

FlashServer™ HA “High Availability Servers” HA-4000 Series

Redundant Failover Servers Deliver Continuous Operation for Mission Critical Applications without Software Clustering

High Availability Servers for Your Most Important Applications

FlashServer HA Redundant Failover Servers provide an innovative hardware solution to address planned and unplanned downtime for your most important applications. FlashServer HA delivers continuous uptime through its fully redundant modular hardware featuring Intel Xeon processors with up to six cores each. These servers provide continuous availability through hardware redundancy in all components: CPU, memory, motherboards, I/O, hard disk drives, power supplies and cooling fans. Two servers in one unit run applications simultaneously so if one fails, the other takes over immediately with *no lost data and no delays common to cluster solutions*. Best of all, only one set of software licenses is needed, delivering big savings compared to cluster software solutions.



FlashServer HA provides High Availability without clusters and reduces the complexity of your IT environment



Hot swap servers are quickly and easily replaced - and enable live software updates.

Five 9s High Availability

Failover with the FlashServer HA is automatic and transparent to the OS, virtualization software, applications, and users. The environment can survive a drive, motherboard, CPU, RAM, bus, power supply and fan failure. The result is a realizable 99.999% uptime without clustering. For the utmost in reliability and to protect against both hardware and software failures, FlashServer HA servers work exceeding well in cluster environments - delivering a double layer of protection from fault tolerant servers and cluster failover. Plus, clustering provides load balancing and other benefits.

Availability	Total Accumulated Outage per Year	(#9s)
90%	More than a month	1
99%	Just under 4 days	2
99.9%	Just under 9 hours	3
99.99%	Just under 1 hour	4
99.999%	A little over 5 minutes	5
99.9999%	About a half a minute	6
99.99999%	About 3 seconds	7

FlashServer HA delivers 99.999% system uptime and immediate failover.

Five 9s Reliability -- Dramatic Cost Savings

FlashServer HA Advantages

Key Benefits

- Continuous Availability for 99.999% uptime
- Transparent application failover with no data loss - applications keep running after hardware failures
- Affordable fault tolerance
- Perfect for mission critical applications
- Deploys like a standard Intel server
- Live updates with split and resync
- Field-proven in mission critical environments

Features

- Dual active servers each with Intel Xeon processors up to 6 cores and 96 GB
- Simultaneous application execution on both servers
- Immediate server failover
- Hot swap server replacement
- Works in native and virtual environments
- Supports Windows, Linux and VMware

Cost Savings

- Cuts downtime and data loss
- Single software licensing
- Avoids professional services
- Eliminates software clustering

Overwhelming Cost Savings

To run in redundant mode, the HA Server only requires one copy of the operating system and application software license, no professional services to setup or configure the server. It's simple to setup, simple to use, and simple to maintain.

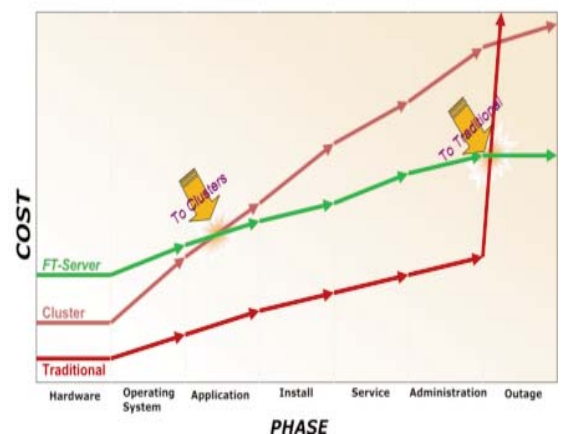
Simplicity

FlashServer HA installs just like any other standard Intel server - saving tremendously on professional services - and reducing complexity and need for specialized staff to support complex cluster environments. FlashServer HA implements redundancy at the hardware level, reducing failures to automatic notifications and indicator light status. This approach significantly reduces the complexity associated with other forms of high availability such as clustering systems. It also simplifies system management and recovery operations, since administration and configurations are performed as a single system view.

Uninterrupted Operation

Eliminating minutes of downtime for a cluster failover and avoiding a data loss provide substantial recapture of otherwise lost revenue often measured in thousands of dollars per minute.

TCO Reduction



FlashServer HA servers offer lower Total Cost of Ownership when all costs are tallied.

High Availability Features

FlashServer HA provides a fault tolerant architecture where two servers in a single enclosure operate in parallel, running the same operating systems and applications on the same data at the same time. Thus, if either server fails, the results are taken from the remaining server while the failed server is restored to proper operation.

99.999% Availability

The FlashServer HA architecture is designed to provide 99.999% uptime which means less than 5 minutes of downtime per year.

Hot Swap Components

All FlashServer HA components including disks, controllers, fans, power supplies and even an entire server are hot swappable and thus can be replaced quickly and easily.

Parallel Servers

By running all applications on two servers in parallel, there is no downtime when a server fails - the surviving server merely continues.

Live Updates

Splitting, updating and resynchronizing servers enables live updates.

Financial Benefits

FlashServer HA dramatically improves operations in many tangible including immediate cost savings:

High Availability without Clusters

Eliminate the cost of cluster software and hardware, avoid the costly professional services needed for installation and training - plus avoid the long term maintenance of the software and overall environment.

Software License Savings

FlashServer HA runs applications in parallel on two servers yet requires only one software license since it appears as a single server. The parallel operation is transparent to the outside world - but protects your applications and data continuously.

Eliminates Lost Data

Immediate failover eliminates the potentially high costs of lost data during the cluster failover period - *because applications continue running.*

Eliminate Planned and Unplanned Downtime

FlashServer HA can split the two servers, update one and then quickly resynchronize the other server - avoiding downtime for routine updates.

Vastly Simpler than Clusters Easier, Lower Cost and Faster Failover

FlashServer HA servers automatically failover to a duplicate server running in parallel - immediately and automatically - perfect for any mission critical environment:

Faster Failover

Transparent failure detection occurs automatically and failover is immediate since the redundant server is processing the same data in parallel.

No Data Loss

Parallel operation eliminates lost data. FlashServer HA avoids the several minutes it takes to failover a cluster where data is typically lost.

Transparent Restoration

After replacing a failed component, FlashServer HA automatically resynchronizes the two servers and get them running in parallel again.

Standard Software

Run your standard software like any other server - load it once and it runs in parallel on both parallel servers - with only one license. Best of all - no cluster software or complexity is required.

Continuous Processing for Business Critical Applications

Now you can run business critical applications and key virtual servers in a high availability environment without the complexity, cost and maintenance of clusters. FlashServer HA servers are ideal for:

eCommerce Servers

Keep web-based and other transaction processing servers in continuous operation - avoid the revenue penalty of down systems.

Call Center Servers

Keep commercial and emergency call centers up and running at all times.

Surveillance Servers

Maintain constant vigilance without interruption.

Database Servers

Do not miss a beat with your database updates, analysis and reporting.

Virtual Servers

With many virtual servers on one hardware platform, the platform needs to perform at all times.

FlashServer HA - High Availability Models

Models	HA-4101	HA-4102	HA-4201	HA-4202
Number and Type of Processors	(1) Quad-Core Processor	(2) Quad-Core Processors	(1) Six-Core Processor	(2) Six-Core Processors
Processor Speed	2.00 GHz	2.00 GHz	2.93 GHz	2.93 GHz
Memory Capacity (DDR3)	12 GB expandable to 96 GB	24GB expandable to 96 GB	24 GB expandable to 96 GB	48 GB expandable to 96 GB
Memory Speed	800 MHz	800 MHz	1,333 MHz	1,333 MHz
Windows Version	Windows Server 2008 R2 Enterprise - Supports Hyper-V			
VMware Version	VMware vSphere 4 Update 2			
Red Hat Linux Version	Red Hat RHEL 5.5 for Intel Servers			
Fibre Channel Support	FC4 and FC8 Host Bus Adapters			
Network Support	Dual 1 GbE or 10 GbE Network Interface Cards			
Internal Disks	Up to 8 SAS or SSD Disks			
External Storage	FlashDisk VX Series Virtual Storage with Snapshots, Replication, Thin Provisioning and Global Manager			
Warranty and Service	One year warranty; On-site service; 24x7 automated "call home" to US call center; Live technical phone support			

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