

IBM Elastic Storage System 5000 delivers the next generation of storage capacity, density, performance, and value

Table of contents

| | |
|---------------------------------------------|------------------------------------------|
| 1 Overview | 17 Publications |
| 1 Key requirements | 18 Technical information |
| 1 Planned availability date | 20 Terms and conditions |
| 2 Description | 25 Prices |
| 3 Product number | |

At a glance

IBM Elastic Storage^(R) System (ESS) 5000 delivers the following enhancements:

- Greater than 25% higher storage density over previous generations
- Up to 78% better performance on equivalent newly announced models compared to the previous generation of ESS (individual model performance will vary)
- Simple install and upgrade process utilizing an embedded Red Hat^(R) Linux^(R) operating system and containerized deployment using Ansible^(R) Playbook Bundles (APBs)

Overview

IBM^(R) delivers the most advanced information architecture for AI by utilizing its industry knowledge and leadership in high-performance data storage to help you thrive in the world of AI. IBM has demonstrated leadership by delivering the smartest and most powerful supercomputers in the world, powered by IBM Spectrum^(R) Scale.

ESS 5000 delivers the next generation of storage capacity, density, performance, and value. With ESS 5000, IBM provides the easiest preintegrated and pretested IBM Spectrum Scale Storage solution customized to meet your AI and big data storage needs.

These models include a simpler install process built on containers to offer the fastest and easiest install and upgrade process ever delivered with ESS. Compared to previous ESS models, ESS 5000 delivers up to 78% better streaming data performance on equivalent newly announced models compared to the previous generation of ESS and more than 25% increased storage density.

Key requirements

- ESS Management server (5105-22E)
- Management switch (8831-S52)

Planned availability date

August 14, 2020

Description

Compared to previous ESS models, ESS 5000 delivers up to 78% higher streaming data performance on equivalent newly announced models compared to the previous generation of ESS (individual model performance will vary), greater than 25% storage density, and the highest storage capacity of any ESS. Networking supports up to 12 EDR InfiniBand 25 and 100 Gbps Ethernet ports with RDMA over Converged Ethernet options (RoCE).

As the data storage requirements of file, object, and Hadoop workloads scale, ESS installations can grow in a building block approach, scaling to meet your needs. Each building block offers you additional storage space, bandwidth, performance, and the single file system image that can scale as your needs grow. Data can be migrated to balance performance, and by deploying IBM Spectrum Scale cloud tiering, data can be migrated to and from cloud-based storage systems.

ESS 5000 offers the following optimized models:

| | | Drive capacity | | |
|-----------|--------------------------------------|-------------------------|--------|--------|
| | | 10 TB | 14 TB | 16 TB |
| ESS model | Quantity of 4U106 Storage Enclosures | Total raw capacity (TB) | | |
| SC1 Model | 1 | 1040 | 1456 | 1664 |
| SC2 Model | 2 | 2100 | 2940 | 3360 |
| SC3 Model | 3 | 3160 | 4424 | 5056 |
| SC4 Model | 4 | 4220 | 5908 | 6752 |
| SC5 Model | 5 | 5280 | 7392 | 8448 |
| SC6 Model | 6 | 6340 | 8876 | 10,144 |
| SC7 Model | 7 | 7400 | 10,360 | 11,840 |
| SC8 Model | 8 | 8460 | 11,844 | 13,536 |

| | | Drive capacity | | | |
|-----------|-------------------------------------|-------------------------|-------|-------|-------|
| | | 6 TB | 10 TB | 14 TB | 16 TB |
| ESS model | Quantity of 5U92 Storage Enclosures | Total raw capacity (TB) | | | |
| SL1 Model | 1 | 540 | 900 | 1260 | 1440 |
| SL2 Model | 2 | 1092 | 1820 | 2548 | 2912 |
| SL3 Model | 3 | 1644 | 2740 | 3836 | 4384 |
| SL4 Model | 4 | 2196 | 3660 | 5124 | 5856 |
| SL5 Model | 5 | 2748 | 4580 | 6412 | 7328 |
| SL6 Model | 6 | 3300 | 5500 | 7700 | 8800 |

ESS 5000 models include the latest RHEL 8.x OS embedded with IBM Spectrum Scale 5.0.5.1 in deployment containers leveraging APBs. This updated architecture provides the fastest and easiest install and upgrade process ever delivered with ESS. These enhancements enable trained clients or business partners to quickly install and manage your ESS, even with a limited IT staff. If additional support is needed, IBM Lab Services is available for assistance.

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.

Reference information

For additional information about Embedded Red Hat for ESS 5000, see Software Announcement [220-097](#), dated July 7, 2020.

Product number

The following are newly announced features and models on the specified models of the IBM System Storage™ 5105, 5141, and 5147 machine types:

| Description | Machine type | Model | Feature |
|--------------------------------------------|--------------|-------|---------|
| ESS Server for Elastic Storage System 5000 | 5105 | 22E | |
| Linux Partition Specify | 5105 | 22E | 0266 |
| TAA Compliance | 5105 | 22E | 0983 |
| Overhead ladder - 5ft | 5105 | 22E | 1101 |
| 3M, Blue Ethernet Cat 5E cable | 5105 | 22E | 1111 |
| 10M, Blue Ethernet Cat 5E cable | 5105 | 22E | 1112 |
| 25M, Blue Ethernet Cat 5E cable | 5105 | 22E | 1113 |
| CAT5E Ethernet Cable, 10M GREEN | 5105 | 22E | 1116 |
| 3M, Yellow Ethernet Cat 5E cable | 5105 | 22E | 1118 |
| 10M, Yellow Ethernet Cat 5E cable | 5105 | 22E | 1119 |
| Primary OS -Linux | 5105 | 22E | 2147 |
| Rack Indicator None | 5105 | 22E | 4650 |
| Rack Indicator Rack 1 | 5105 | 22E | 4651 |
| Rack Indicator Rack 2 | 5105 | 22E | 4652 |
| Rack Indicator Rack 3 | 5105 | 22E | 4653 |
| Rack Indicator Rack 4 | 5105 | 22E | 4654 |
| Rack Indicator Rack 5 | 5105 | 22E | 4655 |
| Rack Indicator Rack 6 | 5105 | 22E | 4656 |
| Rack Indicator Rack 7 | 5105 | 22E | 4657 |
| Rack Indicator Rack 8 | 5105 | 22E | 4658 |
| Rack Indicator Rack 9 | 5105 | 22E | 4659 |
| Rack Indicator Rack 10 | 5105 | 22E | 4660 |
| Rack Indicator Rack 11 | 5105 | 22E | 4661 |

| Description | Machine type | Model | Feature |
|------------------------------------------------------------------|---------------------|--------------|----------------|
| Rack Indicator Rack 12 | 5105 | 22E | 4662 |
| Rack Indicator Rack 13 | 5105 | 22E | 4663 |
| Rack Indicator Rack 14 | 5105 | 22E | 4664 |
| Rack Indicator Rack 15 | 5105 | 22E | 4665 |
| Rack Indicator Rack 16 | 5105 | 22E | 4666 |
| Bulk Order Indicator | 5105 | 22E | 5555 |
| Power Cable - Drawer to IBM PDU, 200-240V/10A | 5105 | 22E | 6458 |
| 4.3m (14- Ft) 3PH/32A 380-415V Power Cord | 5105 | 22E | 6489 |
| 4.3m (14- Ft) 1PH/63A 200-240V Power Cord | 5105 | 22E | 6491 |
| 4.3m (14- Ft) 1PH/48A 200-240V Power Cord | 5105 | 22E | 6492 |
| Power Cable - Drawer to IBM PDU, 200-240V/10A | 5105 | 22E | 6577 |
| 4.3m (14- Ft) 3PH/16A 380-415V Power Cord | 5105 | 22E | 6653 |
| 4.3m (14-Ft) 1PH/24A Power Cord | 5105 | 22E | 6654 |
| 4.3m (14-Ft) 1PH/24A WR Power Cord | 5105 | 22E | 6655 |
| 4.3m (14-Ft) 1PH/32A Power Cord | 5105 | 22E | 6656 |
| 4.3m (14-Ft) 1PH/32A Power Cord | 5105 | 22E | 6657 |
| 4.3m (14-Ft) 1PH/24A Power Cord-Korea | 5105 | 22E | 6658 |
| Power Cord 2.8m (9.2-ft), Drawer to IBM PDU, (250V/10A) | 5105 | 22E | 6665 |
| 4.3m (14- Ft) 3PH/32A 380-415V Power Cord-Australia | 5105 | 22E | 6667 |
| Power Cord 2.7M (9-foot), Drawer to IBM PDU, 250V/10A | 5105 | 22E | 6671 |
| Power Cord 2M (6.5-foot), Drawer | 5105 | 22E | 6672 |

| Description | Machine type | Model | Feature |
|-----------------------------------------------------------|---------------------|--------------|----------------|
| to IBM PDU, 250V/10A | | | |
| OEM (GENERIC) INDICATOR | 5105 | 22E | 7770 |
| RHEL License Core Counter | 5105 | 22E | 9442 |
| Month Indicator | 5105 | 22E | 9461 |
| Day Indicator | 5105 | 22E | 9462 |
| Hour Indicator | 5105 | 22E | 9463 |
| Minute Indicator | 5105 | 22E | 9464 |
| Quantity Indicator | 5105 | 22E | 9465 |
| Countable Member Indicator | 5105 | 22E | 9466 |
| QTY=1, CSC BILLING UNIT | 5105 | 22E | A4ES |
| QTY=10, CSC BILLING UNIT | 5105 | 22E | A4ET |
| Shipping and Handling NC | 5105 | 22E | AG00 |
| Shipping and Handling | 5105 | 22E | AGJK |
| Red Hat OpenShift ^(R) Indicator | 5105 | 22E | AJGH |
| QSFP+ 40GbE Base-SR Transceiver | 5105 | 22E | EB27 |
| 10m IBM Passive QSFP+ MTP Optical cable | 5105 | 22E | EB2J |
| 30m IBM Passive QSFP+ MTP Optical cable | 5105 | 22E | EB2K |
| Lift Tool | 5105 | 22E | EB2Z |
| 2M FDR IB SWITCH COPPER CABLE, QSFP/ QSFP | 5105 | 22E | EB42 |
| 10GbE Optical Transceiver SFP+ SR | 5105 | 22E | EB46 |
| 25GbE Optical Transceiver SFP28 | 5105 | 22E | EB47 |
| 3M FDR IB OPTICAL CABLE/ TRANSCEIVER, QSFP/QSFP | 5105 | 22E | EB4A |
| 5M FDR IB OPTICAL CABLE/ TRANSCEIVER, QSFP/QSFP | 5105 | 22E | EB4B |
| 10M FDR IB OPTICAL CABLE/ TRANSCEIVER, QSFP/QSFP | 5105 | 22E | EB4C |
| 15M FDR IB SWITCH OPTICAL CABLE, QSFP/ QSFP | 5105 | 22E | EB4D |
| 20M FDR IB SWITCH OPTICAL CABLE, QSFP/ QSFP | 5105 | 22E | EB4E |

| Description | Machine type | Model | Feature |
|-----------------------------------------------------------------|---------------------|--------------|----------------|
| 30M FDR IB OPTICAL CABLE/ TRANSCEIVER, QSFP/QSFP | 5105 | 22E | EB4F |
| 50M FDR IB OPTICAL CABLE/ TRANSCEIVER, QSFP/QSFP | 5105 | 22E | EB4G |
| 0.5m SFP28/25GbE copper Cable | 5105 | 22E | EB4J |
| 1.0m SFP28/25GbE copper Cable | 5105 | 22E | EB4K |
| 1.5m SFP28/25GbE copper Cable | 5105 | 22E | EB4L |
| 2.0m SFP28/25GbE copper Cable | 5105 | 22E | EB4M |
| 2.0m QSFP28/100GbE copper split Cable to SFP28 4x25GbE | 5105 | 22E | EB4P |
| 1M EDR IB COPPER CABLE/ TRANSCEIVER, QSFP/QSFP | 5105 | 22E | EB51 |
| 2M EDR IB COPPER CABLE/ TRANSCEIVER, QSFP/QSFP | 5105 | 22E | EB52 |
| 1.5M EDR IB COPPER CABLE/ TRANSCEIVER, QSFP/QSFP | 5105 | 22E | EB54 |
| 100GbE Optical Transceiver QSFP28 | 5105 | 22E | EB59 |
| 3M EDR IB OPTICAL CABLE/ TRANSCEIVER, QSFP/QSFP | 5105 | 22E | EB5A |
| 5M EDR IB OPTICAL CABLE/ TRANSCEIVER, QSFP/QSFP | 5105 | 22E | EB5B |
| 10M EDR IB OPTICAL CABLE/ TRANSCEIVER, QSFP/QSFP | 5105 | 22E | EB5C |
| 15M EDR IB OPTICAL CABLE/ TRANSCEIVER, QSFP/QSFP | 5105 | 22E | EB5D |
| 20M EDR IB OPTICAL CABLE/ TRANSCEIVER, QSFP/QSFP | 5105 | 22E | EB5E |
| 30M EDR IB OPTICAL CABLE/ TRANSCEIVER, QSFP/QSFP | 5105 | 22E | EB5F |
| 50M EDR IB SWITCH OPTICAL CABLE, QSFP/ QSFP | 5105 | 22E | EB5G |

| Description | Machine type | Model | Feature |
|---------------------------------------------------|---------------------|--------------|----------------|
| 0.5M QSFP28 passive copper 100Gb Ethernet cable | 5105 | 22E | EB5J |
| 1M QSFP28 passive copper 100Gb Ethernet cable | 5105 | 22E | EB5K |
| 1.5M QSFP28 passive copper 100Gb Ethernet cable | 5105 | 22E | EB5L |
| 2M QSFP28 passive copper 100Gb Ethernet cable | 5105 | 22E | EB5M |
| 25M EDR IB OPTICAL CABLE/ TRANSCEIVER, QSFP/QSFP | 5105 | 22E | EB5N |
| 3M QSFP28 AOC 100Gb Ethernet cable | 5105 | 22E | EB5R |
| 5M QSFP28 AOC 100Gb Ethernet cable | 5105 | 22E | EB5S |
| 10M QSFP28 AOC 100Gb Ethernet cable | 5105 | 22E | EB5T |
| 15M QSFP28 AOC 100Gb Ethernet cable | 5105 | 22E | EB5U |
| 20M QSFP28 AOC 100Gb Ethernet cable | 5105 | 22E | EB5V |
| 30M QSFP28 AOC 100Gb Ethernet cable | 5105 | 22E | EB5W |
| 50M QSFP28 AOC 100Gb Ethernet cable | 5105 | 22E | EB5X |
| 100M QSFP28 AOC 100Gb Ethernet cable | 5105 | 22E | EB5Y |
| OPAL Bare metal | 5105 | 22E | EC16 |
| PCIe3 LP 2-Port 25/10Gb NIC&ROCE SR/Cu Adapter | 5105 | 22E | EC2T |
| PCIe4 LP 2-port 100Gb EDR IB CAPI adapter | 5105 | 22E | EC64 |
| PCIe4 LP 2-port 100Gb ROCE EN LP adapter | 5105 | 22E | EC67 |
| 5M, Blue Ethernet Cat 5E cable | 5105 | 22E | ECB3 |
| 5m LC-LC Fiber Cable | 5105 | 22E | ECBD |
| 25m LC-LC Fiber Cable | 5105 | 22E | ECBE |
| Blue Manufacturing Select-a-length Ethernet Cable | 5105 | 22E | ECCG |

| Description | Machine type | Model | Feature |
|------------------------------------------------------------------|---------------------|--------------|----------------|
| Yellow Manufacturing Select-a-length Ethernet Cable | 5105 | 22E | ECCJ |
| 5M, Green Ethernet Cat 5E cable | 5105 | 22E | ECCV |
| 5M, Yellow Ethernet Cat 5E cable | 5105 | 22E | ECCW |
| 4.3m (14-Ft) PDU to Wall 3PH/24A 200-240V Delta-wired Power Cord | 5105 | 22E | ECJ5 |
| 4.3m (14-Ft) PDU to Wall 3PH/40A 200-240V Power Cord | 5105 | 22E | ECJ6 |
| 4.3m (14-Ft) PDU to Wall 3PH/48A 200-240V Delta-wired Power Cord | 5105 | 22E | ECJ7 |
| High Function 9xC19 PDU plus : Switched, Monitoring | 5105 | 22E | ECJJ |
| High Function 9xC19 PDU plus 3-Phase: Switched, Monitoring | 5105 | 22E | ECJL |
| High Function 12xC13 PDU plus : Switched, Monitoring | 5105 | 22E | ECJN |
| High Function 12xC13 PDU plus 3-Phase: Switched, Monitoring | 5105 | 22E | ECJQ |
| CSC ORDER ROUTING INDICATOR - GUADALAJARA | 5105 | 22E | ECSM |
| Route to Power Manufacturing Indicator | 5105 | 22E | EFD0 |
| Primary Unit | 5105 | 22E | EGS0 |
| Sub System #1 Indicator | 5105 | 22E | EGS1 |
| Sub System #2 Indicator | 5105 | 22E | EGS2 |
| Sub System #3 Indicator | 5105 | 22E | EGS3 |
| Sub System #4 Indicator | 5105 | 22E | EGS4 |
| Sub System #5 Indicator | 5105 | 22E | EGS5 |
| Sub System #6 Indicator | 5105 | 22E | EGS6 |
| Sub System #7 Indicator | 5105 | 22E | EGS7 |
| Sub System #8 Indicator | 5105 | 22E | EGS8 |
| Sub System #9 Indicator | 5105 | 22E | EGS9 |

| Description | Machine type | Model | Feature |
|----------------------------------------------------|---------------------|--------------|----------------|
| Sub System #10 Indicator | 5105 | 22E | EGST |
| Sub System #11 Indicator | 5105 | 22E | EGSU |
| Sub System #12 Indicator | 5105 | 22E | EGSV |
| Sub System #13 Indicator | 5105 | 22E | EGSW |
| Sub System #14 Indicator | 5105 | 22E | EGSX |
| Sub System #15 Indicator | 5105 | 22E | EGSY |
| Sub System #16 Indicator | 5105 | 22E | EGSZ |
| Front OEM Bezel for 8-Bay Backplane | 5105 | 22E | EJU7 |
| Front IBM Bezel for 8-Bay Backplane | 5105 | 22E | EJUC |
| AC Power Supply - 1400W (200-240 VAC) | 5105 | 22E | EL1B |
| LP 4-port 1GbE Adapter | 5105 | 22E | EL4M |
| Base Storage Backplane 8 SFF-3 Bays | 5105 | 22E | EL66 |
| PDU Access Cord 0.38m | 5105 | 22E | ELC0 |
| Drawer to IBM PDU(250V/10A) | 5105 | 22E | ELC5 |
| 1.8TB 10K RPM SAS SFF-3 Disk Drive 4K Block - 4096 | 5105 | 22E | ELFV |
| 20-small core 2.5 GHz POWER9™ Processor card. | 5105 | 22E | ELPR |
| 16 GB DDR4 Memory | 5105 | 22E | EM62 |
| 32 GB DDR4 Memory | 5105 | 22E | EM63 |
| 64 GB DDR4 Memory | 5105 | 22E | EM64 |
| 128 GB DDR4 Memory | 5105 | 22E | EM65 |
| Dual 16GB NVDIMMs, battery and cable | 5105 | 22E | EM71 |
| 1M Active Twinax cable | 5105 | 22E | EN01 |
| 3M Active Twinax cable | 5105 | 22E | EN02 |
| 5M Active Twinax cable | 5105 | 22E | EN03 |
| Storage Subsystem 01 | 5105 | 22E | EN41 |
| Storage Subsystem 02 | 5105 | 22E | EN42 |
| Storage Subsystem 03 | 5105 | 22E | EN43 |

| Description | Machine type | Model | Feature |
|----------------------|---------------------|--------------|----------------|
| Storage Subsystem 04 | 5105 | 22E | EN44 |
| Storage Subsystem 05 | 5105 | 22E | EN45 |
| Storage Subsystem 06 | 5105 | 22E | EN46 |
| Storage Subsystem 07 | 5105 | 22E | EN47 |
| Storage Subsystem 08 | 5105 | 22E | EN48 |
| Storage Subsystem 09 | 5105 | 22E | EN49 |
| Storage Subsystem 10 | 5105 | 22E | EN50 |
| Storage Subsystem 11 | 5105 | 22E | EN51 |
| Storage Subsystem 12 | 5105 | 22E | EN52 |
| Storage Subsystem 13 | 5105 | 22E | EN53 |
| Storage Subsystem 14 | 5105 | 22E | EN54 |
| Storage Subsystem 15 | 5105 | 22E | EN55 |
| Storage Subsystem 16 | 5105 | 22E | EN56 |
| Storage Subsystem 17 | 5105 | 22E | EN57 |
| Storage Subsystem 18 | 5105 | 22E | EN58 |
| Storage Subsystem 19 | 5105 | 22E | EN59 |
| Storage Subsystem 20 | 5105 | 22E | EN60 |
| Storage Subsystem 21 | 5105 | 22E | EN61 |
| Storage Subsystem 22 | 5105 | 22E | EN62 |
| Storage Subsystem 23 | 5105 | 22E | EN63 |
| Storage Subsystem 24 | 5105 | 22E | EN64 |
| Storage Subsystem 25 | 5105 | 22E | EN65 |
| Storage Subsystem 26 | 5105 | 22E | EN66 |
| Storage Subsystem 27 | 5105 | 22E | EN67 |
| Storage Subsystem 28 | 5105 | 22E | EN68 |
| Storage Subsystem 29 | 5105 | 22E | EN69 |
| Storage Subsystem 30 | 5105 | 22E | EN70 |
| Storage Subsystem 31 | 5105 | 22E | EN71 |
| Storage Subsystem 32 | 5105 | 22E | EN72 |
| Storage Subsystem 33 | 5105 | 22E | EN73 |
| Storage Subsystem 34 | 5105 | 22E | EN74 |

| Description | Machine type | Model | Feature |
|-------------------------------------------------------------------|---------------------|--------------|----------------|
| Storage Subsystem 35 | 5105 | 22E | EN75 |
| Storage Subsystem 36 | 5105 | 22E | EN76 |
| Storage Subsystem 37 | 5105 | 22E | EN77 |
| Storage Subsystem 38 | 5105 | 22E | EN78 |
| Storage Subsystem 39 | 5105 | 22E | EN79 |
| Storage Subsystem 40 | 5105 | 22E | EN80 |
| Storage Subsystem 41 | 5105 | 22E | EN81 |
| Storage Subsystem 42 | 5105 | 22E | EN82 |
| Power Cord 2M (6.5-foot), Drawer to IBM PDU, 250V/10A for India | 5105 | 22E | END0 |
| Power Cord 2.7M (9-foot), Drawer to IBM PDU, 250V/10A for India | 5105 | 22E | END1 |
| Power Cord 4.3m (14-ft), Drawer to IBM PDU (250V/10A) for India | 5105 | 22E | END2 |
| Power Cable - Drawer to IBM PDU, 200-240V/10A for India | 5105 | 22E | END3 |
| Power Cord 2.8m (9.2-ft), Drawer to IBM PDU, (250V/10A) for India | 5105 | 22E | END5 |
| Power Cable - Drawer to IBM PDU (250V/10A) for India | 5105 | 22E | END7 |
| Horizontal PDU Mounting Hardware | 5105 | 22E | EPTH |
| LSI SAS Controller 9305-16E 12GB/S host bus adapter | 5105 | 22E | ESA5 |
| ESS SC1 Solution Specify | 5105 | 22E | ESCF |
| ESS SC2 Solution Specify | 5105 | 22E | ESCG |
| ESS SC3 Solution Specify | 5105 | 22E | ESCH |
| ESS SC4 Solution Specify | 5105 | 22E | ESCJ |
| ESS SC5 Solution Specify | 5105 | 22E | ESCK |
| ESS SC6 Solution Specify | 5105 | 22E | ESCL |
| ESS SC7 Solution Specify | 5105 | 22E | ESCM |

| Description | Machine type | Model | Feature |
|---------------------------------------------------------------------------------------------------|---------------------|--------------|----------------|
| ESS SC8 Solution Specify | 5105 | 22E | ESCN |
| ESS SL1 Solution Specify | 5105 | 22E | ESL1 |
| ESS SL2 Solution Specify | 5105 | 22E | ESL2 |
| ESS SL3 Solution Specify | 5105 | 22E | ESL3 |
| ESS SL4 Solution Specify | 5105 | 22E | ESL4 |
| ESS SL5 Solution Specify | 5105 | 22E | ESL5 |
| ESS SL6 Solution Specify | 5105 | 22E | ESL6 |
| ESS Solution Specify | 5105 | 22E | ESS0 |
| Spectrum Scale Data Access Edition for ESS Indicator | 5105 | 22E | ESSS |
| Spectrum Scale Data Management Edition for ESS Indicator | 5105 | 22E | ESST |
| ESS Spectrum Scale Protocol Node Specify | 5105 | 22E | ESSW |
| ESS Restricted Offering | 5105 | 22E | ESTV |
| Spectrum Scale Data Access Edition for ESS Indicator - Manufacturing preload only, No license | 5105 | 22E | ESTY |
| Spectrum Scale Data Management Edition for ESS Indicator - Manufacturing preload only, No license | 5105 | 22E | ESTZ |
| ESS Management Node Specify | 5105 | 22E | ESZX |
| ESS Data Node Specify | 5105 | 22E | ESZY |
| Operator Panel LCD Display | 5105 | 22E | EU0B |
| Cable Ties & Labels | 5105 | 22E | EU19 |
| Standalone USB DVD drive w/cable | 5105 | 22E | EUA5 |
| BP Post-Sale Services | 5105 | 22E | SVBP |
| IBM Systems Lab Services Post-Sale Services | 5105 | 22E | SVCS |
| Other IBM Post-Sale Services | 5105 | 22E | SVNN |
| Solution Sub System #17 Indicator | 5141 | AF8 | EGTL |

| Description | Machine type | Model | Feature |
|---------------------------------------------|---------------------|--------------|----------------|
| Solution Sub System #18 Indicator | 5141 | AF8 | EGTM |
| ESS 5U92 Storage for Elastic Storage System | 5147 | 092 | |
| TAA Compliance | 5147 | 092 | 0983 |
| Overhead ladder - 5ft | 5147 | 092 | 1101 |
| Power Cord To PDU/UPS, (100-240V/16A) | 5147 | 092 | 4558 |
| Rack Indicator None | 5147 | 092 | 4650 |
| Rack Indicator Rack 1 | 5147 | 092 | 4651 |
| Rack Indicator Rack 2 | 5147 | 092 | 4652 |
| Rack Indicator Rack 3 | 5147 | 092 | 4653 |
| Rack Indicator Rack 4 | 5147 | 092 | 4654 |
| Rack Indicator Rack 5 | 5147 | 092 | 4655 |
| Rack Indicator Rack 6 | 5147 | 092 | 4656 |
| Rack Indicator Rack 7 | 5147 | 092 | 4657 |
| Rack Indicator Rack 8 | 5147 | 092 | 4658 |
| Rack Indicator Rack 9 | 5147 | 092 | 4659 |
| Rack Indicator Rack 10 | 5147 | 092 | 4660 |
| Rack Indicator Rack 11 | 5147 | 092 | 4661 |
| Rack Indicator Rack 12 | 5147 | 092 | 4662 |
| Rack Indicator Rack 13 | 5147 | 092 | 4663 |
| Rack Indicator Rack 14 | 5147 | 092 | 4664 |
| Rack Indicator Rack 15 | 5147 | 092 | 4665 |
| Rack Indicator Rack 16 | 5147 | 092 | 4666 |
| Bulk Order Indicator | 5147 | 092 | 5555 |
| Month Indicator | 5147 | 092 | 9461 |
| Day Indicator | 5147 | 092 | 9462 |
| Hour Indicator | 5147 | 092 | 9463 |
| Minute Indicator | 5147 | 092 | 9464 |
| Quantity Indicator | 5147 | 092 | 9465 |
| Countable Member Indicator | 5147 | 092 | 9466 |
| Shipping and Handling NC | 5147 | 092 | AG00 |
| Shipping and Handling | 5147 | 092 | AGJK |
| Mini SAS HD Active Optical Cable | 5147 | 092 | AJGB |

| Description | Machine type | Model | Feature |
|------------------------------------------------------|---------------------|--------------|----------------|
| (AOC) Cable, 4.5m, 12GB/ s (STRAIGHT CABLE) | | | |
| 800GB 2.5 inch 6Gb SAS PI SSD | 5147 | 092 | AJNV |
| 6TB Enterprise HDD | 5147 | 092 | AJNW |
| 10TB Enterprise HDD | 5147 | 092 | AJNX |
| 14 TB Enterprise HDD | 5147 | 092 | AJNY |
| 16 TB Enterprise HDD | 5147 | 092 | AJNZ |
| Lift Tool | 5147 | 092 | EB2Z |
| Custom Service Specify, Mexico | 5147 | 092 | ECSM |
| Route to Power Manufacturing Indicator | 5147 | 092 | EFD0 |
| Primary Unit | 5147 | 092 | EGS0 |
| Sub System #1 Indicator | 5147 | 092 | EGS1 |
| Sub System #2 Indicator | 5147 | 092 | EGS2 |
| Sub System #3 Indicator | 5147 | 092 | EGS3 |
| Sub System #4 Indicator | 5147 | 092 | EGS4 |
| Sub System #5 Indicator | 5147 | 092 | EGS5 |
| Sub System #6 Indicator | 5147 | 092 | EGS6 |
| Sub System #7 Indicator | 5147 | 092 | EGS7 |
| Sub System #8 Indicator | 5147 | 092 | EGS8 |
| Sub System #9 Indicator | 5147 | 092 | EGS9 |
| Sub System #10 Indicator | 5147 | 092 | EGST |
| Sub System #11 Indicator | 5147 | 092 | EGSU |
| Sub System #12 Indicator | 5147 | 092 | EGSV |
| Sub System #13 Indicator | 5147 | 092 | EGSW |
| Sub System #14 Indicator | 5147 | 092 | EGSX |
| Sub System #15 Indicator | 5147 | 092 | EGSY |
| Sub System #16 Indicator | 5147 | 092 | EGSZ |
| Storage Subsystem 01 | 5147 | 092 | EN41 |
| Storage Subsystem 02 | 5147 | 092 | EN42 |
| Storage Subsystem 03 | 5147 | 092 | EN43 |
| Storage Subsystem 04 | 5147 | 092 | EN44 |
| Storage Subsystem 05 | 5147 | 092 | EN45 |

| Description | Machine type | Model | Feature |
|----------------------|---------------------|--------------|----------------|
| Storage Subsystem 06 | 5147 | 092 | EN46 |
| Storage Subsystem 07 | 5147 | 092 | EN47 |
| Storage Subsystem 08 | 5147 | 092 | EN48 |
| Storage Subsystem 09 | 5147 | 092 | EN49 |
| Storage Subsystem 10 | 5147 | 092 | EN50 |
| Storage Subsystem 11 | 5147 | 092 | EN51 |
| Storage Subsystem 12 | 5147 | 092 | EN52 |
| Storage Subsystem 13 | 5147 | 092 | EN53 |
| Storage Subsystem 14 | 5147 | 092 | EN54 |
| Storage Subsystem 15 | 5147 | 092 | EN55 |
| Storage Subsystem 16 | 5147 | 092 | EN56 |
| Storage Subsystem 17 | 5147 | 092 | EN57 |
| Storage Subsystem 18 | 5147 | 092 | EN58 |
| Storage Subsystem 19 | 5147 | 092 | EN59 |
| Storage Subsystem 20 | 5147 | 092 | EN60 |
| Storage Subsystem 21 | 5147 | 092 | EN61 |
| Storage Subsystem 22 | 5147 | 092 | EN62 |
| Storage Subsystem 23 | 5147 | 092 | EN63 |
| Storage Subsystem 24 | 5147 | 092 | EN64 |
| Storage Subsystem 25 | 5147 | 092 | EN65 |
| Storage Subsystem 26 | 5147 | 092 | EN66 |
| Storage Subsystem 27 | 5147 | 092 | EN67 |
| Storage Subsystem 28 | 5147 | 092 | EN68 |
| Storage Subsystem 29 | 5147 | 092 | EN69 |
| Storage Subsystem 30 | 5147 | 092 | EN70 |
| Storage Subsystem 31 | 5147 | 092 | EN71 |
| Storage Subsystem 32 | 5147 | 092 | EN72 |
| Storage Subsystem 33 | 5147 | 092 | EN73 |
| Storage Subsystem 34 | 5147 | 092 | EN74 |
| Storage Subsystem 35 | 5147 | 092 | EN75 |
| Storage Subsystem 36 | 5147 | 092 | EN76 |

| Description | Machine type | Model | Feature |
|-------------------------------------------------|---------------------|--------------|----------------|
| Storage Subsystem 37 | 5147 | 092 | EN77 |
| Storage Subsystem 38 | 5147 | 092 | EN78 |
| Storage Subsystem 39 | 5147 | 092 | EN79 |
| Storage Subsystem 40 | 5147 | 092 | EN80 |
| Storage Subsystem 41 | 5147 | 092 | EN81 |
| Storage Subsystem 42 | 5147 | 092 | EN82 |
| Power Cord To PDU/UPS, (100-240V/16A) for India | 5147 | 092 | END8 |
| ESS SL1 Solution Specify | 5147 | 092 | ESL1 |
| ESS SL2 Solution Specify | 5147 | 092 | ESL2 |
| ESS SL3 Solution Specify | 5147 | 092 | ESL3 |
| ESS SL4 Solution Specify | 5147 | 092 | ESL4 |
| ESS SL5 Solution Specify | 5147 | 092 | ESL5 |
| ESS SL6 Solution Specify | 5147 | 092 | ESL6 |
| ESS Solution Specify | 5147 | 092 | ESS0 |
| ESS Restricted Offering | 5147 | 092 | ESTV |
| BP Post-Sale Services | 5147 | 092 | SVBP |
| IBM Systems Lab Services Post-Sale Services | 5147 | 092 | SVCS |
| Other IBM Post-Sale Services | 5147 | 092 | SVNN |
| Shipping and Handling | 5147 | 106 | AGJK |
| 16 TB Enterprise HDD | 5147 | 106 | AJPO |
| ESS SC1 Solution Specify | 5147 | 106 | ESCF |
| ESS SC2 Solution Specify | 5147 | 106 | ESCG |
| ESS SC3 Solution Specify | 5147 | 106 | ESCH |
| ESS SC4 Solution Specify | 5147 | 106 | ESCJ |
| ESS SC5 Solution Specify | 5147 | 106 | ESCK |
| ESS SC6 Solution Specify | 5147 | 106 | ESCL |
| ESS SC7 Solution Specify | 5147 | 106 | ESCM |
| ESS SC8 Solution Specify | 5147 | 106 | ESCN |

Business Partner information

If you are a Direct Reseller - System Reseller acquiring products from IBM, you may link directly to Business Partner information for this announcement. A PartnerWorld^(R) ID and password are required (use IBMid).

[BP Attachment for Announcement Letter 120-048](#)

Publications

To download PDF format publications, go to the [IBM Publications Center](#) website.

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

To access the IBM Publications Center Portal, go to the [IBM Publications Center](#) website.

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

Services

IBM Systems Lab Services

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

IBM Systems Lab Services exists to help you successfully implement emerging technologies so as to accelerate your return on investment and improve your satisfaction with your IBM systems and solutions. Services examples include initial implementation, integration, migration, and skills transfer on IBM systems solution capabilities and recommended practices. IBM Systems Lab Services is one of the service organizations of IBM's world-renowned IBM Systems Group development labs.

For details on available services, contact your IBM representative or go to the [Lab Services](#) website.

Global Technology Services

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

These services help you learn about, plan, install, manage, or optimize your IT infrastructure to be an on-demand business. They can help you integrate your high-speed networks, storage systems, application servers, wireless protocols, and an array of platforms, middleware, and communications software for IBM and many non-IBM offerings. IBM is your one-stop shop for IT support needs.

For details on available services, contact your IBM representative or go to the [IBM Global Technology Services^{\(R\)}](#) website.

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

Details on education offerings related to specific products can be found on the [IBM authorized training](#) website.

Technical information

Specified operating environment

Physical specifications

ESS Server for Elastic Storage System 5000 (5105-22E)

- Height: 8.67 cm (3.4 in.), 2 EIA rack units (2U)
- Width: 48.2 cm (18.97 in.)
- Depth: 76.65 cm (30.2 in.)
- Weight (maximum): 30.4 kg (67 lb)

ESS 5U92 Storage for Elastic Storage System (5147-092)

- Height: 22.22 cm (8.75 in.), 5 EIA rack units (5U)
- Width: 48.3 cm (19.0 in.)
- Depth: 96.8 cm (38.1 in.)
- Weight (maximum):
 - With drives: 135 kg (297 lb)
 - Without drives: 67 kg (147.7 lb)

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

Standards

Note: This product was designed, tested, manufactured, and certified for safe operation. It complies with IEC 60950-1 and/or IEC 62368-1 and where required, to relevant national differences/deviations (NDs) 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) may also be used to supplement identification (ID) for worldwide (WW) co-compliance filings or registrations with regulatory bodies.

Operating environment

Environment requirements

| Environment | Recommended operating requirements | Allowable operating requirements | Nonoperating requirements |
|--------------------------------|-------------------------------------------------------------------------------------|----------------------------------|---------------------------|
| ASHRAE class | | A2 | |
| Airflow direction ¹ | | Front-to-back | |
| Temperature ² | 18°C - 27°C (64°F - 80°F) | 10°C - 35°C (50°F - 95°F) | 5°C - 45°C (41°F - 113°F) |
| Humidity range | 5.5°C (42°F) dew point (DP) to 60% relative humidity (RH) and 15°C (59°F) dew point | 20% - 80% RH | 8% - 80% RH |
| Maximum rate of change | | 5°C per 20 hrs | |
| Maximum dew point | | 21°C (70°F) | 27°C (80°F) |

| Environment | Recommended operating requirements | Allowable operating requirements | Nonoperating requirements |
|----------------------------|------------------------------------|----------------------------------|-----------------------------------|
| Maximum operating altitude | | 3050 m (10000 ft) | |
| Shipping temperature | | | -40°C to 60°C (-40°F to 140°F) |
| Shipping relative humidity | | | 5% - 100% |

¹ Nominal cubic feet per minute (CFM) is approximately 2030. Maximum CFM is approximately 4025.

² Derate maximum allowable dry-bulb temperature 1°C per 175 m above 950 m.

IBM Elastic Storage Server building block electrical specifications^{3,4,5}

| Building Block | Power (Watts) | Maximum kVA | Thermal (BTU/hr) | Amperes (A) at 200 Volts (V) |
|-------------------------------------------------------------------------------------------|---------------|-------------|------------------|------------------------------|
| IBM Elastic Storage Server Data Server, Management Server, and Protocol Server (5105-22E) | 800 W | 0.816 | 2730 BTU/hr | 4.08 |
| IBM Elastic Storage Server expansion model 92 (5147-092) | 848 W | 0.865 | 2894 BTU/hr | 4.33 |

³ The input voltage is based on the power distribution unit (PDU) power cord.

⁴ All drawers that are mounted in the rack are rated 200 - 240 V AC. The power supplies automatically accept any voltage within the rated voltage range. With dual power supplies installed and operating, the power supplies draw approximately equal current from the utility (mains) and provide approximately equal current to the load.

⁵ DC power is not supported.

Software requirements

- IBM Spectrum Scale for ESS 5.0.5.1, or later
- Embedded Red Hat Enterprise Linux for ESS 5000
- Support Line Embedded Red Hat Enterprise Linux for ESS 5000
- xCAT Support

Planning information

Cable orders

Cables are required for the following:

- I/O connectivity to servers and fabric components
- System management

As a convenience, a limited selection of cables can be ordered with ESS 5000 machines. See the [Product number](#) section for feature numbers.

Cables, along with installation services, are also available from IBM Network Integration and Deployment Services, an IBM Global Services offering.

I/O connectivity cables

Cables are required to connect the ESS 5000 I/O ports to server or fabric ports.

System management cables

Management Ethernet cables (in blue, yellow and green) are available to order with ESS 5000.

Security, auditability, and control

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

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

IBM Systems Lab Services

For details on available services, contact your IBM representative or go to the [Lab Services](#) website.

Terms and conditions

Volume orders

Contact your IBM representative.

IBM Global Financing

Yes

Products - terms and conditions

Warranty period

| Warranty and additional coverage options | Coverage summary⁶ |
|------------------------------------------------------------------------|------------------------------------------------------------|
| Warranty Period: | Three years |
| Service Level: | IBM On-Site Limited, 9x5 Next Business Day |
| Service upgrade options | |
| Warranty Service Upgrade | IBM On-Site Repair, 24x7 Same Day options |
| Maintenance Services (Post-Warranty) | IBM On-Site Repair, Next Business Day and Same Day options |
| IBM Hardware Maintenance Services - committed maintenance ⁷ | Yes |

⁶ See complete coverage details below.

⁷ Not offered in the US.

IBM Elastic Storage System comes with three years of hardware support.

To obtain copies of the IBM Statement of Limited Warranty, contact your reseller or IBM. An IBM part or feature installed during the initial installation of an IBM machine is subject to the full warranty period specified by IBM. An IBM part or

feature that replaces a previously installed part or feature assumes the remainder of the warranty period for the replaced part or feature. An IBM part or feature added to a machine without replacing a previously installed part or feature is subject to a full warranty. Unless specified otherwise, the warranty period, type of warranty service, and service level of a part or feature are the same as those for the machine in which it is installed.

Warranty service

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

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

CRU Service

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

Tier 1 (mandatory) CRU

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

Tier 2 (optional) CRU

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

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

The following parts have been designated as Tier 1 CRUs:

- Power cord
- Power supply
- Cables
- HDDs
- Bezel

CRU and On-site Service

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

Service level is:

- 9 hours per day, Monday through Friday, excluding holidays, next business day response. Calls must be received by 5:00 PM local time in order to qualify for next business day response.

Warranty service

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

International Warranty Service

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

The warranty service type and the service level provided in the servicing country may be different from that provided in the country in which the machine was purchased. Warranty service will be provided with the prevailing warranty service type and service level available for the eligible machine type in the servicing country, and the warranty period observed will be that of the country in which the machine was purchased.

The following types of information can be found on the [International Warranty Service](#) website

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

Warranty service upgrades

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

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

Maintenance service options

CRU and On-site Service

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

- 9 hours per day, Monday through Friday, excluding holidays, same business day response
- 24 hours per day, 7 days a week, 4 hour average response, same day
- 24 hours per day, 7 days a week, 2 hour average response, same day

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

Maintenance services

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

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

On-site Service

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

Client Replaceable Unit (CRU) Service

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

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

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

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

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

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

The following parts and feature(s) have been designated as Tier 1 CRUs:

- Power cord
- Power supply

- Cables
- HDDs
- Bezel

CRU and Machine Exchange Service

At IBM's discretion you will receive CRU service or IBM will initiate shipment of a replacement machine to your location. You are responsible for its installation and verification of operation. You must pack the failed machine into the shipping container that contained the replacement machine and return the failed machine to IBM. Transportation charges, both ways, are paid by IBM. You may be charged for the replacement machine if IBM does not receive the failed machine within 15 days of your receipt of the replacement.

Non-IBM parts service

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

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

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

Usage plan machine

No

IBM hourly service rate classification

Two

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

General terms and conditions

Field-installable features

Yes

Model conversions

No

Machine installation

Installation is performed by IBM. IBM will install the machine in accordance with the IBM installation procedures for the machine. In the United States, contact IBM at 1-800-IBM-SERV (426-7378). In other countries, contact the local IBM office.

Graduated program license charges apply

No

Licensed Internal Code and Licensed Machine Code

This product does not contain Licensed Internal Code or Licensed Machine Code.

Machine Code License Acceptance Requirement

Acceptance-By-Use Machine: Yes, acceptance of the Machine Code license terms is conveyed through the user's initial use of the Machine.

Educational allowance

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

The educational allowance is 15% for the products in this announcement.

Prices

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

The following are newly announced features and model on the specified model of the IBM System Storage 5105 machine type:

| Description | Model number | Feature numbers | Initial / MES / Both / Support | CSU | RP MES |
|-----------------------------------|---------------------|------------------------|---------------------------------------|------------|---------------|
| IBM ESS 5000 Server | 22E | | Both | No | |
| Linux Partition Specify | 22E | 0266 | Initial | N/A | No |
| TAA Compliance | 22E | 0983 | Initial | N/A | No |
| Overhead ladder - 5ft | 22E | 1101 | Both | Yes | No |
| 3M, Blue Ethernet Cat 5E cable | 22E | 1111 | Both | Yes | No |
| 10M, Blue Ethernet Cat 5E cable | 22E | 1112 | Both | Yes | No |
| 25M, Blue Ethernet Cat 5E cable | 22E | 1113 | Both | Yes | No |
| CAT5E Ethernet Cable, 10M GREEN | 22E | 1116 | Both | Yes | No |
| 3M, Yellow Ethernet Cat 5E cable | 22E | 1118 | Both | Yes | No |
| 10M, Yellow Ethernet Cat 5E cable | 22E | 1119 | Both | Yes | No |
| Primary OS -Linux | 22E | 2147 | Initial | N/A | No |

| Description | Model number | Feature numbers | Initial / MES / Both / Support | CSU | RP MES |
|-----------------------------------------------|---------------------|------------------------|---------------------------------------|------------|---------------|
| Rack Indicator None | 22E | 4650 | Initial | N/A | No |
| Rack Indicator Rack 1 | 22E | 4651 | Initial | N/A | No |
| Rack Indicator Rack 2 | 22E | 4652 | Initial | N/A | No |
| Rack Indicator Rack 3 | 22E | 4653 | Initial | N/A | No |
| Rack Indicator Rack 4 | 22E | 4654 | Initial | N/A | No |
| Rack Indicator Rack 5 | 22E | 4655 | Initial | N/A | No |
| Rack Indicator Rack 6 | 22E | 4656 | Initial | N/A | No |
| Rack Indicator Rack 7 | 22E | 4657 | Initial | N/A | No |
| Rack Indicator Rack 8 | 22E | 4658 | Initial | N/A | No |
| Rack Indicator Rack 9 | 22E | 4659 | Initial | N/A | No |
| Rack Indicator Rack 10 | 22E | 4660 | Initial | N/A | No |
| Rack Indicator Rack 11 | 22E | 4661 | Initial | N/A | No |
| Rack Indicator Rack 12 | 22E | 4662 | Initial | N/A | No |
| Rack Indicator Rack 13 | 22E | 4663 | Initial | N/A | No |
| Rack Indicator Rack 14 | 22E | 4664 | Initial | N/A | No |
| Rack Indicator Rack 15 | 22E | 4665 | Initial | N/A | No |
| Rack Indicator Rack 16 | 22E | 4666 | Initial | N/A | No |
| Bulk Order Indicator | 22E | 5555 | Both | N/A | No |
| Power Cable - Drawer to IBM PDU, 200-240V/10A | 22E | 6458 | Both | Yes | No |
| 4.3m (14-Ft) 3PH/32A 380-415V | 22E | 6489 | Both | Yes | No |

| Description | Model number | Feature numbers | Initial / MES / Both / Support | CSU | RP MES |
|---------------------------------------------------------|---------------------|------------------------|---------------------------------------|------------|---------------|
| Power Cord | | | | | |
| 4.3m (14-Ft) 1PH/63A 200-240V Power Cord | 22E | 6491 | Both | Yes | No |
| 4.3m (14-Ft) 1PH/48A 200-240V Power Cord | 22E | 6492 | Both | Yes | No |
| Power Cable - Drawer to IBM PDU, 200-240V/10A | 22E | 6577 | Initial | N/A | No |
| 4.3m (14-Ft) 3PH/16A 380-415V Power Cord | 22E | 6653 | Both | Yes | No |
| 4.3m (14-Ft) 1PH/24A Power Cord | 22E | 6654 | Both | Yes | No |
| 4.3m (14-Ft) 1PH/24A WR Power Cord | 22E | 6655 | Both | Yes | No |
| 4.3m (14-Ft) 1PH/32A Power Cord | 22E | 6656 | Both | Yes | No |
| 4.3m (14-Ft) 1PH/32A Power Cord | 22E | 6657 | Both | Yes | No |
| 4.3m (14-Ft) 1PH/24A Power Cord-Korea | 22E | 6658 | Both | Yes | No |
| Power Cord 2.8m (9.2-ft), Drawer to IBM PDU, (250V/10A) | 22E | 6665 | Both | Yes | No |
| 4.3m (14-Ft) 3PH/32A 380-415V Power Cord-Australia | 22E | 6667 | Both | Yes | No |

| Description | Model number | Feature numbers | Initial / MES / Both / Support | CSU | RP MES |
|-------------------------------------------------------|---------------------|------------------------|---------------------------------------|------------|---------------|
| Power Cord 2.7M (9-foot), Drawer to IBM PDU, 250V/10A | 22E | 6671 | Both | Yes | No |
| Power Cord 2M (6.5-foot), Drawer to IBM PDU, 250V/10A | 22E | 6672 | Both | Yes | No |
| OEM (GENERIC) INDICATOR | 22E | 7770 | Initial | N/A | No |
| RHEL License Core Counter | 22E | 9442 | Initial | N/A | No |
| Month Indicator | 22E | 9461 | Initial | N/A | No |
| Day Indicator | 22E | 9462 | Initial | N/A | No |
| Hour Indicator | 22E | 9463 | Initial | N/A | No |
| Minute Indicator | 22E | 9464 | Initial | N/A | No |
| Quantity Indicator | 22E | 9465 | Initial | N/A | No |
| Countable Member Indicator | 22E | 9466 | Initial | N/A | No |
| QTY=1, CSC BILLING UNIT | 22E | A4ES | Initial | N/A | No |
| QTY=10, CSC BILLING UNIT | 22E | A4ET | Initial | N/A | No |
| Shipping and Handling NC | 22E | AG00 | Initial | N/A | No |
| Shipping and Handling | 22E | AGJK | Initial | N/A | No |
| Red Hat OpenShift Indicator | 22E | AJGH | Initial | N/A | No |
| QSFP+ 40GbE Base-SR Transceiver | 22E | EB27 | Both | Yes | No |
| 10m IBM Passive QSFP + MTP Optical cable | 22E | EB2J | Both | Yes | No |
| 30m IBM Passive QSFP + MTP | 22E | EB2K | Both | Yes | No |

| Description | Model number | Feature numbers | Initial / MES / Both / Support | CSU | RP MES |
|---------------------------------------------------------------------|---------------------|------------------------|---------------------------------------|------------|---------------|
| Optical cable | | | | | |
| Lift Tool | 22E | EB2Z | Both | Yes | No |
| 2M FDR IB SWITCH COPPER CABLE, QSFP/ QSFP | 22E | EB42 | Both | Yes | No |
| 10GbE Optical Transceiver SFP+ SR | 22E | EB46 | Both | Yes | No |
| 25GbE Optical Transceiver SFP28 | 22E | EB47 | Both | Yes | No |
| 3M FDR IB OPTICAL CABLE/ TRANSCEIVER, QSFP/ QSFP | 22E | EB4A | Both | Yes | No |
| 5M FDR IB OPTICAL CABLE/ TRANSCEIVER, QSFP/ QSFP | 22E | EB4B | Both | Yes | No |
| 10M FDR IB OPTICAL CABLE/ TRANSCEIVER, QSFP/ QSFP | 22E | EB4C | Both | Yes | No |
| 15M FDR IB SWITCH OPTICAL CABLE, QSFP/ QSFP | 22E | EB4D | Both | Yes | No |
| 20M FDR IB SWITCH OPTICAL CABLE, QSFP/ QSFP | 22E | EB4E | Both | Yes | No |
| 30M FDR IB OPTICAL CABLE/ TRANSCEIVER, QSFP/ QSFP | 22E | EB4F | Both | Yes | No |
| 50M FDR IB OPTICAL CABLE/ TRANSCEIVER, QSFP/ QSFP | 22E | EB4G | Both | Yes | No |
| 0.5m SFP28/25GbE | 22E | EB4J | Both | Yes | No |

| Description | Model number | Feature numbers | Initial / MES / Both / Support | CSU | RP MES |
|--------------------------------------------------------|---------------------|------------------------|---------------------------------------|------------|---------------|
| copper Cable | | | | | |
| 1.0m SFP28/25GbE copper Cable | 22E | EB4K | Both | Yes | No |
| 1.5m SFP28/25GbE copper Cable | 22E | EB4L | Both | Yes | No |
| 2.0m SFP28/25GbE copper Cable | 22E | EB4M | Both | Yes | No |
| 2.0m QSFP28/100GbE copper split Cable to SFP28 4x25GbE | 22E | EB4P | Both | Yes | No |
| 1M EDR IB COPPER CABLE/ TRANSCEIVER, QSFP/ QSFP | 22E | EB51 | Both | Yes | No |
| 2M EDR IB COPPER CABLE/ TRANSCEIVER, QSFP/ QSFP | 22E | EB52 | Both | Yes | No |
| 1.5M EDR IB COPPER CABLE/ TRANSCEIVER, QSFP/ QSFP | 22E | EB54 | Both | Yes | No |
| 100GbE Optical Transceiver QSFP28 | 22E | EB59 | Both | Yes | No |
| 3M EDR IB OPTICAL CABLE/ TRANSCEIVER, QSFP/ QSFP | 22E | EB5A | Both | Yes | No |
| 5M EDR IB OPTICAL CABLE/ TRANSCEIVER, QSFP/ QSFP | 22E | EB5B | Both | Yes | No |
| 10M EDR IB OPTICAL CABLE/ TRANSCEIVER, QSFP/ QSFP | 22E | EB5C | Both | Yes | No |
| 15M EDR IB OPTICAL CABLE/ | 22E | EB5D | Both | Yes | No |

| Description | Model number | Feature numbers | Initial / MES / Both / Support | CSU | RP MES |
|---------------------------------------------------------------------|---------------------|------------------------|---------------------------------------|------------|---------------|
| TRANSCEIVER, QSFP/ QSFP | | | | | |
| 20M EDR IB OPTICAL CABLE/ TRANSCEIVER, QSFP/ QSFP | 22E | EB5E | Both | Yes | No |
| 30M EDR IB OPTICAL CABLE/ TRANSCEIVER, QSFP/ QSFP | 22E | EB5F | Both | Yes | No |
| 50M EDR IB SWITCH OPTICAL CABLE, QSFP/ QSFP | 22E | EB5G | Both | Yes | No |
| 0.5M QSFP28 passive copper 100Gb Ethernet cable | 22E | EB5J | Both | Yes | No |
| 1M QSFP28 passive copper 100Gb Ethernet cable | 22E | EB5K | Both | Yes | No |
| 1.5M QSFP28 passive copper 100Gb Ethernet cable | 22E | EB5L | Both | Yes | No |
| 2M QSFP28 passive copper 100Gb Ethernet cable | 22E | EB5M | Both | Yes | No |
| 25M EDR IB OPTICAL CABLE/ TRANSCEIVER, QSFP/ QSFP | 22E | EB5N | Both | Yes | No |
| 3M QSFP28 AOC 100Gb Ethernet cable | 22E | EB5R | Both | Yes | No |
| 5M QSFP28 | 22E | EB5S | Both | Yes | No |

| Description | Model number | Feature numbers | Initial / MES / Both / Support | CSU | RP MES |
|---------------------------------------------------------------|---------------------|------------------------|---------------------------------------|------------|---------------|
| AOC 100Gb Ethernet cable | | | | | |
| 10M QSFP28 AOC 100Gb Ethernet cable | 22E | EB5T | Both | Yes | No |
| 15M QSFP28 AOC 100Gb Ethernet cable | 22E | EB5U | Both | Yes | No |
| 20M QSFP28 AOC 100Gb Ethernet cable | 22E | EB5V | Both | Yes | No |
| 30M QSFP28 AOC 100Gb Ethernet cable | 22E | EB5W | Both | Yes | No |
| 50M QSFP28 AOC 100Gb Ethernet cable | 22E | EB5X | Both | Yes | No |
| 100M QSFP28 AOC 100Gb Ethernet cable | 22E | EB5Y | Both | Yes | No |
| OPAL Bare metal | 22E | EC16 | Initial | N/A | No |
| PCIe3 LP 2-Port 25/10Gb NIC&ROCE SR/Cu Adapter | 22E | EC2T | Both | Yes | No |
| PCIe4 LP 2-port 100Gb EDR IB CAPI adapter | 22E | EC64 | Both | Yes | No |
| PCIe4 LP 2-port 100Gb ROCE EN LP adapter | 22E | EC67 | Both | Yes | No |
| 5M, Blue Ethernet Cat 5E cable | 22E | ECB3 | Both | Yes | No |

| Description | Model number | Feature numbers | Initial / MES / Both / Support | CSU | RP MES |
|------------------------------------------------------------------|---------------------|------------------------|---------------------------------------|------------|---------------|
| 5m LC-LC Fiber Cable | 22E | ECBD | Both | Yes | No |
| 25m LC-LC Fiber Cable | 22E | ECBE | Both | Yes | No |
| Blue Manufacturing Select-a-length Ethernet Cable | 22E | ECCG | Initial | N/A | No |
| Yellow Manufacturing Select-a-length Ethernet Cable | 22E | ECCJ | Initial | N/A | No |
| 5M, Green Ethernet Cat 5E cable | 22E | ECCV | Both | Yes | No |
| 5M, Yellow Ethernet Cat 5E cable | 22E | ECCW | Both | Yes | No |
| 4.3m (14-Ft) PDU to Wall 3PH/24A 200-240V Delta-wired Power Cord | 22E | ECJ5 | Both | Yes | No |
| 4.3m (14-Ft) PDU to Wall 3PH/40A 200-240V Power Cord | 22E | ECJ6 | Both | Yes | No |
| 4.3m (14-Ft) PDU to Wall 3PH/48A 200-240V Delta-wired Power Cord | 22E | ECJ7 | Both | Yes | No |
| High Function 9xC19 PDU plus : Switched, Monitoring | 22E | ECJJ | Both | Yes | No |
| High Function 9xC19 PDU plus 3-Phase: Switched, Monitoring | 22E | ECJL | Both | Yes | No |
| High Function 12xC13 | 22E | ECJN | Both | Yes | No |

| Description | Model number | Feature numbers | Initial / MES / Both / Support | CSU | RP MES |
|-------------------------------------------------------------------------------|---------------------|------------------------|---------------------------------------|------------|---------------|
| PDU plus : Switched, Monitoring | | | | | |
| High Function 12xC13 PDU plus 3-Phase: Switched, Monitoring | 22E | ECJQ | Both | Yes | No |
| CSC ORDER ROUTING INDICATOR - GUADALAJARA | 22E | ECSM | Initial | N/A | No |
| Route to Power Manufacturing Indicator | 22E | EFD0 | Initial | N/A | No |
| Primary Unit | 22E | EGS0 | Initial | N/A | No |
| Sub System #1 Indicator | 22E | EGS1 | Initial | N/A | No |
| Sub System #2 Indicator | 22E | EGS2 | Initial | N/A | No |
| Sub System #3 Indicator | 22E | EGS3 | Initial | N/A | No |
| Sub System #4 Indicator | 22E | EGS4 | Initial | N/A | No |
| Sub System #5 Indicator | 22E | EGS5 | Initial | N/A | No |
| Sub System #6 Indicator | 22E | EGS6 | Initial | N/A | No |
| Sub System #7 Indicator | 22E | EGS7 | Initial | N/A | No |
| Sub System #8 Indicator | 22E | EGS8 | Initial | N/A | No |
| Sub System #9 Indicator | 22E | EGS9 | Initial | N/A | No |
| Sub System #10 Indicator | 22E | EGST | Initial | N/A | No |
| Sub System #11 Indicator | 22E | EGSU | Initial | N/A | No |
| Sub System #12 Indicator | 22E | EGSV | Initial | N/A | No |
| Sub System | 22E | EGSW | Initial | N/A | No |

| Description | Model number | Feature numbers | Initial / MES / Both / Support | CSU | RP MES |
|----------------------------------------------------|---------------------|------------------------|---------------------------------------|------------|---------------|
| #13 Indicator | | | | | |
| Sub System #14 Indicator | 22E | EGSX | Initial | N/A | No |
| Sub System #15 Indicator | 22E | EGSY | Initial | N/A | No |
| Sub System #16 Indicator | 22E | EGSZ | Initial | N/A | No |
| Front OEM Bezel for 8-Bay Backplane | 22E | EJU7 | Both | Yes | No |
| Front IBM Bezel for 8-Bay Backplane | 22E | EJUC | Both | Yes | No |
| AC Power Supply - 1400W (200-240 VAC) | 22E | EL1B | Initial | N/A | No |
| LP 4-port 1GbE Adapter | 22E | EL4M | Initial | N/A | No |
| Base Storage Backplane 8 SFF-3 Bays | 22E | EL66 | Initial | N/A | No |
| PDU Access Cord 0.38m | 22E | ELC0 | Both | Yes | No |
| Drawer to IBM PDU(250V/10A) | 22E | ELC5 | Initial | N/A | No |
| 1.8TB 10K RPM SAS SFF-3 Disk Drive 4K Block - 4096 | 22E | ELFV | Initial | N/A | No |
| 20-small core 2.5 GHz POWER9 Processor card. | 22E | ELPR | Both | No | No |
| 16 GB DDR4 Memory | 22E | EM62 | Both | Yes | No |
| 32 GB DDR4 Memory | 22E | EM63 | Both | Yes | No |
| 64 GB DDR4 Memory | 22E | EM64 | Both | Yes | No |

| Description | Model number | Feature numbers | Initial / MES / Both / Support | CSU | RP MES |
|--------------------------------------|---------------------|------------------------|---------------------------------------|------------|---------------|
| 128 GB DDR4 Memory | 22E | EM65 | Both | Yes | No |
| Dual 16GB NVDIMMs, battery and cable | 22E | EM71 | Initial | N/A | No |
| 1M Active Twinax cable | 22E | EN01 | Both | Yes | No |
| 3M Active Twinax cable | 22E | EN02 | Both | Yes | No |
| 5M Active Twinax cable | 22E | EN03 | Both | Yes | No |
| Storage Subsystem 01 | 22E | EN41 | Initial | N/A | No |
| Storage Subsystem 02 | 22E | EN42 | Initial | N/A | No |
| Storage Subsystem 03 | 22E | EN43 | Initial | N/A | No |
| Storage Subsystem 04 | 22E | EN44 | Initial | N/A | No |
| Storage Subsystem 05 | 22E | EN45 | Initial | N/A | No |
| Storage Subsystem 06 | 22E | EN46 | Initial | N/A | No |
| Storage Subsystem 07 | 22E | EN47 | Initial | N/A | No |
| Storage Subsystem 08 | 22E | EN48 | Initial | N/A | No |
| Storage Subsystem 09 | 22E | EN49 | Initial | N/A | No |
| Storage Subsystem 10 | 22E | EN50 | Initial | N/A | No |
| Storage Subsystem 11 | 22E | EN51 | Initial | N/A | No |
| Storage Subsystem 12 | 22E | EN52 | Initial | N/A | No |
| Storage Subsystem 13 | 22E | EN53 | Initial | N/A | No |
| Storage Subsystem 14 | 22E | EN54 | Initial | N/A | No |
| Storage Subsystem 15 | 22E | EN55 | Initial | N/A | No |

| Description | Model number | Feature numbers | Initial / MES / Both / Support | CSU | RP MES |
|----------------------|---------------------|------------------------|---------------------------------------|------------|---------------|
| Storage Subsystem 16 | 22E | EN56 | Initial | N/A | No |
| Storage Subsystem 17 | 22E | EN57 | Initial | N/A | No |
| Storage Subsystem 18 | 22E | EN58 | Initial | N/A | No |
| Storage Subsystem 19 | 22E | EN59 | Initial | N/A | No |
| Storage Subsystem 20 | 22E | EN60 | Initial | N/A | No |
| Storage Subsystem 21 | 22E | EN61 | Initial | N/A | No |
| Storage Subsystem 22 | 22E | EN62 | Initial | N/A | No |
| Storage Subsystem 23 | 22E | EN63 | Initial | N/A | No |
| Storage Subsystem 24 | 22E | EN64 | Initial | N/A | No |
| Storage Subsystem 25 | 22E | EN65 | Initial | N/A | No |
| Storage Subsystem 26 | 22E | EN66 | Initial | N/A | No |
| Storage Subsystem 27 | 22E | EN67 | Initial | N/A | No |
| Storage Subsystem 28 | 22E | EN68 | Initial | N/A | No |
| Storage Subsystem 29 | 22E | EN69 | Initial | N/A | No |
| Storage Subsystem 30 | 22E | EN70 | Initial | N/A | No |
| Storage Subsystem 31 | 22E | EN71 | Initial | N/A | No |
| Storage Subsystem 32 | 22E | EN72 | Initial | N/A | No |
| Storage Subsystem 33 | 22E | EN73 | Initial | N/A | No |
| Storage Subsystem 34 | 22E | EN74 | Initial | N/A | No |
| Storage Subsystem 35 | 22E | EN75 | Initial | N/A | No |
| Storage Subsystem 36 | 22E | EN76 | Initial | N/A | No |

| Description | Model number | Feature numbers | Initial / MES / Both / Support | CSU | RP MES |
|-------------------------------------------------------------------|---------------------|------------------------|---------------------------------------|------------|---------------|
| Storage Subsystem 37 | 22E | EN77 | Initial | N/A | No |
| Storage Subsystem 38 | 22E | EN78 | Initial | N/A | No |
| Storage Subsystem 39 | 22E | EN79 | Initial | N/A | No |
| Storage Subsystem 40 | 22E | EN80 | Initial | N/A | No |
| Storage Subsystem 41 | 22E | EN81 | Initial | N/A | No |
| Storage Subsystem 42 | 22E | EN82 | Initial | N/A | No |
| Power Cord 2M (6.5-foot), Drawer to IBM PDU, 250V/10A for India | 22E | END0 | Both | Yes | No |
| Power Cord 2.7M (9-foot), Drawer to IBM PDU, 250V/10A for India | 22E | END1 | Both | Yes | No |
| Power Cord 4.3m (14-ft), Drawer to IBM PDU (250V/10A) for India | 22E | END2 | Both | Yes | No |
| Power Cable - Drawer to IBM PDU, 200-240V/10A for India | 22E | END3 | Initial | N/A | No |
| Power Cord 2.8m (9.2-ft), Drawer to IBM PDU, (250V/10A) for India | 22E | END5 | Both | Yes | No |
| Power Cable - Drawer to IBM PDU (250V/10A) for India | 22E | END7 | Initial | N/A | No |
| Horizontal PDU Mounting Hardware | 22E | EPTH | Both | Yes | No |
| LSI SAS Controller 9305-16E | 22E | ESA5 | Initial | N/A | No |

| Description | Model number | Feature numbers | Initial / MES / Both / Support | CSU | RP MES |
|----------------------------------------------------------|---------------------|------------------------|---------------------------------------|------------|---------------|
| 12GB/S host bus adapter | | | | | |
| ESS SC1 Solution Specify | 22E | ESCF | Initial | N/A | No |
| ESS SC2 Solution Specify | 22E | ESCG | Initial | N/A | No |
| ESS SC3 Solution Specify | 22E | ESCH | Initial | N/A | No |
| ESS SC4 Solution Specify | 22E | ESCJ | Initial | N/A | No |
| ESS SC5 Solution Specify | 22E | ESCK | Initial | N/A | No |
| ESS SC6 Solution Specify | 22E | ESCL | Initial | N/A | No |
| ESS SC7 Solution Specify | 22E | ESCM | Initial | N/A | No |
| ESS SC8 Solution Specify | 22E | ESCN | Initial | N/A | No |
| ESS SL1 Solution Specify | 22E | ESL1 | Initial | N/A | No |
| ESS SL2 Solution Specify | 22E | ESL2 | Initial | N/A | No |
| ESS SL3 Solution Specify | 22E | ESL3 | Initial | N/A | No |
| ESS SL4 Solution Specify | 22E | ESL4 | Initial | N/A | No |
| ESS SL5 Solution Specify | 22E | ESL5 | Initial | N/A | No |
| ESS SL6 Solution Specify | 22E | ESL6 | Initial | N/A | No |
| ESS Solution Specify | 22E | ESS0 | Initial | N/A | No |
| Spectrum Scale Data Access Edition for ESS Indicator | 22E | ESSS | Initial | N/A | No |
| Spectrum Scale Data Management Edition for ESS Indicator | 22E | ESST | Initial | N/A | No |
| ESS Spectrum Scale Protocol | 22E | ESSW | Initial | N/A | No |

| Description | Model number | Feature numbers | Initial / MES / Both / Support | CSU | RP MES |
|---------------------------------------------------------------------------------------------------|---------------------|------------------------|---------------------------------------|------------|---------------|
| Node Specify | | | | | |
| ESS Restricted Offering | 22E | ESTV | Initial | N/A | No |
| Spectrum Scale Data Access Edition for ESS Indicator - Manufacturing preload only, No license | 22E | ESTY | Initial | N/A | No |
| Spectrum Scale Data Management Edition for ESS Indicator - Manufacturing preload only, No license | 22E | ESTZ | Initial | N/A | No |
| ESS Management Node Specify | 22E | ESZX | Initial | N/A | No |
| ESS Data Node Specify | 22E | ESZY | Initial | N/A | No |
| Operator Panel LCD Display | 22E | EU0B | Both | Yes | No |
| Cable Ties & Labels | 22E | EU19 | Both | Yes | No |
| Standalone USB DVD drive w/ cable | 22E | EUA5 | Both | Yes | No |
| BP Post-Sale Services | 22E | SVBP | Initial | N/A | No |
| IBM Systems Lab Services Post-Sale Services | 22E | SVCS | Initial | N/A | No |
| Other IBM Post-Sale Services | 22E | SVNN | Initial | N/A | No |

The following are newly announced features of the IBM System Storage 5141 machine type:

| Description | Model number | Feature numbers | Initial / MES / Both / Support | CSU | RP MES |
|-----------------------------------|---------------------|------------------------|---------------------------------------|------------|---------------|
| Solution Sub System #17 Indicator | AF8 | EGTL | Initial | N/A | No |

| Description | Model number | Feature numbers | Initial / MES / Both / Support | CSU | RP MES |
|-----------------------------------|---------------------|------------------------|---------------------------------------|------------|---------------|
| Solution Sub System #18 Indicator | AF8 | EGTM | Initial | N/A | No |

The following are newly announced features and model on the specified model of the IBM System Storage 5147 machine type:

| Description | Model number | Feature numbers | Initial / MES / Both / Support | CSU | RP MES |
|---------------------------------------|---------------------|------------------------|---------------------------------------|------------|---------------|
| IBM ESS 5000 5U92 Storage | 092 | | Both | No | |
| TAA Compliance | 092 | 0983 | Initial | N/A | No |
| Overhead ladder - 5ft | 092 | 1101 | Both | Yes | No |
| Power Cord To PDU/UPS, (100-240V/16A) | 092 | 4558 | Both | Yes | No |
| Rack Indicator None | 092 | 4650 | Initial | N/A | No |
| Rack Indicator Rack 1 | 092 | 4651 | Initial | N/A | No |
| Rack Indicator Rack 2 | 092 | 4652 | Initial | N/A | No |
| Rack Indicator Rack 3 | 092 | 4653 | Initial | N/A | No |
| Rack Indicator Rack 4 | 092 | 4654 | Initial | N/A | No |
| Rack Indicator Rack 5 | 092 | 4655 | Initial | N/A | No |
| Rack Indicator Rack 6 | 092 | 4656 | Initial | N/A | No |
| Rack Indicator Rack 7 | 092 | 4657 | Initial | N/A | No |
| Rack Indicator Rack 8 | 092 | 4658 | Initial | N/A | No |
| Rack Indicator Rack 9 | 092 | 4659 | Initial | N/A | No |
| Rack Indicator Rack 10 | 092 | 4660 | Initial | N/A | No |
| Rack Indicator Rack 11 | 092 | 4661 | Initial | N/A | No |
| Rack Indicator Rack 12 | 092 | 4662 | Initial | N/A | No |

| Description | Model number | Feature numbers | Initial / MES / Both / Support | CSU | RP MES |
|-----------------------------------------------------------------------------|---------------------|------------------------|---------------------------------------|------------|---------------|
| Rack Indicator Rack 13 | 092 | 4663 | Initial | N/A | No |
| Rack Indicator Rack 14 | 092 | 4664 | Initial | N/A | No |
| Rack Indicator Rack 15 | 092 | 4665 | Initial | N/A | No |
| Rack Indicator Rack 16 | 092 | 4666 | Initial | N/A | No |
| Bulk Order Indicator | 092 | 5555 | Both | Yes | No |
| Month Indicator | 092 | 9461 | Initial | N/A | No |
| Day Indicator | 092 | 9462 | Initial | N/A | No |
| Hour Indicator | 092 | 9463 | Initial | N/A | No |
| Minute Indicator | 092 | 9464 | Initial | N/A | No |
| Quantity Indicator | 092 | 9465 | Initial | N/A | No |
| Countable Member Indicator | 092 | 9466 | Initial | N/A | No |
| Shipping and Handling NC | 092 | AG00 | Initial | N/A | No |
| Shipping and Handling | 092 | AGJK | Initial | N/A | No |
| Mini SAS HD Active Optical Cable (AOC) Cable, 4.5m, 12GB/s (STRAIGHT CABLE) | 092 | AJGB | Both | Yes | No |
| 800GB 2.5 inch 6Gb SAS PI SSD | 092 | AJNV | Both | Yes | No |
| 6TB Enterprise HDD | 092 | AJNW | Both | Yes | No |
| 10TB Enterprise HDD | 092 | AJNX | Both | Yes | No |
| 14 TB Enterprise HDD | 092 | AJNY | Both | Yes | No |
| 16 TB Enterprise HDD | 092 | AJNZ | Both | Yes | No |
| Lift Tool | 092 | EB2Z | Both | Yes | No |
| Custom Service | 092 | ECSM | Initial | N/A | No |

| Description | Model number | Feature numbers | Initial / MES / Both / Support | CSU | RP MES |
|----------------------------------------|---------------------|------------------------|---------------------------------------|------------|---------------|
| Specify, Mexico | | | | | |
| Route to Power Manufacturing Indicator | 092 | EFD0 | Initial | N/A | No |
| Primary Unit | 092 | EGS0 | Initial | N/A | No |
| Sub System #1 Indicator | 092 | EGS1 | Initial | N/A | No |
| Sub System #2 Indicator | 092 | EGS2 | Initial | N/A | No |
| Sub System #3 Indicator | 092 | EGS3 | Initial | N/A | No |
| Sub System #4 Indicator | 092 | EGS4 | Initial | N/A | No |
| Sub System #5 Indicator | 092 | EGS5 | Initial | N/A | No |
| Sub System #6 Indicator | 092 | EGS6 | Initial | N/A | No |
| Sub System #7 Indicator | 092 | EGS7 | Initial | N/A | No |
| Sub System #8 Indicator | 092 | EGS8 | Initial | N/A | No |
| Sub System #9 Indicator | 092 | EGS9 | Initial | N/A | No |
| Sub System #10 Indicator | 092 | EGST | Initial | N/A | No |
| Sub System #11 Indicator | 092 | EGSU | Initial | N/A | No |
| Sub System #12 Indicator | 092 | EGSV | Initial | N/A | No |
| Sub System #13 Indicator | 092 | EGSW | Initial | N/A | No |
| Sub System #14 Indicator | 092 | EGSX | Initial | N/A | No |
| Sub System #15 Indicator | 092 | EGSY | Initial | N/A | No |
| Sub System #16 Indicator | 092 | EGSZ | Initial | N/A | No |

| Description | Model number | Feature numbers | Initial / MES / Both / Support | CSU | RP MES |
|----------------------|---------------------|------------------------|---------------------------------------|------------|---------------|
| Storage Subsystem 01 | 092 | EN41 | Initial | N/A | No |
| Storage Subsystem 02 | 092 | EN42 | Initial | N/A | No |
| Storage Subsystem 03 | 092 | EN43 | Initial | N/A | No |
| Storage Subsystem 04 | 092 | EN44 | Initial | N/A | No |
| Storage Subsystem 05 | 092 | EN45 | Initial | N/A | No |
| Storage Subsystem 06 | 092 | EN46 | Initial | N/A | No |
| Storage Subsystem 07 | 092 | EN47 | Initial | N/A | No |
| Storage Subsystem 08 | 092 | EN48 | Initial | N/A | No |
| Storage Subsystem 09 | 092 | EN49 | Initial | N/A | No |
| Storage Subsystem 10 | 092 | EN50 | Initial | N/A | No |
| Storage Subsystem 11 | 092 | EN51 | Initial | N/A | No |
| Storage Subsystem 12 | 092 | EN52 | Initial | N/A | No |
| Storage Subsystem 13 | 092 | EN53 | Initial | N/A | No |
| Storage Subsystem 14 | 092 | EN54 | Initial | N/A | No |
| Storage Subsystem 15 | 092 | EN55 | Initial | N/A | No |
| Storage Subsystem 16 | 092 | EN56 | Initial | N/A | No |
| Storage Subsystem 17 | 092 | EN57 | Initial | N/A | No |
| Storage Subsystem 18 | 092 | EN58 | Initial | N/A | No |
| Storage Subsystem 19 | 092 | EN59 | Initial | N/A | No |
| Storage Subsystem 20 | 092 | EN60 | Initial | N/A | No |
| Storage Subsystem 21 | 092 | EN61 | Initial | N/A | No |

| Description | Model number | Feature numbers | Initial / MES / Both / Support | CSU | RP MES |
|----------------------|---------------------|------------------------|---------------------------------------|------------|---------------|
| Storage Subsystem 22 | 092 | EN62 | Initial | N/A | No |
| Storage Subsystem 23 | 092 | EN63 | Initial | N/A | No |
| Storage Subsystem 24 | 092 | EN64 | Initial | N/A | No |
| Storage Subsystem 25 | 092 | EN65 | Initial | N/A | No |
| Storage Subsystem 26 | 092 | EN66 | Initial | N/A | No |
| Storage Subsystem 27 | 092 | EN67 | Initial | N/A | No |
| Storage Subsystem 28 | 092 | EN68 | Initial | N/A | No |
| Storage Subsystem 29 | 092 | EN69 | Initial | N/A | No |
| Storage Subsystem 30 | 092 | EN70 | Initial | N/A | No |
| Storage Subsystem 31 | 092 | EN71 | Initial | N/A | No |
| Storage Subsystem 32 | 092 | EN72 | Initial | N/A | No |
| Storage Subsystem 33 | 092 | EN73 | Initial | N/A | No |
| Storage Subsystem 34 | 092 | EN74 | Initial | N/A | No |
| Storage Subsystem 35 | 092 | EN75 | Initial | N/A | No |
| Storage Subsystem 36 | 092 | EN76 | Initial | N/A | No |
| Storage Subsystem 37 | 092 | EN77 | Initial | N/A | No |
| Storage Subsystem 38 | 092 | EN78 | Initial | N/A | No |
| Storage Subsystem 39 | 092 | EN79 | Initial | N/A | No |
| Storage Subsystem 40 | 092 | EN80 | Initial | N/A | No |
| Storage Subsystem 41 | 092 | EN81 | Initial | N/A | No |
| Storage Subsystem 42 | 092 | EN82 | Initial | N/A | No |

| Description | Model number | Feature numbers | Initial / MES / Both / Support | CSU | RP MES |
|-------------------------------------------------|---------------------|------------------------|---------------------------------------|------------|---------------|
| Power Cord To PDU/UPS, (100-240V/16A) for India | 092 | END8 | Both | Yes | No |
| ESS SL1 Solution Specify | 092 | ESL1 | Initial | N/A | No |
| ESS SL2 Solution Specify | 092 | ESL2 | Initial | N/A | No |
| ESS SL3 Solution Specify | 092 | ESL3 | Initial | N/A | No |
| ESS SL4 Solution Specify | 092 | ESL4 | Initial | N/A | No |
| ESS SL5 Solution Specify | 092 | ESL5 | Initial | N/A | No |
| ESS SL6 Solution Specify | 092 | ESL6 | Initial | N/A | No |
| ESS Solution Specify | 092 | ESS0 | Initial | N/A | No |
| ESS Restricted Offering | 092 | ESTV | Initial | N/A | No |
| BP Post-Sale Services | 092 | SVBP | Initial | N/A | No |
| IBM Systems Lab Services Post-Sale Services | 092 | SVCS | Initial | N/A | No |
| Other IBM Post-Sale Services | 092 | SVNN | Initial | N/A | No |
| Shipping and Handling | 106 | AGJK | Initial | N/A | No |
| 16 TB Enterprise HDD | 106 | AJP0 | Both | Yes | No |
| ESS SC1 Solution Specify | 106 | ESCF | Initial | N/A | No |
| ESS SC2 Solution Specify | 106 | ESCG | Initial | N/A | No |
| ESS SC3 Solution Specify | 106 | ESCH | Initial | N/A | No |
| ESS SC4 Solution Specify | 106 | ESCJ | Initial | N/A | No |
| ESS SC5 Solution Specify | 106 | ESCK | Initial | N/A | No |

| Description | Model number | Feature numbers | Initial / MES / Both / Support | CSU | RP MES |
|--------------------------|--------------|-----------------|--------------------------------|-----|--------|
| ESS SC6 Solution Specify | 106 | ESCL | Initial | N/A | No |
| ESS SC7 Solution Specify | 106 | ESCM | Initial | N/A | No |
| ESS SC8 Solution Specify | 106 | ESCN | Initial | N/A | No |

CSU = Customer setup

RP MES = Returnable parts MES

N/A = Not applicable

Alternative service

| Machine type-model | Feature | IOR IBM same day onsite repair (IOR, 24 x 7) | IO8 IBM next day onsite repair (IOR, NBD 9 x 5) |
|--------------------|---------|----------------------------------------------|-------------------------------------------------|
| 5105-22E | | | |
| 5105-22E | ESA5 | | |
| 5105-22E | EU0B | | |
| 5105-22E | EUA5 | | |
| 5147-092 | | | |
| 5147-092 | AJNV | | |
| 5147-092 | AJNW | | |
| 5147-092 | AJNX | | |
| 5147-092 | AJNY | | |
| 5147-092 | AJNZ | | |
| 5147-106 | AJPO | | |

Annual minimum maintenance charges

IBM Maintenance is available for the new IBM Elastic Storage System 5000. For pricing information, contact your IBM representative or IBM Business Partner.

ServiceElect (ESA) charges

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

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