



**Tyrone**<sup>®</sup>VERTA

Delivering Superior Performance To  
Meet The Most Demanding Workloads

[www.tyronesystems.com](http://www.tyronesystems.com)

# VERTA

The era of having multiple units for different storage needs is passing as diverse storage products prevent optimum utilization and can be difficult to manage. VERTA series from Tyrone Systems, consolidates all your storage requirements.

VERTA is a high performance SAN & NAS storage system that delivers proven performance and availability for enterprises and data-rich industries such as media, video surveillance and HPC.



**Tyrone**

# Tyrone<sup>®</sup>VERTA



VERTA supports a variety of file & block protocols, client systems and different configurations for host connectivity.

## Key Specifications

<b>File Protocol</b>	SMB v2/v3, NFS v3/v4, AFP, FTP
<b>Block Protocol</b>	FC 8G/16G/32G, SRP 100G, iSCSI 10G/25G/40G/100G
<b>Tape</b>	Virtual Tape Library
<b>Host Interface</b> (Per Controller)	Default: 2x10G SFP+ Ethernet ports, 1 x Management Ports Optional: 8G/16G/32G FC, InfiniBand 100G, Ethernet 10G/25G/40G/100G
<b>Management</b>	Web based GUI for management, Hardware monitoring, SNMP support
<b>System Specification</b>	CPU (Default 1) Intel Xeon processor (10 cores per controller) Memory Max 1TB DDR4 ECC memory (per controller) RAID Level 0, 1, 0+1, 5, 6, 50 & 6 Max Expansion Expands up to 500 disks using add-on enclosures Disk Bays 12/24/36 SAS/SATA HDDs Disk Type SAS/SATA HDD/SSD P. Supply Redundant & Hot-Pluggable power supplies



# VERTA

Tyrone Verta provides single or dual-controller architecture empowering all advantages of industry-standard hardware.

## › SUPPORT FOR HIGH SPEED HOST CONNECTIVITY

The adaptive read-ahead algorithm enables the employment of cache capacity for boost performance at sequential multi-thread workloads.

## › HIGH AVAILABILITY

Dual controller architecture provides a solution with no single point of failure.

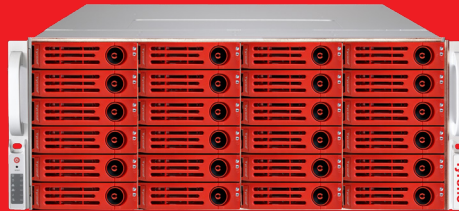
RAID levels demonstrate unprecedented reliability on the modular storage system market.

## › FLEXIBLE AND SCALABLE

Supports co-existence of multiple types of host-interfaces, multiple types of disks, and multiple storage access (Block/Files Protocol) simultaneously.

Storage capacity can be easily enhanced by adding expansion units to primary storage.

## CORE TECHNOLOGY



## FLUIDOS

The core technology of Tyrone VERTA is Fluid OS, a storage software layer built over hardened Linux OS developed by Tyrone Systems. It has been developed to ensure a high level of performance and data availability.

# KEY FEATURES



## Fault-tolerant

Based on a dual controller design with a fault-tolerant architecture that offers a high level of redundancy and data protection.



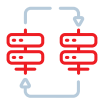
## Snapshot

A read-only copy of a file system or volume is created almost instantly, and they consume no additional disk space within the pool.



## Silent Data Corruption Protection

Verta's forward error correction algorithm analyzes RAID metadata to detect and fix silent corruptions.



## RAID levels

Supports various RAID levels (0,1,0+1,5, 6 & 60) for protection against disk failure.



## Remote Replication

Provides disaster recovery and additional data protection by creating data copies in a remote storage system.



## Deduplication

Dedupe discards any data block identical to an already written block, while keeping a reference so it can reproduce the same block when read.



## Compression

Compresses your files on the fly and lets you store more data using limited storage.



## Dual Controller

Verta is available as a dual controller unified storage system.



## Adaptive Read-Ahead

This tool recognizes sequential data blocks from plenty of concurrent threads & proactively puts them into the cache to increase system performance.



## SSD cache

The technology employs SSD space as hot data buffer in order to improve total system performance.



## Virtual Tape Library (VTL)

VTL ingests data over a Fibre Channel interface, which enables seamless integration with many existing backup infrastructures and processes.



## Dual Controller

Easy migration of volumes between various interconnect

# VERTA

## Dual Controller

### Featuring Optimal Storage Efficiency with High Availability

Verta D4ZC-24D is a dual-controller unified storage system that provides FC, ethernet, (10G/25G/40G/100G) and IB connectivity for concurrent SAN or NAS operations.



Unified Storage Solution



Supports both Block & File protocols



Dual Redundant



High Availability



VERTA D4ZC-24D	
Form Factor	4U 24-bay
Controller	Dual-redundant
System Memory	Default 64GB; Max 1TB memory, with ECC
Host Board	Default: 2x10Gb <u>Add on options</u> 2, 4 or 8Gb Ethernet Ports 2 or 4 10Gb/25Gb Ethernet Ports 1 or 2 200G Ethernet ports 1 or 2 100G InfiniBand ports FC : 2 or 4 8Gb/16Gb/32Gb FC ports
Max. Drives Number	Up to 204 HDDs/SSDs using add-on JBODs
Drive Interface	12Gb/s SAS
Supported Drives	SAS LFF/SFF HDD/SSD
RAID Options	RAID 0,1,0+1,5,6,50 & 60
Advanced Features	Default software features include: - Snapshot: 64 per source volume, 128 per system - Remote replication (file-level) Optional features: SSD cache, Dedupe/Compression
Clients Support	Windows, Linux, MAC OS, FreeBSD, Solaris
Protocol Support	File-level protocol: SMB, NFS, FTP, AFP Block-level protocol: iSCSI, FCP, SRP
Authentication	ADS/ NIS
Management	Web UI , Health monitoring, IPMI

# SPECIFICATION



		VERTA D2ZC-12S	VERTA D3ZC-16S	VERTA D2ZC-24S	VERTA D4ZC-24S	VERTA D4ZC-36S	VERTA D4ZC-24D
Access Protocols	File Protocols	SMB, NFS, AFS, FTP					
	Block Protocols	iSCSI, FC, SRP					
Interface Ports (per controller)	Gigabit Ethernet	4 (Max 8)	4 (Max 8)	4 (Max 8)	4 (Max 8)	4 (Max 8)	0 (Max 8)
	10G/25G/50G/100G	0 (Max 4)	0 (Max 4)	0 (Max 4)	0 (Max 4)	0 (Max 4)	2 x Gbe
	FC 8G/16G/32G	0 (Max 4)	0 (Max 4)	0 (Max 4)	0 (Max 4)	0 (Max 4)	0 (Max 4)
	InfiniBand/OPA Ports	0 (Max 2)	0 (Max 2)	0 (Max 2)	0 (Max 2)	0 (Max 2)	0 (Max 2)
Advanced Features	SSD Acceleration	Optional	Optional	Optional	Optional	Optional	Optional
	Snapshot	✓	✓	✓	✓	✓	✓
	Dedupe/Compression	Optional	Optional	Optional	Optional	Optional	Optional
	Replication	✓	✓	✓	✓	✓	✓
	Tape emulation (VTL)	✓	✓	✓	✓	✓	✓
Dual-Controller	✗	✗	✗	✗	✗	✓	
System Hardware Specifications	Processor	Xeon®	Xeon®	Xeon®	Xeon®	Xeon®	Xeon®
	Memory	32GB (Max 1TB*)	32GB (Max 1TB*)	64GB (Max 1TB*)	64GB (Max 1TB*)	64GB (Max 1TB*)	64GB (Max 1TB*)
	RAID Levels	0/1/5/6/10/50/60					
	HDD/SSD bays	12 LFF/SFF	16 LFF/SFF	24 SFF	24 LFF/SFF	36 LFF/SFF	24 LFF/SFF
	Interface	SAS/SATA	SAS/SATA	SAS/SATA	SAS/SATA	SAS/SATA	SAS
	HDD/SSD Type	500	500	500	500	500	204
Max Expansion (JBOD)	2U	3U	2U	4U	4U	4U	

# VERTA EXPANSION ENCLOSURES



	D2-SJC-212S	D2-SJC-316S	D2-SJC-424S	D2-SJC-444S	D2-SJC-224S	D2-SJC-490D	
System Hardware Specifications	HDD/SSD bays (Hot-Plug)	12 LFF/SFF	16 LFF/SFF	24 LFF/SFF	44 LFF/SFF	24 SFF	90 LFF/SFF
	HDD/SSD Type	SAS/SATA	SAS/SATA	SAS/SATA	SAS/SATA	SAS/SATA	SAS
	Form Factor	2U	3U	4U	4U	2U	4U
	Controller Type	Single Controller	Single Controller	Single Controller	Single Controller	Single Controller	Dual Controller
	Verta D2ZC-12S	✓	✓	✓	✓	✓	✗
	Verta D3ZC-16S	✓	✓	✓	✓	✓	✗
Supported Storage Boxes	Verta D4ZC-24S	✓	✓	✓	✓	✓	✗
	Verta D4ZC-36S	✓	✓	✓	✓	✓	✗
	Verta D2ZC-24S	✓	✓	✓	✓	✓	✗
	Verta D4ZC-24D	✗	✗	✗	✗	✗	✓

Specifications subject to change without notice. Picture used for representation purpose only and the actual product may differ in looks



# INDUSTRIES & WORKLOADS



## MEDIA & ENTERTAINMENT

VERTA is an ideal solution for the most demanding workloads in Media and entertainment industry. Verta is a scalable storage for large data volumes which provides multi-threaded sequential read performance and integrity of mead content.



## VIDEO SURVEILLANCE INFRASTRUCTURES

For large video surveillance projects, VERTA provides reliable performance in case of increased emergency video streaming, cost-effective scalability to archive, and efficient processing of sequential workloads.



## HIGH PERFORMANCE COMPUTING (HPC)

For large global research centers, VERTA provides flexible customization and seamless workflow to achieve world-class performance and fault-tolerant architecture in Supercomputing.



## ENTERPRISE INFRASTRUCTURES

VERTA helps enterprises build an efficient infrastructure disaster recovery and backup system, improves RPO, and cuts storage costs. High access speed and fast and efficient data reconstruction reduce downtime.

# Tyrone®

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