Network Assurance for IP Video
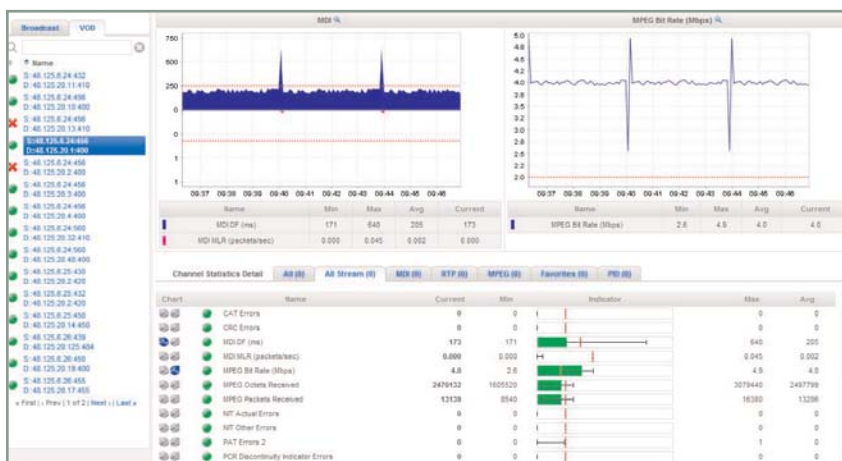
GeoProbe® | Video and APM™ | Video

Evolve Triple-play Monitoring

Triple play has arrived. Voice, video and data are now the table stakes of competitive service bundles. As a service provider, you've got to ensure that all three services meet your end-users' expectations. And, while video in itself is a complicated and unforgiving technology requiring high bandwidth and timely delivery, transporting video over an IP network adds additional complexities and challenges.

To assist service providers in addressing many of the challenges posed by triple play services and the migration to an IP-based network core, Tektronix now offers IP Video monitoring capabilities. With Tektronix' complete Network Assurance solution, service providers benefit from a highly scalable system that provides video analysis reporting and alarms for streaming media.

Access real-time statistics through a user friendly, web-based GUI for a comprehensive view of all Broadcast and VoD channels. Tektronix' IP Video solution offers statistics by location and by use, channel summaries and detailed statistics and alarms with real-time graphing.

- Even with MPEG-4 encoding, the combination of services including video on demand (VoD) and high-definition channels will push the envelope on bandwidth and extend capacity requirements.

- Ensuring network reliability is also key. Even small amounts of packet loss or network jitter can result in significant video quality degradation.

- Bundled service offerings (IP Video and Internet for example) magnify the impact of unsatisfied customer churn. And, with video quality expectations high as a result of terrestrial and cable implementations, ensuring a high-quality viewing experience is paramount.

GeoProbe

- End-to-Edge Monitoring for VoD and Broadcast
- 24/7 real-time tracking of 1000s of channels
- MPEG-2 TS, Per-PID, UDP and RTP Statistics*
- Control Plane Monitoring (IGMP, RTSP)

Includes IETF RFC 3357 loss pattern support

Advanced Performance Monitoring (APM)

- Complete End-to-End Network View
- High-Level Dashboards
- Isolated Path Views
- Historical Statistics and Trending

Tektronix®
Communications

Tektronix' IP Video solution combines industry-proven GeoProbe capabilities with APM's purpose-driven presentation and reporting suite. While independently valuable, the combination of features provides a comprehensive toolkit for use in a variety of scenarios including proactive resolution and reactive troubleshooting as well as ongoing capacity planning.

Network Operations: Identify unfavorable trends and resolve potential issues before they become widespread faults. Tektronix' IP Video solution provides the tools necessary to shorten troubleshooting times through rapid isolation of a problem's location and identification of probable cause.

Network Engineering/Planning: Monitor resources for more informed network planning and optimization. Increase capacity before service degradation occurs.

Customer Care: Increase customer satisfaction by proactively monitoring and addressing network issues. Swift resolution of quality degradation minimizes trouble ticket generation and associated costs. The system's ability to locate issues quickly accelerates the activation of IVR systems, thereby reducing overall support call minutes.

Marketing: Target special promotions and monitor campaign effectiveness with clear statistics for service usage by region and time of day.

Signaling Measures
- IGMP Message Statistics and IGMP to RTP Latency Performance
- RTSP Message Statistics and Transaction Performance
- Signaling Performance by Site and by Server Node

Troubleshoot in real time during a session or pull up historical traces to identify failure trends.

Ensure Video Service Success and Profitability

Comprehensive performance monitoring and analysis tools are critical to the success of service providers who are implementing next-generation networks for video service delivery.

- Meet superior performance benchmarks while optimizing resources and minimizing costs.

- Fine-tune service offerings based on actual usage and performance metrics.

As a complement to Tektronix' proven signaling and voice media monitoring capabilities, the IP Video solution extends service provider visibility to sharpen network and service performance analysis.

Targeted Applications Pair Proactive Problem Detection with Powerful Analysis

By monitoring actual video streams and related control signaling, GeoProbe delivers a robust set of statistics that can be used to trigger real-time alarms and populate the following views.

Portlets: Summarize resource health and program performance with metrics aggregated by site and node types.

Network Aggregation: Evaluate the performance of sites, nodes and site groups for the entire network.

Network Hierarchy: Pinpoint related impacts with a tree-view of site connectivity.

- Detail screens summarize KPI performance for selected sites and channels.

- Grouping capabilities allows aggregated analysis of regional or high-value sites.

Program Path: Understand downstream impacts and resolve upstream issues with a focused tree-view of only the resources traversed by a specific VoD or Broadcast path.

Scorecards*: Track VoD and Broadcast metrics on a per stream basis for each monitored location.

Graph specific KPIs over time with auto-refreshing graphical performance windows.

Supports 5-second refreshment intervals. All other views support 5-minute refreshment intervals.

For troubleshooting applications, Tektronix' IP Video solution takes full advantage of the GeoProbe's core network management alarm displays and session trace capabilities.

Real-Time Alarms:

- Utilizes GeoProbe alarm displays and drill-through paths.

- Supports SNMP and TeMIP Alarm Feeds.

- Provides Periodic KPI Feeds and Exports.

Session Trace:

- Real-time and historical session trace available for RTSP signaling.

For longer term, on-going analysis, Tektronix' IP Video solution leverages the Cognos reporting suite to analyze stream, site, and node performance over time.

Reporting and Analysis:

Broadcast by Channel, Broadcast by Channel by PID, IGMP and VoD cubes support Day by Hour and Month by Day reporting.

Ensuring the video user experience is critical to the overall success of IP Video.

Is the network delivering content adequately?

- Where in the network is congestion occurring?

- What is the network-wide channel usage and distribution?

- How does stream quality change through the network?

- Are there adequate VoD content servers in appropriate markets?

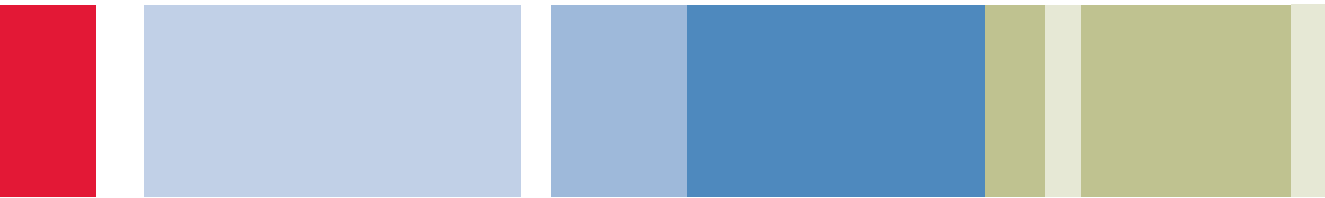- Are interactions between voice, data and video causing problems within the network?

Is the user receiving content adequately?

- Is the subscriber consuming more bandwidth than is provisioned?

- Is the customer receiving the services requested?

- Does the content meet accuracy, timeliness and viewing quality benchmarks?

Tektronix' delivers Quality of Service (QoS) metrics through network-level statistics and Quality of Experience (QoE) metrics through control plane monitoring of accurate and timely requests/processing.

Media Measures

- Broadcast Channel and VoD Stream Performance

- Performance of streams at specific sites, from specific media servers, across specific network interfaces and per PID

- Changes in stream quality as it travels downstream

Solution Summary

Platform Specifications

- **Interface Support:** Quad OC-3/STM-1 fiber, Quad 10/100/1000 optical/electrical, Multi-port T1/E1 and 10 Gig-E*

- **Protocol Support:** MPEG-2 TS over RTP, MPEG-2 TS over UDP, RTP/RTCP, RTSP, DNS/DHCP, HTTP, IGMP

- **Available Footprint:** 2U and 14U SpIprobe chassis. Existing GeoProbe deployments may be easily leveraged with additional cards.

- **Typical Deployment:** Service Provider IP Video Network Hub Offices or Video Service Office/Central Office

*support available in 2008

True Quad Play Monitoring from a Single SpIprobe

- Single probe can monitor VoIP, video, mobile and data services running over the same network or different networks.

- Simplifies the monitoring network. Minimizes equipment cost.

Unmatched IP Video Density per SpIprobe

- Support up to 600 SD and HD video streams with maximum 2.5 Gbps data throughput per interface card.

- Multiple interface cards can be supported within a single SpIprobe for unmatched scalability to over 5000 channels.

- Fewer components needed for high capacity networks. Minimizes equipment cost. Simple, robust expansion.

Easy-to-Use Web-Based GUI

- Customized views are easily configured for efficient routine monitoring, specialized roles or distinct areas of responsibility.

- Extensive filtering and display preferences afford precision focus on emerging problems.

- Active page elements support drill-through analysis and investigation.

About Tektronix:

Tektronix Communications provides network operators and equipment manufacturers around the world an unparalleled suite of network diagnostics and management solutions for fixed, mobile, IP and converged multi-service networks.

This comprehensive set of solutions support a range of architectures and applications such as LTE, fixed mobile convergence, IMS, broadband wireless access, WiMAX, VoIP and triple play, including IPTV.

For Further Information:

Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology.

Please visit www.tektronix.com/communications

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Color-coded "red" and "green" metrics ensure at-a-glance notification of errors and issues.

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