

# Impact

April 20, 2001

## Vicom SVE: Delivering Storage Virtualization's Benefits

*Storage virtualization can provide multiple storage infrastructure management benefits. It's a plus if the virtualization solution investment has extended life. So, when an enterprise IT planner considers buying storage, he or she should ask, "What's in virtualization for me?" Vicom's Storage Virtualization Engine (SVE) offers all four storage virtualization benefits listed below.*

### Key Storage Virtualization Benefits

Storage virtualization can benefit storage buyers and storage managers in four ways:

1. By creating virtual volumes that can span multiple storage units, allowing administrators and developers to operate cost-effectively on the storage as a whole;
2. By enabling heterogeneous "mix and match" server and storage device usage, and (possibly) storage network components from multiple vendors;
3. By serving as a platform for cross-device storage services such as backup, remote mirroring, and point-in-time copying; and
4. By enabling secure storage sharing and efficient storage utilization and reducing overall storage cost.

### *All of the Above, and More...*

Depending on implementation, a storage virtualization solution offers some or all of the four possible benefits. Also, the solution can be "agnostic" with respect to the storage networking protocol, and thus be able to support mixed-protocol networked storage device or subsystem

pooling. Finally, a solution's implementation can render it resistant or immune to potential access to data from an unauthorized server on the storage area network (SAN).

### Storage Security

Decentralized host- or appliance-based solutions that are "out-of-band" use client agents or specialized host bus adapters (HBAs) that need to be set up separately. Otherwise, agent management software can get out of step, permitting servers participating in a SAN to access storage outside their assigned zones.

Such unauthorized "rogue server" access can do great harm. The damage caused by rogue server intrusion must be repaired, and the underlying agent software and HBA problem must be fixed before operation safe to storage contents can proceed.

Vicom SVE is based on the Vicom Independent Distributed Routing architecture (VIDR). VIDR eliminates the need for agent software or specialized HBAs in the SAN, thus avoiding the problem of unauthorized access by improperly configured rogue servers.

---

## Efficient Storage Utilization/Sharing

Vicom's SVE provides efficient storage utilization via logical unit number (LUN) masking and mapping, and zone control in increments as small as half-gigabyte volumes (if required). For load balancing to tune performance, administrators can set up scripts that switch among alternate sets of zone access for servers according to policy.

"Carved LUNs," describing the ability to create smaller virtual drives from larger physical drives for more efficient storage sharing, are an important requirement of many major storage service provider (SSP) vendors. Vicom's SVE architecture satisfies SSP vendor needs by not requiring modifications to servers or hosts on SSP customer sites.

## Freeing Captive Storage

With SVE, disparate storage resources can be gathered and dynamically allocated to servers as needed. Vicom SVE allows this pooling by providing a reliable hardware platform for any-to-any connectivity for small computer system architecture (SCSI) to system storage architecture (SSA), fibre channel (FC) to SSA, or SCSI to FC. For scalability, administrators simply add routers to achieve near to linear improvement in throughput performance.

Protocol conversion can also be provided through Vicom SV Bridge. Thus, Vicom SVE preserves investments made in legacy as well as newer server-hosted "just a bunch of disks" (JBOD) and redundant array of independent disk

(RAID) arrays by bringing them into the pooled storage SAN infrastructure.

## Continuous Data Availability

Vicom SVE provides multiple data protection options that can employ all types of pooled disk storage units for mirroring, instant point-in-time copy, and drive sparing. LAN-free backup can be fully automated, and storage capacity changed or reconfigured without disrupting servers in the SAN.

## Management Power Centralized

An in-house or a storage service provider (SSP) storage utility needs a management capability that allows administrators to manage multiple SANs centrally, without having to individually coordinate and update management software residing on client systems. Vicom's SVE routers each have an Ethernet port to connect to a remote management station for simple central administration of multiple SANs. Each SVE also supports a simple network management protocol (SNMP) management information base (MIB) for SAN control through CA Unicenter, HP OpenView, and Tivoli NetView.

## Aberdeen Conclusions

Organizations should carefully consider potential storage virtualization benefits, whether the solution is scalable, and if it is able to work with legacy equipment to support management of multiple SANs centrally. Vicom's SVE can meet these IS buyer criteria, and should be on most, if not all, evaluation lists.

— Dan Tanner