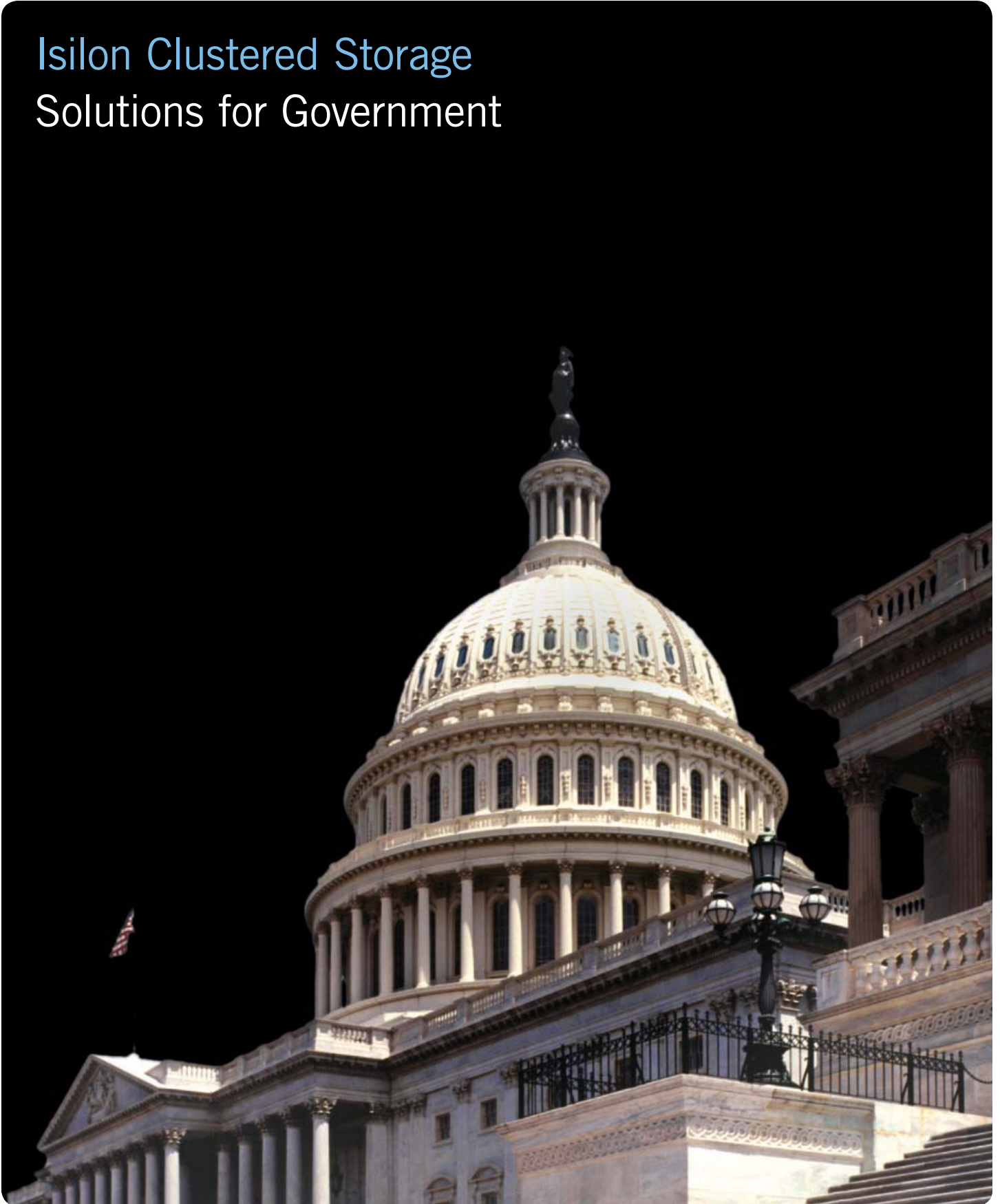




*How breakthroughs begin.™*

Solution Brief

# Isilon Clustered Storage Solutions for Government



# Solutions for Government

## Isilon Clustered Storage: Enabling Breakthroughs for Government

*Government agencies continue to address many of the nation's most pressing problems, including homeland security, global climate change and environmental science. Toward those ends, the ability to acquire, process and generate large amounts of data is placing increasingly strenuous demands on existing storage architectures. Isilon IQ delivers the industry's first single file system that unifies and provides instant and ubiquitous access to the rapidly growing stores of file-based data that agencies collect and disseminate, eliminating the cost and greatly reducing the complexity barriers of traditional storage architectures.*

*By combining the fifth generation of Isilon's unique OneFS® operating system software with the latest advances in industry-standard hardware, Isilon IQ delivers modular, pay-as-you-grow, enterprise-class storage systems—enabling government agencies to transform data into information, and information into breakthroughs.*

### Industry Leading Scalability—up to 2.3 PB in a Single File System

No different than any other complex enterprise, government agencies face an ever-increasing need to collect, store and disseminate information in the easiest, most cost-effective way possible. Isilon IQ easily scales storage, unifying vital data into one file system, increasing the performance of applications, and reducing the time spent managing storage. Isilon IQ delivers industry-leading scalability—up to 96 nodes in a single cluster and up to 2.3 petabytes in a single file system.

### Performance For Multiple Environments

Isilon IQ is the first clustered storage system that can be seamlessly grown from four terabytes to over two petabytes in a single file system and can scale up to 20 GB/second of throughput. The Isilon IQ clustered storage product line addresses a full spectrum of storage needs—from the highest performance Tier-1 applications to Tier-2 nearline archive, disk-to-disk backup and disaster recovery. Isilon IQ is ideal for high throughput, highly concurrent government agency environments where clusters of Windows®, Unix, Linux® and/or Mac® OS X clients require fast read and write access to a large, shared pool of data.

In addition, Isilon IQ Accelerator-x platform extension nodes enable single stream performance of up to 400 MB/second, concurrent performance of up to 700 MB/second and delivery of over 26,000 transaction I/Ops.

### Reliability and Disaster Recovery

Isilon IQ simplifies backup or reduces the reliance on tape for any storage environment—from traditional data center backup to a regional failover site to the remote office—so critical government data always stays available. With Isilon's state-of-the-art FlexProtect-AP, administrators can set data protection policies on the fly at the cluster, directory or file levels. With Isilon IQ, data is automatically protected across the entire cluster using all available resources. In the event of multiple drive or node malfunctions—up to four simultaneous node failures—N+4 protection ensures that all data remains 100% available.

### Easy to Use, Easy to Manage

Isilon IQ clustered storage unifies vast libraries of data into one easily scalable, easily accessible shared pool of data. Isilon IQ dramatically reduces the time and resources required to manage data—allowing agencies to refocus vital resources towards interpreting the data and delivering results. With Isilon IQ clustering, one person can now manage petabytes of data—representing an incredible leap in efficiency.

### Easy To Grow, Easy To Own

Powered by OneFS, the Isilon IQ family of products creates a single pool of expandable storage that is easy to install and grow. Once racked, a 10, 50 or 100+ terabyte cluster takes less than 10 minutes to configure and set up, and capacity can be added on the fly in less than 60 seconds with no downtime—enabling agencies to quickly adapt to new demands and unexpected emergencies. Isilon IQ enables agencies to maximize their budgets by easily expanding storage on a modular pay-as-you-grow basis.

### Breakthroughs Begin With Isilon

The Isilon product line is comprised of the Isilon IQ 1920, 3000, 6000, 9000 and 12000 platform nodes; the Isilon EX 6000, EX 9000, EX 12000 and Isilon IQ Accelerator-x extension nodes; and licensable software applications such as SyncIQ™, SnapshotIQ™, SmartConnect™, SmartQuotas™ and Aspera for Isilon IQ. This set of flexible and innovative products define new industry standards by delivering a single file system that scales to 2.3 petabytes of capacity, up to 20 GB/second of throughput and supports high-performance InfiniBand® for low-latency, high-bandwidth intracluster communication—providing government agencies with the power to transform their critical digital assets into breakthroughs.

## Customer Success



NASA's World Wind project is an online application that lets site users zoom from satellite altitude into any place on Earth. Leveraging Landsat satellite imagery and Shuttle Radar Topography Mission data,

World Wind lets users experience Earth terrain in visually rich 3D. With Isilon IQ, NASA World Wind consolidated its massive collection of Landsat 7 satellite images into one, single global namespace, simplifying its workflow and enabling immediate, 24x7 access for fast, online delivery.

***“By using a vast collection of processed satellite imagery, NASA World Wind enables anyone with Internet access to experience anyplace on Earth as if they were really there. To ensure that our online user’s experience is seamless and compelling, we require storage that delivers high concurrent performance for processing the raw satellite data, as well as immediate, reliable access for fast online delivery.”***

***Patrick Hogan, Project Manager, NASA World Wind***



The San Bernardino County Recorder is leading the way for a digital government by making records available at the click of a mouse almost immediately after their filing with the Recorder's Office.

***“Isilon IQ serves as the primary storage repository for all land title, birth, marriage and death records for the entire county. The system effortlessly integrated with our FileNet document management system, and its clustered architecture and SyncIQ™ replication software provide a high degree of reliability and scalability.”***

***—Patrick Honny, Departmental Information Systems Manager for the County of San Bernardino Auditor-Controller/Recorder's Office***



HiRISE, currently orbiting Mars on-board NASA's Mars Reconnaissance Orbiter (MRO), is an advanced digital imaging project led by the University of Arizona.

HiRISE is focused on collecting groundbreaking, high resolution images of Mars' terrain to deepen scientists' understanding of the planet's evolution, and assist in planning future Mars missions and landings. With Isilon IQ, the USGS Astrogeology Research Program is able to efficiently and cost-effectively consolidate all its HiRISE images—with file sizes often exceeding 2 GB—into one single global namespace and file system.

***“The digital images we are able to capture with HiRISE are unique in their incredibly high resolution and complexity, thereby creating visual depictions of Mars much greater in detail—and file size—than ever before. We found that only Isilon clustered storage was capable of cost-effectively and efficiently storing this type of digital imaging data, as it delivers the unparalleled scalability of capacity and performance we require to store, process and analyze our valuable imagery of Mars and its terrain.”***

***—Chris Bradshaw, Senior Engineer, United States Geological Survey (USGS) Research Program***

## Isilon IQ Clustered Storage

The Isilon IQ family of clustered storage systems was designed from the ground up to meet the needs of data-intensive enterprises and high-performance computing environments. By combining Isilon's OneFS® operating system software with the latest advances in industry-standard hardware, Isilon delivers modular, pay-as-you-grow, enterprise-class clustered storage systems.

- Isilon's OneFS distributed file system creates a single, shared global namespace
- First and only truly symmetrical clustered storage architecture
- System can scale from 4TB–2.3PB in a single file system
- Unmatched aggregate throughput from a single file system with up to 20 GB/second
- Single stream performance of more than 400 MB/second, concurrent performance of 700 MB/second and over 26,000 transaction I/Ops
- Industry leading, high availability for clustered storage systems
- Powerful, easy-to-use Web-based management
- 60-second scaling of both capacity and performance
- Built-in, automatic application/client connection load balancing
- Industry-standard protocol support (NFS, CIFS, HTTP, FTP, NDMP, SNMP, LDAP, ADS, NIS)

Isilon also offers a robust suite of clustered storage software applications that optimize data protection and management:

### SyncIQ™

Enterprises increasingly need to distribute large, mission-critical datasets to multiple shared storage systems and teams in multiple locations. SyncIQ replication software is the industry's only policy-based file replication system designed exclusively for clustered storage, combining a rich set of policies for creating and scheduling storage replication jobs with innovative bandwidth throttling and cluster utilization capabilities.

### SnapshotIQ™

Isilon Systems introduces a true breakthrough in snapshot technology that provides a uniquely simple, scalable and flexible way to enable enterprise-class protection and user-driven data recovery for clustered storage. With the ability to support an unlimited number of snapshots within a highly scalable single pool of clustered storage and up to 1,024 snapshots within any single directory, SnapshotIQ represents a significant advancement over traditional snapshot technology.

### SmartQuotas™

SmartQuotas quota management software delivers quotas and thin provisioning technology for clustered storage and provides data-intensive enterprises with an unparalleled solution for optimizing the value of their storage resources. SmartQuotas enables businesses to simply and flexibly manage storage resources across their entire organization—with both hard quotas and thin provisioning capability—to support growing storage demands with minimal resources.

### SmartConnect™

Isilon Systems' exclusive SmartConnect software application allows IT Managers to meet the demands of an always-on, 24x7x365 world by ensuring the highest levels of performance and industry leading high availability. With intelligent client connection load balancing and failover support, SmartConnect represents a breakthrough in optimizing clustered storage performance and availability.

### Aspera for Isilon IQ

Aspera and Isilon have partnered to provide a solution for quickly transferring the largest files across wide area networks or directly to end-users, independent of network conditions or distance. Files of any type—video, audio, images or other large, rich media files—can be rapidly transferred without impacting other network traffic, while scaling to speeds that meet growing business demands.

### About Isilon Systems

Isilon Systems is the worldwide leader in clustered storage systems and software for file-based data, enabling enterprises to transform data into information—and information into breakthroughs. Isilon's award-winning family of IQ clustered storage systems combines Isilon's OneFS operating system software with the latest advances in industry-standard hardware to deliver modular, pay-as-you-grow, enterprise-class storage systems. Isilon's clustered storage solutions speed access to critical business information while dramatically reducing the cost and complexity of storing it.



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