

# Violin Extreme Performance Operating System



Delivering Enterprise Data Services with Consistent High Performance and Management Simplicity.

Delivering on enterprise business expectations has historically been difficult due to cost and technical limitations. The Violin Concerto OS delivers the enterprise data services and data reduction capabilities required by enterprise primary storage. Concerto OS enables organizations to overcome primary storage challenges and run their applications with persistent and consistent high performance, so they can achieve increased consolidation ratios, higher availability, and lower TCO than legacy disk, hybrid or SSD-based solutions.

## HIGHLIGHTS

### Business Continuity

- Remote asynchronous replication
- WAN optimized replication
- Automated App DR management
- Synchronous mirroring (Local & Metro)
- Zero RPO and RTO with stretch clusters

### Data Protection

- Snapshots (crash consistent)
- Consistency Groups (snaps & replication)
- Backup app integration
- Transparent LUN mirroring o Encryption
- SSL, TLS (AES-128/256, RC-4)
- SSH (AES-128, RC-4)

### Data Scaling

- Selective data reduction
- Online expansion of capacity
- Scale-up to over 422 TB raw (1.3 PB effective) capacity pooling in a single name space

### Data Efficiency

- Snapshots
- Thin Provisioning
- Thin Clones
- Symphony Management

## ENTERPRISE DATA SERVICES

Data Services are paramount for an enterprise-class storage. Resiliency, availability, flexibility, security and efficiency are table-stakes especially when data must be available to applications at all times, even during failure. In addition, functions of replication, snapshots, data reduction are required.

## DATA CENTER ECONOMICS

The Violin extreme performance storage platforms powered by Concerto OS provide the foundation for a significant data center consolidation by reducing the I/O wait times that applications endure. This reduces CAPEX due to a streamlined data center that achieves cost savings from all layers of IT infrastructure: storage, servers, application and server OS software licenses.

The combination of Concerto OS and Extreme Storage means you can support I/O intensive workloads while taking advantage of the efficiencies afforded through our inline deduplication and compression. Violin’s implementation is granular, so data reduction can be turned on at the LUN level and off when there is no benefit. A dashboard in Concerto OS illustrates the data reduction ratios that are achieved. With this knowledge you can seek out similar applications to test with data reduction. When the dashboard shows it is effective, you will know your savings; if it is not effective you can easily turn it off and re-hydrate.

## CONCERTO OS

At the core of Violin’s architecture is ‘Consistent Performance’ enveloped and supported by powerful data services, we call this software Concerto. Concerto OS platform drives the XVS System, integrating Stretch Cluster and LUN mirroring. Powered by Violin Data Protection, Data reduction and FFA engines, Concerto OS delivers consistent low latency and high IOPS, making the Violin the right choice for primary storage. Violin offers a complete extreme performance storage solution, designed from scratch, to deliver the best performance, storage efficiency, data redundancy and value.

Concerto OS uses Secure Sockets Layer (SSL) and Transport Layer Security (TLS) cryptographic protocols with AES-128 (128-bit key), AES-256 (256-bit key), and RC-4 (128-bit key) algorithms to encrypt the data network connections between the host computer and the Storage Platforms. Secure Shell (SSH) protocol encrypts all traffic between the host computers and the Storage Platforms using AES-128 (128-bit key) and RC-4 (128-bit key) algorithms.

Concerto OS delivers consistent low latency with high IOPS with new levels of functionality and ease-of-use through enterprise class data services. It provides application consistent snapshots, replication, granular block level dedupe and the best management in storage.

## SIMPLE & POWERFUL MANAGEMENT @ANYSCALE

The Violin's Symphony management console is a single portal for managing petabytes of storage across hundreds of Violin Platforms with ease.

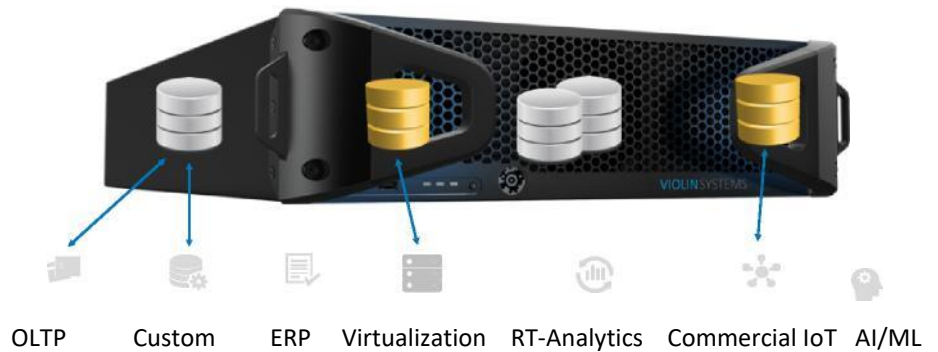
- Performance, Capacity, Health and Data Services
- Personalized Dashboards
- Custom/Automated Reporting
- SLA-based Proactive Health Monitoring



## SELECTABLE DEDUPLICATION

Applications typically have different service level requirements including performance, data availability, data efficiency and more.

With Violin low latency, you can consolidate more business-critical applications and databases per server CPU core without compromising service levels. With 10x lower transactional latency compared with other storage systems, Violin accelerates business critical workloads while delivering transformative data center economics. Combined with embedded enterprise data services and storage management software, the XVS platform offers the best combination of extreme performance, low Total Cost of Ownership (TCO), and high Return on Investment (ROI).



## Delivering Enterprise Data Services with Consistent High Performance and Management Simplicity.

With Violin's Extreme Performance Storage powered by Concerto OS, you get continuous availability and reduced risk to operations through vertically integrated software, firmware, and hardware resiliency that enables you to deploy enterprise-class all-flash primary storage at the same cost as legacy enterprise disk solutions.

Concerto OS can be downloaded, installed and used by a user without any support of the manufacturer (supplier), and the cryptographic features cannot be modified by the user.