“The Universal Storage Platform V gives us flexibility across a very heterogeneous data center. We can be somewhat storage agnostic — bringing in other vendor arrays as needed — but are still able to virtualize, provision and manage it all from the Hitachi framework.”

Sam Peterson
SVP, Technology
Overstock.com

Overstock.com

<table>
<thead>
<tr>
<th>INDUSTRY</th>
<th>Retail: Internet</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOLUTIONS</td>
<td>Virtualization, Storage Management, Enterprise Platform, Modular Platform</td>
</tr>
<tr>
<td>Hardware</td>
<td>Hitachi Universal Storage Platform® V, Hitachi Adaptable Modular Storage 2500, Hitachi Adaptable Modular Storage 500</td>
</tr>
<tr>
<td>Software</td>
<td>Hitachi Dynamic Load Balancing Controller, Hitachi Dynamic Provisioning</td>
</tr>
</tbody>
</table>
Brand Name Online Retailer Overstock.com Provides Faster, More Reliable Service with Hitachi Storage

To keep its high volume online business running smoothly, Overstock.com wanted to replace data migration woes and legacy storage systems with a highly flexible tiered storage infrastructure. Using Hitachi Universal Storage Platform® V and Hitachi Adaptable Modular Storage 2500, Overstock.com created a virtualized tiered storage environment that reduces data migration tasks from hours to minutes and can be managed from a single pane of glass.

In a troubling economy, it is good to know that one company is looking out for the consumer. Overstock.com is a popular online retailer that offers brand name merchandise at deeply cut prices, emblazoning across its website the question, “What would you like to save on today?”

Headquartered in Salt Lake City, Utah, the company brings quality excess inventory and close-out merchandise to consumers through its easy-to-navigate Web-based outlet mall and auction services. While a multitude of partners make up the supply chain for Overstock.com, customers experience a singular entity for purchases, returns, shipments and questions.

Launched a decade ago, the Overstock.com website is now an online leader in purchases of retail goods, with gross merchandise sales recently exceeding US$850 million. The number of products offered on the site has swelled from less than 100 at inception to more than 720,000 selections of books, music, movies and game merchandise and over 63,000 other commodities.

Overcoming Inefficiencies to Leapfrog over the Competition

Purchasing household items, cars and even real estate over the Internet has become almost commonplace. But Overstock.com knows that every customer and every transaction is important to staying competitive in a nebulous, consumer driven marketplace. For this reason, the company employs a talented technical staff and continually conducts development test projects intended to surpass customer expectations and entice new business.

The high growth of data in the last few years has resulted in a significant buildup of a disparate storage infrastructure. As with many organizations that grow quickly over a short period of time, Overstock.com had spread its data across local disks and servers, making data provisioning and migration difficult and often requiring hours of downtime.

“We saw a lack of flexibility in our existing IT infrastructure and maintenance bills beginning to climb so I wanted to refresh older equipment and find a way to better manage our heterogeneous environment. From a business standpoint, running cost efficient operations and eliminating downtime are critical to staying competitive and satisfying customers. We needed more advanced technology that works for us, not against us,” says Sam Peterson, SVP, Technology at Overstock.com.

Overhauling Storage to Improve Data Migration

The Overstock.com IT portfolio contained a heterogeneous mix of equipment at two locations. The IT department has two main divisions: operations and development. On the operations side, production data is replicated to copies for the development group to test code and roll out projects.

“We had monolithic arrays that didn’t really give us the ability to migrate data between the arrays without extended downtime to the hosts. We needed an architecture that...
would allow us to seamlessly and nondisruptively move data between arrays, and between storage tiers within the same array,” says Carter Lee, VP, Technology Operations for Overstock.com.

With requirements for better performance, more data mobility features and easier provisioning, the IT department decided to implement a storage virtualization solution from Hitachi Data Systems. “While we had several key vendors demonstrate potential solutions, Hitachi Data Systems gave us insight into how storage virtualization is really working out in the real world. We were able to talk with other Hitachi Data Systems customers about how the products were working in their environments, which was very helpful. Combined with the Hitachi reputation for quality and its guarantee of application availability, it didn’t take long to choose the right vendor for us,” says Peterson.

**Unifying Heterogeneous Assets with Hitachi Storage Virtualization**

The Universal Storage Platform V packs universal replication, dynamic provisioning, storage virtualization and nondisruptive migration capabilities into an intelligent box that uses a single management interface for everything virtualized behind it. The Universal Storage Platform V enables Overstock.com to consolidate and unify all of its heterogeneous storage into one virtualized pool that can scale up to 247 petabytes of storage.

“It took a little time to initially virtualize everything behind the Universal Storage Platform V, but now we never have to manage external storage from the tools specific to those arrays. Once virtualized, the provisioning, migrating and tiering of the data is done from the Universal Storage Platform V,” says Lee.

Attached behind each Universal Storage Platform V are Hitachi Adaptable Modular Storage 2500 and 500 models for tier 2 and tier 3 storage, respectively. “The Adaptable Modular Storage 2500 is very impressive. We had most of our tier 2 data temporarily on the Adaptable Modular Storage 500, which was averaging 50 to 80 percent busy rates during the day. When we brought the 2500 online as tier 2 and migrated everything from the 500, we saw a huge performance increase. The same amount of load on the 2500 was averaging less than 5 percent busy rates all day long. We didn’t have to manually virtualize or configure failover: with the 2500’s active-active controllers and automated load balancing, it does the work for us,” Lee explains.

**Saving Time and Floor Tiles with Simplified Management**

Since deploying the Universal Storage Platform V and its storage companions, Overstock.com has pruned its production migration from hours to minutes and no longer manages storage systems individually. The ability to flexibly move and consolidate servers has also helped reduce rental space and power consumption. Ultimately, customer interfaces and services are able to run faster and more reliably, and Overstock.com continues to dominate the online discount market.

“We refer to the savings in the number of floor tiles we no longer need. By centralizing management through the Universal Storage Platform V, we’ve been able to reduce the hands-on overhead and greatly simplify our data center. Now, hosts stay online, the Web site stays up and running — and even the applications don’t even know the data is being moved,” says Lee.

“The Universal Storage Platform V gives us flexibility across a very heterogeneous data center. We can be somewhat storage agnostic — bringing in other vendor arrays as needed — but are still able to virtualize, provision and manage it all from the Hitachi framework. We were pleasantly surprised that everything worked as advertised,” Peterson concludes.