IBM Cloud Object Storage Gen2 hardware delivers improved economics, performance, and capacity

At a glance

IBM Cloud™ Object Storage Gen2 hardware delivers the following benefits:

- 25% - 50% lower cost than first-generation hardware based on workload and use cases
- Up to 15% more reads and writes can be completed in the same timeframe, versus the present generation of hardware
- Consolidated solution that supports up to 1.27 PB in a single node and 10.18 PB in a single rack
- Only acquire the amount of performance or capacity initially required and grow performance or capacity as needed, together or independently

New servers in the Cloud Object Storage Gen2 hardware product line include support for:

- The latest Intel Xeon™ processors (scalable processor family)
- Higher performance SAS controllers
- Higher speed memory RDIMMs

Cloud Object Storage Gen2 architecture provides the object storage layer using a controller node server and disk enclosure combination, including support for:

- Higher capacity in less rack units (Us)
- More capacity in a single node (1.27 PB)
- Adding capacity independently of performance

Overview

Cloud Object Storage Gen2 delivers cost reductions versus our present generation of hardware, ensuring that clients can access the same Cloud Object Storage capacity at a lower price. The costs savings will be dependent on client use cases, applications, and specific environments, and savings are expected to range anywhere from 25% - 50% when based on either initial capital outlay or a cost per terabyte metric.

The combination of the new architecture with industry-standard components results in an initial system that completes up to 15% more reads and writes in the same timeframe as the current system, enabling easier and quicker access to much faster systems.

The Cloud Object Storage Gen2 hardware platform takes the best of the current Cloud Object Storage architecture and modifies and extends it to allow for newer technologies, components, and approaches. These modifications and extensions enable this new generation of hardware to incorporate new features, functionalities, and capabilities in an easily manageable manner.

This new generation of hardware still supports the Cloud Object Storage System functions of Manager, Accesser[R], and Slicestor[R], in the same manner as the first generation of hardware with some key differences:

- The Storage Layer (Slicestor) is now provided through two physical components, a Controller Node server and a disk enclosure
- The Manager, Accesser, and Controller Node are all provided using the exact same physical 1U server that can be configured differently depending on purpose
- The function performed by the server is determined by the specific components selected for the server
- Capacity can be added independently or in conjunction with performance

All of these improvements mean that clients can start with small systems, in both the areas of capacity and performance, and grow as needed and in independent steps if that is what is appropriate for them.

This generation of hardware enables Cloud Object Storage solution clients to stay ahead of their competition by having optimized access to the data they need to run their business today. Cloud Object Storage Gen2 can also grow quickly and easily, with a future-ready platform that includes investment protection with a lower cost solution.

All of the capabilities, features, functions, and benefits of Cloud Object Storage that clients are used to today are maintained in this generation of hardware:

- The ability to scale-out to multipetabyte or exabyte capacity with faster performance
- Single-site, mirrored two-site, and geo-dispersed deployment options
- Configuration retention that provides up to 8 nines of availability and up to 15 nines of reliability

Clients will also receive the following benefits:

- Lower cost
- Higher performance
- More options to tailor configurations for workload optimization
- Greater consolidation of data in a single rack unit or a rack configuration
- The ability to more easily and cost effectively grow their systems as needed
- The ability to intermix Gen2 hardware with previous generation hardware

Key requirements

IBM Cloud Object Storage System hardware servers must be loaded with the appropriate IBM Cloud Object Storage System software that is designed for that server type.

These certified hardware servers can be deployed in a single site or across multiple, geographically dispersed locations, connected by public or private networks.

Planned availability date

June 7, 2019

Description

Cloud Object Storage Gen2 hardware is both an extension and an enhancement of the existing hardware. It is an extension as it provides the same functionality using the same Cloud Object Storage software and works with the existing generation, requiring nothing special. Clients can intermix past and present generations of hardware in the same storage pool and cluster, even at the set level.

For example, an existing client that has a Cloud Object Storage system today that contains one Manager Server, three Accesser Servers, and twelve Slicestor Servers could add a set of twelve Slicestor Servers using Gen2 hardware by adding twelve Controller Nodes and twelve disk enclosures.

Cloud Object Storage systems have been designed to support exabytes of data in a single namespace and this generation supports that and also more data per rack unit and per rack. With this new generation, systems have increased capacity by 27% per rack unit and 28% in a single rack, as a single rack can now hold more than 10 PB.

Cloud Object Storage architecture does not change in the Gen2 hardware as the storage system will still be provided by a Manager, Accesser, and a Slicestor function. The Manager and Accesser servers will be very much consistent with the present Manager and Acceser servers.

Another key difference in Gen2 will be in how the storage layer is architected. In the present generation, the storage layer is provided by storage servers, meaning that the performance components and the storage components in the storage layer are in the same physical box and therefore must be installed, grown, and expanded together. In Gen2, the storage layer will be divided into two separate components, a controller node that contains the performance components and a disk enclosure that contains the storage components.

In both the present generation and in Gen2, the storage layer is called a Slicestor, and the functional components, component names, and system management remains exactly the same. This ensures that the same version of Cloud Object Storage software is used across both the present generation and Gen2.

The Manager Server, the Accesser Server, and the Controller Node Server are all based on the exact same 1U server. The server configuration will be determined based on the function performed by the server:

The Manager (Model M10) will support the following configuration:

- 1 x Intel Xeon Silver 4110 CPU
- 96 GB RAM
- 2 x 960 GB OS/Boot drives -- SSD
- 1 x Broadcom MegaRAID 9361-4i controller set in RAID 1 managing the OS/Boot Drives
- 2 x Redundant power supplies

The Accesser (Model A10) will support the following configuration:

- 1 x Intel Xeon Gold 6126 CPU
- 192 GB RAM
- 2 x 480 GB OS/Boot drives -- SSD -- Managed by integrated motherboard control
- 2 x Redundant power supplies

The Controller Node (Model C10) will support the following configuration:

- 1 x Intel Xeon Silver 4110 CPU
- 96 GB RAM

- 2 x 480 GB OS/Boot drives -- SSD -- Managed by integrated motherboard control
- 1 x Broadcom 9305-16i in HBA Mode used to manage the HDDs in the disk enclosures
- 2 x Redundant power supplies

Disk enclosures (models J10, J11, and J12)

Size	Small	Medium	Large
JBOD total rack space	2U	4U	4U
Slicestor total rack Space	3U	5U	5U
Capacity enclosures (rack space/disks)	2U/12	4U/53	4U/106
Drive sizes (TB)	4, 8, 12	4, 8, 12	4, 8, 12
Node raw capacity (min/max TB)	48/144	212/636	424/1270

When a Controller Node and a disk enclosure are combined, they function as and are referred to as a Slicestor, just like the Storage Server is today. Gen2 hardware brings a set of improvements, capabilities, and consolidations to Cloud Object Storage, while doing so at reduced hardware cost and with increased hardware performance. This leads to an improved product set for present and future Cloud Object Storage clients.

IBM Cloud Object Storage

IBM Cloud Object Storage is a software-defined storage platform used by clients who store many of the world's largest object storage systems. Clients can start with only a few terabytes of storage and grow online to exabyte scalability with investment protection. With optimized access from any location, geo-dispersed efficiency, and concurrent and secure cloud native accessibility, data remains available with massive scale that is easy to manage and cost effective to use. With over 800 technology patents driving innovation, Cloud Object Storage architecture is designed for multiple, concurrent demanding workloads with high throughput. Users can quickly and easily search and analyze millions or billions of objects with the automated integration of IBM Spectrum[R] Discover. IBM Cloud Object Storage is turning storage challenges into business solutions.

Accessibility by people with disabilities

A US Section 508 Accessibility Compliance Report containing details on accessibility compliance can be found on the Product accessibility information website.

Statement of general direction

Future releases will deliver various additional options, features, and functionalities that will be reflected in specific components. Specific features and functionalities will be determined by a combination of customer needs and requirements, and available technology.

Features that are currently planned for release include:
- Additional CPU options
- Additional memory options
- Additional network interface options
- Additional drive options
- Support for more than one storage enclosure per controller node
- SSD-based drive capacity with the capabilities to drive performance

Notes:

- IBM Cloud Object Storage equipment is designed to ensure that customers can grow and expand their Cloud Object Storage environment without having to perform forklift upgrades.
- Current generation and Gen2 nodes can be utilized in same cluster.

Statements by IBM$^{(R)}$ regarding its plans, directions, and intent are subject to change or withdrawal without notice at the sole discretion of IBM. Information regarding potential future products is intended to outline general product direction and should not be relied on in making a purchasing decision. The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code, or functionality. Information about potential future products may not be incorporated into any contract. The development, release, and timing of any future features or functionality described for IBM products remain at the sole discretion of IBM.

Product number

The following are newly announced features and models on the specified models of the IBM System Storage$^{(R)}$ 4957 and 4958 machine types:

Description	Machine type	Model	Feature
IBM Cloud Object Storage Accesser A10 3yr	4957	A10	
TAA Compliance	4957	A10	0983
Shipping and Handling NC	4957	A10	AG00
Shipping and handling 1U	4957	A10	AGYG
Intel Xeon Gold 6126 Processor	4957	A10	AJ21
6 x 16 GB 2666 DIMM	4957	A10	AJ22
SFP+	4957	A10	AJ5L
480 GB SSD	4957	A10	AJ5R
IBM Cloud Object Storage Controller Node C10 3yr	4957	C10	
TAA Compliance	4957	C10	0983
Shipping and Handling NC	4957	C10	AG00
Shipping and handling 1U	4957	C10	AGYG
Intel Xeon Silver 4110 Processor	4957	C10	AJ20
6 x 16 GB 2666 DIMM	4957	C10	AJ22
SFP+	4957	C10	AJ5L
480 GB SSD	4957	C10	AJ5R
HBA Controller for Data Drives	4957	C10	AJ5V
IBM Cloud Object Storage Small JBOD Chassis 3yr	4957	J10	
TAA Compliance	4957	J10	0983
Shipping and Handling NC	4957	J10	AG00
Shipping and handling 2U	4957	J10	AGYH

Description	Machine type	Model	Feature
4TB Enterprise HDD	4957	J10	AJ61
8TB Enterprise HDD	4957	J10	AJ63
12TB Enterprise HDD	4957	J10	AJ67
IBM Cloud Object Storage Medium JBOD Chassis 3yr	4957	J11	
TAA Compliance	4957	J11	0983
Shipping and Handling NC	4957	J11	AG00
Shipping and handling 4U	4957	J11	AGYJ
4TB Enterprise HDD	4957	J11	AJ69
8TB Enterprise HDD	4957	J11	AJ6B
12TB Enterprise HDD	4957	J11	AJ6D
IBM Cloud Object Storage Large JBOD Chassis 3yr	4957	J12	
TAA Compliance	4957	J12	0983
Shipping and Handling NC	4957	J12	AG00
Shipping and handling 4U	4957	J12	AGYJ
4TB Enterprise HDD	4957	J12	AJ69
8TB Enterprise HDD	4957	J12	AJ6B
12TB Enterprise HDD	4957	J12	AJ6D
IBM Cloud Object Storage Manager M10 3yr	4957	M10	
TAA Compliance	4957	M10	0983
Shipping and Handling NC	4957	M10	AG00
Shipping and handling 1U	4957	M10	AGYG
Intel Xeon Silver 4110 Processor	4957	M10	AJ20
6 x 16 GB 2666 DIMM	4957	M10	AJ22
SFP+	4957	M10	AJ5L
960 GB SSD	4957	M10	AJ5S
RAID Controller for Manager	4957	M10	AJ5U
Utility model indicator	4957	M10	AJE0
Variable Usage 1TB/month	4957	M10	AJE1
Variable Usage 10TB/month	4957	M10	AJE2
Variable Usage 100TB/month	4957	M10	AJE3
No Ship MES	4957	M10	AQQQ
IBM Cloud Object Storage Accesser A10 1yr	4958	A10	

Description	Machine type	Model	Feature
TAA Compliance	4958	A10	0983
Shipping and Handling NC	4958	A10	AG00
Shipping and handling 1U	4958	A10	AGYG
Intel Xeon Gold 6126 Processor	4958	A10	AJ21
6 x 16 GB 2666 DIMM	4958	A10	AJ22
SFP+	4958	A10	AJ5L
480 GB SSD	4958	A10	AJ5R
IBM Cloud Object Storage Controller Node C10 1yr	4958	C10	
TAA Compliance	4958	C10	0983
Shipping and Handling NC	4958	C10	AG00
Shipping and handling 1U	4958	C10	AGYG
Intel Xeon Silver 4110 Processor	4958	C10	AJ20
6 x 16 GB 2666 DIMM	4958	C10	AJ22
SFP+	4958	C10	AJ5L
480 GB SSD	4958	C10	AJ5R
HBA Controller for Data Drives	4958	C10	AJ5V
IBM Cloud Object Storage Small JBOD Chassis 1yr	4958	J10	
TAA Compliance	4958	J10	0983
Shipping and Handling NC	4958	J10	AG00
Shipping and handling 2U	4958	J10	AGYH
4TB Enterprise HDD	4958	J10	AJ61
8TB Enterprise HDD	4958	J10	AJ63
12TB Enterprise HDD	4958	J10	AJ67
IBM Cloud Object Storage Medium JBOD Chassis 1yr	4958	J11	
TAA Compliance	4958	J11	0983
Shipping and Handling NC	4958	J11	AG00
Shipping and handling 4U	4958	J11	AGYJ
4TB Enterprise HDD	4958	J11	AJ69
8TB Enterprise HDD	4958	J11	AJ6B
12TB Enterprise HDD	4958	J11	AJ6D
IBM Cloud Object Storage Large JBOD Chassis 1yr	4958	J12	
TAA Compliance	4958	J12	0983
Shipping and Handling NC	4958	J12	AG00

Description	Machine type	Model	Feature
Shipping and handling 4U	4958	J12	AGYJ
4TB Enterprise HDD	4958	J12	AJ69
8TB Enterprise HDD	4958	J12	AJ6B
12TB Enterprise HDD	4958	J12	AJ6D
IBM Cloud Object Storage Manager M10 1Yr	4958	M10	
TAA Compliance	4958	M10	0983
Shipping and Handling NC	4958	M10	AG00
Shipping and handling 1U	4958	M10	AGYG
Intel Xeon Silver 4110 Processor	4958	M10	AJ20
6 x 16 GB 2666 DIMM	4958	M10	AJ22
SFP+	4958	M10	AJ5L
960 GB SSD	4958	M10	AJ5S
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Variable Usage 10TB/month	4958	M10	AJE2
Variable Usage 100TB/month	4958	M10	AJE3
No Ship MES	4958	M10	AQQQ

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 119-029

Publications

No publications are shipped with the announced products.

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

IBM Cloud Object Storage Accesser A10 (4957-A10 and 4958-A10)

- Width: 436 mm (17.2 in.)
- Depth: 762 mm (30 in.)
- Height: 43 mm (1.7 in.)
- Maximum weight: 21.7 kg (48 lb)

IBM Cloud Object Storage Manager M10 (4957-M10 and 4958-M10)

- Width: 436 mm (17.2 in.)
- Depth: 762 mm (30 in.)
- Height: 43 mm (1.7 in.)
- Maximum weight: 21.7 kg (48 lb)

IBM Cloud Object Storage Controller Node C10 (4957-C10 and 4958-C10)

- Width: 436 mm (17.2 in.)
- Depth: 762 mm (30 in.)
- Height: 43 mm (1.7 in.)
- Maximum weight: 21.7 kg (48 lb)

IBM Cloud Object Storage Small JBOD (4957-J10 and 4958-J10)

- Width: 483 mm (19 in.)
- Depth: 630 mm (24.8 in.)
- Height: 88.9 mm (3.5 in.)
- Weight: 26 kg (52.7 lb)

IBM Cloud Object Storage Medium JBOD (4957-J11 and 4958-J11)

- Width: 441 mm (17.4 in.)
- Depth: 1139 mm (44.8 in.)
- Height: 176.4mm (6.95 in.)
- Weight (without drives): 64 kg (140 lb)
- Weight (fully populated with drives): 82 kg (181 lb)

IBM Cloud Object Storage Large JBOD (4957-J12 and 4958-J12)

- Width: 441 mm (17.4 in.)
- Depth: 1139 mm (44.8 in.)
- Height: 176.4mm (6.95 in.)
- Weight (without drives): 64 kg (140 lb)
- Weight (fully populated with drives): 141 kg (310 lb)

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

Operating environment

IBM Cloud Object Storage Accesser A10 (4957-A10 and 4958-A10)

- Temperature:
  - Operating: 10°C to 35° C (50°F to 95° F)
  - Nonoperating: -40°C to 65° C (-40°F to 149° F)
- Altitude:
  - Operating: 0 m to 3,000 m (0 ft to 40,000 ft)
  - Nonoperating: 0 m to 3,000 m (0 ft to 40,000 ft)
- Input power requirements: 100 V - 240 V AC 50 Hz/60 Hz
- Max power output per PSU: 800 W

IBM Cloud Object Storage Manager M10 (4957-M10 and 4958-M10)

- Temperature:
  - Operating: 10°C to 35° C (50°F to 95° F)
  - Nonoperating: -40°C to 65° C (-40°F to 149° F)
- Altitude:
  - Operating: 0 m to 3,000 m (0 ft to 40,000 ft)
  - Nonoperating: 0 m to 3,000 m (0 ft to 40,000 ft)
- Input power requirements: 100 V - 240 V AC 50 Hz/60 Hz

- Max power output per PSU: 800 W

IBM Cloud Object Storage Controller Node C10 (4957-C10 and 4958-C10)

- Temperature:
  - Operating: 10°C to 35° C (50°F to 95° F)
  - Nonoperating: -40°C to 65° C (-40°F to 149° F)
- Altitude:
  - Operating: 0 m to 3,000 m (0 ft to 40,000 ft)
  - Nonoperating: 0 m to 3,000 m (0 ft to 40,000 ft)
- Input power requirements: 100 V - 240 V AC 50 Hz/60 Hz
- Max power output per PSU: 800 W

IBM Cloud Object Storage Small JBOD (4957-J10 and 4958-J10)

- Temperature:
  - Operating: 5°C to 40° C (41°F to 104° F)
  - Nonoperating: -40°C to 70° C (-40°F to 158° F)
- Altitude:
  - Operating: 0 m to 3,000 m (0 ft to 40,000 ft)
  - Nonoperating: -300 m to 12,192 m (-1000 ft to 40,000 ft)
- Humidity: 20% - 80% noncondensing
- Input power requirements: 100 V - 240 V AC 50 Hz/60 Hz
- Max power output per PSU: 2 kW

IBM Cloud Object Storage Medium JBOD (4957-J11 and 4958-J11)

- Temperature:
  - Operating: 5°C to 35° C (41°F to 95° F) (de-rated by 1°C per 300 m above 900 m)
  - Nonoperating: -40°C to 70° C (-40 to 158° F)
- Altitude:
  - Operating: -100 m to 3,000 m (-328 ft to 40,000 ft)
  - Nonoperating: -100 m to 12,192 m (-328 ft to 40,000 ft)
- Humidity: 20% - 80% non-condensing
- Input power requirements: 100 V - 240 V AC 50 Hz/60 Hz
- Max power output per PSU: 2 kW

IBM Cloud Object Storage Large JBOD (4957-J12 and 4958-J12)

- Temperature:
  - Operating: 5°C to 35° C (41°F to 95° F) (de-rated by 1°C per 300 m above 900 m)
  - Nonoperating: -40°C to 70° C (-40°F to 158° F)
- Altitude:
  - Operating: -100 m to 3,000 m (-328 ft to 40,000 ft)
  - Nonoperating: -100 m to 12,192 m (-328 ft to 40,000 ft)
- Humidity: 10% - 80% noncondensing
- Input power requirements: 100 V - 240 V AC 50 Hz/60 Hz
- Max power output per PSU: 2 kW

Hardware requirements

The medium and large disk enclosures (J11 and J12 models) are 1,139 mm (44.8 in.) deep. This depth requires that these chassis be installed in 1,200 mm racks in order to be completely enclosed in the rack.

Software requirements

IBM Cloud Object Storage Gen2 hardware requires Cloud Object Storage software V3.14.4, or greater.

An IBM Cloud Object Storage System contains three separate and distinct operating systems, one each that runs on the Manager, the Accessers, and the Slicestors. In order to build a complete Object Storage System, each of the functions must be in place.

Planning information

Cable orders

Not applicable

Security, auditability, and control

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

IBM Systems Lab Services

For details on available services, contact your IBM representative or go to the Lab Services website.

IBM Electronic Services

IBM has transformed its delivery of hardware and software support services to help you achieve higher system availability. Electronic Services is a web-enabled solution that offers an exclusive, no-additional-charge enhancement to the service and support available for IBM servers. These services are designed to provide the opportunity for greater system availability with faster problem resolution and preemptive monitoring. Electronic Services comprises two separate, but complementary, elements: Electronic Services news page and Electronic Services Agent.

The Electronic Services news page is a single internet entry point that replaces the multiple entry points traditionally used to access IBM Internet services and support. The news page enables you to gain easier access to IBM resources for assistance in resolving technical problems.

The Electronic Service Agent is no-additional-charge software that resides on your server. It monitors events and transmits system inventory information to IBM on a periodic, client-defined timetable. The Electronic Service Agent automatically reports hardware problems to IBM. Early knowledge about potential problems enables IBM to deliver proactive service that may result in higher system availability and performance. In addition, information collected through the Service Agent is made available to IBM service support representatives when they help answer your questions or diagnose problems. Installation and use of IBM Electronic Service Agent for problem reporting enables IBM to provide better support and service for your IBM server.

To learn how Electronic Services can work for you, go to the IBM Electronic Service Agent website.

Terms and conditions

Volume orders

Contact your IBM representative.

IBM Global Financing

Yes

Products - terms and conditions

Warranty period

Warranty and additional coverage options	Coverage summary[1]
Warranty Period:	Machine type 4958: 1 year[2]
Service Level:	Machine type 4957: 1 year + 2 years Extended Warranty Services (3 years total) IBM On-Site Limited, 9x5 Next Business Day
Service upgrade options	
Warranty Service Upgrade	IBM On-Site Repair, 9x5 Same Day[3] and 24x7 Same Day options
Maintenance Services (Post-Warranty)	IBM On-Site Repair, Next Business Day and Same Day options
IBM Hardware Maintenance Services - committed maintenance[4]	Yes

[1] See complete coverage details below

[2] Warranty period in Turkey is two years

[3] Only offered in US and EMEA

[4] Not offered in the US

Machine type 4958: One year

Machine type 4957: Three years

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.

Extended Warranty Service

This product is provided with one year of standard warranty. For your convenience, IBM has provided two additional years of extended warranty services to make this offering. Consult with your advisors about the appropriate financial treatment for this offering.

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:

- Hard disk drive
- Optics
- Power cord
- Power supply
- Fans

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.

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

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, next business day.
- 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:

- Hard disk drive
- Optics

- Power cord
- Power supply
- Fans

Usage plan machine

No

IBM hourly service rate classification

Two

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

General terms and conditions

Field-installable features

Yes

Model conversions

No

Machine installation

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

Graduated program license charges apply

No

Licensed Machine Code

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

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

You may also obtain updated code by contacting your IBM representative.

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

Machine Code License Acceptance Requirement

A.) 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.

The following are newly announced features and models on the specified models of the IBM System Storage 4957 machine type:

Description	Model number	Feature numbers	Initial / MES / Both / Support	CSU	RP MES
IBM COS Accesser A10	A10		Both	Yes	
IBM COS Controller Node C10	C10		Both	Yes	
IBM COS Small JBOD Chassis	J10		Both	Yes	
IBM COS Manager M10	M10		Both	Yes	
IBM COS Medium JBOD Chassis	J11		Both	Yes	
IBM COS Large JBOD Chassis	J12		Both	Yes	
TAA Compliance	A10	0983	Initial	N/A	No
Shipping and Handling NC	A10	AG00	Initial	N/A	No
Shipping and handling 1U	A10	AGYG	Initial	N/A	No
Intel Xeon Gold 6126 Processor	A10	AJ21	Both	No	No
6 x 16 GB 2666 DIMM	A10	AJ22	Both	No	No
SFP+	A10	AJ5L	Both	Yes	No
480 GB SSD	A10	AJ5R	Initial	N/A	No
TAA Compliance	C10	0983	Initial	N/A	No
Shipping and Handling NC	C10	AG00	Initial	N/A	No
Shipping and	C10	AGYG	Initial	N/A	No

Description	Model number	Feature numbers	Initial / MES / Both / Support	CSU	RP MES
handling 1U					
Intel Xeon Silver 4110 Processor	C10	AJ20	Both	No	No
6 x 16 GB 2666 DIMM	C10	AJ22	Both	No	No
SFP+	C10	AJ5L	Both	Yes	No
480 GB SSD	C10	AJ5R	Initial	N/A	No
HBA Controller for Data Drives	C10	AJ5V	Initial	N/A	No
TAA Compliance	J10	0983	Initial	N/A	No
Shipping and Handling NC	J10	AG00	Initial	N/A	No
Shipping and handling 2U	J10	AGYH	Initial	N/A	No
4TB Enterprise HDD	J10	AJ61	Both	Yes	No
8TB Enterprise HDD	J10	AJ63	Both	Yes	No
12TB Enterprise HDD	J10	AJ67	Both	Yes	No
TAA Compliance	J11	0983	Initial	N/A	No
Shipping and Handling NC	J11	AG00	Initial	N/A	No
Shipping and handling 4U	J11	AGYJ	Initial	N/A	No
4TB Enterprise HDD	J11	AJ69	Both	Yes	No
8TB Enterprise HDD	J11	AJ6B	Both	Yes	No
12TB Enterprise HDD	J11	AJ6D	Both	Yes	No
TAA Compliance	J12	0983	Initial	N/A	No
Shipping and Handling NC	J12	AG00	Initial	N/A	No
Shipping and	J12	AGYJ	Initial	N/A	No

Description	Model number	Feature numbers	Initial / MES / Both / Support	CSU	RP MES
handling 4U					
4TB Enterprise HDD	J12	AJ69	Both	Yes	No
8TB Enterprise HDD	J12	AJ6B	Both	Yes	No
12TB Enterprise HDD	J12	AJ6D	Both	Yes	No
TAA Compliance	M10	0983	Initial	N/A	No
Shipping and Handling NC	M10	AG00	Initial	N/A	No
Shipping and handling 1U	M10	AGYG	Initial	N/A	No
Intel Xeon Silver 4110 Processor	M10	AJ20	Both	No	No
6 x 16 GB 2666 DIMM	M10	AJ22	Both	No	No
SFP+	M10	AJ5L	Both	Yes	No
960 GB SSD	M10	AJ5S	Initial	N/A	No
RAID Controller for Manager	M10	AJ5U	Initial	N/A	No
Utility model indicator	M10	AJE0	Initial	N/A	No
Variable Usage 1TB/ month	M10	AJE1	MES	Yes	No
Variable Usage 10TB/ month	M10	AJE2	MES	Yes	No
Variable Usage 100TB/ month	M10	AJE3	MES	Yes	No
No Ship MES	M10	AQQQ	MES	Yes	No

The following are newly announced features and models on the specified models of the IBM System Storage 4958 machine type:

Description	Model number	Feature numbers	Initial / MES / Both / Support	CSU	RP MES
IBM COS Accesser A10	A10		Both	Yes	

Description	Model number	Feature numbers	Initial / MES / Both / Support	CSU	RP MES
IBM COS Controller Node C10	C10		Both	Yes	
IBM COS Small JBOD Chassis	J10		Both	Yes	
IBM COS Manager M10	M10		Both	Yes	
IBM COS Medium JBOD Chassis	J11		Both	Yes	
IBM COS Large JBOD Chassis	J12		Both	Yes	
TAA Compliance	A10	0983	Initial	N/A	No
Shipping and Handling NC	A10	AG00	Initial	N/A	No
Shipping and handling 1U	A10	AGYG	Initial	N/A	No
Intel Xeon Gold 6126 Processor	A10	AJ21	Both	No	No
6 x 16 GB 2666 DIMM	A10	AJ22	Both	No	No
SFP+	A10	AJ5L	Both	Yes	No
480 GB SSD	A10	AJ5R	Initial	N/A	No
TAA Compliance	C10	0983	Initial	N/A	No
Shipping and Handling NC	C10	AG00	Initial	N/A	No
Shipping and handling 1U	C10	AGYG	Initial	N/A	No
Intel Xeon Silver 4110 Processor	C10	AJ20	Both	No	No
6 x 16 GB 2666 DIMM	C10	AJ22	Both	No	No
SFP+	C10	AJ5L	Both	Yes	No
480 GB SSD	C10	AJ5R	Initial	N/A	No
HBA Controller for Data Drives	C10	AJ5V	Initial	N/A	No
TAA Compliance	J10	0983	Initial	N/A	No

Description	Model number	Feature numbers	Initial / MES / Both / Support	CSU	RP MES
Shipping and Handling NC	J10	AG00	Initial	N/A	No
Shipping and handling 2U	J10	AGYH	Initial	N/A	No
4TB Enterprise HDD	J10	AJ61	Both	Yes	No
8TB Enterprise HDD	J10	AJ63	Both	Yes	No
12TB Enterprise HDD	J10	AJ67	Both	Yes	No
TAA Compliance	J11	0983	Initial	N/A	No
Shipping and Handling NC	J11	AG00	Initial	N/A	No
Shipping and handling 4U	J11	AGYJ	Initial	N/A	No
4TB Enterprise HDD	J11	AJ69	Both	Yes	No
8TB Enterprise HDD	J11	AJ6B	Both	Yes	No
12TB Enterprise HDD	J11	AJ6D	Both	Yes	No
TAA Compliance	J12	0983	Initial	N/A	No
Shipping and Handling NC	J12	AG00	Initial	N/A	No
Shipping and handling 4U	J12	AGYJ	Initial	N/A	No
4TB Enterprise HDD	J12	AJ69	Both	Yes	No
8TB Enterprise HDD	J12	AJ6B	Both	Yes	No
12TB Enterprise HDD	J12	AJ6D	Both	Yes	No
TAA Compliance	M10	0983	Initial	N/A	No
Shipping and Handling NC	M10	AG00	Initial	N/A	No
Shipping and	M10	AGYG	Initial	N/A	No

Description	Model number	Feature numbers	Initial / MES / Both / Support	CSU	RP MES
handling 1U					
Intel Xeon Silver 4110 Processor	M10	AJ20	Both	No	No
6 x 16 GB 2666 DIMM	M10	AJ22	Both	No	No
SFP+	M10	AJ5L	Both	Yes	No
960 GB SSD	M10	AJ5S	Initial	N/A	No
RAID Controller for Manager	M10	AJ5U	Initial	N/A	No
Utility model indicator	M10	AJE0	Initial	N/A	No
Variable Usage 1TB/ month	M10	AJE1	MES	Yes	No
Variable Usage 10TB/ month	M10	AJE2	MES	Yes	No
Variable Usage 100TB/ month	M10	AJE3	MES	Yes	No
No Ship MES	M10	AQQQ	MES	Yes	No

CSU = Customer setup

RP MES = Returnable parts MES

N/A = Not applicable

Alternative service

ICA Warranty Service Upgrade

Machine type-model	IOR IBM same day On-site Repair (IOR, 24 x 7)
4957-A10	
4957-C10	
4957-M10	
4957-J10	
4957-J11	
4957-J12	
4958-A10	
4958-C10	
4958-M10	
4958-J10	
4958-J11	
4958-J12	

ICA Maintenance

Machine type-model	Feature	IOR IBM same day On-site Repair (IOR, 24 x 7)	IOR IBM next business day On-site repair (IOR, 9 x 5)
4957-A10			
4957-C10			
4957-M10			
4957-J10			
4957-J10	AJ61		
4957-J10	AJ63		
4957-J10	AJ67		
4957-J11			
4957-J11	AJ69		
4957-J11	AJ6B		
4957-J11	AJ6D		
4957-J12			
4957-J12	AJ69		
4957-J12	AJ6B		
4957-J12	AJ6D		
4958-A10			
4958-C10			
4958-M10			
4958-J10			
4958-J10	AJ61		
4958-J10	AJ63		
4958-J10	AJ67		
4958-J11			
4958-J11	AJ69		
4958-J11	AJ6B		
4958-J11	AJ6D		
4958-J12			
4958-J12	AJ69		
4958-J12	AJ6B		
4958-J12	AJ6D		

ServiceElect (ESA) charges

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

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IBM United States

Corrections

(Corrected on June 8, 2019)

The supported configuration lists for each model in the Description section have been updated.