IBM POWER6 Systems Facts and Features

April 2010

Table of Contents

Changes from the last version are highlighted in yellow.

The following notes apply to the following Power Systems BladeCenter through Power 595 tables

X	Standard; Supported
Optional	Optionally Available; Supported
- or N/A	Not Applicable
P	Processor Capacity Upgrade on Demand option – permanent processor activation
M	Memory Capacity Upgrade on Demand option – permanent memory activation
T	Trial Capacity on Demand option
OO	On/Off Capacity on Demand for processors and memory option – temporary activation
U	Utility Capacity on Demand for processors option – temporary activation
SOD	Statement of General Direction announced
SLES	SUSE Linux Enterprise Server
RHEL	Red Hat Enterprise Linux

a	Memory features available for new Power 520/550 system changed in 2009 essentially increasing the minimum amount of memory for a newly shipped system. New minimum uses 1GB DIMMs for 1-core Power 520 and 2GB DIMMs for the remainder of newly shipped Power 520 and Power 550 systems. New minimum shown.
b	Memory features available for the Power BladeCenter JS12 changed in 2009, increasing the minimum amount of memory needed for a newly shipped JS12 from 2GB to 4GB. New minimum shown. Pre-existing JS12 with only 2 GB memory are still valid.
c	Power 570 4.2G Hz and 4.7 GHz withdrawn from marketing in 2009 (use 4.4 and 5.0 GHz instead)
d	1-core Power 520 has 8MB L2 cache
e	The value listed is unconstrained CPW (there is sufficient I/O such that the processor would be the first constrained resource)
h	9407-M15 is 1-core server; 9408-M25 is a 2-core server. Both were withdrawn from marketing on 1/1/09.
k	9409-M50 is a 4.2 GHz 4-core server. It was withdrawn from marketing on 1/1/09.
p	Not all EnergyScale functions are available on every server.
v	Non-Express configurations need not have internal disk storage
w	Requires one year of VIOS SWMA
*	Full benchmark results are located at ibm.com/systems/power/hardware/reports/system_perf.html

For additional connectivity information, please reference the IBM Sales Manual for more information on I/O features and adapters

BladeCenter JS12/JS22

Product Line	IBM BladeCenter® JS12 Express	IBM BladeCenter JS22 Express
Machine type	7998-60X	7998-61X
System packaging	Chassis mount	Chassis mount
Chassis type supported		
BladeCenter E	X	-
BladeCenter T	X	-
BladeCenter H	X	X
BladeCenter HT	X	X
BladeCenter S	X	X
Chassis slots required	1	1
Microprocessor type	64-bit IBM POWER6™	64-bit POWER6
# of processor cores/blade	2	4
Clock rates available	3.8 GHz	4.0 GHz
System memory (minimum - maximum)	4 [b] GB – 64 GB	4 GB - 32 GB
Data - instruction (L1) cache	64 KB - 64 KB per core	64 KB - 64 KB per core
Total Level 2 (L2) cache	4MB (4 MB per dual-core chip)	8 MB (4 MB per dual-core chip)
Total Level 3 (L3) cache	-	-
Reliability, availability, serviceability		
Chipkill memory	X	X
Service processor	X	X
Integrated management processor	X	X
Dynamic Processor Deallocation	X	X
Processor Instruction Retry	X	X
Alternate Processor Recovery	-	-
Redundant hot-plug power	X (at chassis level)	X (at chassis level)
Redundant hot-plug cooling	X (at chassis level)	X (at chassis level)
LED diagnostics	X	X
EnergyScale™ [p]	X	X
Capacity and expandability		
Capacity on Demand (CoD) functions	-	-
PowerVM™ Express Edition	-	-
PowerVM Standard Edition	X [w]	X [w]
PowerVM Enterprise Edition	Optional	Optional
Max logical partitions/micro-partitions	20	40
Available expansion slots	2	2
Maximum PCI-X bus speed (MHz)	133	133
Maximum disk bays	2	1
Minimum|maximum internal disk storage	73 GB [v] | 600 GB	73 GB [v] | 300 GB
Storage interface	Serial Attached SCSI (SAS)	Serial Attached SCSI (SAS)
RAID support for disk on blade	X	-
Connectivity		
Expansion Cards (CFFv or CFFh)	Optional	Optional
2/4 Port Ethernet Expansion Card (CFFh)	X	X
Dual Gigabit Ethernet	X	X
4 Gigabit Fibre Channel	Optional (QLogic: Linux® or AIX®, Emulex: Linux or AIX)	Optional (QLogic: Linux or AIX, Emulex: Linux or AIX)
10 Gigabit Ethernet	Optional	Optional
4X InfiniBand®	Optional	Optional
Performance*		
rPerf for AIX (number cores)	14.71 (2)	30.26 (4)
CPW for IBM i (number cores)	7,100 (2)	13,800 (4)

BladeCenter JS23/JS43

Product Line	IBM BladeCenter® JS23 Express	IBM BladeCenter JS43 Express
Machine type	7778-23X	7778-23X plus FC 8446
System packaging	Chassis mount	Chassis mount
Chassis type supported		
BladeCenter E	-	-
BladeCenter T	-	-
BladeCenter H	X	X
BladeCenter HT	X	X
BladeCenter S	X	X
Chassis slots required	1	2
Microprocessor type	64-bit IBM POWER6+™	64-bit POWER6+
# of processor cores/blade	4	8
Clock rates available	4.2 GHz	4.2 GHz
System memory (minimum - maximum)	4 GB – 64 GB	8 GB - 128 GB
Data - instruction (L1) cache	64 KB - 64 KB per core	64 KB - 64 KB per core
Total Level 2 (L2) cache	16MB (8 MB per dual core chip)	32 MB (8 MB per dual core chip)
Total Level 3 (L3) cache	64MB (32MB per dual-core chip)	128 MB (32MB per dual-core chip)
Reliability, availability, serviceability		
Chipkill memory	X	X
Service processor	X	X
Integrated management processor	X	X
Dynamic Processor Deallocation	X	X
Processor Instruction Retry	X	X
Alternate Processor Recovery	-	-
Redundant hot-plug power	X (at chassis level)	X (at chassis level)
Redundant hot-plug cooling	X (at chassis level)	X (at chassis level)
LED diagnostics	X	X
EnergyScale™[p]	X	X
Capacity and expandability		
Capacity on Demand (CoD) functions	-	-
PowerVM™ Express Edition	-	-
PowerVM Standard Edition	X[w]	X[w]
PowerVM Enterprise Edition	Optional	Optional
Max logical partitions/micro-partitions	40	80
Available expansion slots	2	4
Maximum PCIe data rate bandwidth	3 Gen 1 busses each up to 20 Gb/s bidirectional	6 Gen 1 busses each up to 20 Gb/s bidirectional
Maximum disk bays	1	2
Minimum|maximum internal disk storage	73 GB[v] | 300 GB	73 GB[v] | 600 GB
Solid State Drive used in disk slot	Optional 69 GB	Optional 69 GB each
Storage interface	Serial Attached SCSI (SAS)	Serial Attached SCSI (SAS)
RAID support for disk on blade	-	X
Connectivity		
Expansion Cards (CIOv or CFFh)	1 PCIe CIOv Expansion Card 1 PCIe CFFh High Speed Expansion Card	2 PCIe CIOv Expansion Card 2 PCIe CFFh High Speed Expansion Card
Gigabit Ethernet	Dual	Quad
8 Gigabit Fibre Channel	Optional	Optional
10 Gb Ethernet	Optional	Optional
10 Gb Fibre Channel over Ethernet	Optional	Optional
4X InfiniBand®	Optional	Optional
3 Gb SAS	Optional	Optional
Performance*		
rPerf for AIX (number cores)	36.28 (4)	68.20 (8)
CPW for IBM i (number cores)	14,400 (4)	24,050 (8)

Power 520 / Power 550

Product Line	IBM Power™ 520 Express	IBM Power 550 Express
Machine type	8203-E4A [h]	8204-E8A [k]
System packaging	tower or 19" rack drawer (4U)	tower or 19" rack drawer (4U)
Microprocessor type	64-bit POWER6 & POWER6+	64-bit POWER6 & POWER6+
# of processor cores per system	1 (4.2 GHz only), 2 or 4 (4.7 GHz only)	2, 4, 6 or 8 (2 cores per processor card)
Clock rates available	POWER6: 4.2 GHz POWER6+: 4.7 GHz	POWER6: 3.5 GHz, 4.2 GHz POWER6+: 5.0GHz
System memory (minimum[a] - maximum)	2[a] -16 GB (1 core) 4[a]-32 GB (2-core) 4[a]- 64 GB (4 core)	3.5 GHz: 4[a] – 128 GB 4.2, 5.0 GHz: 4[a] GB - 256 GB (8 DIMM slots per processor card)
Data - instruction (L1) cache	64 KB – 64 KB per core	64 KB - 64 KB per core
Total Level 2 (L2) cache	Up to 16[d] MB (8 MB per dual core chip)	Up to 32 MB (8 MB per dual core chip)
Total Level 3 (L3) cache	4.2 GHz: 0 4.7 GHz: Up to 64 MB (32MB per dual-core chip)	Up to 128 MB (32 MB per dual-core chip)
Reliability, availability, serviceability		
Chipkill memory	X	X
Service processor	X	X
Hot-swappable disks	X	X
Dynamic Processor Deallocation	X (except 1-core system)	X
Processor Instruction Retry	X	X
Alternate Processor Recovery	X	X
Dynamic deallocation: PCI bus slots	X	X
Hot-plug slots	X	X
Blind-swap slots in CEC	-	-
Redundant hot-plug power	Optional	Optional
Redundant hot-plug cooling	X	X
EnergyScale[p]	X	X
Capacity and expandability		
Capacity on Demand (CoD) functions	N/A (except 9408-M25 has P)	N/A (except 9409-M50 has P)
PowerVM Express Edition	Optional	Optional
PowerVM Standard Edition	Optional	Optional
PowerVM Enterprise Edition	Optional	Optional
Max logical partitions/micro-partitions	40 (10 per core)	80 (10 per core)
Maximum CEC PCI slots	2 PCI-X DDR (64-bit) + 3 PCIe 8x	2 PCI-X DDR (64-bit) + 3 PCIe 8x
Max PCI slots: CEC + PCIx 12X I/O drwr	50 PCI-X DDR (64-bit) + 2 PCIe 8x	50 PCI-X DDR (64-bit), 1 PCIe 8x
Max PCI slots: CEC + PCIe 12X I/O drwr	2 PCI-X DDR (64-bit) + 42 PCIe 8x	2 PCI-X DDR (64-bit) + 41 PCIe 8x
Max PCI slots: CEC + RIO I/O drawers	2 PCI-X DDR + 2 PCIe + (84 PCI-X if AIX or 168 PCI-X if IBM i)	2 PCI-X DDR + 1 PCIe + (84 PCI-X if AIX or 168 PCI-X if IBM i)
CEC Disk bays | CEC media bays	6 3.5-inch or 8 SFF | 2	6 3.5-inch or 8 SFF | 2
Maximum disk storage in CEC	2.7 TB (with six 450 GB disk)	2.7 TB (with six 450 GB disk)
Maximum I/O loops (12X and/or RIO)	1-core: 0, 2-core: 1, 4-core: 2	2-core: 1, 4-,6-,8-core: 2
Maximum RIO I/O drawers	12 (max 6 drawers per loop)	12 (max 6 drawers per loop)
Maximum PCI-X 12X I/O drawers	8 (max 4 drawers per loop)	8 (max 4 drawers per loop)
Maximum PCIe 12X I/O drawers	4 (max 2 drawers per loop)	4 (max 2 drawers per loop)
Maximum disk drives (CEC+I/O drawers) | Storage with i formatted drives	296 | 125 TB with 428 GB drives	584 | 249 TB with 428 GB drives
Maximum disk drives (CEC+I/O drawers) | Storage with AIX/Linux formatted drives	296 | 132TB with 450 GB drives	584 | 261 TB with 450 GB drives
Performance*		
rPerf for AIX (number cores)	4.2 GHz: 8.39 (1), 15.95 (2), 31.48 (4) 4.7 GHz: 20.13 (2), 39.73 (4)	3.5 GHz: 15.85 (2), 31.27 (4), 45.04 (6), 58.80 (8); 4.2 GHz: 18.38 (2), 36.28 (4), 52.24 (6), 68.20 (8) 5.0 GHz: 21.18 (2), 41.81 (4), 60.2 (6), 78.6 (8)
CPW for IBM i (number cores)	4.2 GHz: 4300 (1), 8300 (2), 15600 (4) 4.7 GHz: 9500 (2), 18300 (4)	3.5 GHz: 7750 (2), 15000 (4), 20300 (6), 27600 (8); 4.2 GHz: 9200 (2), 18,000 (4), 23850 (6), 32650 (8) 5.0 GHz 10600 (2), 20550 (4), 28800 (6), 37950 (8)

Power 560

Product Line	IBM Power 560 Express
Machine type	8234-EMA
System packaging	19" rack drawer (4U)
Microprocessor type	64-bit POWER6+
# of processor cores per system	4, 8, 16 (4 cores per processor card)
Clock rates available	3.6 GHz
System memory (minimum - maximum)	8 GB - 384 GB (max 96 GB per processor card)
Data - instruction (L1) cache	64 KB - 64 KB per core
Total Level 2 (L2) cache	Up to 64 MB (8 MB per dual core chip)
Total Level 3 (L3) cache	Up to 256 MB (32 MB per dual-core chip)
Reliability, availability, serviceability	
Chipkill memory	X
Service processor	X
Hot-swappable disks	X
Dynamic Processor Deallocation	X
Processor Instruction Retry	X
Alternate Processor Recovery	X
Dynamic deallocation: PCI bus slots	X
Hot-plug slots	X
Blind-swap slots in CEC	X
Redundant hot-plug power	X
Redundant hot-plug cooling	X
EnergyScale[p]	X
Capacity and expandability	
Capacity on Demand (CoD) functions	-
PowerVM Express Edition	-
PowerVM Standard Edition	Optional
PowerVM Enterprise Edition	Optional
Maximum logical partitions/micro-partitions	160
Maximum CEC PCI slots (16-core)	4 PCI-X DDR (64-bit); 8 PCIe 8x
Maximum PCI slots with CEC plus PCI-X 12X I/O drawers	76 PCI-X DDR (64-bit): 7 PCIe 8x
Maximum PCI slots with CEC plus PCIe 12X I/O drawers	4 PCI-X DDR (64-bit) + 67 PCIe 8x
Maximum PCI slots with CEC plus RIO I/O drawers	4 PCI-X DDR + 7 PCIe + (126 PCI-X if AIX)
Maximum CEC Disk bays | CEC media bays (16-core)	12 3.5-inch SAS | 2
Maximum CEC disk storage	5.4 TB with 450 GB drives
Maximum I/O loops (12X and/or RIO)	4-core: 1 8-core: 2 16-core: 3
Maximum PCI-X 12X I/O drawers	12 (max 4 drawers per loop)
Maximum PCIe 12X I/O drawers	6 (max 2 drawers per loop)
Maximum RIO I/O drawers	18 (max 6 drawers per loop)
Maximum disk drives (CEC+I/O drawer) | storage with IBM i formatted drives	1332 | 570 TB with 428 GB drives
Maximum disk drives (CEC+I/O drawer) | storage with AIX/Linux formatted drives	1332 | 599 TB with 450 GB drives
Performance*	
rPerf for AIX (number cores)	31.32 (4), 57.3 (8), 100.3 (16)
CPW for IBM i (number cores)	14100 (4), 27600 (8), 48500 (16)

Power 570

Product Line	IBM Power 570 (2 cores per processor card)	IBM Power 570 (4 cores per processor card)
Machine type	9117-MMA	9117-MMA
System packaging	19" rack drawer (4U)	19" rack drawer (4U)
Microprocessor type	64-bit POWER6 & POWER6+	64-bit POWER6+
# of processor cores per system	2, 4, 8, 12, 16	4, 8, 16, 24, 32
# of cores per processor card	2	4
Clock rates available [c]	POWER6: 3.5 POWER6+: 4.4 and 5.0 GHz	POWER6+: 4.2 GHz
System memory (minimum – maximum)	2 - 768 GB (max 96 GB per proc card)	2 - 768 GB (max 96 GB per proc card)
Data - instruction (L1) cache	64 KB - 64 KB per core	64 KB - 64 KB per core
Total Level 2 (L2) cache	Up to 64MB (8 MB per dual core chip)	Up to 128 MB (8 MB per dual core chip)
Total Level 3 (L3) cache	Up to 256 MB(32 MB per dual-core chip)	Up to 512 MB(32 MB per dual-core chip)
Reliability, availability, serviceability		
Chipkill memory	X	X
Service processor	X	X
Hot-swappable disks	X	X
Dynamic Processor Deallocation	X	X
Processor Instruction Retry	X	X
Alternate Processor Recovery	X	X
Dynamic deallocation: PCI bus slots	X	X
Hot Node Add	X	X
Concurrent Repair	X	X
Hot-plug slots	X	X
Blind-swap slots in CEC	X	X
Redundant hot-plug power	X	X
Redundant hot-plug cooling	X	X
EnergyScale[p]	X	X
Capacity and expandability[n]		
Capacity on Demand (CoD) functions	P, M, U, T, OO	P, M, U, T, OO
PowerVM Express Edition	-	-
PowerVM Standard Edition	Optional	Optional
PowerVM Enterprise Edition	Optional	Optional
Max logical partitions/micro-partitions	160	160
Maximum CEC PCI slots	8 PCI-X DDR(64-bit); 16 PCIe 8x	8 PCI-X DDR(64-bit); 16 PCIe 8x
Max PCI slots: CEC+PCI-X 12X I/O drwr	200 PCI-X DDR, 12 PCIe 8x	200 PCI-X DDR, 12 PCIe 8x
Max PCI slots: CEC + PCIe 12X I/O drwr	8 PCI-X DDR + 172 PCIe 8x	8 PCI-X DDR + 172 PCIe 8x
Max PCI slots: CEC + RIO I/O drawers	8 PCI-X DDR + 12 PCIe + (336 PCI-X if AIX or 672 PCI-X if IBM i)	8 PCI-X DDR + 12 PCIe + (336 PCI-X if AIX or 672 PCI-X if IBM i)
CEC Disk bays | CEC media bays	24 3.5-inch SAS | 4	24 3.5-inch SAS | 4
Maximum CEC disk storage	10.8 TB with 450 GB drives	10.8 TB with 450 GB drives
Maximum I/O loops (12X and/or RIO)	8 (max 1 per processor card)	8 (max 1 per processor card)
Maximum PCI-X 12X I/O drawers	32 (max 4 drawers per loop)	32 (max 4 drawers per loop)
Maximum PCIe 12X I/O drawers	16 (max 2 drawers per loop)	16 (max 2 drawers per loop)
Maximum RIO I/O drawers	48 (max 6 drawers per loop)	48 (max 6 drawers per loop)
Maximum disk drives | storage with IBM i formatted drives	1344 | 575 TB with 428 GB drives	1344 | 575 TB with 428 GB drives
Maximum disk drives | storage with I/O drawers & AIX/Linux formatted drives	1344 | 604 TB with 450 GB drives	1344 | 604 TB with 450 GB drives
Performance*		
rPerf for AIX (number cores)	**3.5 GHz:** 15.85(2), 31.69(4), 58.95(8), 83.35(12), 105.75(16); **4.4 GHz:** 19.08 (2). 38.16(4), 70.97(8). 100.35(12), 127.32(16); **5.0 GHz**: 21.16(2) 42.32(4), 78.71(8), 111.30(12), 141.21(16)	**4.2 GHz:** 35.50(4), 64.96(8), 113.68(16), 153.46(24), 193.25(32)
CPW for IBM i (number cores)	**3.5 GHz**: 8150(2), 16100(4), 30100(8), 43100(12), 57600(16); **4.4 GHz**: 9850(2), 19400(4), 36200(8), 51500(12), 70000(16); **5.0 GHz**: 11000(2), 21600(4), 40300(8), 56800(12), 77600(16)	**4.2 GHz:** 16200(4), 31900(8), 56400(16), 81600(24), 104800(32)

Power 575

Product Line	IBM Power 575
Machine type	9125-F2A
Node packaging	24" system frame (2U; water-cooled)
Microprocessor type	64-bit POWER6
# of processor cores per node	32
Maximum # nodes per 42U rack	14
Maximum # nodes per cluster	64 (higher quantity available by special bid)
Clock rates available	4.7 GHz
Node memory (minimum – maximum)	32 GB - 256 GB
Data - instruction (L1) cache	64 KB - 64 KB per core
Total Level 2 (L2) cache	128 MB per node (8 MB per dual core chip)
Total Level 3 (L3) cache	512 MB per node (32 MB per dual-core chip)
Reliability, availability, serviceability	
Chipkill memory	X
Service processor	X
Hot-swappable disks	X
Dynamic Processor Deallocation	X
Processor Instruction Retry	X
Alternate Processor Recovery	X
Dynamic deallocation: PCI bus slots	X
Hot Node Add	X
Concurrent Repair	-
Hot-plug slots	X
Blind-swap slots	X
Redundant hot-plug power	X
Redundant hot-plug cooling	-
EnergyScale[p]	X
Capacity and expandability[n]	
Capacity on Demand (CoD) functions	-
PowerVM Express Edition	-
PowerVM Standard Edition	Optional
PowerVM Enterprise Edition	Optional
Maximum logical partitions/micro-partitions	254
Maximum CEC PCI slots per node	4 PCIe 8x
Maximum 12X I/O loops per node	1
Maximum RIO I/O loops per node	0
Max PCI slots per node with CEC plus PCIe 24” 12X I/O drawer	24 PCIe 8x (4 + 20)
Max PCI slots per node with CEC plus PCI-X 24” 12X I/O drawer	4 PCIe 8x + 14 PCI-X DDR + 6 PCI-X
CEC Disk | CEC media bays per node	2 SFF SAS | -
Maximum CEC disk storage per node	292 GB with 146GB SFF drives
Minimum | maximum 12X 24” I/O drawers per node	0 | 1
Maximum disk bays | storage with CEC + PCIe 24” I/O drawer & AIX/Linux formatted drives per node	28 | 4 TB with 146 GB SFF drives
Maximum disk bays | storage with CEC + PCI-X 24” I/O drawer & AIX/Linux formatted drives per node	18 | 2.6 TB with 146 GB SCSI drives (2 SFF + 16 SCSI)
Connectivity	
Please reference the IBM Sales Manual for more information on I/O features and adapters	
Performance*	
rPerf for AIX	Not applicable
CPW for IBM i	IBM i not supported on 575

Power 595

Product Line	IBM Power 595
Machine type	9119-FHA
System packaging	24" system frame (+ expansion frames)
Microprocessor type	64-bit POWER6
# of processors cores/system	8 - 64 (4.2 GHz), 16 – 64 (5.0 GHz)
# of cores per processor book	8
Clock rates available	4.2 GHz; 5.0 GHz
System memory (minimum - maximum)	16 GB - 4 TB (Max 32 DIMM slots per processor book)
Data - instruction (L1) cache	64 KB - 64 KB per core
Total Level 2 (L2) cache	Up to 256 MB (8 MB per dual-core chip)
Total Level 3 (L3) cache	Up to 1024 MB (32 MB per dual-core chip)
Reliability, availability, serviceability	
Chipkill memory	X
Service processor	X
Hot-swappable disks in 24” drawer	X
Dynamic Processor Deallocation	X
Processor Instruction Retry	X
Alternate Processor Recovery	X
Dynamic deallocation: PCI bus slots	X
Hot Node Add	X
Concurrent Repair	X
Hot-plug slots	X
Blind-swap slots	X
Redundant hot-plug power	X
Redundant hot-plug cooling	X
EnergyScale[p]	X
Capacity and expandability	
Capacity on Demand (CoD) functions	P, M, U, T, OO,
PowerVM Express Edition	-
PowerVM Standard Edition	Optional
PowerVM Enterprise Edition	Optional
Maximum logical partitions/micro-partitions	254
Minimum | Maximum I/O loops (12X and/or RIO)	1 | 32 (max 4 loops per processor book)
Maximum PCI slots with one PCI-X RIO 24-inch I/O drawer	20 PCI-X
Maximum PCI slots with 12 PCI-X RIO 24-inch I/O drawers	240 PCI-X
Maximum PCI slots with one PCI-X 12X 24-inch I/O drawer	20 (14 PCI-X DDR (64-bit) + 6 PCI-X)
Maximum PCI slots with 30 PCI-X 12X 24-inch I/O drawers	600 (420 PCI-X DDR (64-bit) + 180 PCI-X)
Maximum PCI slots with one PCIe 12X 24-inch I/O drawer	20 PCIe 8x
Maximum PCI slots with 32 PCIe 12X 24inch I/O drawers	640 PCIe 8x
Maximum PCI-X slots with 19" I/O drawers[u]	600 PCI-X AIX; 1336 PCI-X IBM i
Disk | media bays (one 24” PCIe 12X drawer)	28 | -
Disk | media bays (one 24” PCI-X drawer) AIX/Linux use only	16 | -
Maximum disk storage with one 24-inch RIO I/O drawer	4.8 TB with 146 GB AIX drives
Minimum I/O drawers with PCI slots	AIX/Linux: 1 24” drawer (12X or RIO) IBM i: 1 #5790 or 1 24” drawer (12X)
Maximum 24” I/O drawer	32 PCIe 12X or 30 PCI-X 12X or 12 RIO
Maximum 19" I/O drawers with PCI slots	96 (IBM i only)
Max disk drives | TB with 24" PCI-X I/O drawers & AIX formatted	480 | 70 TB with 146 GB SCSI drives
Max disk drives | TB with 24" PCIe I/O drawers & AIX formatted	832 | 121 TB with 146 GB SFF drives
Max disk drives | TB with 24" PCIe I/O drawers & i formatted	832 | 58 TB with 69.7 GB SFF drives
Max disk drives | TB with 19” I/O drawers & i formatted drives	2200 | 950 TB with 428 GB drives
Max disk drives | storage with 19" I/O drawers with AIX/Linux drives	2200 | 999 TB with 450 GB drives
Performance*	
rPerf for AIX (number of cores)	**4.2 GHz**: 72.58(8), 142.90(16), 204.70(24), 266.51(32), 320.05(40), 373.60(48), 426.74(56), 479.89(64); **5.0 GHz:** , 164.67(16), 235.90(24), 307.12(32), 368.82(40), 430.53(48), 491.77(56), 553.01(64)
CPW for IBM i (number of cores) (measurement for 64-core configuration done with two 32-processor partitions)	**4.2 GHz**: 35500(8), 66400(16), 93800(24), 128000(32), 256200(64); **5.0 GHz**: 41000(8), 77000(16),108100(24), 147,900(32), 294700(64)

System Unit Details

System Unit Details	BladeCenter JS12 + JS22 Express	BladeCenter JS23 + JS43 Express	Power 520 Express	Power 550 Express
SAS Disk bays in CEC	2 (JS12) 1 (JS22)	1 (JS23) 2 (JS43)	6 3.5-inch or 8 SFF	6 3.5-inch or 8 SSF
Available media bays	-[3]	-[3]	2	2
Standard HH size	-	-	1 for tape	1 for tape
Slimline size	-	-	1 for DVD ROM/RAM	1 for DVD ROM/RAM
Standard DVD-ROM	-[3]	-[3]	-	-
System ports[1]	-	-	2	2
Integrated USB ports	2	2	3	3
HMC ports	-	-	2	2
Integrated Ethernet ports/controller	2/1	JS23 = 2/1 JS43 = 4/2	Max 4 1Gb or 2 10Gb ports / 1	Max 4 1Gb or 2 10 Gb ports / 1
Integrated SCSI ports/controller	-	-	-	-
Integrated SAS connectors/controller	2/1	JS23 = 1/1 JS43 = 2/1	8/1	8/1
Max SAS speed	3.0/lane, 2 lanes	3.0/lane, 3 lanes JS23 3.0/lane, 6 lanes JS43	3.0/lane, 8 lanes	3.0/lane, 8 lanes
Protected write cache for integrated SAS controller	-	-	Optional 175 MB. enable RAID 5/6 & help disk performance	Optional 175 MB. enable RAID 5/6 & help disk performance
Optional more disk bays with write cache	-	-	Yes, 12 SAS with a #5886	Yes, 12 SAS with a #5886
PCI slots	-[4]	-[4]	5[2]	5[2]
Long	-[4]	-[4]	1 PCIe 8x	1 PCIe 8x
Short	-[4]	-[4]	2 PCIe 8x	2 PCIe 8x
Long 64-bit (MHz)	-[4]	-[4]	2 PCI-X DDR (266)	2 PCI-X DDR (266)
Short 64-bit (MHz)	-	-[4]	-	-
Maximum PCI-X bus speed (MHz)	133	-	266	266
Max PCIe bus speed (GHz)	2.5	2.5	2.5	2.5
Maximum GX slots	-	-	0 (1-core) 1 (2-core) 2 (4-core)	1 (2-core) 2 (4-core or larger)
Max RIO/HSL	-	-	2	2
Max 12X SDR	-	-	2	2
Max 12X DDR	-	-	1 (4-core)	1 (4-core or larger)
RJ-4x connector	X	X	X	X
Rack light indicator	X	X	X	X
LED diagnostics	X	X	X	X

X = Available; - = Not Available

[1] AIX uses only for modem and async terminal connections. Not supported by AIX when HMC ports are connected to Hardware Management Console. IBM i uses for status link to UPS.

[2] If GX I/O loop adapter(s) for optional I/O drawers installed, one or two PCIe slots not usable .

[3] Available via BladeCenter chassis.

[4] BladeCenter does not use long/short cards as used by Power 520-595

Bus Signaling Rate (Peak bandwidth)	BladeCenter JS12 + JS22 Express	BladeCenter JS23 + JS43 Express	Power 520 Express	Power 550 Express
Memory to processor (GB/second)	21.3	21.3/42.68	32.0	128 (8 core)
L2 to L3 cache (GB/second)	-	67.2/134	75.2	160 (8 core)
GX+ I/O subsystem (GB/second)	5.8	8.4/16.8	28.2.0	23.3

Note: L2 to L3 cache and GX+ I/O subsystem bus signaling rate (Peak bandwidth) based on fastest processor available on server and Memory to processor rate based on fastest memory speed utilized on server.

System Unit Details (continued)

System Unit Details	Power 560	Power 570	Power 575	Power 595
Disk bays in CEC	6 SAS (4-,8-core) 12 SAS (16-core)	Max 24 SAS (6 per building block)	2 per node	0 in CEC (use I/O drawer[6])
Max Available media bays			-	
Standard size	-	-	-	2 via optional #5720 media drawer
Slimline size	2 DVD (1 per building block)	4 DVD (1 per building block)	-	2 via optional #5720 media drawer
System ports[4]	2	-	-	-
Integrated USB ports	2 (4-,8-core) 4 (16-core)	Max 8 (2 per building block)	-	-
HMC ports	2	4	2 per rack	4
Integrated 1G/10G Ethernet ports/controller	Max 8 1Gb or 4 10Gb / 2 [2]	Max 16 1Gb or 8 10Gb / 4 [2]	2 1Gb and 1 10Gb per node	-
Integrated SCSI ports/controller	-	-	-	0 in CEC (Use I/O drawer[6])
Max SCSI speed	-	-	-	-
Integrated SAS connectors/controller	5 / 1 (4-,8-core) 10/2 (16-core)	Max 20/4 (5/1 per building block)	1 / 2 per node	-
Max SAS speed	3.0/lane, 8 lanes	3.0/lane, 8 lanes	-	-
Write cache for integrated SAS controller	-	-	-	-
PCI slots	6 / building block	6 / building block	4 / node	0 in CEC (20 per 24" I/O drwr[6])
Long	3 PCIe 8x [3]	3 PCIe 8x [3]	4 PCIe 8x	20 per I/O drawer [6]
Short	1 PCIe 8x	1 PCIe 8x	-	-
Long 64-bit (MHz)	2 PCI-X (266)	2 PCI-X DDR (266)	-	14 (266), 6 (133) per 12X drawer [6]
Maximum PCI-X bus speed (MHz)	266	266		266 [6]
Max PCIe bus speed (GHz)	2.5	2.5	2.5	2.5 [6]
RJ-4x connector	X	-	-	-
Max GX slots	2 (4- or 8-core) 3 (16-core)	2 per building block	2 per node (only for InfiniBand adapters)	4 per 8-core processor book
Max RIO/HSL I/O loops	3	8		32
Max 12X SDR I/O loops	3	8	1 per node	-
Max 12X DDR I/O loops	-	-	-	32
Rack light indicator	-	-	-	-
LED diagnostics	X	X	X	X

X = *Available; - = Not Available*

[2] Assuming maximum building blocks installed.

[3] If GX I/O loop adapters for optional I/O drawers installed, one PCIe slot not usable in that building block.

[4] AIX Uses only for modem and async terminal connections. Not supported on AIX when HMC ports are connected to Hardware Management Console. IBM i uses for status link to UPS.

[5] CEC has no PCI or disk slots. These are provided by I/O drawers. AIX Uses only for modem and async terminal connections. Not supported on AIX when HMC ports are connected to Hardware Management Console. IBM i uses for status link to UPS.

[6] Three 24-inch I/O drawers provide different options. ONE (newest) = 12X DDR with PCIe slots and with/without SFF disk slots. TWO: 12X SDR with PCI-X & PCI-X DDR slots and SCSI disk slots. Or RIO with 20 PCI-X slots and with/without SCSI disk slots

Bus Signaling Rate (Peak bandwidth)	Power 560	Power 570	Power 575	Power 595
Memory to processor (GB/second)	128.0	256.0	273.0	1376.0
L2 to L3 cache (GB/second)	230.0	300.8	601.6	2560.0
GX+ I/O subsystem (GB/second)	24.0	66.7	94.0	640.0

Note: L2 to L3 cache and GX+ I/O subsystem bus signaling rate (Peak bandwidth) based on fastest processor available on server and Memory to processor rate based on fastest memory speed utilized on server.

Server I/O Drawers/Towers

Drawer	Server Loop Attachment	PCI Slots per Drawer	Disk Bays per Drawer	POWER6 Availability	Max Drawers per Loop	Footprint
#5802	12X DDR [6]	10 PCIe	18 SFF SAS	Y	2	19” rack
#5877	12X DDR [6]	10 PCIe	0	Y	2	19” rack
#5803	12X DDR [6]	20 PCIe	26 SFF SAS	Y	1 [4]	24” rack
#5873	12X DDR [6]	20 PCIe	0	Y	1 [4]	24” rack
7311-D20	RIO-2	7 PCI-X	12 SCSI	Limited, mig	4	19" rack 4U
#0595	RIO-2 [1]	7 PCI-X	12 SCSI	w/d, mig	6	19" rack 5U
#5095	RIO-2 [1]	7 PCI-X	12 SCSI	w/d, mig	6	Tower
7314-G30	12X SDR	6 PCI-X DDR	0	w/d mig	4	19" rack ½ 4U
#5796	12X SDR	6 PCI-X DDR	0	Y	4	19" rack ½ 4U
7311-D11	RIO-2	6 PCI-X	0	w/d, mig	4	19" rack ½ 4U
#5790	RIO-2 [1]	6 PCI-X	0	Y [7]	6	19" rack ½ 4U
#5094	RIO-2 [1]	14 PCI-X	15/45 SCSI	w/d, mig	6	Tower
#5294	RIO-2 [1]	28 PCI-X	90 SCSI	w/d, mig	3 [2]	19" rack 36U
#5096	RIO-2 [1]	14 PCI-X	0	w/d, mig	6	Tower
#5296	RIO-2 [1]	28 PCI-X	0	w/d, mig	3 [2]	19" rack 36U
#0588	RIO-2 [1]	14 PCI-X	0	w/d, mig	6	19" rack 8U
#5088	RIO-2 [1]	14 PC-X	0	w/d, mig	3 [5]	Tower
EXP24 7031-D24	n/a	0	24 SCSI	w/d, mig	n/a	19" rack 4U
EXP24 #5786	n/a	0	24 SCSI	Y, limited[10]	n/a	19" rack 4U
EXP 12S #5886	n/a	0	12 SAS	Y	n/a	19" rack 2U
7040-61D [9]	RIO-2	20 PCI-X	16 SCSI	w/d, mig	1 [4]	24" rack
#5791 [9]	RIO-2	20 PCI-X	16 SCSI	w/d, mig	1 [4]	24" rack
#5794 [9]	RIO-2	20 PCI-X	8 SCSI	w/d, mig	1 [4]	24" rack
#5797 [3] [9]	12X	14 PCI-X DDR, 6 PCI-X	16 SCSI	Y	1 [4]	24" rack
#5798 [3] [9]	12X	14 PCI-X DDR, 6 PCI-X	16 SCSI	Y	1 [4]	24" rack

[1] System i servers used the term “HSL” instead of “RIO”. The terms are interchangeable.
[2] Requires two positions on the loop. Physically is two I/O towers in a 19” 36U rack
[3] #5797 and #5798 same drawer except #5797 supports longer 12X cables and can be located in an expansion rack. #5798 can not be in expansion rack, only the CEC frame.
[4] Logically two drawers in one 4-U foot print. Can be configured with two loops per drawer or one loop per drawer
[5] 5088 bolted to top of 5094 tower. Thus combination of 5094 + 5088 require 2 positions on loop
[6] Runs at DDR speed assuming CEC GX adapter and 12X cable are also DDR. Otherwise runs at SDR.
[7] Announced withdrawal for Feb 2010. Already withdrawn on Power 595 (9119-FHA), but can use RPQ 8Q4004
[9] Disk bays used by drives formatted for AIX/Linux, not IBM i formatted drives
[10] Drawer avaible for existing SCSI disk migration. New SCSI disk withdrawn from marketing

w/d Withdrawn from marketing, not orderable from IBM Manufacturing
Limited 7311-D20 redefined for new orders to always require specific telephony adapters and to require an RPQ. Thus this drawer effectively withdrawn except for special telephony configurations
mig Migrate Attachment of existing I/O units supported
Y New I/O drawers orderable from IBM Manufacturing
n/a Not applicable

Server I/O Drawer Attachment

(inclusion in list does not necessarily mean can order new drawers)

Server Drawer	520 1-core (0 Loops)	520 2-,4-core (0-2 Loops)	550 0-2 Loops	560 (0-3 Loops)	570 0-8 Loops	575 0-1 Loops	595 [1] 1-32 Loops
Max[2] all RIO	0	12	12	18	48	0	95 (IBM i), 12 (AIX)
Max[2] all 12X	0	8	8	12	32	1	32
#5802	0	Max 4	Max 4	Max 6	Max 16	0	0
#5877	0	Max 4	Max 4	Max 6	Max 16	0	0
#5803	0	0	0	0	0	Max 1 / node	Max 32
#5873	0	0	0	0	0	Max 1 / node	Max 31
7311-D20	0	Max 12	Max 12	Max 18	Max 48	0	0
#0595	0	Max 12	Max 12	0	Max 48	0	Max 95
#5095	0	Max 12	Max 12	0	0	0	0
7314-G30	0	Max 8	Max 8	Max 12	Max 32	0	0
#5796	0	Max 8	Max 8	Max 12	Max 32	0	0
7311-D11	0	0	0	0	Max 20	0	0
#5790	0	Max 12	Max 12	0	Max 48	0	Max 95
#5094	0	Max 12	Max 12	0	Max 48	0	Max 95
#5294	0	Max 6	Max 6	0	Max 24	0	Max 47
#5096	0	Max 12	Max 12	0	Max 48	0	Max 95
#5296	0	Max 6	Max 6	0	Max 24	0	Max 47
#0588	0	Max 12	Max 12	0	Max 48	0	Max 95
#5088	0	Max 6	Max 6	0	Max 24	0	Max 47
EXP24 7031-D24	0	Max 12	Max 24	Max 26	Max 60	0	0
EXP24 #5786	0	Max 12	Max 24	Max 26	Max 60	0	Max 110
EXP 12S #5886	0	Max 24	Max 48	Max 110	Max 110	0	Max 185
7040-61D	0	0	0	0	0	0	Max 12
#5791	0	0	0	0	0	0	Max 12
#5794	0	0	0	0	0	0	Max 12
#5797	0	0	0	0	0	0	Max 30
#5798	0	0	0	0	0	Max 1 / node	Max 30

[1] At least one I/O drawer with PCI slots is required. After May 2009 the #5803 is highly recommended as that initial drawer. Between Nov 2008 and May 2009, the 12X #5797/5798 was highly recommended for that initial drawer. Prior to Nov 2008, at least one #5791 (AIX/Linux) or #5790 (IBM i) was required

[2] Though you can mix RIO and 12X I/O drawers on systems with two or more loops, within a loop it must be all RIO drawers or all 12X drawers. Thus if you add 12X loops, you lower the maximum number of RIO drawers, and vice versa. Note this maximum does not include I/O drawers with no PCI slots such as disk-only drawers or removable media drawers.
12X I/O drawers with PCIe slots can not be mixed on the SAME loop as 12X I/O drawers without PCIe slots.

For Additional I/O and I/O Adapter Information

Please reference the sales manual

Physical Planning Characteristics

Note: More comprehensive information on BladeCenter chassis and blades may be found at ftp://ftp.software.ibm.com/systems/support/system_x/dw1fr_planning_guide_v4.pdf . Plus additional summary information can be found in the IBM Sales Manual at **ibm.com**/common/ssi .

Server	BladeCenter JS12 + JS22 Express	BladeCenter JS23 + JS43 Express	BladeCenter S Chassis	BladeCenter H Chassis	BladeCenter HT Chassis
Machine type (AC model)	7998-60X 7998-61X	7778-23X 7778-23X + FC8446	7779-BCS	7989-BCH	8750-1RX
Machine type (DC model)	-	-	-	-	8740-1RX
Packaging	Chassis mount	Chassis mount	19" rack blade cabinet (7U)	19" rack blade cabinet (9U)	19" rack blade cabinet (12U)
Number processor cores/blades	2 (JS12) 4 (JS22)	4 (JS23) 8 (JS43)	Up to 6 blades	Up to 14 blades	Up to 12 blades
Maximum KVA	-	-	3.5	8.0	7.8
Maximum watts	-	-	3500	8000	7773
Maximum BTU/hour	-	-	11942	27280	26552
Voltage (AC)	-	-	110 – 127 200 – 240	200 - 240	200 – 240
Voltage (DC)	-	-	-	-	-48 - -60**
Power supply	-	-	N+1 standard	N+N standard	N+N standard
Height					
inches	9.65	9.65	7U - 12.0	9U - 15.75	12U - 21.0
millimeters	245	245	306	400	528
Width					
inches	1.14	1.14 (JS23) 2.32 (JS43)	17.5	17.5	17.4
millimeters	29	29 (JS23) 59 (JS43)	444	444	441
Depth					
inches	17.55	17.55	28.9	28.0	27.8
millimeters	445	445	733	711	706
Maximum altitude					
feet	7000	7000	7000	7000	6000
meters	2133	2133	2133	2133	1800

** NEBS environment

Physical Planning Characteristics (continued)

Note: More Power 520, 550, 560, 570, 575, 595 comprehensive information may be found in the IBM Site and Hardware Planning document) at http://publib.boulder.ibm.com/infocenter/systems/scope/hw/index.jsp?topic=/iphad/sysreq.htm. Plus, additional summary information can be found in the IBM Sales Manual for each server at **ibm.com**/common/ssi

Server	Power 520 Express	Power 550 Express	Power 560 Express
Packaging	19" rack drawer (4U) or Tower	19" rack drawer (4U) or Tower	19" rack drawer (4U)* or Tower
Voltage (AC)	100 - 127, 200 - 240 1-phase	100 - 127, 200 - 240 1-phase	100 - 127, 200 – 240 1-phase
Power supply	N +1 optional	N +1 optional	N +1 optional
Maximum altitude			
feet	10000	10000	10000 **
meters	3048	3048	3048 **

Server	Power 570	Power 570 (4 core processor card #7540)	Power 575	Power 595
Packaging	19" rack drawer (4U)*	19" rack drawer (4U)*	24" system frame (2U; water-cooled)	24" system frame (+expansion frames)
Voltage (AC)	200 - 240 1-phase	200 - 240 1-phase	200 – 240 380 – 415 480 3-phase	200 – 240 380 – 415 480 3-phase
Power supply	N+1 standard	N+1 standard	N+1 standard	N+1 standard
Internal Battery Backup for 24” rack (CEC & expansion)	-	-	optional	Optional
Maximum altitude				
feet	10000	10000**	10000	10000
meters	3048	3048**	3048	3048

* Figures are for a single building block

** For system configurations installing above 2400 meters, additional ambient room temperature limits are in effect. Please refer to the Site and Hardware Planning Guide for details.

19-inch I/O Drawer	7311-D11 or #5790	7311-D20 or #0595	#5802 or #5877	7314-G30 or #5796
	RIO attach, 6 PCI slots	RIO attach, 7 PCI slots & 12 disk slots	12X DDR attach, 10 PCIe slots (both), 18 disk bay(#5802)	12X attach, 6 PCI slots
Packaging	19" rack drawer	19" rack drawer	19" rack drawer	19" rack drawer
Rack space	2 units fit side by side in 4U space	4U for 7311-D20 5U for #0595	1 unit in 4U space	2 units fit side by side in 4U space
Power supply	N+1 standard	N+1 optional	N+1 standard	N+1 standard
Maximum altitude				
feet	10000	10000	10000	10000
meters	3048	3048	3048	3048

Racks	7014-S11 or #0554	7014-S25 or #0555	7014-T00 or #0551	7014-T42 or #0553	7014-B42
	11U	25U	36U	42U	42U
Height					
inches	24.0	49.0	71.0 – 75.8	79.3	79.3
millimeters	612	1344	1804 – 1926	2015	2015
Width (can vary depending on use of side panels)					
inches	20.5	23.8	24.5 – 25.4	24.5 - 25.4	24.5 - 25.4
millimeters	520	605	623 – 644	623 - 644	623 - 644
Depth (can vary depending on door options selected)					
inches	34.4	39.4	41.0 – 45.2	41.0 - 45.2	41.0 - 55.5
millimeters	874	1001	1042 – 1098	1043 - 1098	1042 - 1409

Warranty

Warranty Service Levels[1, 4]	BladeCenter JS12 / JS22 Express	BladeCenter JS23 / JS43 Express	Power 520 Express	Power 550 Express	Power 560	Power 570	Power 575	Power 595
24x7 with two hour service objective[2]	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
24x7 with four hour service objective	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Standard
9x5 with four hour service objective	Optional	Optional	Optional	Optional	Optional	Optional	Optional	-
9x5 next-business-day	Standard [3]	Standard [3]	Standard [3]	Standard [3]	Standard [3]	Standard [3]	Standard [3]	-

1 These warranty terms and conditions are for the United States and may be different in other countries. Consult your local IBM representative or IBM Business Partner for country-specific information.

2 Available in selected cities.

3 Mandatory Customer Replaceable Unit (CRU) and On-site service.

4 All systems have a 1-year warranty except the BladeCenter JS12, JS22, JS23 and JS43 Express blade servers and BladeCenter chassis which have a 3-year warranty.

Power Systems Operating Systems Support

Power™ Systems Software	BladeCenter JS12 Express	BladeCenter JS22 / 23 / 43 Express	Power 520 Express	Power 550 Express	Power 560 Express	Power 570	Power 575	Power 595
Processor Tier	**Small**	**Small**	**Small**	**Small**	**Medium**	**Medium**	**Medium**	**Large**
IBM i Tier/Group	**P05**	**P10**	**P05/P10**	**P20**	**P20**	**P30**	**-**	**P50**
Operating system releases supported								
AIX V5.3 (5765-G03)**	Supported	Supported	Supported	Supported	Supported	Supported	Supported	Supported
AIX V6.1 (5765-G62)**	Supported	Supported	Supported	Supported	Supported	Supported	Supported	Supported
IBM i 5.4 [1,2]	-	-	Supported[2]	Supported[1]	-	Supported	-	Supported
IBM i 6.1	Supported	Supported	Supported	Supported	Supported	Supported	-	Supported
IBM i 7.1	Supported	Supported	Supported	Supported	Supported	Supported	-	Supported
Red Hat Enterprise Linux (RHEL) for POWER™ V4 (5639-RHL)**	Supported	Supported	Supported	Supported	Supported	Supported	Supported	Supported
RHEL for POWER V5**	Supported	Supported	Supported	Supported	Supported	Supported	Supported	Supported
SLES 10 for POWER**	Supported	Supported	Supported	Supported	Supported	Supported	Supported	Supported
PowerHA™ for AIX V5.4 (5765-F62)	-	Supported	Supported	Supported	Supported	Supported	-	Supported
PowerHA for Linux V5.4 (5765-G71)	-	Supported	Supported	Supported	Supported	Supported	-	-
PowerHA for i V6.1 (5761-HAS)	Supported	Supported	Supported	Supported	Supported	Supported	-	Supported
CSM for AIX 5L V1.7 (5765-F67)	Supported	Supported	Supported	Supported	Supported	Supported	Supported	Supported
CSM for Linux on POWER V1.7 (5765-G16)	Supported	Supported	Supported	Supported	Supported	Supported	Supported	Supported
CSM for Linux Multiplatform V1.7 (5765-E88)	Supported	Supported	Supported	Supported	Supported	Supported	Supported	Supported

1 - Power 550 5.0 GHz not supported by IBM i 5.4

2 – Power 520 4.7 GHz supported by IBM i 5.4 (prior to December 2009 required IBM i 5.4)

** Consult your local IBM representative or IBM Business Partner for release levels supported.

Performance Notes

The performance information contained herein is current as of the date of this document. All performance benchmark values and estimates are provided "AS IS" and no warranties or guarantees are expressed or implied by IBM. Buyers should consult other sources of information, including system benchmarks, to evaluate the performance of a system they are considering.

rPerf (Relative Performance) is an estimate of commercial processing performance relative to other IBM UNIX® systems. It is derived from an IBM analytical model which uses characteristics from IBM internal workloads, TPC and SPEC benchmarks. The rPerf model is not intended to represent any specific public benchmark results and should not be reasonably used in that way. The model simulates some of the system operations such as CPU, cache and memory. However, the model does not simulate disk or network I/O operations.

rPerf estimates are calculated based on systems with the latest levels of AIX and other pertinent software at the time of system announcement. Actual performance will vary based on application and configuration specifics. The IBM eServer™ pSeries® 640 is the baseline reference system and has a value of 1.0. Although rPerf may be used to approximate relative IBM UNIX commercial processing performance, actual system performance may vary and is dependent upon many factors including system hardware configuration and software design and configuration. Note that the rPerf methodology used for the POWER6 processor-based systems is identical to that used for the POWER5 processor-based systems. Variations in incremental system performance may be observed in commercial workloads due to changes in the underlying system architecture. For additional information about rPerf, contact your local IBM office or IBM authorized reseller.

Commercial Processing Workload (CPW) is a relative measure of performance of systems running the IBM i operating system. Performance in client environments may vary. The value is based on maximum configurations. Please refer to the "IBM Power Systems Performance Capabilities Reference—IBM i operating system Version 6.1" at the following Web site for a complete description of CPW and the CPW rating for IBM Power Systems. (**ibm.com**/systems/i/advantages/perfmgmt/pdf.pcrm.pdf)

All performance estimates are provided "AS IS" and no warranties or guarantees are expressed or implied by IBM. Buyers should consult other sources of information, including system benchmarks and application sizing guides to evaluate the performance of a system they are considering buying. Actual system performance may vary and is dependent upon many factors including system hardware configuration and software design and configuration. IBM recommends application-oriented testing for performance predictions. Additional information about the performance benchmarks, values and systems tested is available from your IBM marketing representative or IBM Authorized Reseller or access the following on the Web:

SPEC – http://www.spec.org TPC – http://www.tpc.org

More information

- Contact your IBM marketing representative or IBM Business Partner
- Access the Power Systems Products and Services page on IBM's World Wide Web server at **ibm.com**/systems/power and then select the appropriate hardware or software option
- Product announcement letters and Sales Manual containing more details on hardware and software offerings are available at **ibm.com**/common/ssi
- More detailed benchmark and performance information is available at **ibm.com**/systems/p/hardware/benchmarks , **ibm.com**/systems/p/hardware/system_perf.html and at **ibm.com**/systems/i/solutions/perfmgmt/resource.html .
- Details on storage interface and communications/connectivity adapter support may be found in the Power Systems I/O Features Reports at **ibm.com**/systems/p/hardware/factsfeatures.html

IBM Corporation
Integrated Marketing Communications
Systems and Technology Group
Route 100
Somers, New York 10589

Produced in the United States of America
April 2010

This document was developed for products and/or services offered in the United States. IBM may not offer the products, features or services discussed in this document in other countries. The information may be subject to change without notice. Consult your local IBM business contact for information on the products, features and services available in your area.

All statements regarding IBM future directions and intent are subject to change or withdrawal without notice and represent goals and objectives only. These are identified by SOD.

IBM hardware products are manufactured from new parts or new and used parts. Regardless, our warranty terms apply.

Photographs show engineering and design models. Changes may be incorporated in production models.

This equipment is subject to FCC rules. It will comply with the appropriate FCC rules before final delivery to the buyer.

Information concerning non-IBM products was obtained from the suppliers of these products or other public sources. Questions on the capabilities of the non-IBM products should be addressed with the suppliers.

All performance information was determined in a controlled environment. Actual results may vary. Performance information is provided “AS IS” and no warranties or guarantees are expressed or implied by IBM.

When referring to storage capacity, total TB equals total GB divided by 1000; accessible capacity may be less.

The IBM home page on the Internet can be found at **ibm.com** .

This brochure provides detailed technical specifications of all IBM POWER6 processor-based Power Systems servers and BladeCenter blades in a tabular, easy-to-scan format for easy comparison between systems. These systems are UNIX (AIX), IBM i and Linux operating system servers. Not all features listed in this document are available on all three operating systems.

POB03004-USEN-14