

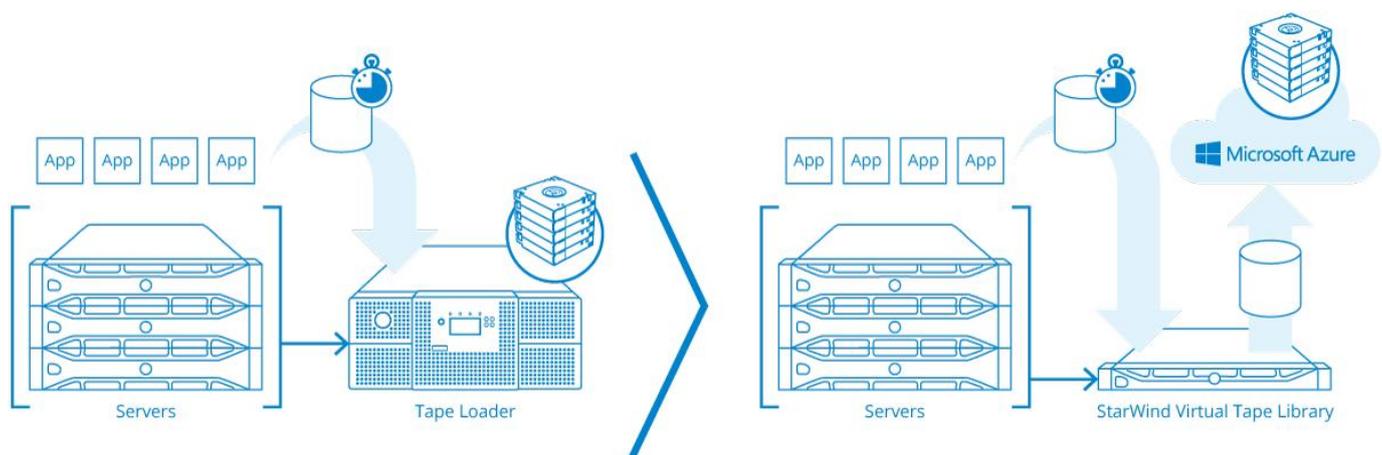
# Virtual Tape Library

## Value Proposition

For SMB and Enterprises, who either look to get rid of backup tapes completely, or are willing to accelerate backup process and add an extra level of protection, our solution is StarWind Virtual Tape Library (VTL). It is an appliance that eliminates the need in physical tape and “pretends” to be a supported tape drive or autoloader, keeping all data on inexpensive, fast and high-capacity spinning disks.

Even with explosive data growth, StarWind VTL fits the backup into backup window by accelerating it, so the process does not overlap with production time. Optionally, it creates additional copy of backup data for better safety. It is also available in a software-only form, as part of StarWind VSAN functionality.

StarWind VTL targets those, who need to replace existing tape backup infrastructure or accelerate it if regulatory requirements prohibit replacement. In case the goal is just virtualizing tape backup or creating a stretched backup infrastructure, StarWind Tape Redirector will come in handy.



*StarWind VTL replaces the bulky tape hardware with agile HDD-based appliance and cloud storage*

## Differentiation

Unlike similar appliances, StarWind VTL offers flexibility, allowing the customer two options to choose from: a full-fledged hardware appliance or a software version, which is essentially part of StarWind Virtual SAN and runs on customer's existing hardware. The customer can take the software, commodity server of choice new or repurposed, put as many spindles in as needed, throw in spare Windows Server license or a free Hyper-V Server and have a full-blown VTL appliance. StarWind VTL licenses are perpetual and capacity-unlimited.

Unlike VTL drivers that only work on the same hardware simultaneously with the backup application, StarWind VTL works over iSCSI. The physical or virtual VTL appliance and actual tape backup application can be located miles away from each other. Client OS is irrelevant – only iSCSI initiator is required on the client and any incompatibilities are removed with virtualization means.

Unlike open-source VTL, StarWind offers support with SLAs behind every hardware and software product. All code is in-house developed, using our at least 10-year matured codebase. Having gone through countless tests, it is proven to work, is obviously less error-prone and does exactly what it was designed for.

## Benefits

### Exceptional Simplicity

StarWind Virtual Tape Library is as easy to manage as “just a bunch of disks” it is. A typical system administrator who deals with backup will install, configure and run it in a matter of minutes. StarWind VTL seamlessly integrates into existing infrastructure due to the ability to emulate most libraries and drives from leading vendors.

### Low Cost

StarWind VTL can replace the whole tape backup infrastructure, allowing to get rid of all the bulky and expensive equipment. It has minimalistic hardware footprint and uses commodity servers and high-capacity disks instead of tapes, drives and autoloaders. There are no associated costs or additional hardware requirements.

### High Performance

StarWind VTL accelerates backup, using fast hard disks to emulate slower tapes. It utilizes multi-tiered RAM and flash caching and data deduplication for exceptional performance, unachievable not only by tape hardware, but also by most of the similar solutions that use HDD.

## Features

### HyperConverged

StarWind VTL is versatile and works with any existing virtualization environment. It will be as easy to deploy it with hyperconverged infrastructure, as it was to configure the infrastructure itself.

### Converged (“Compute and Storage separated”)

StarWind VTL easily integrates into any existing virtualization infrastructure. Though hyperconvergence is spreading through virtualization world, converged scenarios are still very relevant and VTL attaches to them easily.

### VM-Centric Storage and StarWind Log-Structured File System (LSFS)

StarWind VTL uses LSFS to accelerate backup in virtualization environment. It aggregates small random writes in big sequential pages, making better use of HDD and avoiding performance issues typically associated with virtualization.

### Server-Side Cache

StarWind VTL utilizes multi-tiered RAM and flash caches to accelerate backup performance. Using inexpensive conventional RAM, SATA SSD, MLC flash or so for caching, it allows to have bigger caches for the same money. StarWind VTL keeps backup performance exceptionally high, easily fitting it into backup window and avoiding overlapping with production time.

### Snapshots and Automated Storage Tiering

StarWind VTL works directly with snapshots employing D2D and D2D2T backup strategies. The former is used when the actual tape hardware is no longer needed and snapshots can go directly to VTL. The latter case utilizes VTL as a fast intermediate, creating an extra copy of snapshots and writing it to physical tapes in background mode.

### Deduplication and Compression

StarWind VTL uses data deduplication to reduce space usage and conserve disk capacity. It fully supports Microsoft Windows deduplication engine and StarWind Virtual SAN own space reduction technologies. Apart from capacity savings, these technologies also give a boost in performance, reducing the amount of data required for transfer.

## Hardware Agnostic and Commodity Hardware

StarWind VTL uses commodity servers and faster and cheaper high-capacity HDD to emulate traditional tape hardware: drives, libraries and autoloaders. It cuts down the cost of backup and accelerates performance, because backup process takes less time, without overlapping with production.

## Fault Tolerance and High Availability

StarWind VTL is a backup solution, so it does not require continuous availability of data. Instead, it utilizes redundancy, having an extra copy of backup data. In case the main site fails, there is backup, in case DR site fails, there is the main site.

## Scale-up and Scale-out

StarWind VTL scales to meet task demands with constantly growing backup data. Capacity can be increased by either throwing more spindles into the existing storage node or adding new ready-nodes.

## Asynchronous Replication

StarWind VTL is specialized on working with asynchronous replication, being a virtual tape backup solution. The software version can be utilized for this purpose even without a remote DR site, using Azure public or private cloud with enabled “geo-clustering”. StarWind VTL deployed in Azure will make a perfect off-site storage for backup data without having to disrupt backup infrastructure.

## Virtual Storage Appliance

For fast evaluation, VTL is available as a plugin of StarWind Virtual SAN version that is deployed from a pre-configured VMware or Hyper-V compatible VM appliance. In case there is an existing set of suitable hardware, testing the capabilities of StarWind Virtual Tape Library will take little to no time.

## Virtual Tape Library (VTL)

Improving the existing tape backup infrastructure, creating a new one from scratch, preserving physical tape hardware or getting rid of it – StarWind Virtual Tape Library is the right tool for the job. It offers benefits in all the mentioned cases, accelerating backup speed or creating additional backup data copies.

### In 2016, Gartner named StarWind “Cool Vendor for Compute Platforms”.

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