

IBM Power Systems facts and features



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* (standard - maximum)		
	2 GB - 64 GB	4 GB - 32 GB
Data - instruction (L1) cache	64 KB - 64 KB ^b	64 KB - 64 KB ^b
Level 2 (L2) cache	4 MB ^b	4 MB ^b
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	O (at chassis level)	O (at chassis level)
Redundant hot-plug cooling	O (at chassis level)	O (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	O	O
Maximum 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 292 GB	73 GB ^v 146 GB
Storage interface	Serial Attached SCSI	Serial Attached SCSI
RAID support	X	-
Connectivityⁿ		
Daughter Cards (CFFv or CFFh)	O	O
Dual Gigabit Ethernet	X	X
4 Gigabit Fibre Channel	O (QLogic: Linux® or AIX®, Emulex: Linux or AIX)	O (QLogic: Linux or AIX, Emulex: Linux)
4X InfiniBand®	O	O
Benchmarks (AIX V5.3)		
SPECint2006	-	-
SPECfp2006	-	-
SPECint_rate2006	-	84.7
SPECfp_rate2006	-	75.6
SPECjbb2005	-	-
LINPACK HPC	-	-
rPerf	14.71	30.26
Benchmarks (Linux)		
	SLES10	SLES10
SPECint2006	16.1*	-
SPECfp2006	17.9*	-
SPECint_rate2006	45.9*	84.7
SPECfp_rate2006	42.5*	75.0
SPECjbb2005	-	-
LINPACK HPC	24,670	-
Benchmarks (IBM i 6.1)		
CPW	7,100 ^o	13,800 ^o

* Submitted to SPEC; awaiting approval

Product line	IBM Power™ 520 Express	IBM Power 550 Express
Machine type	8203-E4A; 9407-M15, 9408-M25	8204-E8A; 9409-M50
System packaging	deskside or 19" rack drawer (4U)	deskside or 19" rack drawer (4U)
Microprocessor type	64-bit POWER6	64-bit POWER6
# of processor cores/system	1, 2 or 4 ⁿ	2, 4, 6 or 8 ^k
Clock rates available	4.2 GHz	3.5 GHz, 4.2 GHz
System memory^a (standard - maximum)	1 GB - 64 GB ^z	1 GB - 256 GB ^v
Data - instruction (L1) cache	64 KB - 64 KB ^b	64 KB - 64 KB ^b
Level 2 (L2) cache	4 MB ^b	8 MB ^d
Level 3 (L3) cache	-	32 MB ^d
Reliability, availability, serviceability		
Chipkill memory	X	X
Service processor	X	X
Hot-swappable disks (internal and external)	X	X
Dynamic Processor Deallocation	X ^c	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	- ^g	- ^g
Redundant hot-plug power	O	O
Redundant hot-plug cooling	X	X
EnergyScale ^e	X	X
Capacity and expandability^f		
Capacity on Demand (CoD) functions	X (M15, M25 models)	X (M50 model)
PowerVM Express Edition	O	O
PowerVM Standard Edition	O	O
PowerVM Enterprise Edition	O	O
Maximum logical partitions/micro-partitions	40	80
Maximum PCI slots	2 PCI-X (64-bit), 3 PCIe 8x	2 PCI-X (64-bit), 3 PCIe 8x
Maximum PCI slots with I/O drawers	58 PCI-X (64-bit), 2 PCIe 8x	58 PCI-X (64-bit), 1 PCIe 8x
Maximum PCI-X bus speed (MHz)	266	266
Disk I media bays	6 2	6 2
Minimum maximum internal disk storage	73.4 GB 1.8 TB	73.4 GB 1.8 TB
Required optional I/O drawers	0 8	0 8
Maximum disk bays storage with I/O drawers	102 30.6 TB	102 30.6 TB
Connectivity^h		
10 Gigabit Ethernet	O	O
4 Gigabit Fibre Channel	O	O
4x GX	-	-
12x GX	O	O
RIO-2	O	O
Display adapter (maximum)	GXT135P (2), GXT145 (3) ^x	GXT135P (2), GXT145 (3) ^x
Benchmarks (AIX V5.3)		4.2 GHz
SPECint2006	-	-
SPECfp2006	-	-
SPECint_rate2006	90.6 (4-core)	212 (8-core)
SPECfp_rate2006	80.8 (4-core)	178 (8-core)
SPECjbb2005	-	333,779 (8-core)
TPC-C: tpmC; \$/tpmC	-	629,159; 2.49 (8-core)
LINPACK HPC	53,600 (4-core)	104,600 (8-core)
rPerf	8.39, 15.95, 31.48	15.85, 31.27, 45.04, 58.80 (3.5 GHz); 18.38, 36.28, 52.24, 68.20 (4.2 GHz)
Benchmarks (Linux)	SLES10	4.2 GHz; RHEL5.1
SPECint2006	-	-
SPECfp2006	-	-
SPECint_rate2006	89.2 (4-core)	213 (8-core)
SPECfp_rate2006	79.7 (4-core)	176 (8-core)
SPECjbb2005	-	328,343 (8-core)
LINPACK HPC	51,500 (4-core)	104,200 (8-core)
Benchmarks (IBM i 6.1)		4.2 GHz
CPW	4,300 (1-core M15); 8,300 (2-core M25)	4,800 (1-core M50), 18,000 (4-core M50)

Product line	IBM Power 570	IBM Power 575
Machine type	9117-MMA	9125-F2A
System packaging	19" rack drawer (4U)	24" system frame (2U; water-cooled)
Microprocessor type	64-bit POWER6	64-bit POWER6
# of processor cores/system	2, 4, 8, 12, 16	32
Clock rates available	3.5 GHz ; 4.2 GHz; 4.7 GHz	4.7 GHz
System memory^a (standard – maximum)	2 GB - 768 GB ^b	32 GB - 256 GB
Data - instruction (L1) cache ^b	64 KB - 64 KB	64 KB - 64 KB
Level 2 (L2) cache	8 MB ^d	8 MB ^d
Level 3 (L3) cache	32 MB ^d	32 MB ^d
Reliability, availability, serviceability		
Chipkill memory	X	X
Service processor	X ^e	X
Hot-swappable disks (internal and external)	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-plug slots	X	X
Blind-swap slots	X	X
Redundant hot-plug power	X	X
Redundant hot-plug cooling	X	-
EnergyScale ^e	X	X
Capacity and expandability^a		
Capacity on Demand (CoD) functions	P, M ^m , U, T, OO ^m	P, M ⁱ
PowerVM Express Edition	-	-
PowerVM Standard Edition	O	O
PowerVM Enterprise Edition	O	O
Maximum logical partitions/micro-partitions	160	254
Maximum PCI slots	8 PCI-X (64-bit); 16 PCIe 8x	4 PCIe
Maximum PCI slots with I/O drawers	212	24
Maximum PCI-X bus speed (MHz)	266	133
Disk I media bays	24 4	2 -
Minimum maximum internal disk storage	73.4 GB 7.2 TB	146.8 GB 293.6 GB
Required optional I/O drawers	0 32 ^f	0 1
Maximum disk bays storage with I/O drawers	264 79.2 TB	18 5.0 TB
Connectivity^a		
10 Gigabit Ethernet	O	O
4 Gigabit Fibre Channel	O	O
4x GX	-	O
12x GX	O	-
RIO-2	O	-

Product line	IBM Power 570	IBM Power 575
Display adapter (maximum)	GXT135P (8), GXT145 (8)	GXT135P (8)
Benchmarks (AIX V5.3)	4.7 GHz	
SPECint2006	21.6	-
SPECfp2006	22.3	-
SPECint_rate2006	478 (16-core)	934*
SPECfp_rate2006	426 (16-core)	839*
SPECjbb2005	691,975 (16-core)	-
LINPACK HPC	239,400 (16-core)	466,900
TPC-C: tpmC; \$/tpmC	1,616,162.84; 3.54 (16-core)	-
rPerf	15.85, 31.69, 58.95, 83.35, 105.75 (3.5 GHz); 18.38, 36.76, 68.38, 96.68, 122.67 (4.2 GHz); 20.13, 40.26, 74.89, 105.89, 134.35 (4.7 GHz)	-
Benchmarks (Linux)	4.7 GHz; RHEL5.1	-
SPECint2006	21.7	-
SPECfp2006	22.5	-
SPECint_rate2006	484 (16-core)	-
SPECfp_rate2006	430 (16-core)	-
SPECjbb2005	664,167 (16-core)	-
LINPACK HPC	235,100 (16-core; SLES10)	-
Benchmarks (IBM i 6.1)	4.7 GHz	-
SPECjbb2005	345,809 (8-core)*	-
CPW	8,150, 16,100, 30,100, -, 57,600 (3.5 GHz); 9,650, 19,200, 35,500, -, 68,600 (4.2 GHz); 10,800, 21,200, 40,100, -, 76,900 (4.7 GHz)	-

* Submitted to SPEC; awaiting approval

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
Clock rates available	4.2 GHz; 5.0 GHz
System memory^a (standard - maximum)	16 GB - 4 TB ^r
Data - instruction (L1) cache	64 KB - 64 KB ^b
Level 2 (L2) cache	8 MB ^d
Level 3 (L3) cache	32 MB ^d
Reliability, availability, serviceability	
Chipkill memory	X
Service processor	X ^e
Hot-swappable disks (internal and external)	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	X
Redundant hot-plug power	X
Redundant hot-plug cooling	X
EnergyScale ^g	X
Capacity and expandability	
Capacity on Demand (CoD) functions	P, M, U, T, OO, B
PowerVM Express Edition	-
PowerVM Standard Edition	O
PowerVM Enterprise Edition	O
Maximum logical partitions/micro-partitions	254
Maximum PCI-X slots with one 24" I/O drawer	20 (64-bit)
Maximum PCI-X slots with 24" I/O drawers	600 (64-bit)
Maximum PCI-X slots with 19" I/O drawers ^u	1336
Maximum PCI-X bus speed (MHz)	266
Disk I media bays (one drawer)	16 -
Minimum maximum internal disk storage ^u	146.8 GB 4.8 TB
Required optional 24" I/O drawers	1 29
Optional 19" I/O drawers	96
Maximum disk bays storage with 24" I/O drawers ^u	480 144.0 TB
Maximum disk bays storage with 19" I/O drawers ^u	2200 620.9 TB
Connectivity^a	
10 Gigabit Ethernet	O
4 Gigabit Fibre Channel	O
4x GX	-
12x GX	O
RIO-2	X
Display adapter (maximum)	GXT135P(8)
Benchmarks (AIX V5.3)	5.0 GHz
SPECint2006	-
SPECfp2006	24.9*
SPECint_rate2006	2080 (64-core)*
SPECfp_rate2006	2110 (64-core)*
SPECjbb2005	3,435,485 (64-core)*
LINPACK HPC	1,028,000 (64-core)
TPC-C: tpmC; \$/tpmC	-
rPerf	72.58, 142.90, -, 266.51, -, 373.60, -, 479.89 (4.2 GHz); 87.10, 164.67, -, 307.12, -, 450.53, -, 553.01 (5.0 GHz)

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X = Standard; Supported
O = Optionally Available; Supported
- = Not Applicable
N/A = Not Available
P = Processor Capacity Upgrade on Demand option
M = Memory Capacity Upgrade on Demand option
T = Trial Capacity on Demand option
OO = On/Off Capacity on Demand for Processors and Memory option
U = Utility Capacity on Demand option
B = Capacity BackUp option
SOD = Statement of General Direction announced
SLES = SUSE Linux Enterprise Server
RHEL = Red Hat Enterprise Linux

a Shared memory
b Per processor core
c Not available on 1-core system
d Per processor card or processor book or processor chip
e The value listed is unconstrained CPW (there is sufficient I/O such that the processor would be the first constrained resource)
f A maximum of 32 7314-G30 or 20 7311-D11 or D20 I/O drawers are supported
g PCI-X slots on I/O drawers are blind-swap
h 9407-M15 is 1-core server; 9408-M25 is a 2-core server with a minimum of one activation
j All processor/memory CoD resources must be fully active)
k 9409-M50 is a 4.2 GHz 4-core server with a minimum of one activation
m Not supported on 400 MHz DDR2 memory
n For details on I/O features and adapters which can be attached, go to ibm.com/systems/p/hardware/factsfeatures.html
p Not all EnergyScale functions are available on every server.
r Maximum memory is dependent on number of processors and type of memory installed
s Redundant service processor available (standard on 595)
t Maximum memory is 384 GB on 3.5 GHz systems
u Maximum is based on upgraded system; new system maximum may be less
v Non-Express configurations need not have internal disk storage
w Requires one year of VIOS SWMA
x Maximum graphics adapters per system is four
y Maximum memory is 128 GB on 3.5 GHz system
z Maximum memory on 1-core system is 16 GB and 32 GB on 2-core system

System unit details	BladeCenter JS12 Express	BladeCenter JS22 Express	Power 520 Express	Power 550 Express
Standard internal disk bays	2	1	6	6
Optional internal disk bays	-	-	-	8
Optional I/O drawer disk bays	-	-	96	96
Available media bays	.. ³	.. ³	2	2
— Standard size	-	-	1	1
— Slimline size	-	-	1	1
Standard DVD-ROM	.. ³	.. ³	-	-
System ports¹	-	-	2	2
Integrated USB ports	4	4	3	3
HMC ports	-	-	2	2
Integrated 10/100/1000 Ethernet ports/controller	2/1	2/1	4/1	4/1
Integrated SCSI ports/controller	-	-	-	-
— Max SCSI speed (Mbps)	-	-	-	-
Integrated SAS connectors/controller	2/1	1/1	8/1	8/1
— Max SAS speed	3.0/lane, 2 lanes	3.0/lane, 1 lane	3.0/lane, 8 lanes	3.0/lane, 8 lanes
PCI slots²	2	2	5	5
— Long 64-bit	1 PCIe 8x	1 PCIe 8x	1 PCIe 8x	1 PCIe 8x
— Short 64-bit	-	-	2 PCIe 8x	2 PCIe 8x
— Long 64-bit (MHz)	1 PCI-X (133)	1 PCI-X (133)	2 PCI-X (266)	2 PCI-X (266)
— Short 64-bit (MHz)	-	-	-	-
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 Used only for modem and async terminal connections. Not supported when HMC ports are connected to Hardware Management Console.

² Assuming optional I/O drawers are not installed.

³ Available via BladeCenter chassis.

Bus Signaling Rate (Peak bandwidth)	BladeCenter JS12 Express	BladeCenter JS22 Express	Power 520 Express	Power 550 Express
Memory to processor (GB/second)	21.3	21.3	32.0	128.0
L2 to L3 cache (GB/second)	-	-	-	33.6
GX+ I/O subsystem (GB/second)	5.8	5.8	14.0	14.0

System unit details	Power 570	Power 575	Power 595
Standard internal disk bays	24 ²	2	16 ¹
Optional internal disk bays	-	-	-
Optional I/O drawer disk bays	240 ²	16	464
Available media bays	4 ²	-	3
— Standard size	-	-	-
— Slimline size	4 ²	-	3
Standard DVD-ROM	X	-	X
System ports⁴	2	-	-
Integrated USB ports	8 ²	-	16
HMC ports	4	2	4
Integrated 10/100/1000 Ethernet ports/controller	16/4 ²	4/2	-
Integrated SCSI ports/controller	-	-	4/4 ¹
— Max SCSI speed (Mbps)	-	-	320
Integrated SAS connectors/controller	20/4 ²	1/2	-
— Max SAS speed	3.0/lane, 8 lanes	-	-
PCI slots³	6/building block		20 per 24" drawer
— Long 64-bit	3 PCIe 8x	4 PCIe	-
— Short 64-bit	1 PCIe 8x	-	-
— Long 64-bit (MHz)	2 PCI-X (266)	-	14 (266), 6 (133)
RJ-4x connector	X	-	-
Rack light indicator	-	-	-
LED diagnostics	X	X	X

X = Available; - = Not Available

¹ Assuming single 24" I/O drawer.

² Assuming maximum building blocks installed.

³ Assuming optional I/O drawers are not installed.

⁴ Used only for modem and async terminal connections. Not supported when HMC ports are connected to Hardware Management Console.

Bus Signaling Rate (Peak bandwidth)	Power 570	Power 575	Power 595
Memory to processor (GB/second)	256.0	273.0	1376.0
L2 to L3 cache (GB/second)	300.8	601.6	2560.0
GX+ I/O subsystem (GB/second)	62.7	94.0	640.0

- = Not Available

Server I/O drawer attachment

Server	Maximum I/O drawers per system	Slots per drawer	Maximum slots per system	Disk bays per drawer	Maximum disk bays per system	Maximum I/O drawer disk capacity	Maximum disk capacity per system
Power 520 Express¹⁰	8 ^{3,7}		60		102		30.6 TB
7311-D20 drawer ²		7 PCI-X		12		28.8 TB	
7314-G30 drawer ⁶		6 PCI-X					
Power 550 Express¹⁰	8 ⁵		59		102		30.6 TB
7311-D20 drawer ²		7 PCI-X		12		28.8 TB	
7314-G30 drawer ^{6,9}		6 PCI-X					
Power 570			212		264		79.2 TB
7311-D11 drawer	20	6 PCI-X					
7311-D20 drawer ²	20	7 PCI-X		12		72.0 TB	
7314-G30 drawer ⁶	32 ⁸	6 PCI-X					
Power 575¹²	1		24		18		5.0 TB ⁴
F/C 5798 (internal drawer)		20 PCI-X		16		4.8 TB	
Power 595^{1,11}	30		600		480		144.0 TB ⁴
F/C 5791 (internal drawer)		20 PCI-X		16		28.1 TB	
F/C 5794 (internal drawer)		20 PCI-X		8		14.0 TB	
F/C 5797 (internal drawer)		20 PCI-X		16		144.0 TB	

¹ At least one drawer is required

² Ultra320 disk drives enabled

³ Maximum optional I/O drawers require use of one PCI slot

⁴ Using internal I/O drawers

⁵ Maximum optional I/O drawers requires use of two PCI slots

⁶ PCI-X slots in 7314-G30 I/O Drawer are DDR (266 MHz); PCI-X slots in all other drawers are 133 MHz

⁷ I/O drawers may not be installed on a 1-core system; Only four I/O drawers may be installed on a 2-core system

⁸ Maximum optional I/O drawers requires use of four PCI slots

⁹ Also available as FC 5796

¹⁰ Not applicable for Power 520 models M15 and M25 and Power 550 model M50

¹¹ These values are operating system dependent and are appropriate to the AIX and Linux operating systems

¹² Does not include SAS disk drawers which significantly expand these maximums

Physical planning characteristics

Server	Power 520 Express*	Power 520 Express*	Power 550 Express*	Power 550 Express*
Packaging	19" rack drawer (4U)	Deskside	19" rack drawer (4U)	Deskside
Number of processor cores	1, 2, 4	1, 2, 4	2, 4, 6, 8	2, 4, 6, 8
Maximum KVA	0.876	0.876	1.443	1.443
Maximum watts	850	850	1400	1400
Maximum BTU/hour	2901	2901	4778	4778
Noise (bels)	6.8	6.5	7.0	7.0
Voltage (AC)	100 - 127, 200 - 240 1-phase	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	N +1 optional
Height				
— inches	4U - 6.8	21.3	4U - 6.8	21.3
— millimeters	173	540	173	540
Width				
— inches	17.3	7.2 - 12.9	17.3	7.2 - 12.9
— millimeters	440	182 - 329	440	183 - 329
Depth				
— inches	21.2	24.7	28.7	30.6
— millimeters	538	628	730	778
Operating temperature (°C)	5 - 35	5 - 35	5 - 35	5 - 35
Operating humidity	8% - 80%	8% - 80%	8% - 80%	8% - 80%
Maximum altitude				
— feet	10000	10000	10000	10000
— meters	3048	3048	3048	3048
Weight				
— pounds	75	37.6 - 40.8	107.4	117.3 - 126.1
— kilograms	34.0	83.0 - 90.0	48.7	53.2 - 57.2

* M15, M25 and M50 models may have different characteristics

Note: The physical planning characteristics of Power™ Systems servers are estimates and are intended for planning purposes only. More comprehensive information may be found in the IBM Sales Manual at ibm.com/common/ssi.

Physical planning characteristics (continued)

Server	Power 570	Power 575	Power 595
Packaging	19" rack drawer (4U)*	24" system frame	24" system frame (+expansion frames)
Number of processor cores	2, 4, 8, 12, 16	32	8 - 64
Maximum KVA	1.428	N/A	27.7
Maximum watts	1400	N/A	27500
Maximum BTU/hour	4778	N/A	93840
Noise (bels)	6.7 - 7.4	8.2 - 8.7	8.2 - 9.2
Voltage (AC)	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 IBB optional	N+1 standard IBB optional
Height			
— inches	4U - 6.85	42U - 79.3	42U - 79.3
— millimeters	174	2014	2014
Width			
— inches	19.0	29.5	30.5
— millimeters	483	756	775
Depth			
— inches	32.4	60.0	58.5 - 71.1
— millimeters	824	1524	1486 - 1806
Operating temperature (°C)	5 - 35	10 - 28	10 - 28
Operating humidity	8% - 80%	20% - 80%	20% - 80%
Maximum altitude			
— feet	10000	10000	10000
— meters	3048	3048	3048
Weight			
— pounds	140	3650	3376 - 3422
— kilograms	63.6	1656	1531 - 1552

* Figures are for a 4-core (single building block) system

Note: The physical planning characteristics of Power Systems servers are estimates and are intended for planning purposes only. More comprehensive information may be found in the IBM Sales Manual at ibm.com/common/ssi.

Physical planning characteristics (continued)

Drawer	7311-D11 (4U)	7311-D20 (4U)	7314-G30 (4U)
Packaging	19" rack drawer	19" rack drawer	19" rack drawer
Maximum KVA	0.24	0.358	0.275
Maximum watts	225	340	250
Maximum BTU/hour	765	1161	853
Noise (bels)	5.6	6.1	6.1
Voltage (AC)	200 - 240	100 - 127, 200 - 240	200 - 240
Power supply	N+1 standard	N+1 optional	N+1 standard
Height			
— inches	4U - 6.9	4U - 7.0	4U - 7.0
— millimeters	175	178	178
Width			
— inches	17.5	19.0	17.5
— millimeters	445	482	445
Depth			
— inches	28.0	24.0	24.0
— millimeters	711	610	610
Operating temperature (°C)	10 - 38	5 - 35	10 - 38
Operating humidity	8% - 80%	8% - 80%	8% - 80%
Maximum altitude			
— feet	10000	10000	10000
— meters	3048	3048	3048
Weight			
— pounds	86	101	44
— kilograms	39.1	45.9	20

Rack	7014-S11	7014-S25	7014-T00	7014-T42	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					
— 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					
— 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
Weight					
— pounds	75	221	535	575	575
— kilograms	37	100.2	244	261	261

Note: The physical planning characteristics of Power Systems, BladeCenter racks and I/O drawers are estimates and are intended for planning purposes only. More comprehensive information may be found in the IBM Sales Manual at ibm.com/common/ssi.

Physical planning characteristics (continued)

Server	BladeCenter JS12 Express	BladeCenter JS22 Express	BladeCenter S chassis	BladeCenter H chassis	BladeCenter HT chassis
Machine type (AC model)	7998-60X	7998-61X	8886-EPY	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 of processor cores/blades	2	4	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
Noise (bels) - maximum	-	-	6.3 - 6.9	7.5/7.9*	7.5
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	17.5	17.5	17.4
— millimeters	29	29	444	444	441
Depth					
— inches	17.55	17.55	28.9	28.0	27.8
— millimeters	445	445	733	711	706
Operating temperature (°C)	10 - 35	10 - 35	10 - 35	10 - 32	5 - 40
Operating humidity	8% to 80%	8% to 80%	8% to 80%	8% to 80%	5% to 85%
Maximum altitude					
— feet	7000	7000	7000	7000	6000
— meters	2133	2133	2133	2133	1800
Weight***					
— pounds	9.6	9.6	240	350	350
— kilograms	4.35	4.35	108.9	159	159

* BladeCenter H: Acoustic Mode/Performance Mode (0-500)

** NEBS environment

*** Weights shown are for chassis fully loaded with blades

Note: The physical planning characteristics of BladeCenter chassis and blades are estimates and are intended for planning purposes only. More comprehensive information may be found in the IBM Sales Manual at ibm.com/common/ssi.

Warranty

Standard service warranty^{1,4}	BladeCenter JS12 Express	BladeCenter JS22 Express	Power 520 Express	Power 550 Express	Power 570	Power 575	Power 595
24x7 with two hour service objective²	O	O	O	O	O	O	-
24x7 with four hour service objective	-	O	O	O	O	O	-
24x7 with same-day service objective	-	-	-	-	-	-	X ³
9x5 same-business-day with four hour service objective	-	O	O	O	O	-	O
9x5 next-business-day with four hour service objective	O	-	-	-	-	O	-
9x5 next-business-day	X ³	X ³	X ³	X ³	X ³	X ³	-

O = Optional offering

X = Standard offering

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 Customer Replaceable Unit (CRU) service.

⁴ All systems have a 1-year warranty except the BladeCenter JS12 Express and JS22 Express which have a 3-year warranty.

Power™ Systems Software	BladeCenter JS12 Express	BladeCenter JS22 Express	Power 520 Express	Power 550 Express	Power 570	Power 575	Power 595
Operating system support							
AIX V5.2 (5765-E61)	-	-	-	-	X	-	-
AIX V5.3 (5765-G03)	X	X	X	X	X	X	X
AIX V6.1 (5765-G62)	X	X	X	X	X	X	X
Red Hat Enterprise Linux (RHEL) for POWER™ V4 (5639-RHL)	X	X	X	X	X	X	X
RHEL for POWER V5	X	X	X	X	X	X	X
SUSE Linux Enterprise Server (SLES) 9 for POWER (5639-SLP)	-	X	X	X	X	-	-
SLES 10 for POWER	X	X	X	X	X	X	X
IBM i 5.4	-	-	X*	X*	X	-	X
IBM i 6.1	X	X	X*	X*	X	-	X
PowerHA™ for AIX V5.4 (5765-F62)	X	X	X	X	X	-	X
PowerHA for Linux V5.4 (5765-G71)	X	X	X	X	X	-	-
PowerHA for i V6.1 (5761-HAS)	X	X	X	X	X	-	X
CSM for AIX 5L V1.7 (5765-F67)	X	X	X	X	X	X	X
CSM for Linux on POWER V1.7 (5765-G16)	X	X	X	X	X	X	X
CSM for Linux Multiplatform V1.7 (5765-E88)	X	X	X	X	X	X	X

X = Supported; - = Not Supported; * IBM i is only supported on M15, M25 and M50 models
SOD = Statement of General Direction announced

IBM services

IBM services provide the capabilities and solutions needed to manage virtually every aspect of an open systems environment and at any level chosen. They complement the support already included with Power Systems servers. IBM world-class services and support allow you to better manage resources and focus on what matters most—your business.

IBM client financing provides an additional incentive. An array of attractive and flexible financing programs eases the acquisition of new technology and helps protect from the risk of obsolescence. Financing may be available to credit-qualified clients. Rates are based on credit rating, financing terms and other options. Other restrictions may apply.

Project support services

- Operating system porting/conversion
- Operating system migration assistance
- Systems integration
- IBM and non-IBM software customization
- IBM application development
- Site planning services

Continuing support services

- Client Support Center services
 - Electronic/voice
 - IBM and non-IBM hardware and software
- On-site software maintenance support
- Capacity planning
- Maintenance services, including multivendor environment
- Technical/application specialists
- Network custom services
- Education

Benchmark notes

The benchmark information contained herein is current as of the date of this document.

Values shown in the performance benchmarks section were derived using particular, well-configured, development-level computer systems and used 32-bit applications and external cache if external cache is supported on the system. 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. 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>

Unless otherwise indicated, new or upgraded systems were tested with AIX. All TPC-C benchmark results are TPC-C Version 5.

tpmC: TPC Benchmark C throughput measured as the average number of transactions processed per minute during a valid TPC-C configuration run of at least 20 minutes.

\$/tpmC: TPC Benchmark C price-performance ratio reflects the estimated five year total cost of ownership for system hardware, software and maintenance divided by the tpmC for the system.

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.

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.pcrn.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. For additional information about rPerf, contact your local IBM office or IBM authorized reseller.

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



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