

IBM delivers hardware enhancements for selected IBM Power technology-based servers

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At a glance

Hardware enhancements are available for the IBM^(R) Power9 scale-out family of servers, including:

- A new generation of Enterprise solid-state drive (SSD) Non-Volatile Memory Express (NVMe) U.2 module that provides 800 GB, 1.6 TB, 3.2 TB, or 6.4 TB capacity points

In addition, selected IBM Power^(R) servers with Power9 and IBM Power10 technology-based processors now provide support for the IBM i 7.5 feature indicator.

Overview

The Power9 scale-out server family offers Enterprise SSD NVMe U.2 hardware enhancements.

Enterprise SSD PCIe4 NVMe U.2 module

The Enterprise NVMe small form factor (SFF) U.2 15 mm SSD is a Peripheral Component Interconnect^(R) Express (PCIe) generation 4 (Gen4) drive. The SSD employs NVMe and can be used in any U.2 15 mm NVMe slot in the system. NVMe is a high-performance architecture and command protocol that can read and write flash memory. Compared to a serial-attached SCSI (SAS) SSD or a Serial Advanced Technology Attachment (SATA) SSD, the NVMe SSD provides more read and write input/output operations per second (IOPS) and larger throughput (GB/sec).

This Enterprise SSD is rated at 3 Drive Writes Per Day (DWPD) calculated over a five-year period for 100% (4K bytes or larger) random write workloads. Use for workloads within this rating is fully supported and will maintain high reliability and mean time between failures (MTBF).

The nature of the workload has a great impact on the maximum write capacity. If a high percentage of more sequentially oriented writes is used instead of random writes, the maximum write capacity will be larger. Writes past the SSD's maximum write capacity will continue to work for some period of time, but they will perform much more slowly. Whether the application uses sequential or random reads from the device does not affect the life of the device. A Predictive Failure Analysis message will indicate that it is time to replace the SSD if enabled by the operating system (OS) and system administrator. IBM recommends that you monitor SMART log critical information through the appropriate OS utility to observe drive life remaining information. IBM NVMe SSD failures will be replaced during the standard warranty and maintenance period for SSDs that have not reached the maximum

number of write cycles. SSDs that reach this limit may fail to operate according to specifications and must be replaced at the client's expense. The adapter supports boot on Power with Fcode. Data redundancy on a failed SSD may be provided by OS mirroring or software RAID wherever applicable.

This PCIe4 NVMe device can have 64 namespaces per device.

Multi-OS server feature numbers

Enterprise SSD NVMe U.2	Power9 servers
800 GB	#ES3A ¹
1.6 TB	#ES3C ¹ and #ES3B ²
3.72 TB	#ES3E ¹ and #ES3D ²
6.4 TB	#ES3G ¹ and #ES3F ²

Software requirements, assuming the server supports this software level:

- AIX^(R) supported.
- Linux^(R) supported.
- IBM i - See the Feature description section of the Sales Manual for specific software requirements.

IBM i 7.5 Indicator (#EB75)

Selected Power servers with Power10 and Power9 technology-based processors now support the IBM i 7.5 indicator feature. IBM i 7.5 contains enhancements to many base operating system components and to the Licensed Program Products in the IBM i Portfolio. For technical details for IBM i enhancements delivered with IBM i 7.5, see the [IBM i Technology Updates](#) wiki.

1 IBM i supported

2 IBM AIX, Linux, and VIOS supported

Key requirements

Not applicable

Planned availability date

- May 27, 2022, except for feature EB75 and feature AJPA
- May 10, 2022, for feature EB75
- May 20, 2022, for feature AJPA

Availability within a country is subject to local legal requirements.

Reference information

For additional information about IBM i 7.5, see [A22-0116](#), dated May 3, 2022.

Product number

The following are newly announced features on the specific models of the IBM Power Systems 7965, 9009, 9080, and 9223 machine type:

Planned Availability Date May 10, 2022

New Feature

Description	Machine type	Model number	Feature number
IBM i 7.5 Indicator	9009	22A	EB75
	9009	22G	
	9009	41A	
	9009	41G	
	9009	42A	
	9009	42G	
	9080	HEX	
	9080	M9S	
	9223	22H	
	9223	22S	
	9223	42H	
	9223	42S	

The following are newly announced features on the specific models of the IBM Power Systems 7965, 9009, 9080, and 9223 machine type:

Planned Availability Date May 20, 2022

New Feature

Description	Machine type	Model number	Feature number
ESS 3500 solution Specify	7965	S42	AJPA

The following are newly announced features on the specific models of the IBM Power Systems 7965, 9009, 9080, and 9223 machine type:

Planned Availability Date May 27, 2022

New Feature

Description	Machine type	Model number	Feature number
ES3A Load Source Specify (800 GB 4K NVMe U.2 SSD PCIe4 for IBM i)	9009	22G	ELYA
	9009	41G	
	9009	42G	
ES3C Load Source Specify (1.6 TB 4K NVMe U.2 SSD PCIe4 for IBM i)	9009	22G	ELYC
	9009	41G	
	9009	42G	
ES3E Load Source Specify (3.2 TB 4K NVMe U.2 SSD PCIe4 for IBM i)	9009	41G	ELYE
	9009	42G	
ES3G Load Source Specify (6.4 TB 4K NVMe U.2 SSD PCIe4 for IBM i)	9009	41G	ELYG
	9009	42G	
Enterprise 800GB SSD PCIe4 NVMe U.2 module for IBM i	9009	22G	ES3A
	9009	41G	
	9009	42G	
	9223	42S	
Enterprise 1.6 TB SSD PCIe4 NVMe U.2 module for AIX/Linux	9009	22G	ES3B
	9009	41G	
	9009	42G	
	9223	22S	
	9223	42S	
Enterprise 1.6 TB SSD PCIe4 NVMe U.2 module for IBM i	9009	22G	ES3C
	9009	41G	

	9009	42G	
	9223	42S	
Enterprise 3.2 TB SSD PCIe4 NVMe U.2 module for AIX/Linux	9009	22G	ES3D
	9009	41G	
	9009	42G	
	9223	22S	
	9223	42S	
Enterprise 3.2 TB SSD PCIe4 NVMe U.2 module for IBM i	9009	41G	ES3E
	9009	42G	
	9223	42S	
Enterprise 6.4 TB SSD PCIe4 NVMe U.2 module for AIX/Linux	9009	22G	ES3F
	9009	41G	
	9009	42G	
	9223	22S	
	9223	42S	
Enterprise 6.4 TB SSD PCIe4 NVMe U.2 module for IBM i	9009	41G	ES3G
	9009	42G	
	9223	42S	

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 catalogue of 70,000 items. Extensive search facilities are provided. A large number of publications are available on-line in various file formats, which can currently be downloaded.

National language support

Not applicable

Services

IBM Systems Lab Services

Systems Lab Services offers infrastructure services to help build hybrid cloud and enterprise IT solutions. From servers to storage systems and software, Systems Lab Services can help deploy the building blocks of a next-generation IT infrastructure to empower a client's business. Systems Lab Services consultants can perform infrastructure services for clients on-line or onsite, offering deep technical expertise, valuable tools, and successful methodologies. Systems Lab Services is designed to help clients solve business challenges, gain new skills, and apply best practices.

Systems Lab Services offers a wide range of infrastructure services for IBM Power servers, IBM Storage systems, IBM Z^(R), and IBM LinuxONE. Systems Lab Services has a global presence and can deploy experienced consultants on-line or onsite around the world.

For assistance, contact Systems Lab Services at ibmsls@us.ibm.com.

To learn more, see the [IBM Systems Lab Services](#) website.

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For additional information, see the [IBM Consulting](#) website.

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For details on available services, see the [Technology support for hybrid cloud environments](#) website.

IBM Expert Labs

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Expert Labs' deep alignment with IBM product development allows for a strategic advantage as they are often the first in line to get access to new products, features, and early visibility into roadmaps. This connection with the development enables them to deliver First of a Kind implementations to address unique needs or expand a client's business with a flexible approach that works best for their organization.

For additional information, see the [IBM Expert Labs](#) website.

IBM Security^(R) Expert Labs

With extensive consultative expertise on IBM Security software solutions, Security Expert Labs helps clients and partners modernize the security of their applications, data, and workforce. With an extensive portfolio of consulting and learning services, Expert Labs provides project-based and premier support service subscriptions.

These services can help clients deploy and integrate IBM Security software, extend their team resources, and help guide and accelerate successful hybrid cloud solutions, including critical strategies such as zero trust. Remote and on-premises software deployment assistance is available for IBM Cloud Pak^(R) for Security, IBM Security QRadar^(R)/QRoC, IBM Security SOAR/Resilient^(R), IBM i2^(R), IBM Security Verify, IBM Security Guardium^(R), and IBM Security MaaS360^(R).

For more information, contact Security Expert Labs at sel@us.ibm.com.

For additional information, see the [IBM Security Expert Labs](#) website.

IBM support

For installation and technical support information, see the [IBM Support Portal](#).

Additional support

IBM Client Engineering for Systems

Client Engineering for Systems is a framework for accelerating digital transformation. It helps you generate innovative ideas and equips you with the practices, technologies, and expertise to turn those ideas into business value in weeks. When you work with Client Engineering for Systems, you bring pain points into focus. You empower your team to take manageable risks, adopt leading technologies, speed up solution development, and measure the value of everything you do. Client Engineering for Systems has experts and services to address a broad array of use cases, including capabilities for business transformation, hybrid cloud, analytics and AI, infrastructure systems, security, and more. Contact Client Engineering at sysgarage@ibm.com.

Technical information

Planning information

Cable orders

No cables are 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.

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.

IBM Solid State Drive (SSD) and Non-Volatile Memory Express (NVMe) devices identified in this document may have a maximum number of write cycles. IBM SDD and NVMe 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

The same license terms and conditions as the base machine apply.

Prices

Prices are subject to change without notice.

GST, QST, and sales taxes, where applicable, are extra.

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

The following are newly announced features on the specific models of the IBM Power Systems 7965, 9009, 9080, and 9223 machine type:

Description Machine type 7965	Model number	Feature number	Purchase price	Minimum Monthly Maint. charge	Initial/ MES/ Both/ support	RP CSU MES
ESS 3500 Solution Specify	S42	AJPA			Initial	N/A No
Description Machine type 9009	Model number	Feature number	Purchase price	Minimum Monthly Maint. charge	Initial/ MES/ Both/ support	RP CSU MES
IBM i 7.5 Indicator	22A	EB75			MES	Yes No
	22G				Both	Yes No
	41A				MES	Yes No
	41G				Both	Yes No
	42A				MES	Yes No
	42G				Both	Yes No
ES3A Load Source Specify	22G	ELYA			Both	Yes No
	41G				Both	Yes No
	42G				Both	Yes No
ES3C Load Source Specify	22G	ELYC			Both	Yes No
	41G				Both	Yes No
	42G				Both	Yes No
ES3E Load Source Specify	41G	ELYE			Both	Yes No
	42G				Both	Yes No
ES3G Load Source Specify	41G	ELYG			Both	Yes No
	42G				Both	Yes No
Enterprise 800GB NVMe U.2	22G	ES3A			Both	Yes No
	41G				Both	Yes No
	42G				Both	Yes No
Enterprise 1.6TB NVMe U.2	22G	ES3B			Both	Yes No
	41G				Both	Yes No
	42G				Both	Yes No
Enterprise 1.6TB NVMe U.2	22G	ES3C			Both	Yes No
	41G				Both	Yes No
	42G				Both	Yes No
Enterprise 3.2TB NVMe U.2	22G	ES3D			Both	Yes No
	41G				Both	Yes No
	42G				Both	Yes No
Enterprise 3.2TB NVMe U.2	41G	ES3E			Both	Yes No
	42G				Both	Yes No
Enterprise 6.4TB NVMe U.2	22G	ES3F			Both	Yes No

Description	Model number	Feature number	Purchase price	Minimum Monthly Maint. charge	Initial/MES/Both/support	RP CSU	MES
Enterprise 6.4TB NVMe	41G				Both	Yes	No
	42G				Both	Yes	No
	U.2						
	41G	ES3G			Both	Yes	No
	42G				Both	Yes	No
IBM i 7.5 Indicator							
	HEX	EB75			Both	Yes	No
	M9S				Both	Yes	No
IBM i 7.5 Indicator							
	22H	EB75			MES	Yes	No
	22S				Both	Yes	No
	42H				MES	Yes	No
	42S				Both	Yes	No
Enterprise 800GB NVMe	U.2						
	42S	ES3A			Both	Yes	No
Enterprise 1.6TB NVMe	U.2						
	22S	ES3B			Both	Yes	No
	42S				Both	Yes	No
Enterprise 1.6TB NVMe	U.2						
	42S	ES3C			Both	Yes	No
Enterprise 3.2TB NVMe	U.2						
	22S	ES3D			Both	Yes	No
	42S				Both	Yes	No
Enterprise 3.2TB NVMe	U.2						
	42S	ES3E			Both	Yes	No
Enterprise 6.4TB NVMe	U.2						
	22S	ES3F			Both	Yes	No
	42S				Both	Yes	No
Enterprise 6.4TB NVMe	U.2						
	42S	ES3G			Both	Yes	No

RP MES = Return parts, miscellaneous equipment specifications

CSU = Customer setup

Regional availability

Anguilla, Antigua and Barbuda, Aruba, Bahamas, Barbados, Bermuda, Sint Eustatius and Saba Bonaire, Canada, Cayman Islands, Curacao, Dominica, Grenada, Guyana, Jamaica, Montserrat, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Trinidad and Tobago, Turks and Caicos Islands, and British Virgin Islands

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