

IBM optical solutions providing low cost, high capacity, direct access storage – enhanced with IBM 5.2GB (8X) Extended Multifunction Optical Drives. The evolution continues . . .



Enhanced 3995 Optical Library C-Series for the RS/6000

Highlights

- Features IBM's first-in-the-industry extended multifunction drives that include support for Permanent WORM, Magneto-Optical (MO) Rewritable and CCW WORM optical cartridges
- Enhanced with 5.25 inch industry standard 5.2GB (8X) internal optical drives doubling the capacity of previous 3995 C-Series Optical Libraries
- Provides five models for RISC System/6000 SCSI-2 attachment to meet your individual storage capacity requirements
- Delivers from 104GB to 1341GB (1.341TB) of low cost, online optical storage capacity
- Allows configuration flexibility by providing for additional internal optical drives without loss of storage capacity
- Investment protection through continued access to information on optical media created on any previous generation 3995 Optical Library
- Combines capacity, performance, flexibility, and technology to deliver the best optical storage solution available

World class flexibility

The enhanced IBM Optical Library C-Series models provide low cost, high capacity, direct access storage to enable innovative, new business applications for your RISC System/6000 environment. Featuring IBM's 5.2GB industry-standard 5.25 inch optical drives, these enhanced 3995 Optical Library C-Series models deliver new levels of capacity at a reduced cost per megabyte.

With these optical library models, IBM has continued to enhance its innovative, first-in-the-industry extended multifunction optical drives. This technology provides support for Permanent Write-Once, Read-Many (WORM), Magneto-Optical (MO) rewritable, and Continuous Composite Write-Once (CCW) WORM using industry-standard 5.25 inch optical cartridges. All three technologies can be used within a single library, offering the most flexibility in meeting specific business requirements.

Low cost, high capacity

Five models are available, ranging from 104GB to 1341GB (1.341TB) of online storage capacity, providing the granularity required for a wide range of business solutions. Plus, the 540GB capacity model is expandable to 811GB.

With a doubling of capacity over the previous generation of optical technology the enhanced IBM 3995 SCSI models offer optical storage solutions at a significantly lower cost per megabyte.

Enhanced performance

The 3995 C-Series Optical Library family has previously delivered improved optical drive data rates and faster cartridge exchange times. Most models offer a dual-gripper picker on the auto-changer and optional additional internal drives for faster performance.

Broad range of solutions

The enhanced 3995 is ideal for RS/6000 applications requiring centralized online storage with moderate performance. IBM's extended multifunction support is designed to satisfy auditing and/or legal



requirements for unalterable, permanent retention of data. The 3995 also provides the flexibility of rewritable and CCW WORM optical storage.

Industry-leading software solutions for the 3995 are available from IBM, IBM Business Partners, and independent solution providers. This broad range of applications allows you to select the solution which best meets your business needs.

Software solutions need to provide the drivers and library manager for these new IBM optical libraries. Software requirements for SCSI direct-attached host systems may vary depending upon host system. Refer to your host system and application documentation for requirements.

IBM applications for the 3995 include IBM VisualInfo for AIX and OnDemand for AIX, both of which are members of IBM's Electronic Document Management Suite of solutions (EDMSuite), ADSTAR Distributed Storage Manager (ADSM) for AIX, and IBM Digital Library.

Designed for the RS/6000, POWERparallel SP and PC environments

The 3995 SCSI models are designed for attachment to servers, workstations, and personal computers which support a SCSI-2 interface, including the IBM RS/6000, POWERparallel SP, and personal computer (PC) systems.

Industry standards

The enhanced 3995 supports 5.25 inch optical cartridges which are compatible with the industry standards listed below:

- ISO/IEC DIS 15286 information technology – 130mm optical disk cartridges – capacity: 5.2GB per cartridge – for information interchange
- ISO/IEC 15486: 1998 data interchange on 130mm optical disk cartridges of type WORM (Write-Once, Read-Many) using irreversible effects – capacity: 2.6GB per cartridge
- ISO/IEC 14517: 1996 130mm optical disk cartridges for information interchange – capacity: 1.3GB per cartridge
- ISO/IEC 13549: 1993 data interchange on 130mm optical disk cartridges – capacity: 1.3GB per cartridge



Industry-Standard 5.25 inch Optical Media Cartridges with 5.2GB capacity

Optical Disk Cartridges

The following types of 5.25 inch optical disk cartridges are supported in the Enhanced 3995 C-Series RISC System/6000 attached optical libraries. Please note that the application software used with the 3995 may have media-type support restrictions.

Capacity ¹	Magneto-Optical (MO) Rewritable	Permanent WORM	CCW WORM
5.2GB (2048 Bytes/Sector)	Read/Write	Read/Write	Read/Write
4.8GB (1024 Bytes/Sector)	Read/Write	N/A	Read/Write
4.1GB (512 Bytes/Sector)	Read/Write	N/A	Read/Write
2.6GB (1024 Bytes/Sector)	Read/Write	Read/Write	Read/Write
2.3GB (512 Bytes/Sector)	Read/Write	N/A	Read/Write
1.3GB (1024 Bytes/Sector)	Read	Read	N/A
1.19GB (512 Bytes/Sector)	Read	N/A	N/A
650MB (1024 Bytes/Sector)	Read	Read	N/A
595MB (512 Bytes/Sector)	Read	N/A	N/A

- ISO/IEC 11560:1992 information interchange on 130mm optical disk cartridges using the magneto-optical effect, for write once, read multiple functionality
- ISO/IEC 10089: 1991 130mm rewritable optical disk cartridge for information interchange.

Installation

These 3995 Optical Libraries are physically installed by IBM personnel and installation is estimated to take from 2 to 4 hours.

IBM warranty

The enhanced 3995 C-Series models are warranted with IBM's limited one year warranty. This warranty service is on-site customer service, 24 hours a day, 7 days a week.

Media

IBM optical media can be ordered via feature codes, from IBM Media or Supplies Distribution, or from authorized dealers. To order IBM media and supplies in the United States, call toll-free 1-888-IBM-MEDIA (1-888-426-6334) today.

Let us tell you more

For further information on the IBM Enhanced 3995 Optical Library C-Series models, contact your IBM representative or IBM Business Partner. In the U.S. or Canada you can also call IBM Direct: 1-800-IBM-CALL (1-800-426-2255). Internet: www.ibm.com/storage

¹ Unformatted capacity

IBM Enhanced 3995 Optical Library C-Series at a glance

Model	C60	C62	C64	C66	C68
Maximum Storage Capacity (unformatted)	104GB	270GB	540GB	811GB	1341GB (1.341TB)
Maximum Cartridge Slots	20	52	104	156	258
Internal Drives	1 or 2	2	2 or 4	4 or 6	4 or 6
Performance					
Average Cartridge Move Time	2.8 seconds	2.6 seconds	2.8 seconds	2.8 seconds	31 seconds
Picker Type on Autochanger	Single-Gripper	Dual-Gripper	Dual-Gripper	Dual-Gripper	Dual-Gripper
Reliability					
Mean Swaps Between Failure	1,000,000	2,000,000	2,000,000	2,000,000	2,000,000
Mean Time to Repair	30 minutes	30 minutes	30 minutes	30 minutes	30 minutes
Dimensions					
Height-mm (in)	457 (18 in.)	991 (39 in.)	1029 (40.5 in.)	1029 (40.5 in.)	1480 (58.25 in.)
Width-mm (in) ²	216 (8.5 in.)	355 (14 in.)	813 (32 in.)	813 (32 in.)	813 (32 in.)
Depth-mm (in)	737 (29 in.)	737 (29 in.)	762 (30 in.)	762 (30 in.)	762 (30 in.)
Weight-kg (lbs) (without media) ³	28 (61 lb.)	69 (152 lb.)	120 (265 lb.)	125 (275 lb.)	193 (425 lb.)
Nominal Power Consumption (watts)					
Assumes Maximum Drive Configuration	80 watts (275 BTU/Hr)	90 watts (310 BTU/Hr)	140 watts (475 BTU/Hr)	180 watts (614 BTU/Hr)	180 watts (614 BTU/Hr)
Electrical All Models					
Line Voltage (V ac)	100-127 Nominal or 200-240 Nominal				
Line Frequency (Hz)	50-60				
Environmental Specifications (operating) All Models					
Temperature	10°C to 38°C (50°F to 100.4°F)				
Relative Humidity	8 to 80%				
Maximum Wet Bulb Temperature	25.8°C (78.4°F)				
Hardware Interface⁴					
Single-Ended SCSI Interface:	SCSI-2 High-performance External Controller (#2410 or #2831) or SCSI-2 Fast/Wide Adapter/A (#2408, #2412, #2413, #2416, #6207, or #6209)				
Differential SCSI Interface:	SCSI-2 Differential High-performance External Controller (#2420) or SCSI-2 Differential Fast/Wide Adapter/A (#2409, #2414, #2413, #2416, #6207, or #6209)				
HACMP SCSI Connection	A quantity of two (2) each of FC 7217 or FC 7218 are required for HACMP implementation				
Software⁵					
An application that provides optical library management functions and drivers for the C6X Libraries is required and needs to be acquired separately. The selected application may have its own prerequisites and/or dependencies.					
Year 2000 Year 2000 Ready ⁶					
Warranty IBM limited one year warranty					
Upgrade Options					
3995 C-Series Models to Enhanced 3995 C-Series models w/5.2GB	Yes				
Model C64 to Model C66 field upgrades available	Yes				

Optical Drive Performance

Rotation Speed	3000 RPM
Average Seek – MO Rewritable or CCW	25 ms
Average Seek – Permanent WORM	120 ms
Average Latency	10 ms
Average Load Time (including spin-up to ready)	5.5 sec
Average Unload Time (including spin-down)	3 sec

Data Transfer Rate

Sustained	2.3 to 4.6MB/sec
Burst (synchronous)	10MB/sec
Burst (asynchronous)	6MB/sec

Buffer Memory Capacity

Buffer Memory Capacity	2MB
Reliability	
Mean Loads Between Failure (MLBF)	1,000,000
Mean Time Between Failure (MTBF)	100,000 hours

² The width at the base, with stabilizers is 464mm (18.25 in.) for Model C62.

³ The actual weight of the optical library will vary depending on the number of internal optical drives.

⁴ These models, with a single-ended SCSI-2 interface, are not supported on the 900-series POWERserver. A SCSI-2 differential interface is required. Some of the RS/6000 SCSI features may no longer be available.

⁵ RISC System/6000 or application software may require an AIX/6000 selective enhancement installation. These 3995 Models do not include device drivers or Optical Library Management Software. These need to be obtained separately. See you IBM Representative for a list of IBM and non-IBM software that support these enhanced 3995 C-Series Optical Libraries.

⁶ When used in accordance with its associated documentation, it is capable of correctly processing, providing, and/or receiving date data within and between the 20th and 21st centuries, provided all other products (for example, software, hardware, and firmware) used with the product properly exchange accurate date data with it.



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