
# Overview

IxLoad is a scalable solution for testing converged multiplay services and application delivery platforms. IxLoad emulates data, voice, and video subscribers and associated protocols for performance testing. A unique and advanced subscriber modeling capabilities creates realistic scenarios to validate subscriber quality of experience (QoE). Protocols supported include video protocols like MPEG, IGMP, and RTSP; voice protocols like SIP and MGCP; and data protocols like HTTP, P2P, FTP, and SMTP. In addition, IxLoad can be used to test critical aspects of the infrastructure like DNS, DHCP, and AAA services. Security platforms can be tested with integrated L2/L3 authentication mechanisms such as 802.1x and NAC, as well generate malicious traffic to test for security.

## Features

- Support for running data, voice and video services simultaneously to emulate a complete multiplay user environment
- Flexible framework that offers in-depth features for functional and performance testing and integrated automation capabilities
- Quality of experience (QoE) analysis per subscriber with support for video quality metrics (MDI, VQMon) and voice quality scores (MOS)
- Realistic subscriber modeling capability allows applications and network to work in unison
- Ability to create scenarios that allow users to connect and disconnect from the network while using its applications and resources
- QoE detective – features per-subscriber, per-IP or per-VLAN statistics to measure application performance information across multiple services, in real-time
- Network diagnostics provides network-layer statistics in real-time for complete insight into test operation, allowing debugging and troubleshooting of complex network configurations
- Network failure thresholds may be set on a per-test basis, so as to prevent minor misconfigurations or network issues from stopping a valuable test run
- Wizards can be used to easily create complete tests or to create new network topologies
- Automatic goal-seeking of test objectives – goal-seeking metrics include concurrent connections, connection rate, simulated users, and throughput

- Built-in impairment with multiple impair profiles – introduces latency, jitter, and packet drops, fragmentation, and upload/download bandwidth limit to be applied on transmission
- Support for real-time packet captures with filtering and ladder diagrams analysis
- Packet analyzer – plays media packet payloads in a media player
- Traffic mapping – configures the IP addresses and VLANs that will send and receive traffic to and from each other
- Malicious traffic generation and the ability to detect the presence of illegal packets that were not discarded by a DUT under DDOS or vulnerability attack.
- Support for IPv4 and IPv6
- Link layer protocols like PPPoE, IPSec, and DHCP
- Real-world network configurations – multiple subnetworks, unique MAC addresses, 802.1q, 802.1p, and emulated router support
- Real-world user behavior using "Think" times, configurable responses, impairment, etc.
- Application replay – enables replay of stateful captures in order to simulate emerging and propriety Internet traffic at varying levels of performance
- Standard Linux TCP stack
- Ramp-up, ramp-down user sessions – linear, step, and adaptive modes
- Extensive statistics and reports
- Fully customizable statistics viewer with advanced graphing capabilities
- Option to automatically log all collected statistics
- Integrated report generation

## Supported Layer 7 Protocols

| | |
|---|---|
| Data | HTTP (1.0/1.1)<br>SSLv2, SSLv3, TLSv1<br>FTP<br>SMTP<br>POP3<br>IMAP<br>RTSP, RTP/UDP, RTP/TCP<br>Telnet<br>SSH<br>CIFS |

| | |
|---|---|
| | DNS<br>DHCP<br>LDAP<br>RADIUS |
| Peer-to-peer | BitTorrent<br>eDonkey |
| VoIP | SIP<br>MGCP |
| Video | Multicast TV and Video on Demand<br>IGMPv2, IGMPv3<br>RTSP, RTP/UDP, UDP |

## Supported Standards

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|---|---|
| **Network** | RFC 826 - Ethernet Address Resolution Protocol<br>RFC 791 - Internet Protocol<br>RFC 2460 - Internet Protocol, Version 6 (IPv6) Specification<br>RFC 793 - Transmission Control Protocol<br>RFC 2581 - TCP Congestion Control<br>RFC 768 - User Datagram Protocol |
| **HTTP** | RFC 1945 - Hypertext Transfer Protocol – HTTP/1.0<br>RFC 2616 - Hypertext Transfer Protocol – HTTP/1.1<br>RFC 2246 - The TLS Protocol Version 1.0 |
| **FTP** | RFC 959 - File Transfer Protocol |
| **SMTP** | RFC 2821 - Simple Mail Transfer Protocol |
| **POP3** | RFC 1939 - Post Office Protocol - Version 3 |
| **IMAP** | RFC 3501 - Internet Message Access Protocol - Version 4rev1 |
| **CIFS** | Dialect NT LM 0.12 |
| **DHCP** | RFC 2131 – Dynamic Host Configuration Protocol<br>RFC 3046 – DHCP Relay Agent Information Option |
| **Application Test** | RFC 1945 - Hypertext Transfer Protocol – HTTP/1.0<br>RFC 2616 - Hypertext Transfer Protocol – HTTP/1.1<br>RFC 2246 - The TLS Protocol Version 1.0 |
| **SIP** | RFC 3261 - SIP: Session Initiation Protocol |
| **MGCP** | RFC 3435 - Media Gateway Control Protocol (MGCP) Version 1.0 |

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|---|---|
| **Video** | RFC 2326 - Real Time Streaming Protocol (RTSP)<br>RFC 3550 - RTP: A Transport Protocol for Real-Time Applications<br>RFC 3376 - Internet Group Management Protocol, Version 3<br>RFC 4445 - A Proposed Media Delivery Index (MDI)<br>RFC 2250 - RTP Payload Format for MPEG1/MPEG2 Video<br>RFC 2327 - SDP: Session Description Protocol |
| **Telnet** | RFC 854 - Basic Telnet protocol specification<br>RFC 855 - Telnet option specifications<br>RFC 856 - Telnet binary transmission<br>RFC 857 - Echo option<br>RFC 858 - Suppress Go Ahead option<br>RFC 859 - Status option<br>RFC 860 - Timing Mark option<br>RFC 1091 - Terminal Type option<br>RFC 1073 - Window Size option<br>RFC 1079 - Terminal Speed option<br>RFC 1372 - Remote Flow Control option<br>RFC 1184 - Linemode option<br>RFC 1408 - Environment Variables option |
| **SSH** | RFC 4250 - The Secure Shell (SSH) Protocol Assigned Numbers<br>RFC 4251 - The Secure Shell (SSH) Protocol Architecture<br>RFC 4252 – The Secure Shell (SSH) Authentication Protocol<br>RFC 4254 – The Secure Shell (SSH) Connection Protocol |
| **DNS** | RFC 1034 - Domain names - concepts and facilities<br>RFC 1035 - Domain names - implementation and specification |
| **DHCP** | RFC 951 - Bootstrap Protocol (BOOTP)<br>RFC 1534 - Interoperation Between DHCP and BOOTP<br>RFC 1542 - Clarifications and Extensions for the Bootstrap Protocol<br>RFC 2131 - Dynamic Host Configuration Protocol<br>RFC 2132 - DHCP Options and BOOTP Vendor Extensions (partial)<br>RFC 3046 - DHCP Relay Agent Information Option<br>RFC 3396 - Encoding Long Options in the Dynamic Host Configuration Protocol (DHCPv4) |
| **RADIUS** | RFC 2865 – Remote Authentication Dial In User Service |

## Product Bundles

### 925-3310

Aptixia IXLOAD-B1, Software Bundle, Layer 4-7 Performance Test Application Base Software IXLOAD; plus optional software IXLOAD-MAIL, IXLOAD-STREAM, IXLOAD-DDOS and IXLOAD-U1; Supports HTTP, HTTPS, FTP, and TCP; Free Media Kit available if ordered separately with adjoining software purchase; Specify Qty (1) 925-3000 IxLoad Triple-Play Media Kit, Does not include ANALYZER [see IXLOAD-B2 (925-3320) or IXLOAD-B3 (925-3330)]

### 925-3320

Aptixia IXLOAD-B2, Software Bundle, Layer 4-7 Performance Test Application Base Software IXLOAD; plus optional software IXLOAD-MAIL, IXLOAD-STREAM, IXLOAD-DDOS, IXLOAD-U1, IXLOAD-VIDEO, and IXLOAD-VOICE; Supports SSL Client, SSL Server, HTTP, HTTPS, FTP, and TCP; Includes ANALYZER Base Software (932-0101) for packet capture and analysis, and ANALYZER Media optional software (932-0102); Free Media Kit available if ordered separately with adjoining software purchase; Specify Qty (1) 925-3000 IxLoad Triple-Play Media Kit

### 925-3330

Aptixia IXLOAD-B3, Software Bundle, Layer 4-7 Performance Test Application Base Software IXLOAD; plus optional software IXLOAD-MAIL, IXLOAD-STREAM, IXLOAD-DDOS, IXLOAD-U1, IXLOAD-VIDEO, IXLOAD-VOICE, and IXLOAD-ADVNET; Supports SSL Client, SSL Server, HTTP, HTTPS, FTP, and TCP; Includes ANALYZER Base Software (932-0101) for packet capture and analysis, and ANALYZER Media optional software (932-0102); Free Media Kit available if ordered separately with adjoining software purchase; Specify Qty (1) 925-3000 IxLoad Triple-Play Media Kit