

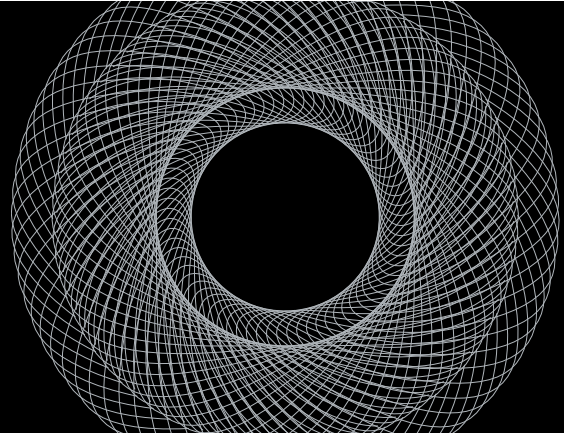


How breakthroughs begin.™

Application Software

## SmartConnect™

Optimizing Clustered Storage Performance and Availability.



### Key Features

- **Optimized Performance**  
SmartConnect optimizes clustered storage performance by keeping client connections automatically balanced across the entire cluster
- **High Availability**  
For NFS environments, SmartConnect provides automated and dynamic N-way failover and failback making for the highest available clustered storage solution on the market
- **Scalability**  
SmartConnect enables Isilon clustered storage systems to seamlessly scale and handle large numbers of clients and nodes in computing-intensive environments
- **Simplicity**  
Through a single virtual host name, SmartConnect automates and greatly simplifies client management
- **Optimized Client Experience**  
For NFS environments, SmartConnect provides automated and scheduled “rebalance” of NFS connections across the cluster to ensure client experience is consistent and performance stays optimized. SmartConnect can also be configured into multiple zones that can be used to ensure different levels of service for different groups of clients

## Enabling Breakthrough Levels of Performance and Availability Through Client Connection Load Balancing with Failover

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.

### Why is SmartConnect such a powerful tool?

Today's competitive companies face a tremendous increase in the amounts of data used to conduct their everyday business, driven in large part by an explosion of file-based data. IT managers know that applications using and storing video, audio, images, research sets and other forms of data are pushing the limits of traditional storage—sometimes to the breaking point. In addition, they are faced with the daunting task of managing both an ever-increasing number of clients and increasingly demanding enterprise mandates for failure resiliency. Taken together, these requirements can seem overwhelming.

SmartConnect, a licensable software module of Isilon's OneFS® operating system software, now in its fifth generation, helps to meet these challenges by greatly simplifying client management across the enterprise. Through a single host name, SmartConnect enables client connection load balancing and dynamic NFS failover and failback of client connections across storage nodes to provide optimal utilization of the cluster resources. Without the need to install client side drivers, administrators can easily manage a large and growing number of clients and rest assured that in the event of a system failure, in-flight reads and writes will successfully finish without failing.

Traditional storage systems with two-way failover typically sustain at least a 50% degradation in performance when a storage head fails as all clients must fail over to the remaining head. With Isilon, during failover, clients are evenly distributed across all remaining nodes in the cluster ensuring minimal performance impact.

Consider the following advantages:

- » **Optimized Performance:** Maximize performance by keeping client connections balanced across the entire storage cluster
- » **Massive Scalability:** Seamlessly scale and handle large numbers of clients and nodes in computing intensive environments
- » **High Availability:** Dynamic NFS failover and failback makes for the highest available clustered storage solution on the market

## How SmartConnect works

### Client Connection Load Balancing:

Isilon's SmartConnect balances client connections across nodes based on policies that ensure optimal usage of cluster resources. By leveraging your existing network infrastructure, SmartConnect provides a layer of intelligence that allows all client and user resources to point to a single host name, enabling easy management of a large and growing numbers of clients. Based on user configurable policies, SmartConnect applies intelligent algorithms (e.g. CPU utilization, aggregate throughput, connection count or round robin) and distributes clients across the cluster to optimize client performance and end-user experience. In addition, SmartConnect can be configured into multiple zones that can be used to ensure different levels of service for different groups of clients. All of this is transparent to the end-user.

### Dynamic NFS Failover and Failback with Performance Rebalance:

SmartConnect uses a virtual IP failover scheme that is specifically designed for Isilon IQ clustered storage and does not require any client side drivers. The Isilon cluster shares a "pool" of virtual IPs and the cluster distributes these IP addresses across NFS (UNIX) clients. If a node is brought down for any reason, including a failure, the virtual IPs on the clients will seamlessly failover across all other nodes in the cluster. When the offline node is brought back online, SmartConnect automatically rebalances the NFS clients across the entire cluster to ensure maximum storage and performance utilization.

In addition, SmartConnect leverages this virtual IP technology to enable scheduled and automated rebalance of NFS connections to ensure that optimal performance is being achieved from the cluster. For example, NFS clients can be automatically and easily rebalanced once per day, based on CPU utilization, to ensure high performance is being achieved from the cluster (i.e. certain clients which have become CPU intense may need to be "rebalanced" to their own nodes on the cluster to ensure an optimized client experience). All of this is transparent to the end user.

## Cornerstone of a Robust Data Management Storage Solution

SmartConnect provides the intelligence and automation necessary to free up time to spend on other more strategic IT projects. Regardless of whether you have a few clients or thousands of clients or whether you have 3-node or 96-node Isilon IQ storage cluster, SmartConnect makes client management simple, requiring very little to no management resources.

For NFS environments, SmartConnect provides automated N-way failover/failback and automated rebalance across the cluster in the event of a failure or for ensuring performance. This delivers industry leading levels of high availability and optimized performance for Isilon's clustered storage solutions.

Through a single virtual host name, IT Administrators will use SmartConnect as the cornerstone for providing seamless enterprise-wide client access to an Isilon storage cluster. Clients and storage nodes can be added and the cluster scaled on the fly while a system is in production, making Isilon IQ with SmartConnect the industry's most flexible, powerful and easy-to-manage clustered storage solution.

With its intelligent client connection load balancing and NFS failover support, SmartConnect achieves breakthrough levels of performance and availability, enabling IT Managers to meet the ever-increasing demands being placed on them to ensure always-on, always-available performance from their Isilon clustered storage solutions.



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