







IBM POWER7® Systems Express Blades Quick Reference Guide





November 2011

						
	BladeCenter® PS700 Express	BladeCenter PS701 Express	BladeCenter PS702 Express	BladeCenter PS703 Express	BladeCenter PS704 Express	
System package	Blade Server / BladeCenter	Blade Server / BladeCenter	Blade Server / BladeCenter	Blade Server / BladeCenter	Blade Server / BladeCenter	
# of processor sockets	1	1	2	2	4	
Processor Options - GHz (cores/socket) - # of cores	3.0 GHz (4-core) 4	3.0 GHz (8-core) 8	3.0 GHz (8-core) 16	2.4 GHz (8-core) 16	2.4 GHz (8-core) 32	
Min - max. memory (clock freq MHz)	8 - 64 GB (1066)	16 - 128 GB (1066)	32 - 256 GB (1066)	16 - 256 GB (1066)	32 - 512 GB (1066)	
Max CEC disk bays / GB/TB storage	2 / 1.2 TB	1 / 600 GB	2 / 1.2 TB	1 / 600GB	2 / 1.2 TB	
Max CEC PCI slots	Expansion Cards 1 PCIe CIOv 1 PCIe CFFh	Expansion Cards 1 PCIe CIOv 1 PCIe CFFh	Expansion Cards 2 PCIe CIOv 2 PCIe CFFh	Expansion Cards 1 PCIe CIOv 1 PCIe CFFh	Expansion Cards 2 PCIe CIOv 2 PCIe CFFh	
Max GX adapter slots	N/A	N/A	N/A	N/A	N/A	
Max 12X I/O PCIe drwrs	N/A	N/A	N/A	N/A	N/A	
Max 12X I/O PCI-X drwrs	N/A	N/A	N/A	N/A	N/A	
Max disk bays w/ I/O drawers	2 + 12 bays if BladeCenter S	1 + 12 bays if BladeCenter S	2 + 12 bays if BladeCenter S	1 + 12 bays if BladeCenter S	2 + 12 bays if BladeCenter S	
Max PCI slots w/ 12X PCI-X I/O drawers	N/A	N/A	N/A	N/A	N/A	
Max PCI slots w/ 12X PCIe I/O drawers	N/A	N/A	N/A	N/A	N/A	
AIX® rPerf Ranges	45.1	81.2	154.3	134.1	251.4	
IBM i CPW Ranges	21,100	42,100	76,300	64,000	110,000	
Capacity on Demand options	N/A	N/A	N/A	N/A	N/A	
Warranty	3-yr 9x5, next business day	3-yr 9x5, next business day	3-yr 9x5, next business day	3-yr 9x5, next business day	3-yr 9x5, next business day	
Max partitions (10/core)	40	80	160	160	320	
IBM i level & tier	6.1.1, 7.1 Small – P05	6.1.1, 7.1 Small – P10	6.1.1, 7.1 Small – P10	6.1.1, 7.1 Small – P10	6.1.1, 7.1 Small – P10	
AIX level & group	5.3, 6.1, 7.1 Small	5.3, 6.1, 7.1 Small	5.3, 6.1, 7.1 Small	5.3, 6.1, 7.1 Small	5.3, 6.1, 7.1 Small	
Linux support	SLES 10 SP3 SLES 11 SP1 RHEL 5.5, 6.0	SLES 10 SP3 SLES 11 SP1 RHEL 5.5, 6.0	SLES 10 SP3 SLES 11 SP1 RHEL 5.5, 6.0	SLES 10 SP4 SLES 11 SP1 RHEL 5.6, 6.0	SLES 10 SP4 SLES 11 SP1 RHEL 5.5, 6.0	
PowerVM™ Express	Optional	Optional	Optional	Optional	Optional	
PowerVM Standard	Optional	Optional	Optional	Optional	Optional	
PowerVM Enterprise	Optional	Optional	Optional	Optional	Optional	
Systems Director Editions (w/VMControl)	Optional	Optional	Optional	Optional	Optional	
Machine type - model	8406-70Y	8406-71Y	8406-71Y	7891-73X	7891-74X	

Power is performance redefined
Deliver new services faster, with higher quality and superior economics

IBM POWER7® Systems Express Quick Reference Guide

November 2011

						
	Power® 710 Express (Gen2 PCIe)	Power 720 Express (Gen2 PCIe)	Power 730 Express (Gen2 PCIe)	Power 740 Express (Gen2 PCIe)	Power 750 Express Used in Watson	
System package	2U, 19" rack	4U, 19" rack or tower	2U, 19" rack	4U, 19" rack	4U, 19" rack	
# of processor sockets	1	1	2	1 or 2	1, 2, 3, 4	
Processor Options - GHz (cores/socket) - # of cores	3.0 GHz (4-core) 4 3.7 GHz (6-core) 6 3.55 GHz (8-core) 8	3.0 GHz (4-core) 4 3.0 GHz (6-core) 6 3.0 GHz (8-core) 8	3.0 GHz (4-core) 8 3.7 GHz (4-core) 8 3.7 GHz (6-core) 12 3.55 GHz (8-core) 16	3.3 GHz (4-core) 4, 8 3.7 GHz (4-core) 4, 8 3.7 GHz (6-core) 6, 12 3.55 GHz (8-core) 8, 16	3.2 GHz (8-core) 8, 16, 24, 32 3.6 GHz (8-core) 8, 16, 24, 32 3.7 GHz (4-core) 4, 8, 12, 16, 3.7 GHz (6-core) 6, 12, 18, 24	
Min - max. memory (clock freq MHz)	4 - 128 GB (1066)	4-core 4 - 64 GB (1066) 6- or 8-core 4 - 256 GB (1066)	8 - 256 GB (1066)	1-socket 8 - 256GB 2-sockets 8 - 512 GB (1066)	8 - 512 GB (1066)	
Max CEC disk/SSD bays / TB storage	6 / 3.6 TB	8 / 4.8 TB	6 / 3.6 TB	8 / 4.8 TB	8 / 4.8 TB	
Max CEC PCI slots ³	5 PCIe LP	5 PCIe + 4 PCIe LP (opt.)	5 PCIe LP	5 PCIe + 4 PCIe LP (opt.)	3 PCIe and 2 PCI-X	
Max GX adapter slots	1 GX++	1 GX++ ¹ (6- or 8-core systems only)	2 GX++	1 socket 1 GX++ ¹ 2 sockets 2 GX++	1 socket 1 GX+ 2 or more sockets 1 GX++ and 1 GX+	
Max 12X I/O PCIe drws	N/A	2 ²	2	4	4	
Max 12X I/O PCI-X drws	N/A	4 ²	N/A	8	8	
Max disk bays w/ I/O drawers	102	380	378	416	584	
Max PCI slots w/ 12X PCI-X I/O drawers ³	5 PCIe LP and 0 PCI-X	5 PCIe and 24 PCI-X	5 PCIe LP and 0 PCI-X	5 PCIe and 48 PCI-X	1 PCIe and 50 PCI-X	
Max PCI slots w/ 12X PCIe I/O drawers ³	5 PCIe LP	25 PCIe	5 PCIe LP and 20 PCIe	45 PCIe	41 PCIe and 2 PCI-X	
AIX® rPerf Ranges	45.1 - 91.9	45.1 - 81.2	86.6 - 176.5	48.3 - 176.5	52.2 - 334.9	
IBM i CPW Ranges	23,800 - 51,800	23,800 - 46,300	44,600 - 97,700	25,500 - 97,700	27,300 - 183,200	
Capacity on Demand	N/A	N/A	N/A	N/A	N/A	
Warranty	3-yr 9x5, next business day	3-yr 9x5, next business day	3-yr 9x5, next business day	3-yr 9x5, next business day	1-yr 9x5, next business day	
Max partitions (10/core)	80	80	160	160	320	
IBM i level & tier	6.1.1, 7.1 Small -P05 (4-core) P10 (6- or 8-core)	6.1.1, 7.1 Small -P05 (4-core) P10 (6- or 8-core)	6.1.1, 7.1 Small - P20	6.1.1, 7.1 Small - P20	6.1.1, 7.1 Small - P20	
AIX level & group	5.3, 6.1, 7.1 Small	5.3, 6.1, 7.1 Small	5.3, 6.1, 7.1 Small	5.3, 6.1, 7.1 Small	5.3, 6.1, 7.1 Small	
Linux support	SLES 10 SP4 SLES 11 SP1 RHEL 5.7, 6.1	SLES 10 SP4 SLES 11 SP1 RHEL 5.7, 6.1	SLES 10 SP4 SLES 11 SP1 RHEL 5.7, 6.1	SLES 10 SP4 SLES 11 SP1 RHEL 5.7, 6.1	SLES 10 SP3 SLES 11 RHEL 5.5, 6.0	
PowerVM™ Express	Optional	Optional	Optional	Optional	Optional	
PowerVM Standard	Optional	Optional	Optional	Optional	Optional	
PowerVM Enterprise	Optional	Optional	Optional	Optional	Optional	
Systems Director Editions (w/VMControl)	Optional	Optional	Optional	Optional	Optional	
Machine type - model	8231-E1C	8202-E4C	8231-E2C	8205-E6C	8233-E8B	







1 The GX++ slot on the Power 720 Express server and the first GX++ slot on the Power 740 Express server are not available if the optional four PCIe low profile slots are used.

2 Not supported on 4-core Power 720 Express configurations.

3 Not included in the five PCIe Gen2 system slots is an additional dedicated PCIe slot for LAN adapter usage

IBM POWER7® Systems Express Quick Reference Guide

November 2011




						
	Power® 710 Express (Gen1 PCIe)	Power 720 Express (Gen1 PCIe)	Power 730 Express (Gen1 PCIe)	Power 740 Express (Gen1 PCIe)	Power 750 Express Used in Watson	
System package	2U, 19" rack	4U, 19" rack or tower	2U, 19" rack	4U, 19" rack or tower	4U, 19" rack	
# of processor sockets	1	1	2	1 or 2	1, 2, 3, 4	
Processor Options - GHz (cores/socket) - # of cores	3.0 GHz (4-core) 4 3.7 GHz (6-core) 6 3.55 GHz (8-core) 8	3.0 GHz (4-core) 4 3.0 GHz (6-core) 6 3.0 GHz (8-core) 8	3.0 GHz (4-core) 8 3.7 GHz (4-core) 8 3.7 GHz (6-core) 12 3.55 GHz (8-core) 16	3.3 GHz (4-core) 4, 8 3.7 GHz (4-core) 4, 8 3.7 GHz (6-core) 6, 12 3.55 GHz (8-core) 8, 16	3.2 GHz (8-core) 8, 16, 24, 32 3.6 GHz (8-core) 8, 16, 24, 32 3.7 GHz (4-core) 4, 8, 12, 16, 3.7 GHz (6-core) 6, 12, 18, 24	
Min - max. memory (clock freq MHz)	4 - 64 GB (1066)	4-core 8 - 64 GB (1066) 6- or 8-core 8 - 128 GB (1066)	8 - 128 GB (1066)	1-socket 8 - 128GB 2-sockets 8 - 256 GB (1066)	8 - 512 GB (1066)	
Max CEC disk bays / TB storage	6 / 3.6 TB	8 / 4.8 TB	6 / 3.6 TB	8 / 4.8 TB	8 / 4.8 TB	
Max CEC PCI slots	4 PCIe LP	4 PCIe + 4 PCIe LP (opt.)	4 PCIe LP	4 PCIe + 4 PCIe LP (opt.)	3 PCIe and 2 PCI-X	
Max GX adapter slots	1 GX++	1 GX++ ¹ (6- or 8-core systems only)	2 GX++	1 socket 1 GX++ ¹ 2 sockets 2 GX++	1 socket 1 GX+ 2 or more sockets 1 GX++ and 1 GX+	
Max 12X I/O PCIe drws	N/A	2 ²	N/A	4	4	
Max 12X I/O PCI-X drws	N/A	4 ²	N/A	8	8	
Max disk bays w/ I/O drawers	102	380	102	416	584	
Max PCI slots w/ 12X PCI-X I/O drawers	N/A	4 PCIe and 24 PCI-X	N/A	4 PCIe and 48 PCI-X	1 PCIe and 50 PCI-X	
Max PCI slots w/ 12X PCIe I/O drawers	N/A	24 PCIe	N/A	44 PCIe	41 PCIe and 2 PCI-X	
AIX® rPerf Ranges	45.1 - 91.9	45.1 - 81.2	86.6 - 176.5	48.3 - 176.5	52.2 - 334.9	
IBM i CPW Ranges	23,800 - 51,800	23,800 - 46,300	44,600 - 97,700	25,500 - 97,700	27,300 - 183,200	
Capacity on Demand	N/A	N/A	N/A	N/A	N/A	
Warranty	3-yr 9x5, next business day	3-yr 9x5, next business day	3-yr 9x5, next business day	3-yr 9x5, next business day	1-yr 9x5, next business day	
Max partitions (10/core)	80	80	160	160	320	
IBM i level & tier	6.1.1, 7.1 Small -P05 (4-core) P10 (6- or 8-core)	6.1.1, 7.1 Small -P05 (4-core) P10 (6- or 8-core)	6.1.1, 7.1 Small - P20	6.1.1, 7.1 Small - P20	6.1.1, 7.1 Small - P20	
AIX level & group	5.3, 6.1, 7.1 Small	5.3, 6.1, 7.1 Small	5.3, 6.1, 7.1 Small	5.3, 6.1, 7.1 Small	5.3, 6.1, 7.1 Small	
Linux support	SLES 10 SP3 SLES 11 SP1 RHEL 5.5, 6.0	SLES 10 SP3 SLES 11 SP1 RHEL 5.5, 6.0	SLES 10 SP3 SLES 11 SP1 RHEL 5.5, 6.0	SLES 10 SP3 SLES 11 SP1 RHEL 5.5, 6.0	SLES 10 SP3 SLES 11 RHEL 5.5, 6.0	
PowerVM™ Express	Optional	Optional	Optional	Optional	Optional	
PowerVM Standard	Optional	Optional	Optional	Optional	Optional	
PowerVM Enterprise	Optional	Optional	Optional	Optional	Optional	
Systems Director Editions (w/VMControl)	Optional	Optional	Optional	Optional	Optional	
Machine type - model	8231-E2B	8202-E4B	8231-E2B	8205-E6B	8233-E8B	

- 1 The GX++ slot on the Power 720 Express server and the first GX++ slot on the Power 740 Express server are not available if the optional four PCIe low profile slots are used.
2 Not supported on 4-core Power 720 Express configurations.

Power is performance redefined
Deliver new services faster, with higher quality and superior economics

IBM POWER7® Systems Family Quick Reference Guide

November 2011

					
	Power 755	Power 770 (Gen2 PCIe)	Power 780 (Gen2 PCIe)	Power 795	
System package	4U, 19" rack	4U / node, 19" rack (1 - 4 nodes)	4U / node, 19" rack (1 - 4 nodes)	24" system frame (1 - 8 processor books)	
# of processor sockets	4	2, 4, 6, 8	2,4,6,8 or 4,8,12,16	4 - 32	
Processor Options - GHz (cores/socket) - Min # of activated cores	3.6 GHz (8-core) 32	3.3 GHz (8-core) 4 - 64 3.7 GHz (6-core) 4 - 48	3.92 GHz (8-core) 4 - 64 4.14 GHz (4-core) ¹ 4 - 32 3.44 GHz (6-core) 4 - 96	3.7 GHz (6-core) 24 - 192 4.0 GHz (8-core) 24 - 256 4.25 GHz (4-core) ² 24 - 128	
Min - max. memory (clock freq MHz) (min Active)	128 - 256 GB (1066)	64 GB - 4 TB (1066) (32 GB)	64 GB - 4 TB (1066) (32 GB)	64 GB - 8 TB (1066) (32 GB)	
Max CEC disk/SSD bays / TB storage	8 / 2.4 TB	Max per node 6 / 1.8 TB Max per sys 24 / 7.2 TB	Max per node 6 / 1.8 TB Max per sys 24 / 7.2 TB	Use I/O drawers	
Max CEC PCI slots	3 PCIe and 2 PCI-X	6 PCIe per node 24 per system	6 PCIe per node 24 per system	Use I/O drawers	
Max GX adapter slots	1 GX++	2 GX++ per node 8 per system	2 GX++ per node 8 per system	4 GX++ per proc. Book 32 per system	
Max 12X PCIe I/O drws	0	16	16	32	
Max 12X PCI-X I/O drws	0	32	32	30	
Max disk bays with I/O drawers	164	1344	1344	4032	
Max PCI slots w/ 12X PCI-X I/O drawers	3 PCIe and 2 PCI-X	24 PCIe and 192 PCI-X	24 PCIe and 192 PCI-X	600	
Max PCI slots w/ 12X PCIe I/O drawers	3 PCIe and 2 PCI-X	184 PCIe	184 PCIe	640	
AIX® rPerf Ranges	N/A	147.5 - 606.8	197.6 - 886.6	273.5 - 2978.1	
IBM i CPW Ranges	N/A	77,000 - 321,000	106,000 - 363,000	149,100 and up ³	
Capacity on Demand options	N/A	CUoD, On/Off, Utility, Trial	CUoD, On/Off, Utility, Trial	CUoD, On/Off, Utility, Trial	
Warranty	1-yr 9x5, next business day	1-yr 9x5, next business day	1-yr 24x7, same day	1-yr 24x7, same day	
Max partitions (10/core)	32 (DLPAR Only)	640	960	1000	
IBM i level & tier	N/A	6.1.1, 7.1 Medium - P30	6.1.1, 7.1 Large - P50	6.1.1, 7.1 Large - P50	
AIX level & group	5.3, 6.1, 7.1 Small	5.3, 6.1, 7.1 Medium	5.3, 6.1, 7.1 Large	5.3, 6.1, 7.1 Large	
Linux support	SLES 10 SP3 SLES 11 RHEL 5.5, 6.0	SLES 10 SP3 SLES 11 RHEL 5.5, 6.0	SLES 10 SP3 SLES 11 RHEL 5.5, 6.0	SLES 10 SP3 SLES 11 SP1 RHEL 5.5, 6.0	
PowerVM™ Express	N/A	N/A	N/A	N/A	
PowerVM Standard	N/A	Optional	Optional	Optional	
PowerVM Enterprise	N/A	Optional	Optional	Optional	
Systems Director Editions (w/VMControl)	Optional	Optional	Optional	Optional	
Machine type - model	8236-E8C	9117-MMC	9179-MHC	9119-FHB	

1 Each Power 780 3.92 GHz processor card has two sockets, with each socket having eight POWER7 processor cores. If run in optional TurboCore mode at 4.14 GHz, only half the cores in each socket are available.

2 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, half the cores in each socket are available.

3 CPW value shown for a 24-core 3.7 GHz configuration. Use IBM Systems Workload Estimator at <http://www.ibm.com/systems/support/tools/estimator> to configure larger systems.

Power is performance redefined
 Deliver new services faster, with higher quality and superior economics

IBM Power Systems

RAS and other features	BladeCenter PS700 - PS704 Express	Power 710 Express	Power 720 Express	Power 730 Express	Power 740 Express	Power 750 Express	Power 755	Power 770	Power 780	Power 795
Redundant / Hot Swap Fans & Blowers	Std in chassis	Std	Std	Std	Std	Std	Std	Std	Std	Std
Hot Swap Disk Bays / Media	N/A	Std	Std	Std	Std	Std	Std	Std	Std	Std
Hot Swap PCI Adapters	N/A	N/A	N/A	N/A	N/A	Std	Std	Std	Std	Std
Concurrent Firmware Update	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std
Redundant / Hot Swap Power Supplies	Std in chassis	Opt	Opt	Std	Std	Std	Std	Std	Std	Std
Dual disk controllers (split backplane for AIX)	N/A	N/A	Opt	N/A	Opt	Opt	N/A	Std	Std	N/A
Processor Instruction Retry / Alternate Processor Recovery	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std
Storage Keys (AIX only)	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std
NEBS compliant	N/A	N/A	N/A	N/A	N/A	Opt	N/A	N/A	N/A	N/A
PowerVM Live Partition Mobility/Live Application Mobility ¹	Opt	Opt	Opt	Opt	Opt	Opt	N/A	Opt	Opt	Opt
PowerVM Active Memory™ Sharing ²	Opt	Opt	Opt	Opt	Opt	Opt	N/A	Opt	Opt	Opt
Dual VIOS	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
Active Memory Expansion	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
Redundant Service Processors	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Std ³	Std ³	Std
Redundant System Clocks	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Std ³	Std ³	Std
Redundant / Hot Swap Power Regulators	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Std	Std	Std
Dynamic Processor Sparing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Opt	Opt	Opt
Memory Sparing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Opt	Opt	Opt
Hot GX Adapter Add and Cold Repair	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Std	Std	Std
Cold-node Repair	Hot-swap Blades	N/A	N/A	N/A	N/A	N/A	N/A	Std ³	Std ³	Std
Hot-Node Add, Hot-Node Repair, Memory Upgrade	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Std ³	Std ³	Std ³
Dynamic System Clock Failover	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Std ³	Std ³	Std
Chipkill Memory with Dynamic Bit Steering	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std
Active Memory Mirroring for Hypervisor	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Opt	Std	Std
Management (IVM/HMC/SDMC)	I/S	I/H/S	I/H/S	I/H/S	I/H/S	I/H/S	H/S	H/S	H/S	H/S

1 Live Partition Mobility/Live Application Mobility is not supported on IBM i.

2 Active Memory Sharing requires AIX 6.1 TL3, IBM i 6.1 or SUSE Linux Enterprise Server 11 for Power, or later.

3 Requires two or more nodes.

See the Power Systems™ Facts and Features document for POWER7 servers (POB03022-USEN-00) for more detailed information

For more benchmark results, see http://www.ibm.com/systems/power/hardware/reports/system_perf.html

The IBM Power Systems home page on the Internet can be found at: ibm.com/systems/power/

© IBM Corporation 2011 All Rights Reserved

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

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

IBM, the IBM logo, AIX, Power, POWER7, PowerVM, Power Systems and TurboCore are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries or both. A full list of U.S. trademarks owned by IBM may be found at: ibm.com/legal/copytrade.shtml. The Power Architecture and Power.org word marks and the Power and Power.org logos and related marks are trademarks and service marks licensed by Power.org.

UNIX is a registered trademark of The Open Group in the United States, other countries or both. Linux is registered a trademark of Linus Torvalds in the United States, other countries or both. Other company, product and service names may be trademarks or service marks of others.

All statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only. Any reliance on these Statements of Direction is at the relying party's sole risk and will not create liability or obligation for IBM.

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

Photographs show engineering and design models and are not to scale. Changes may be incorporated in production models.

Commercial Processing Workload (CPW) is a relative measure of performance of systems running the IBM i operating system. rPerf (Relative Performance) is an estimate of commercial processing performance relative to other IBM UNIX systems. Actual performance will vary based on application and configuration specifics.

POY03032-USEN-11

Power is performance redefined
 Deliver new services faster, with higher quality and superior economics