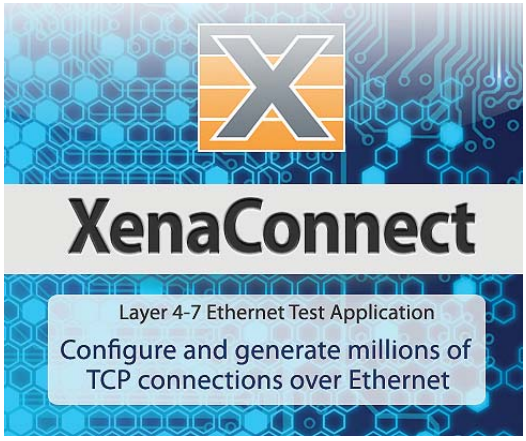
XenaConnect

L4-7 Gigabit TCP test software

XenaConnect is a user-friendly application for managing Xena's Layer 4-7 Gigabit TCP test solutions.

It is used for load testing, analysis and characterization of Ethernet equipment and network infrastructure.



Core Functions

XenaConnect is a free Windows-based application for managing Xena's extreme-performance L4-7 test platforms - XenaScale and XenaAppliance. It is used for stateful end-to-end testing of network appliances such as switches, firewalls, routers, NAT routers, proxies, load-balancers, bandwidth shapers, and more. The platform is also suitable to characterize entire network infrastructure performance for TCP.

This is done by measuring connection establishment and teardown rates, packet forwarding rate at large numbers of connections and identify performance bottlenecks.

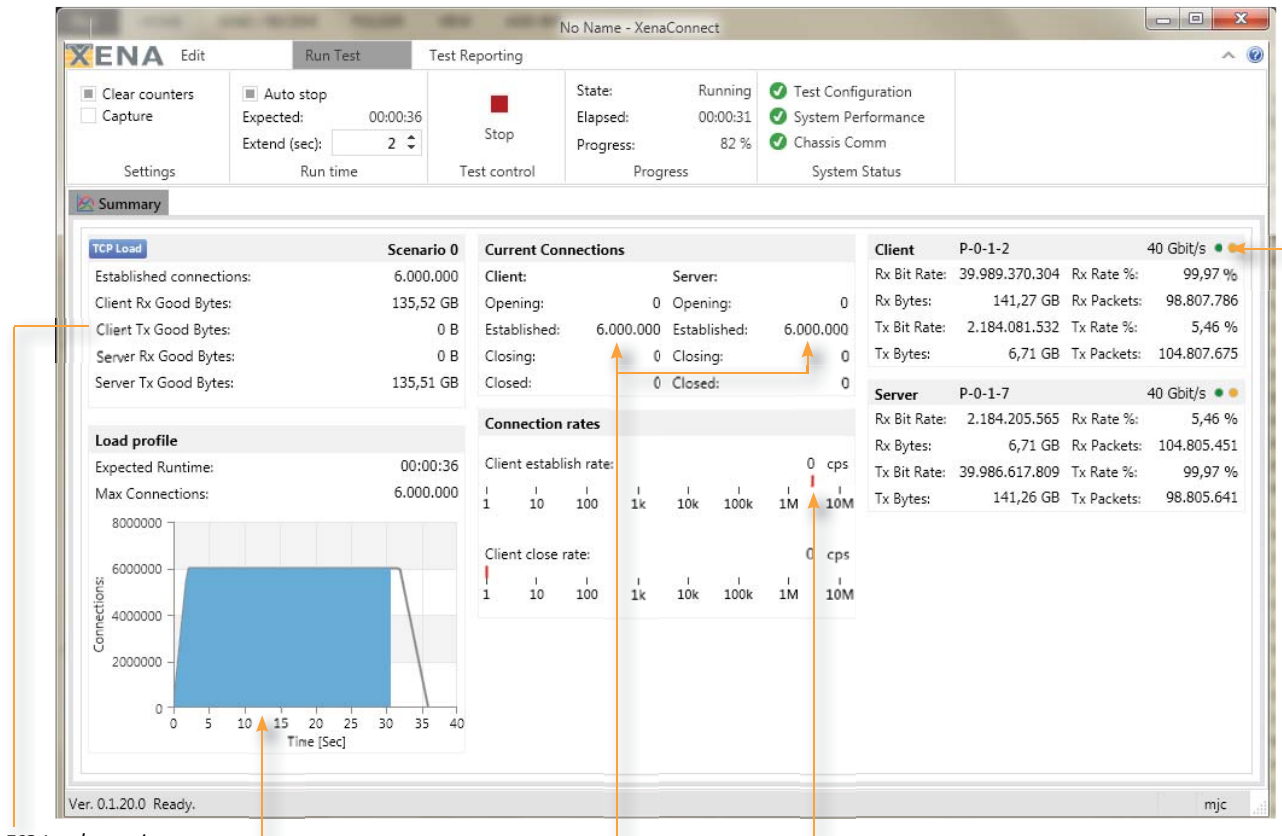
XenaConnect is also ideal for rapid validation of performance or regression testing. Developers of TCP-based application servers such as web- and FTP servers can measure TCP connection rates and verify robustness against TCP SYN attacks. HTTP get blasting can be used to verify web server performance.

XenaConnect supports ad-hoc test execution and remote management of test equipment located in multiple locations. Xena also offers an open scripting API (XenaScripting) for automating testing from any scripting environment.

Top Features

- Wire-speed stateful TCP traffic generation and analysis
- Configuration and tuning of Ethernet, IP and TCP header fields for advanced traffic scenarios
- Stateful TCP connection blasting
- HTTP get/put/head/post blasting
- Extensive live stats and test reports
- Configurable allocation of processing resources to Ethernet test ports
- Wire-speed traffic capture
- Switched and routed network topologies, TCP proxy and NAT support
- Export packet capture to industry standard pcap/Wireshark

Screenshot from XenaConnect



Test Applications

Using XenaConnect, test engineers can quickly generate millions of TCP flows with specified load profiles and configurable IP/TCP/Payload parameters. Real time stats and test reports provide an overview of the system or device characteristics.

XenaConnect supports multi-user environments at the level of per-port reservation. Packet Engines (PE's) can be reserved and allocated individually, depending on the test scenario, for full operational flexibility and performance.

Connection-oriented traffic generation

XenaConnect makes it easy to customize TCP connections by modifying the MAC/IP/TCP headers to create variations in the generated packets.

Traffic rates are specified as a percentage of line rate, frames per second or bit-rate, and traffic generation is controlled by a load profile specifying the speed with which connections are established and terminated.

The TCP payload can be automatically generated (random, incrementing) or customized by the user via a graphical payload editor. Payloads can also be loaded from file.

Automated Report Generation

XenaConnect includes an automated report generation function that makes it easy to document results as attractive, simple-to-view PDFs.

API scripting made easy

XenaScripting is a free text-based Command Line Interface (CLI) API that makes test automation easy to script from any scripting environment that supports TCP/IP. A Python example is available on Xena's website.

Browser-based UI

For additional testing convenience, XenaConnect can be used via XenaWeb (a palm-sized standalone server), enabling engineers to conduct tests via any HTML5-based browser.

Functional Specifications

TCP Connection Generation

TCP Applications
- Open/close – for CPS and CC testing
- Bulk data transfer – for emulation of raw TCP network traffic

TCP Application Behavior
- Upload (client -> server)
- Download (server -> client)
- Bidirectional (server <-> client)

Basic L4+ Emulation
- HTTP GET/HEAD request/response
- HTTP PUT/POST request/response
- Custom HTTP header
- Request/response protocol exchange with custom payload

TCP Payload
- Finite / Infinite lengths
- Custom/increment/random

Bandwidth Specification
- Per Connection Group
- Loads specified in percentage of line rate

TCP Options and configuration
- MSS, window scale, window size

MAC/IP/TCP configuration
- Ethernet address
- VLAN ID/Priority
- IP address (src/dst)
- IP DS/ECN
- TCP port (src/dst)

Control Protocols

- ARP reply from hosts
- ARP request for hosts/GW's
- ICMP Echo replies from hosts

Per Port Statistics

- Runtime and post-run stats
- Packets/bytes (Rx/Tx), packet/byte rates (Rx/Tx), FCS errors
- Packet checksum errors (IP + TCP)
- Protocol counters (IP, TCP, ARP, ICMP)

Per Connection Group statistics

- Runtime and post-run stats
- TCP state counters
- TCP state rates
- Total Rx/Tx packets/bytes
- TCP Retransmissions counters
- Packet size distribution
- Histograms
- Connection establishment/ teardown times (max/min/avg)

Network Topologies

- Switched and routed networks
- NAT routing
- TCP Proxy

Minimum System Requirements:
- XenaConnect (approx. 32MB) can be installed on PCs running MS Windows 7 or newer
- Microsoft .NET version 4.0 is required

Download
- www.xenanetworks.com/download/

Further resources:
- www.xenanetworks.com/resources/
- wiki.xenanetworks.com

Xena Networks is an award-winning manufacturer of advanced Giga Ethernet test and measurement solu

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