

Xcellon-Ultra™ Ultra-high-Performance Application Testing



Ixia's Xcellon-Ultra™ delivers the industry's highest performance and most scalable application traffic generation test solution to validate next-generation multiservice delivery and security platforms.

The Xcellon-Ultra™ product family uses Ixia's next generation Xcellon™ architecture, which leverages the newest generation multi-core processors, hardware encryption coprocessors, and highest 10 Gig port density to deliver real application traffic to match extreme scaling requirements.

Xcellon-Ultra validates the performance of a wide range of devices that deliver multiplay services, including web application servers, application-aware firewalls, application delivery controllers, deep-packet inspection and security platforms. It ensures that carrier and data center networks are ready to deliver highest quality of service to millions of mobile and fixed subscribers.

The Xcellon-Ultra™ product line has two variants, Xcellon-Ultra XT80-V2 optimized for ultra-high application performance and the Xcellon-Ultra XTS08, XTS16, and XTS 40 designed for high-scale IPsec performance testing.



The Xcellon-Ultra XT80-V2 appliance hosts up to eight 10 GE test ports, providing an unprecedented 3 million connections per second and 80 Gbps of bi-directional, stateful real-world traffic to address the testing requirements of tomorrow's application-aware networking devices.

The Xcellon-Ultra XTS appliances utilize built-in IPsec hardware acceleration to provide an industry-leading 4,000 tunnels per second and 40 Gbps of IPsec encrypted traffic to test the highest performing security gateways in the industry.

Key Features

- Highest density 10 Gbps application performance
- Based on Ixia's NP technology for line-rate traffic through a large number of connections
- Client and server protocol emulation in a single appliance
- Hardware IPsec acceleration for Xcellon-Ultra XTS appliances
- Encrypted and clear text traffic from a single appliance
- Fully compatible with XM chassis and load modules for seamless testing with other Ixia hardware and test applications

Application Layer Performance Testing

When used in concert with Ixia's IxLoad test application, Xcellon-Ultra provides a scalable solution for validation of converged multiplay services and application delivery platforms. IxLoad emulates data, voice, and video subscribers and associated protocols for performance testing. Unique advanced subscriber modeling capabilities create realistic scenarios to validate subscriber quality of experience (QoE).

Xcellon-Ultra appliance recreates real-world traffic scenarios at layer 4 (TCP/UDP) and layer 7 (application layer), emulating clients and servers for Web (HTTP, SSL), FTP, e-mail (SMTP, POP3, IMAP), streaming (RTP, RTSP), video (MPEG2, MPEG4, IGMP), voice (SIP, MGCP, Megaco, H.323) and infrastructure services such as DNS and DHCP.

Xcellon-Ultra XT80-V2/XTS40 Application Performanceⁱ

Metric	Ultra XT80-V2	Ultra XTS40
HTTP Throughput	80Gbps	40Gbps
HTTP Connections/Sec	3,000,000	1,500,000
HTTP Concurrent Connections	88,000,000	10,000,000
SSL Throughput	20Gbps	10Gbps
SSL Connections/Sec	400,000	200,000

Xcellon-Ultra XTS08/XTS16/XTS40 IPsec Performanceⁱ

Metric	Ultra XTS08	Ultra XTS16	Ultra XTS40
IPsec Throughput	8Gbps	16Gbps	40Gbps
IPsec Tunnels/Sec (IKEv1)	4,000	4000	4000
IPsec Tunnels/Sec (IKEv2)	4,000	4000	4,000
IPsec Concurrent Tunnels	200,000	1,000,000	1,000,000

ⁱ Performance numbers based on running appliances in pairs

Application Traffic Capabilities

Application Feature	Details
Network Protocols	Extensive support for layer protocols including DHCPv4, DHCPv6-PD, IPsec, unique MAC addresses, VLANs, 802.1q, 802.1p. Flexible IP and VLAN mapping, traffic to network associations for complex scenarios
Dynamic Subscriber Behavior	True user emulation with multiple applications per subscriber. Realistically simulates dynamic network interface setup and tear-down behavior linked with subscriber emulation. Advanced network attachment support to test with any network topology
Data Protocol Emulation	HTTP, SSL, FTP, Peer-to-Peer, RTSP, RTP, SMTP, POP3, IMAP, CIFS, Radius, SSH, Radius, DNS, DHCP, LDAP, DDoS, vulnerability attacks and application replay for true replay of application flows
Voice Protocol Testing	VoIP - SIP, H.323, H.248, MGCP, RTP and T38
Video Protocol Testing	IPTV, video-on-demand, streaming video, RTSP, RTP, IGMP, MLD
Security Protocol Testing	IPsec performance testing with stateless and stateful application traffic

Specifications

Appliance Models	XT80-V2	XTS08	XTS16	XTS40
Hardware Specification				
Number of Ports	8 x 10GE SFP+	8 x 1GE RJ45 with HW IPsec acceleration	16 x 1GE RJ45 with HW IPsec acceleration	8 x 10GE SFP+ 4 x 10GE with HW IPsec acceleration
Number of Appliance Nodes	4	2		
Number of Users	Up to 4 users	Up to 2 users		
SSL Acceleration	Yes	No		
IPsec Hardware Acceleration	No	Yes		
Hard Disk	4 x 250GB	2 x 250GB		
Capture Buffer per Port	Up to 7GB			
Application Support				
Layer 4–7 Application Traffic Testing	Yes			
Layer 2-3 Routing Protocol and Emulation	No			

Physical	
Form Factor	2U Rackmount
Mounting Rails	2U rail set, quick/quick, for 2U 17.2"W; the rail will fit a rack between 26.5" and 36.4" deep that follows the EIA industry standard keep-out zone
Height	3.5" (89mm)
Width	17.2" (437mm)
Depth	28.5" (724mm)
Gross Weight	85 lbs (38.6kg)
Available Colors	Black
Power Supply	
Description	Redundant 1400W high-efficiency power supply with PMBus
AC Input	1200W: 100 - 140V, 50 - 60Hz, 10.5 - 14.7 Amp 1400W: 180 - 240V, 50 - 60Hz, 7.2 - 9.5 Amp
DC Output +5V Standby	6 Amp
DC Output +12V	100 Amp @ 100-140V 116 Amp @ 180-240V
Operating Environment / Compliance	
RoHS	RoHS Compliant
Environmental Specification	Operating Temperature: 10°to 35°C (50°to 95°F) Non-operating Temperature: -40°to 70°C (-40°to 158°F) Operating Relative Humidity: 8% to 90% (non-condensing) Non-operating Relative Humidity: 5 to 95% (non-condensing)

Product Ordering Information

941-0025

Xcellon-Ultra XT80-V2, 2U Application Network Processor Server, 8-10GE, SFP+ test interfaces; REQUIRES 8 SFP+ transceivers 948-0013 10GBASE-SR or 948-0014 SFP+10GBASE-LR

941-0015

Xcellon-Ultra XTS08-01, 2U Application Network Processor Server, 8-1GE RJ45 test interfaces with IPsec hardware acceleration

941-0018

Xcellon-Ultra XTS16-01, 2U Application Network Processor Server, 16-1GE RJ45 test interfaces with IPsec hardware acceleration

941-0019

Xcellon-Ultra XTS40-01, 2U Application Network Processor Server, 4-10GE SFP+ test interfaces with IPsec hardware acceleration and 4-10GE SFP+ interfaces without IPsec hardware acceleration; REQUIRES 8 SFP+ transceivers 948-0013 10GBASE-SR, 948-0014 SFP+10GBASE-LR