

IBM Power Systems enhances I/O

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Overview

IBM^(R) POWER9TM scale-out family servers support the 8 GB DDR4 memory DIMM (#EM60, #EM6G) and the following existing I/O:

- PCIe2 8 Gb 2-Port Fibre Channel Adapter (#EL5Y, #EL5Z)
- PCIe3 LP 2-Port 40 GbE NIC RoCE QSFP+ Adapter (#EC3A, #EC3B)
- PCIe Cryptographic Coprocessor 4767 adapter (#EJ32)
- PCIe1 LP SAS Tape/DVD Dual-port 3 Gb x8 Adapter (#EJ1N)
- EXP24S storage expansion enclosures (#5887, #EL1S) supported for migration, but not as a new order
- HDD and SDD options supported on EXP24S

Feature exchange

Not applicable.

Planned availability date

- July 20, 2018, except for feature EPA0
- August 10, 2018, for feature EPA0

Description

Multiple hardware enhancements are available for POWER9 scale-out family servers, including 8 GB DDR4 memory, PCIe2 8 Gb 2-Port Fibre Channel Adapter, PCIe3 LP 2-Port 40 GbE NIC RoCE QSFP+ Adapter, PCIe crypto card, PCIe1 LP SAS Tape/DVD Dual-port 3 Gb x8 Adapter, I/O drawer attachment, disks, and more.

8 GB DDR4 memory option for IBM Power^(R) L922, S922, S914, S924, H922, and H924 servers

A memory feature that represents one physical DDR4 2666 MHz DIMM memory card is available for the POWER9 scale-out L922, S922, S914, and S924 servers. The capacity option is 8 GB DDR4 memory (#EM60).

A memory feature that represents one physical DDR4 2666 MHz DIMM memory card is available for the POWER9 scale-out H922 and H924 servers. The capacity option is 8 GB DDR4 memory (#EM6G).

PCIe2 2-Port 8 Gb Fibre Channel Adapter (#EL5Y, #EL5Z)

The PCIe2 2-Port 8 Gb Fibre Channel Adapter offers the same functionality as the existing PCIe 2-Port 8 Gb Fibre Channel Adapter (#EN0F, #EN0G) but at a lower price for Linux^(R)-only servers. See the [IBM System Storage Interoperation Center \(SSIC\)](#) website for supported combinations.

Feature EL5Y is low profile, and feature EL5Z is for full-high slots. The PCIe2 8 Gb 2-Port Fibre Channel Adapter adds a lower-price 8 Gb Fibre Channel option for the Linux-only L922 POWER9 server.

PCIe3 LP 2-Port 40 GbE NIC RoCE QSFP+ Adapter (#EC3A, #EC3B)

The feature EC3A adapter is now available for L922, S922, and H922 servers, and the feature EC3B adapter is now available for L922, S922, S914, S924, H922, and H924 servers.

The PCIe Gen3 adapter provides two 40 Gb Ethernet QSFP+ ports (#EC3A, #EC3B). NIC and IBTA RoCE protocols are supported.

RoCE is Remote Direct Memory Access (RDMA) over Converged Ethernet. RoCE 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 feature EC3A and EC3B adapters do not include transceivers. Shorter distance copper cables include transceivers on the end of the QSFP+ cable (see #EB2B (1 m), #EB2H (3 m), and #ECBN (5 m)). For longer distance, use two optical SR transceivers (two #EB27). QSFP+ optical cables to be used with the EB27 transceiver are features EB2J (10 m) or EB2K (30 m). Do not mix copper and optical on the same adapter.

Features EC3A and EC3B have identical electronics and function and the same CCIN (57BD), but they have different tail stocks. Feature EC3A is low profile, and feature EC3B is full height. IBM AIX^(R) NIM and Linux Network Install are supported.

IBM PCIe3 Crypto Coprocessor 4767 (#EJ32)

Feature EJ32 is now available for S914, S924, and H924 servers.

This secure-key adapter provides both cryptographic coprocessor and cryptographic accelerator functions in a single PCIe card. The adapter is well suited to applications that require high-speed, security-sensitivity, RSA acceleration, cryptographic operations for data encryption and digital signing, secure management, and use of cryptographic keys or custom cryptographic applications. It provides secure storage of cryptographic keys in a tamper-resistant hardware security module designed to meet FIPS 140-2 level 4 security requirements. The adapter is a PCIe Gen1 x4 full-height short card. The adapter runs in dedicated mode only (no IBM PowerVM^(R) virtualization).

Features EJ32 and EJ33 represent the same physical card with the same CCIN of 4767. Different feature numbers are used to indicate if a blind-swap cassette is used and its type. Feature EJ32 indicates no blind-swap cassette. Feature EJ33 indicates a Gen3 blind-swap cassette.

PCIe Cryptographic Coprocessor 4767 builds on the solid base of the previous generation crypto adapter (#EJ27, #EJ28, #EJ29). It offers all the existing adapter's capabilities and more. Adapter highlights:

- Binary compatibility with applications written to use previous generation cards.
- Significantly increased performance compared to the previous generation.
- Hardware-accelerated Elliptic Curve Cryptography (ECC) key generation, along with digital signature generation and verification using the Elliptic Curve Digital Signature Algorithm (ECDSA).

- Enhanced firmware load security using ECDSA signatures.
- New financial services support verbs for Visa Data Secure Platform with Point to Point Encryption (VDSP with P2PE), which includes Visa Format-Preserving Encryption (FPE).
- Access-control tracking can be performed on a role ID basis to gather information about which access control points are queried by applications.
- Users of the HSM 4767 have enhanced logon control capabilities, including stricter passphrase length and character requirements and the ability for users to change their own passphrases.
- The ability to encipher and decipher data using the AES algorithm in Galois/Counter Mode (GCM).
- The creation of symmetric key material from a pair of Elliptic Curve Cryptography (ECC) keys using the Elliptic Curve Diffie-Hellman (ECDH) protocol and the ANSI-9.63-KDF key derivation method as specified in ANSI X9.63-2011.
- Newly selectable RSA public exponents 5, 17, and 257. This addition completes the series of the first five Fermat numbers. The first five Fermat numbers are known to be prime.

PCIe1 SAS Tape/DVD Dual-port 3 Gb x8 Adapter (#EJ1N, #EJ1P)

The PCIe1 SAS Tape/DVD Dual-port 3 GB x8 Adapter is now available for the Linux-only L922 POWER9 server.

The PCIe Gen1 is a short x8 form factor adapter that supports the attachment of SAS tape and DVD using a pair of mini SAS 4x connectors. The PCIe1 can be used for external tape drives, which are not supported on the newer and faster 4-port 6 Gb PCIe3 adapter (see #EJ10 or #EJ11). The adapter supports external SAS tape drives such as the LTO™-6, LTO-7, and LTO-8 found in the IBM 7226-1U3 Multimedia drawers, or tape units such as the TS2260, TS2270, and TS2280 single External Tape Drive, TS2900, TS3100, TS3200, and TS3310. Other removable media devices supported include IBM SAS/SATA DVD RAM drive features available on the IBM 7226-1U3 Storage Enclosure.

Feature EJ1N and EJ1P are electrically and functionally identical with the same CCIN of 57B3. EJ1N has a low-profile tailstock bracket and EJ1P has a full-high tailstock bracket.

EXP24S disk/SSD drawer available for migration only

Feature 5887 is supported for migration only for S922, S914, S924, H922, and H924 POWER9 servers, and feature EL1S is supported for migration only for the Linux-only L922 POWER9 server.

The EXP24S SAS HDD/SSD Expansion Drawer (#5887/#EL1S) can be attached to SAS ports on either a PCIe SAS adapter located in the server or to the SAS ports on the rear of the server. Two SAS ports on the rear of the server are enabled with the expanded-function storage backplane with dual IOA support.

- One EXP24S drawer in mode 1 can be attached to the two SAS ports on the rear of the server using three-meter SAS YO cables such as feature ECBT or ECBU. Either SSDs or HDDs can be placed in this drawer, but SSDs and HDDs cannot be mixed in this drawer.
- The EXP24S drawer (#5887/#EL1S) can be attached to SAS ports of PCIe SAS adapters using SAS YO or X cables. Up to 28 EXP24S drawers can be attached. The specific SAS cables used will depend on the specific adapter selected and drawer mode selected. Either SSDs or HDDs can be placed in the drawer, depending on the capabilities of the adapter running the bays. Note that longer distance SAS cables are thicker and can fill the Cable Management Arm more quickly.
- With AIX, Linux, and VIOS, you can migrate the EXP24S with four sets of six bays, two sets of 12 bays, or one set of 24 bays (mode 4, 2, or 1). With IBM i, you can migrate the EXP24S as one set of 24 bays (mode 1). Mode setting is done by IBM Manufacturing, and there is no option provided to change the mode after it is shipped from IBM.

- The EXP24S SAS ports are attached to a SAS PCIe adapter or pair of adapters using SAS YO or X cables.

One no-charge specify code is used with each EXP24S I/O Drawer (#5887/#EL1S) to communicate to IBM configurator tools which mode setting, adapter, and SAS cable are being migrated. With this specify code, no hardware has been shipped. The physical adapters, controllers, and cables were ordered with their own chargeable feature numbers. There are more technically supported configurations than represented by these specify codes. IBM configurator tools such as e-config only understand and support EXP24S configurations represented by these specify codes.

Specify	Mode	Adapter/ Controller	Cable to Drawer	Environment
9387	Mode 1	CEC SAS Ports	2 YO6 cables	AIX/Linux/ IBM i
EJSU	Mode 1	CEC SAS Ports	1 YO6 cable	AIX/Linux
EJR1	Mode 1	One (unpaired) #EJ0J/ #EJ0M/ #EL3B/ #EL59	1 YO6 cable	AIX/Linux/ IBM i
EJR2	Mode 1	Two (unpaired) #EJ0J/ #EJ0M/ #EL3B/ #EL59	2 YO6 cables	AIX/Linux/ IBM i
EJR3	Mode 2	Two (one pair) #EJ0J/ #EJ0M/ #EL3B/ #EL59	2 X6 cables	AIX/Linux/ VIOS
EJR4	Mode 2	Four (two pair) #EJ0J/ #EJ0M/ #EL3B/ #EL59	2 X6 cables	AIX/Linux/ VIOS
EJR5	Mode 4	Four (unpaired) #EJ0J/ #EJ0M/ #EL3B/ #EL59	2 X6 cables	AIX/Linux/ VIOS
EJR6	Mode 2	One (unpaired) #EJ0J/ #EJ0M/ #EL3B/ #EL59	2 YO6 cables	AIX/Linux/ VIOS
EJR7	Mode 2	Two (unpaired) #EJ0J/ #EJ0M/ #EL3B/ #EL59	2 YO6 cables	AIX/Linux/ VIOS
EJRF	Mode 1	Two #EJ14	2 YO6 cables	AIX/Linux/ VIOS
EJRG	Mode 2	Two #EJ14	2 X6 cables	AIX/Linux

All of the above EXP24S specify codes assume a full set of adapters and cables able to run all the SAS bays configured. The following specify codes communicate a lower cost, "partial" configuration that has been configured where the ordered adapters and cables can run only a portion of the SAS bays. The future MES addition of adapters and cables can enable the remaining SAS bays for growth. The following specify codes are used:

Specify	Mode	Adapter/ Controller	Cable to Drawer	Environment
EJRA (1/2 of #EJR7)	Mode 2	One (unpaired) #EJ0J/ #EJ0M/ #EL3B/ #EL59	1 YO6 cable	AIX/Linux/ VIOS
EJRB (1/2 of #EJR4)	Mode 2	One pair #EJ0J/ #EJ0M/ #EL3B/ #EL59	1 X6 cable	AIX/Linux/ VIOS
EJRC (1/4 of #EJR5)	Mode 4	One (unpaired) #EJ0J/ #EJ0M/ #EL3B/ #EL59	1 X6 cable	AIX/Linux/ VIOS
EJRD (2/4 of #EJR5)	Mode 4	Two (unpaired) #EJ0J/ #EJ0M/ #EL3B/ #EL59	1 X6 cable	AIX/Linux/ VIOS
EJRE (3/4 of #EJR5)	Mode 4	Three (unpaired) #EJ0J/ #EJ0M/ #EL3B/ #EL59	2 X6 cables	AIX/Linux/ VIOS
EJRH (1/2 of #EJRG)	Mode 2	Two #EJ14	1 X6 cable	AIX/Linux
EJRJ	Mode 2	Four #EJ14 (two pair)	2 X6 cables	AIX/Linux

The EXP24S supports up to 24 hot-swap SFF-2 SAS HDDs or SSDs. It uses only 2 EIA of space in a 19-inch rack. The EXP24S includes redundant AC power supplies and uses two power cords.

An EXP24S Drawer in mode 4 can be attached to two or four SAS controllers. For example, if using unpaired feature EJ0J adapters, these EJ0J adapters could be in the same server in the same partition, same server in different partitions, or even different servers.

If the I/O drawer EXP24S is in mode 2, then half of its SAS bays can be controlled by one pair of PCIe3 SAS adapters, such as a 12 GB write cache adapter pair (#EJ14), and the other half can be controlled by a different PCIe3 SAS 12 GB write cache adapter pair or by zero-write-cache PCIe3 SAS adapters.

Note that for simplicity, IBM configurator tools such as e-config assume that the SAS bays of an individual I/O drawer are controlled by one type of SAS adapter. As a client, you have more flexibility than e-config understands.

Two-and-a-half-inch small form factor (SFF) SAS HDDs and SSDs are supported for migration only in the EXP24S. All drives are mounted on Gen2 carriers/trays and thus named SFF-2 drives. The SFF-2 drives, which are supported for migration only in the existing EXP24S are:

HDD 10k RPM	HDD 15k RPM	SSD
571 GB 5xx (#1962 IBM i)	283 GB 5xx (#1948 IBM i)	387 GB 5xx (#ES79 IBM i/ #ESG6 IBM i)
1.20 TB/1.14 TB 5xx (#ESD3 AIX, Linux/#ESD2 IBM i)	600 GB/571 GB 5xx (#ESDP AIX, Linux/ #ESDN IBM i)	775 GB 5xx (#ES7F IBM i/ #ESGG IBM i)
		387 GB 4K (#ES0Q AIX, Linux/#ES0R IBM i)

HDD 10k RPM	HDD 15k RPM	SSD
		775 GB 4k (#ES0S AIX, Linux/#ES0T IBM i)

EXP24S drives for feature EL1S (Linux-only) are:

HDD 10k RPM	HDD 15k RPM	SSD
1.20 TB 5xx (#ELD3)	600 GB 5xx (#ELDP)	387 GB 4K (#EL4Q)
		775 GB 4K (#EL4S)

The EXP24S and EXP24SX can be mixed on the same server and on the same PCIe3 adapter, but IBM Manufacturing will only build initial orders with EXP24SX or EXP12SX. The e-config will reflect this per-order limitation. EXP24S, EXP24SX, and EXP12SX can be mixed on the same server. EXP24SX and EXP12SX can be mixed on the same PCIe3 adapter.

Other feature codes can be migrated with a quantity of 150 of the SFF-2 drives (#1817, #1927, #EQDN, #EQDP, #ELQ0, #ELQ3, #EQD2, #EQD3, #EQ79, #EQ7F, #EQ0Q, #EQ0R, #EQ0S, #EQ0T, #ELRQ, #ELQS, #EQG6, #EQGG) and no-charge load source specify features (#0875, #0872, #0911, #ELT9, #ELTF, #ELZ6, #ELZG, #ELSR, #ELST, #ELSN).

Software requirements (assuming the server supports this software level):

- AIX
- Linux
- IBM i

Product number

The following are newly announced features on the specific models of the IBM Power Systems™ 9008, 9009, and 9223 machine types:

New features available July 20, 2018

Description	Machine type	Model	Feature number
EXP24S SFF Gen2 Load Source Specify (#5887 or #EL1S)	9008	22L	0728
	9009	22A	
	9009	41A	
	9009	42A	
	9223	22H	
	9223	42H	
#1948 Load Source Specify (283GB 15k RPM SAS SFF-2 Disk)	9009	41A	0872
	9009	42A	
	9223	42H	
#1962 Load Source Specify (571GB 10k RPM SAS SFF-2 Disk)	9009	41A	0875
	9009	42A	
	9223	42H	
#ESD2 Load Source Specify (1.1TB 10k SFF-2)	9009	41A	0911
	9009	42A	
	9223	42H	
Quantity 150 of #1962	9009	41A	1817
	9009	42A	
	9223	42H	
Quantity 150 of #1948	9009	41A	1927
	9009	42A	
	9223	42H	
283GB 15k RPM SAS SFF-2 Disk Drive (IBM i)	9009	41A	1948
	9009	42A	
	9223	42H	
571GB 10k RPM SAS SFF-2 Disk Drive (IBM i)	9009	41A	1962

	9009	42A	
	9223	42H	
EXP24S SFF Gen2-bay Drawer	9009	22A	5887
	9009	41A	
	9009	42A	
	9223	22H	
	9223	42H	
Specify mode-1 & CEC SAS port for EXP24 #5887/ EL1S	9008	22L	9387
	9009	22A	
	9009	41A	
	9009	42A	
	9223	22H	
	9223	42H	
QSFP+ 40GBase-SR Transceiver	9008	22L	EB27
	9009	22A	
	9009	41A	
	9009	42A	
	9223	22H	
	9223	42H	
1m (3.3-ft), IBM Passive QSFP+ to QSFP+ Cable (DAC)	9008	22L	EB2B
	9009	22A	
	9009	41A	
	9009	42A	
	9223	22H	
	9223	42H	
3m (9.8-ft), IBM Passive QSFP+ to QSFP+ Cable (DAC)	9008	22L	EB2H
	9009	22A	
	9009	41A	
	9009	42A	
	9223	22H	
	9223	42H	
PCIe3 LP 2-Port 40GbE NIC RoCE QSFP+ Adapter	9008	22L	EC3A
	9009	22A	
	9223	22H	
PCIe3 2-Port 40GbE NIC RoCE QSFP+ Adapter	9008	22L	EC3B
	9009	22A	
	9009	41A	
	9009	42A	
	9223	22H	
	9223	42H	
5m (16.4-ft), IBM Passive QSFP+ to QSFP+ Cable (DAC)	9008	22L	ECBN
	9009	22A	
	9009	41A	
	9009	42A	
	9223	22H	
	9223	42H	
PCIe1 LP SAS Tape/DVD Dual-port 3Gb x8 Adapter	9008	22L	EJ1N
PCIe1 SAS Tape/DVD Dual-port 3Gb x8 Adapter	9008	22L	EJ1P
PCIe3 Crypto Coprocessor no BSC 4767	9009	41A	EJ32
	9009	42A	
	9223	42H	
Specify Mode-1 & (1)EJ0J/EJ0M/EL3B for EXP24S (#5887/EL1S)	9008	22L	EJR1
	9009	22A	
	9009	41A	
	9009	42A	
	9223	22H	
	9223	42H	
Specify Mode-1 & (2)EJ0J/EJ0M/EL3B for EXP24S (#5887/EL1S)	9008	22L	EJR2
	9009	22A	
	9009	41A	
	9009	42A	
	9223	22H	
	9223	42H	
Specify Mode-2 & (2)EJ0J/EJ0M/EL3B & (2) X for EXP24S (#5887/EL1S)	9008	22L	EJR3
	9009	22A	
	9009	41A	
	9009	42A	

	9223	22H	
	9223	42H	
Specify Mode-2 & (4)EJ0J/EJ0M/EL3B for EXP24S (#5887/EL1S)	9008	22L	EJR4
	9009	22A	
	9009	41A	
	9009	42A	
	9223	22H	
	9223	42H	
Specify Mode-4 & (4)EJ0J/EJ0M/EL3B for EXP24S (#5887/EL1S)	9008	22L	EJR5
	9009	22A	
	9009	41A	
	9009	42A	
	9223	22H	
	9223	42H	
Specify Mode-2 & (1)EJ0J/EJ0M/EL3B & (2) YO for EXP24S (#5887/EL1S)	9008	22L	EJR6
	9009	22A	
	9009	41A	
	9009	42A	
	9223	22H	
	9223	42H	
Specify Mode-2 & (2)EJ0J/EJ0M/EL3B & (2) YO for EXP24S (#5887/EL1S)	9008	22L	EJR7
	9009	22A	
	9009	41A	
	9009	42A	
	9223	22H	
	9223	42H	
Specify Mode-2 & (1)EJ0J/EJ0M/EL3B & (1) YO for EXP24S (#5887/EL1S)	9008	22L	EJRA
	9009	22A	
	9009	41A	
	9009	42A	
	9223	22H	
	9223	42H	
Specify Mode-2 & (2)EJ0J/EJ0M/EL3B & (1) X for EXP24S (#5887/EL1S)	9008	22L	EJRB
	9009	22A	
	9009	41A	
	9009	42A	
	9223	22H	
	9223	42H	
Specify Mode-4 & (1)EJ0J/EJ0M/EL3B for EXP24S (#5887/EL1S)	9008	22L	EJRC
	9009	22A	
	9009	41A	
	9009	42A	
	9223	22H	
	9223	42H	
Specify Mode-4 & (2)EJ0J/EJ0M/EL3B for EXP24S (#5887/EL1S)	9008	22L	EJRD
	9009	22A	
	9009	41A	
	9009	42A	
	9223	22H	
	9223	42H	
Specify Mode-4 & (3)EJ0J/EJ0M/EL3B for EXP24S (#5888/EL1S)	9008	22L	EJRE
	9009	22A	
	9009	41A	
	9009	42A	
	9223	22H	
	9223	42H	
Specify Mode-1 & (2)EJ14 for EXP24S (#5887/EL1S)	9008	22L	EJRF
	9009	22A	
	9009	41A	
	9009	42A	
	9223	22H	
	9223	42H	
Specify Mode-2 & (2)EJ14 & (2) X for EXP24S (#5887/EL1S)	9008	22L	EJRG
	9009	22A	

	9009	41A	
	9009	42A	
	9223	22H	
	9223	42H	
Specify Mode-2 & (2)EJ14 & (1) X for EXP24S (#5887/EL1S)	9008	22L	EJRH
	9009	22A	
	9009	41A	
	9009	42A	
	9223	22H	
	9223	42H	
Specify Mode-2 & (4)EJ14 for EXP24S (#5887/EL1S)	9008	22L	EJRJ
	9009	22A	
	9009	41A	
	9009	42A	
	9223	22H	
	9223	42H	
Specify Mode-1 & CEC SAS port Controller EJ1G/EL67& (1) 6G YO for EXP24S (#5887/EL1S)	9008	22L	EJSU
	9009	22A	
	9223	22H	
EXP24S SFF Gen2-bay Drawer	9008	22L	EL1S
387GB SFF-2 4K SSD for Linux	9008	22L	EL4Q
775GB SFF-2 4K SSD for Linux	9008	22L	EL4S
PCIe2 LP 8Gb 2-Port Fibre Channel Adapter	9008	22L	EL5Y
PCIe2 8Gb 2-Port Fibre Channel Adapter	9008	22L	EL5Z
1.2TB 10K RPM SAS SFF-2 Disk Drive (Linux)	9008	22L	ELD3
600GB 15K RPM SAS SFF-2 Disk Drive - 5xx Block	9008	22L	ELDP
Quantity 150 of #ELDP 600GB 15k RPM SFF-2 Disk	9008	22L	ELQ0
Quantity 150 of #ELD3 (1.2TB 10k SFF-2)	9008	22L	ELQ3
Quantity 150 of #EL4S 775GB SFF-2 4k SSD (Linux)	9008	22L	ELQS
Quantity 150 of #EL4Q 387GB SFF-2 4k SSD (Linux)	9008	22L	ELRQ
#ESDN Load Source Specify (571GB 15K RPM SFF-2)	9009	41A	ELSN
	9009	42A	
	9223	42H	
#ES0R Load Source Specify (387GB SSD SFF-2 4K)	9009	41A	ELSR
	9009	42A	
	9223	42H	
#ES0T Load Source Specify (775GB SSD SFF-2 4K)	9009	41A	ELST
	9009	42A	
	9223	42H	
#ES79 Load Source Specify (387GB SFF-2 SSD 5xx for IBM i)	9009	41A	ELT9
	9009	42A	
	9223	42H	
#ES7F Load Source Specify (775GB SFF-2 SSD 5xx for IBM i)	9009	41A	ELTF
	9009	42A	
	9223	42H	
#ESG6 Load Source Specify (387GB SSD SFF-2)	9009	41A	ELZ6
	9009	42A	
	9223	42H	
#ESGG Load Source Specify (775GB SSD SFF-2)	9009	41A	ELZG
	9009	42A	
	9223	42H	
8 GB DDR4 Memory	9008	22L	EM60
	9009	22A	
	9009	41A	
	9009	42A	
8 GB DDR4 Memory	9223	22H	EM6G
	9223	42H	
Quantity 150 of #ES0Q 387GB SFF-2 4k SSD (AIX/Linux)	9009	41A	EQ0Q
	9009	42A	
	9223	42H	
Quantity 150 of #ES0R 387GB SFF-2 4k SSD (IBM i)	9009	41A	EQ0R
	9009	42A	
	9223	42H	
Quantity 150 of #ES0S 775GB SFF-2 4k SSD (AIX/Linux)	9009	41A	EQ0S
	9009	42A	
	9223	42H	
Quantity 150 of #ES0T 775GB SFF-2 4k SSD (IBM i)	9009	41A	EQ0T
	9009	42A	

Quantity 150 of #ES79 387GB SFF-2 SSD 5xx	9223 42H	
	9009 41A	EQ79
	9009 42A	
Quantity 150 of #ES7F 775GB SFF-2 SSD 5xx	9223 42H	
	9009 41A	EQ7F
	9009 42A	
Quantity 150 of #ESD2 (1.1TB 10k SFF-2)	9223 42H	
	9009 41A	EQD2
	9009 42A	
Quantity 150 of #ESD3 (1.2TB 10k SFF-2)	9223 42H	
	9009 41A	EQD3
	9009 42A	
	9223 42H	
Quantity 150 of #ESDN (571GB 15K RPM SAS SFF-2 for IBM i)	9009 41A	EQDN
	9009 42A	
	9223 42H	
Quantity 150 of #ESDP (600GB 15K RPM SAS SFF-2 for AIX/LINUX)	9009 41A	EQDP
	9009 42A	
	9223 42H	
Quantity 150 of #ESG6 (387GB SAS 5xx)	9009 41A	EQG6
	9009 42A	
	9223 42H	
Quantity 150 of #ESGG (775GB SAS 5xx)	9009 41A	EQGG
	9009 42A	
	9223 42H	
387GB SFF-2 4K SSD for AIX/Linux	9009 41A	ES0Q
	9009 42A	
	9223 42H	
387GB SFF-2 4k SSD for IBM i	9009 41A	ES0R
	9009 42A	
	9223 42H	
775GB SFF-2 4k SSD for AIX/Linux	9009 41A	ES0S
	9009 42A	
	9223 42H	
775GB SFF-2 4k SSD for IBM i	9009 41A	ES0T
	9009 42A	
	9223 42H	
387GB SFF-2 SSD 5xx eMLC4 for IBM i	9009 41A	ES79
	9009 42A	
	9223 42H	
775GB SFF-2 SSD 5xx eMLC4 for IBM i	9009 41A	ES7F
	9009 42A	
	9223 42H	
1.1TB 10K RPM SAS SFF-2 Disk Drive (IBMi)	9009 41A	ESD2
	9009 42A	
	9223 42H	
1.2TB 10K RPM SAS SFF-2 Disk Drive (AIX/Linux)	9009 41A	ESD3
	9009 42A	
	9223 42H	
571GB 15K RPM SAS SFF-2 Disk Drive - 528 Block (IBM i)	9009 41A	ESDN
	9009 42A	
	9223 42H	
600GB 15K RPM SAS SFF-2 Disk Drive - 5xx Block (AIX/Linux)	9009 41A	ESDP
	9009 42A	
	9223 42H	
387GB Enterprise SAS 5xx SFF-2 SSD for IBM i	9009 41A	ESG6
	9009 42A	
	9223 42H	
775GB Enterprise SAS 5xx SFF-2 SSD for IBM i	9009 41A	ESGG
	9009 42A	
	9223 42H	

The following are newly announced features on the specific models of the Power Systems 9008, 9009, and 9223 machine types:

New feature available August 10, 2018

Machine	Feature
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Description	type	Model	number
Deactivation of LPM for Dedicated Servers	9009	22A	EPA0
	9009	41A	
	9009	42A	

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 118-058](#)

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.

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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 Skills Gateway](#) website.

Technical information

Specified operating environment

Homologation

This product is not certified for direct connection by any means whatsoever to interfaces of public telecommunications networks. Certification may be required by law prior to making any such connection. Contact an IBM representative or reseller for any questions.

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.

Any IBM Mainstream devices (previously called *read intensive device*) identified in this document have a maximum number of write cycles. IBM Mainstream device failures will be replaced during standard warranty and maintenance period for devices that have not reached the maximum number of write cycles. Devices that reach this limit may fail to operate according to specifications and must be replaced at the client's expense. Individual service life may vary and can be monitored using an operating system command.

Customer 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 9008, 9009, and 9223 machine types:

Description	Model number	Feature number	Purchase price	Minimum Monthly Charge	Initial/MES/Both/Support	RP CSU	MES
5887/EL1S Load Source Specify	22L	0728			MES	Yes	No
Specify mode-1 & CEC SAS port	22L	9387			MES	Yes	No
QSFP+ 40G Transceiver	22L	EB27			Both	Yes	No
1m Passive QSFP+ to QSFP+ Cbl	22L	EB2B			Both	Yes	No
3m Passive QSFP+ to QSFP+ Cbl	22L	EB2H			Both	Yes	No
PCIe3 LP 2-Port 40GbE NIC RoCE	22L	EC3A			Both	Yes	No
PCIe3 2-Port 40GbE NIC RoCE	22L	EC3B			Both	Yes	No
5m Passive QSFP+ to QSFP+ Cbl	22L	ECBN			Both	Yes	No
PCIe1 LP SAS Tape/DVD 2P 3Gb							

PCIe1 SAS Tape/DVD 2P 3Gb x8	22L	EJ1N		Both	Yes	No
Specify Mode1 & (1)	22L	EJ1P		Both	Yes	No
Specify Mode1 & (2)	22L	EJ0J-EXP24S		MES	Yes	No
Specify Mode1 & (1)(2)	22L	EJ0J-EXP24S		MES	Yes	No
Specify Mode2 & (2)	22L	EJ0J-EXP24S		MES	Yes	No
Specify Mode2 & (4)	22L	EJ0J-EXP24S		MES	Yes	No
Specify Mode4 & (4)	22L	EJ0J-EXP24S		MES	Yes	No
Specify Mode2 & (1)	22L	EJ0J-EXP24S		MES	Yes	No
Specify Mode2 & (2)	22L	EJ0J-EXP24S		MES	Yes	No
Specify Mode2 & (1)	22L	EJ0J-EXP24S		MES	Yes	No
Specify Mode2 & (2)	22L	EJ0J-EXP24S		MES	Yes	No
Specify-Mode4 & (1)	22L	EJ0J-EXP24S		MES	Yes	No
Specify-Mode4 & (2)	22L	EJ0J-EXP24S		MES	Yes	No
Specify-Mode4 & (3)	22L	EJ0J-EXP24S		MES	Yes	No
Specify Mode1 & (2)	22L	EJ14-EXP24S		MES	Yes	No
Specify Mode2 & (2)	22L	EJ14-EXP24S		MES	Yes	No
Specify Mode2 & (2)	22L	EJ14-EXP24S		MES	Yes	No
Specify Mode2 & (4)	22L	EJ14+EXP24S		MES	Yes	No
Specify Mode1 (1)6G YO EXP24S	22L	EJ0J-EXP24S		MES	Yes	No
EXP24S SFF Gen2-bay Drawer	22L	EJSU		MES	N/A	No
387GB SFF-2 4k SSD for Linux	22L	EL1S		Support	Yes	No
775GB SFF-2 4k SSD for Linux	22L	EL4Q		Support	Yes	No
PCIe2 LP 8Gb 2-Port Fibre Chan	22L	EL4S		Support	Yes	No
PCIe2 8Gb 2-Port Fibre Channel	22L	EL5Y		Both	Yes	No
1.2TB 10K RPM SAS SFF-2 Disk	22L	EL5Z		Both	Yes	No
600GB 15K SAS SFF-2 Disk Drive	22L	ELD3		Support	Yes	No
Qty150 of ELD3 600GB 15k HDD	22L	ELDP		Support	Yes	No
Qty150 of ELD3 1.2TB Disk	22L	ELQ0		Support	Yes	No
QTY150 of EL4S 77GB 4k SSD	22L	ELQ3		Support	Yes	No
Qty150 of EL4Q 387GB 4k SSD	22L	ELQS		Support	Yes	No
8 GB DDR4 2666 RDIMM	22L	ELRQ		Support	Yes	No
	22L	EM60		Both	Yes	No

Description	Model	Feature	Purchase	Minimum Monthly	Initial/	RP
Machine type	9009	number	price	Maint. Charge	MES/Both/Support	CSU MES
5887/EL1S Load Source Specify	22A	0728			MES	Yes No
	41A				MES	Yes No
	42A				MES	Yes No
1948 Load Source Specify						

	41A	0872	MES	Yes	No
	42A		MES	Yes	No
1962 Load Source Specify	41A	0875	MES	Yes	No
	42A		MES	Yes	No
ESD2 Load Source Specify	41A	0911	MES	Yes	No
	42A		MES	Yes	No
Quantity 150 of 1962	41A	1817	Support	Yes	No
	42A		Support	Yes	No
Quantity 150 of 1948	41A	1927	Support	Yes	No
	42A		Support	Yes	No
283GB 15k RPM SAS SFF-2 Disk	41A	1948	Support	Yes	No
	42A		Support	Yes	No
571GB 10k RPM SAS SFF-2 Disk	41A	1962	Support	Yes	No
	42A		Support	Yes	No
EXP24S SFF Gen2-bay Drawer	22A	5887	Support	Yes	No
	41A		Support	Yes	No
	42A		Support	Yes	No
Specify mode-1 & CEC SAS port	22A	9387	MES	Yes	No
	41A		MES	Yes	No
	42A		MES	Yes	No
QSFP+ 40G Transceiver	22A	EB27	Both	Yes	No
	41A		Both	Yes	No
	42A		Both	Yes	No
1m Passive QSFP+ to QSFP+ Cbl	22A	EB2B	Both	Yes	No
	41A		Both	Yes	No
	42A		Both	Yes	No
3m Passive QSFP+ to QSFP+ Cbl	22A	EB2H	Both	Yes	No
	41A		Both	Yes	No
	42A		Both	Yes	No
PCIe3 LP 2-Port 40GbE NIC RoCE	22A	EC3A	Both	Yes	No
PCIe3 2-Port 40GbE NIC RoCE	22A	EC3B	Both	Yes	No
	41A		Both	Yes	No
	42A		Both	Yes	No
5m Passive QSFP+ to QSFP+ Cbl	22A	ECBN	Both	Yes	No
	41A		Both	Yes	No
	42A		Both	Yes	No
PCIe3 Crypto Coproc noBSC 4767	41A	EJ32	Both	Yes	No
	42A		Both	Yes	No
Specify Mode1 & (1)EJ0J-EXP24S	22A	EJR1	MES	Yes	No
	41A		MES	Yes	No
	42A		MES	Yes	No
Specify Mode1 & (2)EJ0J-EXP24S	22A	EJR2	MES	Yes	No
	41A		MES	Yes	No
	42A		MES	Yes	No
Specify Mode2 & (2)EJ0J-EXP24S	22A	EJR3	MES	Yes	No
	41A		MES	Yes	No
	42A		MES	Yes	No
Specify Mode2 & (4)EJ0J-EXP24S	22A	EJR4	MES	Yes	No
	41A		MES	Yes	No
	42A		MES	Yes	No
Specify Mode4 & (4)EJ0J-EXP24S	22A	EJR5	MES	Yes	No
	41A		MES	Yes	No
	42A		MES	Yes	No
Specify Mode2 & (1)EJ0J-EXP24S					

	22A	EJR6	MES	Yes	No
	41A		MES	Yes	No
	42A		MES	Yes	No
Specify Mode2 & (2)EJ0J-EXP24S	22A	EJR7	MES	Yes	No
	41A		MES	Yes	No
	42A		MES	Yes	No
Specify Mode2 & (1)EJ0J-EXP24S	22A	EJRA	MES	Yes	No
	41A		MES	Yes	No
	42A		MES	Yes	No
Specify Mode2 & (2)EJ0J-EXP24S	22A	EJRB	MES	Yes	No
	41A		MES	Yes	No
	42A		MES	Yes	No
Specify-Mode4 & (1)EJ0J-EXP24S	22A	EJRC	MES	Yes	No
	41A		MES	Yes	No
	42A		MES	Yes	No
Specify-Mode4 & (2)EJ0J-EXP24S	22A	EJRD	MES	Yes	No
	41A		MES	Yes	No
	42A		MES	Yes	No
Specify-Mode4 & (3)EJ0J-EXP24S	22A	EJRE	MES	Yes	No
	41A		MES	Yes	No
	42A		MES	Yes	No
Specify Mode1 & (2)EJ14-EXP24S	22A	EJRF	MES	Yes	No
	41A		MES	Yes	No
	42A		MES	Yes	No
Specify Mode2 & (2)EJ14-EXP24S	22A	EJRG	MES	Yes	No
	41A		MES	Yes	No
	42A		MES	Yes	No
Specify Mode2 & (2)EJ14-EXP24S	22A	EJRH	MES	Yes	No
	41A		MES	Yes	No
	42A		MES	Yes	No
Specify Mode2 & (4)EJ14+EXP24S	22A	EJRJ	MES	Yes	No
	41A		MES	Yes	No
	42A		MES	Yes	No
Specify Mode1 (1)6G YO EXP24S	22A	EJSU	MES	N/A	No
ESDN Load Source Specify	41A	ELSN	MES	Yes	No
	42A		MES	Yes	No
ESOR Load Source Specify	41A	ELSR	MES	Yes	No
	42A		MES	Yes	No
ESOT Load Source Specify	41A	ELST	MES	Yes	No
	42A		MES	Yes	No
ES79 Load Source Specify	41A	ELT9	MES	Yes	No
	42A		MES	Yes	No
ES7F Load Source Specify	41A	ELTF	MES	Yes	No
	42A		MES	Yes	No
ESG6 Load Source Specify	41A	ELZ6	MES	Yes	No
	42A		MES	Yes	No
ESGG Load Source Specify	41A	ELZG	MES	Yes	No
	42A		MES	Yes	No
8 GB DDR4 2666 RDIMM	22A	EM60	Both	Yes	No
	41A		Both	Yes	No
	42A		Both	Yes	No
Deactivation of LPM	22A	EPA0	Initial	N/A	No
	41A		Initial	N/A	No
	42A		Initial	N/A	No

Qty 150 of ES0Q 387GB 4k SSD	41A	EQ0Q	Support	Yes	No
	42A		Support	Yes	No
Qty 150 of ES0R 387GB 4k SSD	41A	EQ0R	Support	Yes	No
	42A		Support	Yes	No
QTY 150 of ES0S 775GB 4k SSD	41A	EQ0S	Support	Yes	No
	42A		Support	Yes	No
Qty 150 of ES0T 775GB 4k SSD	41A	EQ0T	Support	Yes	No
	42A		Support	Yes	No
Qty 150 ES79 SSD 387GB 5xx	41A	EQ79	Support	Yes	No
	42A		Support	Yes	No
Qty 150 ES7F SSD 775GB 5xx	41A	EQ7F	Support	Yes	No
	42A		Support	Yes	No
Quantity 150 ESD2 1.1TB Disk	41A	EQD2	Support	Yes	No
	42A		Support	Yes	No
Quantity 150 ESD3 1.2TB Disk	41A	EQD3	Support	Yes	No
	42A		Support	Yes	No
Qty150 of ESDN 571GB 15k HDD	41A	EQDN	Support	Yes	No
	42A		Support	Yes	No
Qty150 of ESDP 600GB 15k HDD	41A	EQDP	Support	Yes	No
	42A		Support	Yes	No
Quantity 150 of ESG6	41A	EQG6	Support	Yes	No
	42A		Support	Yes	No
Quantity 150 of ESGG	41A	EQGG	Support	Yes	No
	42A		Support	Yes	No
387GB SFF-2 4k SSD AIX/Linux	41A	ES0Q	Support	Yes	No
	42A		Support	Yes	No
387GB SFF-2 4k SSD for IBM i	41A	ES0R	Support	Yes	No
	42A		Support	Yes	No
775GB SFF-2 4k SSD AIX/Linux	41A	ES0S	Support	Yes	No
	42A		Support	Yes	No
775GB SFF-2 4k SSD for IBM i	41A	ES0T	Support	Yes	No
	42A		Support	Yes	No
387GB SFF-2 SSD 5xx for IBM i	41A	ES79	Support	Yes	No
	42A		Support	Yes	No
775GB SFF-2 SSD 5xx for IBM i	41A	ES7F	Support	Yes	No
	42A		Support	Yes	No
1.1TB 10K RPM SAS SFF-2 Disk	41A	ESD2	Support	Yes	No
	42A		Support	Yes	No
1.2TB 10K RPM SAS SFF-2 (AIX/	41A	ESD3	Support	Yes	No
	42A		Support	Yes	No
571GB 15k SAS SFF-2 Disk Drive	41A	ESDN	Support	Yes	No
	42A		Support	Yes	No
600GB 15k SAS SFF-2 Disk Drive	41A	ESDP	Support	Yes	No
	42A		Support	Yes	No
387GB Enterprise SAS 5xx SSD	41A	ESG6	Support	Yes	No
	42A		Support	Yes	No
775GB Enterprise SAS 5xx SSD	41A	ESGG	Support	Yes	No
	42A		Support	Yes	No

Description	Model	Feature	Purchase	Minimum	Initial/		
Machine type	9223	number	price	Monthly	MES/	RP	
		number		Maint.	Both/	CSU	MES
				Charge	Support		
5887/EL1S Load Source Specify		22H	0728		MES	Yes	No
		42H			MES	Yes	No
1948 Load Source Specify		42H	0872		MES	Yes	No
1962 Load Source Specify		42H	0875		MES	Yes	No
ESD2 Load Source Specify		42H	0911		MES	Yes	No
Quantity 150 of 1962		42H	1817		Support	Yes	No
Quantity 150 of 1948		42H	1927		Support	Yes	No
283GB 15k RPM SAS SFF-2 Disk		42H	1948		Support	Yes	No
571GB 10k RPM SAS SFF-2 Disk		42H	1962		Support	Yes	No
EXP24S SFF Gen2-bay Drawer		22H	5887		Support	Yes	No
		42H			Support	Yes	No
Specify mode-1 & CEC SAS port		22H	9387		MES	Yes	No
		42H			MES	Yes	No
QSFP+ 40G Transceiver		22H	EB27		Both	Yes	No
		42H			Both	Yes	No
1m Passive QSFP+ to QSFP+ Cb1		22H	EB2B		Both	Yes	No
		42H			Both	Yes	No
3m Passive QSFP+ to QSFP+ Cb1		22H	EB2H		Both	Yes	No
		42H			Both	Yes	No
PCIe3 LP 2-Port 40GbE NIC RoCE		22H	EC3A		Both	Yes	No
PCIe3 2-Port 40GbE NIC RoCE		22H	EC3B		Both	Yes	No
		42H			Both	Yes	No
5m Passive QSFP+ to QSFP+ Cb1		22H	ECBN		Both	Yes	No
		42H			Both	Yes	No
PCIe3 Crypto Coproc noBSC 4767		42H	EJ32		Both	Yes	No
Specify Mode1 & (1)EJ0J-EXP24S		22H	EJR1		MES	Yes	No
		42H			MES	Yes	No
Specify Mode1 & (2)EJ0J-EXP24S		22H	EJR2		MES	Yes	No
		42H			MES	Yes	No
Specify Mode2 & (2)EJ0J-EXP24S		22H	EJR3		MES	Yes	No
		42H			MES	Yes	No
Specify Mode2 & (4)EJ0J-EXP24S		22H	EJR4		MES	Yes	No
		42H			MES	Yes	No
Specify Mode4 & (4)EJ0J-EXP24S		22H	EJR5		MES	Yes	No
		42H			MES	Yes	No
Specify Mode2 & (1)EJ0J-EXP24S		22H	EJR6		MES	Yes	No
		42H			MES	Yes	No
Specify Mode2 & (2)EJ0J-EXP24S		22H	EJR7		MES	Yes	No
		42H			MES	Yes	No
Specify Mode2 & (1)EJ0J-EXP24S		22H	EJRA		MES	Yes	No
		42H			MES	Yes	No
Specify Mode2 & (2)EJ0J-EXP24S		22H	EJRB		MES	Yes	No

	42H		MES	Yes	No
Specify-Mode4 & (1)	EJ0J-EXP24S				
	22H	EJRC	MES	Yes	No
	42H		MES	Yes	No
Specify-Mode4 & (2)	EJ0J-EXP24S				
	22H	EJRD	MES	Yes	No
	42H		MES	Yes	No
Specify-Mode4 & (3)	EJ0J-EXP24S				
	22H	EJRE	MES	Yes	No
	42H		MES	Yes	No
Specify Mode1 & (2)	EJ14-EXP24S				
	22H	EJRF	MES	Yes	No
	42H		MES	Yes	No
Specify Mode2 & (2)	EJ14-EXP24S				
	22H	EJRG	MES	Yes	No
	42H		MES	Yes	No
Specify Mode2 & (2)	EJ14-EXP24S				
	22H	EJRH	MES	Yes	No
	42H		MES	Yes	No
Specify Mode2 & (4)	EJ14+EXP24S				
	22H	EJRJ	MES	Yes	No
	42H		MES	Yes	No
Specify Mode1 (1)	6G YO EXP24S				
	22H	EJSU	MES	N/A	No
ESDN Load Source Specify					
	42H	ELSN	MES	Yes	No
ESOR Load Source Specify					
	42H	ELSR	MES	Yes	No
ESOT Load Source Specify					
	42H	ELST	MES	Yes	No
ES79 Load Source Specify					
	42H	ELT9	MES	Yes	No
ES7F Load Source Specify					
	42H	ELTF	MES	Yes	No
ESG6 Load Source Specify					
	42H	ELZ6	MES	Yes	No
ESGG Load Source Specify					
	42H	ELZG	MES	Yes	No
8 GB DDR4 2666 RDIMM					
	22H	EM6G	Both	Yes	No
	42H		Both	Yes	No
Qty 150 of ES0Q 387GB 4k SSD					
	42H	EQ0Q	Support	Yes	No
Qty 150 of ES0R 387GB 4k SSD					
	42H	EQ0R	Support	Yes	No
QTY 150 of ES0S 775GB 4k SSD					
	42H	EQ0S	Support	Yes	No
Qty 150 of ES0T 775GB 4k SSD					
	42H	EQ0T	Support	Yes	No
Qty 150 ES79 SSD 387GB 5xx					
	42H	EQ79	Support	Yes	No
Qty 150 ES7F SSD 775GB 5xx					
	42H	EQ7F	Support	Yes	No
Quantity 150 ESD2 1.1TB Disk					
	42H	EQD2	Support	Yes	No
Quantity 150 ESD3 1.2TB Disk					
	42H	EQD3	Support	Yes	No
Qty150 of ESDN 571GB 15k HDD					
	42H	EQDN	Support	Yes	No
Qty150 of ESDP 600GB 15k HDD					
	42H	EQDP	Support	Yes	No
Quantity 150 of ESG6					
	42H	EQG6	Support	Yes	No
Quantity 150 of ESGG					
	42H	EQGG	Support	Yes	No
387GB SFF-2 4k SSD AIX/Linux					
	42H	ES0Q	Support	Yes	No
387GB SFF-2 4k SSD for IBM i					
	42H	ES0R	Support	Yes	No
775GB SFF-2 4k SSD AIX/Linux					
	42H	ES0S	Support	Yes	No
775GB SFF-2 4k SSD for IBM i					
	42H	ES0T	Support	Yes	No
387GB SFF-2 SSD 5xx for IBM i					

775GB SFF-2 SSD 5xx for IBM i	42H	ES79	Support	Yes	No
	42H	ES7F	Support	Yes	No
1.1TB 10K RPM SAS SFF-2 Disk	42H	ESD2	Support	Yes	No
1.2TB 10K RPM SAS SFF-2 (AIX/	42H	ESD3	Support	Yes	No
571GB 15k SAS SFF-2 Disk Drive	42H	ESDN	Support	Yes	No
600GB 15k SAS SFF-2 Disk Drive	42H	ESDP	Support	Yes	No
387GB Enterprise SAS 5xx SSD	42H	ESG6	Support	Yes	No
775GB Enterprise SAS 5xx SSD	42H	ESGG	Support	Yes	No

CSU = Customer setup

RP MES = Return parts, miscellaneous equipment specifications

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