



# Secrets of Successful Virtualization

Server virtualization is a great way for your organization to battle today's economic challenges. You can reduce costs through server consolidation, which in turn increases your ROI as you run multiple workloads on a single server. Plus, the ability to deploy new applications—and scale them up or down—boosts business agility. But you can negate the cost-saving benefits of server virtualization by choosing an inefficient SAN storage solution that does not properly support the advanced requirements of virtualized environments.



## What to Watch For

It literally pays to be aware of the right storage choices when you're making the most of your virtualization investments. Here are some things to keep in mind:

- External shared storage can be very inefficient. A volume allocated to hold 100GB of data may only be required to hold 50GB—and that remaining capacity may not be used for years.
- More virtual machines equate to more logical volumes—and more snapshots for backups. Traditional SANs require a 100% reserve, so the same half-full 100GB volume now requires an additional 100GB for each snapshot.
- More often than not, implementing high availability across sites requires an additional storage system plus synchronous replication software to enable continuous data availability.
- Disaster recovery using remote replication boosts storage costs. Storage replication solutions often require multiple copies of data and massive capacity reservation that can increase storage inefficiency by a factor of three.

## Dealing with Budget Realities

The deployment model for traditional SANs is to purchase a storage system with the capability for future expansion. But even with IT budgets being curtailed today, you still need to plan financially for future requirements and expansion.

Lower-cost SAN solutions often lack the features required to support your high availability and disaster recovery requirements, not to mention desired enterprise-class management features.

## iSCSI SANs

An attractive alternative to traditional SANs, iSCSI SAN solutions offer you storage for virtualized environments that soothes all the potential pain points around cost and management. Go one step further to iSCSI SANs with a scale-out architecture, like the HP LeftHand P4000 SAN, and you gain additional advantages in scalability, high availability, disaster recovery and performance.

Storage clustering creates a scalable storage pool by aggregating the critical

components of a number of storage systems into a single pool of resources. This pool accepts and responds to iSCSI requests as a single system, as all physical capacity is aggregated and available to the volumes created on the SAN. Need more storage capacity and performance? Simply and seamlessly add additional storage nodes to the pool—without downtime.

HP LeftHand P4000 SAN solutions dramatically improve overall storage efficiency with built-in thin provisioning that allocates space only as data is actually written to a volume. Purchase only the storage you need now and then add to your pool later as requirements increase. This maximizes utilization and ROI while helping you defer capital expenditures.

What's more, HP LeftHand P4000 SAN solutions include built-in support for high availability and disaster recovery, eliminating the need to buy add-on software. You also get superior, scalable performance plus straightforward management that any administrator can understand and put into practice right away.



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