Empirix Hammer IP

Prevent issues from damaging customer experience and confidently manage implementations with end-to-end, pre-deployment testing

Today's contact center and Unified Communications solutions are extremely complex. Neglecting to validate any proposed change – whether it is a new solution or routine software update — prior to deployment can adversely impact customer experience and performance. Only complete, end-to-end testing under real world conditions can prevent costly problems.

MASTER COMPLEXITIES WITH REALISTIC RESULTS

Empirix Hammer IP fully validates IP-based solutions via a complete set of load, regression, and interoperability tests, as well as customer experience and media quality assessments. Tests are done on the actual network under anticipated traffic conditions to provide a complete understanding of expected performance.

Empirix Hammer IP is the most flexible test solution available, capable of emulating multiple network technologies, real world customer scenarios, and types of services in a single test plan. It is highly scalable for both enterprise and carrier-grade deployments.

With methodical, end-to-end testing, Empirix accurately pinpoints the source of problems and provides a final go/no analysis for software updates, system upgrades, and new solutions. Now, companies can quickly and confidently leverage the latest IP technologies to gain an enduring competitive advantage and loyal customer base.

Benefits

▶ Proactively assure optimal performance and a great user experience

▶ Easily identify the source of problems and eliminate finger pointing

▶ Keep projects on time and on budget to maximize ROI

▶ Confidently release enhancements knowing they will perform as designed

▶ Prevent costly correction of postdeployment issues
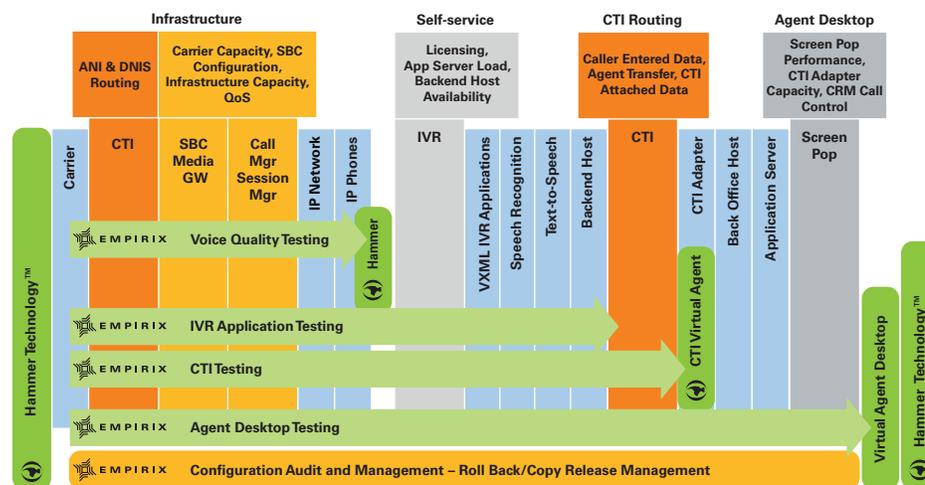
▶ Realize the full value of technology investments

FIGURE 1. SAMPLE CONTACT CENTER TEST PLAN

FEATURES AND SPECIFICATIONS

Signaling Protocols

▸ Supports SIP UA, IMS SIP UE, SIP I+T, SIPs, SIGTRAN, MGCP, NCS, H.248/Megaco, H.323, Avaya's H.323, Cisco's SCCP (Skinny), QSIG, and Clear Channel (No Call Control)

▸ Transport over UDP and TCP, IPv4 and IPv6, and TLS for secure transport

▸ Unique endpoint emulation using IP address, MAC address, and VLAN tagging

▸ Mixed protocol configurations supported

▸ Highly configurable message content and sequence

Media Capability

▸ G.711 A/µ-law, G.722, G.722.2 (AMR-WB),G.723.1***, G.726, G.729A, GSM-AMR (AMRNB), GSM-EFR/FR, EVRC0, iLBC, Speex, RFC 2833, and user-defined codecs for voice and tones

▸ H.263/H.263+, H.264 (MPEG-4 pt. 10) including HD (720p and 1080p resolution), and MPEG-4 pt.2 codecs for video

▸ T.38 Fax

▸ T.30 Fax pass-thru

▸ Silence suppression detection using RFC 3389, G.723.1A, and G.729B

▸ Multiple true voice and video clips

▸ Unique DTMF string validation on every channel

▸ Reference-based voice quality using ITU-T P.862.2 (PESQ*) and MOS (MOS-LQO)

▸ Non-reference-based voice quality using E-model (R-factor) and MOS (MOS-LQE) with up to 5 mapping scales

▸ Non-reference-based video quality with MOS-V

▸ Advanced speech recognition**

▸ Full RTP, Secure RTP (SRTP), and RTCP metrics for every call

▸ Narrowband and Wideband codecs for media with VQScales to around 300,000 endpoints with use of Master/Mega-Controller for single point of control

Empirix Hammer User Interface

▸ Easy to use TestBuilder User Iinterface allows for test scripts to be created by a ladder diagram — all scripts are protocol-independent

▸ Advanced scripting can be developed and executed using the Empirix Hammer Visual Basic User Interface

▸ Multiple test scripts can be run from the TestBuilder or Test

Profiler User Interface

▸ Real-time test information is displayed per channel, as summary test metrics for each call, and as aggregated real-time graphs for visualizing results over time

▸ Configuration, test script, and profile files can be saved and opened on a different system

▸ Powerful Command Line Interface (CLI) and scripting interface for automation, remote control, and feature testing

Benefits

▸ **Integrated:** Provides feature, load, voice and video quality, signaling, and media are all in one platform controlled by a common user interface

▸ **Flexible:** Enables users to graphically develop simple call flow scenarios or easily modify signaling messages and protocol behavior for even the most complex call scenarios

▸ **Scalable:** Scales from a single developer's solution with a few end points and expands up to hundreds of thousands of calls, as required throughout the test lifecycle

▸ **Multi-protocol:** Can run multiple protocols simultaneously using the same tests and scripts to evaluate complex VoIP, NGN, IMS, contact center and Unified Communications environments

▸ **Multi-media:** Supports many different narrowband and wideband codecs for wireline and mobile communications as well as various real media types, such as voice (DTMF and speech), video and fax

Signaling Editor

▸ Customize state machine behavior and message content

▸ Flexible state based architecture provides comprehensive state machine customization capability

▸ Develop state machines to handle call flows specific to your applications and device under test

▸ Create your own message or call flows, or customize existing ones

▸ Import messages from Empirix Hammer Call Analyzer or third-party protocol analyzers

Monitoring and Reporting

▸ Real-time monitoring and reporting of registration and call statistics

▸ Statistics can be viewed on any pair of endpoints

▸ Export data to other applications for customized user report

Customer Supplied Hardware and Operating System Requirements

For systems with up to 120 feature endpoints:

▸ Intel Xeon, Pentium 4 520,or Pentium M 745 CPU

▸ 40 GB hard drive

▸ 4 GB RAM

▸ Windows 2008/2012 Server Standard Edition R2

▸ 100/1000 Ethernet NIC (1 GB dedicated NIC for HD video)

For systems with 120 to 500 feature endpoints:

▸ 2.0 GHz Quad Core Dual Xeon processor with 1.33 GHz front-side bus

▸ 8 GB RAM

▸ 250 GB hard drive

▸ Windows 2008/2012 Server Standard Edition R2

▸ 100/1000 Ethernet NIC (1 GB dedicated NIC form HD video)

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**Speech recognition technology provided under license from Nuance Communications, Inc.

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