Family 9028+01 IBM Power S1012 (9028-21B)

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Product life cycle dates

Type Model	Announced	Available	Marketing Withdrawn	Service Discontinued
9028-21B	7 May 2024	16 June 2024	-	-

Abstract

IBM Power10 servers are already the most reliable and secure in their class. Now, the new IBM Power S1012 (9028-21B) technology-based server extends that leadership and introduces the essential scale-out hybrid cloud platform, uniquely architected to help clients securely and efficiently scale core operational and AI applications anywhere in a hybrid cloud. Clients can encrypt all data simply without management overhead or performance impact and drive insights faster with AI at the point of data. Clients can also gain workload deployment flexibility and agility with a single hybrid cloud currency while doing more work.

Power S1012 features include:

- IBM Power10 processors with up to eight cores per server.
- One-core processor module for Power S1012 server is offered for clients running IBM i.
- In-core AI inferencing and machine learning with Matrix Math Accelerator (MMA) feature.
- Up to 256 GB of system memory distributed across four DDR4 Industry Standard Dual In-Line Memory Modules (ISDIMM) slots.
- Transparent Memory Encryption with no additional management setup and no performance impact.
- BMC and Host Secure and Trusted Boot.
- Four PCIe slots Gen5 capable.
- Up to 4 NVMe U.2 flash bays provide up to 6.4 TB of high-speed storage.
- Optional internal RDX drive.
- 1+1 redundant 800W titanium power supplies supporting 100-127V/200-240V AC in each enclosure.
- IBM PowerVM-integrated virtualization with minimum processing overhead.

The Power S1012 supports:

- IBM AIX, IBM i, Linux, and VIOS environments
- IBM Power Expert Care service tiers

Model abstract 9028-21B

The Power S1012 (9028-21B) server is a one-socket, half-wide offered in a Rack or Tower/Deskside form factor that provides low cost-optimized system. The Power S1012 server brings a secure environment that balances mission-critical traditional workloads.

Highlights

The IBM Power S1012 base system design presents an opportunity to explore an alternate and innovative approach toward existing and new use cases. Featuring a 1-socket processor slot with a 2U height and half-rack width, the S1012 is equipped with support for three processor core counts (1-core, 4-core, and 8-cores) within an eSCM module architecture. The system offers versatility with two form factors: a rack-mounted configuration utilizing a failure-free bare-metal sliding drawer, and a deskside-mounted option featuring a novel tower design that is 40 percentage smaller than the Power S1014 model.

Description

The Power S1012 (9028-21B) server is a one-socket, half-wide offered in a Rack or Tower/Deskside form factor that provides low cost-optimized system. The Power S1012 server brings a secure environment that balances mission-critical traditional workloads.

Power S1012 feature summary

- One entry single-chip processor module per system server:
  - 3.0--3.90 GHz, one-core Power10 processor (#EPG3).
  - 3.0--3.90 GHz, four-core Power10 processor (#EPG7).
  - 3.0--3.90 GHz, eight-core Power10 Processor (#EPGZ).
- Up to 256 GB of system memory distributed across 4 ISDIMM slots per system server. ISDIMM memory cards:
  - 32 GB (2 x 16 GB), (#EMBN).
  - 64 GB (2 x 32 GB), (#EMBW).
  - 128 GB (2 x 64 GB), (#EMBY).
- PCIe slots:
  - Two x16 Gen4 or x8 Gen5 direct slots.
  - Two x8 Gen5 direct slots.
- Integrated:
  - System management using an Enterprise Baseboard Management Controller (eBMC).
  - EnergyScale technology.
  - Redundant AC power supplies and cooling.
  - One HMC 1 GbE RJ45 port.
  - One front host USB 3.0 port.
  - One internal host USB 3.0 Port for RDX.
  - Optional Unit Enclosure and Nineteen-inch rack-mounting hardware (2U).

Processor modules

The Power10 processor is the compute engine for the next generation of Power systems and successor to the current IBM Power9 processor. It offers superior performance on applications such as MMA facility to accelerate computation-intensive kernels, matrix multiplication, convolution, and discrete Fourier transform. To efficiently accelerate MMA operations, the Power10 processor core implements a dense math engine (DME) microarchitecture that effectively provides an accelerator for cognitive computing, machine learning, and AI inferencing workloads.

A maximum of one Power10 processor is allowed. The following defines the allowed quantities of processor activation entitlements:

- One eight-core, typical 3.0 to 3.90 GHz (max) processor (#EPGZ) requires that eight processor activation codes be ordered. A maximum of eight processor activations (#EPFY) are allowed.
- One four-core, typical 3.0 to 3.90 GHz (max) processor (#EPG7) requires that four processor activation codes be ordered. A maximum of four processor activation code features (#EPFV) are allowed.
- One 1-core, typical 3.0 to 3.90 GHz (max) processor (#EPG3) requires that one processor activation code be ordered. A maximum of one processor activation code feature (#EPFW) is allowed.

Enhanced Workload Optimized Frequency for optimum performance: 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 Power10 Processor-Based Systems website.

MMA

The Power10 processor core inherits the modular architecture of the Power9 processor core, but the redesigned and enhanced microarchitecture significantly increases the processor core performance and processing efficiency. The peak computational throughput is markedly improved by new execution capabilities and optimized cache bandwidth characteristics. Extra matrix math acceleration engines can deliver significant performance gains for machine learning, particularly for AI inferencing workloads.

Memory

The Power S1012 server is unique in the Power10 server family, utilizing Industry Standard Dual In-Line Memory Modules (ISDIMM), supporting a total of 4 ISDIMM slots.

- A minimum 32 GB of memory is required with one processor module. All Memory ISDIMMs must be installed in pairs.
- Each ISDIMM feature code delivers two physical Memory ISDIMMs.

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. To assist with the plugging rules, two ISDIMMs are ordered using one memory feature number. Select from:

- 32GB (2x16GB) ISDIMMs, 3200 MHz, 8Gbit DDR4 Memory (#EMBN)
- 64GB (2x32GB) ISDIMMs, 3200 MHz, 8Gbit DDR4 Memory (#EMBW)
- 128GB (2x64GB) ISDIMMs, 3200 MHz, 16Gbit DDR4 Memory (#EMBY)

PowerVM Enterprise Edition

PowerVM Enterprise Edition License Entitlement is included with each Power S1012 server.

PowerVM Enterprise Edition is available as a hardware feature (#EPVT) and supports up to 8 virtual machines (VMs) per core, VIOS, and multiple shared processor pools.

Other PowerVM technologies include:

- System Planning Tool simplifies the process of planning and deploying IBM Power LPARs and virtual I/O.
- VIOS is a dedicated virtual appliance that resides in a Power VM. It facilitates the sharing of physical I/O resources between AIX, IBM i, Linux, and client VMs within the server. VIOS provides shared Ethernet adapter (SEA) virtual I/O to client VMs.
- Virtual SCSI (VSCSI) enables the sharing of physical storage adapters (FC) and storage devices (disk and optical) between VMs.
- With virtual networking, a SEA enables connectivity between internal and external virtual LANs (VLANs); virtual Ethernet provides high-speed connections between VMs.

Active Memory Expansion (#EMBP)

AME is an innovative technology supporting the AIX operating system that helps enable the effective maximum memory capacity to be larger than the true physical memory maximum. Compression or decompression of memory content can enable memory expansion up to 100% or more. This can enable a partition to do significantly more work or support more users with the same physical amount of memory. Similarly, it can enable a server to run more partitions and do more work for the same physical amount of memory.

AME uses CPU resource to compress or decompress the memory contents. The trade-off of memory capacity for processor cycles can be an excellent choice, but the degree of expansion varies on how compressible the memory content is. It also depends on having adequate spare CPU capacity available for this compression or decompression.

Power10 chips include a hardware accelerator designed to boost AME efficiency and use less Power core resource. The Power10 accelerator includes some minor enhancements and also leverages Power10 higher bandwidth and lower latency characteristics.

You have a great deal of control over AME usage. Each individual AIX partition can turn on or turn off AME. Control parameters set the amount of expansion desired in each partition to help control the amount of CPU used by the AME function. An IPL is required for the specific partition that is turning on memory expansion. When turned on, monitoring capabilities are available in standard AIX performance tools, such as lparstat, vmstat, topas, and svmon.

A planning tool is included with AIX, enabling you to sample actual workloads and estimate both how expandable the partition's memory is and how much CPU resource is needed. Any Power model can run the planning tool. In addition, a one-time, 60-day trial of AME is available to enable more exact memory expansion and CPU measurements. You can request the trial using the Power Capacity on Demand website.

AME is enabled by chargeable hardware feature (#EMBP), which can be ordered with the initial order of the system node or as an MES order. A software key is provided when the enablement feature is ordered, which is applied to the system node. An IPL is not required to enable the system node. The key is specific to an individual system node and is permanent. It cannot be moved to a different server.

The additional CPU resource used to expand memory is part of the CPU resource assigned to the AIX partition running AME. Normal licensing requirements apply.

Power S1012 Capacity Backup (CBU) for IBM i

The Power S1012 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 high availability (HA) and disaster recovery (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, DR, and HA 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.

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 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. Prior to a temporary transfer, the CBU will be configured in such a manner that there will be no out of compliance warning messages.

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 servers with P20 or higher software tiers do not have user entitlements that can be transferred, and only processor license entitlements can be transferred.

For a Power S1012 (with 1-core or 4-cores) CBU which is in the P05 software tier, the following are eligible primary systems:

- Power S1012 (9028-21B) with maximum of 1-core, or 4-cores
- Power S1014 (9105-41B) with maximum of 4-cores
- Power S914 (9009-41A) with maximum of 4-cores
- Power S914 (9009-41G) with maximum of 4-cores
- Power S922 (9009-22G) with maximum of 1-core

- Power S1022 (9105-22A)
- Power S1022s (9105-22B)
- Power S1014 (9105-41B)
- Power L1022 (9786-22H)
- Power L1024 (9786-42H)
- Power S924 (9009-42G)
- Power S924 (9009-42A)
- Power S922 (9009-22A)
- Power S922 (9009-22G)
- Power S914 (9009-41A)
- Power S914 (9009-41G)

For a Power S1012 (with 8-cores) CBU which is in the P10 software tier, the following are eligible primary systems:

- Power S1012 (9028-21B) with minimum of 8-cores
- Power S1024 (9105-42A) with 12-, 24-, 32-, or 48-cores
- Power S1022 (9105-22A) with 12-, 24-, 32-, or 40-cores
- Power S1022s (9105-22B) with minimum of 8-, or 16-cores
- Power S1014 (9105-41B) with minimum of 8 cores
- Power L1022 (9786-22H)
- Power L1024 (9786-42H)
- Power S924 (9009-42G)
- Power S924 (9009-42A)
- Power S922 (9009-22A)
- Power S922 (9009-22G) with minimum of 8-cores
- Power S914 (9009-41A) with minimum of 6-cores
- Power S914 (9009-41G) with minimum of 6-cores

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

Power S1012 software (SW) tiers for IBM i on 9028-21B

- The 1-core processor server (#EPG3, QPRCFEAT EPG3) is P05 IBM i Software tier.
- The 4-core processor server (#EPG7, QPRCFEAT EPG7) is P05 IBM i Software tier.
- The 8-core processor server (#EPGZ, QPRCFEAT EPGZ) is P10 IBM i Software tier.

During the temporary transfer, the CBU system's internal records of its total number of IBM i processor entitlements are not updated, and you may see IBM i license noncompliance warning messages from the CBU system. Prior to a temporary transfer, the CBU will be configured in such a manner that there are no out of compliance warning messages.

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.

Power S1012 configuration options if IBM i is selected as an operating system

Processor Module	Maximum Memory capacity	Maximum Storage NVMe U.2 capacity	PCIe slots	Rules/Restrictions/Limitations	IBM i Subscription Term users per Processor
8-core Typical 3.0 to 3.90 Ghz (max) Power10 Processor (#EPGZ)	256 GB (with up to 2x FC EMBY - 128GB (2x64GB) ISDIMMs, 3200 MHz, 16Gbit DDR4 Memory)	6.4 TB (with up to 4x FC ES5D - Enterprise 1.6 TB SSD PCIe4 NVMe U.2 module for IBM i	Two x16 Gen4 or x8 Gen5 direct slots Two x8 Gen5 direct slots	Rack only. Other Memory options (FC EMBN or FC EMBW) are allowed. Mixing with other NVMe devices is allowed in pairs but cannot exceed the maximum capacity of 3.2 TB mirrored (total capacity 6.4 TB). All supported PCIe adapter options are allowed.	Mininum: 10 users by default. Maximum: Unlimited users.
4-core Typical 3.0 to 3.90 Ghz (max) Power10 Processor (#EPG7)	64 GB (with up to 2x FC EMBN - 32GB (2x16GB) ISDIMMs, 3200 MHz, 8Gbit DDR4 Memory, or up to 1x FC EMBW- 64GB (2x32GB) ISDIMMs, 3200 MHz, 8Gbit DDR4 Memory)	6.4 TB (with up to 4x FC ES5D - Enterprise 1.6 TB SSD PCIe4 NVMe U.2 module for IBM i	Two x16 Gen4 or x8 Gen5 direct slots Two x8 Gen5 direct slots	Rack or Tower/Deskside. Memory FC EMBN (2x16GB) is default and FC EMBW (2x32GB) is optional. Mixing with other NVMe devices is allowed in pairs but cannot exceed the maximum capacity of 3.2 TB mirrored (total capacity 6.4 TB). All supported PCIe adapter options are allowed.	Mininum: 10 users by default. Maximum: Unlimited users, except for Italy. Maximum for Italy is 40 users.
1-core Typical 3.0 to 3.90 Ghz (max) Power10	64 GB (with up to 1x FC EMBW - 64GB (2x32GB) ISDIMMs,	3.2 TB (with up to 2x FC ES5D - Enterprise 1.6 TB SSD	Two x16 Gen4 or x8 Gen5 direct slots	Tower/Deskside only. IBM i runs natively and VIOS is not supported. Subprocessor partitioning or partition creation is not supported.	Mininum: 10 users by default. Maximum: 20 users.

Processor Module	Maximum Memory capacity	Maximum Storage NVMe U.2 capacity	PCIe slots	Rules/Restrictions/Limitations	IBM i Subscription Term users per Processor
Processor (#EPG3)	3200 MHz, 8Gbit DDR4 Memory)	PCIe4 NVMe U.2 module for IBM i) or 1.6 TB (with up to 2x FC ES5B - Enterprise 800GB SSD PCIe4 NVMe U.2 module for IBM i)	Two x8 Gen5 direct slots	Other Memory options are not allowed. NVMe qty of 2 #ES5B default and qty of 2 #ES5D optional. (No other option is allowed). One PCIe 4-Port 1GbE Adapter (#EN2Y) is required. PCIe4 32Gb 2-port Optical Fibre Channel Adapter (#EN1K) or PCIe3 12Gb x8 SAS Tape HBA Adapter (#EJ2C) are optional and mutually exclusive for the 1-core processor, other adapter options are not allowed. There is no upgrade to increase the cores on this feature.	

Note: Expansion Drawers are not allowed for S1012 server. Attachment to SANs is supported. For minimum configuration rules with AIX/Linux as primary operating system see Hardware Requirements section.

Titanium power supply

The 800 W supplies are CRPS Titanium power supplies and support input voltages of 100-127VAC or 200VAC-240VAC. All power supplies are concurrently maintainable. Titanium power supplies are designed to meet the latest efficiency regulations.

– Two AC titanium power supplies (feature EB3Y) supporting a rack or tower/desk: Common Redundant Power Supply - 800W for Server (100-127V/200-240V)

Redundant fans

Each power supply has one internal fan to cool its internal electronics.

Power cords

Two power cords are required. The Power S1012 server supports power cord 4.3-meter (14-foot), drawer to wall/IBM PDU (250V/10A) in the base shipment group. See the feature listing for other options.

PCIe slots

The Power S1012 server has up to four PCIe slots Gen5 capable:

– Two PCIe x8 Gen5 or x16 Gen4, half height, half length slots

– Two PCIe x8 Gen5, half height, half length slots

The x16 slots can provide up to twice the bandwidth of x8 slots because they offer twice as many PCIe lanes. PCIe Gen5 slots can support up to twice the bandwidth of a PCIe Gen4 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.

NVMe drive slots and RDX bay options

NVMe SSDs, in the 15-millimeter carrier U.2 2.5-inch form factor, are used for internal storage in the Power S1012 system. The Power S1012 supports up to 4 NVMe U.2 devices with concurrent maintenance. The 15-millimeter NVMe are supported in the 15-millimeter carrier. There is no SAS backplane supported in the Power S1012 system.

The Power S1012 deskside/tower configuration also supports an internal RDX drive attached through the USB controller.

Integrated I/O ports

There are one HMC port, one USB 3.0 port internal only for RDX attach, and one USB 3.0 port in the front. The HMC port is RJ45, supporting 1 Gb Ethernet connection. The eBMC USB 2.0 port can be used for communication to an Uninterrupted Power Supply (UPS) or code update.

RDX docking station

The RDX docking station 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.

Racks

The Power S1012 server is designed to fit a standard 19-inch rack. IBM Development has tested and certified the system in the IBM Enterprise Rack (7965-S42). The 7965-S42 rack is a two-meter enterprise rack that provides 42U or 42 EIA of space. You can choose to place the server in other racks if you are confident those racks have the strength, rigidity, depth, and hole pattern characteristics required. You should work with IBM Service to determine the appropriateness of other racks.

It is highly recommended that the Power S1012 server be ordered with an IBM 42U Enterprise Rack (7965-S42). An initial system order is placed in a 7965-S42 rack. This is done to ease and speed client installation, provide a more complete and higher quality environment for IBM Manufacturing system assembly and testing, and provide a more complete shipping package.

Recommendation: The 7965-S42 rack has optimized cable routing, so all 42U may be populated with equipment.

The 7965-S42 rack does not need 2U on either the top or bottom for cable egress.

Multiple service personnel are required to manually remove or insert a system node drawer into a rack, given its dimensions and weight and content.

Rack Drawer Placement Features and Rules

If a rack is desired on an initial system order it must be a 7965-S42 and the following rules apply:

- Feature (#ERKE) - Unit Enclosure and Rack Mounting Hardware is allowed in maximum quantity of 1.
- If MTM 9028-21B is ordered without #ERKE the user is allowed to add it during MES order.
- Feature #ERKE is only available when a Rack-Mount feature EJX0/EJX1 is selected (not available with DeskSide/Tower features EJVQ/EJVX) and is enabled by default when a Rack-Mount feature is selected.
- Feature #ERKE must be enabled when an RDX (#EUA1) is ordered (Rack only), FC #EUA1 is installed in left half of Unit Enclosure.
- Feature #4650 Rack Indicator- Not Factory Integrated is default when #ERKE is selected (#4651 to #4666 are optional).

Multi-system order grouping indicators and rules

Feature #EGR0 - No Grouping Indicator and feature #EGR1 through #EGRD for Multi-System order grouping Indicators are mutually exclusive and the following rules apply:

- Maximum quantity of #EGRx (#EGR0 through #EGRD) is 1 on a MTM 9028-21B order.
- If feature #ERKE is selected, then #EGR0 is not allowed and are mutually exclusive.
- If feature#ERKE is selected, then one of #EGR1 through #EGRD is required, but user can change to any other feature #EGRx or to feature #EGR0 if #ERKE is deselected.
- In a single multiple-system order, any MTM 9028-21B without feature #ERKE that do not have a matching feature #EGRx ordered in another 9028-21B in the same order, then the 9028-21B without #ERKE requires #EGR0.
- In a single multiple-system order, maximum quantity of feature #EGR1 through #EGRD is 2 per rack.
- If feature #ERKE with #EUA1 (Internal USB RDX station) is ordered, then #EGR0 is not allowed.
- Multiple MTM 9028-21B servers with feature #ERKE and feature #4651, and the features #EGR1 through #EGRD are already all designated, then the feature code #4650 is required for the MTM 9028-21B servers that need to be shipped outside the rack as a stand alone MTMs and feature #EGR0 to be field integrated.

High-function (switched and monitored) PDUs plus

The PDUs can be mounted vertically in rack-side 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-meter (14-foot) PDU to Wall 3PH/24A 200--240V Delta-wired Power Cord
– #ECJ7 - 4.3-meter (14-foot) PDU to Wall 3PH/48A 200--240V Delta-wired Power Cord

No pigtail (like #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.

Customer setup (CSU)

Yes.

Devices supported

The 7226-1U3 that offers a 1U rack-mountable dual bay enclosure with storage device options of LTO-5, -6, -7, -8, and -9 tape drives with both SAS and Fiber Channel interface; the 7226 also offers DVD-RAM SAS and USB drive features as well as RDX 500GB, 1TB, and 2TB drive options. Up to two drives (or four DVD-RAM) can be installed in any combination in the 7226 enclosure.

Model conversions

Not available.

Accessibility by people with disabilities

Accessibility Compliance Reports (previously known as a VPAT) containing details on accessibility compliance to standards, including the Worldwide Consortium Web Content Accessibility Guidelines, European Standard EN 301 349, and US Section 508, can be found on the IBM Accessibility Conformance Report Request website.

Models

Model summary matrix

Model	Form Factor	Processor	Processor socket	Memory capacity	Internal Storage capacity
21B	Rack[1] or Tower[2]	1-[2], 4- [1, 2], or 8-core [1] Processor Power10 module	One	Up to 256 GB	Up to 6.4 TB

Customer setup (CSU)

Yes.

Devices supported

The 7226-1U3 that offers a 1U rack-mountable dual bay enclosure with storage device options of LTO5, 6, 7,and 8 tape drives with both SAS and Fiber Channel interface; the 7226 also offers DVD-RAM SAS and USB drive features as well as RDX 500GB, 1TB, and 2TB drive options. Up to two drives (or four DVD-RAM) can be installed in any combination in the 7226 enclosure.

Model conversions

Not available.

Technical Description

Physical specifications

Dimensions for the 9028-21B (rack version):

Width	Depth	Height	EIA units	Weight
222.3 mm (8.75 in.)	714.4 mm (28.1 in.)	82.5 mm (3.25 in.)	2 (half-wide)	20.4 kg (45 lb)

Dimensions for the 9028-21B (tower version):

Width	Depth	Height	Weight
208 mm (8.2 in.)	800 mm (31.5 in.)	411 mm (16.2 in.)	24.5 kg (54 lb)

Packaging dimensions for the 9028-21B:

Width	Depth	Height
590 mm (23.2in.)	995 mm (39.2 in.)	313 mm (12.3 in.)

Note:
- Width, overall is measured to the outside edges of drawer bezels and tower pedestal. Width, within rack is measured for main chassis, with fits between rack EIA flanges.
- Depth for drawers: From rack EIA outside surface to back PCIe tailstock surface of the system. Depth for tower: From front edge of the bezel to back edge of the pedestal.

Operating environment

Electrical characteristics for the 9028-21B[1]

- AC rated voltage and frequency [2]: 100--127(5)V AC or 200--240 VAC at 50 or 60 Hz plus or minus 3 Hz
- Thermal output (maximum) [3]: 1877 BTU/hr
- Maximum power consumption [3]: 550 W
- Maximum kVA [4]: 0.580 kVA
- Phase: Single

[1] Redundancy is supported. The server has a total of two 800 W power supply units. Each power supply unit has an IEC 320-C14 inlet. A single power supply unit is required for operation. No specific power supply unit plugging sequence is required for the PDUs. Any two power supply units can be plugged into the A-side electrical distribution. The remaining two power supply units can be plugged into the B-side electrical distribution.

[2]The power supplies automatically accept any voltage with the published, rated-voltage range. If multiple power supplies are installed and operating, the power supplies draw approximately equal current from the utility (electricity supply) and provide approximately equal current to the load.

[3]Power draw and heat load vary greatly by configuration. When you plan for an electrical system, it is important to use the maximum values. However, when you plan for heat load, you can use the IBM Systems Energy Estimator to obtain a heat output estimate based on a specific configuration. For more information, see The IBM Systems Energy Estimator website.

[4] To calculate the amperage, multiply the kVA by 1,000 and divide that number by the operating voltage.

Environment (operating)(1)

Properties	Recommended	Allowable[2,3,4]
ASHRAE class	N/A	A3 (Fourth edition)
Airflow direction	Front-to-back	N/A
Temperature	18.0°C – 27.0°C (64.4°F – 80.6°F)	5.0°C – 40.0°C (41.0°F – 104.0°F)
Low end moisture	-9.0°C (15.8°F) dew point	-12.0°C (10.4°F) dew point and 8% relative humidity
High end moisture	60% relative humidity and 15°C (59°F) dew point	85% relative humidity and 24.0°C (75.2°F) dew point

Properties	Recommended	Allowable[2,3,4]
Maximum altitude	N/A	3050 m (10,000 ft)

Allowable environment (nonoperating)[5]

- Temperature: 5°C--45°C (41°F--113°F)
- Relative humidity: 8% to 85%
- Maximum dew point: 27.0°C (80.6°F)

Environment (shipping)

- Temperature: -40.0°C to 60.0°C (-40°F to 140°F)
- Relative humidity: 5% - 100% (no condensation)
- Maximum dew point: 29.0°C (84.2°F)

Environment (storage)

- Temperature: 1°C - 60°C (33.8°F - 140°F)
- Relative humidity: 5% - 80% (no condensation)
- Maximum wet bulb temperature: 29.0°C (84.2°F)

Note:

[1] IBM provides the recommended operating environment as the long-term operating environment that can result in the greatest reliability, energy efficiency, and reliability. The allowable operating environment represents where the equipment is tested to verify functionality. Due to the stresses that operating in the allowable envelope can place on the equipment, these envelopes must be used for short-term operation, not continuous operation. The maximum configuration supports only ASHRAE class A2 (fourth edition).

[2] Must derate the maximum allowable temperature 1°C (1.8°F) per 175 m (574 ft) above 900 m (2953 ft) up to a maximum allowable elevation of 3050 m (10000 ft).

[3] The minimum humidity level is the larger absolute humidity of the -12°C (10.4°F) dew point and the 8% relative humidity. These levels intersect at approximately 25°C (77°F). Below this intersection, the dew point (-12°C) represents the minimum moisture level, while above it, the relative humidity (8%) is the minimum. For the upper moisture limit, the limit is the minimum absolute humidity of the dew point and relative humidity that is stated.

[4]

The following minimum requirements apply to data centers that are operated at low relative humidity:

- Data centers that do not have ESD floors and where people are allowed to wear non-ESD shoes might want to consider increasing humidity given that the risk of generating 8 kV increases slightly at 8% relative humidity, when compared to 25% relative humidity.
- All mobile furnishings and equipment must be made of conductive or static dissipative materials and be bonded to ground.
- During maintenance on any hardware, a properly functioning and grounded wrist strap must be used by any personnel who comes in contact with information technology (IT) equipment.

[5] Equipment that is removed from the original shipping container and is installed, but is powered down. The allowable non-operating environment is provided to define the environmental range that an unpowered system can experience short term without being damaged.

Service clearances

Clearances	Front	Rear	Side[1]	Top[1]
Operating	813 mm (32 in.)	813 mm (32 in.)	N/A	N/A
Nonoperating	1219 mm (48 in.)	813 mm (32 in.)	1219 mm (48 in.)[2]	762 mm (30 in.)

Note:
[1] Side and top clearances are optional during operation.

[2] A service gap of 1219 mm (48 in.) is required in the front of the rack and between racks when servicing the system backplane.

Electromagnetic compatibility compliance: CISPR 32; CISPR 35; FCC, CFR 47, Part 15 (US); VCCI (Japan); EMC Directive (EEA); ICES-003 (Canada); ACMA (Australia, New Zealand); CNS 15936 (Taiwan); Radio Waves Act (Korea); Commodity Inspection Law (China); QCVN 118 (Vietnam); MoCI (Saudi Arabia); SI 961 (Israel); EAC (EAEU).

Safety compliance: This product was designed, tested, manufactured, and certified for safe operation. It complies with IEC / EN 62368-1 and where required, to relevant national differences/deviations (ND) to these IEC base standards. This includes, but is not limited to: EN (European Norms including all Amendments under the Low Voltage Directive), UL/CSA (North America bi-national harmonized and marked per accredited NRTL agency listings), and other such derivative certifications according to corporate determinations and latest regional publication compliance standardized requirements.

Regulatory Model ID (RMID) or Machine Type - Models (MT-Ms) can also be used to supplement identification (ID) for worldwide (WW) co-compliance filings or registrations with regulatory bodies

Special Hardware Management Console considerations

When you manage the server by using an HMC, the console must be provided within the same room and within 8 m (26 ft) of the server.Note: As an alternative to the local HMC requirement, you can provide a supported device, such as a PC, with connectivity and authority to operate through a remotely attached HMC. This local device must be in the same room and within 8 m (26 ft) of your server. This local device must provide functional capabilities that are equivalent to the HMC that it replaces. This local device is needed by the service representative to service the system.

See the Installation Planning Guide in IBM Documentation for additional detail.

Limitations

- Feature #EPGZ - 8-core Typical 3.0 to 3.90 Ghz (max) Power10 Processor is not supported on a Tower/deskside configuration.
- Feature #EPG3 - 1-core Typical 3.0 to 3.90 Ghz (max) Power10 Processor is not supported on a Rack configuration.
- If feature #EPG3 is ordered, then maximum memory capacity is 64 GB, maximum storage NVMe U.2 capacity is 3.2 TB, and selected PCIe adapter options are allowed. See Hardware Requirements section for detailed information.
- If feature #EPG7 is ordered and IBM i is primary or secondary operating system, then maximum memory capacity is 64 GB. See Hardware Requirements section for detailed information.
- Enable Virtual Serial Number (#EVSN) is supported on 4-, 8-core processors and not supported on the 1-core processor configuration.

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, one of the following system console specify codes must be selected:
  - Feature (#5550) - System Console on HMC
  - Feature (#5557) - System Console - Internal LAN

Hardware requirements

Power S1012 system configuration

The minimum Power S1012 initial order must include a processor module, two 16 GB DIMMs (one feature EMBN 32 GB (2 x 16 GB) ISDIMM), 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 these storage options and one of these network options:

Storage options:

- For boot from NVMe for AIX/Linux: One PCIe NVMe U.2 device.
- For boot from NVMe for IBM i: Two PCIe NVMe U.2 devices.
- For boot from SAN: If feature 0837 (boot from SAN) or ESCZ (boot from SAN) is selected, then PCIe NVMe U.2 device is not required. A Fibre Channel Adapter must be ordered if feature 0837 or feature ESCZ is selected.

Network options:

- One PCIe2 4-port 1 Gb Ethernet adapter
- One of the supported 25/10/1 Gb Ethernet adapters

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

System Feature	Feature Code	Description	Default	Minimum Quantity	Notes
LCD Display	EU2K	Operator Panel LCD Display	1	0	For Rack configuration only.
Virtualization Engine	EPVT	PowerVM Enterprise Edition	1	1	EPVT is required.
Processor Modules	EPG7, or EPGZ	4-core Typical 3.0 to 3.90 Ghz (max) Power10 Processor, or 8-core Typical 3.0 to 3.90 Ghz (max) Power10 Processor	1	0	EPG7 Default Qty.1. If EPGZ is selected, Rack only configuration is allowed.
Processor Module Activations	EPFV, or EPFY	One Processor Core Activation for EPG7, or One Processor Core Activation for EPGZ	4	0	EPFV Default Qty.4. All processor cores must be activated on the Processor Module selected.
Memory	EMBN, or EMBW, or EMBY	32GB (2x16GB) ISDIMMs, 3200 MHz, 8Gbit DDR4 Memory, or 64GB (2x32GB) ISDIMMs, 3200 MHz, 8Gbit DDR4 Memory, or 128GB (2x64GB) ISDIMMs, 3200 MHz, 16Gbit DDR4 Memory	1	0	EMBN Default Qty.1. All supported Memory features are optional.

System Feature	Feature Code	Description	Default	Minimum Quantity	Notes
Active Memory Expansion	EMBP	Active Memory Expansion	1	0	Active Memory Expansion (AME) is defaulted for AIX operation system.
RDX Dock Station	EUA1	Internal USB Disk Drive Docking Station RDX	1	0	For Rack and Tower configurations.
Enclosure – Single 9028-21B	ERKE	Unit Enclosure and Rack Mounting Hardware	1	0	For Rack configuration only.
Shipping brackets	EJX2	Rack Ship Support	1	0	For Rack configuration only.
Storage Backplane / Bezels / Covers and Doors	EJVQ, or EJVX, or EJX0, or EJX1	IBM Cover and Doors Desk-side, or OEM Cover and Doors Desk-side, or Front IBM Bezel Rack-Mount, or Front OEM Bezel Rack-Mount	1	0	For Rack configuration: Default EJX0. For Tower configuration: Default EJVQ
NVMe Devices	ES5A	Enterprise 800GB SSD PCIe4 NVMe U.2 module for AIX/Linux	2	0	For AIX/Linux, ES5A default is Qty. 2. All supported NVMe devices are allowed.
Required LAN adapters	EN2Y	PCIe LP 4-Port 1GbE Adapter	1	0	Qty. 1 of these LAN features required on all Initial orders. Default Adapter: feature EN2Y. All supported

System Feature	Feature Code	Description	Default	Minimum Quantity	Notes
					PCIe adapters are allowed.
Power Supply	EB3Y	AC PS 800W for Server (100-127V/200-240V)	2	2	Each initial order must have all power supplies present, power supplies cannot be added later on.
Power Cables	6458	Power Cord 4.3m (14-ft), Drawer to IBM PDU (250V/10A)	2	2	Qty. 2 required.
Language Group	9300	Language Group Specify - US English	1	1	Language Specify code is required.
Primary Operating	2146 or 2147	Primary OS AIX / Primary OS Linux	N/A	1	Must select one option.

When IBM i is the primary operating system, the minimum defined initial order configuration is as follows:

System Feature	Feature Code	Description	Default	Minimum Quantity	Notes
LCD Display	EU2K	Operator Panel LCD Display	1	0	For Rack configuration only.
Virtualization Engine	EPVT	PowerVM Enterprise Edition	1	1	EPVT is required.
Processor Modules	EPG3, or EPG7, or EPGZ	1-core Typical 3.0 to 3.90 Ghz (max) Power10 Processor, or 4-core Typical 3.0 to 3.90 Ghz (max)	1	0	If EPG3 is selected, IBM i only, with no secondary OS allowed, and for Tower/Deskside only. If EPGZ is selected, Rack only

System Feature	Feature Code	Description	Default	Minimum Quantity	Notes
		Power10 Processor, or 8-core Typical 3.0 to 3.90 Ghz (max) Power10 Processor			configuration is allowed.
Processor Module Activations	EPFW, or EPFV, or EPFY	One Processor Core Activation for EPG3, or One Processor Core Activation for EPG7, or One Processor Core Activation for EPGZ	1	0	EPFW Default Qty.1. All processor cores must be activated on the Processor Module selected.
Memory	EMBN, or EMBW, or EMBY	32GB (2x16GB) ISDIMMs, 3200 MHz, 8Gbit DDR4 Memory, or 64GB (2x32GB) ISDIMMs, 3200 MHz, 8Gbit DDR4 Memory, or 128GB (2x64GB) ISDIMMs, 3200 MHz, 16Gbit DDR4 Memory	1	0	EMBN Default Qty.1 . If EPG3 is selected, then EMBW (2x32GB memory) Qty.1 is allowed only. No other memory option allowed. If EPG7 is selected, then Qty.2 of EMBN or Qty.1 of EMBW are allowed and EMBY is not allowed.
Active Memory Expansion	EMBP	Active Memory Expansion	0	0	If EPG3 is selected, then EMBP is not allowed.

System Feature	Feature Code	Description	Default	Minimum Quantity	Notes
RDX Dock Station	EUA1	Internal USB Disk Drive Docking Station RDX	1	0	For Rack and Tower configurations.
Enclosure – Single 9028-21B	ERKE	Unit Enclosure and Rack Mounting Hardware	1	0	For Rack configuration only.
Shipping brackets	EJX2	Rack Ship Support	1	0	For Rack configuration only.
Storage Backplane / Bezels / Covers and Doors	EJVQ or EJX0	IBM Cover and Doors Desk-side or Front IBM Bezel Rack-Mount	1	0	For Rack configuration: Default EJX0. For Tower configuration: Default EJVQ.
NVMe Devices	ES5B	Enterprise 800GB SSD PCIe4 NVMe U.2 module for IBM i	2	0	ES5B Default Qty. 2. If EPG3 is selected Qty.2 of ES5B is default and Qty.2 of ES5D is optional other options are not allowed.
Required LAN adapters	EN2Y	PCIe LP 4-Port 1GbE Adapter	1	0	Qty. 1 of these LAN features required on all Initial orders. Default Adapter: feature EN2Y. If EPG3 is selected, then Qty.1 EN2Y is required and in addition, PCIe Adapter EN1K or EJ2C are orderable. No other options are allowed.

System Feature	Feature Code	Description	Default	Minimum Quantity	Notes
					If EPG3 is selected, then EN1K and EJ2C are mutually exclusive.
Power Supply	EB3Y	AC PS 800W for Server (100-127V/200-240V)	2	2	Each initial order must have all power supplies present, power supplies cannot be added later on.
Power Cables	6458	Power Cord 4.3m (14-ft), Drawer to IBM PDU (250V/10A)	2	2	Qty. 2 required.
Language Group	9300	Language Group Specify - US English	1	1	Language Specify code is required.
Primary Operating	2145	Primary OS IBM i	1	1	2145 is required.
System Consoles	5550 or 5557	System Console-Ethernet LAN adapter	1	1	Must select one System Console feature.
Data Protection	0040	Mirrored System Disk Level, Specify Code	1	1	For IBM i OS only - Qty. 1 system data protection code required.

Note: The racking approach for the initial order can be either a MTM 7965-S42.

Power S1012 Tower-to-Rack conversion

Power S1012 Tower-to-Rack conversion is available through the following MES parts that you need to convert a 2U server (MTM 9028-21B) from a tower model to a rack model. You can then install the server into a 19-inch rack enclosure.

One of following MES parts is required for the tower-to-rack conversion:

Description	Feature	Comments
Front IBM Bezel for Rack-Mount	EJX0	Optional, mutually exclusive with EJX1.
Front OEM Bezel for Rack-Mount	EJX1	Optional, mutually exclusive with EJX0.

Note:
- Each of these conversions includes the shipping of the Rack Ship Support feature EJX2 and Unit Enclosure and Rack Mounting Hardware feature ERKE.
- 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.
- An IBM Service Support Representative (SSR) needs to be dispatched to your site to assist with installation instructions.

Power S1012 Rack-to-Tower conversion

Power S1012 Rack-to-Tower conversion is also available through the following MES parts that you need to convert a 2U server (MTM 9028-21B) from a rack model to a tower model.

One of following MES parts is required for the Rack-to-Tower conversion:

Description	Feature	Comments
IBM Cover and Doors for Desk-side	EJVQ	Optional, mutually exclusive with EJVX.
OEM Cover and Doors for Desk-side	EJVX	Optional, mutually exclusive with EJVQ.

Note:
- The two AC 800 W power supplies that exist on the rack model can be used for the Tower configuration.
- 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.
- An IBM Service Support Representative (SSR) needs to be dispatched to your site to assist with installation instructions.

Hardware Management Console (HMC) machine code

If the system is ordered with 1060 firmware level, or higher, and is capable to be HMC managed, then the managing HMC must be installed with HMC 10.3.1060, or higher.

This level only supports hardware appliance types 7063, or virtual appliances (vHMC) on x86 or PowerVM. The 7042 hardware appliance is not supported.

An HMC is required to manage the Power S1012 server implementing partitioning. Multiple Power8, Power9, and Power10 processor-based servers can be supported by a single HMC with version 10.

Planned HMC hardware and software support:

- Hardware Appliance: 7063-CR1, 7063-CR2
- vHMC on x86
- vHMC on 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.

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 Documentation.

In situations where IBM service is required and the recommended tools are not available, there could be delays in repair actions.

Software requirements

- Red Hat Enterprise Linux 9.2, for Power LE, or later
- Red Hat OpenShift Container Platform 4.15, or later

Please review the Linux alert page for any known Linux issues or limitations Linux on IBM - Readme first issues website.

If installing IBM i:

- IBM i 7.5 TR4, or later
- IBM i 7.4 TR10, or later

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

- AIX Version 7.3 with the 7300-02 Technology Level and Service Pack 7300-02-02-2420, or later
- AIX Version 7.2 with the 7200-05 Technology Level and Service Pack 7200-05-08-2420, or later
- AIX Version 7.3 with the 7300-01 Technology Level and Service Pack 7300-01-04-2420, or later (planned availability - July 26, 2024)

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

- AIX Version 7.3 with the 7300-02 Technology Level and Service Pack 7300-02-01-2346, or later
- AIX Version 7.3 with the 7300-01 Technology Level and Service Pack 7300-01-01-2246, or later
- AIX Version 7.2 with the 7200-05 Technology Level and service pack 7200-05-04-2220, or later
- AIX Version 7.1 with the 7100-05 Technology Level and Service Pack 7100-05-10-2220, or later (AIX 7.1 service extension required)

If installing VIOS:

- VIOS 4.1.0.21
- VIOS 3.1.4.41

Publications

No publications are shipped with the announced product.

IBM Documentation 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 IBM Documentation.

To access the IBM Publications Center Portal, go to the IBM Publications Center website. The IBM Publications Center is a worldwide central repository for IBM product publications and marketing material with a catalog of 70,000 items. Extensive search facilities are provided. A large number of publications are available online in various file formats, which can currently be downloaded.

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Features

Feature descriptions

(#0004) - EMEA Bulk MES Indicator

NON-AAP BULK ORDER INDICATOR

- Attributes provided:None
- Attributes required:None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 0)
- OS level required:
  - None
- Initial Order/MES/Both/Supported: MES
- CSU: CIF
- Return parts MES: No

(#0010) - One CSC Billing Unit

One Billing Unit used by the Customer Solution Center.

- Attributes provided:One CSC Billing Unit
- Attributes required:None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 100)
- OS level required:
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#0011) - Ten CSC Billing Units

Ten Billing Units used by the Customer Solutions Center.

- Attributes provided:Ten CSC Billing Units
- Attributes required:None
- Minimum required: 0
- Maximum allowed: 100 (Initial order maximum: 100)
- OS level required:
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#0040) - Mirrored System Disk Level, Specify Code

This code indicates the level of disk protection desired and helps ensure that adequate hardware is in the final configuration.

- Attributes provided: Device-level mirrored protection
- Attributes required: Minimum of two (2) disk units
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required:
  - IBM i supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#0098) - Special Manufacturing Operations Indicator

This feature is a no-charge feature that indicates special manufacturing operations are to be performed.

- Attributes provided:None
- Attributes required:None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required:
  - None

- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#0205) - RISC-to-RISC Data Migration

#0205 is used on initial orders to designate that the new server should only recieve a partial load of IBM i in IBM Mfg.

When #0205 is on the order, manufacturing will only load SLIC and up through QSYS of IBM i. Ensure that enough storage is ordered to contain the additional OS code that will be loaded following installation of the system at the Client location. Specify code #0205 is mutually exclusive with #5000, SW Preload Required

The migration process requires that the installed model be at the same version and release level of IBM i and other licensed programs as the new server.

More information, and an updated IBM i Upgrade and Data Migration Road Map (RISC-RISC) are available at: http://publib.boulder.ibm.com/iseries/

- Attributes provided:Partial load of IBM i in IBM Mfg.
- Attributes required:#2145 - Primary OS - IBM i and partition specify code #0267 and RISC to RISC Data Migration from Clients existing system
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required:
  - IBM i supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#0265) - AIX Partition Specify

This feature indicates customers intend to create a partition on the system that will use the AIX operating system. This feature should be included once for each intended AIX partition. This feature is an indicator and does not deliver parts, software, or services.

- Attributes provided:None
- Attributes required:Customers intend to create a partition on the system that will run the AIX operating system.
- Minimum required: 0
- Maximum allowed: 640 (Initial order maximum: 250)
- OS level required:
  - AIX supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#0266) - Linux Partition Specify

This feature indicates customers intend to create a partition on the system that will use the Linux operating system. This feature should be included once for each intended Linux partition. This feature is an indicator and does not deliver parts, software, or services.

- Attributes provided:None

- Attributes required:Customers intend to create a partition on the system that will run the Linux operating system.
- Minimum required: 0
- Maximum allowed: 640 (Initial order maximum: 250)
- OS level required:
  - Linux supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#0267) - IBM i Operating System Partition Specify

This feature indicates customers intend to create a partition on the system that will use the IBM i operating system. This feature should be included once for each intended IBM i partition. This feature is an indicator and does not deliver parts, software, or services.

- Attributes provided:None
- Attributes required:Customers intend to create a partition on the system that will run the IBM i operating system.
- Minimum required: 0
- Maximum allowed: 640 (Initial order maximum: 250)
- OS level required:
  - IBM i supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#0444) - CBU Specify

This specify code indicates this system has been properly registered as a Capacity BackUp system and has, through that registration been authorized to temporarily receive IBM i Operating System License Entitlements and either 5250 Processor Enablement entitlements or IBM i user entitlements, from a primary system under the conditions specified at the time the system was registered. This feature is an indicator only, authorization to use this system as a backup is obtained only by registering the system with IBM on the CBU website at: www.ibm.com/systems/power/hardware/cbu

- Attributes provided:Indicates the system has been registered for use as a CBU system for IBM i License entitlement purposes.
- Attributes required:# 2145 Primary OS - IBM i or #0267 IBM i Operating System Partition Specify
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required:
  - IBM i supported
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#0456) - Customer Specified Placement

- Requests that IBM deliver the system to the customer according to the slot in drawer hardware placement defined by the account team.
- Eliminates the need to have these parts relocated in the customers environment as may happen if the order is placed without this feature code.

- Client placement specifications are collected using the System Planning Tool (SPT) and processed through the marketing configurator. (Use of the SPT is not required).
- Requires account team to submit the output of the marketing configurator into IBM manufacturing via the CSP Web site http://www.ibm.com/eserver/power/csp (US Business Partners and Distributors can bypass this step.)
- Requires account team to assure that the marketing configurator output submitted reflects the actual order placed.
- Attributes provided: I/O component placement
- Attributes required: Marketing Configurator output submitted to the CSP Web site. (US Business Partners and Distributors can bypass this step.)
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#0719) - Load Source Not in CEC

This specify feature indicates to the IBM Marketing configurator tools and IBM manufacturing that disk drives will not be placed in the system unit, but will be placed in I/O drawers or in external SAN attached disk.

- Attributes provided: System unit(s) are shipped with no disk units placed inside.
- Attributes required: Alternate load source specified
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 0)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#0837) - Fiber Channel SAN Load Source Specify

Indicates that a SAN drive is being used as the Load Source for the operating system.

- Attributes provided: SAN load source placement specify
- Attributes required: Fiber Channel adapter
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#0983) - US TAA Compliance Indicator

This feature indicates that the product was assembled in a manufacturing plant in the USA or in a country approved under the US Trade Agreement Act. Only valid on U.S. orders.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#0984) - Product assembled in USA manufacturing plant

This feature indicates that the product was assembled in a manufacturing plant in the USA.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#1107) - USB 500 GB Removable Disk Drive

Provides an RDX disk drive in a rugged cartridge to be used in an RDX Internal and External docking station such as the #1103, #1104, #1123, #EU03, #EU04, #EU23 or #EU07. 500 GB is uncompressed. With typical 2X compression, capacity would be 1000 GB. Compression/decompression is provided by the operating system, not the drive itself. Feature 1107 is not entitled under the IBM Maintenance Agreement, if one is purchased.

- Attributes provided: 500 GB RDX rugged disk/cartridge
- Attributes required: None.
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - Linux supported
  - AIX supported
  - IBM i supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#1140) - Custom Service Specify, Rochester Minn, USA

Having #1140 on the order, will cause the order to be routed to Rochester and the machine to be internally routed to the CSC build area in building 114 (Rochester).

- Attributes provided: Customization
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)

- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#2145) - Primary OS - IBM i

Indicates clients intend to use the IBM i operating system on the primary system partition. This feature is used as a Manufacturing Routing indicator and does not deliver parts, software or services.

- Attributes provided: None
- Attributes required: Indicates clients intend to use the IBM i operating system on the primary system partition.
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required : IBM i supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#2146) - Primary OS - AIX

Indicates clients intend to use the AIX operating system on the primary system partition. This feature is used as a Manufacturing Routing indicator and does not deliver parts, software or services.

- Attributes provided: None
- Attributes required: Indicates clients intend to use the AIX operating system on the primary system partition.
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 1)
- OS level required :
  - AIX supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#2147) - Primary OS - Linux

Indicates clients intend to use the Linux operating system on the primary system partition. This feature is used as a Manufacturing Routing indicator and does not deliver parts, software or services.

- Attributes provided: None
- Attributes required: Indicates clients intend to use the Linux operating system on the primary system partition.
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 1)
- OS level required :
  - Linux supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#2319) - Factory Deconfiguration of 1-core

Factory deconfiguration of 1 processor core to assist with optimization of software licensing. The maximum number of this feature that can be ordered is one less than the number of cores on the system, e.g. 7 for an 8-core system and 15 for a 16-core system.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 8 (Initial order maximum: 8)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#4242) - 1.8 M (6-ft) Extender Cable for Displays (15-pin D-shell to 15-pin D-shell)

This cable is required to connect displays with a 15-pin "D" shell connector to the appropriate accelerator connector when it is farther away than the attached monitor cable can reach. Rack mounted systems are likely candidates for this extender cable.

- Attributes provided: 6-foot extension cable
- Attributes required: Supported monitor and adapter with a 15-pin "D" shell connector.
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Supported
- CSU: CIF
- Return parts MES: No

(#4649) - Rack Integration Services

#4649 is a prerequisite for #4651-4666.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#4650) - Rack Indicator- Not Factory Integrated

This indicator is used to specify that the rack mountable device in this initial order should not be merged into a rack within IBM Manufacturing. If a device with 4650 is ordered with a rack, the device will not be factory integrated in the ordered rack and will ship uninstalled in the rack.

NOTE: This "no additional charge" feature will be placed on an initial order for a rack mountable device by the Configuration Tool when the order does not ship from IBM Manufacturing in a Rack. This server is not designed to be rack shippable.

- Attributes provided: System will not be shipped in a rack.
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#4651) - Rack Indicator, Rack #1

When added to an initial rack order, this indicator is used to specify the first rack for a multi rack order, or the only rack for a single rack order.

When added to an initial rack mountable device order, this indicator is used to specify that the rack mountable device (such as a system or I/O drawer) is to be mounted in rack #1.
NOTE:For 19" rack mountable device orders: One feature code from the group 4650 to 4666 must be listed on the order. More than one feature code from this group is not allowed. For 19" rack orders: If IBM Mfg. is to assemble a rack mountable device into the rack, one feature code selection from the group 4651 to 4666 must be listed on the order. More than one feature code selection from this group is not allowed. The quantity of this selected feature code on the 19" rack order must equal the number of rack mountable devices to be installed in the rack by IBM Mfg.

- Attributes provided: Rack Integration/ Rack Specify
- Attributes required: Rack
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#4652) - Rack Indicator, Rack #2

When added to an initial rack order, this indicator is used to specify the second rack for a multi rack order.

When added to an initial rack mountable device order, this indicator is used to specify that the rack mountable device (such as a system or I/O drawer) is to be mounted in rack #2 of a multi rack order.

NOTE: For 19" rack mountable device orders: One feature code from the group 4650 to 4666 must be listed on the order. More than one feature code from this group is not allowed. For 19" rack orders: If IBM Mfg. is to assemble a rack mountable device into the rack, one feature code selection from the group 4651 to 4666 must be listed on the order. More than one feature code selection from this group is not allowed. The quantity of this selected feature code on the 19" rack order must equal the number of rack mountable devices to be installed in the rack by IBM Mfg.

- Attributes provided: Rack Integration/Rack specify

- Attributes required: Rack
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#4653) - Rack Indicator, Rack #3

When added to an initial rack order, this indicator is used to specify the third rack for a multi rack order.

When added to an initial rack mountable device order, this indicator is used to specify that the rack mountable device (such as a system or I/O drawer) is to be mounted in rack #3 of a multi rack order.

NOTE: For 19" rack mountable device orders: One feature code from the group 4650 to 4666 must be listed on the order. More than one feature code from this group is not allowed. For 19" rack orders: If IBM Mfg. is to assemble a rack mountable device into the rack, one feature code selection from the group 4651 to 4666 must be listed on the order. More than one feature code selection from this group is not allowed. The quantity of this selected feature code on the 19" rack order must equal the number of rack mountable devices to be installed in the rack by IBM Mfg.

- Attributes provided: Rack specify
- Attributes required: Rack
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#4654) - Rack Indicator, Rack #4

When added to an initial rack order, this indicator is used to specify the fourth rack for a multi rack order.

When added to an initial rack mountable device order, this indicator is used to specify that the rack mountable device (such as a system or I/O drawer) is to be mounted in rack #4 of a multi rack order.

NOTE: For 19" rack mountable device orders: One feature code from the group 4650 to 4666 must be listed on the order. More than one feature code from this group is not allowed. For 19" rack orders: If IBM Mfg. is to assemble a rack mountable device into the rack, one feature code selection from the group 4651 to 4666 must be listed on the order. More than one feature code selection from this group is not allowed. The quantity of this selected feature code on the 19" rack order must equal the number of rack mountable devices to be installed in the rack by IBM Mfg.

- Attributes provided: Rack specify
- Attributes required: Rack
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None

- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#4655) - Rack Indicator, Rack #5

When added to an initial rack order, this indicator is used to specify the fifth rack for a multi rack order.

When added to an initial rack mountable device order, this indicator is used to specify that the rack mountable device (such as a system or I/O drawer) is to be mounted in rack #5 of a multi rack order.

NOTE: For 19" rack mountable device orders: One feature code from the group 4650 to 4666 must be listed on the order. More than one feature code from this group is not allowed. For 19" rack orders: If IBM Mfg. is to assemble a rack mountable device into the rack, one feature code selection from the group 4651 to 4666 must be listed on the order. More than one feature code selection from this group is not allowed. The quantity of this selected feature code on the 19" rack order must equal the number of rack mountable devices to be installed in the rack by IBM Mfg.

- Attributes provided: Rack specify
- Attributes required: Rack
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#4656) - Rack Indicator, Rack #6

When added to an initial rack order, this indicator is used to specify the sixth rack for a multi rack order.

When added to an initial rack mountable device order, this indicator is used to specify that the rack mountable device (such as a system or I/O drawer) is to be mounted in rack #6 of a multi rack order.

NOTE: For 19" rack mountable device orders: One feature code from the group 4650 to 4666 must be listed on the order. More than one feature code from this group is not allowed. For 19" rack orders: If IBM Mfg. is to assemble a rack mountable device into the rack, one feature code selection from the group 4651 to 4666 must be listed on the order. More than one feature code selection from this group is not allowed. The quantity of this selected feature code on the 19" rack order must equal the number of rack mountable devices to be installed in the rack by IBM Mfg.

- Attributes provided: Rack specify
- Attributes required: Rack
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#4657) - Rack Indicator, Rack #7

When added to an initial rack order, this indicator is used to specify the seventh rack for a multi rack order.

When added to an initial rack mountable device order, this indicator is used to specify that the rack mountable device (such as a system or I/O drawer) is to be mounted in rack #7 of a multi rack order.

NOTE: For 19" rack mountable device orders: One feature code from the group 4650 to 4666 must be listed on the order. More than one feature code from this group is not allowed. For 19" rack orders: If IBM Mfg. is to assemble a rack mountable device into the rack, one feature code selection from the group 4651 to 4666 must be listed on the order. More than one feature code selection from this group is not allowed. The quantity of this selected feature code on the 19" rack order must equal the number of rack mountable devices to be installed in the rack by IBM Mfg.

- Attributes provided: Rack specify
- Attributes required: Rack
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#4658) - Rack Indicator, Rack #8

When added to an initial rack order, this indicator is used to specify the eighth rack for a multi rack order.

When added to an initial rack mountable device order, this indicator is used to specify that the rack mountable device (such as a system or I/O drawer) is to be mounted in rack #8 of a multi rack order.

NOTE: For 19" rack mountable device orders: One feature code from the group 4650 to 4666 must be listed on the order. More than one feature code from this group is not allowed. For 19" rack orders: If IBM Mfg. is to assemble a rack mountable device into the rack, one feature code selection from the group 4651 to 4666 must be listed on the order. More than one feature code selection from this group is not allowed. The quantity of this selected feature code on the 19" rack order must equal the number of rack mountable devices to be installed in the rack by IBM Mfg.

- Attributes provided: Rack specify
- Attributes required: Rack
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#4659) - Rack Indicator, Rack #9

When added to an initial rack order, this indicator is used to specify the ninth rack for a multi rack order.

When added to an initial rack mountable device order, this indicator is used to specify that the rack mountable device (such as a system or I/O drawer) is to be mounted in rack #9 of a multi rack order.

NOTE: For 19" rack mountable device orders: One feature code from the group 4650 to 4666 must be listed on the order. More than one feature code from this group is not allowed. For 19" rack orders: If IBM Mfg. is to assemble a rack mountable device into the rack, one feature code selection from the group 4651 to 4666 must be listed on the order. More than one feature code selection from this group is not allowed. The quantity of this selected feature code on the 19" rack order must equal the number of rack mountable devices to be installed in the rack by IBM Mfg.

- Attributes provided: Rack specify
- Attributes required: Rack
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#4660) - Rack Indicator, Rack #10

When added to an initial rack order, this indicator is used to specify the tenth rack for a multi rack order.

When added to an initial rack mountable device order, this indicator is used to specify that the rack mountable device (such as a system or I/O drawer) is to be mounted in rack #10 of a multi rack order.

NOTE: For 19" rack mountable device orders: One feature code from the group 4650 to 4666 must be listed on the order. More than one feature code from this group is not allowed. For 19" rack orders: If IBM Mfg. is to assemble a rack mountable device into the rack, one feature code selection from the group 4651 to 4666 must be listed on the order. More than one feature code selection from this group is not allowed. The quantity of this selected feature code on the 19" rack order must equal the number of rack mountable devices to be installed in the rack by IBM Mfg.

- Attributes provided: Rack specify
- Attributes required: Rack
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#4661) - Rack Indicator, Rack #11

When added to an initial rack order, this indicator is used to specify the eleventh rack for a multi rack order.

When added to an initial rack mountable device order, this indicator is used to specify that the rack mountable device (such as a system or I/O drawer) is to be mounted in rack #11 of a multi rack order.

NOTE: For 19" rack mountable device orders: One feature code from the group 4650 to 4666 must be listed on the order. More than one feature code from this group is not allowed. For 19" rack orders: If IBM Mfg. is to assemble a rack mountable device into the rack, one feature code selection from the group 4651 to 4666 must be listed on the order. More than one feature code selection from this group is not allowed. The

quantity of this selected feature code on the 19" rack order must equal the number of rack mountable devices to be installed in the rack by IBM Mfg.

- Attributes provided: Rack specify
- Attributes required: Rack
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#4662) - Rack Indicator, Rack #12

When added to an initial rack order, this indicator is used to specify the twelfth rack for a multi rack order.

When added to an initial rack mountable device order, this indicator is used to specify that the rack mountable device (such as a system or I/O drawer) is to be mounted in rack #12 of a multi rack order.

NOTE: For 19" rack mountable device orders: One feature code from the group 4650 to 4666 must be listed on the order. More than one feature code from this group is not allowed. For 19" rack orders: If IBM Mfg. is to assemble a rack mountable device into the rack, one feature code selection from the group 4651 to 4666 must be listed on the order. More than one feature code selection from this group is not allowed. The quantity of this selected feature code on the 19" rack order must equal the number of rack mountable devices to be installed in the rack by IBM Mfg.

- Attributes provided: Rack specify
- Attributes required: Rack
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#4663) - Rack Indicator, Rack #13

When added to an initial rack order, this indicator is used to specify the thirteenth rack for a multi rack order.

When added to an initial rack mountable device order, this indicator is used to specify that the rack mountable device (such as a system or I/O drawer) is to be mounted in rack #13 of a multi rack order.

NOTE: For 19" rack mountable device orders: One feature code from the group 4650 to 4666 must be listed on the order. More than one feature code from this group is not allowed. For 19" rack orders: If IBM Mfg. is to assemble a rack mountable device into the rack, one feature code selection from the group 4651 to 4666 must be listed on the order. More than one feature code selection from this group is not allowed. The quantity of this selected feature code on the 19" rack order must equal the number of rack mountable devices to be installed in the rack by IBM Mfg.

- Attributes provided: Rack specify
- Attributes required: Rack
- Minimum required: 0

- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#4664) - Rack Indicator, Rack #14

When added to an initial rack order, this indicator is used to specify the fourteenth rack for a multi rack order.

When added to an initial rack mountable device order, this indicator is used to specify that the rack mountable device (such as a system or I/O drawer) is to be mounted in rack #14 of a multi rack order.

NOTE: For 19" rack mountable device orders: One feature code from the group 4650 to 4666 must be listed on the order. More than one feature code from this group is not allowed. For 19" rack orders: If IBM Mfg. is to assemble a rack mountable device into the rack, one feature code selection from the group 4651 to 4666 must be listed on the order. More than one feature code selection from this group is not allowed. The quantity of this selected feature code on the 19" rack order must equal the number of rack mountable devices to be installed in the rack by IBM Mfg.

- Attributes provided: Rack specify
- Attributes required: Rack
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#4665) - Rack Indicator, Rack #15

When added to an initial rack order, this indicator is used to specify the fifteenth rack for a multi rack order.

When added to an initial rack mountable device order, this indicator is used to specify that the rack mountable device (such as a system or I/O drawer) is to be mounted in rack #15 of a multi rack order.

NOTE: For 19" rack mountable device orders: One feature code from the group 4650 to 4666 must be listed on the order. More than one feature code from this group is not allowed. For 19" rack orders: If IBM Mfg. is to assemble a rack mountable device into the rack, one feature code selection from the group 4651 to 4666 must be listed on the order. More than one feature code selection from this group is not allowed. The quantity of this selected feature code on the 19" rack order must equal the number of rack mountable devices to be installed in the rack by IBM Mfg.

- Attributes provided: Rack specify
- Attributes required: Rack
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial

- CSU: N/A
- Return parts MES: Does not apply

(#4666) - Rack Indicator, Rack #16

When added to an initial rack order, this indicator is used to specify the sixteenth rack for a multi rack order.

When added to an initial rack mountable device order, this indicator is used to specify that the rack mountable device (such as a system or I/O drawer) is to be mounted in rack #16 of a multi rack order.

NOTE: For 19" rack mountable device orders: One feature code from the group 4650 to 4666 must be listed on the order. More than one feature code from this group is not allowed. For 19" rack orders: If IBM Mfg. is to assemble a rack mountable device into the rack, one feature code selection from the group 4651 to 4666 must be listed on the order. More than one feature code selection from this group is not allowed. The quantity of this selected feature code on the 19" rack order must equal the number of rack mountable devices to be installed in the rack by IBM Mfg.

- Attributes provided: Rack specify
- Attributes required: Rack
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#5000) - Software Preload Required

Indicates that preloaded software and/or consolidated I/O is shipped with the initial order. A maximum of one (#5000) is supported. This feature has country-specific usage.

Note: Not supported in Brazil and India.

- Attributes provided: Software Pre-load
- Attributes required: N/A
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - Linux supported
  - AIX supported
  - IBM i cannot be preloaded on this system
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#5260) - PCIe2 LP 4-port 1GbE Adapter

This short PCIe Gen2 adapter provides four 1Gb Ethernet ports that can be configured to run at 1000, 100 or 10 Mbps. 4-pair CAT-5 Unshielded Twisted Pair (UTP) cables up to 100 meters in length are attached to the copper RJ45 connectors. Each port is independent of one another and supports full-duplex or half-duplex. 1000 Mbps speed is not supported in Half Duplex (HDX) mode.

Feature #5260 and #5899 are electronically identical and have the same CCIN of 576F. #5260 indicates a low profile tail stock while #5899 indicates a full high tail stock.

Details for the ports include:

- AIX NIM support
- IEEE 802.3ab (1 GbE), 802.1p priority, 802.1Q VLAN tagging, 802.3x flow control, 802.3ad load-balancing and failover,
- Link aggregation, IEEE 802.3ad 802.3
- Multiple MAC addresses per interface
- MSI-X, MSI and support of legacy pin interrupts
- Ether II and IEEE 802.3 encapsulated frames
- Jumbo frames up to 9.6 Kbytes
- TCP checksum offload for IPv4 and IPv6
- TCP segmentation Offload (TSO) for IPv4 and IPv6
- UDP checksum offload for IPv4 and IPv6
- AIX, IBM i and Linux provide software iSCSI support through the adapter. Linux can also leverage adapter hardware support including initiator and header & data digest (CRC) generation and checking

- Attributes provided: Four-port 1 Gb Ethernet
- Attributes required: 1 Low Profile (LP) PCIe slot (Gen1 or Gen2)
- Minimum required: 0
- Maximum allowed: 4 (Initial order maximum: 0)
- OS level required :
  - IBM i supported
  - AIX supported
  - Linux supported
- Initial Order/MES/Both/Supported: Supported
- CSU: CIF
- Return parts MES: No

(#5550) - Sys Console On HMC

With #5550, system console function is driven by the Hardware Management Console (HMC) connected to the system. The HMC is required if the following functions are desired/selected for the system:

- Attributes provided: System Console on Hardware Management Console(HMC)
- Attributes required: Hardware Management Console (HMC)
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required : IBM i supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#5557) - System Console-Ethernet LAN adapter

Indicates that the system console is driven by an Ethernet LAN adapter. This LAN adapter must be dedicated to console support functions and cannot be used for any other purpose.

- Attributes provided: System Console connection through an Ethernet LAN adapter
- Attributes required: Ethernet LAN adapter
- Minimum required: 0

- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required : IBM i supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6458) - Power Cord 4.3m (14-ft), Drawer to IBM PDU (250V/10A)

Standard IBM rack power cable that goes from the system or I/O drawer to the rack power distribution unit (PDU). Cable has C13 on one end (for C14 power supply connector on system unit or I/O drawer) and C14 on the other end (for IBM PDU C13 receptacle). Note for different length C13/C14 cables see #6671 (2.7M) or #6672 (2.0M).

- Attributes provided: Power jumper cord
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6460) - Power Cord 4.3m (14-ft), Drawer To OEM PDU (125V, 15A)

This power cord goes from the system or I/O drawer to the rack OEM power distribution unit or wall socket outlet. Cable has C13 on one end (for C14 power supply connector on system unit or I/O drawer) and plug type #4 (NEMA 5-15) on the other end.

The following countries/regions use the #6460 power cord to power the system and/or peripheral features requiring a power cord: United States, Antigua & Barbuda, Aruba, Bahamas, Barbados, Belize, Bermuda, Bolivia, Bonaire, Calicos Islands, Canada, Cayman Islands, Colombia, Costa Rica, Cuba, Curacao, Dominican Republic, Ecuador, El Salvador, Guam, Guatemala, Guyana, Haiti, Honduras, Jamaica, Japan, Mexico, Micronesia, Montserrat, Netherlands Antilles, Nicaragua, Panama, Peru, Philippines, St. Kitts/Nevis, St. Martin, Taiwan, Tortola (BVI), Trinidad/Tobago, Venezuela.

- Attributes provided: Power cord.
- Attributes required: None.
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6469) - Power Cord 4.3m (14-ft), Drawer to Wall/OEM PDU (250V/15A) U. S.

This power cord goes from the system or I/O drawer to the wall or rack OEM power distribution unit. Cable has C13 on one end (for C14 power supply connector on system unit or I/O drawer) and plug type #5 (NEMA 6-15) on the other end for wall or OEM PDU.

The following countries/regions use the #6469 power cord to power the system and/or peripheral features requiring a power cord:

United States, Anguilla, Antigua & Barbuda, Aruba, Bahamas, Barbados, Belize, Bermuda, Bolivia, Bonaire, Caicos Is., Canada, Cayman Islands, Colombia, Costa Rica, Cuba, Curacao, Dominican Republic, Ecuador, El Salvador, Guam, Guatemala, Haiti, Honduras, Jamaica, Japan, Micronesia, Montserrat, Netherlands Antilles, Nicaragua, Panama, Peru, Philippines, St. Marten NA, Taiwan, Tortola (BVI), Thailand, Venezuela.

- Attributes provided: Power cord.
- Attributes required: None.
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6470) - Power Cord 1.8m (6-ft), Drawer to Wall (125V/15A)

This power cord goes from the system and/or peripheral features to a wall-type outlet. Plug type #4 (NEMA 5-15). Refer to Corporate Bulletin C-B-2-4700-009 for a description of plug types. 6-foot length.

The following countries/regions use the #6470 power cord to power the system and/or peripheral features requiring a power cord:

United States, Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, Bermuda, Bolivia, Bonaire, Calicos Islands, Canada, Cayman Islands, Colombia, Costa Rica, Cuba, Curacao, Dominican Republic, Ecuador, El Salvador, Guam, Guatemala, Guyana, Haiti, Honduras, Jamaica, Japan, Mexico, Micronesia, Montserrat, Netherlands Antilles, Nicaragua, Panama, Peru, Philippines, St. Kitts/Nevis, St. Martin, Taiwan, Tortola (BVI), Trinidad/Tobago, Venezuela.

- Attributes provided: Power cord
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6471) - Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU (250V/10A)

This power cord goes from the system and/or peripheral features to a wall-type outlet. Plug type #73 (InMetro NBR 14136). Refer to Corporate Bulletin C-B-2-4700-009 for a description of plug types.

The following countries/regions use the #6471 power cord to power the system and/or peripheral features requiring a power cord:

Brazil

- Attributes provided: Power cord
- Attributes required: None

- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6472) - Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU (250V/16A)

This power cord goes from the system and/or peripheral features to a wall-type outlet. Plug type #18 (CEE 7 VII). Refer to Corporate Bulletin C-B-2-4700-009 for a description of plug types.

The following countries/regions use the #6472 power cord to power the system and/or peripheral features requiring a power cord:

Afghanistan, Albania, Algeria, Andorra, Angola, Armenia, Austria, Belarus, Belgium, Benin, Bosnia/Herzegovina, Bulgaria, Burkina Faso, Burundi, Cambodia, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo, Croatia, Czech Republic, Dahomey, Djibouti, Egypt, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Finland, France, French Polynesia, French Guyana, Gabon, Georgia, Germany, Greece, Guadeloupe, Guinea, Guinea-Bissau, Hungary, Iceland, Indonesia, Iran, Ivory Coast, Kazakhstan, Kyrgyzstan, Laos, Latvia, Lebanon, Lithuania, Luxembourg, Macau, Macedonia, Mali, Martinique, Mauritania, Mauritius, Mayotte, Moldova, Monaco, Mongolia, Morocco, Mozambique, Netherlands, New Caledonia, Niger, North Korea (C19 only), Norway, Poland, Portugal, Principe, Reunion, Romania, Russia, Rwanda, St. Thomas, Saudi Arabia, Senegal, Serbia, Slovenia, Somalia, South Korea (C19 only), Spain, Surinam, Sweden, Syria, Tahiti, Tajikistan, Togo, Tunisia, Turkey, Turkmenistan, Ukraine, Upper Volta, Uzbekistan, Vanuatu, Vietnam, Wallis & Futuna, Zaire, Zimbabwe.

- Attributes provided: Power cord
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6473) - Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU (250V/10A)

This power cord goes from the system and/or peripheral features to a wall-type outlet. Plug type #19 (CEE). Refer to Corporate Bulletin C-B- 2-4700-009 for a description of plug types.

The following countries/regions use the #6473 power cord to power the system and/or peripheral features requiring a power cord:

Denmark

- Attributes provided: Power cord
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :

    - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6474) - Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU, (250V/13A)

This power cord goes from the system and/or peripheral features to a wall-type outlet. Plug type #23 (BS 1364A). Refer to Corporate Bulletin C-B-2-4700-009 for a description of plug types.

The following countries/regions use the #6474 power cord to power the system and/or peripheral features requiring a power cord:

Abu Dhabi, Bahrain, Botswana, Brunei, Channel Islands, Cyprus, Dominica, Gambia, Grenada, Grenadines, Guyana, Hong Kong, Iraq, Ireland, Jordan, Kenya, Kuwait, Liberia, Malawi, Malaysia, Malta, Myanmar, Nigeria, Oman, Qatar, Sierra Leone, Singapore, St. Kitts, St. Lucia, Seychelles, Sudan, Tanzania, Trinidad & Tobago, United Arab Emirates, United Kingdom, Yemen, Zambia

- Attributes provided: Power cord
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
    - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6475) - Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU, (250V/16A)

This power cord goes from the system and/or peripheral features to a wall-type outlet. Plug type #32 (SII 32-1971). Refer to Corporate Bulletin C-B-2-4700-009 for a description of plug types.

The following countries/regions use the #6475 power cord to power the system and/or peripheral features requiring a power cord:

Israel

- Attributes provided: Power cord
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
    - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6476) - Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU, (250V/10A)

This power cord goes from the system and/or peripheral features to a wall-type outlet. Plug type #24 (SEV 24507). Refer to Corporate Bulletin C-B-2-4700-009 for a description of plug types.

The following countries/regions use the #6476 power cord to power the system and/or peripheral features requiring a power cord:

Lichtenstein, Switzerland

- Attributes provided: Power cord
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6477) - Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU, (250V/16A)

This power cord goes from the system and/or peripheral features to a wall-type outlet. Plug type #22 (SABS 164). Refer to Corporate Bulletin C-B-2-4700-009 for a description of plug types.

The following countries/regions use the #6477 power cord to power the system and/or peripheral features requiring a power cord:

Bangladesh, LeSotho, Maceo, Maldives, Nambia, Pakistan, Samoa, South Africa, Sri Lanka, Swaziland, Uganda.

- Attributes provided: Power cord
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6478) - Power Cord 2.7 M(9-foot), To Wall/OEM PDU, (250V, 16A)

This power cord goes from the system and/or peripheral features to a wall-type outlet. Plug type #25 (CEI 23-16). Refer to Corporate Bulletin C-B-2-4700-009 for a description of plug types. The following countries/regions use the #6478 power cord to power the system and/or peripheral features requiring a power cord: Chile Italy Libya

- Attributes provided: Power cord
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6488) - Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU, (125V/15A or 250V/10A)

This power cord goes from the system and/or peripheral features to a wall-type outlet. 125V, 15A or 250V, 10A, Plug Type #2. Refer to Corporate Bulletin C-B-2-4700-009 for a description of plug types.

The following countries/regions use the #6488 power cord to power the system and/or peripheral features requiring a power cord:

Argentina, Paraguay, Uruguay.

- Attributes provided: Power cord
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6489) - 4.3m (14-Ft) 3PH/32A 380-415V Power Cord

#6489 is a 14-FT/4.3m 3PH/32A power cable with a Type 46 plug which distributes power from a power source to a Power Distribution Unit.

- Attributes provided: power cord
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6491) - 4.3m (14-Ft) 1PH/63A 200-240V Power Cord

#6491 is a 14-FT/4.3m 200-240V/63A power cord with a Type 46 plug which distributes power from a power source to a Power Distribution Unit.

- Attributes provided: power cord
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6492) - 4.3m (14-Ft) 1PH/60A (48A derated) 200-240V Power Cord

Feature #6492 is a 14-FT/4.3m 200-240V/48-60A power cord with a Type 46 plug which distributes power from a power source to a Power Distribution Unit.

- Attributes provided: Power Cord PDU to wall
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6493) - Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU, (250V/10A)

This power cord goes from the system and/or peripheral features to a wall-type outlet. Plug type #62 (GB 1053). Refer to Corporate Bulletin C-B-2-4700-009 for a description of plug types.

The following countries/regions use the #6493 power cord to power the system and/or peripheral features requiring a power cord:

People's Republic of China.

- Attributes provided: Power cord
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6494) - Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU, (250V/10A)

This power cord goes from the system and/or peripheral features to a wall-type outlet. Plug type #69 (IS 6538). Refer to Corporate Bulletin C-B-2-4700-009 for a description of plug types.

The following countries/regions use the #6494 power cord to power the system and/or peripheral features requiring a power cord:

India

- Attributes provided: Power cord
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6496) - Power Cord 2.7M (9-foot), To Wall/OEM PDU, (250V, 10A)

This power cord goes from the system and/or peripheral features to a wall-type outlet. Plug type #66 (KETI). Refer to Corporate Bulletin C-B- 2-4700-009 for a description of plug types. The following countries/regions

use the #6496 power cord to power the system and/or peripheral features requiring a power cord: North Korea South Korea

- Attributes provided: Power cord
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6577) - Power Cable - Drawer to IBM PDU, 200-240V/10A

This feature permits manufacturing to select the optimum PDU power jumper cord length (1.0M, 2.0M, 2.7M, or 4.3M) for rack integration. This feature is mandatory on initial order specifying factory integration with IBM racks (such as with 7965-S42 racks). Feature is not valid on initial order with non-factory integrated feature 4650. Power jumper cord has C13 on one end (for C14 power supply connector on system unit or I/O drawer) and C14 on the other end (for C13 PDU receptacle).

Note: This feature is not used for MES orders except for bulk orders by SDI clients only. See C13/C14 jumper cord features #6458 (4.3M), #6671 (2.7M), #6672 (2.0M) when not using factory integration.

- Attributes provided: One power jumper cord.
- Attributes required: At least one rack and the absence of #4650.
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6651) - Power Cord 2.7M (9-foot), To Wall/OEM PDU, (125V, 15A)

This power cord goes from the system and/or peripheral features to a wall-type outlet. Plug type #75 (KETI). Refer to Corporate Bulletin C-B- 2-4700-009 for a description of plug types. The following countries/regions use the #6651 power cord to power the system and/or peripheral features requiring a power cord: Taiwan

- Attributes provided: Power cord
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6653) - 4.3m (14-Ft) 3PH/16A 380-415V Power Cord

#6653 is a 14-FT/4.3m 3PH/16A power cord with a Type 46 plug which distributes power from a power source to a Power Distribution Unit.

- Attributes provided: power cord
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6654) - 4.3m (14-Ft) 1PH/30A (24A derated) Power Cord

Feature #6654 is a 14-FT/4.3m 200-240V/24A-30A locking power cord with a Type 12 plug which distributes power from a power source to a Power Distribution Unit.

- Attributes provided: power cord
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6655) - 4.3m (14-Ft) 1PH/30A (24A derated) WR Power Cord

Feature #6655 is a 14-FT/4.3m 200-240V/24A-30A water-resistant power cord with a Type 40 plug which distributes power from a power source to a Power Distribution Unit.

- Attributes provided: Power Cord
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6656) - 4.3m (14-Ft) 1PH/32A Power Cord

#6656 is a 14-FT/4.3m 200-240V/32A power cord with a Type 46 plug which distributes power from a power source to a Power Distribution Unit.

- Attributes provided: PDU power cord
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :

    - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6657) - 4.3m (14-Ft) 1PH/32A Power Cord-Australia

This power cord provides power to a #5889, #7188 #9188, #7109, #EPTG, #EPTM, #EPTJ, #ECJM, #ECJG, #ECJJ, #ECJN, or #EPTN power distribution unit. It connects to a wall power outlet with a PDL plug.

- Attributes provided: Power connection for a PDU
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
    - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6658) - 4.3m (14-Ft) 1PH/30A (24A derated) Power Cord-Korea

This power cord provides power to a #5889, #7188, #9188, #7109, #EPTG, #EPTM, #EPTJ, #ECJM, #ECJG, #ECJJ, #ECJN, or #EPTN power distribution unit. It connects to a wall power outlet with a Korean plug.

- Attributes provided: PDU power cable
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
    - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6659) - Power Cord 2.7M (9-foot), To Wall/OEM PDU, (250V, 15A)

This power cord goes from the system and/or peripheral features to a wall-type outlet. Plug type #76 (KETI). Refer to Corporate Bulletin C-B- 2-4700-009 for a description of plug types. The following countries/regions use the #6659 power cord to power the system and/or peripheral features requiring a power cord: Taiwan

- Attributes provided: Power cord
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
    - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6660) - Power Cord 4.3m (14-ft), Drawer to Wall/OEM PDU (125V/15A)

This power cord goes from the system and/or peripheral features to a wall-type outlet. Plug type #59 (NEMA 5-15). Refer to Corporate Bulletin C-B-2-4700-009 for a description of plug types. 14-foot length.

This power cord meets the DENAN marking requirement in Japan.

- Attributes provided: Power Cord
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6665) - Power Cord 2.8m (9.2-ft), Drawer to IBM PDU, (250V/10A)

Standard IBM rack power jumper cord that goes from the system or I/O drawer to the rack power distribution unit (PDU). Cable has C13 on one end (for C14 power supply connector on system unit or I/O drawer) and C20 on the other end (for IBM PDU C19 receptacle).

Note: For power jumper cord which attach to PDUs with C13 receptacles, use features such as #6577, #6458, #6671, or #6672.

- Attributes provided: Power jumper cord.
- Attributes required: None.
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6667) - 4.3m (14-Ft) 3PH/32A 380-415V Power Cord-Australia

#6667 is a 14-FT/4.3m 380-45V/32A power cord with a Type PDL plug which distributes power from a power source to a Power Distribution Unit.

- Attributes provided: PDU power cable
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6669) - Power Cord 4.3M (14-foot), Drawer to OEM PDU, (250V, 15A)

.* 6669 |lp 02-05 PWR CBL, DRWR TO OEM PDU, 14', 200-240V/15A, IEC320/C13, PT#57

This power cord goes from the system or I/O drawer to the rack power distribution unit. Plug type #57 (NEMA 6-15). Refer to Corporate Bulletin C-B-2-4700-009 for a description of plug types. 14-foot length.

This power cord meets the DENAN marking requirement in Japan.

- Attributes provided: Power Cord
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6671) - Power Cord 2.7M (9-foot), Drawer to IBM PDU, 250V/10A

.* 6671 |lp 02-05 PWR CBL, DRWR TO OEM PDU, 9', 200-240V/15A, IEC320/C13, PT#57

Standard IBM rack power cable that goes from the system or I/O drawer to the rack power distribution unit (PDU). Cable has C13 on one end (for C14 power supply connector on system unit or I/O drawer) and C14 on the other end (for IBM PDU C13 receptacle). Note for different length C13/C14 cables see #6458 (4.3M) or #6672 (2.0M).

- Attributes provided: Power jumper cord.
- Attributes required: None.
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6672) - Power Cord 2M (6.5-foot), Drawer to IBM PDU, 250V/10A

Standard rack power cable that goes from the system or I/O drawer to the rack power distribution unit (PDU). Cable has C13 on one end (for C14 power supply connector on system unit or I/O drawer) and C14 on the other end (for IBM PDU C13 receptacle). Note for different length C13/C14 cables see #6458 (4.3M) or #6671 (2.7M).

- Attributes provided: Power jumper cord.
- Attributes required: None.
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#6680) - Power Cord 2.7m (9-ft), Drawer to Wall/OEM PDU, (250V/10A)

This insulated power cord goes from the system and/or peripheral features to a wall-type outlet. Plug type #6 (AS 3112-1964 NZS 198). Refer to Corporate Bulletin C-B-2-4700-009 for a description of plug types.

The following countries/regions use the #6680 power cord to power the system and/or peripheral features requiring a power cord:

Australia, Fiji Islands, Kiribati, Nauru, New Zealand, Papua New Guinea, W. Samoa.

- Attributes provided: Power cord
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#7109) - Intelligent PDU+, 1 EIA Unit, Universal UTG0247 Connector

This feature is for an intelligent AC power distribution unit (PDU+) that will allow the user to monitor the amount of power being used by the devices that are plugged in to this PDU+. This AC power distribution unit provides twelve C13 power outlets. It receives power through a UTG0247 connector. It can be used for many different countries and applications by varying the PDU to Wall Power Cord, which must be ordered separately. Each PDU requires one PDU to Wall Power Cord. Supported power cords include the following features: #6489, #6491, #6492, #6653, #6654, #6655, #6656, #6657, #6658, #ELC1 or #ELC2.

Limitation: Some configurations of the Elastic Storage Server (ESS) are delivered with a 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 Customers responsibility to configure this PDU. In any case the ethernet port on the Intelligent PDU must not be connected to the ESS Management switch.

- Attributes provided: Twelve C13 outlets with Power Monitoring Capability
- Attributes required: none
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 0)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Supported
- CSU: CIF
- Return parts MES: No

(#7188) - Power Distribution Unit

An AC Power Distribution Unit (PDU) which mounts in a 19" rack and provides twelve C13 power outlets. The #7188 has six 16A circuit breakers, with two power outlets per circuit breaker. System units and/or expansion units must use a power cord with a C14 plug to connect to the #7188.

One of the following line cords must be used to distribute power from a wall outlet to the #7188; #6489, #6491, #6492, #6653, #6654, #6655, #6656, #6657, #6658, #ELC1 or #ELC2.

- Attributes provided: Power Distribution Unit with Twelve C13 power outlets.
- Attributes required: none
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :

    - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#7196) - Power Distribution Unit (US) - 1 EIA Unit, Universal, Fixed Power Cord

This AC power distribution unit provides six C19 power outlets. Fixed power cord (IEC309 60A plug (3P+G). This PDU requires 3-phase electrical service.

Limitation: Some configurations of the Elastic Storage Server (ESS) are delivered with a 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 Customers responsibility to configure this PDU. In any case the ethernet port on the Intelligent PDU must not be connected to the ESS Management switch.

- Attributes provided: Six C19 power outlets
- Attributes required: 3 phase electrical service
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
    - None
- Initial Order/MES/Both/Supported: Supported
- CSU: CIF
- Return parts MES: No

(#9169) - Order Routing Indicator- System Plant

.* 9169 |s 04-05 FACTORY INTEGRATION SPECIFY

This feature will be auto-selected by the Configurator Tool when required. Use of this feature will affect the routing of the order. Selection of this indicator will direct the order to a system plant for fulfillment.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
    - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9300) - Language Group Specify - US English

.*:h5.(#9300) - Language Group Specify - US English

English language group for nomenclature and standard publications.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 250)
- OS level required :
    - None
- Initial Order/MES/Both/Supported: Initial

- CSU: N/A
- Return parts MES: Does not apply

(#9440) - New AIX License Core Counter

This feature is used to count the number of cores licensed to run AIX.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 32 (Initial order maximum: 32)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9441) - New IBM i License Core Counter

This feature is used to count the number of cores licensed to run IBM i.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 8 (Initial order maximum: 8)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9442) - New Red Hat License Core Counter

This feature is used to count the number of cores licensed to run Red Hat Linux.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 8 (Initial order maximum: 8)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9443) - New SUSE License Core Counter

This feature is used to count the number of cores licensed to run SUSE Linux.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 8 (Initial order maximum: 8)
- OS level required :

    - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9444) - Other AIX License Core Counter

This feature is used to count the number of existing AIX licenses transferred from another server.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 8 (Initial order maximum: 8)
- OS level required :
    - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9445) - Other Linux License Core Counter

This feature is used to count the number of existing Linux licenses transferred from another server.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 8 (Initial order maximum: 8)
- OS level required :
    - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9446) - 3rd Party Linux License Core Counter

This feature is used to count the number of cores licensed to run 3rd party Linux.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 8 (Initial order maximum: 8)
- OS level required :
    - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9447) - VIOS Core Counter

This feature is used to count the number of cores licensed to run VIOS (Virtual I/O Server).

- Attributes provided: None
- Attributes required: None
- Minimum required: 0

- Maximum allowed: 8 (Initial order maximum: 8)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9449) - Other License Core Counter

This feature is used to count the number of other cores licensed.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 8 (Initial order maximum: 8)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9461) - Month Indicator

This month indicator is used to create a date stamp to enable CFR splitting and rejoining in order to circumvent the AAS maximum limitation of 30 systems entered on any one order. The quantity ordered for this feature is generated by eConfig.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 12 (Initial order maximum: 12)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9462) - Day Indicator

This day indicator is used to create a date stamp to enable CFR splitting and rejoining in order to circumvent the AAS maximum limitation of 30 systems entered on any one order. The quantity ordered for this feature is generated by eConfig.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 31 (Initial order maximum: 31)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9463) - Hour Indicator

This hour indicator is used to create a time stamp to enable CFR splitting and rejoining in order to circumvent the AAS maximum limitation of 30 systems entered on any one order. The quantity ordered for this feature is generated by eConfig.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 24 (Initial order maximum: 24)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9464) - Minute Indicator

This hour indicator is used to create a time stamp to enable CFR splitting and rejoining in order to circumvent the AAS maximum limitation of 30 systems entered on any one order. The quantity ordered for this feature is generated by eConfig.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 60 (Initial order maximum: 60)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9465) - Qty Indicator

This quantity indicator is used to specify the remaining, or N-1 quantity of CFR entities that need to be accumulated for rejoining. The quantity ordered for this feature is generated by eConfig and is equal to N-1, where 'N' equals the total quantity of CFRs being rejoined.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9466) - Countable Member Indicator

This administrative indicator used to identify each CFR associated with a date/time stamp that is eligible for splitting and rejoining. The quantity ordered for this feature is generated by eConfig.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9700) - Language Group Specify - Dutch

.*:h5.(#9700) - Language Group Specify - Dutch

Dutch language group for Nomenclature and Standard Publications.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9703) - Language Group Specify - French

.*:h5.(#9703) - Language Group Specify - French

French language group for Nomenclature and Standard Publications.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9704) - Language Group Specify - German

.*:h5.(#9704) - Language Group Specify - German

German language group for Nomenclature and Standard Publications.

- Attributes provided: Language specify
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A

– Return parts MES: Does not apply

(#9705) - Language Group Specify - Polish

.*:h5.(#9705) - Language Group Specify - Polish

Polish language group for Nomenclature and Standard Publications.

– Attributes provided: Language specify
– Attributes required: None
– Minimum required: 0
– Maximum allowed: 1 (Initial order maximum: 1)
– OS level required :
  ▪ None
– Initial Order/MES/Both/Supported: Initial
– CSU: N/A
– Return parts MES: Does not apply

(#9706) - Language Group Specify - Norwegian

Norwegian language group for Nomenclature and Standard Publications.

– Attributes provided: Language specify
– Attributes required: None
– Minimum required: 0
– Maximum allowed: 1 (Initial order maximum: 1)
– OS level required :
  ▪ None
– Initial Order/MES/Both/Supported: Initial
– CSU: N/A
– Return parts MES: Does not apply

(#9707) - Language Group Specify - Portuguese

.*:h5.(#9707) - Language Group Specify - Portuguese

Portuguese language group for Nomenclature and Standard Publications.

– Attributes provided: None
– Attributes required: None
– Minimum required: 0
– Maximum allowed: 1 (Initial order maximum: 1)
– OS level required :
  ▪ None
– Initial Order/MES/Both/Supported: Initial
– CSU: N/A
– Return parts MES: Does not apply

(#9708) - Language Group Specify - Spanish

.*:h5.(#9708) - Language Group Specify - Spanish

Spanish language group for Nomenclature and Standard Publications.

– Attributes provided: None
– Attributes required: None
– Minimum required: 0

- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9711) - Language Group Specify - Italian

.*:h5.(#9711) - Language Group Specify - Italian

Italian language group for Nomenclature and Standard Publications.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9712) - Language Group Specify - Canadian French

.*:h5.(#9712) - Language Group Specify - Canadian French

Canadian French language group for Nomenclature and Standard Publications.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9714) - Language Group Specify - Japanese

.*:h5.(#9714) - Language Group Specify - Japanese

Japanese language group for Nomenclature and Standard Publications.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9715) - Language Group Specify - Traditional Chinese (Taiwan)

.*:h5.(#9715) - Language Group Specify - Tradition Chinese (Taiwan)
Traditional Chinese language group for Nomenclature and Standard Publications.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9716) - Language Group Specify - Korean

.*:h5.(#9716) - Language Group Specify - Korean
Korean language group for Nomenclature and Standard Publications.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9718) - Language Group Specify - Turkish

.* 9718 |L 12-39 LANGUAGE SPECIFY, TURKISH(NOT USED)
Turkish language group for nomenclature and publications.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9719) - Language Group Specify - Hungarian

.*:h5.(#9719) - Language Group Specify - Hungarian
Hungarian language group for Nomenclature and Standard Publications.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :

    - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9720) - Language Group Specify - Slovakian

.*:h5.(#9720) - Language Group Specify - Slovakian

Slovakian language group for Nomenclature and Standard Publications.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
    - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9721) - Language Group Specify - Russian

.*:h5.(#9721) - LANGUAGE SPECIFY, RUSSIAN

Russian language group for nomenclature and standard publications.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
    - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9722) - Language Group Specify - Simplified Chinese (PRC)

.*:h5.(#9722) - LANGUAGE GROUP SPECIFY - SIMPLIFIED CHINESE (PRC)

Simplified Chinese language group for nomenclature and standard publications.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
    - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9724) - Language Group Specify - Czech

.* 9724 |L 12-39 LANGUAGE SPECIFY, CZECHOSLOVAKIAN (NOT USED)

Czech language group for nomenclature and standard publications.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9725) - Language Group Specify - Romanian

Romanian language group for Nomenclature and Standard Publications.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9726) - Language Group Specify - Croatian

Croatian language group for Nomenclature and Standard Publications.

- Attributes provided: Language specify
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9727) - Language Group Specify - Slovenian

Slovenian language group for Nomenclature and Standard Publications.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9728) - Language Group Specify - Brazilian Portuguese

Brazilian Portuguese language group for Nomenclature and Standard Publications.

- Attributes provided: Language specify
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#9729) - Language Group Specify - Thai

Thai language group for Nomenclature and Standard Publications.

- Attributes provided: Language specify
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#AKCH) - Standard S&H Indicator

This feature indicates that the machine order will be shipped under the 'Standard' Shipping & Handling Service Level Agreement. The S&H cost is not charged under this feature code, but this serves as the mechanism to bring the cost into the quote and invoice as a bottom line cost.

- Attributes provided: 'Standard' Shipping & Handling Service Level Agreement.
- Attributes required: IBM Power10 or Power9 server
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#AKCJ) - Standard S&H N/C - Exception

This feature indicates there's a contractual agreement that prevents IBM to charge for Standard Shipping & Handling. Selection of this feature requires Approval.

- Attributes provided: None
- Attributes required: Contractual agreement that prevents IBM to charge for Standard Shipping & Handling.
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None

- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#AKNC) - Premium S&H Indicator

This feature indicates that the machine order will be shipped under the 'Premium' Shipping & Handling Service Level Agreement. The S&H cost is not charged under this feature code, but this serves as the mechanism to bring the cost into the quote and invoice as a bottom line cost.

- Attributes provided: 'Premium' Shipping & Handling Service Level Agreement.
- Attributes required: IBM Power10 or Power9 server
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#ALH0) - Expert Care Indicator

This feature indicates the Expert Care Service and Support offering is included on the order. It is for administrative purposes only.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 255 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#B0PR) - SP Hard Drive/Media Retention - Power 5 years

This feature indicates ServicePac Hard Drive/Media Retention - Power 5 years

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#B0VH) - SP HDR/MR POWER 3Y

ServicePac for Hard Drive or Media Retention for Power 3 years

- Attributes provided: None

- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#B0VP) - SP Machine Setup Support for Power

This feature indicates SP Machine Setup Support for Power.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EB2J) - 10m (30.3-ft) - IBM MTP 12 strand cable for 40/100G transceivers

QSFP+ cable is used for 40Gb-to-40Gb Ethernet connectivity. Clients can use this QSFP+ Direct Attach Cable for Ethernet connectivity.

- Attributes provided: 10m QSFP+ to QSFP+ Cable
- Attributes required: QSFP/QSFP+ ports with optical transceivers
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EB2K) - 30m (90.3-ft) - IBM MTP 12 strand cable for 40/100G transceivers

QSFP+ cable is used for 40Gb-to-40Gb Ethernet connectivity. Clients can use this QSFP+ Direct Attach Cable for Ethenet connectivity.

- Attributes provided: 30m QSFP+ to QSFP+ Cable
- Attributes required: QSFP/QSFP+ ports with optical transceivers
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EB3Y) - AC Common Redundant Power Supply - 800W for Server (100-127V/200-240V)

This feature provides an AC 100-127V/200-240V, 800 watt Common Redundant Power Supply (CRPS).

The power supply is configurated in a one plus one for a 2U server configuration to provide redundancy. Supported in rack and tower models.

To be operational, a minimum power supply in the CEC base enclosure is required. If there is a power supply failure, any of the power supplies can be exchanged without interrupting the operation of the system.
This power supply is not supported on all models.

- Attributes provided: Power Supply
- Attributes required: Supported on rack and tower model. Requires input voltage of 100-127V/200-240V.
- Minimum required: 0
- Maximum allowed: 2 (Initial order maximum: 2)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EB3Z) - Lift tool based on GenieLift GL-8 (standard)

This feature delivers the Low-Cost Lift Tool (based on GenieLift GL-8 (standard)) for IBM servers.

Feature #EB3Z is a feature that is available on multiple Power8, Power9 and Power10 as well as the rack models 7965-S42, 7014-T00, and 7014-T42). Failure to have at least one Lift tool available in a location may result in delayed or prolonged maintenance times.

A lift tool raises and lowers servers and I/O drawers so they can be placed into or removed from standard 19-inch racks. It allows heavier equipment to be handled more safely by fewer people. Lift tool feature EB3Z has a hand crank to lift and position up to 181 kg (400 lbs). The lift tool feature EB3Z operating length and width are 88.3 cm x 62.9 cm (34 3/4 x 24 3/4 in). It has rollers which allow it to be moved to different racks in the data center.
The feature EB3Z is not orderable in the following countries/regions: Saudi Arabia, Kuwait, UAE, Qatar, Bahrain, Oman, Egypt, Jordan, Morocco, Albania, Bulgaria, Croatia, Greece, Slovakia, Slovenia, Montenegro, Serbia, Ukraine, and Taiwan.

- Attributes provided: Lift Tool
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EB46) - 10GbE Optical Transceiver SFP+ SR

One optical transceiver for 10Gb Ethernet adapter such as #EC2S or #EC2R and also #EC2U or #EC2T using SFP+ SP. Does not include cable.
The 10 Gb optical transceiver is capable up to 300 M through the OM3 cable or 82 M through OM2 cable. Either one or both of the adapter's two SFP+ ports can be populated.

- Attributes provided: Optical Transceiver SFP+ SR 10Gb
- Attributes required: SFP+ socket
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EB47) - 25GbE Optical Transceiver SFP28

One optical transceiver for 25Gb Ethernet adapter such as #EC2U or #EC2T using SFP28. Does not include cable.

The 25 Gb optical transceiver is capable up to 100 m through the OM4 cable or 70 M through OM3 cable. Either one or both of the adapter?s two SFP28 ports can be populated.

Note: The SFP28 25GbE transceiver only supports 25GbE speeds.

- Attributes provided: SFP28 optical transceiver
- Attributes required: SFP28 socket
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EB48) - 1GbE Base-T Transceiver RJ45

One 1GbE Base-T RJ45 transceiver for 25/10Gb Ethernet adapter such as features EC2U or EC2T. Does not include cable.

The 1GbE Base-T RJ45 transceiver uses CAT5E STP cable up to 100m.

The transceiver can be plugged into the SFP28 port of EC2U or EC2T in order to provide a 1GbE Base-T RJ45 connection. Either one or both of the adapter's two SFP ports can be populated.

Limitations:
- SRIOV or RoCE capabilities are not supported on the EC2U or EC2T adapters using this feature EB48.
- Feature EB48 cannot be used with Feature EB46 - 10GbE Optical Transceiver SFP+ SR or EB47 - 25GbE Optical Transceiver SFP28.

- Attributes provided: 1Gb RJ45 transceiver
- Attributes required: SFP socket
- Minimum required: 0

- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EB49) - QSFP28 to SFP28 Connector

This feature provides a QSFP28 to SFP28 connector which enables connections between a single lane transceiver/cable and a quad-lane port. The QSA28 provides the option to connect an SFP28 transceiver or cable to a QSFP28 port 100 Gb/s switch or network card.

The adapter has a QSFP28 form factor with a receptacle for an SFP28 transceiver/AOC/DAC connector. The QSA28 interoperates with all major optical modules and direct attached copper cable.

Its design assures minimum loss on the conversion path between the QSFP28 cage and the SFP28 receptacle.

The QSFP28 to SFP28 connector is qualified for 10GbE SFP+ and 1GbE SFP transceivers meeting the Small Form Factor Pluggable (SFP) Transceiver Multi-source Agreement (MSA).

Note: This feature is only available through Offering Management approval, contact douglasg@ca.ibm.com or bbarnett@us.ibm.com for authorization.

- Attributes provided: QSFP28 to SFP28 Adapter
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EB4J) - 0.5m SFP28/25GbE copper Cable

Feature EB4J is a passive 0,5 meter copper cable that contains a single high-speed copper pair, operating at data rates of up to 25 Gb/s. This cable can be used for either 25Gb Ethernet adapters or switches. Built onto each end of the cable is a passive SFP28 copper cable transceiver. Cables are available in various lengths: 0.5M - #EB4J, 1.0M=#EB4K, 1.5M=#EB4L, 2.0M=#EB4M

- Attributes provided: Copper cable with SFP28 transceivers
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EB4K) - 1.0m SFP28/25GbE copper Cable

Feature EB4K is a passive 1.0 meter copper cable that contains a single high-speed copper pair, operating at data rates of up to 25 Gb/s. This cable can be used for either 25Gb Ethernet adapters or switches. Built onto each end of the cable is a passive SFP28 copper cable transceiver. Cables are available in various lengths: 0.5M - #EB4J, 1.0M=#EB4K, 1.5M=#EB4L, 2.0M=#EB4M

- Attributes provided: Copper cable with SFP28 transceivers
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EB4M) - 2.0m SFP28/25GbE copper Cable

Feature EB4M is a passive 2.0 meter copper cable that contains a single high-speed copper pair, operating at data rates of up to 25 Gb/s. This cable can be used for either 25Gb Ethernet adapters or switches. Built onto each end of the cable is a passive SFP28 copper cable transceiver. Cables are available in various lengths: 0.5M - #EB4J, 1.0M=#EB4K, 1.5M=#EB4L, 2.0M=#EB4M

- Attributes provided: Copper cable with SFP28 transceivers
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EB4P) - 2.0m QSFP28/100GbE copper split Cable to SFP28 4x25GbE

Feature EB4P is a 2.0 meter, active optical 100Gb E to 4x25Gb E splitter cable. It provides connectivity between system units with a QSFP28 port on one side and up to four different SFP28 ports on the other side, such as a switch and four servers.

- Attributes provided: Copper splitter cable with QSFP28 and 4x SFP28 transceivers
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EB4Z) - Service wedge shelf tool kit for EB3Z

This feature provides a separate tool kit to replace the flat shelf with a wedge/angle shelf at the client site.

Note: EB4Z wedge shelf is IBM SSR use only (due to safety labels/instructions/certifications only for IBM and not filed for clients). A client can order feature EB4Z to ensure the tool is conveniently located on site in case an IBM SSR needed to use it and do not want to wait for the SSR to locate and bring in an EB4Z or to schedule additional personnel to manually handle server installation/removal from the rack.

Client is free to use EB3Z (without EB4Z) for their normal work.

The feature EB4Z is not orderable in the following countries/regions: Saudi Arabia, Kuwait, UAE, Qatar, Bahrain, Oman, Egypt, Jordan, Morocco, Albania, Bulgaria, Croatia, Greece, Slovakia, Slovenia, Montenegro, Serbia, Ukraine, and Taiwan.

- Attributes provided: Wedge/angle shelf
- Attributes required: Feature EB3Z
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CE
- Return parts MES: No

(#EB57) - QSFP+ 40GbE Base-SR4 Transceiver

IBM QSFP+ optical base-SR4 transceiver required for 40 Gbps ports which are not using copper QSFP+ transceiver.

The QSFP+ 40GbE Base-SR4 Transceiver is designed to deliver the following functions:
- Hot-swappable input/output device that plugs into a 40 Gigabit Ethernet QSFP port
- Interoperable with other IEEE-compliant 40GBASE interfaces where applicable
- High-speed electrical interface compliant to the IEEE 802.3ba standard
- QSFP Form factor, 2-wire I2C communication interface and other low-speed electrical interface compliant to SFF 8436 and QSFP Multisource Agreement (MSA)

- Attributes provided: QSFP+ transceiver for 40 Gbs ports
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EB59) - 100GbE Optical Transceiver QSFP28

One optical transceiver for 100Gb Ethernet adapter such as #EC3L or #EC3M or #EC66 or #EC67 using QSFP28. Does not include cable.
See also AOC fiber cables which include QSFP28 transceivers EB5R - EB5Y.

- Attributes provided: Optical Transceiver QSFP28 100Gb.
- Attributes required: Port on adapter with QSFP28 socket.
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)

- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EB74) - IBM i 7.4 Indicator

This feature is used to indicate the correct level of code when IBM i is specified.

- Attributes provided: IBM i 7.4 Indicator
- Attributes required: IBM i operating system
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - IBM i 7.4 supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EB75) - IBM i 7.5 Indicator

This feature is used to indicate the correct level of code when IBM i is specified.

- Attributes provided: IBM i 7.5 Indicator
- Attributes required: IBM i operating system
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - IBM i 7.5 supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EC71) - PCIe4 LP 2-Port 25/10/1 GbE RoCE SFP28 Adapter

This PCIe Gen4 Ethernet adapter provides two 25/10/1GbE SFP28 ports. The adapter supports both NIC and IBTA RoCE standards. RoCE is Remote Direct Memory Access (RDMA) over Converged Ethernet. Using RoCE, the adapter can support significantly greater bandwidth with low latency and minimize CPU overhead by more efficiently using memory access. This offloads the CPU from I/O networking tasks, improving performance and scalability.

Cables: For 25GbE, IBM offers SFP28 Passive Copper 25Gb Ethernet cables up to 2m. SFP28 based transceivers are included on each end of these cables. See features EB4J, EB4K, EB4L, and EB4M for a 0.5M, 1.0M, 1.5M and 2.0M copper cable.

For 10GbE, IBM offers Direct Attach (DAC) cables up to 5m. SFP-based transceivers are included on each end of the cables. See features EN01, EN02, EN03.

Transceivers: For 25 GbE, IBM qualifies and supports SFP28 optical transceiver (FC EB47) to install into the adapter. Customers can also use their own optical cabling and SFP28 optical transceiver for the other end. The 25 Gb optical transceiver is capable up to 100 m through the OM4 cable or 70 M through OM3 cable. Either one or both of the adapter's two SFP28 ports can be populated.

Note: The (FC EB47) SFP28 25GbE transceiver only supports 25GbE speeds.

For 10 GbE, IBM qualifies and supports SFP+ optical transceiver (FC EB46) to install into the adapter. Customers can also use their own optical cabling and SFP+ optical transceiver for the other end. The 10 Gb optical transceiver is capable up to 300 M through the OM3 cable or 82 m through OM2 cable. Either one or both of the adapter's two SFP28 ports can be populated.

For 1GbE, IBM qualifies and supports the 1GbE Base-T Transceiver RJ45 (FC EB48) for 25/10Gb Ethernet adapter (features EC71 or EC72). The 1GbE Base-T RJ45 transceiver uses CAT5E STP cable up to 100m (does not include cable). The transceiver can be plugged into the SFP28 port of the adapter in order to provide a 1GbE Base-T RJ45 connection.

Feature code #EC71 and #EC72 have identical electronics and function and CCIN (2CF9), but have different tail stock brackets. #EC71 is low profile and #EC72 is full high. The adapter is based on a Mellanox ConnectX-6 adapter which uses a ConnectX-6 Lx EN Network Controller.

Attributes:
- PCI Express 4.0 (up to 16GT/s) x8
- PCIe Gen 4.0 compliant, 1.1, 2.0, and 3.0 compatible
- RDMA over Converged Ethernet (RoCE)
- NIC and RoCE are concurrently supported
- NIC supported on all OSes
- IEEE 802.3ae (25Gb or 10Gb Ethernet), IEEE 802.3ad (Link Aggregation & Failover), IEEE 802.3az (Energy Efficient Ethernet), IEEE 802.1Q/P (VLAN Tagging), IEEE 802.10au (Congestion Notification), IEEE 802.1Qbg, IEEE 802.3Qaz D0.2 (ETS), IEEE 802.1Qbb D1.0 (PFC), IEEE 1588v2 (PTP)
- Jumbo frame support up to 9.6KB
- VXLAN and NVGRE Overlay Network offload support
- TCP/UDP/IP stateless offload
- TCP checksum offload
- TCP segmentation offload
- UDP checksum offload
- MSI-X, MSI and support of legacy pin interrup
- AIX Network Installation Manager (NIM) boot support
- PowerVM SR-IOV support

For SR-IOV FAQs visit https://community.ibm.com/community/user/power/viewdocument/sr-iov-vnic-a nd-hnv-information?CommunityKey=71e6bb8a-5b34-44da-be8b-277834a183b0&tab= librarydocuments

- Attributes provided: 2-port 25Gb Ethernet
- Attributes required: Available Low profile PCIe Gen4 slot
- Minimum required: 0
- Maximum allowed: 4 (Initial order maximum: 4)
- OS level required :
  - IBM i supported
  - AIX supported
  - Linux supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#ECBY) - SAS AE1 Cable 4m - HD Narrow 6Gb Adapter to Enclosure

This 4 meter SAS cable connects a PCIe3 SAS adapter to a SAS tape drive or DVD. The tape drive or DVD is probably in an I/O enclosure such as a bridge box or 1U media enclosure or tape library. This AE cable has two connectors, one Mini-SAS HD (High Density) Narrow connector and one Mini-SAS connectors. The Mini-SAS HD Narrow connector attaches to a SAS adapter such as the #EJ0X. The Mini-SAS connector attaches to a SAS tape drive enclosure or DVD. This cable can support up to 6Gb throughput.

Use #ECBY when ordering the cable as a feature code on a Power System. Alternatively the same cable can be ordered using feature code #5507 of the IBM tape enclosure or DVD.

- Attributes provided: connection between PCIe3 SAS adapter with Mini-SAS HD Narrow connectors and a SAS tape drive or DVD with Mini-SAS connectors
- Attributes required: available connectors on SAS controller such as #EJ0X, #EJ10 or #EJ11 for use with an available SAS tape drive or DVD.
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#ECCF) - System Port Converter Cable for UPS

Converter cable allows a serial cable attached to a Uninterruptible Power Supply (UPS) to connect to a USB port on the server's service processor card. Cable's connectors are USB (Male) and 9 PIN D SHELL (Female) and the cable's length is about 1.6m (60 inches). The UPS can provide power status information over the cable to IBM i.

- Attributes provided: Converter Cable
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#ECE3) - 3.0M SAS AA12 Cable

This 3.0 meter SAS cable has two Mini-SAS HD (High Density) connectors, and is designed for high speed to support up to 12Gb throughput. This is a straight cable (in contrast with X or YO cables) that has two distinct uses:

- For Elastic Storage Server (ESS) solutions that have a 5147-024 I/O drawer, this cable is used to attach the 5147-024 to its controller.
- For POWER Servers with #5887, #EL1S, #ESLS, #ESLL, #ELLS, or #ELLL I/O drawers driven by paired PCIe controllers with write cache such as #EJ0L or #EJ14, this cable is used to connect the top connectors of the paired controllers. The cable provides a high performance path of all the dual controller communication including mirroring the write cache and status awareness of each card.

Note that X or YO cables are always used to attach I/O drawers #5887, #EL1S, #ESLS, #ESLL, #ELLS, or #ELLL to controllers on POWER Servers. Straight cables (such as #ECE3) are not allowed to directly attach

to I/O drawers on POWER Servers.

Two AA cables are always required between a pair of PCIe3 SAS adapters with write cache when just one or two I/O drawers are attached. One AA cable is required if three I/O drawers are attached. If four drawers are attached or if an AA cable fails or is disconnected, then the information it was carrying is then sent over the cables attached to the I/O drawers, sharing their bandwidth. On POWER Servers, AA cables are not used with SAS adapters with no write cache.

Multiple cable length feature codes are available. Choose the cable length that best matches the distance between the two adapters.

The 6Gb version of this cable is feature #5915. #5915 and #ECE3 can be mixed on the same PCIe3 adapter pair.

- Attributes provided: For ESS solutions, connection between a SAS controller and one 5174-024 I/O drawer. For POWER Systems, connection between two paired SAS controllers with write cache and Mini-SAS HD connectors.
- Attributes required: For ESS solutions, a 5147-024 I/O drawer and appropriate controller. For POWER Systems, available connectors on SAS controllers.
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

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

This power cord feature ECJ5 contains an amphenol type of connector and only supported on PDUs ECJK or ECJL, and ECJP or ECJQ.

ECJ5 has a 4-pin IEC 60309 style plug, 430P9W. It contains three line conductors and a protective earth, but no neutral. ECJ5 is supported in countries that use a delta electrical distribution. ECJ5 is not supported in China, Hong Kong, and other countries that use a wye electrical distribution.

- Attributes provided: Power cord
- Attributes required: PDU features ECJK or ECJL, and ECJP or ECJQ.
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#ECJ6) - 4.3m (14-Ft) PDU to Wall 3PH/40A 200-240V Power Cord

This power cord goes from the chassis to a wall-type outlet. The line cord has a 200-240V, CS8365 50A Plug (de-rated to 40A) and Amphenol inlet compatible with PDU FCs ECJL and ECJQ. The following countries/regions use the #ECJ6 power cord to power the system: United States and Canada only.

- Attributes provided: Power cord PDU to Wall
- Attributes required: None

- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

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

This power cord feature ECJ7 contains an amphenol type of connector and only supported on PDUs ECJK or ECJL, and ECJP or ECJQ.

ECJ7 has a 4-pin IEC 60309 style plug, 460P9W. It contains three line conductors and a protective earth, but no neutral. ECJ7 is supported in countries that use a delta electrical distribution. ECJ7 is not supported in China, Hong Kong, and other countries that use a wye electrical distribution.

- Attributes provided: Power cord
- Attributes required: PDU features ECJK or ECJL, and ECJP or ECJQ.
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#ECJJ) - High Function 9xC19 Single-Phase or Three-Phase Wye PDU plus

This is an intelligent, switched 200-240 volt single-phase or 380-415/220-240 volt three-phase wye AC Power Distribution Unit (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 single-phase or three-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 three-phase wye PDUs.

The PDU can be mounted vertically in rack side pockets or it can be mounted horizontally. If mounted horizontally, it uses 1 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, #6667, #ELC1 or #ELC2.

Two RJ45 ports on the front of the PDU enable the client 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 and IBM strongly urges clients 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 generally not easily accessed and therefore IBM does not generally recommend their use.

#ECJG and #ECJJ are identical PDUs. Up to one lower price #ECJG can be ordered with a new 7965-S42 rack in place of a no-charge #9188 PDU.

For comparison, this is most similar to the earlier generation #EPTJ PDU.

Limitation: Some configurations of the Elastic Storage Server (ESS) are delivered with a 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 Customers responsibility to configure this PDU. In any case the ethernet port on the Intelligent PDU must not be connected to the ESS Management switch.

- Attributes provided: Nine C19 PDU plus - switched, power monitoring
- Attributes required: PDU wall line cord and space in 19-inch rack
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#ECJL) - High Function 9xC19 PDU plus 3-Phase Delta

This is an intelligent, switched 200-240 volt 3-phase delta AC Power Distribution Unit (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 three-phase delta PDUs.

The PDU can be mounted vertically in rack side pockets or it can be mounted horizontally. If mounted horizontally, it uses 1 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, #ECJ6, and #ECJ7.

Two RJ45 ports on the front of the PDU enable the client 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 and IBM strongly urges clients 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 generally not easily accessed and therefore IBM does not generally recommend their use.

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

For comparison, this is most similar to the earlier generation #EPTL PDU.

Not supported in China, Hong Kong, and other countries that use a wye electrical distribution.

Limitation: Some configurations of the Elastic Storage Server (ESS) are delivered with a 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 Customers responsibility to configure this PDU. In any case the ethernet port on the Intelligent PDU must not be connected to the ESS Management switch.

- Attributes provided: Nine C19 PDU plus - switched, power monitoring
- Attributes required: space in rack, 3-phase 208V AC delta electrical service
- Minimum required: 0

- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#ECJN) - High Function 12xC13 Single-Phase or Three-Phase Wye PDU plus

This is an intelligent, switched 200-240 volt single-phase or 380-415/220-240 volt three-phase wye AC Power Distribution Unit (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 single-phase or three-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 three-phase wye PDUs.

The PDU can be mounted vertically in rack side pockets or it can be mounted horizontally. If mounted horizontally, it uses 1 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, #6667, #ELC1 or #ELC2.

Two RJ45 ports on the front of the PDU enable the client 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 and IBM strongly urges clients to change it upon installation.

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

For comparison, this is most similar to the earlier generation #EPTN PDU.

Limitation: Some configurations of the Elastic Storage Server (ESS) are delivered with a 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 Customers responsibility to configure this PDU. In any case the ethernet port on the Intelligent PDU must not be connected to the ESS Management switch.

- Attributes provided: Twelve C13 PDU plus - switched, power monitoring
- Attributes required: PDU wall line cord and space in 19-inch rack
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#ECJQ) - High Function 12xC13 PDU plus 3-Phase Delta

This is an intelligent, switched 200-240 volt 3-phase delta AC Power Distribution Unit (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 three-phase delta PDUs.

The PDU can be mounted vertically in rack side pockets or it can be mounted horizontally. If mounted horizontally, it uses 1 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, #ECJ6, and #ECJ7.

Two RJ45 ports on the front of the PDU enable the client 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 and IBM strongly urges clients to change it upon installation.

#ECJP and #ECJQ are identical PDUs. Up to one lower price #ECJP can be ordered with a new 7965-S42 rack in place of a no-charge #9188 PDU.

For comparison, this is most similar to the earlier generation #EPTP PDU.

Not supported in China, Hong Kong, and other countries that use a wye electrical distribution.

Limitation: Some configurations of the Elastic Storage Server (ESS) are delivered with a 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 Customers responsibility to configure this PDU. In any case the ethernet port on the Intelligent PDU must not be connected to the ESS Management switch.

- Attributes provided: Twelve C13 PDU plus - switched, power monitoring
- Attributes required: space in rack, 3-phase 208V AC delta electrical service
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#ECSM) - Custom Service Specify, Mexico

Having #ECSM on the order, will cause the order to be routed to Mexico and the machine to be internally routed to the CSC build area.

- Attributes provided: Customization
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#ECSP) - Custom Service Specify, Poughkeepsie, USA

Having #ECSP on the order, will cause the order to be routed to Poughkeepsie, USA and the machine to be internally routed to the CSC build area.

- Attributes provided: Customization
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#ECW0) - Optical Wrap Plug

A wrap plug is a small connector designed to perform a diagnostic test called a loopback test. This wrap plug is inserted into a SR optical port on a PCIe Fibre Channel adapter or a SR or LR optical port on a PCIe Ethernet adapter

This is a multi-mode LC fiber optic wrap plug with an inside/outside optics diameter of 50/125. Its IBM part number as of early 2016 is 12R9314. An earlier equivalent function IBM part number which is no longer shipped is 11P3847.

It is strongly recommended that Fibre Channel adapters (HBAs) fill any empty adapter ports with a wrap plug. There is no technical issue leaving a port empty. However, filling all ports with a cable to a device/switch or with a wrap plug can speed the booting/IPLing of a partition and can avoid error messages uselessly pointing to a planned empty port.

There is no technical issue leaving an Ethernet port empty. Whether an Ethernet port is empty or contains a wrap plug should not impact boot/IPL time or impact empty-port messages.

- Attributes provided: Wrap plug
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EGR0) - No Grouping Indicator

This feature is an indicator to not group a server to any other server.

- Attributes provided: Manufacturing Instruction
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: Yes

- Return parts MES: Does not apply

(#EGR1) - Multi-system Order Grouping Indicator 1

This feature is an indicator of rack space utilization.

- Attributes provided: Manufacturing Instruction
- Attributes required: Feature #ERKE
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EGR2) - Multi-system Order Grouping Indicator 2

This feature is an indicator of rack space utilization.

- Attributes provided: Manufacturing Instruction
- Attributes required: Feature #ERKE
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EGR3) - Multi-system Order Grouping Indicator 3

This feature is an indicator of rack space utilization.

- Attributes provided: Manufacturing Instruction
- Attributes required: Feature #ERKE
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EGR4) - Multi-system Order Grouping Indicator 4

This feature is an indicator of rack space utilization.

- Attributes provided: Manufacturing Instruction
- Attributes required: Feature #ERKE
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None

- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EGR5) - Multi-system Order Grouping Indicator 5

This feature is an indicator of rack space utilization.

- Attributes provided: Manufacturing Instruction
- Attributes required: Feature #ERKE
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EGR6) - Multi-system Order Grouping Indicator 6

This feature is an indicator of rack space utilization.

- Attributes provided: Manufacturing Instruction
- Attributes required: Feature #ERKE
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EGR7) - Multi-system Order Grouping Indicator 7

This feature is an indicator of rack space utilization.

- Attributes provided: Manufacturing Instruction
- Attributes required: Feature #ERKE
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EGR8) - Multi-system Order Grouping Indicator 8

This feature is an indicator of rack space utilization.

- Attributes provided: Manufacturing Instruction
- Attributes required: Feature #ERKE
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)

- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EGR9) - Multi-system Order Grouping Indicator 9

This feature is an indicator of rack space utilization.

- Attributes provided: Manufacturing Instruction
- Attributes required: Feature #ERKE
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EGRA) - Multi-system Order Grouping Indicator 10

This feature is an indicator of rack space utilization.

- Attributes provided: Manufacturing Instruction
- Attributes required: Feature #ERKE
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EGRB) - Multi-system Order Grouping Indicator 11

This feature is an indicator of rack space utilization.

- Attributes provided: Manufacturing Instruction
- Attributes required: Feature #ERKE
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EGRC) - Multi-system Order Grouping Indicator 12

This feature is an indicator of rack space utilization.

- Attributes provided: Manufacturing Instruction
- Attributes required: Feature #ERKE

- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EGRD) - Multi-system Order Grouping Indicator 13

This feature is an indicator of rack space utilization.

- Attributes provided: Manufacturing Instruction
- Attributes required: Feature #ERKE
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EHSC) - Power Modernization Segment Indicator

- None

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EHSD) - Power AIX Segment Indicator

- None

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EHSE) - Power IBM i Segment Indicator

- None

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EJ2C) - PCIe3 LP 12Gb x8 SAS Tape HBA Adapter

The PCIe3 SAS Tape HBA Adapter is a high performance SAS tape controller using PCIe Gen3 12Gb x8 technology. The adapter supports external SAS tape drives such as the LTO-6, LTO-7, LTO-8, and LTO-9, available in the IBM 7226-1U3 Multimedia drawers or standalone tape units such as the TS2270, TS2280 single External Tape Drive, TS2900, TS3100, TS3200, or TS4300. The adapter provides four Mini-SAS HD (high density) connectors to which AE1 SAS cables such as #ECBY or AA12 SAS cables such as #ECE3 with HD narrow connectors, other cables supplied with tape devices may also be supported. A max of 4 tape drives per adapter can be attached using four AE1 or AA12 cables.

#EJ2B (full high) and #EJ2C (low profile) are electronically the same adapter with the same 57F2 CCIN, but differ in that their tailstocks to fit different size PCIe slots.

Note: Adapter uses a Mini-SAS HD narrow connector and AE1 such as #ECBY or AA12 SAS cables such as #ECE3 or 4m Mini-SAS HD/Mini-SAS 1X Cable such as Storage feature #5507.

Prerequisite: Firmware 1030.20.

Limitations:
- For a 12Gb SAS connection, cables longer than 3 meters are not supported.
- LTO-5 or earlier drives are not supported.
- LTO-6 devices support reading LTO5 tapes for restore purposes.
- VIOS not supported.

- Attributes provided: Low profile PCIe3 four port x8 SAS adapter
- Attributes required: One low profile PCIe slot per adapter
- Minimum required: 0
- Maximum allowed: 3 (Initial order maximum: 3)
- OS level required :
  - IBM i supported
  - AIX not supported
  - Linux not supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EJVQ) - IBM Cover and Doors for Desk-side/Tower

Cover and doors with IBM logo for Deskside Server system. Bezel fits Storage Backplane and its 4 NVMe bays.

- Attributes provided: Cover and doors
- Attributes required: None

- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EJVX) - OEM Cover and Doors for Desk-side/Tower

Cover and doors with OEM logo for Deskside Server system. Bezel fits Storage Backplane and its 4 NVMe bays.

- Attributes provided: Cover and doors
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EJX0) - Front IBM Bezel for Rack-Mount

Front bezel with IBM logo for 2U rack mounted system. Bezel fits Storage Backplane and its 4 NVMe bays.

- Attributes provided: Front bezel
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EJX1) - Front OEM Bezel for Rack-Mount

Front bezel with OEM logo for 2U rack mounted system. Bezel fits Storage Backplane and its 4 NVMe bays.

- Attributes provided: Front bezel
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EJX2) - Rack Ship Support

This feature provides the shipping brackets for rack integration.

- Attributes provided: Rack brackets
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#ELC1) - 4.3m (14-Ft) PDU to Wall 24A 200-240V Power Cord North America

This power cord goes from the chassis to a wall-type outlet. The line cord has a 200-240V, IEC309 30A P+N+G Plug (de-rated to 24A) and Souriau inlet compatible with PDU FCs ECJJ and ECJN. The following countries/regions use the #ELC1 power cord to power the system: United States, Canada, Mexico.

- Attributes provided: Power cord PDU to Wall
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#ELC2) - 4.3m (14-Ft) PDU to Wall 3PH/24A 415V Power Cord North America

This power cord goes from the chassis to a wall-type outlet. The line cord has a 3-phase wye-wired 415/240V, IEC309 30A 3P+N+G Plug (de-rated to 24A per phase) and Souriau inlet compatible with PDU FCs ECJJ and ECJN. The following countries/regions use the #ELC2 power cord to power the system: United States, Canada, Mexico.

- Attributes provided: Power Cord PDU to Wall
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#ELC5) - Power Cable - Drawer to IBM PDU (250V/10A)

This feature permits manufacturing to select the optimum PDU power jumper cord length (2.8M or 4.3M) for rack integration. This feature is mandatory for servers that use power supplies with C14 inlets that are going to be factory integrated with IBM racks (such as with 7014-T00 or T42 racks) that contains C19 PDU types. Feature is not valid on initial order with non-factory integrated feature 4650. Power jumper cord has C13 on one end (for C14 power supply connector on system unit or I/O drawer) and C20 on the other end (for IBM PDU C19 receptacle). MES orders of FC #ELC5 will ship 4.3m length. If MES customers want 2.8m length should order #6665.

- Attributes provided: Power jumper cord (2.8m or 4.3m)
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#ELYA) - ES3A Load Source Specify (800 GB 4K NVMe U.2 SSD PCIe4 for IBM i)

This specify code indicates that a #ES3A Solid State Drive is being used as the Load Source. The IBM i NVMe Load Source Name Space specify codes #ENSA and #ENSB are used with this specify code.

- Attributes provided: Load source specify
- Attributes required: Feature ES3A
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required : see feature ES3A
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#ELYC) - ES3C Load Source Specify (1.6 TB 4K NVMe U.2 SSD PCIe4 for IBM i)

This specify code indicates that a #ES3C Solid State Drive is being used as the Load Source. The IBM i NVMe Load Source Name Space specify codes #ENSA and #ENSB are used with this specify code.

- Attributes provided: Load source specify
- Attributes required: Feature ES3C
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required : see feature ES3C
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EMBN) - 32GB (2x16GB) ISDIMMs, 3200 MHz, 8Gbit DDR4 Memory

This feature ships two 16 GB Industry Standard Dual In-Line Memory Modules (ISDIMM) providing 32 GB of DDR4 memory. DRAM is 8Gbit and 3200 MHz.

- Attributes provided: Two 16 GB ISDIMMs providing 32 GB of DDR4 memory
- Attributes required: Two empty ISDIMM slots
- Minimum required: 0
- Maximum allowed: 2 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EMBP) - Active Memory Expansion

AME is an innovative technology supporting the AIX operating system that helps enable the effective maximum memory capacity to be larger than the true physical memory maximum. Compression or decompression of memory content can enable memory expansion up to 100% or more. This can enable a partition to do significantly more work or support more users with the same physical amount of memory. Similarly, it can enable a server to run more partitions and do more work for the same physical amount of memory. AME uses CPU resource to compress or decompress the memory contents. The trade-off of memory capacity for processor cycles can be an excellent choice, but the degree of expansion varies on how compressible the memory content is. It also depends on having adequate spare CPU capacity available for this compression or decompression. Power10 chips include a hardware accelerator designed to boost AME efficiency and use less Power core resource. The Power10 accelerator includes some minor enhancements and also leverages Power10 higher bandwidth and lower latency characteristics. You have a great deal of control over AME usage. Each individual AIX partition can turn on or turn off AME. Control parameters set the amount of expansion desired in each partition to help control the amount of CPU used by the AME function. An IPL is required for the specific partition that is turning on memory expansion. When turned on, monitoring capabilities are available in standard AIX performance tools, such as lparstat, vmstat, topas, and svmon. A planning tool is included with AIX, enabling you to sample actual workloads and estimate both how expandable the partition's memory is and how much CPU resource is needed. Any Power model can run the planning tool. In addition, a one-time, 60-day trial of AME is available to enable more exact memory expansion and CPU measurements. You can request the trial using the Power Capacity on Demand website. AME is enabled by chargeable hardware feature (#EMBP), which can be ordered with the initial order of the system node or as an MES order. A software key is provided when the enablement feature is ordered, which is applied to the system node. An IPL is not required to enable the system node. The key is specific to an individual system node and is permanent. It cannot be moved to a different server. The additional CPU resource used to expand memory is part of the CPU resource assigned to the AIX partition running AME. Normal licensing requirements apply.

- Attributes provided: None
- Attributes required: An HMC
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - AIX supported
  - IBM i not supported
  - Linux not supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EMBW) - 64GB (2x32GB) ISDIMMs, 3200 MHz, 8Gbit DDR4 Memory

This feature ships two 32 GB Industry Standard Dual In-Line Memory Modules (ISDIMM) providing 64 GB of DDR4 memory. DRAM is 8Gbit and 3200 MHz.

- Attributes provided: Two 32 GB ISDIMMs providing 64 GB of DDR4 memory
- Attributes required: Two empty ISDIMM slots
- Minimum required: 0
- Maximum allowed: 2 (Initial order maximum: 2)
- OS level required :
  - None

- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EMBY) - 128GB (2x64GB) ISDIMMs, 3200 MHz, 16Gbit DDR4 Memory

This feature ships two 64 GB Industry Standard Dual In-Line Memory Modules (ISDIMM) providing 128 GB of DDR4 memory. DRAM is 16Gbit and 3200 MHz.

- Attributes provided: Two 64 GB ISDIMMs providing 128 GB of DDR4 memory
- Attributes required: Two empty ISDIMM slots
- Minimum required: 0
- Maximum allowed: 2 (Initial order maximum: 2)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EN01) - 1m (3.3-ft), 10Gb E'Net Cable SFP+ Act Twinax Copper

1m (3.3-ft) copper active twinax Ethernet cable which supports Ethernet data transfer rates up to 10 Gb/s. The cable has a copper twinax transceiver on each end which is placed in an SFP+ port of an adapter and/or a switch. This cabling option can be a cost effective alternative to optical cable for short reach link high-speed connection.

- Attributes provided: 10Gb/s copper active twinax Ethernet cable
- Attributes required: One available SFP+ 10Gb/s Ethernet Port
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EN02) - 3m (9.8-ft), 10Gb E'Net Cable SFP+ Act Twinax Copper

3m (9.8-ft) copper active twinax Ethernet cable which supports Ethernet data transfer rates up to 10 Gb/s. The cable has a copper twinax transceiver on each end which is placed in an SFP+ port of an adapter and/or a switch. This cabling option can be a cost effective alternative to optical cable for short reach link high-speed connection.

- Attributes provided: 10Gb/s copper active twinax Ethernet cable
- Attributes required: One available SFP+ 10Gb/s Ethernet Port
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EN03) - 5m (16.4-ft), 10Gb E'Net Cable SFP+ Act Twinax Copper

5m (16.4-ft) copper active twinax Ethernet cable which supports Ethernet data transfer rates up to 10 Gb/s. The cable has a copper twinax transceiver on each end which is placed in an SFP+ port of an adapter and/or a switch. This cabling option can be a cost effective alternative to optical cable for short reach link high-speed connection.

- Attributes provided: 10Gb/s copper active twinax Ethernet cable
- Attributes required: One available SFP+ 10Gb/s Ethernet Port
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EN1B) - PCIe3 LP 32Gb 2-port Fibre Channel Adapter

PCIe Gen3 32 Gigabit dual-port Optical Fibre Channel (FC) Adapter is a high-performance 8x short form adapter based on the Broadcom LPe32000-series PCIe Host Bus Adapter (HBA). The adapter provides two ports of 32Gb Fibre Channel capability using SR optics. Each port can provide up to 32Gb Fibre Channel functions simultaneously.

Each port provides single initiator capability over a fibre link or with NPIV, multiple initiator capability is provided. The ports are SFP+ and include an optical SR transceiver. The ports have LC type connectors and utilize shortwave laser optics. The adapter operates at link speeds of 8, 16 and 32Gbps and will automatically negotiate to the highest speed possible.

Feature #EN1A and #EN1B are electronically identical. They differ physically only that EN1A has a tail stock for full high PCIe slots and #EN1B has a short tail stock for low profile PCIe slots.

CCIN is 578F for both features.

Each port has two LED indicators located on the bracket next to each connector. These LEDs communicate boot status and give a visual indication of the operating state. The LEDs have five defined states; solid on, solid off, slow blink, fast blink, and flashing. The slow blink rate is 1Hz, the fast blink is 4Hz, and the flashing refers to an irregular on/off transition that reflects test progress. The operator should observe the LED sequence for several seconds to ensure that the operating state is correctly identified.

Cables:Cables are the responsibility of the customer. Use multimode fibre optic cables with short-wave lasers that adhere to the following specifications:

- OM4 - multimode 50/125 micron fibre, 4700 MHz*km bandwidth with LC connectors o 4GFC: 0.5m - 400m o 8GFC: 0.5m - 190m o 16GFC: 0.5m - 125m o 32GFC: 0.5m - 100m
- OM3 - multimode 50/125 micron fibre, 2000 MHz*km bandwidth with LC connectors o 4GFC: 0.5m - 380m o 8GFC: 0.5m - 150m o 16GFC: 0.5m - 100m o 32GFC: 0.5m - 70m
- OM2 - multimode 50/125 micron fibre, 500 MHz*km bandwidth with LC connectors o 4GFC: 0.5m - 150m o 8GFC: 0.5m - 50m o 16GFC: 0.5m - 35m o 32GFC: 0.5m - 20m
- OM1 - multimode 62.5/125 micron fibre, 200 MHz*km bandwidth with LC connectors o 4GFC: 0.5m - 70m o 8GFC: 0.5m - 21m o 16GFC: 0.5m - 15m o 32GFC: N/A

Note: The H/W cannot detect what length and type of cable is installed. The link will auto-negotiate to the speed reported during negotiation by the Target. The user must manually set the maximum negotiation speed. If too high of speed is selected, bit errors may occur.

See also optional wrap plug feature #ECW0 which is: a) Required to run some diagnostic procedures and b) In some cases may speed system boot when placed in empty ports as well as avoid useless messages pointing to a planned empty port.

- Attributes provided: 2-port 32Gb Optical FC
- Attributes required: Low profile PCIe Gen3 slot
- Minimum required: 0
- Maximum allowed: 3 (Initial order maximum: 3)
- OS level required :
  - Linux supported
  - AIX supported
  - IBM i supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EN1K) - PCIe4 LP 32Gb 2-port Optical Fibre Channel Adapter

This PCIe 4.0 x8 dual-port 32 Gigabit optical fibre channel (FC) adapter is a high-performance short form adapter based on the Marvell QLE2772 PCIe host bus adapter (6.6 inches x 2.731 inches). The adapter provides two ports of 32Gb fibre channel capability using SR optics. Each port can provide up to 6,400MBps bandwidth per port.

Each port provides single initiator capability over a fibre link or with NPIV, multiple initiator capability is provided. The adapter ships with 32Gb SR optical transceivers installed. The ports have LC type connectors and utilize shortwave laser optics. The adapter operates at link speeds of 8, 16 and 32Gbps and will automatically negotiate to the highest speed possible. The adapter supports boot on IBM power with fcode.

Feature #EN1J and #EN1K are electronically identical. They differ physically only that the #EN1J has a tail stock for full height PCIe slots and the #EN1K has a short tail stock for low profile PCIe slots.

Cables are the responsibility of the customer. Use multimode fibre optic cables with short-wave lasers that adhere to the following specifications:

- OM4 - multimode 50/125 micron fibre, 4700 MHz*km bandwidth with LC connectors o 4GFC: 0.5m - 400m o 8GFC: 0.5m - 190m o 16GFC: 0.5m - 125m o 32GFC: 0.5m - 100m
- OM3 - multimode 50/125 micron fibre, 2000 MHz*km bandwidth with LC connectors o 4GFC: 0.5m - 380m o 8GFC: 0.5m - 150m o 16GFC: 0.5m - 100m o 32GFC: 0.5m - 70m
- OM2 - multimode 50/125 micron fibre, 500 MHz*km bandwidth with LC connectors o 4GFC: 0.5m - 150m o 8GFC: 0.5m - 50m o 16GFC: 0.5m - 35m o 32GFC: 0.5m - 20m
- OM1 - multimode 62.5/125 micron fibre, 200 MHz*km bandwidth with LC connectors o 4GFC: 0.5m - 70m o 8GFC: 0.5m - 21m o 16GFC: 0.5m - 15m o 32GFC: N/A

Note: The H/W cannot detect what length and type of cable is installed. The link will auto-negotiate to the speed reported during negotiation by the Target. The user must manually set the maximum negotiation speed. If too high of speed is selected, bit errors may occur. See also optional wrap plug feature #ECW0 which is: a) Required to run some diagnostic procedures and b) In some cases may speed system boot when placed in empty ports as well as avoid useless messages pointing to a planned empty port.

- Attributes provided: 2-port 32Gb Optical FC
- Attributes required: Low profile PCIe Gen3 slot
- Minimum required: 0
- Maximum allowed: 3 (Initial order maximum: 3)
- OS level required :
  - IBM i supported
  - Linux supported
  - AIX supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EN2B) - PCIe3 LP 16Gb 2-port Fibre Channel Adapter

PCIe Gen3 16 Gigabit dual-port Optical Fibre Channel (FC) Adapter is a high-performance 8x short form adapter PCIe Host Bus Adapter (HBA). The adapter provides two ports of 16Gb Fibre Channel capability using SR optics. Each port can provide up to 16Gb Fibre Channel functions simultaneously.

Each port provides single initiator capability over a fibre link. If you are using N_Port ID Virtualization (NPIV), multiple initiator capability is provided. The ports are SFP+ and include an optical SR transceiver. The ports have little connector-type (LC) and utilize shortwave laser optics. The adapter operates at link speeds of 4, 8, and 16 Gbps and it will automatically negotiate to the highest speed possible.

The adapter connects to a Fibre Channel switch at 4 Gb, 8 Gb, or 16 Gb. It can directly attach to a device without a switch at 16 Gb. The adapter without a Fibre Channel switch attached is not supported at 4 Gb or 8 Gb.

NPIV capability is supported through Virtual I/O Server (VIOS).

Feature #EN2A and #EN2B are electronically identical. They differ physically only that EN2A has a tail stock for full high PCIe slots and #EN2B has a short tail stock for low profile PCIe slots.

CCIN is 579D for both features.

Each port has two LED indicators located on the bracket next to each connector. These LEDs communicate boot status and give a visual indication of the operating state. The LEDs have five defined states; solid on, solid off, slow blink, fast blink, and flashing. The slow blink rate is 1Hz, the fast blink is 4Hz, and the flashing refers to an irregular on/off transition that reflects test progress. The operator should observe the LED sequence for several seconds to ensure that the operating state is correctly identified.

The adapter has the following features:

- The adapter is compliant with the PCIe base and Card Electromechanical (CEM) 2.0 specifications with the following characteristics:
  - Provides an x8 lane link interface at 14.025 Gbps, 8.5 Gbps, or 4.25 Gbps (automatic negotiation with system)
  - Provides support for one Virtual Channel (VC0) and one Traffic Class (TC0)
  - Provides configuration and I/O memory read and write, completion, and messaging capabilities
  - Provides support for 64-bit addressing
  - Provides error correction code (ECC) and error protection functions
  - Provides link cyclic redundancy check (CRC) on all PCIe packets and message information
  - Provides a large payload size of 2048 bytes for read and write functions
  - Provides a large read request size of 4096 bytes

- The adapter is compatible with 4, 8, and 16 Gb Fibre Channel interface with the following characteristics:
  - Provides for automatic negotiation between 4 Gb, 8 Gb, or 16 Gb link attachments
  - Provides support for the following Fibre Channel topologies: point-to-point (16 Gb only) and fabric
  - Provides support for Fibre Channel class 3
  - Provides a maximum Fibre Channel throughput that is achieved by using full duplex hardware support
- The adapter provides an end-to-end data path parity and CRC protection, including internal data path random-access memory (RAM)
- Provides architectural support for multiple upper layer protocols
- Provides comprehensive virtualization capabilities with support for N_Port ID Virtualization (NPIV) and virtual fabric (VF)
- Provides support for message signaled interrupts extended (MSI-X)
- Provides support for 255 VFs and 1024 MSi-X
- Provides an internal, high-speed static random-access memory (SRAM) memory
- Provides ECC protection of local memory that includes single-bit correction and double-bit protection
- Provides an embedded shortwave optical connection with diagnostics capability
- Provides support for an on-board context management by firmware:
  - Up to 8192 FC port logins
  - I/O multiplexing down to the Fibre Channel frame level
- Provides data buffers capable of supporting 64+ buffer-to-buffer (BB) credits per port for shortwave applications
- Provides link management and recovery that is handled by firmware
- Provides on-board diagnostic capability accessible by an optional connection
- Provides a performance up to 16 Gbps full duplex

Cables: Cables are the responsibility of the customer. Use multimode fibre optic cables with short-wave lasers that adhere to the following specifications:

- OM4 - multimode 50/125 micron fibre, 4700 MHz*km bandwidth with LC connectors o 4GFC: 0.5m - 400m o 8GFC: 0.5m - 190m o 16GFC: 0.5m - 125m o 32GFC: 0.5m - 100m
- OM3 - multimode 50/125 micron fibre, 2000 MHz*km bandwidth with LC connectors o 4GFC: 0.5m - 380m o 8GFC: 0.5m - 150m o 16GFC: 0.5m - 100m o 32GFC: 0.5m - 70m
- OM2 - multimode 50/125 micron fibre, 500 MHz*km bandwidth with LC connectors o 4GFC: 0.5m - 150m o 8GFC: 0.5m - 50m o 16GFC: 0.5m - 35m o 32GFC: 0.5m - 20m
- OM1 - multimode 62.5/125 micron fibre, 200 MHz*km bandwidth with LC connectors o 4GFC: 0.5m - 70m o 8GFC: 0.5m - 21m o 16GFC: 0.5m - 15m o 32GFC: N/A

Note: The H/W cannot detect what length and type of cable is installed. The link will auto-negotiate to the speed reported during negotiation by the Target. The user must manually set the maximum negotiation speed. If too high of speed is selected, bit errors may occur.

See also optional wrap plug feature #ECW0 which is: a) Required to run some diagnostic procedures and b) In some cases may speed system boot when placed in empty ports as well as avoid useless messages pointing to a planned empty port.

- Attributes provided: 2-port 16Gb Optical FC
- Attributes required: Low profile PCIe Gen3 slot
- Minimum required: 0
- Maximum allowed: 3 (Initial order maximum: 3)
- OS level required :
  - IBM i supported

  - Linux supported
  - AIX supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EN2X) - PCIe3 LP 4-port 10GbE BaseT RJ45 Adapter

PCIe Gen3 short x8 adapter which provides four 10G-BaseT ports. The ports are RJ45. The ports default to auto negotiate the highest speed either 10Gb (10GBaseT) or 1Gb (1000BaseT) full duplex. Each RJ45 port's configuration is independent of the other. The adapter supports Ethernet NIC (Network Interface Card) traffic

Supported distances per cable type and connection speed:
- 10GBASE-T: Distances up to 100 m using CAT6A or better
- 1000BASE-T: Distances up to 100 m using CAT5e, CAT6, or CAT6A

#EN2W and #EN2X are electronically identical with the same CCIN of 2F04. #EN2W has a full high tail stock and #EN2X has a low profile tail stock.

Details for the ports include:
- NIM install supported for VIOS, AIX, and Linux
- IEEE 802.3an (10GBASE-T), IEEE 802.3ab (1000BASE-T GbE), IEEE, 802.1p priority, IEEE 802.1Q VLAN tagging, IEEE 802.3x and ab flow control, IEEE 802.3ad LACP
- Multiple MAC addresses / promiscuous mode (for PowerVM/VIOS) per interface
- Supports MSI-X for load-balancing of interrupt handling between multiple cores/CPUs
- Supports Interrupt Moderation
- Ether II and IEEE 802.3 encapsulated frames
- Supports Jumbo frames
- Supports Link Layer Discovery Protocol (LLDP)
- TCP checksum offload for IPv4 and IPv6
- TCP segmentation Offload (TSO)
- RSS (Receive Side Scaling) support for IPv4, IPv6 and UDP
- UDP checksum offload for IPv4 and IPv6
- Supports firmware updates
- AIX, IBM i, and Linux provide software iSCSI support through the adapter

- Attributes provided: 4-ports 10G-BaseT Adapter
- Attributes required: Low profile PCIe Gen3 slot
- Minimum required: 0
- Maximum allowed: 4 (Initial order maximum: 4)
- OS level required :
  - IBM i supported
  - AIX supported
  - Linux supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EN2Y) - PCIe LP 4-Port 1GbE Adapter

This short PCIe Gen1 adapter provides four 1Gb Ethernet ports that can be configured to run at 1000, 100 or 10 Mbps. 4-pair CAT-5 Unshielded Twisted Pair (UTP) cables up to 100 meters in length are attached to the copper RJ45 connectors. Each port is independent of one another and supports full-duplex or half-duplex. 1000 Mbps speed is not supported in Half Duplex (HDX) mode.

Feature #EN2Y and #EN2Z are electronically identical and have the same CCIN of 5775. Feature #EN2Y indicates a low profile tail stock while feature #EN2Z indicates a full high tail stock.

Attributes:
- AIX NIM support
- IEEE 802.3ab (1 GbE), 802.1p priority, 802.1Q VLAN tagging, 802.3x flow control, 802.3ad load-balancing and failover,
- Link aggregation, IEEE 802.3ad 802.3
- Multiple MAC addresses per interface
- MSI-X, MSI and support of legacy pin interrupts
- Ether II and IEEE 802.3 encapsulated frames
- Jumbo frames up to 9.6 Kbytes
- TCP checksum offload for IPv4 and IPv6
- TCP segmentation Offload (TSO) for IPv4 and IPv6
- UDP checksum offload for IPv4 and IPv6
- AIX, IBM i and Linux provide software iSCSI support through the adapter. Linux can also leverage adapter hardware support including initiator and header & data digest (CRC) generation and checking

- Attributes provided: Four-port 1 Gb Ethernet
- Attributes required: Low-Profile PCIe slot
- Minimum required: 0
- Maximum allowed: 4 (Initial order maximum: 4)
- OS level required :
  - IBM i supported
  - AIX Version 7.3 with the 7300-02 Technology Level and Service Pack 7300-02-02-2420, or later
  - AIX Version 7.2 with the 7200-05 Technology Level and Service Pack 7200-05-08-2420, or later
  - AIX Version 7.3 with the 7300-01 Technology Level and Service Pack 7300-01-04-2420, or later (planned availability - July 26, 2024)
  - Linux supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#END0) - Power Cord 2M (6.5-foot), Drawer to IBM PDU, 250V/10A for India

Standard rack power cable for India only that goes from the system or I/O drawer to the rack power distribution unit (PDU). Cable has C13 on one end (for C14 power supply connector on system unit or I/O drawer) and C14 on the other end (for IBM PDU C13 receptacle). Note for different length C13/C14 cables see #6458 (4.3M) or #6671 (2.7M).

- Attributes provided: Power jumper cord.
- Attributes required: None.
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None

- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#END1) - Power Cord 2.7M (9-foot), Drawer to IBM PDU, 250V/10A for India

Standard IBM rack power cable for India only that goes from the system or I/O drawer to the rack power distribution unit (PDU). Cable has C13 on one end (for C14 power supply connector on system unit or I/O drawer) and C14 on the other end (for IBM PDU C13 receptacle). Note for different length C13/C14 cables see #6458 (4.3M) or #6672 (2.0M).

- Attributes provided: Power jumper cord.
- Attributes required: None.
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#END2) - Power Cord 4.3m (14-ft), Drawer to IBM PDU (250V/10A) for India

Standard IBM rack power cable for India only that goes from the system or I/O drawer to the rack power distribution unit (PDU). Cable has C13 on one end (for C14 power supply connector on system unit or I/O drawer) and C14 on the other end (for IBM PDU C13 receptacle). Note for different length C13/C14 cables see #6671 (2.7M) or #6672 (2.0M).

- Attributes provided: Power jumper cord
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#END3) - Power Cable - Drawer to IBM PDU, 200-240V/10A for India

This feature is for India only and permits manufacturing to select the optimum PDU power jumper cord length (1.0M, 2.0M, 2.7M, or 4.3M) for rack integration. This feature is mandatory on initial order specifying factory integration with IBM racks (such as with 7014-T00 or T42 racks). Feature is not valid on initial order with non-factory integrated feature 4650. Power jumper cord has C13 on one end (for C14 power supply connector on system unit or I/O drawer) and C14 on the other end (for C13 PDU receptacle).

Note: See C13/C14 jumper cord features #6458 (4.3M), #6671 (2.7M), #6672 (2.0M) when not using factory integration.

- Attributes provided: One power jumper cord.
- Attributes required: At least one rack and the absence of #4650.
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)

- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: CIF
- Return parts MES: No

(#END5) - Power Cord 2.8m (9.2-ft), Drawer to IBM PDU, (250V/10A) for India

Standard IBM rack power jumper cord for India only that goes from the system or I/O drawer to the rack power distribution unit (PDU). Cable has C13 on one end (for C14 power supply connector on system unit or I/O drawer) and C20 on the other end (for IBM PDU C19 receptacle).

Note: For power jumper cord which attach to PDUs with C13 receptacles, use features such as #6577, #6458, #6671, or #6672.

- Attributes provided: Power jumper cord.
- Attributes required: None.
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#END7) - Power Cable - Drawer to IBM PDU (250V/10A) for India

This feature is for India only and permits manufacturing to select the optimum PDU power jumper cord length (2.8M or 4.3M) for rack integration. This feature is mandatory for servers that use power supplies with C14 inlets that are going to be factory integrated with IBM racks (such as with 7014-T00 or T42 racks) that contains C19 PDU types.

Feature is not valid on initial order with non-factory integrated feature 4650. Power jumper cord has C13 on one end (for C14 power supply connector on system unit or I/O drawer) and C20 on the other end (for IBM PDU C19 receptacle). MES orders of FC #ELC5 will ship 4.3m length. If MES customers want 2.8m length should order #6665.

- Attributes provided: Power jumper cord.
- Attributes required: None.
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: CIF
- Return parts MES: No

(#ENSA) - 200 GB IBM i NVMe Load Source Namespace size

Specify code indicates a Namespace Size when an IBM i NVMe Load Source device specify feature code is on the order.

- Attributes provided: Load Source Namespace size
- Attributes required: IBM i NVMe Load Source device specify feature

- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#ENSB) - 400 GB IBM i NVMe Load Source Namespace size

Specify code indicates a Namespace Size when an IBM i NVMe Load Source device specify feature code is on the order.

- Attributes provided: Load Source Namespace size
- Attributes required: IBM i NVMe Load Source device specify feature
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#ENSM) - Specify Code Configure all IBM i Namespaces

This Specify code instructs Manufacturing to create multiple namespaces of the same size, as indicated by the IBM i Load Source Namespace specify code size, on the U.2 NVMe load source mirrored device pair. When using this feature, the U.2 NVMe load source device and its mirror device must be identical IBM i NVMe device feature codes. All of these mirrored Namespaces will be added to the System Auxiliary Storage Pool (ASP). If there are more than two U.2 NVMe device only the first two devices will be configured, additional devices will remain unconfigured.

Feature #ENSM is only allowed on initial system orders and feature #ENSM is allowed on a storage configuration with U.2 NVMe devices only not a combination of NVMe and SAS HDD/SSD. Feature #ENSM is also not allowed with feature code #0837 - SAN Load Source Specify (Boot from SAN).

Feature #ENSM is also not applicable with PCIe NVMe Add In Cards, only U.2 devices are configurable.
Feature #ESNM only applies to the P05 IBM i SW tier configs which are:
- 9009-22G with the 1 core processor (feature #EP5Y)
- 9009-41G with the 4 core processor (feature #EP50)
- 9105-41B with the 4 core processor (feature #EPG0)

- Attributes provided: Create the maximum number of Namespaces of the size indicated by the IBM i Load Source Namespace specify code on the NVMe Load Source devices
- Attributes required: Feature #2145 Primary Operating System Indicator ? IBM i plus feature #5000 Software Preload Required or feature #0205 RISC-TO-RISC Data Migration plus identical IBM i NVMe U.2 devices plus IBM i NVMe load source Namespace size and the system is not partitioned (single/un-partitioned only)
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None

- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EPFV) - One Processor Core Activation for EPG7

Entitlement for one processor core activation.

- Attributes provided: Processor core activation for EPG7
- Attributes required: Feature EPG7
- Minimum required: 0
- Maximum allowed: 4 (Initial order maximum: 4)
- OS level required : See feature EPG7
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EPFW) - One Processor Core Activation for EPG3

Entitlement for one processor core activation.

- Attributes provided: Processor core activation for EPG3
- Attributes required: Feature EPG3
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required : See feature EPG3
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EPFY) - One Processor Core Activation for EPGZ

Entitlement for one processor core activation.

- Attributes provided: Processor core activation for EPGZ
- Attributes required: Feature EPGZ
- Minimum required: 0
- Maximum allowed: 8 (Initial order maximum: 8)
- OS level required : See feature EPGZ
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EPG3) - 1-core Typical 3.0 to 3.90 Ghz (max) Power10 Processor

4-core Typical 3.0 to 3.90 Ghz (max) Power10 Processor card. Available only in quantity of one.

- Attributes provided: One core processor card
- Attributes required: One processor card slot
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - IBM i supported
  - Linux not supported

    - AIX not supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EPG7) - 4-core Typical 3.0 to 3.90 Ghz (max) Power10 Processor

4-core Typical 3.0 to 3.90 Ghz (max) Power10 Processor card. Available only in quantity of one.

- Attributes provided: 4-core processor card
- Attributes required: One processor card slot
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
    - IBM i supported
    - Linux supported
    - AIX supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EPGZ) - 8-core Typical 3.0 to 3.90 Ghz (max) Power10 Processor

8-core Typical 3.0 to 3.90 Ghz (max) Power10 Processor card. Available only in quantity of one.

- Attributes provided: One core processor card
- Attributes required: One processor card slot
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
    - IBM i supported
    - Linux supported
    - AIX supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EPTJ) - High Function 9xC19 PDU: Switched, Monitoring

This is an intelligent, switched 200-240 volt AC Power Distribution Unit (PDU) 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 single-phase or three-phase wye. See three-phase #EPTK/EPTL for countries which do not use wye wiring.

The PDU can be mounted vertically in rack side pockets or it can be mounted horizontally. If mounted horizontally, it uses 1 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, #6667, #ELC1 or #ELC2.

Two RJ45 ports on the front of the PDU enable the client 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 and

IBM strongly urges clients 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 generally not easily accessed and therefore IBM does not generally recommend their use.

#EPTG and #EPTJ are identical PDUs. Up to one lower price #EPTG can be ordered with a new 7014-T42/T00 rack in place of a no-charge #9188 PDU.

For comparison, this is most similar to the earlier generation #7189 PDU.

Limitation: Some configurations of the Elastic Storage Server (ESS) are delivered with a 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 Customers responsibility to configure this PDU. In any case the ethernet port on the Intelligent PDU must not be connected to the ESS Management switch.

- Attributes provided: Nine C19 PDU - switched, power monitoring
- Attributes required: PDU wall line cord & space in 19-inch rack
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 0)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Supported
- CSU: CIF
- Return parts MES: No

(#EPTL) - High Function 9xC19 PDU 3-Phase: Switched, Monitoring

This is an intelligent, switched 208 volt 3-phase AC Power Distribution Unit (PDU) 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.

The PDU can be mounted vertically in rack side pockets or it can be mounted horizontally. If mounted horizontally, it uses 1 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 provided with the PDU (no separate feature code) and has a IEC60309 60A plug (3P+G). The PDU supports up to 48 amps.

Two RJ45 ports on the front of the PDU enable the client 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 and IBM strongly urges clients 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 generally not easily accessed and therefore IBM does not generally recommend their use.

#EPTK and #EPTL are identical PDUs. Up to one lower price #EPTK can be ordered with a new 7014-T42/T00 rack in place of a no-charge #9188 PDU.

For comparison, this is most similar to the earlier generation #7196 PDU.

Not orderable in China and Hong Kong.

Limitation: Some configurations of the Elastic Storage Server (ESS) are delivered with a 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 Customers responsibility to configure this PDU. In any case the ethernet port on the Intelligent PDU must not be connected to the ESS Management switch.

- Attributes provided: Nine C19 PDU - switched, power monitoring
- Attributes required: space in rack, 3-phase 208V AC delta electrical service
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 0)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Supported
- CSU: CIF
- Return parts MES: No

(#EPTN) - High Function 12xC13 PDU: Switched, Monitoring

This is an intelligent, switched 200-240 volt AC Power Distribution Unit (PDU) 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 single-phase or three-phase wye. See three-phase #EPTK/EPTL for countries which do not use wye wiring.

The PDU can be mounted vertically in rack side pockets or it can be mounted horizontally. If mounted horizontally, it uses 1 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, #6667, #ELC1 or #ELC2.

Two RJ45 ports on the front of the PDU enable the client 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 and IBM strongly urges clients to change it upon installation.

#EPTM and #EPTN are identical PDUs. Up to one lower price #EPTM can be ordered with a new 7014-T42/T00 rack in place of a no-charge #9188 PDU.

For comparison, this is most similar to the earlier generation #7109 PDU.

Limitation: Some configurations of the Elastic Storage Server (ESS) are delivered with a 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 Customers responsibility to configure this PDU. In any case the ethernet port on the Intelligent PDU must not be connected to the ESS Management switch.

- Attributes provided: Twelve C13 PDU - switched, power monitoring
- Attributes required: PDU wall line cord & space in 19-inch rack
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Supported
- CSU: CIF
- Return parts MES: No

(#EPTQ) - High Function 12xC13 PDU 3-Phase: Switched, Monitoring

This is an intelligent, switched 208 volt 3-phase AC Power Distribution Unit (PDU) 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.

The PDU can be mounted vertically in rack side pockets or it can be mounted horizontally. If mounted horizontally, it uses 1 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 wall line cord is provided with the PDU (no separate feature code) and has a IEC60309 60A plug (3P+G). The PDU supports up to 48 amps.

Two RJ45 ports on the front of the PDU enable the client 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 and IBM strongly urges clients to change it upon installation.

#EPTP and #EPTQ are identical PDUs. Up to one lower price #EPTP can be ordered with a new 7014-T42/T00 rack in place of a no-charge #9188 PDU.

For comparison, this is most similar to the earlier generation #7196 PDU, but offers C13 receptacles.

Not orderable in China and Hong Kong.

Limitation: Some configurations of the Elastic Storage Server (ESS) are delivered with a 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 Customers responsibility to configure this PDU. In any case the ethernet port on the Intelligent PDU must not be connected to the ESS Management switch.

- Attributes provided: Twelve C13 PDU - switched, power monitoring
- Attributes required: space in rack, 3-phase 208V AC delta electrical service
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Supported
- CSU: CIF
- Return parts MES: No

(#EPV0) - Deactivation of LPM (Live Partition Mobility)

This feature codes provides firmware commands to deactivate LPM.

- Attributes provided: None.
- Attributes required: None.
- Minimum required: 0
- Maximum allowed: 8 (Initial order maximum: 8)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EPVT) - PowerVM Enterprise Edition

This feature allows the customer to create partitions that are in units of less than 1 CPU (sub-CPU LPARs) and allows the same system I/O to be virtually allocated to these partitions. When PowerVM is installed in the system, all activated processors must have the PowerVM feature. A fully activated 4-core system requires that four of this feature be ordered.

An encrypted key is supplied to the customer and is installed on the system, authorizing the partitioning at the sub-processor level.

PowerVM Enterprise Edition also includes Live Partition Mobility, which allows for the movement of a logical partition from one Power8, Power9 or Power10 with no application downtime.

Note: If feature EPVT is ordered, the quantity ordered must be equal to the number of active processors.

- Attributes provided: Capability to partition processor
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 8 (Initial order maximum: 8)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#ERB0) - Bulk Packaging Request ID

This indicator is used to optimize package density of 2U server shipments through the use of bulk packaging.

NOTE: Bulk packaging would be defaulted via a specify code on the order for any customer order that contains 2 or more servers.

Limitations: There will be no mixing of MTMs with in the bulk packaging.

- Attributes provided: Bulk packaging from the IBM factory to the customer.
- Attributes required: Order that contains 2 or more servers.
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#ERB1) - Bulk Packaging ID #1

This indicator is used to specify that servers will be bulk packaged for shipment in package identifier #1.

Note: Bulk packaging would be defaulted via a specify code on the order for any customer order that contains 2 or more servers.

Limitations: There will be no mixing of MTMs with in the bulk packaging.

- Attributes provided: Multiple servers in 1 package.

- Attributes required: Order that contains 2 or more servers.
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#ERB2) - Bulk Packaging ID #2

This indicator is used to specify that servers will be bulk packaged for shipment in package identifier #2.

Note: Bulk packaging would be defaulted via a specify code on the order for any customer order that contains 2 or more servers.

Limitations: There will be no mixing of MTMs with in the bulk packaging.

- Attributes provided: Multiple servers in 1 package.
- Attributes required: Order that contains 2 or more servers.
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#ERB3) - Bulk Packaging ID #3

This indicator is used to specify that servers will be bulk packaged for shipment in package identifier #3.

Note: Bulk packaging would be defaulted via a specify code on the order for any customer order that contains 2 or more servers.

Limitations: There will be no mixing of MTMs with in the bulk packaging.

- Attributes provided: Multiple servers in 1 package.
- Attributes required: Order that contains 2 or more servers.
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#ERB4) - Bulk Packaging ID #4

This indicator is used to specify that servers will be bulk packaged for shipment in package identifier #4.

Note: Bulk packaging would be defaulted via a specify code on the order for any customer order that contains 2 or more servers.

Limitations: There will be no mixing of MTMs with in the bulk packaging.

- Attributes provided: Multiple servers in 1 package.
- Attributes required: Order that contains 2 or more servers.
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#ERB5) - Bulk Packaging ID #5

This indicator is used to specify that servers will be bulk packaged for shipment in package identifier #5.

Note: Bulk packaging would be defaulted via a specify code on the order for any customer order that contains 2 or more servers.

Limitations: There will be no mixing of MTMs with in the bulk packaging.

- Attributes provided: Multiple servers in 1 package.
- Attributes required: Order that contains 2 or more servers.
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#ERB6) - Bulk Packaging ID #6

indicator is used to specify that servers will be bulk packaged for shipment in package identifier #6.

Note: Bulk packaging would be defaulted via a specify code on the order for any customer order that contains 2 or more servers.

Limitations: There will be no mixing of MTMs with in the bulk packaging.

- Attributes provided: Multiple servers in 1 package.
- Attributes required: Order that contains 2 or more servers.
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#ERB7) - Bulk Packaging ID #7

This indicator is used to specify that servers will be bulk packaged for shipment in package identifier #7.

Note: Bulk packaging would be defaulted via a specify code on the order for any customer order that contains 2 or more servers.

Limitations: There will be no mixing of MTMs with in the bulk packaging.

- Attributes provided: Multiple servers in 1 package.
- Attributes required: Order that contains 2 or more servers.
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#ERB8) - Bulk Packaging ID #8

This indicator is used to specify that servers will be bulk packaged for shipment in package identifier #8.

Note: Bulk packaging would be defaulted via a specify code on the order for any customer order that contains 2 or more servers.

Limitations: There will be no mixing of MTMs with in the bulk packaging.

- Attributes provided: Multiple servers in 1 package.
- Attributes required: Order that contains 2 or more servers.
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#ERB9) - Bulk Packaging ID #9

This indicator is used to specify that servers will be bulk packaged for shipment in package identifier #9.

Note: Bulk packaging would be defaulted via a specify code on the order for any customer order that contains 2 or more servers.

Limitations: There will be no mixing of MTMs with in the bulk packaging.

- Attributes provided: Multiple servers in 1 package.
- Attributes required: Order that contains 2 or more servers.
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#ERBA) - Bulk Packaging ID #10

This indicator is used to specify that servers will be bulk packaged for shipment in package identifier #10.

Note: Bulk packaging would be defaulted via a specify code on the order for any customer order that contains 2 or more servers.

Limitations: There will be no mixing of MTMs with in the bulk packaging.

- Attributes provided: Multiple servers in 1 package.
- Attributes required: Order that contains 2 or more servers.
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#ERBB) - Bulk Packaging ID #11

This indicator is used to specify that servers will be bulk packaged for shipment in package identifier #11.

Note: Bulk packaging would be defaulted via a specify code on the order for any customer order that contains 2 or more servers.

Limitations: There will be no mixing of MTMs with in the bulk packaging.

- Attributes provided: Multiple servers in 1 package.
- Attributes required: Order that contains 2 or more servers.
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#ERBC) - Bulk Packaging ID #12

This indicator is used to specify that servers will be bulk packaged for shipment in package identifier #12.

Note: Bulk packaging would be defaulted via a specify code on the order for any customer order that contains 2 or more servers.

Limitations: There will be no mixing of MTMs with in the bulk packaging.

- Attributes provided: Multiple servers in 1 package.
- Attributes required: Order that contains 2 or more servers.
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#ERBD) - Bulk Packaging ID #13

This indicator is used to specify that servers will be bulk packaged for shipment in package identifier #13.

Note: Bulk packaging would be defaulted via a specify code on the order for any customer order that contains 2 or more servers.

Limitations: There will be no mixing of MTMs with in the bulk packaging.

- Attributes provided: Multiple servers in 1 package.
- Attributes required: Order that contains 2 or more servers.
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#ERBE) - Bulk Packaging ID #14

This indicator is used to specify that servers will be bulk packaged for shipment in package identifier #14.

Note: Bulk packaging would be defaulted via a specify code on the order for any customer order that contains 2 or more servers.

Limitations: There will be no mixing of MTMs with in the bulk packaging.

- Attributes provided: Multiple servers in 1 package.
- Attributes required: Order that contains 2 or more servers.
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#ERBF) - Bulk Packaging ID #15

This indicator is used to specify that servers will be bulk packaged for shipment in package identifier #15.

Note: Bulk packaging would be defaulted via a specify code on the order for any customer order that contains 2 or more servers.

Limitations: There will be no mixing of MTMs with in the bulk packaging.

- Attributes provided: Multiple servers in 1 package.
- Attributes required: Order that contains 2 or more servers.
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#ERBG) - Bulk Packaging ID #16

This indicator is used to specify that servers will be bulk packaged for shipment in package identifier #16.

Note: Bulk packaging would be defaulted via a specify code on the order for any customer order that contains 2 or more servers.

Limitations: There will be no mixing of MTMs with in the bulk packaging.

- Attributes provided: Multiple servers in 1 package.
- Attributes required: Order that contains 2 or more servers.
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#ERBH) - Bulk Packaging ID #17

This indicator is used to specify that servers will be bulk packaged for shipment in package identifier #17.

Note: Bulk packaging would be defaulted via a specify code on the order for any customer order that contains 2 or more servers.

Limitations: There will be no mixing of MTMs with in the bulk packaging.

- Attributes provided: Multiple servers in 1 package.
- Attributes required: Order that contains 2 or more servers.
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#ERBJ) - Bulk Packaging ID #18

This indicator is used to specify that servers will be bulk packaged for shipment in package identifier #18.

Note: Bulk packaging would be defaulted via a specify code on the order for any customer order that contains 2 or more servers.

Limitations: There will be no mixing of MTMs with in the bulk packaging.

- Attributes provided: Multiple servers in 1 package.
- Attributes required: Order that contains 2 or more servers.
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial

- CSU: N/A
- Return parts MES: Does not apply

(#ERBK) - Bulk Packaging ID #19

This indicator is used to specify that servers will be bulk packaged for shipment in package identifier #19.

Note: Bulk packaging would be defaulted via a specify code on the order for any customer order that contains 2 or more servers.

Limitations: There will be no mixing of MTMs with in the bulk packaging.

- Attributes provided: Multiple servers in 1 package.
- Attributes required: Order that contains 2 or more servers.
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#ERBL) - Bulk Packaging ID #20

This indicator is used to specify that servers will be bulk packaged for shipment in package identifier #20.

Note: Bulk packaging would be defaulted via a specify code on the order for any customer order that contains 2 or more servers.

Limitations: There will be no mixing of MTMs with in the bulk packaging.

- Attributes provided: Multiple servers in 1 package.
- Attributes required: Order that contains 2 or more servers.
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#ERBZ) - Single Bulk Packaging Specify

This indicator is used to indicate single packaging will be used and not allow for bulk packaging.

- Attributes provided: Single packages
- Attributes required: Single customer orders.
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#ERKE) - Unit Enclosure and Rack Mounting Hardware

This feature provides the S1012 server Unit Enclosure and Rack Mounting Hardware for vertical mounting in a 19-inch rack enclosure.

- Attributes provided: Unit Enclosure and Rack Mounting Hardware
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#ES5A) - Enterprise 800GB SSD PCIe4 NVMe U.2 module for AIX/Linux

The Enterprise NVMe small form factor (SFF) U.2 15 mm SSD is a PCIe Gen4 device. This device supports boot on Power and can be use in any U.2 15mm NVMe slot in the system. NVMe is a high-performance architecture and command protocol that can read and write flash memory. Compared to a serial-attached SCSI (SAS) SSD or a Serial Advanced Technology Attachment (SATA) SSD, the NVMe SSD provides more read and write input/output operations per second (IOPS) and larger throughput (GB/sec).

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

Features #ES5A and #ES5B are physically identical drives with the same CCIN of 5B53.

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

This PCIe4 NVMe device can have 64 namespaces per device and works with the previous generation of NVMe devices that manage the same custom card identification number (CCIN).

- Attributes provided: 800 GB PCIe4 SSD NVMe
- Attributes required: SFF U.2 slot
- Minimum required: 0
- Maximum allowed: 4 (Initial order maximum: 4)
- OS level required :
  - Linux supported
  - AIX supported
  - IBM i supported through VIOS

- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#ES5B) - Enterprise 800GB SSD PCIe4 NVMe U.2 module for IBM i

The Enterprise NVMe small form factor (SFF) U.2 15 mm SSD is a PCIe Gen4 device. This device supports boot on Power and can be use in any U.2 15mm NVMe slot in the system. NVMe is a high-performance architecture and command protocol that can read and write flash memory. Compared to a serial-attached SCSI (SAS) SSD or a Serial Advanced Technology Attachment (SATA) SSD, the NVMe SSD provides more read and write input/output operations per second (IOPS) and larger throughput (GB/sec).

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

Features #ES5A and #ES5B are physically identical drives with the same CCIN of 5B53.

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

This PCIe4 NVMe device can have 64 namespaces per device and works with the previous generation of NVMe devices that manage the same custom card identification number (CCIN).

- Attributes provided: 800 GB PCIe4 SSD NVMe
- Attributes required: SFF U.2 slot
- Minimum required: 0
- Maximum allowed: 4 (Initial order maximum: 4)
- OS level required :
  - IBM i supported
  - Linux not supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#ES5C) - Enterprise 1.6 TB SSD PCIe4 NVMe U.2 module for AIX/Linux

The Enterprise NVMe small form factor (SFF) U.2 15 mm SSD is a PCIe Gen4 device. This device supports boot on Power and can be use in any U.2 15mm NVMe slot in the system. NVMe is a high-performance architecture and command protocol that can read and write flash memory. Compared to a serial-attached SCSI (SAS) SSD or a Serial Advanced Technology Attachment (SATA) SSD, the NVMe SSD provides more read and write input/output operations per second (IOPS) and larger throughput (GB/sec).

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

Features #ES5C and #ES5D are physically identical drives with the same CCIN of 5B52.

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

This PCIe4 NVMe device can have 64 namespaces per device and works with the previous generation of NVMe devices that manage the same custom card identification number (CCIN).

- Attributes provided: 1.6 TB PCIe4 NVMe SSD
- Attributes required: SFF U.2 slot
- Minimum required: 0
- Maximum allowed: 4 (Initial order maximum: 4)
- OS level required :
  - Linux supported
  - AIX supported
  - IBM i supported through VIOS
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#ES5D) - Enterprise 1.6 TB SSD PCIe4 NVMe U.2 module for IBM i

The Enterprise NVMe small form factor (SFF) U.2 15 mm SSD is a PCIe Gen4 device. This device supports boot on Power and can be use in any U.2 15mm NVMe slot in the system. NVMe is a high-performance architecture and command protocol that can read and write flash memory. Compared to a serial-attached SCSI (SAS) SSD or a Serial Advanced Technology Attachment (SATA) SSD, the NVMe SSD provides more read and write input/output operations per second (IOPS) and larger throughput (GB/sec).

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

Features #ES5C and #ES5D are physically identical drives with the same CCIN of 5B52.

The nature of the workload has a great impact on the maximum write capacity. If a high percentage of more sequentially oriented writes is used instead of random writes, the maximum write capacity will be larger. Writes past the SSD's maximum write capacity will continue to work for some period of time, but they will perform much more slowly. Whether the application uses sequential or random reads from the device does not affect the life of the device. A Predictive Failure Analysis message will indicate that it is time to replace the SSD if enabled by the operating system (OS) and system administrator. IBM recommends that you

monitor SMART log critical information through the appropriate OS utility to observe drive life remaining information. IBM NVMe SSD failures will be replaced during the standard warranty and maintenance period for SSDs that have not reached the maximum number of write cycles. SSDs that reach this limit may fail to operate according to specifications and must be replaced at the client's expense. Data redundancy on a failed SSD may be provided by OS mirroring or software RAID wherever applicable.

This PCIe4 NVMe device can have 64 namespaces per device and works with the previous generation of NVMe devices that manage the same custom card identification number (CCIN).

- Attributes provided: 1.6 TB PCIe4 NVMe SSD
- Attributes required: SFF U.2 slot
- Minimum required: 0
- Maximum allowed: 4 (Initial order maximum: 4)
- OS level required :
  - IBM i supported
  - Linux not supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#ESC0) - S&H - No Charge

No charge shipping and handling

> **Note:** For Latin America only

- Attributes provided: None
- Attributes required: Sales Preapproval Required
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#ESC5) - S&H-a

Shipping and handling

> **Note:** For Latin America only

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: Does not apply

(#ESCT) - Virtual Capacity Expedited Shipment

This feature will instruct the Manufacture scheduling team to schedule shipment of orders with only activation features immediately (within 24 hours). Set (ESCT = 1) to trigger the expedite and receive and electronic notification. Set (ESCT = 0) to receive the paper notification and normal order scheduling.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: MES
- CSU: N/A
- Return parts MES: Does not apply

(#ESCZ) - iSCSI SAN Load Source Specify for AIX

Indicates that an LAN adapter is being used as the Load Source for the AIX operating system.

- Attributes provided: iSCSI load source placement specify
- Attributes required: LAN adapter
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - AIX supported
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#ESWK) - AIX Update Access Key (UAK)

With the introduction of the Power10 server, IBM expands upon the use of the update access key (UAK) with the addition of an AIX Software Maintenance (SWMA) UAK. This functionality provides proactive notification of AIX SWMA expirations to ensure continued and uninterrupted software support. AIX SWMA UAKs do not limit the operability of or capability to update AIX.

For additional information see announcement letters:
- For Japan: JP21-0387
- For Asia Pacific: AP21-0322
- For United States: 221-331
- For Latin America: LP21-0395
- For Canada: A21-050
- For Europe Middle East and Africa: ZP21-0403

- Attributes provided: AIX software maintenance agreements (SWMA) validation
- Attributes required: AIX OS on server
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - AIX supported
- Initial Order/MES/Both/Supported: Initial

- CSU: N/A
- Return parts MES: No

(#EU01) - 1TB Removable Disk Drive Cartridge

1TB Removable Disk Drive Cartridge (#EU01) provides a RDX disk drive in a rugged cartridge to be used in an RDX Internal and External Docking Station such as the (#1103, #1104 or #1123, #EU03, #EU04 ,#EU23, or #EU07 1TB is uncompressed. docking station. 1TB is uncompressed. Compression/decompression is provided by the operating system, not the drive itself. Feature EU01 is not entitled under the IBM Maintenance Agreement, if one is purchased.

- Attributes provided: 1TB RDX rugged disk cartridge
- Attributes required: None.
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - Linux supported
  - AIX supported
  - IBM i supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EU08) - RDX 320 GB Removable Disk Drive

Provides a RDX disk drive in a rugged cartridge to be used in an RDX docking station such as #EU03, #EU04, #EU23, #1123, #1103, #1104 or #EU07. Capacity is 320 GB is uncompressed. Compression/ decompression is provided by the operating system, not the drive itself. Feature EU08 is not entitled under the IBM Maintenance Agreement, if one is purchased.

- Attributes provided: 320 GB RDX rugged disk/cartridge
- Attributes required: One docking station
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 0)
- OS level required :
  - Linux supported
  - AIX supported
  - IBM i supported
- Initial Order/MES/Both/Supported: Supported
- CSU: CIF
- Return parts MES: No

(#EU15) - 1.5TB Removable Disk Drive Cartridge

The 1.5 TB Removable Disk Drive Cartridge provides a RDX disk drive in a rugged cartridge to be used in an RDX Internal and External Docking Station such as (#1103, #1104 or #1123, #EU03, #EU04 ,#EU23, or #EU07. 1.5TB is uncompressed. Compression/decompression is provided by the operating system, not the drive itself. Feature EU015 is not entitled under the IBM Maintenance Agreement, if one is purchased.

- Attributes provided: 1.5TB RDX rugged disk cartridge
- Attributes required: RDX docking station
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 0)

- OS level required :
  - IBM i supported
  - Linux supported
  - AIX supported
- Initial Order/MES/Both/Supported: Supported
- CSU: CIF
- Return parts MES: No

(#EU19) - Cable Ties & Labels

Set of 10 hook and loop fabric, often called VELCRO(R) ties 35.5 cm (14-inch) in length to conveniently attach cables or cords to rack or other cables.

Set of 16 labels 2x4 inches (5x10 cm) in sizet to identify cables when installing or moving or servicing equipment.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EU29) - Order Placed Indicator

This feature is use to identify ORDER PLACED for administrative purposes within manufacturing to Facilitate processing.

- Attributes provided: ORDER PLACED INDICATOR FOR ADMINISTRATIVE TRACKING
- Attributes required: None.
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EU2K) - Operator Panel LCD Display

This feature provides a cable that connects the system's Operator Panel to the Storage backplane. Used on a Rack-mount drawer.

- Attributes provided: LCD Display
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both

- CSU: CIF
- Return parts MES: No

(#EU2T) - 2TB Removable Disk Drive Cartridge (RDX)

The 2.0TB Removable Disk Drive Cartridge provides a RDX disk drive in a rugged cartridge to be used in an RDX Internal and External Docking Station such as (#1103, #1104 or #1123, #EU03, #EU04 ,#EU23, or #EU07. 2.0TB is uncompressed. Compression/decompression is provided by the operating system, not the drive itself. Feature EU2T is not entitled under the IBM Maintenance Agreement, if one is purchased.

- Attributes provided: 2.0TB RDX rugged disk cartridge
- Attributes required: None.
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - Linux supported
  - AIX supported
  - IBM i supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EUA1) - Internal USB Disk Drive Docking Station RDX

USB Internal Docking Station accommodates RDX removable disk cartridge of any capacity. The disk are in a protective rugged cartridge enclosure that plug into the docking station. The docking station holds one removable rugged disk drive/cartridge at a time. The rugged removable disk cartridge and docking station provides saves, restores and backs up similar to tape drive. This can be an excellent alternative to DAT72, DAT160, 8mm, and VXA-2 and VXA-320 tapes.
The drive is controlled by an internal USB port in the system unit.

- Attributes provided: USB Disk Drive Docking Station
- Attributes required: Available RDX bay
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - Linux supported
  - AIX supported
  - IBM i supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EUA4) - RDX USB External Docking Station

USB External Docking Station which accommodates RDX removable disk cartridge of any capacity. The disk is in a protective rugged cartridge enclosure that plug into the docking station. The docking station holds one removable rugged disk drive/cartridge at a time. The rugged removable disk cartridge and docking station can be used similar to a tape drive. This can be an excellent entry system save/restore option and a good alternative to DAT72, DAT160, 8mm, and VXA-2 and VXA-320 tapes. CCIN: 63B8-005.

#EUA4 attaches to a Power server via a USB cable which carries data and control information. It is not powered by the USB port on the Power System or Power System USB adapter, but has a separate electrical

line cord. Physically the #EUA4 docking station is a standalone enclosure about 2.0 x 7.0 x 4.25 inches in size which can sit on a shelf or on top of equipment in a rack.

#EUA4 is a follow on product to the #EU04 RDX docking station. #EUA4 has identical performance and identical application function to:

- Previously announced #EU04 and #1104 USB external docking stations
- Top mount #EUA3 USB docking station used in the Power S814 tower configuration
- #EU03 USB internal docking stations used in Power 720 system units
- #EU03 USB docking station available in the rack mounted IBM 7226-1U3 Multimedia Drawer

:note. Feature EUA4 is not orderable in the following countries: China, Taiwan, Australia, India, New Zealand, Japan, Armenia, Tajikistan, Turkmenistan, Uzbekistan, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Russia, South Africa, and Mexico.

- Attributes provided:
  - USB 3.0 RDX External Docking Station
  - USB 3.0 Cable (2.7 meter or 8.8 foot)
  - Four line cords (1.85 meter or 6 foot) with type A, G, F or I plug (see http://www.iec.ch/worldplugs for type definition and country-specific usage)
  - One power jumper cord as an alternative to using one of the four power line cords above. This would draw power from a PDU in a rack.
  - Power Adapter using single phase 110-250V 50-60Hz power source
- Attributes required: One USB port on server or server's USB adapter
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 0)
- OS level required :
  - Linux supported
  - AIX supported
  - IBM i supported
- Initial Order/MES/Both/Supported: Supported
- CSU: CIF
- Return parts MES: No

(#EUA5) - Standalone USB DVD drive w/cable

The Standalone USB DVD drive (FC EUA5) is an optional, standalone external USB-DVD device. It requires high current at 5V and must use the front USB 3.0 port on the 9008-22L, 9009-22A, 9009-41A, 9009-42A, 9223-22H, 9223-42H, and 9043-MRX systems.

- Custom card identification number (CCIN): 6331 model 005
- Media: Reads CD-ROM, CD-R, CD-RW, DVD-R, DVD+R, DVD-RW, DVD+RW, DVD-ROM, and DVD-RAM discs; Writes 4.7 GB DVD-RAM discs; CD read speed at 24X; DVD-ROM read speed at 8X; DVD-RAM at 5X; DVD-RAM has a write speed of 5X; The buffer size is 0.75 MB and cannot be disabled.
- Interface: USB
- Connector: USB 2.0
- Loading tray: supports 12 cm and 8 cm discs
- Operating positions: horizontal only (on a flat stable surface or floor) Note: A USB extension cable is included (P/N 32N1311). The USB extension cable is to be used when there are no safe, flat spots available in the rack. This cable allows the drive to reach the floor. Alternate or additional extension cables are not supported as the total USB cable length can be no longer than 3 meters.
- Form factor: standalone USB DVD drive

- DVD video: not supported
- Attributes provided: USB DVD drive
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - Linux supported
  - AIX supported
  - IBM i supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EVSN) - Enable Virtual Serial Number

This feature provides the ability to order a set of Virtual Serial Numbers.
The order is placed and fulfilled on the Entitled System Support (ESS) web site. A customer can go to ESS and request their set of Virtual Serial Numbers on the machine. At the end of the ordering and ESS retrieval steps, the customer will have an array of Virtual Serial Numbers available to start using, example: assigning to partitions, on their machine.

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 999 (Initial order maximum: 999)
- OS level required :
  - IBM i supported
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#EX23) - 3 YEAR, IBM POWER EXPERT CARE ADVANCED, 48HR COMMITTED FIX

This feature indicates IBM Power Expert Care Advanced 3 years 48 hr committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EX24) - 4 YEAR, IBM POWER EXPERT CARE ADVANCED, 48HR COMMITTED FIX

This feature indicates the IBM Power Expert Care Advanced 4 year, 48 hr committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)

- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EX25) - 5 YEAR, IBM POWER EXPERT CARE ADVANCED, 48HR COMMITTED FIX

This feature indicates IBM Power Expert Care Advanced 5 years 48 hr committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EX33) - 3 YEAR, IBM POWER EXPERT CARE ADVANCED, 72HR COMMITTED FIX

This feature indicates IBM Power Expert Care Advanced 3 years 72 hr committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EX34) - 4 YEAR, IBM POWER EXPERT CARE ADVANCED, 72HR COMMITTED FIX

This feature indicates the IBM Power Expert Care Advanced 4 year, 72 hr committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EX35) - 5 YEAR, IBM POWER EXPERT CARE ADVANCED, 72HR COMMITTED FIX

This feature indicates IBM Power Expert Care Advanced 5 years 72 hr committed fix

- Attributes provided: None
- Attributes required: None

- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EX43) - 3 YEAR, IBM POWER EXPERT CARE PREMIUM, 48HR COMMITTED FIX

This feature indicates IBM Power Expert Care Premium 3 years 48 hr committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EX44) - 4 YEAR, IBM POWER EXPERT CARE PREMIUM, 48HR COMMITTED FIX

This feature indicates the IBM Power Expert Care Premium 4 year, 48 hr committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EX45) - 5 YEAR, IBM POWER EXPERT CARE PREMIUM, 48HR COMMITTED FIX

This feature indicates IBM Power Expert Care Premium 5 years 48 hr committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EX53) - 3 YEAR, IBM POWER EXPERT CARE PREMIUM, 72HR COMMITTED FIX

This feature indicates IBM Power Expert Care Premium 3 years 72 hr committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EX54) - 4 YEAR, IBM POWER EXPERT CARE PREMIUM, 72HR COMMITTED FIX

This feature indicates the IBM Power Expert Care Premium 4 year, 72 hr committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EX55) - 5 YEAR, IBM POWER EXPERT CARE PREMIUM, 72HR COMMITTED FIX

This feature indicates IBM Power Expert Care Premium 5 years 72 hr committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EX63) - 3 YEAR, IBM POWER EXPERT CARE ADVANCED, 6HR COMMITTED FIX

This feature indicates IBM Power Expert Care Advanced 3 years 6H committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EX64) - 4 YEAR, IBM POWER EXPERT CARE ADVANCED, 6HR COMMITTED FIX

This feature indicates the IBM Power Expert Care Advanced 4 year, 6h committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EX65) - 5 YEAR, IBM POWER EXPERT CARE ADVANCED, 6HR COMMITTED FIX

This feature indicates IBM Power Expert Care Advanced 5 years 6H committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EX73) - 3 YEAR, IBM POWER EXPERT CARE PREMIUM, 6HR COMMITTED FIX

This feature indicates IBM Power Expert Care Premium 3 years 6 hr committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EX74) - 4 YEAR, IBM POWER EXPERT CARE PREMIUM, 6HR COMMITTED FIX

This feature indicates the IBM Power Expert Care Premium 4 year, 6 hr committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EX75) - 5 YEAR, IBM POWER EXPERT CARE PREMIUM, 6HR COMMITTED FIX

This feature indicates IBM Power Expert Care Premium 5 years 6 hr committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EX83) - 3 YEAR, IBM POWER EXPERT CARE ADVANCED, 8HR COMMITTED FIX

This feature indicates IBM Power Expert Care Advanced 3 years 8H committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EX84) - 4 YEAR, IBM POWER EXPERT CARE ADVANCED, 8HR COMMITTED FIX

This feature indicates the IBM Power Expert Care Advanced 4 year, 8h committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EX85) - 5 YEAR, IBM POWER EXPERT CARE ADVANCED, 8HR COMMITTED FIX

This feature indicates IBM Power Expert Care Advanced 5 years 8H committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial

- CSU: N/A
- Return parts MES: No

(#EX93) - 3 YEAR, IBM POWER EXPERT CARE PREMIUM, 8HR COMMITTED FIX

This feature indicates IBM Power Expert Care Premium 3 years 8 hr committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EX94) - 4 YEAR, IBM POWER EXPERT CARE PREMIUM, 8HR COMMITTED FIX

This feature indicates the IBM Power Expert Care Premium 4 year, 8 hr committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EX95) - 5 YEAR, IBM POWER EXPERT CARE PREMIUM, 8HR COMMITTED FIX

This feature indicates IBM Power Expert Care Premium 5 years 8 hr committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EXA3) - 3 YEAR, ADVANCED EXPERT CARE

This feature indicates IBM Power Expert Care Advanced 3 years

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :

    - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EXA4) - 4 YEAR, ADVANCED EXPERT CARE

This feature indicates the IBM Power Expert Care Advanced 4 year

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
    - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EXA5) - 5 YEAR, ADVANCED EXPERT CARE

This feature indicates IBM Power Expert Care Advanced 5 years

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
    - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EXB3) - IBM Power Expert Care Basic 3 Year

This feature indicates the Power Expert Care Basic 3 year option

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
    - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EXB4) - IBM Power Expert Care Basic 4 Year

This feature indicates the Power Expert Care Basic 4 year option

- Attributes provided: None
- Attributes required: None
- Minimum required: 0

- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EXB5) - IBM Power Expert Care Basic 5 Year

This feature indicates the Power Expert Care Basic 5 year option

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EXF3) - 3 YEAR, IBM POWER EXPERT CARE ADVANCED, 24HR COMMITTED FIX

This feature indicates IBM Power Expert Care Advanced 3 years 24 hr committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EXF4) - 4 YEAR, IBM POWER EXPERT CARE ADVANCED, 24HR COMMITTED FIX

This feature indicates the IBM Power Expert Care Advanced 4 year, 24 hr committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EXF5) - 5 YEAR, IBM POWER EXPERT CARE ADVANCED, 24HR COMMITTED FIX

This feature indicates IBM Power Expert Care Advanced 5 years 24 hr committed fix

- Attributes provided: None

- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EXG3) - 3 YEAR, IBM POWER EXPERT CARE PREMIUM, 24HR COMMITTED FIX

This feature indicates IBM Power Expert Care Premium 3 years 24 hr committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EXG4) - 4 YEAR, IBM POWER EXPERT CARE PREMIUM, 24HR COMMITTED FIX

This feature indicates the IBM Power Expert Care Premium 4 year, 24 hr committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EXG5) - 5 YEAR, IBM POWER EXPERT CARE PREMIUM, 24HR COMMITTED FIX

This feature indicates IBM Power Expert Care Premium 5 years 24 hr committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EXH3) - 3 YEAR, IBM POWER EXPERT CARE ADVANCED, 12HR COMMITTED FIX

This feature indicates IBM Power Expert Care Advanced 3 years 12H committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EXH4) - 4 YEAR, IBM POWER EXPERT CARE ADVANCED, 12HR COMMITTED FIX

This feature indicates the IBM Power Expert Care Advanced 4 year, 12h committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EXH5) - 5 YEAR, IBM POWER EXPERT CARE ADVANCED, 12HR COMMITTED FIX

This feature indicates IBM Power Expert Care Advanced 5 years 12H committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EXJ3) - 3 YEAR, IBM POWER EXPERT CARE PREMIUM, 12HR COMMITTED FIX

This feature indicates IBM Power Expert Care Premium 3 years 12 hr committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EXJ4) - 4 YEAR, IBM POWER EXPERT CARE PREMIUM, 12HR COMMITTED FIX

This feature indicates the IBM Power Expert Care Premium 4 year, 12 hr committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EXJ5) - 5 YEAR, IBM POWER EXPERT CARE PREMIUM, 12HR COMMITTED FIX

This feature indicates IBM Power Expert Care Premium 5 years 12 hr committed fix

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EXP3) - 3 YEAR, PREMIUM EXPERT CARE

This feature indicates IBM Power Expert Care Premium 3 years

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EXP4) - 4 YEAR, PREMIUM EXPERT CARE

This feature indicates the IBM Power Expert Care Premium 4 year

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#EXP5) - 5 YEAR, PREMIUM EXPERT CARE

This feature indicates IBM Power Expert Care Premium 5 years

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 1 (Initial order maximum: 1)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Initial
- CSU: N/A
- Return parts MES: No

(#SVBP) - BP Post-Sale Services: 1 Day

BP Post-Sale Services: 1 Day

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#SVCS) - IBM Systems Lab Services Post-Sale Services: 1 Day

IBM Systems Lab Services Post-Sale Services: 1 Day

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both
- CSU: CIF
- Return parts MES: No

(#SVNN) - Other IBM Post-Sale Services: 1 Day

Other IBM Post-Sale Services: 1 Day

- Attributes provided: None
- Attributes required: None
- Minimum required: 0
- Maximum allowed: 9999 (Initial order maximum: 250)
- OS level required :
  - None
- Initial Order/MES/Both/Supported: Both

- CSU: CIF
- Return parts MES: No

Accessories

None.

Customer replacement parts

None.

Supplies

Supplemental media

None.

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