VIAVI TestCenter Benchmarking Bundle

For AION

Overview

VIAVI TestCenter Benchmarking Bundle for AION is a comprehensive test package that includes multiple automated benchmarking tests, such as RFC 2544, RFC 2889, RFC 3918 and enables Network Equipment Manufacturers, Service Providers and Enterprises to measure and report the performance characteristics of network devices. It provides the ability to users to evaluate network devices from different vendors by comparing the benchmark test results. Some of the tests are based on IETF standards, while other test specifications are curated to specific industry need.

Utilizing TestCenter next generation architecture, benchmarking tests can be executed faster with nanosecond accuracy at high-density scale, including:

- **RFC 2544 –** industry-leading Layer 2 and 3 network device benchmarking test specification
- **RFC 2889 –** the standard for initial performance testing of Layer 2 switches
- **RFC 3918 –** the industry standard for IP Multicast benchmarking test
- **RFC 5180 –** benchmarking test for IPv6, available within VIAVI TestCenter RFC 2544 test to enable IPv6 option

To support voice, video and data, access concentrators have evolved to address scalability, high-bandwidth, traffic management, QoS, authentication and multicast applications. **Asymmetric Performance Test** is a variation of RFC 2544 that allows asymmetric loads and suitable for access concentrator requirements.

RFC 8239 Data Center Benchmarking Test is a complete test suite for automated performance evaluation of L2/L3 network devices following the IETF RFC 8239 Data Center Benchmarking Methodology. This test suite includes multiple tests to measure the capabilities of data center network under various traffic conditions, including stateful and stateless traffic, congestion scenarios, switch buffer analysis, microburst, and head-of-line blocking.

Data Center Bridging Test includes several test methodologies for characterization of the underlying switching fabric of FC/FCoE and Priority Flow Control (PFC) capability.

The Benchmarking Bundle is an integrated component of VIAVI TestCenter and works with other VIAVI TestCenter components. Tests can also be combined with Routing and Switching, Access or Segment Routing control-plane.

Beyond that, the Benchmarking Bundle is used for running tests in VIAVI AION application BenchmarkingApp. Currently the tests available in BenchmarkingApp are:

1. Layer 2-3 Performance Benchmarking (RFC 2544)
2. TCP Throughput Benchmarking (RFC 6349)

Features and Benefits

- Verify performance of Layer 2 and Layer 3 devices, quickly and consistently over different network topologies
- Measure latency and jitter as part of throughput in a single test
- Test with jumbo frames and verify low-latency and wire-rate
- Test performance of different IMIX distributions
- Measure impact of QoS/DiffServ and latency types, including LILO/LIFO/FIFO with jitter, latency, and throughput in a single test
- IGMP/MLD support for RFC 3918 Multicast benchmarking test
- The Asymmetric Performance Test simplifies testing for access concentrator devices such as DSLAMs, PON OLTs and Cable CMTS
- Data Center Bridging test provides comprehensive characterization for FC/FCoE fabric PFC capability
- Large port, full mesh tests through millions of available streams
- Summary and comprehensive detailed results using the VIAVI TestCenter IQ
- Reduce time-to-test through easy configuration wizards and fast automated execution
- Complete benchmarking test suite in a single package which is light on budget
- Benefit from decades of testing experience with VIAVI as your guide through a world of complex testing

Technical Specifications

IETF Specification	Description
RFC 2544	RFC 2544 Benchmarking Methodology for Network Interconnect Devices • Throughput Test • Latency Test • Frame Loss Test • Back-to-Back Frames Test RFC 5180 Benchmarking Methodology for IPv6
RFC 2889	RFC 2889 Benchmarking Methodology for LAN Switching Devices • Forwarding Test • Congestion Control Test • Address Caching Test • Address Learning Test • Error Filtering Test • Broadcast Forwarding Test • Broadcast Latency Test • Forwarding Pressure Test • Maximum forwarding rate Test
RFC 3918	RFC 3918 Benchmarking Methodology for IP Multicast • Mixed Class Throughput Test • Scaled Group Forwarding Matrix Test • Aggregated Multicast Throughput Test • Multicast Forwarding Latency Test • Multicast Join/Leave Latency Test • Multicast Group Capacity Test
RFC 8239	RFC 8239 Data Center Benchmarking Methodology • Line Rate Testing • Buffering Testing • Microburst Testing • Head-of-Line Blocking Testing • Incast Stateful and Stateless Traffic Testing

Technical Specifications continued

Custom Specification		
Asymmetric Performance	Asymmetric Performance Test • Asymmetric Throughput Test • Asymmetric Latency Test • Asymmetric Frame Loss / Bit-Error-Rate Test	
Data Center Bridging	Switching Fabric Test • Queueput Test • Maximum Forwarding Rate Test • Step Test • Back-to-Back Frames Test • Congestion Control Test	Priority Flow Control Test • Buffering Test • Buffering with Histograms Test • Pause Response Time Test • Load Validation Test
VIAVI TestCenter BenchmarkingApp in AION		
Layer 2-3 Performance Benchmarking Test (RFC 2544)	• RFC 2544 Benchmarking Methodology (Layer 2 and IPv4) • RFC 5180 Benchmarking Methodology (IPv6)	
TCP Throughput Bench-marking Test (RFC 6349)	• RFC 6349 TCP Throughput Testing	

Ordering Information

Product Number	Description
AON-PB-BENCHMARK*	AION Benchmarking Bundle

*Bundles are available in different number of seats, contact your VIAVI Sales Representative to find the right combination for your testing needs.

About AION

VIAVI AION is a flexible delivery platform that enables users to achieve improved deployment and provisioning for all their cloud and network testing needs. Built with your needs in mind, offering maximum flexibility in acquiring and utilizing VIAVI TestCenter platforms.

The extended platform combines a wealth of industry-leading test solutions with a flexible licensing architecture to support a wide range of next-generation solution-based domain applications.

AION offers a centralized management hub to help leverage software and hardware functionalities across all lab users and locations for a simplified management and decision-making process:

- **Flexible purchasing options** available via subscription, consumption-based, and perpetual plans, with the ability to license different bandwidth, scale, and protocol bundles.
- **Flexible deployment options** offered include cloud-delivery, on-prem, and laptop-hosted licensing services.

Enhanced user serviceability delivers always-on platform services from auto-discovery and inventory management to user and workspace administration, notifications, and log aggregation.

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