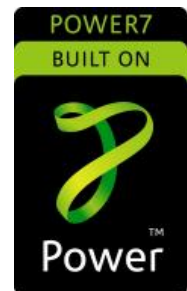




# IBM Power Facts and Features IBM Power Systems, IBM PureFlex and Power Blades

June 2013



IBM Power Systems™ servers and IBM BladeCenter® blade servers using IBM POWER6® and POWER6+™ processors are described in a separate Facts and Features report dated April 2010 (POB03004-USEN-14).

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These notes apply to the description tables for IBM POWER7® POWER7+ ® systems:

Y	Standard / Supported
Optional	Optionally Available / Supported
N/A or -	Not Available / Supported or Not Applicable
M	CoD capabilities include: Capacity Upgrade on Demand option – permanent processor or memory activation, Elastic Capacity on Demand (previously called On/Off)– temporary processor or memory activation by the day, Utility Capacity on Demand – temporary processor activation by the minute, and Trial Capacity on Demand.
M+	Elastic COD built-in to new Power 780 or Power 795 servers and includes a block of no-charge processor and memory days
N	Power 760 has processor Capacity Upgrade on Demand (permanent activations). Memory CUoD and Elastic CoD not provided
SOD	Statement of General Direction announced
SLES	SUSE Linux Enterprise Server
RHEL	Red Hat Enterprise Linux

a	If installed in BladeCenter E or T chassis, Advanced Management Module is required and other restrictions may apply.
b	The Power 770 and Power 780 “B” and “C” models are not included in this document.
d	The PowerLinux 7R1 model L1C/L1S and PowerLinux 7R2 model L2C/L2S are not included in this document
e	Hot Node Repair and Memory Upgrade for 2-, 3- and 4-processor enclosure systems.
f	The Power 710, 720, 730, 740 Express “B” and “C” models introduced earlier are not included in this document.
g	CPW values for servers with more than 32 cores shown using two or more partitions. For example two 24-core partitions for a 48-core CPW listing. Or two 32-core partitions for a 64-core CPW listing. Or a 24-core and 12-core partitions or two 18-core partitions for a 36-core CPW listing.
h	Maximum drives refers to a system limit. There may also be per-partition limits. For example IBM i has a maximum of about 2800 paths per partition.
j	Each Power 795 4.0 GHz processor book has four sockets, with each socket having eight POWER7 processor cores. If run in optional TurboCore mode at 4.25 GHz, only half the cores in each socket are available to be activated, with each of those cores having access to 8 MB of Level 3 (L3) cache, rather than the standard 4 MB of L3 cache. At least three processor books must be installed to run in TurboCore mode.
l	EXP12S & EXP24S & EXP30 drawers not supported on 4-core Power 710 Express and PowerLinux 7R1 configurations.
m	EXP 12S & EXP24S & EXP30 drawers and 12X I/O drawers not supported on 4-core Power 720 Express configurations.
n	Option is supported on IBM i only through VIOS.
o	Not included in the five PCIe Gen2 system slots is an additional (6 <sup>th</sup> ) dedicated PCIe 4x slot for LAN adapter usage
p	rPerf values for 96-core 780 shown using three 32-core partitions and 128-core 780 using two 64-core partitions
r	Max 64 cores (128 threads) per AIX 5.3 partition. Max 64 cores (256 threads) per AIX 6 partition. Max 256 cores (1024 threads) per AIX 7 partition. Max 32 cores (128 threads) per IBM i partition except when an approved RPQ allows greater than 32 cores.
s	The Power 710 8268-E1D is only offered in specific countries
*	Full benchmark results are located at <a href="http://ibm.com/systems/power/hardware/reports/system_perf.html">ibm.com/systems/power/hardware/reports/system_perf.html</a>

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

## IBM Power Systems

On a Smarter Planet, the rise of mobile devices, big data, analytics and social business are creating explosive growth in compute intensive workloads including transaction processing, ERP, and other data-centric workloads. These applications are remaking businesses and driving the need for smarter computing. Today, businesses need to differentiate themselves, gain business insights faster and deliver an exceptional client experience through solutions that are efficient, secure and affordable. For more than a decade, businesses have relied on IBM Power Systems to deliver industry leading performance, scalability and virtualization flexibility to address their compute intensive requirements. With the new IBM Power Systems servers with POWER7+ businesses of all sizes can:

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- **Deliver an exceptional client experience** with systems and software that provide unique capabilities, Power Experts and expertise and a vast network of Business Partners and Solution Providers to ensure you're receiving rapid and long lasting benefits from your investment





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# IBM PureFlex™ System with POWER7

	 PureFlex System	 Flex System Chassis	 Flex System 260 Flex System p460
<a href="http://www.ibm.com/systems/flex/comp ute-nodes/power/">http://www.ibm.com/systems/flex/comp ute-nodes/power/</a>	IBM PureFlex System Express	IBM PureFlex System Standard	IBM PureFlex System Enterprise
IBM PureFlex System 42U Rack	1	1	1
Compute nodes required	1 p260 or 1 p24L	1 p260 or 1 p460 or 1 p24L	2 p460 or 2 p24L
IBM Flex System p260 Compute Node	Optional	Optional	Optional
IBM Flex System p460 Compute Node	Optional	Optional	Optional
IBM Flex System PowerLinux p24L Compute Node <sup>1</sup>	Optional	Optional	Optional
Operating Systems Supported	AIX 6 AIX 7 IBM i 6.1 IBM i 7.1 RHEL 5 & 6 SLES 11	AIX 6 AIX 7 IBM i 6.1 IBM i 7.1 RHEL 5 & 6 SLES 11	AIX 6 AIX 7 IBM i 6.1 IBM i 7.1 RHEL 5 & 6 SLES 11
IBM Flex System Enterprise Chassis	1	1	1
IBM Flex System Fabric EN4093 10Gb Scalable Switch	1	1	2 with both port-count upgrades
IBM Flex System FC3171 8Gb SAN Switch	1	2	2
Chassis power supplies (std/max)	2 / 6	4 / 6	6 / 6
Chassis 80 mm fan modules (std/max)	4 / 8	6 / 8	8 / 8
IBM Flex System Manager Node	1	1	1
IBM Flex System Manager software license	Flex System Manager with 1-year service and support	Flex System Manager Advanced with 3-year service and support	Flex System Manager Advanced with 3-year service and support
Chassis Management Module	2	2	2
IBM Storwize® V7000 Disk System	Yes (redundant controller) 2 SDD 8 HDD	Yes (redundant controller) 2 SDD 16 HDD	Yes (redundant controller) 4 SDD 16 HDD
IBM Storwize V7000 Software	Base with 1-year software maintenance agreement	Base with 3-year software maintenance agreement	Base with 3-year software maintenance agreement
Virtualization Software <sup>2</sup>	PowerVM Standard PowerVM Enterprise (optional)	PowerVM Enterprise	PowerVM Enterprise
Security Software	PowerSC (AIX only)	PowerSC (AIX only)	PowerSC (AIX only)
Cloud Software	SmartCloud Entry (optional)	SmartCloud Entry	SmartCloud Entry
Expert Integrated Deployment Services	Remote planning and start-up including inventory, discovery and setup. initial configuration of storage and management	Includes all Express elements plus virtual server provisioning. Simplify workload deployment and skills transfer	Includes all Express and Standard elements plus configuration of system pools, Populate virtual appliance and simplify network & cloud integration
MTS Services	3 years with 1 microcode analysis per year	3 years with 1 microcode analysis per year Account Advocate 9x5 support	3 years with 2 microcode analysis per year Account Advocate 24x7 support

1. Only supports Linux operating systems.

2. PowerLinux p24L compute nodes are supported by IBM PowerVM for IBM PowerLinux

**Power 710 and 730 Express <sup>f</sup>**

Product Line	IBM Power 710 Express	IBM Power 730 Express
Machine type	8231-E1D,8268-E1D <sup>s</sup>	8231-E2D
System packaging	19" rack drawer (2U)	19" rack drawer (2U)
Microprocessor type	64-bit POWER7+	64-bit POWER7+
# of processor sockets per server	1	2
Processor options	3.6 GHz (4)   4	4.3 GHz (4)   8
GHz (cores/socket)   # of cores	4.2 GHz (6)   6	4.2 GHz (6)   12
	4.2 GHz (8)   8	3.6 GHz (8)   16
		4.2 GHz (8)   16
EnergyScale	Y	Y
Level 2 (L2) cache per core	256 KB	256 KB
Level 3 (L3) cache per core	10 MB	10 MB
System memory (minimum - maximum)	8 GB – 256 GB (1066 MHz DDR3)	8 GB -512 GB (1066 MHz DDR3)
Active Memory Expansion	Optional	Optional
<b>Reliability, availability, serviceability</b>		
Chipkill memory	Y	Y
Service processor	Y	Y
Hot-swappable disks	Y	Y
Dynamic Processor Deallocation	Y	Y
Processor Instruction Retry	Y	Y
Alternate Processor Recovery	Y	Y
Dynamic deallocation: PCI bus slots	Y	Y
Hot-plug PCI slots	N/A	N/A (in system unit) Y (in 12X I/O drawers)
Blind-swap PCI slots in system unit	N/A	N/A
Redundant hot-plug power	Optional	Y
Redundant hot-plug cooling	Y	Y
Node Add, Node Repair, Memory Upgrade	N/A	N/A
Dual VIOS	Optional	Optional
<b>Capacity and expandability</b>		
Capacity on Demand (CoD) functions	N/A	N/A
PowerVM Express Edition	Optional	Optional
PowerVM Standard Edition	Optional	Optional
PowerVM Enterprise Edition	Optional	Optional
Max logical partitions/micro-partitions	160 (20 per core)	320 (20 per core)
Maximum system unit PCI slots <sup>o</sup>	5 PCIe 8x low profile	5 PCIe 8x low profile
Max PCI slots: system unit <sup>o</sup>	5 PCIe 8x low profile	5 PCIe 8x low profile
+ PCI-X 12X I/O drwrs	12X drawer not supported	12X PCI-X drawer not supported
Max PCI slots: system unit <sup>o</sup>	5 PCIe 8x low profile	4 PCIe 8x low profile +
+ PCIe 12X I/O drwrs	12X drawer not supported	20 PCIe 8x full high
System Unit: Disk/SSD bays   media bays (select one of three options)	3 SFF   2 (DVD & tape) <sup>n</sup> 6 SFF   1 (DVD) <sup>n</sup> 6 SFF w/ RAID   1 (DVD)	3 SFF   2 (DVD & tape) <sup>n</sup> 6 SFF   1 (DVD) <sup>n</sup> 6 SFF w/ RAID   1 (DVD)
Maximum disk storage in system unit	5.4 TB (with six 900 GB disks)	5.4 TB (with six 900 GB disks)
Maximum I/O loops (12X)	N/A	1
Maximum PCI-X 12X I/O drawers	N/A	N/A
Maximum PCIe 12X I/O drawers	N/A	2
Max disk drives (sys unit +I/O drawers)   Storage	102   91 TB (900 SFF GB drives in system unit and in EXP24S drawer <sup>l</sup> , )	378   340 TB (900 GB SFF drives in system unit, in EXP24S drawers and in #5802 12X drawers.)
Max Ultra SSD I/O Drawer   TB	½   11.6 TB	1   11.6TB
<b>Performance*</b>		
AIX rPerf	3.6 GHz (4): 53.9 (4)	4.3 GHz (4): 120.4 (8)
GHz (cores/socket): perf (# cores)	4.2 GHz (6): 90.6 (6)	4.2 GHz (6): 176.6 (12),
	4.2 GHz (8): 115.5 (8)	3.6 GHz (8): 197.7 (16)
		4.2 GHz (8): 223.1 (16)
IBM i CPW	3.6 GHz (4): 28,400 (4)	4.3 GHz (4): 59,700 (8)
GHz (cores/socket): perf (# cores)	4.2 GHz (6): 49,400 (6)	4.2 GHz (6): 89,200 (12),
	4.2 GHz (8): 64,500 (8)	3.6 GHz (8): 104,700 (16)
		4.2 GHz (8): 117,600 (16)

IBM Power Systems  
**PowerLinux 7R1<sup>d</sup>**

Product Line	IBM PowerLinux™ 7R1	IBM PowerLinux 7R1
Machine type	8246-L1D	8246-L1T
System packaging	19" rack drawer (2U)	19" rack drawer (2U)
Microprocessor type	64-bit POWER7+	64-bit POWER7+
# of processor sockets per server	1	1
Processor options	3.6 GHz (8)   4	3.6 GHz (8)   4
GHz (cores/socket)   # of cores	4.2 GHz (8)   6	4.2 GHz (8)   6
	4.2 GHz (8)   8	4.2 GHz (8)   8
EnergyScale	Y	Y
Level 2 (L2) cache per core	256 KB	256 KB
Level 3 (L3) cache per core	10 MB	10 MB
System memory (minimum - maximum)	32 GB – 256 GB (1066 MHz DDR3)	32 GB – 256 GB (1066 MHz DDR3)
Active Memory Expansion	N/A	N/A
<b>Reliability, availability, serviceability</b>		
Chipkill memory	Y	Y
Service processor	Y	Y
Hot-swappable disks	Y	Y
Dynamic Processor Deallocation	Y	Y
Processor Instruction Retry	Y	Y
Alternate Processor Recovery	Y	Y
Dynamic deallocation: PCI bus slots	Y	Y
Hot-plug PCI slots	N/A	N/A
Blind-swap PCI slots in system unit	N/A	N/A
Redundant hot-plug power	Optional	Optional
Redundant hot-plug cooling	Y	Y
Node Add, Node Repair, Memory Upgrade	N/A	N/A
Dual VIOS	Optional	Optional
<b>Capacity and expandability</b>		
Capacity on Demand (CoD) functions	N/A	N/A
PowerVM for IBM PowerLinux	Required	Required
Max logical partitions/micro-partitions	160 (20 per core)	160 (20 per core)
Maximum system unit PCI slots <sup>o</sup>	5 PCIe 8x low profile	5 PCIe 8x low profile
Max PCI slots: system unit <sup>o</sup>	5 PCIe 8x low profile	5 PCIe 8x low profile
PCIe 12X I/O drwrs	12X drawer not orderable	12X drawer not orderable
System Unit: Disk/SSD bays   media bays (select one of three options)	3 SFF   2 (DVD & tape) <sup>n</sup> 6 SFF   1 (DVD) <sup>n</sup> 6 SFF w/ RAID   1 (DVD)	3 SFF   2 (DVD & tape) <sup>n</sup> 6 SFF   1 (DVD) <sup>n</sup> 6 SFF w/ RAID   1 (DVD)
Maximum disk storage in system unit	5.4 TB (with six 900 GB disks)	5.4 TB (with six 900 GB disks)
Maximum I/O loops (12X)	N/A	N/A
Maximum PCI-X 12X I/O drawers	N/A	N/A
Maximum PCIe 12X I/O drawers	N/A	N/A
Max disk drives (sys unit +I/O drawers)   Storage	5.4 TB (with six 900 SFF GB drives) (No drawer available)	102   91 TB (900 SFF GB drives in system unit and in EXP24S drawer <sup>l</sup> , )
<b>Performance*</b>		
Linux performance	IBM internal testing shows performance is similar to the Power 710 system on workloads running the same software stack.	IBM internal testing shows performance is similar to the Power 710 system on workloads running the same software stack.

IBM Power Systems  
**PowerLinux 7R2<sup>d</sup>**

Product Line	IBM PowerLinux 7R2	IBM PowerLinux 7R2
Machine type	8246-L2D	8246-L2T
System packaging	19" rack drawer (2U)	19" rack drawer (2U)
Microprocessor type	64-bit POWER7+	64-bit POWER7+
# of processor sockets per server	2	2
Processor options	3.6 GHz (8)   16	3.6 GHz (8)   16
GHz (cores/socket)   # of cores	4.2 GHz (8)   16	4.2 GHz (8)   16
EnergyScale	Y	Y
Level 2 (L2) cache per core	256 KB	256 KB
Level 3 (L3) cache per core	10 MB	10 MB
System memory (minimum - maximum)	32 GB – 512 GB (1066 MHz DDR3)	32 GB – 512 GB (1066 MHz DDR3)
Active Memory Expansion	N/A	N/A
<b>Reliability, availability, serviceability</b>		
Chipkill memory	Y	Y
Service processor	Y	Y
Hot-swappable disks	Y	Y
Dynamic Processor Deallocation	Y	Y
Processor Instruction Retry	Y	Y
Alternate Processor Recovery	Y	Y
Dynamic deallocation: PCI bus slots	Y	Y
Hot-plug PCI slots	N/A	N/A
Blind-swap PCI slots in system unit	N/A	N/A
Redundant hot-plug power	Y	Y
Redundant hot-plug cooling	Y	Y
Node Add, Node Repair, Memory Upgrade	N/A	N/A
Dual VIOS	Optional	Optional
<b>Capacity and expandability</b>		
Capacity on Demand (CoD) functions	N/A	N/A
PowerVM for PowerLinux	Optional	Optional
Max logical partitions/micro-partitions	320 (20 per core)	320 (20 per core)
Maximum system unit PCI slots <sup>o</sup>	5 PCIe 8x low profile	5 PCIe 8x low profile
Max PCI slots: system unit <sup>o</sup>	5 PCIe 8x low profile	5 PCIe 8x low profile
+ PCI-X 12X I/O drwrs	12X drawer not supported	12X drawer not supported
Max PCI slots: system unit <sup>o</sup>	5 PCIe 8x low profile	4 PCIe 8x low profile +
+ PCIe 12X I/O drwrs	12X drawer not supported	20 PCIe 8x full high
System Unit: Disk/SSD bays   media bays (select one of three options)	3 SFF   2 (DVD & tape) <sup>n</sup> 6 SFF   1 (DVD) <sup>n</sup> 6 SFF w/ RAID   1 (DVD)	3 SFF   2 (DVD & tape) <sup>n</sup> 6 SFF   1 (DVD) <sup>n</sup> 6 SFF w/ RAID   1 (DVD)
Maximum disk storage in system unit	5.4 TB (with six 900 GB disks)	5.4 TB (with six 900 GB disks)
Maximum I/O loops (12X)	N/A	1
Maximum PCI-X 12X I/O drawers	N/A	N/A
Maximum PCIe 12X I/O drawers	N/A	2
Max disk drives (sys unit +I/O drawers)   Storage	6   5.4 TB (900 SFF GB drives in system unit)	378   340 TB (900 GB SFF drives in system unit, in EXP24S drawers and in #5802 12X drawers.)
<b>Performance*</b>		
Linux performance	IBM internal testing shows performance is similar to the Power 730 system on workloads running the same software stack.	IBM internal testing shows performance is similar to the Power 730 system on workloads running the same software stack.

**Power 720 and 740 Express<sup>f</sup>**

Product Line	IBM Power 720 Express	IBM Power 740 Express
Machine type	8202-E4D	8205-E6D
System packaging	19" rack drawer (4U) or tower	19" rack drawer (4U)
Microprocessor type	64-bit POWER7+	64-bit POWER7+
# of processor sockets per server	1	1 or 2
Processor options	3.6 GHz (4)   4	4.2 GHz (6)   6, 12
GHz (cores/socket)   # of cores	3.6 GHz (6)   6	3.6 GHz (8)   8, 16
	3.6 GHz (8)   8	4.2 GHz (8)   8, 16
EnergyScale	Y	Y
Level 2 (L2) cache per core	256 KB	256 KB
Level 3 (L3) cache per core	10 MB	10 MB
System memory (minimum - maximum)	4-core: 8 GB – 64 GB (1066 MHz DDR3)	1-socket 8 GB – 512 GB (1066 MHz DDR3)
	6- or 8-core: 8 GB – 512 GB (1066 MHz DDR3)	2-socket 8 GB – 1024 GB (1066 MHz DDR3)
Active Memory Expansion	Optional	Optional
<b>Reliability, availability, serviceability</b>		
Chipkill memory	Y	Y
Service processor	Y	Y
Hot-swappable disks	Y	Y
Dynamic Processor Deallocation	Y	Y
Processor Instruction Retry	Y	Y
Alternate Processor Recovery	Y	Y
Dynamic deallocation: PCI bus slots	Y	Y
Hot-plug PCI slots	N/A (in system unit) Y (in 12X I/O drawers)	N/A (in system unit) Y (in 12X I/O drawers)
Blind-swap PCI slots in system unit	N/A	N/A
Redundant hot-plug power	Optional	Y
Redundant hot-plug cooling	Y	Y
Node Add & Repair, Memory Upgrade	N/A	N/A
Dual VIOS	Optional	Optional
<b>Capacity and expandability</b>		
Capacity on Demand (CoD) functions	N/A	N/A
PowerVM: Express, Standard or Enterprise Edition	Optional	Optional
Max logical partitions/micro-partitions	160 (20 per core)	320 (20 per core)
Maximum system unit PCI slots <sup>o</sup>	5 PCIe 8x full high + optional 4 PCIe 8x low profile	5 PCIe 8x full high + optional 4 PCIe low profile
Max PCI slots: system unit <sup>o</sup> + PCI-X 12X I/O drwrs	5 PCIe 8x full high + 24 PCI-X DDR (64-bit)	5 PCIe 8x full high + 48 PCI-X DDR (64-bit)
Max PCI slots: system unit <sup>o</sup> + PCIe 12X I/O drwrs	5 PCIe 8x full high + 20 PCIe 8x	5 PCIe 8x full high + 40 PCIe 8x
System Unit: Disk/SSD bays   media bays (select one of two options)	6 SFF   2 (DVD & tape) <sup>n</sup> 8 SFF w/ RAID   2 (DVD & tape)	6 SFF   2 (DVD & tape) <sup>n</sup> 8 SFF w/ RAID   2 (DVD & tape)
Maximum disk storage in system unit	7.2 TB (with eight 900 GB disks)	7.2 TB (with eight 900 GB disks)
Maximum I/O loops (12X)	1	2
Maximum PCI-X 12X I/O drawers <sup>m</sup>	4 (max 4 drawers per loop)	8 (max 4 drawers per loop)
Maximum PCIe 12X I/O drawers <sup>m</sup>	2 (max 2 drawers per loop)	4 (max 2 drawers per loop)
Max disk drives (sys unit +I/O drawers)   Storage	380   342 TB (900 GB SFF drives in system unit, #5802 and EXP24S drawers <sup>m</sup> )	416   374 TB (900 GB SFF drives in system unit, #5802 and EXP24S drawers),
Maximum Ultra SSD I/O Drawer   TB	1   11.6 TB	2   23.2 TB
<b>Performance*</b>		
AIX rPerf	3.6 GHz (4): 53.9 (4)	4.2 GHz (6): 90.6 (6), 176.6 (12)
GHz (cores/socket): perf (# cores)	3.6 GHz (6): 79.5 (6), 3.6 GHz (8): 102.4 (8)	3.6 GHz (8): 102.4 (8), 197.7 (16) 4.2 GHz (8): 115.5 (8), 223.1 (16)
IBM i CPW	3.6 GHz (4): 28,400 (4)	4.2 GHz (6): 49,000 (6), 91,700 (12)
GHz (cores/socket): perf (# cores)	3.6 GHz (6): 42,400 (6), 3.6 GHz (8): 56,300 (8)	3.6 GHz (8): 56,300 (8), 106,500 (16) 4.2 GHz (8): 64,500 (8), 120,000 (16)



## Power 750 Express with POWER7



### Watson and the IBM Power 750 Express

Watson is based on a cluster of 90 IBM Power 750 servers, each with 32 POWER7 cores running at 3.55 GHz with a combined total of 16 Terabytes of memory. Designing Watson on commercially available Power 750 servers will ensure more rapid adoption of optimized systems in industries such as healthcare and financial services. For a white paper on Watson – A System Designed for Answers, see <https://www14.software.ibm.com/webapp/iwm/web/signup.do?source=stg-600BE30W>

Product Line	IBM Power 750 Express
Machine type	8233-E8B
System packaging	19" rack drawer (4U)
Microprocessor type	64-bit POWER7
# of processor sockets per server	1 – 4 (one per processor card)
<u>Processor options</u> GHz (cores/socket)   # of cores	3.2 GHz (8)   8, 16, 24, 32
	3.6 GHz (8)   8, 16, 24, 32
	3.7 GHz (4)   4, 8, 12, 16
	3.7 GHz (6)   6, 12, 18, 24
EnergyScale	Y
Level 2 (L2) cache per core	256 KB
Level 3 (L3) cache per core	4 MB
System memory (minimum - maximum)	8 GB – 512 GB (1066 MHz DDR3)
Active Memory Expansion	Optional
<b>Reliability, availability, serviceability</b>	
Chipkill memory	Y
Service processor	Y
Hot-swappable disks	Y
Dynamic Processor Deallocation	Y
Processor Instruction Retry	Y
Alternate Processor Recovery	Y
Dynamic deallocation: PCI bus slots	Y
Hot-plug PCI slots	Y
Blind-swap PCI slots in system unit	N/A
Redundant hot-plug power	Y
Redundant hot-plug cooling	Y
Node Add, Node Repair, Memory Upgrade	N/A
NEBS compliant	Optional
Dual VIOS	Optional
<b>Capacity and expandability</b>	
Capacity on Demand (CoD) functions	-
PowerVM Express Edition	Optional
PowerVM Standard Edition	Optional
PowerVM Enterprise Edition	Optional
Max logical partitions/micro-partitions	320 (10 per core)
Maximum system unit PCI slots	2 PCI-X DDR (64-bit) + 3 PCIe 8x
Max PCI slots: system unit + PCI-X 12X I/O drwrs	50 PCI-X DDR (64-bit) + 1 PCIe 8x
Max PCI slots: system unit + PCIe 12X I/O drwrs	2 PCI-X DDR (64-bit) + 41 PCIe 8x
System Unit: Disk/SSD bays   media bays	8 SFF   2 (1 bay optional)
Maximum disk storage in system unit	7.2 TB (with eight 900 GB disks)
Maximum I/O loops (12X)	1-socket: 1, 2- to 4-socket: 2
Maximum PCI-X 12X I/O drawers	8 (max 4 drawers per loop)
Maximum PCIe 12X I/O drawers	4 (max 2 drawers per loop)
Max disk drives (sys unit +I/O drawers)   Storage	584   525 TB with 900 GB drives
<b>Performance*</b>	
AIX rPerf	3.2 GHz (8): 85.29 (8), 163.75 (16), 235.39 (24), 307.03 (32)
GHz (cores/socket): perf (# cores)	3.6 GHz (8): 93.05 (8), 178.65 (16), 256.81 (24), 334.97 (32)
	3.7 GHz (4): 52.90 (4), 101.57 (8), 146.00 (12), 190.44 (16)
	3.7 GHz (6): 76.71 (6), 147.27 (12), 211.71 (18), 276.14 (24)
IBM i CPW	3.2 GHz (8): 47800 (8), 89600 (16), 131500 (24), 171400 (32)
GHz (cores/socket): perf (# cores)	3.6 GHz (8): 52700 (8), 97000 (16), 141400 (24), 183200 (32)
	3.7 GHz (4): 27300 (4), 51000 (8), 74700 (12), 97700 (16)
	3.7 GHz (6): 40800 (6), 75500 (12), 109100 (18), 145600 (24)

**Power 750 Express with POWER7+**

<b>Product Line</b>	<b>IBM Power 750 Express</b>
Machine type	8408-E8D
System packaging	19" rack drawer (5U)
Microprocessor type	64-bit POWER7+
# of processor sockets per server	1 – 4
Processor options	3.5 GHz (8-core DCM)   8, 16, 24, 32
GHz (cores/socket)   # of cores	4.0 GHz (8-core DCM)   8, 16, 24, 32
EnergyScale	Y
Level 2 (L2) cache per core	256 KB
Level 3 (L3) cache per core	10 MB
System memory (minimum - maximum)	32 GB – 1 TB (1066 MHz DDR3)
Active Memory Expansion	Optional
<b>Reliability, availability, serviceability</b>	
Chipkill memory	Y
Service processor	Y
Hot-swappable disks	Y
Dynamic Processor Deallocation	Y
Processor Instruction Retry	Y
Alternate Processor Recovery	Y
Dynamic deallocation: PCI bus slots	Y
Hot-plug PCI slots	Y
Blind-swap PCI slots in system unit	Y
Redundant hot-plug power	Y
Redundant hot-plug cooling	Y
Node Add, Node Repair, Memory Upgrade	N/A
NEBS compliant	N/A
Dual VIOS	Optional
<b>Capacity and expandability</b>	
Capacity on Demand (CoD) functions	-
PowerVM Express Edition	Optional
PowerVM Standard Edition	Optional
PowerVM Enterprise Edition	Optional
Max logical partitions/micro-partitions	640 (20 per core)
Maximum system unit PCI slots	6 PCIe-Gen2
Max PCI slots: system unit + PCI-X 12X I/O drwrs	6 PCIe-Gen2 + 0 PCI-X slots
Max PCI slots: system unit + PCIe 12X I/O drwrs	6 PCIe-Gen2 + 40 PCIe Gen1 slots
System Unit: Disk/SSD bays   media bays	6 SFF   1
Maximum disk storage in system unit	5.4 TB (with six 900 GB disks)
Maximum I/O loops (12X)	1-socket: 0, 2- to 4-socket: 2
Maximum PCI-X 12X I/O drawers	N/A
Maximum PCIe 12X I/O drawers	4 (max 2 drawers per loop)
Max disk drives (sys unit +I/O drawers)   Storage	1302 <sup>n</sup>   1,171 TB with 900 GB drives
Maximum Ultra SSD I/O Drawer   TB	2   23.2 TB
<b>Performance*</b>	
AIX rPerf	3.5 GHz (8): 104.5 (8), 197.0 (16), 275.9 (24), 354.9 (32)
GHz (cores/socket): perf (# cores)	4.0 GHz (8): 117.1 (8), 220.7 (16), 309.2 (24), 397.7 (32)
IBM i CPW	3.5 GHz (8): 52,000(8), 96,000(16), 141,500(24), 185(32)
GHz (cores/socket): perf (# cores)	4.0 GHz (8): 59,000(8), 108,000(16), 158,000(24), 208,000(32)

IBM Power Systems  
**Power 760 Express**

<b>Product Line</b>	<b>IBM Power 760</b>
Machine type	9109-RMD
System packaging	19" rack drawer (5U)
Microprocessor type	64-bit POWER7+
# of processor sockets per server	1 – 4
Processor options	3.1 GHz (12-core DCM)   12,,24, 36, 48
GHz (cores/socket)   # of cores	3.4 GHz (12-core DCM)   12, 24, 36, 48
EnergyScale	Y
Level 2 (L2) cache per core	256 KB
Level 3 (L3) cache per core	10 MB
System memory (minimum - maximum)	32 GB – 2 TB (1066 MHz DDR3)
Active Memory Expansion	Optional
<b>Reliability, availability, serviceability</b>	
Chipkill memory	Y
Service processor	Y
Hot-swappable disks	Y
Dynamic Processor Deallocation	Y
Processor Instruction Retry	Y
Alternate Processor Recovery	Y
Dynamic deallocation: PCI bus slots	Y
Hot-plug PCI slots	Y
Blind-swap PCI slots in system unit	Y
Redundant hot-plug power	Y
Redundant hot-plug cooling	Y
Node Add, Node Repair, Memory Upgrade	N/A
NEBS compliant	N/A
Dual VIOS	Optional
<b>Capacity and expandability</b>	
Capacity on Demand (CoD) functions	Y <sup>N</sup> , CUoD processors
PowerVM Express Edition	N/A
PowerVM Standard Edition	Optional
PowerVM Enterprise Edition	Optional
Max logical partitions/micro-partitions	960 (20 per core)
Maximum system unit PCI slots	6 PCIe-Gen2
Max PCI slots: system unit + PCI-X 12X I/O drwrs	6 PCIe-Gen2 + 0 PCI-X slots
Max PCI slots: system unit + PCIe 12X I/O drwrs	6 PCIe-Gen2 + 40 PCIe Gen1 slots
System Unit: Disk/SSD bays   media bays	6 SFF   1
Maximum disk storage in system unit	5.4 TB (with six 900GB drives)
Maximum I/O loops (12X)	1-socket: 0, 2- to 4-socket: 2
Maximum PCI-X 12X I/O drawers	N/A
Maximum PCIe 12X I/O drawers	4 (max 2 drawers per loop)
Max disk drives (sys unit +I/O drawers)   Storage	1302 <sup>h</sup>   1,171 TB with 900 GB drives
Maximum Ultra SSD I/O Drawer   TB	2   23.2 TB
<b>Performance*</b>	
AIX rPerf	3.1 GHz (12): 142.1 (12), 264.8 (24), 370.7 (36), 476.7 (48)
GHz (cores/socket): perf (# cores)	3.4 GHz (12): 151.4 (12), 282.1 (24), 395.0 (36), 507.8 (48)
IBM i CPW <sup>g</sup>	3.1 GHz (12): 69,800(12), 129,000(24), 194,700(36), 258,000(48)
GHz (cores/socket): perf (# cores)	3.4 GHz (12): 75,200(12), 137,000(24), 209,000(36), 274,000(48)

IBM Power Systems  
**Power 770<sup>b</sup>**

<b>Product Line</b>		<b>IBM Power 770</b>
Machine type	9117-MMD	
System packaging	19" rack drawer (4U per node) 1 – 4 nodes per CEC	
Microprocessor type	64-bit POWER7+	
# of processor sockets per server	4, 8, 12, 16 (4 per CEC enclosure)	
Processor options	3.8 GHz (4)   16, 32, 48, 64 4.2 GHz (3)   12, 24, 36, 48	
GHz (cores/socket)   # of cores   Min. 4 active		
EnergyScale	Y	
Level 2 (L2) cache per core	256 KB	
Level 3 (L3) cache per core	10 MB	
System memory (min physical/min active/maximum)	64 GB/32 GB/4 TB (1066 MHz DDR3)	
Active Memory Expansion	Optional	
<b>Reliability, availability, serviceability</b>		
Chipkill memory	Y	
Service processor	Redundant SP and clock with failover (2 nodes or more)	
Hot-swappable disks	Y	
Dynamic Processor Deallocation	Y	
Processor Instruction Retry	Y	
Alternate Processor Recovery	Y	
Dynamic deallocation: PCI bus slots	Y	
Hot-plug PCI slots	Y	
Blind-swap PCI slots in system unit	Y	
Active Memory Mirroring	Optional	
Redundant hot-plug power	Y	
Redundant hot-plug cooling	Y	
Node Add, Node Repair, Memory Upgrade	Y <sup>e</sup>	
Dual VIOS	Optional	
<b>Capacity and expandability</b>		
Capacity on Demand (CoD) functions	Y <sup>m</sup>	
PowerVM Express Edition	N/A	
PowerVM Standard Edition	Optional	
PowerVM Enterprise Edition	Optional	
Max logical partitions/micro-partitions <sup>r</sup>	1000	
Maximum system unit PCI slots	24 PCIe 8x (6 per enclosure)	
Max PCI slots: system unit + PCI-X 12X I/O drawers	24 PCIe + 192 PCI-X DDR	
Max PCI slots: system unit + PCIe 12X I/O drawers	184 PCIe	
System unit: Disk bays   media bays	24 SFF   4 (optional)	
Maximum disk storage in system unit	21.6 TB (with 24 900 GB disks)	
Maximum I/O loops (12X)	8	
Maximum PCI-X 12X I/O drawers	32	
Maximum PCIe 12X I/O drawers	16	
Max disk drives (system unit+I/O drawers)   Storage	3024 <sup>n</sup>   2731 TB with 900 GB drives	
Maximum Ultra SSD I/O Drawer   TB	8   92.8 TB (2 per enclosure)	
<b>Performance*</b>		
AIX rPerf	3.8 GHz (4): 219.3(16), 410.8(32), 570.1(48), 729.3(64)	
GHz (cores/socket): perf (# cores)	4.2 GHz (3): 184.2(12), 345.1(24), 478.9(36), 612.7(48)	
IBM i CPW	3.8 GHz (4): 110,000(16), 191,500(32), 290,500(48) <sup>9</sup> , 379,300(64) <sup>9</sup>	
GHz (cores/socket): perf (# cores)	4.2 GHz (3): 90,000(12), 154,800(24), 242,600(36) <sup>9</sup> , 306,600(48) <sup>9</sup>	

IBM Power Systems  
**Power 780<sup>b</sup>**

Product Line	IBM Power 780
Machine type	9179-MHD
System packaging	19" rack drawer (4U per node) 1 – 4 nodes per CEC
Microprocessor type	64-bit POWER7+
# of processor sockets per server	4, 8, 12, 16 (4 per CEC enclosure)
Processor options	3.7 GHz (8)   32, 64, 96, 128
GHz (cores/socket)   # of cores   Min. 4 active	4.4 GHz (4)   16, 32, 48, 64
EnergyScale	Y
Level 2 (L2) cache per core	256 KB
Level 3 (L3) cache per core	10 MB
System memory (min physical/min active/maximum)	64 GB/32 GB/4 TB (1066 MHz DDR3)
Active Memory Expansion	Optional
Reliability, availability, serviceability	
Chipkill memory	Y
Service processor	Redundant SP and clock with failover (2 nodes or more)
Hot-swappable disks	Y
Dynamic Processor Deallocation	Y
Processor Instruction Retry	Y
Alternate Processor Recovery	Y
Dynamic deallocation: PCI bus slots	Y
Hot-plug PCI slots	Y
Blind-swap PCI slots in system unit	Y
Active Memory Mirroring	Y
Redundant hot-plug power	Y
Redundant hot-plug cooling	Y
Node Add, Node Repair, Memory Upgrade	Y <sup>e</sup>
Dual VIOS	Optional
Capacity and expandability	
Capacity on Demand (CoD) functions	Y <sup>M, M+</sup>
PowerVM Express Edition	-
PowerVM Standard Edition	Optional
PowerVM Enterprise Edition	Optional
Max logical partitions/micro-partitions <sup>r</sup>	1000
Maximum system unit PCI slots	24 PCIe 8x (6 per enclosure)
Max PCI slots: system unit + PCI-X 12X I/O drawers	24 PCIe 8x + 192 PCI-X DDR
Max PCI slots: system unit + PCIe 12X I/O drawers	24+160 PCIe 8x
System Unit: Disk bays   media bays	24 SFF   4 (optional)
Maximum disk storage in system unit	21.6 TB (with 24 900 GB disks)
Maximum I/O loops (12X)	8
Maximum PCI-X 12X I/O drawers	32
Maximum PCIe 12X I/O drawers	16
Max disk drives (system unit+I/O drawers)   Storage	3024 <sup>h</sup>   2731 TB with 900 GB drives
Maximum Ultra SSD I/O Drawer   TB	8   92.8 TB (2 per enclosure)
Performance*	
AIX rPerf GHz (cores/socket): perf (# cores)	3.7 GHz (8): 383.9(32), 690.1(64), 1151.6(96) <sup>p</sup> , 1380.19(128) <sup>p</sup> 4.4 GHz (4): 245.7(16), 460.3(32), 638.7(48), 817.1(64)
IBM i CPW GHz (cores/socket): perf (# cores)	3.7 GHz (8): 209,500(32), 414,900(64), 622,300(96) <sup>g</sup> , 829,800(128) <sup>g</sup> 4.4 GHz (4): 123,500(16), 214,000(32) , 326,100(48) <sup>g</sup> , 424,400(64) <sup>g</sup>

**Power 795**

<b>Product Line</b>		<b>IBM Power 795</b>
Machine type		9119-FHB
System packaging		24" system frame (+ expansion frames)
Microprocessor type		64-bit POWER7
# of processor sockets per server		4 – 32 (4 sockets per processor book)
Processor options		3.7 GHz (6)   24 - 192
GHz (cores/socket)   # of cores   Min. 24 active		4.0 GHz (8)   32 - 256
		4.25 GHz (4) <sup>j</sup>   24 – 128 (TurboCore mode)
EnergyScale		Y
Level 2 (L2) cache per core		256 KB
Level 3 (L3) cache per core		4 MB (MaxCore mode) 8 MB (TurboCore mode) <sup>j</sup>
System memory (min physical/min active/maximum)		64 GB/32 GB/16 TB (1066 MHz DDR3)
Active Memory Expansion		Optional
<b>Reliability, availability, serviceability</b>		
Chipkill memory		Y
Service processor		Redundant SP and clock with failover
Hot-swappable disks in I/O drawer		Y
Dynamic Processor Deallocation		Y
Processor Instruction Retry		Y
Alternate Processor Recovery		Y
Dynamic deallocation: PCI bus slots		Y
Hot-plug PCI slots in I/O drawer		Y
Blind-swap PCI slots in I/O drawer		Y
Active Memory Mirroring		Y
Redundant hot-plug power		Y
Redundant hot-plug cooling		Y
Node Add, Node Repair, Memory Upgrade		Y
Dual VIOS		Optional
<b>Capacity and expandability</b>		
Capacity on Demand (CoD) functions		Y <sup>M, M+</sup>
PowerVM Express Edition		-
PowerVM Standard Edition		Optional
PowerVM Enterprise Edition		Optional
Maximum logical partitions/micro-partitions <sup>r</sup>		1000
Maximum system unit PCI slots		Use I/O drawers
Max PCI slots: system unit + PCI-X 12X I/O drawers		600 PCI-X
Max PCI slots: system unit + PCIe 12X I/O drawers		640 PCIe
System Unit: Disk bays   media bays		Use I/O drawers
Maximum disk storage in system unit		Use I/O drawers
Maximum I/O loops (12X)		32
Maximum PCI-X 12X I/O drawers		30
Maximum PCIe 12X I/O drawers		32
Max disk drives (system unit+I/O drawers)   Storage		4032 <sup>n</sup>   3628 TB with 900 GB drives
Maximum Ultra SSD I/O Drawer   TB		N/A
<b>Performance*</b>		
AIX rPerf	3.7 GHz (6):	273.51 (24) – 2,188.08 (192)
GHz (cores/socket): perf (# cores) *	4.0 GHz (8):	372.27 (32) – 2,978.16 (256)
	4.25 GHz (4):	347.36 (24) – 1,852.56 (128)
IBM i CPW	3.7 GHz (6):	39,300 (6) – 288,500 (2 x 24-core LPARs)
GHz (cores/socket): perf (# cores) **	4.0 GHz (8):	55,100 (8) – 399,200 (2 x 32-core LPARs)
	4.25 GHz (4):	162,100 (24) – 218,400 (2 x 16-core LPARs)

\* rPerf estimates shown for the Power 795 assume the LPAR size equal to the number of cores in one processor book (24-core for 3.7 GHz, 32-core for 4.0 GHz and 16-core for 4.25 GHz).

\*\* To obtain CPW estimates for larger configurations than those shown, use the IBM Systems Workload Estimator at <http://www.ibm.com/systems/support/tools/estimator>.

**BladeCenter PS700 Express**

<b>Product Line</b>	<b>IBM BladeCenter PS700 Express</b>
Machine type	8406-70Y
System packaging	Chassis mount (1 wide)
BladeCenter chassis supported	E <sup>a</sup> , H, HT, S, T <sup>a</sup>
Microprocessor type	64-bit POWER7
# of processor sockets per blade	1
<b>Processor options</b>	
GHz (cores/socket)   # of cores	3.0 GHz (4)   4
EnergyScale™	Y
Level 2 (L2) cache per core	256 KB
Level 3 (L3) cache per core	4 MB
Blade memory (minimum - maximum)	8 GB – 64 GB (1066 MHz DDR3)
Active Memory™ Expansion	Optional
<b>Reliability, availability, serviceability</b>	
Chipkill memory	Y
Service processor	Y
Hot-swappable disks	Y (in BladeCenter S chassis)
Dynamic Processor Deallocation	Y
Processor Instruction Retry	Y
Alternate Processor Recovery	Y
Dynamic deallocation: PCI bus slots	Y
Redundant hot-plug power	Y (in chassis)
Redundant hot-plug cooling	Y (in chassis)
Hot-Node Add, Hot-Node Repair, Memory Upgrade	Hot-swap blades
Dual VIOS	Optional
<b>Capacity and expandability</b>	
Capacity on Demand (CoD) functions	N/A
PowerVM™ Express Edition	Optional
PowerVM Standard Edition	Optional
PowerVM Enterprise Edition	Optional
Max logical partitions/micro-partitions	40 (10 per core)
Available expansion card slots	1 PCIe CIOv + 1 PCIe CFFh
Maximum disk bays   Storage on blade	2 SFF   1.2 TB
RAID support for disk on blade	Y
Maximum disk bays   Storage in BladeCenter S	12   12.0 TB
Maximum media bays in chassis	1 - BladeCenter E, H, HT, S 2 - optional in BladeCenter HT
<b>Connectivity</b>	
Integrated Gigabit Ethernet ports	2
Gigabit Ethernet	Optional
10 Gbps Ethernet	Optional
4 Gbps Fibre Channel	Optional
8 Gbps Fibre Channel	Optional
10 Gbps Fibre Channel over Ethernet	Optional
4X InfiniBand®	Optional
3 Gbps SAS	Optional
<b>Performance*</b>	
AIX® rPerf range	3.0 GHz (4): 45.13 (4)
GHz (cores/socket): perf (# cores)	
IBM i CPW	3.0 GHz (4): 21100 (4)
GHz (cores/socket): perf (# cores)	

**BladeCenter PS701 & PS702 & PS703 Express**

Product Line	IBM BladeCenter PS701 Express	IBM BladeCenter PS702 Express	IBM BladeCenter PS703 Express
Machine type	8406-71Y	8406-71Y + FC 8358	7891-73X
System packaging	Chassis mount (1 wide)	Chassis mount (2 wide)	Chassis mount (1 wide)
BladeCenter chassis supported	H, HT, S	H, HT, S	H, HT, S
Microprocessor type	64-bit POWER7	64-bit POWER7	64-bit POWER7
# of processor sockets per blade	1	2	2
Processor options GHz (cores/socket)   # of cores	3.0 GHz (8)   8	3.0 GHz (8)   16	2.4 GHz (8)   16
EnergyScale	Y	Y	Y
Level 2 (L2) cache per core	256 KB	256 KB	256 KB
Level 3 (L3) cache per core	4 MB	4 MB	4 MB
Blade memory (minimum - maximum)	16 GB – 128 GB (1066 MHz DDR3)	32 GB – 256 GB (1066 MHz DDR3)	16 GB – 256 GB (1066 MHz DDR3)
Active Memory Expansion	Optional	Optional	Optional
<b>Reliability, availability, serviceability</b>			
Chipkill memory	Y	Y	Y
Service processor	Y	Y	Y
Hot-swappable disks	Y (in BladeCenter S chassis)	Y (in BladeCenter S chassis)	Y (in BladeCenter S chassis)
Dynamic Processor Deallocation	Y	Y	Y
Processor Instruction Retry	Y	Y	Y
Alternate Processor Recovery	Y	Y	Y
Dynamic deallocation: PCI bus slots	Y	Y	Y
Redundant hot-plug power	Y (in chassis)	Y (in chassis)	Y (in chassis)
Redundant hot-plug cooling	Y (in chassis)	Y (in chassis)	Y (in chassis)
Hot-Node Add, Hot-Node Repair, Memory Upgrade	Hot-swap blades	Hot-swap blades	Hot-swap blades
Dual VIOS	Optional	Optional	
<b>Capacity and expandability</b>			N/A
Capacity on Demand (CoD) functions	N/A	N/A	Optional
PowerVM Express Edition	Optional	Optional	Optional
PowerVM Standard Edition	Optional	Optional	Optional
PowerVM Enterprise Edition	Optional	Optional	160 (10 per core)
Max logical partitions/micro-partitions	80 (10 per core)	160 (10 per core)	1 PCIe CIOv + 1 PCIe CFFh
Available expansion card slots	1 PCIe CIOv + 1 PCIe CFFh	2 PCIe CIOv + 2 PCIe CFFh	1 SFF   600 GB
Maximum disk bays   Storage on blade	1 SFF   600 GB	2 SFF   1.2 TB	-
RAID support for disk on blade	-	Y	12   12.0 TB
Maximum disk bays   Storage in BladeCenter S	12   12.0 TB	12   12.0 TB	1 - BladeCenter H, HT, S 2 - optional in BladeCenter HT
Maximum media bays in BladeCenter chassis	1 - BladeCenter H, HT, S 2 - optional in BladeCenter HT	1 - BladeCenter H, HT, S 2 - optional in BladeCenter HT	Optional
<b>Connectivity</b>			
Integrated Gigabit Ethernet ports	2	4	2
Gigabit Ethernet	Optional	Optional	Optional
10 Gbps Ethernet	Optional	Optional	Optional
4 Gbps Fibre Channel	Optional	Optional	Optional
8 Gbps Fibre Channel	Optional	Optional	Optional
10 Gbps Fibre Channel over Ethernet	Optional	Optional	Optional
4X InfiniBand	Optional	Optional	Optional
3 Gbps SAS	Optional	Optional	Optional
<b>Performance*</b>			
AIX rPerf GHz (cores/socket): perf (# cores)	3.0 GHz (8): 81.24 (8)	3.0 GHz (8): 154.36 (16)	2.4 GHz (8): 134.11 (16)
IBM i CPW GHz (cores/socket): perf (# cores)	3.0 GHz (8): 42100 (8)	3.0 GHz (8): 76300 (16)	2.4 GHz (8): 64,000 (16)



**System Unit Details (POWER7 Express Servers : 710/720/730/7R1/7R2/740)**

System Unit Details	Power 710 Express 8231-E1D 8268-E1D <sup>5</sup>	Power 720 Express 8202-E4D	Power 730 Express 8231-E2D	PowerLinux 7R1 8246-L1D 8246-L1T	PowerLinux 7R2 8246-L2D 8240-L2T	Power 740 Express 8205-E6D
SAS Disk bays in CEC	3 <sup>1</sup> or 6 SFF	6 <sup>2</sup> or 8 SFF	3 <sup>1</sup> or 6 SFF	3 <sup>1</sup> or 6 SFF	3 <sup>1</sup> or 6 SFF	6 <sup>2</sup> or 8 SFF
Available media bays	1 or 2 <sup>1</sup>	2	1 or 2 <sup>1</sup>	1 or 2 <sup>1</sup>	1 or 2 <sup>1</sup>	2
Standard HH size	1 for opt. tape <sup>1</sup>	1 for opt. tape	1 for opt. tape <sup>1</sup>	1 for opt. tape <sup>1</sup>	1 for opt. tape <sup>1</sup>	1 for opt. tape
Slimline size	1 for DVD-RAM	1 for DVD-RAM	1 for DVD-RAM	1 for DVD-RAM	1 for DVD-RAM	1 for DVD-RAM
System / serial ports <sup>3</sup>	2	2	2	2	2	2
USB ports	3	3	3	3	3	3
HMC ports	2	2	2	2	2	2
SPCN ports	0	2	2 Optional	0	2 Optional	2
Integrated Ethernet adapter ports <sup>8</sup>	- <sup>8</sup>	- <sup>8</sup>	- <sup>8</sup>	- <sup>8</sup>	- <sup>8</sup>	- <sup>8</sup>
Integrated storage controllers	1 SAS/SATA	1 SAS/SATA	1 SAS/SATA	1 SAS/SATA	1 SAS/SATA	1 SAS/SATA
Max SAS speed	3.0 Gbps	3.0 Gbps	3.0 Gbps	3.0 Gbps	3.0 Gbps	3.0 Gbps
Protected write cache for integrated SAS controller	Opt. dual 175 MB. enable RAID 5/6 & help disk performance	Opt. dual 175 MB. enable RAID 5/6 & help disk performance	Opt. dual 175 MB. enable RAID 5/6 & help disk performance	Opt. dual 175 MB. enable RAID 5/6 & help disk performance	Opt. dual 175 MB. enable RAID 5/6 & help disk performance	Opt. dual 175 MB. enable RAID 5/6 & help disk performance
Optional more disk bays with write cache via external SAS port	Yes, 12 SAS with EXP12S #5886 or 24 SAS with EXP24S #5887 <sup>4</sup>	Yes, 12 SAS with EXP12S #5886 or 24 SAS with EXP24S #5887 <sup>5</sup>	Yes, 12 SAS with EXP12S #5886 or 24 SAS with EXP24S #5887	8246-L1S supports additional disk bays via external EXP24S	8246-L2S supports additional disk bays via external EXP24S	Yes, 12 SAS with EXP12S #5886 or 24 SAS with EXP24S #5887
PCI adapter slots	6	6 + 4 optional	6	6	6	6 + 4 optional
PCIe 8x Long	-	-	-	-	-	-
PCIe 8x Short	5 LP	5 FH + 4 opt. LP <sup>8</sup>	5 LP	5 LP	5 LP	5 FH + 4 opt. LP <sup>8</sup>
PCIe 4x Short	1 LP <sup>8</sup>	1 <sup>8</sup>	1 LP <sup>8</sup>	1 LP <sup>8</sup>	1 LP <sup>8</sup>	1 <sup>8</sup>
Max PCIe bus speed (GHz)	5.0 (Gen2)	5.0 (Gen2)	5.0 (Gen2)	5.0 (Gen2)	5.0 (Gen2)	5.0 (Gen2)
GX adapter slots	1 GX++	1 GX++ <sup>7</sup>	2 GX++ <sup>6</sup>	1 GX++	2 GX++ <sup>6</sup>	1GX++ (1-socket) 2 GX++ (2-sockets) <sup>7,9</sup>
PCIe 12X I/O drawers	N/A	Up to 2 <sup>5</sup>	Up to 2	N/A	N/A	Up to 4
PCI-X 12X I/O drawers	N/A	Up to 4 <sup>5</sup>	N/A	N/A	N/A	Up to 8
LED diagnostics	Y	Y	Y	Y	Y	Y

Note: The terms LP (low profile) and FH (full high or full height) refer to the size of a PCI slot or size of a PCI adapter card.

- 1 On the Power 710 and 730 Express servers, the backplane option with 3 SSF bays + DVD slot + HH tape slot is supported on IBM i only through VIOS.
- 2 On the Power 720 and 740 Express servers, the backplane option with 6 SSF bays + DVD slot + HH tape slot is supported on IBM i only through VIOS.
- 3 AIX uses only for modem and async terminal connections. Not supported by AIX when HMC ports are connected to Hardware Management Console or SDMC. IBM i can use for status link to UPS.
- 4 Not supported on 4-core Power 710 Express configurations.
- 5 Not supported on 4-core Power 720 Express configurations.
- 6 Power 730: GX adapter for I/O loop is double wide plus an SPCN adapter card is needed. Thus both GX slots are used and the 4x PCIe slot and an 8x PCIe slot is covered when an I/O loop is configured
- 7 The GX++ slot on the Power 720 Express and the first GX++ slot on the Power 740 Express are not available if the optional PCIe Riser with four PCIe LP adapter slots is used.
- 8 Required 4-port Ethernet adapter used in PCIe 4x slot. (If a GX adapter is placed in the 2<sup>nd</sup> GX slot of a 730 or 740 covering up the 4x slot, the Ethernet adapter should be moved to another PCI slot on the server.)
- 9 Power 740: GX adapter in 2<sup>nd</sup> GX slot covers the PCIe 4x slot, reducing by one the total number of PCIe slots available in the system unit.

**System Unit Details (POWER7 Servers: 750/750/760/770/780/795)**

System Unit Details	Power 750 Express 8234-E8B	Power 750 Express 8408-E8D	Power 760 9109-RMD	Power 770 Node 9117-MMD	Power 780 Node 9179-MHD	Power 795 9119-FHB
SAS Disk bays in CEC	8 SFF	6 SFF	6 SFF	6 SFF	6 SFF	-
Available media bays	2	1	1	1	1	2 in media drawer
Standard HH size	1	-	-	-	-	1 for opt. tape
Slimline size	1 for DVD-RAM	1 for DVD-RAM	1 for DVD-RAM	1 for DVD-RAM	1 for DVD-RAM	1 for opt. DVD
System / serial ports	2	1	1	0 + IMFC <sup>5</sup>	0 + IMFC <sup>5</sup>	-
USB ports	3	1 + IMFC <sup>5</sup> (3 max <sup>5</sup> per system)	1 + IMFC <sup>5</sup> (3 max <sup>5</sup> per system)	1 + IMFC <sup>5</sup> (9 max <sup>5</sup> per system)	1 + IMFC <sup>5</sup> (9 max <sup>5</sup> per system)	-
HMC ports	2	2	2	2 (4 max per system)	2 (4 max per system)	4
SPCN ports	2	2	2	2 <sup>6</sup>	2 <sup>6</sup>	-
Integrated Ethernet controller ports	4 at 1 Gbps or 2 at 10 Gbps	-	-	-	-	-
Integrated Multifunction Card <sup>4</sup>	-	Four Ethernet ports (2 10Gb and 2 1Gb) Plus 1 serial port Plus 2 USB ports	Four Ethernet ports (2 10Gb and 2 1Gb) Plus 1 serial port Plus 2 USB ports	Four Ethernet ports (2 10Gb and 2 1Gb) Plus 1 serial port Plus 2 USB ports <sup>4</sup>	Four Ethernet ports (2 10Gb and 2 1Gb) Plus 1 serial port Plus 2 USB ports <sup>4</sup>	-
Integrated storage controllers	1 SAS/SATA	2 SAS, 1 SATA (media)	2 SAS, 1 SATA (media)	2 SAS, 1 SATA (media)	2 SAS, 1 SATA (media)	-
Max SAS speed	3.0 Gbps	3.0 Gbps	3.0 Gbps	3.0 Gbps	3.0 Gbps	3.0 Gbps
Protected write cache for integrated SAS controller	Optional dual 175 MB. enable RAID 5/6 & help disk/SSD performance	Optional dual 175 MB. enable RAID 5/6 & help disk/SSD performance	Optional dual 175 MB. enable RAID 5/6 & help disk/SSD performance	Optional dual 175 MB. enable RAID 5/6 & help disk/SSD performance	Optional dual 175 MB. enable RAID 5/6 & help disk/SSD performance	N/A
Optional more disk bays with write cache via integrated external SAS port	Yes, 24 SAS with EXP24S #5887 <sup>7</sup>	Yes, 24 SAS with EXP24S #5887 <sup>7</sup>	Yes, 24 SAS with EXP24S #5887 <sup>7</sup>	Yes, 24 SAS with EXP24S #5887 <sup>7</sup>	Yes, 24 SAS with EXP24S #5887 <sup>7</sup>	N/A
PCI adapter slots	5	6	6	6	6	-
PCIe 8x Long	1	6	6	6	6	-
PCIe 8x Short	2 <sup>2</sup>	-	-	-	-	-
PCI-X DDR Long	2	-	-	-	-	-
Max PCIe bus speed (GHz)	2.5 (Gen1)	5.0 (Gen2)	5.0 (Gen2)	5.0 (Gen2)	5.0 (Gen2)	2.5 (Gen1 in #5803/5873 drawer)
GX++ adapter slots	1 (1-socket) <sup>8</sup> 2 (2-4 socket)	0 (1-socket) 2 (2-4 socket)	0 (1-socket) 2 (2-4 socket)	2	2	4 per processor book
PCIe 12X I/O drawers	Up to 4	Up to 4	Up to 4	Up to 4	Up to 4	Up to 32 <sup>3</sup>
PCI-X DDR 12X I/O drawers	Up to 8	zero	zero	Up to 8	Up to 8	Up to 30
LED diagnostics	Y	Y	Y	Y	Y	Y

<sup>1</sup> AIX uses only for modem and async terminal connections. Not supported by AIX when HMC ports are connected to Hardware Management Console. IBM i can use for status link to UPS.

<sup>2</sup> Power 750 (POWER7): Each GX+ and GX++ I/O loop adapter occupies same space as one PCIe short slot.

<sup>3</sup> Total number of 12X PCIe I/O drawers per system is 32. The maximum for I/O drawer #5873 is 31.

<sup>4</sup> Integrated Multifunction card required for first and second node, optional for third and fourth node.

<sup>5</sup> IMFC = Integrated Multifunction Card has 2 USB ports. Note the 3<sup>rd</sup> USB port on console requires IMFC to be active. Total quantity ignores USB ports provided by optional additional PCIe adapters.

<sup>6</sup> SPCN located on service processor cards located on first two processor nodes. Max 4 SPCN ports per server.

<sup>7</sup> EXP12S #5886 Drawer also supported vs just EXP24S #5887 Drawer, but EXP12S withdrawn from marketing

<sup>8</sup> Power 750 (POWER7) one GX+ slot with one socket. Add one GX++ socket with 2-4 sockets

**System Unit Details (POWER7 Express Servers: Blades)**

System Unit Details	BladeCenter PS700 Express	BladeCenter PS701 Express	BladeCenter PS702 Express	BladeCenter PS703 Express
SAS Disk bays in CEC	2 SFF	1 SFF	2 SFF	1 SFF
Available media bays	- <sup>1</sup>	- <sup>1</sup>	- <sup>1</sup>	- <sup>1</sup>
Standard HH size	-	-	-	-
Slimline size	-	-	-	-
System ports	1 <sup>2</sup>	1 <sup>2</sup>	1 <sup>2</sup>	1 <sup>2</sup>
Serial ports	-	-	-	-
USB ports	2	2	2	2
HMC ports	n/a <sup>3</sup>	n/a <sup>3</sup>	n/a <sup>3</sup>	n/a <sup>3</sup>
Integrated Ethernet controller ports	2 at 1 Gbps	2 at 1 Gbps	4 at 1 Gbps	2 at 1 Gbps
Integrated storage controllers	1 SAS	1 SAS	1 SAS	1 SAS
Max SAS speed	3.0 Gbps	3.0 Gbps	3.0 Gbps	3.0 Gbps
Protected write cache for integrated SAS controller	-	-	-	-
Optional more disk bays with write cache	-	-	-	-
PCIe expansion slots				
PCIe CIOv	1 (Gen1)	1 (Gen1)	2 (Gen1)	1 (Gen2)
PCIe CFFh	1 (Gen1)	1 (Gen1)	2 (Gen1)	1 (Gen2)
Max PCIe bus speed (GHz)	2.5	2.5	2.5	5.0
LED diagnostics	Y	Y	Y	Y

<sup>1</sup> Media bay available in BladeCenter H or S chassis

<sup>2</sup> Serial over LAN (SOL) connection from service processor on blade to Adv. Mgmt. Module in BladeCenter chassis.

<sup>3</sup> HMC not used. Use either SDMC or IVM for consoles specialized functions

IBM Power Systems  
**Server I/O Drawers**

Drawer	Server Loop Attachment	PCI Slots per Drawer	Bays per Drawer	Availability	Max Drwrs per Loop	Footprint
#5797	12X SDR	14 PCI-X DDR + 6 PCI-X	16 SCSI	w/d, mig	1	24" rack
#5798	12X SDR	14 PCI-X DDR + 6 PCI-X	16 SCSI	w/d, mig	1	24" rack
#5803	12X DDR	20 PCIe Gen1	26 SFF SAS	Y	1	24" rack
#5873	12X DDR	20 PCIe Gen1	0	Y	1	24" rack
7314-G30	12X SDR	6 PCI-X DDR	0	w/d	4	19" rack ½ 4U <sup>2</sup>
#5796	12X SDR	6 PCI-X DDR	0	w/d, mig	4	19" rack ½ 4U <sup>2</sup>
#5802	12X DDR <sup>1</sup>	10 PCIe Gen1	18 SFF SAS	Y	2	19" rack
#5877	12X DDR <sup>1</sup>	10 PCIe Gen1	0	Y	2	19" rack
EXP30 Ultra SSD #EDR1	GX++ PCIe2	0	30 1.8" SSD	Y	n/a	19" rack 1U
EXP30 Ultra SSD #5888	GX++ PCIe2	0	30 1.8" SSD	Y	n/a	19" rack 1U
EXP24 7031-D24	via SCSI	0	24 SCSI	w/d, mig <sup>3</sup>	n/a	19" rack 4U
EXP24 #5786	via SCSI	0	24 SCSI	w/d, mig <sup>3</sup>	n/a	19" rack 4U
EXP12S #5886	via SAS	0	12 3.5-inch SAS	w/d, mig	n/a	19" rack 2U
EXP24S #5887	via SAS	0	24 SFF-2 SAS	Y	n/a	19" rack 2U

- <sup>1</sup> Runs at DDR (Double Data Rate) speed assuming GX adapter and 12X cable are also DDR. Otherwise runs at SDR.  
<sup>2</sup> Logically two drawers in one 4-U foot print. Drawers can be configured on the same or different loops.  
<sup>3</sup> Statement of Direction issued 4/12/12 states EXP24 (#5786 and 7031-D24) will not be supported on the next servers after POWER7  
w/d Withdrawn from marketing, not orderable from IBM Manufacturing  
mig Migrate - Attachment of existing I/O units supported

**Server I/O Drawer Attachment (Drawers withdrawn from marketing can not be ordered.)**

Server Drawer <sup>1</sup>	Power 710 / PowerLinux 7R1 (L1T) 0 Loop	Power 730 PowerLinux 7R2 (L2T) 0-1 Loop	Power 720 Express 0-1 Loop	Power 740 Express 0-2 Loops	Power 750 Express 0-2 Loops	Power 760 0-2 Loops	Power 770 0-8 Loops	Power 780 0-8 Loops	Power 795 1-32 loops
#5797	0	0	0	0	0	0	0	0	30
#5798	0	0	0	0	0	0	0	0	30
#5803	0	0	0	0	0	0	0	0	32
#5873	0	0	0	0	0	0	0	0	31
7314-G30	0	0	Max 4 <sup>4</sup>	Max 8	0 <sup>8</sup>	0	Max 32	Max 32	0
#5796	0	0	Max 4 <sup>4</sup>	Max 8	0 <sup>8</sup>	0	Max 32	Max 32	0
EXP24 7031-D24	0	0	Max 24 <sup>4</sup>	Max 24	0 <sup>9</sup>	0	Max 60	Max 60	110
EXP24 #5786 <sup>2</sup>	0	0	Max 24 <sup>4</sup>	Max 24	0 <sup>9</sup>	0	Max 60	Max 60	110
#5802	0	Max 2 <sup>5</sup>	Max 2 <sup>4</sup>	Max 4	Max 4	Max 4	Max 16	Max 16	0
#5877	0	Max 2 <sup>5</sup>	Max 2 <sup>4</sup>	Max 4	Max 4	Max 4	Max 16	Max 16	0
#EDR1 Ultra	Max ½ <sup>6</sup>	Max 1 <sup>5</sup>	Max 1 <sup>4,6</sup>	Max 2 <sup>6</sup>	Max 2 <sup>10</sup>	Max 2	Max 8	Max 8	0
#5888 Ultra	0	0	0	0	0	0	0	0	0
EXP12S #5886	Max 8 <sup>3,7</sup>	Max 28, <sup>7</sup>	Max 28 <sup>4</sup>	28	Max 27 <sup>11</sup>	Max 27	Max 110	Max 110	Max 185
EXP24S #5887	Max 4 <sup>3,5</sup>	Max 14 <sup>5</sup>	Max 14 <sup>4</sup>	Max 14	Max 51 <sup>11</sup>	Max 51	Max 126	Max 126	Max 168

For Additional I/O and I/O Adapter Information - Please reference the sales manual

- <sup>1</sup> Though you can mix 12X PCI-X DDR I/O drawers with 12X PCIe I/O drawers on a system with two or more loops, within a loop it must be all PCIe or all PCI-X DDR I/O drawers.  
<sup>2</sup> In addition to the #5786, the EXP24 #5787 Disk Tower is supported, but not orderable, on the Power 770 and 780.  
<sup>3</sup> Disk-only I/O drawers or Ultra Drawer are not supported on 4-core Power 710 Express configurations..  
<sup>4</sup> 12X I/O drawers or disk-only drawers or Ultra Drawers are not supported on 4-core Power 720 Express configurations.  
<sup>5</sup> PowerLinux servers can use features #EL36 (#5802), #EL37 (#5877), EL1S (#5887), EL30 (#EDR1),  
<sup>6</sup> "D" model 710/720/730/740 only. Note a single Power 710 can not attach one #EDR1 by itself, but can attach in conjunction with another server. Power 720, 730, 740 can attach more Ultra Drawers than shown assuming attached in conjunction with other servers.  
<sup>7</sup> #5886 not supported on PowerLinux servers  
<sup>8</sup> 0 value shown is for POWER7+ 750. POWER7 750 value is 8 #5796 or G30 PCI-X I/O Drawers  
<sup>9</sup> 0 value shown is for POWER7+ 750. POWER7 750 value is 24 EXP24  
<sup>10</sup> 2 value shown is for POWER7+ 750. POWER7 750 value is zero #EDR1 Ultra SSD I/O Drawer attached  
<sup>11</sup> 27 & 51 values shown are for POWER7+ 750. POWER7 750 value is 48 for #5886 and is 24 for #5887 drawers

## Physical Planning Characteristics (POWER7 Servers)

Note: More comprehensive information may be found in the IBM Site and Hardware Planning document) at [http://pic.dhe.ibm.com/infocenter/powersys/v3r1m5/index.jsp?topic=/p7hdx/p7\\_systems.htm](http://pic.dhe.ibm.com/infocenter/powersys/v3r1m5/index.jsp?topic=/p7hdx/p7_systems.htm). Plus, additional summary information can be found in the IBM Sales Manual for each server at [ibm.com/common/ssi](http://ibm.com/common/ssi)

Server	Power 710 Express	Power 720 Express	Power 730 Express	PowerLinux 7R1 & 7R2	Power 740 Express	Power 750 Express POWER7
Packaging	19" rack drawer (2U)	19" rack drwr (4U) + tower	19" rack drawer (2U)	19" rack drawer (2U)	19" rack drwr (4U) + tower***	19" rack drawer (4U)
Voltage (AC)	100 -127 (1-ph.) 200 - 240 (1-ph.)	100 -127 (1-ph.) 200 - 240 (1-ph.)	200 - 240 (1-ph.)	100 -127 (1-ph.)* 200 - 240 (1-ph.)**	200 - 240 (1-ph.)	200 - 240 1-phase
Power supply	N +1 optional	N +1 optional	N +1 standard	N +1 standard	N +1 standard	N +1 standard
Maximum altitude						
feet	10000	10000	10000	10000	10000	10000
meters	3048	3048	3048	3048	3048	3048

\* 7R1

\*\* Both 7R1 and 7R2

Server	Power 750 Express (POWER7+)	Power 760	Power 770 *	Power 780 *	Power 795
Packaging	19" rack drawer (5U)	19" rack drawer (5U)	19" rack drawer (4U)	19" rack drawer (4U)	24" system frame (+expansion frames)
Voltage (AC)	200 - 240 1-phase	200 - 240 1-phase	200 - 240 1-phase	200 - 240 1-phase	200 - 240 (3-phase) 380 - 415 (3-phase) 480 - 510 (3-phase)
Power supply	N +1 standard	N +1 standard	N+1 standard	N+1 standard	N+1 standard
Maximum altitude					
feet	10000	10000	10000	10000	10000
meters	3048	3048	3048	3048	3048

\* Figures are for a single building block or node. Up to 4 nodes per system.

\*\* 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.

\*\*\* The newer Power 740, 8205-E6D and E6C, is offered only as a rack drawer, not as a tower

19-inch I/O Drawer	#5802	#5877	7314-G30 or #5796
	12X DDR attach, 10 PCIe slots, 18 disk bay	12X DDR attach, 10 PCIe slots, 0 disk bay	12X SDR attach, 6 PCI slots
Packaging	19" rack drawer	19" rack drawer	19" rack drawer
Rack space	1 unit in 4U space	1 unit in 4U space	2 units fit side by side in 4U space
Power supply	N+1 standard	N+1 standard	N+1 standard
Voltage	200-240V, single phase	200-240 V, single phase	200-240 V, single phase
Maximum altitude			
feet	10000	10000	10000
meters	3048	3048	3048

Racks	7014-S25 or #0555	7014-T00 or #0551	7014-T42 or #0553	7014-B42	7953-94X Flex rack
	25U	36U	42U	42U	42U
Height					
inches	49.0	71.0 - 75.8	79.3	79.3	78.8
millimeters	1344	1804 - 1926	2015	2015	2002
Width (can vary depending on use of side panels)					
inches	23.8	24.5 - 25.4	24.5 - 25.4	24.5 - 25.4	23.6
millimeters	605	623 - 644	623 - 644	623 - 644	600
Depth (can vary depending on door options selected)					
inches	39.4	41.0 - 45.2	41.0 - 45.2	41.0 - 55.5	43.1 - 48.2
millimeters	1001	1042 - 1098	1043 - 1098	1042 - 1409	1095 - 1224

## Physical Planning Characteristics (POWER7 Blades)

Note: Additional summary information can be found in the IBM Sales Manual at [ibm.com/common/ssj](http://ibm.com/common/ssj).

Server	BladeCenter PS700 / PS701 / PS703 Express	BladeCenter PS702 Express	BladeCenter S Chassis	BladeCenter H Chassis	BladeCenter HT Chassis <sup>1</sup>
Machine type (AC model)	8401-70Y / 8401-71Y / 7891-73X	8401-71Y+FC 8358 / 7891-74X	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 blades	-	-	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 <sup>2</sup>
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	2.32	17.5	17.5	17.4
millimeters	29	59	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

1 Orderable only through HVEC fulfillment system (not AAS)

2 NEBS environment

## Warranty<sup>1</sup> / Installation

Warranty Service Levels	Power 710 Express	Power 720 Express	Power 730 Express	PowerLinux 7R1 & 7R2	Power 740 Express	Power 750 Express POWER7	Power 750 Express POWER7+
24x7 with two hour service objective <sup>2</sup>	Optional	Optional	Optional	Optional	Optional	Optional	Optional
24x7 with four hour service objective	Optional	Optional	Optional	Optional	Optional	Optional	Included
9x5 with four hour service objective	Optional	Optional	Optional	Optional	Optional	Optional	Optional
9x5 next-business-day	Standard <sup>3</sup>	Standard <sup>3</sup>	Standard <sup>3</sup>	Standard <sup>3</sup>	Standard <sup>3</sup>	Standard <sup>3</sup>	Standard <sup>3</sup>
<b>Warranty Period</b>	3 years <sup>6</sup>	3 years	3 years	3 years	3 years	1 year	3 years <sup>5</sup>
<b>Server install<sup>4</sup></b>	CSU	CSU	CSU	CSU	CSU	CSU	CSU

Warranty Service Levels	Power 760	Power 770	Power 780	Power 795	BladeCenter PS700, PS701 & PS702 & PS703 Express & BladeCenter Chassis H, HT, S
24x7 with two hour service objective <sup>2</sup>	Optional	Optional	Optional	Optional	Optional
24x7 with four hour service objective	Included	Optional	Standard	Standard	Optional
9x5 with four hour service objective	Optional	Optional	-	-	Optional
9x5 next-business-day	Standard <sup>3</sup>	Standard <sup>3</sup>	-	-	Standard <sup>3</sup>
<b>Warranty Period</b>	3 years <sup>5</sup>	1 year	1 year	1 year	3 years
<b>Server installation<sup>4</sup></b>	IBI	IBI	IBI	IBI	CSU

<sup>1</sup> 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.

<sup>2</sup> Available in selected cities.

<sup>3</sup> Mandatory Customer Replaceable Unit (CRU) and On-site service.

<sup>4</sup> CSU = Customer Set Up, IBI = Installation by IBM For server hardware only. Note except for 795 I/O, feature I/O drawers added later as MES are CSU.

<sup>5</sup> This system is provided with a one year standard warranty. For your convenience, IBM has provided two additional years of extended warranty services plus an upgrade to 24x7 coverage. (Varies by country)

<sup>6</sup> The Power 710 8231-E1D has a three year warranty. The Power 710 8268-E1D is offered as an alternative with a one year warranty in selected countries.

**Power Systems Express Servers Software Support**

Power Systems Software	Power 710 Express	Power 720 Express	Power 730 Express	PowerLinux 7R1 & 7R2	Power 740 Express	Power 750 Express
Software Tier	Small	Small	Small	N/A	Small	Small
<b>PowerVM™</b>						
PowerVM Express	Supported	Supported	Supported	N/A	Supported	Supported
PowerVM Standard and Enterprise Editions	Supported	Supported	Supported	N/A	Supported	Supported
IBM PowerVM for IBM PowerLinux	N/A	N/A	N/A	Supported	N/A	N/A
<b>AIX</b>						
AIX 5.3 Standard Edition	Supported*	Supported*	Supported*	N/A	Supported*	Supported*
AIX 6.1 Express <sup>1</sup> Standard and Enterprise Editions	Supported TL 3/4/5/6	Supported TL 3/4/5/6	Supported TL 3/4/5/6	N/A	Supported TL 3/4/5/6	Supported TL 2/3/4/5
AIX 7.1 Express <sup>1</sup> , Standard and Enterprise Editions	Supported	Supported	Supported	N/A	Supported	Supported
AIX 5.2 Workload Partitions for AIX 7	Supported	Supported	Supported	N/A	Supported	Supported
<b>IBM i</b>						
IBM i Software Tier	Small P05(4-core) P10(6/8-core)	Small P05(4-core) P10(6/8-core)	Small P20	N/A	Small P20	Small P20
IBM i 6.1.1 Express, Standard and Enterprise Editions <sup>7</sup>	Supported	Supported	Supported	N/A	Supported	Supported
IBM i 7.1 Express, Standard and Enterprise Editions	Supported	Supported	Supported	N/A	Supported	Supported
<b>Linux</b>						
Red Hat Enterprise Linux 5.5	Supported <sup>3</sup>	Supported <sup>3</sup>	Supported <sup>3</sup>	Supported <sup>4,5</sup>	Supported <sup>3</sup>	Supported
Red Hat Enterprise Linux 6	Supported	Supported	Supported	Supported <sup>4,5</sup>	Supported	Supported
Novell SUSE Linux Enterprise Server 10 SP3	Supported	Supported	Supported	Supported <sup>4,5</sup>	Supported	Supported
Novell SUSE Linux Enterprise Server 11	Supported SP1	Supported SP1	Supported SP1	Supported <sup>4,5</sup> SP1	Supported SP1	Supported
<b>PowerHA™</b>						
PowerHA SystemMirror for AIX 6.1 <sup>2</sup> Standard and Enterprise Editions	Supported	Supported	Supported	Supported <sup>6</sup>	Supported	Supported
PowerHA SystemMirror for AIX 7 <sup>2</sup> Standard Edition	Supported	Supported	Supported	Supported <sup>6</sup>	Supported	Supported
PowerHA SystemMirror for i 6.1	Supported	Supported	Supported	Supported <sup>6</sup>	Supported	Supported
PowerHA SystemMirror for i 7.1 Standard and Enterprise Editions	Supported	Supported	Supported	Supported <sup>6</sup>	Supported	Supported
<b>IBM Systems Director for Power</b>						
Express, Standard and Enterprise Editions	Supported	Supported	Supported	N/A	Supported	Supported
IBM Systems Director for IBM PowerLinux	Supported	Supported	Supported	Supported	Supported	Supported
<b>SmartCloud Entry</b>						
SmartCloud Entry	Supported	Supported	Supported	Supported <sup>8</sup>	Supported	Supported

\* General support for the AIX V5.3 operating system ended April 30, 2012. A service extension is available

1 – Note that AIX 6.1 and AIX 7.1 Express Edition may be used for partitions of up to 4 cores and 8 GB of memory per core.

2 – PowerHA SystemMirror for AIX 6.1 is supported on AIX 5.3, AIX 6.1 and AIX 7.1. PowerHA SystemMirror for AIX 7 is supported with both AIX 6.1 and AIX 7.1

3 – Power 710 8231-E1C, Power 720 8202-E4C, Power 730 8231-E2C, and Power 740 8231-E2C require Red Hat Enterprise Linux 5.7

4 – PowerLinux 7R1 requires Red Hat Enterprise Linux 6.2, Red Hat Enterprise Linux 5.8, or SUSE Linux Enterprise Server 11 SP2

5 – PowerLinux 7R2 requires Red Hat Enterprise Linux 6.1, Red Hat Enterprise Linux 5.7, SUSE Linux Enterprise Server 10 SP4, or SUSE Linux Enterprise Server 11 SP1

6 – Not supported on the 7R1

7 – IBM i 6.1 is a client partition under IBM i 7.1 or VIOS (no native I/O) on POWER7+. With #EB34 native I/O support available for 710/720/730/740/770/780

8 – SmartCloud Entry can “manage to” PowerLinux, Management console runs on AIX on Power.



## Power Systems Servers Software Support

Power Systems Software	Power 760	Power 770	Power 780	Power 795	BladeCenter PS700 Express	BladeCenter PS701/PS702 PS703 Express
Software Tier	Medium	Medium	Large	Large	Small	Small
<b>PowerVM™</b>						
PowerVM Express	N/A	N/A	N/A	N/A	Supported	Supported
PowerVM Standard and Enterprise Editions	Supported	Supported	Supported	Supported	Supported	Supported
<b>AIX</b>						
AIX 5.3 Standard Edition	Supported *	Supported *	Supported *	Supported *	Supported *	Supported *
AIX 6.1 Express <sup>1</sup> , Standard and Enterprise Editions	Supported TL 2/3/4/5/6	Supported TL 2/3/4/5/6	Supported TL 2/3/4/5/6	Supported TL 3/4/5/6	Supported TL 5	Supported TL 5
AIX 7.1 Express <sup>1</sup> , Standard and Enterprise Editions	Supported	Supported	Supported	Supported	Supported	Supported
AIX 5.2 Workload Partitions for AIX 7	Supported	Supported	Supported	Supported	Supported	Supported
<b>IBM i</b>						
IBM i Software Tier	Medium P30	Medium P30	Large P50	Large P50	Small P05	Small P10
IBM i 6.1.1 Express, Standard and Enterprise Editions <sup>3</sup>	Supported	Supported	Supported	Supported	Supported	Supported
IBM i 7.1 Express, Standard and Enterprise Editions	Supported	Supported	Supported	Supported	Supported	Supported
<b>Linux</b>						
Red Hat Enterprise Linux 5	Supported 5	Supported 5.7	Supported 5.7	Supported 5.7	Supported	Supported
Red Hat Enterprise Linux 6	Supported 6	Supported 6.3	Supported 6.3	Supported 6.3	Supported	Supported
Novell SUSE Linux Enterprise Server 10	Supported 10	Supported 10 SP3	Supported 10 SP3	Supported 10 SP3	Supported	Supported
Novell SUSE Linux Enterprise Server 11	Supported 11	Supported 11 SP2	Supported 11 SP2	Supported 11 SP2	Supported SP1	Supported SP1
<b>PowerHA™</b>						
PowerHA SystemMirror for AIX 6.1 <sup>2</sup> Standard and Enterprise Editions	Supported	Supported	Supported	Supported	Supported	Supported
PowerHA SystemMirror for AIX 7 <sup>2</sup> Standard Edition	Supported	Supported	Supported	Supported	Supported	Supported
PowerHA SystemMirror for i 6.1	Supported	Supported	Supported	Supported	Supported	Supported
PowerHA SystemMirror for i 7.1 Standard and Enterprise Editions	Supported	Supported	Supported	Supported	Supported	Supported
<b>IBM Systems Director for Power</b>						
Express, Standard and Enterprise Editions	Supported	Supported	Supported	Supported	Supported	Supported
<b>SmartCloud Entry</b>						
SmartCloud Entry	Supported	Supported	Supported	Supported	Supported	Supported

\* General support for the AIX V5.3 operating system ended April 30, 2012. A service extension is available

1 – Note that AIX 6.1 and AIX 7.1 Express Edition may be used for partitions of up to 4 cores and 8 GB of memory per core.

2 – PowerHA SystemMirror for AIX 6.1 is supported on AIX 5.3, AIX 6.1 and AIX 7.1. PowerHA SystemMirror for AIX 7 is supported with both AIX 6.1 and AIX 7.1

3- IBM i 6.1 is a client partition under 7.1 or VIOS (no native I/O) on POWER7+. Feature #EB34 will provide native 6.1 I/O support for 710/720/730/740/770/780 only.

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](http://ibm.com/systems/i/advantages/perfmgmt/pdf.pcrm.pdf) )

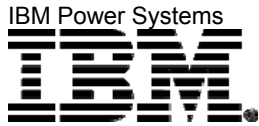
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SPEC – <http://www.spec.org>

TPC – <http://www.tpc.org>

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- 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](http://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](http://ibm.com/common/ssi)
- More detailed benchmark and performance information is available at [ibm.com/systems/p/hardware/benchmarks](http://ibm.com/systems/p/hardware/benchmarks) , [ibm.com/systems/p/hardware/system\\_perf.html](http://ibm.com/systems/p/hardware/system_perf.html) and at [ibm.com/systems/i/solutions/perfmgmt/resource.html](http://ibm.com/systems/i/solutions/perfmgmt/resource.html) .



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This brochure provides detailed technical specifications of all IBM POWER7 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.

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