



# IBM Half-High LTO Generation 6 SAS Tape Drive offers a reliable, economical, and versatile tape backup subsystem with removable media cartridge, and an RDX 1.5 TB Cartridge

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## At a glance

The Half-High LTO™ Generation 6 SAS Tape Drive brings performance and capacity in a 5.25-inch, half-high form factor to entry through enterprise System x® and BladeCenter® systems. Key features include:

- Up to 2.5 TB native capacity, and up to 6.2 TB in compressed mode
- Up to 160 Mbps native backup rate, and up to 400 Mbps in compressed mode
- SAS interface
- Support from leading operating systems and popular backup software
- Backward compatibility: read and write to LTO 5, read only to LTO 4

## Overview

### **IBM Half-High LTO Generation 6 SAS Tape Drive Option (00D8924)**

The IBM® Half-High LTO Generation 6 SAS Tape Drive is a high-performance, high-capacity data-storage device that is designed to back up and restore open-systems applications. The tape drive is available as an internal device or an external device. It is the sixth generation in the Ultrium™ series of products, and is available with a Serial Attached SCSI interface (SAS). This model is the Linear Tape-Open™ ( LTO ) IBM Ultrium 6 Half-High Tape Drive.

The new IBM LTO Generation 6 SAS Tape Drive maintains the competitive total cost of ownership (TCO) of LTO tape storage. The SAS interface supports internal plug-and-play capability with select System x systems, as well as external attachment in IBM's supported external tape drive enclosure to System x and BladeCenter systems.

Key messages:

- SAS interface allowing for direct internal connections with select System x and external attach to BladeCenter systems
- Form factor: 5.25-inch half-high tape drive

Features and functions:

- Native storage capacity of 2.5 TB per cartridge (6.2 TB at 2.5:1 compression)

- Maximum native data transfer rate of up to 160 Mbps, 400 Mbps compressed
- Burst data transfer rate of up to 600 MB per second
- 512 MB read-and-write cache
- Support for encryption on Ultrium 6 and Ultrium 5 tape cartridges
- Single-character display (SCD) operator panel

Service and support:

- Warranty internal option: One-year limited warranty<sup>1</sup>

An IBM part or feature installed during the initial installation of an IBM machine is subject to a full warranty effective on the date of installation of the machine. 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 effective on its date of installation. Unless specified otherwise, the warranty period, type of warranty service, and service level of a part or feature are the same as those for the machine in which it is installed.

### **IBM LTO Gen 6 Media Cartridge (46W6589 and 00D8933)**

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The tape drive uses the IBM LTO Ultrium 2.5 TB Data Cartridge and is compatible with the cartridges of its predecessor, the IBM Half-High LTO Ultrium 5 Tape Drive. The drive performs the following functions:

- Reads and writes Generation 6 cartridges to Generation 6 format
- Reads and writes Generation 5 cartridges to Generation 5 format
- Reads Generation 4 cartridges

The drive reads tapes that have been written by other licensed Ultrium 6 drives. It also writes to tapes that can be read by other licensed Ultrium 5 drives.

Service and support:

The LTO Gen 6 cartridge has a limited one-year warranty provided by IBM Storage Media. If any defect in material or manufacture appears within one year of the date of original purchase of this product, it will be replaced or the purchase price refunded.

Contact the seller of the IBM Data Storage products or visit us on the web at

<http://www.ibm.com/storage/media>

Within the US and Canada, call toll-free 888-426-6334 (or 888-IBM-MEDIA) to receive warranty service or product information.

### **IBM RDX 1.5 TB Cartridge Option (00D8935)**

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The new IBM RDX USB 3.0 disk backup solution is designed to reliably and cost-effectively help protect your business's valuable assets. It uses a rugged removable disk cartridge and docking station to provide an easy-to-use, highly secure, fast, and portable answer to your data protection concerns.

IBM RDX features a high-capacity, shock-resistant 1.5 TB cartridge, making your storage options extremely flexible. The RDX USB 3.0 docking stations are offered in external stand-alone and internal 5.25-inch half height units to seamlessly integrate into your System x or BladeCenter environment. The USB interface ensures a simple installation while providing high performance, with sustained transfer rates of up to 96 Mbps.

Features and functions:

- Cost-effective and highly secure removable disk technology
- Up to 96 Mbps native USB transfer rate
- Up to 1.5 TB native capacity
- Hot-plug capability
- Internal form factor of 5.25-inch, convertible to 3.5-inch form factor in certain configurations

Service and support:

The RDX 1.5 TB cartridge has a limited one-year warranty provided by IBM Storage Media. If any defect in material or manufacture appears within one year of the date of original purchase of this product, it will be replaced or the purchase price refunded.

Contact the seller of the IBM Data Storage products or visit us on the web at

<http://www.ibm.com/storage/media>

Within the US and Canada, call toll-free 888-426-6334 (or 888-IBM-MEDIA) to receive warranty service or product information.

<sup>1</sup> For information on the IBM Statement of Limited Warranty, visit

<http://www-947.ibm.com/support/entry/portal/wlup>

Alternatively, this information is available through your IBM representative or reseller. Copies are available upon request.

With respect to on-site service, IBM sends a technician after attempting to diagnose and resolve the problem remotely.

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## Key prerequisites

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- A supported System x or BladeCenter server that supports SAS drives with an available PCI Express® expansion slot
- A dedicated SAS adapter with internal and external connectors

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## Planned availability date

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January 25, 2013:

- IBM Half-High LTO Gen 6 SAS Tape Drive (00D8924)
- IBM LTO Gen 6 Media Cartridge (5 pack) (00D8933)
- IBM LTO Ultrium Gen 6 Single Media (46W6589)
- IBM RDX 1.5 TB Cartridge (00D8935)

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## Description

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### IBM Half-High LTO Gen 6 SAS Tape Drive

The IBM Half-High LTO Generation 6 SAS Tape Drive is a high-performance, high-capacity data-storage device that is designed to back up and restore open-systems applications. The tape drive is available as an internal device or an external device.

A drive with a SAS interface can be linked directly to controllers. SAS is a performance improvement over traditional SCSI because SAS enables multiple devices (up to 128) of different sizes and types to be connected simultaneously with thinner and longer cables; its full-duplex signal transmission supports 6.2 Gbps SAS drives and can be hot-plugged.

This drive can be used with the following cleaning cartridge and media:

- IBM LTO Cleaning Cartridge Option
- IBM LTO Ultrium Gen 6 Single Media

### **IBM RDX 1.5 TB Cartridge Option (00D8935)**

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## **Product number**

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Option (SEOs)

Description	SEO number
IBM Half High LTO Generation 6 SAS Tape Drive	00D8924
IBM LTO 6 Media 5 Pack	00D8933
IBM LTO Ultrium Gen 6 Single Media	46W6589
IBM RDX 1.5 TB Cartridge	00D8935

The following features are already announced for the 3331 machine type:

Description	MT	Model	Feature
IBM Half High LTO Ultrium Gen 6 Internal SAS Tape Drive	3331	HC1	A3S3
IBM LTO Ultrium Gen 6 Media 5 Pack	3331	HC1	A3S4
IBM LTO Ultrium Gen 6 Single Media	3331	HC1	A3S6
IBM RDX 1.5TB Cartridge	3331	HC1	A3S5

### **Business Partner information**

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

<https://www.ibm.com/partnerworld/mem/sla.jsp?num=112-227>

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## **Publications**

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Publications are shipped with the announced product.

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

<http://publib14.boulder.ibm.com/infocenter/systems>

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### **IBM Publications Center Portal**

<http://www.ibm.com/shop/publications/order>

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, as well as payment options via credit card. A large number of publications are available online in various file formats, which can currently be downloaded free of charge.

#### **Displayable softcopy publications**

None

#### **Source file publications**

None

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## **Services**

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### **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 visit

<http://www.ibm.com/services/>

For details on available IBM Business Continuity and Recovery Services, contact your IBM representative or visit

<http://www.ibm.com/services/continuity>

For details on education offerings related to specific products, visit

<http://www.ibm.com/services/learning/index.html>

Select your country, and then select the product as the category.

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### **System x and BladeCenter support services**

#### ***Recommended core technical support***

When you buy IBM System x technology, include the support services you need -- to help keep both your hardware and software working for you, day after day, at peak performance. It's your first step toward helping to protect your investment and sustain high levels of system availability. We offer service-level and response-time options to fit your business needs. And we'll help you get started with a core support package that includes:

- **Continuous system monitoring**

Electronic monitoring that helps speed up problem-solving with automated, early detection of potential problems and system errors.

- **Hardware maintenance**

World-class remote and on-site hardware problem determination and repair services.

- **Software technical support**

Access to help line calls for fast, accurate answers to your questions during installation and throughout ongoing operations.

For more information, visit

<http://www.ibm.com/servers/eserver/xseries/services.html>

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## Technical information

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### **Specified operating environment**

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#### ***Physical specifications***

#### **IBM Half-High LTO Generation 6 SAS Tape Drive (00D8924)**

- Approximate height: 39 mm (1.54 in)
- Approximate width: 146 mm (5.76 in)
- Approximate depth: 210 mm (8.28 in)
- Approximate weight: 3.2 kg (7.0 lb)

#### **Shipping dimensions**

- Approximate height: 69 mm (2.72 in)
- Approximate width: 176 mm (6.94 in)
- Approximate depth: 240 mm (9.50 in)
- Approximate weight: 3.8 kg (8.3 lb)

#### **Electrical specifications:**

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- 100 to 240 (nominal) V ac; 50 Hz to 60 Hz; single phase
- Line current 100 V ac, .48 A; 240 V ac, .20 A

#### **Agency approvals**

- FCC Class A
- IEC 950
- TUV
- VDE
- UL
- cUL or CSA
- NOM
- GOST

#### **Standards**

None

## **Operating environment**

Temperature:

- - 10° to 40°C (50° to 104°F) at 0 to 914 m (0 to 3,000 ft)
- - 10° to 40°C (50° to 104°F) at 3048 m (10,000 ft)

Relative humidity: 20% to 80% (noncondensing)

Maximum altitude: 12,192 m (40,000 ft)

## **Hardware requirements**

The tape drives must be installed in a selected System x server system.

## **Software requirements**

The IBM Half-High LTO Generation 6 SAS Tape Drive supports most major operating systems.

## **Compatibility**

For latest compatibility information, visit

<http://www-03.ibm.com/systems/info/x86servers/serverproven/compat/us/>

**Note:** Some configurations may not be compatible.

## **Limitations**

None

## **User group requirements**

This announcement satisfies or partially satisfies the requirements from one or more of the worldwide user group communities. Groups include COMMON, COMMON Europe, Guide Share Europe (GSE), InterAction (Australia/New Zealand), Japan Guide Share (JGS), and SHARE Inc.

## **Planning information**

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### **Customer responsibilities**

The IBM Half-High LTO Generation 6 SAS Tape Drive product is designated as customer setup. Customer installation instructions are shipped with each option part.

### **Cable orders**

None

### **Installability**

The IBM Half-High LTO Gen 6 Tape Drive requires about 20 minutes for installation.

Installation includes unpacking, setting up, and powering on.

### **Packaging**

#### **HH LTO Gen 6 SAS Tape Drive for IBM System x and BladeCenter**

Product	Package description	Boxes
Half-High LTO Gen 6	Option Unit Box	1

## SAS Tape Drive

### Contents:

LTO tape drive  
Quick install guide  
CD with pub  
Important Notices Flyer

The Half-High LTO Gen 6 Tape Drive is shipped as a single package. Other items are in zipped bags.

### **Retail only**

#### *Packaging dimensions/weight*

- Single box (HxDxW):
  - Approximate height: 69 mm (2.72 in)
  - Approximate width: 176 mm (6.94 in)
  - Approximate depth: 240 mm (9.50 in)
- Approximate weight: 3.8 kg (8.3 lb)

**Note:** All measurements are approximate.

### **Supplies**

**For end users:** IBM Half-High LTO Generation 6 SAS Tape Drive can be purchased through dealers.

### **Security, auditability, and control**

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It is a customer's responsibility to ensure that the server is secure to prevent sensitive data from being removed.

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

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## **IBM Electronic Services**

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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, visit

<http://www.ibm.com/support/electronic>

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## Terms and conditions

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### ***Field-installable features***

Yes

### ***Warranty period***

One year for the internal drive options.

- Warranty period: One year
- Service type (IOR/IOE/CCE/CCR): CRU
- Maintenance agreement: No
- Optional upgrade: No

An IBM part or feature installed during the initial installation of an IBM machine is subject to a full warranty effective on the date of installation of the machine. 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 effective on its date of installation. 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.

### ***Customer setup***

Yes

### ***Machine code***

No license terms apply.

The following parts are designated as Tier 1 FRUs:

FRUs - Internal tape drive (49Y9898)

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## Pricing

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For current prices, contact IBM at 888-Shop-IBM (746-7426) or visit

<http://www-03.ibm.com/systems/x/>

To locate the web price, search on the feature number in the Search field.

Description	Part number
IBM Half High LTO Gen 6 SAS Tape	00D8924
LTO GEN 6 Media Cartridge (5 pack)	00D8933
IBM LTO Ultrium Gen 6 Single Media	46W6589
IBM RDX 1.5 TB Cartridge	00D8935

Field install only	Plant install only	MES removal	Cables required
N	N	N	N

If field installed on a purchased machine, parts removed or replaced become the property of IBM and must be returned.

The following features are already announced for the 3331 machine type

Description	Model number	Feature number	Initial/ MES/ Both support	RP CSU MES
IBM Half High LTO Ultrium Gen 6 Internal SAS Tape Drive	HC1	A3S3	MES	Yes
IBM LTO Ultrium Gen 6 Media 5 Pack	HC1	A3S4	MES	Yes
IBM RDX 1.5TB Cartridge	HC1	A3S5	MES	Yes
IBM LTO Ultrium Gen 6 Single Media	HC1	A3S6	MES	Yes

### **Trademarks**

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For the most current information regarding IBM products, consult your IBM representative or reseller, or visit the IBM worldwide contacts page

<http://www.ibm.com/planetwide/us/>