ONStor
NAS for the Enterprise

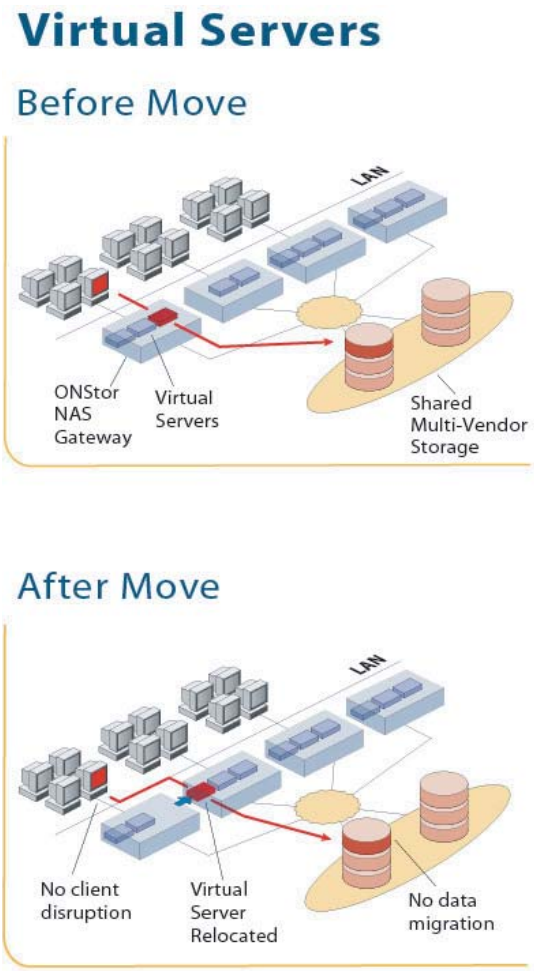
W H I T E P A P E R

Virtual Server Technology For Seamless Scalability

The significant growth in file serving requirements has driven the need for new solutions for IT managers who are expected to cope with increased loads often without increased resources. The simplicity of deployment of NAS as a solution to file services has proven attractive to IT managers around the globe. But while managing a few NAS devices is easy, managing many is not. Until now, when a NAS device neared capacity, the only solution was to add another, larger NAS device and to migrate the data and the users to the new box. If higher performance was required, the only solution was a new, faster box with ensuing migration of users and data. The ONStor NAS Gateway and suite of storage management tools mean an end to both user and data migration.

The key to providing seamless scalability is the remarkable technology behind the ONStor Virtual Server or vServer and the ONStor EverON™ software platform which enables seamless workload balancing, performance scaling and device failover, all without user disruption or data migration. Each ONStor NAS Gateway is capable of hosting multiple vServers, each with its own name, IP address and authentication. To users on the LAN, these virtual servers look like individual physical servers with storage attached. Any virtual server may be relocated to any physical NAS Gateway at any time, ending the need to migrate users.

Because the storage is shared by all ONStor NAS Gateways and can be dynamically provisioned to any virtual server, no data needs to be migrated when the capacity of a volume is increased. As additional ONStor NAS Gateways are added, performance and availability scales without the need for migration of users or data.



To clients, virtual servers appear to be a complete NAS device. For performance scaling or load balancing, virtual servers can be moved from one NAS Gateway to another without user disruption or data migration.

File Serving Headaches

The big pain points for storage administrators are user migration and data migration. User migration means user disruption and data migration involves risk, additional work and cost. Conventional NAS devices create an inflexible link between specific disk resources and specific NAS heads. When either the disk is full or the bandwidth of the NAS head is saturated, the remedy is to add an additional NAS device. Then begins the painful process of migrating data and users to the new device.

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Creating the Enterprise-Enabled NAS

ONStor's virtual server technology addresses the most significant issue with today's NAS: the ongoing need for user and data migration. vServers eliminate the pain associated with conventional NAS. To clients and servers on the LAN a vServer appears to be a complete NAS device with a unique identity, IP address and security authentications. To administrators, the vServer delivers exceptional management power and flexibility.

The elegance of the vServer is its mobility. A single NAS Gateway can simultaneously host up to 255 vServers, any of which can be relocated from one NAS Gateway to another at any time without disrupting either clients or storage. This delivers the flexibility to scale performance, balance loads, and perform anytime system maintenance.

Seamlessly Scalable, Linear Performance Growth

With vServers, growing performance is easy. Simply add an ONStor NAS Gateway to an existing cluster and relocate vServers to the new device. The move is a quick one-touch operation that requires no data migration and no disruption to clients and servers on the LAN. ONStor's clustering architecture carries exceptionally low overhead, so when a NAS Gateway is added to a cluster, the result is a nearly linear growth of system throughput. If more system throughput is needed it's immediately available simply by adding a NAS Gateway and relocating vServers to the new device.

High Availability Supported Through vServers

Conventional NAS heads are available as clustered pairs, however that leaves your file serving needs unprotected in the event of a box or cabling issue. With ONStor's virtual server technology and support for n-way clustering, 99.999% uptime becomes a reality. Should the connection to any of the NAS Gateways be lost, client file services will be automatically transferred to one of the remaining NAS Gateways. Up to four NAS Gateways may participate in a single cluster, and with three or more NAS Gateways clustered, full redundancy is maintained, even if one NAS Gateway is removed from the cluster. The automatic failover is enabled by the vServer technology: the vServers assigned to the affected box are transparently moved to another physical NAS Gateway, with no user disruption and no migration of data. When the affected box is brought back on line, the vServers are simply relocated back to their original physical NAS Gateway.

IT Managers Get Their Personal Lives Back!

For many IT managers, system maintenance too often means working nights and weekends, as these are the only times that file servers can be taken down to perform maintenance. Thanks to ONStor's virtual server technology, system maintenance may be performed at any time without user disruption or migration of data, and in clusters of three or more, full redundancy is maintained. The vServers assigned to one physical NAS Gateway are temporarily offloaded to the other NAS Gateways, transparently to users. When the maintenance is complete, the vServers are relocated back to the first NAS Gateway, all the time, keeping users connected with their essential file services.

Summary

ONStor's virtual server technology provides the key to the enterprise-enabled NAS. vServers deliver the management power and flexibility to take the pain out of providing enterprise-wide mission-critical file services, while putting an end to user and data migration.