



# IBM TS2900 Tape Autoloader supports LTO Ultrium 7 SAS Half-high Tape Drives

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## At a glance

IBM<sup>®</sup> TS2900 Tape Autoloader is designed to address capacity, data protection, reliability, availability, and affordability. It is a low-entry tape storage solution incorporating half-high LTO<sup>™</sup> Ultrium<sup>™</sup> tape technology. IBM TS2900 Tape Autoloader Model S7H offers:

- IBM Ultrium 7 Tape Drive increased data transfer rate of up to 300 MB/sec native
- Support for LTO Generation 7 media specification tape cartridge compressed capacity of up to 15 TB with 2.5 to 1 compression per cartridge
- A 6 Gbps SAS interface attachment
- Support for media partitioning and self-describing tape
- Support for encryption capabilities with IBM Security Key Lifecycle Manager
- An entry-level and compact tape library that is designed for high capacity, high performance, and high reliability
- One removable magazine providing nine cartridge slots, including a single I/O station
- A bar code reader that is standard and enables operation of the TS2900 in sequential or random access mode
- Remote management capabilities to enable remote administration of the TS2900 through a web interface
- Optional features such as rack mount kits, desktide covers, and additional cartridge magazines
- Adherence to LTO Generation 7 media specifications

## Order now

For ordering, contact your IBM representative or an IBM Business Partner. For more information, contact the Americas Call Centers at: 800-IBM-CALL (426-2255).

Reference: YE001

## Overview

IBM TS2900 Tape Autoloader (machine type 3572) offers IBM tape reliability, density, and performance for entry-level and compact tape libraries at a cost-effective price in open system environments. The TS2900 is part of the IBM tape library family of offerings.

TS2900 Tape Autoloader, with a capacity of nine cartridges employing IBM-patented high density (HD) slot technology, is a rack-mountable or deskside unit that contains a single IBM LTO Ultrium 7 Half-high (HH) SAS Tape.

TS2900 Tape Autoloader with the IBM Ultrium 7 HH SAS Tape Drive is designed to support the LTO Generation 7 native data rate performance of up to 300 MB/sec compared to the IBM LTO Ultrium 6 HH Tape Drive at up to 160 MB/sec native data transfer rate. The TS2900 Tape Autoloader supports the LTO Generation 7 media specifications for LTO tape drive technology and LTO Generation 7 media with a compressed capacity of up to 15 TB with 2.5 to 1 compression (up to 6 TB native capacity) compared to previous LTO 6 compressed capacity of up to 6.25 TB with 2.5:1 compression (up to 2.5 TB native capacity) per tape cartridge.

TS2900 Tape Autoloader Model S7H can also read and write to Ultrium 6 cartridges, and read Ultrium 5 cartridges. The Ultrium 7 Tape Drive is encryption-capable and designed to support library managed encryption.

The TS2900 comes standard with a bar code reader and a removable magazine to provide nine cartridge slots, including a single I/O station. It has remote management capabilities to enable remote administration of the TS2900 through a web interface. The TS2900 can be configured to run in sequential (autoloader) or random (library) access mode. Optional features available for the TS2900 include rack-mount kits, deskside covers, and additional cartridge magazines.

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## Key prerequisites

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Appropriate levels of host software are required to attach the TS2900 Tape Library with IBM LTO Ultrium 7 to a wide range of environments, including select IBM Power Systems™, IBM System p, IBM z Systems™ (zLinux), and other servers running Linux™ and Microsoft™ Windows™ operating system environments with SAS interface support. Refer to the [Technical information](#) section for details.

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## Planned availability date

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October 23, 2015

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## Description

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IBM TS2900 Tape Autoloader (machine type 3572) is an entry-level, compact 1U tape library (autoloader) that is designed to offer IBM tape reliability, density, and performance for entry-level and compact tape libraries at a cost-effective price.

The TS2900 Tape Autoloader, with a capacity of nine cartridges and employing patented IBM HD slot technology, is a rack-mountable or deskside unit that contains either a single IBM LTO Ultrium 7 HH SAS Tape Drive (Model S7H), an IBM LTO Ultrium 6 HH SAS Tape Drive (Model S6H), or an IBM LTO Ultrium 5 HH SAS Tape Drive (Model S5H) in a 1U form factor height.

The TS2900 is suitable for use in network-attached storage implementations, such as backups and mass storage archives where multi-terabyte capacities are required. Storage and tape management is provided by software such as IBM Spectrum Protect™ and other compatible software offerings.

The TS2900 Tape Autoloader includes:

- Ultrium 7 and Ultrium 6 tape drive encryption support, including Application Managed Encryption, System Managed Encryption, and Library Managed Encryption. Transparent LTO Encryption is enabled through a license key Encryption Key Manager for LTO Ultrium 7 and LTO Ultrium 6 SAS drives.

- A single I/O station to help support continuous library operations while importing and exporting media, with little or no disruption to library operation.
- Remote management capabilities to enable remote administration of the tape library through a web interface.
- One removable magazine that houses nine data cartridges to enable quick population of the tape library, as well as ease of storage for media. Additional magazines may be ordered as an option (feature number 8111).
- A standard bar code reader that enables operation of the TS2900 in sequential (autoloader) or random (library) access mode with labeled media. Labeled Ultrium 7 and Ultrium 6 media can be ordered through the 3589 LTO Ultrium media machine type. You can also order through IBM Media at 888-IBM-MEDIA (426-6334).
- Optional rack mount kits, desktide covers, and additional cartridge magazines.
- Increased performance for maximum tape drive throughput and LTO Generation 7 media native data rate performance of up to 300 MB/sec for IBM Ultrium 7 Tape Drives.
- Mixed media support, including IBM 7, 6, and 5 WORM media. IBM Ultrium 7 tape drives can read and write LTO Ultrium 7 Data Cartridges, read and write LTO Ultrium 6 Data Cartridges at original Ultrium 6 capacities, and also read LTO Ultrium 5 data cartridges with improved data rates.
- A 6 Gbps SAS attachment for connection to select selected IBM Power, IBM System p, and other Microsoft Windows and Linux servers, including HP and Sun Sparc servers.

LTO Generation 7 media specification compressed of up to 15 TB WORM tape cartridges are designed for applications such as archiving, data retention, and those applications requiring an audit trail, preventing the alteration or deletion of user data. IBM Ultrium WORM Tape Cartridges can be ordered as unique 3589 models with the following features:

- Color coding and prelabeling with the ability to specify a starting volume serial number
- Packaging in individual jewel cases or in bulk
- Cartridge memory built into every cartridge to enhance functionality and media reliability by storing access history and media performance information for use by the tape drive every time the cartridge is accessed
- Half-inch barium-ferrite tape with up to 6 TB WORM compressed capacity in a single cartridge

## Product preview

IBM intends to introduce IBM Spectrum Archive™ Single Drive Edition and IBM Spectrum Archive Library Edition support for LTO Ultrium 7 tape drives in the fourth quarter of 2015.

IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion. Information regarding potential future products is intended to outline our general product direction and it 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 our products remains at our sole discretion.

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## Product number

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Description	Machine type	Model	Feature number
TS2900 Tape Autoloader with LTO Ultrium 7	3572	S7H	

<b>Description</b>	<b>Machine type</b>	<b>Model</b>	<b>Feature number</b>
Half-high SAS Tape Drive			
SEO Options Routing	3572	S7H	0789 *
Admin SEO Trans. Code - 4	3572	S7H	0974 *
Admin SEO Trans. Code - 5	3572	S7H	0975 *
Admin SEO Trans. Code - 6	3572	S7H	0976 *
TAA Compliance	3572	S7H	0983 *
Storage Bid Machine Select	3572	S7H	0997 *
Hungary CHW Plant 9SH	3572	S7H	1764 *
Guad CHW Plant 9KQ	3572	S7H	1765 *
ISTC CHW 9K2	3572	S7H	1766 *
China Offload Routing Code	3572	S7H	1770 *
Capacity Sched Svc	3572	S7H	1772 *
Custom SLA Sched Svc	3572	S7H	1796 *
2.0 m SAS/Mini-SAS 1x Cable	3572	S7H	5402 *
2.0 m Mini-SAS/Mini-SAS 1x Cable	3572	S7H	5502 *
Transparent LTO Encryption	3572	S7H	5901 *
3572 Rack Mount Kit	3572	S7H	7006 *
3572 Deskside Covers	3572	S7H	7010 *
OEM - No IBM Logo	3572	S7H	7703 *
Ultrium Cleaning Cartridge L1 UCC	3572	S7H	8002 *
Consolidate Shipment	3572	S7H	8031 *
3572 Additional Magazine	3572	S7H	8111 *
Ultrium 4 Data Cartridges (5-pack)	3572	S7H	8405 *
Ultrium 5 Data Cartridges (5-Pack)	3572	S7H	8505 *
Ultrium 6 Data Cartridges (5-Pack)	3572	S7H	8605 *
Attached to Windows System	3572	S7H	9212 *
Attached to Linux System	3572	S7H	9215 *
Attached to i5/OS™ or OS/400 <sup>(R)</sup>	3572	S7H	9400 *
Attached to IBM AIX <sup>(R)</sup> System	3572	S7H	9600 *
2.8 m Power Cord 125V US/Canada	3572	S7H	9800 *

Description	Machine type	Model	Feature number
2.8 m Power Cord 250V France/ Germany	3572	S7H	9820 *
2.8 m Power Cord 250V Denmark	3572	S7H	9821 *
2.8 m Power Cord 250V UK/China	3572	S7H	9825 *
2.8 m Power Cord 250V Israel	3572	S7H	9827 *
2.8 m Power Cord 250V Switzerland	3572	S7H	9828 *
2.8 m Power Cord 250V S.Africa	3572	S7H	9829 *
2.8 m Power Cord 250V Italy	3572	S7H	9830 *
2.8 m Power Cord 250V Australia	3572	S7H	9831 *
2.8 m Power Cord 250V US/Canada	3572	S7H	9833 *
2.8 m Power Cord 250V Uruguay/ Argentina	3572	S7H	9834 *
2.8 m Power Cord 125V Taiwan	3572	S7H	9835 *
2.8 m Power Cord 250V China (PRC)	3572	S7H	9840 *
2.8 m Power Cord 250V Taiwan	3572	S7H	9841 *
2.8 m Power Cord 125V Japan	3572	S7H	9842 *
2.8 m Power Cord 250V Korea	3572	S7H	9844 *
2.8 m Power Cord 250V India	3572	S7H	9845 *
2.8 m Power Cord 250V Brazil	3572	S7H	9847 *
OEM 1 Order Indicator	3572	S7H	ACY1 *
No Rules Order Indicator	3572	S7H	ADNR *
Shipping and Handling - No charge	3572	S7H	AG00 *
Shipping and Handling - Charge	3572	S7H	AGGF *

\* Feature previously announced on other product model.

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## 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<sup>(R)</sup> ID and password are required (use IBM ID).

[BP Attachment for Announcement Letter 115-131](#)

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## Publications

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The following publications are shipped with the product. Additional copies will be available by October 23, 2015.

<b>Title</b>	<b>Order number</b>
<i>IBM TS2900 Tape Autoloader Setup, Operator, and Service Guide</i>	GC27-2212-04
<i>IBM TS2900 Tape Autoloader Installation Quick Reference Guide</i>	GA76-0423-01
IBM Storage Translated Safety Notices	G229-9054-07
Multi-language Statement of Limited Warranty	TS02-0114-00

The following publications will be available by October 23, 2015. To order, contact your IBM representative.

<b>Title</b>	<b>Order number</b>
<i>IBM TS2900 Tape Autoloader Setup, Operator, and Service Guide</i>	GC27-2212-04
<i>IBM TS2900 Tape Autoloader Installation Quick Reference Guide</i>	GA76-0423-01
IBM Storage Translated Safety Notices	G229-9054-07
Multi-language Statement of Limited Warranty	TS02-0114-00

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

### IBM Publications Center Portal

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The IBM Publications Center Portal is located at

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

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## Services

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### Global Technology Services

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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

For details on education offerings related to specific products, visit

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## Technical information

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### **Specified operating environment**

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

- Width: 445 mm (17.6 in)
  - 445 mm (17.52 in.) (chassis)
  - 483 mm (19.02 in.) (bezel)
- Depth: 847 mm (33.3 in)
- Height: 43.6 mm (1.7 in)
- Weight: 13 kg (28.66 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***

- Temperature: 10°C to 38°C (50°F to 100°F)
- Relative humidity: 20 - 80%
- Wet bulb (caloric value): 26°C (78.8°F) maximum
- Electrical power: (100 V ac) 1.3 A (240 V ac) 0.7 A
- Noise level: 6.6 dBa (idle), 6.8 dBa (maximum)

#### ***Hardware requirements***

The TS2900 Tape Autoloader contains a single IBM LTO Ultrium HH SAS Tape Drive in a 1U form factor height.

The TS2900 will attach to select IBM Power Systems, IBM System p, and other Microsoft Windows and Linux operating systems.

A current list of supported open system configurations is available at

#### **Cables**

A SAS cable is required to attach a TS2900 Tape Autoloader with an LTO Ultrium SAS Tape Drive to a host SAS adapter. At least one SAS cable must be specified on the initial plant order.

The IBM Ultrium 7 single-port SAS Tape Drive comes with two Mini-SAS (SFF-8088) connectors.

The following cable options are available for SAS attachment:

- Feature 5402 - 2 m SAS/Mini-SAS 1x Cable (host SFF-8470 to target SFF-8088)
- Feature 5502 - 2 m Mini-SAS/Mini-SAS 1x Cable (host SFF-8088 to target SFF-8088)

Refer to the **Specify or Special Features** section of the Sales Manual for a detailed description of the above features.

## Software requirements

For a current list of host software versions and release levels that support the TS2900, refer to the following website

<http://www-03.ibm.com/systems/support/storage/config/ssic/index.jsp>

IBM Spectrum Protect and other compatible software offerings can provide storage and tape management software for the TS2900. Supporting software and applications must be obtained separately from IBM, IBM Business Partners, or independent software vendors (ISVs). A list of compatible software is available from your IBM representative or at

<http://www-03.ibm.com/systems/storage/tape/library.html#compatibility>

Select *Compatibility Information*, then *Independent Software Vendor (ISV) matrix for LTO* for the product.

IBM continues to work together with the ISVs to support the TS2900. Individual application vendors should be contacted for specific information and availability dates.

**Note:** All new IBM tape device drivers will be posted to the web through the Fix Central download portal. IBM maintains the latest levels of Storage tape drive and library device drivers and documentation on the Internet. Utilize the Fix Central download portal by accessing the following website

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

There are a few pull down menus to navigate to the correct download as follows:

1. In the first pull down menu labeled *Product Group*, select *System Storage<sup>(R)</sup>*.
2. In the next pull down menu that appears which is labeled *Product Family*, select *Tape Systems*.
3. With the next pull down menu, *Product Type*, select *Tape drivers and software*.
4. This will bring up the *Product* menu, which provides selections for *Platform drivers, Tools, or Software*.
5. Under *Platform drivers*, in order to download your driver, select the correct operating system.
6. Two more pull down menus will appear with information. Click *Continue*.
7. The next screen can be used to narrow the search, however just click *Continue* to view what is available.

The *IBM Tape Device Drivers Installation and User's Guide* can be found at the following website

<http://www-01.ibm.com/support/docview.wss?rs=577&uid=ssg1S7002972>

## LTO Ultrium 7 Encryption

Encryption for the TS2900 Tape Autoloader, with LTO Ultrium 7 HH SAS Tape Drive is provided in AIX, Linux, and Microsoft Windows operating system environments.

The installation of an Ultrium 7 Tape Drive with encryption may require code updates for System p and supported open systems device drivers or storage management software. An update of the open systems device drivers can be obtained from the Fix Central download portal by accessing the following website

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

There are a few pull down menus to navigate to the correct download as follows:

1. In the first pull down menu labeled *Product Group*, select *System Storage*.
2. In the next pull down menu that appears which is labeled *Product Family*, select *Tape Systems*.
3. With the next pull down menu, *Product Type*, select *Tape drivers and software*.



4. This will bring up the *Product* menu, which provides selections for *Platform drivers*, *Tools*, or *Software*.
5. Under *Platform drivers*, in order to download your driver, select the correct operating system.
6. Two more pull down menus will appear with information. Click *Continue*.
7. The next screen can be used to narrow the search, however just click *Continue* to view what is available.

The *IBM Tape Device Drivers Installation and User's Guide* can be found at the following website

<http://www-01.ibm.com/support/docview.wss?rs=577&uid=ssg1S7002972>

For details on supported software versions and release levels for the Ultrium 7 Tape Drive, as well as hardware support information, refer to the following website

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

Three modes of encryption management are supported:

- System Managed (available for AIX, Linux, Windows)
- Library Managed (available for OS/400, i5/OS, AIX, Linux, and Windows)
- Application Managed (IBM Spectrum Protect)

### **Limitations**

IBM Ultrium 7 Tape Cartridges can be used with the IBM Ultrium 7 Tape Drives.

Ultrium 7 tape drives have encryption capability.

For LTO Ultrium 7, IBM Security Key Lifecycle Manager V1.0 or V2.0 is required for enabling System Managed and Library Managed Encryption.

### **Planning information**

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#### **Customer responsibilities**

Physical planning and installation is a customer responsibility. Detailed planning information is in the *IBM TS2900 Tape Autoloader Setup, Operator, and Guide* (GC27-2212-04). The TS2900 is designated as a customer setup unit (CSU).

It is the customer's responsibility to install and service the unit. Customers are responsible for obtaining the appropriate adapters and cables for system attachment. Customers are also responsible for ordering media. For optimum performance the customer must obtain the latest level of firmware prior to installing the unit and must update the unit as new firmware release become available. Customers can download the latest level of drive and library firmware from the LTO website

<http://www.ibm.com/storage/tape/lto>

IBM offers IBM Installation and Maintenance support at an additional cost if the customer does not wish to install or maintain the TS2900 Tape Autoloader. The customer is responsible for downloading or obtaining from IBM, and installing designated Machine Code (microcode, basic input/output system code (called BIOS), utility programs, device drivers, and diagnostics delivered with an IBM machine) and other software updates in a timely manner from an IBM Internet website or from other electronic media, and following the instructions that IBM provides. Customers may request IBM to install Machine Code changes; however, there is a charge for that service.

You are responsible for downloading or obtaining from IBM, and installing designated Machine Code (microcode, basic input/output system code (called BIOS), utility programs, device drivers, and diagnostics delivered with an IBM machine) and other software updates in a timely manner from an IBM Internet website or from other

electronic media, and following the instructions that IBM provides. You may request IBM to install Machine Code changes; however, you may be charged for that service.

### **Cable orders**

SAS cables for the IBM LTO Ultrium 7 SAS HH Tape Drive are required to attach the TS2900 to the server. At least one cable should be specified on the initial plant order. Customers are responsible for selecting and ordering the correct cables to match the IBM LTO Ultrium Tape Drive interface and the server interface.

Refer to the **Cables** section at the end of [Hardware requirements](#) section for a list of available cables. Refer to the **Specify or Special Features** section of the TS2900 Tape Autoloader Sales Manual for a detailed description of the cables available.

### **Packaging**

<b>Product</b>	<b>Shipment group</b>	<b>Number of boxes</b>
3572-S7H	TS2900 Tape Autoloader Model S7H with IBM Ultrium 7 Half-high SAS Tape Drive	1
	Power Cord (must be selected)	
	SAS wrap tool	
	Rack Mount Kit with Device to PDU line cord or Deskside Cover (one must be selected)	
	<i>IBM TS2900 Tape Autoloader Installation Quick Reference Guide</i>	
	IBM Storage Translated Safety Notices	
	Multi-language Statement of Limited Warranty	
	Statement of Limited Warranty Pointer Sheet	
	Quality Hotline Card	
	China RoHS Statement	
	Device Driver README sheet	

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

This product uses the security and auditability features of host hardware, host software, and application software to which is attached.

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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## **Terms and conditions**

### **IBM Global Financing**

Yes

### **Products - terms and conditions**

#### **Warranty period**

One year. IBM media is warranted separately.

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 a 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.

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 via 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 Customer Replaceable Units (CRUs) will be provided as part of the machine's standard warranty service.

Standard Warranty Service level is:

- 9 hours per day, Monday through Friday, excluding holidays, next business day response

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:

- TS2900 Tape Autoloader Model S7H

Calls must be received by 5:00 p.m. local time in order to qualify for NBD service.

## **Non-IBM parts service**

### ***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 customers, and normal warranty service procedures for the IBM machine apply.

### ***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***

#### ***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.

Service levels are:

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

#### ***Customer 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 may be provided as part of the machine's standard maintenance service except that you may install a CRU yourself or request IBM installation, at no additional charge, under any of the On-site Service levels specified above.

#### ***Usage plan machine***

No

#### ***IBM hourly service rate classification***

One

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.

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**General terms and conditions**

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**Field-installable features**

Yes

**Model conversions**

No

**Machine installation**

Customer setup. Customers are responsible for installation according to the instructions IBM provides with the machine.

**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.

**Educational allowance**

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

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

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**Prices**

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

<b>Description</b>	<b>Machine type</b>	<b>Model</b>	<b>Feature number</b>
TS2900 Tape Autoloader with LTO Ultrium 7 Half-high SAS Tape Drive	3572	S7H	
SEO Options Routing	3572	S7H	0789*
Admin SEO Trans. Code - 4	3572	S7H	0974*
Admin SEO Trans. Code - 5	3572	S7H	0975*
Admin SEO Trans. Code - 6	3572	S7H	0976*
TAA Compliance	3572	S7H	0983*
Storage Bid Machine Select	3572	S7H	0997*
Hungary CHW Plant 9SH	3572	S7H	1764*
Guad CHW Plant 9KQ	3572	S7H	1765*
ISTC CHW 9K2	3572	S7H	1766*
China Offload Routing Code	3572	S7H	1770*
Capacity Sched Svc	3572	S7H	1772*

<b>Description</b>	<b>Machine type</b>	<b>Model</b>	<b>Feature number</b>
Custom SLA Sched Svc	3572	S7H	1796*
2.0 m SAS/Mini-SAS 1x Cable	3572	S7H	5402*
2.0 m Mini-SAS/Mini-SAS 1x Cable	3572	S7H	5502*
Transparent LTO Encryption	3572	S7H	5901*
3572 Rack Mount Kit	3572	S7H	7006*
3572 Deskside Covers	3572	S7H	7010*
OEM - No IBM Logo	3572	S7H	7703*
Ultrium Cleaning Cartridge L1 UCC	3572	S7H	8002*
Consolidate Shipment	3572	S7H	8031*
3572 Additional Magazine	3572	S7H	8111*
Ultrium 4 Data Cartridges (5-pack)	3572	S7H	8405*
Ultrium 5 Data Cartridges (5-Pack)	3572	S7H	8505*
Ultrium 6 Data Cartridges (5-Pack)	3572	S7H	8605*
Attached to Windows System	3572	S7H	9212*
Attached to Linux System	3572	S7H	9215*
Attached to i5/OS or OS/400	3572	S7H	9400*
Attached to IBM AIX System	3572	S7H	9600*
2.8 m Power Cord 125V US/Canada	3572	S7H	9800*
2.8 m Power Cord 250V France/Germany	3572	S7H	9820*
2.8 m Power Cord 250V Denmark	3572	S7H	9821*
2.8 m Power Cord 250V UK/China	3572	S7H	9825*
2.8 m Power Cord 250V Israel	3572	S7H	9827*
2.8 m Power Cord 250V Switzerland	3572	S7H	9828*
2.8 m Power Cord 250V S.Africa	3572	S7H	9829*
2.8 m Power Cord 250V Italy	3572	S7H	9830*
2.8 m Power Cord 250V Australia	3572	S7H	9831*
2.8 m Power Cord 250V US/Canada	3572	S7H	9833*
2.8 m Power Cord 250V Uruguay/Argentina	3572	S7H	9834*
2.8 m Power Cord 125V Taiwan	3572	S7H	9835*

<b>Description</b>	<b>Machine type</b>	<b>Model</b>	<b>Feature number</b>
2.8 m Power Cord 250V China (PRC)	3572	S7H	9840*
2.8 m Power Cord 250V Taiwan	3572	S7H	9841*
2.8 m Power Cord 125V Japan	3572	S7H	9842 *
2.8 m Power Cord 250V Korea	3572	S7H	9844 *
2.8 m Power Cord 250V India	3572	S7H	9845 *
2.8 m Power Cord 250V Brazil	3572	S7H	9847 *
OEM 1 Order Indicator	3572	S7H	ACY1 *
No Rules Order Indicator	3572	S7H	ADNR *
Shipping and Handling - No charge	3572	S7H	AG00 *
Shipping and Handling - Charge	3572	S7H	AGGF *

<b>Feature number</b>	<b>Field/Plant install</b>	<b>MES removal</b>	<b>Cables required</b>
0789*	Plant	N	N
0974*	Plant	N	N
0975*	Plant	N	N
0976*	Plant	N	N
0983*	Plant	N	N
0997*	Plant	N	N
1764*	Plant	N	N
1765*	Plant	N	N
1766*	Plant	N	N
1770*	Plant	N	N
1772*	Plant	N	N
1796*	Plant	N	N
5402*	Both	Y	N
5502*	Both	Y	N
5901*	Both	Y	N
7006*	Both	Y	N
7010*	Both	Y	N
7703*	Plant	N	N
8002*	Plant	N	N
8031*	Plant	N	N
8111*	Field	Y	N
8405*	Plant	N	N
8505*	Plant	N	N
8605*	Plant	N	N
9212*	Plant	N	N
9215*	Plant	N	N
9400*	Plant	N	N
9600*	Plant	N	N
9800*	Both	N	N
9820*	Both	N	N
9821*	Both	N	N
9825*	Both	N	N
9827*	Both	N	N
9828*	Both	N	N

Feature number	Field/Plant install	MES removal	Cables required
9829*	Both	N	N
9830*	Both	N	N
9831*	Both	N	N
9833*	Both	N	N
9834*	Both	N	N
9835*	Both	N	N
9840*	Both	N	N
9841*	Both	N	N
9842*	Both	N	N
9844*	Both	N	N
9845*	Both	N	N
9847*	Plant	N	N
ACY1 *	Plant	N	Y
ADNR*	Plant	N	N
AG00*	Plant	N	N
AGGF*	Plant	N	N

\* Feature previously announced on other product model

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Machine type-model	IW8 IBM On-site exchange (IOE, 9 x 5)	IWR IBM On-site Exchange (IOE, 24 x 7)
3572-S7H		

### Alternative service

#### ICA warranty upgrade

Machine type-model	IOE IBM same day on-site exchange (IOR, 24 x 7)
3572-S7H	

### ICA maintenance

Machine type-model	IOR IBM same day on-site exchange (IOE, 24 x 7)	IE8 IBM next day on-site exchange (IE8, NBD 9 x 5)

### Annual minimum maintenance charges

Machine type-model	IBM on-site exchange (IOE 9 x 5)	IBM on-site exchange (IOE 24 x 7)
3572-S7H		

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