SolidFire Availability

MORE THAN JUST RELIABLE.

Availability is a matter of architecture, not marketing promises or complex contractual remedies, as some storage vendors would have you think. In order to achieve five-nines (aka 99.999%) or higher availability, it is essential to challenge the claims and ask these important questions upfront related to architectural design of a storage system:

1. Can the system support disk drive shelf failure without a fire drill?
2. Can the system support a disk or controller failure without a fire drill?
3. Is the system capable of automated rebuilds within minutes?
4. Is the system able to support non-disruptive generational upgrades with no downtime?
5. Will resources be instantly available after adding storage (capacity and performance)?

The SolidFire way

We drive better outcomes through better architecture. The SolidFire system was designed for 100% uptime. The focus of availability should always be centered on the architectural advantages a storage appliance can provide. By focusing on the architecture of a storage appliance, an organization enables itself to assess the true value the appliance can yield when maintaining operational assurance, and ensuring risk of downtime is mitigated by tangible design functionality. SolidFire's core belief centers on the inherent design capabilities of the SolidFire system to enable your business to keep running. Rather than focus on the number of nines we can loosely guarantee, or how we will buy back your business with incentiveswhen downtime occurs, we simply ensure that our storage system is purpose-built to deliver resiliency during hardware failure, expansion/upgrade/replacement, or software upgrade. With SolidFire, your business remains operational no matter what.

SolidFire Availability

Event	Downtime	Impact
SSD failure	No	None. Fully automated recovery in <10mins
Node failure	No	None. Fully automated recovery in <60mins
HW upgrades / replacement	No	None. Nondisruptive process.
HW expansion	No	None. Instant resource availability.
SW upgrades	No	None. Online process.

How SolidFire delivers operational excellence

Failure Prevention

Shared-nothing architecture - SolidFire's shared-nothing architecture does not leverage a shared disk shelf design as found with most all-flash arrays (both traditional and alternative). SolidFire truly has no single point of failure and completely eliminates common failure scenarios where loss of availability of data may occur.

Fully redundant architecture - SolidFire automatically rebuilds redundant data across remaining nodes in minutes to maintain high availability with minimal impact to performance. RAID-based systems suffer significant performance degradation upon disk or controller failures, taking hours or days to restore redundancy and equally as long to replace failed hardware.

Data Protection

Non-disruptive software and hardware upgrades- SolidFire's clustered architecture allows non-disruptive software upgrades on a rolling node-by-node basis. Upgrades can be done during production hours with little to no workload impact. New nodes can be easily added or removed from the system at any time to match business needs without downtime or data migration.

Self-healing architecture - When a failure occurs within a traditional RAID-based storage system, recovering can take hours or days, opening the window to additional faults and complete data loss. Within a SolidFire system, recovering from failures takes minutes and is fully automated. In a failure event, each drive in the system re-distributes a small percentage of its data – usually 1-2% – in parallel to the free space on all remaining drives. Failure recovery requires no operator intervention, eliminating the fire drills common with traditional RAID-based architectures.

Seamless Scalability

Non-disruptive system expansion / contraction - Expanding a SolidFire system is as simple as adding 1U storage nodes to an established cluster — all without disrupting service or compromising volume level Quality of Service (QoS) settings.

Instant resource availability - When a new node is added to the storage system, its additional capacity and performance resources are added to the overall resources of the cluster. Once added, the additional capacity and performance resources are instantly available to each and every volume within the system, eliminating the need to re-allocate volumes over new drives.

Seamless generational upgrades - New nodes with more capacity and performance are simply added to the established cluster, while old nodes are removed and retired. No rebalancing, re-striping, or volume re-allocation required. And all QoS settings remain enforced and guaranteed.

SolidFire Support

Go beyond reacting - At SolidFire, support is a proactive process beginning the moment a SolidFire cluster is deployed. SolidFire Active Support continuously monitors your systems, ensuring SolidFire products are maintained and operated at the highest possible level of availability and performance.