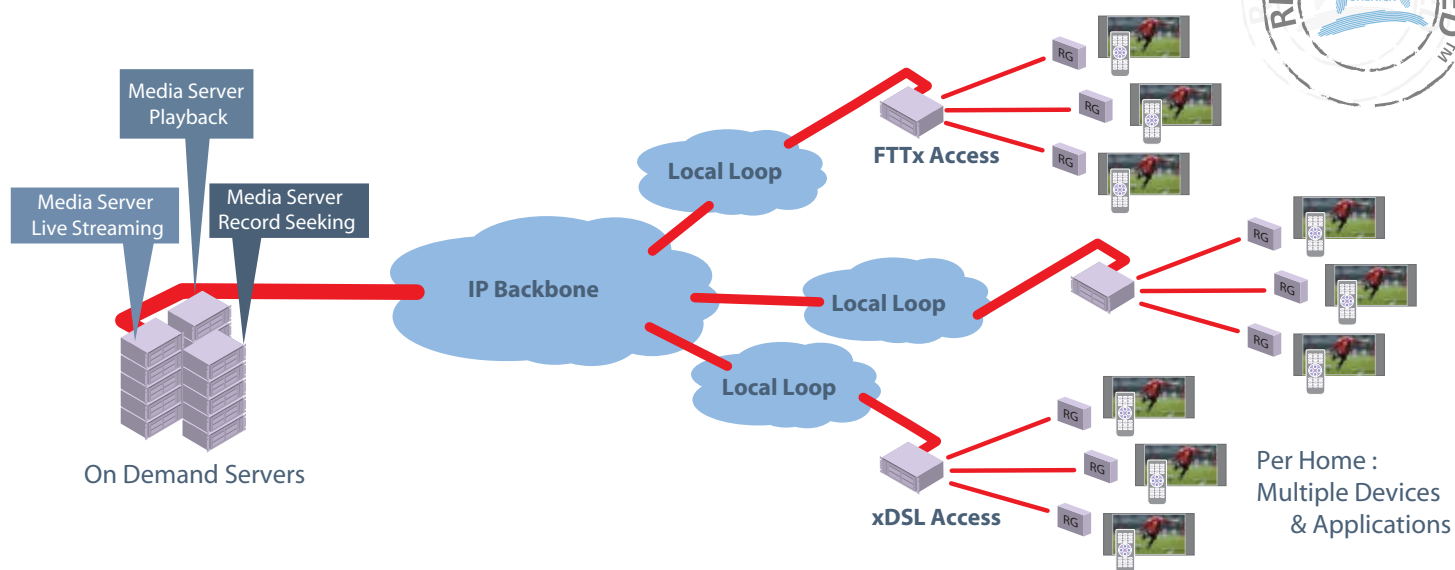




Testing VoD with diversifEye™

Delivering On Demand services to hundreds of homes with trick play features (rewind, fast forward and pause) requires extensive knowledge on the practical limitations of the network from content ingest to the end viewer. As a pay for service, Providers need to have a clear indication of what their customers will experience under a variety of network conditions.

diversifEye's Per flow architecture enables Providers assess network performance but more importantly provides a microscopic view of performance for each and every emulated subscribers activity and the impact that network flows have on the subscriber quality of experience.



Sample VoD Test Scenarios

Content Quality and Accessibility -

On receipt of content verify video/audio quality with no reference analysis, use diversifEye to quantify quality of experience of the video offering on download of each available movie.

Scalability -

Perform stateful, functional and scalability testing of both the control plane and media plane architecture of the VoD solution.

Mixed Application (VoD, IPTV, VoIP and Data Applications) Performance -

Emulate and analyze on demand performance with concurrent application sessions. Utilize diversifEye to quantify the effect of mixed traffic environments on the quality of video flows right up to thousands of users at 10Gigabit Ethernet levels.

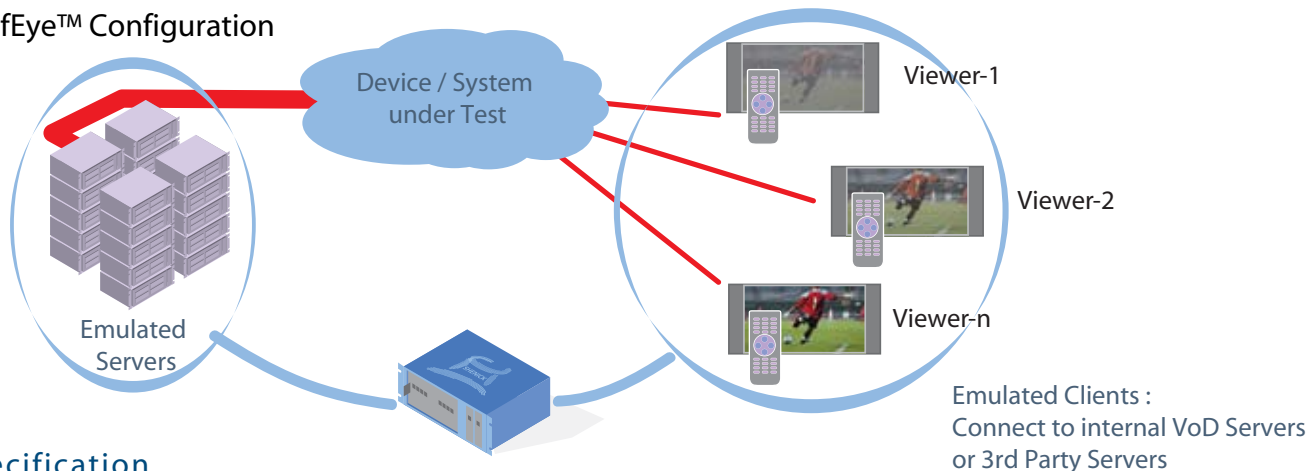
Security Attacks -

Analyze the impact of DDoS/virus/worm attacks on VoD servers and applications.



On Demand services use a number of techniques to deliver content and trick play functionality of fast forward, rewind and pause. VoD implementations generally have their own proprietary way of doing things, which results in the lack of off-the-shelf test solutions. However with diversifEye's fully compliant TCP stack, Shenick can quickly deliver a customized solution that fits the protocol, enabling advanced testing of solutions with Per flow granularity.

Sample diversifEye™ Configuration



Software Specification

- Per RTSP based VoD viewer configuration, emulation and quality of experience analysis.
- RTSP VoD Server testing of vendor specific value added services.
- Support for VoD sessions enabled via SIP or HHTP.
- RTSP client supports redirect (300-399) responses from DESCRIBE requests.
- Test RTSP supplementary services such as pause, rewind, buffer control.
- Collective aggregate view of overall VoD performance for all viewers.
- Residential gateway emulation, with per IP flow QoS (diffServ code point (DSCP/ToS) support). Assign multiple application flows per subsystem.
- DHCP & PPPoE support.
- Compare RTSP against IGMP based VoD (support for IGMP v1,1,3, MLDv2).
- Full RFC compliant TCP stack with configurable TCP stack parameters.
- Support for concurrent data application emulation (HTTP, SMTP/POP3) and attack emulation (Virus/Worm, DDoS, Spam).
- IPv6 Test Full interworking IPv4 and IPv6 (MLDv2 supported). Support for Dual-Stack Lite.
- Captured PCAP file replay (TCP/UDP) > 1Gb.
- Demand surge condition generation.
- Video/Audio Quality Analysis.

diversifEye Summary Features and Benefits

- Load test networks to establish performance with real world VoD traffic scenarios under normal, high demand and attack conditions.
- Test key RTSP features such as buffering, pause/rewind capability.
- Connect to internal and/or third party external VoD servers.
- SIP and HTTP enabled VoD session functionality.
- Compare both unicast (RTSP) and multicast (IGMP) VoD models for performance and quality.
- Test under converged IP test conditions such as the triple play of VoIP, IPTV/VoD, Data.
- Determine key performance metrics from VoD server, network and individual viewer quality of experience.
- Highly scalable test platform supporting emulation of thousands of VoD users.
- Completely integrated test system with low cost of ownership and ease of use. Avoids necessity for multiple test systems and non integrated software applications.

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