



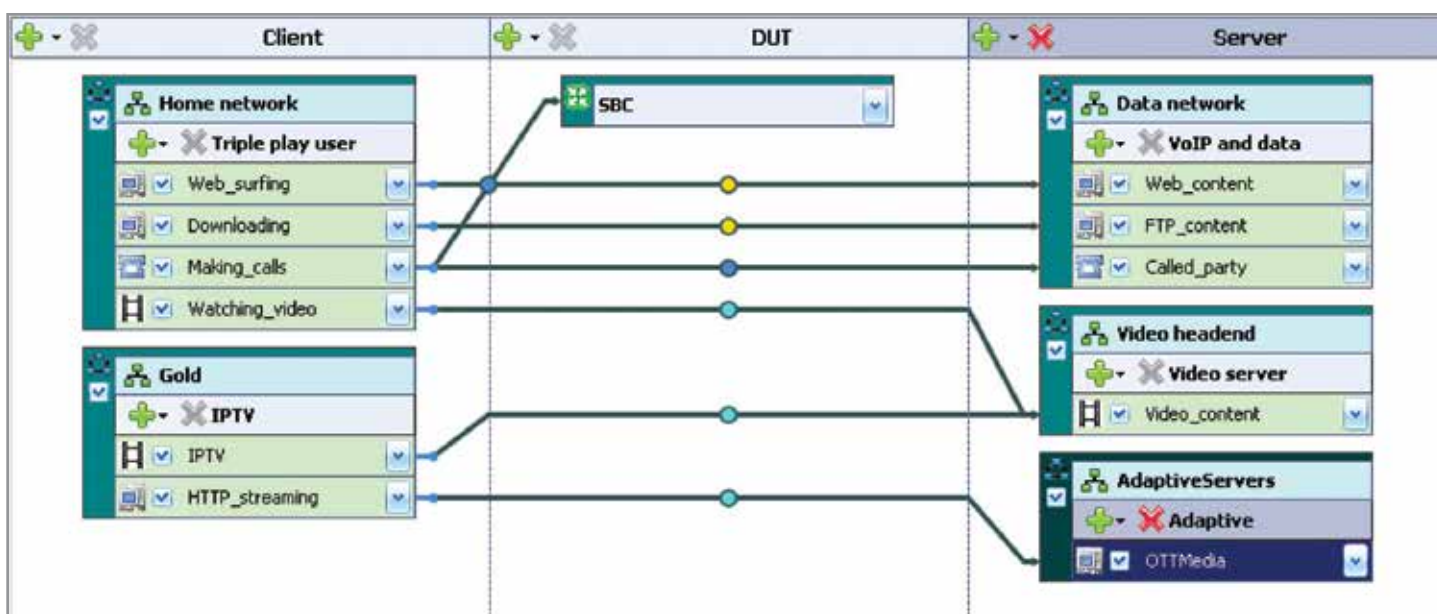
IxLoad

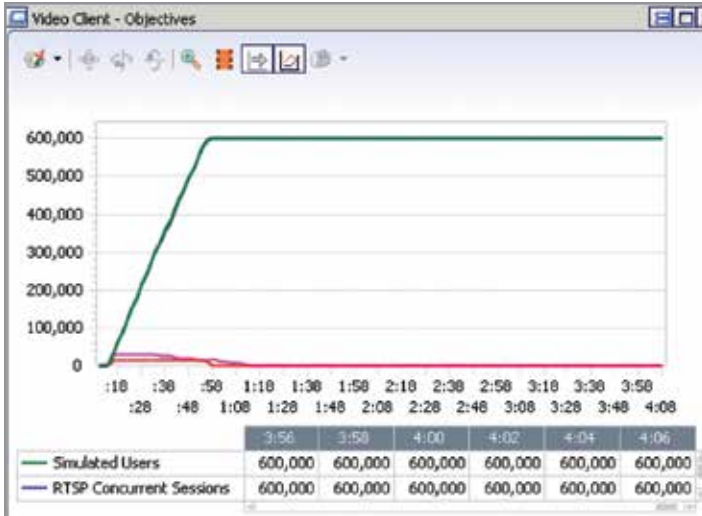
IxLoad is a scalable test solution for multiplay services, application delivery platforms, and network security appliances. IxLoad emulates data, voice, and video clients, subscribers, and servers to assess user quality of experience (QoE). IxLoad also applies malware and distributed denial of service (DDoS) attacks for security testing.

IxLoad works with Ixia's high-performance hardware platform to exchange control and data plane traffic with the device or network under test. Each test port is equipped with an independent processor and substantial memory in addition to specialized traffic stream generation and capture hardware – providing the speed and intelligence needed for large-scale protocol emulation. In particular, the Xcellon-Ultra™ product family is optimized for use with IxLoad. Xcellon-Ultra XT and XTS systems offer the industry's highest performance application traffic performance for both clear text and encrypted traffic.

Comprehensive Multiplay Technology Coverage

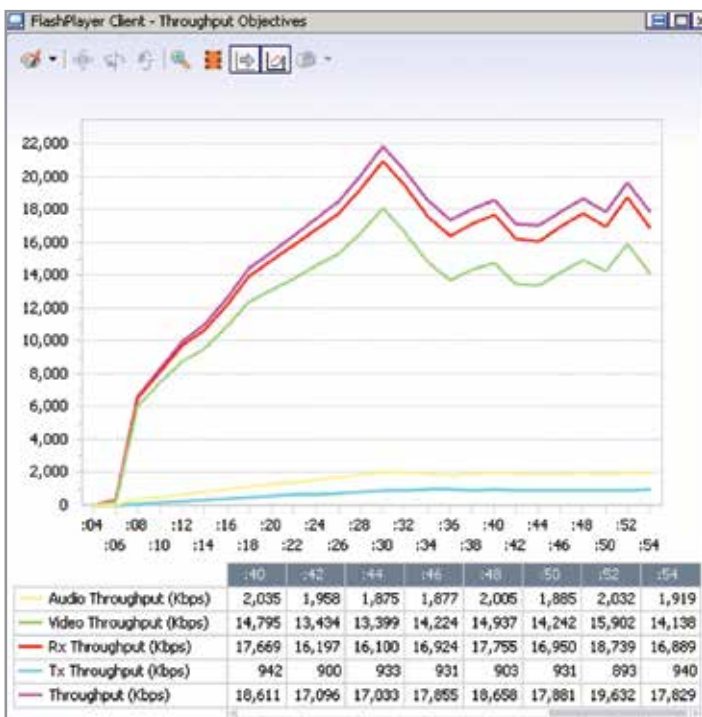
- **Internet:** HTTP, P2P, FTP, SMTP, POP3, and CIFS
- **IPTV:** IGMP, RTSP, VOD, MPEG2, H.264
- **OTT Video:** Adobe Flash Player™, Microsoft Silverlight™, Apple® HLS
- **Voice:** SIP, MGCP, H.323, H.248, Cisco Skinny™, FAX over IP, video conferencing and PSTN
- **Infrastructure:** DNS, DHCP, LDAP, and AAA
- **Security:** IPsec, GTP, PPP/L2TP with integrated 802.1x and NAC authentication, DDoS and vulnerability attacks
- **Wireless:** GTP-c and GTP-u for emulation of the mobility management entity (MME) and the eNode B on the S11 and S1-U interfaces





City-Scale Emulation

- Simulate and track millions of sessions
- Find device or network failure threshold
- Use custom hardware for maximum scalability



True Subscriber Modeling

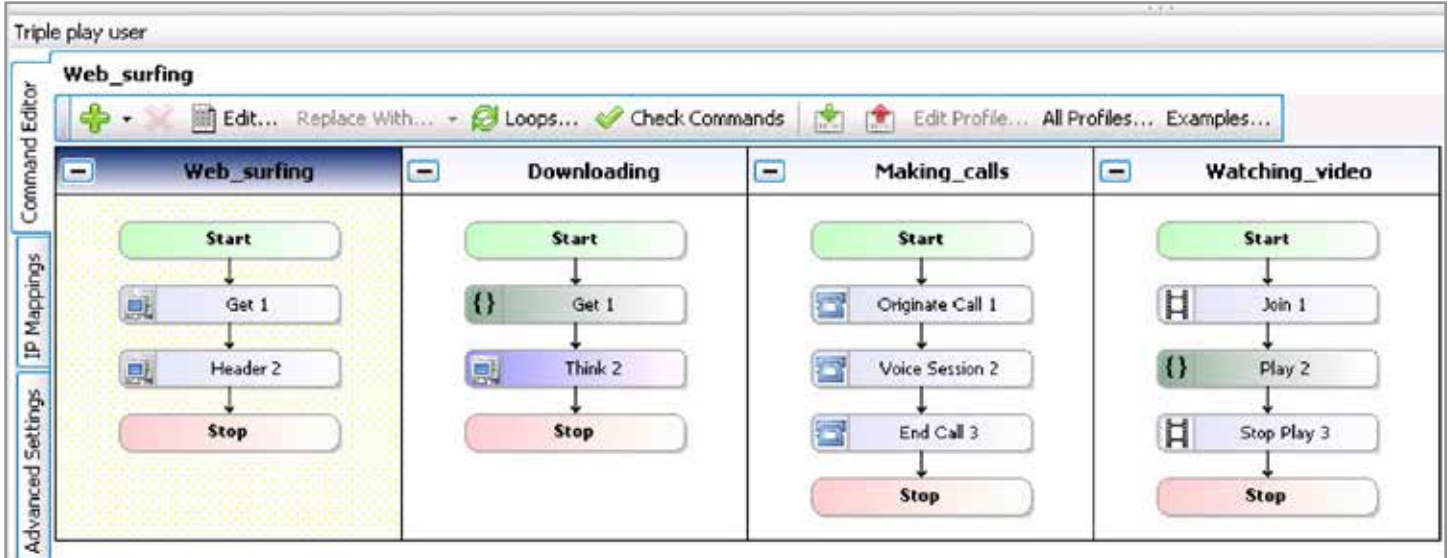
- Create real world, multi-protocol traffic profiles
- Control subscriber application mix and bandwidth
- Vary load over time to simulate network dynamics
- Use stateful L7 application traffic with a real TCP stack



Real-Time QoE Measurements

- View extensive statistics and reports
- Measure QoE per-subscriber, per-IP address or per-VLAN
- Perform real-time video quality analysis (MDI, VQMon) and voice quality analysis (E-Model or PESQ)
- Analyze packet captures and protocol ladder diagrams
- Use sophisticated data mining tools to quickly identify network or application layer issues

Stat Name	Media IPv4 Dst Address	Media UDP Dst Port	Received BR Rate (Kbps)	UDP Packets Received	MDI-Df (ms)	MDI-MLR	Jitter (us)	MPEG2 TS Loss	RTP Packets Lost
1 10.200.134.132/Card9/Port1 - 0	225.10.1.1	1,234	0.000	4,630	56.433	18,011		225,974	0
2 10.200.134.132/Card9/Port1 - 1	225.10.1.2	1,234	0.000	4,581	21.063	21		322	0
3 10.200.134.132/Card9/Port1 - 2	225.10.1.3	1,234	0.000	4,580	21.072	21		322	0
4 10.200.134.132/Card9/Port1 - 3	225.10.1.4	1,234	0.000	4,628	89.378	19,068		231,770	0
5 10.200.134.132/Card9/Port1 - 4	225.10.1.5	1,234	0.000	4,671	21.059	315		4,830	0
6 10.200.134.132/Card9/Port1 - 5	225.10.1.6	1,234	0.000	4,625	5.269	0		0	0
7 10.200.134.132/Card9/Port1 - 6	225.10.1.7	1,234	0.000	4,625	5.279	0		0	0
8 10.200.134.132/Card9/Port1 - 7	225.10.1.8	1,234	0.000	4,625	5.284	0		0	0





	Supported Protocol	IPv4	IPv6
Data	HTTP (1.0/1.1)	Yes	Yes
	SSLv2, SSLv3, TLSv1	Yes	Yes
	FTP	Yes	Yes
	TFTP	Yes	Yes
	SMTP	Yes	Yes
	POP3	Yes	Yes
	IMAP	Yes	N/S
	RTSP, RTP/UDP, RTP/TCP	Yes	N/S
	Telnet	Yes	N/S
	SSH	Yes	N/S
	CIFS	Yes	Yes
	DNS	Yes	N/A
	DHCP	Yes	N/S
	LDAP	Yes	N/S
	RADIUS	Yes	TCP
Application Replay	Yes	Yes	
Stateless Peer			
P2P	BitTorrent	BitTorrent	Yes
	eDonkey	eDonkey	Yes
VoIP	SIP	Yes	Yes
	MGCP	Yes	Yes
	H.323	Yes	Yes
	H.248	Yes	Yes
	Cisco SCCP (Skinny)	Yes	N/S
	Audio, video conferencing and FAX over IP	Yes	Yes
Video	IGMPv2, IGMPv3	Yes	N/A
	MLDv1, v2	N/A	Yes
	VoD, RTP/UDP, UDP	Yes	Yes
	Adobe Flash Player Client	Yes	N/S
	Microsoft Silverlight Player Client	Yes	N/S
	Apple HLS Player Client	Yes	N/S
Wireless	3GPP TS 29.274 Evolved GPRS Tunneling Protocol for Control plane (GTPv2-C)	N/A	N/A
	3GPP TS 29.281 GPRS Tunneling Protocol for User Plane (GTPv1-U)		

For more information, go to <http://www.ixiacom.com/products/ixload/index.php>.