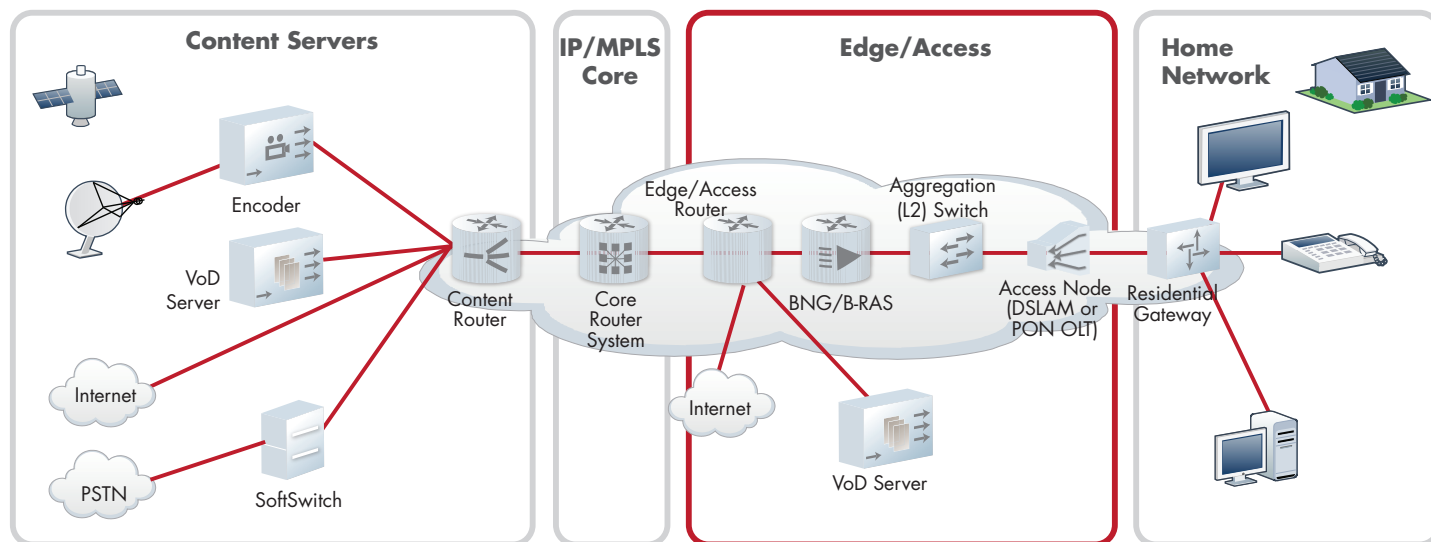




Broadband Testing



Video on demand, IPTV, YouTube, and other bandwidth-intensive applications are placing unprecedented demands on broadband access devices and networks. New applications and technologies, such as the extension of the IP addressing system to include the lengthier and more robust IPv6 addresses, add further layers of potential trouble to an already straining network. High-quality broadband Internet access, delivered via wireless, cable, or DSL service, requires numerous protocols and devices to work together properly.

Testing services over broadband access is a critical factor in providing excellent quality of experience (QoE) to end-users, whether they are enterprises, service providers, or individual customers. Coupled with this, the switchover to IPv6 to accommodate the depleted IPv4 address space requires that networks run both IPv4 and IPv6 seamlessly in order to mitigate the transition risks.

Ixia specializes in testing network components and topologies, helping to ensure reliability and QoE in broadband access networks. Ixia's platform emulates network protocols, simulates network devices, and generates wire-rate service traffic to ensure the performance, conformance, and scalability of broadband networking equipment.

Ixia Broadband Testing Includes:

Broadband Testing

- Network protocol and device implementation
 - PPPoX clients and servers (PPPoE, PPPoEoA, PPPoA, Dual-Stack PPP) over DSLAMs, BRAS, or BNGs
 - DHCPv4, DHCPv6/DHCPv6PD (Client, Relay Agent, Servers)
 - Protocols over EoGRE: DHCPv4, DHCPv6/DHCPv6PD (Client, Relay Agent, Servers)
 - ANCP access nodes and home gateways
 - L2TP access concentrators and network servers
 - IPTV Channel Zapping

Real-World Traffic Testing

- Create and send real-world network traffic that emulates:
 - Voice
 - Video
 - Data

Subscriber Emulation Testing

- Create access request for different subscriber types:
 - PPPoX v4/v6 clients
 - DHCP v4/v6 clients
 - 802.1x and network access control (NAC) authentication supplicants
 - IPTV v4/v6 clients

Product	Feature	Benefit
IxNetwork and IxN2X	Protocol Emulation and Traffic Generation	Validate the functionality, scale and interoperability of a single device or a system under test with integrated traffic generation
IxANVL	Protocol Conformance Testing	Confirm the protocol implementation is compliant to standards and ensure interoperability among third parties
IxAutomate	Canned benchmark testing	Leverage proven test methodologies to quickly and easily perform repeatable benchmark testing

Technology	Ixia Solution
Protocols over EoGRE: DHCPv4, DHCPv6/DHCPv6PD (Client, Relay Agent, Servers)	IxNetwork - Emulation
PPPoX: PPPoE, PPPoEoA or PPPoA	IxNetwork - Emulation IxN2X - Emulation IxANVL - Conformance IxAutomate - Test Suites
L2TP: L2TPv2	IxNetwork - Emulation IxN2X - Emulation IxANVL - Conformance IxAutomate - Test Suites
ANCP: ANCP	IxNetwork - Emulation IxN2X - Emulation
DHCP: DHCPv4 Client/Server DHCPv6/PD Client/Server	IxNetwork - Emulation IxN2X - Emulation IxANVL - Conformance IxAutomate - Test Suites
Multicast: IGMP/MLD IPTV Channel Zapping	IxNetwork - Emulation IxN2X - Emulation IxAutomate - Test Suites
IPv6 SLAAC: IPv6 Stateless Auto-configuration	IxNetwork - Emulation IxN2X - Emulation
Web-Auth: Cisco and HP	IxNetwork - Emulation
802.1x: 802.1x	IxNetwork - Emulation IxANVL - Conformance
NAC: Cisco NAC	IxNetwork - Emulation

For more information see http://www.ixiacom.com/solutions/testing_broadband/index.php.

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