

# IBM System x3550 M2 servers feature new Intel Xeon 5500 series processors with new, next-generation microarchitecture design featuring QuickPath Interconnect (QPI) and Turbo Boost technology

# Table of contents

- 1 At a glance
- 2 Overview
- **3** Key prerequisites
- 3 Planned availability date
- 3 Description
- 8 Product positioning
- 9 Product number

- 21 Publications
- 22 Services
- 23 Technical information
- 33 Terms and conditions
- 39 Pricing
- **57** Order now

# At a glance



Power, scalability, control, and serviceability for dynamic Web-serving and On Demand Business applications:

- Ultrathin, high-availability, rack-optimized, 1U platform
- Powerful Intel® Xeon® 5500 Series dual- or quad-core processor with new microarchitecture design featuring Quick Path Interconnect (QPI) technology with Intel Extended Memory 64 Technology (EM64T)
- 1 GB, 2 GB, 4 GB, or 8 GB (optional) of high-speed DDR3 SDRAM Registered DIMM memory; sixteen DIMM slots that support up to 128 GB
- Support for hot-swap SAS/SATA HDDs
- Six 2.5-inch hot-swap HDD bays
- Two PCI-Express Gen 2 x16 slots (one full height, half length and one low profile); both slots convertible to PCI-X via riser card option 64-bit/133 MHz
- 675-watt, auto-ranging power supply (redundant power supply optional)
- Integrated systems management processor (IMM)
- Integrated dual GB Ethernet standard plus two optional on planar for scalable network communication
- One 16550A-compatible serial port (rear), four USB ports (two front and two rear), and two video ports (one front and one rear)

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

#### Overview

New models of the System x3550 M2 feature new Intel dual-core and quad-core processors.

This 1U-high, rack-optimized server features superior power optimized performance and leadership virtualization and systems management for business critical workloads built on IBM X-Architecture®.

#### Optimized for energy efficiency and performance

Apply new, innovative energy-smart design with powerful high-performance processors, large capacity of high-performing DDR3 memory, and a balanced feature set ideal for many general business applications:

- Intel Xeon Processor E5502
- Intel Xeon Processor E5504
- Intel Xeon Processor E5506
- Intel Xeon Processor E5520
- Intel Xeon Processor L5520
- Intel Xeon Processor L5506
- Intel Xeon Processor E5530
- Intel Xeon Processor E5540
- Intel Xeon Processor X5550
- Intel Xeon Processor X5560
- Intel Xeon Processor X5570
- New energy efficient design incorporating low 675W and 92% efficient power supplies, 6 cooling fans (3 banks of counter-rotating dual fans), altimeter (barometric pressure sensor), and energy-efficient planar components to lower operational costs
- Highly functional chipset optimized for better application computing supporting general business workloads
- Sixteen DIMM slots that enable you to deploy up to 128 GB of DDR3 SDRAM Registered DIMM memory, with 2 GB, 4 GB, or 8 GB (optional) of memory (model dependent)
- SAS and SATA HDDs, and SSD with RAID support
- Integrated dual GB Ethernet standard plus two optional on planar for scalable network communication
- Embedded VMware ESXi 3.5 hypervisor (connector on motherboard) activated with optional 2 GB USB key for leadership virtualization

# Manage with efficiency

High availability, manageability, and serviceability features help diagnose problems quickly, even from remote locations:

- IBM Systems Director Active Energy Manager<sup>tm</sup> (AEM) for advanced power management including real time monitoring, trending, and reporting of power
- Snoop filters to boost processor performance
- Integrated SAS controller supporting up to six 2.5-inch hot-swap HDD with RAID solutions
- IPMI 2.0-compliant full IMM for enterprise-class systems management to monitor, maintain, and maximize server availability, including full remote systems management
- Optional IBM Virtual Media Key to enable the remote presence and blue-screen capture features

- Predictive Failure Analysis® (PFA) on six selected components that warns of problems before they occur
- Fast and easy servicing: Innovative light path diagnostics, improved onboard diagnostics, and LED diagnostic panel

## Ultimate fault tolerant protection

- Hot-swap, redundant fans with calibrated vectored cooling, to keep components cool, and simplified fan replacement
- Optional hot-swap, redundant power supplies to help reduce downtime
- High-performance hot-swap SAS and SATA HDDs and SSD
- ServerGuide<sup>tm1</sup>, IBM Director, and Web support
- Three-year, Customer Replaceable Unit (CRU) and on-site labor<sup>2</sup>, limited warranty<sup>3</sup>; optional warranty service upgrades available
- <sup>1</sup> The Microsoft® Windows® Preinstallation Environment software included as part of ServerGuide software, may be used for boot, diagnostic, setup, restoration, installation, configuration, test, or disaster recovery purposes only. **Note:** The Microsoft Windows Preinstallation Environment software contains a security feature that will cause an end-user customer's system to reboot without prior notification to the end-user customer after 24 hours of continuous use of the Microsoft Windows Preinstallation Environment. During routine usage of ServerGuide, which does not usually require usage of the Microsoft Windows Preinstallation Environment software for such an extended time period, this condition should not occur.
- $^{2}$  You may be asked certain diagnostic questions before a technician is sent.
- $^3$  For information on IBM's Statement of Limited Warranty, call 800-IBM-SERV (426-7378) or contact your IBM representative or reseller. Copies are available upon request.

# Key prerequisites

- Monitor
- USB keyboard
- USB mouse

Note: PS/2 style keyboard and mouse are not supported.

# Planned availability date

April 30, 2009

# Description

# System x3550 M2-related options

The System x3550 M2 server features an Intel Xeon dual- or quad-core processor that supports internal processing speeds of up to 2.93 GHz, and processing operations to memory up to 1333 MHz. They contain integrated, full-speed 4 MB or 8 MB ECC L2 cache.

# High-performance server subsystems

These servers are high-throughput, network servers with excellent scalability when you add memory and a second processor.

Two Intel Xeon connectors are standard on the system board to support installation of a second processor. High-speed DDR3 SDRAM Registered DIMM memory is optimized for 800 MHz, 1066 MHz, or 1333 MHz processor-to-memory subsystem performance.

# Standard System x3550 M2 configurations

				HDD		
Model	Processor Men	nory	GT/s	Interface	HDD	Other
7946-12x		2 GB 1 MB	4.80	SAS/SATA/SSD	2.5-in	Open bay hot-swap
7946-3Ax		2 GB 4 MB	4.80	SAS/SATA/SSD	2.5-in	Open bay hot-swap
7946-32x		GB MB	5.86	SAS/SATA/SSD	2.5-in	Open bay hot-swap
7946-42x		GB MB	5.86	SAS/SATA/SSD	2.5-in	Open bay hot-swap
7946-52x		GB MB	5.86	SAS/SATA/SSD	2.5-in	Open bay hot-swap
7946-62x		GB MB	5.86	SAS/SATA/SSD	2.5-in	Open bay hot-swap
7946-92x		4 GB 3 MB	6.40	SAS/SATA/SSD	2.5-in	Open bay hot-swap
Express N	Models					
				HDD		
Model	Processor Men	nory	GT/s	Interface	HDD	Other
7946-E1x		4 GB 4 MB	4.80	SAS/SATA/SSD	2.5-in	Open bay hot-swap
7946-E2x		GB MB	4.80	SAS/SATA/SSD	2.5-in	Open bay hot-swap
7946-E3x		GB B MB	4.80	SAS/SATA/SSD	2.5-in	Open bay hot-swap

Note: All models contain a SATA Combo optical drive.

# **Additional features**

- System board containing sixteen DIMM connectors, supporting 1 GB, 2 GB, 4 GB, or 8 GB (optional) DDR3 SDRAM Registered DIMM memory, with:
  - Support for up to 128 GB of system memory
  - Support for Chipkill<sup>tm</sup> memory
- 64-bit SAS controller
- SATA controller supporting one 12.7-mm (0.5-inch) CD-RW/DVD Combo drive
- SATA drive support that employs high-speed (up to 1.5 Gbps) dual differential pairs to communicate with simple-swap SATA HDDs
- Full-duplex Broadcom 5709 Dual Gigabit Ethernet PCIe controllers speeding network communications to LAN clients

The System x3550 M2 subsystems are tuned to provide solid system throughput from processor, to memory, to bus, to disk-intensive I/O. These features combined with multicore capability make this server an excellent choice for:

- Database
- E-mail collaboration
- · Linux® clusters
- File/print
- Virtualization

# High-availability and serviceability features

The System x3550 M2 server subsystem delivers excellent reliability and serviceability features:

- Six 2.5-inch hot-swap SAS/SATA/SSD HDD bays
- Hot-swap, redundant cooling fans
- Optional hot-swap, redundant power supplies
- ECC DIMMs combined with an integrated ECC memory controller correcting many soft and hard single-bit memory errors, while minimizing disruption of service to LAN clients
- Chipkill memory to detect and correct many multibit memory errors, helping keep the server up and running, while taking the inoperative memory offline
- ECC L2 cache processors to improve data integrity and help reduce downtime
- PFA on HDD options, memory, and fans, to help alert the system administrator of an imminent component failure
- Dual Broadcom 5709 Gigabit Ethernet controllers that support:
  - Failover, Adapter Fault Tolerance (AFT)
  - PXE 2.0 Boot Agent
  - IPMI 2.0 (Microsoft Windows only)
  - Wake on LAN®
  - Load balancing or teaming
  - TOE
- Worldwide, voltage-sensing 675-watt power supply with auto restart
- Up to six sets (two fans per set) of counter-rotating fans that provide excellent cooling for added reliability:
  - Each power supply comes with its own internal cooling fans.
  - Six fan sets cool a single processor, memory, and HDD bays.
  - Fan speed controls are incorporated to reduce noise, while reducing system temperatures.
- Integrated systems management processor for diagnostic, reset, POST, and auto recovery functions; monitoring temperature, voltage, and fan speed; alerts generated when thresholds are exceeded (refer to the <u>Limitations</u> section for restrictions)
- Information LED panel giving visual indications of system well-being
- Light path diagnostics and onboard diagnostics providing an error log that can help find a failing component, helping reduce downtime and service costs
- Easy access to system board, adapter cards, processor, and memory
- CPU failure recovery in dual-socket configurations:
  - Forces failed processor offline
  - Automatic server reboot capability
  - Generates alerts
  - Continues operations with the working processor

# Expandability and growth

The System x3550 M2 server contains high levels of function and storage capacity for a 1U, 19-inch rack-drawer package. It supports customer installation of adapters, processors, memory, and HDD options. Functions such as SVGA video, SAS, and two Gigabit Ethernet controllers are integrated on the system board. Features include:

- Rack-optimized design for 19-inch wide, industry-standard rack cabinets supported in the NetBAY42 and NetBAY25
- Sixteen DIMM connectors capable of support for up to 128 GB of system memory

- Six 2.5-inch slim-high, hot-swap SAS/SATA/SSD HDD bays
- Internal data storage up to 1.8 TB (using six 300 GB SATA 2.5-inch HDDs)
- 12.7-mm (0.5-inch) CD-RW/DVD Combo drive

# Systems management

# **Integrated Management Module (IMM)**

The System x3550 M2 includes an Integrated Management Module (IMM) that provides industry-standard Intelligent Platform Management Interface (IPMI) 2.0-compliant systems management. The IMM comes standard, and shares one of the two onboard Ethernet ports for access. The IMM can be accessed via software that is compatible with IPMI 2.0 (xCAT, for example).

# Features and benefits:

- Monitoring:
  - System voltages
  - Battery voltage
  - System temperatures
- Fan speed control.
- Fan tachometer monitor.
- Good Power signal monitor.
- System ID and planar version detection.
- System power and reset control.
- NMI detection (system interrupts).
- SMI detection and generation (system interrupts).
- Serial port text console redirection.
- System LED control (power, HDD, activity, alerts, and heartbeat).
- An embedded Web server gives you remote control from any standard Web browser. No additional software is required on the remote administrator's workstation.
- For users who are accustomed to a command-line interface (CLI), the ability for the administrator to also use the CLI from a Telnet session to perform some of the functions that can be performed from the Web server.
- Secure Sockets Layer (SSL) and Lightweight Directory Access Protocol (LDAP).
- Built-in LAN and serial connectivity that supports virtually any network infrastructure.
- Multiple alerting functions that warn systems administrators of potential problems through e-mail, IPMI PETs, and SNMP.

In addition, you can purchase an optional IBM Virtual Media Key to enable the remote presence and blue-screen capture features. You can add this key to the server through a connector on the planar. This key enables easy console redirection with text and graphics, keyboard, and mouse support (operating system must support USB) over the system management LAN connections.

With video compression now built into the adapter hardware, the adapter allows the greater screen sizes and refresh rates that are usually in the marketplace. This feature helps enable the user to display server activities from power-on to full operation remotely with remote user interaction at virtually any time.

#### IBM Director

The System x3550 M2 server also features IBM Director, a powerful, highly integrated, systems-management software solution built on industry standards and designed for ease of use. Exploit your existing enterprise or workgroup-management environments, and use rich security to access and manage physically dispersed

IT assets more efficiently over the Internet. It can help reduce costs through potentially:

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

IT administrators can view the hardware configuration of remote systems in detail, and monitor the usage and performance of critical components such as processors, HDDs, and memory.

IBM Director includes a portfolio of integrated server tools that work with the systems management monitoring functions. Typical functions and monitoring capabilities can include:

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

IT administrators have comprehensive, virtual on-site control of System x® servers with the ability to remotely:

- · Access the server, often 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
- Monitor and set thresholds on server health including:
  - Operating system load
  - POST time-out
  - Voltage
  - Temperature
- Set proactive alerts for critical server events including PFA on:
  - Memory
  - Fans
  - Power supplies
  - HDDs
- Define automated actions, such as:
  - Send 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 use of server resources, such as:
  - Memory
  - Processor
  - HDDs
- Identify potential performance bottlenecks and react to prevent downtime

IBM Director Agent integrates into leading workgroup and enterprise systems management environments via upward integration modules (available from IBM and

third parties). Advanced management capabilities built into System x servers are available through:

- Tivoli® Enterprise and Tivoli NetView®
- Computer Associates Unicenter TNG
- HP OpenView
- Microsoft SMS
- BMC Patrol
- NetIQ

# World-class support tools and programs

The System x3550 M2 server includes a number of 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 over the long haul. IBM can help your company maintain ownership of technology leadership network servers.

- IBM CRU and on-site, three-year limited warranty with next-business-day (NBD) service (same-business-day service optionally available) helps protect your investment if a problem occurs. This service also includes replacement of parts identified through Predicted Failure Analysis (PFA).
- The ServerProven<sup>4</sup> program lets you confidently configure your server with various devices and operating systems. This program provides compatibility information from actual testing of the System x3550 M2 server with various adapters and devices.
- The Web-based ServerGuide includes online publications, in addition to utilities and drivers that enable assisted loading of popular network operating systems.
- Electronic support on the Web provides additional support in an easy-to-use format.

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

# **Product positioning**

IBM's 3550 M2 is a 1U, dual socket rack server for single or multiple business-critical application hosting built on innovative IBM X-Architecture leveraging Intel Quick Path Interconnect (QPI) technology. Featuring power-optimized, high-performance Intel Xeon 5500 quad- and dual-core processors and a leadership, energy-efficient design with balanced functionality, the x3550 M2 can reduce cost, improve service, and allow you to manage risk easily and simply.

The x3550 M2 is targeted at large-enterprise, mid-market, and SMB rack customers looking to optimize their IT budgets, and is designed for single or multiple business-critical application hosting and virtualized, non-blade environments.

# **Optimized for speed**

The new System x3550 M2 server offers new levels of fast Intel Xeon dualand quad-core processors with up to 6.4 GT/s and lower power for datacenter environments and collaboration applications. This server is uniquely optimized for better application computing with a highly functional chipset and sixteen DIMM slots for a maximum of 128 GB of fully buffered DDR3 SDRAM Registered DIMM memory.

## **Innovation comes standard**

 Boost application efficiency with snoop filters that free up cache and improve processor performance.

- Supercharged TOE optimizes system performance by offloading protocol processing.
- A drop-down light path diagnostics panel improves in-rack manageability and allows easy problem identification.

# **Ultimate fault tolerant protection**

- Memory mirroring feature enables you to increase memory reliability.
- Integrated SAS controller with RAID 0, 1, and 1E on hot-swap SAS models helps safeguard your data at no additional cost.
- Simple-swap SATA models support JBOD (Just A Bunch of Disks) and Linux operating systems.

# **Target applications**

- Database
- · E-mail collaboration
- File/print
- Virtualization
- · Linux clustering
- · Scientific and technical computing

These powerful servers also meet traditional enterprise network server requirements, but with an added benefit of requiring less space.

#### **Product number**

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
Description	number
7046	4100
7946-AC1 Routing Code	4180
7946-MC1 Routing Code	4181

The following are newly announced features on the specified models of the IBM xSeries® 7946 machine type:

Description	MT	Model	Feature
7946-AC1 7946-MC1	7946 7946		
Optical Blank Bezel	7946	AC1 MC1	0906
NetXtreme II 1000 Express G Ethernet Adapter- PCIe	7946	AC1 MC1	1485
PRO/1000 GT Dual Port Server Adapter by Intel- PCI-X	7946	AC1	1579
PRO/1000 GT Quad Port Server Adapter by Intel-		MC1	
PCI-X	7946	AC1 MC1	1580
Emulex 4GB FC Single-Port PCI-E HBA for IBM System		MCI	
x	7946	AC1 MC1	1698
Emulex 4GB FC Dual-Port PCI-E HBA for IBM System x	7946	AC1 MC1	1699
EMEA Long Leadtime Configurations	7946		1763
Hungary CHW plant 9SH	7946		1764
Guad CHW plant 9KQ	7946		1765
ISTC CHW 9K2	7946	AC1	1766

_		MC1
RTP CHW 9NR	7946	AC1 1767 MC1
Offload Manufacturing to Guadalajara HVEC	7946	AC1 1768 MC1
Offload Manufacturing to RTP HVEC	7946	AC1 1769 MC1
Offload Manufacturing to ISTC	7946	AC1 1770 MC1
Routing for AP Foxconn	7946	AC1 1771 MC1
Capacity Scheduling Service	7946	AC1 1772 MC1
Custom SLA Scheduling Service	7946	AC1 1796 MC1
NVIDIA Quadro FX 1700 3D Graphics Card	7946	AC1 1822 MC1
NVIDIA Quadro FX 570	7946	AC1 1823 MC1
Redundant 675W Power supply	7946	AC1 1999 MC1
2U Bracket for NetXtreme II 1000 Express Ethernet Adapter	7946	AC1 2048
System Documentation and Software-US English	7946	MC1 AC1 2161 MC1Custom Asset Tagging - Standard
Custom Asset Tagging - Enhanced	7946	MC1 AC1 2201 MC1
Custom Image Load - Server	7946	AC1 2204 MC1
Custom Media Shipgroup	7946	AC1 2206 MC1
Request for Global Trade Number (UPC or EAN)	7946	AC1 2207 MC1
Custom Software/Firmware Setting - Standard	7946	AC1 2208 MC1
Custom Software/Firmware Setting - Enhanced	7946	AC1 2209 MC1
Custom RAID Configuration	7946	AC1 2212 MC1
Custom Labeling	7946	AC1 2220 MC1
Custom Palletization	7946	AC1 2221 MC1
Request for a new Vendor Logo Hardware	7946	AC1 2247
Request for an existing IBM Feature	7946	MC1 AC1 2248
Request for an existing Public RPQ	7946	MC1 AC1 2249 MC1
RAID Configuration	7946	AC1 2302 MC1
Rack Installation of 10 Component	7946	AC1 2305
Department of Defense UID Label	7946	MC1 AC1 2320
TCPIP Off Load Engine (TOE)	7946	MC1 AC1 2500
System Packaging-WW	7946	MC1 AC1 2577
2U Bracket for QLogic iSCSI Single-Port PCIe HBA for IBM System x	7946	MC1 AC1 2754
2U Bracket for IBM 10 GbE PCIe SR Server Adapter	7946	MC1 AC1 2755
2U Bracket for IBM SAS HBA Controller	7946	MC1 AC1 2769
PRO/1000 PT Dual Port Server Adapter by Intel	7946	MC1 AC1 2944
PRO/1000 PT Quad Port Server Adapter	7946	MC1 AC1 2974
PRO/1000 PF Server Adapter	7946	MC1 AC1 2975 MC1

QLogic iSCSI Single Port PCIe HBA for IBM System $\boldsymbol{x}$	7946	AC1	2976
QLogic iSCSI Dual Port PCIe HBA for IBM System x	7946	MC1 AC1 MC1	2977
IBM 10 GbE PCIe SR Server Adapter	7946	AC1 MC1	2978
NetXtreme II 1000 Express Dual Port Ethernet Adapter	7946	AC1	2995
Install in Rack 01	7946	MC1 AC1	3101
Install in Rack 02	7946	MC1 AC1	3102
Install in Rack 03	7946	MC1 AC1 MC1	3103
Install in Rack 04	7946	AC1 MC1	3104
Install in Rack 05	7946	AC1 MC1	3105
Install in Rack 06	7946	AC1 MC1	3106
Install in Rack 07	7946	AC1 MC1	3107
Install in Rack 08	7946	AC1	3108
Install in Rack 09	7946	MC1 AC1	3109
Install in Rack 10	7946	MC1 AC1 MC1	3110
Install in Rack 11	7946	AC1 MC1	3111
Install in Rack 12	7946	AC1 MC1	3112
Install in Rack 13	7946	AC1 MC1	3113
Install in Rack 14	7946	AC1 MC1	3114
Install in Rack 15	7946	AC1 MC1	3115
Install in Rack 16	7946	AC1 MC1	3116
Install in Rack 17	7946	AC1 MC1	3117
Install in Rack 18	7946	AC1 MC1	3118
Install in Rack 19	7946	AC1 MC1	3119
Install in Rack 20	7946	AC1 MC1	3120
Install in Rack 21	7946	AC1	3121
Install in Rack 22	7946	MC1 AC1 MC1	3122
Install in Rack 23	7946	AC1 MC1	3123
Install in Rack 24	7946	AC1	3124
Install in Rack 25	7946	MC1 AC1 MC1	3125
Install in Rack 26	7946	AC1 MC1	3126
Install in Rack 27	7946	AC1 MC1	3127
Install in Rack 28	7946	AC1 MC1	3128
Install in Rack 29	7946	AC1 MC1	3129
Install in Rack 30	7946	AC1 MC1	3130
Install in Rack 31	7946	AC1 MC1	3131
Install in Rack 32	7946	AC1 MC1	3132
Install in Rack 33	7946	AC1	3133

Install in Rack 34			MC1	
Install in Rack 35   7946   Act   3135   Act   3136   Act   3136   Act   3136   Act   3137   Act   3137   Act   3137   Act   3138   Act   3139   Act   3139   Act   3139   Act   3140   Act   3140   Act   3140   Act   3141   Act   Act   Act   Act   3141   Act   Ac	Install in Rack 34	7946	AC1	3134
Install in Rack 36	Install in Rack 35	7946	AC1	3135
Install in Rack 37   7946   Act   3137   Mct   3138   Mct   3138   Mct   3138   Mct   3138   Mct   3138   Mct   3139   Mct   3139   Mct   3140   Mct   3140   Mct   3140   Mct   3141   Mct	Install in Rack 36	7946	AC1	3136
Install in Rack 38	Install in Rack 37	7946	AC1	3137
Install in Rack 40   7946   AC1   3140   MC1	Install in Rack 38	7946	AC1	3138
Install in Rack 40   7946   ACI   3140   MCI   Install in Rack 41   7946   ACI   3141   MCI   Install in Rack 42   7946   ACI   3142   MCI   Install in Rack 43   7946   ACI   3143   MCI   Install in Rack 44   7946   ACI   3144   MCI   Install in Rack 45   7946   ACI   3145   MCI   Install in Rack 46   7946   ACI   3147   MCI   MCI   Install in Rack 47   7946   ACI   3147   MCI	Install in Rack 39	7946	AC1	3139
Install in Rack 41   Type   Act   State   St	Install in Rack 40	7946	AC1	3140
Install in Rack 42   7946   AC1   3142   MC1	Install in Rack 41	7946	AC1	3141
Install in Rack 43   7946   AC1   3143   MC1	Install in Rack 42	7946	AC1	3142
Install in Rack 44	Install in Rack 43	7946	AC1	3143
Install in Rack 45   7946   AC1   3145   MC1   3146   Install in Rack 46   7946   AC1   3147   MC1   3147   MC1   3147   MC1   3148   MC1   3148   MC1   3148   MC1   3149   MC1   3149   MC1   3149   MC1   3150   MC1   3150   MC1   3151   MC1   3151   MC1   3151   MC1   3152   MC1   3152   MC1   3152   MC1   3153   MC1   3153   MC1   3154   MC1   3155	Install in Rack 44	7946	AC1	3144
Install in Rack 46	Install in Rack 45	7946	AC1	3145
Install in Rack 47   7946   AC1   3147   MC1   Install in Rack 48   7946   AC1   3148   MC1   Install in Rack 49   7946   AC1   3149   MC1   Install in Rack 50   7946   AC1   3150   MC1   Install in Rack 51   7946   AC1   3151   MC1   Install in Rack 52   7946   AC1   3153   MC1   Install in Rack 53   7946   AC1   3153   MC1   Install in Rack 54   7946   AC1   3155   MC1   Install in Rack 55   7946   AC1   3155   MC1   Install in Rack 55   7946   AC1   3155   MC1   Install in Rack 56   7946   AC1   3156   MC1   Install in Rack 57   7946   AC1   3157   MC1   Install in Rack 58   7946   AC1   3158   MC1   Install in Rack 59   7946   AC1   3159   MC1   Install in Rack 60   7946   AC1   3160   MC1   Install in Rack 62   7946   AC1   3161   MC1   Install in Rack 62   7946   AC1   3161   MC1   Install in Rack 63   7946   AC1   3162   MC1   Install in Rack 64   7946   AC1   3163   MC1   Install in Rack 64   7946   AC1   3164   MC1   Install in Rack 64   7946   AC1   3162   MC1   Install in Rack 64   7946   AC1   3163   MC1   Install in Rack 64   7946   AC1   3164   MC1   Install in Rack 64   7946   AC1   3201   MC1   Rack location U02   7946   AC1   3202   Rack location U04   7946   AC1   3203   MC1   Rack location U05   7946   AC1   3204   MC1   Rack location U05   7946   AC1   3205   MC1   Rack location U05   7946   AC1   3205   MC1   Rack location U05   7946   AC1   3205   MC1   Rack location U06   7946   AC1   3205   MC1   Ra	Install in Rack 46	7946	AC1	3146
Install in Rack 48       7946       AC1       3148         Install in Rack 49       7946       AC1       3149         Install in Rack 50       7946       AC1       3150         Install in Rack 51       7946       AC1       3151         Install in Rack 52       7946       AC1       3152         MC1       3153       MC1       3153         Install in Rack 53       7946       AC1       3153         Install in Rack 54       7946       AC1       3154         Install in Rack 55       7946       AC1       3155         MC1       3156       MC1       3156         Install in Rack 56       7946       AC1       3156         Install in Rack 57       7946       AC1       3157         Install in Rack 58       7946       AC1       3158         Install in Rack 60       7946       AC1       3159         MC1       3159       MC1       3160         Install in Rack 61       7946       AC1       3161         Install in Rack 62       7946       AC1       3162         Install in Rack 64       7946       AC1       3163         Install in Rack 64       7946	Install in Rack 47	7946	AC1	3147
Install in Rack 49       7946 AC1 3149 MC1 AC1 3150 MC1         Install in Rack 50       7946 AC1 3151 MC1         Install in Rack 51       7946 AC1 3151 MC1         Install in Rack 52       7946 AC1 3152 MC1         Install in Rack 53       7946 AC1 3153 MC1         Install in Rack 54       7946 AC1 3154 MC1         Install in Rack 55       7946 AC1 3155 MC1         Install in Rack 56       7946 AC1 3156 MC1         Install in Rack 57       7946 AC1 3157 MC1         Install in Rack 58       7946 AC1 3158 MC1         Install in Rack 59       7946 AC1 3159 MC1         Install in Rack 60       7946 AC1 3160 MC1         Install in Rack 61       7946 AC1 3161 MC1         Install in Rack 62       7946 AC1 3162 MC1         Install in Rack 63       7946 AC1 3163 MC1         Install in Rack 64       7946 AC1 3164 MC1         Rack location U01       7946 AC1 3201 MC1         Rack location U03       7946 AC1 3203 MC1         Rack location U04       7946 AC1 3203 MC1         Rack location U05       7946 AC1 3204 MC1         Rack location U06       7946 AC1 3205 MC1         Rack location U07       7946 AC1 3205 MC1         Rack location U08       7946 AC1 3205 MC1         Rack location U09 <t< td=""><td>Install in Rack 48</td><td>7946</td><td>AC1</td><td>3148</td></t<>	Install in Rack 48	7946	AC1	3148
Install in Rack 50       7946 AC1 MC1 AC1 AC1 AC1 AC1 AC1 AC1 AC1 AC1 AC1 A	Install in Rack 49	7946	AC1	3149
Install in Rack 51       7946       AC1       3151         Install in Rack 52       7946       AC1       3152         Install in Rack 53       7946       AC1       3153         Install in Rack 54       7946       AC1       3154         Install in Rack 55       7946       AC1       3155         Install in Rack 56       7946       AC1       3156         Install in Rack 57       7946       AC1       3157         Install in Rack 58       7946       AC1       3158         MC1       3158       MC1       3159         MC1       3159       MC1       3160         Install in Rack 60       7946       AC1       3160         Install in Rack 61       7946       AC1       3161         Install in Rack 62       7946       AC1       3162         Install in Rack 63       7946       AC1       3163         MC1       3163       MC1         Install in Rack 64       7946       AC1       3164         Rack location U01       7946       AC1       3201         Rack location U02       7946       AC1       3202         MC1       AC1       3203	Install in Rack 50	7946	AC1	3150
Install in Rack 52       7946 AC1 MC1 MC1       3152 MC1 MC1         Install in Rack 54       7946 AC1 MC1 MC1       3153 MC1         Install in Rack 55       7946 AC1 MC1 MC1       3154 MC1         Install in Rack 56       7946 AC1 MC1 MC1       3156 MC1         Install in Rack 57       7946 AC1 MC1 MC1       3157 MC1         Install in Rack 58       7946 AC1 MC1 MC1       3158 MC1         Install in Rack 59       7946 AC1 MC1 MC1       3159 MC1         Install in Rack 60       7946 AC1 MC1 MC1       3160 MC1         Install in Rack 61       7946 AC1 MC1 MC1       3161 MC1         Install in Rack 62       7946 AC1 MC1 MC1       3162 MC1         Install in Rack 63       7946 AC1 MC1 MC1       3163 MC1         Install in Rack 64       7946 AC1 MC1 MC1       3201 MC1         Rack location U01       7946 AC1 MC1 MC1       3201 MC1         Rack location U03       7946 AC1 MC1 MC1       3203 MC1         Rack location U04       7946 AC1 MC1 MC1       3204 MC1         Rack location U05       7946 AC1 MC1 MC1       3205 MC1         Rack location U06       7946 AC1 MC1 MC1       3205 MC1         Rack location U06       7946 AC1 MC1       3205 MC1	Install in Rack 51	7946		3151
Install in Rack 54 Install in Rack 55 Install in Rack 56 Install in Rack 56 Install in Rack 56 Install in Rack 57 Install in Rack 57 Install in Rack 58 Install in Rack 58 Install in Rack 59 Install in Rack 60 Install in Rack 61 Install in Rack 62 Install in Rack 62 Install in Rack 63 Install in Rack 63 Install in Rack 64 Rack location U01 Rack location U04 Rack location U05 Rack location U05 Rack location U05 Rack location U06  Rack location U06 Rack location U06 Rack location U07 Rack locatio	Install in Rack 52	7946		3152
Install in Rack 54       7946 AC1 MC1       3154         Install in Rack 55       7946 AC1 MC1       3155         Install in Rack 56       7946 AC1 MC1       3156         Install in Rack 57       7946 AC1 MC1       3157         Install in Rack 58       7946 AC1 MC1       3158         Install in Rack 59       7946 AC1 MC1       3159         Install in Rack 60       7946 AC1 MC1       3160         Install in Rack 61       7946 AC1 MC1       3161         Install in Rack 62       7946 AC1 MC1       3162         Install in Rack 63       7946 AC1 MC1       3163         Install in Rack 64       7946 AC1 MC1       3201         Rack location U01       7946 AC1 MC1       3202         Rack location U03       7946 AC1 MC1       3203         Rack location U04       7946 AC1 MC1       3204         Rack location U05       7946 AC1 MC1       3205         Rack location U06       7946 AC1 MC1       3205	Install in Rack 53	7946	AC1	3153
Install in Rack 55       7946       AC1 MC1 MC1       3155 MC1         Install in Rack 56       7946       AC1 MC1 MC1       3156 MC1         Install in Rack 57       7946       AC1 MC1 MC1       3157 MC1         Install in Rack 58       7946       AC1 MC1 MC1       3158 MC1         Install in Rack 59       7946 AC1 MC1 MC1       3160 MC1         Install in Rack 60       7946 AC1 MC1 MC1       3161 MC1         Install in Rack 62       7946 AC1 MC1 MC1       3162 MC1         Install in Rack 63       7946 AC1 MC1 MC1       3163 MC1         Install in Rack 64       7946 AC1 MC1 MC1       3201 MC1         Rack location U01       7946 AC1 MC1 MC1       3202 MC1 MC1         Rack location U03       7946 AC1 MC1 MC1       3203 MC1 MC1         Rack location U04       7946 AC1 MC1 MC1       3204 MC1 MC1         Rack location U05       7946 AC1 MC1 MC1       3205 MC1         Rack location U06       7946 AC1 MC1 MC1       3205 MC1         Rack location U06       7946 AC1 MC1 MC1       3205 MC1	Install in Rack 54	7946	AC1	3154
Install in Rack 56 Install in Rack 57 Install in Rack 57 Install in Rack 58 Install in Rack 58 Install in Rack 59 Install in Rack 60 Install in Rack 60 Install in Rack 61 Install in Rack 62 Install in Rack 63 Install in Rack 63 Install in Rack 64 Install in Rack 64 Rack location U01 Rack location U04 Rack location U04 Rack location U05 Rack location U05 Rack location U06  Typ46 AC1	Install in Rack 55	7946	AC1	3155
Install in Rack 57 Install in Rack 58 Install in Rack 59 Install in Rack 59 Install in Rack 60 Install in Rack 60 Install in Rack 61 Install in Rack 61 Install in Rack 62 Install in Rack 63 Install in Rack 63 Install in Rack 63 Install in Rack 64 Install in Rack 64 Install in Rack 64 Install in Rack 65 Install in Rack 66 Install in Ra	Install in Rack 56	7946	AC1	3156
Install in Rack 58       7946 AC1 MC1       3158 MC1         Install in Rack 59       7946 AC1 MC1       3159 MC1         Install in Rack 60       7946 AC1 MC1       3160 MC1         Install in Rack 61       7946 AC1 MC1       3161 MC1         Install in Rack 62       7946 AC1 MC1       3162 MC1         Install in Rack 63       7946 AC1 MC1       3163 MC1         Install in Rack 64       7946 AC1 MC1       3201 MC1         Rack location U01       7946 AC1 MC1       3201 MC1         Rack location U02       7946 AC1 MC1       3202 MC1         Rack location U04       7946 AC1 MC1       3203 MC1         Rack location U05       7946 AC1 MC1       3205 MC1         Rack location U06       7946 AC1 MC1       3205 MC1	Install in Rack 57	7946	AC1	3157
Install in Rack 59       7946 AC1 MC1       3159 MC1         Install in Rack 60       7946 AC1 MC1       3160 MC1         Install in Rack 61       7946 AC1 MC1       3161 MC1         Install in Rack 62       7946 AC1 MC1       3162 MC1         Install in Rack 63       7946 AC1 MC1       3163 MC1         Install in Rack 64       7946 AC1 MC1       3164 MC1         Rack location U01       7946 AC1 MC1       3201 MC1         Rack location U02       7946 AC1 MC1       3202 MC1         Rack location U03       7946 AC1 MC1       3203 MC1         Rack location U04       7946 AC1 MC1       3204 MC1         Rack location U05       7946 AC1 MC1       3205 MC1         Rack location U06       7946 AC1 MC1       3206	Install in Rack 58	7946	AC1	3158
Install in Rack 60       7946 AC1 MC1       3160 MC1         Install in Rack 61       7946 AC1 MC1       3161 MC1         Install in Rack 62       7946 AC1 MC1       3162 MC1         Install in Rack 63       7946 AC1 MC1       3163 MC1         Install in Rack 64       7946 AC1 MC1       3201 MC1         Rack location U01       7946 AC1 MC1       3201 MC1         Rack location U02       7946 AC1 MC1       3202 MC1         Rack location U03       7946 AC1 MC1       3203 MC1         Rack location U04       7946 AC1 MC1       3204 MC1         Rack location U05       7946 AC1 MC1       3205 MC1         Rack location U06       7946 AC1 MC1       3205 MC1         Rack location U06       7946 AC1 MC1       3206	Install in Rack 59	7946	AC1	3159
Install in Rack 61       7946 AC1 MC1       3161         Install in Rack 62       7946 AC1 MC1       3162         Install in Rack 63       7946 AC1 MC1       3163         Install in Rack 64       7946 AC1 MC1       3164         Rack location U01       7946 AC1 MC1       3201         Rack location U02       7946 AC1 MC1       3202         Rack location U03       7946 AC1 MC1       3203         Rack location U04       7946 AC1 MC1       3204         Rack location U05       7946 AC1 MC1       3205         Rack location U06       7946 AC1 MC1       3205         Rack location U06       7946 AC1 MC1       3206	Install in Rack 60	7946	AC1	3160
Install in Rack 62       7946 AC1 MC1         Install in Rack 63       7946 AC1 MC1         Install in Rack 64       7946 AC1 MC1         Rack location U01       7946 AC1 MC1         Rack location U02       7946 AC1 MC1         Rack location U03       7946 AC1 MC1         Rack location U04       7946 AC1 MC1         Rack location U05       7946 AC1 MC1         Rack location U05       7946 AC1 MC1         Rack location U06       7946 AC1 MC1	Install in Rack 61	7946		3161
Install in Rack 63       7946 AC1 MC1       3163 MC1         Install in Rack 64       7946 AC1 MC1       3164 MC1         Rack location U01       7946 AC1 MC1       3201 MC1         Rack location U02       7946 AC1 MC1       3202 MC1         Rack location U03       7946 AC1 MC1       3203 MC1         Rack location U04       7946 AC1 MC1       3204 MC1         Rack location U05       7946 AC1 MC1       3205 MC1         Rack location U06       7946 AC1 MC1       3206	Install in Rack 62	7946	AC1	3162
Rack location U01 7946 AC1 3201 Rack location U02 7946 AC1 3202 Rack location U03 7946 AC1 3203 Rack location U04 7946 AC1 3204 Rack location U05 7946 AC1 3205 Rack location U05 7946 AC1 3205 Rack location U06 7946 AC1 3205 Rack location U06 7946 AC1 3206	Install in Rack 63	7946	AC1	3163
Rack location U01       7946 AC1 MC1         Rack location U02       7946 AC1 3202 MC1         Rack location U03       7946 AC1 3203 MC1         Rack location U04       7946 AC1 3204 MC1         Rack location U05       7946 AC1 3205 MC1         Rack location U06       7946 AC1 3206	Install in Rack 64	7946	AC1	3164
Rack location U02       7946 AC1 MC1         Rack location U03       7946 AC1 3203 MC1         Rack location U04       7946 AC1 3204 MC1         Rack location U05       7946 AC1 3205 MC1         Rack location U06       7946 AC1 3206	Rack location U01	7946	AC1	3201
Rack location U03       7946 AC1 MC1         Rack location U04       7946 AC1 3204 MC1         Rack location U05       7946 AC1 3205 MC1         Rack location U06       7946 AC1 3206	Rack location UO2	7946	AC1	3202
Rack location U04       7946 AC1 MC1         Rack location U05       7946 AC1 3205 MC1         Rack location U06       7946 AC1 3206	Rack location UO3	7946	AC1	3203
Rack location U05       7946 AC1 3205 MC1         Rack location U06       7946 AC1 3206	Rack location UO4	7946	AC1	3204
Rack location U06 7946 AC1 3206	Rack location UO5	7946	AC1	3205
	Rack location U06	7946		3206

			MC1	
Rack location UO	)7	7946	AC1	3207
Rack location UO	08	7946	MC1 AC1	3208
Rack location UO	)9	7946	MC1 AC1	3209
Rack location U1	10	7946	MC1 AC1	3210
Rack location U1	11	7946	MC1 AC1	3211
			MC1	
Rack location U1		7946	AC1 MC1	3212
Rack location U1	13	7946	AC1 MC1	3213
Rack location U1	14	7946	AC1 MC1	3214
Rack location U1	15	7946		3215
Rack location U1	16	7946	AC1	3216
Rack location U1	17	7946		3217
Rack location U1	18	7946	MC1 AC1	3218
Rack location U1	19	7946	MC1 AC1	3219
Rack location U2	20	7946	MC1 AC1	3220
Rack location U2			MC1	
	_	7946	MC1	3221
Rack location U2	22	7946	AC1 MC1	3222
Rack location U2	23	7946	AC1 MC1	3223
Rack location U2	24	7946	AC1 MC1	3224
Rack location U2	25	7946	AC1	3225
Rack location U2	26	7946		3226
Rack location U2	27	7946	MC1 AC1	3227
Rack location U2	28	7946	MC1 AC1	3228
Rack location U2	29	7946	MC1 AC1	3229
Rack location U3		7946	MC1	3230
			MC1	
Rack location U3		7946	AC1	3231
Rack location U3	32	7946	AC1 MC1	3232
Rack location U3	33	7946	AC1 MC1	3233
Rack location U3	34	7946	AC1	3234
Rack location U3	35	7946		3235
Rack location U3	36	7946		3236
Rack location U3	37	7946	MC1 AC1	3237
Rack location U3	38	7946	MC1 AC1	3238
Rack location U3		7946	MC1	3239
			MC1	
Rack location U4		7946	MC1	3240
Rack location U4		7946	AC1 MC1	3241
Rack location U4	12	7946	AC1 MC1	3242
DS4000 FC 4Gb PC	CI-X Single Port HBA	7946		3550
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DS4000 FC 4Gb PCI-X Dual Port HBA	7946	MC1 AC1	3551
ServeRAID-MR10M SAS/SATA Controller	7946	MC1 AC1	3559
2U Bracket for Emulex 4Gb Single-Port PCI-X or		MC1	
PCI-E HBA for Sys x	7946	AC1 MC1	3563
2U Bracket for Emulex 4Gb Dual-Port PCI-X or PCI-E HBA for Sys x	7946	AC1 MC1	3564
2U Bracket for QLogic 4-Gbps FC Single-Port PCI-E HBA	7946	AC1 MC1	3565
2U Bracket for QLogic 4-Gbps FC Dual-Port PCI-E HBA	7946	AC1	3566
QLogic 4Gb FC Single-Port PCIe HBA for IBM System		MC1	
X	7946	AC1 MC1	3567
QLogic 4Gb FC Dual-Port PCIe HBA for IBM System x	7946	AC1 MC1	3568
ServeRAID-MR10i SAS/SATA Controller	7946	AC1 MC1	3571
ServeRAID-BR10i SAS/SATA Controller	7946	AC1 MC1	3577
QLogic 8Gb FC Single-port HBA for IBM System x	7946	AC1 MC1	3578
QLogic 8Gb FC Dual-port HBA for IBM System x	7946	AC1 MC1	3579
Emulex 8Gb FC Single-port HBA for IBM System $\mathbf{x}$	7946	AC1 MC1	3580
Emulex 8Gb FC Dual-port HBA for IBM System x	7946	AC1 MC1	3581
IBM 3Gb SAS HBA Controller v2	7946	AC1 MC1	3583
ServeRAID-MR10is VAULT SAS/SATA Controller	7946	AC1 MC1	3584
Dual port 1Gb Ethernet Daughter Card	7946	AC1 MC1	3585
Brocade 8Gb FC Single-port HBA for IBM System $\boldsymbol{x}$	7946	AC1	3589
Brocade 8Gb FC Dual-port HBA for IBM System x	7946	MC1	3591
Dual-Core Intel Xeon E5502 (1.86GHz 4MB L2 Cache	7046	MC1	2627
800MHz FSB 80W)	7946	AC1 MC1	3637
Quad-Core Intel Xeon E5506 (2.13GHz 4MB L2 Cache 800MHz FSB 80w)	7946	AC1	3638
Quad-Core Intel Xeon L5520 (2.26GHz 8MB L2 Cache	7046	MC1	2620
1066MHz FSB LV 60w)	7946	AC1 MC1	3639
Quad-Core Intel Xeon E5530 (2.4GHz 8MB L2 Cache 1066MHz FSB 80w)	7946	AC1	3640
Quad-Core Intel Xeon X5550 (2.66GHz 8MB L2 Cache	7046	MC1	2641
1333MHz FSB 95w)	7946	AC1 MC1	3641
Quad-Core Intel Xeon X5560 (2.8GHz 8MB L2 Cache 1333MHz FSB 95w)	7946	AC1 MC1	3642
Quad-Core Intel Xeon X5570 (2.93GHz 8MB L2 Cache 1333MHz FSB 95w)	7946	AC1 MC1	3643
1m LC-LC Fiber Cable (networking)	7946	AC1	3700
5m LC-LC Fiber Cable (networking) 25m LC-LC Fiber Cable (networking)	7946 7946	AC1 AC1	3701 3702
1m LC-LC Fiber Cable	7946	AC1 MC1	3703
5m LC-LC Fiber Cable	7946	AC1	3704
25m LC-LC Fiber Cable	7946	MC1	3705
		MC1	

IBM 50GB SATA 2.5" SFF Slim-HS High IOPS SSD	7946	AC1	3745
IBM 31.4GB 2.5" Solid State Drive	7946	MC1 AC1	3747
3m Console Switch Cable (USB)	7946	MC1	3751
1.5M USB Conversion Cable Set	7946	MC1	3757
1.8m Black Cat5e Cable	7946	MC1 AC1	3760
3m Black Cat5e Cable	7946	MC1	3761
10m Black Cat5e Cable	7946	MC1 AC1 MC1	3762
Cyclades RJ45 -to- DB9 serial cable adapter 0.6m Yellow Cat5e Cable	7946 7946	AC1 AC1	3769 3791
1.5m Yellow Cat5e Cable	7946	MC1	3792
3m Yellow Cat5e Cable	7946	MC1 AC1 MC1	3793
10m Yellow Cat5e Cable	7946	AC1 MC1	3794
25m Yellow Cat5e Cable	7946	AC1 MC1	3795
0.6m Green Cat5e Cable	7946	AC1 MC1	3796
1.5m Green Cat5e Cable	7946	AC1 MC1	3797
3m Green Cat5e Cable	7946	AC1 MC1	3798
10m Green Cat5e Cable	7946	AC1 MC1	3799
25m Green Cat5e Cable	7946	AC1 MC1	3800
0.6m Blue Cat5e Cable	7946	AC1 MC1	3801
1.5m Blue Cat5e Cable	7946	AC1 MC1	3802
3m Blue Cat5e Cable	7946	AC1 MC1	3803
10m Blue Cat5e Cable	7946	AC1 MC1	3804
25m Blue Cat5e Cable	7946	AC1 MC1	3805
2U Bracket for NetXtreme II 10 GigE Express Fiber SR Adapter	7946	AC1	4029
2x3 2.5" HDD backplane for 1U	7946	MC1 AC1	4038
Slide Kit	7946	MC1 AC1	4039
GBM, CMA	7946	MC1 AC1	4040
System code Group BoM	7946	MC1 AC1	4041
Power Supply Blank Filler	7946	MC1 AC1	4042
2U bracket for Emulex 8Gb FC Single-port HBA for		MC1	
System x	7946	AC1 MC1	4047
2U bracket for Emulex 8Gb FC Dual-port HBA for System x	7946	AC1 MC1	4048
2U bracket for QLogic 8Gb FC Single-port HBA for System x	7946	AC1	4049
2U Bracket for NetXtreme II 1000 Express Dual Port		MC1	
Ethernet Adapter	7946	AC1 MC1	4055
2.5" HDD Filler Bezel	7946	AC1 MC1	4069
UltraSlim Enhanced SATA DVD-ROM	7946	AC1 MC1	4161

UltraSlim Enhanced SATA CD-RW / DVD-ROM Combo	7946	AC1	4162
UltraSlim Enhanced SATA Multi-Burner	7946	MC1 AC1 MC1	4163
IBM 1m LC-LC Fibre Channel Cable	7946	AC1 MC1	4282
IBM 5m LC-LC Fibre Channel Cable	7946	AC1 MC1	4283
IBM 25m LC-LC Fibre Channel Cable	7946	AC1 MC1	4284
InfiniBand 8 meter 4x Cable for IBM eServer BladeCenter	7946	AC1	4294
InfiniBand 4x Cable 3 meter for IBM eServer BladeCenter	7946	AC1	4296
Simple Swap Kit	7946	AC1	4319
Simple Shap Kit	7310	MC1	1313
PCI-X Riser Card slot 1 (support low profile			
adapter)	7946	AC1	4373
		MC1	
PCI-Express (1x16) Riser Card Slot 2 (support	=0.46		40==
FH/HL adapter)	7946	AC1	4375
Customer Provided and Installed - Red Hat		MC1	
Enterprise Linux 4 ES for AMD64/EM64T	7946	AC1	4714
Customer Provided and Installed - Red Hat	7 340	ACI	7/17
Enterprise Linux 4 WS for x86	7946	AC1	4732
Customer Provided and Installed - Microsoft			
Windows Server 2003 R2 Standard Edition	7946	AC1	4733
Customer Provided and Installed - Microsoft			
Windows Server 2003, Enterprise Edition	7946	AC1	4734
Customer Provided and Installed - Microsoft	7046	1	4725
Windows Server 2003, Standard Edition Customer Provided and Installed - Microsoft	7946	AC1	4735
Windows Server 2003, Web Edition	7946	AC1	4736
Customer Provided and Installed - Microsoft	7310	ACI	17 30
Windows Server 2003, Enterprise x64 Edition	7946	AC1	4737
Customer Provided and Installed - Microsoft			
Windows Server 2003 R2 Enterprise x64 Edition	7946	AC1	4738
Customer Provided and Installed - Microsoft	7046	1	4720
Windows Server 2003 R2 Standard x64 Edition Customer Provided and Installed - Microsoft	7946	AC1	4739
Windows Server 2003 R2 Enterprise Edition	7946	AC1	4740
Customer Provided and Installed - Red Hat	7310	7101	17.10
Enterprise Linux 3 WS for x86	7946	AC1	4741
Customer Provided and Installed - Red Hat			
Enterprise Linux 4 WS for AMD64/EM64T	7946	AC1	4742
Customer Provided and Installed - Red Hat	7046	4.61	4742
Enterprise Linux 4 AS for AMD64/EM64T Customer Provided and Installed - SUSE LINUX	7946	ACI	4743
Enterprise Server 9 for x86	7946	AC1	4744
Customer Provided and Installed - Red Hat			
Enterprise Linux 4 ES for x86	7946	AC1	4745
Customer Provided and Installed - Red Hat			
Enterprise Linux 4 AS for x86	7946	AC1	4746
Customer Provided and Installed - SUSE LINUX Enterprise Server 9 for AMD64/EM64T	7946	AC1	4747
Customer Provided and Installed - Microsoft	7940	ACI	4/4/
Windows Server 2003, Standard x64 Edition	7946	AC1	4748
Customer Provided and Installed - NetWare 6.5	7946	AC1	4749
DO NOT USE - Microsoft Windows Server 2003 R2,			
Web Edition	7946	AC1	4751
Customer Provided and Installed - Microsoft	7046	1	4750
Windows Small Business Server 2003 Customer Provided and Installed - Red Hat	7946	AC1	4758
Enterprise Linux 3 AS for x86	7946	AC1	4759
Customer Provided and Installed - VMware ESX	7310	ACI	17 33
Server 2.5	7946	AC1	4760
Customer Provided and Installed - Red Hat			
Enterprise Linux 3 ES for AMD64/EM64T	7946	AC1	4761
Customer Provided and Installed - Red Hat	70.10		4700
Enterprise Linux 3 AS for AMD64/EM64T Customer Provided and Installed - Red Hat	7946	AC1	4762
Enterprise Linux 3 ES for x86	7946	AC1	4763
Customer Provided and Installed - VMware ESX	. 5 +0	,,,,,	1, 05

Server 3.0 Customer Provided and Installed - Red Hat	7946	AC1	4764
Enterprise Linux 3 WS for AMD64/EM64T	7946	AC1	4765
<pre>InfiniBand 10 meter 4x Cable for IBM BladeCenter® IBM Virtual Media Key</pre>	7946 7946	AC1 AC1	4866 5080
IBM VII Cual Meula Key	7940	MC1	3080
50 GB Simple Swap SATA SSD	7946	AC1 MC1	5197
NetXtreme II 10 GigE Express Fiber SR Adapter	7946	AC1 MC1	5451
IBM 73GB 15K 6Gbps SAS 2.5" SFF Slim-HS HDD	7946	AC1 MC1	5522
IBM 146GB 15K 6Gbps SAS 2.5" SFF Slim-HS HDD	7946	AC1 MC1	5536
IBM 146GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD	7946	AC1 MC1	5537
IBM 73 GB 10K SAS 2.5" SFF Slim-HS HDD	7946	AC1 MC1	5577
IBM 146 GB 10K SAS 2.5" SFF Slim-HS HDD	7946	AC1 MC1	5578
IBM 73 GB 15K SAS 2.5" SFF Slim-HS HDD	7946	AC1 MC1	5579
300GB 10K SATA 2.5" Slim-HS HDD	7946	AC1 MC1	5595
IBM 300GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD	7946	AC1 MC1	5599
Base	7946	AC1 MC1	5600
System Common planar for 1U/2U	7946	AC1 MC1	5653
Remote Battery Cable	7946	AC1 MC1	5862
ServeRAID-MR10i Li-Ion Battery	7946	AC1 MC1	5864
1.5m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable	7946	AC1	6201
Cable	7 340	MC1	0201
2.8m, $10A/100-250V$ , C13 to IEC 320-C20 Rack Power Cable	7946	AC1	6204
Line cord - 4.3M, 10A/125V, C13 to NEMA 5-15P (US)	7946	MC1 AC1	6207
4.3m, 10A/100-250V, C13 to IEC 320-C14 Rack Power		MC1	
Cable	7946	AC1 MC1	6263
2.8m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable	7946	AC1	6311
2.8m, 10A/120V, C13 to NEMA 5-15P (US) Line Cord	7946	MC1 AC1	6313
Rack power cable - 2.0m, 125-250V, C13 to IEC		MC1	
320-C14 (ww)	7946	AC1 MC1	6316
Line cord - 1.8m, 10A/250V, C13 to NEMA 6-15P (US)	7946	AC1 MC1	6351
Line cord - 1.8M, 10A/125V, C13 to NEMA 5-15P (US)	7946	AC1 MC1	6369
Line cord - 2.8m, 10A/250V, C13 to NEMA 6-15P (US)	7946	AC1 MC1	6372
Quad-Core Intel Xeon E5504 (2.0GHz 4MB L2 Cache 800MHz FSB 80w)	7946	AC1 MC1	6990
Quad-Core Intel Xeon E5520 (2.26GHz 8MB L2 Cache 1066MHz FSB 80w)	7946	AC1 MC1	6991
Quad-Core Intel Xeon L5506 (2.13GHz 4MB L2 Cache 800MHz FSB LV 60w)	7946	AC1 MC1	6992
Quad-Core Intel Xeon E5540 (2.53GHz 8MB L2 Cache 1066MHz FSB 80w)	7946	AC1 MC1	6993
RAID 10 - Primary Array (SAS) - minimum of 4 HDDs required	7946	AC1	7074
requireu	1340	MC1	1014

RAID 10 - Secondary Array (SAS) - minimum of 4 HDDs required	7946	AC1 MC1	7075
2U bracket for QLogic 8Gb FC Dual-port HBA for System x	7946	AC1	7550
2U Bracket for Brocade 8Gb FC Single-port HBA for IBM System x	7946	MC1 AC1	7594
2U Bracket for Brocade 8Gb FC Dual-port HBA for IBM System x	7946	MC1 AC1	7595
Grouped Product	7946	MC1 AC1	7830
Customer Solution Center Services	7946	MC1 AC1	7831
No HDD Selected	7946	MC1 AC1	8026
Consolidate Shipment	7946	MC1 AC1	8031
·	7946	MC1	8034
e1350 Solution Component Compute Node	7946	AC1	8036
Management Node	7946	MC1 AC1	8037
Storage Node	7946	MC1 AC1	8038
TAA Compliant Order	7946	MC1 AC1	8067
General Racking Solution	7946	MC1 AC1	8072
No SATA HDD Selected	7946	MC1 AC1	8080
No 2.5" SAS HDD Selected	7946	MC1 AC1	8081
No Publications Selected	7946	MC1 AC1	8086
RAID 1E - Primary Array (SAS) - minimum of 3 HDDs required	7946	MC1 AC1	8143
RAID 1E - Secondary Array (SAS) - minimum of 3		MC1	
HDDs required	7946	AC1 MC1	8146
IBM 2 Button Optical Wheel Mouse - Black - USB	7946	AC1 MC1	8912
IBM 3 Button Optical Mouse - Black - USB	7946	AC1 MC1	8913
Integrate in manufacturing	7946	AC1 MC1	8971
Ship Uninstalled (Safety)	7946	AC1 MC1	8972
No Internal RAID	7946	AC1	9012
Hot Spare	7946	MC1	9013
Enable Memory Mirroring	7946	MC1 AC1	9017
Internal SAS RAID - Setup by IBM	7946	MC1 AC1	9066
Internal SAS RAID - Setup by Customer	7946	MC1 AC1	9067
RAID 0 - SAS Primary Array - minimum of 2 HDD	=0.46	MC1	04.44
required	7946	AC1 MC1	8141
RAID 1 - SAS Primary Array - 2 HDDs required	7946	AC1 MC1	8142
RAID 5 - SAS Primary Array - minimum of 3 HDDs required	7946	AC1 MC1	7853
RAID 0 - SAS Secondary Array - minimum of 2 HDD required	7946	AC1	8144
RAID 1 - SAS Secondary Array - 2 HDDs required	7946	MC1 AC1	8145
,		MC1	

RAID 5 - SAS Secondary Array - minimum of 3 HDDs			
required	7946	AC1 MC1	7854
Storage Subsystem ID 01	7946	AC1 MC1	9170
Storage Subsystem ID 02	7946	AC1 MC1	9171
Storage Subsystem ID 03	7946	AC1 MC1	9172
Storage Subsystem ID 04	7946	AC1	9173
Storage Subsystem ID 05	7946	MC1 AC1 MC1	9174
Storage Subsystem ID 06	7946	AC1 MC1	9175
Storage Subsystem ID 07	7946	AC1 MC1	9176
Storage Subsystem ID 08	7946	AC1 MC1	9177
Storage Subsystem ID 09	7946	AC1 MC1	9178
Storage Subsystem ID 10	7946	AC1 MC1	9179
Storage Subsystem ID 11	7946	AC1 MC1	9180
Storage Subsystem ID 12	7946	AC1 MC1	9181
Storage Subsystem ID 13	7946	AC1 MC1	9182
Storage Subsystem ID 14	7946	AC1 MC1	9183
Storage Subsystem ID 15	7946	AC1 MC1	9184
Storage Subsystem ID 16	7946	AC1 MC1	9185
Storage Subsystem ID 17	7946	AC1 MC1	9186
Storage Subsystem ID 18	7946	AC1 MC1	9187
Storage Subsystem ID 19	7946	AC1 MC1	9188
Storage Subsystem ID 20	7946	AC1 MC1	9189
RAID 6 - SAS Primary Array - minimum of 4 HDDs required	7946	AC1	7857
RAID 6 - SAS Secondary Array - minimum of 4 HDDs	7540	MC1	7037
required	7946	AC1 MC1	7858
Preload Specify	7946	AC1 MC1	9200
Windows Specify	7946	MC1	9201
Red Hat Specify	7946	AC1	9202
SUSE Specify	7946		9203
Drop-in-the-Box Specify	7946	AC1	9205
No Preload Specify	7946	MC1 AC1	9206
The following are features already announced for the	7946	MC1 mach	ine type:
Description	МТ	Model	Feature
7946-AC1	7946	AC1	
7946-MC1 Addl Dual-Core Intel Xeon E5502 (1.86GHz 4MB L2	7946	MC1	
800MHz FSB 80w)	7946	AC1 MC1	0362
1GB DDR3-1333 1Rx8 LP RDIMM	7946	AC1	3963
2GB DDR3-1333 2Rx8 LP RDIMM	7946	AC1 MC1	3964
2GB DDR3-1333 1Rx4 LP RDTMM	7946	AC1	3965

2GB DDR3-1333 1Rx4 LP RDIMM

7946 AC1

3965

4GB DDR3-1333 2Rx4 LP RDIMM	7946	MC1 AC1 MC1	3966
Addl Quad-Core Intel Xeon E5506 (2.13GHz 4MB L2 800MHz FSB 80w)	7946	AC1 MC1	4410
Addl Quad-Core Intel Xeon L5520 (2.26GHz 8MB L2 1066MHz FSB LV 60w)	7946	AC1 MC1	4411
Addl Quad-Core Intel Xeon E5530 (2.4GHz 8MB L2 1066MHz FSB 80w)	7946	AC1 MC1	4412
Addl Quad-Core Intel Xeon X5550 (2.66GHz 8MB L2 1333MHz FSB 95w)	7946	AC1 MC1	4413
Addl Quad-Core Intel Xeon X5560 (2.8GHz 8MB L2 1333MHz FSB 95w)	7946	AC1 MC1	4414
Addl Quad-Core Intel Xeon X5570 (2.93GHz 8MB L2 1333MHz FSB 95w)	7946	AC1 MC1	4415
Addl Quad-Core Intel Xeon E5504 (2.0GHz 4MB L2 800MHz FSB 80w)	7946	AC1	4449
PCI-Express (1x16) Riser Card Slot 1 (support low profile adapter)	7946	AC1	5076
PCI-X Riser Card slot 2 (support FH/HL adapter)	7946	MC1 AC1 MC1	5077
Addl Quad-Core Intel Xeon E5520 (2.26GHz 8MB L2 1066MHz FSB 80w)	7946	AC1 MC1	7750
Addl Quad-Core Intel Xeon L5506 (2.13GHz 4MB L2 800MHz FSB LV 60w)	7946	AC1 MC1	7751
Addl Quad-Core Intel Xeon E5540 (2.53GHz 8MB L2			7752
1066MHz FSB 80w)	7946	AC1 MC1	1132
	7946		7732
1066MHz FSB 80w)	SE	MC1	7732
1066MHz FSB 80w)  The Single Entity Offerings (SEO)	SE nu 79 79 79 79 79	MC1	7732
1066MHz FSB 80w)  The Single Entity Offerings (SEO)  Description	SE nu 79 79 79 79 79 79 79 79 79	MC1  O mber  4612U 463AU 4632U 4642U 4652U 4662U	7732
1066MHz FSB 80w)  The Single Entity Offerings (SEO)  Description  IBM System x3550 M2	SE nu 79 79 79 79 79 79 79 79 79	MC1 Omber 4612U 463AU 4632U 4642U 4652U 4662U 4692U 46E1U 46E2U	7732
1066MHz FSB 80w)  The Single Entity Offerings (SEO)  Description  IBM System x3550 M2  IBM System x3550 M2 Express Models	SE nu 79 79 79 79 79 79 79 79 79	MC1 Omber 4612U 463AU 4632U 4642U 4652U 4662U 4692U 46E1U 46E2U	
The Single Entity Offerings (SEO)  Description IBM System x3550 M2  IBM System x3550 M2 Express Models  Option SEOs	SE nu 79 79 79 79 79 79 79 79 79	MC1  Omber  4612U 463AU 4632U 4662U 4662U 4662U 4662U 46E1U 46E3U	r
The Single Entity Offerings (SEO)  Description  IBM System x3550 M2  IBM System x3550 M2 Express Models  Option SEOs  Description  Intel Xeon Processor E5502	SE nu 79 79 79 79 79 79 79 79 79	MC1  Omber  4612U 463AU 4632U 4662U 4662U 4662U 4662U 46E3U  SEO numbe	r 77
The Single Entity Offerings (SEO)  Description  IBM System x3550 M2  IBM System x3550 M2 Express Models  Option SEOs  Description  Intel Xeon Processor E5502 2C 1.86 GHz 4 MB Cache 800 MHz  Intel Xeon Processor E5504	SE nu 79 79 79 79 79 79 79 79 79	MC1  O mber  4612U 463AU 4632U 4662U 4662U 4692U 46E1U 46E3U 46E3U SEO numbe 46M10	r 77 78
The Single Entity Offerings (SEO)  Description  IBM System x3550 M2  IBM System x3550 M2 Express Models  Option SEOs  Description  Intel Xeon Processor E5502 2C 1.86 GHz 4 MB Cache 800 MHz  Intel Xeon Processor E5504 4C 2.00 GHz 4 MB Cache 800 MHz  Intel Xeon Processor E5506	SE nu 79 79 79 79 79 79 79 79 79	MC1 Omber 4612U 463AU 4632U 4652U 4652U 4662U 4692U 46E1U 46E3U 46E3U SEO numbe 46M10	r 77 78 79

4C 2.26 GHz 8 MB Cache 1066 MHz	
Intel Xeon Processor L5506 4C 2.13 GHz 4 MB Cache 800 MHz	46M1082
Intel Xeon Processor E5530 4C 2.40 GHz 8 MB Cache 1066 MHz	46M1083
Intel Xeon Processor E5540 4C 2.53 GHz 8 MB Cache 1066 MHz	46M1084
Intel Xeon Processor X5550 4C 2.66 GHz 8 MB Cache 1333 MHz	46M1085
Intel Xeon Processor X5560 4C 2.80 GHz 8 MB Cache 1333 MHz	46M1086
Intel Xeon Processor X5570 4C 2.93 GHz 8 MB Cache 1333 MHz	46M1087
1GB (1x1GB) PC3-10600 CL9 ECC DDR3 1333MHz Low Power LP RDIMM	44T1480
2GB (1x2GB) PC3-10600 CL9 ECC DDR3 1333MHz Low Power LP RDIMM	44T1481
2GB (1x2GB) PC3-10600 CL9 ECC DDR3 1333MHz Chipkill LP RDIMM	44T1482
4GB (1x4GB) PC3-10600 CL9 ECC DDR3 1333MHz Chipkill LP RDIMM	44T1483
PCI-Express Riser Card	46M1070
PCI-X Riser Card	46M1071

# **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=109-116

# **Publications**

The following publications and CD-ROMs are shipped with the System  $x3550\ M2$  server.

- System x3550 M2 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 guickly set up your System x3550 M2 server.
- *Documentation/User's Guide CD* contains translated versions of the product user's guide.
- ServerGuide contains online publications and drivers to support the System x3550 M2 server. In addition, it includes a set of easy-to-use utilities to help you install the system using CDs of several popular network operating systems.
- 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 System x3550 M2 Installation Guide and Problem Determination and Service Guide (PDSG), in U.S. English versions, are available from

http://www-304.ibm.com/jct01004c/systems/support/

Under Product Support, select System x, and under Popular links, select Publications lookup. Select the Product family and click on continue.

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For more information, visit

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

# Specified operating environment

# Physical specifications

```
7946-12x
  Processor
                           Xeon E5502 (80W)
   Quad-core
   Internal speed
                           1.86 GHz
   External speed
                           4.8 GT/s
   Number standard
                           1
  Maximum
                           2
  L2 cache (full speed)
                           4 MB
                           2 GB (800 MHz)
  Memory (SDRAM)
   RDIMMS
                           2 x 1 GB
   DIMM sockets
                           16
                           128 GB
  Address capability
                           SVGA
  Video
   Memory
                           8 MB
  HDD controller
                           SAS
   Channels
   Connector internal
                           2
   Connector external
                           0
  HDD
                           Open bay 2.5-in
  Total drive bays
   3.5-in slim
                           0
   2.5-in slim
                           6
   Hot-swap
                           6
   Internal capacity
                           1.8 TB(6)
  Bays available
                           6
   5.25/3.5-in slim
                           0
   3.5-in slim
                           0
                           6
   2.5-in slim
   Hot-swap
                           6
  Total slots
                           2(7)
   PCT
                           2
   x16 PCI-E slot
                           0-2
   64bit 133 MHz-PCI-X
                           0-2
  Slots available
                           Standard
  Management proc.
  Ethernet controller
                           2x10/100/1k Mbps
  Optical (SATA)
                           Combo
  Diskette drive
                           n
  Power supply
                           675 W
   Number standard
                           1
   Hot-swap
                           Yes
   Redundant power
                           Optional
   Auto restart
                           Yes
                           7946-3Ax
                                            7946-32x
  Processor
                           Xeon E5506 (80W)
                                            Xeon E5520 (80W)
   Quad-core
                           Yes
                                              Yes
   Internal speed
                           2.13 GHz
                                              2.26 GHz
   External speed
                           4.8 GT/s
                                              5.86 GT/s
   Number standard
                           1
                                              1
  Maximum
                           2
                                              2
  L2 cache (full speed)
                           4 MB
                                              8 MB
                           2 GB (1066 MHz)
                                              2 GB (1066 MHz)
  Memory (SDRAM)
   RDIMMS
                           2 x 1 GB
                                              2 x 1 GB
   DIMM sockets
                           16
                                              16
                                             128 GB
                           128 GB
  Address capability
  Video
                           SVGA
                                              SVGA
  Memory
                           8 MB
                                              8 MB
  HDD controller
                           SAS
                                              SAS
   Channels
                                              8
   Connector internal
                           2
                                              2
   Connector external
                           0
                                              0
  HDD
                           Open bay 2.5-in
                                              Open bay 2.5-in
  Total drive bays
                           6
                                              6
   3.5-in slim
                                              0
                           0
   2.5-in slim
                           6
                                              6
```

```
Hot-swap
                                              6
   Internal capacity
                                              1.8 TB(6)
                           1.8 \text{ TB}(6)
  Bays available
                           6
                                              6
   5.25/3.5-in slim
                           0
                                              0
                           0
                                              0
   3.5-in slim
   2.5-in slim
                           6
                                              6
   Hot-swap
                           6
  Total slots
                           2(7)
                                              2(7)
   PCI
                                              0-2
                           0-2
   x16 PCI-E slot
       or
   64bit 133 MHz-PCI-X
                           0-2
                                              0-2
  Slots available
                                              2
                           2
  Management proc.
                           Standard
                                              Standard
  Ethernet controller
                           2x10/100/1k Mbps
                                              2x10/100/1k Mbps
  Optical (SATA)
                           Combo
                                              Combo
  Diskette drive
                                              0
                                              675 W
  Power supply
                           675 W
   Number standard
                           1
                                              1
   Hot-swap
                           Yes
                                              Yes
                                              Optional
   Redundant power
                           Optional
   Auto restart
                                              Yes
                           Yes
                           7946-42x
                           Xeon L5520 (60W)
  Processor
   Quad-core
                           Yes
   Internal speed
                           2.26 GHz
   External speed
                           5.86 \text{ GT/s}
   Number standard
                           1
   Maximum
  L2 cache (full speed)
                           8 MB
                           2 GB (1066 MHz)
  Memory (SDRAM)
   RDIMMS
                           2 x 1 GB
   DIMM sockets
                           16
  Address capability
                           128 GB
  Video
                           SVGA
                           8 MB
  Memory
  HDD controller
                           SAS
   Channels
                           8
   Connector internal
                           2
   Connector external
  HDD
                           Open bay 2.5-in
  Total drive bays
                           6
   3.5-in slim
                           0
   2.5-in slim
                           6
   Hot-swap
                           6
   Internal capacity
                           1.8 TB(6)
  Bays available
                           6
   5.25/3.5-in slim
                           0
   3.5-in slim
                           0
   2.5-in slim
                           6
   Hot-swap
                           6
  Total slots
                           2(7)
                           2
   PCI
   x16 PCI-E slot
                           0-2
   64bit 133 MHz-PCI-X
                           0-2
  Slots available
                           2
                           Standard
  Management proc.
  Ethernet controller
                           2x10/100/1k Mbps
  Optical (SATA)
                           Combo
  Diskette drive
                           0
  Power supply
                           675 W
   Number standard
                           1
   Hot-swap
                           Yes
   Redundant power
                           Optional
   Auto restart
                           Yes
7946-52x
                           Xeon E5530 (80W)
  Processor
   Quad-core
                           Yes
   Internal speed
                           2.4 GHz
```

5.86 GT/s

External speed

```
Number standard
                           1
                           2
   Maximum
  L2 cache (full speed)
                           8 MB
                           2 GB (1066 MHz)
  Memory (SDRAM)
   RDIMMs
                           2 x 1 GB
   DIMM sockets
                           16
   Address capability
                           128 GB
                           SVGA
  Video
  Memory
                           8 MB
  HDD controller
                           SAS
   Channels
                           8
   Connector internal
                           2
   Connector external
                           0
                           Open bay 2.5-in
  Total drive bays
                           6
                           0
   3.5-in slim
   2.5-in slim
                           6
   Hot-swap
                           6
   Internal capacity
                           1.8 TB(6)
  Bays available
                           0
   5.25/3.5-in slim
                           0
   3.5-in slim
   2.5-in slim
                           6
  Hot-swap
                           6
  Total slots
                           2(7)
   PCI
   x16 PCI-E slot
                           0-2
       or
   64bit 133 MHz-PCI-X
                           0 - 2
  Slots available
                           2
  Management proc.
                           Standard
  Ethernet controller
                           2x10/100/1k Mbps
  Optical (SATA)
                           Combo
  Diskette drive
                           675 W
  Power supply
   Number standard
                           1
   Hot-swap
                           Yes
   Redundant power
                           Optional
   Auto restart
                           Yes
7946-62x
                  7946-92x
  Processor
                           Xeon L5540 (60W) Xeon L5570 (95W)
   Quad-core
                           Yes
                                              Yes
   Internal speed
                           2.53 GHz
                                              2.93 GHz
   External speed
                           5.86 GT/s
                                              6.4 GT/s
   Number standard
   Maximum
                           2
                                              2
  L2 cache (full speed)
                           8 MB
                                              8 MB
                                              4 GB (1333 MHz)
  Memory (SDRAM)
                           2 GB (1066 MHz)
   RDIMMs
                           2 x 1 GB
                                              2 x 2 GB
   DIMM sockets
                           16
                                              16
                           128 GB
                                              128 GB
   Address capability
  Video
                           SVGA
                                              SVGA
  Memory
                           8 MB
                                              8 MB
  HDD controller
                           SAS
                                              SAS
   Channels
                           8
                                              8
   Connector internal
                           2
                                              2
   Connector external
                           0
                                              0
                           Open bay 2.5-in
                                              Open bay 2.5-in
  Total drive bays
                           6
   3.5-in slim
                           0
                                              0
   2.5-in slim
                           6
                                              6
   Hot-swap
                           6
   Internal capacity
                           1.8 TB(6)
                                              1.8 TB(6)
  Bays available
                           6
                           0
   5.25/3.5-in slim
                                              0
                           0
   3.5-in slim
                                              0
   2.5-in slim
                           6
                                              6
  Hot-swap
                           6
                                              6
  Total slots
                           2(7)
                                              2(7)
   PCI
                                              2
                                              0-2
   x16 PCI-E slot
                           0-2
       or
   64bit 133 MHz-PCI-X
                           0-2
                                              0-2
  slots available
                           2
                                              2
```

```
Management proc.
                         Standard
                                            Standard
Ethernet controller
                         2x10/100/1k Mbps
                                            2x10/100/1k Mbps
Optical (SATA)
                         Combo
                                            Combo
Diskette drive
                         675 W
                                            675 W
Power supply
Number standard
                         1
                                            1
Hot-swap
                         Yes
                                            Yes
Redundant power
                         Optional
                                            Optional
Auto restart
                         Yes
                                            Yes
                         7946-E1x
                                           7946-E2x
Processor
                         Xeon E5502 (80W)
                                           Xeon L5530 (80W)
Ouad-core
                                            Yes
                         1.86 GHz
Internal speed
                                            2.4
                                                 GHZ
                                            5.86 GT/s
External speed
                         4.8 GT/s
Number standard
                                            2
Maximum
                         2
L2 cache (full speed)
                                            8 MB
                         4 MB
Memory (SDRAM)
                         4 GB (800 MHz)
                                            4 GB (1066 MHz)
                         2 x 2 GB
RDIMMS
                                            2 x 2 GB
DIMM sockets
                                            16
                         16
Address capability
                         128 GB
                                            128 GB
Video
                         SVGA
                                            SVGA
Memory
                         8 MB
                                            8 MB
HDD controller
                         SAS
                                            SAS
Channels
                                            8
                         8
Connector internal
                         2
                                            2
Connector external
                         0
                                            0
                         Open bay 2.5-in
                                            Open bay 2.5-in
Total drive bays
                         0
3.5-in slim
                                            0
2.5-in slim
                         6
                                            6
Hot-swap
                         6
                                            6
Internal capacity
                         1.8 TB(6)
                                            1.8 TB(6)
Bays available
                         6
                                            6
5.25/3.5-in slim
                         0
                                            0
                         0
                                            0
3.5-in slim
2.5-in slim
                         6
                                            6
Hot-swap
                         6
                                            6
Total slots
                         2(7)
                                            2(7)
PCI
                                            0-2
x16 PCI-E slot
                         0-2
     or
64bit 133 MHz-PCI-X
                         0-2
                                            0 - 2
Slots available
                         2
                                            2
Management proc.
                         Standard
                                            Standard
Ethernet controller
                         2x10/100/1k Mbps
                                            2x10/100/1k Mbps
Optical (SATA)
                         Combo
                                            Combo
Diskette drive
                                            675 W
Power supply
                         675 W
Number standard
                                            2
                         1
Hot-swap
                                            Yes
                         Yes
Redundant power
                         Optional
                                            Yes
Auto restart
                         Yes
                                            Yes
                         7946-E3x
Processor
                         Xeon E5560 (95W)
Quad-core
                         No
Internal speed
                         2.8
                              GHZ
External speed
                         6.4
                              GT/s
Number standard
                         1
Maximum
L2 cache (full speed)
                         8 MB
Memory (SDRAM)
                         4 GB (1333 MHz)
RDIMMS
                         2 x 2 GB
DIMM sockets
                         16
Address capability
                         128 GB
Video
                         SVGA
Memory
                         8 MB
HDD controller
                         SAS
Channels
                         8
Connector internal
```

2

```
Connector external
                         0
HDD
                         Open bay 2.5-in
Total drive bays
3.5-in slim
                         0
                         6
2.5-in slim
Hot-swap
                         6
Internal capacity
                         1.8 TB(6)
Bays available
                         6
5.25/3.5-in slim
                         0
                         0
3.5-in slim
2.5-in slim
                         6
Hot-swap
                         6
Total slots
                         2(7)
PCI
                         2
x16 PCI-E slot
                         0 - 2
     or
64bit 133 MHz-PCI-X
                         0-2
Slots available
                         2
Management proc.
                         Standard
Ethernet controller
                         2x10/100/1k Mbps
Optical (SATA)
                         Combo
Diskette drive
                         675 W
Power supply
Number standard
                         2
Hot-swap
                         Yes
Redundant power
                         Yes
Auto restart
                         Yes
```

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

# Video subsystem

- SVGA compatible video controller (Matrox G200).
- Integrated on Integrated Management Module (IMM).
- Integrated on planar and connected to the PCI bus.
- DDR2-250MHz SDRAM video memory controller.
- Video memory is not expandable.
- Two analog video ports (one front, one rear) that can be connected at the same time.
- One DVI (Digital Video Interface) is not used.
- Avocent Digital Video Compression (with Virtual Media Key option).

Supported video mode capabilities for the SVGA PCI controller with a 200 MHz memory clock:

Microsoft Windows 2000 or Windows 2003 (32- and 64-bit) and Linux (all distributions)

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

 $<sup>^6</sup>$  Capacities are based on installation of six 2.5-in 300 GB HS SATA HDDs. For the latest information on supported HDD options, visit

<sup>&</sup>lt;sup>7</sup> Two Express Gen2 x16 slots (one full height, half length and one low profile); both slots are convertible to PCI-X via riser card option 64-bit/133 MHz (full height, half length).

```
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
```

Note: Some modes are not supported by all monitors.

#### **Dimensions**

Width: 440 mm (17.3 in)
Depth: 711 mm (28.0 in)
Height: 43 mm (1.7 in)

• Weight:

Minimum configuration 12.7 kg (28 lb)Maximum configuration 15.6 kg (35.5 lb)

# **Electrical**

- 100 to 127 (nominal) V ac; 50 Hz or 60 Hz; 7.8 A
- 200 to 240 (nominal) V ac; 50 Hz or 60 Hz; 3.8 A
- Input kilovolt-amperes (kVA) (approximately):

Minimum configuration: 0.12 kVAMaximum configuration: 0.78 kVA

• Btu output:

Minimum configuration: 307 Btu/hr (90 watts)Maximum configuration: 2662 Btu/hr (780 watts)

- Acoustical noise level emission level: Sound power levels
  - 6.1 bels (idling)
  - 6.1 bels (operating)

**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.

System x3550~M2 servers are intended for use as rack-drawer servers and are tested and designed to operate in a horizontal position.

#### Standards

These systems support or comply with the following standards:

- Multi Processor Specification (MPS) 1.4
- Peripheral Component Interconnect (PCI) specification 2.3
- PCI-X specification V1.0a
- Hardware-enabled to meet the International Organization for Standardization (ISO) 9241, Part 3

# **Equipment approvals and safety**

- FCC Verified to comply with Part 15 of the FCC Rules, Class A
- Canada ICES-003, issue 4, Class A
- UL/IEC 60950-1:2001<sup>8</sup>
- CSA C22.2 No. 69950-1-03 1st Edition
- NOM-019<sup>8</sup>

# Operating environment

 $<sup>^{\</sup>mbox{\scriptsize 8}}$  These servers are certified by the respective UL and NOM agencies.

#### Air temperature:

- Server on: 10 C to 35 C (50.0 F to 95.0 F); altitude: 0 to 914.4 m (3000 ft). Decrease system temperature by 0.75 C for every 1000-foot increase in altitude.
- Server off: 10 C to 43 C (50.0 F to 109.4 F); maximum altitude: 2133 m (7000 ft)
- Shipment: -40 C to +60 C (-40 F to 140 F); maximum altitude: 2133 m (7000 ft)

#### Humidity:

Server on/off: 8% to 80%Shipment: 5% to 100%

#### Hardware requirements

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

- USB keyboard
- USB mouse
- HDD
- 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:

- USB keyboard
- USB mouse
- HDD
- Display

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

#### Software requirements

The following software products have been tested by IBM and software publishers in the latest available versions, and where appropriate, are or will soon be certified by the publisher to be compatible with the System x3550 M2.

# Operating systems

- Microsoft
  - Windows Server 2008 (Std, Enterprise) 32-bit
  - Windows Server 2008 (Std, Enterprise) 64-bit
  - Windows Server 2003 (Std, Enterprise) 32-bit
  - Windows Server 2003 (Std, Enterprise) 64-bit
- Linux
  - $^-$  SLES 10 32-bit, Linux 4 AS for x86 $^9$
  - $^-$  SLES 10 64-bit, Linux 4 ES for x86 $^9$
  - $^-$  SLES 10 64-bit with Xen Support, 64 and Intel EM64T $^9$
  - RHEL 5.3 Server Edition 32-bit86

 $<sup>^{9}\ \</sup>mbox{Support}$  and certification is planned for these operating systems.

**Note:** For information on additional support, certification, version information, or network operating systems, visit

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

## Compatibility

The System x3550 M2 server contains licensed system programs that include set configuration, set features, and test programs. System UEFI is loaded from a "flash" EEPROM into system memory. This BIOS provides instructions and interfaces designed to support the standard features of the System x3550 M2 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 xSeries servers, visit

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

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

#### Limitations

- The System x3550 M2 server contains a single, configurable serial port. It can be configured to be operating-system-controlled, service-processor-controlled, or shared between the two. You can set the configuration by altering the BIOS. The default configuration from the factory is in the shared position. In the shared position, the service processor controls the port until the operating system is running, then the operating system takes control. The service processor can regain control of the port for user-configured dial-out situations or if the operating system is not available, but operating system control cannot be reestablished without resetting the server.
- System x3550 M2 servers can address a maximum of 128 GB of system memory. All supported system memory is addressable through direct memory access. The System x3550 M2 server supports 1 GB, 2 GB, 4 GB, and 8 GB DDR3 SDRAM Registered DIMM memory. All supported DIMMs can coexist in the same system. Refer to the Planning information section for supported memory options.
- To ensure proper air flow for cooling, the System x3550 M2 server requires a rack with a perforated door, such as the NetBAY42 SR or NetBAY25 SR. An alternative is to remove the front door of rack cabinets where the door panel is of solid construction.
- Microprocessor upgrades must be of the same QuickPath Interconnect (QPI) link speed, Integrated Memory Controller frequency, Core frequency, power segment, internal cache size and type. Mixing processors of different stepping levels but same model (as per CPUID instruction) is supported. Mixing microprocessors of different QPI, core speed, cache size, core quantity and power segment is not supported.
- Use the version of ServerGuide that is shipped with the system, or a later version, to load software and drivers. Earlier versions of ServerGuide may not be compatible with the server.

Refer to the Software requirements section for operating system limitations.

#### **Planning information**

# Customer responsibilities

# System x3550 M2 and related options

The System x3550 M2 server and related options are designated as customer setup. Customer setup instructions are shipped with system and options.

# **Configuration information**

#### **Bay configuration**

The System x3550 M2 server supports up to six 2.5-inch SAS/SATA HDDs. All models come with a CD-RW/DVD Combo drive. All models are open bay models.

System x3550 M2 hot-swap models contain a DASD backplane supporting up to six hot-swap, SAS compliant drive bays. The backplane is connected to the internal connector of the integrated SAS controller through a SAS cable.

# **Cabling - Standard RAID configurations**

# Additional cabling alternatives

#### **Rack installations**

System x3550 M2 1U rack-drawer models are designed to be installed in a 19-inch rack cabinet designed for 711.1-mm (28-in) deep devices, such as the NetBAY42U ER and NetBAY42U SR. Installation into some of the older Netfinity® racks (9306900, 9306910, 9306200) will require a rack extension kit for proper cable bend radius and cooling.

If a System x3550 M2 server is mounted in a non-IBM rack, the rack must satisfy the following specifications:

- The rack must meet EIA-310-D standards for mounting flanges and hole locations.
- The front to rear distance of the mounting flanges must be between 635 mm and 788 mm (25 and 31 in) if not using a cable management arm.
- The front to rear distance of the mounting flanges must be between 716 mm and 744 mm (28 and 29 in) if using a cable management arm.
- The thickness of the mounting flanges must be between 1.9 mm and 3.3 mm (0.08 and 0.13 in).
- The mounting flanges must have either 7.1-mm (0.28-in) diameter holes or 9.6-mm (0.38-in) square holes on the standard EIA hole spacing.
- The rack must have a minimum depth of 50 mm (1.97 in) between the front mounting flange and inside of the front door for appropriate cooling.
- The rack must have a minimum depth of 166 mm (6.53 in) between the rear mounting flange and inside of the rear door to install the server and provide cable management space.
- The minimum side-to-side clearance in the rack between the front and rear mounting flanges must be 467 mm (18.2 in) to accommodate the width of the server and the slide mounting brackets.
- The minimum side-to-side clearance in the rack between each door and the mounting flanges must be 484 mm (19.1 in) to accommodate the slide mounting brackets.
- The rack must include perforated front and rear doors and must not prevent the flow of cool air into or out of the rack.
- The weight-handling capacity of the rack must be able to support the maximum rack configuration, including all servers, external cables, power distribution units, and so on.
- The rack must provide proper stabilization so that the rack does not become unstable when servers are pulled out for service.

# **Processor options**

The System x3550 M2 server is an Intel Xeon processor system that supports internal processing speeds of up to 2.93 GHz and processing operations to memory up to 1333 MHz. It contains an integrated, full-speed 8 MB advanced transfer L2 cache. This dual-socket system supports a second processor with the same QuickPath Interconnect (QPI) link speed, Integrated Memory Controller frequency, Core frequency, power segment, internal cache size, and type of processor as the first.

# Supported processor options

The following processor options are supported:

- Intel Xeon Processor E5502 (46M1077)
- Intel Xeon Processor E5504 (46M1078)
- Intel Xeon Processor E5506 (46M1079)
- Intel Xeon Processor E5520 (46M1081)
- Intel Xeon Processor L5520 (46M1080)
- Intel Xeon Processor L5506 (46M1082)
- Intel Xeon Processor E5530 (46M1083)
- Intel Xeon Processor E5540 (46M1084)
- Intel Xeon Processor X5550 (46M1085)
- Intel Xeon Processor X5560 (46M1086)
- Intel Xeon Processor X5570 (46M1087)

# **Supported memory options**

The following memory options are supported:

- 1GB (1x1GB) PC3-10600 CL9 ECC DDR31333MHz Low Power LP RDIMM (44T1480)
- 2GB (1x2GB) PC3-10600 CL9 ECC DDR31333MHz Low Power LP RDIMM (44T1481)
- 2GB (1x2GB) PC3-10600 CL9 ECC DDR31333MHz Chipkill LP RDIMM (44T1482)
- 4GB (1x4GB) PC3-10600 CL9 ECC DDR31333MHz Chipkill LP RDIMM (44T1483)

# Supported communications options

The following communications options are supported:

• Dual-port 1 GB Ethernet daughter card (46M1076)

## **Power considerations**

The System  $\times 3550$  M2 server includes a standard 675-watt power supply. This power supply is capable of providing sufficient power to run the server fully configured with supported devices.

#### Supported power options

The following power options are supported:

• 675 W redundant power supply (46M1075)

#### Cable orders

The dual 10/100/1000 Mbps, full-duplex, Ethernet PCI controllers, standard with the System x3550 M2 server, are connected directly to independent RJ-45 connectors. The RJ-45 connectors provides a 10/100/1000 Base-T interface (either at half-or full-duplex) for connecting twisted-pair cable to the Ethernet network. Cabling is not included with the server. To connect the Ethernet controller to a repeater or switch, use a UTP cable with RJ-45 connectors at both ends. For 100 Mbps, or higher, Category 5e, or better, cabling must be used.

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

# Installability

The System x3550 M2 server requires about 20 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

One box

- System unit carton: System unit
- Country kit carton
  - System x3550 Installation Guide
  - Rack Installation Guide
  - ServerRAID Support Package

The System x3550 M2 server is shipped in a single package. The country kit carton is contained inside the top portion of the system unit carton.

# Processor upgrade options

- Intel Xeon processor
- Safety instructions and warranty

# **Supplies**

None

# Security, auditability, and control

Security and auditability features include:

- Power-on and privileged-access password functions provide control of who has access to the data and server setup program on the server.
- A set unattended boot mode allows the system keyboard to be locked to all entries except the password and at the same time allows other computers on the network to access the system disk drive.
- A selectable boot sequence can be used to prevent unauthorized installation of software or removal of data from the diskette drive.
- Integrated Winbond Trusted Platform Module (TPM) version 1.2 (WPCT201BA0WG) security chip performs cryptographic functions and stores private and public security keys. It provides the hardware support for the Trusted Computing Group (TCG) specification. Users can download the software to support the TCG specification when the software is available. The TPM firmware can be upgraded in the field The TPM firmware can be upgraded in the field.

These servers are intended to be installed and secured in a rack. It is a customer's responsibility to ensure that the server and rack installation are 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

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

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

- Machine Type 7946 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 (System)
- Battery (RAID)

# **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:

- Top cover (All models)
- DIMM air duct
- Memory
- · Virtual media key
- A/C Power supply

- · Optical drives
- · Rack latch kit
- · Hard disk drives
- Fillers
- Fan, hot-swap
- ServeRAID-BR10i adapter
- SAS/SATA riser card
- Air baffle kit
- Cable management arm
- · System label
- Top cover
- Voltage regulator module
- · Cable, hard disk drive configuration
- · Cable, operator panel
- Cable, SATA DVD
- · EMC fillers
- Ethernet card
- Labels
- Low-profile adapter (varies)
- Riser-card bracket
- Bracket assembly, rear I/O
- SAS adapter retainer
- Video adapters
- Hypervisor<sup>tm</sup>, embedded USB flash device

#### 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:

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<sup>tm</sup>, 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 quaranteed.

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.

See the **Pricing** section for specific offerings.

#### 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 quaranteed.

# 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.

See the Pricing section for specific offerings.

# 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.

See the **Pricing** section for specific offerings.

#### 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.

See the **Pricing** section for specific offerings.

# 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.

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/servers/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.

## **Educational allowance**

None

# **Pricing**

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 7946 machine type:

Initial/

	MES/
	Both
Number Numbers	support
IBM System x3550 M2	
AC1	
IBM System x3550 M2	
MC1	
Optical Blank Bezel	
· · · · · · · · · · · · · · · · · · ·	Initial
MC1	Initial
NetXtreme II 1000 Express G Ethernet Adapter- PCIe	
AC1 1485	Initial
MC1	Initial
PRO/1000 GT Dual Port Server Adapter by Intel-	
PCI-X	
AC1 1579	Initial
MC1	Initial
PRO/1000 GT Quad Port Server Adapter by Intel- PCI-X	
· · ·	Initial
	Initial
Emulex 4GB FC Single-Port PCI-E HBA for IBM System x	
AC1 1698	Initial

	MC1		Initial
Emulex 4GB FC Dual-Port PCI-E	HBA for AC1	IBM System x 1699	Initial
	MC1	1033	Initial
EMEA Long Leadtime Configurat		1762	Tuitial
	AC1 MC1	1763	Initial Initial
Hungary CHW plant 9SH			
	AC1 MC1	1764	Initial Initial
Guad CHW plant 9KQ	MCI		Interat
	AC1	1765	Initial Initial
ISTC CHW 9K2	MC1		Initial
	AC1	1766	Initial
RTP CHW 9NR	MC1		Initial
KIT CIW SINK	AC1	1767	Initial
Offlood Manufacturing to Cuad	MC1	IVEC	Initial
Offload Manufacturing to Guad	AC1	1768	Initial
	MC1		Initial
Offload Manufacturing to RTP	HVEC		
	AC1	1769	Initial Initial
Offload Manufacturing to ISTO	MC1		Initial
0ouddu.cug co 15	AC1	1770	Initial
	MC1		Initial
Routing for AP Foxconn	AC1	1771	Initial
	MC1	1//1	Initial
Capacity Scheduling Service			
	AC1	1772	Initial
Custom CLA Cobodulian Comuisso	MC1		Initial
Custom SLA Scheduling Service	e AC1	1796	Initial
	MC1	1750	Initial
NVIDIA Quadro FX 1700 3D Grap	hics Card		
	AC1	1822	Initial
NVIDIA Quadro FX 570	MC1		Initial
Wilsin Quadro In Sto	AC1	1823	Initial
	MC1		Initial
Redundant 675W Power supply	AC1	1999	Initial
	MC1	1999	Initial
2U Bracket for NetXtreme II 1 Adapter		ess Ethernet	
	AC1	2048	Initial
System Documentation and Soft	MC1 ware-US F	nalish	Initial
system bocumentation and sort	AC1	2161	Initial
	MC1		InitialCustom Asset Tagging - Standard
	AC1 MC1	2200	Initial Initial
Custom Asset Tagging - Enhanc			Inicial
	AC1	2201	Initial
	MC1		Initial
Custom Image Load - Server	AC1	2204	Initial
	MC1	2204	Initial
Custom Media Shipgroup			
	AC1	2206	Initial
Request for Global Trade Numb	MC1	or EAN)	Initial
Request for Grobal frade Numb	AC1	2207	Initial
	MC1	-	Initial
Custom Software/Firmware Sett			
	AC1	2208	Initial
Custom Software/Firmware Sett	MC1 ina – Ent	nanced	Initial
Cascom Software/Filmware Sett	AC1	2209	Initial
	MC1		Initial
Custom RAID Configuration			

Control to be 15 mg	AC1 MC1	2212	Initial Initial
Custom Labeling	AC1 MC1	2220	Initial Initial
Custom Palletization	AC1 MC1	2221	Initial Initial
Request for a new Vendor Logo	AC1 MC1	2247	Initial Initial
Request for an existing IBM F	AC1 MC1	2248	Initial Initial
Request for an existing Publi	c RPQ AC1 MC1	2249	Initial Initial
RAID Configuration	AC1 MC1	2302	Initial Initial
Rack Installation of 1U Compo	AC1 MC1	2305	Initial Initial
Department of Defense UID Lab	el AC1 MC1	2320	Initial Initial
TCPIP Off Load Engine (TOE)	AC1 MC1	2500	Initial Initial
System Packaging-WW	AC1 MC1	2577	Initial Initial
2U Bracket for QLogic iSCSI S for IBM System x	AC1	t PCIe HBA 2754	Initial
2U Bracket for IBM 10 GbE PCI	AC1	er Adapter 2755	Initial Initial
2U Bracket for IBM SAS HBA CO	AC1	2769	Initial Initial
PRO/1000 PT Dual Port Server	AC1	y Intel 2944	Initial Initial
PRO/1000 PT Quad Port Server	AC1	2974	Initial Initial
PRO/1000 PF Server Adapter	MC1 AC1	2975	Initial Initial
QLogic iSCSI Single Port PCIe	AC1	IBM System x 2976	Initial Initial
QLogic iSCSI Dual Port PCIe H	AC1	M System x 2977	Initial Initial
IBM 10 GbE PCIe SR Server Ada	MC1 pter AC1 MC1	2978	Initial Initial Initial
NetXtreme II 1000 Express Dua Adapter		hernet 2995	Initial
Install in Rack 01	MC1 AC1	3101	Initial Initial
Install in Rack 02	MC1 AC1	3102	Initial Initial
Install in Rack 03	MC1 AC1	3103	Initial Initial
Install in Rack 04	MC1	3103	Initial

	AC1 MC1	3104	Initial Initial
Install in Rack 05	AC1 MC1	3105	Initial Initial
Install in Rack 06	AC1 MC1	3106	Initial Initial
Install in Rack 07  Install in Rack 08	AC1 MC1	3107	Initial Initial
Install in Rack 09	AC1 MC1	3108	Initial Initial
Install in Rack 10	AC1 MC1	3109	Initial Initial
Install in Rack 11	AC1 MC1	3110	Initial Initial
Install in Rack 12	AC1 MC1	3111	Initial Initial
Install in Rack 13	AC1 MC1	3112	Initial Initial
Install in Rack 14	AC1 MC1	3113	Initial Initial
Install in Rack 15	AC1 MC1	3114	Initial Initial
Install in Rack 16	AC1 MC1	3115	Initial Initial
Install in Rack 17	AC1 MC1	3116	Initial Initial
Install in Rack 18	AC1 MC1	3117	Initial Initial
Install in Rack 19	AC1 MC1	3118	Initial Initial
Install in Rack 20	AC1 MC1	3119	Initial Initial
Install in Rack 21	AC1 MC1	3120	Initial Initial
Install in Rack 22	AC1 MC1	3121	Initial Initial
Install in Rack 23	AC1 MC1	3122	Initial Initial
Install in Rack 24	AC1 MC1	3123	Initial Initial
Install in Rack 25	AC1 MC1	3124	Initial Initial
Install in Rack 26	AC1 MC1	3125	Initial Initial
Install in Rack 27	AC1 MC1	3126	Initial Initial
Install in Rack 28	AC1 MC1	3127	Initial Initial
	AC1 MC1	3128	Initial Initial

Install in Rack 29			
	AC1 MC1	3129	Initial Initial
Install in Rack 30	AC1 MC1	3130	Initial Initial
Install in Rack 31	AC1 MC1	3131	Initial Initial
Install in Rack 32	AC1 MC1	3132	Initial Initial
Install in Rack 33	AC1 MC1	3133	Initial Initial
Install in Rack 34	AC1 MC1	3134	Initial Initial
Install in Rack 35	AC1 MC1	3135	Initial Initial
Install in Rack 36	AC1 MC1	3136	Initial Initial
Install in Rack 37	AC1 MC1	3137	Initial Initial
Install in Rack 38	AC1 MC1	3138	Initial Initial
Install in Rack 39	AC1 MC1	3139	Initial Initial
Install in Rack 40	AC1 MC1	3140	Initial Initial
Install in Rack 41	AC1	3141	Initial Initial
Install in Rack 42	MC1 AC1	3142	Initial
Install in Rack 43	MC1 AC1	3143	Initial Initial
Install in Rack 44	MC1 AC1	3144	Initial Initial
Install in Rack 45	MC1 AC1	3145	Initial Initial
Install in Rack 46	MC1 AC1	3146	Initial Initial
Install in Rack 47	MC1 AC1	3147	Initial Initial
Install in Rack 48	MC1 AC1	3148	Initial Initial
Install in Rack 49	MC1 AC1	3149	Initial Initial
Install in Rack 50	MC1 AC1	3150	Initial Initial
Install in Rack 51	MC1	3151	Initial Initial
Install in Rack 52	MC1 AC1	3152	Initial Initial
Install in Rack 53	MC1		Initial
	AC1	3153	Initial

	MC1		Initial
Install in Rack 54	AC1 MC1	3154	Initial Initial
Install in Rack 55	AC1 MC1	3155	Initial Initial
Install in Rack 56	AC1 MC1	3156	Initial Initial
Install in Rack 57	AC1 MC1	3157	Initial Initial
Install in Rack 58	AC1 MC1	3158	Initial Initial
Install in Rack 59	AC1 MC1	3159	Initial Initial
Install in Rack 60	AC1 MC1	3160	Initial Initial
Install in Rack 61	AC1 MC1	3161	Initial Initial
Install in Rack 62	AC1 MC1	3162	Initial Initial
Install in Rack 63	AC1 MC1	3163	Initial Initial
Install in Rack 64	AC1 MC1	3164	Initial Initial
Rack location UO1	AC1 MC1	3201	Initial Initial
Rack location UO2	AC1 MC1	3202	Initial Initial
Rack location UO3	AC1 MC1	3203	Initial Initial
Rack location UO4	AC1 MC1	3204	Initial Initial
Rack location UO5	AC1 MC1	3205	Initial Initial
Rack location UO6	AC1 MC1	3206	Initial Initial
Rack location UO7	AC1 MC1	3207	Initial Initial
Rack location UO8	AC1 MC1	3208	Initial Initial
Rack location UO9	AC1 MC1	3209	Initial Initial
Rack location U10	AC1 MC1	3210	Initial Initial
Rack location U11	AC1 MC1	3211	Initial Initial
Rack location U12	AC1 MC1	3212	Initial Initial
Rack location U13	AC1 MC1	3213	Initial Initial
Rack location U14			

Dook Jacobian U15	AC1 MC1	3214	Initial Initial
Rack location U15	AC1 MC1	3215	Initial Initial
Rack location U16	AC1 MC1	3216	Initial Initial
Rack location U17	AC1 MC1	3217	Initial Initial
Rack location U18	AC1 MC1	3218	Initial Initial
Rack location U20	AC1 MC1	3219	Initial Initial
	AC1 MC1	3220	Initial Initial
Rack location U21	AC1 MC1	3221	Initial Initial
Rack location U23	AC1 MC1	3222	Initial Initial
Rack location U24	AC1 MC1	3223	Initial Initial
Rack location U25	AC1 MC1	3224	Initial Initial
Rack location U26	AC1 MC1	3225	Initial Initial
Rack location U27	AC1 MC1	3226	Initial Initial
Rack location U28	AC1 MC1	3227	Initial Initial
Rack location U29	AC1 MC1	3228	Initial Initial
Rack location U30	AC1 MC1	3229	Initial Initial
Rack location U31	AC1 MC1	3230	Initial Initial
Rack location U32	AC1 MC1	3231	Initial Initial
Rack location U33	AC1 MC1	3232	Initial Initial
Rack location U34	AC1 MC1	3233	Initial Initial
Rack location U35	AC1 MC1	3234	Initial Initial
Rack location U36	AC1 MC1	3235	Initial Initial
Rack location U37	AC1 MC1	3236	Initial Initial
Rack location U38	AC1 MC1	3237	Initial Initial
	AC1 MC1	3238	Initial Initial

Rack location U39			
	AC1 MC1	3239	Initial Initial
Rack location U40	AC1 MC1	3240	Initial Initial
Rack location U41	AC1 MC1	3241	Initial Initial
Rack location U42	AC1 MC1	3242	Initial Initial
DS4000 FC 4Gb PCI-X Single Po	rt HBA AC1 MC1	3550	Initial Initial
DS4000 FC 4Gb PCI-X Dual Port	HBA AC1 MC1	3551	Initial Initial
ServeRAID-MR10M SAS/SATA Cont		3559	Initial Initial
2U Bracket for Emulex 4Gb Sin PCI-E HBA for Sys x	gle-Port		
	AC1 MC1	3563	Initial Initial
2U Bracket for Emulex 4Gb Dua HBA for Sys x	1-Port PC		
	AC1 MC1	3564	Initial Initial
2U Bracket for QLogic 4-Gbps		-Port PCI-E	
НВА	AC1 MC1	3565	Initial Initial
2U Bracket for QLogic 4-Gbps	FC Dual-P AC1 MC1	ort PCI-E HBA 3566	Initial Initial
QLogic 4Gb FC Single-Port PCI		IBM System x 3567	Initial Initial
QLogic 4Gb FC Dual-Port PCIe		BM System x	IIIICIAI
	AC1 MC1	3568	Initial Initial
ServeRAID-MR10i SAS/SATA Cont	AC1	3571	Initial
	MC1		Initial
ServeRAID-BR10i SAS/SATA Cont		3577	Initial
	AC1 MC1	33//	Initial
QLogic 8Gb FC Single-port HBA	for IBM AC1 MC1	System x 3578	Initial Initial
QLogic 8Gb FC Dual-port HBA f	or IBM Sy		
	AC1 MC1	3579	Initial Initial
Emulex 8Gb FC Single-port HBA	for IBM	-	
- 1 Oal 1 S	AC1 MC1	3580	Initial Initial
Emulex 8Gb FC Dual-port HBA f	AC1 MC1	3581	Initial Initial
IBM 3Gb SAS HBA Controller v2	AC1	3583	Initial
ServeRAID-MR10is VAULT SAS/S	MC1		Initial Initial
Dual port 1Gb Ethernet Daught	MC1 er Card		Initial
purchase only and all the second	AC1 MC1	3585	Initial Initial
Brocade 8Gb FC Single-port HB	A for IBM AC1 MC1	System x 3589	Initial Initial
Brocade 8Gb FC Dual-port HBA		ystem x 3591	Initial
	ACT	2327	IIIICIAI

Dual-Core Intel Xeon E5502 (1 800MHz FSB 80w)	MC1 .86GHz 4MB L2	Initial Cache
Quad-Core Intel Xeon E5506 (2	AC1 3637 MC1 .13GHz 4MB L2	Initial
800MHz FSB 80w)  Quad-Core Intel Xeon L5520 (2	AC1 3638 MC1 .26GHz 8MB L2	Initial
1066MHz FSB LV 60w)	AC1 3639 MC1	Initial Initial
Quad-Core Intel Xeon E5530 (2 1066MHz FSB 80w)	AC1 3640	
Quad-Core Intel Xeon X5550 (2 1333MHz FSB 95w)	MC1 .66GHz 8MB L2 AC1 3641	Cache
Quad-Core Intel Xeon X5560 (2 1333MHz FSB 95w)	MC1	Initial
Quad-Core Intel Xeon X5570 (2	AC1 3642 MC1 .93GHz 8MB L2	Initial
1333MHz FSB 95w)  1m LC-LC Fiber Cable (network	AC1 3643 MC1	Initial Initial
5m LC-LC Fiber Cable (network	AC1 3700	Initial
25m LC-LC Fiber Cable (networ	AC1 3701 king)	Initial
1m LC-LC Fiber Cable	AC1 3702	Initial
5m LC-LC Fiber Cable	AC1 3703 MC1	Initial Initial
	AC1 3704 MC1	Initial Initial
25m LC-LC Fiber Cable	AC1 3705 MC1	Initial Initial
IBM 50GB SATA 2.5" SFF Slim-H		D
IBM 31.4GB 2.5" Solid State D	rive AC1 3747 MC1	Initial Initial
3m Console Switch Cable (USB)	AC1 3751 MC1	Initial Initial
1.5M USB Conversion Cable Set	AC1 3757 MC1	Initial Initial
1.8m Black Cat5e Cable	AC1 3760 MC1	Initial Initial
3m Black Cat5e Cable	AC1 3761 MC1	Initial Initial
10m Black Cat5e Cable	AC1 3762 MC1	Initial Initial
Cyclades RJ45 -to- DB9 serial	cable adapter AC1 3769	
0.6m Yellow Cat5e Cable	AC1 3791 MC1	. Initial Initial
1.5m Yellow Cat5e Cable	AC1 3792 MC1	
3m Yellow Cat5e Cable		

10m Vallau Catia Cabla	AC1 MC1	3793	Initial Initial
10m Yellow Cat5e Cable	AC1 MC1	3794	Initial Initial
25m Yellow Cat5e Cable	AC1 MC1	3795	Initial Initial
0.6m Green Cat5e Cable	AC1 MC1	3796	Initial Initial
1.5m Green Cat5e Cable	AC1 MC1	3797	Initial Initial
3m Green Cat5e Cable	AC1 MC1	3798	Initial Initial
10m Green Cat5e Cable	AC1 MC1	3799	Initial Initial
25m Green Cat5e Cable	AC1 MC1	3800	Initial Initial
0.6m Blue Cat5e Cable	AC1 MC1	3801	Initial Initial
1.5m Blue Cat5e Cable	AC1 MC1	3802	Initial Initial
3m Blue Cat5e Cable	AC1 MC1	3803	Initial Initial
10m Blue Cat5e Cable	AC1 MC1	3804	Initial Initial
25m Blue Cat5e Cable	AC1 MC1	3805	Initial Initial
2U Bracket for NetXtreme II 1 SR Adapter		press Fiber 4029	Initial
2x3 2.5" HDD backplane for 1U	MC1	4038	Initial Initial
Slide Kit	MC1 AC1	4039	Initial
GBM, CMA	MC1		Initial Initial
System code Group BoM	AC1 MC1	4040	Initial Initial
Power Supply Blank Filler	AC1 MC1	4041	Initial Initial
2U bracket for Emulex 8Gb FC	AC1 MC1 Single-po	4042 rt HBA for	Initial Initial
System x	AC1 MC1	4047	Initial Initial
2U bracket for Emulex 8Gb FC System x	AC1	4048	Initial
2U bracket for QLogic 8Gb FC System x			Initial
2U Bracket for NetXtreme II 1	AC1 MC1 000 Expre	4049 ss Dual Port	Initial Initial
Ethernet Adapter	AC1 MC1	4055	Initial Initial
2.5" HDD Filler Bezel			

	AC1 MC1	4069		Initial Initial
UltraSlim Enhanced SATA DVD-	ROM AC1 MC1	4161		Initial Initial
UltraSlim Enhanced SATA CD-R		M Comb	0	IIIICIai
	AC1 MC1	4162		Initial Initial
UltraSlim Enhanced SATA Mult	i-Burner AC1 MC1	4163		Initial Initial
IBM 1m LC-LC Fibre Channel C				IIIICIAI
	AC1 MC1	4282		Initial Initial
IBM 5m LC-LC Fibre Channel C	able AC1	4283		Initial
	MC1	4203		Initial
IBM 25m LC-LC Fibre Channel				
	AC1 MC1	4284		Initial Initial
InfiniBand 8 meter 4x Cable		Server		IIIICIAI
BladeCenter				
InfiniBand 4x Cable 3 meter	AC1	4294		Initial
BladeCenter	IOI IDM ES	sei vei		
	AC1	4296		Initial
Simple Swap Kit	AC1	4319		Initial
	MC1	4319		Initial
PCI-X Riser Card slot 1 (sup	port low p	rofile		
adapter)	AC1	4373		Initial
	MC1	4373		Initial
PCI-Express (1x16) Riser Car	d Slot 2 (	suppor	t FH/HL	
adapter)	AC1	4375		Initial
	MC1	4373		Initial
Customer Provided and Instal		Hat		
Enterprise Linux 4 ES for AM	D64/EM64T AC1	4714		Initial
Customer Provided and Instal				Interat
Enterprise Linux 4 WS for x8		4722		1
Customer Provided and Instal	AC1 led - Micr	4732	Windows	Initial
Server 2003 R2 Standard Edit		000. 0		
Sustanian Busided and Tuetal	AC1	4733	مرينم ام مرافرين	Initial
Customer Provided and Instal Server 2003, Enterprise Edit		OSOTE	windows	
•	AC1	4734		Initial
Customer Provided and Instal Server 2003, Standard Editio		osoft	Windows	
Server 2003, Standard Editio	AC1	4735		Initial
Customer Provided and Instal	led - Micr	osoft	Windows	
Server 2003, Web Edition	AC1	4736		Initial
Customer Provided and Instal			Windows	Interat
Server 2003, Enterprise x64		4727		
Customer Provided and Instal	AC1 led - Micr	4737	Windows	Initial
Server 2003 R2 Enterprise x6		000. 0		
Customer Provided and Instal	AC1	4738	wa ndawa	Initial
Server 2003 R2 Standard x64		0501 L	WITIGOWS	
	AC1	4739		Initial
Customer Provided and Instal Server 2003 R2 Enterprise Ed		osoft	พาndows	
Server 2003 KZ Emecipi ise Eu	AC1	4740		Initial
Customer Provided and Instal		Hat		
Enterprise Linux 3 WS for x8	6 AC1	4741		Initial
Customer Provided and Instal	led - Red			
Enterprise Linux 4 WS for AM	D64/EM64T AC1	4742		Initial
Customer Provided and Instal				IIIICIAI

Enterprise Linux 4 AS		•
Customer Provided and Enterprise Server 9 fo	r x86	Initial
Customer Provided and Enterprise Linux 4 ES		Initial
Customer Provided and Enterprise Linux 4 AS		Initial
Customer Provided and Enterprise Server 9 fo		Initial
•	AC1 4747 Installed - Microsoft Windows	Initial
·	AC1 4748 Installed - NetWare 6.5	Initial
	AC1 4749 t Windows Server 2003 R2, Web	Initial
	AC1 4751 Installed - Microsoft Windows 2003	Initial
Customer Provided and Enterprise Linux 3 AS	AC1 4758 Installed - Red Hat	Initial
•	AC1 4759 Installed - VMware ESX Server	Initial
Customer Provided and		Initial
Enterprise Linux 3 ES  Customer Provided and	AC1 4761	Initial
Enterprise Linux 3 AS		Initial
Customer Provided and Enterprise Linux 3 ES	for x86	Tmitial
Customer Provided and 3.0	AC1 4763 Installed - VMware ESX Server	Initial
Customer Provided and Enterprise Linux 3 WS		Initial
InfiniBand 10 meter 4x	AC1 4765 Cable for IBM BladeCenter	Initial
IBM Virtual Media Key	AC1 4866	Initial
	AC1 5080 MC1	Initial Initial
50 GB Simple Swap SATA	AC1 5197 MC1	Initial Initial
NetXtreme II 10 GigE E	xpress Fiber SR Adapter AC1 5451 MC1	Initial Initial
IBM 73GB 15K 6Gbps SAS		Initial
IBM 146GB 15K 6Gbps SA	S 2.5" SFF Slim-HS HDD AC1 5536	Initial Initial
IBM 146GB 10K 6Gbps SA	AC1 5537	Initial Initial
IBM 73 GB 10K SAS 2.5"	MC1 SFF Slim-HS HDD AC1 5577	Initial Initial
IBM 146 GB 10K SAS 2.5	MC1 " SFF Slim-HS HDD	Initial
	AC1 5578 MC1	Initial Initial
IBM 73 GB 15K SAS 2.5"		Initial

300GB 10K SATA 2.5" Slim-HS H	MC1		Initial
SOUGH TOR SATA 2.3 STIM-HS H	AC1	5595	Initial
IBM 300GB 10K 6Gbps SAS 2.5"	MC1 SFF Slim-	HS HDD	Initial
Paca	AC1 MC1	5599	Initial Initial
Base	AC1	5600	Initial
System Common planar for 1U/2	MC1 U		Initial
Remote Battery Cable	AC1 MC1	5653	Initial Initial
•	AC1 MC1	5862	Initial Initial
ServeRAID-MR10i Li-Ion Batter	AC1	5864	Initial
1.5m, 10A/100-250V, C13 to IE Cable	MC1 C 320-C14	Rack Power	Initial
	AC1 MC1	6201	Initial Initial
2.8m, 10A/100-250V, C13 to IE		Rack Power	IIIICIAI
Cable	AC1	6204	Initial
Line cord - 4.3M, 10A/125V, C	MC1 13 to NEM	A 5-15P (US)	Initial
,,	AC1 MC1	6207	Initial Initial
4.3m, 10A/100-250V, C13 to IE Cable		Rack Power	IIIICIAI
	AC1 MC1	6263	Initial Initial
2.8m, 10A/100-250V, C13 to IECable		Rack Power	
Cable	AC1	6311	Initial
2.8m, 10A/120V, C13 to NEMA 5	MC1 -15P (US)	Line Cord	Initial
	AC1 MC1	6313	Initial Initial
Rack power cable - 2.0m, 125-320-c14 (WW)	250v, c13		
	AC1 MC1	6316	Initial Initial
Line cord - 1.8m, 10A/250V, C	13 to NEM AC1	A 6-15P (US) 6351	Initial
Line cord - 1.8M, 10A/125V, C	MC1	Δ 5-15P (US)	Initial
Time cord 110m, 10A/125V, C	AC1	6369	Initial
Line cord - 2.8m, 10A/250V, C		A 6-15P (US)	Initial
	AC1 MC1	6372	Initial Initial
Quad-Core Intel Xeon E5504 (2 800MHz FSB 80w)	.OGHZ 4MB	L2 Cache	
000M12 13B 00W)	AC1	6990	Initial
Quad-Core Intel Xeon E5520 (2 1066MHz FSB 80w)	MC1 .26GHz 8M	3 L2 Cache	Initial
	AC1 MC1	6991	Initial Initial
Quad-Core Intel Xeon L5506 (2		3 L2 Cache	
800MHz FSB LV 60w)	AC1	6992	Initial
Quad-Core Intel Xeon E5540 (2	MC1 .53GHz 8MI	B L2 Cache	Initial
1066MHz FSB 80w)	AC1	6993	Initial
DATE 10 Primary America (CCC)	MC1		Initial
RAID 10 - Primary Array (SAS) - minimum of 4 HDDs required			_
	AC1 MC1	7074	Initial Initial

RAID 10 - Secondary Array (SA - minimum of 4 HDDs required	(S)		
·	AC1 MC1	7075	Initial Initial
2U bracket for QLogic 8Gb FC System x			T-1111
2U Bracket for Brocade 8Gb FC	AC1 MC1 Single-p	7550 ort HBA for	Initial Initial
IBM System x	AC1 MC1	7594	Initial Initial
2U Bracket for Brocade 8Gb FC System x		t HBA for IBM	
	AC1 MC1	7595	Initial Initial
Grouped Product	AC1 MC1	7830	Initial Initial
Customer Solution Center Serv		7831	Initial
No HDD Selected	AC1	8026	Initial Initial
Consolidate Shipment	MC1		Initial
olico colution component	AC1 MC1	8031	Initial Initial
e1350 Solution Component Compute Node	AC1	8034	Initial
Compace Node	AC1 MC1	8036	Initial Initial
Management Node	AC1 MC1	8037	Initial Initial
Storage Node	AC1	8038	Initial
TAA Compliant Order	MC1		Initial
	AC1 MC1	8067	Initial Initial
General Racking Solution	AC1 MC1	8072	Initial Initial
No SATA HDD Selected	AC1	8080	Initial
No 2.5" SAS HDD Selected	MC1		Initial
	AC1 MC1	8081	Initial Initial
No Publications Selected	AC1 MC1	8086	Initial Initial
RAID 1E - Primary Array (SAS) required		m of 3 HDDs	Interat
•	AC1 MC1	8143	Initial Initial
RAID 1E - Secondary Array (SA required			7
IBM 2 Button Optical Wheel Mc	AC1 MC1	8146	Initial Initial
15M 2 Button Optical wheel Mc	AC1 MC1	8912	Initial Initial
IBM 3 Button Optical Mouse -	Black - U AC1 MC1	SB 8913	Initial Initial
Integrate in manufacturing	AC1 MC1	8971	Initial Initial
Ship Uninstalled (Safety)	MC1 AC1	8972	Initial
	MC1		Initial

No Internal RAID			
	AC1 MC1	9012	Initial Initial
Hot Spare	AC1 MC1	9013	Initial Initial
Enable Memory Mirroring	AC1 MC1	9017	Initial Initial
Internal SAS RAID - Setup by	IBM AC1 MC1	9066	Initial Initial
Internal SAS RAID - Setup by		9067	Initial Initial
RAID 0 - SAS Primary Array - required	minimum o	f 2 HDD 8141	Initial
RAID 1 - SAS Primary Array -	AC1	quired 8142	Initial Initial
RAID 5 - SAS Primary Array - required	MC1 minimum o	f 3 HDDs	Initial
	AC1 MC1	7853	Initial Initial
RAID 0 - SAS Secondary Array required	- minimum		
RAID 1 - SAS Secondary Array			Initial Initial
RAID 5 - SAS Secondary Array	AC1 MC1 - minimum	8145 of 3 HDDs	Initial Initial
required	AC1 MC1	7854	Initial Initial
Storage Subsystem ID 01	AC1 MC1	9170	Initial Initial
Storage Subsystem ID 02	AC1 MC1	9171	Initial Initial
Storage Subsystem ID 03	AC1 MC1	9172	Initial Initial
Storage Subsystem ID 04	AC1	9173	Initial
Storage Subsystem ID 05	MC1 AC1	9174	Initial Initial
Storage Subsystem ID 06	MC1 AC1	9175	Initial Initial
Storage Subsystem ID 07	MC1 AC1	9176	Initial Initial
Storage Subsystem ID 08	MC1		Initial
Storage Subsystem ID 09	AC1 MC1	9177	Initial Initial
Storage Subsystem ID 10	AC1 MC1	9178	Initial Initial
	AC1 MC1	9179	Initial Initial
Storage Subsystem ID 11	AC1 MC1	9180	Initial Initial
Storage Subsystem ID 12	AC1 MC1	9181	Initial Initial
Storage Subsystem ID 13	AC1	9182	Initial

Storage Subsystem ID 14	MC1		Initial
Storage Subsystem ID 14	AC1 MC1	9183	Initial Initial
Storage Subsystem ID 15	AC1 MC1	9184	Initial Initial
Storage Subsystem ID 16	AC1 MC1	9185	Initial Initial
Storage Subsystem ID 17	AC1	9186	Initial
Storage Subsystem ID 18	MC1 AC1	9187	Initial Initial
Storage Subsystem ID 19	MC1		Initial
Storage Subsystem ID 20	AC1 MC1	9188	Initial Initial
•	AC1 MC1	9189	Initial Initial
RAID 6 - SAS Primary Array - required	minimum o AC1 MC1	f 4 HDDs 7857	Initial Initial
RAID 6 - SAS Secondary Array required		of 4 HDDs	IIIICIAI
Preload Specify	AC1 MC1	7858	Initial Initial
. ,	AC1 MC1	9200	Initial Initial
Windows Specify	MC1	9201	Initial
Red Hat Specify	AC1	9202	Initial
SUSE Specify	AC1	9203	Initial
Drop-in-the-Box Specify	AC1 MC1	9205	Initial Initial
No Preload Specify	AC1 MC1	9206	Initial Initial

The following are features already announced for the 7946 machine type:

Description	Model Fe	ature mber	Initial/ MES/ Both support
AC1			
	AC1		
MC1			
	MC1		
Addl Dual-Core Intel Xeon E55 800MHz FSB 80w)	502 (1.86G	Hz 4MB L2	
	AC1	0362	Initial
	MC1		Initial
1GB DDR3-1333 1Rx8 LP RDIMM			
	AC1	3963	Initial
	MC1		Initial
2GB DDR3-1333 2Rx8 LP RDIMM			
	AC1	3964	Initial
	MC1		Initial
2GB DDR3-1333 1Rx4 LP RDIMM		2005	
	AC1	3965	Initial
4 4222 2- 4	MC1		Initial
4GB DDR3-1333 2Rx4 LP RDIMM	1	2000	
	AC1	3966	Initial
Addl ound come Tutol Year FF	MC1	4MD 2	Initial
Addl Quad-Core Intel Xeon E55	ουο (2.13G	HZ 4MB LZ	

800MHz FSB 80w)	
AC1 4410 MC1	Initial Initial
Addl Quad-Core Intel Xeon L5520 (2.26GHz 8MB L2 1066MHz FSB LV 60w)	
AC1 4411 MC1	Initial Initial
Addl Quad-Core Intel Xeon E5530 (2.4GHz 8MB L2 1066MHz FSB 80w)	
AC1 4412 MC1	Initial Initial
Addl Quad-Core Intel Xeon X5550 (2.66GHz 8MB L2 1333MHz FSB 95w)	IIIICIAI
AC1 4413 MC1	Initial Initial
Addl Quad-Core Intel Xeon X5560 (2.8GHz 8MB L2 1333MHz FSB 95w)	IIIICIAI
AC1 4414 MC1	Initial Initial
Addl Quad-Core Intel Xeon X5570 (2.93GHz 8MB L2 1333MHz FSB 95w)	Initial
AC1 4415 MC1	Initial Initial
Addl Quad-Core Intel Xeon E5504 (2.0GHz 4MB L2 800MHz FSB 80w)	Initial
AC1 4449	Initial Initial
MC1 PCI-Express (1x16) Riser Card Slot 1 (support low profile adapter)	Initiai
AC1 5076 MC1	Initial Initial
PCI-X Riser Card slot 2 (support FH/HL adapter)	IIIILIAI
AC1 5077 MC1	Initial Initial
Addl Quad-Core Intel Xeon E5520 (2.26GHz 8MB L2	IIIICIAI
1066MHz FSB 80w) AC1 7750	Initial
MC1	Initial
Addl Quad-Core Intel Xeon L5506 (2.13GHz 4MB L2 800MHz FSB LV 60w)	
AC1 7751	Initial
MC1 Addl Quad-Core Intel Xeon E5540 (2.53GHz 8MB L2	Initial
1066MHz FSB 80w) AC1 7752	Initial
MC1	Initial
The Single Entity Offerings (SEO)	
Description	SEO number
Description	Hullibet
IBM System x3550 M2	794612U 79463AU
	794632U
	794642u 794652u
	7946320 794662U
	794692u
IBM System x3550 M2 Express Models	7946E1U
	7946E2U 7946E3U
Option SEOs	
Description	SEO number
Intel Xeon Processor E5502	46M1077
2C 1.86 GHz 4 MB Cache 800 MHz	
Intel Xeon Processor E5504 4C 2.00 GHz 4 MB Cache 800 MHz	46M1078
Intel Xeon Processor E5506	46M1079

4C 2.13 GHz 4 MB Cache 800 MHz	
Intel Xeon Processor E5520 4C 2.26 GHz 8 MB Cache 1066 MHz	46M1081
Intel Xeon Processor L5520 4C 2.26 GHz 8 MB Cache 1066 MHz	46M1080
Intel Xeon Processor L5506 4C 2.13 GHz 4 MB Cache 800 MHz	46M1082
Intel Xeon Processor E5530 4C 2.40 GHz 8 MB Cache 1066 MHz	46M1083
Intel Xeon Processor E5540 4C 2.53 GHz 8 MB Cache 1066 MHz	46M1084
Intel Xeon Processor X5550 4C 2.66 GHz 8 MB Cache 1333 MHz	46M1085
Intel Xeon Processor X5560 4C 2.80 GHz 8 MB Cache 1333 MHz	46M1086
Intel Xeon Processor X5570 4C 2.93 GHz 8 MB Cache 1333 MHz	46M1087
1GB (1x1GB) PC3-10600 CL9 ECC DDR3 1333MHz Low Power LP RDIMM	44T1480
2GB (1x2GB) PC3-10600 CL9 ECC DDR3 1333MHz Low Power LP RDIMM	44T1481
2GB (1x2GB) PC3-10600 CL9 ECC DDR3 1333MHz Chipkill LP RDIMM	44T1482
4GB (1x4GB) PC3-10600 CL9 ECC DDR3 1333MHz Chipkill LP RDIMM	44T1483
PCI-Express Riser Card	46M1070

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