Introduction

Network and application testing is an intensive process that needs to move fast but often takes a tremendous amount of time and resources to complete correctly. Automating a test lab provides the opportunity to test devices, applications, and services faster and to establish 24x7 operations from anywhere in the world. Automation can greatly improve the cycle time of repetitive test procedures such as regression tests, build tests, and performance tests. The resultant savings, while potentially significant, do not represent peak efficiency. Both CAPEX and OPEX savings can be greatly expanded by not only automating, but optimizing as well. Whether an organization is just beginning to develop an automation framework or already has a solution in place, combining automation with an optimization strategy can greatly improve lab efficiency, speed, and performance.

Test Lab Automation Challenges

Deploying a test lab automation infrastructure, however, poses a significant set of challenges for most organizations. Poor equipment utilization and control is typical when there is limited remote access and sharing. The test tools required are often expensive and many budgets are only getting smaller. Typically, the speed and bandwidth requirements of test beds far outpace the availability of test tools. Additionally, simulating network failures and cable breaks across a broad range of networks, speeds, or media can be challenging or impossible.

NetScout Test Lab Automation Solutions

NetScout delivers a proven solution for enabling and enhancing a test lab automation infrastructure. By providing easy to use, intelligent, scalable technology at the lab's logical core, not only can topology changes be fully automated, but additional tools and functions can be utilized to expand CAPEX and OPEX savings.
This innovative approach combines layer 1 switching with layer 2-4 intelligence in order to provide functions that are not otherwise practical using legacy technology. Layer 2-4 functions such as test stream aggregation, replication and rate conversion, or providing a tap with a filtered data feed for analysis can be provided via a software interface, and without requiring physical access to the lab.

**NetScout Test Optimization Benefits**

Today, the nGenius® 3900 Series Packet Flow Switch family, along with our TestStream™ Management Software, provides the industry's highest scalability, security, and visibility for high-performance test automation applications. The key features enable significant benefits to Test Lab Automation applications.

**A Test Optimization Solution from NetScout Can Help:**

**Increase Utilization**
- Fewer devices, higher efficiency, and optimized packet flow
- Improved access to servers, storage, and network equipment
- Less downtime and reduced errors during testing and reconfiguration

**Reduce Time**
- Execute topology moves, adds, and changes instantly and reliably
- Reduce personnel time & prevent errors during reconfiguration & troubleshooting
- Increase uptime, quickly isolate and resolve problems

**Save Money**
- Reduce capital costs with more equipment & tool sharing
- Lower operating costs through increased performance & automation
- Increased availability & security with standardized hardware and software

**Traditional Labs**

**NetScout Solution**

![Figure 1: Traditional test labs grow in complexity as equipment is added. This results in a slow, complex, and error prone environment where expensive equipment and personnel resources are poorly utilized.](image1)

![Figure 2: A NetScout Test Lab Automation solution simplifies the network while providing instant and assured moves, adds, and changes.](image2)