Independent Lab Validation Report

MIERCONSULTING

Best Features & Claims Verified

- **On the Windows platform tested, WinEyeQ could readily analyze over 600 concurrent calls in real-time, delivering over 125 key performance indicators (KPIs) for each**
- **Software can readily isolate problem calls, and let the user drill down into full signaling details to analyze and diagnose call-control issues**
- **WinSIP lets user flexibly configure, generate hundreds of VoIP test calls for link or network VoIP assessment**
- **Efficient storage of call detail records; over a million CDRs take less than 1 GB of disk storage**

Product Reviewed:

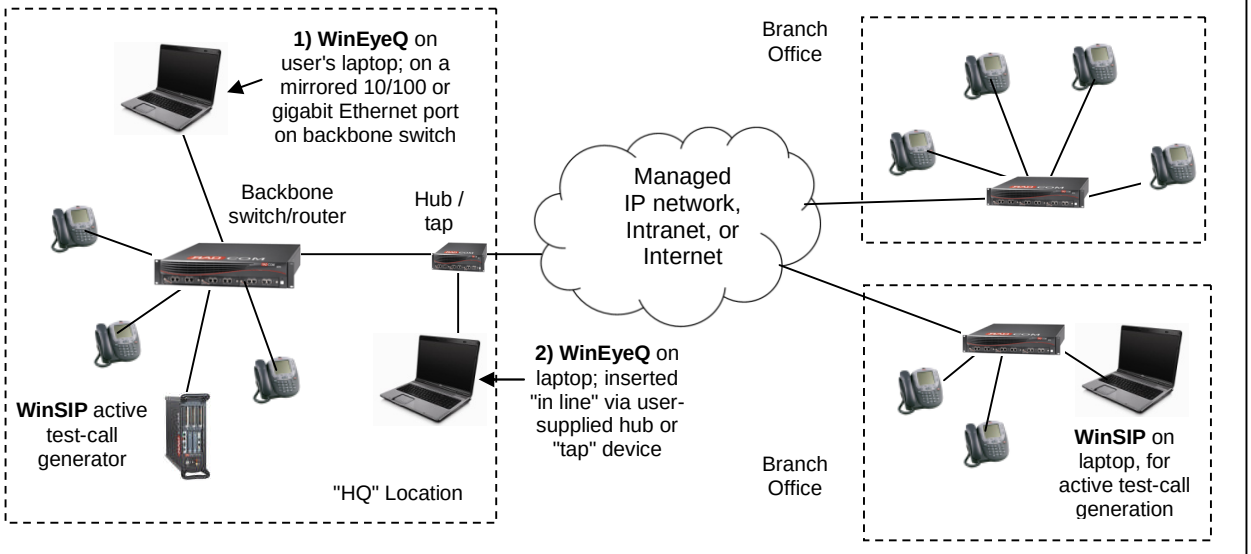
TOUCHSTONE TECHNOLOGIES

WinEyeQ, with WinSIP VoIP Test-Call Generation

MierConsulting engineers evaluated version 3.1.1 of Touchstone's WinEyeQ VoIP-analysis software, and version 4.0 of WinSIP in a simulated VoIP field testing environment. WinEyeQ was loaded and run on a high-end multi-processor (a quad core Xeon 3.33-Ghz processor), which was inserted with an "in-line" tap on a gigabit-Ethernet backbone link.

A companion software product, WinSIP, ran on two quad core Intel i7 3.07-GHz processors and was used to generate hundreds of concurrent background VoIP calls for analysis by WinEyeQ. ►

How product is typically deployed: For passive VoIP monitoring, WinEyeQ software runs on the user's laptop, desktop or Windows server, observing network traffic from either a mirrored 10/100 or gig-Ethernet switch port (1), or else inserted "in-line" on a backbone link (2).



Validation of Key Features and Capabilities

Key feature/ capability	Meets or exceeds expectations	Validation
Real-time VoIP monitoring	√	• 600 concurrent, diverse SIP VoIP calls were launched via WinSIP. WinEyeQ tracking of all active calls was accurate. Specific calls, and errored calls, were also easily tracked. • Call capture/replay of G.711 calls was tested. • Per-call and per-RTP-direction VoIP quality was measured, clearly reported via R factor, MOS, and proprietary SQI. • Accurate VoIP bandwidth consumption was clearly shown.
Long-term VoIP activity tracking	√	• Call stats are retained in a MySQL database, which can store over 1 million call detail records per GB of disk space. • Specified CDR data can be filtered and custom tables created. • Min, max and average were reported for select metrics. • Data was exported from the MySQL database in CSV format.
Impairments measurement, reporting	√	• Accurate per-call statistics were collected and aggregate, summary stats displayed for jitter, MOS and R factor. • WinEyeQ showed it could identify and assimilate RTCP data. • An R-factor rating per call is readily obtained. • Suitability for pre-VoIP network assessment was validated. • Capabilities for measuring VoIP impairments were verified.
Threshold setting, alarming	√	• Thresholds were settable and alerts (warnings) and alarms (more serious) were issued when thresholds were exceeded. • The user could set custom thresholds on measured metrics. • Testing verified that SNMP traps could be defined.
Signaling/call-control monitoring, reporting	√	• WinEyeQ readily tracked and deciphered call-control for all SIP and H.323 calls. Cisco SCCP support was in the works. • Signaling ladder diagrams could be displayed in real-time. • Call-control and signaling analysis was verified. • Call-success-rate statistics and call set-up time were reported. • Capabilities for identifying and isolating calls with errors and then diagnosing signaling issues were tested.
Active VoIP testing and pre-deployment testing/analysis	√	• With companion WinSIP software, generation of artificial VoIP test streams was performed. • More than 600 concurrent VoIP test streams were generated. • The user can schedule test calls by duration and frequency, set the number of calls and VoIP parameters such as codec and frame packing, even DiffServ (TOS) on VoIP streams.

► Various VoIP parameters were varied in the calls issued by these WinSIP nodes, including codec and frame packing (voice sample size per packet). All VoIP traffic for the testing employed SIP call control.

Up to 600 concurrent calls were generated and WinEyeQ enabled the user to dynamically analyze each one in real-time, as well as record full call details of each call in the integral MySQL database. The vendor maintains that WinEyeQ, running on a sufficient hardware platform, can track up to 1,000 concurrent VoIP calls.

The testing, conducted in January 2010, examined each major functional area addressed by the WinEyeQ and WinSIP software. The validation off their key VoIP-handling features is summarized on the previous page.

Well organized
While WinEyeQ is structured to retain full details of literally millions of calls and detailed call records for post-processing analysis, we believe the package is best suited for the real-time analysis of calls in progress.

While hundreds of measurements and statistics are retained for each call, everything is accessed via a fairly straightforward interface, which features a table of calls in progress. A series of logical tabs lets the user readily toggle to other aspects of VoIP activity.

Two aspects of WinEyeQ's user interface are particularly laudable and noteworthy:

- Errored calls are automatically isolated under a separate tab, so it's easy and fast to review troubled calls, and then drill down into each to see exactly what transpired in the call's signaling.
- The user can also quickly and easily set any calls to be "watched." The software will flag, and can even automatically record, any call that the user defines – by calling or called number, by IP address, or by any information element that can be gleaned from call set-up messages.

In our opinion, someone with a working VoIP knowledge would become functionally adept with WinEyeQ in a matter of hours.

Noted, but not tested
While all key functions of WinEyeQ and WinSIP relating to VoIP testing, monitoring and measurement were reviewed, not all aspects of these and other Touchstone software and configurations were examined. Other features and software that we note, but were not specifically tested in this review, include:

- The ability to also monitor/test **video** traffic.
- The NetObserver package, a distributed Service Level Agreement (SLA) monitoring package, which entails multiple distributed WinEyeQ probes and an IQAggregator
- Active test-call generation with H.323-based call control, which is addressed by Touchstone's Win323 software module.
- Call-control analysis based on H.323
- Call-control monitoring or analysis based on Cisco's SCCP ("skinny") protocol, which is being added by Touchstone in subsequent releases.

Conclusions
These applications are stable, and deliver performance commensurate with the power of the Windows-based platforms they are run on. We observed the full real-time generation, monitoring and measurement of 600 concurrently active calls.

The WinEyeQ interface, while offering access to hundreds of real-time measurements and metrics, is nevertheless well organized, fairly navigable, and easy to learn. As noted, handling of errored calls and calls the user specifies for WinEyeQ to "watch" are particularly well done.

Many aspects of WinEyeQ deserve special note, but all considered, we conclude that the software constitutes a valuable tool for either central-site, NOC-type monitoring/analysis, or for VoIP-oriented field technicians.

About the vendor and product …

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WinEyeQ, WinSIP

- Software that runs on Windows XP, Windows Server 2000 and/or Windows Server 2003
- Price: WinEyeQ from $895
  WinSIP from $695;
- Includes one-year warranty
- Annual software maintenance:
  15% of purchase price
- Contact vendor for licensing rates & terms
- Versions reviewed: v3.1.1 of WinEyeQ and v4.0 of WinSIP
- For additional on-line details go to:
  http://www.touchstone-inc.com/wineyeq.php

About MierConsulting …

MierConsulting, LLC, a privately owned company based in northeast Pennsylvania, is dedicated to VoIP and network measurement, monitoring, and management. The company has for years conducted comprehensive, confidential and comparative quality and performance testing for its enterprise and service-provider clients.

Having tracked, used and comparatively reviewed VoIP test and measurement products for years, MierConsulting has dedicated much of its web site (www.mierconsulting.com) to offering a first-of-its-kind, independent, publicly accessible, single-site compendium of available products that enable users to test, measure and monitor VoIP and *video*-over-IP traffic and performance.

CEO Ed Mier (emier@mierconsulting.com) and VP Engineering Dave Mier (dmier@miercon sulting.com) collectively deliver decades of experience in VoIP and IP networking, having designed and implemented global and local networks for organizations around the world. Additionally, Mier pioneered the side-by-side testing and comparison of hundreds of network products – from VoIP gateways to IP PBXs. They have co-authored over 200 comprehensive articles on all aspects of network technology for *Network World, VON Magazine, Business Communications Review (BCR)*, and a dozen other leading industry publications.