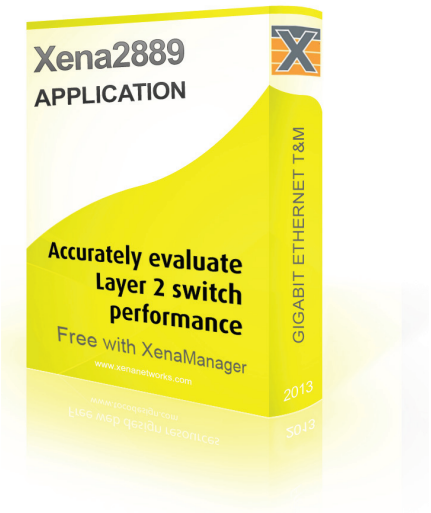
Xena2889

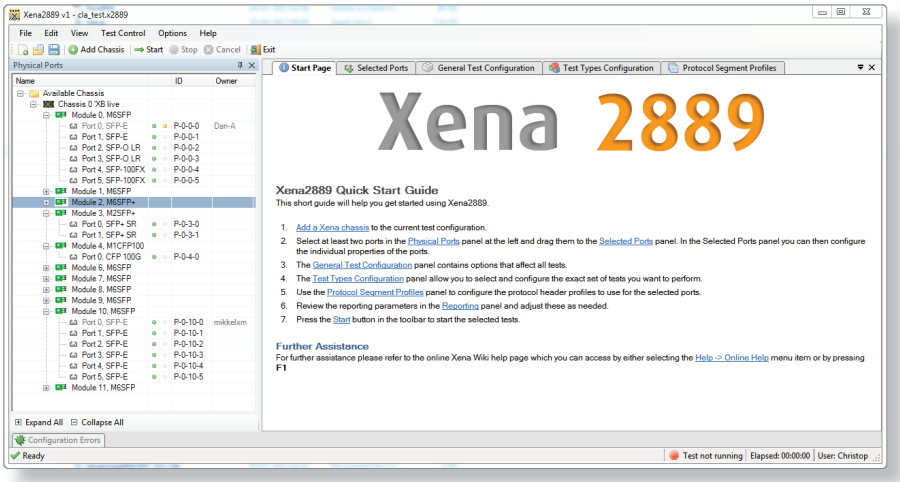
Accurately benchmark Layer 2 switch performance



Xena2889 is a free and easy-to-use standalone app that lets you benchmark the data plane performance of layer 2 LAN switching devices according to RFC 2889. It supports these RFC 2889 test types:

- All Throughput and Forwarding rate tests (both Fully and Partially meshed)
- Congestion Control
- Address Caching Capacity
- Address Learning Rate
- Broadcast Frame Forwarding and Latency
- Forward Pressure and Maximum Forwarding Rate

Xena2889 also supports Errored Frames Filtering (with the exception of the "Dribble Bit Errors" and "Alignment Errors" tests).



Top Features - Xena2889

- Create, edit and execute test configurations using Xena test equipment in accordance with RFC 2889
- Configure and enable many of the test-types defined in RFC 2889
- Supports use on multiple XenaBay and XenaCompact test chassis
- Supports different network topologies and traffic flow directions
- Supports Layer 2 and Layer 3 testing
- Supports either IPv4 or IPv6
- Flexibly define protocol layers (Ethernet, VLANs, IP, UDP, etc.) supported by the test
- Assign separate protocol layer definitions to each test port
- Extensive configuration options to fine-tune the tests

Address Caching Capacity uses a binary search to find the size of the address table for each port, or for an entire switch. Beginning at half the initial user-specified table size, frames are transmitted at a user-specified frame rate to see if the DUT has properly learned all the addresses. If no frame loss and no flooding is detected, the address table size is increased and the test is repeated until the address table size is determined. Results include maximum number of MAC addresses supported by DUT.

Address Learning Rate determines the maximum "no drop rate" by transmitting frames with multiple addresses based on the initial table size at the user-specifi ed frame rate. The number of frames received on each receive port is counted and the receive rate calculated. The rates are compared and a binary search algorithm is used to calculate the address learning rate of the DUT. Results include address learning rate of DUT.

Broadcast Frame Latency determines the latency for broadcast frames across the DUT. The broadcast frames are transmitted for a fixed duration, and latency is calculated by subtracting the transmit timestamp from the receive timestamp. The broadcast frames can be MAC only or VLAN/Q-in-Q/IPv4/UDP. Results include latencies for each frame size and the average, minimum, and maximum broadcast latencies for all the trials.

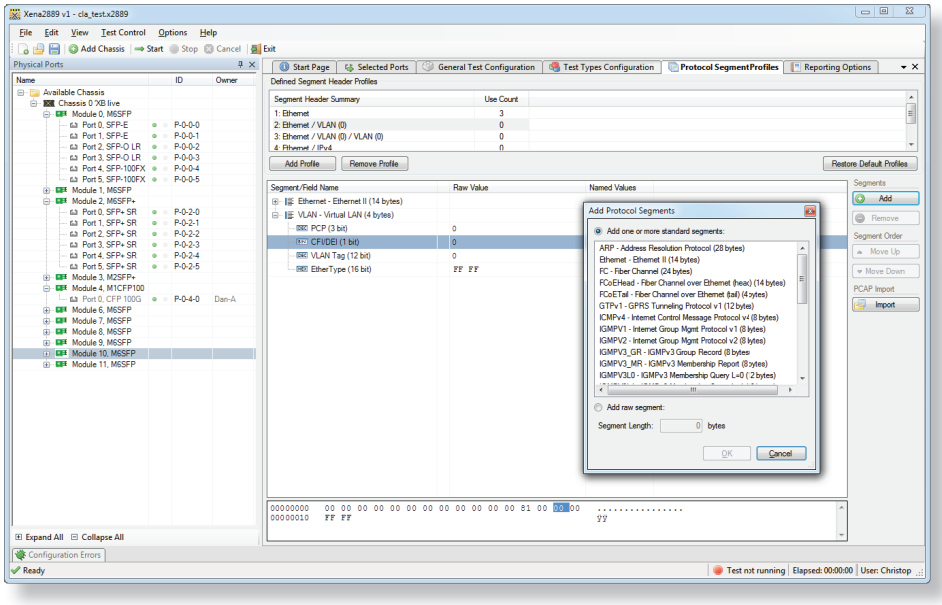
Fully Meshed Throughput, Frame Loss and Forwarding Rates Test determines the total number of frames that the DUT can handle when it receives frames on all ports. The results show the total number of frames transmitted from and received by all the ports, and the percent loss of frames obtained for each frame size. Dual-mesh capability that supports two separate sets of ports running independently. Results include percent frame loss, average latency, frame loss.

Partially Meshed Many to One Throughput Test determines the maximum rate that the DUT receives and forwards frames from many interfaces to one interface without loss of frames. A binary search algorithm is used to obtain a rate at which the DUT does not lose frames within an acceptable rate window. The results of the test show the

throughput rates obtained for each frame size. Results include throughput per frame size.

Partially Meshed One to Many Throughput Test determines the maximum rate at which the DUT receives and forwards frames from one interface to many interfaces without any frame loss. A binary search algorithm is used to obtain a rate at which the DUT does not lose frames within an acceptable rate window. This window is the rate within one inter-frame gap of the initial transmit rate. The results show the throughput rates obtained for each frame size. Results include throughput per frame size.

Partially Meshed Test determines the maximum throughput of the DUT by sending frames from multiple transmit ports to multiple receive ports in a mesh fashion, where the transmit ports do not receive and the receive ports do not transmit. Results include throughput per frame size.



Specifications

Xena2889	Features
Key Tests	Fully supported: • All Throughput and Forwarding rate tests (both Fully and Partially meshed) • Congestion Control • Forward Pressure and Maximum Forwarding Rate • Address Caching Capacity • Address Learning Rate • Broadcast Frame Forwarding and Latency Partially supported: • Errored Frames Filtering: Supported with the exception of the “Dribble Bit Errors” and “Alignment Errors” tests.
Traffic Control	• Ethernet, VLAN, and Q-in-Q support • Automatic learning packets • Custom field setting for supported protocols
Test Topologies	• Multiple XenaBay and XenaCompact chassis • Flexible topology definition using Mesh, Blocks or Pairs concept to define any network traffic topology • Uni-directional or Bi-directional testing
Reporting	• Printable summary reports • Export of results in PDF or .XML format
Supported Modules & Platforms	All Xena testers and all port speeds (10/100/1000M, 10G, 40G, and 100G)

Further resources:

- wiki.xenanetworks.com
- www.xenanetworks.com/html/documentation.html

Xena Networks is an award-winning manufacturer of advanced Gigabit Ethernet test and measurement solutions.

Presented by:
Mimetrix Technologies
11160 C-1 South Lakes Drive
Suite 190
Reston, VA 20191
Phone: 571-306-1234
Email: xena@mimetrix.com