IBM Power System S914 server is refreshed, providing a superior on-premises infrastructure for hybrid multicloud platforms and delivering high security and reliability, industry-leading PCIe Gen4 IO, and a built-in cloud-optimized hypervisor

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At a glance

The IBM(R) Power(R) System S914 (9009-41G) server easily integrates into your organization's cloud and cognitive strategy and delivers industry-leading price and performance for your mission-critical workloads.

- Deliver superior price and performance for your mission-critical applications with room to scale in IBM AIX(R), IBM i, and Linux(R) environments.
- Prevent security threats with advanced security features combined with unmatched reliability and resiliency.
- Harness the integrated virtualization capabilities of the server to rapidly deploy, optimize, and recover workloads.
- Migrate from previous IBM Power Systems servers with Live Partition Mobility (LPM) capabilities. Every new Power S914 server comes with a temporary IBM PowerVM(R) license for your old server to support a seamless move to IBM POWER9™ technology-based servers.
- Use this cloud-enabled server to build an agile, containerized cloud on a server platform that is optimized for data and cognitive services.
- Extend IBM i, the integrated operating system, and connect to the cognitive capabilities of the IBM Cloud(R) using secure APIs.
- Twice as much bandwidth for a seamless integration between on-premises and public clouds with a new back-end PCIe Gen4 switch.
- More NVMe adapters with seven PCIe Gen4 slots in the back and four PCI Gen4 capable U.2 front-accessible drives.
- New cost-effective 800 GB data center PCIe Gen3 NVMe device supported for AIX, IBM VIOS, or Linux environments.
- Boot from PCIe Gen4 NVMe devices supported for native IBM i deployments.

Overview

The IBM Power Systems has always been focused on reliability and performance. The Power System S914 server is primed with a POWER9 processor, displaying a technology designed from the ground up for data-intensive workloads, such as operational databases, advanced analytics, and business applications. The system is built with innovations that deliver the highest security and reliability standards for future-driven enterprises.

When it comes to virtualization technology, IBM Power Systems are unmatched. With the built-in PowerVM hypervisor, clients have been relying on IBM for years to provide consumability and agility in IT data centers. Today, leveraging IBM's unique, comprehensive approach to the cloud, from on-premises IT to public cloud provider, we are taking one step forward. The new Power System S914, powered by PCIe Gen4 switches, delivers a seamless and lightspeed throughput I/O between multiple on-premises and public cloud applications.

The Power S914 (9009-41G) server has been refreshed to provide:

A superior on-premises infrastructure for hybrid cloud

- Twice as fast back-end I/O enables seamless maximum speed and throughput between on-premises and multiple public cloud infrastructures with high availability.
- Largest memory bandwidth and memory storage in the market together with up to 11 (four U.2 NVMe plus up to seven PCIe add in cards) NVMe adapters allow a huge VM, container, and bare metal consolidation, saving data center space and networking costs.
- Support multiple OS instances without processing overhead in the server.
- PowerVM hypervisor is built in at no extra charge, so every POWER9 workload is virtualized, mobile, and cloud ready.
- IBM VM Recovery Manager, built on PowerVM, provides easy, low-cost solutions for high availability (HA) and disaster recoery (DR) operations.
- IBM PowerHA(R) for AIX and IBM i are the low-cost, highly automated solutions to deliver high availability features to your mission-critical applications.

Increased performance and flexibility for your key workloads

- Upgrade IBM AIX and IBM i installations to speed up your journey to a hybrid multicloud
- Benefit from an increased I/O architecture on IBM Db2(R) Mirror for i
- Optimize performance and license costs with Oracle applications
- Red Hat(R) Enterprise Linux and Red Hat OpenShift(R) deployments

Key features

The Power System S914 server is a 1-socket system that meets today's growth and tomorrow's processing needs. It ships with up to 8 powerful cores and I/O configuration flexibility in a 19-inch rack-mount, 4U (EIA units) form factor. The server supports:

- One processor socket populated with the following POWER9 processor modules:
  - 4-core typical 2.3 to 3.8 GHz (max)
  - 6-core typical 2.3 to 3.8 GHz (max)
  - 8-core typical 2.8 to 3.8 GHz (max)
  - Power Management mode is set to Max Performance by default in the system. This mode can dynamically optimize the processor frequency at any given time based on CPU utilization and operating environmental conditions. For a description of this feature and other power management options available for this server, see the IBM EnergyScale for POWER9 Processor-Based Systems website.
- Up to 1.0 TB of system memory distributed across 16 DDR4 DIMM slots. Supports different memory DIMMs sizes such as 16 GB, 32 GB, and 64 GB, running at different speeds of 2133, 2400, and 2666 Mbps.
- Multiple I/O options:
  - One PCIe x16 Gen4, full-height, half-length slot (This slot can contain a CAPI-capable card or an I/O drawer interface card.)
  - One PCIe x8 Gen4, full-height, half-length slot (with x16 connector) (CAPI)

  - Two PCIe x16 Gen4, full-height, half-length slots (not CAPI)
  - Four PCIe x8 Gen4, full-height, half-length slots (One of these slots is used for the required base LAN adapter.)
- Storage features:
  - Storage backplane with six SFF-3 bays and two front PCIe Gen4 capable NVMe U.2 drive slots
  - Storage backplane with two or four front PCIe Gen4 capable NVMe U.2 drive slots
  - Twelve or eighteen 2.5-in. SFF-3 (Gen3 carrier) disk bays
  - RAID 0, 5, 6, 10, 5T2, 6T2, and 10T2 support
  - One RDX bay (only available with x12 disk bays, not available with x18 disk bays)
  - Split feature to 6+6 SFF bays: Add a second SAS controller
  - Expanded function 18 SFF-3 bays/dual IOA with write cache and optional external SAS port
  - Expanded function 12 SFF-3 bays/RDX bay and optional external SAS port
  - Expansion capabilities for the EXP12SX/EXP24SX SFF Gen2-bay drawer
  - Hot-plug PCIe Gen4 capable U.2 slots
- Integrated technologies and features:
  - Service processor
  - EnergyScale
  - Hot-plug and redundant cooling
  - One front and two rear USB 3.0 ports
  - Two HMC ports
  - One system port with RJ45 connector
- 1+1 redundant hot-plug AC power supplies in each enclosure, or
- 2+2 redundant hot-plug AC power supplies in each enclosure
- PowerVM integrated virtualization with minimum processing overhead

Feature exchange

Not applicable

Key requirements

An IBM i, or AIX, or Linux operating system. See the Software requirements section for details.

Planned availability date

July 24, 2020

Description

The POWER9 scale-out family is the first set of servers that comes completely cloud enabled out of the box with integrated PowerVM Enterprise capabilities. These servers have a native hypervisor included at no additional license cost. Additionally, on-chip analytics and algorithms combined with a sophisticated PCIe Gen4 I/O architecture help clients run their workloads at an optimized processor frequency for performance and throughput. In combination with the DDR4 memory footprint of 1 TB, IBM provides a system that is unmatched by the competition in terms

of memory scaling as well as the core to memory ratio needed for data-centric and in-memory workloads. Live Partition Mobility capabilities help you migrate from previous Power Systems. Every new S914 also has the option of a temporary PowerVM license for your old server to support a seamless move of workloads to POWER9. The Power System S914 server has built-in security that can help you to be ready for current and future security threats.

Summary of standard features for Power S914 server:

- POWER9 processor modules:
  - 4-core, typical 2.3 to 3.8 GHz (max) POWER9 processor (#EP50)
  - 6-core, typical 2.3 to 3.8 GHz (max) POWER9 processor (#EP51)
  - 8-core, typical 2.8 to 3.8 GHz (max) POWER9 processor (#EP52) (rackmount configuration only)
- High-performance Mbps DDR4 ECC memory
  - 16 GB (#EM62), 32 GB (#EM63), or 64 GB (#EM64) memory features
  - Up to 1024 GB of DDR4 memory with one Power Systems processor
- Storage features:
  - Storage backplane with six SFF-3 bays and two front PCIe Gen4 capable NVMe U.2
  - Storage backplane with two or four front PCIe Gen4 capable NVMe U.2 drive slots
  - Twelve SFF-3 bays/RDX bays
  - Option to split the above SFF-3 bays and add a second integrated SAS controller without cache
  - Eighteen SFF-3 bays/dual IOA with write cache and external SAS port
  - Twelve SFF-3 bays/RDX bay/dual IOA with write cache and external SAS port
  - Option to attach an EXP12SX/EXP24SX SAS HDD/SSD expansion drawer to the dual IOA
- PCIe slots with single processor:
  - One x16 Gen4 full-height, half-length (CAPI)
  - One x8 Gen4 full-height, half-length (with x16 connector) (CAPI)
  - Two x16 Gen4 full-height, half-length
  - Four x8 Gen4 full-height, half-length (One of these slots is used for the required base LAN adapter.)
- Integrated:
  - Service processor
  - EnergyScale technology
  - Hot-swap and redundant cooling
  - One front USB 3.0 ports
  - Two rear USB 3.0 ports
  - Two HMC 1 GbE RJ45 ports
  - One system port with RJ45 connector
  - Four hot-plug, redundant power supplies
  - Nineteen-inch rack-mounting hardware (4U)

PowerVM

PowerVM, which delivers industrial-strength virtualization for AIX and Linux environments on POWER(R) processor-based systems, offers a virtualization-oriented performance monitor, and performance statistics are available through the HMC. These performance statistics can be used to understand the workload characteristics and to prepare for capacity planning.

Power S914 Capacity Backup (CBU) for IBM i

The Power S914 (9009-41G) CBU designation enables you to temporarily transfer IBM i processor license entitlements and IBM i user license entitlements purchased for a primary machine to a secondary CBU-designated system for HA and DR operations. Temporarily transferring these resources instead of purchasing them for your secondary system may result in significant savings. Processor activations cannot be transferred.

The CBU specify feature 0444 is available only as part of a new server purchase. Certain system prerequisites must be met, and system registration and approval are required before the CBU specify feature can be applied on a new server. Standard IBM i terms and conditions do not allow either IBM i processor license entitlements or IBM i user license entitlements to be transferred permanently or temporarily. These entitlements remain with the machine they were ordered for. When you register the association between your primary and on-order CBU system, you must agree to certain terms and conditions regarding the temporary transfer.

After a new CBU system is registered as a pair with the proposed primary system and the configuration is approved, you can temporarily move your optional IBM i processor license entitlement and IBM i user license entitlements from the primary system to the CBU system when the primary system is down or while the primary system processors are inactive. The CBU system can then support failover and role swapping for a full range of test, disaster recovery, and high availability scenarios. Temporary entitlement transfer means that the entitlement is a property transferred from the primary system to the CBU system and may remain in use on the CBU system as long as the registered primary and CBU system are in deployment for the high availability or disaster recovery operation. The intent of the CBU offering is to enable regular role-swap operations.

The Power S914 server is available with six or eight cores in the P10 software tier and four cores in the P05 software tier.

Power S914 SW tiers for IBM i on 9009-41G

- The 4-core processor (#EP50, QPRCFEAT EP50) is IBM i SW tier P05.
- The 6-core processor (#EP51, QPRCFEAT EP51) is IBM i SW tier P10.
- The 8-core processor (#EP52, QPRCFEAT EP52) is IBM i SW tier P10.

For the Power S914 (9009-41G) CBU server in the P10 software tier

The primary systems for a Power S914 (9009-41G) CBU server with an IBM i P10 software tier can be a POWER8(R) or POWER9 server with a P10 or P20 software tier listed below:

- Power S824 (8286-42A)
- Power S814 6-core or 8-core (8286-41A)
- Power S822 (8284-22A)
- Power S924 (9009 42A)
- Power S924 (9009 42G)
- Power S914 6-core or 8-core (9009-41A)
- Power S914 6-core or 8-core (9009-41G)
- Power S922 (9009-22A)
- Power S922 (9009-22G)

The primary machine must be in the same enterprise as the CBU system. The IBM i Solution Editions are not eligible for CBU status.

Before you can temporarily transfer IBM i processor license entitlements from the registered primary system, you must have more than one IBM i processor license on the primary machine and at least one IBM i processor license on the CBU server. To be in compliance, the CBU will be configured in a such a manner that there will be no out-of-compliance messages prior to a failover. An activated processor(s) must

be available on the CBU server to use the transferred entitlement. You can then transfer any IBM i processor entitlements above the minimum one, assuming the total IBM i workload on the primary system does not require the IBM i entitlement you would like to transfer during the time of the transfer. During this temporary transfer, the CBU system's internal records of its total number of IBM i processor license entitlements are not updated, and you may see IBM i license noncompliance warning messages from the CBU system. These warning messages in this situation do not mean you are not in compliance.

Before you can temporarily transfer IBM i user entitlements, you must have more than the minimum number of IBM i user entitlements on a primary server. You can then transfer any IBM i user entitlements above the minimum, assuming the total IBM i users on the primary system do not require the IBM i entitlement you want to transfer during the time of the transfer. The Power S924 and Power S824 servers do not have IBM i user entitlements to transfer, only processor entitlements. For a P10 primary, the minimum number of IBM i user entitlements on the eligible P10 POWER9 and POWER8 servers are:

- Power S814 6-core or 8-core (8286-41A): 10 users
- Power S822 (8284-22A): 10 users
- Power S914 6-core or 8-core (9009-41A): 10 users
- Power S914 6-core or 8-core (9009-41G): 10 users
- Power S922 (9009-22A): 10 users
- Power S922 (9009-22G): 10 users

For the Power S914 (9009-41G) CBU server in the P05 software tier

The primary systems for a Power S914 (9009-41G) CBU server with an IBM i P05 software tier can be a POWER8 or POWER9 server with a P05 or P10 software tier listed below:

- Power S814 (8286-41A) 4, 6, or 8 core
- Power S822 (8284-22A)
- Power S914 (9009-41A) 4, 6, or 8 core
- Power S914 (9009-41G) 4, 6, or 8 core
- Power S922 (9009-22A)
- Power S922 (9009-22G)

Before you can temporarily transfer IBM i user entitlements, you must have more than the minimum number of IBM i user entitlements on a primary server. You can then transfer any IBM i user entitlements above the minimum, assuming the total IBM i users on the primary system do not require the IBM i entitlement you want to transfer during the time of the transfer. The minimum number of IBM i user entitlements on the P05 or P10 POWER9 and POWER8 with IBM i user entitlements are:

- Power S814 4 core (8286-41A): 5 users
- Power S814 6 core or 8 core (8286-41A): 10 users
- Power S822 (8284-22A): 10 users
- Power S914 4 core (9009-41A): 5 users
- Power S914 6 core or 8 core (9009-41A): 10 users
- Power S922 (9009-22A): 10 users
- Power S914 4 core (9009-41G): 5 users
- Power S914 6 core or 8 core (9009-41G): 10 users
- Power S922 (9009-22G): 10 users

For example, if you have a Power S914 6-core server as your primary system with two IBM i processor license entitlements (one above the minimum) and 40 IBM i user entitlements (30 above the minimum), you can temporarily transfer up to one

IBM i entitlement and up to 30 user entitlements. During this temporary transfer, the CBU system's internal records of its total number of IBM i processor and user license entitlements is not updated, and you may see IBM i license noncompliance warning messages from the CBU system.

If your primary or CBU machine is sold or discontinued from use, any temporary entitlement transfers must be returned to the machine on which they were originally acquired. For CBU registration, terms and conditions, and further information, see the IBM Power Systems: Capacity BackUp website.

4-core Power S914 processor feature

The 4-core Power S914 server offers clients running AIX, IBM i, or Linux an entry server based on POWER9 technology. It uses a typical 2.3 to 3.8 GHz (max) POWER9 Processor Card (#EP50) with processor core activation feature (#EP60). All four processor cores must be activated, but factory deconfiguration feature (#2319) is supported. The chargeable feature EP60 is used for these activations. The 4-core Power S914 server supports a maximum system memory of 64 GB. The 4-core Power S914 server has eight PCIe Gen4 slots. One slot is used by one 4-port 1 Gb Ethernet adapter. If the expanded function backplane is chosen, another PCIe slot is used, leaving six slots.

There is no upgrade to increase the cores on this feature. This server supports AIX, IBM i, and Linux, but it is especially attractive to IBM i clients with its P05 software tier.

If IBM i is selected as the primary operating system. The Capacity Backup option for IBM i (#0444) is supported. The 4-core S914 server supports a maximum of 10 disk drives or 10 SSDs or a combination of 10 disks and SSDs in the system unit. Alternatively, in the system unit, a maximum of two NVMe PCIe devices (and no SAS drives) are allowed. This is true with any of the storage backplane options selected. SAS drives located in feature code I/O drawers such as the EXP24SX (#ESLS) are not supported. Attachment to SANs is supported.

The following SFF-3 SAS drives and NVMe devices for IBM i are supported in the SAS/NVMe bays of the 4-core Power S914 system unit:

15k rpm disk drives

- 283 GB 15k rpm disk drive (#ESDA) 5xx byte blocks (IBM i)
- 283 GB 15k rpm disk drive (#ESFA) 4k byte blocks (IBM i)
- 283 GB 15K rpm disk drive (#ESNJ) 4k byte blocks (IBM i)

10k rpm disk drives

- 571 GB 10k rpm disk drive (#ESD4) 5xx byte blocks (IBM i)
- 571 GB 10k rpm disk drive (#ESF4) 4k byte blocks (IBM i)

SSDs

- 387 GB SSD (#ES7L) 5xx byte blocks (eML4 technology) for IBM i
- 387 GB SSD (#ES8P) 4k byte blocks (eML4 technology) for IBM i
- 387 GB SSD (#ESGA) 5xx byte blocks (Enterprise technology) for IBM i
- 387 GB SSD (#ESGE) 4k byte blocks (Enterprise technology) for IBM i
- 387 GB SSD (#ESB9) 4k byte blocks (Enterprise technology) for IBM i
- 931 GB SSD (#ES84) 4k byte blocks (Mainstream technology) for IBM i
- 931 GB SSD (#ESHT) 4k byte blocks (Mainstream technology) for IBM i
- 931 GB SSD (#ESJ9) 4k byte blocks (Mainstream technology) for IBM i

NVMe PCIe devices

- 1.6 TB (#EC6V) - PCIe3 x8 NVMe Flash Adapter for IBM i

- 1.6 TB (#ES1F) - PCIe4 U.2 NVMe module for IBM i
- 3.2 TB (#EC6X) PCIe3 x8 NVMe Flash Adapter for IBM i
- 3.2 TB (#ES1H) PCIe4 U.2 NVMe module for IBM i

The CBU specify feature (#0444) is supported with the 4-core processor card (#EP50) in IBM i environments. With its P05 software, it can be paired with a POWER7(R), POWER7 +, or POWER8 server with P05 or P10 software tier.

If IBM AIX or Linux is selected as the primary operating system. The 4-core S914 server supports a maximum of 10 disk drives or 10 SSDs or a combination of 10 disks and SSDs in the system unit. Alternatively, in the system unit, a maximum of 3 NVMe PCIe devices (and no SAS drives) are allowed. This is true with any of the storage backplane options selected.

The following SFF-3 SAS drives and NVMe devices for AIX/Linux are supported in the SAS/NVMe bays of the 4-core Power S914 system unit:

15k rpm disk drives

- 300 GB 15k rpm disk drive (#ESDB) 5xx byte blocks (AIX/Linux)
- 300 GB 15k rpm disk drive (#ESFB) 4k byte blocks (AIX/Linux)
- 300 GB 15K rpm disk drive (#ESNK) 4k byte blocks (AIX/Linux)

10k rpm disk drives

- 600 GB 10k rpm disk drive (#ESD5) 5xx byte blocks (AIX/Linux)
- 600 GB 10k rpm disk drive (#ESF5) 4k byte blocks (AIX/Linux)

SSDs

- 387 GB SSD (#ES7K) 5xx byte blocks (eML4 technology) for AIX/Linux
- 387 GB SSD (#ES8N) 4k byte blocks (eML4 technology) for AIX/Linux
- 387 GB SSD (#ESG9) 5xx byte blocks (Enterprise technology) for AIX/Linux
- 387 GB SSD (#ESGD) 4k byte blocks (Enterprise technology) for AIX/Linux
- 387 GB SSD (#ESB8) 4k byte blocks (Enterprise technology) for AIX/Linux
- 387 GB SSD (#ESB0) 5xx byte blocks (Enterprise technology) for AIX/Linux
- 931 GB SSD (#ES83) 4k byte blocks (Mainstream technology) for AIX/Linux
- 931 GB SSD (#ESHS) 4k byte blocks (Mainstream technology) for AIX/Linux
- 931 GB SSD (#ESJ8) 4k byte blocks (Mainstream technology) for AIX/Linux

NVMe PCIe devices

- 1.6 TB (#EC5B) - PCIe3 x8 NVMe Flash Adapter for AIX/Linux
- 3.2 TB (#EC5D) - PCIe3 x8 NVMe Flash Adapter for AIX/Linux
- 6.4 TB (#EC5F) - PCIe3 x8 NVMe Flash Adapter for AIX/Linux
- 1.6 TB (#ES1E) - PCIe4 U.2 NVMe module for AIX/Linux
- 3.2 TB (#ES1G) - PCIe4 U.2 NVMe module for AIX/Linux
- 6.4 TB (#EC5V) - PCIe4 U.2 NVMe module for AIX/Linux
- 800 GB (#EC5X) - PCIe3 U.2 NVMe module for AIX/Linux

Other NVMe PCI devices or SFF-3 drives are not supported. Note that 4k byte drives are generally less expensive than 5xx byte drives.

The PCIe expansion drawer (#EMX0) and EXP24SX /EXP12SX SAS Storage Enclosures (#ESLS or #ESLL) do not apply to the 4-core configuration Power S914 server.

IBM i Solution Edition for Power S914

The IBM i Solution Edition is designed to help you take advantage of the combined experience and expertise of IBM and ISVs in building business value with your IT investments. A qualifying purchase of software, maintenance, services, or training for a participating ISV solution is required when purchasing an IBM i Solution Edition.

The Power S914 Solution Edition feature 4928 supports 4-core configurations and feature 4927 supports 6-core configurations. For a list of participating ISVs, registration form, and additional details, see the IBM i Solution Editions website.

IBM i Express(R) Edition for Power S914

IBM i clients acquiring a new 4-core or 6-core Power S914 server can choose to use an IBM i Express Edition. Two new editions are similar to the editions provided with POWER8 servers and offer specific licensing advantages that further improve the price and performance of the Power S914 server when running IBM i. Feature EU2C can be included with a new 4-core Power S914 server, and feature EU2D can be included with a new 6-core Power S914 server.

Processor modules

A maximum of one processor is allowed. The following defines the allowed quantities of processor activation entitlements:

- One 4-core, typical 2.3 to 3.8 GHz (max) processor (#EP50) requires that four processor activation codes be ordered. A maximum of four processor activations (#EP60) is allowed.
- One 6-core, typical 2.3 to 3.8 GHz (max) processor (#EP51) requires that six processor activation codes be ordered. A maximum of six processor activation code features (#EP61) is allowed.
- One 8-core, typical 2.8 to 3.8 GHz (max) processor (#EP52) requires that eight processor activation codes be ordered. A maximum of eight processor activation code features (#EP62) is allowed.

System memory

- A minimum of 32 GB of memory is required on the Power S914 system.
- Memory upgrades require memory pairs. Base memory is 2x 16 GB DIMMs (#EM62) with one socket installed.

Plans for future memory upgrades should be taken into account when deciding which memory feature size to use at the time of initial system order.

Summary of standard features for Power S914:

Feature description	Feature number	Minimum DIMM quantity	Maximum DIMM quantity
16 GB DDR4 Memory	EM62	0	16
32 GB DDR4 Memory	EM63	0	16
64 GB DDR4 Memory	EM64	0	16

Note: Different sizes and configurations run at different frequencies of 2133, 2400, and 2666 Mbps.

Power supply

- Four power supplies supporting a tower or rack: 2+2 900 Watt 100 - 127 Volt or 200 - 240 Volt AC options (#EB2L)
- Two power supplies supporting a rack: 1+1 1400 Watt 200 - 240 Volt (#EB2M)

Redundant fans

Redundant fans are standard.

Power cords

Four power cords are required with power supply EB2L and two power cords are required with power supply EB2M. A maximum of four feature 6458 cords is allowed on the system unless a valid I/O drawer or tower is attached to the system. The Power S914 server supports power cord 4.3 m (14 ft), Drawer to Wall/IBM PDU (250V/10A) in the base shipment group. See the feature listing for other options.

PCIe slots

The Power S914 server has up to 11 (four U.2 NVMe plus up to seven PCIe add in cards) PCIe hot-plug slots, providing excellent configuration flexibility and expandability. For more information about the PCIe slots, see the I/O expansion drawer section.

With one POWER9 processor single-chip modules (SCM), eight PCIe slots are available: One is x16 Gen4 full-height, half-length slot (CAPI), one is x8 Gen4 full-height, half-length slot (with x16 connector) (CAPI), two are x16 Gen4 full-height, half-length slots, and four are x8 Gen4 full-height, half-length slots (one of these slots is used for the required base LAN adapter).

The x16 slots can provide up to twice the bandwidth of x8 slots because they offer twice as many PCIe lanes. PCIe Gen4 slots can support up to twice the bandwidth of a PCIe Gen3 slot, and PCIe Gen3 slots can support up to twice the bandwidth of a PCIe Gen2 slot, assuming an equivalent number of PCIe lanes.

At least one PCIe Ethernet adapter is required on the server by IBM to ensure proper manufacture, test, and support of the server. One of the x8 PCIe slots is used for this required adapter.

These servers are smarter about energy efficiency when cooling the PCIe adapter environment. They sense which IBM PCIe adapters are installed in their PCIe slots, and, if an adapter requires higher levels of cooling, they automatically speed up fans to increase airflow across the PCIe adapters. Note that faster fans increase the sound level of the server. Higher wattage PCIe adapters include the PCIe3 SAS adapters and SSD/flash PCIe adapters (#EJ10, #EJ14, and #EJ0J).

NVMe drive slots, SAS bays, and storage backplane options

- Storage backplane with six SFF-3 bays and two front PCIe Gen4 capable NVMe U.2 drive slots (#EJ1S)
- Storage backplane with two front PCIe Gen4 capable NVMe U.2 drive slots (#EJ1T)
- Storage backplane with four front PCIe Gen4 capable NVMe U.2 drive slots (#EJ1U)
- Base storage backplane 12 SFF-3 bays/RDX bay (#EJ1C)
- Feature EJ1E (6 +6 SFF-3 bays split backplane for #EJ1C)
- Expanded function storage backplane 18 SFF-3 bays/dual IOA with write cache and optional external SAS port (#EJ1D)
- Expanded function storage backplane 12 SFF-3 bays/RDX bay/dual IOA with write cache and optional external SAS port (#EJ1M)

The backplane options provide SFF-3 SAS bays in the system unit. These 2.5-inch or small form factor (SFF) SAS bays can contain SAS drives (HDD or SSD) mounted on a Gen3 tray or carrier. Thus the drives are designated SFF-3. SFF-1 or SFF-2 drives do not fit in an SFF-3 bay. All SFF-3 bays support concurrent maintenance or hot-plug capability.

These backplane options use leading-edge, integrated SAS RAID controller technology designed and patented by IBM. A custom-designed PowerPC(R) based ASIC chip is the basis of these SAS RAID controllers and provides RAID 5 and RAID 6 performance levels, especially for SSD. Internally, SAS ports are implemented and

provide plenty of bandwidth. The integrated SAS controllers are placed in dedicated slots and do not reduce the number of available PCIe slots.

The feature EJ1C base storage backplane option provides twelve SFF-3 bays and one SAS controller with zero write cache.

By optionally adding the feature EJ1E split backplane, a second integrated SAS controller with no write cache is provided, and the twelve SSF-3 bays are logically divided into two sets of six bays. Each SAS controller independently runs one of the six-bay sets of drives.

This backplane option supports HDDs or SSDs or a mixture of HDDs and SSDs in the SFF-3 bays. Mixing HDDs and SSDs applies even within a single set of six bays of the split backplane option. Note that if mixing HDDs and SSDs, they must be in separate arrays.

This backplane option can offer different drive protection options: RAID 0, RAID 5, RAID 6, or RAID 10. RAID 5 requires a minimum of three drives of the same capacity. RAID 6 requires a minimum of four drives of the same capacity. RAID 10 requires a minimum of two drives. Hot spare capability is supported with RAID 5, or RAID 6, or RAID 10.

Note that RAID 5 and RAID 6 result in more drive write activity than mirroring or than unprotected drives.

This backplane option is supported by AIX, Linux, VIOS, and IBM i. It is highly recommended but not required that the drives be protected. With IBM i all drives are required to be protected by either RAID or mirroring.

If you need a change after the server is installed, the backplane option can be changed. For example, the feature EJ1E split backplane feature can be added to an existing feature EJ1C backplane.

Unlike the hot-plug PCIe slots and SAS bays, concurrent maintenance is not available for the integrated SAS controllers. Scheduled downtime is required if a service action is required for these integrated resources.

In addition to supporting HDDs and SSDs in the SFF-3 SAS bays, the expanded function storage backplanes (#EJ1D and #EJ1M) support the optional attachment of an EXP12SX/EXP24SX drawer in mode 1. For these expanded function backplanes, all bays are accessed by both of the integrated SAS controllers. The bays support concurrent hot-plug maintenance.

Cable management arm

A folding arm is attached to the server's rails at the rear of the server. The server's power cords and the cables from the PCIe adapters or integrated ports run through the arm and into the rack. The arm enables the server to be pulled forward on its rails for service access to PCIe slots, memory, processors, and so on without disconnecting the cables from the server. Approximately 1 meter (3 feet) of cord or cable length is needed for the arm.

Integrated I/O ports

In addition to the integrated SAS controllers and SAS ports associated with the storage backplane, there are two HMC ports, one system port, and three USB ports. The two HMC ports are RJ45 supporting 1 Gb Ethernet connections.

The one system port is RJ45 and is supported by AIX and Linux for attaching serial devices such as an asynchronous device like a console. If the device does not have an RJ45 connection, a converter cable such as feature 3930 can provide a 9-pin D-shell connection. Note that serial devices can have very individual characteristics (different pin outs), and the feature 3930 may not be appropriate for all possible devices. In this case, the user should acquire an OEM converter cable appropriate for their device.

Three USB-3 ports are available for general client use; one is located in front and two in the rear. Additionally, there are two USB-2 ports in the service processor located in the rear of the system. These ports are for limited client use. A converter cable ECCF provides a USB-to-9-pin D-Shell connection for this function.

Rack-integrated system with I/O expansion drawer

Regardless of the rack-integrated system to which the PCIe Gen3 I/O expansion drawer is attached, if the expansion drawer is ordered as factory integrated, the PDUs in the rack will be placed horizontally by default to enhance cable management.

Expansion drawers complicate the access to vertical PDUs if located at the same height. IBM recommends accommodating PDUs horizontally on racks containing one or more PCIe Gen3 I/O expansion drawers.

After the rack with expansion drawers is delivered, you can rearrange the PDUs from horizontal to vertical. However, the configurator will continue to consider the PDUs as being placed horizontally for the matter of calculating the free space still available in the rack.

Vertical PDUs can be used only if CSRP (#0469) is on the order. When specifying CSRP, you should provide the locations where the PCIe Gen3 I/O expansion drawers must be placed to avoid locating them adjacent to vertical PDU locations, EIA 6 through 16 and 21 through 31.

The I/O expansion drawer can be migrated from a POWER8 to a POWER9 processor-based system. Only I/O cards supported on POWER9 in the I/O expansion drawer are allowed. Clients migrating the I/O expansion drawer configuration might have one or two PCIe3 6-slot fanout modules (#EMXF or #EMXG) installed in the rear of the I/O expansion drawer.

For a 4U server configuration with one processor module, up to one I/O expansion drawer and one fanout module (#EMXF or #EMXG) connected to one optical cable adapter (#EJ08) are supported (the right PCIe module bay must be populated by a filler module).

For a 4U server configuration with one processor module, up to one I/O expansion drawer and one fanout module (#EMXH) connected to one optical cable adapter (#EJ20) are supported (the right PCIe module bay must be populated by a filler module).

Limitations:

- Mixing of prior PCIe3 fanout modules (#EMXF, #EMXG) with PCIe3 fanout module (#EMXH) in the same I/O expansion drawer is not allowed.
- Mixing of I/O expansion drawer with prior PCIe3 fanout modules (#EMXF or #EMXG) and I/O expansion drawer with PCIe3 fanout module (#EMXH) in same configuration is allowed.
- PCIe3 optical cable adapters (#EJ20) requires use of optical cables (#ECCX or ECCY) or copper cable (#ECCS).

Note: Tower system configuration does not allow attachment of any I/O expansion drawer.

RDX docking station

The RDX docking station EUA4 accommodates RDX removable disk cartridges of any capacity. The disk is in a protective rugged cartridge enclosure that plugs into the docking station. The docking station holds one removable rugged disk drive or cartridge at a time. The rugged removable disk cartridge and docking station performs saves, restores, and backups similar to a tape drive. This docking station can be an excellent entry capacity and performance option.

EXP24SX SAS storage enclosure (#ESLS)

The EXP24SX is a storage expansion enclosure with twenty-four 2.5-inch SFF SAS bays. It supports up to 24 hot-plug HDDs or SSDs in only 2 EIA of space in a 19-inch rack. The EXP24SX SFF bays use SFF Gen2 (SFF-2) carriers or trays.

The EXP24SX drawer feature ESLS is supported on the Power S914, Power S922, and Power S924 servers by AIX, IBM i, Linux, and VIOS.

With AIX, Linux, and VIOS, the EXP24SX can be ordered with four sets of 6 bays (mode 4), two sets of 12 bays (mode 2), or one set of 24 bays (mode 1). With IBM i, only one set of 24 bays (mode 1) is supported. It is possible to change the mode setting in the field using software commands along with a specifically documented procedure. The predecessor EXP24S did not support this mode change in the field.

Important: When changing modes, a skilled, technically qualified person should follow the special documented procedures. Improperly changing modes can potentially destroy existing RAID sets, prevent access to existing data, or allow other partitions to access another partition's existing data. Hire an expert to assist if you are not familiar with this type of reconfiguration work.

Four mini-SAS HD ports on the EXP24SX are attached to PCIe Gen3 SAS adapters or attached to an integrated SAS controller in a POWER9 scale-out server such as the Power H922 or Power H924 servers. The following PCIe3 SAS adapters support the EXP24SX:

- PCIe3 RAID SAS Adapter Quad-port 6 Gb x8 (#EJ0J)
- PCIe3 12 GB Cache RAID Plus SAS Adapter Quad-port 6 Gb x8 (#EJ14)

Earlier generation PCIe2 or PCIe1 SAS adapters are not supported with the EXP24SX.

The attachment between the EXP24SX and the PCIe3 SAS adapters or integrated SAS controllers is through SAS YO12 or X12 cables. X12 and YO12 cables are designed to support up to 12 Gb SAS. The PCIe Gen3 SAS adapters support up to 6 Gb throughput. The EXP24SX has been designed to support up to 12 Gb throughput if future SAS adapters support that capability. All ends of the YO12 and X12 cables have mini-SAS HD narrow connectors. Cable options are:

- X12 cable: 3-meter copper (#ECDJ)
- YO12 cables: 1.5-meter copper (#ECDT), 3-meter copper (#ECDU)
- 3M 100 GbE Optical Cable QSFP28 (AOC) (#EB5R)
- 5M 100 GbE Optical Cable QSFP28 (AOC) (#EB5S)
- 10M 100 GbE Optical Cable QSFP28 (AOC) (#EB5T)
- 15M 100 GbE Optical Cable QSFP28 (AOC) (#EB5U)
- 20M 100 GbE Optical Cable QSFP28 (AOC) (#EB5V)
- 30M 100 GbE Optical Cable QSFP28 (AOC) (#EB5W)
- 50M 100 GbE Optical Cable QSFP28 (AOC) (#EB5X)
- 100M 100 GbE Optical Cable QSFP28 (AOC) (#EB5Y)

An AA12 cable interconnecting a pair of PCIe3 12 GB cache adapters (two #EJ14) is not attached to the EXP24SX. These higher-bandwidth cables could support 12 Gb throughput if future adapters support that capability. Copper feature ECE0 is 0.6 meters long, ECE3 is 3 meters long, and optical AA12 feature ECE4 is 4.5 meters long.

One no-charge specify code is used with each EXP24SX I/O drawer (#ESLS) to communicate to IBM configurator tools and IBM Manufacturing which mode setting, adapter, and SAS cable are needed. With this specify code, no hardware is shipped. The physical adapters, controllers, and cables must be ordered with their own chargeable feature numbers. There are more technically supported configurations than are represented by these specify codes. IBM Manufacturing

and IBM configurator tools such as e-config only understand and support EXP24SX configurations represented by these specify codes.

Specify code	Mode	Adapter/ Controller	Cable to drawer	Environment
#EJW0	Mode 1	CEC SAS Ports	2 YO12 cables	AIX/IBM i/ Linux/VIOS
#EJW1	Mode 1	One (unpaired) #EJ0J/#EJ0M	1 YO12 cable	AIX/IBM i/ Linux/VIOS
#EJW2	Mode 1	Two (one pair) #EJ0J/ #EJ0M	2 YO12 cables	AIX/IBM i/ Linux/VIOS
#EJW3	Mode 2	Two (unpaired) #EJ0J/#EJ0M	2 X12 cables	AIX/Linux/ VIOS
#EJW4	Mode 2	Four (two pair) #EJ0J/ #EJ0M	2 X12 cables	AIX/Linux/ VIOS
#EJW5	Mode 4	Four (unpaired) #EJ0J/#EJ0M	2 X12 cables	AIX/Linux/ VIOS
#EJW6	Mode 2	One (unpaired) #EJ0J/#EJ0M	2 YO12 cables	AIX/Linux/ VIOS
#EJW7	Mode 2	Two (unpaired) #EJ0J/#EJ0M	2 YO12 cables	AIX/Linux/ VIOS
#EJWF	Mode 1	Two (one pair) #EJ14	2 Y012 cables	AIX/IBM i/ Linux/VIOS
#EJWG	Mode 2	Two (one pair) #EJ14	2 X12 cables	AIX/Linux/ VIOS
#EJWJ	Mode 2	Four (two pair) #EJ14	2 X12 cables	AIX/Linux/ VIOS
#EJWU	Mode 1	Controller EJ1G	1 YO12 cables	Linux/AIX

All of the above EXP24SX specify codes assume a full set of adapters and cables able to run all the SAS bays configured. The following specify codes communicate to IBM Manufacturing a lower-cost partial configuration is to be 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
#EJWA (1/2 of #EJW7)	Mode 2	One (unpaired) #EJ0J/#EJ0M	1 YO12 cables	AIX/Linux/ VIOS
#EJWB (1/2 of #EJW4)	Mode 2	Two (one pair) #EJ0J/ #EJ0M	1 X12 cable	AIX/Linux/ VIOS
#EJWC (1/4 of #EJW5)	Mode 4	One (unpaired) #EJ0J/#EJ0M	1 X12 cable	AIX/Linux/ VIOS
#EJWD (1/2 of #EJW5)	Mode 4	Two (unpaired) #EJ0J/#EJ0M	1 X12 cables	AIX/Linux/ VIOS
#EJWE (3/4 of #EJW5)	Mode 4	Three (unpaired) #EJ0J/#EJ0M	2 X12 cables	AIX/Linux/ VIOS
#EJWH (1/2 of #EJWJ)	Mode 2	Two (one pair) #EJ14	1 X12 cables	AIX/Linux/ VIOS

An EXP24SX drawer in mode 4 can be attached to two or four SAS controllers and provide a great deal of configuration flexibility. 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.

An EXP24SX drawer in mode 2 has similar flexibility. If the I/O drawer 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.

A maximum of twenty-four 2.5-inch SSDs or 2.5-inch HDDs is supported in the EXP24SX 24 SAS bays. There can be no mixing of HDDs and SSDs in the same mode 1 drawer. HDDs and SSDs can be mixed in a mode 2 or mode 4 drawer, but they cannot be mixed within a logical split of the drawer. For example, in a mode 2 drawer with two sets of 12 bays, one set could hold SSDs and one set could hold HDDs, but you cannot mix SSDs and HDDs in the same set of 12 bays.

The indicator feature EHS2 helps IBM Manufacturing understand where SSDs are placed in a mode 2 or a mode 4 EXP24SX drawer. On one mode 2 drawer, use a quantity of one feature EHS2 to have SSDs placed in just half the bays, and use two EHS2 features to have SSDs placed in any of the bays. Similarly, on one mode 4 drawer, use a quantity of one, two, three, or four EHS2 features to indicate how many bays can have SSDs. With multiple EXP24SX orders, IBM Manufacturing will have to guess which quantity of feature ESH2 is associated with each EXP24SX. Consider using CSP (#0456) to reduce guessing.

Two-and-a-half-inch small form factor (SFF) SAS HDDs and SSDs are supported in the EXP24SX. All drives are mounted on Gen2 carriers or trays and thus named SFF-2 drives.

The EXP24SX drawer has many high-reliability design points:

- SAS drive bays that support hot swap
- Redundant and hot-plug-capable power and fan assemblies
- Dual line cords
- Redundant and hot-plug enclosure service modules (ESMs)
- Redundant data paths to all drives
- LED indicators on drives, bays, ESMs, and power supplies that support problem identification
- Through the SAS adapters or controllers, drives can be protected with RAID and mirroring and hot-spare capability

Order two ESLA features for AC power supplies. The enclosure is shipped with adjustable depth rails and can accommodate 19-inch rack depths from 59.5 - 75 cm (23.4 - 29.5 in.). Slot filler panels are provided for empty bays when initially shipped from IBM.

EXP12SX SAS storage enclosure (#ESLL)

The EXP12SX is a storage expansion enclosure with twelve 3.5-inch LFF SAS bays. It supports up to 12 hot-plug HDDs in only 2 EIA of space in a 19-inch rack. The EXP12SX SFF bays use LFF Gen1 (LFF-1) carriers/trays. The 4k byte sector drives (#4096 or #4224) are supported. SSDs are not supported.

The EXP12SX drawer feature ESLL is supported on the Power S914, Power S922, and Power S924 servers by AIX, Linux, and VIOS.

With AIX/Linux/VIOS, the EXP12SX enclosure can be ordered with four sets of 3 bays (mode 4), two sets of 6 bays (mode 2), or one set of 12 bays (mode 1). The mode setting can be changed in the field using software commands along with a specifically documented procedure.

Important: When changing modes, it is very important that you follow the documented procedures. Improperly changing modes can potentially destroy existing RAID sets, prevent access to existing data, or allow other partitions to access another partition's existing data. Hire an expert to assist if you are not familiar with this type of reconfiguration work.

Four mini-SAS HD ports on the EXP12SX are attached to PCIe Gen3 SAS adapters or attached to an integrated SAS controller in a POWER9 scale-out server such as the Power S914, S922, or S924 server. The following PCIe3 SAS adapters support the EXP12SX:

- PCIe3 RAID SAS Adapter Quad-port 6 Gb x8 (#EJ0J)
- PCIe3 12 GB Cache RAID Plus SAS Adapter Quad-port 6 Gb x8 (#EJ14)

Earlier generation PCIe2 or PCIe1 SAS adapters are not supported with the EXP12SX drawer.

The EXP12SX drawer and the PCIe3 SAS adapters or integrated SAS controllers are attached through SAS YO12 or X12 cables. X12 and YO12 cables are designed to support up to 12 Gb. The PCIe Gen3 SAS adapters support up to 6 Gb throughput. The EXP12SX has been designed to support up to 12 Gb throughput if future SAS adapters support that capability. All ends of the YO12 and X12 cables have mini-SAS HD narrow connectors. Cable options are:

- X12 cable: 3-meter copper (#ECDJ)
- YO12 cables: 1.5-meter copper (#ECDT), 3-meter copper (#ECDU)
- 3M 100 GbE Optical Cable QSFP28 (AOC) (#EB5R)
- 5M 100 GbE Optical Cable QSFP28 (AOC) (#EB5S)
- 10M 100 GbE Optical Cable QSFP28 (AOC) (#EB5T)
- 15M 100 GbE Optical Cable QSFP28 (AOC) (#EB5U)
- 20M 100 GbE Optical Cable QSFP28 (AOC) (#EB5V)
- 30M 100 GbE Optical Cable QSFP28 (AOC) (#EB5W)
- 50M 100 GbE Optical Cable QSFP28 (AOC) (#EB5X)
- 100M 100 GbE Optical Cable QSFP28 (AOC) (#EB5Y)

An AA12 cable interconnecting a pair of PCIe3 12 GB cache adapters (two #EJ14) is not attached to the EXP12SX drawer. These higher-bandwidth cables could support 12 Gb throughput if future adapters support that capability. Copper feature ECE0 is 0.6 meters long, feature ECE3 is 3 meters long, and optical AA12 feature ECE4 is 4.5 meters long.

One no-charge specify code is used with each EXP12SX I/O drawer (#ESLL) to communicate to IBM configurator tools and IBM Manufacturing which mode setting, adapter, and SAS cable are needed. With this specify code, no hardware is shipped. The physical adapters, controllers, and cables must be ordered with their own chargeable feature numbers. There are more technically supported configurations than are represented by these specify codes. IBM Manufacturing and IBM configurator tools such as e-config only understand and support EXP12SX configurations represented by these specify codes.

Specify	Mode	Adapter/ Controller	Cable to drawer	Environment
#EJV0	Mode 1	CEC SAS Ports	2 YO12 cables	AIX/Linux/ VIOS
#EJV1	Mode 1	One (unpaired) #EJ0J/#EJ0M	1 YO12 cable	AIX/Linux/ VIOS
#EJV2	Mode 1	Two (unpaired) #EJ0J/#EJ0M	2 YO12 cables	AIX/Linux/ VIOS

Specify	Mode	Adapter/ Controller	Cable to drawer	Environment
#EJV3	Mode 2	Two (one pair) #EJ0J/ #EJ0M	2 X12 cables	AIX/Linux/ VIOS
#EJV4	Mode 2	Four (two pair) #EJ0J/ #EJ0M	2 X12 cables	AIX/Linux/ VIOS
#EJV5	Mode 4	Four (unpaired) #EJ0J/#EJ0M	2 X12 cables	AIX/Linux/ VIOS
#EJV6	Mode 2	One(unpaired) #EJ0J/#EJ0M	2 YO12 cables	AIX/Linux/ VIOS
#EJV7	Mode 2	Two (unpaired) #EJ0J/#EJ0M	2 YO12 cables	AIX/Linux/ VIOS
#EJVF	Mode 1	Two #EJ14 (one pair)	2 YO12 cables	AIX/Linux/ VIOS
#EJVG	Mode 2	Two #EJ14 (one pair)	2 X12 cables	AIX/Linux/ VIOS
#EJVJ	Mode 2	Four #EJ14 (two pair)	2 X12 cable	AIX/Linux/ VIOS
#EJVU	Mode 1	Controller #EJ1G/ #EL67	1 YO12 cables	Linux

All of the above EXP12SX specify codes assume a full set of adapters and cables able to run all the SAS bays configured. The following specify codes communicate to IBM Manufacturing a lower cost, partial configuration is to be 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
#EJVA (1/2 of #EJV7)	Mode 2	One (unpaired) #EJ0J/#EJ0M	1 YO12 cables	AIX/Linux/ VIOS
#EJVB (1/2 of #EJV4)	Mode 2	One pair #EJ0J/#EJ0M	1 X12 cable	AIX/Linux/ VIOS
#EJVC (1/4 of #EJV5)	Mode 4	One (unpaired) #EJ0J/#EJ0M	1 X12 cable	AIX/Linux/ VIOS
#EJVD (2/4 of #EJV5)	Mode 4	Two (unpaired) #EJ0J/#EJ0M	1 X12 cables	AIX/Linux/ VIOS
#EJVE (3/4 of #EJV5)	Mode 4	Three (unpaired) #EJ0J/#EJ0M	2 X12 cables	AIX/Linux/ VIOS

An EXP12SX drawer in mode 4 can be attached to two or four SAS controllers and provide a great deal of configuration flexibility. 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.

An EXP12SX drawer in mode 2 has similar flexibility. If the I/O drawer 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.

The 3.5-inch large form factor (LFF) SAS HDDs are supported in the EXP24SX. All drives are mounted on Gen1 carriers or trays and thus are named LFF-1 drives.

Only 4k byte sector drives are supported in the EXP24SX drawer. The 5xx byte sector drives are not announced or planned. Drives are 7200 rpm and sometimes referred to as *nearline*. These drives provide excellent cost per gigabyte. Note that formatting or rebuilding arrays on large disk drives can take hours. If higher performance is required, consider higher rpm disks or SSDs in the EXP24SX drawer.

The EXP12SX drawer has many high-reliability design points:

- SAS bays that support hot swap
- Redundant and hot-plug power and fan assemblies
- Dual line cords
- Redundant and hot-plug ESMs
- Redundant data paths to all drives
- LED indicators on drives, bays, ESMs, and power supplies that support problem identification
- Through the SAS adapters or controllers, drives can be protected with RAID and mirroring and hot-spare capability

Order two ESLA features for AC power supplies. The enclosure is shipped with adjustable depth rails and can accommodate 19-inch rack depths from 59.5 - 75 cm (23.4 - 29.5 in.). Slot filler panels are provided for empty bays when initially shipped from IBM.

EXP24SX and EXP12SX enclosures can be mixed on the same server. EXP24SX and EXP12SX enclosures can be mixed on the same PCIe3 adapter.

PCIe Gen3 I/O drawer cabling option

A copper cabling option (#ECCS) is available for the scale-out servers. The cable option offers a much lower-cost connection between the server and the PCIe Gen3 I/O drawer fanout modules. The currently available Active Optical Cable (AOC) offers much longer length cables, providing rack placement flexibility. AOC cables are also much thinner and have tighter bend radius and thus are much easier to cable in the rack.

The 3M Copper CXP Cable Pair (#ECCS) has the same performance and same reliability, availability, and serviceability (RAS) characteristics as the AOC cables. One copper cable length of 3 m is offered. Note that the cable management arm of the scale-out servers requires about 1 meter of cable.

Like the AOC cable pair, the copper pair is cabled in the same manner. One cable attaches to the top CXP port in the PCIe adapter in the x16 PCIe slot in the server system unit and then attaches to the top CXP port in the fanout module in the I/O drawer. Its cable pair attaches to the bottom CXP port of the same PCIe adapter and to the bottom CXP port of the same fanout module. Note that the PCIe adapter providing the CXP ports on the server was named a PCIe3 "Optical" Cable Adapter. In hindsight, this naming was unfortunate as the adapter's CXP ports are not unique to optical. But at the time, optical cables were the only connection option planned.

Copper and AOC cabling can be mixed on the same server. However, they cannot be mixed on the same PCIe Gen3 I/O drawer or mixed on the same fanout module.

Copper cables have the same operating system software prerequisites as AOC cables.

High-function (switched and monitored) Power Distribution Units (PDUs)

The high-function PDUs provide switching, better monitoring, and 50% more C19 receptacles than previous Power Systems PDUs. Depending on country wiring standards, either two or four full-price features are orderable.

	208 V 3-phase delta	**200 V - 240 V 1-phase or 3-phase wye**
12xC13	#EPTQ	#EPTN

9xC19	#EPTL	#EPTJ

These PDUs can be mounted vertically in rackside pockets or they can be mounted horizontally. If mounted horizontally, they each use 1 EIA (1U) of rack space. See feature EPTH for horizontal mounting hardware, which is used when IBM Manufacturing doesn't automatically factory-install the PDU. Two RJ45 ports on the front of the PDU enable you to monitor each receptacle's electrical power usage and to remotely switch any receptacle on or off. The PDU is shipped with a generic PDU password. IBM strongly urges you to change the password upon installation. These PDUs do provide the same low price as the low-function 12xC13 PDU feature (#7188).

High-function (switched and monitored) PDUs plus

Hardware

- IEC 62368-1 and IEC 60950 safety standard
- A new product safety approval
- No China 5000 m altitude or tropical restrictions
- Detachable inlet for 3-phase delta-wired PDU with 30A, 50A, and 60A wall plugs
- IBM Technology and Qualification approved components, such as Anti-Sulfur Resistors (ASRs)
- Ethernet 10/100/1000 Mb/s

Software

- IPv4 and IPv6 support
- SSH command line
- Ability to change passwords over a network

PDU description	208 V 3-phase delta	200 V - 240 V 1-phase or 3-phase wye
12xC13	#ECJQ/#ECJP	#ECJN/#ECJM
9xC19	#ECJL/#ECJK	#ECJJ/#ECJG

These PDUs can be mounted vertically in rackside pockets or they can be mounted horizontally. If mounted horizontally, they each use one EIA (1U) of rack space. See feature EPTH for horizontal mounting hardware, which is used when IBM Manufacturing doesn't automatically factory-install the PDU. Two RJ45 ports on the front of the PDU enable you to monitor each receptacle's electrical power usage and to remotely switch any receptacle on or off.

Recommendation: The PDU is shipped with a generic PDU password. IBM strongly urges you to change it upon installation.

Existing and new high-function (switched and monitored) PDUs have the same physical dimensions. New high-function (switched and monitored) PDUs can be supported in the same racks as existing PDUs. Mixing of PDUs in a rack on new orders is not allowed.

Also, all factory-integrated orders must have the same PDU line cord.

The PDU features ECJQ/ECJP and ECJL/ECJK with the Amphenol inlet connector require new PDU line cords:

- #ECJ5 - 4.3 m (14-Ft) PDU to Wall 3PH/24A 200-240V Delta-wired Power Cord
- #ECJ7 - 4.3 m (14-Ft) PDU to Wall 3PH/48A 200-240V Delta-wired Power Cord

No pigtail (like feature ELC0) is available because an Amphenol male inline connector is unavailable.

The PDU features ECJJ/ECJG and ECJN/ECJM with the UTG624-7SKIT4/5 inlet connector use the existing PDU line cord features 6653, 6667, 6489, 6654, 6655, 6656, 6657, 6658, 6491, or 6492.

High-function 12xC13 PDU plus 3-phase delta (#ECJQ/#ECJP)

This is an intelligent, switched 200 - 240 volt 3-phase delta AC PDU plus with twelve C13 receptacles on the front of the PDU. The PDU is mounted on the rear of the rack, making the twelve C13 receptacles easily accessible. Each receptacle has a 20 amp circuit breaker. Three-phase delta-wired connectors have 4 pins and use three line conductors and a protective earth. The input is 200 - 240 volt line-to-line and the output is 200 - 240 volt line-to-line for 3-phase delta PDUs.

The PDU can be mounted vertically in rackside pockets, or it can be mounted horizontally. If mounted horizontally, it uses one EIA (1U) of rack space. See feature EPTH for horizontal mounting hardware.

Device power cords with a C20 plug connect to C19 PDU receptacles and are ordered separately. One wall line cord is also ordered separately and attaches to the Amphenol inlet connector. Supported line cords include features ECJ5 and ECJ7.

Two RJ45 ports on the front of the PDU enable you to monitor the electrical power usage of each receptacle and to remotely switch any receptacle on or off.

Recommendation: The PDU is shipped with a generic PDU password. IBM strongly urges you to change it upon installation.

Features ECJP and ECJQ are identical PDUs. Up to one lower-priced feature ECJP can be ordered with a new 7014-T42/T00 rack in place of a no-charge feature 9188 PDU.

For comparison, this is most like the earlier generation feature EPTP PDU.

Limitation: Some configurations of the Elastic Storage Server (ESS) are delivered with an Intelligent PDU. At this time, the intelligent management capabilities of this PDU are not configured or used by the ESS system. If the ESS customer would like to use this capability, it is the customer's responsibility to configure this PDU. In any case, the Ethernet port on the Intelligent PDU must not be connected to the ESS Management switch.

High-function 9xC19 PDU plus 3-phase delta (#ECJL/#ECJK)

This is an intelligent, switched 200 - 240 volt 3-phase delta AC PDU plus with nine C19 receptacles on the front of the PDU. The PDU is mounted on the rear of the rack, making the nine C19 receptacles easily accessible. Each receptacle has a 20 amp circuit breaker. Three-phase delta-wired connectors have 4 pins and use three line conductors and a protective earth. The input is 200 - 240 volt line-to-line and the output is 200 - 240 volt line-to-line for 3-phase delta PDUs.

The PDU can be mounted vertically in rackside pockets, or it can be mounted horizontally. If mounted horizontally, it uses one EIA (1U) of rack space. See feature EPTH for horizontal mounting hardware.

Device power cords with a C20 plug connect to C19 PDU receptacles and are ordered separately. One wall line cord is also ordered separately and attaches to the Amphenol inlet connector. Supported line cords include features ECJ5 and ECJ7.

Two RJ45 ports on the front of the PDU enable you to monitor the electrical power usage of each receptacle and to remotely switch any receptacle on or off.

Recommendation: The PDU is shipped with a generic PDU password. IBM strongly urges you to change it upon installation.

There are also three C13 receptacles on the rear of the PDU positioned toward the middle of the rack. These are not easily accessed, and therefore IBM does not generally recommend their use.

Features ECJK and ECJL are identical PDUs. Up to one lower-priced feature ECJK can be ordered with a new 7014-T42/T00 rack in place of a no-charge feature 9188 PDU.

For comparison, this is most like the earlier generation feature EPTL PDU.

Limitation: Some configurations of the ESS are delivered with an Intelligent PDU. At this time, the intelligent management capabilities of this PDU are not configured or used by the ESS system. If the ESS customer would like to use this capability, it is the customer's responsibility to configure this PDU. In any case, the Ethernet port on the Intelligent PDU must not be connected to the ESS Management switch.

High-function 9xC19 1-phase or 3-phase wye PDU plus (#ECJJ/#ECJG)

This is an intelligent, switched 200 - 240 volt 1-phase or 380 - 415/220 - 240 volt 3-phase wye AC PDU plus with nine C19 receptacles on the front of the PDU. The PDU is mounted on the rear of the rack, making the nine C19 receptacles easily accessible. Each receptacle has a 20 amp circuit breaker. Depending on country wiring standards, the PDU is 1-phase or 3-phase wye. Three-phase wye-wired connectors have 5 pins and use three line conductors, a neutral, and a protective earth. The input is 380 - 415 volt line-to-line and the output is 220 - 240 volt line-to-neutral for 3-phase wye PDUs.

The PDU can be mounted vertically in rackside pockets, or it can be mounted horizontally. If mounted horizontally, it uses one EIA (1U) of rack space. See feature EPTH for horizontal mounting hardware.

Device power cords with a C20 plug connect to C19 PDU receptacles and are ordered separately. One country-specific wall line cord is also ordered separately and attaches to a UTG524-7 connector on the front of the PDU. Supported line cords include features 6489, 6491, 6492, 6653, 6654, 6655, 6656, 6657, 6658, and 6667.

Two RJ45 ports on the front of the PDU enable you to monitor the electrical power usage of each receptacle and to remotely switch any receptacle on or off.

Recommendation: The PDU is shipped with a generic PDU password. IBM strongly urges you to change it upon installation.

There are also three C13 receptacles on the rear of the PDU positioned toward the middle of the rack. These are not easily accessed, and therefore IBM does not generally recommend their use.

Features ECJG and ECJJ are identical PDUs. Up to one lower-priced feature ECJG can be ordered with a new 7014-T42/T00 rack in place of a no-charge feature 9188 PDU.

For comparison, this is most like the earlier generation feature EPTJ PDU.

Limitation: Some configurations of the ESS are delivered with an Intelligent PDU. At this time, the intelligent management capabilities of this PDU are not configured or used by the ESS system. If the ESS customer would like to use this capability, it is the customer's responsibility to configure this PDU. In any case, the Ethernet port on the Intelligent PDU must not be connected to the ESS Management switch.

High-function 12xC13 1-phase or 3-phase wye PDU plus (#ECJN/#ECJM)

This is an intelligent, switched 200 - 240 volt 1-phase or 380 - 415/220 - 240 volt 3-phase wye AC PDU plus with twelve C13 receptacles on the front of the PDU. The PDU is mounted on the rear of the rack, making the twelve C13 receptacles easily accessible. Each receptacle has a 20 amp circuit breaker. Depending on country wiring standards, the PDU is 1-phase or 3-phase wye. Three-phase wye-wired connectors have 5 pins and use three line conductors, a neutral, and a protective earth. The input is 380 - 415 volt line-to-line and the output is 220 - 240 volt line-to-neutral for 3-phase wye PDUs.

See 3-phase #ECJP/#ECJQ for countries that do not use wye wiring.

The PDU can be mounted vertically in rackside pockets, or it can be mounted horizontally. If mounted horizontally, it uses one EIA (1U) of rack space. See feature EPTH for horizontal mounting hardware.

Device power cords with a C14 plug connect to C13 PDU receptacles and are ordered separately. One country-specific wall line cord is also ordered separately and attaches to a UTG524-7 connector on the front of the PDU. Supported line cords include features 6489, 6491, 6492, 6653, 6654, 6655, 6656, 6657, 6658, and 6667.

Two RJ45 ports on the front of the PDU enable you to monitor the electrical power usage of each receptacle and to remotely switch any receptacle on or off.

Recommendation: The PDU is shipped with a generic PDU password. IBM strongly urges you to change it upon installation.

Features ECJM and ECJN are identical PDUs. Up to one lower-priced feature ECJM can be ordered with a new 7014-T42/T00 rack in place of a no-charge feature 9188 PDU.

For comparison, this is most like the earlier generation feature EPTN PDU.

Limitation: Some configurations of the ESS are delivered with an Intelligent PDU. At this time, the intelligent management capabilities of this PDU are not configured or used by the ESS system. If the ESS customer would like to use this capability, it is the customer's responsibility to configure this PDU. In any case, the Ethernet port on the Intelligent PDU must not be connected to the ESS Management switch.

Reliability, Availability, and Serviceability

Reliability, fault tolerance, and data correction

The reliability of systems starts with components, devices, and subsystems that are designed to be highly reliable. During the design and development process, subsystems go through rigorous verification and integration testing processes. During system manufacturing, systems go through a thorough testing process to help ensure the highest level of product quality.

Memory subsystem RAS

The memory has error detection and correction circuitry designed such that the failure of any one specific memory module within an ECC word by itself can be corrected absent any other fault.

Mutual surveillance

The service processor monitors the operation of the firmware during the boot process and also monitors the hypervisor for termination. The hypervisor monitors the service processor and reports a service reference code when it detects surveillance loss. In the PowerVM environment, it will perform a reset/reload if it detects the loss of the service processor.

Environmental monitoring functions

The Power Systems family does ambient and over temperature monitoring and reporting.

POWER9 processor functions

As in POWER8, the POWER9 processor has the ability to do processor instruction retry for some transient errors.

Cache availability

The L2 and L3 caches in the POWER9 processor in the memory buffer chip are protected with double-bit detect, single-bit correct error detection code (ECC). In addition, a threshold of correctable errors detected on cache lines can result in

the data in the cache lines being purged and the cache lines removed from further operation without requiring a reboot in the PowerVM environment.

Modified data would be handled through Special Uncorrectable Error handling. L1 data and instruction caches also have a retry capability for intermittent errors and a cache set delete mechanism for handling solid failures.

Special Uncorrectable Error handling

Special Uncorrectable Error (SUE) handling prevents an uncorrectable error in memory or cache from immediately causing the system to terminate. Rather, the system tags the data and determines whether it will ever be used again. If the error is irrelevant, it will not force a check stop. If the data is used, termination may be limited to the program/kernel or hypervisor owning the data; or the I/O adapters controlled by an I/O hub controller would freeze if data were transferred to an I/O device.

PCI extended error handling

PCI extended error handling (EEH)-enabled adapters respond to a special data packet generated from the affected PCI slot hardware by calling system firmware, which will examine the affected bus, allow the device driver to reset it, and continue without a system reboot. For Linux, EEH support extends to the majority of frequently used devices, although some third-party PCI devices may not provide native EEH support.

Uncorrectable error recovery

When the auto-restart option is enabled, the system can automatically restart following an unrecoverable software error, hardware failure, or environmentally induced (AC power) failure.

Serviceability

The purpose of serviceability is to efficiently repair the system while attempting to minimize or eliminate impact to system operation. Serviceability includes system installation, MES (system upgrades/downgrades), and system maintenance/repair. Depending upon the system and warranty contract, service may be performed by the client, an IBM representative, or an authorized warranty service provider.

The serviceability features delivered in this system help provide a highly efficient service environment by incorporating the following attributes:

- Design for Customer Set Up (CSU), Customer Installed Features (CIF), and Customer Replaceable Units (CRU)
- Error Detection and Fault Isolation (ED/FI)
- First Failure Data Capture (FFDC)
- Lightpath service indicators
- Service labels and service diagrams available on the system and delivered through IBM Knowledge Center
- Step-by-step service procedures documented in IBM Knowledge Center or available through the Hardware Management Console
- Automatic reporting of serviceable events to IBM through the Electronic Service Agent Call Home application
- CRU videos planned to be available on the web at general availability
- Mobile access to important customer service functions available by scanning a QR label

Service environment

In the PowerVM environment, the HMC is a dedicated server that provides functions for configuring and managing servers for either partitioned or full-system partition using a GUI or command-line interface (CLI) or REST API. An HMC attached to the system allows support personnel (with client authorization) to remotely, or locally to

the physical HMC that is in proximity of the server being serviced, log in to review error logs and perform remote maintenance if required.

The POWER9 processor-based platforms support several service environments:

- Attachment to one or more HMCs or vHMCs is a supported option by the system with PowerVM. This is the default configuration for servers supporting logical partitions with dedicated or virtual I/O. In this case, all servers have at least one logical partition.
- For non-HMC systems.
  - Full-system partition with PowerVM: A single partition owns all the server resources and only one operating system may be installed. The primary service interface is through the operating system and the service processor.

Service interface

Support personnel can use the service interface to communicate with the service support applications in a server using an operator console, a graphical user interface on the management console or service processor, or an operating system terminal. The service interface helps to deliver a clear, concise view of available service applications, helping the support team to manage system resources and service information in an efficient and effective way. Applications available through the service interface are carefully configured and placed to give service providers access to important service functions.

Different service interfaces are used, depending on the state of the system, hypervisor, and operating environment. The primary service interfaces are:

- LEDs
- Operator Panel
- Service Processor menu
- Operating system service menu
- Service Focal Point on the HMC or vHMC with PowerVM

In the light path LED implementation, the system can clearly identify components for replacement by using specific component-level LEDs, and can also guide the servicer directly to the component by signaling (turning on solid) the amber system fault LED, enclosure fault LED, and component FRU fault LED. The servicer can also use the identify function to blink the FRU-level LED. When this function is activated, a roll-up to the blue enclosure locate and system locate LEDs will occur. These enclosure LEDs will turn on solid and can be used to follow the light path from the system to the enclosure and down to the specific FRU in the PowerVM environment.

First Failure Data Capture and error data analysis

First Failure Data Capture (FFDC) is a technique that helps ensure that when a fault is detected in a system, the root cause of the fault will be captured without the need to re-create the problem or run any sort of extending tracing or diagnostics program. For the vast majority of faults, a good FFDC design means that the root cause can also be detected automatically without servicer intervention.

FFDC information, error data analysis, and fault isolation are necessary to implement the advanced serviceability techniques that enable efficient service of the systems and to help determine the failing items.

In the rare absence of FFDC and Error Data Analysis, diagnostics are required to re-create the failure and determine the failing items.

Diagnostics

General diagnostic objectives are to detect and identify problems so they can be resolved quickly. Elements of IBM's diagnostics strategy include:

- Provide a common error code format equivalent to a system reference code with PowerVM, system reference number, checkpoint, or firmware error code.

- Provide fault detection and problem isolation procedures. Support remote connection ability to be used by the IBM Remote Support Center or IBM Designated Service.
- Provide interactive intelligence within the diagnostics with detailed online failure information while connected to IBM's back-end system.

Automatic diagnostics

Because of the FFDC technology designed into IBM servers, it is not necessary to perform re-create diagnostics for failures or require user intervention. Solid and intermittent errors are designed to be correctly detected and isolated at the time the failure occurs. Runtime and boot-time diagnostics fall into this category.

Standalone diagnostics with PowerVM

As the name implies, standalone or user-initiated diagnostics requires user intervention. The user must perform manual steps, including:

- Booting from the diagnostics CD, DVD, USB, or network
- Interactively selecting steps from a list of choices

Concurrent maintenance

The determination of whether a firmware release can be updated concurrently is identified in the readme information file that is released with the firmware. An HMC is required for the concurrent firmware update with PowerVM. In addition, concurrent maintenance of PCIe adapters is supported with PowerVM. Concurrent maintenance of the Operator Panel is supported through ASMI. Additional concurrent maintenance includes power supplies, fans, and HDD/SSD drives.

Service labels

Service providers use these labels to assist them in performing maintenance actions. Service labels are found in various formats and positions and are intended to transmit readily available information to the servicer during the repair process. Following are some of these service labels and their purpose:

- Location diagrams: Location diagrams are located on the system hardware, relating information regarding the placement of hardware components. Location diagrams may include location codes, drawings of physical locations, concurrent maintenance status, or other data pertinent to a repair. Location diagrams are especially useful when multiple components such as DIMMs, CPUs, processor books, fans, adapter cards, LEDs, and power supplies are installed.
- Remove/replace procedures: Service labels that contain remove/replace procedures are often found on a cover of the system or in other spots accessible to the servicer. These labels provide systematic procedures, including diagrams detailing how to remove or replace certain serviceable hardware components.
- Arrows: Numbered arrows are used to indicate the order of operation and the serviceability direction of components. Some serviceable parts such as latches, levers, and touch points need to be pulled or pushed in a certain direction and in a certain order for the mechanical mechanisms to engage or disengage. Arrows generally improve the ease of serviceability.

QR labels

QR labels are placed on the system to provide access to key service functions through a mobile device. Once the QR label is scanned, it will go to a landing page specific to that server which contains many of the service functions of interest while physically located at the server. These include things such as installation and repair instructions, service diagrams, reference code look up, and so on.

Packaging for service

The following service enhancements are included in the physical packaging of the systems to facilitate service:

- Color coding (touch points): Blue-colored touch points delineate touchpoints on service components where the component can be safely handled for service actions such as removal or installation.
- Tool-less design: Selected IBM systems support tool-less or simple tool designs. These designs require no tools or simple tools such as flathead screw drivers to service the hardware components.
- Positive retention: Positive retention mechanisms help to assure proper connections between hardware components such as cables to connectors, and between two cards that attach to each other. Without positive retention, hardware components run the risk of becoming loose during shipping or installation, preventing a good electrical connection. Positive retention mechanisms like latches, levers, thumb-screws, pop Nylatches (U-clips), and cables are included to help prevent loose connections and aid in installing (seating) parts correctly. These positive retention items do not require tools.

Error handling and reporting

In the event of system hardware or environmentally induced failure, the system runtime error capture capability systematically analyzes the hardware error signature to determine the cause of failure. The analysis result will be stored in system NVRAM. When the system can be successfully restarted either manually or automatically, or if the system continues to operate, the error will be reported to the operating system. Hardware and software failures are recorded in the system log. When an HMC is attached in the PowerVM environment, an ELA routine analyzes the error, forwards the event to the Service Focal Point (SFP) application running on the HMC, and notifies the system administrator that it has isolated a likely cause of the system problem. The service processor event log also records unrecoverable checkstop conditions, forwards them to the SFP application, and notifies the system administrator.

The system has the ability to call home through the operating system to report platform-recoverable errors and errors associated with PCI adapters/devices.

In the HMC-managed environment, a call home service request will be initiated from the HMC and the pertinent failure data with service parts information and part locations will be sent to an IBM service organization. Customer contact information and specific system-related data such as the machine type, model, and serial number, along with error log data related to the failure, are sent to IBM Service.

Live Partition Mobility

With Live Partition Mobility, users can migrate an AIX or IBM i partition running on one POWER partition system to another POWER system without disrupting services. The migration transfers the entire system environment, including processor state, memory, attached virtual devices, and connected users. It provides continuous operating system and application availability during planned partition outages for repair of hardware and firmware faults.

Service processor

The service processor provides the capability to diagnose, check the status of, and sense the operational conditions of a system. It runs on its own power boundary and does not require resources from a system processor to be operational to perform its tasks.

Under PowerVM, the service processor supports surveillance of the connection to the HMC and to the system firmware (hypervisor). It also provides several remote power control options, environmental monitoring, reset, restart, remote maintenance, and diagnostic functions, including console mirroring. The service processors menus (ASMI) can be accessed concurrently with system operation, allowing nondisruptive abilities to change system default parameters.

Call home

Call home refers to an automatic or manual call from a client location to the IBM support structure with error log data, server status, or other service-related information. Call home invokes the service organization in order for the appropriate service action to begin. Call home can be done through HMC or most non-HMC-managed systems through Electronic Service Agent running on top of the operating system. While configuring call home is optional, clients are encouraged to implement this feature in order to obtain service enhancements such as reduced problem determination and faster and potentially more accurate transmittal of error information. In general, using the call home feature can result in increased system availability. The Electronic Service Agent application can be configured for automated call home. See the next section for specific details on this application.

IBM Electronic Services

Electronic Service Agent and the IBM Electronic Services web portal comprise the IBM Electronic Services solution, which is dedicated to providing fast, exceptional support to IBM clients. IBM Electronic Service Agent is a no-charge tool that proactively monitors and reports hardware events such as system errors, performance issues, and inventory. Electronic Service Agent can help focus on the client's company business initiatives, save time, and spend less effort managing day-to-day IT maintenance issues.

System configuration and inventory information collected by Electronic Service Agent also can be viewed on the secure Electronic Services web portal and used to improve problem determination and resolution between the client and the IBM support team. As part of an increased focus to provide even better service to IBM clients, Electronic Service Agent tool configuration and activation comes standard with the system. In support of this effort, a new HMC External Connectivity security whitepaper has been published, which describes data exchanges between the HMC and the IBM Service Delivery Center (SDC) and the methods and protocols for this exchange. To read the whitepaper and prepare for Electronic Service Agent installation, see the "Security" section at the IBM Electronic Service Agent website.

Select your country. Click "IBM Electronic Service Agent Connectivity Guide."

Benefits: increased uptime

Electronic Service Agent is designed to enhance the warranty and maintenance service by potentially providing faster hardware error reporting and uploading system information to IBM Support. This can optimize the time monitoring the symptoms, diagnosing the error, and manually calling IBM Support to open a problem record. And 24x7 monitoring and reporting means no more dependency on human intervention or off-hours client personnel when errors are encountered in the middle of the night.

Security: The Electronic Service Agent tool is designed to help secure the monitoring, reporting, and storing of the data at IBM. The Electronic Service Agent tool is designed to help securely transmit either through the internet (HTTPS or VPN) or modem to provide clients a single point of exit from their site. Communication is one way. Activating Electronic Service Agent does not enable IBM to call into a client's system.

For additional information, see the IBM Electronic Service Agent website.

More accurate reporting

Because system information and error logs are automatically uploaded to the IBM Support Center in conjunction with the service request, clients are not required to find and send system information, decreasing the risk of misreported or misdiagnosed errors. Once inside IBM, problem error data is run through a data knowledge management system, and knowledge articles are appended to the problem record.

Customized support

By using the IBMid entered during activation, clients can view system and support information in the "My Systems" and "Premium Search" sections of the Electronic Services website.

The Electronic Services web portal is a single internet entry point that replaces the multiple entry points traditionally used to access IBM internet services and support. This web portal enables you to gain easier access to IBM resources for assistance in resolving technical problems. The newly improved My Systems and Premium Search functions make it even easier for Electronic Service Agent-enabled clients to track system inventory and find pertinent fixes.

My Systems provides valuable reports of installed hardware and software using information collected from the systems by IBM Electronic Service Agent. Reports are available for any system associated with the client's IBMid. Premium Search combines the function of search and the value of Electronic Service Agent information, providing advanced search of the technical support knowledgebase. Using Premium Search and the Service Agent information that has been collected from the system, clients are able to see search results that apply specifically to their systems.

For more information on how to utilize the power of IBM Electronic Services, see the following website or contact an IBM Systems Services Representative.

Section 508 of the US Rehabilitation Act

The Power S914 server (9009-41G) is capable as of July 24, 2020, when used in accordance with IBM's associated documentation, of satisfying the applicable requirements of Section 508 of the Rehabilitation Act, provided that any assistive technology used with the product properly interoperates with it. A US Section 508 Voluntary Product Accessibility Template (VPAT) can be found on the Product accessibility information website.

Product number

The following are newly announced features on the specific models of the IBM Power Systems 9009 machine type:

Description	Machine type	Model number	Feature number
IBM Power System S914	9009	41G	
Enterprise 6.4 TB SSD PCIe4 NVMe U.2 module for AIX/Linux	9009	41G	EC5V
Enterprise 6.4 TB SSD PCIe4 NVMe U.2 module for IBM i	9009	41G	EC5W
Mainstream 800 GB SSD PCIe3 NVMe U.2 module for AIX/Linux	9009	41G	EC5X
NVMe U.2 Passthru adapter Gen4 capable	9009	41G	EJ1Q
Storage backplane 6 SFF-3 Bays and 2 front PCIe Gen4 capable NVMe U.2 drive slots	9009	41G	EJ1S
Storage backplane with two front PCIe Gen4 capable NVMe U.2 drive slots	9009	41G	EJ1T
Storage backplane with four front PCIe Gen4 capable NVMe U.2 drive slots	9009	41G	EJ1U
Front IBM Bezel for 6 SAS + 4 NVMe -Bays BackPlane	9009	41G	EJUJ
Front OEM Bezel for 6 SAS + 4 NVMe-Bays BackPlane	9009	41G	EJUL
Front IBM Cover/Door Tower with 6 SAS/4 NVMe Bays BackPlane	9009	41G	EJUQ
Front OEM Cover/Door Tower with 6 SAS/4 NVMe Bays BackPlane	9009	41G	EJUR
ES1F Load Source Specify (1.6 TB 4K NVMe U.2 SSD PCIe4 for IBM i)	9009	41G	ELS3
ES1H Load Source Specify (3.2 TB 4K NVMe U.2 SSD for IBM i)	9009	41G	ELSQ
EC5W Load Source Specify (6.4 TB 4K NVMe U.2 SSD			

for IBM i)	9009	41G	ELUW
PCIe3 2-Port 16Gb Fibre Channel Adapter	9009	41G	EN1G
200 GB IBM i NVMe Load Source Namespace size	9009	41G	ENSA
400 GB IBM i NVMe Load Source Namespace size	9009	41G	ENSB
4-core Typical 2.3 to 3.8 Ghz (max) POWER9 Processor	9009	41G	EP50
6-core Typical 2.3 to 3.8 Ghz (max) POWER9 Processor	9009	41G	EP51
8-core Typical 2.8 to 3.8 Ghz (max) POWER9 Processor	9009	41G	EP52
One Processor Core Activation for #EP50	9009	41G	EP60
One Processor Core Activation for #EP51	9009	41G	EP61
One Processor Core Activation for #EP52	9009	41G	EP62
One Processor Core Activation for #EP50	9009	41G	EPZR
One Processor Core Activation for #EP51	9009	41G	EPZS
Enterprise 1.6 TB SSD PCIe4 NVMe U.2 module for AIX/Linux	9009	41G	ES1E
Enterprise 1.6 TB SSD PCIe4 NVMe U.2 module for IBM i	9009	41G	ES1F
Enterprise 3.2 TB SSD PCIe4 NVMe U.2 module for AIX/Linux	9009	41G	ES1G
Enterprise 3.2 TB SSD PCIe4 NVMe U.2 module for IBM i	9009	41G	ES1H

The following are features already announced for the IBM Power Systems 9009 machine type:

Description	Machine type	Model number	Feature number
One CSC Billing Unit	9009	41G	0010
Ten CSC Billing Units	9009	41G	0011
Mirrored System Disk Level, Specify Code	9009	41G	0040
Device Parity Protection-All, Specify Code	9009	41G	0041
Mirrored System Bus Level, Specify Code	9009	41G	0043
Device Parity RAID-6 All, Specify Code	9009	41G	0047
RISC-to-RISC Data Migration	9009	41G	0205
AIX Partition Specify	9009	41G	0265
Linux Partition Specify	9009	41G	0266
IBM i Operating System Partition Specify	9009	41G	0267
Specify Custom Data Protection	9009	41G	0296
Mirrored Level System Specify Code	9009	41G	0308
RAID Hot Spare Specify	9009	41G	0347
V.24/EIA232 6.1m (20-Ft) PCI Cable	9009	41G	0348
V.35 6.1m (20-Ft) PCI Cable	9009	41G	0353
X.21 6.1m (20-Ft) PCI Cable	9009	41G	0359
CBU Specify	9009	41G	0444
Customer Specified Placement	9009	41G	0456
19 inch, 1.8 meter high rack	9009	41G	0551
19 inch, 2.0 meter high rack	9009	41G	0553
Rack Filler Panel Kit	9009	41G	0599
Load Source Not in CEC	9009	41G	0719
EXP24S SFF Gen2 Load Source Specify (#5887 or #EL1S)	9009	41G	0728
SAN Load Source Specify	9009	41G	0837
#1948 Load Source Specify (283GB 15k RPM SAS SFF-2 Disk)	9009	41G	0872
#1962 Load Source Specify (571GB 10k RPM SAS SFF-2 Disk)	9009	41G	0875
#ESD2 Load Source Specify (1.1TB 10k SFF-2)	9009	41G	0911
US TAA Compliance Indicator	9009	41G	0983
Product assembled in USA manufacturing plant	9009	41G	0984

Modem Cable - US/Canada and General Use	9009	41G	1025
USB 500 GB Removable Disk Drive	9009	41G	1107
Custom Service Specify, Rochester Minn, USA	9009	41G	1140
Quantity 150 of #1962	9009	41G	1817
Quantity 150 of #1964	9009	41G	1818
Quantity 150 of #1948	9009	41G	1927
Quantity 150 of #1953	9009	41G	1929
283GB 15k RPM SAS SFF-2 Disk Drive (IBM i)	9009	41G	1948
300GB 15k RPM SAS SFF-2 Disk Drive (AIX/Linux)	9009	41G	1953
571GB 10k RPM SAS SFF-2 Disk Drive (IBM i)	9009	41G	1962
600GB 10k RPM SAS SFF-2 Disk Drive (AIX/Linux)	9009	41G	1964
Primary OS - IBM i	9009	41G	2145
Primary OS - AIX	9009	41G	2146
Primary OS - Linux	9009	41G	2147
Factory Deconfiguration of 1-core	9009	41G	2319
2M LC-SC 50 Micron Fiber Converter Cable	9009	41G	2456
2M LC-SC 62.5 Micron Fiber Converter Cable	9009	41G	2459
PCIe 2-Line WAN w/Modem	9009	41G	2893
3M Asynchronous Terminal/Printer Cable EIA-232	9009	41G	2934
Asynchronous Cable EIA-232/V.24 3M	9009	41G	2936
Serial-to-Serial Port Cable for Drawer/Drawer-3.7M	9009	41G	3124
Serial-to-Serial Port Cable for Rack/Rack- 8M	9009	41G	3125
Widescreen LCD Monitor	9009	41G	3632
0.3M Serial Port Converter Cable, 9-Pin to 25-Pin	9009	41G	3925
Serial Port Null Modem Cable, 9-pin to 9-pin, 3.7M	9009	41G	3927
Serial Port Null Modem Cable, 9-pin to 9-pin, 10M	9009	41G	3928
System Serial Port Converter Cable	9009	41G	3930
1.8 M (6-ft) Extender Cable for Displays (15-pin D-shell to 15-pin D-shell)	9009	41G	4242
Extender Cable - USB Keyboards, 1.8M	9009	41G	4256
VGA to DVI Connection Converter	9009	41G	4276
Rack Integration Services	9009	41G	4649
One and only one rack indicator feature is required on all orders (#4650 to #4666).			
Rack Indicator- Not Factory Integrated	9009	41G	4650
Rack Indicator, Rack #1	9009	41G	4651
Rack Indicator, Rack #2	9009	41G	4652
Rack Indicator, Rack #3	9009	41G	4653
Rack Indicator, Rack #4	9009	41G	4654
Rack Indicator, Rack #5	9009	41G	4655
Rack Indicator, Rack #6	9009	41G	4656
Rack Indicator, Rack #7	9009	41G	4657
Rack Indicator, Rack #8	9009	41G	4658
Rack Indicator, Rack #9	9009	41G	4659
Rack Indicator, Rack #10	9009	41G	4660
Rack Indicator, Rack #11	9009	41G	4661
Rack Indicator, Rack #12	9009	41G	4662
Rack Indicator, Rack #13	9009	41G	4663
Rack Indicator, Rack #14	9009	41G	4664
Rack Indicator, Rack #15	9009	41G	4665
Rack Indicator, Rack #16	9009	41G	4666
Power Active Memory Expansion Enablement	9009	41G	4794
Solution Edition for IBM i (6-core)	9009	41G	4927
Solution Edition for IBM i (4-core)	9009	41G	4928
Software Preload Required	9009	41G	5000
PowerVM Enterprise Edition	9009	41G	5228
Sys Console On HMC	9009	41G	5550
System Console-Ethernet LAN adapter	9009	41G	5557
PCIe2 8Gb 4-port Fibre Channel Adapter	9009	41G	5729
8 Gigabit PCI Express(R) Dual Port Fibre Channel Adapter	9009	41G	5735
POWER(R) GXT145 PCI Express Graphics Accelerator	9009	41G	5748
4 Port Async EIA-232 PCIe Adapter	9009	41G	5785
EXP24S SFF Gen2-bay Drawer	9009	41G	5887
PCIe2 4-port 1GbE Adapter	9009	41G	5899
Opt Front Door for 1.8m Rack	9009	41G	6068
Opt Front Door for 2.0m Rack	9009	41G	6069
1.8m Rack Acoustic Doors	9009	41G	6248

2.0m Rack Acoustic Doors	9009	41G	6249
1.8m Rack Trim Kit	9009	41G	6263
2.0m Rack Trim Kit	9009	41G	6272
Power Cord 4.3m (14-ft), Drawer to IBM PDU (250V/ 10A)	9009	41G	6458
Power Cord 4.3m (14-ft), Drawer To OEM PDU (125V, 15A)	9009	41G	6460
Power Cord 4.3m (14-ft), Drawer to Wall/OEM PDU (250V/15A) U. S.	9009	41G	6469
Power Cord 1.8m (6-ft), Drawer to Wall (125V/15A)	9009	41G	6470
Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU (250V/10A)	9009	41G	6471
Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU (250V/16A)	9009	41G	6472
Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU (250V/10A)	9009	41G	6473
Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU, (250V/13A)	9009	41G	6474
Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU, (250V/16A)	9009	41G	6475
Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU, (250V/10A)	9009	41G	6476
Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU, (250V/16A)	9009	41G	6477
Power Cord 2.7 M(9-foot), To Wall/OEM PDU, (250V, 16A)	9009	41G	6478
Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU, (125V/15A or 250V/10A)	9009	41G	6488
4.3m (14-Ft) 3PH/32A 380-415V Power Cord	9009	41G	6489
4.3m (14-Ft) 1PH/63A 200-240V Power Cord	9009	41G	6491
4.3m (14-Ft) 1PH/48A 200-240V Power Cord	9009	41G	6492
Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU, (250V/10A)	9009	41G	6493
Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU, (250V/10A)	9009	41G	6494
Power Cord 2.7M (9-foot), To Wall/OEM PDU, (250V, 10A)	9009	41G	6496
Power Cable - Drawer to IBM PDU, 200-240V/10A	9009	41G	6577
Optional Rack Security Kit	9009	41G	6580
Power Cord 2.7M (9-foot), To Wall/OEM PDU, (125V, 15A)	9009	41G	6651
4.3m (14-Ft) 3PH/16A 380-415V Power Cord	9009	41G	6653
4.3m (14-Ft) 1PH/24A Power Cord	9009	41G	6654
4.3m (14-Ft) 1PH/24A WR Power Cord	9009	41G	6655
4.3m (14-Ft) 1PH/32A Power Cord	9009	41G	6656
4.3m (14-Ft) 1PH/32A Power Cord	9009	41G	6657
4.3m (14-Ft) 1PH/24A Power Cord-Korea	9009	41G	6658
Power Cord 2.7M (9-foot), To Wall/OEM PDU, (250V, 15A)	9009	41G	6659
Power Cord 4.3m (14-ft), Drawer to Wall/OEM PDU (125V/15A)	9009	41G	6660
Power Cord 2.8m (9.2-ft), Drawer to IBM PDU, (250V/10A)	9009	41G	6665
4.3m (14-Ft) 3PH/32A 380-415V Power Cord-Australia	9009	41G	6667
Power Cord 4.3M (14-foot), Drawer to OEM PDU, (250V, 15A)	9009	41G	6669
Power Cord 2.7M (9-foot), Drawer to IBM PDU, 250V/10A	9009	41G	6671
Power Cord 2M (6.5-foot), Drawer to IBM PDU, 250V/10A	9009	41G	6672
Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU, (250V/10A)	9009	41G	6680
Intelligent PDU+, 1 EIA Unit, Universal UTG0247 Connector	9009	41G	7109
Environmental Monitoring Probe	9009	41G	7118
Power Distribution Unit	9009	41G	7188
Power Distribution Unit (US) - 1 EIA Unit, Universal, Fixed Power Cord	9009	41G	7196
Ethernet Cable, 15m, Hardware Management Console to System Unit	9009	41G	7802
Linux Software Preinstall	9009	41G	8143
Linux Software Preinstall (Business Partners)	9009	41G	8144
USB Mouse	9009	41G	8845

Order Routing Indicator- System Plant	9009	41G	9169
Language Group Specify - US English	9009	41G	9300
Specify mode-1 & CEC SAS port for EXP24 #5887/ EL1S	9009	41G	9387
New AIX License Core Counter	9009	41G	9440
New IBM i License Core Counter	9009	41G	9441
New Red Hat License Core Counter	9009	41G	9442
New SUSE License Core Counter	9009	41G	9443
Other AIX License Core Counter	9009	41G	9444
Other Linux License Core Counter	9009	41G	9445
3rd Party Linux License Core Counter	9009	41G	9446
VIOS Core Counter	9009	41G	9447
Other License Core Counter	9009	41G	9449
Ubuntu Linux License Core Counter	9009	41G	9450
Month Indicator	9009	41G	9461
Day Indicator	9009	41G	9462
Hour Indicator	9009	41G	9463
Minute Indicator	9009	41G	9464
Qty Indicator	9009	41G	9465
Countable Member Indicator	9009	41G	9466
Language Group Specify - Dutch	9009	41G	9700
Language Group Specify - French	9009	41G	9703
Language Group Specify - German	9009	41G	9704
Language Group Specify - Polish	9009	41G	9705
Language Group Specify - Norwegian	9009	41G	9706
Language Group Specify - Portuguese	9009	41G	9707
Language Group Specify - Spanish	9009	41G	9708
Language Group Specify - Italian	9009	41G	9711
Language Group Specify - Canadian French	9009	41G	9712
Language Group Specify - Japanese	9009	41G	9714
Language Group Specify - Traditional Chinese (Taiwan)	9009	41G	9715
Language Group Specify - Korean	9009	41G	9716
Language Group Specify - Turkish	9009	41G	9718
Language Group Specify - Hungarian	9009	41G	9719
Language Group Specify - Slovakian	9009	41G	9720
Language Group Specify - Russian	9009	41G	9721
Language Group Specify - Simplified Chinese (PRC)	9009	41G	9722
Language Group Specify - Czech	9009	41G	9724
Language Group Specify - Romanian	9009	41G	9725
Language Group Specify - Croatian	9009	41G	9726
Language Group Specify - Slovenian	9009	41G	9727
Language Group Specify - Brazilian Portuguese	9009	41G	9728
Language Group Specify - Thai	9009	41G	9729
QSFP+ 40GbE Base-SR Transceiver	9009	41G	EB27
1m (3.3-ft), IBM Passive QSFP+ to QSFP+ Cable (DAC)	9009	41G	EB2B
3m (9.8-ft), IBM Passive QSFP+ to QSFP+ Cable (DAC)	9009	41G	EB2H
10m (30.3-ft), IBM Passive QSFP+ MTP Optical Cable	9009	41G	EB2J
30m (90.3-ft), IBM Passive QSFP+ MTP Optical Cable	9009	41G	EB2K
AC Power Supply - 900W	9009	41G	EB2L
AC Power Supply - 1400W for Server (200-240 VAC)	9009	41G	EB2M
Lift tool based on GenieLift GL-8 (standard)	9009	41G	EB3Z
10GbE Optical Transceiver SFP+ SR	9009	41G	EB46
25GbE Optical Transceiver SFP28	9009	41G	EB47
0.5m SFP28/25GbE copper Cable	9009	41G	EB4J
1.0m SFP28/25GbE copper Cable	9009	41G	EB4K
1.5m SFP28/25GbE copper Cable	9009	41G	EB4L
2.0m SFP28/25GbE copper Cable	9009	41G	EB4M
2.0m QSFP28/100GbE copper split Cable to SFP28 4x25GbE	9009	41G	EB4P
Service wedge shelf tool kit for EB3Z	9009	41G	EB4Z
0.5m EDR IB Copper Cable QSFP28	9009	41G	EB50
1.0m EDR IB Copper Cable QSFP28	9009	41G	EB51
2.0M EDR IB Copper Cable QSFP28	9009	41G	EB52
1.5M EDR IB Copper Cable QSFP28	9009	41G	EB54
100GbE Optical Transceiver QSFP28	9009	41G	EB59
3M EDR IB Optical Cable QSFP28	9009	41G	EB5A
5M EDR IB Optical Cable QSFP28	9009	41G	EB5B
10M EDR IB Optical Cable QSFP28	9009	41G	EB5C
15M EDR IB Optical Cable QSFP28	9009	41G	EB5D

20M EDR IB Optical Cable QSFP28	9009	41G	EB5E
30M EDR IB Optical Cable QSFP28	9009	41G	EB5F
50M EDR IB Optical Cable QSFP28	9009	41G	EB5G
100M EDR IB Optical Cable QSFP28	9009	41G	EB5H
0.5M 100GbE Copper Cable QSFP28	9009	41G	EB5J
1.0M 100GbE Copper Cable QSFP28	9009	41G	EB5K
1.5M 100GbE Copper Cable QSFP28	9009	41G	EB5L
2.0M 100GbE Copper Cable QSFP28	9009	41G	EB5M
25M EDR IB Optical Cable QSFP28	9009	41G	EB5N
3M 100GbE Optical Cable QSFP28 (AOC)	9009	41G	EB5R
5M 100GbE Optical Cable QSFP28 (AOC)	9009	41G	EB5S
10M 100GbE Optical Cable QSFP28 (AOC)	9009	41G	EB5T
15M 100GbE Optical Cable QSFP28 (AOC)	9009	41G	EB5U
20M 100GbE Optical Cable QSFP28 (AOC)	9009	41G	EB5V
30M 100GbE Optical Cable QSFP28 (AOC)	9009	41G	EB5W
50M 100GbE Optical Cable QSFP28 (AOC)	9009	41G	EB5X
100M 100GbE Optical Cable QSFP28 (AOC)	9009	41G	EB5Y
IBM i 7.2 Indicator	9009	41G	EB72
IBM i 7.3 Indicator	9009	41G	EB73
IBM i 7.4 Indicator	9009	41G	EB74
Slim Rear Acoustic Door	9009	41G	EC07
Slim Front Acoustic Door	9009	41G	EC08
PCIe3 2-Port 10Gb NIC&ROCE SR/Cu Adapter	9009	41G	EC2S
PCIe3 2-Port 25/10Gb NIC&ROCE SR/Cu Adapter	9009	41G	EC2U
PCIe3 2-port 10GbE NIC&RoCE SFP+ Copper Adapter	9009	41G	EC38
PCIe3 2-Port 40GbE NIC RoCE QSFP+ Adapter	9009	41G	EC3B
PCIe3 2-port 100Gb EDR IB Adapter x16	9009	41G	EC3F
PCIe3 2-port 100GbE (NIC&RoCE) QSFP28 Adapter x16	9009	41G	EC3M
PCIe3 1-port 100Gb EDR IB Adapter x16	9009	41G	EC3U
PCIe2 4-Port USB 3.0 Adapter	9009	41G	EC46
PCIe3 x8 1.6 TB NVMe Flash Adapter for AIX/Linux	9009	41G	EC5B
PCIe3 x8 3.2 TB NVMe Flash Adapter for AIX/Linux	9009	41G	EC5D
PCIe3 x8 6.4 TB NVMe Flash Adapter for AIX/Linux	9009	41G	EC5F
PCIe4 1-port 100Gb EDR IB CAPI adapter	9009	41G	EC63
PCIe4 2-port 100Gb EDR IB CAPI adapter	9009	41G	EC65
PCIe4 2-port 100Gb ROCE EN adapter	9009	41G	EC66
PCIe3 x8 1.6 TB NVMe Flash Adapter for IBM i	9009	41G	EC6V
PCIe3 x8 3.2 TB NVMe Flash Adapter for IBM i	9009	41G	EC6X
PCIe3 x8 6.4 TB NVMe Flash Adapter for IBM i	9009	41G	EC6Z
SAS X Cable 3m - HD Narrow 6Gb 2-Adapters to Enclosure	9009	41G	ECBJ
SAS X Cable 6m - HD Narrow 6Gb 2-Adapters to Enclosure	9009	41G	ECBK
SAS X Cable 10m - HD Narrow 6Gb 2-Adapters to Enclosure	9009	41G	ECBL
SAS X Cable 15m - HD Narrow 3Gb 2-Adapters to Enclosure	9009	41G	ECBM
5m (16.4-ft), IBM Passive QSFP+ to QSFP+ Cable (DAC)	9009	41G	ECBN
SAS YO Cable 1.5m - HD Narrow 6Gb Adapter to Enclosure	9009	41G	ECBT
SAS YO Cable 3m - HD Narrow 6Gb Adapter to Enclosure	9009	41G	ECBU
SAS YO Cable 6m - HD Narrow 6Gb Adapter to Enclosure	9009	41G	ECBV
SAS YO Cable 10m - HD Narrow 6Gb Adapter to Enclosure	9009	41G	ECBW
SAS YO Cable 15m - HD Narrow 3Gb Adapter to Enclosure	9009	41G	ECBX
SAS AE1 Cable 4m - HD Narrow 6Gb Adapter to Enclosure	9009	41G	ECBY
SAS YE1 Cable 3m - HD Narrow 6Gb Adapter to Enclosure	9009	41G	ECBZ
3M Optical Cable Pair for PCIe3 Expansion Drawer	9009	41G	ECC7
10M Optical Cable Pair for PCIe3 Expansion Drawer	9009	41G	ECC8
System Port Converter Cable for UPS	9009	41G	ECCF
3M Copper CXP Cable Pair for PCIe3 Expansion Drawer	9009	41G	ECCS
3M Active Optical Cable Pair for PCIe3 Expansion Drawer	9009	41G	ECCX
10M Active Optical Cable Pair for PCIe3 Expansion Drawer	9009	41G	ECCY
3.0M SAS X12 Cable (Two Adapter to Enclosure)	9009	41G	ECDJ
4.5M SAS X12 Active Optical Cable (Two Adapter			

to Enclosure)	9009	41G	ECDK
10M SAS X12 Active Optical Cable (Two Adapter to Enclosure)	9009	41G	ECDL
1.5M SAS YO12 Cable (Adapter to Enclosure)	9009	41G	ECDT
3.0M SAS YO12 Cable (Adapter to Enclosure)	9009	41G	ECDU
4.5M SAS YO12 Active Optical Cable (Adapter to Enclosure)	9009	41G	ECDV
10M SAS YO12 Active Optical Cable (Adapter to Enclosure)	9009	41G	ECDW
0.6M SAS AA12 Cable (Adapter to Adapter)	9009	41G	ECE0
3.0M SAS AA12 Cable	9009	41G	ECE3
4.5M SAS AA12 Active Optical Cable (Adapter to Adapter)	9009	41G	ECE4
4.3m (14-Ft) PDU to Wall 3PH/24A 200-240V Delta-wired Power Cord	9009	41G	ECJ5
4.3m (14-Ft) PDU to Wall 3PH/48A 200-240V Delta-wired Power Cord	9009	41G	ECJ7
High Function 9xC19 Single-Phase or Three-Phase Wye PDU plus	9009	41G	ECJJ
High Function 9xC19 PDU plus 3-Phase Delta	9009	41G	ECJL
High Function 12xC13 Single-Phase or Three-Phase Wye PDU plus	9009	41G	ECJN
High Function 12xC13 PDU plus 3-Phase Delta	9009	41G	ECJQ
Cloud Private Solution	9009	41G	ECP0
2.0 Meter Slim Rack	9009	41G	ECR0
Rack Front Door High-End appearance	9009	41G	ECRF
Rack Rear Door Black	9009	41G	ECRG
Rack Side Cover	9009	41G	ECRJ
Rack Rear Extension 5-In	9009	41G	ECRK
Rack Front Door for Rack (Black/Flat)	9009	41G	ECRM
Custom Service Specify, Montpellier, France	9009	41G	ECSF
Custom Service Specify, Mexico	9009	41G	ECSM
Custom Service Specify, Poughkeepsie, USA	9009	41G	ECSP
Integrated Solution Packing	9009	41G	ECSS
Optical Wrap Plug	9009	41G	ECW0
1x HW Subscription Increment	9009	41G	EHB1
10x HW Subscription Increment	9009	41G	EHB2
100x HW Subscription Increment	9009	41G	EHB3
Boot Drive / Load Source in EXP12SX Specify (in #ESLL or #ELLL)	9009	41G	EHR1
Boot Drive / Load Source in EXP24SX Specify (in #ESLS or #ELLS)	9009	41G	EHR2
SSD Placement Indicator - #ESLS/#ELLS	9009	41G	EHS2
PCIe3 Optical Cable Adapter for PCIe3 Expansion Drawer	9009	41G	EJ08
PCIe3 RAID SAS Adapter Quad-port 6Gb x8	9009	41G	EJ0J
PCIe3 12GB Cache RAID SAS Adapter Quad-port 6Gb x8	9009	41G	EJ0L
SAS Ports/Cabling for Dual IOA BackPlane	9009	41G	EJ0W
PCIe3 SAS Tape/DVD Adapter Quad-port 6Gb x8	9009	41G	EJ10
PCIe3 12GB Cache RAID PLUS SAS Adapter Quad-port 6Gb x8	9009	41G	EJ14
Base Storage Backplane 12 SFF-3 Bays/RDX Bay	9009	41G	EJ1C
Expanded Function Storage Backplane 18 SFF-3 Bays/Dual IOA with Write Cache/Opt Ext SAS port	9009	41G	EJ1D
Split #EJ1C to 6+6 SFF-3 Bays: Add 2nd SAS Controller	9009	41G	EJ1E
Expanded Function Storage Backplane 12 SFF-3 Bays/RDX Bay/Opt Ext SAS port	9009	41G	EJ1M
PCIe1 SAS Tape/DVD Dual-port 3Gb x8 Adapter	9009	41G	EJ1P
PCIe x16 to CXP Optical or CU converter Adapter for PCIe3 Expansion Drawer	9009	41G	EJ20
PCIe3 Crypto Coprocessor no BSC 4767	9009	41G	EJ32
PCIe3 Crypto Coprocessor BSC-Gen3 4767	9009	41G	EJ33
Specify Mode-1 & (1)EJ0J/EJ0M/EL3B for EXP24S (#5887/EL1S)	9009	41G	EJR1
Specify Mode-1 & (2)EJ0J/EJ0M/EL3B for EXP24S (#5887/EL1S)	9009	41G	EJR2
Specify Mode-2 & (2)EJ0J/EJ0M/EL3B & (2) X for EXP24S (#5887/EL1S)	9009	41G	EJR3
Specify Mode-2 & (4)EJ0J/EJ0M/EL3B for EXP24S (#5887/EL1S)	9009	41G	EJR4
Specify Mode-4 & (4)EJ0J/EJ0M/EL3B for EXP24S (#5887/EL1S)	9009	41G	EJR5

Specify Mode-2 & (1)EJ0J/EJ0M/EL3B & (2) YO for EXP24S (#5887/EL1S)	9009	41G	EJR6
Specify Mode-2 & (2)EJ0J/EJ0M/EL3B & (2) YO for EXP24S (#5887/EL1S)	9009	41G	EJR7
Specify Mode-2 & (1)EJ0J/EJ0M/EL3B & (1) YO for EXP24S (#5887/El1S)	9009	41G	EJRA
Specify Mode-2 & (2)EJ0J/EJ0M/EL3B & (1) X for EXP24S (#5887/EL1S)	9009	41G	EJRB
Specify Mode-4 & (1)EJ0J/EJ0M/EL3B for EXP24S (#5887/EL1S)	9009	41G	EJRC
Specify Mode-4 & (2)EJ0J/EJ0M/EL3B for EXP24S (#5887/EL1S)	9009	41G	EJRD
Specify Mode-4 & (3)EJ0J/EJ0M/EL3B for EXP24S (#5888/EL1S)	9009	41G	EJRE
Specify Mode-1 & (2)EJ14 for EXP24S (#5887/EL1S)	9009	41G	EJRF
Specify Mode-2 & (2)EJ14 & (2) X for EXP24S (#5887/EL1S)	9009	41G	EJRG
Specify Mode-2 & (2)EJ14 & (1) X for EXP24S (#5887/EL1S)	9009	41G	EJRH
Specify Mode-2 & (4)EJ14 for EXP24S (#5887/EL1S)	9009	41G	EJRJ
Non-paired Indicator EJ14 PCIe SAS RAID+ Adapter	9009	41G	EJRL
Specify Mode-1 & (2)EJ0L for EXP24S (#5887/EL1S)	9009	41G	EJRP
Specify mode-2 & (4) EJ0L for EXP24S #5887/EL1S	9009	41G	EJRR
Specify Mode-2 & (2)EJ0L & (2) X for EXP24S (#5887/EL1S)	9009	41G	EJRS
Specify Mode-2 & (2)EJ0L & (1) X for EXP24S (#5887/EL1S)	9009	41G	EJRT
Non-paired Indicator EJ0L PCIe SAS RAID Adapter	9009	41G	EJRU
Rack-mount Rail Kit	9009	41G	EJTZ
Front IBM Bezel for 12-Bay BackPlane	9009	41G	EJU2
Front OEM Bezel for 12-Bay BackPlane	9009	41G	EJU4
Front Door and Covers for 12-Bay BackPlane	9009	41G	EJU8
Front Door and Covers for 18-Bay BackPlane	9009	41G	EJU9
Front OEM Door and Covers for 12-Bay BackPlane	9009	41G	EJUA
Front OEM Door and Covers for 18-Bay BackPlane	9009	41G	EJUB
Front IBM Bezel 18-Bay Backplane	9009	41G	EJUF
Front OEM Bezel for 18-Bay BackPlane	9009	41G	EJUH
Specify Mode-1 & CEC SAS Ports & (2)YO12 for EXP12SX #ESLL/ELLL	9009	41G	EJV0
Specify Mode-1 & (1)EJ0J/EJ0M/EL3B/EL59 & (1)YO12 for EXP12SX #ESLL/ELLL	9009	41G	EJV1
Specify Mode-1 & (2)EJ0J/EJ0M/EL3B/EL59 & (2)YO12 for EXP12SX #ESLL/ELLL	9009	41G	EJV2
Specify Mode-2 & (2)EJ0J/EJ0M/EL3B/EL59 & (2)X12 for EXP12SX #ESLL/ELLL	9009	41G	EJV3
Specify Mode-2 & (4)EJ0J/EJ0M/EL3B/EL59 & (2)X12 for EXP12SX #ESLL/ELLL	9009	41G	EJV4
Specify Mode-4 & (4)EJ0J/EJ0M/EL3B/EL59 & (2)X12 for EXP12SX #ESLL/ELLL	9009	41G	EJV5
Specify Mode-2 & (1)EJ0J/EJ0M/EL3B/EL59 & (2)YO12 for EXP12SX #ESLL/ELLL	9009	41G	EJV6
Specify Mode-2 & (2)EJ0J/EJ0M/EL3B/EL59 & (2)YO12 for EXP12SX #ESLL/ELLL	9009	41G	EJV7
Specify Mode-2 & (1)EJ0J/EJ0M/EL3B/EL59 & (1)YO12 for EXP12SX #ESLL/ELLL	9009	41G	EJVA
Specify Mode-2 & (2)EJ0J/EJ0M/EL3B/EL59 & (1)X12 for EXP12SX #ESLL/ELLL	9009	41G	EJVB
Specify Mode-4 & (1)EJ0J/EJ0M/EL3B/EL59 & (1)X12 for EXP12SX #ESLL/ELLL	9009	41G	EJVC
Specify Mode-4 & (2)EJ0J/EJ0M/EL3B/EL59 & (1)X12 for EXP12SX #ESLL/ELLL	9009	41G	EJVD
Specify Mode-4 & (3)EJ0J/EJ0M/EL3B/EL59 & (2)X12 for EXP12SX #ESLL/ELLL	9009	41G	EJVE
Specify Mode-1 & (2)EJ14 & (2)YO12 for EXP12SX #ESLL/ELLL	9009	41G	EJVF
Specify Mode-1 & (2)EJ0L & (2)YO12 for EXP12SX #ESLL/ELLL	9009	41G	EJVP
Specify Mode-1 & CEC SAS Ports & (2)YO12 for EXP24SX #ESLS/ELS	9009	41G	EJW0
Specify Mode-1 & (1)EJ0J/EJ0M/EL3B/EL59 & (1)YO12 for EXP24SX #ESLS/ELLS	9009	41G	EJW1
Specify Mode-1 & (2)EJ0J/EJ0M/EL3B/EL59 & (2)YO12 for EXP24SX #ESLS/ELLS	9009	41G	EJW2
Specify Mode-2 & (2)EJ0J/EJ0M/EL3B/EL59 & (2)X12			

for EXP24SX #ESLS/ELLS	9009	41G	EJW3
Specify Mode-2 & (4)EJ0J/EJ0M/EL3B/EL59 & (2)X12 for EXP24SX #ESLS/ELLS	9009	41G	EJW4
Specify Mode-4 & (4)EJ0J/EJ0M/EL3B/EL59 & (2)X12 for EXP24SX #ESLS/ELLS	9009	41G	EJW5
Specify Mode-2 & (1)EJ0J/EJ0M/EL3B/EL59 & (2)YO12 for EXP24SX #ESLS/ELLS	9009	41G	EJW6
Specify Mode-2 & (2)EJ0J/EJ0M/EL3B/EL59 & (2)YO12 for EXP24SX #ESLS/ELLS	9009	41G	EJW7
Specify Mode-2 & (1)EJ0J/EJ0M/EL3B/EL59 & (1)YO12 for EXP24SX #ESLS/ELLS	9009	41G	EJWA
Specify Mode-2 & (2)EJ0J/EJ0M/EL3B/EL59 & (1)X12 for EXP24SX #ESLS/ELLS	9009	41G	EJWB
Specify Mode-4 & (1)EJ0J/EJ0M/EL3B/EL59 & (1)X12 for EXP24SX #ESLS/ELLS	9009	41G	EJWC
Specify Mode-4 & (2)EJ0J/EJ0M/EL3B/EL59 & (1)X12 for EXP24SX #ESLS/ELLS	9009	41G	EJWD
Specify Mode-4 & (3)EJ0J/EJ0M/EL3B/EL59 & (2)X12 for EXP24SX #ESLS/ELLS	9009	41G	EJWE
Specify Mode-1 & (2)EJ14 & (2)YO12 for EXP24SX #ESLS/ELLS	9009	41G	EJWF
Specify Mode-2 & (2)EJ14 & (2)X12 for EXP24SX #ESLS/ELLS	9009	41G	EJWG
Specify Mode-2 & (2)EJ14 & (1)X12 for EXP24SX #ESLS/ELLS	9009	41G	EJWH
Specify Mode-2 & (4)EJ14 & (2)X12 for EXP24SX #ESLS/ELLS	9009	41G	EJWJ
Specify Mode-1 & (2)EJ0L & (2)YO12 for EXP24SX #ESLS/ELLS	9009	41G	EJWP
Specify Mode-2 & (4)EJ0L & (2)X12 for EXP24SX #ESLS/ELLS	9009	41G	EJWR
Specify Mode-2 & (2)EJ0L & (2)X12 for EXP24SX #ESLS/ELLS	9009	41G	EJWS
Specify Mode-2 & (2)EJ0L& (1)X12 for EXP24SX #ESLS/ELLS	9009	41G	EJWT
PDU Access Cord 0.38m	9009	41G	ELC0
Power Cable - Drawer to IBM PDU (250V/10A)	9009	41G	ELC5
#ESD4 Load Source Specify (571GB 10K RPM SAS SFF-3 for IBM i)	9009	41G	ELS4
#ESDA Load Source Specify (283GB 15K RPM SAS SFF-3 for IBM i)	9009	41G	ELSA
#ESDN Load Source Specify (571GB 15K RPM SFF-2)	9009	41G	ELSN
#ES0R Load Source Specify (387GB SSD SFF-2 4K)	9009	41G	ELSR
#ES0T Load Source Specify (775GB SSD SFF-2 4K)	9009	41G	ELST
#ESFU Load Source Specify (1.7TB HDD SFF-3)	9009	41G	ELT0
#ES81 Load Source Specify (1.9TB SFF-2 SSD)	9009	41G	ELT1
#ESF2 Load Source Specify (1.1TB HDD SFF-2)	9009	41G	ELT2
#ESF4 Load Source Specify (571GB HDD SFF-3)	9009	41G	ELT4
#ES86 Load Source Specify (387GB SFF-2 SSD 4k for IBM i)	9009	41G	ELT6
#ESF8 Load Source Specify (1.1TB HDD SFF-3)	9009	41G	ELT8
#ES79 Load Source Specify (387GB SFF-2 SSD 5xx for IBM i)	9009	41G	ELT9
#ESFA Load Source Specify (283GB 15K RPM SAS SFF-3 4K Block - 4224)	9009	41G	ELTA
#ES8D Load Source Specify (775GB SFF-2 SSD 4k for IBM i)	9009	41G	ELTD
#ESFE Load Source Specify (571GB 15K RPM SAS SFF-3 4K Block - 4224)	9009	41G	ELTE
#ES7F Load Source Specify (775GB SFF-2 SSD 5xx for IBM i)	9009	41G	ELTF
#ES8G Load Source Specify (1.55TB SFF-2 SSD 4k for IBM i)	9009	41G	ELTG
#ES8K Load Source Specify (1.9TB SFF-3 SSD)	9009	41G	ELTK
#ES7L Load Source Specify (387GB SFF-3 SSD 5xx for IBM i)	9009	41G	ELTL
#ESFN Load Source Specify (571GB 15K RPM SAS SFF-2 4K Block - 4224)	9009	41G	ELTN
#ES8P Load Source Specify (387GB SFF-3 SSD 4k for IBM i)	9009	41G	ELTP
#ES7Q Load Source Specify (775GB SFF-3 SSD 5xx for IBM i)	9009	41G	ELTQ
#ES8R Load Source Specify (775GB SFF-3 SSD 4k for IBM i)	9009	41G	ELTR

#ESFS Load Source Specify (1.7TB HDD SFF-2)	9009	41G	ELTS
#ESEU Load Source Specify (571GB HDD SFF-2)	9009	41G	ELTU
#ES8W Load Source Specify (1.55TB SFF-3 SSD 4k for IBM i)	9009	41G	ELTW
#ESEY Load Source Specify (283GB 15K RPM SAS SFF-2 4K Block - 4224)	9009	41G	ELTY
#ESNJ Load Source Specify (283GB HDD SFF-3)	9009	41G	ELUJ
#ESNL Load Source Specify (283GB HDD SFF-2)	9009	41G	ELUL
#ESNN Load Source Specify (571GB HDD SFF-3)	9009	41G	ELUN
#ESNQ Load Source Specify (571GB HDD SFF-2)	9009	41G	ELUQ
ES91 Load Source Specify (387GB SSD SFF-3)	9009	41G	ELZ1
#ESE2 Load Source Specify (3.72TB SSD SFF-3)	9009	41G	ELZ2
#ES93 Load Source Specify (1.86TB SSD SFF-3)	9009	41G	ELZ3
#ES84 Load Source Specify (931GB SSD SFF-3)	9009	41G	ELZ4
ES95 Load Source Specify (387GB SSD SFF-2)	9009	41G	ELZ5
#ESG6 Load Source Specify (387GB SSD SFF-2)	9009	41G	ELZ6
#ES97 Load Source Specify (1.86TB SSD SFF-2)	9009	41G	ELZ7
#ESE8 Load Source Specify (3.72TB SSD SFF-2)	9009	41G	ELZ8
#ESM9 Load Source Specify (3.72 TB SSD 4k SFF-2)	9009	41G	ELZ9
#ESGA Load Source Specify (387GB SSD SFF-3)	9009	41G	ELZA
ESNB Load Source Specify (775GB SSD SFF-2)	9009	41G	ELZB
#ESGC Load Source Specify (387GB SSD SFF-2)	9009	41G	ELZC
ESND Load Source Specify (775GB SSD SFF-3)	9009	41G	ELZD
#ESGE Load Source Specify (387GB SSD SFF-3)	9009	41G	ELZE
ESNF Load Source Specify (1.55TB SSD SFF-2)	9009	41G	ELZF
#ESGG Load Source Specify (775GB SSD SFF-2)	9009	41G	ELZG
ESNH Load Source Specify (1.55TB SSD SFF-3)	9009	41G	ELZH
#ESGJ Load Source Specify (775GB SSD SFF-3)	9009	41G	ELZJ
#ESHK Load Source Specify (931 GB SSD 4k SFF-2)	9009	41G	ELZK
#ESGL Load Source Specify (775GB SSD SFF-2)	9009	41G	ELZL
#ESHM Load Source Specify (1.86 TB SSD 4k SFF-2)	9009	41G	ELZM
#ESGN Load Source Specify (775GB SSD SFF-3)	9009	41G	ELZN
#ESGQ Load Source Specify (1.55TB SSD SFF-2)	9009	41G	ELZQ
#ESMR Load Source Specify (3.72 TB SSD 4k SFF-3)	9009	41G	ELZR
#ESGS Load Source Specify (1.55TB SSD SFF-3)	9009	41G	ELZS
#ESHT Load Source Specify (931 GB SSD 4k SFF-3)	9009	41G	ELZT
#ESHV Load Source Specify (1.86 TB SSD 4k SFF-3)	9009	41G	ELZV
#ES8Z Load Source Specify (931GB SSD SFF-2)	9009	41G	ELZZ
8 GB DDR4 Memory	9009	41G	EM60
16 GB DDR4 Memory	9009	41G	EM62
32 GB DDR4 Memory	9009	41G	EM63
64 GB DDR4 Memory	9009	41G	EM64
PCIe Gen3 I/O Expansion Drawer	9009	41G	EMX0
AC Power Supply Conduit for PCIe3 Expansion Drawer	9009	41G	EMXA
PCIe3 6-Slot Fanout Module for PCIe3 Expansion Drawer	9009	41G	EMXF
PCIe3 6-Slot Fanout Module for PCIe3 Expansion Drawer	9009	41G	EMXG
PCIe3 6-Slot Fanout Module for PCIe3 Expansion Drawer	9009	41G	EMXH
1m (3.3-ft), 10Gb E'Net Cable SFP+ Act Twinax Copper	9009	41G	EN01
3m (9.8-ft), 10Gb E'Net Cable SFP+ Act Twinax Copper	9009	41G	EN02
5m (16.4-ft), 10Gb E'Net Cable SFP+ Act Twinax Copper	9009	41G	EN03
PCIe3 16Gb 2-port Fibre Channel Adapter	9009	41G	EN0A
PCIe2 8Gb 2-Port Fibre Channel Adapter	9009	41G	EN0G
PCIe3 4-port (10Gb FCoE & 1GbE) SR&RJ45	9009	41G	EN0H
PCIe3 4-port (10Gb FCoE & 1GbE) SFP+Copper&RJ45	9009	41G	EN0K
PCIe2 4-Port (10Gb+1GbE) SR+RJ45 Adapter	9009	41G	EN0S
PCIe2 4-port (10Gb+1GbE) Copper SFP+RJ45 Adapter	9009	41G	EN0U
PCIe2 2-port 10/1GbE BaseT RJ45 Adapter	9009	41G	EN0W
PCIe2 8Gb 4-port Fibre Channel Adapter Not withdrawn in Japan until August 7, 2018	9009	41G	EN12
PCIe 1-port Bisync Adapter	9009	41G	EN13
PCIe3 4-port 10GbE SR Adapter	9009	41G	EN15
PCIe3 32Gb 2-port Fibre Channel Adapter	9009	41G	EN1A
PCIe3 16Gb 4-port Fibre Channel Adapter	9009	41G	EN1C
188 GB IBM i NVMe Load Source Namespace size	9009	41G	ENS1
393 GB IBM i NVMe Load Source Namespace size	9009	41G	ENS2

Deactivation of LPM (Live Partition Mobility)	9009	41G	EPA0
Horizontal PDU Mounting Hardware	9009	41G	EPTH
High Function 9xC19 PDU: Switched, Monitoring	9009	41G	EPTJ
High Function 9xC19 PDU 3-Phase: Switched, Monitoring	9009	41G	EPTL
High Function 12xC13 PDU: Switched, Monitoring	9009	41G	EPTN
High Function 12xC13 PDU 3-Phase: Switched, Monitoring	9009	41G	EPTQ
Quantity 150 of #ES0Q 387GB SFF-2 4k SSD (AIX/ Linux)	9009	41G	EQ0Q
Quantity 150 of #ES0R 387GB SFF-2 4k SSD (IBM i)	9009	41G	EQ0R
Quantity 150 of #ES0S 775GB SFF-2 4k SSD (AIX/ Linux)	9009	41G	EQ0S
Quantity 150 of #ES0T 775GB SFF-2 4k SSD (IBM i)	9009	41G	EQ0T
Quantity 150 of #ES62 3.86-4.0 TB 7200 rpm 4k LFF-1 Disk	9009	41G	EQ62
Quantity 150 of #ES64 7.72-8.0 TB 7200 rpm 4k LFF-1 Disk	9009	41G	EQ64
Quantity 150 of #ES78 387GB SFF-2 SSD 5xx	9009	41G	EQ78
Quantity 150 of #ES79 387GB SFF-2 SSD 5xx	9009	41G	EQ79
Quantity 150 of #ES7E 775GB SFF-2 SSD 5xx	9009	41G	EQ7E
Quantity 150 of #ES7F 775GB SFF-2 SSD 5xx	9009	41G	EQ7F
Quantity 150 of #ES80 1.9TB SFF-2 SSD 4k	9009	41G	EQ80
Quantity 150 of ES81 1.9TB SFF-2 SSD 4k	9009	41G	EQ81
Quantity 150 of #ES85 387GB SFF-2 SSD 4k	9009	41G	EQ85
Quantity 150 of #ES86 387GB SFF-2 SSD 4k	9009	41G	EQ86
Quantity 150 of #ES8C 775GB SFF-2 SSD 4k	9009	41G	EQ8C
Quantity 150 of #ES8D 775GB SFF-2 SSD 4k	9009	41G	EQ8D
Quantity 150 of #ES8F 1.55TB SFF-2 SSD 4k	9009	41G	EQ8F
Quantity 150 of #ES8G 1.55TB SFF-2 SSD 4k	9009	41G	EQ8G
Quantity 150 of #ES8Y 931GB SFF-2 SSD 4k	9009	41G	EQ8Y
Quantity 150 of ES8Z 931GB SFF-2 SSD 4k	9009	41G	EQ8Z
Quantity 150 of ES96 1.86TB SFF-2 SSD 4k	9009	41G	EQ96
Quantity 150 of ES97 1.86TB SFF-2 SSD 4k	9009	41G	EQ97
Quantity 150 of #ESD2 (1.1TB 10k SFF-2)	9009	41G	EQD2
Quantity 150 of #ESD3 (1.2TB 10k SFF-2)	9009	41G	EQD3
Quantity 150 of #ESDN (571GB 15K RPM SAS SFF-2 for IBM i)	9009	41G	EQDN
Quantity 150 of #ESDP (600GB 15K RPM SAS SFF-2 for AIX/LINUX)	9009	41G	EQDP
Quantity 150 of #ESE7 3.72TB SFF-2 SSD 4k	9009	41G	EQE7
Quantity 150 of ESE8 3.72TB SFF-2 SSD 4k	9009	41G	EQE8
Quantity 150 of #ESEU (571GB 10k SFF-2)	9009	41G	EQEU
Quantity 150 of #ESEV (600GB 10k SFF-2)	9009	41G	EQEV
Quantity 150 of #ESEY (283 GB SFF-2)	9009	41G	EQEY
Quantity 150 of #ESEZ (300GB SFF-2)	9009	41G	EQEZ
Quantity 150 of #ESF2 (1.1TB 10k SFF-2)	9009	41G	EQF2
Quantity 150 of #ESF3 (1.2TB 10k SFF-2)	9009	41G	EQF3
Quantity 150 of #ESFN (571GB SFF-2)	9009	41G	EQFN
Quantity 150 of #ESFP (600GB SFF-2)	9009	41G	EQFP
Quantity 150 of #ESFS (1.7TB 10k SFF-2)	9009	41G	EQFS
Quantity 150 of #ESFT (1.8TB 10k SFF-2)	9009	41G	EQFT
Quantity 150 of #ESG5 (387GB SAS 5xx)	9009	41G	EQG5
Quantity 150 of #ESG6 (387GB SAS 5xx)	9009	41G	EQG6
Quantity 150 of #ESGB (387GB SAS 4k)	9009	41G	EQGB
Quantity 150 of #ESGC (387GB SAS 4k)	9009	41G	EQGC
Quantity 150 of #ESGF (775GB SAS 5xx)	9009	41G	EQGF
Quantity 150 of #ESGG (775GB SAS 5xx)	9009	41G	EQGG
Quantity 150 of #ESGK (775GB SAS 4k)	9009	41G	EQGK
Quantity 150 of #ESGL (775GB SAS 4k)	9009	41G	EQGL
Quantity 150 of #ESGP (1.55TB SAS 4k)	9009	41G	EQGP
Quantity 150 of #ESGQ (1.55TB SAS 4k)	9009	41G	EQGQ
Quantity 150 of ES94 387GB SAS 4k	9009	41G	ER94
Quantity 150 of ES95 387GB SAS 4k	9009	41G	ER95
RFID Tags for Servers, Compute Nodes, Chassis, Racks, and HMCs	9009	41G	ERF1
Rear rack extension	9009	41G	ERG0
Quantity 150 of ESGV 387GB SSD 4k	9009	41G	ERGV
Quantity 150 of ESGZ 775GB SSD 4k	9009	41G	ERGZ
Quantity 150 of #ESHJ 931 GB SSD 4k SFF-2	9009	41G	ERHJ
Quantity 150 of #ESHK 931 GB SSD 4k SFF-2	9009	41G	ERHK
Quantity 150 of #ESHL 1.86 TB SSD 4k SFF-2	9009	41G	ERHL
Quantity 150 of #ESHM 1.86 TB SSD 4k SFF-2	9009	41G	ERHM
Quantity 150 of #ESHN 7.45 TB SSD 4k SFF-2	9009	41G	ERHN

Quantity 150 of ESJ0 931GB SAS 4k	9009	41G	ERJ0
Quantity 150 of ESJ1 931GB SAS 4k	9009	41G	ERJ1
Quantity 150 of ESJ2 1.86TB SAS 4k	9009	41G	ERJ2
Quantity 150 of ESJ3 1.86TB SAS 4k	9009	41G	ERJ3
Quantity 150 of ESJ4 3.72TB SAS 4k	9009	41G	ERJ4
Quantity 150 of ESJ5 3.72TB SAS 4k	9009	41G	ERJ5
Quantity 150 of ESJ6 7.45TB SAS 4k	9009	41G	ERJ6
Quantity 150 of ESJ7 7.45TB SAS 4k	9009	41G	ERJ7
Quantity 150 of #ESM8 3.72 TB SSD 4k SFF-2	9009	41G	ERM8
Quantity 150 of #ESM9 3.72 TB SSD 4k SFF-2	9009	41G	ERM9
Quantity 150 of ESNA 775GB SSD 4k	9009	41G	ERNA
Quantity 150 of ESNB 775GB SSD 4k	9009	41G	ERNB
Quantity 150 of ESNE 1.55TB SSD 4k	9009	41G	ERNE
Quantity 150 of ESNF 1.55TB SSD 4k	9009	41G	ERNF
387GB SFF-2 4K SSD for AIX/Linux	9009	41G	ES0Q
387GB SFF-2 4k SSD for IBM i	9009	41G	ES0R
775GB SFF-2 4k SSD for AIX/Linux	9009	41G	ES0S
775GB SFF-2 4k SSD for IBM i	9009	41G	ES0T
3.86-4.0 TB 7200 RPM 4K SAS LFF-1 Nearline Disk Drive (AIX/Linux)	9009	41G	ES62
7.72-8.0 TB 7200 RPM 4K SAS LFF-1 Nearline Disk Drive (AIX/Linux)	9009	41G	ES64
387GB SFF-2 SSD 5xx eMLC4 for AIX/Linux	9009	41G	ES78
387GB SFF-2 SSD 5xx eMLC4 for IBM i	9009	41G	ES79
775GB SFF-2 SSD 5xx eMLC4 for AIX/Linux	9009	41G	ES7E
775GB SFF-2 SSD 5xx eMLC4 for IBM i	9009	41G	ES7F
387GB SFF-3 SSD 5xx eMLC4 for AIX/Linux	9009	41G	ES7K
387GB SFF-3 SSD 5xx eMLC4 for IBM i	9009	41G	ES7L
775GB SFF-3 SSD 5xx eMLC4 for AIX/Linux	9009	41G	ES7P
775GB SFF-3 SSD 5xx eMLC4 for IBM i	9009	41G	ES7Q
1.9TB Read Intensive SAS 4k SFF-2 SSD for AIX/Linux	9009	41G	ES80
1.9TB Read Intensive SAS 4k SFF-2 SSD for IBM i	9009	41G	ES81
931GB Mainstream SAS 4k SFF-3 SSD for AIX/Linux	9009	41G	ES83
931GB Mainstream SAS 4k SFF-3 SSD for IBM i	9009	41G	ES84
387GB SFF-2 SSD 4k eMLC4 for AIX/Linux	9009	41G	ES85
387GB SFF-2 SSD 4k eMLC4 for IBM i	9009	41G	ES86
775GB SFF-2 SSD 4k eMLC4 for AIX/Linux	9009	41G	ES8C
775GB SFF-2 SSD 4k eMLC4 for IBM i	9009	41G	ES8D
1.55TB SFF-2 SSD 4k eMLC4 for AIX/Linux	9009	41G	ES8F
1.55TB SFF-2 SSD 4k eMLC4 for IBM i	9009	41G	ES8G
1.9TB Read Intensive SAS 4k SFF-3 SSD for AIX/Linux	9009	41G	ES8J
1.9TB Read Intensive SAS 4k SFF-3 SSD for IBM i	9009	41G	ES8K
387GB SFF-3 SSD 4k eMLC4 for AIX/Linux	9009	41G	ES8N
387GB SFF-3 SSD 4k eMLC4 for IBM i	9009	41G	ES8P
775GB SFF-3 SSD 4k eMLC4 for AIX/Linux	9009	41G	ES8Q
775GB SFF-3 SSD 4k eMLC4 for IBM i	9009	41G	ES8R
1.55TB SFF-3 SSD 4k eMLC4 for AIX/Linux	9009	41G	ES8V
1.55TB SFF-3 SSD 4k eMLC4 for IBM i	9009	41G	ES8W
931GB Mainstream SAS 4k SFF-2 SSD for AIX/Linux	9009	41G	ES8Y
931GB Mainstream SAS 4k SFF-2 SSD for IBM i	9009	41G	ES8Z
387GB Enterprise SAS 4k SFF-3 SSD for AIX/Linux	9009	41G	ES90
387GB Enterprise SAS 4k SFF-3 SSD for IBM i	9009	41G	ES91
1.86TB Mainstream SAS 4k SFF-3 SSD for AIX/Linux	9009	41G	ES92
1.86TB Mainstream SAS 4k SFF-3 SSD for IBM i	9009	41G	ES93
387GB Enterprise SAS 4k SFF-2 SSD for AIX/Linux	9009	41G	ES94
387GB Enterprise SAS 4k SFF-2 SSD for IBM i	9009	41G	ES95
1.86TB Mainstream SAS 4k SFF-2 SSD for AIX/Linux	9009	41G	ES96
1.86TB Mainstream SAS 4k SFF-2 SSD for IBM i	9009	41G	ES97
387GB Enterprise SAS 5xx SFF-3 SSD for AIX/Linux	9009	41G	ESB0
387GB Enterprise SAS 5xx SFF-2 SSD for AIX/Linux	9009	41G	ESB2
775GB Enterprise SAS 5xx SFF-3 SSD for AIX/Linux	9009	41G	ESB4
775GB Enterprise SAS 5xx SFF-2 SSD for AIX/Linux	9009	41G	ESB6
387GB Enterprise SAS 4k SFF-3 SSD for AIX/Linux	9009	41G	ESB8
387GB Enterprise SAS 4k SFF-3 SSD for IBM i	9009	41G	ESB9
387GB Enterprise SAS 4k SFF-2 SSD for AIX/Linux	9009	41G	ESBA
387GB Enterprise SAS 4k SFF-2 SSD for IBM i	9009	41G	ESBB
775GB Enterprise SAS 4k SFF-3 SSD for AIX/Linux	9009	41G	ESBE
775GB Enterprise SAS 4k SFF-3 SSD for IBM i	9009	41G	ESBF
775GB Enterprise SAS 4k SFF-2 SSD for AIX/Linux	9009	41G	ESBG
775GB Enterprise SAS 4k SFF-2 SSD for IBM i	9009	41G	ESBH
1.55TB Enterprise SAS 4k SFF-3 SSD for AIX/Linux	9009	41G	ESBJ
1.55TB Enterprise SAS 4k SFF-3 SSD for IBM i	9009	41G	ESBK

1.55TB Enterprise SAS 4k SFF-2 SSD for AIX/Linux	9009	41G	ESBL
1.55TB Enterprise SAS 4k SFF-2 SSD for IBM i	9009	41G	ESBM
S&H - No Charge	9009	41G	ESC0
S&H-b	9009	41G	ESC6
1.1TB 10K RPM SAS SFF-2 Disk Drive (IBMi)	9009	41G	ESD2
1.2TB 10K RPM SAS SFF-2 Disk Drive (AIX/Linux)	9009	41G	ESD3
571GB 10K RPM SAS SFF-3 Disk Drive (IBM i)	9009	41G	ESD4
600GB 10K RPM SAS SFF-3 Disk Drive (AIX/Linux)	9009	41G	ESD5
283GB 15K RPM SAS SFF-3 Disk Drive (IBM i)	9009	41G	ESDA
300GB 15K RPM SAS SFF-3 Disk Drive (AIX/Linux)	9009	41G	ESDB
571GB 15K RPM SAS SFF-2 Disk Drive - 528 Block (IBM i)	9009	41G	ESDN
600GB 15K RPM SAS SFF-2 Disk Drive - 5xx Block (AIX/Linux)	9009	41G	ESDP
3.72TB Mainstream SAS 4k SFF-3 SSD for AIX/Linux	9009	41G	ESE1
3.72TB Mainstream SAS 4k SFF-3 SSD for IBM i	9009	41G	ESE2
3.72TB Mainstream SAS 4k SFF-2 SSD for AIX/Linux	9009	41G	ESE7
3.72TB Mainstream SAS 4k SFF-2 SSD for IBM i	9009	41G	ESE8
571GB 10K RPM SAS SFF-2 Disk Drive 4K Block - 4224	9009	41G	ESEU
600GB 10K RPM SAS SFF-2 Disk Drive 4K Block - 4096	9009	41G	ESEV
283GB 15K RPM SAS SFF-2 4K Block - 4224 Disk Drive	9009	41G	ESEY
300GB 15K RPM SAS SFF-2 4K Block - 4096 Disk Drive	9009	41G	ESEZ
1.1TB 10K RPM SAS SFF-2 Disk Drive 4K Block - 4224	9009	41G	ESF2
1.2TB 10K RPM SAS SFF-2 Disk Drive 4K Block - 4096	9009	41G	ESF3
571GB 10K RPM SAS SFF-3 Disk Drive 4K Block - 4224	9009	41G	ESF4
600GB 10K RPM SAS SFF-3 Disk Drive 4K Block - 4096	9009	41G	ESF5
1.1TB 10K RPM SAS SFF-3 Disk Drive 4K Block - 4224	9009	41G	ESF8
1.2TB 10K RPM SAS SFF-3 Disk Drive 4K Block - 4096	9009	41G	ESF9
283GB 15K RPM SAS SFF-3 4K Block - 4224 Disk Drive	9009	41G	ESFA
300GB 15K RPM SAS SFF-3 4K Block - 4096 Disk Drive	9009	41G	ESFB
571GB 15K RPM SAS SFF-3 4K Block - 4224 Disk Drive	9009	41G	ESFE
600GB 15K RPM SAS SFF-3 4K Block - 4096 Disk Drive	9009	41G	ESFF
571GB 15K RPM SAS SFF-2 4K Block - 4224 Disk Drive	9009	41G	ESFN
600GB 15K RPM SAS SFF-2 4K Block - 4096 Disk Drive	9009	41G	ESFP
1.7TB 10K RPM SAS SFF-2 Disk Drive 4K Block - 4224	9009	41G	ESFS
1.8TB 10K RPM SAS SFF-2 Disk Drive 4K Block - 4096	9009	41G	ESFT
1.7TB 10K RPM SAS SFF-3 Disk Drive 4K Block - 4224	9009	41G	ESFU
1.8TB 10K RPM SAS SFF-3 Disk Drive 4K Block - 4096	9009	41G	ESFV
387GB Enterprise SAS 5xx SFF-2 SSD for AIX/Linux	9009	41G	ESG5
387GB Enterprise SAS 5xx SFF-2 SSD for IBM i	9009	41G	ESG6
387GB Enterprise SAS 5xx SFF-3 SSD for AIX/Linux	9009	41G	ESG9
387GB Enterprise SAS 5xx SFF-3 SSD for IBM i	9009	41G	ESGA
387GB Enterprise SAS 4k SFF-2 SSD for AIX/Linux	9009	41G	ESGB
387GB Enterprise SAS 4k SFF-2 SSD for IBM i	9009	41G	ESGC
387GB Enterprise SAS 4k SFF-3 SSD for AIX/Linux	9009	41G	ESGD
387GB Enterprise SAS 4k SFF-3 SSD for IBM i	9009	41G	ESGE
775GB Enterprise SAS 5xx SFF-2 SSD for AIX/Linux	9009	41G	ESGF
775GB Enterprise SAS 5xx SFF-2 SSD for IBM i	9009	41G	ESGG
775GB Enterprise SAS 5xx SFF-3 SSD for AIX/Linux	9009	41G	ESGH
775GB Enterprise SAS 5xx SFF-3 SSD for IBM i	9009	41G	ESGJ
775GB Enterprise SAS 4k SFF-2 SSD for AIX/Linux	9009	41G	ESGK
775GB Enterprise SAS 4k SFF-2 SSD for IBM i	9009	41G	ESGL
775GB Enterprise SAS 4k SFF-3 SSD for AIX/Linux	9009	41G	ESGM
775GB Enterprise SAS 4k SFF-3 SSD for IBM i	9009	41G	ESGN

1.55TB Enterprise SAS 4k SFF-2 SSD for AIX/Linux	9009	41G	ESGP
1.55TB Enterprise SAS 4k SFF-2 SSD for IBM i	9009	41G	ESGQ
1.55TB Enterprise SAS 4k SFF-3 SSD for AIX/Linux	9009	41G	ESGR
1.55TB Enterprise SAS 4k SFF-3 SSD for IBM i	9009	41G	ESGS
387GB Enterprise SAS 5xx SFF-3 SSD for AIX/Linux	9009	41G	ESGT
387GB Enterprise SAS 5xx SFF-2 SSD for AIX/Linux	9009	41G	ESGV
775GB Enterprise SAS 5xx SFF-3 SSD for AIX/Linux	9009	41G	ESGX
775GB Enterprise SAS 5xx SFF-2 SSD for AIX/Linux	9009	41G	ESGZ
931 GB Mainstream SAS 4k SFF-2 SSD for AIX/Linux	9009	41G	ESHJ
931 GB Mainstream SAS 4k SFF-2 SSD for IBM i	9009	41G	ESHK
1.86 TB Mainstream SAS 4k SFF-2 SSD for AIX/Linux	9009	41G	ESHL
1.86 TB Mainstream SAS 4k SFF-2 SSD for IBM i	9009	41G	ESHM
7.45 TB Mainstream SAS 4k SFF-2 SSD for AIX/Linux	9009	41G	ESHN
931 GB Mainstream SAS 4k SFF-3 SSD for AIX/Linux	9009	41G	ESHS
931 GB Mainstream SAS 4k SFF-3 SSD for IBM i	9009	41G	ESHT
1.86 TB Mainstream SAS 4k SFF-3 SSD for AIX/Linux	9009	41G	ESHU
1.86 TB Mainstream SAS 4k SFF-3 SSD for IBM i	9009	41G	ESHV
7.45 TB Mainstream SAS 4k SFF-3 SSD for AIX/Linux	9009	41G	ESHW
931GB Mainstream SAS 4k SFF-2 SSD for AIX/Linux	9009	41G	ESJ0
931GB Mainstream SAS 4k SFF-2 SSD for IBM i	9009	41G	ESJ1
1.86TB Mainstream SAS 4k SFF-2 SSD for AIX/Linux	9009	41G	ESJ2
1.86TB Mainstream SAS 4k SFF-2 SSD for IBM i	9009	41G	ESJ3
3.72TB Mainstream SAS 4k SFF-2 SSD for AIX/Linux	9009	41G	ESJ4
3.72TB Mainstream SAS 4k SFF-2 SSD for IBM i	9009	41G	ESJ5
7.45TB Mainstream SAS 4k SFF-2 SSD for AIX/Linux	9009	41G	ESJ6
7.45TB Mainstream SAS 4k SFF-2 SSD for IBM i	9009	41G	ESJ7
931GB Mainstream SAS 4k SFF-3 SSD for AIX/Linux	9009	41G	ESJ8
931GB Mainstream SAS 4k SFF-3 SSD for IBM i	9009	41G	ESJ9
1.86TB Mainstream SAS 4k SFF-3 SSD for AIX/Linux	9009	41G	ESJA
1.86TB Mainstream SAS 4k SFF-3 SSD for IBM i	9009	41G	ESJB
3.72TB Mainstream SAS 4k SFF-3 SSD for AIX/Linux	9009	41G	ESJC
3.72TB Mainstream SAS 4k SFF-3 SSD for IBM i	9009	41G	ESJD
7.45TB Mainstream SAS 4k SFF-3 SSD for AIX/Linux	9009	41G	ESJE
7.45TB Mainstream SAS 4k SFF-3 SSD for IBM i	9009	41G	ESJF
ESB9 Load Source Specify (387GB SSD SFF-3)	9009	41G	ESL9
Specify AC Power Supply for EXP12SX/EXP24SX Storage Enclosure	9009	41G	ESLA
ESBB Load Source Specify (387GB SSD SFF-2)	9009	41G	ESLB
ESBF Load Source Specify (775GB SSD SFF-3)	9009	41G	ESLF
ESBH Load Source Specify (775GB SSD SFF-2)	9009	41G	ESLH
ESBK Load Source Specify (1.55TB SSD SFF-3)	9009	41G	ESLK
EXP12SX SAS Storage Enclosure	9009	41G	ESLL
ESBM Load Source Specify (1.55TB SSD SFF-2)	9009	41G	ESLM
EXP24SX SAS Storage Enclosure	9009	41G	ESLS
Load Source Specify for EC6V (NVMe 1.6 TB SSD for IBM i)	9009	41G	ESLV
Load Source Specify for EC6X (NVMe 3.2 TB SSD for IBM i)	9009	41G	ESLX
Load Source Specify for EC6Z (NVMe 6.4 TB SSD for IBM i)	9009	41G	ESLZ
3.72 TB Mainstream SAS 4k SFF-2 SSD for AIX/Linux	9009	41G	ESM8
3.72 TB Mainstream SAS 4k SFF-2 SSD for IBM i	9009	41G	ESM9
3.72 TB Mainstream SAS 4k SFF-3 SSD for AIX/Linux	9009	41G	ESMQ
3.72 TB Mainstream SAS 4k SFF-3 SSD for IBM i	9009	41G	ESMR
775GB Enterprise SAS 4k SFF-2 SSD for AIX/Linux	9009	41G	ESNA
775GB Enterprise SAS 4k SFF-2 SSD for IBM i	9009	41G	ESNB
775GB Enterprise SAS 4k SFF-3 SSD for AIX/Linux	9009	41G	ESNC
775GB Enterprise SAS 4k SFF-3 SSD for IBM i	9009	41G	ESND
1.55TB Enterprise SAS 4k SFF-2 SSD for AIX/Linux	9009	41G	ESNE
1.55TB Enterprise SAS 4k SFF-2 SSD for IBM i	9009	41G	ESNF
1.55TB Enterprise SAS 4k SFF-3 SSD for AIX/Linux	9009	41G	ESNG
1.55TB Enterprise SAS 4k SFF-3 SSD for IBM i	9009	41G	ESNH
283GB 15K RPM SAS SFF-3 4k Block Cached Disk Drive (IBM i)	9009	41G	ESNJ
300GB 15K RPM SAS SFF-3 4k Block Cached Disk Drive (AIX/Linux)	9009	41G	ESNK
283GB 15K RPM SAS SFF-2 4k Block Cached Disk Drive (IBM i)	9009	41G	ESNL
300GB 15K RPM SAS SFF-2 4k Block Cached Disk Drive (AIX/Linux)	9009	41G	ESNM
571GB 15K RPM SAS SFF-3 4k Block Cached Disk Drive (IBM i)	9009	41G	ESNN
600GB 15K RPM SAS SFF-3 4k Block Cached Disk Drive (AIX/Linux)	9009	41G	ESNP

571GB 15K RPM SAS SFF-2 4k Block Cached Disk Drive (IBM i)	9009	41G	ESNQ
600GB 15K RPM SAS SFF-2 4k Block Cached Disk Drive (AIX/Linux)	9009	41G	ESNR
Quantity 150 of #ESNL (283GB 15k SFF-2)	9009	41G	ESPL
Quantity 150 of #ESNM (300GB 15k SFF-2)	9009	41G	ESPM
Quantity 150 of #ESNQ (571GB 15k SFF-2)	9009	41G	ESPQ
Quantity 150 of #ESNR (600GB 15k SFF-2)	9009	41G	ESPR
Quantity 150 of ESB2 387GB SAS 4k	9009	41G	ESQ2
Quantity 150 of ESB6 775GB SAS 4k	9009	41G	ESQ6
Quantity 150 of ESBA 387GB SAS 4k	9009	41G	ESQA
Quantity 150 of ESBB 387GB SAS 4k	9009	41G	ESQB
Quantity 150 of ESBG 775GB SAS 4k	9009	41G	ESQG
Quantity 150 of ESBH 775GB SAS 4k	9009	41G	ESQH
Quantity 150 of ESBL 1.55TB SAS 4k	9009	41G	ESQL
Quantity 150 of ESBM 1.55TB SAS 4k	9009	41G	ESQM
RDX USB Internal Docking Station for Removable Disk Cartridge	9009	41G	EU00
1TB Removable Disk Drive Cartridge Not available in US, EMEA, and Japan	9009	41G	EU01
RDX USB External Docking Station for Removable Disk Cartridge	9009	41G	EU04
RDX 320 GB Removable Disk Drive	9009	41G	EU08
Operator Panel LCD Display	9009	41G	EU0B
1.5TB Removable Disk Drive Cartridge	9009	41G	EU15
Cable Ties & Labels	9009	41G	EU19
Order Placed Indicator	9009	41G	EU29
Express Edition 4 core (IBM i)	9009	41G	EU2C
Express Edition 6-core (IBM i)	9009	41G	EU2D
2TB Removable Disk Drive Cartridge (RDX)	9009	41G	EU2T
ESJ1 Load Source Specify (931GB SSD SFF-2)	9009	41G	EU41
ESJ3 Load Source Specify (1.86TB SSD SFF-2)	9009	41G	EU43
ESJ5 Load Source Specify (3.72TB SSD SFF-2)	9009	41G	EU45
ESJ7 Load Source Specify (7.45TB SSD SFF-2)	9009	41G	EU47
ESJ9 Load Source Specify (931GB SSD SFF-3)	9009	41G	EU49
ESJB Load Source Specify (1.86TB SSD SFF-3)	9009	41G	EU4B
ESJD Load Source Specify (3.72TB SSD SFF-3)	9009	41G	EU4D
ESJF Load Source Specify (7.45TB SSD SFF-3)	9009	41G	EU4F
RDX USB External Docking Station	9009	41G	EUA4
Standalone USB DVD drive w/cable	9009	41G	EUA5
Core Use HW Feature	9009	41G	EUC6
Core Use HW Feature 10X	9009	41G	EUC7
BP Post-Sale Services: 1 Day	9009	41G	SVBP
IBM Systems Lab Services Post-Sale Services: 1 Day	9009	41G	SVCS
Other IBM Post-Sale Services: 1 Day	9009	41G	SVNN

The following are newly announced features on the specific models of the IBM Power Systems 7014, 7965, 9009, 9040, and 9080 machine types:

Planned Availability Date July 24, 2020

New Features

Description	Machine type	Model number	Feature number
PCIe3 2-Port 16Gb Fibre Channel Adapter	9009	22A	EN1G
	9009	41A	
	9009	42A	
	9040	MR9	
	9080	M9S	
PCIe3 LP 2-Port 16Gb Fibre Channel Adapter	9009	22A	EN1H
	9080	M9S	
Rack Content Specify: 9009-41G - 4EIA	7014	T00	ER34
	7014	T42	
	7965	S42	

Feature conversions

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 9009-41G adapters features:

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

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 ID and password are required (use IBMid).

BP Attachment for Announcement Letter 120-026

Publications

Publications:

Power Systems hardware documentation provides clients with the following topical information:

- Licenses, notices, safety, and warranty information
- Planning for the system
- Installing and configuring the system
- Troubleshooting, service, and support
- Installing, configuring, and managing consoles, terminals, and interfaces
- Installing operating systems
- Creating a virtual computing environment
- Enclosures and expansion units
- Glossary

You can access the product documentation at IBM Knowledge Center.

Product documentation is also available on DVD (SK5T-7087).

The following information is shipped with the 9009-41G:

- Power Hardware Information DVD SK5T-7087
- Installing the 9009-41G
- Important Notices
- Warranty Information
- License Agreement for Machine Code

Hardware documentation such as installation instructions, user's information, and service information is available to download or view at the IBM Support website.

You can access IBM i documentation at the IBM website.

You can access AIX documentation at the AIX website.

You can access documentation about Linux on IBM systems at the Linux information for IBM systems website.

The IBM Systems Information Center provides you with a single information center where you can access product documentation for IBM systems hardware, operating systems, and server software. Through a consistent framework, you can efficiently find information and personalize your access. See the IBM Systems Information Center, at IBM Knowledge Center.

IBM Knowledge Center provides you with a single point of reference where you can access product documentation for IBM systems hardware, operating systems, and server software. Through a consistent framework, you can efficiently find information and personalize your access by going to IBM Knowledge Center for all your product information needs.

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.

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.

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 go to the IBM Global Technology Services 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

Physical specifications

- 19-inch rackmount hardware
  - Width: 482 mm (18.97 in.)
  - Depth: 769.6 mm (30.3 in.)
  - Height: 173.3 mm (6.8 in.)
  - Weight: 36.3 kg (80 lb)
- Tower hardware
  - Width: 182.4 mm (7.18 in.)
  - Width with stand: 328.5 mm (12.93 in.)
  - Depth: 751.7 mm (29.59 in.)
  - Depth with front-rotatable door: 814.7 mm (32.07 in.)
  - Height: 486.1 mm (19.14 in.)
  - Height with handle: 522 mm (20.55 in.)
  - Weight: 46.94 kg (103.5 lb)

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

Operating environment

- Temperature: (nonoperating) 5 to 45 degrees Celsius (41 to 113 Fahrenheit); recommended temperature (operating) 18 to 27 degrees Celsius (64 to 80 Fahrenheit); allowable operating temperature 5 to 40 degrees Celsius (41 to 104 Fahrenheit)
- Relative humidity: 8% - 85% (allowable operating humidity range); recommended 5.5 degrees Celsius (42 Fahrenheit) dew point to 60% RH and 15 degrees Celsius (59 Fahrenheit) dew point
- Maximum dew point: 24 degrees Celsius (75 Fahrenheit) (allowable operating)
- Operating voltage:
  - 900 W PSU: 100 - 127 V AC or 200 - 240 V AC
  - 1400 W PSU: 200 - 240 V AC
- Operating frequency: 47/63 Hz
- Maximum power consumption: 1600 watts (maximum)
- Power factor: 0.98
- Thermal output: 5,461 Btu/hour (maximum)
- Power-source loading
  - 1.65 kVa (maximum configuration)
  - Maximum altitude: 3,050 m (10,000 ft)

Note: The maximum measured value is the worst case power consumption expected from a fully populated server under an intensive workload. The maximum measured value also accounts for component tolerance and non-ideal

operating conditions. Power consumption and heat load vary greatly by server configuration and utilization. The IBM Systems Energy Estimator should be used to obtain a heat output estimate based on a specific configuration.

Noise levels and declared A-weighted sound power level

- Tower system: 5.8 bels operating; 5.3 bels idling
- Rack-mount system: 5.9 bels operating; 5.3 bels idling

See the *Installation Planning Guide* in IBM Knowledge Center for additional detail.

For example, the actual power noise level is impacted by multiple factors, including:

- Enablement of the Turbo mode increases fan speed, which increases power noise levels.
- Usage of the Turbo mode further increases fan speed, which further increases power noise levels.
- Using higher wattage PCIe adapters increases fan speed, which increases power noise levels.
- Placing multiple servers in a rack increases the total power noise level.
- Placing servers in racks with acoustic doors reduces the power noise levels.

EMC conformance classification

This equipment is subject to FCC rules and shall comply with the appropriate FCC rules before final delivery to the buyer or centers of distribution.

- US: FCC Class A
- Europe: CISPR 22 Class A
- Japan: VCCI-A
- Korea: Korean Requirement Class A
- China: People's Republic of China commodity inspection law Class A

Homologation -- Telecom environmental testing (Safety and EMC):

Homologation approval for specific countries has been initiated with the IBM Homologation and Type Approval (HT&A) organization in LaGaude, France. This Power Systems model and applicable features meet the environmental testing requirements of the country telecom and have been designed and tested in compliance with the Full Quality Assurance Approval (FQAA) process as delivered by the British Approval Board for Telecom (BABT), the UK Telecom regulatory authority.

This product is not certified for 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.

Product safety/Country testing/Certification

- UL 60950-1:2007 Underwriters Laboratory, Safety Information
- CSA C22.2 No. 60950-1-07, Canadian Standards Association
- EN60950 European Norm
- IEC 60950, Edition 1, International Electrotechnical Commission, Safety Information
- Nordic deviations to IEC 60950-1 1st Edition

General requirements:

The product is in compliance with IBM Corporate Bulletin C-B 0-2594-000 Statement of Conformity of IBM Product to External Standard (Suppliers Declaration).

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.

Hardware requirements

Power S914 system configuration

The minimum Power S914 initial order must include a processor module, two 16 GB DIMMs, four or two power supplies and line cords, an operating system indicator, a cover set indicator, and a Language Group Specify. Also, it must include one of the storage options and the network options below:

Storage options:

- For boot from NVMe: One NVMe drive slot and one NVMe drive or one PCIe NVMe add in adapter.
- For boot from direct attach storage SFF-3 / SFF-2 HDD or SSD: One storage backplane and one SFF-3 / SFF-2 HDD or SSD.
- For boot from SAN: Internal HDD or SSD and RAID card are not required if feature 0837 (Boot from SAN) is selected. A Fibre Channel adapter must be ordered if feature 0837 is selected.

Network options:

- One PCIe2 4-port 1 Gb Ethernet adapter
- One of the supported 10 Gb Ethernet adapters

AIX or Linux is the primary operating system. The minimum defined initial order configuration is as follows:

Feature number	Description	Quantity	Notes
EU0B	Operator Panel LCD Display	1	Optional in rackmount configuration
Processors			
EP50	4-core, typical 2.3 to 3.8 GHz (max) POWER9 Processor	1	
or			
EP51	6-core, typical 2.3 to 3.8 GHz (max) POWER9 Processor	1	
or			
EP52	8-core, typical 2.8 to 3.8 GHz (max) POWER9 Processor	1	Rackmount configuration only
Processor activations			
EP60	One Processor Core Activation for #EP50	4	
or			
EP61	One Processor Core Activation for #EP51	6	
or			
EP62	One Processor Core Activation for #EP52	8	
Memory DIMMs			

Feature number	Description	Quantity	Notes
EM62	16 GB DDR4 Memory	2	
or			
EM63	32 GB DDR4 Memory	2	
or			
EM64	64 GB DDR4 Memory	2	
Storage Backplane			
EJ1S	Storage Backplane with 6 SFF-3 Bays and 2 PCIe Gen4 capable NVMe U.2 drive slots	1	See Note 2 and Note 4
or			
EJ1T	Storage Backplane with 2 PCIe Gen4 capable NVMe U.2 drive slots	1	Optional EJ1Q as MES to allow 4 NVMe U.2 drives. See Note 2 and Note 4.
or			
EJ1U	Storage Backplane with 4 PCIe Gen4 capable NVMe U.2 drive slots	1	See Note 2 and Note 4
Disk Drive			
ESDB	300 GB 15K RPM SAS SFF-3 Disk Drive (AIX/Linux)	1	
LAN Adapter			
5899	PCIe2 LP 4-port 1 GbE Adapter	1	See Note 3
Power supplies/ Power cord			
EB2L	AC Power Supply - 900 W for Server (200 - 240 V AC)	4	41G Tower: Qty 4 of #EB2L required
or			
EB2M	AC Power Supply - 1400 W for Server (200 - 240 V AC)	2	41G Rack: Qty 2 of #EB2M required
6458	Power Cord 4.3 m (14 ft), Drawer to IBM PDU (250V/10A)	4	41G Tower: Qty 4, or 41A Rack: Qty 2
9300/97xx	Language Group Specify	1	9300 - (default)
Front Bezel			Default front bezel #EJU2 (rack) or #EJU8 (tower) on when no DASD backplane is ordered
EJUJ	Front IBM Bezel for 6 SAS + 4 NVMe - Bays BackPlane	1	41G Rack: used with #EJ1S, or #EJ1T, or #EJ1U
or			
EJUL	Front OEM Bezel for 6 SAS + 4 NVMe-Bays BackPlane	1	41G Rack: used with #EJ1S, or #EJ1T, or #EJ1U

Feature number	Description	Quantity	Notes
or			
EJUQ	Front IBM Cover/ Door Tower with 6 SAS/4 NVMe Bays BackPlane	1	41G Tower: used with #EJ1S, or #EJ1T, or #EJ1U
or			
EJUR	Front OEM Cover/ Door Tower with 6 SAS/4 NVMe Bays BackPlane	1	41G Tower: used with #EJ1S, or #EJ1T, or #EJ1U
Optional mounting hardware			
EJTZ	Rack-mount Rail Kit	1	Must order one rail kit with #EJU2 or #EJU4 or #EJUJ bezel
Primary operating system			
2146	Primary Operating System Indicator - AIX	1	
or			
2147	Primary Operating System Indicator - Linux	1	

1. The racking approach for the initial order must be either a 7014-T00, 7014-T42, 7965-S42, or 7953-94Y. If an additional rack is required for I/O expansion drawers as an MES to an existing system, either a feature 0551, 0553, or ER05 rack must be ordered.
2. Must order, at a minimum, one #ES1E/#ES1G/#EC5V/#EC5X (NVMe U.2 drive) with backplane #EJ1S, #EJ1T, or #EJ1U. Maximum of two #ES1E/#ES1G/ #EC5V/#EC5X per one #EJ1S/#EJ1T. Maximum of four #ES1E/#ES1G/#EC5V/ #EC5X per one #EJ1U. Mixing of #ES1E, #ES1G, #EC5V, or #EC5X is allowed on a backplane.
3. IBM i operating system performance: Clients with write-sensitive disk/HDD workloads should upgrade from the feature EJ1C/EJ1E base storage backplane to the feature EJ1M/EJ1D expanded function storage backplanes to gain the performance advantage of write cache, or upgrade to use NVMe devices to gain the advantage of NVMe.
4. Storage backplane features EJ1C, EJ1D, EJ1E, and EJ1M are also available (selected Front Bezel are required).

The minimum defined initial order configuration, if no choice is made, when IBM i is the primary operating system, is:

Feature number	Description	Quantity	Notes
EU0B	Operator Panel LCD Display	1	
Processors			
EP50	4-core, typical 2.3 to 3.8 GHz (max) POWER9 Processor	1	
or			
EP51	6-core, typical 2.3 to 3.8 GHz (max) POWER9 Processor	1	
or			
EP52	8-core, typical 2.8 to 3.8 GHz (max) POWER9 Processor	1	Rackmount configuration only
Processor activations			

Feature number	Description	Quantity	Notes
EP60	One Processor Core Activation for #EP50	4	
or			
EP61	One Processor Core Activation for #EP51	6	
or			
EP62	One Processor Core Activation for #EP52	8	
Memory DIMMs			
EM62	16 GB DDR4 Memory	2	
or			
EM63	32 GB DDR4 Memory	2	
or			
EM64	64 GB DDR4 Memory	2	
Storage Backplane			See Note 3
EJ1S	Storage Backplane with 6 SFF-3 Bays and 2 PCIe Gen4 capable NVMe U.2	1	See Note 2
or			
EJ1T	Storage Backplane with 2 PCIe Gen4 capable NVMe U.2 drive slots	1	Optional EJ1Q as MES to allow 4 NVMe U.2 drives. See Note 2.
or			
EJ1U	Storage Backplane with 4 PCIe Gen4 capable NVMe U.2 drive slots	1	See Note 2
Disk Drive			
ESNJ	283GB 15K RPM SAS SFF-3 4k Block Cached Disk Drive (IBM i)	2	One system data protection specify code required
LAN Adapter			
5899	PCIe2 LP 4-port 1 GbE Adapter	1	
or			
EN15	PCIe3 4-port 10 GbE SR Adapter	1	
or			
EC2S	PCIe3 2-Port 10 Gb NIC&ROCE SR/Cu Adapter	1	
or			
EC2U	PCIe3 2-Port 25/10 Gb NIC&ROCE SR/ Cu Adapter	1	
Power supplies/ Power cord			
EB2L	AC Power Supply - 900 W for Server (200 - 240 V AC)	4	41G Tower: Qty 4 of #EB2L required
or			

Feature number	Description	Quantity	Notes
EB2M	AC Power Supply - 1400 W for Server (200 - 240 V AC)	2	41G Rack: Qty 2 of #EB2M required
6458	Power Cord 4.3 m (14 ft), Drawer to IBM PDU (250V/10A)	4	41G Tower: Qty 4, or 41G Rack: Qty 2
9300/97xx	Language Group Specify	1	9300 - (default)
Front Bezel			Default front bezel #EJU2 (rack) or #EJU8 (tower) on when no DASD backplane is ordered
EJUJ	Front IBM Bezel for 6 SAS + 4 NVMe - Bays BackPlane	1	41G Rack: used with #EJ1S, #EJ1T, or #EJ1U
or			
EJUQ	Front IBM Cover/ Door Tower with 6 SAS/4 NVMe Bays BackPlane	1	41G Tower: used with #EJ1S, #EJ1T, or #EJ1U
Optional mounting hardware			
EJTZ	Rack-mount Rail Kit	1	Must order one rail kit with #EJU2, #EJUF, or #EJUJ bezel
System Data Protection Specify			
0040	Mirrored System Disk Level, Specify Code	1	Default is #0040. One system data protection specify code required.
System Console Specify			
5550	System console on HMC	1	
or			
5557	System Console-Ethernet LAN adapter	1	
Primary operating system			
2145	Primary Operating System Indicator - IBM i	1	Feature EB73 or EB74 is required.

1. The racking approach for the initial order must be either a 7014-T00, 7014-T42, 7965-S42, or 7953-94Y. If an additional rack is required for I/O expansion drawers as an MES to an existing system, either a feature 0551, 0553, or ER05 rack must be ordered.
2. Must order, at a minimum, two #ES1F/#ES1H/#EC5W (NVMe U.2 drive) with backplane #EJ1S, #EJ1T, or #EJ1U. Maximum of two #ES1F/#ES1H/#EC5W per one #EJ1S/#EJ1T. Maximum of four #ES1F/#ES1H/#EC5W per one #EJ1U except on 4-core P05 platform. Mixing of #ES1F, #ES1H, or #EC5W is allowed in pairs.
3. IBM i operating system performance: Clients with write-sensitive disk/HDD workloads should upgrade from the feature EJ1C/EJ1E base storage backplane to the feature EJ1M/EJ1D expanded function storage backplanes to gain the performance advantage of write cache, or upgrade to use NVMe devices to gain the advantage of NVMe

POWER9 Tower-to-Rack conversion

The IBM System Server S914 Tower-to-Rack conversion is available through the following MES parts that you need to convert a 4U server (MTM 9009-41G) from a tower model to a rack model. You can then install the server into a 19-inch rack enclosure.

The following MES parts need to be requested for the tower-to-rack conversion:

Description	Feature	Comments
Front IBM Bezel for 12-Bay BackPlane	EJU2	Optional, mutually exclusive with EJUL, EJUJ, EJUF, EJU4, and EJUH
Front IBM Bezel 18-Bay BackPlane	EJUF	Optional, mutually exclusive with EJUL, EJUJ, EJU2, EJU4, and EJUH
Front OEM Bezel for 12-Bay BackPlane	EJU4	Optional, mutually exclusive with EJUL, EJUJ, EJU2, EJUF, and EJUH
Front OEM Bezel for 18-Bay BackPlane	EJUH	Optional, mutually exclusive with EJUL, EJUJ, EJU2, EJUF, and EJU4
Front IBM Bezel for 6 SAS + 4 NVMe -Bays BackPlane	EJUJ	Optional, mutually exclusive with EJUL, EJU2, EJUF, EJUH, and EJU4
Front OEM Bezel for 6 SAS + 4 NVMe-Bays BackPlane	EJUL	Optional, mutually exclusive with EJUJ, EJU2, EJUF, EJUH, and EJU4
Rack-mount Rail Kit	EJTZ	Required

Note: Choose the correct set of power cords to PDU for your rack configuration, depending on the rack type, the PDU type, and the number of power supplies.

POWER9 Rack-to-Tower conversion

The System Server S914 Rack-to-Tower Conversion is also available through the following MES parts that you need to convert a 4U server (MTM 9009-41G) from a rack model to a tower model.

The following MES parts need to be requested for the rack-to-tower conversion:

Description	Feature	Comments
Front Door and Covers for 12-Bay BackPlane	EJU8	Optional, mutually exclusive with EJUR, EJUQ, EJU9, EJUA, and EJUB
Front Door and Covers for 18-Bay BackPlane	EJU9	Optional, mutually exclusive with EJUR, EJUQ, EJU8, EJUA, and EJUB
Front OEM Door and Covers for 12-Bay BackPlane	EJUA	Optional, mutually exclusive with EJUR, EJUQ, EJU8, EJU9, and EJUB
Front OEM Door and Covers for 18-Bay BackPlane	EJUB	Optional, mutually exclusive with EJUR, EJUQ, EJU8, EJU9, and EJUA
Front IBM Cover/Door Tower with 6 SAS/4 NVMe Bays BackPlane	EJUQ	Optional, mutually exclusive with EJUR, EJU8, EJU9, EJUA, and EJUB
Front OEM Cover/Door Tower with 6 SAS/4 NVMe Bays BackPlane	EJUR	Optional, mutually exclusive with EJUQ, EJU8, EJU9, EJUA, and EJUB

Notes:

- Four 900 W power supplies are required. If two 1400 W power supplies exist on the rack model, they will be removed on the order.
- Choose the correct set of power cords to wall cables, depending on AC, length of cord required, and number of power cords required per power supply.

For installation instructions, see the POWER9 systems information in IBM Knowledge Center.

Hardware Management Console (HMC) machine code

An HMC is required to manage the Power S914 server (9009-41G) implementing partitioning. Multiple POWER7(R), POWER8(R), and POWER9 processor-based servers can be supported by a single HMC.

Planned HMC hardware and software support:

- X86 based - 7042-CR7, 7042-CR8, 7042-CR9
  - vHMC x86
- POWER8 based Open Power: 7063-CR1
  - vHMC PowerVM based LPAR

If you are attaching an HMC to a new server or adding function to an existing server that requires a firmware update, the HMC machine code may need to be updated because HMC code must always be equal to or higher than the managed server's firmware. Access to firmware and machine code updates is conditioned on entitlement and license validation in accordance with IBM policy and practice. IBM may verify entitlement through customer number, serial number, electronic restrictions, or any other means or methods employed by IBM at its discretion.

To determine the HMC machine code level required for the firmware level on any server, go to the following web page to access the Fix Level Recommendation Tool (FLRT) on or after the planned availability date for this product. FLRT will identify the correct HMC machine code for the selected system firmware level; see the website Fix Level Recommendation Tool.

If a single HMC is attached to multiple servers, the HMC machine code level must be updated to be at or higher than the server with the most recent firmware level. All prior levels of server firmware are supported with the latest HMC machine code level.

The HMC code latest level contains the following:

- Support for managing Power S922, Power S924, and Power S914 systems.
- Support for the new HMC model 7063-CR1.
- Support for PowerVM functions, such as the new HMC GUI interface for VIOS management.
- GUI for HMC's Performance and Capacity Monitoring function.
- An HMC command to initiate a remote restart operation. This removes the requirement of VMControl for the PowerVM Remote Restart function.
- For PowerVM GUI functions, VIOS is recommended.

For clients installing systems higher than the EIA 29 position (location of the rail that supports the rack-mounted server) in any IBM or non-IBM rack, acquire approved tools outlined in the server specifications section at IBM Knowledge Center. In situations where IBM service is required and the recommended tools are not available, there could be delays in repair actions.

Software requirements

If installing the Linux operating system LPAR:

- Red Hat Enterprise Linux 8 for Power LE, version 8.1, or later
- SUSE Linux Enterprise Server 15 Service Pack 1, or later

If installing IBM i, the IBM i operating system levels supported are:

- IBM i 7.4 TR2, or later

- IBM i 7.3 TR8 , or later
- IBM i 7.2 with 7.2 Licensed Machine Code - RS 720-Q, or later

If installing the AIX operating system LPAR with any I/O configuration (one of these):

- AIX Version 7.2 with the 7200-04 Technology Level and Service Pack 7200-04-02-2028, or later
- AIX Version 7.1 with the 7100-05 Technology Level and Service Pack 7100-05-06-2028, or later
- AIX Version 7.2 with the 7200-03 Technology Level and Service Pack 7 (Planned Availability February 19, 2021)

If installing the AIX operating system Virtual I/O only LPAR (one of these):

- AIX Version 7.2 with the 7200-04 Technology Level, or later
- AIX Version 7.2 with the 7200-03 Technology Level, or later
- AIX Version 7.2 with the 7200-02 Technology Level and Service Pack 7200-02-02-1832, or later
- AIX Version 7.1 with the 7100-05 Technology Level and Service Pack 7100-05-02-1832, or later

If installing VIOS:

- VIOS 3.1.1.25, or later
- VIOS 2.2.6.65, or later

Limitations

- Integrated system port is not supported under AIX or Linux when the HMC ports are connected to an HMC. Either the HMC ports or the integrated system ports can be used, but not both. The FSP2 USB 2.0 port is used for communication to a UPS.
- The integrated system port is supported for modem and TTY terminal connections by AIX or Linux. Any other application using serial ports requires a serial port adapter to be installed in a PCI slot. The integrated system port does not support HACMP configurations.

Boot requirements

- If IBM i (#2145) is selected as the primary operating system and SAN boot is not selected (#0837), one of the load source specify codes for SAS drives or NVMe devices in Special Features - Initial Orders - Specify codes section must be specified.
- If IBM i (#2145) is selected and the load source disk unit is not in the system unit (CEC), one of the following specify codes must also be selected:
  - #0719 Load Source Not in CEC and are to be placed in I/O drawers or in external SAN-attached disk
  - #EHR2 Load Source Specifies DASD are placed in an EXP24SX SFF Gen 2 bay Drawer (#ESLS or ELLS)
  - #0837 SAN Operating System Load Source Specify
- If IBM i (#2145) is selected, one of the following system console specify codes must be selected:
  - #5550 -- System Console on HMC
  - #5557 -- System Console - Internal LAN

4-core Power S914 processor feature

The PCIe expansion drawer (#EMX0) and EXP24SX /EXP12SX SAS Storage Enclosures (#ESLS or #ESLL) do not apply to the 4-core configuration S914 server.

Planning information

Cable orders

No additional cables are required.

Security, auditability, and control

This product uses the security and auditability features of host hardware and application software.

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.

Terms and conditions

Volume orders

Contact your IBM representative.

IBM Global Financing

Yes

Products - terms and conditions

Warranty period

Warranty and additional coverage options:	**Coverage summary[1]:**
Warranty Period:	3 years
Service Level:	IBM CRU & On-Site, 9x5 Next Business Day
Service Upgrade Options :	
Warranty Service Upgrade	IBM On-Site Repair, 9x5 Same Day[2] and 24x7 Same Day options
Maintenance Services (Post-Warranty):	IBM On-Site Repair, Next Business Day and Same Day options
IBM Hardware Maintenance Services - committed maintenance[3]:	Y

[1] See complete coverage details below.

[2] Offered in US and EMEA only.

[3] Not offered in the US.

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(R) (NVMe) devices identified in this document may have a maximum number of write cycles. IBM SDD and NMVe 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.

The IBM warranty covers feature number EB4Z. For warranty terms associated with feature number EB3Z and the Lift tool based on GenieLift GL-8, see the separate warranty terms provided by Genie found in the Genie Operator's Manual at the Genie website.

For clients installing systems higher than the EIA 29 position (location of the rail that supports the rack-mounted server) in any IBM or non-IBM rack, acquire approved tools outlined in the server specifications section at IBM Knowledge Center. In situations where IBM service is required and the recommended tools are not available, there could be delays in repair actions.

Warranty service

If required, IBM provides repair or exchange service depending on the types of warranty service specified for the machine. IBM will attempt to resolve your problem over the telephone, or electronically through an IBM website. Certain machines contain remote support capabilities for direct problem reporting, remote problem determination, and resolution with IBM. You must follow the problem determination and resolution procedures that IBM specifies. Following problem determination, if IBM determines on-site service is required, scheduling of service will depend upon the time of your call, machine technology and redundancy, and availability of parts. If applicable to your product, parts considered Customer Replaceable Units (CRUs) will be provided as part of the machine's standard warranty service.

Service levels are response-time objectives and are not guaranteed. The specified level of warranty service may not be available in all worldwide locations. Additional charges may apply outside IBM's normal service area. Contact your local IBM representative or your reseller for country-specific and location-specific information.

CRU Service

IBM provides replacement CRUs to you for you to install. CRU information and replacement instructions are shipped with your machine and are available from IBM upon your request. CRUs are designated as being either a Tier 1 (mandatory) or a Tier 2 (optional) CRU.

Tier 1 (mandatory) CRU

Installation of Tier 1 CRUs, as specified in this announcement, is your responsibility. If IBM installs a Tier 1 CRU at your request, you will be charged for the installation.

The following parts have been designated as Tier 1 CRUs:

- DASD SFF Drive
- DASD SSD Drive
- RDX Drive
- Enclosure
- Power Cable
- NVMe U.2
- SAS Card
- Op Panel -- Base

- Op Panel -- LCD
- Memory DIMM
- All PCI Adapters
- FAN
- Upper Fan cable
- TPM Card
- Power Supplies
- Service Processor Card/FSP
- TOD Battery
- Air Baffle
- Bezel
- SAS Cable
- Front Heatsink
- Service Cover
- DASD Backplane Power Cable
- DASD Backplane Signal Cable

Tier 2 (optional) CRU

You may install a Tier 2 CRU yourself or request IBM to install it, at no additional charge.

Based upon availability, CRUs will be shipped for next-business-day (NBD) delivery. IBM specifies, in the materials shipped with a replacement CRU, whether a defective CRU must be returned to IBM. When return is required, return instructions and a container are shipped with the replacement CRU. You may be charged for the replacement CRU if IBM does not receive the defective CRU within 15 days of your receipt of the replacement.

CRU and On-site Service

At IBM's discretion, you will receive specified CRU service, or IBM will repair the failing machine at your location and verify its operation. You must provide a suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well-lit, and suitable for the purpose.

Service level is:

- 9 hours per day, Monday through Friday, excluding holidays, next-business-day response. Calls must be received by 3:00 PM local time in order to qualify for next-business-day response.

Warranty service

IBM is now shipping machines with selected non-IBM parts that contain an IBM field replaceable unit (FRU) part number label. These parts are to be serviced during the IBM machine warranty period. IBM is covering the service on these selected non-IBM parts as an accommodation to their customers, and normal warranty service procedures for the IBM machine apply.

International Warranty Service

International Warranty Service allows you to relocate any machine that is eligible for International Warranty Service and receive continued warranty service in any country where the IBM machine is serviced. If you move your machine to a different country, you are required to report the machine information to your Business Partner or IBM representative.

The warranty service type and the service level provided in the servicing country may be different from that provided in the country in which the machine was purchased. Warranty service will be provided with the prevailing warranty service

type and service level available for the eligible machine type in the servicing country, and the warranty period observed will be that of the country in which the machine was purchased.

The following types of information can be found on the International Warranty Service website

- Machine warranty entitlement and eligibility
- Directory of contacts by country with technical support contact information
- Announcement Letters

Warranty service upgrades

During the warranty period, warranty service upgrades provide an enhanced level of On-site Service for an additional charge. Service levels are response-time objectives and are not guaranteed. See the Warranty services section for additional details.

IBM will attempt to resolve your problem over the telephone or electronically by access to an IBM website. Certain machines contain remote support capabilities for direct problem reporting, remote problem determination, and resolution with IBM. You must follow the problem determination and resolution procedures that IBM specifies. Following problem determination, if IBM determines on-site service is required, scheduling of service will depend upon the time of your call, machine technology and redundancy, and availability of parts.

Maintenance service options

CRU and On-site Service

At IBM's discretion, you will receive CRU service or IBM will repair the failing machine at your location and verify its operation. You must provide a suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well-lit, and suitable for the purpose. The following on-site response-time objectives are available as warranty service upgrades for your machine. Available offerings are:

- On-Site Repair, Monday through Friday (excluding holidays), 8 AM to 5 PM, 4-hour on-site response objective. Response times are objectives and are not guaranteed
- On-Site Repair, 7 days a week, 24hrs/day.
- On-Site Repair, 7 days a week, 24hrs/day, 2-hour response objective. Response times are objectives and are not guaranteed.

Customer Replaceable Units (CRUs) may be provided as part of the machine's standard warranty CRU Service except that you may install a CRU yourself or request IBM installation, at no additional charge, under the CRU and On-site Service level specified above. For additional information on the CRU Service, see the warranty information.

Maintenance services

If required, IBM provides repair or exchange service depending on the types of maintenance service specified for the machine. IBM will attempt to resolve your problem over the telephone or electronically, through an IBM website. Certain machines contain remote support capabilities for direct problem reporting, remote problem determination, and resolution with IBM. You must follow the problem determination and resolution procedures that IBM specifies. Following problem determination, if IBM determines on-site service is required, scheduling of service will depend upon the time of your call, machine technology and redundancy, and availability of parts. Service levels are response-time objectives and are not guaranteed. The specified level of maintenance service may not be available in all worldwide locations. Additional charges may apply outside IBM's normal service area. Contact your local IBM representative or your reseller for country-specific and location-specific information.

The following service selections are available as maintenance options, at additional cost, for your machine type.

- On-Site Repair, Monday through Friday (excluding holidays), 8 AM to 5 PM, next business day.
- On-Site Repair, Monday through Friday (excluding holidays), 8 AM to 5 PM, 4-hour response objective. Response times are objectives and are not guaranteed.
- On-Site Repair, 7 days a week, 24hrs/day.
- On-Site Repair, 7 days a week, 24hrs/day, 2-hour response objective. Response times are objectives and are not guaranteed.

On-site Service

IBM will repair the failing machine at your location and verify its operation. You must provide a suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well-lit, and suitable for the purpose.

Customer Replaceable Unit (CRU) Service

If your problem can be resolved with a CRU (for example, keyboard, mouse, speaker, memory, or hard disk drive), and depending upon the maintenance service offerings in your geography, IBM will ship the replacement CRU to you for you to install. CRU information and replacement instructions are shipped with your machine and are available from IBM upon your request.

CRUs will be shipped based upon availability. IBM specifies, in the materials shipped with a replacement CRU, whether a defective CRU must be returned to IBM. When return is required, 1) return instructions and a container are shipped with the replacement CRU, and 2) you may be charged for the replacement CRU if IBM does not receive the defective CRU within 15 days of your receipt of the replacement.

CRUs are designated as being either a Tier 1 (mandatory) or a Tier 2 (optional) CRU.

Tier 1 (mandatory) CRUs: Installation of Tier 1 CRUs, as specified in this announcement, is your responsibility. If IBM installs a Tier 1 CRU at your request, you will be charged for the installation.

For machines with On-site Same-day Response Service, IBM will replace a Tier 1 CRU part at your request, at no additional charge.

The following parts have been designated as Tier 1 CRUs:

- DASD SFF Drive
- DASD SSD Drive
- RDX Drive
- Enclosure
- Power Cable
- NVMe U.2
- SAS Card
- Op Panel -- Base
- Op Panel -- LCD
- Memory DIMM
- All PCI Adapters
- FAN
- Upper Fan cable
- TPM Card
- Power Supplies
- Service Processor Card/FSP
- TOD Battery

- Air Baffle
- Bezel
- SAS Cable Front
- Heatsink
- Service Cover
- DASD Backplane Power Cable
- DASD Backplane Signal Cable

Tier 2 (optional) CRUs: You may install a Tier 2 CRU yourself or request IBM to install it, at no additional charge.

Additional reference for Europe

The following European documents can be found on the IBM Maintenance and Technical Support Services website.

- European Announcement Letter ZS03-0150 for IBM Customer Agreement (ICA)
- European Announcement Letter ZS04-0135 for Enterprise Agreement Contract
- European Announcement Letter ZS98-0118 for ServiceSuite Contract

Non-IBM parts service

Under certain conditions, IBM provides services for selected non-IBM parts at no additional charge for machines that are covered under warranty service upgrades or maintenance services.

This service includes hardware problem determination (PD) on the non-IBM parts (for example, adapter cards, PCMCIA cards, disk drives, memory) installed within IBM machines and provides the labor to replace the failing parts at no additional charge.

If IBM has a Technical Service Agreement with the manufacturer of the failing part, or if the failing part is an accommodations part (a part with an IBM FRU label), IBM may also source and replace the failing part at no additional charge. For all other non-IBM parts, customers are responsible for sourcing the parts. Installation labor is provided at no additional charge, if the machine is covered under a warranty service upgrade or a maintenance service.

Usage plan machine

No

IBM hourly service rate classification

Two

When a type of service involves the exchange of a machine part, the replacement may not be new, but will be in good working order.

General terms and conditions

Field-installable features

Yes

Model conversions

No

Machine installation

Client setup. Clients are responsible for installation according to the instructions IBM provides with the machine.

Graduated program license charges apply

Yes

The applicable processor group is: Small

Licensed Machine Code

IBM Machine Code is licensed for use by a customer on the IBM machine for which it was provided by IBM under the terms and conditions of the IBM License Agreement for Machine Code, to enable the machine to function in accordance with its specifications, and only for the capacity authorized by IBM and acquired by the customer. You can obtain the agreement by contacting your IBM representative. It can also be found on the License Agreement for Machine Code and Licensed Internal Code website.

Machine using LMC Type Model 9009-41G

Access to Machine Code updates is conditioned on entitlement and license validation in accordance with IBM policy and practice. IBM may verify entitlement through customer number, serial number, electronic restrictions, or any other means or methods employed by IBM in its discretion.

If the machine does not function as warranted and your problem can be resolved through your application of downloadable Machine Code, you are responsible for downloading and installing these designated Machine Code changes as IBM specifies. If you would prefer, you may request IBM to install downloadable Machine Code changes; however, you may be charged for that service.

Educational allowance

A reduced charge is available to qualified education customers. The educational allowance may not be added to any other discount or allowance.

The educational allowance is 8% for the products in this announcement.

Prices

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

Product charges

The following are newly announced features on the specific models of the IBM Power Systems 9009 machine type:

Description	Model number	Feature number	Purchase price	Minimum Initial/ Monthly MES/ Maint. charge	Both/ support	CSU	RP MES
IBM Power System S914	41G					Yes	
One CSC Billing Unit	41G	0010			Both	Yes	No
Ten CSC Billing Units	41G	0011			Both	Yes	No
Mirrored System Disk Level, Sp							

	41G	0040	Both	Yes	No
Device Parity Protection All					
	41G	0041	Both	Yes	No
Mirrored System Bus Level					
	41G	0043	Both	Yes	No
Device Parity RAID 6 All					
	41G	0047	Both	Yes	No
RISC to RISC Data Migration					
	41G	0205	Initial	N/A	No
AIX Partition Specify					
	41G	0265	Both	Yes	No
Linux Partition Specify					
	41G	0266	Both	Yes	No
IBM i Partition Specify					
	41G	0267	Both	Yes	No
Specify Custom Data Protection					
	41G	0296	Both	Yes	No
Mirrored Level System Specify					
	41G	0308	Both	Yes	No
RAID Hot Spare Specify					
	41G	0347	Both	Yes	No
V.24/EIA232 6.1m (20 Ft) PCI C					
	41G	0348	Both	Yes	No
V.35 6.1m (20 Ft) PCI Cable					
	41G	0353	Both	Yes	No
X.21 6.1m (20 Ft) PCI Cable					
	41G	0359	Both	Yes	No
CBU Specify					
	41G	0444	Initial	N/A	No
Customer Specified Placement					
	41G	0456	Initial	N/A	No
19 inch, 1.8 meter high rack					
	41G	0551	MES	Yes	No
19 inch, 2.0 meter high rack					
	41G	0553	MES	Yes	No
Rack Filler Panel Kit					
	41G	0599	Both	Yes	No
Load Source Not in CEC					
	41G	0719	Both	Yes	No
5887/EL1S Load Source Specfy					
	41G	0728	MES	Yes	No
SAN Load Source Specify					
	41G	0837	Both	Yes	No
1948 Load Source Specify					
	41G	0872	MES	Yes	No
1962 Load Source Specify					
	41G	0875	MES	Yes	No
ESD2 Load Source Specify					
	41G	0911	MES	Yes	No
US TAA Compliance Indicator					
	41G	0983	Both	Yes	No
Asm in USA manufacturing plant					
	41G	0984	Both	N/A	No
Modem Cable US/Canada and GU					
	41G	1025	Both	Yes	No
USB 500 GB Removable Disk Dr					
	41G	1107	Both	Yes	No
Custom Serv. Specify, Roch					
	41G	1140	Both	Yes	No
Quantity 150 of 1962					
	41G	1817	Support	Yes	No
Quantity 150 of #1964					
	41G	1818	Both	Yes	No
Quantity 150 of 1948					
	41G	1927	Support	Yes	No

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Quantity 150 of #1953
                        41G     1929                    Both     Yes No
283GB 15k RPM SAS SFF-2 Disk
                        41G     1948                    Support  Yes No
300GB 15k RPM SAS SFF-2 Disk
                        41G     1953                    Both     Yes No
571GB 10k RPM SAS SFF-2 Disk
                        41G     1962                    Support  Yes No
600GB 10k RPM SAS SFF-2 Disk
                        41G     1964                    Both     Yes No
Primary OS - IBM i
                        41G     2145                    Both     Yes No
Primary OS AIX
                        41G     2146                    Both     Yes No
Primary OS Linux
                        41G     2147                    Both     Yes No
Factory Deconfiguration of 1 c
                        41G     2319                    Initial  N/A No
LC-SC 50 Micron Fiber Conv Cab
                        41G     2456                    Both     Yes No
LC-SC 62.5 Mic.Fib.Conv.Cable
                        41G     2459                    Both     Yes No
PCIe 2 Line WAN w/Modem
                        41G     2893                    Support  Yes No


Asynch.Termin/Print.Cbl EIA232
                        41G     2934                    Both     Yes No
Asynchronous Cable EIA 232/V
                        41G     2936                    Both     Yes No
Ser to Ser Port Cab Draw/Draw
                        41G     3124                    Both     Yes No
Serial to Se.Port Cbl Rack 8M
                        41G     3125                    Both     Yes No
Widescreen LCD Monitor
                        41G     3632                    Support  Yes No
0.3M Serial Prt Converter Cbl
                        41G     3925                    Both     Yes No
Serial Port Null Mod Cab 3.7M
                        41G     3927                    Both     Yes No
Ser.Port Null Modem Cable,10M
                        41G     3928                    Both     Yes No
System Serial Port Converter C
                        41G     3930                    Both     Yes No
6Foot Extend.Cbl for Displays
                        41G     4242                    Support  Yes No
Extender Cable USB Keybo 1.8M
                        41G     4256                    Both     Yes No
VGA to DVI Connection Converte
                        41G     4276                    Both     Yes No
Rack Integration Services
                        41G     4649                    Initial  N/A No
 One and only one rack indicator feature is required on
 all orders (#4650 to #4666).
No Factory Integration Ind.
                        41G     4650                    Initial  N/A No
Rack Indicator, Rack 1
                        41G     4651                    Initial  N/A No
Rack Indicator, Rack 2
                        41G     4652                    Initial  N/A No
Rack Indicator, Rack 3
                        41G     4653                    Initial  N/A No
Rack Indicator, Rack 4
                        41G     4654                    Initial  N/A No
Rack Indicator, Rack 5
                        41G     4655                    Initial  N/A No
Rack Indicator, Rack 6
                        41G     4656                    Initial  N/A No
Rack Indicator, Rack 7
                        41G     4657                    Initial  N/A No
Rack Indicator, Rack 8
                        41G     4658                    Initial  N/A No
Rack Indicator, Rack 9
                        41G     4659                    Initial  N/A No
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Rack Indicator, Rack 10	41G	4660	Initial	N/A	No
Rack Indicator, Rack 11	41G	4661	Initial	N/A	No
Rack Indicator, Rack 12	41G	4662	Initial	N/A	No
Rack Indicator, Rack 13	41G	4663	Initial	N/A	No
Rack Indicator, Rack 14	41G	4664	Initial	N/A	No
Rack Indicator, Rack 15	41G	4665	Initial	N/A	No
Rack Indicator, Rack 16	41G	4666	Initial	N/A	No
Power Active Memory Expansion	41G	4794	Both	Yes	No
IBM i Solution Edition IBM i	41G	4927	Initial	N/A	No
Solution Edition for IBM i	41G	4928	Initial	N/A	No
Software Preload Required	41G	5000	Initial	N/A	No
PowerVM Enterprise Edition	41G	5228	Both	Yes	No
Sys Console On HMC	41G	5550	Both	Yes	No
Sys Console-Ethernet LAN	41G	5557	Initial	N/A	No
PCIe2 8Gb 4-port Fibre Channel	41G	5729	Support	Yes	No
8 Gigabit PCI Express Dual Por	41G	5735	Support	Yes	No
POWER(R) GXT145 PCI Express Graph	41G	5748	Both	Yes	No
4 Port Async EIA 232 PCIe Adap	41G	5785	Support	Yes	No
EXP24S SFF Gen2-bay Drawer	41G	5887	Support	Yes	No
PCIe2 4-port 1GbE Adapter	41G	5899	Both	Yes	No
Opt Front Door for 1.8m Rack	41G	6068	MES	Yes	No
Opt Front Door for 2.0m Rack	41G	6069	MES	Yes	No
1.8m Rack Acoustic Doors	41G	6248	MES	Yes	No
2.0m Rack Acoustic Doors	41G	6249	MES	Yes	No
1.8m Rack Trim Kit	41G	6263	MES	Yes	No
2.0m Rack Trim Kit	41G	6272	MES	Yes	No
Pwr Crd 4.3m 14ft to IBM PDU	41G	6458	Both	Yes	No
Pwr Crd (14FT), Drwr - OEM PDU	41G	6460	Both	Yes	No
Pwr Crd 4.3m 14ft Wall OEM PDU	41G	6469	Both	Yes	No
Pwr Crd 1.8m 6ft Wall 125V/15A	41G	6470	Both	Yes	No
Pwr Crd 2.7m 9ft Wall OEM PDU	41G	6471	Both	Yes	No
Pwr Crd 2.7m 9ft Wall OEM PDU	41G	6472	Both	Yes	No
Pwr Crd 2.7m 9ft Wall OEM PDU	41G	6473	Both	Yes	No
Pwr Crd 2.7m 9ft Wall OEM PDU	41G	6474	Both	Yes	No
Pwr Crd 2.7m 9ft Wall OEM PDU	41G	6475	Both	Yes	No
Pwr Crd 2.7m 9ft Wall OEM PDU	41G	6476	Both	Yes	No
Pwr Crd 2.7m 9ft Wall OEM PDU					

41G	6477	Both	Yes	No
Pwr Crd 2.7m 9ft Wall OEM PDU				
41G	6478	Both	Yes	No
Pwr Crd 2.7m 9ft Wall OEM PDU				
41G	6488	Both	Yes	No
4.3m 14 Ft 3PH/32A Pwr Cord				
41G	6489	Both	Yes	No
4.3m (14 Ft) 1PH/63A Pwr Cord				
41G	6491	Both	Yes	No
4.3m (14 Ft) 1PH/48A PwrCord				
41G	6492	Both	Yes	No
Pwr Crd 2.7m 9ft Wall OEM PDU				
41G	6493	Both	Yes	No
Pwr Crd 2.7m 9ft Wall OEM PDU				
41G	6494	Both	Yes	No
Pwr Crd 2.7m 9ft Wall 250V,10A				
41G	6496	Both	Yes	No
Power Cable Drawer to IBM PD				
41G	6577	Both	Yes	No
Optional Rack Security Kit				
41G	6580	MES	Yes	No
Pwr Crd 2.7m 9ft Wall 125V,15A				
41G	6651	Both	Yes	No
4.3m 3PH/16A Power Cord				
41G	6653	Both	Yes	No
4.3m 1PH/24A Pwr Cord				
41G	6654	Both	Yes	No
4.3m 14Ft 1PH/24A WR Pwr				
41G	6655	Both	Yes	No
4.3m 14Ft 1PH/32A Power Cord				
41G	6656	Both	Yes	No
4.3m 14Ft 1PH/32A Power Cord				
41G	6657	Both	Yes	No
4.3m 14Ft 1PH/24A Pwr Cd Kor				
41G	6658	Both	Yes	No
Pwr.Cord(9ft),To Wall/OEM PDU				
41G	6659	Both	Yes	No
Pwr Crd 14ft 4.3m WallOEM PDU				
41G	6660	Both	Yes	No
Pwr Crd 2.8m 9.2ft PDU				
41G	6665	Both	Yes	No
4.3m 14Ft 3PH/32A Pwr Cd Aus				
41G	6667	Both	Yes	No
Pwr Crd 4.3M, Drwr - OEM PDU				
41G	6669	Both	Yes	No
Pwr Crd 2.7m, Drwr - IBM PDU				
41G	6671	Both	Yes	No
Pwr Crd 2M, Drwr - IBM PDU				
41G	6672	Both	Yes	No
Pwr Crd 2.7m 9ft Wall OEM PDU				
41G	6680	Both	Yes	No
IIntelligent PDU+ 1 EIA Unit				
41G	7109	Support	Yes	No
Environmental Monitoring Probe				
41G	7118	Both	Yes	No
Power Distribution Unit				
41G	7188	Both	Yes	No
PowDistribUnit(US)Fixed PowCrd				
41G	7196	Support	Yes	No
Eth Cbl 15M HW Management				
41G	7802	Both	Yes	No
Linux Software Preinstall				
41G	8143	Initial	N/A	No
Linux Software Preinstall BP				
41G	8144	Initial	N/A	No
USB Mouse				
41G	8845	Support	Yes	No
Order Routing Indicator Syste				
41G	9169	Initial	N/A	No
Language Group Spcf-US Eng				
41G	9300	Initial	N/A	No
Specify mode-1 & CEC SAS port				
41G	9387	MES	Yes	No
New AIX License Core Counter				

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                        41G     9440                    Initial  N/A No
New IBM i Lic Core Counter
                        41G     9441                    Initial  N/A No
New Red Hat Lic Core Counter
                        41G     9442                    Initial  N/A No
New SUSE Lic Core Counter
                        41G     9443                    Initial  N/A No
Other AIX Lic Core Counter
                        41G     9444                    Initial  N/A No
Other Linux Lic Core Counter
                        41G     9445                    Initial  N/A No
3rd Party Linux Lic Core Cnt
                        41G     9446                    Initial  N/A No
VIOS Core Counter
                        41G     9447                    Initial  N/A No
Other License Core Counter
                        41G     9449                    Initial  N/A No
Ubuntu Linux License Core Cntr
                        41G     9450                    Initial  N/A No
Month Indicator
                        41G     9461                    Initial  N/A No
Day Indicator
                        41G     9462                    Initial  N/A No
Hour Indicator
                        41G     9463                    Initial  N/A No
Minute Indicator
                        41G     9464                    Initial  N/A No
Qty Indicator
                        41G     9465                    Initial  N/A No
Countable Member Indicator
                        41G     9466                    Initial  N/A No
Language Group Spcf-Dutch
                        41G     9700                    Initial  N/A No
Language Group Spcf-French
                        41G     9703                    Initial  N/A No
Language Group Spcf-German
                        41G     9704                    Initial  N/A No
Language Group Spcf-Polish
                        41G     9705                    Initial  N/A No
Lang Group Specify - Norwegian
                        41G     9706                    Initial  N/A No
Lang.Group Spcf-Portuguese
                        41G     9707                    Initial  N/A No
Language Group Spcf-Spanish
                        41G     9708                    Initial  N/A No
Language Group Spcf-Italian
                        41G     9711                    Initial  N/A No
Langua Gr Speci Canadian Frenc
                        41G     9712                    Initial  N/A No
Language Group Spcf-Japanese
                        41G     9714                    Initial  N/A No
Language Group Specify Tr Chin
                        41G     9715                    Initial  N/A No
Language Group Spcf-Korean
                        41G     9716                    Initial  N/A No
Language Group Spcf-Turkish
                        41G     9718                    Initial  N/A No
Language Group Spcf-Hungarian
                        41G     9719                    Initial  N/A No
Language Group Spcf-Slovakian
                        41G     9720                    Initial  N/A No
Language Group Spcf-Russian
                        41G     9721                    Initial  N/A No
Lang Group Spcf Simpl Chinese
                        41G     9722                    Initial  N/A No
Language Group Spcf-Czech
                        41G     9724                    Initial  N/A No
Language Group Spcf-Romanian
                        41G     9725                    Initial  N/A No
Lang Group Specify - Croatian
                        41G     9726                    Initial  N/A No
Language Group Spcf-Slovenian
                        41G     9727                    Initial  N/A No
Lang Group Specify - Braz Port
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                      41G     9728                    Initial  N/A No
Lang Group Specify - Thai
                      41G     9729                    Initial  N/A No
QSFP+ 40GbE Transceiver
                      41G     EB27                    Both     Yes No
1m Passive QSFP+ to QSFP+ Cbl
                      41G     EB2B                    Both     Yes No
3m Passive QSFP+ to QSFP+ Cbl
                      41G     EB2H                    Both     Yes No
10m QSFP+ MTP Optical Cable
                      41G     EB2J                    Both     Yes No
30m QSFP+ MTP Optical Cable
                      41G     EB2K                    Both     Yes No
AC Power Supply - 900W
                      41G     EB2L                    Both     Yes No
Power Supply 1400W 200-240 VAC
                      41G     EB2M                    Both     Yes No
Lift tool GenieLift GL-8
                      41G     EB3Z                    Both     Yes No
10GbE Optical Transc SFP+ SR
                      41G     EB46                    Both     Yes No
25GbE Opt Transceiver SFP28
                      41G     EB47                    Both     Yes No
0.5 SFP/25GbE CU Cable
                      41G     EB4J                    Both     Yes No
1.0 SFP/25GbE CU Cable
                      41G     EB4K                    Both     Yes No
1.5 SFP/25GbE CU Cable
                      41G     EB4L                    Both     Yes No
2.0 SFP/25GbE CU Cable
                      41G     EB4M                    Both     Yes No
2.5 QSFP28/100GbE CU Cable
                      41G     EB4P                    Both     Yes No
Service wedge shelf for EB3Z
                      41G     EB4Z                    Both     No  No
0.5m EDR IB Copper Cable
                      41G     EB50                    Support  Yes No
1.0m EDR IB Copper Cable
                      41G     EB51                    Both     Yes No
2.0M EDR IB Copper Cable
                      41G     EB52                    Both     Yes No
1.5M EDR IB Copper Cable
                      41G     EB54                    Both     Yes No
100GbE Optic Transc QSFP28
                      41G     EB59                    Both     Yes No
3M EDR IB Optical Cable
                      41G     EB5A                    Both     Yes No
5M EDR IB Optical Cable
                      41G     EB5B                    Both     Yes No
10M EDR IB Optical Cable
                      41G     EB5C                    Both     Yes No
15M EDR IB Optical Cable
                      41G     EB5D                    Both     Yes No
20M EDR IB Optical Cable
                      41G     EB5E                    Both     Yes No
30M EDR IB Optical Cable
                      41G     EB5F                    Both     Yes No
50M EDR IB Optical Cable
                      41G     EB5G                    Both     Yes No
100M EDR IB Optical Cable
                      41G     EB5H                    Both     Yes No
0.5M 100GbE Cu Cable QSFP28
                      41G     EB5J                    Both     Yes No
1.0M 100GbE Cu Cable QSFP28
                      41G     EB5K                    Both     Yes No
1.5M 100GbE Cu Cable QSFP28
                      41G     EB5L                    Both     Yes No
2.0M 100GbE Cu Cable QSFP28
                      41G     EB5M                    Both     Yes No
25M EDR IB Optical Cable
                      41G     EB5N                    Both     Yes No
3M 100GbE Optic Cable QSFP28
                      41G     EB5R                    Both     Yes No
5M 100GbE Optic Cable QSFP28
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41G	EB5S	Both	Yes	No
10M 100GbE Optic Cable QSFP28				
41G	EB5T	Both	Yes	No
15M 100GbE Optic Cable QSFP28				
41G	EB5U	Both	Yes	No
20M 100GbE Optic Cable QSFP28				
41G	EB5V	Both	Yes	No
30M 100GbE Optic Cable QSFP28				
41G	EB5W	Both	Yes	No
50M 100GbE Optic Cable QSFP28				
41G	EB5X	Both	Yes	No
100M 100GbE Optic Cable QSFP28				
41G	EB5Y	Both	Yes	No
IBM i 7.2 Indicator				
41G	EB72	Support	Yes	No
IBM i 7.3 Indicator				
41G	EB73	Both	Yes	No
IBM i 7.4 Indicator				
41G	EB74	Both	Yes	No
Slim Rear Acoustic Door				
41G	EC07	MES	Yes	No
Slim Front Acoustic Door				
41G	EC08	MES	Yes	No
PCIe3 2-Port 10Gb NIC&ROCE				
41G	EC2S	Both	Yes	No
PCIe3 2-Port 25/10Gb NIC&Ro				
41G	EC2U	Both	Yes	No
PCIe3 2-port 10GbE NIC&RoCE Cu				
41G	EC38	Support	Yes	No
PCIe3 2-Port 40GbE NIC RoCE				
41G	EC3B	Support	Yes	No
PCIe3 2port 100Gb EDR IB Ad				
41G	EC3F	Support	Yes	No
PCIe3 2-port 100GbE Adapterx16				
41G	EC3M	Support	Yes	No
PCIe3 1port 100Gb EDR IB Ad				
41G	EC3U	Support	Yes	No
PCIe2 4-Port USB 3.0 Adapter				
41G	EC46	Both	Yes	No
PCIe3 x8 1.6 TB NVMe AIX/Lin				
41G	EC5B	Both	Yes	No
PCIe3 x8 3.2 TB NVMe AIX/Lin				
41G	EC5D	Both	Yes	No
PCIe3 x8 6.4 TB NVMe AIX/Lin				
41G	EC5F	Both	Yes	No
Enterprise 6.4TB NVMe U.2				
41G	EC5V	Both	Yes	No
Enterprise 6.4TB NVMe U.2				
41G	EC5W	Both	Yes	No
Mainstream 800GB SSD NVMe				
41G	EC5X	Both	Yes	No
PCIe4 1-port 100Gb EDR IB				
41G	EC63	Both	Yes	No
PCIe4 2-port 100Gb EDR IB				
41G	EC65	Support	Yes	No
PCIe4 2-port 100Gb ROCE EN				
41G	EC66	Both	Yes	No
PCIe3 x8 1.6TB NVMe IBMi				
41G	EC6V	Both	Yes	No
PCIe3 x8 3.2TB NVMe IBM i				
41G	EC6X	Both	Yes	No
PCIe3 x8 6.4TB NVMe IBM i				
41G	EC6Z	Both	Yes	No
SAS X Cable 3m - HD Narrow				
41G	ECBJ	Both	Yes	No
SAS X Cable 6m - HD Narrow				
41G	ECBK	Both	Yes	No
SAS X Cable 10m - HD Narrow				
41G	ECBL	Both	Yes	No
SAS X Cable 15m -HD Narrow 3Gb				
41G	ECBM	Both	Yes	No
5m Passive QSFP+ to QSFP+ Cbl				
41G	ECBN	Support	Yes	No
SAS YO Cable 1.5m - HD Narrow				

41G	ECBT	Both	Yes	No
SAS YO Cable 3m - HD Narrow				
41G	ECBU	Both	Yes	No
SAS YO Cable 6m - HD Narrow				
41G	ECBV	Both	Yes	No
SAS YO Cable 10m - HD Narrow				
41G	ECBW	Both	Yes	No
SAS YO Cable 15m-HD Narrow 3Gb				
41G	ECBX	Both	Yes	No
SAS AE1 Cable 4m - HD Narrow				
41G	ECBY	Both	Yes	No
SAS YE1 Cable 3m - HD Narrow				
41G	ECBZ	Both	Yes	No
3M Optical Cable Pair				
41G	ECC7	Support	Yes	No
10M Optical Cable Pair				
41G	ECC8	Support	Yes	No
Port Converter Cable for UPS				
41G	ECCF	Both	Yes	No
3M Copper CXP Cable Pair				
41G	ECCS	Both	Yes	No
3M Active Optical Cable Pair				
41G	ECCX	Both	Yes	No
10M Active Optical Cbl Pair				
41G	ECCY	Both	Yes	No
3.0M SAS X12 Cable				
41G	ECDJ	Both	Yes	No
4.5M SAS X12 Cable				
41G	ECDK	Both	Yes	No
10M SAS X12 Cable				
41G	ECDL	Both	Yes	No
1.5M SAS YO12 Cable				
41G	ECDT	Both	Yes	No
3.0M SAS YO12 Cable				
41G	ECDU	Both	Yes	No
4.5M SAS YO12 Cable				
41G	ECDV	Both	Yes	No
10M SAS YO12 Cable				
41G	ECDW	Both	Yes	No
0.6M SAS AA12 Cable				
41G	ECE0	Both	Yes	No
3.0M SAS AA12 Cable				
41G	ECE3	Both	Yes	No
4.5M SAS AA12 Cable				
41G	ECE4	Both	Yes	No
4.3m (14-Ft) PDU to Wall Pwr				
41G	ECJ5	Both	Yes	No
4.3m (14-Ft) PDU to Wall Pwr				
41G	ECJ7	Both	Yes	No
High Function 9xC19 PDU plus				
41G	ECJJ	Both	Yes	No
High Function9xC19 PDU plus				
41G	ECJL	Both	Yes	No
High Function12xC13 PDU plus				
41G	ECJN	Both	Yes	No
High Function12xC13 PDU plus				
41G	ECJQ	Both	Yes	No
Cloud Private Solution				
41G	ECP0	Initial	N/A	No
2.0 M Slim Rack				
41G	ECR0	MES	Yes	No
Rack Front Door				
41G	ECRF	MES	Yes	No
Rack Rear Door Black				
41G	ECRG	MES	Yes	No
Rack Side Cover				
41G	ECRJ	MES	Yes	No
Rack Rear Extension 5-In				
41G	ECRK	MES	Yes	No
Rack Front Door (Black/Flat)				
41G	ECRM	MES	Yes	No
Custom Serv. Specify, France				
41G	ECSF	Both	Yes	No
Custom Serv. Specify, Mexico				

	41G	ECSM		Both	Yes No
Custom Serv. Spec Poughkeepsie					
	41G	ECSP		Both	Yes No
Integrated Solution Packing					
	41G	ECSS		Initial	N/A No
Optical Wrap Plug					
	41G	ECW0		Both	Yes No
1x HW Subscription Increment					
	41G	EHB1		MES	Yes No
10x HW Subscription Incremen					
	41G	EHB2		MES	Yes No
100x HW Subscription Increme					
	41G	EHB3		MES	Yes No
Boot Drive in EXP12SX Specify					
	41G	EHR1		Both	Yes No
Boot / Load in EXP24SX Specify					
	41G	EHR2		Both	Yes No
SSD Placement Ind- #ESLS/#ELLS					
	41G	EHS2		Both	Yes No
PCIe3 Optical Cable Adapter					
	41G	EJ08		Support	Yes No
PCIe3 RAID SAS Adapter 4-port					
	41G	EJ0J		Both	Yes No
PCIe3 12GB Cache RAID SAS Adap					
	41G	EJ0L		Support	Yes No
SAS Ports: Dual IOA Backplane					
	41G	EJ0W		Both	Yes No
PCIe3 SAS Tape/DVD Adapter					
	41G	EJ10		Both	Yes No
PCIe3 12GB Cache RAID+ SAS Ada					
	41G	EJ14		Both	Yes No
Backplane 12 SFF & RDX Bay					
	41G	EJ1C		Both	No No
Backplane 18 SFF & Dual IOA					
	41G	EJ1D		Both	No No
Split#EJ1C Add 2nd Controlle					
	41G	EJ1E		Both	No No
Backplane 12 SFF & RDX Bay					
	41G	EJ1M		Both	No No
PCIe1 SAS Tape/DVD 2P 3Gb x8					
	41G	EJ1P		Both	Yes No
NVMe U.2 Passthru adapter					
	41G	EJ1Q		MES	Yes No
Backplane 6 SFF-3/2 NVMe U.2					
	41G	EJ1S		Both	No No
Backplane w/2 Gen4 NVMe U.2					
	41G	EJ1T		Both	No No
Backplane w/4 Gen4 NVMe U.2					
	41G	EJ1U		Both	No No
PCIe X16 to CXP Adapter					
	41G	EJ20		Both	Yes No
PCIe3 Crypto Coproc noBSC 4767					
	41G	EJ32		Both	Yes No
PCIe3 Crypto Coproc BSC-3 4767					
	41G	EJ33		Both	Yes No
Specify Mode1 & (1)EJ0J-EXP24S					
	41G	EJR1		MES	Yes No
Specify Mode1 &1(2)EJ0J-EXP24S					
	41G	EJR2		MES	Yes No
Specify Mode2 & (2)EJ0J-EXP24S					
	41G	EJR3		MES	Yes No
Specify Mode2 & (4)EJ0J-EXP24S					
	41G	EJR4		MES	Yes No
Specify Mode4 & (4)EJ0J-EXP24S					
	41G	EJR5		MES	Yes No
Specify Mode2 & (1)EJ0J-EXP24S					
	41G	EJR6		MES	Yes No
Specify Mode2 & (2)EJ0J-EXP24S					
	41G	EJR7		MES	Yes No
Specify Mode2 & (1)EJ0J-EXP24S					
	41G	EJRA		MES	Yes No
Specify Mode2 & (2)EJ0J-EXP24S					
	41G	EJRB		MES	Yes No
Specify-Mode4 & (1)EJ0J-EXP24S					

41G	EJRC	MES	Yes	No
Specify-Mode4 & (2)EJ0J-EXP24S				
41G	EJRD	MES	Yes	No
Specify-Mode4 & (3)EJ0J-EXP24S				
41G	EJRE	MES	Yes	No
Specify Mode1 & (2)EJ14-EXP24S				
41G	EJRF	MES	Yes	No
Specify Mode2 & (2)EJ14-EXP24S				
41G	EJRG	MES	Yes	No
Specify Mode2 & (2)EJ14-EXP24S				
41G	EJRH	MES	Yes	No
Specify Mode2 & (4)EJ14+EXP24S				
41G	EJRJ	MES	Yes	No
Non-paired Indicator EJ0L PCIe				
41G	EJRL	Both	Yes	No
Specify Mode1 & (2)EJ0L-EXP24S				
41G	EJRP	MES	Yes	No
Specify Mode2 & (4)EJ0L EXP24S				
41G	EJRR	MES	Yes	No
Specify Mode2 & (2)EJ0L-EXP24S				
41G	EJRS	MES	Yes	No
Specify Mode2 & (2)EJ0L-EXP24S				
41G	EJRT	MES	Yes	No
Non-paired Indicator EJ0L PCIe				
41G	EJRU	MES	Yes	No
Rack-mount Rail Kit				
41G	EJTZ	Both	Yes	No
Front IBM Bezel 12-Bay BackP				
41G	EJU2	Both	Yes	No
Front OEM Bezel 12-Bay BackP				
41G	EJU4	Both	Yes	No
Front Door and Covers 12-Bay				
41G	EJU8	Both	Yes	No
Front Door and Covers 18-Bay				
41G	EJU9	Both	Yes	No
Front OEM Door/Covers 12-Bay				
41G	EJUA	Both	Yes	No
Front OEM Door/Covers 18-Bay				
41G	EJUB	Both	Yes	No
Front IBM Bezel 18-Bay BackP				
41G	EJUF	Both	Yes	No
Front OEM Bezel 18-Bay BackP				
41G	EJUH	Both	Yes	No
Front IBM Bezel 6 SAS/4 NVMe				
41G	EJUJ	Both	Yes	No
Front OEM Bezel 6SAS/4NVMe				
41G	EJUL	Both	Yes	No
Front IBM Cover 6SAS/4NVMe T				
41G	EJUQ	Both	Yes	No
Front OEM Cover 6SAS/4NVMe T				
41G	EJUR	Both	Yes	No
Specify Mode-1 & CEC Ports 2YO				
41G	EJV0	Both	Yes	No
Specify Mode-1 for EXP12SX 1&1				
41G	EJV1	Both	Yes	No
Specify Mode-1 for EXP12SX 2&2				
41G	EJV2	Both	Yes	No
Specify Mode-2 for EXP12SX 2&2				
41G	EJV3	Both	Yes	No
Specify Mode-2 for EXP12SX 4&2				
41G	EJV4	Both	Yes	No
Specify Mode-4 for EXP12SX 4&2				
41G	EJV5	Both	Yes	No
Specify Mode-2 for EXP12SX 1&2				
41G	EJV6	Both	Yes	No
Specify Mode-2 for EXP12SX 2&2				
41G	EJV7	Both	Yes	No
Specify Mode-2 for EXP12SX 1&1				
41G	EJVA	Both	Yes	No
Specify Mode-2 for EXP12SX 2&1				
41G	EJVB	Both	Yes	No
Specify Mode-4 for EXP12SX 1&1				
41G	EJVC	Both	Yes	No
Specify Mode-4 for EXP12SX 2&1				

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                        41G     EJVD                    Both     Yes No
Specify Mode-4 for EXP12SX 3&2
                        41G     EJVE                    Both     Yes No
Specify Mode-1 for EXP12SX 2&2
                        41G     EJVF                    Both     Yes No
Specify Mode-1 for EXP12SX 2&2
                        41G     EJVP                    MES      Yes No
Specify Mode-1 & CEC Ports 2YO
                        41G     EJW0                    Both     Yes No
Specify Mode-1 for EXP24SX 1&1
                        41G     EJW1                    Both     Yes No
Specify Mode-1 for EXP24SX 2&2
                        41G     EJW2                    Both     Yes No
Specify Mode-2 for EXP24SX 2&2
                        41G     EJW3                    Both     Yes No
Specify Mode-2 for EXP24SX 4&2
                        41G     EJW4                    Both     Yes No
Specify Mode-4 for EXP24SX 4&2
                        41G     EJW5                    Both     Yes No
Specify Mode-2 for EXP24SX 1&2
                        41G     EJW6                    Both     Yes No
Specify Mode-2 for EXP24SX 2&2
                        41G     EJW7                    Both     Yes No
Specify Mode-2 for EXP24SX 1&1
                        41G     EJWA                    Both     Yes No
Specify Mode-2 for EXP24SX 2&1
                        41G     EJWB                    Both     Yes No
Specify Mode-4 for EXP24SX 1&1
                        41G     EJWC                    Both     Yes No
Specify Mode-4 for EXP24SX 2&1
                        41G     EJWD                    Both     Yes No
Specify Mode-4 for EXP24SX 3&2
                        41G     EJWE                    Both     Yes No
Specify Mode-1 for EXP24SX 2&2
                        41G     EJWF                    Both     Yes No
Specify Mode-2 for EXP24SX 2&2
                        41G     EJWG                    Both     Yes No
Specify Mode-2 for EXP24SX 2&1
                        41G     EJWH                    Both     Yes No
Specify Mode-2 for EXP24SX 4&2
                        41G     EJWJ                    Both     Yes No
Specify Mode-1 for EXP24SX 2&2
                        41G     EJWP                    MES      Yes No
Specify Mode-2 for EXP24SX 4&2
                        41G     EJWR                    MES      Yes No
Specify Mode-2 for EXP24SX 2&2
                        41G     EJWS                    MES      Yes No
Specify Mode-2 for EXP24SX 2&1
                        41G     EJWT                    MES      Yes No
PDU Access Cord 0.38m
                        41G     ELC0                    MES      Yes No
Power Cord - Drawer to PDU
                        41G     ELC5                    Both     Yes No
ES1F Load Source Specify
                        41G     ELS3                    Both     Yes No
#ESD4 Load Source Specify
                        41G     ELS4                    MES      Yes No
#ESDA Load Source Specify
                        41G     ELSA                    MES      Yes No
ESDN Load Source Specify
                        41G     ELSN                    MES      Yes No
ES1H Load Source Specify
                        41G     ELSQ                    Both     Yes No
ES0R Load Source Specify
                        41G     ELSR                    MES      Yes No
ES0T Load Source Specify
                        41G     ELST                    MES      Yes No
#ESFU Load Source Specify
                        41G     ELT0                    Both     Yes No
#ES81 Load Source Specify
                        41G     ELT1                    MES      Yes No
#ESF2 Load Source Specify
                        41G     ELT2                    Both     Yes No
#ESF4 Load Source Specify
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                        41G     ELT4                    Both     Yes No
#ES86 Load Source Specify
                        41G     ELT6                    Support  Yes No
#ESF8 Load Source Specify
                        41G     ELT8                    Both     Yes No
ES79 Load Source Specify
                        41G     ELT9                    Support  Yes No
#ESFA Load Source Specify
                        41G     ELTA                    Support  Yes No
#ES8D Load Source Specify
                        41G     ELTD                    Support  Yes No
#ESFE Load Source Specify
                        41G     ELTE                    Support  Yes No
ES7F Load Source Specify
                        41G     ELTF                    Support  Yes No
#ES8G Load Source Specify
                        41G     ELTG                    Support  Yes No
#ES8K Load Source Specify
                        41G     ELTK                    MES      Yes No
#ES7L Load Source Specify
                        41G     ELTL                    Support  Yes No
#ESFN Load Source Specify 571G
                        41G     ELTN                    Support  Yes No
#ES8P Load Source Specify
                        41G     ELTP                    Support  Yes No
#ES7Q Load Source Specify
                        41G     ELTQ                    Support  Yes No
#ES8R Load Source Specify
                        41G     ELTR                    Support  Yes No
#ESFS Load Source Specify
                        41G     ELTS                    Both     Yes No
#ESEU Load Source Specify
                        41G     ELTU                    Both     Yes No
#ES8W Load Source Specify
                        41G     ELTW                    Support  Yes No
#ESEY Load Source Specify 283G
                        41G     ELTY                    Support  Yes No
#ESNJ Load Source Specify
                        41G     ELUJ                    Both     Yes No
#ESNL Load Source Specify
                        41G     ELUL                    Both     Yes No
#ESNN Load Source Specify
                        41G     ELUN                    Both     Yes No
#ESNQ Load Source Specify
                        41G     ELUQ                    Both     Yes No
EC5W Load Source Specify
                        41G     ELUW                    Both     Yes No
ES91 Load Source Specify
                        41G     ELZ1                    Both     Yes No
#ESE2 Load Source Specify
                        41G     ELZ2                    Support  Yes No
#ES93 Load Source Specify
                        41G     ELZ3                    Support  Yes No
#ES84 Load Source Specify
                        41G     ELZ4                    Support  Yes No
ES95 Load Source Specify
                        41G     ELZ5                    Both     Yes No
ESG6 Load Source Specify
                        41G     ELZ6                    Support  Yes No
#ES97 Load Source Specify
                        41G     ELZ7                    Support  Yes No
#ESE8 Load Source Specify
                        41G     ELZ8                    Support  Yes No
ESM9 Load Source Specify
                        41G     ELZ9                    Support  Yes No
#ESGA Load Source Specify
                        41G     ELZA                    Support  Yes No
ESNB Load Source Specify
                        41G     ELZB                    Both     Yes No
#ESGC Load Source Specify
                        41G     ELZC                    Support  Yes No
ESND Load Source Specify
                        41G     ELZD                    Both     Yes No
#ESGE Load Source Specify
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                        41G     ELZE                    Support  Yes No
ESNF Load Source Specify
                        41G     ELZF                    Both     Yes No
ESGG Load Source Specify
                        41G     ELZG                    Support  Yes No
ESNH Load Source Specify
                        41G     ELZH                    Both     Yes No
#ESGJ Load Source Specify
                        41G     ELZJ                    Support  Yes No
ESHK Load Source Specify
                        41G     ELZK                    Support  Yes No
#ESGL Load Source Specify
                        41G     ELZL                    Support  Yes No
ESHM Load Source Specify
                        41G     ELZM                    Support  Yes No
#ESGN Load Source Specify
                        41G     ELZN                    Support  Yes No
#ESGQ Load Source Specify
                        41G     ELZQ                    Support  Yes No
ESMR Load Source Specify
                        41G     ELZR                    Support  Yes No
#ESGS Load Source Specify
                        41G     ELZS                    Support  Yes No
ESHT Load Source Specify
                        41G     ELZT                    Support  Yes No
ESHV Load Source Specify
                        41G     ELZV                    Support  Yes No
#ES8Z Load Source Specify
                        41G     ELZZ                    Support  Yes No
8 GB DDR4 2666 RDIMM
                        41G     EM60                    Support  Yes No
16 GB DDR4 Memory
                        41G     EM62                    Both     Yes No
32 GB DDR4 Memory
                        41G     EM63                    Both     Yes No
64 GB DDR4 Memory
                        41G     EM64                    Both     Yes No
PCIe Gen3 I/O Expansion Drawer
                        41G     EMX0                    Both     Yes No
AC Power Supply Conduit
                        41G     EMXA                    Both     Yes No
PCIe3 6-Slot Fanout Module
                        41G     EMXF                    Support  Yes No
PCIe3 6-Slot Fanout Module
                        41G     EMXG                    Support  Yes No
PCIe3 6-Slot Fanout Mod
                        41G     EMXH                    Both     Yes No
1m 10GbE Cable SFP+ Act Twinax
                        41G     EN01                    Both     Yes No
3m 10GbE Cable SFP+ Act Twinax
                        41G     EN02                    Both     Yes No
5m 10GbE Cable SFP+ Act Twinax
                        41G     EN03                    Both     Yes No
PCIe3 16Gb 2-port Fibre Channe
                        41G     EN0A                    Both     Yes No
PCIe2 8Gb 2-Port Fibre Channel
                        41G     EN0G                    Support  Yes No
PICe3 4-port 10Gb FCoE & 1GbE
                        41G     EN0H                    Both     Yes No
PCIe3 4-port 10GB FCoE & 1GbE
                        41G     EN0K                    Both     Yes No
PCIe2 4-pt(10+1 GbE)SR+RJ45
                        41G     EN0S                    Both     Yes No
PCIe2 4-pt(10+1GbE)CRSR+RJ45
                        41G     EN0U                    Both     Yes No
PCIe2 2-pt 10/1GbE BaseT RJ45
                        41G     EN0W                    Both     Yes No
PCIe2 8Gb 4-port Fibre Channel
                        41G     EN12                    Support  Yes No
 Not withdrawn in Japan until August 7, 2018
PCIe 1-port Bisync Adapter
                        41G     EN13                    Support  Yes No
PCIe3 4-port 10GbE SR Adapter
                        41G     EN15                    Both     Yes No
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PCIe3 32Gb 2-port FC Adapter
41G EN1A Both Yes No
PCIe3 16Gb 4-port FC Adapter
41G EN1C Both Yes No
PCIe3 2-Port 16Gb FC Adapter
41G EN1G Both Yes No

188 GB IBMi NVMe Load Source
41G ENS1 Both Yes No
393 GB IBMi NVMe Load Source
41G ENS2 Both Yes No
200GB IBM i NVMe Load Source
41G ENSA Both Yes No
400GB IBM i NVMe Load Source
41G ENSB Both Yes No
4-core 2.3/3.8 GHz POWER9
41G EP50 Both No No
6-core 2.3/3.8 GHz POWER9
41G EP51 Both No No
8-core 2.8/3.8 GHz POWER9
41G EP52 Both No No
One Proc Activation for EP50
41G EP60 Both Yes No
One Proc Activation for EP51
41G EP61 Both Yes No
One Proc Activation for EP52
41G EP62 Both Yes No
Deactivation of LPM
41G EPA0 Both Yes No
Horizontal PDU Mounting Hardwr
41G EPTH Both Yes No
High Function 9xC19 PDU
41G EPTJ Support Yes No
High Function 9xC19 PDU 3Phase
41G EPTL Support Yes No
High Function 12xC13 PDU
41G EPTN Support Yes No
High Function 12xC13 PDU 3-Phs
41G EPTQ Support Yes No
Feature EPZR is not available in People's Republic of
China, Hong Kong S.A.R. of the PRC, Marco S.A.R. of
the PRC and Taiwan.
One Proc Activation for EP50
41G EPZR Initial Yes No
Feature #EPZS is not available in People's Republic of
China, Hong Kong S.A.R. of the PRC, Marco S.A.R. of
the PRC, and Taiwan.
One Proc Activation for EP51
41G EPZS Initial Yes No
Qty 150 of ES0Q 387GB 4k SSD
41G EQ0Q Support Yes No
Qty 150 of ES0R 387GB 4k SSD
41G EQ0R Support Yes No
QTY 150 of ES0S 775GB 4k SSD
41G EQ0S Support Yes No
Qty 150 of ES0T 775GB 4k SSD
41G EQ0T Support Yes No
Qty 150 #ES62 3.86TB LFF Dsk
41G EQ62 Both Yes No
Qty 150 #ES64 7.72TB LFF Dsk
41G EQ64 Both Yes No
Qty 150 #ES78 SSD 387GB 5xx
41G EQ78 Support Yes No
Qty 150 ES79 SSD 387GB 5xx
41G EQ79 Support Yes No
Qty 150 #ES7E SSD 775GB 5xx
41G EQ7E Support Yes No
Qty 150 ES7F SSD 775GB 5xx
41G EQ7F Support Yes No
Quantity 150 of ES80 1.9TB SSD
41G EQ80 Support Yes No
Quantity 150 of ES81 1.9TB SSD
41G EQ81 Support Yes No

Qty 150 #ES85 SSD 387GB 4k					
	41G	EQ85	Support	Yes	No
Qty 150 #ES86 SSD 387GB 4k					
	41G	EQ86	Support	Yes	No
Qty 150 #ES8C SSD 775GB 4k					
	41G	EQ8C	Support	Yes	No
Qty 150 #ES8D SSD 775GB 4k					
	41G	EQ8D	Support	Yes	No
Qty 150 #ES8F SSD 1.55TB 4k					
	41G	EQ8F	Support	Yes	No
Qty 150 #ES8G SSD 1.55TB 4k					
	41G	EQ8G	Support	Yes	No
Quantity 150 of ES8Y 931GB					
	41G	EQ8Y	Support	Yes	No
Quantity 150 of ES8Z 931GB					
	41G	EQ8Z	Support	Yes	No
Quantity 150 of ES96 1.86TB					
	41G	EQ96	Support	Yes	No
Quantity 150 of ES97 1.86TB					
	41G	EQ97	Support	Yes	No
Quantity 150 ESD2 1.1TB Disk					
	41G	EQD2	Support	Yes	No
Quantity 150 ESD3 1.2TB Disk					
	41G	EQD3	Support	Yes	No
Qty150 of ESDN 571GB 15k HDD					
	41G	EQDN	Support	Yes	No
Qty150 of ESDP 600GB 15k HDD					
	41G	EQDP	Support	Yes	No
Quantity 150 of #ESE7 3.72TB					
	41G	EQE7	Support	Yes	No
Quantity 150 of ESE8 3.72TB					
	41G	EQE8	Support	Yes	No
Quantity 150 of #ESEU 571GB					
	41G	EQEU	Both	Yes	No
Quantity 150 of #ESEV 600GB					
	41G	EQEV	Both	Yes	No
Quantity 150 of #ESEY 283 GB S					
	41G	EQEY	Support	Yes	No
Quantity 150 of #ESEZ 300GB					
	41G	EQEZ	Support	Yes	No
Quantity 150 of #ESF2 1.2TB					
	41G	EQF2	Both	Yes	No
Quantity 150 of #ESF3 1.2TB					
	41G	EQF3	Both	Yes	No
Quantity 150 of #ESFN 571GB					
	41G	EQFN	Support	Yes	No
Quantity 150 of #ESFP 600GB					
	41G	EQFP	Support	Yes	No
Quantity 150 of #ESFS 1.7TB					
	41G	EQFS	Both	Yes	No
Quantity 150 of #ESFT 1.8TB					
	41G	EQFT	Both	Yes	No
Quantity 150 of #ESG5					
	41G	EQG5	Support	Yes	No
Quantity 150 of ESG6					
	41G	EQG6	Support	Yes	No
Quantity 150 of #ESGB					
	41G	EQGB	Support	Yes	No
Quantity 150 of #ESGC					
	41G	EQGC	Support	Yes	No
Quantity 150 of #ESGF					
	41G	EQGF	Support	Yes	No
Quantity 150 of ESGG					
	41G	EQGG	Support	Yes	No
Quantity 150 of #ESGK					
	41G	EQGK	Support	Yes	No
Quantity 150 of #ESGL					
	41G	EQGL	Support	Yes	No
Quantity 150 of #ESGP					
	41G	EQGP	Support	Yes	No
Quantity 150 of #ESGQ					
	41G	EQGQ	Support	Yes	No
Quantity 150 of ES94 387GB					
	41G	ER94	Both	Yes	No

Quantity 150 of ES95 387GB					
	41G	ER95	Both	Yes	No
RFID Tags for Compute Nodes					
	41G	ERF1	Initial	N/A	No
Rear rack extension					
	41G	ERG0	MES	Yes	No
Quantity 150 of ESGV 387GB					
	41G	ERGV	Both	Yes	No
Quantity 150 of ESGZ 775GB					
	41G	ERGZ	Both	Yes	No
Quantity 150 of ESHJ					
	41G	ERHJ	Support	Yes	No
Quantity 150 of ESHK					
	41G	ERHK	Support	Yes	No
Quantity 150 of ESHL					
	41G	ERHL	Support	Yes	No
Quantity 150 of ESHM					
	41G	ERHM	Support	Yes	No
Quantity 150 of ESHN					
	41G	ERHN	Support	Yes	No
Quantity 150 of ESJ0 931GB					
	41G	ERJ0	Both	Yes	No
Quantity 150 of ESJ1 931GB					
	41G	ERJ1	Both	Yes	No
Quantity 150 of ESJ2 1.86TB					
	41G	ERJ2	Both	Yes	No
Quantity 150 of ESJ3 1.86TB					
	41G	ERJ3	Both	Yes	No
Quantity 150 of ESJ4 3.72TB					
	41G	ERJ4	Both	Yes	No
Quantity 150 of ESJ5 3.72TB					
	41G	ERJ5	Both	Yes	No
Quantity 150 of ESJ6 7.45TB					
	41G	ERJ6	Both	Yes	No
Quantity 150 of ESJ7 7.45TB					
	41G	ERJ7	Both	Yes	No
Quantity 150 of ESM8					
	41G	ERM8	Support	Yes	No
Quantity 150 of ESM9					
	41G	ERM9	Support	Yes	No
Quantity 150 of ESNA 775GB					
	41G	ERNA	Both	Yes	No
Quantity 150 of ESNB 775GB					
	41G	ERNB	Both	Yes	No
Quantity 150 of ESNE 1.55TB					
	41G	ERNE	Both	Yes	No
Quantity 150 of ESNF 1.55TB					
	41G	ERNF	Both	Yes	No
387GB SFF-2 4k SSD AIX/Linux					
	41G	ES0Q	Support	Yes	No
387GB SFF-2 4k SSD for IBM i					
	41G	ES0R	Support	Yes	No
775GB SFF-2 4k SSD AIX/Linux					
	41G	ES0S	Support	Yes	No
775GB SFF-2 4k SSD for IBM i					
	41G	ES0T	Support	Yes	No
Enterprise 1.6TB NVMe U.2					
	41G	ES1E	Both	Yes	No
Enterprise 1.6TB NVMe U.2					
	41G	ES1F	Both	Yes	No
Enterprise 3.2TB NVMe U.2					
	41G	ES1G	Both	Yes	No
Enterprise 3.2TB NVMe U.2					
	41G	ES1H	Both	Yes	No
3.86TB 7200 RPM SAS LFF Disk					
	41G	ES62	Both	Yes	No
7.72TB 7200 RPM SAS LFF Disk					
	41G	ES64	Both	Yes	No
387GB SFF-2 SSD 5xx for AIX/L					
	41G	ES78	Support	Yes	No
387GB SFF-2 SSD 5xx for IBM i					
	41G	ES79	Support	Yes	No
775GB SFF-2 SSD 5xx for AIX/L					
	41G	ES7E	Support	Yes	No

775GB SFF-2 SSD 5xx for IBM i					
	41G	ES7F	Support	Yes	No
387GB SFF-3 SSD 5xx for AIX/L					
	41G	ES7K	Support	Yes	No
387GB SFF-3 SSD 5xx for IBM i					
	41G	ES7L	Support	Yes	No
775GB SFF-3 SSD 5xx for AIX/L					
	41G	ES7P	Support	Yes	No
775GB SFF-3 SSD 5xx for IBM i					
	41G	ES7Q	Support	Yes	No
1.9TB RI SAS 4k SFF-2 SSD AIX					
	41G	ES80	Support	Yes	No
1.9TB RI SAS 4k SFF-2 SSD IBM					
	41G	ES81	Support	Yes	No
931GB Mainstream SAS 4k SSD					
	41G	ES83	Support	Yes	No
931GB Mainstream SAS 4k SSD					
	41G	ES84	Support	Yes	No
387GB SFF-2 SSD 4k for AIX/Li					
	41G	ES85	Support	Yes	No
387GB SFF-2 SSD 4k for IBM i					
	41G	ES86	Support	Yes	No
775GB SFF-2 SSD 4k for AIX/Li					
	41G	ES8C	Support	Yes	No
775GB SFF-2 SSD 4k for IBM i					
	41G	ES8D	Support	Yes	No
1.55TB SFF-2 SSD 4k for AIX/L					
	41G	ES8F	Support	Yes	No
1.55TB SFF-2 SSD 4k for IBM i					
	41G	ES8G	Support	Yes	No
1.9TB RI SAS 4k SFF-3 SSD AIX					
	41G	ES8J	Support	Yes	No
1.9TB RI SAS 4k SFF-3 SSD IBM					
	41G	ES8K	Support	Yes	No
387GB SFF-3 SSD 4k for AIX/Li					
	41G	ES8N	Support	Yes	No
387GB SFF-3 SSD 4k for IBM i					
	41G	ES8P	Support	Yes	No
775GB SFF-3 SSD 4k for AIX/Li					
	41G	ES8Q	Support	Yes	No
775GB SFF-3 SSD 4k for IBM i					
	41G	ES8R	Support	Yes	No
1.55TB SFF-3 SSD 4k for AIX/L					
	41G	ES8V	Support	Yes	No
1.55TB SFF-3 SSD 4k for IBM i					
	41G	ES8W	Support	Yes	No
931GB Mainstream SAS 4k SSD					
	41G	ES8Y	Support	Yes	No
931GB Mainstream SAS 4k SSD					
	41G	ES8Z	Support	Yes	No
387GB Enterprise SAS 4k SFF3					
	41G	ES90	Both	Yes	No
387GB Enterprise SAS 4k SFF3					
	41G	ES91	Both	Yes	No
1.86TB Mainstream SAS 4k SSD					
	41G	ES92	Support	Yes	No
1.86TB Mainstream SAS 4k SSD					
	41G	ES93	Support	Yes	No
387GB Enterprise SAS 4k SFF2					
	41G	ES94	Both	Yes	No
387GB Enterprise SAS 4k SFF2					
	41G	ES95	Both	Yes	No
1.86TB Mainstream SAS 4k SSD					
	41G	ES96	Support	Yes	No
1.86TB Mainstream SAS 4k SSD					
	41G	ES97	Support	Yes	No
387GB Enterprise SAS 5xxSFF3					
	41G	ESB0	Both	Yes	No
387GB Enterprise SAS 5xxSFF2					
	41G	ESB2	Both	Yes	No
775GB Enterprise SAS 5xxSFF3					
	41G	ESB4	Both	Yes	No
775GB Enterprise SAS 5xxSFF2					
	41G	ESB6	Both	Yes	No

387GB Enterprise SAS 4k SFF3					
	41G	ESB8	Both	Yes	No
387GB Enterprise SAS 4k SFF3					
	41G	ESB9	Both	Yes	No
387GB Enterprise SAS 4k SFF2					
	41G	ESBA	Both	Yes	No
387GB Enterprise SAS 4k SFF2					
	41G	ESBB	Both	Yes	No
775GB Enterprise SAS 4k SFF3					
	41G	ESBE	Both	Yes	No
775GB Enterprise SAS 4k SFF3					
	41G	ESBF	Both	Yes	No
775GB Enterprise SAS 4k SFF2					
	41G	ESBG	Both	Yes	No
775GB Enterprise SAS 4k SFF2					
	41G	ESBH	Both	Yes	No
1.55TB Enterprise SAS 4kSFF3					
	41G	ESBJ	Both	Yes	No
1.55TB Enterprise SAS 4kSFF3					
	41G	ESBK	Both	Yes	No
1.55TB Enterprise SAS 4kSFF2					
	41G	ESBL	Both	Yes	No
1.55TB Enterprise SAS 4kSFF2					
	41G	ESBM	Both	Yes	No
S&H - No Charge					
	41G	ESC0	Both	Yes	No
S&H-b					
	41G	ESC6	Initial	N/A	No
1.1TB 10K RPM SAS SFF-2 Disk					
	41G	ESD2	Support	Yes	No
1.2TB 10K RPM SAS SFF-2 (AIX/					
	41G	ESD3	Support	Yes	No
571GB 10K RPM SAS SFF-3 Disk					
	41G	ESD4	Support	Yes	No
600GB 10K RPM SAS SFF3 Disk					
	41G	ESD5	Both	Yes	No
283GB 15K RPM SAS SFF-3 Disk					
	41G	ESDA	Support	Yes	No
300GB 15K RPM SAS SFF-3 Disk					
	41G	ESDB	Both	Yes	No
571GB 15k SAS SFF-2 Disk Drive					
	41G	ESDN	Support	Yes	No
600GB 15k SAS SFF-2 Disk Drive					
	41G	ESDP	Support	Yes	No
3.72TB Mainstream SAS 4k SSD					
	41G	ESE1	Support	Yes	No
3.72TB Mainstream SAS 4k SSD					
	41G	ESE2	Support	Yes	No
3.72TB Mainstream SAS 4k SSD					
	41G	ESE7	Support	Yes	No
3.72TB Mainstream SAS 4k SSD					
	41G	ESE8	Support	Yes	No
571GB 10K RPM SFF-2 Disk 4K					
	41G	ESEU	Both	Yes	No
600GB 10K RPM SFF-2 Disk 4K					
	41G	ESEV	Both	Yes	No
283GB 15K SAS SFF-2 4K BLK HDD					
	41G	ESEY	Support	Yes	No
300GB 15K SAS SFF-2 4K BLK HDD					
	41G	ESEZ	Support	Yes	No
1.1TB 10K RPM SFF-2 Disk 4K					
	41G	ESF2	Both	Yes	No
1.2TB 10K RPM SFF-2 Disk 4K					
	41G	ESF3	Both	Yes	No
571GB 10K RPM SFF-3 Disk 4K					
	41G	ESF4	Both	Yes	No
600GB 10K RPM SFF-3 Disk 4K					
	41G	ESF5	Both	Yes	No
1.1TB 10K RPM SFF-3 Disk 4K					
	41G	ESF8	Both	Yes	No
1.2TB 10K RPM SFF-3 Disk 4K					
	41G	ESF9	Both	Yes	No
283GB 15K SAS SFF-3 4K BLK HDD					
	41G	ESFA	Support	Yes	No

300GB 15K SAS SFF-3 4K BLK HDD					
	41G	ESFB	Support	Yes	No
571GB 15K SAS SFF-3 4K BLK HDD					
	41G	ESFE	Support	Yes	No
600GB 15K SAS SFF-3 4K BLK HDD					
	41G	ESFF	Support	Yes	No
571GB 15K SAS SFF-2 4K BLK HDD					
	41G	ESFN	Support	Yes	No
600GB 15K SAS SFF-2 4K BLK HDD					
	41G	ESFP	Support	Yes	No
1.7TB 10K RPM SFF-2 Disk 4K					
	41G	ESFS	Both	Yes	No
1.8TB 10K RPM SFF-2 Disk 4K					
	41G	ESFT	Both	Yes	No
1.7TB 10K RPM SFF-3 Disk 4K					
	41G	ESFU	Both	Yes	No
1.8TB 10K RPM SFF-3 Disk 4K					
	41G	ESFV	Both	Yes	No
387GB Enterprise SAS 5xx SSD					
	41G	ESG5	Support	Yes	No
387GB Enterprise SAS 5xx SSD					
	41G	ESG6	Support	Yes	No
387GB Enterprise SAS 5xx SSD					
	41G	ESG9	Support	Yes	No
387GB Enterprise SAS 5xx SSD					
	41G	ESGA	Support	Yes	No
387GB Enterprise SAS 4k SSD					
	41G	ESGB	Support	Yes	No
387GB Enterprise SAS 4k SSD					
	41G	ESGC	Support	Yes	No
387GB Enterprise SAS 4k SSD					
	41G	ESGD	Support	Yes	No
387GB Enterprise SAS 4k SSD					
	41G	ESGE	Support	Yes	No
775GB Enterprise SAS 5xx SSD					
	41G	ESGF	Support	Yes	No
775GB Enterprise SAS 5xx SSD					
	41G	ESGG	Support	Yes	No
775GB Enterprise SAS 5xx SSD					
	41G	ESGH	Support	Yes	No
775GB Enterprise SAS 5xx SSD					
	41G	ESGJ	Support	Yes	No
775GB Enterprise SAS 4k SSD					
	41G	ESGK	Support	Yes	No
775GB Enterprise SAS 4k SSD					
	41G	ESGL	Support	Yes	No
775GB Enterprise SAS 4k SSD					
	41G	ESGM	Support	Yes	No
775GB Enterprise SAS 4k SSD					
	41G	ESGN	Support	Yes	No
1.55TB Enterprise SAS 4k SSD					
	41G	ESGP	Support	Yes	No
1.55TB Enterprise SAS 4k SSD					
	41G	ESGQ	Support	Yes	No
1.55TB Enterprise SAS 4k SSD					
	41G	ESGR	Support	Yes	No
1.55TB Enterprise SAS 4k SSD					
	41G	ESGS	Support	Yes	No
387GB Enterprise SAS 5xxSFF3					
	41G	ESGT	Both	Yes	No
387GB Enterprise SAS 5xxSFF2					
	41G	ESGV	Both	Yes	No
775GB Enterprise SAS 5xxSFF3					
	41G	ESGX	Both	Yes	No
775GB Enterprise SAS 5xxSFF2					
	41G	ESGZ	Both	Yes	No
931GB Mainstream SAS 4k SSD					
	41G	ESHJ	Support	Yes	No
931GB Mainstream SAS 4k SSD					
	41G	ESHK	Support	Yes	No
1.86TB Mainstream SAS 4k SSD					
	41G	ESHL	Support	Yes	No
1.86TB Mainstream SAS 4k SSD					
	41G	ESHM	Support	Yes	No

7.45TB Mainstream SAS 4k SSD					
	41G	ESHN	Support	Yes	No
931GB Mainstream SAS 4k SSD					
	41G	ESHS	Support	Yes	No
931GB Mainstream SAS 4k SSD					
	41G	ESHT	Support	Yes	No
1.86TB Mainstream SAS 4k SSD					
	41G	ESHU	Support	Yes	No
1.86TB Mainstream SAS 4k SSD					
	41G	ESHV	Support	Yes	No
7.45TB Mainstream SAS 4k SSD					
	41G	ESHW	Support	Yes	No
931GB Mainstream SAS 4k SFF2					
	41G	ESJ0	Both	Yes	No
931GB Mainstream SAS 4k SFF2					
	41G	ESJ1	Both	Yes	No
1.86TB Mainstream SAS 4kSFF2					
	41G	ESJ2	Both	Yes	No
1.86TB Mainstream SAS 4kSFF2					
	41G	ESJ3	Both	Yes	No
3.72TB Mainstream SAS 4kSFF2					
	41G	ESJ4	Both	Yes	No
3.72TB Mainstream SAS 4kSFF2					
	41G	ESJ5	Both	Yes	No
7.45TB Mainstream SAS 4kSFF2					
	41G	ESJ6	Both	Yes	No
7.45TB Mainstream SAS 4kSFF2					
	41G	ESJ7	Both	Yes	No
931GB Mainstream SAS 4k SFF3					
	41G	ESJ8	Both	Yes	No
931GB Mainstream SAS 4k SFF3					
	41G	ESJ9	Both	Yes	No
1.86TB Mainstream SAS 4kSFF3					
	41G	ESJA	Both	Yes	No
1.86TB Mainstream SAS 4kSFF3					
	41G	ESJB	Both	Yes	No
3.72TB Mainstream SAS 4kSFF3					
	41G	ESJC	Both	Yes	No
3.72TB Mainstream SAS 4kSFF3					
	41G	ESJD	Both	Yes	No
7.45TB Mainstream SAS 4kSFF3					
	41G	ESJE	Both	Yes	No
7.45TB Mainstream SAS 4kSFF3					
	41G	ESJF	Both	Yes	No
ESB9 Load Source Specify					
	41G	ESL9	Both	Yes	No
Specify AC Power Supply					
	41G	ESLA	Both	Yes	No
ESBB Load Source Specify					
	41G	ESLB	Both	Yes	No
ESBF Load Source Specify					
	41G	ESLF	Both	Yes	No
ESBH Load Source Specify					
	41G	ESLH	Both	Yes	No
ESBK Load Source Specify					
	41G	ESLK	Both	Yes	No
EXP12SX SAS Storage Enclosure					
	41G	ESLL	Both	Yes	No
ESBM Load Source Specify					
	41G	ESLM	Both	Yes	No
EXP24SX SAS Storage Enclosure					
	41G	ESLS	Both	Yes	No
Load Source Specify for EC6V					
	41G	ESLV	Both	Yes	No
Load Source Specify for EC6X					
	41G	ESLX	Both	Yes	No
Load Source Specify for EC6Z					
	41G	ESLZ	Both	Yes	No
3.72TB Mainstream SAS 4k SSD					
	41G	ESM8	Support	Yes	No
3.72TB Mainstream SAS 4k SSD					
	41G	ESM9	Support	Yes	No
3.72TB Mainstream SAS 4k SSD					
	41G	ESMQ	Support	Yes	No

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3.72TB Mainstream SAS 4k SSD
                        41G     ESMR                    Support  Yes No
775GB Enterprise SAS 4k SFF2
                        41G     ESNA                    Both     Yes No
775GB Enterprise SAS 4k SFF2
                        41G     ESNB                    Both     Yes No
775GB Enterprise SAS 4k SFF3
                        41G     ESNC                    Both     Yes No
775GB Enterprise SAS 4k SFF3
                        41G     ESND                    Both     Yes No
1.55TB Enterprise SAS 4kSFF2
                        41G     ESNE                    Both     Yes No
1.55TB Enterprise SAS 4kSFF2
                        41G     ESNF                    Both     Yes No
1.55TB Enterprise SAS 4kSFF3
                        41G     ESNG                    Both     Yes No
1.55TB Enterprise SAS 4kSFF3
                        41G     ESNH                    Both     Yes No
283GB 15K SAS SFF-3 4k HDD
                        41G     ESNJ                    Both     Yes No
300GB 15K SAS SFF-3 4k HDD
                        41G     ESNK                    Both     Yes No
283GB 15K SAS SFF-2 4K HDD
                        41G     ESNL                    Both     Yes No
300GB 15K SAS SFF-2 4k HDD
                        41G     ESNM                    Both     Yes No
571GB 15K SAS SFF-3 4K HDD
                        41G     ESNN                    Both     Yes No
600GB 15K SAS SFF-3 4k HDD
                        41G     ESNP                    Both     Yes No
571GB 15K SAS SFF-2 4K HDD
                        41G     ESNQ                    Both     Yes No
600GB 15K SAS SFF-2 4k HDD
                        41G     ESNR                    Both     Yes No
Quantity 150 of #ESNL 283GB
                        41G     ESPL                    Both     Yes No
Quantity 150 of #ESNM 300GB
                        41G     ESPM                    Both     Yes No
Quantity 150 of #ESNQ 571GB
                        41G     ESPQ                    Both     Yes No
Quantity 150 of #ESNR 600GB
                        41G     ESPR                    Both     Yes No
Quantity 150 of ESB2 387GB
                        41G     ESQ2                    Both     Yes No
Quantity 150 of ESB6 775GB
                        41G     ESQ6                    Both     Yes No
Quantity 150 of ESBA 387GB
                        41G     ESQA                    Both     Yes No
Quantity 150 of ESBB 387GB
                        41G     ESQB                    Both     Yes No
Quantity 150 of ESBG 775GB
                        41G     ESQG                    Both     Yes No
Quantity 150 of ESBH 775GB
                        41G     ESQH                    Both     Yes No
Quantity 150 of ESBL 1.55TB
                        41G     ESQL                    Both     Yes No
Quantity 150 of ESBM 1.55TB
                        41G     ESQM                    Both     Yes No
RDX USB Internal Docking
                        41G     EU00                    Both     Yes No
1TB Removable Disk Cartridge
                        41G     EU01                    Both     Yes No
 Not available in US, EMEA, and Japan
RDX USB External Docking
                        41G     EU04                    Both     Yes No
RDX 320 GB Removable Disk Driv
                        41G     EU08                    Support  Yes No
Operator Panel LCD Display
                        41G     EU0B                    Both     Yes No
1.5TB Removable Disk Cartridge
                        41G     EU15                    Support  Yes No
Cable Ties & Labels
                        41G     EU19                    Both     Yes No
Order Placed Indicator
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	41G	EU29		Both	Yes	No
Express Edition 4 core IBM i						
	41G	EU2C		Initial	N/A	No
Express Edition 6-core IBM i						
	41G	EU2D		Initial	N/A	No
2TB Removable Disk Cartrdg-RDX						
	41G	EU2T		Both	Yes	No
ESJ1 Load Source Specify						
	41G	EU41		Both	Yes	No
ESJ3 Load Source Specify						
	41G	EU43		Both	Yes	No
ESJ5 Load Source Specify						
	41G	EU45		Both	Yes	No
ESJ7 Load Source Specify						
	41G	EU47		Both	Yes	No
ESJ9 Load Source Specify						
	41G	EU49		Both	Yes	No
ESJB Load Source Specify						
	41G	EU4B		Both	Yes	No
ESJD Load Source Specify						
	41G	EU4D		Both	Yes	No
ESJF Load Source Specify						
	41G	EU4F		Both	Yes	No
RDX USB External Docking Sta						
	41G	EUA4		Both	Yes	No
Standalone USB DVD drive w/c						
	41G	EUA5		Both	Yes	No
Core Use HW Feature						
	41G	EUC6		MES	Yes	No
Core Use HW Feature 10						
	41G	EUC7		MES	Yes	No
BP Post-Sales Service 1 Day						
	41G	SVBP		Both	Yes	No
Post-Sales Service 1 Day						
	41G	SVCS		Both	Yes	No
Other Post-Sale Svcs: 1 Day						
	41G	SVNN		Both	Yes	No

The following are newly announced features on the specific models of the IBM Power Systems 7014, 7965, 9009, 9040, and 9080 machine type:

Description	Model	Feature	Purchase	Minimum Monthly Maint.	Initial/ MES/ Both/		RP
Machine type 7014	number	number	price	charge	support	CSU	MES
Rack Specify 9009-41G - 4EIA							
	T00	ER34			Initial	N/A	No
	T42				Initial	N/A	No

Description	Model	Feature	Purchase	Minimum Monthly Maint.	Initial/ MES/ Both/		RP
Machine type 7965	number	number	price	charge	support	CSU	MES
Rack Specify 9009-41G - 4EIA							
	S42	ER34			Initial	N/A	No

Description	Model	Feature	Purchase	Minimum Monthly Maint.	Initial/ MES/ Both/		RP
Machine type 9009	number	number	price	charge	support	CSU	MES
PCIe3 2-Port 16Gb FC Adapter							
	22A	EN1G			Both	Yes	No

	41A				Both	Yes	No
	42A				Both	Yes	No
PCIe3 LP 2-Port 16Gb FC Adap							
	22A	EN1H			Both	Yes	No

Description	Model	Feature	Purchase	Minimum Monthly Maint.	Initial/ MES/ Both/		RP
Machine type 9040	number	number	price	charge	support	CSU	MES
PCIe3 2-Port 16Gb FC Adapter							
	MR9	EN1G			Both	Yes	No

Description	Model	Feature	Purchase	Minimum Monthly Maint.	Initial/ MES/ Both/		RP
Machine type 9080	number	number	price	charge	support	CSU	MES
PCIe3 2-Port 16Gb FC Adapter							
	M9S	EN1G			Both	Yes	No
PCIe3 LP 2-Port 16Gb FC Adap							
	M9S	EN1H			Both	Yes	No

RP MES = Return parts, miscellaneous equipment specifications
CSU = Customer setup

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Annual minimum maintenance charges

Not applicable

ServiceElect (ESA) charges

For ServiceElect (ESA) maintenance service charges, contact IBM Global Services at 888-IBM-4343 (426-4343).

Feature conversion purchase price

Feature Conversions

Feature conversions for 9009-41G adapters features:

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

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