



IBM System Storage Linear Tape File System Library Edition Version 2.1

Table of contents

1 Overview	4 Publications
1 Key prerequisites	4 Technical information
1 Planned availability date	6 Ordering information
2 Description	11 Terms and conditions
2 Product positioning	13 Prices
3 Program number	14 Announcement countries
	14 Corrections

At a glance

IBM® System Storage® Linear Tape File System (LTFS) Library Edition V2.1 enables read, write, search, and indexing of user metadata, as well as access to the user data.

Metadata is the descriptive information about user data stored on a cartridge, and it enables searching and accessing of files via the graphical user interface of the operating system. With graphic search, read, and write, it can be easier to write and read files using LTFS Library Edition as compared to using traditional tape management software.

Overview

IBM LTFS Library Edition extends the capability of the IBM LTFS File Manager Single Drive Edition to the IBM System Storage TS2900 and TS3310 systems. LTFS Library Edition enables mounting of the library as a file system and indexing of LTO data, while the file manager manages the automation and provides operating system level access to all the content in the library. LTFS Library Edition is based on the LTFS format specification, enabling tape library cartridges to be 100% interchangeable with cartridges written with the open source, single drive versions of LTFS.

IBM LTFS Library Edition supports selected IBM tape library systems. This LTFS Library Edition software is required to be installed on customer server supporting RedHat Enterprise Linux® R5.5 with connection and support of selected IBM tape libraries.

Key prerequisites

- An IBM TS2900 Tape Library Engine solution with IBM LTFS Library Edition V2.1 software
- An IBM TS3310 Tape Library Engine solution with IBM LTFS Library Edition V2.1 software
- Linux RHEL 5.5 installed

Planned availability date

August 9, 2011

Availability of programs with encryption algorithm in France is subject to French government approval.

Cryptography in this product is limited to password encryption, authentication or digital signature.

Description

IBM LTFS Library Edition extends the capability of the IBM LTFS file manager Single Drive edition to the TS2900 and TS3310 systems. With LTFS Library Edition, LTO data stored in these tape libraries can be indexed for ease of use. LTFS Library Edition enables mounting of the library as a file system, while the file manager manages the automation and provides operating system-level access to all the content in the library. LTFS Library Edition is based on the LTFS format specification, so tape library cartridges are 100% interchangeable with cartridges written with the open source, single drive versions of LTFS.

Accessibility by people with disabilities

A U.S. Section 508 Voluntary Product Accessibility Template (VPAT) containing details on accessibility compliance can be requested at

http://www.ibm.com/able/product_accessibility/index.html

Product positioning

With LTFS, accessing data stored on an IBM tape cartridge is as easy and intuitive as using a USB flash drive. With LTFS and the operating system's graphical file manager, reading data on a tape cartridge is as easy as dragging and dropping. Any application designed for disk files can be treated as tape data without concern for the fact that the data is physically stored on tape.

IBM LTFS Library Edition adds support for IBM tape automation in addition to the single drive-use LTFS. Library Edition provides the ability to create a single file system mount point for a logical library managed by a single instance of LTFS, running on a single computer system. In addition, it provides for caching of tape indices in memory and for searching, querying, and displaying tape contents within an IBM tape Library without the requirement to mount tape cartridges.

Since the invention of disk storage, tape has been viewed as complex and difficult to use since it has required tape device specific software to read, write, and manage data stored on tape cartridges in tape libraries. Even with tape management software, file access was not intuitive since it required knowledge of what cartridge volume contained the file you needed. The standard disk interfaces of operating systems did not enable direct reading and writing to tape cartridges stored in tape libraries. Operating systems were not typically shipped with 'built-in' tape library support.

IBM recognizes that in order to be an attractive, more widely usable storage medium, tape must be as easy to use as other storage media, such as disk and removable flash media. This requires a file system interface that behaves like disk with the flash drive-like ability to share data without regard to platform. Designed to meet these needs, LTFS Library Edition offers:

- The ability to manage scheduling and accessing tape cartridges in multiple drives
- The ability to recognize the cartridges in a library at library mount time and create a file system directory (under the Library) for each cartridge in the library
- The ability to pre-populate the file system directories for the cartridge with information from the cached index at library mount time, allowing for listing and searching of the contents of all known tape cartridges without having to physically load each cartridge into a tape drive

Reference information

Refer to Software Announcement [ZP11-0215](#), dated May 09, 2011.

Program number

IBM LTFS Library Edition V2.1

Program number	VRM	Program name
5639-LT1	2.1.0	IBM LTFS Library Edition V2.1

Software Maintenance:

5639-LT2	IBM LTFS Library Edition 1year Registration and Renewal
5639-LT3	IBM LTFS Library Edition 1year After License
5639-LT4	IBM LTFS Library Edition 2year Registration
5639-LT5	IBM LTFS Library Edition 3year Registration
5639-LT6	IBM LTFS Library Edition 3year Renewal
5639-LT7	IBM LTFS Library Edition 3year After License
5639-LT8	IBM LTFS Library Edition 4year Registration
5639-LT9	IBM LTFS Library Edition 5year Registration

Product identification number

IBM LTFS Library Edition V2.1

Program PID number	First Yr Reg and Maintenance 1 year Renewal PID number	Maintenance 1 year After License PID number
5639-LT1	5639-LT2	5639-LT3
	Maintenance 3 year Registration PID number	Maintenance 3 year Renewal PID number
	5639-LT5	5639-LT6
	Maintenance 3 year After License PID number	
	5639-LT7	
	Maintenance 2 year	Maintenance 4 year

Registration PID number	Registration PID number
5639-LT4	5639-LT8
Maintenance 5 year	
Registration PID number	
5639-LT9	

Offering Information

Product information is available via the Offering Information website

<http://www.ibm.com/common/ssi>

Publications

No publications are shipped with this program.

Publications with software relevance included in the TS2900, TS3310 Publications DVD-ROM, when the media supply feature is ordered for IBM LTFS Library Edition Version 2.1.0.

Publications are available on the IBM Publications Center website and are included on the IBM System Storage TS2900 and TS3310 automation.

To order additional selected hardcopy publications for a fee or download free PDF format publications, visit the IBM Publications Center website

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

Technical information

Specified operating environment

Hardware requirements

General platform prerequisites

IBM Tape Library with one or more LTO 5 Tape Drives PC with x86 or x64 processor architecture:

- DVD-ROM drive for LTFS software installation
- One or more SAS or Fibre Channel Host Bus Adapter with matching connection type LTO 5 tape cartridges

The runtime memory and disk space requirements may be found in documentation accompanying the program.

Software requirements

Operating system prerequisites

Redhat Enterprise Linux (RHEL) Version 5.5 needs to be installed prior to installing LTFS Library Edition. LTFS Library Edition depends on the following software components, and are installed and configured by default OS installation:

libfuse
libxml2
libuuid
libc
openssl
python

Connectivity prerequisites

LTO 5 Ultrium drive supported Fiber Channel switches listed in the System Storage Operation Center (SSIC) located at

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

The program's specifications and specified operating environment information may be found in documentation accompanying the program, if available, such as a README file, or other information published by IBM, such as an announcement letter. Documentation and other program content may be supplied only in the English language.

Companion products

None

Compatibility

The tape cartridges formatted and written by this software comply with the LTFS Format Specification 2.0.0, and can be read by LTFS Single Drive Edition 1.2.0 or later, when the cartridge is exported from the library.

Limitations

- No additional operating systems offer support for LTFS Library Edition beyond Linux RHEL 5.5 at this time.
- Data Path Failover with LTFS Library Edition is not supported at this time.
- "Per Install" LTFS Library Edition license feature is required for each selected IBM Tape Library with each two Tape Drives.

For additional information, refer to [Usage restriction](#) in the Terms and conditions section of this announcement, or to the license information document that is available on the IBM Software License Agreement website

<http://www.ibm.com/software/sla/sladb.nsf>

Planning information

Customer responsibilities

Physical planning is a customer responsibility. Detailed planning information is in the IBM LTFS Information Center

<http://publib.boulder.ibm.com/infocenter/ltfs/cust/index.jsp>

Packaging

For new orders of IBM LTFS Library Edition V2.1.0 (5639-LT1), the following media are shipped with media feature 5806:

- LTFS LE Version 2.1.0 (LCD7-5224)

Security, auditability, and control

This product uses the security and auditability features of host hardware, host software, or application software to which it is attached. The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities.

Global Technology Services

Contact your IBM representative for the list of selected services available in your country, either as standard or customized offerings for the efficient installation, implementation, or integration of this product.

Ordering information

Consult your IBM representative.

Charge metric

Program name	Part number or PID number	Charge metric
IBM LTFS Library Edition V2.1 for TS2900 and TS3310 Tape Libraries	5639-LT1	Per Install

Install

Install is a unit of measure by which the program can be licensed. An install is an installed copy of the program on a physical or virtual disk made available to be executed on a computer. Licensee must obtain an entitlement for each install of the program.

IBM LTFS Library Edition V2.1

Program name: IBM LTFS Library Edition
Program PID: 5639-LT1

Contact your local IBM representative for the applicable charges.

5639-LT1:
IBM Linear Tape File System Library Edition V2.1

Use Authorizations
with One Year Software Maintenance

One-time charge features

IBM LTFS Library Edition
per Install with 1 Year
SW Maintenance

Feature description	OTC Feature number
Per Install with 1 Year SW Maintenance for TS3310 Tape Library each with 2 drives	U9YUC1
Per 250 Install with 1 Year SW Maintenance for TS3310 Tape Library each with 2 drives	B9YUF2
Per Install with 1 Year SW Maintenance for TS2900 Tape Autoloader	U9YVC1
Per 250 Install with 1 Year SW Maintenance for TS2900 Tape Autoloader	B9YVF2

Feature description	Feature number
Supply feature code	5806

This software license includes Software Maintenance, previously referred to as Software Subscription and Technical Support.

Extending coverage for a total of three years from the date of acquisition may be elected. Order the program number, feature number, and quantity to extend coverage for your software licenses. If maintenance has expired, specify the after license feature number.

IBM LTFS Library Edition Software Maintenance

5639-LT2:
 IBM Linear Tape File System Library Edition V2.1
 One Year Software Maintenance

IBM LTFS Library Edition
 No Charge Registration
 per Install

Feature description	OTC Feature number
Per Install SW Maintenance No Charge Registration for TS3310 Tape Library each with 2 drives	U9YWC2
Per 250 Install SW Maintenance No Charge Registration for TS3310 Tape Library each with 2 drives	L9YWF4
Per Install SW Maintenance No Charge Registration for TS2900 Tape Autoloader	U9YXC2
Per 250 Install SW Maintenance No Charge Registration for TS2900 Tape Autoloader	L9YXF4

One-time charge features

IBM LTFS Library Edition
 One Year Renewal
 One Time Charge
 per Install

Feature description	OTC Feature number
Per Install SW Maintenance 1 Year Renewal for TS3310 Tape Library each with 2 drives	U9YWC3
Per 250 Install SW Maintenance 1 Year Renewal for TS3310 Tape Library each with 2 drives	L9YWF5
Per Install SW Maintenance 1 Year Renewal for TS2900 Tape Autoloader	U9YXC3

Per 250 Install SW Maintenance L9YXF5
1 Year Renewal
for TS2900 Tape Autoloader

5639-LT3:
IBM Linear Tape File System Library Edition V2.1
One Year Software Maintenance
One-time charge features

IBM LTFS Library Edition
One Year After License
One Time Charge
per Install

Feature description	OTC Feature number
Per Install SW Maintenance 1 Year After License for TS3310 Tape Library each with 2 drives	U9YYC4
Per 250 Install SW Maintenance 1 Year After License for TS3310 Tape Library each with 2 drives	L9YYF6
Per Install SW Maintenance 1 Year After License for TS2900 Tape Autoloader	U9YZC4
Per 250 Install SW Maintenance 1 Year After License for TS2900 Tape Autoloader	L9YZF6

5639-LT4:
IBM Linear Tape File System Library Edition V2.1
Two Year Software Maintenance
One-time charge features

IBM LTFS Library Edition
Two Year Registration
One Time Charge
per Install

Feature description	OTC Feature number
Per Install SW Maintenance 2 Year Registration for TS3310 Tape Library each with 2 drives	M9Y0TA
Per 250 Install SW Maintenance 2 Year Registration for TS3310 Tape Library each with 2 drives	X9Y041
Per Install SW Maintenance 2 Year Registration for TS2900 Tape Autoloader	M9Y1TA
Per 250 Install SW Maintenance 2 Year Registration	X9Y141

for TS2900 Tape Autoloader

5639-LT5:

IBM Linear Tape File System Library Edition V2.1
Three Year Software Maintenance
One-time charge features

IBM LTFS Library Edition
Three Year Registration
One Time Charge
per Install

Feature description	OTC Feature number
Per Install SW Maintenance 3 Year Registration for TS3310 Tape Library each with 2 drives	U9Y2C5
Per 250 Install SW Maintenance 3 Year Registration for TS3310 Tape Library each with 2 drives	L9Y2F7
Per Install SW Maintenance 3 Year Registration for TS2900 Tape Autoloader	U9Y3C5
Per 250 Install SW Maintenance 3 Year Registration for TS2900 Tape Autoloader	L9Y3F7

5639-LT6:

IBM Linear Tape File System Library Edition V2.1
Three Year Software Maintenance
One-time charge features

IBM LTFS Library Edition
Three Year Renewal
One Time Charge
per Install

Feature description	OTC Feature number
Per Install SW Maintenance 3 Year Renewal for TS3310 Tape Library each with 2 drives	U9Y4C6
Per 250 Install SW Maintenance 3 Year Renewal for TS3310 Tape Library each with 2 drives	L9Y4F8
Per Install SW Maintenance 3 Year Renewal for TS2900 Tape Autoloader	U9Y5C6
Per 250 Install SW Maintenance 3 Year Renewal for TS2900 Tape Autoloader	L9Y5F8

5639-LT7:

IBM Linear Tape File System Library Edition V2.1
Three Year Software Maintenance

One-time charge features

IBM LTFS Library Edition
Three Year After License
One Time Charge
per Install

Feature description	OTC Feature number
Per Install SW Maintenance 3 Year After License for TS3310 Tape Library each with 2 drives	U9Y6C7
Per 250 Install SW Maintenance 3 Year After License for TS3310 Tape Library each with 2 drives	L9Y6F9
Per Install SW Maintenance 3 Year After License for TS2900 Tape Autoloader	U9Y7C7
Per 250 Install SW Maintenance 3 Year After License for TS2900 Tape Autoloader	L9Y7F9

5639-LT8:
IBM Linear Tape File System Library Edition V2.1
Four Year Software Maintenance
One-time charge features

IBM LTFS Library Edition
Four Year Registration
One Time Charge
per Install

Feature description	OTC Feature number
Per Install SW Maintenance 4 Year Registration for TS3310 Tape Library each with 2 drives	M9Y8TB
Per 250 Install SW Maintenance 4 Year Registration for TS3310 Tape Library each with 2 drives	X9Y842
Per Install SW Maintenance 4 Year Registration for TS2900 Tape Autoloader	M9Y9TB
Per 250 Install SW Maintenance 4 Year Registration for TS2900 Tape Autoloader	X9Y942

5639-LT9:
IBM Linear Tape File System Library Edition V2.1
Five Year Software Maintenance
One-time charge features

IBM LTFS Library Edition
Five Year Registration
One Time Charge
per Install

Feature description	OTC Feature number
Per Install SW Maintenance 5 Year Registration for TS3310 Tape Library each with 2 drives	M9ZATC
Per 250 Install SW Maintenance 5 Year Registration for TS3310 Tape Library each with 2 drives	X9ZA43
Per Install SW Maintenance 5 Year Registration for TS2900 Tape AutoLoader	M9ZBTC
Per 250 Install SW Maintenance 5 Year Registration for TS2900 Tape AutoLoader	X9ZB43

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License Information form number

LICR ID # L-SSCZ-8FXQUN

The program's License Information will be available for review on the IBM Software License Agreement website

<http://www.ibm.com/software/sla/sladb.nsf>

Limited warranty applies

Yes

Limited warranty

IBM warrants that when the program is used in the specified operating environment, it will conform to its specifications. The warranty applies only to the unmodified portion of the program. IBM does not warrant uninterrupted or error-free operation of the program or that IBM will correct all program defects. You are responsible for the results obtained from the use of the program.

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For clarification, note that for programs acquired under any of IBM's On/Off Capacity on Demand (On/Off CoD) software offerings, this term does not apply since these offerings apply to programs already acquired and in use by you.

Other terms

Volume orders (IVO)

Yes. Contact your IBM representative.

Passport Advantage applies

No

Usage restriction

Yes

IBM Library Tape File System V2.1 software (5639-LT1) is licensed on a per Install basis.

Software Subscription and Support applies

Yes. All distributed software licenses include Software Subscription and Support (also referred to as Software Maintenance) for a period of 12 months from the date of acquisition, providing a streamlined way to acquire IBM software and assure technical support coverage for all licenses. Extending coverage for a total of three years from date of acquisition may be elected.

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System i Software Maintenance applies

No

Variable charges apply

No

Educational allowance available

Yes. When ordering through the program number process, a 15% education allowance applies to qualified education institution customers.

Education Software Allowance Program applies when ordering through the program number process.

ESAP available

Yes, to qualified customers.

Prices

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

Corrections

(Corrected on August 1, 2011)

The Planned availability date has been updated.