

# EMC ISILON SMARTCONNECT

Optimize performance and availability while simplifying data management



## ESSENTIALS

### Optimized performance

- SmartConnect keeps client connections automatically balanced across the entire cluster

### High availability

- For NFS environments, SmartConnect provides automated and dynamic failover

### Simplified and efficient management

- SmartConnect streamlines management with automated rebalancing of client connections across the cluster

## ENABLING BREAKTHROUGH LEVELS OF PERFORMANCE AND AVAILABILITY

EMC® Isilon® SmartConnect™ software allows IT managers to meet the demands of an always-on, 24x7 world by providing the highest levels of performance and industry-leading data availability. With intelligent, automatic client connection load balancing and failover capabilities, SmartConnect simplifies and optimizes scale-out storage performance and data availability.

## WHY IS SMARTCONNECT SUCH A POWERFUL TOOL?

Today's enterprises face a tremendous increase in the volume of data used to conduct their everyday business. 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 a highly available data environment. Taken together, these requirements can seem overwhelming.

SmartConnect helps you 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 network file system (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 a minimum 50 percent degradation in performance when a storage head fails, as all clients must fail over to the remaining head. With Isilon, clients are evenly distributed across all remaining nodes in the cluster during failover, helping to ensure 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:** Provide seamless dynamic NFS failover and failback for a highly available data environment

## **HOW SMARTCONNECT WORKS**

### **Automatic client connection load balancing:**

SmartConnect balances client connections across nodes based on policies that help 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 for high availability:**

SmartConnect uses a virtual IP failover scheme that is specifically designed for Isilon 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 (Linux and UNIX) clients.

If a node within an Isilon storage cluster 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. This ensures that when a node failure occurs, all in-flight reads and writes are handed off to another node in the cluster to finish its operation without any user or application interruption. When the offline node is brought back online, SmartConnect automatically rebalances the NFS clients across the entire cluster to maximize storage utilization and performance.

### **Automatic rebalance of connections to optimize performance:**

SmartConnect also leverages virtual IP technology to enable scheduled and automated rebalance of NFS connections to achieve optimal performance from the cluster. For example, NFS clients can be automatically and easily rebalanced once per day, based on CPU utilization, to achieve high performance from the cluster. In this way, certain clients which have become CPU intense can 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 HIGHLY EFFICIENT AND SCALABLE STORAGE SOLUTION

Whether you have a few clients or thousands of clients, or whether you have three-node or 144-node Isilon storage cluster, SmartConnect makes client management simple, requiring minimal management resources. With its built-in intelligence and data management automation, SmartConnect helps to free up time for your IT staff to spend on other, more strategic IT projects.

For NFS environments, SmartConnect provides automated 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 scale-out storage solutions.

Through a single virtual host name, SmartConnect provides 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 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 provide always-on, always-available performance from their Isilon clustered storage solutions.

### CONTACT US

To learn more about how EMC Isilon products, services, and solutions can help solve your business and IT challenges, [contact](#) your local representative or authorized reseller—or visit us at [www.EMC.com/Isilon](http://www.EMC.com/Isilon).

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