NETSCOUT

Test Lab Automation Solutions

Enabling World-Class Network and Application Test Labs

SOLUTIONS HIGHLIGHTS

HS-Series for Test Lab Automation

- Flexible multi-speed support for up to 100GbE (including 10, 25, 40, and 50GbE)

- Support for multiple media types: Single Mode Fiber, Multimode Fiber, DAC, AOC Support

- Configurable on a per port basis

- Zero impact on test traffic

- Controlled by TestStream Management Software or 3rd party automation systems
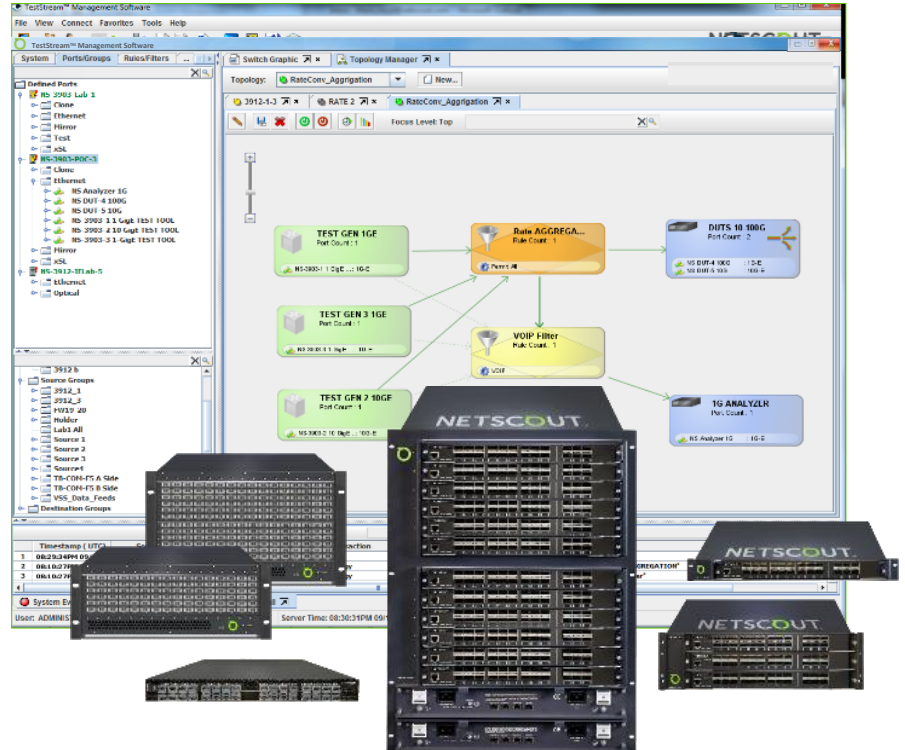
3900 Series for Test Lab Automation

- Integrated Layer 1-4 intelligence in a patented, non-blocking architecture

- Scalable to 1,152 OEO ports per chassis

- Low latency for time sensitive applications

- Redundant, modular systems designed for high availability

- Controlled by TestStream Management Software or 3rd party automation systems

OS Series for Test Lab Automation

- Support for up to 96 or up to 192 duplex ports of Single Mode fiber connectivity

- Delivers data rate and protocol transparency

- Near zero latency (< 10ns) for time sensitive applications

- Controlled by TestStream Management Software or 3rd party automation systems

TestStream Management Software

- Integrated intelligence with Layer 1-4 functions from a single user interface

- Scalable deployment options to control up to 32 switches from a single instance

- Simple drag-and-drop provisioning of layer 1 connectivity and Layer 2-4 optimization functions

- Manage topologies to share lab tools and devices under test

- Built-in Reservation System to enable test topologies based on easy-to-use scheduler

- Real-time and historical statistics for increased visibility

- Threshold alarming and user activity logging for rapid isolation of problems

- CLI/API for integrating with internal tools or 3rd party automation software

Test Lab Optimization

Today's high-performance test labs continue to evolve quickly, creating the demand for agile test lab automation solutions that will evolve and scale along with their needs. NETSCOUT delivers a line of flexible Test Optimization products to meet those ever-growing demands. From simple Layer 1 matrix switches, to scalable high-speed solutions, and even all optical alternatives, NETSCOUT delivers solutions that enable world-class network and application test labs.

An optimized test lab solution should:

- Increase network and application test lab efficiency

- Reduce time required to set-up and test

- Improve overall lab performance

- Provide savings in both CAPEX and OPEX

NETSCOUT Test Lab Automation Solutions

HS Series for Test Lab Automation – The HS-3200 delivers a high-speed solution with protocol, media type, and speed flexibility, in a pay-as-you-grow solution.

3900 Series for Test Lab Automation – The 3900 Series optimizes test lab operations by combining Layer 1 matrix switching with unique Layer 2-4 intelligence, all in a single platform.

OS Series for Test Lab Automation – For customers in need of an all-optical solution, NETSCOUT offers its OS Series for Test Lab Automation.

Functions of an Optimized Solution

Packet Generation

Impairment

Traffic Statistics

Filtering

Aggregation

Rate Conversion

Replication

TAP

Switch

LAYERS 2 - 4

LAYER 1

HS Series for Test Lab Automation

The HS-3200 delivers a high-speed solution with protocol, media type, and speed flexibility, in a pay-as-you-grow solution.

The HS Series for Test Lab Automation supports up to 100G Ethernet, and enables you to automate your lab with speeds up to 100GbE. including 10, 25, 40, and 50GbE. It also supports all your different media types – including Multimode and Single Mode, and DAC and AOC, all in a single chassis that integrates seamlessly into your test environment.

3900 Series for Test Lab Automation

The 3900 Series optimizes test lab operations by combining Layer 1 matrix switching with unique Layer 2-4 intelligence, all in a single platform. It offers flexible pay-as-you-grow configurations, with 1, 3, and 12 slot chassis options and a variety of interoperable optical-electrical-optical blades.

The 3900 family supports a wide range of interfaces, as well as a combination of Layer 1 switching with higher level intelligence for managing network topologies within today's complex test labs.

OS Series for Test Lab Automation

For customers in need of and all-optical solution, NETSCOUT offers the OS Series for Test Lab Automation. The OS Series includes two chassis configuration options, the all-optical OS-96 and the OS-192, offering 96 or 192 duplex ports of Single Mode fiber connectivity. Both OS Series products are data-rate and protocol transparent, and offer near-zero latency for time-sensitive applications.

Whether you are managing dedicated high performance test labs or consolidated global test labs operating in a Lab as a Service (LaaS) model, NETSCOUT can help you deploy a Test Lab Automation Infrastructure solution that will address

your immediate needs as well as your long term objectives.

TestStream Management Software

All of NETSCOUT'S Test Lab Automation switches are controlled by our TestStream Management Software, so they seamlessly integrate with your existing test lab environment. TestStream provides an easy to use drag-and-drop user interface to define and remotely manage topologies using layer 1 switching and to apply layer 2-4 functions to enable increased efficiency, speed, and performance of test labs. A CLI is also available to integrate with 3rd party test lab automation software.

Our TestStream Management Software allows you to manage up to 32 Test Lab Automation switches from a single instance.

Additionally, TestStream Management Software serves as a secure access portal, and maintains an audit trail of user actions and alarms. This software can be deployed as an external server, controlling up to 32 switches from a single instance, or as an internal server running directly on a NETSCOUT switch. Alternatively, NETSCOUT switches can be controlled via a CLI using internal tools or 3rd party automation software.

Lab Automation – No Complexity

With TestStream's Reservation System, customers can simplify and further optimize their test lab operations. It enables them to maximize the utilization of their current lab resources, minimize delays for planned test cycles, and enables ad-hoc testing using smart resource searching.

Requiring no custom drivers, professional services, or subscription fees, the Reservation System allows customers to leave the complexity of lab testing behind. ~~They can quickly and easily create topologies, define resources, and schedule tests.~~

NETSCOUT Test Lab Automation Switch Configuration Options:

	HS-3200	OS-96	OS-192	3901		3903		3912	
Total Port Capacity	32	96	192	10G	40G	10G	40G	10G	40G
				96	24	288	72	1,152	288
Slots	n/a	n/a	n/a	1		3		12	
Rack Units (RU)	1	3	6	1		3		16	

Blade Options for 3900 Series for Test Lab Automation

NETSCOUT's specialized blades for Test Optimization provide optimal integration, scalability, and simplicity to meet various lab requirements:

FEATURE	S-BLADE PRO	G-BLADE	T-BLADE	T100-BLADE
Speeds Supported	1/10/40Gbps	1Gbps	1/10/40Gbps	10/100Gbps
Protocols Supported	Ethernet	Ethernet	Ethernet	Ethernet
# Full duplex ports per blade	Standard L1 – Up to 72x1/10G or 18x40G Smart L1 – Up to 24x10G or 6x40G	Up to 48 x 1G	Up to 48 x 1/10G Up to 4 x 40G	Up to 24 x 10G Up to 2 x 100G
Copper Interface	Yes	Yes	Yes	Yes
MM Fiber Interface	Yes	Yes	Yes	Yes
SM Fiber Interface	Yes	Yes	Yes	Yes
Blade Latency	Standard L1 ports <10ns Smart L1 ports <500ns	<50ns	<500ns	<1,000ns
Blade Height	1RU	1RU	1RU	1RU
Functions				

Test Lab Automation Solutions Details by Product:

With options to support various size, speed, media type, and protocol requirements, NETSCOUT offers you the ideal platform for optimizing your test lab.

PRODUCT LINE	DETAILS	SPEED	MEDIA TYPE
HS-3200 Series	High speed; media type & speed flexibility, 32 QSFP28 ports per chassis, scalable to 512 ports of non-blocking connectivity	10,25,40, 50,100GbE	Single Mode, Multimode, DAC
3900 Series	High density, up to 1152 ports per chassis, 1-slot, 3-3lot, and 12-slot configurations	1,10,40GbE	Single Mode, Multimode, Copper
OS Series	All Optical switch, 96 or 192 ports per chassis	All speeds	Single Mode

Summary of Interfaces Supported
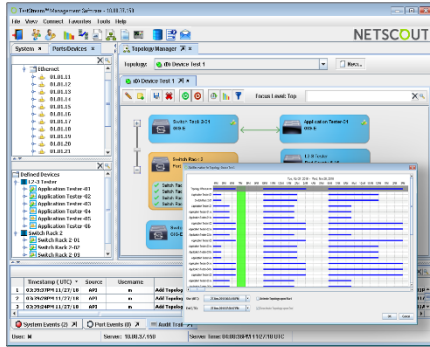
LAN Interfaces

- Ethernet Copper
- Ethernet Fiber SM/MM
- SM Optical: Any Speed

SAN Interfaces

- FICON
- Fibre Channel
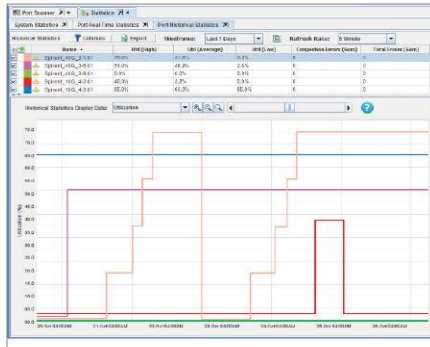- SM Optical: Any Speed

MAN/WAN Interfaces

- SONET/SDH, OTN
- CWDM/DWDM
- SM Optical: Any Speed

Reservation System – SIMPLE OPERATION

The TestStream Management Software graphical topology simplifies even the most complex test configurations with drag-and-drop execution. Topologies can be created and changed in real time, or users can create topologies in advance and apply them to a test bed as schedules dictate.
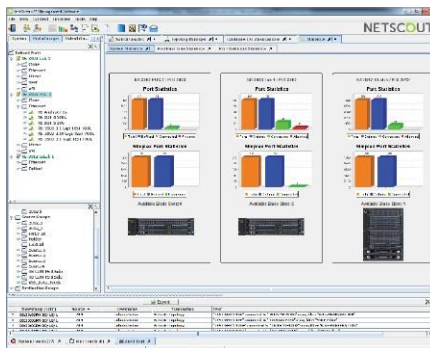
Using the built-in Reservation System, users can manage lab resources and minimize wasteful idle time using a centralized test topology scheduler. Test topologies are automatically created and enabled using the underlying layer 1 infrastructure. Once a test is scheduled, no manual processes are required to activate the test topology at start time, or to tear it down *[clean it up? release resources?]* once the test is complete.

Utilization Statistics - INTEGRATED INTELLIGENCE

In addition to interface up/down information available from traditional layer 1 switches, our TestStream Management Software provides higher level port utilization statistics based on actual bandwidth usage. Utilization statistics are available in real-time and historical views.

This level of granularity from a central point in the test lab, coupled with our TestStream software's Layer 2-4 functions that can be applied to any stream, provide test labs with an entirely new set of optimization tools.

System Dashboard – HIGH SCALABILITY

The TestStream Management Software System Dashboard provides comprehensive system views and total access of up to 32 switches from a single pane. Users can view system configurations, packet flows, and port utilization in real time. They are also able to monitor the health and utilization of all controlled switches, and react accordingly.

Our TestStream Management Software also provides access to audit trails, port events, and system events for all connected switches.

NETSCOUT Test Lab Optimization Solutions Can Help:

Increase Utilization

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

Reduce Time

- Automates topology moves and changes instantly and reliably
- Automated activity scheduling and remote monitoring
- Increase uptime, quickly isolate and resolve problems

Save Money

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

NETSCOUT®

For more information, please visit www.netscout.com or contact NETSCOUT at 800-309-4804 or +1 978-614-4000

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