IBM System x3100 M5 single-socket entry value tower server delivers innovation and solid, economical performance

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At a glance

Features of the new System x3100 M5 server include:

- 4U and 5U mini tower
- Choice of Intel™ processors:
    - Processor E3-1220 v3 3.1GHz 8MB cache 1600MHz 4C (80W)
    - Processor E3-1231 v3 3.4GHz 8MB cache 1600MHz 4C (80W)
    - Processor E3-1231 v3 3.4GHz 8MB cache 1600MHz 4C (80W)
    - Processor E3-1271 v3 3.6GHz 8MB cache 1600MHz 4C (80W)
    - Xeon Processor E3-1281 v3 3.7GHz 8MB cache 1600MHz 4C (82W)
    - Xeon Processor E3-1241 v3 3.5GHz 8MB cache 1600MHz 4C (80W)
    - Xeon Processor E3-1275L v3 2.7GHz 8MB cache 1600MHz 4C (45W)
    - Xeon Processor E3-1240L v3 2.0GHz 8MB cache 1600MHz 4C (25W)
    - Xeon Processor E3-1220L v3 1.1GHz 4MB cache 1600MHz 2C (13W)
    - Core i3 Processor 4360 3.7GHz 4MB 1600MHz 2C (53W)
    - Core i3 Processor 4350 3.6GHz 4MB 1600MHz 2C (54W)
    - Core i3 Processor 4150 3.5GHz 3MB 1600MHz 2C (54W)
    - Core i3 Processor 4150T 3.0GHz 3MB 1600MHz 2C (35W)
    - Pentium™ Processor G3450 3.4GHz 3MB 1600MHz 2C (53W)

- Pentium Processor G3240 3.1GHz 3MB 1600MHz 2C (53W)
- Pentium Processor G3240T 2.7GHz 3MB 1600MHz 2C (35W)
- Pentium Processor G3220 3.0GHz 3MB 1600MHz 2C (53W)
- Pentium Processor G3440 3.3GHz 3MB 1600MHz 2C (54W)
- Celeron™ Processor G1840 2.8GHz 2MB 1333MHz 2C (53W)
- Integrated SAS/SATA controller
- Four available PCI Express® I/O expansion slots
- Ten bays in 5U 2.5-inch HDD chassis:
  - Two accessible 5.25-inch half-high, one bay with DVD-ROM or multiburner drive
  - Eight internal 2.5-inch slim high bays
- Six bays in 5U 3.5-inch HDD chassis:
  - Two accessible 5.25-inch half-high, one bay with DVD-ROM drive
  - Four internal 3.5-inch slim high bays
- Six bays in 4U chassis:
  - Two accessible 5.25-inch half-high, one bay with DVD-ROM drive
  - Four internal 3.5-inch slim high bays
- 300-watt, 350-watt, or 430-watt power supplies
- System-management support
- I/O ports:
  - Seven USB ports, two in front, four in rear, and one internal
  - Integrated dual Gigabit Ethernet with RJ-45
  - One software-compatible serial port
  - One VGA port

Overview

The System x3100 M5 single-socket tower server is designed for small businesses and first-time server buyers looking for a solution to improve business efficiency. The x3100 M5 delivers several IBM® innovative features in a compact mini 4U and 5U form factor with a competitive price.

Server-class features

- New Intel dual-core and quad-core Intel processors:
  - Xeon E3-1200 v3 series
  - Core i3-2100 series
  - Pentium series
  - Celeron G1840
  - Optimized for EM64T to support 32-bit or 64-bit applications
- 4[1] GB, 8 GB PC3-12800 CL11 1600 MHz DDR3 LP ECC UDIMM memory; 32 GB maximum
- Four PCI Express expansion slots:
  - One x16
  - Two x8
  - One x4
- Support for 300-watt, 350-watt, and 430-watt PSU with redundant option
- Integrated dual Gigabit Ethernet controllers

At your control

Manageability and serviceability features help diagnose problems quickly.

- Integrated Management Module II (IMM2) subsystems with IPMI 2.0 support
- Optional upgrade to remote presence by FoD
- Trusted Platform Module (TPM) 1.2 support
- IBM tools supports
- Intelligent Platform Management Interface (IPMI) 2.0 integrated systems management processor
- Monitoring of memory, thermal, and voltage faults
- Preboot eXecution Environment (PXE) and support for Wake on LAN
- Automatic server restart (ASR) to restart server after operating system failure

At your service

Worldwide support and services with IBM systems management tools, which help improve productivity and get your server up and running quickly.

- ServerGuide[2] utilities to assist loading of many popular network operating systems
- IBM Director
- Warranty: One-year customer replaceable unit (CRU) and on-site labor[3], limited warranty[4]; optional warranty service upgrades available

[1] When referring to memory, HDD, or tape backup capacity, GB stands for one billion bytes. Total user capacity may vary depending on operating environments.

[2] 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.

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.

[3] You may be asked certain diagnostic questions before a technician is sent.

[4] For information on IBM's Statement of Limited Warranty, contact your IBM representative or reseller. Copies are available upon request.

Key prerequisites

Monitor, keyboard, and mouse.

Planned availability date

- June 18, 2014: All except Express Models 5457-EAP, 5457-ECP, 5457-EDP, 5457-EGP
- October 15, 2014: Express Models 5457-EAP, 5457-ECP, 5457-EDP, 5457-EGP

Description

Solid-performing server subsystems

This uniprocessor entry-level server delivers solid, economical performance by coupling Intel Core i3 and Xeon processors, high-speed PC3-10600 CL9 ECC DDR3 1333 MHz or PC3-12800 CL11 memory, and SATA storage subsystems.

Expansion capacity and standard features

The System x3100 M5 server is housed in a minitower that can economically handle expansion. This model features:

- System board with four sockets that supports high-speed PC3-10600 CL9 ECC DDR3 1333 MHz or PC3-12800 CL11 memory:
  - 4 GB and 8 GB 1600 MHz memory standard (model dependent)
  - Up to 32 GB supported
- Four adapter card slots that support multiple adapters for network or data storage:
  - Four PCIe slots (x4, x8, x8, x16)
- Ten bays in 5U 2.5-inch HDD chassis:
  - Two accessible 5.25-inch half-high, one bay with DVD-ROM drive
  - Eight internal 2.5-inch slim high bays
- Six bays in 5U 3.5-inch HDD chassis:
  - Two accessible 5.25-inch half-high, one bay with DVD-ROM drive
  - Four internal 3.5-inch slim high bays
- Six bays in 4U chassis:
  - Two accessible 5.25-inch half-high, one bay with DVD-ROM drive
  - Four internal 3.5-inch slim high bays
- Dual full-duplex, Gigabit Ethernet PCIe controller that speeds network communications to LAN clients
- A worldwide, auto-sensing power supply with auto restart that supports maximum configurations and minimizes operator intervention after a temporary power outage
- One variable-speed system fan that cools microprocessor and I/O, plus one variable-speed power supply fan
- Integrated video controller

Systems management and control

System x3100 M5 servers comply with the 2000 ATX implementation guidelines. These guidelines offer better control and manageability of a network.

Supported features include:

- Wake on LAN for legacy LAN adapters to remotely turn the server on from an off state
- Wake on LAN support on integrated Ethernet controller
- Flash EPROM write protection
- SMBus isolation: One bus section and required system components during system power-down from other buses and components to prevent current leakage into devices without power
- PXE support
- SM BIOS
- MAC address on PC box

World-class support tools and programs

The System x3100 M5 server includes tools and programs that help you get your server running, and keep it running smoothly. IBM can help your company maintain ownership of technology leadership servers.

- The ServerProven® [5] program lets you confidently configure your server with various devices and operating systems. This web-based program provides compatibility information from actual testing of the System x3100 M5 server with various adapters and devices.

The System x3100 M5 server uses high-performance chipsets to optimize throughput from the processors to memory and I/O.

Standard System x3100 M5 configurations

```
SEO       Processor                Cache Memory HDD/INT     Optical

5457A3x  Pentium G3440 3.3 GHz(2C)  3M   4GB   SS LFF SATA     DVD-ROM
5457B3x  Xeon E3-1220v3 3.1 GHz(4C)  8M   4GB   SS LFF SATA     DVD-ROM
5457C3x  Xeon E3-1231v3 3.4 GHz(4C)  8M   4GB   SS LFF SATA     DVD-ROM
5457C5x  Xeon E3-1231v3 3.4 GHz(4C)  8M   4GB   HS LFF SAS/SATA Multiburner
5457F3x  Xeon E3-1271v3 3.6 GHz(4C)  8M   4GB   HS SFF SAS/SATA Multiburner
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Express models for System x3250 M5

```
SEO       Processor                Cache Memory HDD/INT     Optical

5457EDM  Xeon E3-1220v3 3.1 GHz(4C) 8M   8GB   SS LFF SATA     Multiburner
```

[5]
  IBM makes no warranties, expressed or implied, regarding non-IBM products and services that are ServerProven, including but not limited to implied warranties of merchantability and fitness for a particular purpose. These products are offered and under warranty solely by third parties, including those designated as ServerProven or ClusterProven.

Accessibility by people with disabilities

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

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

Product positioning

The System x3100 M5 server is positioned as a System x® entry value tower server and is a confident choice for small businesses because it is built to last, designed to be easy to implement, and affordable.

The System x3100 M5 server combines server-class security and reliability, new technologies, and increased compatibility into an attractively priced entry server designed to be easy to implement, supported by IBM sales and service. This server delivers solid performance to support typical general-purpose network, email, or web-serving applications in small businesses. Software-ready and with intuitive industry-standard management capabilities, the x3100 M5 server is ideal for transitioning business applications off your PC.

Product number

The following are features already announced for the 5457 machine type:

Description	MT	Model	Feature
5457-AC1	5457	AC1	
5457-MC1	5457	MC1	
QLogic 10Gb SFP+ SR Optical Transceiver	5457	AC1 MC1	0064
Brocade 10Gb SFP+ SR Optical Transceiver	5457	AC1 MC1	0069
EMEA Long Leadtime Configurations	5457	AC1 MC1	1763
Hungary CHW plant 9SH	5457	AC1 MC1	1764
Guad CHW plant 9KQ	5457	AC1 MC1	1765
ISTC CHW 9K2	5457	AC1 MC1	1766
RTP CHW 9NR	5457	AC1 MC1	1767
Offload Manufacturing to Guadalajara HVEC	5457	AC1 MC1	1768
Offload Manufacturing to RTP HVEC	5457	AC1 MC1	1769
Offload Manufacturing to ISTC	5457	AC1 MC1	1770
Routing for AP Foxconn	5457	AC1 MC1	1771
Capacity Scheduling Service	5457	AC1 MC1	1772
Custom SLA Scheduling Service	5457	AC1 MC1	1796
Custom Asset Tagging - Standard	5457	AC1 MC1	2200
Custom Asset Tagging - Enhanced	5457	AC1 MC1	2201
Custom Image Load - Server	5457	AC1 MC1	2204
Custom Media Shipgroup	5457	AC1 MC1	2206
Request for Global Trade Number (UPC or EAN)	5457	AC1 MC1	2207
Custom Software/Firmware Setting - Standard	5457	AC1 MC1	2208
Custom Software/Firmware Setting - Enhanced	5457	AC1 MC1	2209
Custom RAID Configuration	5457	AC1 MC1	2212
Custom Unit Carton Label	5457	AC1 MC1	2220

Custom Palletization	5457	AC1 MC1	2221
Request for a new Vendor Logo Hardware	5457	AC1 MC1	2247
Request for a Classic RPQ	5457	AC1 MC1	2248
Request for an existing Public RPQ	5457	AC1 MC1	2249
RAID Configuration	5457	AC1 MC1	2302
Rack Installation >1U Component	5457	AC1 MC1	2306
Install largest capacity, faster drives starting in Array 1	5457	AC1 MC1	2498
Install smallest capacity, slower drives starting in Array 1	5457	AC1 MC1	2499
PRO/1000 PF Server Adapter	5457	AC1 MC1	2975
QLogic 8Gb FC Single-port HBA for IBM System x	5457	AC1 MC1	3578
QLogic 8Gb FC Dual-port HBA for IBM System x	5457	AC1 MC1	3579
Emulex 8Gb FC Single-port HBA for IBM System x	5457	AC1 MC1	3580
Emulex 8Gb FC Dual-port HBA for IBM System x	5457	AC1 MC1	3581
Brocade 8Gb FC Single-port HBA for IBM System x	5457	AC1 MC1	3589
Brocade 8Gb FC Dual-port HBA for IBM System x	5457	AC1 MC1	3591
IBM USB Conversion Option Pack	5457	AC1 MC1	3756
IBM Single Cable USB Conversion Option (UCO)	5457	AC1 MC1	3757
IBM HH DVD-ROM	5457	AC1 MC1	4154
IBM HH Multiburner DVD	5457	AC1 MC1	4155
IBM Serial Conversion Option (SCO)	5457	AC1 MC1	5340
IBM Virtual Media Conversion Option Gen2 (VCO2)	5457	AC1 MC1	5341
IBM Half High LTO^{TM} Gen 5 Internal SAS Tape Drive	5457	AC1 MC1	5345
IBM DDS Gen 6 USB Tape Drive	5457	AC1 MC1	5395
IBM Half-high LTO Gen 4 SAS Tape Drive	5457	AC1 MC1	5397
IBM RDX 320GB Cartridge	5457	AC1 MC1	5708
IBM RDX 500GB Cartridge	5457	AC1 MC1	5709
Intel Ethernet Dual Port Server Adapter I340-T2 for IBM System x	5457	AC1 MC1	5767
Intel Ethernet Quad Port Server Adapter I340-T4 for IBM System x	5457	AC1 MC1	5768
Select Storage devices - no IBM-configured RAID required	5457	AC1 MC1	5977
Select Storage devices - IBM-configured RAID	5457	AC1 MC1	5978
IBM 6Gb SAS HBA	5457	AC1 MC1	5982
1.5m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable	5457	AC1 MC1	6201
2.8m, 10A/100-250V, C13 to IEC 320-C20 Rack Power Cable	5457	AC1 MC1	6204

Description	Machine	Feature	Number
Line cord - 4.3M, 10A/125V, C13 to NEMA 5-15P (US)	5457	AC1 MC1	6207
Line cord - 2.8m, 220-240V, C13 to GB 2099.1 (China)	5457	AC1 MC1	6210
Line cord - 2.8m, 10A/250V, C13 to AS/NZ 3112 (Australia/NZ)	5457	AC1 MC1	6211
2.8m, 10A/230V, C13 to CEE7-VII (Europe)	5457	AC1 MC1	6212
Line cord - 2.8m, 10A/250V, C13 to SABS 164 (S Africa)	5457	AC1 MC1	6214
Line cord - 2.8m, 10A/250V, C13 to BS 1363/A (UK)	5457	AC1 MC1	6215
Line cord - 2.8m, 220-240V, C13 to KETI (S Korea)	5457	AC1 MC1	6219
4.3m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable	5457	AC1 MC1	6263
Line cord - 2.8M 10A/250V C13(2P+Gnd) (India)	5457	AC1 MC1	6269
2.8m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable	5457	AC1 MC1	6311
2.8m, 10A/120V, C13 to NEMA 5-15P (US) Line Cord	5457	AC1 MC1	6313
Rack power cable - 2.0m, 125-250V, C13 to IEC 320-C14 (WW)	5457	AC1 MC1	6316
Line cord - 1.8m, 10A/250V, C13 to NEMA 6-15P (US)	5457	AC1 MC1	6351
Line cord - 1.8M, 10A/125V, C13 to NEMA 5-15P (US)	5457	AC1 MC1	6369
Line cord - 4.3M, 10A/125V, C13 to NEMA 5-15P (US)	5457	AC1 MC1	6370
Line cord - 2.8m, 10A/250V, C13 to NEMA 6-15P (US)	5457	AC1 MC1	6372
Line cord - 4.3m, 10A/250V, C13 to NEMA 6-15P (US)	5457	AC1 MC1	6373
IBM Pref. Pro Keyboard USB - US English 103P RoHS v2	5457	AC1 MC1	A4XJ
Line cord - 2.8m, 10A/125V, C13 to CNS 10917-3 (Taiwan)	5457	AC1 MC1	6386
Line cord - 1.8m, 10 AMP/125 VAC - IEC 320 C13 Inline (Thailand)	5457	AC1 MC1	6496
Primary Array 2 HDDs	5457	AC1 MC1	7008
Primary Array 3 HDDs	5457	AC1 MC1	7009
Primary Array 4 HDDs	5457	AC1 MC1	7010
Primary Array 5 HDDs	5457	AC1 MC1	7011
Primary Array 6 HDDs	5457	AC1 MC1	7012
Primary Array 7 HDDs	5457	AC1 MC1	7013
Primary Array 8 HDDs	5457	AC1 MC1	7014
Secondary Array 2 HDDs	5457	AC1 MC1	7015
Secondary Array 3 HDDs	5457	AC1 MC1	7016
Secondary Array 4 HDDs	5457	AC1 MC1	7017
Secondary Array 5 HDDs	5457	AC1	7057

Description			
		MC1	
Secondary Array 6 HDDs	5457	AC1	7058
		MC1	
China Warranty	5457	AC1	7599
		MC1	
Grouped Product	5457	AC1	7830
		MC1	
Customer Solution Center Services	5457	AC1	7831
		MC1	
e1350 Special Bid Solution Component	5457	AC1	7929
		MC1	
No HDD Selected	5457	AC1	8026
		MC1	
Consolidate Shipment	5457	AC1	8031
		MC1	
e1350 Solution Component	5457	AC1	8034
		MC1	
Compute Node	5457	AC1	8036
		MC1	
Management Node	5457	AC1	8037
		MC1	
Storage Node	5457	AC1	8038
		MC1	
TAA Compliant Order	5457	AC1	8067
		MC1	
General Racking Solution	5457	AC1	8072
		MC1	
No SATA HDD Selected	5457	AC1	8080
		MC1	
No 2.5" SAS HDD Selected	5457	AC1	8081
		MC1	
No 3.5" SAS HDD Selected	5457	AC1	8082
		MC1	
No Pointing Device Selected	5457	AC1	8084
		MC1	
No Keyboard Selected	5457	AC1	8085
		MC1	
No Publications Selected	5457	AC1	8086
		MC1	
IBM 2 Button Optical Wheel Mouse - Black - USB	5457	AC1	8912
		MC1	
Integrated SATA Single Mirroring - 2 identical SS HDDs required	5457	AC1	8947
		MC1	
Integrated SATA Double Mirroring - 2 pairs identical SS HDD required	5457	AC1	8948
		MC1	
Storage Subsystem ID 01	5457	AC1	9170
		MC1	
Storage Subsystem ID 02	5457	AC1	9171
		MC1	
Storage Subsystem ID 03	5457	AC1	9172
		MC1	
Storage Subsystem ID 04	5457	AC1	9173
		MC1	
Storage Subsystem ID 05	5457	AC1	9174
		MC1	
Storage Subsystem ID 06	5457	AC1	9175
		MC1	
Storage Subsystem ID 07	5457	AC1	9176
		MC1	
Storage Subsystem ID 08	5457	AC1	9177
		MC1	
Storage Subsystem ID 09	5457	AC1	9178
		MC1	
Storage Subsystem ID 10	5457	AC1	9179
		MC1	
Storage Subsystem ID 11	5457	AC1	9180
		MC1	
Storage Subsystem ID 12	5457	AC1	9181
		MC1	
Storage Subsystem ID 13	5457	AC1	9182
		MC1	
Storage Subsystem ID 14	5457	AC1	9183

		MC1	
Storage Subsystem ID 15	5457	AC1	9184
		MC1	
Storage Subsystem ID 16	5457	AC1	9185
		MC1	
Storage Subsystem ID 17	5457	AC1	9186
		MC1	
Storage Subsystem ID 18	5457	AC1	9187
		MC1	
Storage Subsystem ID 19	5457	AC1	9188
		MC1	
Storage Subsystem ID 20	5457	AC1	9189
		MC1	
Preload Specify	5457	AC1	9200
		MC1	
Windows Specify	5457	MC1	9201
Red Hat Specify	5457	AC1	9202
SuSE Specify	5457	AC1	9203
Drop-in-the-Box Specify	5457	AC1	9205
		MC1	
No Preload Specify	5457	AC1	9206
		MC1	
VMware Specify	5457	AC1	9207
		MC1	
Preload by Hardware Feature Specify	5457	AC1	9220
		MC1	
Internal split SAS cable	5457	AC1	9265
		MC1	
1 meter internal USB cable	5457	AC1	9266
		MC1	
Software Application (Not Preinstalled) Specify	5457	AC1	A0UF
		MC1	
Integrated SATA Striping - 1-8 identical SS HDDs required	5457	AC1	A15A
		MC1	
Integrated SATA Double Striping - 2 pairs identical SS HDD required	5457	AC1	A15B
		MC1	
Integrated SATA Mirroring & Striping-2 pair identical SS HD required	5457	AC1	A15C
		MC1	
Integrated SATA Striping with parity - 3-8 identical SS HDD required	5457	AC1	A15D
		MC1	
ServeRAID C100 for System x	5457	AC1	A17T
		MC1	
ServeRAID C100 Series RAID 5 Upgrade for IBM System x-FoD	5457	AC1	A17U
		MC1	
Broadcom NetXtreme II Dual Port 10GBaseT Adapter for IBM System x	5457	AC1	A18Y
		MC1	
IBM 1TB 7.2K 6Gbps NL SATA 2.5" SFF HS HDD	5457	AC1	A1AV
		MC1	
5.25 ODD Filler Kit	5457	AC1	A1BZ
		MC1	
ServeRAID M5100 Series 512MB Cache/RAID 5 Upgrade for IBM System x	5457	AC1	A1J3
		MC1	
ServeRAID M5100 Series 512MB Flash/RAID 5 Upgrade for IBM System x	5457	AC1	A1J4
		MC1	
IBM Integrated Management Module Advanced Upgrade	5457	AC1	A1ML
		MC1	
ServeRAID M1115 SAS/SATA Controller for IBM System x	5457	AC1	A1MZ
		MC1	
IBM 250GB 7.2K 6Gbps NL SATA 2.5" SFF HS HDD	5457	AC1	A1NX
		MC1	
IBM 500GB 7.2K 6Gbps NL SATA 2.5" SFF HS HDD	5457	AC1	A1NZ
		MC1	
IBM 1TB 7.2K 6Gbps NL SAS 2.5" SFF HS HDD	5457	AC1	A1P3
		MC1	
IBM RDX 1TB Cartridge	5457	AC1	A1VL

Description			
		MC1	
ServeRAID M5120 SAS/SATA Controller for IBM System x	5457	AC1	A1WX
		MC1	
ServeRAID M5100 Series 1GB Flash/RAID 5 Upgrade for IBM System x	5457	AC1	A1WY
		MC1	
ServeRAID M1100 Series Zero Cache/RAID 5 Upgrade for IBM System x	5457	AC1	A1X1
		MC1	
ServeRAID M5100 Series Zero Cache/RAID 5 Upgrade for IBM System x	5457	AC1	A1X2
		MC1	
ServeRAID M5100 Series RAID 6 Upgrade for IBM System x	5457	AC1	A1X3
		MC1	
3U bracket for low profile-internal-storage adapters	5457	AC1	A1X6
		MC1	
ServeRAID M5100 Series 425mm Flash Power Module Cable	5457	AC1	A1X9
		MC1	
ServeRAID H1110 SAS/SATA Controller for IBM System x	5457	AC1	A1XL
		MC1	
ServeRAID M5100 Series Battery Kit for IBM System x	5457	AC1	A22E
		MC1	
500MM Cable for ServRAID M5100 Series Battery Kit	5457	AC1	A22F
		MC1	
IBM 1TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD	5457	AC1	A22P
		MC1	
IBM 3TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD	5457	AC1	A22S
		MC1	
IBM 2TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD	5457	AC1	A22T
		MC1	
IBM 500GB 7.2K 6Gbps NL SATA 3.5" G2SS HDD	5457	AC1	A22U
		MC1	
IBM 3TB 7.2K 6Gbps NL SATA 3.5" G2SS HDD	5457	AC1	A22V
		MC1	
IBM 2TB 7.2K 6Gbps NL SATA 3.5" G2SS HDD	5457	AC1	A22W
		MC1	
IBM 1TB 7.2K 6Gbps NL SATA 3.5" G2SS HDD	5457	AC1	A22X
		MC1	
IBM 500GB 7.2K 6Gbps NL SATA 3.5" G2HS HDD	5457	AC1	A22Y
		MC1	
IBM 900GB 10K 6Gbps SAS 2.5" SFF HS HDD	5457	AC1	A282
		MC1	
IBM 300GB 15K 6Gbps SAS 2.5" G2HS HDD	5457	AC1	A283
		MC1	
Label KC	5457	AC1	A2CM
		MC1	
Intel x520 Dual Port 10GbE SFP+ Adapter for IBM System x	5457	AC1	A2EC
		MC1	
Intel X540-T2 Dual Port 10GBaseT Adapter for IBM System x	5457	AC1	A2ED
		MC1	
IBM Blank USB Memory Key for VMWare ESXi Downloads	5457	AC1	A2G0
		MC1	
Configuration ID 01	5457	AC1	A2HP
		MC1	
Configuration ID 02	5457	AC1	A2HQ
		MC1	
Configuration ID 03	5457	AC1	A2HR
		MC1	
Configuration ID 04	5457	AC1	A2HS
		MC1	
Configuration ID 05	5457	AC1	A2HT
		MC1	
Configuration ID 06	5457	AC1	A2HU
		MC1	
Configuration ID 07	5457	AC1	A2HV
		MC1	

Configuration ID 08	5457	AC1 MC1	A2HW
Configuration ID 09	5457	AC1 MC1	A2HX
Configuration ID 10	5457	AC1 MC1	A2HY
Configuration ID 11	5457	AC1 MC1	A2HZ
Configuration ID 12	5457	AC1 MC1	A2J0
Configuration ID 13	5457	AC1 MC1	A2J1
Configuration ID 14	5457	AC1 MC1	A2J2
Configuration ID 15	5457	AC1 MC1	A2J3
Configuration ID 16	5457	AC1 MC1	A2J4
Configuration ID 17	5457	AC1 MC1	A2J5
Configuration ID 18	5457	AC1 MC1	A2J6
Configuration ID 19	5457	AC1 MC1	A2J7
Configuration ID 20	5457	AC1 MC1	A2J8
Configuration ID 21	5457	AC1 MC1	A2J9
Configuration ID 22	5457	AC1 MC1	A2JA
Configuration ID 23	5457	AC1 MC1	A2JB
Configuration ID 24	5457	AC1 MC1	A2JC
Configuration ID 25	5457	AC1 MC1	A2JD
Configuration ID 26	5457	AC1 MC1	A2JE
Configuration ID 27	5457	AC1 MC1	A2JF
Configuration ID 28	5457	AC1 MC1	A2JG
Configuration ID 29	5457	AC1 MC1	A2JH
Configuration ID 30	5457	AC1 MC1	A2JJ
Configuration ID 31	5457	AC1 MC1	A2JK
Configuration ID 32	5457	AC1 MC1	A2JL
Configuration ID 33	5457	AC1 MC1	A2JM
Configuration ID 34	5457	AC1 MC1	A2JN
Configuration ID 35	5457	AC1 MC1	A2JP
Configuration ID 36	5457	AC1 MC1	A2JQ
Configuration ID 37	5457	AC1 MC1	A2JR
Configuration ID 38	5457	AC1 MC1	A2JS
Configuration ID 39	5457	AC1 MC1	A2JT
Configuration ID 40	5457	AC1 MC1	A2JU
Configuration ID 41	5457	AC1 MC1	A2JV
Configuration ID 42	5457	AC1 MC1	A2JW
Primary Array – RAID 0	5457	AC1 MC1	A2K6
Primary Array – RAID 1	5457	AC1 MC1	A2K7

Primary Array - RAID 1E	5457	AC1 MC1	A2K8
Primary Array - RAID 5	5457	AC1 MC1	A2K9
Primary Array - RAID 6	5457	AC1 MC1	A2KA
Primary Array - RAID 10	5457	AC1 MC1	A2KB
Secondary Array - RAID 0	5457	AC1 MC1	A2KF
Secondary Array - RAID 1	5457	AC1 MC1	A2KG
Secondary Array - RAID 5	5457	AC1 MC1	A2KJ
Secondary Array - RAID 6	5457	AC1 MC1	A2KK
Secondary Array - RAID 10	5457	AC1 MC1	A2KL
ServeRAID M5100 Series SSD Performance Key for IBM System x	5457	AC1 MC1	A2MC
ServeRAID M5100 Series SSD Caching Enabler for IBM System x	5457	AC1 MC1	A2MD
Emulex VFA III/IIIr FCoE/iSCSI License for IBM System x (FoD)	5457	AC1 MC1	A2U2
IBM 256GB SATA 2.5" MLC HS Enterprise Value SSD	5457	AC1 MC1	A2U3
IBM 128GB SATA 2.5" MLC HS Enterprise Value SSD	5457	AC1 MC1	A2U4
IBM RDX 3 Internal USB Drive	5457	AC1 MC1	A2U7
Broadcom NetXtreme I Quad Port GbE Adapter for IBM System x	5457	AC1 MC1	A2V3
Broadcom NetXtreme I Dual Port GbE Adapter for IBM System x	5457	AC1 MC1	A2V4
Emulex 16Gb FC Single-port HBA for IBM System x	5457	AC1 MC1	A2W5
Emulex 16Gb FC Dual-port HBA for IBM System x	5457	AC1 MC1	A2W6
No Power Cord Validation	5457	AC1 MC1	A2X0
IBM 146GB 15K 6Gbps SAS 2.5" SFF G2HS HDD	5457	AC1 MC1	A2XB
IBM 300GB 10K 6Gbps SAS 2.5" SFF G2HS HDD	5457	AC1 MC1	A2XC
IBM 600GB 10K 6Gbps SAS 2.5" SFF G2HS HDD	5457	AC1 MC1	A2XD
Brocade 16Gb FC Single-port HBA for IBM System x	5457	AC1 MC1	A2XU
Brocade 16Gb FC Dual-port HBA for IBM System x	5457	AC1 MC1	A2XV
Power Supply Blank Filler	5457	AC1 MC1	A2YY
430W Redundant Power Supply	5457	AC1 MC1	A2Z0
IBM Keyboard w/ Int. Pointing Device USB - US English 103P RoHS	5457	AC1 MC1	A31J
IBM Keyboard w/ Int. Pointing Device USB - Chinese/US 467 RoHS	5457	AC1 MC1	A31M
BM Keyboard w/ Int. Pointing Device USB - Korean 413 RoHS	5457	AC1 MC1	A31Z
BM Keyboard w/ Int. Pointing Device USB - Thai 191 RoHS	5457	AC1 MC1	A329
IBM Pref. Pro Keyboard USB - Chinese/US 467 RoHS	5457	AC1	A32M

Description	Type	Model	Feature
		MC1	
IBM Pref. Pro Keyboard USB – Japanese 194 RoHS	5457	AC1	A331
		MC1	
IBM Pref. Pro Keyboard USB – Korean 413 RoHS	5457	AC1	A332
		MC1	
IBM Pref. Pro Keyboard USB – Thailand 191 RoHS	5457	AC1	A33F
		MC1	
ServeRAID M5110 SAS/SATA Controller for IBM System x	5457	AC1	A347
		MC1	
IBM 64GB SATA 2.5" MLC HS Enterprise Value SSD	5457	AC1	A3AS
		MC1	
IBM 300GB 15K 6Gbps SAS 3.5" G2HS HDD	5457	AC1	A3DV
		MC1	
IBM 450GB 15K 6Gbps SAS 3.5" G2HS HDD	5457	AC1	A3DW
		MC1	
IBM 600GB 15K 6Gbps SAS 3.5" G2HS HDD	5457	AC1	A3DX
		MC1	
IBM 600GB 10K 6Gbps SAS 2.5" SFF G2HS SED	5457	AC1	A3EF
		MC1	
IBM 900GB 10K 6Gbps SAS 2.5" SFF G2HS SED	5457	AC1	A3EG
		MC1	
QLogic 16Gb FC Single-port HBA for IBM System x	5457	AC1	A3KW
		MC1	
QLogic 16Gb FC Dual-port HBA for IBM System x	5457	AC1	A3KX
		MC1	
Qlogic 8200 Dual Port 10GbE SFP+ VFA for IBM System x	5457	AC1	A3MR
		MC1	
Qlogic 8200 VFA FCoE/iSCSI License for IBM System x (FoD)	5457	AC1	A3MT
		MC1	
N2125 SAS/SATA HBA for IBM System x	5457	AC1	A3MV
		MC1	
N2115 SAS/SATA HBA for IBM System x	5457	AC1	A3MW
		MC1	
Mellanox ConnectX-3 10 GbE Adapter for IBM System x	5457	AC1	A3PM
		MC1	
4GB (1x4GB, 2Rx8, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP UDIMM	5457	AC1	A3QB
		MC1	
8GB (1x8GB, 2Rx8, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP UDIMM	5457	AC1	A3QC
		MC1	
Intel Xeon Processor E3-1220 v3 3.1GHz 8MB cache 1600MHz 4C (80W)	5457	AC1	A3QT
		MC1	
x3100 M5 System Planar	5457	AC1	A3QW
		MC1	
Base LFF Hardware with 80 Plus certified RDN® Power Supply (430W)	5457	AC1	A3QX
		MC1	
Base Hardware with 80 Plus certified Fixed Power Supply (300W)	5457	AC1	A3QY
		MC1	
Base Hardware with Fixed Power Supply (350W)	5457	AC1	A3R0
		MC1	
x3100 M5 4U Chassis Packaging	5457	AC1	A3R1
		MC1	
System Documentation and Software-US English	5457	AC1	A3R3
		MC1	
System Documentation and Software-Korean	5457	AC1	A3RB
		MC1	
System Documentation and Software-Traditional Chinese (Taiwan)	5457	AC1	A3RC
		MC1	
System Documentation and Software-Simplified Chinese (China)	5457	AC1	A3RD
		MC1	
System Documentation and Software-Korea (English)	5457	AC1	A3RE

		MC1	
System Documentation and Software-Traditional Chinese (Hong Kong)	5457	AC1	A3RF
		MC1	
3.5" Hot Swap Hardware RAID kit	5457	AC1	A3SB
		MC1	
2.5" Hot Swap Hardware RAID kit	5457	AC1	A3SC
		MC1	
System x3100 Hardware RAID Remote Battery/Cap Mechanical kit	5457	AC1	A3SE
		MC1	
System x3100 Thermal Solution Fan kit for 4U Tower	5457	AC1	A3SF
		MC1	
System Labels GBM for 4U Chassis	5457	AC1	A3SQ
		MC1	
IBM 4TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD	5457	AC1	A3W9
		MC1	
3U Bracket for Mellanox ConnectX-3 10 GbE Adapter	5457	AC1	A3WG
		MC1	
NVIDIA Quadro K600	5457	AC1	A3WH
		MC1	
System x3100 3.5" Simple Swap HDD Hardware RAID upgrade kit	5457	AC1	A49A
		MC1	
System x3100 Operating Temperature Enhancement Kit for 4U Tower	5457	AC1	A49B
		MC1	
System x3100 Operating Temperature Enhancement Kit for 5U Tower	5457	AC1	A49C
		MC1	
System x3100 Thermal Solution Fan kit for 5U Tower	5457	AC1	A49D
		MC1	
System Labels GBM for 5U Chassis	5457	AC1	A49E
		MC1	
x3100 M5 Tower Bezel for LFF HS HDD	5457	AC1	A49F
		MC1	
x3100 M5 Tower Bezel for SFF HS HDD	5457	AC1	A49G
		MC1	
Base SFF Hardware with 80 Plus certified RDN Power Supply (430W)	5457	AC1	A49H
		MC1	
IMM2 Standard	5457	AC1	A4K8
		MC1	
x3100 M5 5U Chassis Packaging	5457	AC1	A4KZ
		MC1	
Intel Xeon Processor E3-1220L v3 1.1GHz 4MB cache 1600MHz 2C (13W)	5457	AC1	A4VZ
		MC1	
UM KVM Module VGA+SD Dual RJ45	5457	AC1	A4X4
		MC1	
Emulex Dual Port 10GbE SFP+ VFA IIIr for IBM System x	5457	AC1	A4XH
		MC1	
IBM USB Memory Key for VMware ESXi 5.5	5457	AC1	A584
		MC1	
Intel Core i3 Processor 4360 3.7GHz 4MB 1600MHz 2C (54W)	5457	AC1	A58B
		MC1	
Intel Core i3 Processor 4350 3.6GHz 4MB 1600MHz 2C (54W)	5457	AC1	A58C
		MC1	
Intel Core i3 Processor 4150 3.5GHz 3MB 1600MHz 2C (54W)	5457	AC1	A58D
		MC1	
Intel Core i3 Processor 4150T 3.0GHz 3MB 1600MHz 2C (35W)	5457	AC1	A58E
		MC1	
Intel Pentium Processor G3450 3.4GHz 3MB 1600MHz 2C (53W)	5457	AC1	A58F
		MC1	
Intel Pentium Processor G3240 3.1GHz 3MB 1333MHz 2C (53W)	5457	AC1	A58G
		MC1	
Intel Pentium Processor G3240T 2.7GHz 3MB 1333MHz			

Description	MT	Model	Feature
2C (35W)	5457	AC1 MC1	A58H
Intel Pentium Processor G3440 3.3GHz 3MB 1600MHz 2C (53W)	5457	AC1 MC1	A58J
Intel Xeon Processor E3-1231 v3 3.4GHz 8MB cache 1600MHz 4C (80W)	5457	AC1 MC1	A58K
Intel Xeon Processor E3-1241 v3 3.5GHz 8MB cache 1600MHz 4C (80W)	5457	AC1 MC1	A58L
Intel Xeon Processor E3-1271 v3 3.6GHz 8MB cache 1600MHz 4C (80W)	5457	AC1 MC1	A58M
Intel Xeon Processor E3-1281 v3 3.7GHz 8MB cache 1600MHz 4C (82W)	5457	AC1 MC1	A58N
Intel Xeon Processor E3-1275L v3 2.7GHz 8MB cache 1600MHz 4C (45W)	5457	AC1 MC1	A58P
Intel Xeon Processor E3-1240L v3 2.0GHz 8MB cache 1600MHz 4C (25W)	5457	AC1 MC1	A58Q
Intel Pentium Processor G3220 3.0GHz 3MB 1333MHz 2C (53W)	5457	AC1 MC1	A58R
Intel Celeron Processor G1840 2.8GHz 2MB 1333MHz 2C (53W)	5457	AC1 MC1	A58S
Essential Package	5457	AC1 MC1	A5QJ
Enhanced Package	5457	AC1 MC1	A5QK
Elite Package	5457	AC1 MC1	A5QL
Essential Package	5457	AC1 MC1	A5QM
Enhanced Package	5457	AC1 MC1	A5QN
Elite Package	5457	AC1 MC1	A5QP
IBM 500GB 7.2K 6Gbps NL SAS 2.5" SFF G2HS HDD	5457	AC1 MC1	A2XE

The following are features already announced for the 3331 machine type:

Description	MT	Model	Feature
System x3100 Hardware RAID Remote Battery/Cap Mechanical kit	3331	HC1	A3SE
System x3100 Thermal Solution Fan kit for 4U Tower	3331	HC1	A3SF
System x3100 3.5" Simple Swap HDD Hardware RAID upgrade kit	3331	HC1	A49A
System x3100 Operating Temperature Enhancement Kit for 4U Tower	3331	HC1	A49B
System x3100 Operating Temperature Enhancement Kit for 5U Tower	3331	HC1	A49C
System x3100 Thermal Solution Fan kit for 5U Tower	3331	HC1	A49D
System x3100 Tower to Rack Conversion Kit for 5U Tower	3331	HC1	A4HU

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

HIPO feature number	Description
A85G	5457-AC1 Routing Code
A85H	5457-MC1 Routing Code

Note: All models are GAV except for C models.

```
                                                Part
 Description                       MT    Mod    number

 IBM System x3100 M5               5457  A3M    5457A3M
                                   5457  A3B    5457A3B
                                   5457  A3A    5457A3A
                                   5457  A3V    5457A3V
                                   5457  A3K    5457A3K
                                   5457  A3C    5457A3C

 IBM System x3100 M5               5457  B3M    5457B3M
                                   5457  B3B    5457B3B
                                   5457  B3A    5457B3A
                                   5457  B3V    5457B3V
                                   5457  B3K    5457B3K
                                   5457  B3C    5457B3C

 IBM System x3100 M5               5457  C3M    5457C3M
                                   5457  C3B    5457C3B
                                   5457  C3A    5457C3A
                                   5457  C3V    5457C3V
                                   5457  C3K    5457C3K
                                   5457  C3C    5457C3C

 IBM System x3100 M5               5457  C5M    5457C5M
                                   5457  C5B    5457C5B
                                   5457  C5A    5457C5A
                                   5457  C5V    5457C5V
                                   5457  C5K    5457C5K
                                   5457  C5C    5457C5C

 IBM System x3100 M5               5457  F3M    5457F3M
                                   5457  F3B    5457F3B
                                   5457  F3A    5457F3A
                                   5457  F3V    5457F3V
                                   5457  F3K    5457F3K
                                   5457  F3C    5457F3C

 Express model
 IBM System x3100 M5 Express       5457  EDM    5457EDM
 Note:
 xxK = Korea (Korea)
 xxC = PRC (Simple Chinese)
 xxV = Taiwan
 xxB = Hong Kong
 xxA = Hong Kong, Singapore, Brunei, Malaysia, Myanmar, Burma.
       India, Nepal, Sri Lanka
 xxM = Australia, New Zealand
```

Starting Point models

```
                                                Part
 Description                                    number

 System x3100 M5 Starting Point                 5457-FT1
 System x3100 M5 Starting Point                 5457-FT2
 System x3100 M5 Starting Point                 5457-FT3
 System x3100 M5 Starting Point                 5457-FT4
```

Options

Note: Applies to China only.

```
                                           SEO      Part
 Description                 Type  Mod Feature Number   Number


 System x3100 Tower to Rack Conversion
```

IBM Asia Pacific Hardware Announcement AG14-0052   IBM is a registered trademark of International Business Machines Corporation   17

```
             Kit for 5U Tower                3331  HC1   A4HU  00J6353 00J6353

System x3100 Operating Temperature
   Enhancement Kit for 4U  Tower           3331  HC1   A49B  00Y8197 00Y8197


System x3100 3.5" Simple Swap HDD
   Hardware RAID upgrade kit              3331  HC1   A49A  00J6352 00J6352

System x3100 Thermal Solution Fan
   kit for 5U Tower                       3331  HC1   A49D  00Y8200 00Y8200

System x3100 Operating Temperature
   Enhancement Kit for 5U Tower           3331  HC1   A49C  00FK940 00FK940

System x3100 Thermal Solution Fan
   kit for 4U Tower                       3331  HC1   A3SF  46W9177 46W9177

System x3100 Hardware RAID Remote
   Battery/Cap Mechanical kit            3331  HC1   A3SE  00J6455 00J6455
```

Pseudo part numbers

Note: The following Pseudo part numbers cannot be ordered as stand-alone parts and can only be ordered using configurator.

```
Pseudo
Part
Number  Description

00FK512 System Labels GBM for 4U Chassis
00FK531 3.5" Hot Swap Hardware RAID kit
00FK532 2.5" Hot Swap Hardware RAID kit
00FK533 x3100 M5 4U Chassis Packaging
00FK530 x3100 M5 System Planar
00FK517 System Documentation and Software-US English
00AL164 Intel Xeon™ Processor E3-1220L v3 1.1GHz 4MB cache 1600MHz
        2C (13W) E,AP,JPN
00J6471 Intel Xeon Processor E3-1220 v3 3.1GHz 8MB cache 1600MHz
        4C (80W)
00KA412 Intel Core i3 Processor 4360 3.7GHz 4MB 1600MHz 2C (54W)
00KA413 Intel Core i3 Processor 4350 3.6GHz 4MB 1600MHz 2C (54W)
00KA415 Intel Core i3 Processor 4150 3.5GHz 3MB 1600MHz 2C (54W)
00KA416 Intel Core i3 Processor 4150T 3.0GHz 3MB 1600MHz 2C (35W)
00KA417 Intel Pentium Processor G3450 3.4GHz 3MB 1600MHz 2C (53W)
00KA418 Intel Pentium Processor G3220 3.0GHz 3MB 1333MHz 2C (53W)
00KA419 Intel Pentium Processor G3240 3.1GHz 3MB 1333MHz 2C (53W)
00KA420 Intel Pentium Processor G3240T 2.7GHz 3MB 1333MHz 2C (35W)
00KA422 Intel Celeron Processor G1840 2.8GHz 2MB 1333MHz 2C (53W)
00KA443 Intel Pentium Processor G3440 3.3GHz 3MB 1600MHz 2C (53W)
00KA444 Intel Xeon Processor E3-1231 v3 3.4GHz 8MB cache 1600MHz
        4C (80W)
00KA445 Intel Xeon Processor E3-1241 v3 3.5GHz 8MB cache 1600MHz
        4C (80W)
00KA446 Intel Xeon Processor E3-1271 v3 3.6GHz 8MB cache 1600MHz
        4C (80W)
00KA447 Intel Xeon Processor E3-1281 v3 3.7GHz 8MB cache 1600MHz
        4C (82W)
00KA448 Intel Xeon Processor-83-1275L v3 2.7GHz 8MB cache 1600MHz
        4C (45W)
00KA449 Intel Xeon Processor E3-1240L v3 2.0GHz 8MB cache 1600MHz
        4C (25W)
00FK513 x3100 M5 Tower Bezel for LFF HS HDD
00FK514 x3100 M5 Tower Bezel for SFF HS HDD
00FK515 System Labels GBM for 5U Chassis
00FK534 x3100 M5 5U Chassis Packaging



00FK525 System Documentation and Software-Korean
00FK526 System Documentation and Software-Traditional Chinese
        (Taiwan)
```

```
00FK527 System Documentation and Software-Simplified Chinese
        (China)
00FK528 System Documentation and Software-Korea (English)
00FK529 System Documentation and Software-Traditional Chinese
        (Hong Kong)
```

Publications

The following publications and CD-ROMs are shipped with the x3100 M5 server:

- The *System x3100 M5 Installation and User's Guide* contains an introduction to the computer, installation and setup, installing options, reference information, and problem determination. This publication has easy-to-use text and pictorials to enable you to quickly set up the System x3100 M5 servers.
- 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 discontinued at any time.

The publications *System x3100 M5 Installation and User's Guide* and *Problem Determination and Service Guide* , in US English and translation versions, are available from

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

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

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

Technical information

Specified operating environment

Physical specifications

```
                              5457-A3x

 Processor                    Pentium G3440 (53W)
  Internal speed              3.3 GHz
  External speed              1600 MHz
  Number standard             1
  Maximum                     1
  Cache                       3 MB
 Memory                       4 GB (1600 MHz)
  (2Rx8, 1.35V, PC3L-12800 CL11 ECC DDR3 1600MHz LP UDIMM)
  DIMMs                       1 x 4 GB
  Sockets UDIMM               4
  Capacity UDIMM⁶             32 GB
 Video controller            Integrated in BMC
  Memory                      16 MB (shared)
 HDD                          Simple-swap
 HDD controllers             SATA
  Channels                    4
  Connector int.              1
  Connector ext.              0
  RAID                        On-board
 Fixed disk standard         Open-bay 3.5" SS SATA
 Tape backup                  0
 Total bays                   6
  5.25/3.5-in half-high⁷      2
  3.5-in slim                 4
  2.5-in slim                 0
  Hot-swap                    0
  Internal capacity⁸          12 TB
  Standard                    0
 Bays available               5
  5.25/3.5-in half-high       1
  3.5-in slim                 4
  2.5-in slim                 0
  Hot-swap                    0
 Total slots                  4
  PCI-E x16                   1 (x8 electrical)
  PCI-E x8                    2 (x8 + x4 electrical)
  PCI-E x4                    1 (x1 electrical)
 Slots available              4
 Management proc.             IMM2
 Ethernet controller         Dual Gb
 Optical drive (SATA)        DVD-ROM
 Power supply                 350 W
  Number standard             1
  Maximum                     1
  Hot-swap                    No
  Redundant power             No
  Auto restart                Yes


                              5457-B3x

 Processor                    Xeon E3-1220 v3 4C (80W)
  Internal speed              3.1 GHz
  External speed              1600 MHz
  Number standard             1
  Maximum                     1
  Cache                       8 MB
 Memory                       4 GB (1600 MHz)
  (2Rx8, 1.35V, PC3L-12800 CL11 ECC DDR3 1600MHz LP UDIMM)
  DIMMs                       1 x 4 GB
  Sockets UDIMM               4
  Capacity UDIMM⁶             32 GB
```

```
Video controller           Integrated in BMC
 Memory                    16 MB (shared)
HDD                        Simple-swap
HDD controllers            SATA
 Channels                  4
 Connector int.            1
 Connector ext.            0
 RAID                      On-board
Fixed disk standard        Open-bay 3.5" SS SATA
Tape backup                0
Total bays                 6
 5.25/3.5-in half-high[7]  2
 3.5-in slim               4
 2.5-in slim               0
 Hot-swap                  0
 Internal capacity[8]      12 TB
 Standard                  0
Bays available             5
 5.25/3.5-in half-high     1
 3.5-in slim               4
 2.5-in slim               0
 Hot-swap                  0
Total slots                4
 PCI-E x16                 1 (x8 electrical)
 PCI-E x8                  2 (x8 + x4 electrical)
 PCI-E x4                  1 (x1 electrical)
Slots available            4
Management proc.           IMM2
Ethernet controller        Dual Gb
Optical drive (SATA)       DVD-ROM
Power supply               350 W
 Number standard           1
 Maximum                   1
 Hot-swap                  No
 Redundant power           No
 Auto restart              Yes


                           5457-C3x


Processor                  Xeon E3-1231 v3 4C (80W)
 Internal speed            3.4 GHz
 External speed            1600 MHz
 Number standard           1
 Maximum                   1
 Cache                     8 MB
Memory                     4 GB (1600 MHz)
 (2Rx8, 1.35V, PC3L-12800 CL11 ECC DDR3 1600MHz LP UDIMM)
 DIMMs                     1 x 4 GB
 Sockets UDIMM             4
 Capacity UDIMM[6]         32
Video controller           Integrated in BMC
 Memory                    16 MB (shared)
HDD                        Simple-swap
HDD controllers            SATA
 Channels                  4
 Connector int.            1
 Connector ext.            0
 RAID                      On-board
Fixed disk standard        Open-bay 3.5" SS SATA
Tape backup                0
Total bays                 6
 5.25/3.5-in half-high[7]  2
 3.5-in slim               4
 2.5-in slim               0
 Hot-swap                  0
 Internal capacity[8]      12 TB
 Standard                  0
Bays available             5
 5.25/3.5-in half-high     1
 3.5-in slim               4
 2.5-in slim               0
 Hot-swap                  0
```

```
Total slots               4
 PCI-E x16                1 (x8 electrical)
 PCI-E x8                 2 (x8 + x4 electrical)
 PCI-E x4                 1 (x1 electrical)
Slots available           4
Management proc.          IMM2
Ethernet controller       Dual Gb
Optical drive (SATA)      DVD-ROM
Power supply              300 W (Bronze)
 Number standard          1
 Maximum                  1
 Hot-swap                 No
 Redundant power          No
 Auto restart             Yes



                          5457-C5x


Processor                 Xeon E3-1231 v3 4C (80W)
 Internal speed           3.4 GHz
 External speed           1600 MHz
 Number standard          1
 Maximum                  1
 Cache                    8 MB
Memory                    4 GB (1600 MHz)
 (2Rx8, 1.35V, PC3L-12800 CL11 ECC DDR3 1600MHz LP UDIMM)
 DIMMs                    1 x 4 GB
 Sockets UDIMM            4
 Capacity UDIMM⁶          32
Video controller          Integrated in BMC
 Memory                   16 MB (shared)
HDD                       Hot-swap
HDD controllers           SAS/SATA
 Channels                 4
 Connector int.           1
 Connector ext.           0
 RAID                     H1110 Controller
Fixed disk standard       Open-bay 3.5" HS SAS/SATA
Tape backup               0
Total bays                6
 5.25/3.5-in half-high⁷   2
 3.5-in slim              4
 2.5-in slim              0
 Hot-swap                 4
Total slots               4
 PCI-E x16                1 (x8 electrical)
 PCI-E x8                 2 (x8 + x4 electrical)
 PCI-E x4                 1 (x1 electrical)
Slots available           3
 PCI-E x16                1
 PCI-E x8                 2
 PCI-E x4                 0
Management proc.          IMM2
Ethernet controller       Dual Gb
Optical drive (SATA)      Multiburner
Power supply              430 W
 Number standard          1
 Maximum                  2
 Hot-swap                 Yes
 Redundant power          Optional
 Auto restart             Yes



                          5457-F3x


Processor                 Xeon E3-1271 v3 4C (80W)
 Internal speed           3.6 GHz
 External speed           1600 MHz
 Number standard          1
 Maximum                  1
 Cache                    8 MB
Memory                    4 GB (1600 MHz)
 (2Rx8, 1.35V, PC3L-12800 CL11 ECC DDR3 1600MHz LP UDIMM)
```

```
 DIMMs                     1 x 4 GB
 Sockets UDIMM             4
 Capacity UDIMM[6]         32
Video controller          Integrated in BMC
 Memory                   16 MB (shared)
HDD                       Hot-swap
HDD controllers           SAS/SATA
 Channels                 8
 Connector int.           2
 Connector ext.           0
 RAID                     M1115 Controller
Fixed disk standard       Open-bay 2.5" HS SAS/SATA
Tape backup               0
Total bays                10
 5.25/3.5-in half-high[7] 2
 3.5-in slim              0
 2.5-in slim              8
 Hot-swap                 8
 Internal capacity[8]     8 TB
 Standard                 0
Bays available            9
 5.25/3.5-in half-high    1
 3.5-in slim              0
 2.5-in slim              8
 Hot-swap                 8
Total slots               4
 PCI-E x16                1 (x8 electrical)
 PCI-E x8                 2 (x8 + x4 electrical)
 PCI-E x4                 1 (x1 electrical)
Slots available           3
 PCI-E x16                1
 PCI-E x8                 1
 PCI-E x4                 1
Management proc.          IMM2
Ethernet controller       Dual Gb
Optical drive (SATA)      Multiburner
Power supply              430 W
 Number standard          1
 Maximum                  2
 Hot-swap                 Yes
 Redundant power          Optional
 Auto restart             Yes
```

Express models

System x3250 M5 Express

```
                          5458-EDM


Processor                 Xeon E3-1220 v3 4C (80W)
 Internal speed           3.1 GHz
 External speed           1600 MHz
 Number standard          1
 Maximum                  1
 Cache                    8 MB
Memory                    8 GB (1600 MHz)
 DIMMs                    1 x 8 GB
 Sockets UDIMM            4
 Capacity UDIMM[6]        32
Video controller          Integrated in BMC
 Memory                   16 MB (shared)
HDD                       Simple-swap
HDD controllers           SATA
 Channels                 4
 Connector int.           1
 Connector ext.           0
 RAID                     On-board
Fixed disk standard       2 (2 x 1 TB)
Tape backup               0
Total bays                6
 5.25/3.5-in half-high    2
 3.5-in slim              4
```

```
 2.5-in slim              0
 Hot-swap                 0
 Internal capacity⁸       12 TB
 Standard                 0
Bays available            3
 5.25/3.5-in half-high    1
 3.5-in slim              2
 2.5-in slim              0
 Hot-swap                 0
Total slots               4
 PCI-E x16                1 (x8 electrical)
 PCI-E x8                 2 (x8 + x4 electrical)
 PCI-E x4                 1 (x1 electrical)
Slots available           4
Management proc.          IMM2
Ethernet controller       Dual Gb
Optical drive (SATA)      Multiburner
Power supply              350 W
 Number standard          1
 Hot-swap                 No
 Redundant power          No
 Auto restart             Yes
```

[6]
Maximum memory is based on using four 8 GB UDIMMs. (2Rx8, 1.35V, PC3-12800 CL11 ECC DDR3 1600MHz LP UDIMM).

[7]
This bay does not support HDD options. It can be used for removable media devices such as tape backup.

[8]
Capacity is based on the installation of 8x 2.5-inch 1 TB, or 4x 3.5-inch 3 TB SAS/SATA HDDs. (Model dependent).

For the most up-to-date information on supported HDD options, visit

http://www-03.ibm.com/systems/info/x86servers/serverproven/compat/us/

16x SATA DVD-ROM drive characteristics

- Interface: SATA
- Average access time including latency: Less than 120 ms
- CD speed: 48x
- Cache size: 512 KB

Half High Multi-burner drive specifications

- Average access time:
  - DVD-ROM: 145 ms
  - CD-ROM (Random): 125 ms
- Write speed:
  - DVD-R: 2x, 4x, 6x CLV, 8x ZCLV, 8x PCAV, 16x CAV
  - DVD-R DL: 2x, 4x, 6x CLV, 8x ZCLV
  - DVD-RW: 1x, 2x, 4x, 6x CLV
  - DVD-RAM: 2x, 3x ZCLV, 3x-5x PCAV (Ver.2.2), 6x ZCLV, 6x-8x PCAV, 6x-12x PCAV
  - DVD+R: 2.4x, 4x, 6x CLV, 8x ZCLV, 8x, 12x PCAV, 16x CAV
  - DVD+R DL: 2.4x, 4x, 6x CLV, 8x ZCLV
  - DVD+RW: 2.4x, 4x, 6x CLV, 8x ZCLV (High Speed DVD+RW: 6x CLV, 8x ZLV)
  - CD-R: 4x, 8x, 16x CLV, 24x, 32x, 40x PCAV
  - CD-RW: 4x, 10x,16x CLV, 24x, 32x ZCL (High Speed: 10x, Ultra Speed 16x, 24x, US Plus: 16x, 24x, 32x)
- Read speed:
  - DVD-R/RW/ROM(SL/DL): 16x/8x/16x/8x max.
  - DVD-R DL: 8x max.

- DVD-RAM (Ver.1.0/2.2): 2x/ 3x-5x PCAV 6x CLV, 6x-8x PCAV, 6x-12x PCAV
  - DVD- Video (CSS Compliant Disc): 8x max. (Single/Dual layer)
  - DVD+R/+RW: 16x / 8x max.
  - DVD+R DL: 8x max.
  - CD-R/RW/ROM: 40x/40x/40x max.
  - CD-DA (DAE): 32x max.
  - 80 mm CD: 10x max.
- Sustained transfer rate:
  - DVD-ROM: 22.16 Mbps (16x) max.
  - CD-ROM: 7,200 kBps (48x) max.
- Burst transfer rate:
  - SATA, Ultra DMA Mode 5
  - Multi word DMA Mode2, PIO Mode 4
- Multimedia MPC-3 compliant

Video subsystem

- Matrox G200 Video Core
- Integrated on planar and connected to the PCI bus
- Support for DDR2 SDRAM external memory
- 64-bit graphics engine with 8 bpp, 16 bpp, and 24 bpp mode acceleration
- Support for 32 bpp (4G colors/True Color)
- Integrated 350 MHz RAMDAC
- DDC2B monitor communications support

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

Resolution	Maximum Refresh Rate Supported	Bpp
640 x 400	60, 72, 75, 85	8, 16, 24
800 x 600	60, 72, 75, 85	8, 16, 24
1024 x 768	60, 72, 75, 85	8, 16, 24
1280 x 1024	60, 75	8, 16, 24
1440 x 900	60, 60 RB	8, 16, 24
1600 x 1200	60, 75	8, 16, 24
1680 x 1050	60, 60 RB	8, 16, 24

Notes:

- 24 Bpp (16.7 million colors) aligned on a 32-bit boundary for performance.
- Each resolution supports both CRT and Flat Panel monitors. For CRT monitors, each resolution complies with CRT ISO 9241.3:
  - 1440 x 900 and 1680 x 1050 are typically wide screen flat panel (non-CRT) settings so they are only available at 60 Hz.
  - 1440 x 900 and 1680 x 1050 are available at 60 Hz with support for 60 Hz Reduced Blanking Mode.
  - For the resolutions supported by different operating systems, refer the operating system documentation.

Dimensions

4U chassis

- Width: 180 mm (7.08 in.)
- Depth: 480 mm (18.90 in.)

- Height: 360 mm (14.17 in.)
- Weight:
  - Minimum ship configuration: 10 kg (22 lb)
  - Maximum ship configuration: 13 kg (28.66 lb)

5U chassis

- Width: 217.3 mm (8.56 in.)
- Depth: 569.11 mm (22.41 in.)
- Height: 438.6 mm (17.27 in.)
- Weight:
  - Minimum ship configuration: 19.60 kg (43.00 lb)
  - Maximum ship configuration: 22.00 kg (48.50 lb)

Minimum clearance for cooling
- 100 mm (4 in.) at the back
- 50 mm (2 in.) on each side

Electrical

300 watt power supply

- 100 - 127 (nominal) V ac; 50 - 60 Hz; 7.0 A (maximum)
- 200 - 240 (nominal) V ac; 50 - 60 Hz; 3.5 A (maximum)

350 watt power supply

- 100 - 127 (nominal) V ac; 50 - 60 Hz; 7.0 A (maximum)
- 200 - 240 (nominal) V ac; 50 - 60 Hz; 3.5 A (maximum)

430 watt power supply

- 100 - 127 (nominal) V ac; 50 - 60 Hz; 6.0 A (maximum)
- 200 - 240 (nominal) V ac; 50 - 60 Hz; 3.0 A (maximum)
  - Input kilovolt-amperes (kVA) (approximately)
    -- Minimum configuration: 0.100 kVA
    -- Maximum configuration: 0.506 kVA
- Btu output
  - Ship configuration: 341 Btu/hr (100 watts)
  - Full configuration: 1726 Btu/hr (506 watts)
- Acoustical noise emission level: Sound power levels
  - Fixed PSU model
    -- 4.2 bels (idling)
    -- 4.3 bels (operating)
  - Redundant PSU model
    -- 5.0 bels (idling)
    -- 5.1 bels (operating)

Note: The noise emission level stated is the declared (upper limit) A-weighted sound power level, in bels, for a random sample of machines, typically configured and operating in idle mode (powered on, but no DASD read/write or other I/O activity). All measurements have been made in accordance with ANSI S12.10 and reported in conformance with ISO 9296.

The System x3100 M5 server is shipped as a floor-standing server.

Standards

These systems support or comply with the following standards:

- Peripheral Component Interconnect (PCI) specification 2.2.
- This model is ISO 9241 capable. A supplier's declaration is available.

Equipment approvals and safety

- Japan VCCI, Class A
- Australia/New Zealand AS/NZS CISPR 22, Class A; AS/NZS 60950.1
- IEC-60950-1 (CB Certificate and CB Test Report)
- China CCC GB4943.1, GB9254 Class A, GB17625.1
- Taiwan BSMI CNS13438, Class A); CNS14336-1
- Korea KN22, Class A; KN24

Operating environment

- Air temperature:
  - Server on:
    - 10.0°C to 35.0°C (50°F to 95°F); altitude: 0 to 914.4 m (3,000 ft)
    - 10.0°C to 32.0°C (50°F to 89.6°F); altitude: 914.4 m (3,000 ft) to 2,133.6 m (7,000 ft)
  - Server off:
    - 10.0°C to 43.0°C (50°F to 109.4°F); maximum altitude: 2,133.6 m (7,000 ft)
  - Shipping:
    - -40°C to 60°C (-40°F to 140°F)
- Relative humidity: 8% to 80%
- Maximum altitude: 2,133.6 m (7,000 ft)

Homologation

This product is not certified for direct connection by any means whatsoever to interfaces of public telecommunications networks. Certification may be required by law prior to making any such connection. Contact an IBM representative or reseller for any questions.

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:

- Keyboard
- Mouse
- HDD

- Display

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

Software requirements

The following network operating systems are supported in the System x3100 M5 server:

- Microsoft :
  - Microsoft Windows Server 2008, Enterprise x86 Edition
  - Microsoft Windows Server 2008, Standard x86 Edition
  - Microsoft Windows Server 2008, Web x86 Edition
  - Windows Small Business Server 2008 Standard Edition
  - Windows Small Business Server 2008 Premium Edition
  - Microsoft Windows Server 2008, R2 Edition
  - Microsoft Windows Server 2008, Enterprise x64 Edition
  - Microsoft Windows Server 2008, Standard x64 Edition
  - Microsoft Windows Server 2008, Web x64 Edition
- Linux™ :
  - Red Hat Enterprise Linux 5.10 Server Edition
  - Red Hat Enterprise Linux 5.10 Server x64 Edition
  - Red Hat Enterprise Linux 5.10 Server with Xen x64 Edition
  - Red Hat Enterprise Linux 6.5 Server x64 Edition includes KVM
  - Red Hat Enterprise Linux 6.5 Server 32 bit Edition
  - Red Hat Enterprise Linux 7 Server x64 Edition includes KVM
- SUSE:
  - SUSE Linux Enterprise Server 11 SP3 for x86
  - SUSE Linux Enterprise Server 11 SP3 for AMD64/EM64T
  - SUSE Linux Enterprise Server 11 SP3 with Xen for AMD64/EM64T
- VMware
  - VMware vSphere 5.1 u2
  - VMware vSphere 5.5

For additional support, certification, and version information on network operating systems, visit

  http://www-03.ibm.com/systems/info/x86servers/serverproven/compat/us/

Compatibility

The System x3100 M5 systems contain licensed system programs that include set configuration, set features, and test programs. System BIOS (flash BIOS modified to IBM specifications) is loaded from a "flash" EEPROM into system memory. This BIOS provides instructions and interfaces designed to support the standard features of the server and to maintain compatibility with many current software programs.

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

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

Contact your IBM representative, 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 open 5.25-inch bay supports removable media devices, such as tape backup devices. It does not support HDD options.
- Wake on LAN is not supported if systems are improperly shut down.

Note: Regarding the use of SSDs, solid-state memory cells have an intrinsic, finite number of write cycles each cell can incur. As a result, each solid-state device has a maximum amount of write cycles to which it can be subjected, documented as total bytes written (TBD). IBM is not responsible for replacement of hardware that has reached the maximum guaranteed number of write cycles. This limit may be revealed as the device failing to respond to system-generated commands or becoming incapable of being written to. Additional information is available at

http://www-03.ibm.com/systems/x/options/storage/solidstate/index.html

Refer to the Software requirements section for operating system limitations.

Planning information

Customer responsibilities

Customer setup: The System x3100 M5 server is designated as customer setup. Customer setup instructions are shipped with systems.

Standard SATA/SAS configurations

The System x3100 M5 server uses the SATA interface for the optical drive.

Two mini SAS cable are used to attach up to eight SAS/SATA HDDs and one addition cable for the SATA optical disk drives (ODDs).

Supported memory options

- 4GB (1x4GB, 2Rx8, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP UDIMM (00D5012)
- 8GB (1x8GB, 2Rx8, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP UDIMM (00D5016)

Rack installations

The System x3100 M5 server can be converted to a rack-mounted unit by installing a Tower-to-Rack Kit. The 4U and 5U System x3100 M5 server can be installed in a 19-inch industry-standard rack such as:

- IBM 25U Standard Rack
- IBM 42U Standard Rack Extension
- IBM 42U Standard Rack

  If using a non-IBM rack, the cabinet must meet the EIA-310-D standards with a depth of at least 71 cm (28 in). Also, adequate space (approximately 6.7 cm (2.64 in) for the front bezel and 2.5 cm (1 in) for air flow) must be maintained from the slide assembly to the front door of the rack cabinet to allow sufficient space for the door to close and provide adequate air flow.

Cable orders

The dual Gigabit full duplex, Ethernet controller, standard with the server, is connected directly to a RJ-45 connector. The RJ-45 connector provides a 10/100/1000Base-T interface for connecting twisted-pair cable to the Ethernet network. Cabling is not included with the server. To connect the Ethernet controller

to a repeater or switch, use a UTP cable with RJ-45 connectors at both ends. For 100/1000 Mbps operation, Category 5, 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 x3100 M5 server requires about 30 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
- System unit power cord
- Country kit:
  - Important Notices Flyer
  - Warranty Flyer
  - Documentation CD

The System x3100 M5 system is shipped as a single package. The country kit is contained inside the top portion of the system unit carton.

4U approximate shipping dimensions and weight:
- Single pack dimensions: 600 mm x 500.2 mm x 325 mm (23.62 in. x 19.69 in. x 12.80 in.)
- Single pack weight: 15 kg (33 lb)
- Quantity per pallet: 16
- Pallet load dimensions: 1000 mm x 1200 mm x 1450 mm (39.37 in. x 47.24 in. x 57.09 in.)
- Pallet load weight: 257 kg (566.57 lb)
- Estimated safe stacking: 2 high

5U approximate shipping dimensions and weight:
- Single pack dimensions: 596 mm x 330.2 mm x 681 mm (23.50 in. x 12.61 in. x 26.81 in.)
- Single pack weight: 27 kg (59.52 lb)
- Quantity per pallet: 12
- Pallet load dimensions: 1016 mm x 1219 mm x 1512 mm (40.00 in. x 47.99 in. x 59.73 in.)
- Pallet load weight: 340.4 kg (750.45 lb)
- Estimated safe stacking: 3 high

Security, auditability, and control

Security and auditability features include:

- Power-on password (secured boot).
- A mechanical lock allows you to lock the system cover to prevent unauthorized personnel access to internal components of the server.
- Tie-down capability is available by using a common U bolt attached to the back frame.
- Operation without a keyboard and display is supported after the server is configured with the appropriate network operating system. This minimizes

the risk of unauthorized people tampering with the system software and configuration.

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

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

Warranty period

- 5457: One year
- Optional features: One year

Note: For configurations that support the RAID battery, the RAID battery will be warranted for 1 year effective on its Date of Installation. All other product warranty terms for the machine remain unchanged.

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

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

- RAID battery
- Blank filler
- Cable-management arm
- Side cover

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 website. Certain machines contain remote support capabilities for direct problem reporting, remote problem determination, and resolution with IBM. You must follow the problem determination and resolution procedures that IBM specifies. Following problem determination, if IBM determines On-site Service is required, scheduling of service will depend upon the time of your call, machine technology and redundancy, and availability of parts. Service levels are response-time objectives and are not guaranteed. The specified level of 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 designated for your Machine.

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 or features have been designated as Tier 1 CRUs:

- RAID batteries
- CMOS batteries
- Hard disk drive
- Hot-swap fan
- Hot-swap power supply
- Memory DIMM
- Memory expansion card
- Optical drive
- PCI adapter
- PCI divider
- Power cord
- Service label
- System label
- Voltage regulator module
- Operation panel
- USB holder

The following parts or features have been designated as Tier 2 CRUs:

- Service processor
- Motherboard
- 430W Power Cage

On-site Service

At IBM's discretion you will receive CRU service or IBM or your reseller will repair the failing machine at your location and verify its operation. If required, On-site Repair is provided, 9 hours per day, Monday through Friday excluding holidays, NBD response. 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.

International Warranty Service (IWS)

IWS is available in selected countries or regions.

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

Under IWS, warranty service will be provided with the prevailing warranty service type and service level available for the IWS-eligible machine type in the servicing

country, and the warranty period observed will be that of the country in which the machine was purchased.

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

http://www-947.ibm.com/support/entry/portal/docdisplay?lndocid=GCOR-3FBJK2

For more information on IWS, refer to Services Announcement AA01-3100, dated September 28, 2001.

Licensing

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

IBM hourly service rate classification

One

Field-installable features

Yes

Model conversions

No

Machine installation

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

Graduated program license charges apply

No

Licensed Machine Code

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

http://www-304.ibm.com/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 website

http://www.ibm.com/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.

Machine Code License Acceptance Requirement

Acceptance-By-Use Machine: Yes, acceptance of the Machine Code license terms is conveyed through the user's initial use of the machine.

Educational allowance

None

Prices

For all local charges, contact your IBM representative.

IBM Global Financing

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   http://www.ibm.com/financing

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AP distribution

```
                                    Announce
  Country/Region            Announce  Date

  AP IOT
   ASEAN*                    Yes     May 13, 2014
   India/South Asia**        Yes     May 13, 2014
   Australia                 Yes     May 13, 2014
   People's Republic of China Yes    May 13, 2014
   Hong Kong S.A.R of the PRC Yes    May 13, 2014
   Macao S.A.R of the PRC    Yes     May 13, 2014
   Taiwan                    Yes     May 13, 2014
   Korea                     Yes     May 13, 2014
   New Zealand               Yes     May 13, 2014
  Japan IOT
   Japan                     Yes     May 13, 2014

  *  Brunei Darussalam, Indonesia, Cambodia, Lao People's Democratic
     Republic, Malaysia, Philippines, Singapore, Thailand, and Vietnam
  ** Bangladesh, Bhutan, India, Sri Lanka, Maldives, Nepal, and
     Afghanistan
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Corrections

(Corrected on May 29, 2014)
Revised warranty information in the Terms and conditions section.