



## Customer Case Study

Avere Systems tests more effectively and efficiently using the SwiftTest 3000.



Avere Systems, a storage solution provider of high-performance, tiered NAS appliances to the enterprise, realizes significant savings using the SwiftTest 3000 in the test lab. Avere's QA team has deployed the SwiftTest 3000 to put their flagship product, the Avere FXT Series, through its paces.

### About Avere Systems

Avere Systems provides Demand-Driven Storage™ solutions that dynamically organize data in response to business demand. The Avere product line, the FXT series of tiered NAS appliances, allows enterprises to scale storage network performance independently of capacity, driving up performance while driving down cost.

Avere FXT appliances sit between applications and storage, separating data delivery from data retention. Active client data is stored and accessed on the FXT appliances optimized for performance. Inactive data is stored on traditional NAS systems optimized for storage capacity. System performance scales by adding appliances to the FXT cluster and capacity scales by adding disk storage to the mass storage systems.

Each FXT appliance contains multiple types of storage media, from NVRAM to Flash to SAS drives, and data is automatically tiered between media types depending upon access patterns and application characteristics. This sets Avere's test team up for a challenge, given requirements for such a variety of data types and priorities.

### Challenges in the Test Lab

- **Test tool limitations prevent more advanced testing.**  
*Impossible to develop new, complex tests with tools that have limited configurability and performance.*
- **Prohibitively time-consuming to develop the most complex customer scenarios.**  
*Assembling complex tests to mimic customer traffic is very time-intensive and often impossible.*
- **Renting rack space is money out the door.**  
*Space concerns significantly limit test environment growth.*

### Changes with SwiftTest

- **Now performing more sophisticated tests.**  
*Thanks to configurability and performance of the SwiftTest 3000.*
- **Dramatic time reduction in complex test development.**  
*It's now practical to use resources to create realistic customer traffic.*
- **Significant savings in colocation costs.**  
*Space, power and cooling optimized.*

### Avere Test Environment

The Avere test environment, at its most basic, consists of servers and mass storage with the Avere FXT appliance cluster in between.

To thoroughly test their products, Avere requires diverse application traffic, including varying file sizes and access permissions. The generated traffic must simulate loads typical of a wide variety of customer environments. Application data needs to be both NFS and CIFS, generated either separately or together.

Avere leverages collocated space, managing hardware in remote racks, which means a monthly cash outlay.

### What Every Test Lab Needs

It's just about universal that a test organization works non-stop to improve efficiency, which includes reducing the need for hardware resources and human resources.

Avere is no different. Space is at a premium. Power consumption and cooling costs must be reduced. And there are better uses of talent than writing home-grown test tools, manually reconfiguring scenarios, and keeping racks of servers running smoothly.

Bryan Schmersal, member of technical staff at Avere responsible for the lab's automation and QA infrastructure, says that they're always looking for ways to optimize resources.

They need to generate as much load as possible to test FXT system performance while they're scaling up the cluster to maximum limits. The more economical it is to do so, the better.

Further, since much of the lab's hardware resources are offsite at a hosting facility, every rack costs real money, and any consolidation or reduction of hardware is good news for Bryan and his team.

### Before SwiftTest

Before installing the SwiftTest 3000, the Avere team was manually creating customer simulations. Whitney Kratsas, member of technical staff, says that what slowed her down was setting up scenarios individually and writing complicated scripts to generate unique data characteristics.

Plus, she and the rest of the team were spending too much time configuring whiteboxes, reserving hardware, and trying to share resources.

### Enter SwiftTest

Always seeking new ways to automate his environment, Bryan constantly plumbs the industry for new ideas, products, and services that might give Avere a competitive edge.

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*“With the SwiftTest 3000, I can quickly set up the tests I want, run them, find the problems, make changes, and run again. Really easy and automated—I don't have to write and rewrite from scratch, I can use the CIFS and NFS toolbox to customize tests by clicking and dragging.”*

*- Whitney Kratsas, member of technical staff at Avere*

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*“We're saving significant dollars on hardware, cutting rack space, power, and cooling costs. And capital investment is smarter. Instead of buying a bunch of NFS client test machines that were on my purchasing roadmap, I got the SwiftTest 3000. I now need only 2U for every 8U needed before.”*

*- Bryan Schmersal, member of technical staff at Avere*

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He discovered SwiftTest in the fall of 2009 and was quickly attracted by the company's focus on storage and the depth and breadth of features in their SwiftTest 3000. It was a go when Bryan saw he'd found a product that so specifically fit Avere's needs from a responsive company of testing experts specializing in storage.

### The SwiftTest 3000

The SwiftTest 3000 is a high-performance load-generating system designed for comprehensive storage network testing.

More than a simple load generator, the SwiftTest 3000 features 8 independently configurable ports, and originates both NFS and CIFS traffic. It can simulate a large number of clients and scenarios at once, easily handling multiple scenarios with varying lists of commands within each of 5 protocols (CIFS v1, v2, and NFS v2, v3, v4)—all running at the same time.

tests and wizards.

### Test Development Environment

The SwiftTest 3000 isn't only about traffic. The system includes the SwiftTest Test Development Environment, which is a graphical application that provides flexible, granular configuration options and test results analysis.

Testers can now find problems, modify parameters, and quickly see results using the SwiftTest interface. Problem isolation is fast and accurate, leading to much-appreciated efficiency in working with development engineers.

### The Results

The SwiftTest 3000 sits on the application end of Avere's network setup and generates customer data to put Avere's FXT cluster through its paces.

Bryan Schmersal says that they can do everything they want to do, and more. Multiple tests can now be run independently on the SwiftTest 3000, or all eight ports can be used to put extreme stress on the FXT.

Whitney Kratsas observes that the canned tests SwiftTest provides are great, and that creating new tests is a breeze. The team can take testing further, automate more functions and attempt more challenging analysis and simultaneous tests—all of which were impractical before.

The combination of the performance and feature set of the SwiftTest 3000 with the responsiveness and support from SwiftTest, the company, has enhanced testing quality, improved team efficiency, and reduced costs for QA at Avere.

The SwiftTest 3000 is the clear choice for companies in the storage industry, because SwiftTest knows storage better than any other test tool vendor. By far, their products are the industry's elite testing tools due to the SwiftTest focus on storage-specific features—high-volume traffic handling, customer-centric graphic interface, and prebuilt



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