IBM Power Systems enhances I/O and processor support

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Overview

Enhancements for the IBM(R) Power(R) System E980 and IBM Power System E950 servers include:

- A processor enhancement introduces support of a three-processor module configuration on the Power E950 server. The 3-processor/socket support provides even more agility to the E950 by adding new 24-core, 30-core, 33-core, and 36-core configuration options.
- These adapters are available for the Power E950 (9040-MR9) server:
  - The PCIe3 2-port 100 GbE (NIC and RoCE) QSFP28 Adapter x16 can support significantly greater bandwidth with low latency and minimize CPU overhead by more efficiently using memory access. This offloads the CPU from I/O networking tasks, improving performance and scalability.
  - The PCIe2 4-Port USB 3.0 Adapter provides support for USB devices.
  - The PCIe Gen4 x16 2-port InfiniBand EDR adapter provides high-speed connectivity with other servers or IB switches.
- The following adapter features are supported only for the Power E980 (9080-M9S) server: EC2M, EC2N, EC37, EC38, EN0M, and EN0N. These features are not available for initial orders.
- The following features are supported only for the Power E950 (9040-MR9) server: EC2N, EC38, EJ0L, EJ27, EJ28, and EN0M. These features are not available for initial orders.

Feature exchange

Not applicable.

Planned availability date

March 15, 2019

Description

Hardware enhancements are available for the Power System E980 (9080-M9S) server.

PCIe3 2-port 100 GbE (NIC and RoCE) QSFP28 Adapter x16 (#EC3M)

This PCIe Gen3 Ethernet x16 adapter provides two 100 Gb QSFP28 ports. The adapter supports both NIC and IBTA RoCE standards. RoCE is Remote Direct Memory

Access (RDMA) over Converged Ethernet. Using RoCE, the adapter can support significantly greater bandwidth with low latency and minimize CPU overhead by more efficiently using memory access. This offloads the CPU from I/O networking tasks, improving performance and scalability. IBM offers either passive copper twinax cables up to 2 meter in length or active optical cables up to 100 meters in length. See features EB5J - EB5M for a 0.5M, 1.0M, 1.5M, and 2.0M copper cable. See features EB5R - EB5Y for a 3 m, 5 m, 10 m, 15 m, 20 m, 30 m, 50 m, and 100 m active optical cable. Transceivers are included on each end of these QSFP28 cables. Alternatively to the above supported cables, you may choose to order an IBM qualified and supported QSFP28 optical transceiver (#EB59) to put into the adapter and provide your own 100GE optical cabling with your own QSP28 optical transceiver for the other end. Either one or both of the adapter's two QSP28 ports can be populated. When two ports are filled, both can have copper cables, both can have optical cables, or one can be copper and one can be optical. Features EC3L and EC3M have identical electronics and function and CCIN (2CEC), but have different tailstock brackets. Feature EC3L is low profile and feature EC3M is full high. The adapter is based on a Mellanox ConnectX-4 adapter that uses a ConnectX-4 EN Network Controller.

PCIe2 4-Port USB 3.0 Adapter (#EC46)

The PCIe Gen2 x8 short 4-port USB 3.0 adapter provides support for USB devices. In applications that require the use of a USB extension cable for keyboards, use one feature 4256 adapter per port. The feature EC45 and EC46 USB adapters are electronically identical with the same 58F9 CCIN. They differ physically in their tailstock. Feature EC45 is low profile and feature EC46 is full high.

PCIe4 2-port 100 Gb EDR IB CAPI adapter (#EC65)

The PCIe Gen4 x16 2-port InfiniBand EDR adapter provides high-speed connectivity with other servers or IB switches. Each port maximum of 100 Gb assumes no other system or switch bottlenecks are present. A PCIe Gen4 x16 PCIe slot is required. This adapter is sourced from Mellanox Corporation, based on ConnectX-5 technology. The adapter supports the InfiniBand Trade Association (IBTA) specification version 2. The two 100 Gb ports have QSFP+ connections that support EDR cables, either EDR DAC or EDR optical. One adapter can support either or both types of cable. The user can choose to cable up just one port if they want. Transceivers are included in the cables. IBM cable features EB50 - EB54 (copper shorter distance) and feature EB5A - EB5H (optical longer distance) are supported or their copper or optical Mellanox equivalents are supported. Other cables are not supported. The feature EC64 and EC65 adapters are electronically and functionally identical with the same CCIN of 2CF2. Feature EC64 is low profile and feature EC65 is full high.

Product number

The following are newly announced features on the specific models of the IBM Power Systems™ 9040 and 9080 machine types:

New features available March 15, 2019

Description	Machine type	Model	Feature number
EXP24S SFF Gen2 Load Source Specify (#5887 or #EL1S)	9040	MR9	0728
PCIe LP POWER GXT145 Graphics Accelerator	9080	M9S	5269
PCIe LP 4-Port Async EIA-232 Adapter	9080	M9S	5277
POWER GXT145 PCI Express Graphics Accelerator	9040	MR9	5748
4 Port Async EIA-232 PCIe Adapter	9040	MR9	5785
EXP24S SFF Gen2-bay Drawer	9040	MR9	5887
PCIe3 LP 2-port 10GbE NIC&RoCE SR Adapter	9080	M9S	EC2M
PCIe3 2-port 10GbE NIC&RoCE SR Adapter	9080	M9S	EC2N
PCIe3 2-port 10GbE NIC&RoCE SR Adapter	9040	MR9	EC2N

PCIe3 LP 2-port 10GbE NIC&RoCE SFP+ Copper Adapter	9080	M9S	EC37
PCIe3 2-port 10GbE NIC&RoCE SFP+ Copper Adapter	9080	M9S	EC38
PCIe3 2-port 10GbE NIC&RoCE SFP+ Copper Adapter	9040	MR9	EC38
PCIe3 2-port 100GbE (NIC&RoCE) QSFP28 Adapter x16	9040	MR9	EC3M
PCIe2 LP 4-Port USB 3.0 Adapter	9080	M9S	EC45
PCIe2 4-Port USB 3.0 Adapter	9080	M9S	EC46
PCIe2 4-Port USB 3.0 Adapter 9040 MR9 EC46			
PCIe4 1-port 100Gb EDR IB CAPI adapter	9040	MR9	EC63
PCIe4 2-port 100Gb EDR IB CAPI adapter	9040	MR9	EC65
PCIe3 12GB Cache RAID SAS Adapter Quad-port 6Gb x8	9040	MR9	EJ0L
PCIe1 SAS Tape/DVD Dual-port 3Gb x8 Adapter	9040	MR9	EJ1P
PCIe Crypto Coprocessor No BSC 4765-001	9040	MR9	EJ27
PCIe Crypto Coprocessor Gen3 BSC 4765-001	9040	MR9	EJ28
PCIe3 Crypto Coprocessor no BSC 4767	9040	MR9	EJ32
Specify Mode-1 & (1)EJ0J/EJ0M/EL3B for EXP24S (#5887/EL1S)	9040	MR9	EJR1
Specify Mode-1 & (2)EJ0J/EJ0M/EL3B for EXP24S (#5887/EL1S)	9040	MR9	EJR2
Specify Mode-2 & (2)EJ0J/EJ0M/EL3B & (2) X for EXP24S (#5887/EL1S)	9040	MR9	EJR3
Specify Mode-2 & (4)EJ0J/EJ0M/EL3B for EXP24S (#5887/EL1S)	9040	MR9	EJR4
Specify Mode-4 & (4)EJ0J/EJ0M/EL3B for EXP24S (#5887/EL1S)	9040	MR9	EJR5
Specify Mode-2 & (1)EJ0J/EJ0M/EL3B & (2) YO for EXP24S (#5887/EL1S)	9040	MR9	EJR6
Specify Mode-2 & (2)EJ0J/EJ0M/EL3B & (2) YO for EXP24S (#5887/EL1S)	9040	MR9	EJR7
Specify Mode-2 & (1)EJ0J/EJ0M/EL3B & (1) YO for EXP24S (#5887/El1S)	9040	MR9	EJRA
Specify Mode-2 & (2)EJ0J/EJ0M/EL3B & (1) X for EXP24S (#5887/EL1S)	9040	MR9	EJRB
Specify Mode-4 & (1)EJ0J/EJ0M/EL3B for EXP24S (#5887/EL1S)	9040	MR9	EJRC
Specify Mode-4 & (2)EJ0J/EJ0M/EL3B for EXP24S (#5887/EL1S)	9040	MR9	EJRD
Specify Mode-4 & (3)EJ0J/EJ0M/EL3B for EXP24S (#5888/EL1S)	9040	MR9	EJRE
Specify Mode-1 & (2)EJ14 for EXP24S (#5887/EL1S)	9040	MR9	EJRF
Specify Mode-2 & (2)EJ14 & (2) X for EXP24S (#5887/EL1S)	9040	MR9	EJRG
Specify Mode-2 & (2)EJ14 & (1) X for EXP24S (#5887/EL1S)	9040	MR9	EJRH
Specify Mode-2 & (4)EJ14 for EXP24S (#5887/EL1S)	9040	MR9	EJRJ
Specify Mode-2 & (1 or 2)EJ0K for EXP24S (#5887/EL1S)	9040	MR9	EJRK
Specify Mode-1 & (2)EJ0L for EXP24S (#5887/EL1S)	9040	MR9	EJRP
Specify mode-2 & (4) EJ0L for EXP24S #5887/EL1S	9080	M9S	EJRR
Specify mode-2 & (4) EJ0L for EXP24S #5887/EL1S	9040	MR9	EJRR
Specify Mode-2 & (2)EJ0L & (2) X for EXP24S (#5887/EL1S)	9080	M9S	EJRS
Specify Mode-2 & (2)EJ0L & (2) X for EXP24S (#5887/EL1S) 9040 MR9 EJRS			
Specify Mode-2 & (2)EJ0L & (1) X for EXP24S (#5887/EL1S)	9040	MR9	EJRT
Specify Mode-2 & (2)EJ0L & (1) X for EXP24S (#5887/EL1S)	9080	M9S	EJRT
Non-paired Indicator EJ0L PCIe SAS RAID Adapter	9040	MR9	EJRU
Specify Mode-1 & (2)EJ14 & (2)YO12 for EXP24S (#5887/EL1S)	9040	MR9	EJRV
Specify Mode-1 & (2)EJ0L & (2)YO12 for EXP12SX #ESLL/ELLL	9040	MR9	EJVP
Specify Mode-1 & (2)EJ0L & (2)YO12 for EXP24SX #ESLS/ELLS	9040	MR9	EJWP
Specify Mode-2 & (4)EJ0L & (2)X12 for EXP24SX #ESLS/ELLS	9040	MR9	EJWR
Specify Mode-2 & (2)EJ0L & (2)X12 for EXP24SX #ESLS/ELLS	9040	MR9	EJWS
Specify Mode-2 & (2)EJ0L& (1)X12 for EXP24SX #ESLS/ELLS	9040	MR9	EJWT
PCIe2 LP 8Gb 2-Port Fibre Channel Adapter	9080	M9S	EN0F
PCIe2 8Gb 2-Port Fibre Channel Adapter	9080	M9S	EN0G

PCIe2 8Gb 2-Port Fibre Channel Adapter	9040	MR9	EN0G
PCIe3 4-port(10Gb FCoE & 1GbE) LR&RJ45 Adapter	9040	MR9	EN0M
PCIe3 4-port(10Gb FCoE & 1GbE) LR&RJ45 Adapter	9080	M9S	EN0M
PCIe3 LP 4-port(10Gb FCoE & 1GbE) LR&RJ45 Adapter	9080	M9S	EN0N
PCIe2 LP 8Gb 4-port Fibre Channel Adapter	9080	M9S	EN0Y
PCIe2 8Gb 4-port Fibre Channel Adapter	9080	M9S	EN12

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 clients on February 12, 2019:

Feature conversions for 9040-MR9 adapter features:

From FC:	To FC:	Return parts
EJ32 - PCIe3 Crypto Coprocessor no BSC 4767	EJ33 - PCIe3 Crypto Coprocessor BSC-Gen3 4767	No

Feature conversions for 9080-MHE to 9080-M9S processor features:

From FC:	To FC:	Return parts
ELPC - SOL Edition FOR SAP HANA 4.02GHz 48 core act (IFL), 2TB Mem Act (IFL)	EFP1 - 32-core (4x8) Typical 3.9 to 4.0 GHz (max) POWER9 Processor with 5U system node drawer	Yes
ELPC - SOL Edition FOR SAP HANA 4.02GHz 48 core act (IFL), 2TB Mem Act (IFL)	EFP2 - 40-core (4x10) Typical 3.7 to 3.9 GHz (max) POWER9 Processor with 5U system node drawer	Yes
ELPC - SOL Edition FOR SAP HANA 4.02GHz 48 core act (IFL), 2TB Mem Act (IFL)	EFP3 - 48-core (4x12) Typical 3.55 to 3.9 GHz (max) POWER9 Processor with 5U system node drawer	Yes
ELPC - SOL Edition FOR SAP HANA 4.02GHz 48 core act (IFL), 2TB Mem Act (IFL)	EFP4 - 44-core (4x11) Typical 3.58 to 3.9 GHz (max) POWER9 Processor with 5U system node drawer	Yes

Feature conversions for 9119-MHE to 9080-M9S processor features:

From FC:	To FC:	Return parts
ELPA - SOL Edition FOR SAP HANA 4.19GHz 40 core act (IFL), 2TB Mem Act (IFL)	EFP1 - 32-core (4x8) Typical 3.9 to 4.0 GHz (max) POWER9 Processor with 5U system node drawer	Yes
ELPA - SOL Edition FOR SAP HANA 4.19GHz 40 core act (IFL), 2TB Mem Act (IFL)	EFP2 - 40-core (4x10) Typical 3.7 to 3.9 GHz (max) POWER9 Processor with 5U system node drawer	Yes
ELPA - SOL Edition FOR SAP HANA 4.19GHz 40 core act (IFL), 2TB Mem Act (IFL)	EFP3 - 48-core (4x12) Typical 3.55 to 3.9 GHz (max) POWER9 Processor with 5U system node drawer	Yes

ELPA - SOL Edition FOR SAP HANA 4.19GHz 40 core act (IFL), 2TB Mem Act (IFL)	EFP4 - 44-core (4x11) Typical 3.58 to 3.9 GHz (max) POWER9 Processor with 5U system node drawer	Yes

Feature conversions for 9119-MME to 9080-M9S processor features:

From FC:	To FC:	Return parts
EPBE - Power IFL Package for HANA Solution	EFP1 - 32-core (4x8) Typical 3.9 to 4.0 GHz (max) POWER9 Processor with 5U system node drawer	Yes
EPBE - Power IFL Package for HANA Solution	EFP2 - 40-core (4x10) Typical 3.7 to 3.9 GHz (max) POWER9 Processor with 5U system node drawer	Yes
EPBE - Power IFL Package for HANA Solution	EFP3 - 48-core (4x12) Typical 3.55 to 3.9 GHz (max) POWER9 Processor with 5U system node drawer	Yes
EPBE - Power IFL Package for HANA Solution	EFP4 - 44-core (4x11) Typical 3.58 to 3.9 GHz (max) POWER9 Processor with 5U system node drawer	Yes

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 IBMid).

BP Attachment for Announcement Letter 119-007

Publications

No publications are shipped with the announced products.

To access the IBM Publications Center Portal, go to the IBM Publications Center website.

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.

National language support
Not applicable.

Services

IBM Systems Lab Services

IBM Systems Lab Services offers a wide array of services available for your enterprise. It brings expertise on the latest technologies from the IBM development community and can help with your most difficult technical challenges.

IBM Systems Lab Services exists to help you successfully implement emerging technologies so as to accelerate your return on investment and improve your satisfaction with your IBM systems and solutions. Services examples include initial implementation, integration, migration, and skills transfer on IBM systems solution

capabilities and recommended practices. IBM Systems Lab Services is one of the service organizations of IBM's world-renowned IBM Systems Group development labs.

For details on available services, contact your IBM representative or go to the IBM Systems Lab Services website.

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

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For details on available services, contact your IBM representative or go to the IBM Global Technology Services(R) website.

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

Details on education offerings related to specific products can be found on the IBM authorized training website.

Technical information

Planning information

Cable orders

No cables required.

Security, auditability, and control

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

IBM Systems Lab Services

For details on available services, contact your IBM representative or go to the IBM Systems Lab Services website.

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, go to the IBM Electronic Service Agent website.

Terms and conditions

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.

Client setup

Yes

Machine code

Same license terms and conditions as base machine

Prices

For additional information and current prices, contact your local IBM representative.

The following are newly announced features on the specific models of the IBM Power Systems™ 9040 machine type:

Description Machine type 9040	Model number	Feature number	Purchase price	Minimum Initial/ Monthly MES/ Maint. Charge	Both/ Support	CSU	RP MES
5887/EL1S Load Source Specfy	MR9	0728			MES	Yes	No
POWER GXT145 PCI Express Graph	MR9	5748			Both	Yes	No
4 Port Async EIA 232 PCIe Adap	MR9	5785			Both	Yes	No
EXP24S SFF Gen2-bay Drawer	MR9	5887			Support	Yes	No
PCIe3 2-port 10GbE NIC&RoCE SR	MR9	EC2N			Support	Yes	No
PCIe3 2-port 10GbE NIC&RoCE Cu	MR9	EC38			Support	Yes	No
PCIe3 2-port 100GbE Adapterx16	MR9	EC3M			Both	Yes	No

PCIe2 4-Port USB 3.0 Adapter					
	MR9	EC46	Both	Yes	No
PCIe4 1-port 100Gb EDR IB					
	MR9	EC63	Both	Yes	No
PCIe4 2-port 100Gb EDR IB					
	MR9	EC65	Both	Yes	No
PCIe3 12GB Cache RAID SAS Adap					
	MR9	EJ0L	Support	Yes	No
PCIe1 SAS Tape/DVD 2P 3Gb x8					
	MR9	EJ1P	Both	Yes	No
PCIe Crypto Coprocessor No BSC					
	MR9	EJ27	Support	N/A	No
PCIe Crypto Coprocessor G3 BSC					
	MR9	EJ28	Support	N/A	No
PCIe3 Crypto Coproc noBSC 4767					
	MR9	EJ32	Both	Yes	No
Specify Mode1 & (1)EJ0J-EXP24S					
	MR9	EJR1	MES	Yes	No
Specify Mode1 &1(2)EJ0J-EXP24S					
	MR9	EJR2	MES	Yes	No
Specify Mode2 & (2)EJ0J-EXP24S					
	MR9	EJR3	MES	Yes	No
Specify Mode2 & (4)EJ0J-EXP24S					
	MR9	EJR4	MES	Yes	No
Specify Mode4 & (4)EJ0J-EXP24S					
	MR9	EJR5	MES	Yes	No
Specify Mode2 & (1)EJ0J-EXP24S					
	MR9	EJR6	MES	Yes	No
Specify Mode2 & (2)EJ0J-EXP24S					
	MR9	EJR7	MES	Yes	No
Specify Mode2 & (1)EJ0J-EXP24S					
	MR9	EJRA	MES	Yes	No
Specify Mode2 & (2)EJ0J-EXP24S					
	MR9	EJRB	MES	Yes	No
Specify-Mode4 & (1)EJ0J-EXP24S					
	MR9	EJRC	MES	Yes	No
Specify-Mode4 & (2)EJ0J-EXP24S					
	MR9	EJRD	MES	Yes	No
Specify-Mode4 & (3)EJ0J-EXP24S					
	MR9	EJRE	MES	Yes	No
Specify Mode1 & (2)EJ14-EXP24S					
	MR9	EJRF	MES	Yes	No
Specify Mode2 & (2)EJ14-EXP24S					
	MR9	EJRG	MES	Yes	No
Specify Mode2 & (2)EJ14-EXP24S					
	MR9	EJRH	MES	Yes	No
Specify Mode2 & (4)EJ14+EXP24S					
	MR9	EJRJ	MES	Yes	No
Spec Mode2 & (2)EJ0K-EXP24S					
	MR9	EJRK	MES	Yes	No
Specify Mode1 & (2)EJ0L-EXP24S					
	MR9	EJRP	MES	Yes	No
Specify Mode2 & (4)EJ0L EXP24S					
	MR9	EJRR	MES	Yes	No
Specify Mode2 & (2)EJ0L-EXP24S					
	MR9	EJRS	MES	Yes	No
Specify Mode2 & (2)EJ0L-EXP24S					
	MR9	EJRT	MES	Yes	No
Non-paired Indicator EJ0L PCIe					
	MR9	EJRU	Both	Yes	No
Spec Mode1 & (2)EJ14-EXP24S					
	MR9	EJRV	MES	Yes	No
Specify Mode-1 for EXP12SX 2&2					
	MR9	EJVP	MES	Yes	No
Specify Mode-1 for EXP24SX 2&2					
	MR9	EJWP	MES	Yes	No
Specify Mode-2 for EXP24SX 4&2					
	MR9	EJWR	MES	Yes	No
Specify Mode-2 for EXP24SX 2&2					
	MR9	EJWS	MES	Yes	No
Specify Mode-2 for EXP24SX 2&1					
	MR9	EJWT	MES	Yes	No
PCIe2 8Gb 2-Port Fibre Channel					
	MR9	EN0G	Both	Yes	No

PCIe3 4-port 10Gb FCoE & 1GbE							
	MR9	EN0M			Support	Yes	No

The following are features already announced for the IBM Power Systems 9080 machine type:

Description Machine type 9080	Model number	Feature number	Purchase price	Minimum Monthly Maint. Charge	Initial/ MES/ Both/ Support	CSU	RP MES
PCIe LP POWER GXT145 Graphics	M9S	5269			Both	Yes	No
PCIe LP 4 Port Async EIA 232 A	M9S	5277			Both	Yes	No
PCIe3 LP 2-port 10GbE NIC&R SR	M9S	EC2M			Support	Yes	No
PCIe3 2-port 10GbE NIC&RoCE SR	M9S	EC2N			Support	Yes	No
PCIe3 LP 2-port 10GbE NIC&R Cu	M9S	EC37			Support	Yes	No
PCIe3 2-port 10GbE NIC&RoCE Cu	M9S	EC38			Support	Yes	No
PCIe2 LP 4-Pt USB 3.0 Adapter	M9S	EC45			Both	Yes	No
PCIe2 4-Port USB 3.0 Adapter	M9S	EC46			Both	Yes	No
Specify Mode2 & (4)EJ0L EXP24S	M9S	EJRR			MES	Yes	No
Specify Mode2 & (2)EJ0L-EXP24S	M9S	EJRS			MES	Yes	No
Specify Mode2 & (2)EJ0L-EXP24S	M9S	EJRT			MES	Yes	No
PCIe2 LP 8Gb 2-Port Fibre Chan	M9S	EN0F			Both	Yes	No
PCIe2 8Gb 2-Port Fibre Channel	M9S	EN0G			Both	Yes	No
PCIe3 4-port 10Gb FCoE & 1GbE	M9S	EN0M			Support	Yes	No
PCIe3 LP 4-port 10Gb FCoE &1GE	M9S	EN0N			Support	Yes	No
PCIe2 LP 8Gb 4-port Fibre Chan	M9S	EN0Y			Both	Yes	No
PCIe2 8Gb 4-port Fibre Channel	M9S	EN12			Both	Yes	No

CSU = Client setup

RP MES = Return parts, miscellaneous equipment specifications

Feature conversions

Feature conversions for 9040-MR9 adapter features:

From FC:	To FC:	Parts returned	Purchase price
EJ32 - PCIe3 Crypto Coprocessor no BSC 4767	EJ33 - PCIe3 Crypto Coprocessor BSC-Gen3 4767	No	

Feature conversions for 9080-MHE to 9080-M9S processor features:

From FC:	To FC:	Parts returned	Purchase price
ELPC - SOL Edition FOR SAP HANA 4.02GHz 48 core act (IFL), 2TB Mem Act (IFL)	EFP1 - 32-core (4x8) Typical 3.9 to 4.0 GHz (max) POWER9 Processor with 5U system node drawer	Yes	

ELPC - SOL Edition FOR SAP HANA 4.02GHz 48 core act (IFL), 2TB Mem Act (IFL)	EFP2 - 40-core (4x10) Typical 3.7 to 3.9 GHz (max) POWER9 Processor with 5U system node drawer	Yes
ELPC - SOL Edition FOR SAP HANA 4.02GHz 48 core act (IFL), 2TB Mem Act (IFL)	EFP3 - 48-core (4x12) Typical 3.55 to 3.9 GHz (max) POWER9 Processor with 5U system node drawer	Yes
ELPC - SOL Edition FOR SAP HANA 4.02GHz 48 core act (IFL), 2TB Mem Act (IFL)	EFP4 - 44-core (4x11) Typical 3.58 to 3.9 GHz (max) POWER9 Processor with 5U system node drawer	Yes

Feature conversions for 9119-MHE to 9080-M9S processor features:

From FC:	To FC:	Parts returned	Purchase price
ELPA - SOL Edition FOR SAP HANA 4.19GHz 40 core act (IFL), 2TB Mem Act (IFL)	EFP1 - 32-core (4x8) Typical 3.9 to 4.0 GHz (max) POWER9 Processor with 5U system node drawer	Yes	
ELPA - SOL Edition FOR SAP HANA 4.19GHz 40 core act (IFL), 2TB Mem Act (IFL)	EFP2 - 40-core (4x10) Typical 3.7 to 3.9 GHz (max) POWER9 Processor with 5U system node drawer	Yes	
ELPA - SOL Edition FOR SAP HANA 4.19GHz 40 core act (IFL), 2TB Mem Act (IFL)	EFP3 - 48-core (4x12) Typical 3.55 to 3.9 GHz (max) POWER9 Processor with 5U system node drawer	Yes	
ELPA - SOL Edition FOR SAP HANA 4.19GHz 40 core act (IFL), 2TB Mem Act (IFL)	EFP4 - 44-core (4x11) Typical 3.58 to 3.9 GHz (max) POWER9 Processor with 5U system node drawer	Yes	

Feature conversions for 9119-MME to 9080-M9S processor features:

From FC:	To FC:	Parts returned	Purchase price
EPBE - Power IFL Package for HANA Solution	EFP1 - 32-core (4x8) Typical 3.9 to 4.0 GHz (max) POWER9 Processor with 5U system node drawer	Yes	
EPBE - Power IFL Package for HANA Solution	EFP2 - 40-core (4x10) Typical 3.7 to 3.9 GHz (max) POWER9 Processor with 5U system node drawer	Yes	
EPBE - Power IFL Package for HANA Solution	EFP3 - 48-core (4x12) Typical 3.55 to 3.9 GHz (max) POWER9 Processor with 5U system node drawer	Yes	
EPBE - Power IFL Package for HANA Solution	EFP4 - 44-core (4x11) Typical 3.58 to 3.9 GHz (max) POWER9 Processor with 5U system node drawer	Yes	

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