



Multiple enhancements for IBM Power Systems I/O and servers are introduced

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At a glance

Power Systems™ enhancements include:

- Power^(R) S822 adds support for IBM^(R) i partitions with special terms and conditions
- Enhanced reliability, availability, and serviceability (RAS) for the PCIe Gen3 I/O Drawer
- High voltage dc (HVDC) power supply options that enable Power servers to improve data center energy efficiency
- Expanded configuration flexibility for existing PCIe adapters
 - 4-port 8Gb Fibre Channel Adapter (#EN12) on POWER8^(R) servers
 - 2-port 10GbE NIC&RoCE Adapter (#EC2M, #EC2N, #EC37, #EC38, #EL3X, or #EL40) on POWER7+™ servers
 - Additional PCIe adapter support for Power E850
- Support of LTO-7 tape drives in IBM Storage products such as the Removable Media Drawer

Overview

Multiple Power Systems enhancements for both the server and server I/O are announced.

The Power S822 is enhanced with the ability to run IBM i with special terms and conditions. The new offering provides support for a very space-efficient footprint for IBM i clients with partitions of two or fewer cores using virtual I/O at a P10 software tier. Firmware 840 or later is required.

With the latest 8.4 firmware level, the PCIe Gen3 I/O Drawer has several RAS enhancements. I/O drawers can now be added to Power E870 or E880 while the server is running. Concurrent maintenance is also enhanced with the ability to service a Fan-out Module in a PCIe Gen3 I/O Drawer while the other Fan-out Module in that drawer continues to run for all models. Cable RAS is also enhanced, allowing the drawer to continue operation if either top or bottom cable is detached or fails for all models.

HVDC power supplies, HVDC power cords, and HVDC PDUs are now an option for the POWER8 system units and nodes and for the PCIe Gen3 I/O Drawer. Compared to typical 200-240 V ac power, using 380 V dc power can improve the energy efficiency in the data center by several percent for these devices. Note that ac power is required on the EXP24S disk/SSD drawer, HMC, and Multimedia drawer.

Two adapters previously available on POWER8 servers are given expanded configuration flexibility. The PCIe2 LP 8Gb 4-port Fibre Channel Adapter (#EN0Y), which was previously available only in low profile slots, is now also available as a full high adapter (#EN12) and available in many more PCIe slots. The PCIe3 2-port 10GbE NIC&RoCE SR Adapter (#EC2M, #EC2N, #EC37, #EC38, #EL3X, or #EL40) with NIM and Linux™ Network capability is now supported on POWER7+ servers.

In addition to the above #EN12 adapter, the Power E850 is expanding its PCIe adapter configuration flexibility. The previously announced #5708 10GbE Adapter and #EJ27 Crypto Adapter and #EC2N/EC38 10GbE NIC&RoCE Adapter are now supported on the Power E850.

The new LTO-7 tape drives available in IBM Storage products such as the 7226-1U3 Multimedia Storage Enclosure are supported by POWER8 servers. LTO-7 offers increased capacity and improved price performance.

Planned availability date

October 30, 2015

Note: The PCIe3 2-port 10GbE NIC&RoCE SFP+ Copper Adapter (#EC38, #EC37, #EL3X) and PCIe3 2-port 10GbE NIC&RoCE SR Adapter (#EC2N, #EC2M, #EL40) are not available in the following countries: Abu Dhabi, Algeria, Bahrain, Comoros, Djibouti, Dubai, Iraq, Kuwait, Lebanon, Libya, Malaysia, Morocco, Oman, Pakistan, Qatar, Saudi Arabia, Somalia, Tunisia, United Arab Emirates, and Yemen.

Description

Power S822 supports IBM i

With firmware code level 840, the 2U Power S822 (8284-22A) supports IBM i 7.2 or IBM i 7.1 with special terms and conditions. Technology Refresh 3 or later for IBM i 7.2 or Technology Refresh 11 or later for IBM i 7.1 is required. Multiple IBM i partitions each up to a maximum of two cores are supported. IBM i partitions needing more than two cores can be run on a different model server. The Power S822 software tier is only P10.

Virtual I/O Server (VIOS) is required for all the I/O that IBM i accesses. There is no "native" IBM i support for I/O. Note that async or bisync adapters or crypto cards are not supported under VIOS. Thus IBM i applications requiring use of these adapters are not a good fit for the Power S822. Note IBM i 7.2 clients can connect to a LAN-attached OEM device that has downstream async connections. IBM i partitions accessing direct attached disk or SSD through VIOS must use 4k byte sector drives, not 5xx byte sector drives. The 4k drives are required for performance reasons.

PCIe Gen3 I/O Drawer RAS

The 8.4 firmware level provides the PCIe Gen3 I/O Drawer (feature #EMX0 or #ELMX) with expanded reliability, availability, and serviceability (RAS) capabilities.

All POWER8 models with firmware 8.4 are enhanced with the ability to concurrently service a Fan-out Module in a PCIe Gen3 I/O Drawer without taking the server down or taking down a Fan-out Module located in the same PCIe Gen3 I/O Drawer. After the service action is completed the Fan-out Module is returned to the server while the server is running. Note that when a Fan-out Module is being serviced, all six PCIe slots in the module are not available to the server.

All POWER8 models with firmware 8.4 are enhanced with the ability to disconnect either of the cables attaching a Fan-out Module to a system PCIe3 Optical Cable Adapter (#EJ05, #EJ07, or #EJ08). Previously only the top cable could be disconnected and still have the I/O drawer continue running. And previously restoring the configuration to full two-cable bandwidth required scheduled downtime

of both sides of the I/O drawer (two Fan-out Modules). With firmware 8.4 the detached cable can be replaced or reattached while the system is running and scheduled downtime is required only for the one Fan-out Module with cabling changes to restore two-cable bandwidth.

The Power E870/E880 with firmware 8.4 can now concurrently add one or more PCIe3 Optical Cable Adapters (feature #EJ07) to a system node and one or more PCIe Gen3 I/O Drawers (feature #EMX0) with either one or two 6-Slot Fan-out Modules (EMXF) while the server is running. Other server models do not have this concurrent add capability. Note adding a second Fan-out Module to an already installed PCIe Gen3 I/O Drawer with only one Fan-out Module initially installed does not have concurrent add capability.

HVDC

Using high voltage dc (HVDC) power instead of ac power to run servers in a data center saves energy and avoids heat. The savings is not to the server or I/O drawer itself. The savings is to the data center since there are fewer conversions being done to the electrical power before being given to the HVDC servers and HVDC I/O. The amount of savings depends on how much electrical power is being used and on the voltage initially being brought into the data center and the efficiency of different ac components. Typical savings will be about 4.5% to 8% for HVDC equipment.

Power Systems adding this capability are the models S822, S814, S824, E850, E870, E880, S812L, S822L, and S824L. System units using HVDC need the appropriate HVDC power supplies (feature #EB2N , #EL1D, or #EBAD) instead of ac power supplies. HVDC power supply feature #EMXB is used for a PCIe Gen3 I/O Drawer. The ac and dc power supplies can not be mixed in the same system unit or CEC. But two different components of the same system, such as a CEC and an I/O drawer, can have different types of power.

Mixing of dc and ac power in the same rack must use grounding that is done in accordance with the applicable electrical code. IBM provides documentation for different ac and dc products as to their disconnecting means for service. Refer to that documentation to determine if the disconnecting means should differ. Mixing ac and dc in the same rack is atypical and given the possibility a client might easily incorrectly wire the grounding, IBM Manufacturing does not support integrating both ac and dc power in the same rack for client safety reasons. Note this might cause more than one rack to be configured in e-config if factory integration has been requested or it might cause some components to be shipped outside of a rack.

The HVDC power supply uses HVDC power cords and attaches to HVDC power distribution units (PDUs). Use feature #EPAD to select a 2.5-meter HVDC power cord for the server or I/O drawer. Or alternatively, use feature #EPAC to let IBM Manufacturing select an HVDC power cord (either 1.0 m, 1.5 m, or 2.5 m) for the server or I/O drawer.

The IBM Power Systems HVDC PDU feature code used depends on country-specific electrical codes (feature #EPAA or #EPAF). The PDU includes vertical mounting hardware for a rack side pocket or horizontal mounting hardware. Often horizontal mounting is preferred to provide better access to power cords and an optional horizontal mounting specify feature #EBA5 communicates this desire to IBM Manufacturing.

LTO-7

The new LTO-7 tape drives available in IBM Storage products such as the 7226-1U3 Multimedia Storage Enclosure are supported by POWER8 servers. LTO-7 offers more than 2X more capacity, providing approximately 6 TB vs the previous 2.5 TB LTO-6 capacity. This provides a lower cost per TB. The drive is attached using an 8Gb or 16Gb Fibre Channel adapter with a maximum bandwidth on Power Systems of 8 Gb.

Business Partner information

If you are a Direct Reseller - System Reseller acquiring products from IBM, you may link directly to Business Partner information for this announcement. A PartnerWorld^(R) ID and password are required (use IBM ID).

[BP Attachment for Announcement Letter 115-089](#)

Product number

The following are newly announced features on the specific models of the IBM Power Systems 7014, 7965, 8202, 8205, 8231, 8246, 8247, 8248, 8268, 8284, 8286, 8408, 8412, 9109, 9117, 9119, and 9179 machine types:

Planned Availability Date October 30, 2015

New Feature

Description	MT	Model	Feature		
DC Power Supply - 1400w (180-400v)	8284	22A	EB2N		
	8286	41A			
	8286	42A			
	8408	E8E			
HVDC PDU Horizontal Mounting	7014	T00	EBA5		
	7014	T42			
	7965	94Y			
	8247	21L			
	8247	22L			
	8247	42L			
	8284	22A			
	8286	41A			
	8286	42A			
	8408	E8E			
	9119	MHE			
DC Power Channels	9119	MME	EBAD		
	9119	MHE			
DC Power Supply - 1400w (180-400v)	8247	21L	EL1D		
	8247	22L			
	8247	42L			
DC Power Supply Conduit for PCIe3 Expansion Drawer	8247	21L	EMXB		
	8247	22L			
	8247	42L			
	8284	22A			
	8286	41A			
	8286	42A			
	8408	E8E			
	9119	MHE			
	9119	MME			
	HVDC PDU - 90A 6xOutlet	7014		T00	EPAA
		7014		T42	
7965		94Y			
8247		21L			
8247		22L			
8247		42L			
8284		22A			
8286		41A			
8286		42A			
8408		E8E			
9119		MHE			
Auto Selected HVDC Power Cord	9119	MME	EPAC		
	8247	21L			
	8247	22L			
	8247	42L			
	8284	22A			

	8286	41A	
	8286	42A	
	8408	E8E	
	9119	MHE	
	9119	MME	
2.5 Meter HVDC Power Cord	8247	21L	EPAD
	8247	22L	
	8247	42L	
	8284	22A	
	8286	41A	
	8286	42A	
	8408	E8E	
	9119	MHE	
	9119	MME	
HVDC PDU - 90A 6xOutlet Alternate Base	7014	T00	EPAF
	7014	T42	
Rack Content Specify 1U Horizontal PDU - 1 EIA	7965	94Y	ER14

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Planned Availability Date November 20, 2015

New Feature

Description	MT	Model	Feature
10Gb FCoE PCIe Dual Port Adapter	8408	E8E	5708
Lift Tool	8408	E8E	EB2Z
OPAL with PowerKVM 3.1	8247	21L	EC40
	8247	22L	
	8247	42L	
PCIe Crypto Coprocessor No BSC 4765-001	8408	E8E	EJ27
Quantity 150 of #EL1Q	8247	42L	ELQQ
PCIe2 8Gb 4-port Fibre Channel Adapter	8247	21L	EN12
	8247	22L	
	8247	42L	
	8284	22A	
	8286	41A	
	8286	42A	
	8408	E8E	
	9119	MHE	
	9119	MME	
Rear rack extension	8408	E8E	ERGO

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Planned Availability Date December 11, 2015

New Feature

Description	MT	Model	Feature
PCIe3 LP 2-port 10GbE NIC&RoCE SR Adapter	8202	E4D	EC2M
	8205	E6D	
	8231	E1D	
	8231	E2D	
	8268	E1D	
PCIe3 2-port 10GbE NIC&RoCE SR Adapter	8202	E4D	EC2N
	8205	E6D	
	8248	L4T	
	8412	EAD	
	9109	RMD	
	9117	MMD	

	9179	MHD	
PCIe3 2-port 10GbE NIC&RoCE SR Adapter	8408	E8D	EC2N
PCIe3 LP 2-port 10GbE NIC&RoCE SFP+ Copper Adapter	8202	E4D	EC37
	8205	E6D	
	8231	E1D	
	8231	E2D	
	8268	E1D	
PCIe3 2-port 10GbE NIC&RoCE SFP+ Copper Adapter	8202	E4D	EC38
	8205	E6D	
	8248	L4T	
	8412	EAD	
	9109	RMD	
	9117	MMD	
	9179	MHD	
PCIe3 2-port 10GbE NIC&RoCE SFP+ Copper Adapter	8408	E8D	EC38
PCIe3 LP 2-port 10GbE NIC&RoCE SFP+ Copper Adapter	8246	L1D	EL3X
	8246	L1T	
	8246	L2D	
	8246	L2T	
PCIe3 LP 2-port 10GbE NIC&RoCE SR Adapter	8246	L1D	EL40
	8246	L1T	
	8246	L2D	
	8246	L2T	

Feature conversions

The existing components being replaced during a model or feature conversion become the property of IBM and must be returned.

Feature conversions are always implemented on a "quantity of one for quantity of one" basis. Multiple existing features may not be converted to a single new feature. Single existing features may not be converted to multiple new features.

The following conversions are available to customers.

Feature conversions for 9119-MHE processor features:

From FC:	To FC:	Return parts
ELJ6 - Power IFL Processor Activation	ELJ8 - Power IFL Processor Activation	No
EPBB - 4.35 GHz, 32-core POWER8 processor	EPBD - 4.02 GHz 48-core POWER8 processor	Yes
EPBK - 1 core Processor Activation for #EPBB	EPBM - 1 core Processor Activation for #EPBD	No
EPBP - 1 core Processor Activation for #EPBB, Mobile Eabled	EPBR - 1 core Processor Activation for #EPBD, Mobile Eabled	No

Publications

No publications are shipped with the announced products.

The IBM Publications Center Portal is located on

<http://www.ibm.com/shop/publications/order>

The Publications Center is a worldwide central repository for IBM product publications and marketing material with a catalog of 70,000 items. Extensive

search facilities are provided. A large number of publications are available online in various file formats, which can currently be downloaded.

Services

Global Technology Services

IBM services include business consulting, outsourcing, hosting services, applications, and other technology management.

These services help you learn about, plan, install, manage, or optimize your IT infrastructure to be an on-demand business. They can help you integrate your high-speed networks, storage systems, application servers, wireless protocols, and an array of platforms, middleware, and communications software for IBM and many non-IBM offerings. IBM is your one-stop shop for IT support needs.

For details on available services, contact your IBM representative or see

<http://www.ibm.com/services/>

For details on available IBM Business Continuity and Recovery Services, contact your IBM representative or go to

<http://www.ibm.com/services/continuity>

For details on education offerings related to specific products, go to

http://www.ibm.com/services/learning/ites.wss/zz/en?pageType=tp_search_new

Technical information

Specified operating environment

Physical specifications

For physical specifications, refer to the *Sales Manual*.

To assure installability and serviceability in non-IBM industry-standard racks, review the installation planning information for any product-specific installation requirements.

Planning information

Cable orders

No cables are required.

Security, auditability, and control

The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communications facilities.

IBM Electronic Services

IBM has transformed its delivery of hardware and software support services to help you achieve higher system availability. Electronic Services is a web-enabled solution that offers an exclusive, no-additional-charge enhancement to the service and support available for IBM servers. These services are designed to provide the opportunity for greater system availability with faster problem resolution and preemptive monitoring. Electronic Services comprises two separate, but

complementary, elements: Electronic Services news page and Electronic Services Agent.

The Electronic Services news page is a single Internet entry point that replaces the multiple entry points traditionally used to access IBM Internet services and support. The news page enables you to gain easier access to IBM resources for assistance in resolving technical problems.

The Electronic Service Agent™ is no-additional-charge software that resides on your server. It monitors events and transmits system inventory information to IBM on a periodic, client-defined timetable. The Electronic Service Agent automatically reports hardware problems to IBM. Early knowledge about potential problems enables IBM to deliver proactive service that may result in higher system availability and performance. In addition, information collected through the Service Agent is made available to IBM service support representatives when they help answer your questions or diagnose problems. Installation and use of IBM Electronic Service Agent for problem reporting enables IBM to provide better support and service for your IBM server.

To learn how Electronic Services can work for you, see

<http://www.ibm.com/support/electronic>

Terms and conditions

MES discount applicable

Equal to the volume commitment discount

Field-installable feature

Yes

Warranty period

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

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

Customer setup

Yes

Machine code

Same license terms and conditions as base machine

Prices

The following are newly announced features on the specific models of the IBM Power Systems 7014, 7965, 8202, 8205, 8231, 8246, 8247, 8248, 8268, 8284, 8286, 8408, 8412, 9109, 9117, 9119, and 9179 machine types:

Description	Model number	Feature number	Initial/	
			MES/Both support	RP CSU MES
HVDC PDU Horizontal Mounting				

	T00	EBA5	Both	Yes	No
	T42		Both	Yes	No
HVDC PDU - 90A 6xOutlet					
	T00	EPAA	Both	Yes	No
	T42		Both	Yes	No
HVDC PDU 90A 6xOutlet Alt Base					
	T00	EPAF	Initial	N/A	No
	T42		Initial	N/A	No
Initial/ MES/ Both					
Description	Model	Feature	Both	RP	
Machine type 7965	number	number	support	CSU	MES
HVDC PDU Horizontal Mounting					
	94Y	EBA5	Both	Yes	No
HVDC PDU - 90A 6xOutlet					
	94Y	EPAA	Both	Yes	No
Specify 1U PDU - 1 EIA					
	94Y	ER14	Initial	N/A	No
Initial/ MES/ Both					
Description	Model	Feature	Both	RP	
Machine type 8202	number	number	support	CSU	MES
PCIe3 LP 2-port 10GbE NIC&R SR					
	E4D	EC2M	Both	Yes	No
PCIe3 2-port 10GbE NIC&RoCE SR					
	E4D	EC2N	Both	Yes	No
PCIe3 LP 2-port 10GbE NIC&R Cu					
	E4D	EC37	Both	Yes	No
PCIe3 2-port 10GbE NIC&RoCE Cu					
	E4D	EC38	Both	Yes	No
Initial/ MES/ Both					
Description	Model	Feature	Both	RP	
Machine type 8205	number	numbers	support	CSU	MES
PCIe3 LP 2-port 10GbE NIC&R SR					
	E6D	EC2M	Both	Yes	No
PCIe3 2-port 10GbE NIC&RoCE SR					
	E6D	EC2N	Both	Yes	No
PCIe3 LP 2-port 10GbE NIC&R Cu					
	E6D	EC37	Both	Yes	No
PCIe3 2-port 10GbE NIC&RoCE Cu					
	E6D	EC38	Both	Yes	No
Initial/ MES/ Both					
Description	Model	Feature	Both	RP	
Machine type 8231	number	number	support	CSU	MES
PCIe3 LP 2-port 10GbE NIC&R SR					
	E1D	EC2M	Both	Yes	No
	E2D		Both	Yes	No
PCIe3 LP 2-port 10GbE NIC&R Cu					
	E1D	EC37	Both	Yes	No
	E2D		Both	Yes	No
Initial/ MES/ Both					
Description	Model	Feature	Both	RP	
Machine type 8246	number	number	support	CSU	MES
PCIe3 LP 2-port 10GbE NIC&R CU					
	L1D	EL3X	Both	Yes	No
	L1T		Both	Yes	No
	L2D		Both	Yes	No
	L2T		Both	Yes	No
PCIe3 LP 2-port 10GbE NIC&R SR					
	L1D	EL40	Both	Yes	No
	L1T		Both	Yes	No

Description	Model number	Feature number	Both support	Initial/MES/	Yes	No	RP CSU MES
		L2D			Both	Yes	No
		L2T			Both	Yes	No
Machine type 8247				Initial/MES/			
HVDC PDU Horizontal Mounting							
		21L		EBA5	MES	Yes	No
		22L			MES	Yes	No
		42L			MES	Yes	No
Opal with PowerKVM 3.1							
		21L		EC40	Initial	N/A	No
		22L			Initial	N/A	No
		42L			Initial	N/A	No
DC Power Supply - 1400W							
		21L		EL1D	Both	Yes	No
		22L			Both	Yes	No
		42L			Both	Yes	No
DC Power Supply Conduit							
		21L		EMXB	Both	Yes	No
		22L			Both	Yes	No
		42L			Both	Yes	No
PCIe2 8Gb 4-port Fibre Channel							
		21L		EN12	Both	Yes	No
		22L			Both	Yes	No
		42L			Both	Yes	No
HVDC PDU - 90A 6xOutlet							
		21L		EPAA	MES	Yes	No
		22L			MES	Yes	No
		42L			MES	Yes	No
Auto Selected HVDC Power Cord							
		21L		EPAC	Initial	N/A	No
		22L			Initial	N/A	No
		42L			Initial	N/A	No
2.5 Meter HVDC Power Cord							
		21L		EPAD	Both	Yes	No
		22L			Both	Yes	No
		42L			Both	Yes	No
Machine type 8248							
PCIe3 2-port 10GbE NIC&RoCE SR							
		L4T		EC2N	Both	Yes	No
PCIe3 2-port 10GbE NIC&RoCE Cu							
		L4T		EC38	Both	Yes	No
Machine type 8268							
PCIe3 LP 2-port 10GbE NIC&R SR							
		E1D		EC2M	Both	Yes	No
PCIe3 LP 2-port 10GbE NIC&R Cu							
		E1D		EC37	Both	Yes	No
Machine type 8284							
DC Power Supply - 1400W							
		22A		EB2N	Both	Yes	No
HVDC PDU Horizontal Mounting							
		22A		EBA5	MES	Yes	No
DC Power Supply Conduit							
		22A		EMXB	Both	Yes	No
PCIe2 8Gb 4-port Fibre Channel							
		22A		EN12	Both	Yes	No

HVDC PDU - 90A 6xOutlet	22A	EPAA	MES	Yes	No
Auto Selected HVDC Power Cord	22A	EPAC	Initial	N/A	No
2.5 Meter HVDC Power Cord	22A	EPAD	Both	Yes	No
			Initial/ MES/ Both		RP
Description Machine type 8286	Model number	Feature number	Both support	CSU	MES
DC Power Supply - 1400W	41A	EB2N	Both	Yes	No
	42A		Both	Yes	No
HVDC PDU Horizontal Mounting	41A	EBA5	MES	Yes	No
	42A		MES	Yes	No
DC Power Supply Conduit	41A	EMXB	Both	Yes	No
	42A		Both	Yes	No
PCIe2 8Gb 4-port Fibre Channel	41A	EN12	Both	Yes	No
	42A		Both	Yes	No
HVDC PDU - 90A 6xOutlet	41A	EPAA	MES	Yes	No
	42A		MES	Yes	No
Auto Selected HVDC Power Cord	41A	EPAC	Initial	N/A	No
	42A		Initial	N/A	No
2.5 Meter HVDC Power Cord	41A	EPAD	Both	Yes	No
	42A		Both	Yes	No
			Initial/ MES/ Both		RP
Description Machine type 8408	Model number	Feature number	Both support	CSU	MES
DC Power Supply - 1400W	E8E	EB2N	Both	Yes	No
Lift Tool	E8E	EB2Z	Both	Yes	No
HVDC PDU Horizontal Mounting	E8E	EBA5	MES	Yes	No
PCIe Crypto Coprocessor No BSC	E8E	EJ27	Both	Yes	No
DC Power Supply Conduit	E8E	EMXB	Both	Yes	No
PCIe2 8Gb 4-port Fibre Channel	E8E	EN12	Both	Yes	No
HVDC PDU - 90A 6xOutlet	E8E	EPAA	MES	Yes	No
Auto Selected HVDC Power Cord	E8E	EPAC	Initial	N/A	No
2.5 Meter HVDC Power Cord	E8E	EPAD	Both	Yes	No
Rear rack extension	E8E	ERG0	MES	Yes	No
			Initial/ MES/ Both		RP
Description Machine type 8412	Model number	Feature number	Both support	CSU	MES
PCIe3 2-port 10GbE NIC&RoCE SR	EAD	EC2N	Both	Yes	No
PCIe3 2-port 10GbE NIC&RoCE Cu	EAD	EC38	Both	Yes	No
			Initial/ MES/ Both		RP
Description Machine type 9109	Model number	Feature numbers	Both support	CSU	MES

PCIe3 2-port 10GbE NIC&RoCE SR	RMD	EC2N	Both	Yes	No
PCIe3 2-port 10GbE NIC&RoCE Cu	RMD	EC38	Both	Yes	No
			Initial/ MES/ Both/ support		RP CSU MES
Description Machine type 9117	Model number	Feature number			
PCIe3 2-port 10GbE NIC&RoCE SR	MMD	EC2N	Both	Yes	No
PCIe3 2-port 10GbE NIC&RoCE Cu	MMD	EC38	Both	Yes	No
			Initial/ MES/ Both/ support		RP CSU MES
Description Machine type 9119	Model number	Feature number			
HVDC PDU Horizontal Mounting	MHE	EBA5	MES	Yes	No
	MME		MES	Yes	No
DC Power Channels	MHE	EBAD	Both	Yes	No
	MME		Both	Yes	No
DC Power Supply Conduit	MHE	EMXB	Both	Yes	No
	MME		Both	Yes	No
PCIe2 8Gb 4-port Fibre Channel	MHE	EN12	Both	Yes	No
	MME		Both	Yes	No
HVDC PDU - 90A 6xOutlet	MHE	EPAA	MES	Yes	No
	MME		MES	Yes	No
Auto Selected HVDC Power Cord	MHE	EPAC	Initial	N/A	No
	MME		Initial	N/A	No
2.5 Meter HVDC Power Cord	MHE	EPAD	Both	Yes	No
	MME		Both	Yes	No
			Initial/ MES/ Both/ support		RP CSU MES
Description Machine type 9179	Model number	Feature number			
PCIe3 2-port 10GbE NIC&RoCE SR	MHD	EC2N	Both	Yes	No
PCIe3 2-port 10GbE NIC&RoCE Cu	MHD	EC38	Both	Yes	No

The following are features already announced for the IBM Power Systems 8247 and 8408 machine types:

			Initial/ MES/ Both/ support		RP CSU MES
Description Machine type 8247	Model number	Feature number			
Quantity 150 of #EL1Q	42L	ELQQ	Both	Yes	No
			Initial/ MES/ Both/ support		RP CSU MES
Description Machine Type 8408	Model number	Feature number			
10Gb FCoE PCIe Dual Port Adapt	E8E	5708	Support	Yes	No
PCIe3 2-port 10GbE NIC&RoCE SR	E8D	EC2N	Both	Yes	No

Feature conversions

Feature conversions for 9119-MHE processor features:

From FC:	To FC:	Parts returned
ELJ6 - Power IFL Processor Activation	ELJ8 - Power IFL Processor Activation	No
EPBB - 4.35 GHZ, 32-core POWER8 processor	EPBD - 4.02 GHZ 48-core POWER8 processor	Yes
EPBK - 1 core Processor Activation for #EPBB	EPBM - 1 core Processor Activation for #EPBD	No
EPBP - 1 core Processor Activation for #EPBB, Mobile Eabled	EPBR - 1 core Processor Activation for #EPBD, Mobile Eabled	No

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