



Product Bulletin:

NetApp VTL300, VTL700, and VTL1400 Series Storage Systems

Revision History

2 October 2006 - Initial version

9 November 2009 – Current version

Proprietary and confidential. Restricted to NetApp employees and channel partners, each of whom is under NDA obligations. This document may not be shared with customers without prior written permission from NetApp. © Copyright 2009 NetApp, Inc. All rights reserved.

This product bulletin informs NetApp sales and NetApp partners about new or changed NetApp® products or services.

1. Summary
2. What's New?
3. Sales and Customer-Ready Tools
4. System Requirements
5. Product Information
6. Regulatory Compliance
7. Warranty and Service
8. Additional Information

1. Summary

This product bulletin announces that an approved feature PVR is now required for all new VTL quotes.

The NetApp VTL300, VTL700, and VTL1400 come standard with hardware compression, and an optional no-charge deduplication license is also offered. NetApp VTL systems are ideally suited for use in data center backup environments in which high performance, scalability, and physical tape library integration are important. NetApp VTL works with standard backup applications, such as Symantec™ NetBackup™, Symantec Backup Exec™, IBM Tivoli Storage Manager (TSM), EMC/Legato NetWorker, CommVault Galaxy, CA BrightStor, BakBone NetVault, HP Data Protector, Atempo Time Navigator, SyncSort Backup Express, and Oracle® Secure Backup. Designed with enterprise scalability and ease of management in mind, the NetApp VTL series increases the performance and reliability of the existing tape-based infrastructure and simplifies backup management.

2. What's New?

The **November 2009** Quote Tool announces that an approved feature PVR is now required for all new VTL quotes.

To generate a VTL quote, a NetApp SE must first submit a “feature” PVR via the NetApp CustomerEdge system. Instructions for this PVR process are posted on the NetApp Field Portal. A customer quote can only be generated after a PVR has been approved. Once authorized, a NetApp inside sales rep can generate a quote via a restricted access catalog.

NOTE: The optional deduplication feature requires a no-charge software license.

The **March 2008** Quote Tool update includes the following:

- Support for 750GB and 1TB SATA drives/shelves

The **December 2007** Quote Tool update includes the following:

- Configuring storage for noncabinet NetApp VTL platforms will now drive the VTL-7.0TB-R5 storage bundle.
- NetApp VTL platforms now support VTL Academy education ED-VTL-TU-30.

The **September 2007** Quote Tool update includes the following:

- The VTL300 to VTL700 upgrade kit (VTL300-UG1-R5) now contains the 4-port HBA (X2054A-R6).

The **May 2007** Quote Tool update includes the following:

- When quoting the VTL300 to VTL700 upgrade, the Professional Services implementation utilizes zone-based service parts and logic.
- When quoting a zero-shelf VTL700 and VTL1400, the Quote Tool will automatically drive quantity 1 and 2, 4Gb Quad-Port FC HBA (X2054A-R5-C), respectively.

The **March 2007** Quote Tool update includes the following:

- Introduction of VTL OS 5.2
- Support for 4Gb Quad-Port FC HBAs will double the maximum capacity and improve the performance of the VTL700 and VTL1400

System	VTL700	VTL1400
Maximum raw capacity	168TB	336TB
Maximum write performance (uncompressed)	1200MB/s	2400MB/s
Maximum write performance at 2:1	950MB/s	1900MB/s

- Improved support for NetApp DataFort when used with NetApp VTL Direct Tape Creation
- Support for SSHv2 and passwordless authentication for CLI scripts
- Compression performance improvements up to 10%
- Disk firmware can be upgraded

The **December 2006** Quote Tool update includes the following:

- Introduction of VTL OS 5.1
- ACSLS option for Direct Tape Creation with StorageTek tape libraries
- ACSLS feature is supported only on VTL600/VTL1200/VTL700/VTL1400 (VTL300 excluded)
- ACSLS is a chargeable feature and requires a license key for activation
- CLI—extensive command-line interface to allow scripting of VTL commands
- Intelligent cloning—only changed data is copied to tape
- HTTPS support for ASUP
- Compressed ASUP e-mails
- Enhanced diagnostic capabilities

The **November 2006** Quote Tool update includes the following:

- VTL300 to VTL700 upgrade
- VTL600 to VTL700 upgrade
- VTL1200 to VTL1400 upgrade

Initial release in the **September 2006** Quote Tool update includes the following:

The NetApp VTL series of Virtual Tape Library systems represents industry-leading value for the midtier and large enterprise storage market. The following key features and capabilities are offered by the NetApp VTL family:

- VTL300, VTL700, and VTL1400 include hardware compression, which doubles the effective capacity of the systems for typical data sets and improves system performance.
- VTL300, VTL700, and VTL1400 are built on a new high-performance controller platform.
- VTL300 is positioned as an entry-level VTL for the enterprise market with the ability to be upgraded to a

VTL700.

- Designed and priced to compete against all other VTL systems in the midtier and large enterprise storage market.
- There is support for cost-effective serial ATA (SATA) storage shelves.
- Has a compact 3U controller design.
- All FC ports are 4Gb.
- There are multiple FC configuration options for connecting back-end tape drives and libraries.
- VTL1400 includes two controllers that are managed as two systems.
- NetApp *strongly recommends* the VTL Design and Implementation Service for all VTL customer deployments. This service will be quoted automatically with the part number <PS-SOW-BR-VTL> for all VTL deals. Dollars are based upon a percentage of system and storage pricing. Please contact your local PS manager for information about this service.

3. Sales and Customer-Ready Tools (Training, SE, Customer Presentations, Datasheets, Sales Guides)

- [NetApp Field Portal](#)

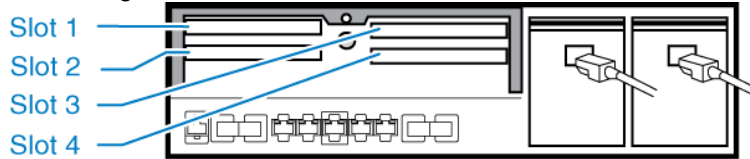
4. System Requirements

Base System Configuration

	NetApp VTL300	NetApp VTL700	NetApp VTL1400
Number of controllers	1	1	2
4 on-board 4Gb FC ports configured as	2 front end, 2 disk ports	4 front end or 3 front end and 1 tape port	8 front end or 6 front end and 2 tape ports
Slot 1	Optional quad-port 4Gb FC HBA for disk	Quad-port 4Gb FC HBA for disk	Quad-port 4Gb FC HBA for disk (1 per controller)
Slot 2	Hardware compression	Hardware compression	Hardware compression (1 per controller)
Slot 3	Optional quad-port 4Gb FC HBA for tape	Optional quad-port 4Gb FC HBA for disk or tape	Optional quad-port 4Gb FC HBA for disk or tape
Slot 4	Optional second hardware compression	Optional quad-port 4Gb FC HBA for tape or optional second hardware compression	Optional quad-port 4Gb FC HBA for tape or optional second hardware compression
Maximum raw capacity (TB)	55	275	550
Maximum effective capacity @ 2:1 compression (TB)	90	440	880
Maximum effective capacity @ 10:1 compression (TB)	400	2,000	4,000

Note: Capacity is calculated using base 10 arithmetic; that is, 1TB = 1,000,000,000,000 bytes. Maximum capacities are calculated with 1TB drives.

- Slot configuration:



- Systems are sold with DS14-Mk2-AT disk shelves, each with 14 x (1TB/750GB/500GB) SATA disk drives.
- Systems are compatible with DS14-Mk2-AT disk shelves, each with 14 x (1TB/750GB/500GB) SATA disk drives.
- Drives within a shelf and RAID group must be the same, but a single system can support 1TB, 750GB, and 500GB shelves at the same time (320GB and 250GB shelves are no longer supported with new orders, though 5.6 includes support for legacy systems running those drives).
- VTL300 systems can be purchased with any combination of up to 5 shelves.
- VTL700 systems can be purchased with any combination of up to 24 shelves.
- VTL1400 systems can be purchased with up to 48 shelves, but only in multiples of 2 (2 shelves, 4 shelves, and so on).
- In the **VTL300/700/1400 Base Configurations**, although a hardware compression board is included as standard, it will not be listed in the quote. When a **second optional hardware compression** board is added to a VTL300/700/1400, you will see *only* the second hardware compression board (X1300A-R5-C) listed in the quote and the corresponding software component (SW-VTL-COMPRESS-C).

Example: VTL700 configuration with the second optional hardware compression board will show:

QTY 1: VTL Software,Compression,EXP, -C SW-VTL-COMPRESS-C

QTY 1: X1300A-R5-C

NIC,Compression,-C,R5

Note: There is no support for back-end parallel SCSI devices; an external FC/SCSI bridge is required to connect SCSI tape devices.

Product Specifications

NetApp VTL Specifications ¹	VTL300	VTL700	VTL1400 ²
Peak Aggregate Write Throughput			
VTLOS 5.x	600MB/s	1150MB/s	2300MB/s
VTLOS 6.x Default	380MB/s	380MB/s	760MB/s
VTLOS 6.x Optimized for Ingest	500MB/s	600MB/s	1200MB/s
Peak Aggregate Read Throughput			
VTLOS 5.x	450MB/s	900MB/s	1800MB/s
VTLOS 6.x	450MB/s	900MB/s	1800MB/s
Peak Aggregate Throughput to Tape			
100% Write to Physical Tape	450MB/s	900MB/s	1800MB/s
With Concurrent I/O (50% Write to Tape)	200 - 300MB/s	200 - 500MB/s	400 - 1000MB/s
Guidelines for Max Weekly Throughput			
VTLOS 5.x, no Tape Creation	150TB/wk	200TB/wk	400TB/wk
VTLOS 5.x, with Tape Creation	125TB/wk	175TB/wk	350TB/wk
VTLOS 6.x, 100% dedupe, no Tape Creation ³	35TB/wk	42TB/wk	42TB/wk
VTLOS 6.x, 100% dedupe, with Tape Creation ³	28TB/wk	35TB/wk	35TB/wk
Max Raw Capacity	55TB	275TB	550TB
Max Effective Capacity @ 2:1	90TB	440TB	880TB
Max Effective Capacity @ 10:1	400TB	2000TB	4000TB
Max Number of Virtual Tapes			
Displayable in GUI per Virtual Library	1,000	1,000	1,000
Total	10,000	10,000	20,000
Max Number of Virtual Libraries	256	256	512
Max Number of Virtual Drives	1,500	1,500	1,500
Max Concurrent in Use Virtual Drives	96	96	192

Notes

¹ Maximum capacities are calculated using base 10 arithmetic. Dedupe results will vary depending upon backup application, backup and retention policies, data type, the amount of redundant data, and whether the savings are computed globally or on a per-volume basis.

² A VTL1400 is the equivalent of two independent VTL700 systems.

³ Results will vary based on backup application and other factors.

I/O Connectivity

VTL300 systems ordered with 0 to 5 disk shelves include as configured:

Number of Shelves	0-5
FC host connectivity ports (target)	2
FC disk connectivity ports (initiator)	2
FC tape ports	0
Compression card	1

VTL700 systems ordered with 0 to 24 disk shelves include as configured:

Number of Shelves	0-6	7-12	13-18	19-24
FC host connectivity ports (target)	4	4	4	4
# of disk loop pairs	1-2	2	3-4	4
FC disk connectivity ports (initiator)	4	4	8	8
FC tape ports	0	0	0	0
Compression card	1	1	1	1

VTL1400 systems ordered with 0 to 48 disk shelves include as configured:

Number of Shelves / Controller	0-6	7-12	13-18	19-24
FC host connectivity ports (target)	8	8	8	8
# of disk loop pairs	2-4	4	6-8	8
FC disk connectivity ports (initiator)	8	8	16	16
FC tape ports	0	0	0	0
Compression card	2	2	2	2

Note:

- A single tape library cannot span both controllers in a VTL1400.
- For VTL300/700/1400, the number of default shelves is two, which can be changed up to the maximum number permitted.
- A zero-shelf configuration is valid.

Capacity Expansion

- For expansion, NetApp[®] VTL systems support only DS14-Mk2-AT shelves with 1TB, 750GB, 500GB SATA disks.
- Drives within a shelf and RAID group must be the same, but a single system can support 1TB, 750GB, and 500GB shelves at the same time (320GB and 250GB shelves are no longer supported with new orders, although 5.6.2 includes support for legacy systems running those drives).
- VTL300 systems support up to 5 shelves.

- VTL700 systems support up to 24 shelves. When upgrading a system with 2 loop pairs and fewer than 13 shelves to a system with 13 or more shelves, 1 additional quad-port FC HBA (X2054A-R6-C) is required.
- VTL1400 systems support up to 48 shelves. When upgrading a system with 4 loop pairs and fewer than 25 shelves to a system with 26 or more shelves, 2 additional quad-port FC HBAs (X2054A-R6-C) are required.

Tape Connectivity

- VTL300 systems have three available expansion slots. Slot 3 is used for a quad-port FC HBA (X2054A-R6-C) for tape connectivity.
- VTL700/1400 base systems can be configured with either four front-end ports or three front-end ports and one tape port per controller; additional tape ports require the purchase of an additional quad-port FC HBA (X2054A-R6-C).
- VTL700 systems have two available expansion slots. Normally Slot 3 is used for the second quad-port FC HBA (X2054A-R6-C) for disk connectivity, if more than two disk loop pairs are needed and Slot 4 is used for either a quad-port FC HBA (X2054A-R6-C) for tape connectivity or a second compression card (X1300A-R5).
- VTL700 and VTL1400 configurations can use any spare FC ports on the quad-port HBAs for tape connectivity, but they must be used in pairs for tape.

Note: VTL1400 is composed of two VTL700 systems, and the same logic that applies to the VTL700 applies to each of the individual controllers in a VTL1400 system.

How to Select Card Options for Slots 3 and 4 on a VTL700¹

Card slot options for configurations with less than 12 disk shelves:

Slot		
3	Optional quad-port HBA for additional back-end tape I/O	Provides 4 FC ports for tape connectivity
4	Choice 1: Compression card 2 for performance Choice 2: Quad-port HBA for additional back-end tape I/O	Increases 2:1 compression performance from 500MB/s to 1150MB/s Provides 4 additional FC ports for tape connectivity (total of 8)

Card slot options for configurations with 13 to 18 disk shelves:

Slot		
3	Optional quad-port HBA for additional back-end disk and tape I/O	Provides third disk loop pair and 2 FC ports for tape
4	Choice 1: Compression card 2 for performance Choice 2: Quad-port HBA for additional back-end tape I/O	Increases 2:1 compression performance from 500MB/s to 1150MB/s Provides 4 additional FC ports for tape connectivity (total of 6)

Card slot options for configurations with 19 to 24 disk shelves:

Slot		
3	Optional quad-port HBA for additional back-end disk and tape I/O ²	Used for third and fourth disk loop pairs ²
4	Choice 1: Compression card 2 for performance ³ Choice 2: Quad-port HBA for additional back-end tape I/O	Increases 2:1 compression performance from 500MB/s to 1150MB/s ³ Provides 4 additional FC ports for tape connectivity

¹ Slot 1 always contains a quad-port HBA for disk. This is used for the first and second disk loop pairs. Slot 2 always contains a compression card. The four on-board FC ports are used as front-end (host-facing) ports.

² Four disk loop pairs are required to achieve the maximum uncompressed throughput of 1200MB/s.

³ For this configuration, one of the four on-board FC ports can be used for tape connectivity, resulting in only a single port for tape connectivity.

Software Support

NetApp VTL systems include embedded VTL O/S and VTL software.

5. Product Information

The following table lists the primary system part numbers and field-replaceable units (FRUs). For a complete list of parts, refer to the current price list or Quote Tool.

Part Number	Description	Discount Category Code
VTL300-BASE-SYS-R5	NetApp VTL300 Base Platform,R5	J
VTL700-BASE-SYS-R5	NetApp VTL700 Base Platform,R5	J
VTL1400-BASE-SYS-R5	NetApp VTL1400 Base Platform,R5	J
SW-OS-VTL300	VTL300 Software, Operating System	J
SW-OS-VTL700	VTL700 Software, Operating System	J
SW-OS-VTL1400	VTL1400 Software, Operating System	J
SW-VTL-COMPRESSION	VTL Software, Compression	J
SW-VTL-COMPRESS-C	VTL Software,Compression,EXP,-C	J
SW-VTL-ACSLs	VTL Software, ACSLS	J
SW-VTL-ACSLs-C	VTL Software,ACSLs,-C	J
SW-VTL300-DEDUP-C	VTL Dedupe License for VTL300 for configured systems	J
SW-VTL700-DEDUP-C	VTL Dedupe License for VTL700 for configured systems	J
SW-VTL1400-DEDUP-C	VTL Dedupe License for VTL1400 for configured systems	J
SW-VTL300-DEDUP	VTL Dedupe License for VTL300	J
SW-VTL700-DEDUP	VTL Dedupe License for VTL700	J
SW-VTL1400-DEDUP	VTL Dedupe License for VTL1400	J
X1300A-R5	NIC,Compression,R5	A

X1300A-R5-C	NIC,Compression,R5, -C	A
X2054A-R6	HBA, FC, Disk, 4-port, PCIe, 4Gb, R6	A
X2054A-R6-C	HBA, FC, Disk, 4-port, PCIe, 4Gb, R6,-C,	A
VTL-7.0TB-R5	VTL Disk Shelf,7.0TB,SATA,R5 (non-cabinet configurations)	B
DSX-7.0TB-R5-C	Disk Shelf,7.0TB,SATA,-C,R5 (cabinet configurations)	B
VTL-10.5TB-R5	VTL Disk Shelf,10.5TB,SATA,R5 (non-cabinet configurations)	B
DSX-10.5TB-R5-C	DS14MK2 SHLF,10.5TB SATA,-C,R5 (cabinet configurations)	B
VTL-14.0TB-R5	VTL Disk Shelf,14.0TB,SATA,R5 (non-cabinet configurations)	B
DSX-14.0TB-R5-C	DS14MK2 SHLF,14.0TB SATA,-C,R5 (cabinet configurations)	B
VTL300-UG1-R5	VTL300 Upgrade, SW, HBA FC 4-port PCIe 4Gb,R5	J
PS-ZA-VTL300-HEAD-IMPL	VTL Implementation,VTL300 head in ZA	S
PS-ZB-VTL300-HEAD-IMPL	VTL Implementation,VTL300 head in ZB	S
PS-ZC-VTL300-HEAD-IMPL	VTL Implementation,VTL300 head in ZC	S
PS-ZD-VTL300-HEAD-IMPL	VTL Implementation,VTL300 head in ZD	S
PS-ZA-VTL700-HEAD-IMPL	VTL Implementation,VTL700 head in ZA	S
PS-ZB-VTL700-HEAD-IMPL	VTL Implementation,VTL700 head in ZB	S
PS-ZC-VTL700-HEAD-IMPL	VTL Implementation,VTL700 head in ZC	S
PS-ZD-VTL700-HEAD-IMPL	VTL Implementation,VTL700 head in ZD	S
PS-ZA-VTL1400-HEAD-IMPL	VTL Implementation,VTL1400 head in ZA	S
PS-ZB-VTL1400-HEAD-IMPL	VTL Implementation,VTL1400 head in ZB	S
PS-ZC-VTL1400-HEAD-IMPL	VTL Implementation,VTL1400 head in ZC	S
PS-ZD-VTL1400-HEAD-IMPL	VTL Implementation,VTL1400 head in ZD	S
PS-ZA-VTL-SHELF-IMPL	VTL Implementation, Shelf in ZA	S

PS-ZB-VTL-SHELF-IMPL	VTL Implementation, Shelf in ZB	S
PS-ZC-VTL-SHELF-IMPL	VTL Implementation, Shelf in ZC	S
PS-ZD-VTL-SHELF-IMPL	VTL Implementation, Shelf in ZD	S
PS-ZA-VTL300-UPG-IMPL	VTL Implementation,VTL300 to VTL700 in ZA	S
PS-ZB-VTL300-UPG-IMPL	VTL Implementation,VTL300 to VTL700 in ZB	S
PS-ZC-VTL300-UPG-IMPL	VTL Implementation,VTL300 to VTL700 in ZC	S
PS-ZD-VTL300-UPG-IMPL	VTL Implementation,VTL300 to VTL700 in ZD	S
ED-VTL-TU-30	VTL,Training Units 30,EXP 1YR From Invoice	S

Software Subscription Plans

NetApp VTL systems are supported fully through NetApp SupportEdge and ConsultingEdge services. Please check [NetApp Global Services](#) for information about how the NetApp Global Services team can help.

NetApp strongly recommends the VTL Design and Implementation Service for all VTL customer deployments. This service will be quoted automatically with the part number <PS-Zx-VTL-y00-HEAD-IMPL> for the different zones (x: A, B, C, D) and different appliances (y: 3, 7, 14) and <PS-Zx-VTL-SHELF-IMPL> for the different zones (x: A, B, C, D) for the shelves, for all VTL deals. Pricing is based upon a percentage of system and storage pricing. Please contact your local PS manager for information about the service.

The following table lists the SSP part numbers as of the date of this product bulletin. Partners should contact their channel representative for pricing information.

Part Number	Description	Discount Category Code
PS-Zx-VTL-y100-HEAD-IMPL	VTL Implementation, VTLy00 head in Zx	S
PS-Zx-VTL-SHELF-IMPL	VTL Implementation, Shelf in Zx	S

Pricing

- The NetApp VTL300 is priced aggressively to provide a lower entry price for enterprise VTL requirements.
- All NetApp VTL models are priced aggressively to ensure competitiveness against enterprise-class VTL products of similar capacities.
- For NetApp VTL part numbers and prices, see the current NetApp Price List and Quote Tool.
- NetApp partners should contact their channel representative or distributor for pricing information.

Quoting

For detailed instructions about how to quote this product or service using the Quote Tool, see the Quote Tool Bulletin:

- **NetApp Quote Tool Bulletin**

Downloading

For downloading software go to [NOW Download Software](#).

Product Availability

The NetApp VTL300, VTL700, and VTL1400 are available to quote in the current release of the Quote Tool in a restricted access catalog.

6. Regulatory Compliance

Products need to be validated against the NetApp Safety/EMI Regulatory Compliance List prior to order submission. This is required to ensure that products are being sold only in the countries in which NetApp has received regulatory compliance certification. This information can be found in the Field Portal by searching under “Compliance, Policies and Procedures” or following the links below:

- [RoHS Compliance](#)
- [Safety/EMI Regulatory Compliance \(XLS\)](#)
- [WEEE Compliance](#)

7. Warranty and Service

Standard software and hardware warranty and services apply.

8. Additional Information

Contact Information: Please contact your NetApp sales or channel partner representative with questions concerning this bulletin.