Service quality monitoring for comprehensive, integrated performance and fault management of Next Generation Networks

Empirix and IBM BladeCenter – helping telecommunications service providers manage realtime services

Highlights

- ***Monitoring and diagnostic solutions for VoIP, NGN and converged networks on IBM BladeCenter and System x platforms.***
- ***Available IBM Tivoli Netcool/ OMNIbus Integration Module (NIM) for Empirix Hammer XMS.***
- ***Comprehensive performance management of VoIP and NGN networks through the integration of Tivoli Netcool Proviso with critical network and subscriber information.***

As demand for Voice over IP (VoIP) and advanced NGN services continues to accelerate, subscriber's service level expectations also continue to increase. The desire of telecommunications service providers to pursue these new revenue opportunities — while meeting high service level expectations — is driving a need for the comprehensive monitoring and analysis capabilities that Hammer XMS and Hammer Call Analyzer can provide.

These Empirix solutions help expedite the deployment of new services for new subscribers. These solutions help meet the expected Quality of Service (QoS) by proactively resolving network problems and limiting potentially adverse impact on subscribers. Empirix solutions can help enhance revenue generation capabilities and revenue assurance requirements.

Advanced VoIP / NGN monitoring

Empirix's Hammer XMS solution delivers a carrier-class monitoring solution for comprehensive visualization of realtime service quality in VoIP / NGN networks. When used by network operations, network engineering and customer support organizations, the VoIP and NGN monitoring portfolio can:

- *Enhance proactive efforts to avoid service quality problems before customer's quality of experience is adversely impacted – by helping detect negative quality metric trends, alerting on pre-set thresholds, and scheduled testing for verification of service quality*
- *Help increase the efficiency of reactive measures to respond to network or service issues by providing realtime analysis, reporting and diagnostics to minimize ticket handling, and root cause identification and verification of remediation measures*
- *Help optimize searching and diagnostic analysis on large volumes of information gathered by VoIP / NGN monitoring through the use of intelligent database indexing and integrated call ladder visualization of messages per call / session messages*

The realtime data gathered by Hammer XMS is extensive and can be extremely valuable when integrated with upstream fault and performance management systems, such as the IBM Netcool/Omnibus and Netcool Proviso offerings.

In addition, Empirix can deliver Hammer XMS as an integrated carrier-class solution running on IBM system platforms.

Integration with IBM Tivoli Netcool/ OMNIbus

To further facilitate these integrated capabilities, the available Netcool/ OMNIbus Integration Module (NIM) for Empirix Hammer XMS provides:

- *Out-of-the-box integration enabling faster deployment*
- *Tighter integration facilitating maintenance and support for later releases*
- *Conformity with the Netcool/OMNIbus Rules File Development Standards*
- *Advance testing of integrated solution*

Integration between the two systems supports both SNMP trap and tool based methodologies. The Netcool/ OMNIbus Integration Module provides:

- *Automated de-duplication of events and alarms in Netcool/OMNIbus*
- *Automated 'Generic Clear' correlation of problem/ resolution events*
- *Informative and descriptive event presentation in Netcool/OMNIbus*
- *Context sensitive tools in Netcool/ OMNIbus EventList*

SNMP trap-based Integration

Empirix's Hammer XMS application sends SNMP traps to Netcool/ OMNIbus via the SNMP probe and the associated configuration rules file. These traps can be set against call control metrics, voice quality measurements and protocol information. Hammer XMS will notify Netcool of any alarms and events based on supported MIBs.

Tool-based Integration

Context-sensitive tools enable the 'right-click' functionality that will access Hammer XMS and launch the Hammer XMS GUI from the Netcool EventList to enable the Hammer XMS capabilities:

- *Diagnostics*
- *Analysis*
- *Reports*

Integration with IBM Tivoli Netcool Proviso

The IBM Tivoli Netcool Proviso can aggregate Hammer XMS call and protocol information to provide trending within integrated dashboard views. By combining Hammer XMS subscriber information with the device level information Proviso collects, the telecom service provider can have a comprehensive dashboard view of their network.

For example, measuring Grade of Service (% of calls that have been blocked by the network)

With this data a service provider can better understand when failures occur, be able to determine the impact on service delivery and who experienced failures — with the ability to drill down into the Top N failures that subscribers experienced (network congestion, no route to destination)

Hammer XMS can be used to track the session (at the call level) and view diagnostics for specific calls & errors.

"Empirix's Hammer solutions can be integrated with Tivoli Netcool to offer Service Providers a comprehensive and integrated service management platform for VoIP and NGN networks. By leveraging the IBM BladeCenter family and System x platforms we are able to deliver the scalability that our telecom customers demand."

— Greg Ferguson
CEO
Empirix

Hammer on IBM Systems

Empirix has tested Hammer XMS on IBM's Intel-based platforms, including the IBM System x 3650T running SUSE Linux, and the IBM DS3400 storage solution.

Hammer Call Analyzer (HCA) is a time-saving diagnostic and analysis software tool for VoIP, NGN, and converged networks. HCA can help uncover, isolate, troubleshoot, and document signaling and media problems. Features include full protocol decodes, call/session correlation across multiple protocols and multiple domains, call/session flow visualization and media analysis.

HCA has been adapted for Broadsoft environments with the ability to pull files directly from BroadWorks® to enhance deployment and advanced troubleshooting. HCA is compatible with the IBM BladeCenter family.

IBM BladeCenter family — for every customer need

The IBM BladeCenter T chassis provides hardware redundancy (power supply, I/O modules, management modules, L2 switching, mid-plane, etc.) thereby minimizing potential points of failure in the solution.

The IBM BladeCenter is an advanced blade system which integrates servers, storage and networking into a single chassis — yielding significant simplification, improved density and potential TCO savings . A single family of common server blades, storage, I/O, switches and networking modules are fully supported and interchangeable across the family of BladeCenter chassis. The IBM BladeCenter chassis is designed as the ideal solution for data center deployments. The IBM BladeCenter H is for high performance computing platform, while the IBM BladeCenter T chassis is specifically designed for telecom central office deployments.

The new, IBM BladeCenter HT — a new, telecom optimized version of the BladeCenter H — opens new market opportunities with a new and powerful NGN platform ideally suited for telecom equipment and service providers.

The IBM BladeCenter T and BladeCenter HT deliver rich telecommunications features and functionality, including fault-tolerant capabilities, hot-swappable redundant DC or AC power supplies and cooling, and built-in systems management resources in a 20" deep chassis. The rigorous Network Equipment Building System (NEBS) Level 3 and European Telecommunications Standard Institute

(ETSI) outline requirements typical of telecom central office environments in the areas of electromagnetic compatibility, thermal robustness, fire resistance, earthquake and office vibration resistance, transportation and handling durability, acoustics and illumination, and airborne contaminant resistance. The IBM BladeCenter T and BladeCenter HT chassis meet the NEB Level 3 / ETSI requirements[1].

Empirix and IBM: a winning combination

The effective management of realtime services, such as VoIP and NGN, requires well integrated management processes that provide service providers with a comprehensive view of their valuable network resources. The IBM BladeCenter is the ideal platform for the deployment of these services providing a single platform to help reduce operating costs and complexity.

- *A comprehensive Service Delivery Platform combining Fault Management and Performance Management analysis with subscriber information.*
- *Proactive monitoring and diagnostics to help meet the expectations of reliability that subscribers demand from their service providers.*
- *Grow your VoIP networks without adversely impacting existing subscribers by leveraging IBM Tivoli's comprehensive OSS solutions and scalable hardware solutions with Empirix's proven carrier class monitoring capabilities.*

For more information

Learn how IBM Systems can help your company achieve more revenue and reduce your costs, while helping you keep your profitable customers.

Have questions? Contact the IBM Telecommunications team today on how we can help you take advantage of our extensive industry expertise. Please visit us on the web at:

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[1] For additional details, please refer to Underwriter's Laboratory (UL) certified NEBS Level 3 / ETSI test report.