

Professional Automation Solutions



TANDBERG DATA 

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Why Automation Solutions?

Storage management has emerged as the key issue in today's exploding data environment. Hundreds of gigabytes and even terabytes of data needing backup is forcing IT managers to look beyond traditional methods of storing and securing critical information. It is estimated that for every dollar spent on storage hardware, companies will spend three dollars to manage the information stored on those devices. Therefore, storage management cost containment, or total cost of ownership is a key factor in selecting the correct hardware and methods for securing data.

Tape storage automation technology helps solve these data management issues, with tape autoloaders and libraries being key components in any automated storage architecture.

Increased Capacity and Performance

If the capacity of a single tape cartridge drive does meet the requirements of the total amount of data to be backed up, additional cartridges need to be exchanged manually. A tape autoloader will increase the total capacity of a single tape drive by 8-16 times without human intervention. A tape library provides even greater capacity and performance by utilizing dozens of cartridges and multiple tape drives simultaneously, all without human intervention.

Security and Productivity

Human failure is the most common cause for data loss. Human related failures such as overwrite, selection of a wrong tape, and poor care and handling of data cartridges are just a few. Tape storage automation eliminates these threats by providing "hands-free" operation, lower cost of ownership and increased productivity. Data Backups can be performed routinely for a full week or even up to months without administrative intervention saving valuable resources and reducing the total cost of ownership. Tandberg automation products are also "lockable" which prevents unauthorized user intervention.

Tandberg Data Tape Automation Solutions

Tandberg Data offers automated storage solutions with its range of highly scalable and highly reliable autoloaders and libraries. These solutions offer from one to four tape drives and eight to forty cartridge slots and are available as table-top, deskside or rackmount versions. All automation solutions have an optional or built-in barcode reader support for quick identification and inventory of the media.

The Tandberg Data Library, SuperLoader and VS Autoloader offerings also have support for an I/O Port or Mail-Slot, which enables a single cartridge to be inserted or removed without interrupting the system. Another feature of the library is the ability to send data to multiple tape drives in parallel for increased data transfer rates or for redundancy for fault-free operation.

Major Operating System and Software Connectivity

Operating system and platform software support are assured by certified compatibility with all leading software packages for Sun Solaris, Novell NetWare, Windows NT, Windows 2000, IBM AIX, SCO UNIX, LINUX, HPUX, and more. TapeAlert™ and the LC-Display keep host software fully aware of the presence of all media and the status of the drive and robotics.

Protecting Your Storage Investment

Tandberg Data is the market leader of experience and knowledge in providing business-critical tape storage solutions reliability and service you can depend on.

Features



System-Interface

The easy-to-use LC display provides a simple three step installation and configuration process. Information about the tape drive, robotics, media and cleaning are also available via TapeAlert™.



Barcode Reader

The Barcode Reader as an optional or standard feature of the Tandberg auto-loaders and libraries allows for fast and precise inventory of the available Data Cartridges in maximum of 60 seconds.



Magazine

The removable cartridge magazines allow for a complete 7 day tape rotation scheme and an additional slot for the cleaning cartridge. This allows a full week or even months of protection completely hands free. The removable magazine provides easy handling and allows for exchanging weekly backups in one simple step as well as off-site storage.



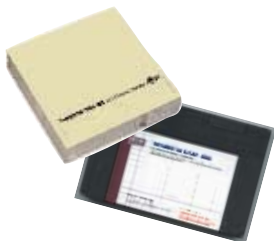
I/O Port or Mail-Slot

The I/O Port makes it possible to insert or remove single data cartridges during the operation without interrupting the operation of the automation product.



Security Functions

The Tandberg automation products can either be locked through the input of a security-code via the LC-display panel or with a key to prevent unauthorized access.



Cleaning Cartridge

Preventive maintenance is an important part of any backup strategy. Regular cleaning of the read-/write-head is highly recommended to guarantee high reliability. The SLR Autoloader and Libraries have a separate reserved slot in each magazine for the cleaning cartridge that allows maximum storage capacity of the device.

High Level

- Up to 16 cartridges
- High capacity up to 3.52 TB
- Outstanding performance: up to 79.2 GB per hour transfer rate

SDLT 220 Autoloader

1.1/2.2 TB



Medium Level

- Up to 16 cartridges
- High capacity up to 1.28 TB
- up to 43.2 GB per hour transfer rate

DLT 8000 Autoloader

400/800 GB



Entry Level

- 8 cartridges
- High capacity up to 800 GB
- Up to 36 GB per hour transfer rate

SLR60 Autoloader

240/480 GB



SLR100 Autoloader

400/800 GB

Desktop

TECHNICAL DATA TANDBERG AUTOLOADERS AND LIBRARIES

Model		DLT VS Autoloader	DLT8000 Autoloader	SDLT220 Autoloader	DLT 1280L SuperLoader	SDLT 1280L SuperLoader
Number of Drives		1	1	1	1	1
Type of Drives		DLT VS80	DLT8000	SDLT220	DLT1	SDLT1
Number of Cartridges		8	10	10	8-16	10
Data Cartridges		DLTtape™IV		SDLTtape™I	DLTtape™IV	SDLTtape™I
Drives and Performance						
Capacity	native	320 GB	400 GB	1.1 TB	320 / 640 GB ¹	880 GB
	compressed	640 GB	800 GB	2.2 TB	640 GB / 1.28 TB ¹	1.7 TB
Transfer Rate	native	10.8 GB/hr	21.6 GB/hr	39.6 GB/hr	10.8 GB/hr	36 GB/hr
	compressed	21.6 GB/hr	43.2 GB/hr	79.2 GB/hr	21.6 GB/hr	72 GB/hr
Transfer Rate	native Burst	20 MB/s ²	12 MB/s ² / 20 MB/s ³	40 MB/s ² / 80 MB/s ³	20 MB/s ³	40 MB/s ³
SCSI Interface		SCSI Wide, LVD/SE	SCSI Wide, LVD/SE oder HVD	SCSI Wide, LVD/SE oder HVD	SCSI Wide, LVD/SE	SCSI Wide, LVD/SE
File Access Time		68 sec.	70 sec.	70 sec.	68 sec.	LVD/SE
Cartridge Change		25 sec.	17 sec.	17 sec.	40 sec.	
Number of Tracks		168	208	448	168	
BPI (Bit per Inch)		123,000	98,000	133,000	123,000	
Operation						
System Interface		LC-Display, Media-, Configuration- and Diagnostic-Status; Power and Alarm				
Web Administration		-	-	-	Review System Status, Drive Operation, Cartridge Change, Remote Diagnostics, Remote Management	
Security		Lockable with Security Code	Lockable Door			
Barcode Reader		-	Optional	Optional	Optional	Optional
I/O Port		Standard	-	-	Standard	Standard
Reliability						
Media Data Retention		> 30 years				
Hard Read Error Rate		< 1 error in 10 Mio. GB				
Mean Time Between Failure		100,000 hours	220,000 hours	250,000 hours	200,000 hours	250,000 hours
Warranty		3 years				
Physical						
Dimensions (HxWxD)	Desktop	84x419x609mm	178x223x599mm		-	
	Rackmount	84x419x609mm	175x220x599mm		89x447x703mm	
Weight		15 kg	18 kg		24 kg	
Environmental Conditions						
Electrical		96-264 VAC; 47-63 Hz	100-200 VAC; 50-60Hz		100-265 VAC; 50-60Hz	
Temperature		10° C to 40° C, operation				10° C to 35° C, operation

¹ Depends on the number of modules, ² asynchronous, ³ synchronous

**SuperLoader
SDLT 3520L**

880 GB – 3,52 TB



**SuperLoader
DLT 1280L**

320 GB – 1,28 TB



**DLT VS
Autoloader**

320/640 GB



Rackmount

DLT 3520L SuperLoader	SLR60 Autoloader	SLR100 Autoloader	SLR1210 Library	SLR1420 Library	SLR1440 Library
1	1	1	2	2-4	2-4
SDLT220	SLR60	SLR100		SLR100	
8-16	8	8	10	20	40
DLTtape™	SLR60	SLR100		SLR100	
GB / 1.76 TB¹	240 GB	400 GB	500 GB	1000 GB	2000 GB
6 / 3.52 TB¹	480 GB	800 GB	1000 GB	2000 GB	4000 GB
9.6 GB/hr	14.4 GB/hr	18 GB/hr	18-36 GB/hr	18-72 GB/hr	
9.2 GB/hr	28.8 GB/hr	36 GB/hr	36-72 GB/hr	36-144 GB/hr	
B/s² / 80 MB/s²	40 MB/s		40 MB/s		
CSI Wide, SE oder HVD	SCSI Wide, LVD/SE		SCSI Wide, LVD/SE		
70 sec.	53 sec.	89 sec.	89 sec.		
40 sec.	10 sec.		8,4 sec.	9,9 sec.	
448	192 + 24 Servo Tracks		192 + 24 Servo Tracks		
133,000	152,400		152,400		
Alarm LED; 4-Button Keypad			LC-Display, Media-, Configuration- and Diagnostic-Status, 6-Button-Keypad		
Options, Management	-	-	-	-	-
Lockable with Security Code			Lockable Door		
Optional Standard	Standard		Standard		
	-		Standard		
	> 20 years		> 20 years		
			< 1 error in 10 Mio. GB		
1,000 hours	300,000 hours		300,000 hours		
			2 years		
	174x224x578mm		589x330x645mm	744x432x759	
	174x224x578mm		-	-	
	13.6 kg		31.8 kg	47.3 kg	
	100-240 VAC; 50-60Hz		90-264 VAC; 48-62Hz		
Operation	5° C to 35° C, operation		5° C to 35° C, operation		

Tandberg DLT VS Autoloader



- Up to 640 GB compressed storage capacity
- Up to 21.6 GB*/hr transfer rate
- 8 Cartridge slot capacity
- 2U high rack-optimized DLT Autoloader
- 48-hour advanced replacement service
- 3-year warranty

The Tandberg DLT VS Autoloader, based on the DLT VS80 tape drive, is a significant advancement in automation innovation based on industry standard DLT technology. Designed for the small to mid-size company in mind, the DLT VS autoloader provides automatic administration of data protection, changing up to eight DLTape™ IV cartridges providing up to 640 GByte of compressed storage capacity.

The simple mechanical construction of the media carousel provides high reliability and long lifetime. The design utilizes a toothed belt which moves the eight cartridge carriers around the DLT VS80 tape drive.

The optimal combination of a half-height DLT tape drive with a 2U autoloader case provides best-of-breed data density when implemented in rack-optimized installations.

The Tandberg DLT VS Autoloader uses a menu-driven, easy to operate LC display to operate the loader. The Autoloader also features automated cartridge management for import and export of data cartridges. The I/O port or Mail-Slot makes it possible to insert or remove single data cartridges during the operation without interrupting the system.

Tandberg SuperLoader

SDLT 3520L / 1280L



- Up to 3.52 TByte compressed storage capacity
- Up to 79.2 GB/hr transfer rate
- 2U high rack-optimized DLT Autoloader
- Optional barcode reader
- Available with a Tandberg SDLT220 or DLT1 tape drive
- Remote Web Management
- 48-hour advanced replacement service
- 3-year warranty

The new SuperLoader provides the highest DLT data density available in a 2U form factor while providing best in class investment protection.

The SuperLoader is based on a modular architecture that facilitates unmatched upgradeability, serviceability and configuration flexibility.

The tape drive, power supply, cooling and interfaces are contained within a single module that can be replaced or upgraded in seconds. This provides the user the choice of value starting with 1280L based on the DLT1 tape drive with 40/80 GByte of capacity per cartridge or performance with the 3520L using the SDLT220 tape drive with 110/220 GByte.

In addition, all 16-cartridge storage slots are contained in two removable, eight-cartridge modules. This allows users to

start with an entry-level configuration and easily upgrade capacity and performance as their needs change.

The Tandberg SuperLoader is equipped with an Ethernet port that provides direct access to its integrated web-based management tools, without the need to install additional interfaces or software. Using a standard web browser, remote IT personnel can configure, control, monitor, diagnose, maintain and update the SuperLoader system.

Like all Tandberg DLT products the Tandberg SuperLoader is read compatible with the broad base of millions DLTtape™ cartridges worldwide.

Tandberg DLT/SuperDLT Autoloader



- With up to 2.2**TByte storage capacity
- Transfer rates up to 79,2**GByte/hr
- Holds up to 10 cartridges
- Available with a Tandberg DLT8000 or SDLT220 tape drive
- Optional barcode reader
- Added security with TapeAlert™
- Tabletop and rackmount models available
- 48-hour advanced replacement service
- 3-year warranty

The ten cartridge* Tandberg DLT/SuperDLT autoloader is available with either Tandberg DLT8000 or SDLT220 tape drives, providing up to 2.2GB** of unattended storage capacity and transfer rates up to 79.2GB** per hour. The Tandberg DLT/SuperDLT autoloader is the ideal automation solution for medium network systems requiring high capacity, high reliability, performance and scalability.

With the easy to use LCD-Display, information about the tape drive, media status, installation, configuration and sys-

tem control can be easily managed. The optional barcode reader provides an inventory of stored data and automated media tracking, so that access to stored data is fast and simple. The Tandberg DLT/SuperDLT autoloader also fits easily on top of the server or desktop as well as available in a standard 4U high half width 19-inch rackmount version allowing for drive exchanges and upgrades to be simple and fast.

* 7 in a removable magazine, 3 in fixed slots

** Assuming 2:1 data compression

Tandberg SLR Autoloader



- Up to 800*GByte storage capacity
- Transfer rates up to 36*GByte/hr
- One 8-cartridge magazine
- Available as stand-alone table-top or in 4U, 1/2 rackmount form factor
- Barcode reader
- Added security with TapeAlert™
- 48-hour advanced replacement service
- 3-year warranty

The Tandberg SLR Autoloader brings you the productivity and security of an automated tape solution, as well as the proven reliability and scalability of SLR technology, at an extremely affordable price. Based on the SLR tape drive and a removable eight-cartridge magazine, the SLR autoloader offers capacities up to 800GByte* and transfer rates up to 36GByte/hr*. The easy to use LCD display allows installation to be completed in three simple steps. Information about the tape drive, robotics, media and cleaning are also available via TapeAlert.

Most autoloaders offer a barcode reader as an option. However, the barcode reader is a standard feature in the SLR autoloader providing information of stored data and

automated media tracking, so that access to data is fast and simple. A security code allows you to lock the autoloader to prevent unauthorized access to the drive, magazine and cartridges.

The SLR Autoloader is designed with scalability and backward compatibility in mind. Users can begin with the SLR60 autoloader offering 480GB* of capacity and migrate to the SLR100 autoloader with 800GB* of capacity by simply exchanging the tape drive. The SLR autoloader is also fully backward compatible so all of the previously stored data can be retrieved.

* Assuming 2:1 data compression

Tandberg SLR Library



- 4TByte* storage capacity*
- Transfer rates up to 144*GByte/hr
- Up to four 10-Cartridge Magazines
- Barcode reader for easy tracking of stored data
- I/O Port for manual load and unload of cartridges
- Supported by all major operating systems and application software
- 2-year warranty

The decision to automate your data is critical. High capacity backup, Near-On-line storage, Archival Storage, HSM or data collection, require hardware with high capacity, performance, reliability and scalability. SLR libraries meet these requirements now and in the future.

Based on the Tandberg SLR100 tape drive, with 100 GByte* storage capacity, SLR100 Libraries offer up to 4TByte* of storage capacity and up 144GB* per hour transfer rates.

Protecting Future Data Requirements

Regardless of which configuration you choose, you have the ability to scale to future drives with higher capacities and transfer rates. Tandberg SLR Libraries have an Ultra 2 SCSI

LVD interface which offer high performance, which is a critical requirement to access to Near-Online-data (transfer rates with up 144GByte/hr* are achievable).

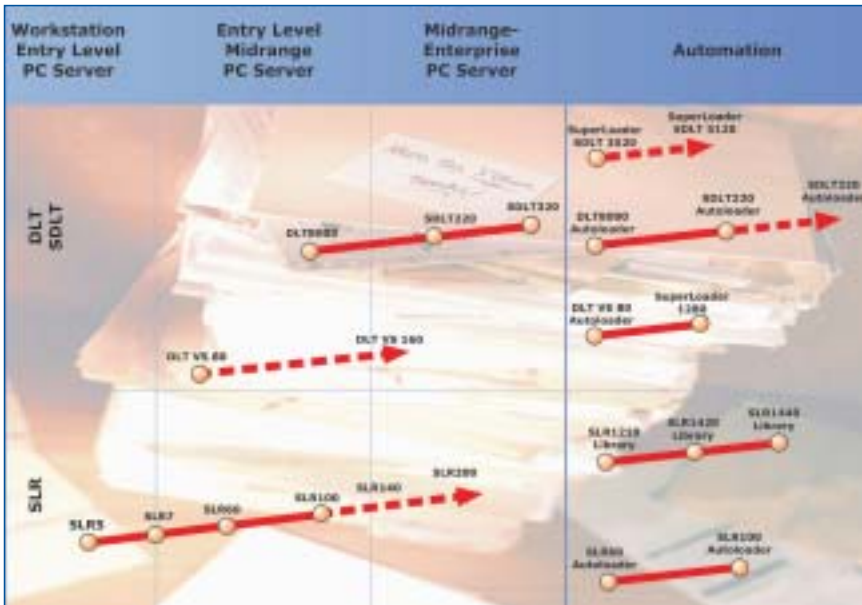
Ultimate Reliability and Security

All components are designed with reliability in mind. The SLR library is based on the SLR tape drive which is a proven technology with over 3 million units installed in the market. The rock solid robotics include a solenoid gripper and stepper motor for precise handling of cartridge, as well as acoustic alarms for temperature, voltage, air filter, inventory and manual interrupt. The exchangeable 10 cartridge magazines also provide for easy transport of data cartridges.

* Assuming 2:1 data compression

Tandberg Data

Selecting the Correct Solution



Major Operating System and Software Connectivity

Operating system and platform software support is assured for Tandberg tape drives and automation solutions by certified compatibility with all leading software packages for Sun Solaris, Novell NetWare, Win NT, Win 2000, IBM AIX, SCO OpenServer, UnixWare, HP-UX, Linux, Mac OS and more. Tandberg SLR5 -100 and DLT tape drives support TapeAlert™ which provides the user important information regarding status for the tape drive, media and cleaning requirements.

The complete product range of TANDBERG DATA offers the appropriate storage solution for your company now and well into the future.

As a global acting and leading company of data storage we set a high value on service, quality, backward compatibility and scalability of our products. Our portfolio is dedicated to the needs of the market, from lower capacity up to 4* TByte in automation solutions.

TANDBERG DATA's large investment in research and development ensures that our position as a market leader of experience and knowledge in providing business-critical storage solutions is still growing.

Your Dealer:

Tandberg Data GmbH, Feldstraße 81, D-44141 Dortmund, Germany. Tel: +49 231 5436 0. Fax: +49 231 5436 111.

Tandberg Data ASA, Kjelsåsveien 161, P.O. Box 134 Kjelsås, N-0411 Oslo, Norway. Tel: +47 22 18 90 90. Fax: +47 22 18 95 50.

InoStor Inc., 13000 Gregg Street, Poway, CA 92064, U.S.A. Tel: +1 858 726 0277. Fax: +1 858 726 0278.

Tandberg Data S.A., 16/18 Ave. Morane-Saulnier, F-78941 Vélizy Cedex, France. Tel: +33 1 39 26 01 01. Fax: +33 1 34 65 02 89.

Tandberg Data (Asia) Pte. Ltd., 801 Lorong 7, Toa Payoh #02-00, Singapore 319319. Tel: +65 259 9330. Fax: +65 258 1702.

Tandberg Data (Japan) Inc., Shinkawa-nittei Annex Bldg., 7th floor, 22-4 Shinkawa 1-chome, Chuo-ku, Tokyo 104, Japan. Tel: +81 3 5566 2871. Fax: +81 3 5566 2875.

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