THE TOLLY GROUP

No. 201108 May 2001

NetTest, Inc.

Fastnet DS3 ATM Probe versus NetScout Systems, Inc. DS3 ATM Probe

Competitive Evaluation

Test Summary

Premise: *As DS3 ATM links become more common in enterprise environments there is a need to monitor these links in real time as well as to log historical data. A remote DS3 ATM probe should be capable of identifying a variety of different protocols and applications, as well as be able to monitor virtual circuits.*

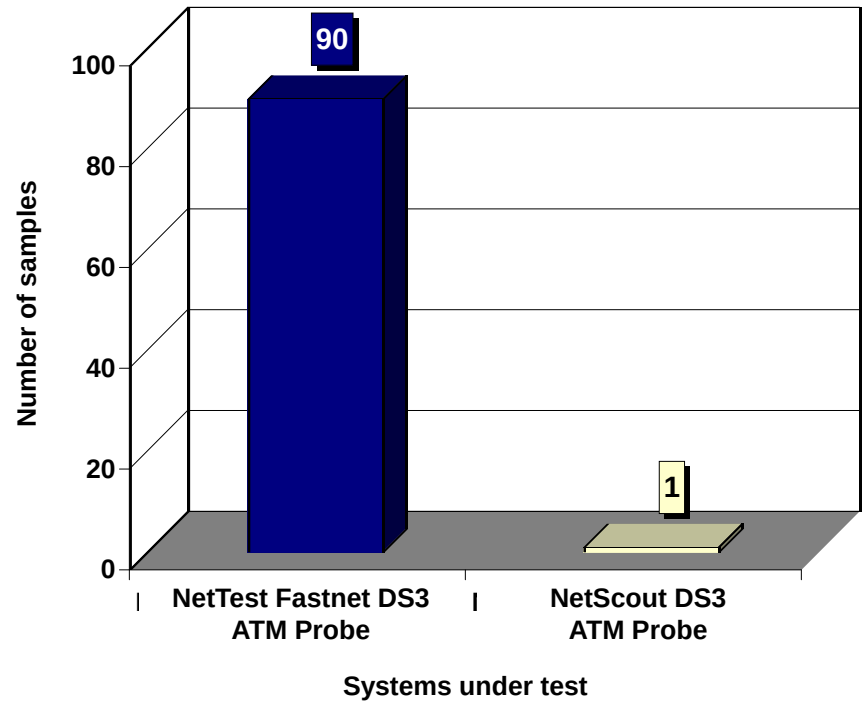
NetTest, Inc. commissioned The Tolly Group to evaluate its Fastnet distributed DS3 ATM Probe. NetTest's Fastnet was tested to determine its sampling frequency, protocol traffic monitoring capabilities, and virtual circuit monitoring performance. Additionally, NetTest requested that The Tolly Group also evaluate a NetScout Systems, Inc. DS3 ATM Probe using the same test criteria. Testing was performed in January 2001.

Test results show that the NetTest Fastnet DS3 ATM Probe is capable of reporting historical samples every 10 seconds while the NetScout DS3 ATM Probe reports historical samples just once every 15 minutes. The NetTest Fastnet DS3 ATM Probe also accurately identifies 31 unique traffic flows offered by a traffic generator, while the NetScout DS3 ATM Probe identifies only five of those flows. Finally, the NetTest Fastnet DS3 ATM Probe shows that it detects 1,100 virtual circuits right “out-of-the-box” with no configuration, while the NetScout DS3 ATM Probe only detects 120 virtual circuits.

Test Highlights

- Reports 90 samples in a 15-minute time period compared to NetScout's DS3 ATM Probe which reports one sample in each 15-minute time period
- The NetTest Fastnet DS3 ATM Probe detected all 1,100 virtual circuits offered compared to the NetScout DS3 ATM Probe that detected 120 virtual circuits
- Fastnet's DS3 ATM Probe detects 1,100 virtual circuits offered by the test tool in an "out-of-the-box" configuration
- Fastnet's DS3 ATM Probe demonstrates its capability to signal alarms for link activity, link utilization and ILMI link up/down

Historical Reported Samples in a 15-minute Time Period



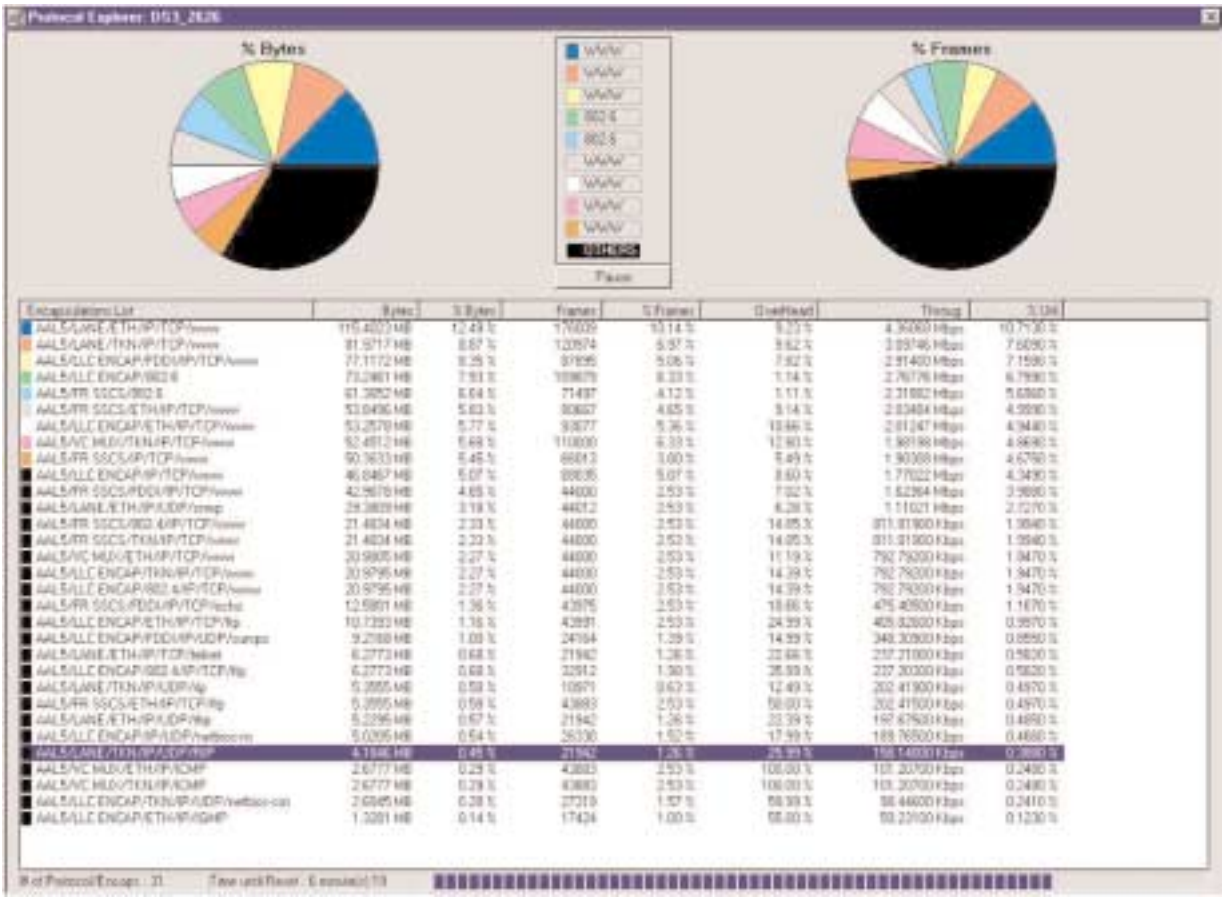
Source: The Tolly Group, May 2001 *Figure 1*

Results

Historical Reporting

The Tolly Group verified that in a 15-minute time period, the NetTest Fastnet DS3 ATM Probe reported 90 historical samples. In the same 15-minute time period, the NetScout DS3 ATM Probe reported only one historical sample. See figure 1.

Protocol Traffic Decode
as Reported by Fastnet



Source: The Tolly Group, May 2001 *Figure 2*

Protocol, Topology and Application traffic Detection

The Tolly Group measured the number of protocols, topologies and application traffic types identified by each DS3 ATM probe under test when a traffic generator sent a test script of 33 streams with 31 unique traffic flows.

Results show that the NetTest Fastnet DS3 ATM Probe accurately identified each of the 31 unique traffic flows while NetScout's DS3 ATM Probe distinguished only five unique traffic flows. See figure 2.

Detection of Virtual Circuits

Results show that the NetTest Fastnet DS3 ATM Probe successfully detects all 1,100 virtual circuits offered by the test tool in an "out-of-the-box" configuration. The NetScout DS3 ATM Probe monitored 120 virtual circuits due to a limitation of the probe described in the NetScout documentation. See figure 3.

Analysis

Managers of networks, both large and small, have growing needs to monitor and understand the traffic that traverses their networks. As increasing amounts of mission-critical data are placed on these networks, network managers need the ability to monitor network behavior to determine excessive network utilization and active protocols as well as to monitor individual virtual circuits. The ability to view these network statistics is required not only in real time, but also in meaningful, concise historical report formats as well. Armed with this information, network managers can forecast the growth needs of the network

Virtual Circuit Detection Evaluation

Probe Under Test	Duplex Mode	No. of VCs Offered	No. of VCs Counted
NetTest Fastnet DS3 ATM Probe	Full	1100	1100
	Full	120	120
NetScout DS3 ATM Probe	Full	1100	120
	Full	120	120

Source: The Tolly Group, May 2001 *Figure 3*

and perform their duties in a proactive manner, instead of in the all too familiar reactive ways of years past.

The Tolly Group evaluation of the NetTest's Fastnet DS3 ATM probe revealed that it offers a comprehensive decode of the traffic flows placed on the test network in an "out-of-the-box" configuration. In comparison, the NetScout product offered a slightly less robust decode. Details were provided from NetScout on how to configure the device in order to offer a lower level decode but were obtained from NetScout after testing was complete. Please refer to the Technical Support Diary for details.

The Tolly Group created a test scenario to demonstrate the probe's capability to detect 1,100 unique virtual circuits. Testing of virtual circuit monitoring validated NetTest's ability to accurately monitor all 1,100 virtual circuits offered on the test network in an "out-of-the-box" configuration. NetScout stopped monitoring at their published maximum of 120.

Historical reporting was tested to show the most granular time slice displayed in a historical report. Testing showed that while NetScout was able to report in 15-minute windows, NetTest was able to report in 10-second increments.

Round trip time measurements were tested on the NetTest product only. Testing demonstrated that the NetTest product was capable of providing round trip time measurements without the intrusive introduction of additional network traffic, but by utilizing existing network traffic to report these measurements.

Alarms

The Tolly Group engineers tested the following three alarm types supported by Fastnet: link utilization, link activity and ILMI link up/down. In each case, the alarms were configured and a trigger for each of the alarms was created. Each of the three alarms tested and operated as advertised.

Non-Intrusive Round Trip Time Measurements

The Tolly Group's tests included validating Fastnet's non-intrusive round trip time measurement capabilities. Unlike traditional intrusive measurement methods, such as PING, Fastnet utilizes existing traffic on the network to make round trip time measurements.

Test Configuration and Methodology

The Tolly Group tested two different remote DS3 ATM probes in this series of tests commissioned by NetTest, Inc.

Tolly engineers tested a NetTest, Inc. Fastnet DS3 ATM Probe v. 7.40.282.0.

Engineers also tested a NetScout Systems, Inc. DS3 ATM Probe v. 5.0.0 (Build 115) configured with NetScout Manager Plus v. 5.8.1a software.

While each device was under test, it was connected to a Spirent Communications, Inc. SmartBits SMB-2000 Advanced Multiport Network Performance Analysis System firmware version 6.63.004 running Spirent Communications SmartWindows software version 7.00.23. The SMB-2000 was equipped with two AT-9045B 45 Mbit/s DS3 ATM interface card version 4.04.001. See figure 4.

To test the protocol measurement performance of each device under test, Tolly engineers configured SmartWindows for a test script consisting of 33 streams with 31 unique protocols, topologies and application traffic types. Tolly engineers then recorded the number of protocols, topologies and application traffic types transmitted from the SmartBits SMB-2000, and the number of protocols, topologies and application traffic types identified by each probe under test.

To test the virtual circuit monitoring of each DS3 ATM probe under test, Tolly engineers configured test scripts designed to test the number of virtual circuits each DS3 ATM probe could monitor. The scripts were designed to test how many VCs each DS3 ATM probe could accurately monitor up to a reasonable limit, which we set at 1,100.

Each script transmitted identical streams of 1,100 virtual circuits, with each stream having a unique VPI/VCI combination, one unique protocol, and 1,100 unique IP pair conversations in each direction.

NetTest, Inc.

Fastnet DS3 ATM Probe

Competitive Evaluation

NetTest, Inc.
Fastnet DS3 ATM Probe
Product Specifications*

- Data acquisition and monitoring over ATM link at 34 Mbit/s (E3), 45 Mbit/s (T3), 155 Mbit/s (OC3) full rate under normal traffic condition and 622 Mbit/s (OC12)
- Explores for automatic discovery: VC/VP (up to 4,096), Protocols (30 including AAL), IP (10,000 IP pairs)
- Support of RFC 2684 and Frame Relay over AAL5
- Aggregated statistics for the physical layer (10-minute period), the ATM layer (10 seconds, 1 minute and 10-minute period), each VPI/VCI (10-minute on each, 10 seconds for 16 selected VPI/VCI), aggregation for two years
- Capture mode: up to 40-Gbytes storage on hard disk
- Full-duplex capture with remote storage, real time filtering for a specific VPI/VCI
- Fully automated publishing of statistics: intranet, Web, printers, and export to databases

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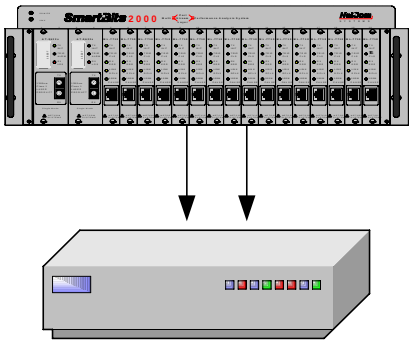
Fax: (508) 497-5198
URL: http://www.gnnettest.com

**Vendor supplied information not verified by The Tolly Group*

Test Bed

Spirent Communications
SmartBits SMB-2000



DS3 ATM Probe under test

Source: The Tolly Group, May 2001 *Figure 4*

Tolly engineers then recorded the number of virtual circuits transmitted from SmartBits SMB-2000 and the number of virtual circuits counted by the probe under test.

During all tests, both DS3 ATM probes under test were logging traffic for historical reporting.

Equipment Acquisition and Support

The NetScout Systems, Inc. DS3 ATM Probe was acquired through normal product distribution channels. The Tolly Group contacted executives at NetScout and invited them to provide a higher level of support than available through normal channels. NetScout executives accepted the offer. NetScout phone and E-mail technical support was used to configure the NetScout device for the test suites executed by The Tolly Group.

The Tolly Group verified product release levels and shared test configurations with NetScout executives in order to give them an opportunity to optimize their device for the tests. Results were shared with the NetScout executives who neither acknowledged, nor disputed their accuracy. For a more complete understanding of the interaction between The Tolly Group and NetScout Systems, Inc., check out the Technical Support Diary for Competitive Products Tested posted on The Tolly Group's World Wide Web site at http://www.tolly.com (see document 201108).

The Tolly Group gratefully acknowledges the providers of test equipment used in this project.

Vendor	Product	Web address
Spirent Communications, Inc.	SmartBits SMB-2000	http://www.spirentcom.com

Since its inception, The Tolly Group has produced high-quality tests that meet three overarching criteria: All tests are objective, fully documented and repeatable.

We endeavor to provide complete disclosure of information concerning individual product tests, and multiparty competitive product evaluations.

As an independent organization, The Tolly Group does not accept retainer contracts from vendors, nor does it endorse products or suppliers. This open and honest environment assures vendors they are treated fairly, and with the necessary care to guarantee all parties that the results of these tests are accurate and valid. The Tolly Group has codified this into the Fair Testing Charter, which may be viewed at http://www.tolly.com.

Project Profile

Sponsor: NetTest, Inc.

Document number: 201108

Product Class: DS3 ATM Probes

Products under test:

- NetTest, Inc. Fastnet DS3 ATM Probe
- NetScout Systems, Inc. DS3 ATM Probe

Testing window: January 2001

Additional information available:

- Technical Support Diary

For more information on this document, or other services offered by The Tolly Group, visit our World Wide Web site at http://www.tolly.com, send E-mail to info@tolly.com, call (800) 933-1699 or (732) 528-3300.

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