup during POST
- Browse and delete logs of events and errors
- Reset or power cycle the server
- Run diagnostics, SCSI, and RAID setup during POST
- Monitor thresholds on server health including:
  - Operating system load
  - POST time-out
  - Voltage
  - Temperature
- Set proactive alerts for critical server events including PFA on:
  - Processors
  - Memory
  - Fans
  - Power supplies
  - HDDs
- Define automated actions such as:
  - Send an e-mail or page to an administrator
  - Execute a command or program
  - Pop up an error message to the IBM Director console
- Flash BIOS
- Monitor and graph the utilization of server resources such as:
  - Memory
  - Processor

  - HDDs
- Identify potential performance bottlenecks and react to prevent downtime

Active Energy Manager tools and programs

The IBM Active Energy Manager tool is available on the System x3690 X5 server. IBM Systems Director Active Energy Manager™ V3.1 is the next generation product of IBM PowerExecutive™ which was previously available from IBM for x86 systems only. IBM Systems Director Active Energy Manager now supports multiple IBM platforms and provides new capabilities that build upon the functions previously available with IBM PowerExecutive V2.1. Enhancements to existing function include:

- Cross-system monitoring and management support
- Dynamic Polling Rate
- Discovery and monitoring of intelligent PDUs

The Active Energy Manager V3.1 offering has both no-charge (free) monitoring functions and optional chargeable (fee-based) management functions.

No-charge monitor functions

- Power Trending
- Thermal Trending
- iPDU Support

Priced Management functions

- Power Capping
- Power Savings Mode

For more information refer to

http://www-03.ibm.com/systems/management/director/extensions/actengmrg.html

World-class support tools and programs

x3690 X5 servers include tools and programs designed to make ownership a positive experience. From the start, IBM programs help you purchase servers, get them running, and keep them running. IBM can help your company maintain ownership of technology leadership network servers.

- IBM customer replaceable unit (CRU) and on-site, three-year limited warranty with next-business-day service (same-business-day service optionally available) protects your investment if a problem occurs. This service also includes replacement of parts identified through PFA.
- The ServerProven[4] program lets you confidently configure your server with various devices and operating systems. This Web-based program provides compatibility information from actual testing of the x3690 X5 server with various adapters and devices.
- The ServerGuide[4] CD library includes online publications and utilities and drivers that help you load popular network operating systems.
- Electronic support on the Web offers additional support in an easy-to-use format.

[4]IBM makes no warranties, expressed or implied, regarding non-IBM products and services that are ServerProven®, including but not implied warranties and of merchantability and fitness for a particular purpose. These products are offered and warranted solely by third parties.

IBM System x3690 X5 model configuration

System Number	SEO	Processor	L3 Cache	Memory	HDD Iface	HDD	Power Supply
7148-ARx	1 x 1.86 GHz Xeon E7520 Four core 95W		18 MB	2x4 GB	SAS	open bay	one
7148-1Rx	1 x 1.86 GHz Xeon E7520 Four core 95W		18 MB	2x4 GB	SAS	open bay	one
7148-2Rx	1 x 2.0 GHz Xeon E6540 Six core 105W		18 MB	2x4 GB	SAS	open bay	one
7148-3Rx	1 x 2.0 GHz Xeon X6550 Turbo Eight core 130W		18 MB	2x4 GB	SAS	open bay	one
7148-3Gx	1 x 2.0 GHz Xeon X6550 Turbo Eight core 130W		18 MB	2x4 GB	SAS	open bay	one
7148-4Rx	1 x 2.26 GHz Xeon X7560 Turbo Eight core 130W		24 MB	2x4 GB	SAS	open bay	one
7148-3Dx	2 x 2.0 GHz Xeon X6550 Turbo Eight core 130W		18 MB	4x4 GB w/1 memory card	SAS	open bay	four

IBM System x3690 X5 Express® Model

System Number	SEO	Processor	L3 Cache	Memory	HDD Iface	HDD	Power Supply
7148-E3U	2 x 2.0 GHz Xeon X7550 Turbo Eight core 130W		18 MB	4x4 GB	SAS	open bay	two

Product positioning

These new IBM System x3690 X5 models enhance the server line by providing new levels of performance and price/performance. The IBM System x3690 X5 server features a high-density, 2U mechanical platform that supports 4-core, 6-core, and 8-core Xeon processors, PCI-E architecture, and high-speed DDR3 memory.

IBM System x3690 X5 servers deliver additional processing, expandability, and high-availability features. These features make them ideal for handling complex, business-critical On Demand Business applications that must be supported by space-saving, rack-optimized servers.

The IBM System x3690 X5 server is designed for extremely complex, compute-intense applications requiring 2-socket plus processing power and large memory support.

This makes the IBM System x3690 X5 server an excellent fit for current and future enterprise on demand applications.

Applications include:

- On Demand Business
- Business intelligence
- Transaction processing
- Enterprise resource planning
- Collaboration applications (Microsoft Exchange and Lotus Notes®)

- Server consolidation
- Internet or intranet front-end serving
- Web content serving
- Database storage as a SAN solution

Statement of general direction

Advanced networking capabilities with Emulex 10 Gb Ethernet Adapter, standard in all models except ARx, including support for Fibre Channel over Ethernet (FCoE) as a future feature entitlement upgrade.

Other - OS limitations

VMware statement

- VMware ESX/ESXi 4.0

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

Product number

Description	SEO number
Single Entity Offerings (SEOs)	
Base Models -	
IBM System x3690 X5	7148ARU
IBM System x3690 X5	71481RU
IBM System x3690 X5	71482RU
IBM System x3690 X5	71483RU
IBM System x3690 X5	71483GU
IBM System x3690 X5	71484RU
IBM System x3690 X5 (Express)	7148E3U
Database Optimization -	
IBM System x3690 X5	71483DU

CTO Offering

Description	Machine Type	Model	Part Number
System x3690 X5	7148	CTO	7148CTO

Option SEOs

Description	SEO number
Intel Xeon Processor X7560 8C 2.26 GHz 24MB Cache 130w	60Y0311
Intel Xeon Processor L7555 8C 1.86 GHz 24MB Cache 95w	60Y0312
Intel Xeon Processor X7550 8C 2.0 GHz 18MB Cache 130w	60Y0313
Intel Xeon Processor L7545 6C 1.86 GHz 18MB Cache 95w	60Y0314
Intel Xeon Processor E7540 6C 2.0 GHz 18MB Cache 105w	60Y0315
Intel Xeon Processor E7530 6C 1.86 GHz 12MB Cache 105w	60Y0316
Intel Xeon Processor E7520 4C 1.86 GHz 18MB Cache 95w	60Y0317
Intel Xeon Processor E6510 4C 1.73 GHz 12MB Cache 105w	60Y0318
Intel Xeon Processor X6550 8C 2.0 GHz 18MB Cache 130w	60Y0319
Intel Xeon Processor E6540 6C 2.0 GHz 18MB Cache 105w	60Y0320

Intel Xeon Processor X7542 6C 2.66 GHz 12MB Cache 130w	60Y0321
IBM x3690 X5 16-DIMM Internal Memory Expansion	60Y0323
IBM 675W Redundant Power Supply Kit	60Y0327
IBM PCIe 2 x8 Adapter Kit	60Y0329
IBM PCIe x16 Adapter 3/4 Video	60Y0331
IBM PCIe x16 Adapter Full Video	60Y0337
IBM 4x 2.5" HS SAS HDD Backplane	60Y0339
IBM x3690 X5 PCI-Express (3x8) Riser Card	60Y0366
IBM x3690 8x 1.8" HS SAS SSD Backplane	60Y0360
IBM 8x 2.5" HS SAS HDD Backplane	60Y0381
2.5" SATA single bay	60Y0333
ServeRAID Expansion Adapter	60Y0309
Ball Bearing Slide Kit	69Y2345
Cable Management Arm	69Y2347
2GB(1x2GB,1Rx8,1.5V) PC3-10600 CL9 ECC DDR3 1333MHz LP RDIMM	44T1592

The following are newly announced features on the specified models of the IBM System x 7148 machine type.

Description	MT	Model	Feature	
7148-AC1	7148	AC1		
7148-AC3	7148	AC3		
7148-AC4	7148	AC4		
7148-MC1	7148	MC1		
7148-MC3	7148	MC3		
7148-MC4	7148	MC4		
QLogic 10Gb SFP+ SR Optical Transceiver	7148	AC1 AC3 AC4 MC1 MC3 MC4	0064	
Brocade 10Gb SFP+ SR Optical Transceiver	7148	AC1 AC3 AC4 MC1 MC3 MC4	0069	
ServeRAID M5015 SAS/SATA Controller (Battery not included)	7148	AC1 AC3 AC4 MC1 MC3 MC4	0093	
ServeRAID M1015 SAS/SATA Controller	7148	AC1 AC3 AC4 MC1 MC3 MC4	0095	
IBM 160GB High IOPS SS Class SSD PCIe Adapter	7148	AC1 AC3 AC4 MC1 MC3 MC4	0096	
IBM 320GB High IOPS SD Class SSD PCIe Adapter	7148	AC1 AC3 AC4 MC1 MC3 MC4	0097	
NetXtreme II 1000 Express G Ethernet Adapter PCIe	7148	AC1 AC3 AC4 MC1 MC3 MC4	1485	N4X10M238245

Brocade 10Gb CNA for IBM System x	7148	AC1 AC3 AC4 MC1 MC3 MC4	1637	
Emulex 10Gb Dual-port Ethernet Adapter for IBM System x	7148	AC1 AC3 AC4 MC1 MC3 MC4	1648	
IBM 320GB High IOPS MS Class SSD PCIe Adapter	7148	AC1 AC3 AC4 MC1 MC3 MC4	1649	
Emulex 4GB FC Single-Port PCI-E HBA for IBM System x	7148	AC1 AC3 AC4 MC1 MC3 MC4	1698	
Emulex 4GB FC Dual-Port PCI-E HBA for IBM System x	7148	AC1 AC3 AC4 MC1 MC3 MC4	1699	
4GB (1x4GB Quad Rankx8) PC3-8500 CL7 ECC DDR3 1066MHz LP RDIMM	7148	AC1 AC3 AC4 MC1 MC3 MC4	1701	N4X10M237256 N5X10M237367 (Canada)
8GB (1x8GB Quad Rankx8) PC3-8500 CL7 ECC DDR3 1066MHz LP RDIMM	7148	AC1 AC3 AC4 MC1 MC3 MC4	1706	N4X10M237256 N5X10M237367 (Canada)
16GB (1x16GB, Quad Rankx4) PC3-8500 CL7 ECC DDR3 1066MHz LP RDIMM	7148	AC1 AC3 AC4 MC1 MC3 MC4	1707	
2GB (1x2GB, 1Rx8, 1.5V) PC3-10600 CL9 ECC DDR3 1333MHz LP RDIMM	7148	AC1 AC3 AC4 MC1 MC3 MC4	1712	
4GB (1x4GB, Dual Rankx8) PC3-10600 CL9 ECC DDR3 1333MHz LP RDIMM	7148	AC1 AC3 AC4 MC1 MC3 MC4	1713	
Capacity Scheduling Service	7148	AC1 AC3 AC4 MC1 MC3 MC4	1772	
IBM USB Memory Key for VMware ESXi 4	7148	AC1	1776	

		AC3 AC4 MC3 MC4	
Custom SLA Scheduling Service	7148	AC1 AC3 AC4 MC1 MC3 MC4	1796
Mfg Code	7148	AC1 AC3 AC4 MC1 MC3 MC4	2121
Labels GBM	7148	AC1 AC3 AC4 MC1 MC3 MC4	2122
x3690 X5 Bezel	7148	AC1 AC3 AC4 MC1 MC3 MC4	2123
MemCard Filler	7148	AC1 AC3 AC4 MC1 MC3 MC4	2124
QPI filler	7148	AC1 AC3 AC4 MC1 MC3 MC4	2126
SAS Riser Rear Bulkhead Filler	7148	AC1 AC3 AC4 MC1 MC3 MC4	2127
PCIe Riser Rear Bulkhead Filler	7148	AC1 AC3 AC4 MC1 MC3 MC4	2128
2U Bracket for NetXtreme II 1000 Express Quad Port Ethernet Adapter	7148	AC1 AC3 AC4 MC1 MC3 MC4	2141
2U Bracket for ServeRAID M1015 SAS/SATA Controller or 6Gb SSD HBA	7148	AC1 AC3 AC4 MC1 MC3 MC4	2145
Custom Asset Tagging - Standard	7148	AC1 AC3 AC4 MC1 MC3 MC4	2200
Custom Asset Tagging - Enhanced	7148	AC1 AC3	2201

		AC4	
		MC1	
		MC3	
		MC4	
Custom Media Shipgroup	7148	AC1	2206
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Request for Global Trade Number (UPC or EAN)	7148	AC1	2207
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Custom Software/Firmware Setting - Standard	7148	AC1	2208
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Custom Software/Firmware Setting - Enhanced	7148	AC1	2209
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Custom RAID Configuration	7148	AC1	2212
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Custom Labeling	7148	AC1	2220
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Custom Palletization	7148	AC1	2221
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Request for a new Vendor Logo Hardware	7148	AC1	2247
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Request for an existing IBM Feature	7148	AC1	2248
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Request for an existing Public RPQ	7148	AC1	2249
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
RAID Configuration	7148	AC1	2302
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack Installation >1U Component	7148	AC1	2306
		AC3	
		AC4	
		MC1	

		MC3	
		MC4	
Department of Defense UID Label	7148	AC1	2320
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Primary Array 12 HDDs	7148	AC1	2400
		AC3	
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		MC1	
		MC3	
		MC4	
Primary Array 13 HDDs	7148	AC1	2401
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Primary Array 14 HDDs	7148	AC1	2402
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Primary Array 15 HDDs	7148	AC1	2403
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Primary Array 16 HDDs	7148	AC1	2404
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Secondary Array 9 HDDs	7148	AC1	2405
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Secondary Array 10 HDDs	7148	AC1	2406
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Secondary Array 11 HDDs	7148	AC1	2407
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Secondary Array 12 HDDs	7148	AC1	2408
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Secondary Array 13 HDDs	7148	AC1	2409
		AC3	
		AC4	

		MC1	
		MC3	
		MC4	
Secondary Array 14 HDDs	7148	AC1	2410
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Tertiary Array 2 HDDs	7148	AC1	2411
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Tertiary Array 3 HDDs	7148	AC1	2412
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Tertiary Array 4 HDDs	7148	AC1	2413
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Tertiary Array 5 HDDs	7148	AC1	2414
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Tertiary Array 6 HDDs	7148	AC1	2415
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Tertiary Array 7 HDDs	7148	AC1	2416
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Tertiary Array 8 HDDs	7148	AC1	2417
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
IBM 6Gb SSD HBA	7148	AC1	2421
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
2U Bracket for Brocade 10Gb CNA for IBM System x	7148	AC1	2492
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Optical Blank Filler	7148	AC1	2496

		AC3 AC4 MC1 MC3 MC4	
Enable selection of Solid State Drives for Secondary Array	7148	AC1 AC3 AC4 MC1 MC3 MC4	2498
Enable selection of Solid State Drives for Primary Array	7148	AC1 AC3 AC4 MC1 MC3 MC4	2499
4 pack 2.5" HDD Filler	7148	AC1 AC3 AC4 MC1 MC3 MC4	2504
System Packaging - WW	7148	AC1 AC3 AC4 MC1 MC3 MC4	2584
2U Bracket for ServeRAID M5015 SAS/SATA Controller	7148	AC1 AC3 AC4 MC1 MC3 MC4	2591
PRO/1000 PT Dual Port Server Adapter by Intel	7148	AC1 AC3 AC4 MC1 MC3 MC4	2944
PRO/1000 PT Quad Port Server Adapter	7148	AC1 AC3 AC4 MC1 MC3 MC4	2974
PRO/1000 PF Server Adapter	7148	AC1 AC3 AC4 MC1 MC3 MC4	2975
NetXtreme II 1000 Express Dual Port Ethernet Adapter	7148	AC1 AC3 AC4 MC1 MC3 MC4	2995
RAID 1 - Tertiary Array (SSD) - 2 SSDs required	7148	AC1 AC3 AC4 MC1 MC3 MC4	3034
Rack 01	7148	AC1 AC3 AC4 MC1 MC3	3101

		MC4	
Rack 02	7148	AC1	3102
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 03	7148	AC1	3103
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 04	7148	AC1	3104
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 05	7148	AC1	3105
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 06	7148	AC1	3106
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 07	7148	AC1	3107
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 08	7148	AC1	3108
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 09	7148	AC1	3109
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 10	7148	AC1	3110
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 11	7148	AC1	3111
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 12	7148	AC1	3112
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 13	7148	AC1	3113
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 14	7148	AC1	3114

		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 15	7148	AC1	3115
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 16	7148	AC1	3116
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 17	7148	AC1	3117
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 18	7148	AC1	3118
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 19	7148	AC1	3119
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 20	7148	AC1	3120
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 21	7148	AC1	3121
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 22	7148	AC1	3122
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 23	7148	AC1	3123
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 24	7148	AC1	3124
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 25	7148	AC1	3125
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 26	7148	AC1	3126
		AC3	
		AC4	

		MC1	
		MC3	
		MC4	
Rack 27	7148	AC1	3127
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 28	7148	AC1	3128
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 29	7148	AC1	3129
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 30	7148	AC1	3130
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 31	7148	AC1	3131
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 32	7148	AC1	3132
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 33	7148	AC1	3133
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 34	7148	AC1	3134
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 35	7148	AC1	3135
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 36	7148	AC1	3136
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 37	7148	AC1	3137
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 38	7148	AC1	3138
		AC3	
		AC4	
		MC1	
		MC3	

		MC4	
Rack 39	7148	AC1	3139
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 40	7148	AC1	3140
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 41	7148	AC1	3141
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 42	7148	AC1	3142
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 43	7148	AC1	3143
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 44	7148	AC1	3144
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 45	7148	AC1	3145
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 46	7148	AC1	3146
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 47	7148	AC1	3147
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 48	7148	AC1	3148
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 49	7148	AC1	3149
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 50	7148	AC1	3150
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 51	7148	AC1	3151

		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 52	7148	AC1	3152
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 53	7148	AC1	3153
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 54	7148	AC1	3154
		AC3	
		AC4	
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		MC3	
		MC4	
Rack 55	7148	AC1	3155
		AC3	
		AC4	
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		MC3	
		MC4	
Rack 56	7148	AC1	3156
		AC3	
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		MC3	
		MC4	
Rack 57	7148	AC1	3157
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		AC4	
		MC1	
		MC3	
		MC4	
Rack 58	7148	AC1	3158
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 59	7148	AC1	3159
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 60	7148	AC1	3160
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 61	7148	AC1	3161
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 62	7148	AC1	3162
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack 63	7148	AC1	3163
		AC3	
		AC4	

		MC1	
		MC3	
		MC4	
Rack 64	7148	AC1	3164
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack location U01	7148	AC1	3201
		AC3	
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		MC1	
		MC3	
		MC4	
Rack location U02	7148	AC1	3202
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack location U03	7148	AC1	3203
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack location U04	7148	AC1	3204
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack location U05	7148	AC1	3205
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack location U06	7148	AC1	3206
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		AC4	
		MC1	
		MC3	
		MC4	
Rack location U07	7148	AC1	3207
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack location U08	7148	AC1	3208
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		MC1	
		MC3	
		MC4	
Rack location U09	7148	AC1	3209
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack location U10	7148	AC1	3210
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		AC4	
		MC1	
		MC3	
		MC4	
Rack location U11	7148	AC1	3211
		AC3	
		AC4	
		MC1	
		MC3	

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Rack location U12	7148	AC1	3212
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		MC1	
		MC3	
		MC4	
Rack location U13	7148	AC1	3213
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		MC3	
		MC4	
Rack location U14	7148	AC1	3214
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack location U15	7148	AC1	3215
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		MC3	
		MC4	
Rack location U16	7148	AC1	3216
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		MC3	
		MC4	
Rack location U17	7148	AC1	3217
		AC3	
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		MC1	
		MC3	
		MC4	
Rack location U18	7148	AC1	3218
		AC3	
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		MC1	
		MC3	
		MC4	
Rack location U19	7148	AC1	3219
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		MC3	
		MC4	
Rack location U20	7148	AC1	3220
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		MC3	
		MC4	
Rack location U21	7148	AC1	3221
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Rack location U22	7148	AC1	3222
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		MC3	
		MC4	
Rack location U23	7148	AC1	3223
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack location U24	7148	AC1	3224

		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack location U25	7148	AC1	3225
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack location U26	7148	AC1	3226
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack location U27	7148	AC1	3227
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		AC4	
		MC1	
		MC3	
		MC4	
Rack location U28	7148	AC1	3228
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack location U29	7148	AC1	3229
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack location U30	7148	AC1	3230
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack location U31	7148	AC1	3231
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack location U32	7148	AC1	3232
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack location U33	7148	AC1	3233
		AC3	
		AC4	
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		MC3	
		MC4	
Rack location U34	7148	AC1	3234
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack location U35	7148	AC1	3235
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack location U36	7148	AC1	3236
		AC3	
		AC4	

		MC1	
		MC3	
		MC4	
Rack location U37	7148	AC1	3237
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack location U38	7148	AC1	3238
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack location U39	7148	AC1	3239
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack location U40	7148	AC1	3240
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack location U41	7148	AC1	3241
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Rack location U42	7148	AC1	3242
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
No RAID - Primary Array set up by customer	7148	AC1	3270
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
No RAID - Secondary Array set up by customer	7148	AC1	3271
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
No RAID - Teriary Array set up by customer	7148	AC1	3272
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
QLogic 4Gb FC Single-Port PCIe HBA for IBM System x	7148	AC1	3567
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
QLogic 4Gb FC Dual-Port PCIe HBA for IBM System x	7148	AC1	3568
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
ServeRAID-BR10i SAS/SATA Controller	7148	AC1	3577

		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
QLogic 8Gb FC Single-port HBA for IBM System x	7148	AC1	3578
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
QLogic 8Gb FC Dual-port HBA for IBM System x	7148	AC1	3579
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Emulex 8Gb FC Single-port HBA for IBM System x	7148	AC1	3580
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Emulex 8Gb FC Dual-port HBA for IBM System x	7148	AC1	3581
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Brocade 8Gb FC Single-port HBA for IBM System x	7148	AC1	3589
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Brocade 8Gb FC Dual-port HBA for IBM System x	7148	AC1	3591
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
1m LC-LC Fiber Cable (networking)	7148	AC1	3700
		AC3	
		AC4	
5m LC-LC Fiber Cable (networking)	7148	AC1	3701
		AC3	
		AC4	
25m LC-LC Fiber Cable (networking)	7148	AC1	3702
		AC3	
		AC4	
IBM 1m SAS Cable	7148	AC1	3714
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
IBM 3m SAS Cable	7148	AC1	3716
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
0.5m QLogic Copper QDR InfiniBand QSFP 30AWG Cable	7148	AC1	3725
		AC3	
		AC4	
1m QLogic Copper QDR InfiniBand QSFP 30AWG Cable	7148	AC1	3726
		AC3	
		AC4	
3m QLogic Copper QDR InfiniBand QSFP 28AWG Cable	7148	AC1	3727
		AC3	
		AC4	
3m QLogic Optical QDR InfiniBand QSFP Cable	7148	AC1	3731
		AC3	
		AC4	

10m QLogic Optical QDR InfiniBand QSFP Cable	7148	AC1 AC3 AC4	3732
30m QLogic Optical QDR InfiniBand QSFP Cable	7148	AC1 AC3 AC4	3733
0.5m Molex Direct Attach Copper SFP+ Cable	7148	AC1 AC3 AC4	3735
1m Molex Direct Attach Copper SFP+ Cable	7148	AC1 AC3 AC4	3736
3m Molex Direct Attach Copper SFP+ Cable	7148	AC1 AC3 AC4	3737
7m Molex Direct Attach Copper SFP+ Cable	7148	AC1 AC3 AC4	3738
IBM 50GB SATA 2.5" SFF Slim-HS High IOPS SSD	7148	AC1 AC3 AC4 MC1 MC3 MC4	3745
3m Console Switch Cable (USB)	7148	AC1 AC3 AC4 MC1 MC3 MC4	3751
IBM Single Cable USB Conversion Option (UCO)	7148	AC1 AC3 AC4 MC1 MC3 MC4	3757
0.6m Yellow Cat5e Cable	7148	AC1 AC3 AC4	3791
1.5m Yellow Cat5e Cable	7148	AC1 AC3 AC4	3792
3m Yellow Cat5e Cable	7148	AC1 AC3 AC4	3793
10m Yellow Cat5e Cable	7148	AC1 AC3 AC4	3794
25m Yellow Cat5e Cable	7148	AC1 AC3 AC4	3795
0.6m Green Cat5e Cable	7148	AC1 AC3 AC4	3796
1.5m Green Cat5e Cable	7148	AC1 AC3 AC4	3797
3m Green Cat5e Cable	7148	AC1 AC3 AC4	3798
10m Green Cat5e Cable	7148	AC1 AC3 AC4	3799
25m Green Cat5e Cable	7148	AC1 AC3 AC4	3800
0.6m Blue Cat5e Cable	7148	AC1 AC3 AC4	3801
1.5m Blue Cat5e Cable	7148	AC1 AC3 AC4	3802
3m Blue Cat5e Cable	7148	AC1	3803

		AC3 AC4	
10m Blue Cat5e Cable	7148	AC1 AC3 AC4	3804
25m Blue Cat5e Cable	7148	AC1 AC3 AC4	3805
10m Emcore Connects/Intel Connects Optical Cable	7148	AC1 AC3 AC4	3856
30m Emcore Connects/Intel Connects Optical Cable	7148	AC1 AC3 AC4	3857
3m Emcore Connects/Intel Connects Optical Cable	7148	AC1 AC3 AC4	3858
1m Mellanox Copper Cable for 4X IB and 10GbE	7148	AC1 AC3 AC4	3859
3m Mellanox Copper Cable for 4X IB and 10GbE	7148	AC1 AC3 AC4	3860
5m Mellanox Copper Cable for 4X IB and 10GbE	7148	AC1 AC3 AC4	3861
8m Mellanox Copper Cable for 4X IB and 10GbE	7148	AC1 AC3 AC4	3862
ServeRAID M5014 SAS/SATA Controller (Battery not included)	7148	AC1 AC3 AC4 MC1 MC3 MC4	3877
Brocade 4Gb FC Single-port HBA for IBM System x	7148	AC1 AC3 AC4 MC1 MC3 MC4	3885
Brocade 4Gb FC Dual-port HBA for IBM System x	7148	AC1 AC3 AC4 MC1 MC3 MC4	3886
ServeRAID B5015 SSD Controller	7148	AC1 AC3 AC4 MC1 MC3 MC4	3889
2GB (1x2GB, Dual Rank x8) PC3-10600 CL9 ECC DDR3-1333 LP RDIMM	7148	AC1 AC3 AC4 MC1 MC3 MC4	3964
2U Bracket for NetXtreme II 10 GigE Express Fiber SR Adapter	7148	AC1 AC3 AC4 MC1 MC3 MC4	4029
Power Supply Blank Filler	7148	AC1 AC3 AC4 MC1 MC3 MC4	4042

2U bracket for Emulex 8Gb FC Single-port HBA for System x	7148	AC1 AC3 AC4 MC1 MC3 MC4	4047
2U bracket for QLogic 8Gb FC Single-port HBA for System x	7148	AC1 AC3 AC4 MC1 MC3 MC4	4049
2U Bracket for NetXtreme II 1000 Express Dual Port Ethernet Adapter	7148	AC1 AC3 AC4 MC1 MC3 MC4	4055
2U bracket for ServeRAID-MR10M SAS/SATA Controller	7148	AC1 AC3 AC4 MC1 MC3 MC4	4057
2.5" HDD Filler Bezel	7148	AC1 AC3 AC4 MC1 MC3 MC4	4069
IBM UltraSlim Enhanced SATA DVD-ROM	7148	AC1 AC3 AC4 MC1 MC3 MC4	4161
UltraSlim Enhanced SATA Multi-Burner	7148	AC1 AC3 AC4 MC1 MC3 MC4	4163
Universal Slides Kit	7148	AC1 AC3 AC4 MC1 MC3 MC4	4178
Intel Xeon Processor X7560 8C (2.27GHz 24MB L3 130w 8S)	7148	AC1 AC3 AC4 MC1 MC3 MC4	4458
Intel Xeon Processor L7555 8C (1.86GHz 24MB L3 95w 8S)	7148	AC1 AC3 AC4 MC1 MC3 MC4	4459
Intel Xeon Processor X7550 8C (2.00GHz 18MB L3 130w 8S)	7148	AC1 AC3 AC4 MC1 MC3 MC4	4460
Intel Xeon Processor L7545 6C (1.86GHz 18MB L3 95w 8S)	7148	AC1	4461

		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Intel Xeon Processor E7540 6C (2.00GHz 18MB L3 105w 8S)	7148	AC1	4462
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Intel Xeon Processor E7530 6C (1.86GHz 12MB L3 105w 4S)	7148	AC1	4463
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Intel Xeon Processor E7520 4C (1.86GHz 18MB L3 95w 4S)	7148	AC1	4464
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Intel Xeon Processor E6510 4C (1.73GHz 12MB L3 105w 2S)	7148	AC1	4465
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Intel Xeon Processor X6550 8C (2.00GHz 18MB L3 130w 2S)	7148	AC1	4466
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Intel Xeon Processor E6540 6C (2.00GHz 18MB L3 105w 2S)	7148	AC1	4467
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Intel Xeon Processor X7542 6C (2.67GHz 12MB L3 130w 8S)	7148	AC1	4468
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
IBM 675W HE Redundant Power Supply	7148	AC1	4782
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
ServeRAID M5000 Series Advance Feature Key	7148	AC1	5106
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
IBM 50GB SATA 1.8" NHS SSD	7148	AC1	5314
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
IBM 500GB 7200 6Gbps NL SAS 2.5" SFF Slim-HS HDD	7148	AC1	5409
		AC3	

		AC4 MC1 MC3 MC4	
IBM 146GB 15K 6Gbps SAS 2.5" SFF Slim-HS SED	7148	AC1 AC3 AC4 MC1 MC3 MC4	5412
IBM 300GB 10K 6Gbps SAS 2.5" SFF Slim-HS SED	7148	AC1 AC3 AC4 MC1 MC3 MC4	5413
IBM 500GB 7200 SATA 2.5" SFF Slim-HS HDD	7148	AC1 AC3 AC4 MC1 MC3 MC4	5414
NetXtreme II 10 GigE Express Fiber SR Adapter	7148	AC1 AC3 AC4 MC1 MC3 MC4	5451
IBM 73GB 15K 6Gbps SAS 2.5" SFF Slim-HS HDD	7148	AC1 AC3 AC4 MC1 MC3 MC4	5522
IBM 146GB 15K 6Gbps SAS 2.5" SFF Slim-HS HDD	7148	AC1 AC3 AC4 MC1 MC3 MC4	5536
IBM 146GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD	7148	AC1 AC3 AC4 MC1 MC3 MC4	5537
IBM 300GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD	7148	AC1 AC3 AC4 MC1 MC3 MC4	5599
x3690 X5 CPU Planar	7148	AC1 AC3 AC4 MC1 MC3 MC4	5662
RAID 5 - Tertiary Array (SSD) - minimum of 3 SSDs required	7148	AC1 AC3 AC4 MC1 MC3 MC4	5731
ServeRAID M5000 Series Battery Assembly	7148	AC1 AC3 AC4 MC1 MC3 MC4	5744
Emulex 10GbE Virtual Fabric Adapter for IBM System x	7148	AC1 AC3	5749

		AC4 MC1 MC3 MC4	
QLogic 10Gb CNA for IBM System x	7148	AC1 AC3 AC4 MC1 MC3 MC4	5751
NetXtreme II 1000 Express Quad Port Ethernet Adapter	7148	AC1 AC3 AC4 MC1 MC3 MC4	5766
Intel Ethernet Dual Port Server Adapter I340-T2 for IBM System x	7148	AC1 AC3 AC4 MC1 MC3 MC4	5767
Intel Ethernet Quad Port Server Adapter I340-T4 for IBM System x	7148	AC1 AC3 AC4 MC1 MC3 MC4	5768
SSD Blank Filler	7148	AC1 AC3 AC4 MC1 MC3 MC4	5779
2U Bracket for QLogic 10Gb CNA for IBM System x	7148	AC1 AC3 AC4 MC1 MC3 MC4	5787
Remote Battery Cable	7148	AC1 AC3 AC4 MC1 MC3 MC4	5862
Select storage devices - no RAID required	7148	AC1 AC3 AC4 MC1 MC3 MC4	5977
Select storage devices for RAID - configure RAID	7148	AC1 AC3 AC4 MC1 MC3 MC4	5978
RAID 1 - Primary Array (SSD) - 2 SSDs required	7148	AC1 AC3 AC4 MC1 MC3 MC4	5979
RAID 5 - Primary Array (SSD) - minimum of 3 SSDs required	7148	AC1 AC3 AC4 MC1	5980

		MC3	
		MC4	
RAID 1 - Secondary Array (SSD) - 2 SSDs required	7148	AC1	5981
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
IBM 6Gb SAS HBA	7148	AC1	5982
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Unique SBB for AC1/MC1 models	7148	AC1	6134
		MC1	
Unique SBB for AC3/MC3 models	7148	AC3	6136
		MC3	
Unique SBB for AC4/MC4 models	7148	AC4	6137
		MC4	
1.8" SAS Storage Support	7148	AC1	6138
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
SF Instruction	7148	AC4	6139
1.5m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable	7148	AC1	6201
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
2.8m, 10A/100-250V, C13 to IEC 320-C20 Rack Power Cable	7148	AC1	6204
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Line cord - 4.3M, 10A/125V, C13 to NEMA 5-15P (US)	7148	AC1	6207
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
4.3m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable	7148	AC1	6263
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
2.8m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable	7148	AC1	6311
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Line cord - 2.8m, 10A/250V, C13 to NEMA 6-15P (US)	7148	AC1	6372
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
2.8m, 10A/200-250V, 2xC13 to IEC 320-C14 Rack Power Y-Cable	7148	AC1	6406
		AC3	

		AC4 MC1 MC3 MC4	
Short SAS cable	7148	AC1 AC3 AC4 MC1 MC3 MC4	6428
Long SAS cable	7148	AC1 AC3 AC4 MC1 MC3 MC4	6429
2U Bracket for IBM 3Gb SAS HBA Controller v2	7148	AC1 AC3 AC4 MC1 MC3 MC4	6455
Drive ID label sheet	7148	AC1 AC3 AC4 MC1 MC3 MC4	6456
Friction Slide	7148	AC1 AC3 AC4 MC1 MC3 MC4	6457
Friction CMA	7148	AC1 AC3 AC4 MC1 MC3 MC4	6458
HDD Backplane Filler	7148	AC1 AC3 AC4 MC1 MC3 MC4	6459
RAID 5 - Secondary Array (SSD) - minimum of 3 SSDs required	7148	AC1 AC3 AC4 MC1 MC3 MC4	6472
Primary Array 2 HDDs	7148	AC1 AC3 AC4 MC1 MC3 MC4	7008
Primary Array 3 HDDs	7148	AC1 AC3 AC4 MC1 MC3 MC4	7009
Primary Array 4 HDDs	7148	AC1 AC3 AC4 MC1 MC3 MC4	7010
Primary Array 5 HDDs	7148	AC1 AC3	7011

		AC4	
		MC1	
		MC3	
		MC4	
Primary Array 6 HDDs	7148	AC1	7012
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Primary Array 7 HDDs	7148	AC1	7013
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Primary Array 8 HDDs	7148	AC1	7014
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Secondary Array 2 HDDs	7148	AC1	7015
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Secondary Array 3 HDDs	7148	AC1	7016
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Secondary Array 4 HDDs	7148	AC1	7017
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Secondary Array 5 HDDs	7148	AC1	7057
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Secondary Array 6 HDDs	7148	AC1	7058
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Secondary Array 7 HDDs	7148	AC1	7059
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Secondary Array 8 HDDs	7148	AC1	7060
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
2U Bracket for High IOPS SSD PCIe Adapters	7148	AC1	7466
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
2U Bracket for IBM 6Gb SAS HBA	7148	AC1	7478
		AC3	
		AC4	
		MC1	

		MC3	
		MC4	
2U bracket for QLogic 8Gb FC Dual-port HBA for System x	7148	AC1	7550
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
2U Bracket for Brocade 8Gb FC Single-port HBA for IBM System x	7148	AC1	7594
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
2U Bracket for Brocade 8Gb FC Dual-port HBA for IBM System x	7148	AC1	7595
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
x3690 X5 Base	7148	AC1	7630
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
2U Bracket for Brocade 4Gb FC Single-port HBA for IBM System x	7148	AC1	7633
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
2U Bracket for Brocade 4Gb FC Dual-port HBA for IBM System x	7148	AC1	7634
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Primary Array 9 HDDs	7148	AC1	7664
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Grouped Product	7148	AC1	7830
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Customer Solution Center Services	7148	AC1	7831
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
RAID 5 - Primary Array (SAS) - minimum of 3 HDDs required	7148	AC1	7853
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
RAID 5 - Secondary Array (SAS) - minimum of 3 HDDs required	7148	AC1	7854
		AC3	
		AC4	
		MC1	

		MC3	
		MC4	
RAID 6 - Primary Array (SAS) - minimum of 4 HDDs required	7148	AC1	7857
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
RAID 6 - Secondary Array (SAS) - minimum of 4 HDDs required	7148	AC1	7858
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
e1350 Special Bid Solution Component	7148	AC1	7929
		AC3	
		AC4	
No HDD Selected	7148	AC1	8026
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Consolidate Shipment	7148	AC1	8031
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
e1350 Solution Component	7148	AC1	8034
		AC3	
		AC4	
Compute Node	7148	AC1	8036
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Management Node	7148	AC1	8037
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
Storage Node	7148	AC1	8038
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
TAA Compliant Order	7148	AC1	8067
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
General Racking Solution	7148	AC1	8072
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
No SATA HDD Selected	7148	AC1	8080
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
No 2.5" SAS HDD Selected	7148	AC1	8081

		AC3 AC4 MC1 MC3 MC4	
No Publications Selected	7148	AC1 AC3 AC4 MC1 MC3 MC4	8086
RAID 0 - Primary Array (SAS) - minimum of 2 HDDs required	7148	AC1 AC3 AC4 MC1 MC3 MC4	8141
RAID 1 - Primary Array (SAS) - 2 HDDs required	7148	AC1 AC3 AC4 MC1 MC3 MC4	8142
RAID 0 - Secondary Array (SAS) - minimum of 2 HDDs required	7148	AC1 AC3 AC4 MC1 MC3 MC4	8144
RAID 1 - Secondary Array (SAS) - 2 HDDs required	7148	AC1 AC3 AC4 MC1 MC3 MC4	8145
System Documentation and Software-US English	7148	AC1 AC3 AC4 MC1 MC3 MC4	8640
Integrate in manufacturing	7148	AC1 AC3 AC4 MC1 MC3 MC4	8971
Ship Uninstalled (Safety)	7148	AC1 AC3 AC4 MC1 MC3 MC4	8972
Hot Spare	7148	AC1 AC3 AC4 MC1 MC3 MC4	9013
Enable Memory Mirroring	7148	AC1 AC3 AC4 MC1 MC3 MC4	9017
Preload Specify	7148	AC1 AC3 AC4 MC1 MC3 MC4	9200

Windows Specify	7148	MC1 MC3 MC4	9201
Red Hat Specify	7148	AC1 AC3 AC4	9202
SuSE Specify	7148	AC1 AC3 AC4	9203
Drop-in-the-Box Specify	7148	AC1 AC3 AC4 MC1 MC3 MC4	9205
No Preload Specify	7148	AC1 AC3 AC4 MC1 MC3 MC4	9206
VMWare Specify	7148	AC1 AC3 AC4 MC1 MC3 MC4	9207
Preload by Hardware Feature Specify	7148	AC1 AC3 AC4 MC1 MC3 MC4	9220
2U Bracket for Emulex 10GbE Virtual Fabric Adapter for IBM System x	7148	AC1 AC3 AC4 MC1 MC3 MC4	9297
Primary Array 10 HDDs	7148	AC1 AC3 AC4 MC1 MC3 MC4	9714
Primary Array 11 HDDs	7148	AC1 AC3 AC4 MC1 MC3 MC4	9715
ServeRAID M1000 Series Advance Feature Key	7148	AC1 AC3 AC4 MC1 MC3 MC4	9749

The following are features already announced for the 7148 machine type.

Description	MT	Model	Feature
7148-AC1	7148	AC1	
7148-AC3	7148	AC3	
7148-AC4	7148	AC4	
7148-MC1	7148	MC1	
7148-MC3	7148	MC3	
7148-MC4	7148	MC4	
IBM 8x 2.5" HS SAS HDD Backplane	7148	AC1	1790

		AC3 AC4 MC1 MC3 MC4	
IBM 3Gb SAS HBA Controller v2	7148	AC1 AC3 AC4 MC1 MC3 MC4	3583
IBM x3690 X5 RAID Expansion Adapter	7148	AC1 AC3 AC4 MC1 MC3 MC4	4164
Addl Intel Xeon Processor X7560 8C 2.26GHz 24MB Cache 130w	7148	AC1 AC3 AC4 MC1 MC3 MC4	4469
Addl Intel Xeon Processor L7555 8C 1.86GHz 24MB Cache 95w	7148	AC1 AC3 AC4 MC1 MC3 MC4	4470
Addl Intel Xeon Processor X7550 8C 2.0GHz 18MB Cache 130w	7148	AC1 AC3 AC4 MC1 MC3 MC4	4471
Addl Intel Xeon Processor L7545 6C 1.86GHz 18MB Cache 95w	7148	AC1 AC3 AC4 MC1 MC3 MC4	4472
Addl Intel Xeon Processor E7540 6C 2.00GHz 18MB Cache 105w	7148	AC1 AC3 AC4 MC1 MC3 MC4	4473
Addl Intel Xeon Processor E7530 6C 1.86GHz 12MB Cache 105w	7148	AC1 AC3 AC4 MC1 MC3 MC4	4474
Addl Intel Xeon Processor E7520 4C 1.86GHz 18MB Cache 95w	7148	AC1 AC3 AC4 MC1 MC3 MC4	4475
Addl Intel Xeon Processor E6510 4C 1.73GHz 12MB Cache 105w	7148	AC1 AC3 AC4 MC1 MC3 MC4	4476
Addl Intel Xeon Processor X6550 8C 2.0GHz 18MB			

Cache 130w	7148	AC1 AC3 AC4 MC1 MC3 MC4	4477
Addl Intel Xeon Processor E6540 6C 2.0GHz 18MB Cache 105w	7148	AC1 AC3 AC4 MC1 MC3 MC4	4478
Addl Intel Xeon Processor X7542 6C 2.66GHz 18MB Cache 130w	7148	AC1 AC3 AC4 MC1 MC3 MC4	4479
IBM System x3690 X5 Ball Bearing Slide Kit	7148	AC1 AC3 AC4 MC1 MC3 MC4	4786
IBM System x3690 X5 Cable Management Arm for Ball Bearing Slides	7148	AC1 AC3 AC4 MC1 MC3 MC4	6473
IBM System x3690 X5 2U Cable Management Arm	7148	AC1 AC3 AC4 MC1 MC3 MC4	6474
IBM x3690 X5 16-DIMM Internal Memory Expansion	7148	AC1 AC3 AC4 MC1 MC3 MC4	9278
IBM 675W Redundant Power Supply Kit	7148	AC1 AC3 AC4 MC1 MC3 MC4	9279
IBM System x3690 X5 PCI-Express (3x8) Riser Card	7148	AC1 AC3 AC4 MC1 MC3 MC4	9280
IBM eXFlash 8x 1.8" HS SAS SSD Backplane	7148	AC1 AC3 AC4 MC1 MC3 MC4	9281
IBM System x3690 X5 PCI-Express (1x16) Riser Card 3/4 length	7148	AC1 AC3 AC4 MC1 MC3 MC4	9282
IBM System x3690 X5 PCI-Express (1x16) Riser Card full length	7148	AC1 AC3 AC4	9283

		MC1	
		MC3	
		MC4	
IBM x3690 X5 Single SATA HDD Bay	7148	AC1	9284
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
IBM System x3690 X5 PCI-Express (2x8) Riser Card	7148	AC1	9285
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	
IBM 4x 2.5" HS SAS HDD Backplane	7148	AC1	9287
		AC3	
		AC4	
		MC1	
		MC3	
		MC4	

The following feature numbers are automatically added to the 5372-SWX HIPO order whenever one of the hardware system units are configured in an order.

HIPO feature number	Description
4220	7148-AC1 Routing Code
4221	7148-MC1 Routing Code
4222	7148-AC3 Routing Code
4223	7148-AC4 Routing Code
4226	7148-MC3 Routing Code
4227	7148-MC4 Routing Code
4224	7145-MC3 Routing Code
4225	7145-MC4 Routing Code

Business Partner information

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

https://www.ibm.com/partnerworld/mem/sla.jsp?num=110-121

Publications

The following publications and CD-ROMs are shipped with the x3690 X5 servers.

- *x3690 X5 Installation Guide* contains an introduction to the computer, installation and setup, installing options, reference information, and problem determination. The installation guide has easy-to-use text and illustrations to enable you to quickly set up your x3690 X5 server.
- IBM Director systems-management software is included.

Note: Software versions, features, and functions shipped with these systems may change as new releases become available or may be discontinued at any time.

The following publications are available immediately.

To order, contact your IBM representative.

The *x3690 X5 Installation Guide* and the *Problem Determination Guide*, in U.S. English versions, are available from

http://www-03.ibm.com/servers/eserver/serverproven/compat/us/indexsp.html

IBM Publications Center Portal

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

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Global Technology Services

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

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Recommended core technical support

When you buy IBM System x technology, include the support services you need -- to help keep both your hardware and software working for you, day after day, at peak performance. It's your first step toward helping to protect your investment and sustain high levels of system availability. We offer service-level and response-time options to fit your business needs. And we'll help you get started with a core support package that includes:

- **Continuous system monitoring**

  Electronic monitoring that helps speed up problem-solving with automated, early detection of potential problems and system errors.

- **Hardware maintenance**

  World-class remote and on-site hardware problem determination and repair services.

- **Software technical support**

  Access to help line calls for fast, accurate answers to your questions during installation and throughout ongoing operations.

For more information, visit

http://www.ibm.com/servers/eserver/xseries/services.html

Technical information

Specified operating environment

Physical specifications

x3690 X5

EMEA x=G

	7148ARx
Processor	Xeon 4C E7520 95w
Quad-core	
Internal speed	1.86 GHz
Memory bus speed	800 MHz
Number standard	1
Maximum	2
Interconnect speed	4.8 GT/s
L3 cache total	18 MB
Memory (PC3-10600 DDR3)	8 GB ECC
DIMMs	2 x 4 GB
DIMM sockets standard	16
DIMM sockets maximum	64 (Optional memory expansion card and optional MAX5 memory drawer)
Capacity	1024 GB[5]
Video	SVGA
Memory	16 MB
SAS controller	Optional
Ports	8
Connector internal	2
Connector external	0
HDD standard	0
Bays available	0 Standard, 16 with upgrade kit
2.5-inch slim	0 Standard, 16 with upgrade kit
Hot-swap	0 Standard, 16 with upgrade kit
Internal capacity	8 TB[6]
PCIE sockets	4
Management processor IMM	Standard
ServeRAID M5015 6Gb	Optional
ServeRAID M1015	Optional
ServeRAID BR10i	Optional
Dual Ethernet controller	Standard
10/100/1000 Mbps	
Emulex 10Gb Dual-port	Optional
Ethernet Adapter	
Optical disk drive	Optional
Power supply	675 W
Number standard	1
Maximum	4
Hot-swap	Yes
Redundant power	Optional
Auto restart	Yes

EMEA x=G

	71481Rx
Processor	Xeon 4C E7520 95w
Quad-core	
Internal speed	1.86 GHz
Memory bus speed	800 MHz
Number standard	1
Maximum	2
Interconnect speed	4.8 GT/s
L3 cache total	18 MB
Memory (PC3-10600 DDR3)	8 GB ECC
DIMMs	2 x 4 GB

DIMM sockets standard	16
DIMM sockets maximum	64 (Optional memory expansion card and optional MAX5 memory drawer)
Capacity	1024 GB[5]
Video	SVGA
Memory	16 MB
SAS controller	ServeRAID-M1015 standard
Ports	8
Connector internal	2
Connector external	0
HDD standard	0
Bays available	4 Standard, 16 with upgrade kit
2.5-inch slim	4 Standard, 16 with upgrade kit
Hot-swap	4 Standard, 16 with upgrade kit
Internal capacity	8 TB[6]
PCIE sockets	4
Management processor IMM	Standard
RAID 0/1	Standard
ServeRAID M5015 6Gb	Optional
Dual Ethernet controller 10/100/1000 Mbps	Standard
Emulex 10Gb Dual-port Ethernet Adapter	optional
Optical disk drive	Optional
Power supply	675 W
Number standard	1
Maximum	4
Hot-swap	Yes
Redundant power	Optional
Auto restart	Yes

EMEA x=G

	71482Rx
Processor	Xeon 6C E6540 105w
6-core	
Internal speed	2.0 GHz
Memory bus speed	1066 MHz
Number standard	1
Maximum	2
Interconnect speed	6.4 GT/s
L3 cache total	18 MB
Memory (PC3-10600 DDR3)	8 GB ECC
DIMMs	2 x 4 GB
DIMM sockets standard	16
DIMM sockets maximum	64 (Optional memory expansion card and optional MAX5 memory drawer)
Capacity	1024 GB[5]
Video	SVGA
Memory	16 MB
SAS controller	ServeRAID-M1015 standard
Ports	8
Connector internal	2
Connector external	0
HDD standard	0
Bays available	4 Standard, 16 with upgrade kit
2.5-inch slim	4 Standard, 16 with upgrade kit
Hot-swap	4 Standard, 16 with upgrade kit
Internal capacity	8 TB[6]
PCIE sockets	4
Management processor IMM	Standard
RAID 0/1	Standard
ServeRAID M5015 6Gb	Optional
Dual Ethernet controller 10/100/1000 Mbps	Standard
Emulex 10Gb Dual-port Ethernet Adapter	Optional
Optical disk drive	Optional
Power supply	675 W
Number standard	1
Maximum	4
Hot-swap	Yes

Redundant power	Optional
Auto restart	Yes

EMEA x=G

	71483Rx
Processor	Xeon 8C X6550 Turbo 130w
8-core	
Internal speed	2.0 GHz
Memory bus speed	1066 MHz
Number standard	2
Maximum	4
Interconnect speed	6.4 GT/s
L3 cache total	18 MB
Memory (PC3-10600 DDR3)	8 GB ECC
DIMMs	2 x 4 GB
DIMM sockets standard	16
DIMM sockets maximum	64 (Optional memory expansion card and optional MAX5 memory drawer)
Capacity	1024 GB[5]
Video	SVGA
Memory	16 MB
SAS controller	ServeRAID-M1015 standard
Ports	8
Connector internal	2
Connector external	0
HDD standard	0
Bays available	4 Standard, 16 with upgrade kit
2.5-inch slim	4 Standard, 16 with upgrade kit
Hot-swap	4 Standard, 16 with upgrade kit
Internal capacity	8 TB[6]
PCIE sockets	4
Management processor IMM	Standard
RAID 0/1	Standard
ServeRAID M5015 6Gb	Optional
Dual Ethernet controller	Standard
10/100/1000 Mbps	
Emulex 10Gb Dual-port	Optional
Ethernet Adapter	
Optical disk drive	Optional
Power supply	675 W
Number standard	1
Maximum	4
Hot-swap	Yes
Redundant power	Optional
Auto restart	Yes

EMEA x=G

	71483Gx
Processor	Xeon 8C X6550 Turbo 130w
8-core	
Internal speed	2.0 GHz
Memory bus speed	1066 MHz
Number standard	1
Maximum	2
Interconnect speed	6.4 GT/s
L3 cache total	18 MB
Memory (PC3-10600 DDR3)	8 GB ECC
DIMMs	2 x 4 GB
DIMM sockets standard	16
DIMM sockets maximum	64 (Optional memory expansion card and optional MAX5 memory drawer)
Capacity	1024 GB[5]
Video	SVGA
Memory	16 MB
SAS controller	ServeRAID-M1015 standard
Ports	8
Connector internal	2
Connector external	0
HDD standard	0

Bays available	4 Standard, 16 with upgrade kit
2.5-inch slim	4 Standard, 16 with upgrade kit
Hot-swap	4 Standard, 16 with upgrade kit
Internal capacity	8 TB[6]
PCIE sockets	4
Management processor IMM	Standard
RAID 0/1	Standard
ServeRAID M5015 6Gb	Optional
Dual Ethernet controller 10/100/1000 Mbps	Standard
Emulex 10Gb Dual-port Ethernet Adapter	Standard
Optical disk drive	Optional
Power supply	675 W
Number standard	1
Maximum	4
Hot-swap	Yes
Redundant power	Optional
Auto restart	Yes

EMEA x=G

	71484Rx
Processor 8-core	Xeon 8C X7560 Turbo 130w
Internal speed	2.26 GHz
Memory bus speed	1066 MHz
Number standard	1
Maximum	2
Interconnect speed	6.4 GT/s
L3 cache total	24 MB
Memory (PC3-10600 DDR3)	8 GB ECC
DIMMs	2 x 4 GB
DIMM sockets standard	16
DIMM sockets maximum	64 (Optional memory expansion card and optional MAX5 memory drawer)
Capacity	1024 GB[5]
Video	SVGA
Memory	16 MB
SAS controller	ServeRAID-M1015 standard
Ports	8
Connector internal	2
Connector external	0
HDD standard	0
Bays available	4 Standard, 16 with upgrade kit
2.5-inch slim	4 Standard, 16 with upgrade kit
Hot-swap	4 Standard, 16 with upgrade kit
Internal capacity	8 TB[6]
PCIE sockets	4
Management processor IMM	Standard
RAID 0/1	Standard
ServeRAID M5015 6Gb	Optional
Dual Ethernet controller 10/100/1000 Mbps	Standard
Emulex 10Gb Dual-port Ethernet Adapter	Optional
Optical disk drive	Optional
Power supply	675 W
Number standard	1
Maximum	4
Hot-swap	Yes
Redundant power	Optional
Auto restart	Yes

EMEA x=G

	71483Dx
Processor 8-core	Xeon 8C X6550 Turbo 130w
Internal speed	2.0 GHz
Memory bus speed	1066 MHz

Number standard	2
Maximum	2
Interconnect speed	6.4 GT/s
L3 cache total	18 MB
Memory (PC3-10600 DDR3)	16 GB ECC
DIMMs	4 x 4 GB
DIMM sockets standard	32
DIMM sockets maximum	64 (Optional MAX5 memory drawer)
Capacity	1024 GB[5]
Video	SVGA
Memory	16 MB
SAS controller	Optional
HDD standard	0
Bays available	16 Standard, 32 with upgrade kit
1.8-inch slim	16 Standard, 32 with upgrade kit
2.5-inch slim	0
Hot-swap	16 Standard, 32 with upgrade kit
Internal capacity	1.6 TB, (based on 32 x 50 GB SSD)
PCIE sockets	4
Management processor IMM	Standard
Dual Ethernet controller 10/100/1000 Mbps	Standard
Emulex 10Gb Dual-port Ethernet Adapter	Optional
Optical disk drive	Optional
Power supply	675 W
Number standard	4
Maximum	4
Hot-swap	Yes
Redundant power	Standard
Auto restart	Yes

x3690 X5 Express Model

	7148E3U
Processor 8-core	Xeon 8C X7550 Turbo 130w
Internal speed	2.0 GHz
Memory bus speed	1066 MHz
Number standard	2
Maximum	2
Interconnect speed	6.4 GT/s
L3 cache total	18 MB
Memory (PC3-10600 DDR3)	16 GB ECC
DIMMs	4 x 4 GB
DIMM sockets standard	16
DIMM sockets maximum	64 (Optional memory expansion card and optional MAX5 memory drawer)
Capacity	1024 GB[5]
Video	SVGA
Memory	16 MB
SAS controller	ServeRAID-M1015 standard
Ports	8
Connector internal	2
Connector external	0
HDD standard	0
Bays available	4 Standard, 16 with upgrade kit
2.5-inch slim	4 Standard, 16 with upgrade kit
Hot-swap	4 Standard, 16 with upgrade kit
Internal capacity	8 TB[6]
PCIE sockets	4
Management processor IMM	Standard
RAID 0/1/5/10/50	Standard
Dual Ethernet controller 10/100/1000 Mbps	Standard
Emulex 10Gb Dual-port Ethernet Adapter	Optional
Optical disk drive	Optional
Power supply	675 W
Number standard	2
Maximum	4

Hot-swap	Yes
Redundant power	Optional
Auto restart	Yes

[5] Capacities are based on installation of the memory expansion card and 64 x 16 GB DIMMs installed on the planar and in the memory expansion card.

[6] Capacities are based on installation of sixteen 500 GB 2.5-inch SFF SATA HDDs. For the latest information on supported HDD options, visit

http://www-03.ibm.com/servers/eserver/serverproven/compat/us/indexsp.html

Supported video mode capabilities for the SVGA PCI controller:

Windows 2003 (32- and 64-bit) and Linux (all distributions)

Resolution	Colors	Refresh Rate (Hz)
640 x 480 x 8	256	60, 72, 75, 85, 90, 100, 120, 160, 200
640 x 480 x 16	64K	60, 72, 75, 85, 90, 100, 120, 160, 200
640 x 480 x 32	16M	60, 72, 75, 85, 90, 100, 120, 160, 200
800 x 600 x 8	256	60, 70, 72, 75, 85, 90, 100, 120, 160, 200
800 x 600 x 16	64K	60, 70, 72, 75, 85, 90, 100, 120, 160, 200
800 x 600 x 32	16M	60, 70, 72, 75, 85, 90, 100, 120, 160
1024 x 768 x 8	256	60, 70, 72, 75, 85, 90, 100, 120, 140, 150, 160, 200
1024 x 768 x 16	64K	60, 70, 72, 75, 85, 90, 100, 120, 140, 150, 160, 200
1024 x 768 x 32	16M	60, 70, 72, 75, 85, 90, 100
1280 x 1024 x 8	256	60, 72, 75
1280 x 1024 x 16	64K	60, 72, 75
1280 x 1024 x 32	16M	60, 72, 75

Dimensions

2U rack drawer

- Width: 440 mm (17.32 in.)
- Depth: 712.1 mm (28.04 in.)
- Height: 86.4 mm (3.40 in.)
- Minimum configuration: 35.4 kg (78 lb)
- Maximum configuration: 49.90 kg (110 lb)

Electrical

- 100 to 127 (nominal) V ac; 50 Hz or 60 Hz; System 20A (10A/PS)
- 200 to 208 (nominal) V ac; 50 Hz or 60 Hz; System 10A
- 200 to 240 (nominal) V ac; 50 Hz or 60 Hz; System 9A
  - Minimum configuration: 0.20 kVA (one power supply)
  - Minimum configuration: 0.26 kVA (two power supplies)
  - Typical configuration: 1.12 kVA (two power supplies)
  - Maximum configuration: 2.16 kVA (two power supplies)
- Btu output:
  - Ship configuration (1PS): 648 Btu/hr (190 watts)
  - Ship configuration (2PS): 802 Btu/hr (235 watts)
  - Typical configuration: 3,753 Btu/hr (1100 watts)
  - Full configuration: 7,336 Btu/hr (2150 watts)
- Noise level horizontal position: 6.3 bels

Note: The noise emission level stated is the declared (upper limit) sound power level, in bels, for a random sample of machines. All measurements made in accordance with ISO 7779 and reported in conformance with ISO 9296.

Standards

x3690 X5 servers are intended for use as rack-drawer servers and are tested and designed to operate in a horizontal position.

These systems support or comply with the following standards:

- Multiprocessor Specification (MPS) 1.4
- Hardware-enabled to meet ISO 9241, Part 3

In addition to the above standards, they are compatible with the PCI-E specification.

Equipment approvals and safety

- FCC - Verified to comply with Part 15 of the FCC Rules, Class A
- Canada ICES-003, issue 4, Class A
- IEC/UL 60950-1, 2nd Edition
- CAN/CSA - C22.2 No. 60950-1-07 2nd Edition
- NOM-019[7]

[7] This server is certified by the respective UL and NOM agencies.

Operating environment

- Temperature:
  - 10.0° to 35.0° C (50° to 95° F) at 0 to 914 m (0 to 3,000 ft)
  - 10.0° to 32.0° C (50° to 90° F) at 914 to 2,133 m (3,000 to 7,000 ft)
- Relative humidity: 8% to 80%

Hardware requirements

For attended installation of an operating system, this server requires a compatible:

- Keyboard
- Mouse
- Display

Unattended or remote installation may be performed without requiring some or all of these components. Review your unattended software installation program information for specific hardware configuration requirements.

For service, the server requires a compatible:

- Keyboard
- Mouse
- Display

When having the unit serviced, plan to have these components attached to your server either directly or indirectly via a console switch.

Software requirements

Programming requirements

The following network operating systems have been tested for compatibility with the x3690 X5 server.

Network operating systems

- Microsoft
  - Windows Server 2008 R2 (64-bit)
  - Windows Server 2008 (64-bit)
- Linux
  - Red Hat EL 5 Server for 64-bit
  - Red Hat EL 5 Server for 64-bit (with Xen)
  - SUSE Linux ES 10 for x86-64
  - SUSE Linux ES 10 for x86-64 (with Xen)
  - SUSE Linux ES 11 for x86-64
  - SUSE Linux ES 11 for x86-64 (with Xen)

Other - OS limitations

VMware statement

- VMware ESX/ESXi 4.1

The MAX5 drawer is designed to work seamlessly with the server and VMware and provides a high-speed low-latency path to additional memory. The connection, enabled by the IBM-exclusive eX5 technology, is fast and wide enough to ensure that operating systems and applications see just a single, large memory space, thus no software modifications are necessary to use MAX5. MAX5 is not currently supported with vSphere 4.0. We are working with VMware to build support for MAX5 in a future release of vSphere.

Note: For information on additional support, certification, and versions of network operating systems, visit

http://www.ibm.com/servers/eserver/serverproven/compat/us/

IBM makes no representation or warranty regarding third-party products, including those designated as ServerProven.

Compatibility

The IBM System x3690 X5 server contains licensed system programs that include set configuration, set features, and test programs. IBM system BIOS is loaded from a "flash" EEPROM into system memory. This BIOS provides instructions and interfaces designed to support the standard features of the IBM System x3690 X5 server and to maintain compatibility with many current software programs.

For detailed information about IBM and non-IBM devices, adapters, software, and network operating systems supported with IBM System x3690 X5 servers, visit

http://www-03.ibm.com/servers/eserver/serverproven/compat/us/indexsp.html

Contact your IBM representative, IBM Business Partner, or refer to the *IBM Sales Manual* for information on the compatibility of hardware and software for IBM System x3690 X5 servers. The *Sales Manual* is updated periodically as new features and options are announced that support these servers.

Limitations

Memory

The x3690 X5 servers are shipped with 8 GB high-speed PC3-10600 DDR3 ECC memory standard, supporting up to 512 GB of system memory per chassis, A maximum of up to 1024 GB of system memory is supported by adding a 16 GB PC3-10600 CL4 ECC DDR3 SDRAM RDIMM in each of the 32 DIMM sockets. All supported system memory is addressable through direct memory access (DMA).

This server supports 2 GB, 4 GB, 8 GB, and 16 GB 1.8 V, 240-pin, PC3-10600 ECC DDR3 SDRAM RDIMMs. Supported DIMMs can coexist in the same server; however, memory DIMMs of the same capacity must be installed in matched pairs. Refer to the Planning information section or the IBM System x3690 X5 server Web page memory options.

The x3690 X5 has RAID 0, 1, and 10 standard. The optional ServeRAID M5015 SAS/SATA, ServeRAID BR10i, and ServeRAID M1015 Controllers provide additional RAID 5 level.

ServerGuide™

Use the *ServerGuide*, available on the Web, to load software and drivers. Earlier versions of *ServerGuide* may not be compatible with the server.

Planning information

Customer responsibilities

x3690 X5 Server and Related Options

The x3690 X5 server is designated as customer setup. Customer setup instructions are shipped with systems.

Configuration information

Bay configuration

The x3690 X5 server contains 16 customer-accessible drive bays on the front of the server. A upper right bay is for the optional slim combo drive.

The optional disk drive is cabled directly to the SATA port.

Internal SCSI cabling

Most models of the x3690 X5 server contains a DASD backplane supporting four hot-swap, SCA-2-compliant drive bays. The x3690 X5 models with the SAS controller support RAID 0 , 1, and 10 standard. The optional ServeRAID-M5015 SAS/SATA, ServeRAID-M1015, and the ServeRAID-BR10i Controllers provide additional RAID 5 level.

Processor upgrade

The following processor upgrade options are supported:

- **Intel Xeon Processor E7520 - 1.86 GHz 18 MB L3 Cache 1066 MHz Intel Four Core Processor Upgrade (60Y0317)** supports internal processing speeds of 1.86 GHz and external processing operations to memory at 1066 MHz. It contains an integrated, full-speed, 18 MB level 3 cache.
- **Intel Xeon Processor E6540 - 2.00 GHz 18 MB L3 Cache 1066 MHz Intel Six Core Processor Upgrade (60Y0320)** supports internal processing speeds of 2.00 GHz and external processing operations to memory at 1066 MHz. It contains an integrated, full-speed, 18 MB level 3 cache.
- **Intel Xeon Processor X6550 Turbo - 2.0 GHz 18 MB L3 Cache 1066 MHz Intel Eight Core Processor Upgrade (60Y0319)** supports internal processing speeds of 2.0 GHz and external processing operations to memory at 1066 MHz. It contains an integrated, full-speed, 18 MB level 3 cache.
- **Intel Xeon Processor X7550 - 2.00 GHz 18 MB L3 Cache 1066 MHz Intel Eight Core Processor Upgrade (60Y0313)** supports internal processing speeds of 2.00 GHz and external processing operations to memory at 1066 MHz. It contains an integrated, full-speed, 18 MB level 3 cache.
- **Intel Xeon Processor X7560 Turbo - 2.26 GHz 24 MB L3 Cache 1066 MHz Intel Eight Core Processor Upgrade (60Y0311)** supports internal processing speeds of 2.26 GHz and external processing operations to memory at 1066 MHz. It contains an integrated, full-speed, 24 MB level 3 cache.

Memory support

The following memory options are supported:

- 2 GB PC3-10600 CL4 ECC DDR3 SDRAM RDIMM (44T1481)
- 4 GB PC3-10600 CL4 ECC DDR3 SDRAM RDIMM (46C7448)
- 8 GB PC3-10600 CL4 ECC DDR3 SDRAM RDIMM (46C7482)
- 16 GB (2X8 GB KIT) PC3-10600 CL4 ECC DDR3 SDRAM RDIMM (46C7483)

Memory DIMMs should be plugged in order of size. Largest size first, followed by next size. When plug order moves to new DIMM numbers, start with memory card with smallest total amount.

PCI-E adapter installations

The x3690 X5 server contains PCI-E architecture. Four 5.0 Gb PCIE I/O (two x8, low profile, two x8, standard) sockets.

Rack installations

x3690 X5 2U, rack-drawer models are designed to be installed in a 19-inch rack cabinet designed for 28-inch deep devices, such as the NetBAY42 ER, NetBAY42 SR, NetBAY25 SR, or NetBAY11.

If using a non-IBM rack, the cabinet must meet the EIA-310-D standards with a depth of at least 71.1 cm (28 in). Also, adequate space (approximately 5 cm (2 in) for the front bezel and 2.5 cm (1 in) for air flow) must be maintained from the slide assembly to the front door of the rack cabinet to allow sufficient space for the door to close and provide adequate air flow.

Power considerations

These x3690 X5 models include one standard 675-watt, hot-swap power supply which have redundancy for all configurations when powered at 200 - 240 V ac.

Cable orders

The 10/100/1000 Mbps full-duplex, Dual Ethernet PCI-E Controller is standard with the x3690 X5 server. The RJ-45 connectors provide a 10BaseT or 100/1000Base-TX interface for connecting twisted-pair cable to the Ethernet network. Cabling is not included with the server. To connect the Ethernet controller to a repeater or switch, use a UTP cable with RJ-45 connectors at both ends. For 100/1000 Mbps operation, Category 5 cabling must be used. For 10 Mbps operation, Category 3, or better, cabling must be used.

There are no additional cabling requirements, other than for system power, keyboard, mouse, and monitor connections.

Installability

The x3690 X5 server requires about 60 minutes for installation. Installation includes unpacking, setting up, and powering on the system. Additional time is required to install an operating system, additional adapters, or features.

Packaging

Product	Shipment group	Number of boxes
IBM System x3690 X5	System unit carton	1
	Contents:	
	System unit Rack components:	

```
                          Rails
                          Cable management hardware

IBM System x3690 X5       Country kit carton                    1

                         Contents:

                        Two 2.8 m 220 V intra-rack cables
                        Safety booklet
                        IBM Director
                        CD-ROM Packages
```

The x3690 X5 system is shipped as a single package. The country kit carton is contained inside the top portion of the system unit carton, while the rack components are contained in the system unit carton.

The following publications will be available on the support Web site and on the Documentation CD.

The *IBM System x3690 X5 Installation and User's Guide* , the *IBM System x3690 X5 Problem Determination and Service Guide*, and the *Rack Installation Instructions*, in U.S. English versions, are available from our Web site.

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

Related options

Processor upgrades

- Xeon processor
- VRM and heat sink
- Installation publications/warranty

Supplies

None

Security, auditability, and control

Security and auditability features include:

- Power-on and remote-control password functions provide controls of who has access to the data and server setup program on the server.

It is a customer's responsibility to ensure that the server is secure to prevent sensitive data from being removed.

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

Terms and conditions

IBM Global Financing

Yes

IBM System x3690 X5

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

In the United States, call 800-IBM-SERV (426-7378), or write to:

Warranty Information
P.O. Box 12195
Research Triangle Park, NC 27709
Attn: Dept JDJA/B203

Warranty period

- System x3690 X5 - Three years
- Optional features - One year

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

The following have been designated as consumables or supply items and are, therefore, not covered by this warranty:

- Battery 3.0 Volt CMOS
- ServeRAID SAS controller battery

Warranty service

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

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

Customer Replaceable Unit (CRU) Service

IBM provides a replacement CRU to you for you to install. CRU information and replacement instructions are shipped with your machine and are available from IBM at any time on your request. A CRU is designated as being either a Tier 1 (mandatory) or a Tier 2 (optional) CRU. Installation of Tier 1 CRUs, as specified in this announcement, is your responsibility. If IBM installs a Tier 1 CRU at your request, you will be charged for the installation. You may install a Tier 2 CRU yourself or request IBM to install it, at no additional charge, under the type of warranty service specified below, On-site Service.

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

The following parts have been designated as Tier 1 CRUs: (Unless indicated otherwise)

- Enet Cd
- PRO/1000 (T2)

- Svr Adapter
- Svr Adapter
- 10GBE Fibre
- 10GB CNA
- 10GB HBA (T2)
- 8GB PCI-e
- 8GB FC HBA
- 8GB FC HBA
- 8GB FC HBA
- 3U Adapter
- PCI-e Cntroller
- 2GB Memory
- 2GB RDIMM
- 4GB RDIM
- Backplane (FRU)
- 8GB FC SNG Adapter
- 8GB FC DUA Adapter
- Exp Ethrnt Adapter
- Quad Enet Adapter
- Dual Port Adapter
- Quad Port Adapter
- 10GBE Adapter
- 4GB FC Adapter
- 4GB FC Dual
- Slide Kit (T2)
- CMA
- Dual Port Adapter
- Quad Port Adapter
- 2.8M PDU Jumper

On-site Service

This provides On-site Repair, 9 hours per day, Monday through Friday excluding holidays, NBD response. IBM or your reseller will repair the failing machine at your location and verify its operation. You must provide a suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well lit, and suitable for the purpose. On-site Service is not available in all countries, and some countries have kilometer or mileage limitations from an IBM service center. In those locations where On-site Service is not available, the normal in-country service delivery is used.

Call IBM at 1-800-IBM-SERV (426-7378) to assist with problem isolation for hardware to determine if warranty service is required. Telephone support may be subject to additional charges, even during the limited warranty period.

Calls must be received by 5:00 p.m. local time in order to qualify for NBD service.

International Warranty Service

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

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

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

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

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

For more information on IWS, refer to Services Announcement 601-034, dated September 25, 2001.

Licensing

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

Maintenance services

ServicePac , ServiceSuite , ServiceElect, and ServiceElite

ServicePac®, ServiceSuite™, ServiceElect, and ServiceElite provide hardware warranty service upgrades, maintenance, and selected support services in one agreement.

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. Certain machines contain remote support capabilities for direct problem reporting, remote problem determination, and resolution with IBM. You must follow the problem determination and resolution procedures that IBM specifies. Following problem determination, if IBM determines On-site Service is required, scheduling of service will depend upon the time of your call, machine technology and redundancy, and availability of parts.

CRUs will be provided as part of the machine's standard warranty CRU Service except that you may install a Tier 1 CRU yourself or request IBM installation, at no additional charge, under one of the On-site Service levels specified below.

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.

Maintenance service

If required, IBM provides repair or exchange service, depending on the type of maintenance service specified below for the machine. IBM will attempt to resolve your problem over the telephone or electronically by access to an IBM Web site. Certain machines contain remote support capabilities for direct problem reporting, remote problem determination, and resolution with IBM. You must follow the problem determination and resolution procedures that IBM specifies. Following problem determination, if IBM determines On-site Service is required, scheduling of service will depend upon the time of your call, machine technology and redundancy, and availability of parts. Service levels are response-time objectives and are not guaranteed.

CRU Service

If your problem can be resolved with a CRU (for example, keyboard, mouse, speaker, memory, or hard disk drive), 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 at any time on your request.

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.

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.

Maintenance service (ICA)

Maintenance services are available for ICA legacy contracts.

Alternative service (warranty service upgrades)

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. Certain machines contain remote support capabilities for direct problem reporting, remote problem determination, and resolution with IBM. You must follow the problem determination and resolution procedures that IBM specifies. Following problem determination, if IBM determines On-site Service is required, scheduling of service will depend upon the time of your call, machine technology and redundancy, and availability of parts.

A CRU will be provided as part of the machine's standard warranty CRU Service except that you may install a Tier 1 CRU yourself or request IBM to install it, at no additional charge, under the type of warranty service specified below, 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.

Maintenance service

If required, IBM provides repair or exchange service, depending on the type of maintenance service specified below for the machine. IBM will attempt to resolve your problem over the telephone or electronically by access to an IBM Web site. Certain machines contain remote support capabilities for direct problem reporting, remote problem determination, and resolution with IBM. You must follow the problem determination and resolution procedures that IBM specifies. Following problem determination, if IBM determines On-site Service is required, scheduling of service will depend upon the time of your call, machine technology and redundancy, and availability of parts. Service levels are response-time objectives and are not guaranteed.

CRU Service

If your problem can be resolved with a CRU (for example, keyboard, mouse, speaker, memory, or hard disk drive), 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 at any time on your request.

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.

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.

Non-IBM parts support

Warranty service

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

Warranty service upgrades and maintenance services

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

IBM Service provides hardware problem determination on non-IBM parts (for example, adapter cards, PCMCIA cards, disk drives, or 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.

IBM hourly service rate classification

One

Field-installable features

Yes

Model conversions

No

Machine installation

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

Graduated program license charges apply

No

Licensed machine code

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

http://www-304.ibm.com/systems/support/machine_warranties/machine_code.html

IBM may release changes to the Machine Code. IBM plans to make the Machine Code changes available for download from the IBM System x technical support Web site

http://www-304.ibm.com/systems/support/

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

Prices

For current prices, contact IBM at 888-Shop-IBM (746-7426) or visit

http://www-03.ibm.com/systems/x/

The following are newly announced features on the specified models of the IBM xSeries® 7148 machine type.

Description	Model Number	Feature Number	Initial/ MES/ Both/ Support
IBM System x3690 X5			
	AC1		
IBM System x3690 X5			
	AC3		
IBM System x3690 X5			
	AC4		
IBM System x3690 X5			
	MC1		
IBM System x3690 X5			
	MC3		
IBM System x3690 X5			
	MC4		
QLogic 10Gb SFP+ SR Optical Transceiver			
	AC1	0064	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Brocade 10Gb SFP+ SR Optical Transceiver			
	AC1	0069	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial

```
ServeRAID M5015 SAS/SATA Controller (Battery not
included)
                              AC1      0093          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
ServeRAID M1015 SAS/SATA Controller
                              AC1      0095          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
IBM 160GB High IOPS SS Class SSD PCIe Adapter
                              AC1      0096          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
IBM 320GB High IOPS SD Class SSD PCIe Adapter
                              AC1      0097          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
NetXtreme II 1000 Express G Ethernet Adapter- PCIe
                              AC1      1485          Initial    N4X10M238245
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
Brocade 10Gb CNA for IBM System x
                              AC1      1637          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
Emulex 10Gb Dual-port Ethernet Adapter for IBM
System x
                              AC1      1648          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
IBM 320GB High IOPS MS Class SSD PCIe Adapter
                              AC1      1649          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
Emulex 4GB FC Single-Port PCI-E HBA for IBM System
x
                              AC1      1698          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
Emulex 4GB FC Dual-Port PCI-E HBA for IBM System x
                              AC1      1699          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
4GB (1x4GB  Quad Rankx8) PC3-8500 CL7 ECC DDR3 1066MHz LP RDIMM
```

	AC1	1701	N4X10M237256
	AC3		N5X10M237367
	AC4		(Canada)
	MC1		
	MC3		
	MC4		
8GB (1x8GB Quad Rankx8) PC3-8500 CL7 ECC DDR3 1066MHz LP RDIMM			
	AC1	1706	N4X10M237256
	AC3		N5X10M237367
	AC4		(Canada)
	MC1		
	MC3		
	MC4		
16GB (1x16GB, Quad Rankx4) PC3-8500 CL7 ECC DDR3 1066MHz LP RDIMM			
	AC1	1707	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
2GB (1x2GB, 1Rx8, 1.5V) PC3-10600 CL9 ECC DDR3 1333MHz LP RDIMM			
	AC1	1712	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
4GB (1x4GB, Dual Rankx8) PC3-10600 CL9 ECC DDR3 1333MHz LP RDIMM			
	AC1	1713	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Capacity Scheduling Service			
	AC1	1772	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
IBM USB Memory Key for VMware ESXi 4			
	AC1	1776	Initial
	AC3		Initial
	AC4		Initial
	MC3		Initial
	MC4		Initial
Custom SLA Scheduling Service			
	AC1	1796	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Mfg Code			
	AC1	2121	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Labels GBM			
	AC1	2122	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
x3690 X5 Bezel			
	AC1	2123	Initial

	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
MemCard Filler			
	AC1	2124	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
QPI filler			
	AC1	2126	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
SAS Riser Rear Bulkhead Filler			
	AC1	2127	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
PCIe Riser Rear Bulkhead Filler			
	AC1	2128	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
2U Bracket for NetXtreme II 1000 Express Quad Port Ethernet Adapter			
	AC1	2141	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
2U Bracket for ServeRAID M1015 SAS/SATA Controller or 6Gb SSD HBA			
	AC1	2145	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Custom Asset Tagging - Standard			
	AC1	2200	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Custom Asset Tagging - Enhanced			
	AC1	2201	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Custom Media Shipgroup			
	AC1	2206	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Request for Global Trade Number (UPC or EAN)			
	AC1	2207	Initial
	AC3		Initial
	AC4		Initial

	MC1		Initial
	MC3		Initial
	MC4		Initial
Custom Software/Firmware Setting - Standard			
	AC1	2208	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Custom Software/Firmware Setting - Enhanced			
	AC1	2209	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Custom RAID Configuration			
	AC1	2212	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Custom Labeling			
	AC1	2220	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Custom Palletization			
	AC1	2221	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Request for a new Vendor Logo Hardware			
	AC1	2247	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Request for an existing IBM Feature			
	AC1	2248	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Request for an existing Public RPQ			
	AC1	2249	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
RAID Configuration			
	AC1	2302	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack Installation >1U Component			
	AC1	2306	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Department of Defense UID Label			

	AC1	2320	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Primary Array 12 HDDs			
	AC1	2400	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Primary Array 13 HDDs			
	AC1	2401	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Primary Array 14 HDDs			
	AC1	2402	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Primary Array 15 HDDs			
	AC1	2403	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Primary Array 16 HDDs			
	AC1	2404	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Secondary Array 9 HDDs			
	AC1	2405	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Secondary Array 10 HDDs			
	AC1	2406	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Secondary Array 11 HDDs			
	AC1	2407	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Secondary Array 12 HDDs			
	AC1	2408	Initial
	AC3		Initial
	AC4		Initial

	MC1		Initial
	MC3		Initial
	MC4		Initial
Secondary Array 13 HDDs			
	AC1	2409	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Secondary Array 14 HDDs			
	AC1	2410	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Tertiary Array 2 HDDs			
	AC1	2411	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Tertiary Array 3 HDDs			
	AC1	2412	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Tertiary Array 4 HDDs			
	AC1	2413	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Tertiary Array 5 HDDs			
	AC1	2414	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Tertiary Array 6 HDDs			
	AC1	2415	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Tertiary Array 7 HDDs			
	AC1	2416	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Tertiary Array 8 HDDs			
	AC1	2417	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial

	MC4		Initial
IBM 6Gb SSD HBA			
	AC1	2421	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
2U Bracket for Brocade 10Gb CNA for IBM System x			
	AC1	2492	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Optical Blank Filler			
	AC1	2496	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Enable selection of Solid State Drives for Secondary Array			
	AC1	2498	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Enable selection of Solid State Drives for Primary Array			
	AC1	2499	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
4 pack 2.5" HDD Filler			
	AC1	2504	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
System Packaging - WW			
	AC1	2584	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
2U Bracket for ServeRAID M5015 SAS/SATA Controller			
	AC1	2591	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
PRO/1000 PT Dual Port Server Adapter by Intel			
	AC1	2944	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
PRO/1000 PT Quad Port Server Adapter			
	AC1	2974	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial

```
                              MC4                   Initial
PRO/1000 PF Server Adapter
                              AC1      2975         Initial
                              AC3                   Initial
                              AC4                   Initial
                              MC1                   Initial
                              MC3                   Initial
                              MC4                   Initial
NetXtreme II 1000 Express Dual Port Ethernet
Adapter
                              AC1      2995         Initial
                              AC3                   Initial
                              AC4                   Initial
                              MC1                   Initial
                              MC3                   Initial
                              MC4                   Initial

RAID 1 - Tertiary Array (SSD) - 2 SSDs required
                              AC1      3034         Initial
                              AC3                   Initial
                              AC4                   Initial
                              MC1                   Initial
                              MC3                   Initial
                              MC4                   Initial

Rack 01
                              AC1      3101         Initial
                              AC3                   Initial
                              AC4                   Initial
                              MC1                   Initial
                              MC3                   Initial
                              MC4                   Initial
Rack 02
                              AC1      3102         Initial
                              AC3                   Initial
                              AC4                   Initial
                              MC1                   Initial
                              MC3                   Initial
                              MC4                   Initial
Rack 03
                              AC1      3103         Initial
                              AC3                   Initial
                              AC4                   Initial
                              MC1                   Initial
                              MC3                   Initial
                              MC4                   Initial
Rack 04
                              AC1      3104         Initial
                              AC3                   Initial
                              AC4                   Initial
                              MC1                   Initial
                              MC3                   Initial
                              MC4                   Initial
Rack 05
                              AC1      3105         Initial
                              AC3                   Initial
                              AC4                   Initial
                              MC1                   Initial
                              MC3                   Initial
                              MC4                   Initial
Rack 06
                              AC1      3106         Initial
                              AC3                   Initial
                              AC4                   Initial
                              MC1                   Initial
                              MC3                   Initial
                              MC4                   Initial
Rack 07
                              AC1      3107         Initial
                              AC3                   Initial
                              AC4                   Initial
                              MC1                   Initial
                              MC3                   Initial
                              MC4                   Initial
```

Rack 08			
	AC1	3108	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 09			
	AC1	3109	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 10			
	AC1	3110	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 11			
	AC1	3111	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 12			
	AC1	3112	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 13			
	AC1	3113	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 14			
	AC1	3114	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 15			
	AC1	3115	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 16			
	AC1	3116	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 17			
	AC1	3117	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 18			
	AC1	3118	Initial
	AC3		Initial
	AC4		Initial

		MC1	Initial
		MC3	Initial
		MC4	Initial
Rack 19			
		AC1	3119 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
Rack 20			
		AC1	3120 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
Rack 21			
		AC1	3121 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
Rack 22			
		AC1	3122 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
Rack 23			
		AC1	3123 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
Rack 24			
		AC1	3124 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
Rack 25			
		AC1	3125 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
Rack 26			
		AC1	3126 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
Rack 27			
		AC1	3127 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
Rack 28			
		AC1	3128 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
Rack 29			

	AC1	3129	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 30			
	AC1	3130	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 31			
	AC1	3131	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 32			
	AC1	3132	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 33			
	AC1	3133	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 34			
	AC1	3134	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 35			
	AC1	3135	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 36			
	AC1	3136	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 37			
	AC1	3137	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 38			
	AC1	3138	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 39			
	AC1	3139	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial

	MC3		Initial
	MC4		Initial
Rack 40			
	AC1	3140	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 41			
	AC1	3141	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 42			
	AC1	3142	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 43			
	AC1	3143	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 44			
	AC1	3144	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 45			
	AC1	3145	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 46			
	AC1	3146	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 47			
	AC1	3147	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 48			
	AC1	3148	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 49			
	AC1	3149	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 50			
	AC1	3150	Initial

		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
Rack 51			
		AC1	3151 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
Rack 52			
		AC1	3152 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
Rack 53			
		AC1	3153 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
Rack 54			
		AC1	3154 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
Rack 55			
		AC1	3155 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
Rack 56			
		AC1	3156 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
Rack 57			
		AC1	3157 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
Rack 58			
		AC1	3158 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
Rack 59			
		AC1	3159 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
Rack 60			
		AC1	3160 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial

	MC4		Initial
Rack 61			
	AC1	3161	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 62			
	AC1	3162	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 63			
	AC1	3163	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack 64			
	AC1	3164	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack location U01			
	AC1	3201	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack location U02			
	AC1	3202	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack location U03			
	AC1	3203	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack location U04			
	AC1	3204	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack location U05			
	AC1	3205	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack location U06			
	AC1	3206	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack location U07			
	AC1	3207	Initial
	AC3		Initial

```
                          AC4                 Initial
                          MC1                 Initial
                          MC3                 Initial
                          MC4                 Initial
Rack location U08
                          AC1       3208      Initial
                          AC3                 Initial
                          AC4                 Initial
                          MC1                 Initial
                          MC3                 Initial
                          MC4                 Initial
Rack location U09
                          AC1       3209      Initial
                          AC3                 Initial
                          AC4                 Initial
                          MC1                 Initial
                          MC3                 Initial
                          MC4                 Initial
Rack location U10
                          AC1       3210      Initial
                          AC3                 Initial
                          AC4                 Initial
                          MC1                 Initial
                          MC3                 Initial
                          MC4                 Initial
Rack location U11
                          AC1       3211      Initial
                          AC3                 Initial
                          AC4                 Initial
                          MC1                 Initial
                          MC3                 Initial
                          MC4                 Initial
Rack location U12
                          AC1       3212      Initial
                          AC3                 Initial
                          AC4                 Initial
                          MC1                 Initial
                          MC3                 Initial
                          MC4                 Initial
Rack location U13
                          AC1       3213      Initial
                          AC3                 Initial
                          AC4                 Initial
                          MC1                 Initial
                          MC3                 Initial
                          MC4                 Initial
Rack location U14
                          AC1       3214      Initial
                          AC3                 Initial
                          AC4                 Initial
                          MC1                 Initial
                          MC3                 Initial
                          MC4                 Initial
Rack location U15
                          AC1       3215      Initial
                          AC3                 Initial
                          AC4                 Initial
                          MC1                 Initial
                          MC3                 Initial
                          MC4                 Initial
Rack location U16
                          AC1       3216      Initial
                          AC3                 Initial
                          AC4                 Initial
                          MC1                 Initial
                          MC3                 Initial
                          MC4                 Initial
Rack location U17
                          AC1       3217      Initial
                          AC3                 Initial
                          AC4                 Initial
                          MC1                 Initial
                          MC3                 Initial
                          MC4                 Initial
```

```
Rack location U18
                          AC1      3218          Initial
                          AC3                    Initial
                          AC4                    Initial
                          MC1                    Initial
                          MC3                    Initial
                          MC4                    Initial
Rack location U19
                          AC1      3219          Initial
                          AC3                    Initial
                          AC4                    Initial
                          MC1                    Initial
                          MC3                    Initial
                          MC4                    Initial
Rack location U20
                          AC1      3220          Initial
                          AC3                    Initial
                          AC4                    Initial
                          MC1                    Initial
                          MC3                    Initial
                          MC4                    Initial
Rack location U21
                          AC1      3221          Initial
                          AC3                    Initial
                          AC4                    Initial
                          MC1                    Initial
                          MC3                    Initial
                          MC4                    Initial
Rack location U22
                          AC1      3222          Initial
                          AC3                    Initial
                          AC4                    Initial
                          MC1                    Initial
                          MC3                    Initial
                          MC4                    Initial
Rack location U23
                          AC1      3223          Initial
                          AC3                    Initial
                          AC4                    Initial
                          MC1                    Initial
                          MC3                    Initial
                          MC4                    Initial
Rack location U24
                          AC1      3224          Initial
                          AC3                    Initial
                          AC4                    Initial
                          MC1                    Initial
                          MC3                    Initial
                          MC4                    Initial
Rack location U25
                          AC1      3225          Initial
                          AC3                    Initial
                          AC4                    Initial
                          MC1                    Initial
                          MC3                    Initial
                          MC4                    Initial
Rack location U26
                          AC1      3226          Initial
                          AC3                    Initial
                          AC4                    Initial
                          MC1                    Initial
                          MC3                    Initial
                          MC4                    Initial
Rack location U27
                          AC1      3227          Initial
                          AC3                    Initial
                          AC4                    Initial
                          MC1                    Initial
                          MC3                    Initial
                          MC4                    Initial
Rack location U28
                          AC1      3228          Initial
                          AC3                    Initial
                          AC4                    Initial
```

```
                              MC1                 Initial
                              MC3                 Initial
                              MC4                 Initial
      Rack location U29
                              AC1       3229      Initial
                              AC3                 Initial
                              AC4                 Initial
                              MC1                 Initial
                              MC3                 Initial
                              MC4                 Initial
      Rack location U30
                              AC1       3230      Initial
                              AC3                 Initial
                              AC4                 Initial
                              MC1                 Initial
                              MC3                 Initial
                              MC4                 Initial
      Rack location U31
                              AC1       3231      Initial
                              AC3                 Initial
                              AC4                 Initial
                              MC1                 Initial
                              MC3                 Initial
                              MC4                 Initial
      Rack location U32
                              AC1       3232      Initial
                              AC3                 Initial
                              AC4                 Initial
                              MC1                 Initial
                              MC3                 Initial
                              MC4                 Initial
      Rack location U33
                              AC1       3233      Initial
                              AC3                 Initial
                              AC4                 Initial
                              MC1                 Initial
                              MC3                 Initial
                              MC4                 Initial
      Rack location U34
                              AC1       3234      Initial
                              AC3                 Initial
                              AC4                 Initial
                              MC1                 Initial
                              MC3                 Initial
                              MC4                 Initial
      Rack location U35
                              AC1       3235      Initial
                              AC3                 Initial
                              AC4                 Initial
                              MC1                 Initial
                              MC3                 Initial
                              MC4                 Initial
      Rack location U36
                              AC1       3236      Initial
                              AC3                 Initial
                              AC4                 Initial
                              MC1                 Initial
                              MC3                 Initial
                              MC4                 Initial
      Rack location U37
                              AC1       3237      Initial
                              AC3                 Initial
                              AC4                 Initial
                              MC1                 Initial
                              MC3                 Initial
                              MC4                 Initial
      Rack location U38
                              AC1       3238      Initial
                              AC3                 Initial
                              AC4                 Initial
                              MC1                 Initial
                              MC3                 Initial
                              MC4                 Initial
      Rack location U39
```

	AC1	3239	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack location U40			
	AC1	3240	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack location U41			
	AC1	3241	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Rack location U42			
	AC1	3242	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
No RAID - Primary Array set up by customer			
	AC1	3270	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
No RAID - Secondary Array set up by customer			
	AC1	3271	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
No RAID - Teriary Array set up by customer			
	AC1	3272	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
QLogic 4Gb FC Single-Port PCIe HBA for IBM System x			
	AC1	3567	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
QLogic 4Gb FC Dual-Port PCIe HBA for IBM System x			
	AC1	3568	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
ServeRAID-BR10i SAS/SATA Controller			
	AC1	3577	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
QLogic 8Gb FC Single-port HBA for IBM System x			
	AC1	3578	Initial
	AC3		Initial

```
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
QLogic 8Gb FC Dual-port HBA for IBM System x
                              AC1      3579          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
Emulex 8Gb FC Single-port HBA for IBM System x
                              AC1      3580          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
Emulex 8Gb FC Dual-port HBA for IBM System x
                              AC1      3581          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
Brocade 8Gb FC Single-port HBA for IBM System x
                              AC1      3589          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
Brocade 8Gb FC Dual-port HBA for IBM System x
                              AC1      3591          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
1m LC-LC Fiber Cable (networking)
                              AC1      3700          Initial
                              AC3                    Initial
                              AC4                    Initial
5m LC-LC Fiber Cable (networking)
                              AC1      3701          Initial
                              AC3                    Initial
                              AC4                    Initial
25m LC-LC Fiber Cable (networking)
                              AC1      3702          Initial
                              AC3                    Initial
                              AC4                    Initial
IBM 1m SAS Cable
                              AC1      3714          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
IBM 3m SAS Cable
                              AC1      3716          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
0.5m QLogic Copper QDR InfiniBand QSFP 30AWG Cable
                              AC1      3725          Initial
                              AC3                    Initial
                              AC4                    Initial
1m QLogic Copper QDR InfiniBand QSFP 30AWG Cable
                              AC1      3726          Initial
                              AC3                    Initial
                              AC4                    Initial
3m QLogic Copper QDR InfiniBand QSFP 28AWG Cable
```

	AC1	3727	Initial
	AC3		Initial
	AC4		Initial
3m QLogic Optical QDR InfiniBand QSFP Cable			
	AC1	3731	Initial
	AC3		Initial
	AC4		Initial
10m QLogic Optical QDR InfiniBand QSFP Cable			
	AC1	3732	Initial
	AC3		Initial
	AC4		Initial
30m QLogic Optical QDR InfiniBand QSFP Cable			
	AC1	3733	Initial
	AC3		Initial
	AC4		Initial
0.5m Molex Direct Attach Copper SFP+ Cable			
	AC1	3735	Initial
	AC3		Initial
	AC4		Initial
1m Molex Direct Attach Copper SFP+ Cable			
	AC1	3736	Initial
	AC3		Initial
	AC4		Initial
3m Molex Direct Attach Copper SFP+ Cable			
	AC1	3737	Initial
	AC3		Initial
	AC4		Initial
7m Molex Direct Attach Copper SFP+ Cable			
	AC1	3738	Initial
	AC3		Initial
	AC4		Initial
IBM 50GB SATA 2.5" SFF Slim-HS High IOPS SSD			
	AC1	3745	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
3m Console Switch Cable (USB)			
	AC1	3751	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
IBM Single Cable USB Conversion Option (UCO)			
	AC1	3757	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
0.6m Yellow Cat5e Cable			
	AC1	3791	Initial
	AC3		Initial
	AC4		Initial
1.5m Yellow Cat5e Cable			
	AC1	3792	Initial
	AC3		Initial
	AC4		Initial
3m Yellow Cat5e Cable			
	AC1	3793	Initial
	AC3		Initial
	AC4		Initial
10m Yellow Cat5e Cable			
	AC1	3794	Initial
	AC3		Initial
	AC4		Initial
25m Yellow Cat5e Cable			
	AC1	3795	Initial
	AC3		Initial
	AC4		Initial
0.6m Green Cat5e Cable			

```
                              AC1      3796          Initial
                              AC3                    Initial
                              AC4                    Initial
1.5m Green Cat5e Cable
                              AC1      3797          Initial
                              AC3                    Initial
                              AC4                    Initial
3m Green Cat5e Cable
                              AC1      3798          Initial
                              AC3                    Initial
                              AC4                    Initial
10m Green Cat5e Cable
                              AC1      3799          Initial
                              AC3                    Initial
                              AC4                    Initial
25m Green Cat5e Cable
                              AC1      3800          Initial
                              AC3                    Initial
                              AC4                    Initial
0.6m Blue Cat5e Cable
                              AC1      3801          Initial
                              AC3                    Initial
                              AC4                    Initial
1.5m Blue Cat5e Cable
                              AC1      3802          Initial
                              AC3                    Initial
                              AC4                    Initial
3m Blue Cat5e Cable
                              AC1      3803          Initial
                              AC3                    Initial
                              AC4                    Initial
10m Blue Cat5e Cable
                              AC1      3804          Initial
                              AC3                    Initial
                              AC4                    Initial
25m Blue Cat5e Cable
                              AC1      3805          Initial
                              AC3                    Initial
                              AC4                    Initial
10m Emcore Connects/Intel Connects Optical Cable
                              AC1      3856          Initial
                              AC3                    Initial
                              AC4                    Initial
30m Emcore Connects/Intel Connects Optical Cable
                              AC1      3857          Initial
                              AC3                    Initial
                              AC4                    Initial
3m Emcore Connects/Intel Connects Optical Cable
                              AC1      3858          Initial
                              AC3                    Initial
                              AC4                    Initial
1m Mellanox Copper Cable for 4X IB and 10GbE
                              AC1      3859          Initial
                              AC3                    Initial
                              AC4                    Initial
3m Mellanox Copper Cable for 4X IB and 10GbE
                              AC1      3860          Initial
                              AC3                    Initial
                              AC4                    Initial
5m Mellanox Copper Cable for 4X IB and 10GbE
                              AC1      3861          Initial
                              AC3                    Initial
                              AC4                    Initial
8m Mellanox Copper Cable for 4X IB and 10GbE
                              AC1      3862          Initial
                              AC3                    Initial
                              AC4                    Initial
ServeRAID M5014 SAS/SATA Controller (Battery not
included)
                              AC1      3877          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
```

		MC4	Initial
Brocade 4Gb FC Single-port HBA for IBM System x			
		AC1	3885 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
Brocade 4Gb FC Dual-port HBA for IBM System x			
		AC1	3886 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
ServeRAID B5015 SSD Controller			
		AC1	3889 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
2GB (1x2GB, Dual Rank x8) PC3-10600 CL9 ECC DDR3-1333 LP RDIMM			
		AC1	3964 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
2U Bracket for NetXtreme II 10 GigE Express Fiber SR Adapter			
		AC1	4029 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
Power Supply Blank Filler			
		AC1	4042 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
2U bracket for Emulex 8Gb FC Single-port HBA for System x			
		AC1	4047 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
2U bracket for QLogic 8Gb FC Single-port HBA for System x			
		AC1	4049 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
2U Bracket for NetXtreme II 1000 Express Dual Port Ethernet Adapter			
		AC1	4055 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
2U bracket for ServeRAID-MR10M SAS/SATA Controller			
		AC1	4057 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial

```
                              MC3                     Initial
                              MC4                     Initial
2.5" HDD Filler Bezel
                              AC1       4069          Initial
                              AC3                     Initial
                              AC4                     Initial
                              MC1                     Initial
                              MC3                     Initial
                              MC4                     Initial
IBM UltraSlim Enhanced SATA DVD-ROM
                              AC1       4161          Initial
                              AC3                     Initial
                              AC4                     Initial
                              MC1                     Initial
                              MC3                     Initial
                              MC4                     Initial
UltraSlim Enhanced SATA Multi-Burner
                              AC1       4163          Initial
                              AC3                     Initial
                              AC4                     Initial
                              MC1                     Initial
                              MC3                     Initial
                              MC4                     Initial
Universal Slides Kit
                              AC1       4178          Initial
                              AC3                     Initial
                              AC4                     Initial
                              MC1                     Initial
                              MC3                     Initial
                              MC4                     Initial
7148-AC1 Routing Code                   4220          Initial
7148-MC1 Routing Code                   4221          Initial
7148-AC3 Routing Code                   4222          Initial
7148-AC4 Routing Code                   4223          Initial
7148-MC3 Routing Code                   4226          Initial
7148-MC4 Routing Code                   4227          Initial
7145-MC3 Routing Code                   4224          Initial
7145-MC4 Routing Code                   4225          Initial

Intel Xeon Processor X7560 8C (2.27GHz 24MB L3 130w
8S)
                              AC1       4458          Initial
                              AC3                     Initial
                              AC4                     Initial
                              MC1                     Initial
                              MC3                     Initial
                              MC4                     Initial
Intel Xeon Processor L7555 8C (1.86GHz 24MB L3 95w
8S)
                              AC1       4459          Initial
                              AC3                     Initial
                              AC4                     Initial
                              MC1                     Initial
                              MC3                     Initial
                              MC4                     Initial
Intel Xeon Processor X7550 8C (2.00GHz 18MB L3 130w
8S)
                              AC1       4460          Initial
                              AC3                     Initial
                              AC4                     Initial
                              MC1                     Initial
                              MC3                     Initial
                              MC4                     Initial
Intel Xeon Processor L7545 6C (1.86GHz 18MB L3 95w
8S)
                              AC1       4461          Initial
                              AC3                     Initial
                              AC4                     Initial
                              MC1                     Initial
                              MC3                     Initial
                              MC4                     Initial
Intel Xeon Processor E7540 6C (2.00GHz 18MB L3 105w
8S)
                              AC1       4462          Initial
```

```
                              AC3                       Initial
                              AC4                       Initial
                              MC1                       Initial
                              MC3                       Initial
                              MC4                       Initial
Intel Xeon Processor E7530 6C (1.86GHz 12MB L3 105w
4S)
                              AC1       4463            Initial
                              AC3                       Initial
                              AC4                       Initial
                              MC1                       Initial
                              MC3                       Initial
                              MC4                       Initial
Intel Xeon Processor E7520 4C (1.86GHz 18MB L3 95w
4S)
                              AC1       4464            Initial
                              AC3                       Initial
                              AC4                       Initial
                              MC1                       Initial
                              MC3                       Initial
                              MC4                       Initial
Intel Xeon Processor E6510 4C (1.73GHz 12MB L3 105w
2S)
                              AC1       4465            Initial
                              AC3                       Initial
                              AC4                       Initial
                              MC1                       Initial
                              MC3                       Initial
                              MC4                       Initial
Intel Xeon Processor X6550 8C (2.00GHz 18MB L3 130w
2S)
                              AC1       4466            Initial
                              AC3                       Initial
                              AC4                       Initial
                              MC1                       Initial
                              MC3                       Initial
                              MC4                       Initial
Intel Xeon Processor E6540 6C (2.00GHz 18MB L3 105w
2S)
                              AC1       4467            Initial
                              AC3                       Initial
                              AC4                       Initial
                              MC1                       Initial
                              MC3                       Initial
                              MC4                       Initial
Intel Xeon Processor X7542 6C (2.67GHz 12MB L3 130w
8S)
                              AC1       4468            Initial
                              AC3                       Initial
                              AC4                       Initial
                              MC1                       Initial
                              MC3                       Initial
                              MC4                       Initial
IBM 675W HE Redundant Power Supply
                              AC1       4782            Initial
                              AC3                       Initial
                              AC4                       Initial
                              MC1                       Initial
                              MC3                       Initial
                              MC4                       Initial
ServeRAID M5000 Series Advance Feature Key
                              AC1       5106            Initial
                              AC3                       Initial
                              AC4                       Initial
                              MC1                       Initial
                              MC3                       Initial
                              MC4                       Initial
IBM 50GB SATA 1.8" NHS SSD
                              AC1       5314            Initial
                              AC3                       Initial
                              AC4                       Initial
                              MC1                       Initial
                              MC3                       Initial
                              MC4                       Initial
```

IBM 500GB 7200 6Gbps NL SAS 2.5" SFF Slim-HS HDD			
	AC1	5409	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
IBM 146GB 15K 6Gbps SAS 2.5" SFF Slim-HS SED			
	AC1	5412	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
IBM 300GB 10K 6Gbps SAS 2.5" SFF Slim-HS SED			
	AC1	5413	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
IBM 500GB 7200 SATA 2.5" SFF Slim-HS HDD			
	AC1	5414	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
NetXtreme II 10 GigE Express Fiber SR Adapter			
	AC1	5451	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
IBM 73GB 15K 6Gbps SAS 2.5" SFF Slim-HS HDD			
	AC1	5522	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
IBM 146GB 15K 6Gbps SAS 2.5" SFF Slim-HS HDD			
	AC1	5536	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
IBM 146GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD			
	AC1	5537	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
IBM 300GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD			
	AC1	5599	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
x3690 X5 CPU Planar			
	AC1	5662	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
RAID 5 - Tertiary Array (SSD) - minimum of 3 SSDs required			
	AC1	5731	Initial
	AC3		Initial
	AC4		Initial

```
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial

ServeRAID M5000 Series Battery Assembly
                              AC1      5744          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
Emulex 10GbE Virtual Fabric Adapter for IBM System
x
                              AC1      5749          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
QLogic 10Gb CNA for IBM System x
                              AC1      5751          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
NetXtreme II 1000 Express Quad Port Ethernet
Adapter
                              AC1      5766          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
Intel Ethernet Dual Port Server Adapter I340-T2 for
IBM System x
                              AC1      5767          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
Intel Ethernet Quad Port Server Adapter I340-T4 for
IBM System x
                              AC1      5768          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
SSD Blank Filler
                              AC1      5779          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
2U Bracket for QLogic 10Gb CNA for IBM System x
                              AC1      5787          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
Remote Battery Cable
                              AC1      5862          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
Select storage devices - no RAID required
                              AC1      5977         Initial
                              AC3                   Initial
```

	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Select storage devices for RAID - configure RAID			
	AC1	5978	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
RAID 1 - Primary Array (SSD) - 2 SSDs required			
	AC1	5979	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
RAID 5 - Primary Array (SSD) - minimum of 3 SSDs required			
	AC1	5980	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
RAID 1 - Secondary Array (SSD) - 2 SSDs required			
	AC1	5981	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
IBM 6Gb SAS HBA			
	AC1	5982	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Unique SBB for AC1/MC1 models			
	AC1	6134	Initial
	MC1		Initial
Unique SBB for AC3/MC3 models			
	AC3	6136	Initial
	MC3		Initial
Unique SBB for AC4/MC4 models			
	AC4	6137	Initial
	MC4		Initial
1.8" SAS Storage Support			
	AC1	6138	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
SF Instruction			
	AC4	6139	Initial
1.5m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable			
	AC1	6201	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
2.8m, 10A/100-250V, C13 to IEC 320-C20 Rack Power Cable			
	AC1	6204	Initial
	AC3		Initial

	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Line cord - 4.3M, 10A/125V, C13 to NEMA 5-15P (US)			
	AC1	6207	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
4.3m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable			
	AC1	6263	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
2.8m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable			
	AC1	6311	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Line cord - 2.8m, 10A/250V, C13 to NEMA 6-15P (US)			
	AC1	6372	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
2.8m, 10A/200-250V, 2xC13 to IEC 320-C14 Rack Power Y-Cable			
	AC1	6406	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Short SAS cable			
	AC1	6428	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Long SAS cable			
	AC1	6429	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
2U Bracket for IBM 3Gb SAS HBA Controller v2			
	AC1	6455	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Drive ID label sheet			
	AC1	6456	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Friction Slide	AC1	6457	Initial
	AC3		Initial

	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Friction CMA			
	AC1	6458	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
	MC4		Initial
HDD Backplane Filler			
	AC1	6459	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
RAID 5 - Secondary Array (SSD) - minimum of 3 SSDs required			
	AC1	6472	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Primary Array 2 HDDs			
	AC1	7008	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Primary Array 3 HDDs			
	AC1	7009	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Primary Array 4 HDDs			
	AC1	7010	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Primary Array 5 HDDs			
	AC1	7011	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Primary Array 6 HDDs			
	AC1	7012	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Primary Array 7 HDDs			
	AC1	7013	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Primary Array 8 HDDs			
	AC1	7014	Initial
	AC3		Initial
	AC4		Initial

		MC1	Initial
		MC3	Initial
		MC4	Initial
Secondary Array 2 HDDs			
		AC1	7015 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
Secondary Array 3 HDDs			
		AC1	7016 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
Secondary Array 4 HDDs			
		AC1	7017 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
Secondary Array 5 HDDs			
		AC1	7057 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
Secondary Array 6 HDDs			
		AC1	7058 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
Secondary Array 7 HDDs			
		AC1	7059 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
Secondary Array 8 HDDs			
		AC1	7060 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
2U Bracket for High IOPS SSD PCIe Adapters			
		AC1	7466 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
2U Bracket for IBM 6Gb SAS HBA			
		AC1	7478 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial
		MC4	Initial
		MC4	Initial
2U bracket for QLogic 8Gb FC Dual-port HBA for System x			
		AC1	7550 Initial
		AC3	Initial
		AC4	Initial
		MC1	Initial
		MC3	Initial

```
                              MC4                    Initial
2U Bracket for Brocade 8Gb FC Single-port HBA for
IBM System x
                              AC1      7594          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
2U Bracket for Brocade 8Gb FC Dual-port HBA for IBM
System x
                              AC1      7595          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
x3690 X5 Base
                              AC1      7630          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
2U Bracket for Brocade 4Gb FC Single-port HBA for
IBM System x
                              AC1      7633          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
2U Bracket for Brocade 4Gb FC Dual-port HBA for IBM
System x
                              AC1      7634          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
Primary Array 9 HDDs
                              AC1      7664          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial

Grouped Product
                              AC1      7830          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
Customer Solution Center Services
                              AC1      7831          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
RAID 5 - Primary Array (SAS) - minimum of 3 HDDs
required
                              AC1      7853          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
RAID 5 - Secondary Array (SAS) - minimum of 3 HDDs
required
                              AC1      7854          Initial
                              AC3                    Initial
```

	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
RAID 6 - Primary Array (SAS) - minimum of 4 HDDs required			
	AC1	7857	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
RAID 6 - Secondary Array (SAS) - minimum of 4 HDDs required			
	AC1	7858	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
e1350 Special Bid Solution Component			
	AC1	7929	Initial
	AC3		Initial
	AC4		Initial
No HDD Selected			
	AC1	8026	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Consolidate Shipment			
	AC1	8031	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
e1350 Solution Component			
	AC1	8034	Initial
	AC3		Initial
	AC4		Initial
Compute Node			
	AC1	8036	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Management Node			
	AC1	8037	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Storage Node			
	AC1	8038	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
TAA Compliant Order			
	AC1	8067	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial

```
General Racking Solution
                              AC1      8072          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial

No SATA HDD Selected
                              AC1      8080          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
No 2.5" SAS HDD Selected
                              AC1      8081          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
No Publications Selected
                              AC1      8086          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
RAID 0 - Primary Array (SAS) - minimum of 2 HDDs
required
                              AC1      8141          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
RAID 1 - Primary Array (SAS) - 2 HDDs required
                              AC1      8142          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
RAID 0 - Secondary Array (SAS) - minimum of 2 HDDs
required
                              AC1      8144          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
RAID 1 - Secondary Array (SAS) - 2 HDDs required
                              AC1      8145          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial

System Documentation and Software-US English
                              AC1      8640          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
Integrate in manufacturing
                              AC1      8971          Initial
                              AC3                    Initial
                              AC4                    Initial
                              MC1                    Initial
                              MC3                    Initial
                              MC4                    Initial
```

Ship Uninstalled (Safety)			
	AC1	8972	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Hot Spare			
	AC1	9013	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Enable Memory Mirroring			
	AC1	9017	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Preload Specify			
	AC1	9200	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Windows Specify			
	MC1	9201	Initial
	MC3		Initial
	MC4		Initial
Red Hat Specify			
	AC1	9202	Initial
	AC3		Initial
	AC4		Initial
SuSE Specify			
	AC1	9203	Initial
	AC3		Initial
	AC4		Initial
Drop-in-the-Box Specify			
	AC1	9205	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
No Preload Specify			
	AC1	9206	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
VMWare Specify			
	AC1	9207	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Preload by Hardware Feature Specify			
	AC1	9220	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
2U Bracket for Emulex 10GbE Virtual Fabric Adapter for IBM System x			
	AC1	9297	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial

	MC3		Initial
	MC4		Initial
Primary Array 10 HDDs			
	AC1	9714	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Primary Array 11 HDDs			
	AC1	9715	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
ServeRAID M1000 Series Advance Feature Key			
	AC1	9749	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial

The following are features already announced for the 7148 machine type.

Description	Model Number	Feature Number	Initial/ MES/ Both/ Support
AC1			
	AC1		
AC3			
	AC3		
AC4			
	AC4		
MC1			
	MC1		
MC3			
	MC3		
MC4			
	MC4		
IBM 8x 2.5" HS SAS HDD Backplane			
	AC1	1790	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
IBM 3Gb SAS HBA Controller v2			
	AC1	3583	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
IBM x3690 X5 RAID Expansion Adapter			
	AC1	4164	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
Addl Intel Xeon Processor X7560 8C 2.26GHz 24MB Cache 130w			
	AC1	4469	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial

Addl Intel Xeon Processor L7555 8C 1.86GHz 24MB Cache 95w

AC1	4470	Initial
AC3		Initial
AC4		Initial
MC1		Initial
MC3		Initial
MC4		Initial

Addl Intel Xeon Processor X7550 8C 2.0GHz 18MB Cache 130w

AC1	4471	Initial
AC3		Initial
AC4		Initial
MC1		Initial
MC3		Initial
MC4		Initial

Addl Intel Xeon Processor L7545 6C 1.86GHz 18MB Cache 95w

AC1	4472	Initial
AC3		Initial
AC4		Initial
MC1		Initial
MC3		Initial
MC4		Initial

Addl Intel Xeon Processor E7540 6C 2.00GHz 18MB Cache 105w

AC1	4473	Initial
AC3		Initial
AC4		Initial
MC1		Initial
MC3		Initial
MC4		Initial

Addl Intel Xeon Processor E7530 6C 1.86GHz 12MB Cache 105w

AC1	4474	Initial
AC3		Initial
AC4		Initial
MC1		Initial
MC3		Initial
MC4		Initial

Addl Intel Xeon Processor E7520 4C 1.86GHz 18MB Cache 95w

AC1	4475	Initial
AC3		Initial
AC4		Initial
MC1		Initial
MC3		Initial
MC4		Initial

Addl Intel Xeon Processor E6510 4C 1.73GHz 12MB Cache 105w

AC1	4476	Initial
AC3		Initial
AC4		Initial
MC1		Initial
MC3		Initial
MC4		Initial

Addl Intel Xeon Processor X6550 8C 2.0GHz 18MB Cache 130w

AC1	4477	Initial
AC3		Initial
AC4		Initial
MC1		Initial
MC3		Initial
MC4		Initial

Addl Intel Xeon Processor E6540 6C 2.0GHz 18MB Cache 105w

AC1	4478	Initial
AC3		Initial
AC4		Initial
MC1		Initial
MC3		Initial
MC4		Initial

Addl Intel Xeon Processor X7542 6C 2.66GHz 18MB Cache 130w

	AC1	4479	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
IBM System x3690 X5 Ball Bearing Slide Kit			
	AC1	4786	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
IBM System x3690 X5 Cable Management Arm for Ball Bearing Slides			
	AC1	6473	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
IBM System x3690 X5 2U Cable Management Arm			
	AC1	6474	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
IBM x3690 X5 16-DIMM Internal Memory Expansion			
	AC1	9278	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
IBM 675W Redundant Power Supply Kit			
	AC1	9279	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
IBM System x3690 X5 PCI-Express (3x8) Riser Card			
	AC1	9280	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
IBM eXFlash 8x 1.8" HS SAS SSD Backplane			
	AC1	9281	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
IBM System x3690 X5 PCI-Express (1x16) Riser Card 3/4 length			
	AC1	9282	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
IBM System x3690 X5 PCI-Express (1x16) Riser Card full length			
	AC1	9283	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
IBM x3690 X5 Single SATA HDD Bay			
	AC1	9284	Initial

	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
IBM System x3690 X5 PCI-Express (2x8) Riser Card			
	AC1	9285	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial
IBM 4x 2.5" HS SAS HDD Backplane			
	AC1	9287	Initial
	AC3		Initial
	AC4		Initial
	MC1		Initial
	MC3		Initial
	MC4		Initial

Description	SEO Numbers	Initial/ MES/ Both/ Support	CSU
x3690 X5 - 1x1.86 GHz/18 MB, 8 GB E7520 four-core	7148ARU	Both	Yes
x3690 X5 - 1x1.86 GHz/18 MB, 8 GB E7520 four-core	71481RU	Both	Yes
x3690 X5 - 1x2.0 GHz/18 MB, 8 GB E7530 six-core	71482RU	Both	Yes
x3690 X5 - 1x2.0 GHz/18 MB, 8 GB X6550 Turbo eight core	71483RU	Both	Yes
x3690 X5 - 1x2.0 GHz/18 MB, 8 GB X6550 Turbo eight-core	71483GU	Both	Yes
x3690 X5 - 1x2.26 GHz/24 MB, 8 GB X7560 Turbo eight-core	71484RU	Both	Yes
x3850 X5 - 2x2.0 GHz/18 MB, 16 GB Express X7550 Turbo six-core	7148E4U	Both	Yes
x3690 X5 - 2x2.0 GHz/18 MB, 16 GB X6550 Turbo eight-core	71483DU	Both	Yes

Option SEOs

Description	SEO Numbers	Initial/ MES/ Both/ Support	CSU
Intel Xeon Processor X7560 8C 2.26 GHz 24MB Cache 130w	60Y0311	Both	Yes
Intel Xeon Processor L7555 8C 1.86 GHz 24MB Cache 95w	60Y0312	Both	Yes
Intel Xeon Processor X7550 8C 2.0 GHz 18MB Cache 130w	60Y0313	Both	Yes
Intel Xeon Processor L7545 6C 1.86 GHz 18MB Cache 95w	60Y0314	Both	Yes
Intel Xeon Processor E7540 6C 2.0 GHz 18MB Cache 105w	60Y0315	Both	Yes
Intel Xeon Processor E7530 6C 1.86 GHz 12MB Cache 105w	60Y0316	Both	Yes
Intel Xeon Processor E7520 4C 1.86 GHz 18MB Cache 95w	60Y0317	Both	Yes
Intel Xeon Processor E6510 4C 1.73 GHz 12MB Cache 105w	60Y0318	Both	Yes
Intel Xeon Processor X6550 8C 2.0 GHz 18MB Cache 130w	60Y0319	Both	Yes
Intel Xeon Processor E6540 6C 2.0 GHz 18MB Cache 105w	60Y0320	Both	Yes
Intel Xeon Processor X7542 6C 2.66 GHz 12MB Cache 130w	60Y0321	Both	Yes
IBM x3690 X5 16-DIMM Internal	60Y0323	Both	Yes

Memory Expansion			
IBM 675W Redundant Power Supply Kit	60Y0327	Both	Yes
IBM PCIe 2 x8 Adapter Kit	60Y0329	Both	Yes
IBM PCIe x16 Adapter 3/4 Video	60Y0331	Both	Yes
IBM PCIe x16 Adapter Full Video	60Y0337	Both	Yes
IBM 4x 2.5" HS SAS HDD Backplane	60Y0339	Both	Yes
IBM x3690 X5 PCI-Express (3x8) Riser Card	60Y0366	Both	Yes
IBM x3690 8x 1.8" HS SAS SSD Backplane	60Y0360	Both	Yes
IBM 8x 2.5" HS SAS HDD Backplane	60Y0381	Both	Yes
2.5" SATA single bay	60Y0333	Both	Yes
ServeRAID Expansion Adapter	60Y0309	Both	Yes
Ball Bearing Slide Kit	69Y2345	Both	Yes
Cable Management Arm for Ball Bearing Slide Kit	69Y2346	Both	Yes
Cable Management Arm	69Y2347	Both	Yes
2GB(1x2GB,1Rx8,1.5V) PC3-10600 CL9 ECC DDR3 1333Mhz LP RDIMM	44T1592	Both	Yes

IBM System x3690 X5 - 7148

Hardware models announcing with this release will utilize existing U.S. ServicePacs.

Please reference the following IBM Web site for applicable U.S. ServicePac information:

http://www-935.ibm.com/services/us/its/html/servicepac_americas.html

ServicePac for Warranty and Maintenance

Machine Type/Model	Description	ServicePac SEO	ServicePac MTM
7148	3 Year Onsite Repair 9x5 4 Hour Response	88Y8306	67567F7
7148	3 Year Onsite Repair 24x7 4 Hour Response	88Y8307	67567F8
7148	3 Year Onsite Repair 24x7 2 Hour Response	88Y8308	67567F9
7148	4 Year Onsite Repair 9x5 Next Business Day	88Y8309	67567FA
7148	4 Year Onsite Repair 9x5 4 Hour Response	88Y8310	67567FB
7148	4 Year Onsite Repair 24x7 4 Hour Response	88Y8311	67567FC
7148	4 Year Onsite Repair 24x7 2 Hour Response	88Y8312	67567FD
7148	5 Year Onsite Repair 9x5 Next Business Day	88Y8313	67567FF
7148	5 Year Onsite Repair 9x5 4 Hour Response	88Y8314	67567FG
7148	5 Year Onsite Repair 24x7 4 Hour Response	88Y8315	67567FH
7148	5 Year Onsite Repair 24x7 2 Hour Response	88Y8316	67567FJ

ServicePac for Maintenance Agreement

Machine Type/Model	Description	ServicePac SEO	ServicePac MTM
7148	1 Year Onsite Repair 9x5 Next Business Day	88Y8317	6756MFG
7148	1 Year Onsite Repair 9x5 4 Hour Response	88Y8318	6756MFH
7148	1 Year Onsite Repair 24x7 4 Hour Response	88Y8319	6756MFJ
7148	1 Year Onsite Repair 24x7 2 Hour Response	88Y8320	6756MFK
7148	2 Year Onsite Repair 9x5 Next Business Day	88Y8321	6756MFM
7148	2 Year Onsite Repair 9x5 4 Hour Response	88Y8322	6756MFN
7148	2 Year Onsite Repair 24x7 4 Hour Response	88Y8323	6756MFP
7148	2 Year Onsite Repair 24x7 2 Hour Response	88Y8324	6756MFQ

ServicePac for Essential Support: Warranty and Maintenance Option plus Remote Technical Support

Machine Type	SEO Service Description ServicePac	SEO ServicePac
7148	3 Year Onsite Repair 24x7 4 Hour Response, Base Software Support, Hardware How-To	88Y8325

ServicePac for Essential Support: Maintenance plus Remote Technical Support

Machine Type/SEO	Service Description ServicePac	SEO ServicePac
7148	1 Year Onsite Repair 24x7 4 Hour Response plus 1 Year Base Software Support and Hardware How To 24x7	88Y8326
7148	1 Year Onsite Repair 9x5 NBD plus 1 Year Base Software Support and Hardware How To 24x7	88Y8327

These ServicePac offerings are valid for models announced in the United States.

Maintenance charges

For additional information on maintenance and pricing, please contact your IBM Sales Representative or your IBM Business Partner, or call 1-800-IBM-CALL (1-800-426-2255).

For ServiceElect (ESA) maintenance service charges, contact IBM Global Services at 888-IBM-4343 (426-4343).

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Corrections

(Corrected on July 15, 2010)
Revision to list of features in Product number and Prices sections.