



# Infortrend ESVA<sup>®</sup> Family

Enterprise Scalable Virtualized Architecture



## Highlights

### Optimized ROI

Ensures the most efficient allocation of consolidated capacity and computing power, and meets wide array of service level requirements

### Simplified Infrastructure

Enables a single point of administration and online scaling

### Maximized Productivity

Supports the highest data availability and quick service restart after storage accidents

With business growth comes increased demand for storage capacity and performance. Moreover, there is always the possibility that accidents, such as human errors, hardware malfunctions and disasters, threaten data integrity and availability. Finding ways to effectively store and protect vital applications and data therefore becomes essential for companies. However, in today's economic environment, this task can be challenging. Equipped with comprehensive data services, ESVA helps you deal with your storage challenges in the most cost-effective way. ESVA's unique modular design allows you to "pay as you grow", and lowers your operating costs without sacrificing the storage capacity and performance you need.

All ESVA systems come with a 3-year standard hardware warranty and 3-year free software update. Included in the warranty period are advanced FRU next business day dispatch and 3 years of 24x7 phone and web technical support at no additional cost. Infortrend partner service providers are available to deliver Advanced and Premium services, which include next business day or 4-hour onsite diagnostics service for mission-critical applications. To properly protect your long-term investments in IT equipment, extended warranty and RMA services are also available.

### Optimized Return on Investment

With storage virtualization technology, the capacity and computing power of multiple ESVA systems can be consolidated into a storage pool. For the most efficient utilization of pooled capacity, ESVA arrays support thin provisioning. Capacity is dynamically allocated to applications when data is written, while minimizing space, power and cooling expenses for large, underutilized data volumes common in traditional storage environments.

By enabling users to flexibly assign applications to four available tiers distinguished by different drive types and RAID levels, and offering automated data migration, automated storage tiering on ESVA helps users meet a wide array of service level requirements.

ESVA also comes with an intelligent access prioritizing mechanism, creating different priorities for data volumes based on actual needs. Combined with energy-efficient design, ESVA's advanced technologies enable you to make the most of your storage investment.

### Simplified Storage Infrastructure

ESVA simplifies storage management by enabling a single point of administration. Scaling the ESVA storage pool is also a very easy task. Expansion enclosures can be connected to the ESVA system for increased capacity. If you want to increase capacity and promote performance at the same time, you can scale out the virtualized foundation by adding additional ESVA systems. All scaling and configuration tasks can be done online.

When a new system is added, the distributed load balancing technology will dynamically balance workloads among storage systems for increased processing power. Power is increased with capacity expansion, allowing it to handle even the most demanding high-performance applications. If you remove a system from the pool, the load-balancing technology will also automatically migrate data to maintain the optimized performance without disrupting service.

### Maximized Application Productivity

In the competitive business world, downtime can lead to profit loss and threaten business continuity. With the revolutionary ESVA architecture, downtime for storage scaling is eliminated.

ESVA also includes storage-based replication capabilities. Local replication features space-efficient snapshots that can serve as granular recovery points, based on which files can be restored and data can be rolled back. Local replication also offers full data copies within a storage pool, while remote replication enables users to create full data copies across storage pools. These data copies can be readily leveraged by host applications to resume operations when the original data is corrupt. By strategically deploying snapshot images and full data copies, you can achieve the highest data availability with a minimum service downtime in the event of logical or physical errors.

	Fibre-host Series		
	ESVA F10	ESVA F60	ESVA F70
<b>Hardware Configurations</b>			
Host Ports	Eight (8) 8Gb/s FC ports	Eight (8) 8Gb/s FC ports	Eight (8) 8Gb/s FC ports + Four (4) 1GbE iSCSI ports
Drive Connectivity		Exclusively 6Gb/s SAS	
Cache Memory	4GB	8GB	8GB
Starting Configuration (No. of Drives)		8	
Supported Drives		100GB or 200GB - STEC MACH16 SSD 300, 450 or 600GB - 3.5" 15,000 RPM SAS drives 1TB or 2TB - 3.5" 7,200 RPM Nearline SAS drives 300, 450 or 600GB - 2.5" 10,000 RPM SAS drives	
Max. Drive (per system)		16	
Max. Drive (via JBOD)	-	112	112
Max. Drive (via scale-out <sup>1</sup> )	64	1344	1344
Expansion Enclosure (JBOD)	-	ESVA J60-230 (16 - 3.5" SSD/SAS and 2.5" SAS drives)	ESVA J60-230 (16 - 3.5" SSD/SAS and 2.5" SAS drives)
Form Factor		3U	
<b>Data Services</b>			
Enterprise Scalable Virtualized Architecture	Linear scaling of performance and capacity; storage pooling; thin provisioning; automatic data migration; prioritized volume accessibility; distributed load balancing; automated storage tiering <sup>2</sup>		
Data Protection	<b>Local Replication<sup>1</sup></b> : Snapshot; Volume Copy/Volume Mirror; Quick Recovery <b>Remote Replication<sup>1</sup></b> : Synchronous <sup>3</sup> or Asynchronous; Data Compression; Near Continuous Data Protection (N-CDP)		
<b>Green</b>	80 PLUS-certified power supplies delivering more than 80% energy efficiency Intelligent multi-level drive spin-down		
<b>RAID Configurations</b>	RAID level 0, 1, 3, 5, 6		
<b>Availability and Reliability</b>	Redundant, hot-swappable hardware modules; CacheSafe technology; Multi-pathing support (EonPath); Device mapper support		
<b>Notification</b>	Email, Fax, LAN broadcast, SNMP traps, SMS, MSN messenger		
<b>Management</b>	SANWatch management suite; Terminal via RS-232C		
<b>OS Support<sup>4</sup></b>	Windows Server 2003, Windows Server 2008 (including Hyper-V), RedHat Enterprise Linux, SUSE Linux Enterprise, Sun Solaris, IBM AIX, HP-UX, Debian, CentOS, VMware, Citrix XenServer		
<b>Service and Support<sup>5</sup></b>	All ESVA systems are shipped with 3-year Standard Service.		
Standard Service	Hardware warranty; replacement part dispatch on the next business day Software update; 24x7 phone, web and email support		
Advanced Service <sup>6</sup>	<b>Standard Service</b> + Onsite diagnostics on the next business day		
Premium Service <sup>6</sup>	<b>Standard Service</b> + Onsite diagnostics in 4 hours		

<sup>1</sup> Optional for the ESVA F60 and F70.

<sup>2</sup> Available with optional license on the ESVA F60 and F70.

<sup>3</sup> Synchronous remote replication currently available on the ESVA F60 and F70.

<sup>4</sup> For compatibility details, please contact our sales representatives.

<sup>5</sup> Service may vary by region.

<sup>6</sup> Optional.

	iSCSI-host Series		
	ESVA E10	ESVA E60 (1GbE)	ESVA E60 (10GbE)
<b>Hardware Configurations</b>			
Host Ports	Four (4) 1GbE iSCSI ports	Twelve (12) 1GbE iSCSI ports	Four (4) 10GbE iSCSI ports
Drive Connectivity	Exclusively 6Gb/s SAS	Exclusively 6Gb/s SAS	Exclusively 6Gb/s SAS
Cache Memory	4GB	8GB	8GB
Starting Configuration (No. of Drives)	8	8	8
Supported Drives	100GB or 200GB - STEC MACH16 SSD 300, 450 or 600GB - 3.5" 15,000 RPM SAS drives 1TB or 2TB - 3.5" 7,200 RPM Nearline SAS drives 300, 450 or 600GB - 2.5" 10,000 RPM SAS drives		
Max. Drive (per system)	16	16	16
Max. Drive (via JBOD)	-	112	112
Max. Drive (via scale-out <sup>1</sup> )	64	1344	1344
Expansion Enclosure (JBOD)	-	ESVA J60-230 (16 - 3.5" SSD/SAS and 2.5" SAS drives)	ESVA J60-230 (16 - 3.5" SSD/SAS and 2.5" SAS drives)
Form Factor	3U	3U	3U
<b>Data Services</b>			
Enterprise Scalable Virtualized Architecture	Linear scaling of performance and capacity; storage pooling; thin provisioning; automatic data migration; prioritized volume accessibility; distributed load balancing; automated storage tiering <sup>2</sup>		
Data Protection	<b>Local Replication</b> <sup>1</sup> : Snapshot; Volume Copy/Volume Mirror; Quick Recovery <b>Remote Replication</b> <sup>1</sup> : Synchronous <sup>3</sup> or Asynchronous; Data Compression; Near Continuous Data Protection (N-CDP)		
Green	80 PLUS-certified power supplies delivering more than 80% energy efficiency Intelligent multi-level drive spin-down		
RAID Configurations	RAID level 0, 1, 3, 5, 6		
Availability and Reliability	Redundant, hot-swappable hardware modules; CacheSafe technology; Multi-pathing support (EonPath); Device mapper support		
Notification	Email, Fax, LAN broadcast, SNMP traps, SMS, MSN messenger		
Management	SANWatch management suite; Terminal via RS-232C		
OS Support <sup>4</sup>	Windows Server 2003, Windows Server 2008 (including Hyper-V), RedHat Enterprise Linux, SUSE Linux Enterprise, Sun Solaris, VMware, Citrix XenServer, Debian, CentOS		
Service and Support <sup>5</sup>	All ESVA systems are shipped with 3-year Standard Service.		
Standard Service	Hardware warranty; replacement part dispatch on the next business day Software update; 24x7 phone, web and email support		
Advanced Service <sup>6</sup>	<b>Standard Service</b> + Onsite diagnostics on the next business day		
Premium Service <sup>6</sup>	<b>Standard Service</b> + Onsite diagnostics in 4 hours		

<sup>1</sup> Optional for the ESVA E60.

<sup>2</sup> Available with optional license on the ESVA E60.

<sup>3</sup> Synchronous remote replication currently only on the ESVA E60.

<sup>4</sup> For the latest compatibility details, please contact our sales representatives.

<sup>5</sup> Service may vary by region.

<sup>6</sup> Optional.

Rapidly growing data leads to burgeoning storage needs. An ideal storage solution for mission-critical applications should not only provide necessary capacity and performance to accommodate data and process transactions, but also ensure quick recovery from unplanned outages or disasters. However, the dynamic nature of applications makes it difficult to anticipate data demands. Leveraging storage based on traditional rigid architectures to deal with changing needs often leads to wasted investments in storage along with additional management overhead.

Infortrend's ESVA offers industry-leading storage systems built on a revolutionary architecture featuring virtualization and scale-out technologies. Enhanced with comprehensive data services and data protection features, ESVA can meet the most demanding storage requirements at attractive price points and provide enhanced management efficiency.



### EFFICIENT RESOURCE UTILIZATION

Through our storage virtualization technology, the capacity and computing power of multiple ESVA storage systems are consolidated into single or multiple storage pools. Coupled with thin provisioning and an intelligent access prioritizing mechanism, the Infortrend ESVA ensures the most efficient utilization of pooled resources.

- Allocate capacity dynamically when data writes happen to minimize expenses wasted on large and underutilized data volumes
- Eliminate the administration overhead associated with capacity planning and utilization monitoring of each data volume
- Arrange I/Os in the queue based on their priority to allow applications to achieve ideal service levels

### NON-DISRUPTIVE STORAGE SCALING

With scale-up and scale-out on ESVA, storage scaling can be performed on demand. Both capacity and performance can incrementally grow without disrupting service.

- Achieve "hot" capacity scaling by simply attaching expansion enclosures to member ESVA systems of a storage pool
- Automatic, dynamic workload balancing across ESVA systems to achieve and maintain optimized performance
- Linearly scale performance for increased transactional speed by adding more ESVA systems to the storage pool

### HIGHEST DATA AVAILABILITY

ESVA comes with snapshot and replication capabilities to protect mission-critical data. By strategically deploying snapshot images and full data copies, you can enjoy the highest data availability in the event of an outage caused by logical errors, physical errors or disasters.

- Create granular recovery points by creating space-efficient snapshot copies
- Protect data from extensive disasters with asynchronous data copies
- Optimize asynchronous remote replication with data compression feature
- Achieve optimal no-data-loss protection with synchronous data copies

### OPTIMIZED STORAGE PERFORMANCE

By enabling users to flexibly assign applications to four available tiers distinguished by different drive types and RAID levels, and offering automated data migration, automated storage tiering on ESVA provides an architecture that fully leverages the advantages of different storage media. With automated storage tiering, users can greatly optimize storage performance and increase ROI.

- Deploy up to four tiers to meet different service level requirements
- Optimize performance by efficiently integrating SSDs in highest tier
- Ensure the most efficient data distribution in a storage pool through highly granular data migration based on data usage patterns and user-configured policies



	ESVA F60 ESVA F70 ESVA E60	ESVA F10 ESVA E10
<b>Virtualization</b>		
Storage-based Virtualization	Yes	Yes
Thin Provisioning	Yes	Yes
Zero Downtime Capacity Expansion	Yes	Yes
Maximum Number of Disks in a Virtual Pool	1344	64
Maximum Number of Virtual Volumes in a Virtual Pool	1024	1024
Maximum Size of a Virtual Pool	2PB	512TB
Maximum Size of a Virtual Volume	2PB	512TB
Minimum Size of a Virtual Volume	10GB	10GB
<b>Scale-out</b>		
Horizontal performance scaling	Yes	Yes
Distributed Load Balance	Yes	Yes
Balanced Data Migration	Yes	Yes
Prioritized Volume Access	Yes	Yes
Maximum Number of Systems in a Virtual Pool	12	4
<b>Snapshot</b>		
Snapshot Rollback	Yes	Yes
Maximum Number of Snapshot Images for a Source Volume	1024	256
Maximum Number of Snapshot Images in a Virtual Pool	16,000	4096
<b>Replication</b>		
Sync and Async Remote Replication	Yes	Async Only
Data Compression for Async Remote Replication	Yes	Yes
Volume Copy/Volume Mirror	Yes	Yes
Disaster Tolerance	Yes	Yes
Maximum Number of Source Volumes in a Virtual Pool	32	32
Maximum Number of Concurrent Replication Pairs of a Source Volume	8	8
Maximum Number of Concurrent Replication Pairs in a Virtual Pool	256	256
<b>Automated Storage Tiering</b>		
Automated Storage Tiering	Yes	No
Sub-Volume Tiering	Yes	-
Maximum Number of Storage Tiers	4	-
Storage Tiers Based on Drive Type	Yes	-
SSD Support	Yes	-
Storage Tiers Based on RAID Level	Yes	-
Automated Data Migration with Scheduling Options	Yes	-

<sup>1</sup> To include more than one ESVA storage system in a storage pool, Scale-out License is required for all models except the ESVA F10/E10. To take snapshot images and create full data copies in a single storage pool, Local Replication License is required for all models except the ESVA F10/E10. To create full data copies across storage pools, Remote Replication License is required for all models except the ESVA F10/E10.

24x7 Global Support: <http://support.infortrend.com/esva>

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