



Spirent TestCenter

RFC-2889 with VLAN Switching Benchmark Test Package

Product Overview

The RFC-2889 with VLAN Switching Benchmark Test Package is an essential tool enabling network testers to measure the performance of Layer 2 switches and the networks on which they will be deployed. A component of the Spirent TestCenter, the test package provides a framework to test modern layer switches within the guidelines of well-established standards.

This benchmark test package provides pre-programmed tests per the IETF RFC-2889, Benchmarking Methodology for LAN Switching Devices, which is the standard for initial performance testing of L2 switches. With this test package you can quickly obtain baselines of behavior on existing network devices and reveal the effects of newer technologies as they are incrementally introduced.

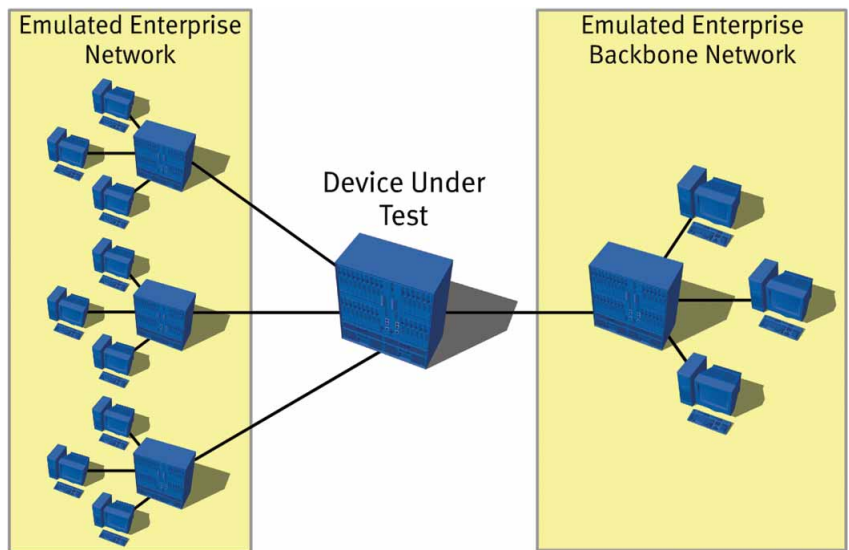
Applications

This test package helps Spirent TestCenter customers to evaluate key performance parameters of L2 switches under typical or extreme traffic load conditions for minutes, hours, and days. It can emulate unicast traffic across a device or network under test, performing tasks such as regression testing following firmware changes and comparative analysis of switches. It can perform standards-based tests with a large number of uniquely trackable traffic streams to verify scalability before a network goes live.

In preparation for using VLANs, DiffServ or jumbo frames, the RFC-2889 with VLAN Switching Benchmark Test Package can assess network performance impact, and it can make measurements on data plane traffic with combined control plane activity such as spanning tree. The product's capabilities extend beyond RFC-2889, supporting the latest technologies, all within a unique framework for better troubleshooting and customization of controls than found in legacy solutions.

Benefits

- Ensure that test results baseline specifically according to the RFC, and see the effects of newer technologies as they are incrementally introduced
- Run RFC-2889 tests over VLAN-based topologies
- Test with jumbo frames to verify whether or not the bulk transfer capacity of a network is truly low-latency and wire-rate. These constraints are particularly important for cluster computing



- Automate testing on multiple operating systems
- Improve understanding between developer and QA performance tester by using standard benchmarks
- Obtain a set of rich results that provide significant insight into performance degradation in real-time, and after the test has completed

GET IT DONE FASTER WITH Spirent TestCenter

- Integrated RFC test methodology
- Transmit 32,767 streams per port
- Wizards for large and complex traffic creation
- Finite control of traffic streams
- Enhanced results with complete per-stream results analysis
- Integrated automation

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Analyze | Assure | Accelerate™



- Test large switches in a small, cost-effective footprint
- Reduce time-to-test by making tests easier to configure, faster to run, more interoperable, and easier to interpret
- Uncover potential issues with realistic traffic configuration, integrated capture, decode, and statistics

Key Features

- RFC testing of L2 devices per RFC-2889
- Support for technologies beyond the RFC: VLANs, DiffServ, jumbo frames
- Key metrics beyond the RFC such as per flow statistics
- A single user-interface for RFC testing combined with bridging and routing protocols
- Wizards provide easy test setup of IPv4 and IPv6 protocols for use with DUT and ASICs that make forwarding decisions based in L3
- Finite control of frame content via the Spirent Packet Generator and Analyzer
- Large stream volume allows simulation of thousands of logical network users

Test Results

The RFC-2889 with VLAN Network Device Benchmark Test Package provides both real-time results and final test results using spreadsheets and graphical formats. These results can be exported in comma separated value (.CSV) file format or HTML for spreadsheet or browser-based analysis and reporting.

The test package provides enhanced results with complete per stream results analysis. Post-test results are provided on a port, logical group (such as all traffic for the same QoS level, VLAN or upper-layer protocol) and at an individual stream level.

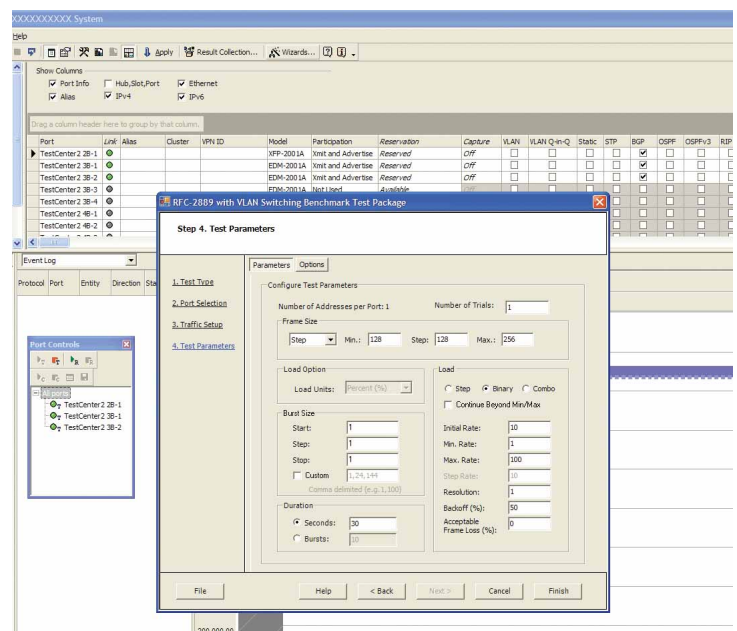
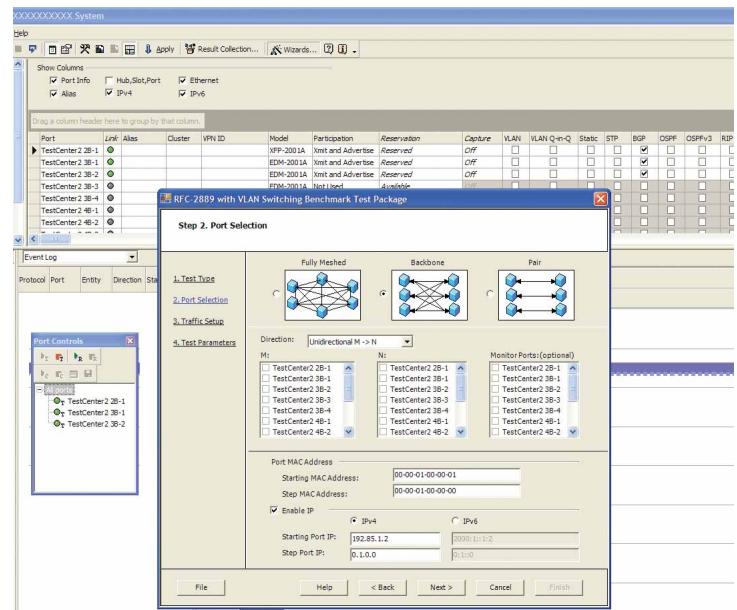
Integrated real time counters help identify gross failure conditions as they happen such as packets lost, misdirected or flooded, and intermittent frame check sequence errors. The integrated capture feature allows capturing of data as the primary test executes.

Test results are reported in terms of fps, Mbps, Kbps, bps and % of line rate for easy comparison to the same units used in the transmit configuration.

Technical Specifications

Key Tests

- Forwarding
- Congestion control
- Address caching
- Address learning
- Error filtering
- Broadcast forwarding
- Broadcast latency
- Forwarding pressure
- Latency



Traffic Control

- Ports, source and destination MAC addresses can vary with step value
- Ethernet II frame support
- Multiple 802.1p,Q VLANs per port
- Customization of editable streams after using the wizard
- Optionally enable or disable streams

Test Control

- Stagger start
- Delay after transmission
- Traffic start delay
- Duration in seconds or by frame burst

Learning Parameters

- L2 learning (Ethernet sourcing)
- Repeat count
- Delay before learning
- Per test, per trial, and per frame size learning
- Learning verification
- Frame sizes same as stream or user-defined

Test Configuration

- Traffic wizards configure thousands of traffic streams with personalized control
- Traffic loads configured in terms of fps, Mbps, Kbps, bps and % of line rate
- Loads: fixed or stepped
- Frame sizes: fixed, stepped, or random and custom with minimum/maximum
- Burst size in frames
- Easily set uni-directional or bi-directional flows

Supported Modules

Module	Description
CPR-1001A	10/100/1000 copper RJ-45, 8 port
EDM-1001A	10/100/1000 dual media, 4 port
FBR-1001A	1G fiber SFP, 8 port
XFP-1001A	10G XFP, 1 port
CPR-2001A	10/100/1000 copper RJ-45, 8 port
EDM-2001A	10/100/1000 dual media, 4 port
FBR-2001A	1G fiber SFP, 8 port
CPR-2002A	10/100 copper RJ-45, 8 port
XFP-2001A	10G XFP, 1 port

Requirements

- An SPT-2000A Spirent 2U chassis and controller or SPT-5000A Spirent 5U chassis and controller with the appropriate hardware modules
- Pentium™ or greater PC running Windows® 2000 SP4 or XP SP1/1A/2 with mouse/color monitor required for GUI operation
- Automated operation requires Pentium™ or greater PC running Windows® 2000 SP4 or XP SP1/1A/2, Red Hat Enterprise Workstation Linux 3.0 or SUN Solaris 7.0/8.0

Ordering Information

TPK-1001 RFC-2889 with VLAN Network Device Benchmark Test Package

Other related Spirent TestCenter software

BPK-1001A Packet Generator and Analyzer Base Package¹

TPK-1000 RFC-2544 with VLAN Network Device Benchmark Test Package

Spirent Global Services

Spirent Global Services provides a variety of professional services, support services, and education services — all focused on helping customers meet their complex testing and service assurance requirements. For more information, visit the Global Services website at www.spirentcom.com/gs or contact your Spirent sales representative.

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¹ Required for complete functionality described herein.