

**ESG Lab
Validation
Report
Summary**

Springpath Data Platform

Enterprise Data Management with Cloud Economics and Maximum Simplicity

The Springpath Data Platform is a scale-out software platform that runs on the same servers that host the hypervisor, VMs, and applications, converging storage and compute functionality onto a single unified commodity server-based infrastructure cluster. It can operate as a hyperconverged solution supporting virtualized or container or even bare metal deployments. Springpath is architected to be a 100% software solution capable of running on tier-1 servers, scaling both storage capacity and performance as servers are added to the cluster; delivering high I/O performance and capacity; and providing enterprise-class data services without caveats.

**Read the Full Report at
www.springpathinc.com**

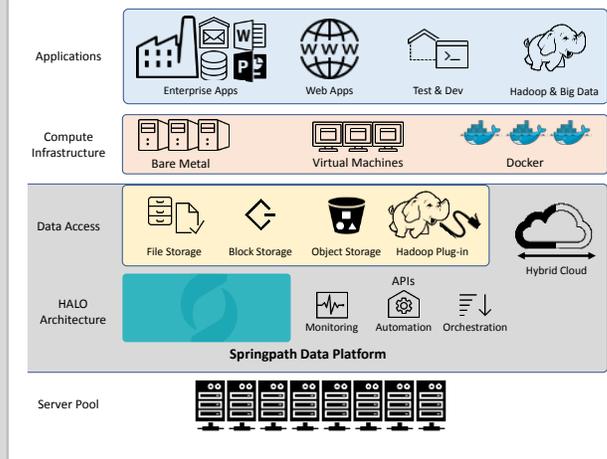
The Product

Springpath’s hardware agnostic log-structured object (HALO) storage technology seamlessly and automatically leverages separate performance and capacity tiers. Data is fully distributed across disks in all the servers in the cluster to leverage all controller resources and provide high availability.

Logical abstractions of physical resources enable data to be resynchronized and rebalanced with cluster changes. Built-in space reclamation policies are based on data patterns as written by applications.

In-line data deduplication is designed to increase cache efficiency and performance, and to provide space savings with no overhead. In-line compression also has practically no overhead, providing space savings with uncompromised, sustained, and predictable performance.

Springpath native snapshots and ReadyClones have no performance, scalability, or granularity caveats. Springpath snapshots are pointer-based, zero-copy, and space efficient. ReadyClones are space efficient. Both snapshots and clones are integrated into VMware via VAAI, and provisioned through the VMware vSphere management client.



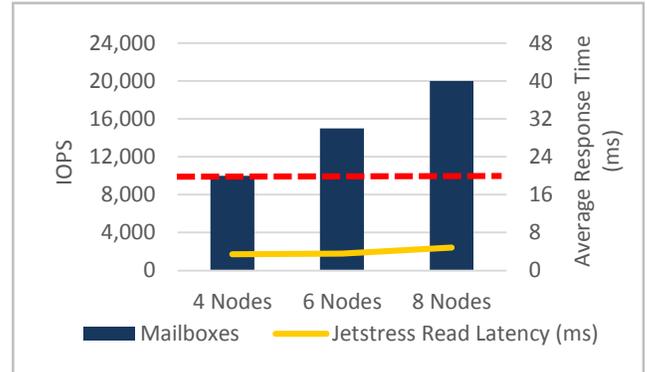
Why This Matters

To take advantage of the benefits of virtualization and private cloud technology, IT infrastructures have grown complex. Organizations are turning to integrated computing platforms and converged infrastructures as a means of simplifying the environment. The ability of IT end-users to access information anytime from anywhere is not simply desired; it is expected. Global operations demand 24x7 data access, leaving no window for downtime.

Springpath Data Platform is designed to provide flexible tier-1 storage, engineered for efficiency and performance in support of the modern data center. ESG Lab has verified that Springpath Data Platform can be quickly deployed to provide cost-effective, easy-to-configure storage for data center environments of all sizes with excellent scalability and performance. Efficient use of a small amount of SSDs for cache enabled the system to support nearly 100,000 total users on a small number of high-capacity drives with excellent response times. Springpath provides an always-on, non-disruptive storage environment thanks to a tightly integrated, highly available architecture combined with robust cluster services.

ESG Lab Validation Highlights

- ESG Lab performed hands-on evaluation and testing of Springpath Data Platform at Springpath’s Sunnyvale, California facilities. The following is a summary of the results:
- ESG Lab validated that Springpath was extremely easy to install and deploy. Using a pre-configured JSON file, a new cluster was deployed in less than 15 minutes. Adding additional nodes to a cluster was non-disruptive and executed in less than a minute using the intuitive web interface.
- ESG Lab demonstrated that Springpath simplifies management with no additional training necessary for administrators with working knowledge of the vCenter client. ESG Lab showed that all day-to-day operations could be accomplished using native VMware tools.
- ESG Lab validated that Springpath’s proprietary log-structured file system provided always-on deduplication, compression, and optimization of all data, which enhanced system performance, reduced response times, and reduced storage capacity, hence reducing the associated power and space requirements.
- ESG Lab validated that data operations performed at a VM level in Springpath were performed more efficiently and quickly than in a traditional virtualized environment, saving valuable time and resources. One hundred clones of a virtual machine completed in a remarkable two minutes, 32 seconds.



- ESG Lab demonstrated very nearly linear performance scalability of a mix of common business applications in a virtualized environment. The eight-node Springpath cluster was easily able to support nearly 100,000 users while response times remained manageably low.

Issues to Consider

Springpath technology is server, platform, and application agnostic. Springpath software can be deployed on an array of servers from four major vendors today—Cisco, Dell HP, and Supermicro—and Springpath is in the process of qualifying additional platforms, realizing the flexibility of the technology in terms of scaling performance, capacity, and different ratios of VMs to configurations of CPU, DRAM, SSD, and HDD.

The performance test results presented in this report are based on benchmarks and configurations deployed in a controlled environment. Due to the many variables in each production data center environment, capacity planning and testing in your own environment is recommended.

The Bigger Truth

The ubiquitous adoption of server virtualization requires significant changes to existing storage infrastructure. Storage groups are playing catch up as they design new networked storage solutions to meet the demands that the high I/O and throughput virtualization creates. While virtualization promises to deliver savings in capital expenditures, these savings can be wiped out by the costs of upgrading to the faster storage systems needed to respond to these requirements.

Springpath delivers a software solution that simplifies the deployment of scale-out compute and storage resources while providing agile enterprise-class data management functions and outstanding capacity and performance efficiency via penalty-free in-line deduplication and data compression. Customers looking to build a virtual environment rapidly and easily will find the solution offered by Springpath to be a perfect fit.

Virtualization will continue to be a disruptive force for IT, requiring new ways of thinking about compute and storage environments as scalability and elasticity become paramount. Springpath is both simple and versatile to deploy and manage with the ability to scale easily for demanding mixed application environments. Springpath’s powerful, proprietary log-structured file system liberates organizations to elastically grow and adapt infrastructure resources to meet rapidly changing business objectives. Infrastructure consolidation has increased the effectiveness of IT resources and decreased complexity, and hyperconverged infrastructure can help organizations take on the next-level challenges of maximizing efficiency while reducing effort and costs. ESG Lab believes that the Springpath Data Platform is strongly positioned to help organizations get to the next level.

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