

High Performance Software Probe for IP Voice, Video, and Data

SQprobe® is an advanced high speed probe designed for emerging software defined (SDN) and virtualized networks. It monitors IP based voice, video, audio and data streams at Gigabit rates, performing deep packet inspection (DPI) and providing accurate and detailed real time service quality metrics, usage and demographic data. SQprobe incorporates **VQmon®**, the industry's most trusted real time QoE analysis technology.

Extreme Performance and Scalability — SQprobe scales from 5 Mbps to 10 Gbps capacity, based on available CPU resources and configured capacity limits. Performance scales with the number of CPU cores available, achieving 1-2 million packets per second per core.

Pure Software — SQprobe is a pure software application that can run on off-the-shelf hardware or in virtualized environments; SQprobe is typically deployed on industry standard 32- or 64-bit Linux/Intel systems. Other operating systems and processor types can be supported on request.

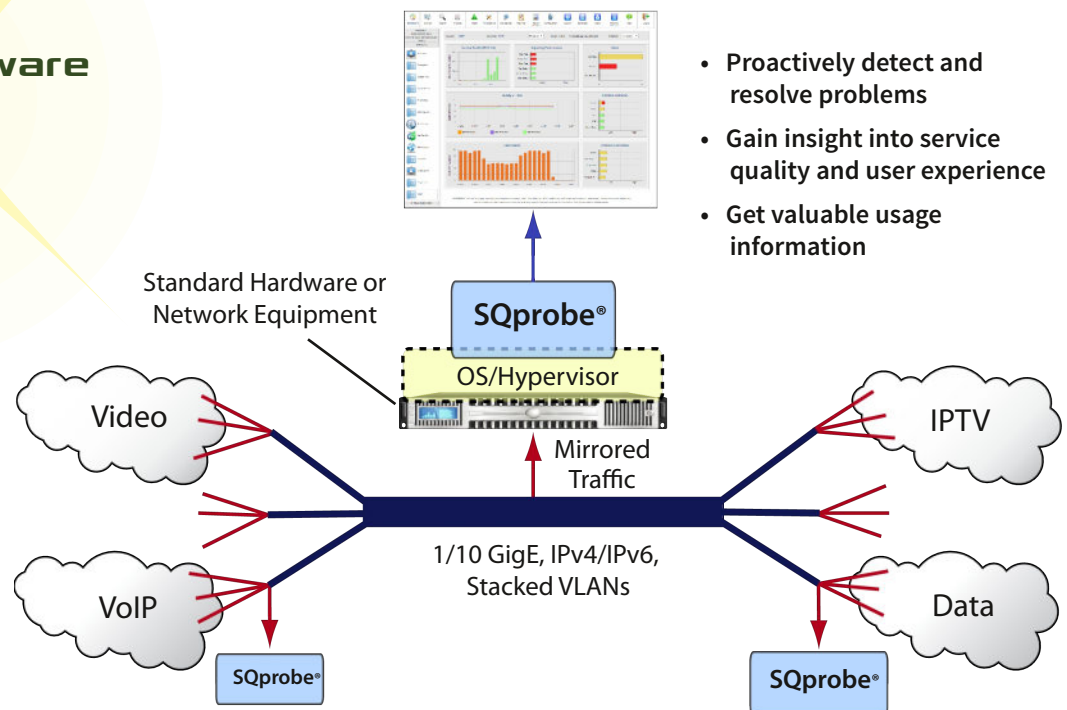
Flexible Deployment — deploy on servers, in virtualized data centers/NFV, or embedded into networking equipment. SQprobe is efficient in its use of memory and CPU, and can co-exist with other applications.

KEY FEATURES
▶ Detailed Analytics and QoE metrics for VoIP, Video, Data
▶ Analyzes Media, SIP signaling and Data
▶ Accurate MOS scores for Voice and Video
▶ Live packet capture for VoIP and Videoconferencing calls
▶ Hardware independent, true software probe
▶ Ultra high performance - up to 10 GigE monitoring interface
▶ Supports IPv4 / IPv6 / Stacked VLANs (Q, QinQ, QinQinQ)
KEY BENEFITS
▶ DPI, Service Assurance and Diagnostics in a single platform
▶ Supports key emerging virtualization environments
▶ Runs on off-the-shelf hardware & standard Linux distributions
▶ Monitor from 5 calls up to 10 million calls concurrently
▶ Cost advantage - less expensive per MB / per call than other probes
▶ Quickly identify and diagnose service problems
▶ Minimize downtime & impact on users/subscribers

100% Software Solution

Right: SQprobe monitoring the performance of VoIP, Videoconferencing, IPTV and Data traffic traversing multiple stacked VLANs across a core network.

Additional SQprobe instances can be deployed to take measurements at key points on the network edge.



SQprobe® — Powerful, Real-Time Performance Monitoring at an Affordable Price.

Advanced Networks — SQprobe supports IPv4 and IPv6, up to three levels of stacked VLANs and a variety of VLAN configurations. This meets key requirements for advanced service provider and enterprise networks.

Monitor Encrypted Voice and Video Traffic — SQprobe is uniquely able to analyze encrypted VoIP and Videoconferencing over Secure RTP and to analyze encrypted (scrambled) IPTV streams.

Automatic Detection and Packet Capture for Live Calls — SQprobe can identify and capture SIP/RTP packets for VoIP and Videoconferencing calls matching user-specified criteria (IP address, phone number, VLAN ID). Capture signaling packets only, or both signaling and media packets with optional payload privacy.

Understands Broadest Range of Voice and Video Codecs — SQprobe is able to analyze a wide range of voice and video codecs, including the latest ultra-wideband codecs, adaptive codecs, and codecs with FEC and retransmission.

SQmediator - Advanced Diagnostics — SQprobe works seamlessly with SQmediator's advanced performance management, providing advanced diagnostics, expert analysis and per-call quality records.

Accurate, Detailed Analytics — SQprobe tracks every VoIP call, Videoconferencing session, IPTV channel, Video Streaming session and Data session, providing a wealth of metrics, analytics, KPIs and QoE scores.

The SQprobe® Software Probe Advantage

SQprobe®	Conventional Hardware Probes
Deploys efficiently in virtualized data centers, saving space and power	Waste dedicated rack space and power on single-purpose hardware
Can leverage shared server platforms, reducing hardware churn	Hardware requires maintenance and replacement
Easily scale capacity by redeploying onto faster server or simply by reconfiguring SQprobe	Need to replace hardware to scale capacity
Embeds directly into network equipment as either a VM-based or native application	Can't embed into network equipment

TECHNICAL SPECIFICATIONS

Hardware

- Intel processors (Sandy Bridge or newer, Xeon recommended for monitoring at multi-gigabit rates)
- Other processors available on request
- Optimized for multi-core processor environments - performance scales with number of cores
- DPDK-supported NIC recommended for maximum performance

Operating System

- CentOS/Red Hat Enterprise Linux 7.7 (32-bit or 64-bit)
- Common hypervisors including KVM, ESXi and Xen

Interfaces

- Up to 8 physical interfaces
- IPv4, IPv6
- Up to 3 stacked VLANs (Q, QinQ, QinQinQ)

VoIP/Video QoE Assessment

- VQmon (ITU-T P.564, ETSI TS101-329 and other relevant standards)
- Codecs: ITU-T G 7xx/H 2xx series, MPEG, Mobile (AMR, EVRC, SMV, GSM), common industry codecs including iLBC, Speex, SILK/Opus, VP8 and many more
- Protocols: RTP, MPEG Transport, DASH, streaming protocols from Adobe, Apple, Google, Microsoft

SQprobe can process high volumes of traffic at rates of 1-2 million packets per second per core, and supports operation on multiple cores. Standard server-class hardware and virtualization platforms may limit the transfer rates of network traffic into memory to 1 gigabit per second or less; to achieve multi-gigabit performance it may be necessary to install zero-copy drivers or enhanced NIC cards.



Telchemy, Incorporated

105 Nobel Ct
Suite 100
Alpharetta, GA 30005
USA

Email: info@telchemy.com

Web: www.telchemy.com

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