

UC MONITORING AND TROUBLESHOOTING **BUYER'S GUIDE**

*Choosing the Right Unified
Communications Management Tools*



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Comprehensive network monitoring and troubleshooting tools are essential for ensuring high service quality and superior user experiences in today's complex enterprise unified communications (UC) networks. Best-of-breed monitoring solutions provide end-to-end visibility into IP communications flows, helping you track key performance metrics and resolve problems across diverse vendors, network elements and service providers—quickly and cost-effectively. This buyer's guide reviews the key features and functions of an advanced UC monitoring and troubleshooting solution and provides tips for selecting the right product for your particular environment.

You will learn:

- Top reasons for introducing end-to-end UC monitoring tools
- Important criteria for evaluating and comparing potential solutions
- Key business benefits you can expect with a proactive management approach



Why End-to-End UC Monitoring and Troubleshooting Tools?

Many businesses rely on fractured UC and contact center networks that are made up of disparate IP communications platforms, endpoints and services, and are notoriously difficult to administer. Unable to proactively manage the network in a systematic manner, many IT organizations simply troubleshoot problems after they are reported using vendor-specific management applications or general-purpose packet capture and analysis tools like Wireshark. Identifying issues, correlating data and resolving problems can take hours or even days, frustrating users and eroding confidence in the IT group.

IT organizations can improve service quality and increase user satisfaction by introducing purpose-built multi-vendor UC monitoring and troubleshooting tools, and taking a pro-active and holistic approach to network management. Nemertes Research found third-party management tools help businesses reduce implementation costs by 76% and reduce annual operations expenses by 25%.¹

Choosing the Right Tools — Product Evaluation Criteria

Not all UC monitoring and troubleshooting tools are the same. Product architectures and features vary widely from vendor to vendor. When evaluating a UC management solution it is important to fully consider functionality, usability, scalability, extensibility and costs to ensure the product meets both your immediate needs and long-term requirements.

Key capabilities and attributes of an advanced UC monitoring and troubleshooting solution include:

End-to-End Real-Time Monitoring and Troubleshooting

Look for a solution that is specifically designed for managing real-time IP communications sessions across diverse endpoints, devices and services including SIP trunking services and cloud-based communications services. The solution should automatically correlate data from multiple sources, providing an end-to-end view of each session to streamline troubleshooting and analysis. End-to-end monitoring and troubleshooting tools eliminate manually intensive packet capture and analysis approaches, saving time and accelerating problem resolution.

¹ True Total Cost of Ownership for Unified Communication, Nemertes Research, September 2015

Flexible Search and Filter Capabilities

Choose a tool that supports rich search and filter capabilities, and provides ladder diagram displays to help administrators quickly identify and analyze live calls, drill-down on individual segments, and pinpoint problems. Administrators must be able to quickly search for calls by phone number to efficiently troubleshoot a problem. And they must be able to filter data based on specific parameters—all calls with one-way audio or all calls flowing through a particular gateway—to quickly isolate and resolve issues.

Granular MOS Reporting

The solution should support detailed media quality analysis with granular mean opinion score (MOS) reporting to help administrators accurately size up the user experience and efficiently troubleshoot problems. Many tools simply present an *average* MOS score over the life of a call using RTP Control Protocol (RTCP) statistics. In many cases, quality issues may be sporadic. The overall MOS score for a call may appear acceptable even though the user experienced intermittent quality issues. Detailed media quality analysis tools help the IT team better assess the full user experience and more effectively debug issues.

Key Performance Indicators and Real-Time Alerts

Best-of-breed solutions continuously monitor key network health metrics to provide advanced warning of potential performance problems and service quality issues. Key performance indicators (KPIs) let you take a proactive approach to network management, helping you detect and resolve issues before they degrade performance and impact users. Look for a solution that offers an extensive collection of KPIs, with configurable thresholds and alert notifications (e.g. SNMP traps, email messages).

Historical Data Collection and Reporting

Choose a tool that gathers session signaling and media information and call detail records (CDRs) over time. Administrators can use historical data to analyze and troubleshoot problems reported by users after the fact. Network engineering teams can use historical data for capacity planning and network design functions. And IT organizations can use CDRs to bill back departments or business units for network usage. Look for a tool that provides comprehensive reports that clearly delineate a problem to help eliminate finger-pointing. Reports should include the full details of protocol messages, ladder diagrams, and media quality measurements. They should be easily exportable as PDF, HTML or PCAP



files so they can be easily shared with vendors and service providers.

Call Recording

Many UC monitoring tools support configurable call recording capabilities. Network administrators can playback the same audio heard by a user to identify issues and debug problems more efficiently.

Intuitive User Interface

Look for a solution with an easy-to-use graphical user interface that minimizes the learning curve and supports a wide range of users (help desk personnel, network engineers, system architects) with diverse backgrounds and skill sets.



Standards-Based and Vendor-Agnostic

Choose a solution that supports a variety of IP-based signaling and media protocols (SIP, RTP, SRTP, RTCP, RTCP-XR, H.248/MEGACO, and MGCP) with encrypted data correlation, supports both IPv4 and IPv6, and works with a wide range of UC platforms, endpoints and services. Look for a solution that leverages vendor-specific APIs for better visibility. For example, if you are using Skype for Business, look for a monitoring product that uses Microsoft's SDN API to collect detailed session performance and quality metrics. Be sure to bring a potential solution into your lab and thoroughly test it against all your existing and planned UC network elements and services to ensure everything interoperates seamlessly.

Hierarchical Software Architecture

Look for a solution that leverages a hierarchical, software-based architecture for ultimate economics, performance and reliability. Best-in-class solutions support tiered product architectures with distinct data collection, mediation and aggregation layers to enable high availability and scalability. By decoupling data collection, mediation and aggregation functions you can achieve massive scalability and eliminate single points of failure. And by collecting signaling and media data passively, using external probes, you can avoid network performance implications and ensure UC health and service quality

metrics are accurate. Leading management vendors offer a choice of cost effective, software-based probes that can be deployed stand-alone on industry-standard servers or embedded with devices like session border controllers. Avoid expense probes based on proprietary hardware.

Open Interfaces

Be sure your UC monitoring and troubleshooting tools can easily tie into the other network management tools and business systems your company uses. Many UC management solutions offer REST APIs and SNMP interfaces for integration with external applications and business processes.



END-TO-END UC MONITORING USE CASES

- ▶ **Help desk** – rapidly identify, isolate and resolve problems
- ▶ **Network operations** – monitor service levels and ensure superior user experiences
- ▶ **Network engineering** – track and analyze network performance over time for capacity planning
- ▶ **Network administration** – bill back departments for network usage



Improve UC Service Quality, User Satisfaction and Economics with End-to-End Monitoring Tools

Best-of-breed UC monitoring tools can help you improve user experiences, streamline operations and reduce expenses by eliminating manually intensive, error-prone administrative tasks and taking a unified approach to network management.

The right UC monitoring and troubleshooting solution can help you:

- **Accelerate problem resolution** - quickly identify, isolate and resolve problems across vendors, network elements and service providers. Eliminate disjointed troubleshooting practices, avoid finger-pointing and slash repair times.
- **Boost service quality and user satisfaction** - proactively monitor

end-to-end network performance and real-time media quality metrics to improve communications experiences and boost user satisfaction.

- **Minimize costs** - use software-based probes to contain upfront expenses and accelerate investment returns. Slash ongoing operations expenses by radically simplifying network administration and support tasks.
- **Protect investments** – monitor performance and resolve issues across a wide range of UC network elements, endpoints and services. Protect past investments and choose from a variety of UC components and services in the future.

INDEPENDENT STUDY CONFIRMS END-TO-END UC MONITORING BENEFITS

Nemertes Research, an independent advisory and strategic consulting firm, interviewed ten Oracle Enterprise Operations Monitor customers of various sizes and industries to quantify the business benefits of an end-to-end UC monitoring solution. The customers employ a range of multi-vendor VoIP systems, UC platforms and contact center applications and use the Oracle solution to monitor performance and troubleshoot problems.

Each customer reported Enterprise Operations Monitor helped them save time, reduce costs, and/or more efficiently troubleshoot and manage the network. In particular, companies using the Oracle product:

- ▶ Reduced mean time to repair (MTTR) by an average of 65%
- ▶ Reduced full-time equivalents (FTEs) managing VoIP and UC systems by an average of 35%
- ▶ Realized a three-year ROI ranging from 338% to 627%

Source: Business Value Analysis, Oracle Enterprise Operations Monitor, Nemertes Research Group, January 2016.

END-TO-END UC MONITORING IN ACTION — INTUIT, INC.

Intuit, a leading provider of business and financial management solutions, uses Oracle Enterprise Operations Monitor to proactively manage its complex multi-vendor unified communications and contact center implementation. The Oracle solution ensures high service quality and customer satisfaction for the company's business-critical voice and video interactions.

Enterprise Operations Monitor replaced several discrete network test and performance management tools, providing end-to-end visibility into IP communications flows. Intuit network administrators resolve problems more quickly and efficiently—often before they are detected by end-users and customers.

“With Oracle we have shortened problem isolation and resolution times from days to hours or minutes,” explains James Rubio, EBS Technology Infrastructure Manager for Intuit. “Oracle helps us optimize service quality and improve customer satisfaction. In fact, our mean customer satisfaction rating has increased by 20 points since we introduced the Oracle solution.”

About Oracle Enterprise Operations Monitor

Oracle Enterprise Operations Monitor is a comprehensive service monitoring, troubleshooting and analysis tool that provides real-time visibility into enterprise VoIP and UC networks. The solution helps businesses increase user satisfaction, reduce operations costs and accelerate the deployment of IP communications services. It also provides historical reports and call logs for network planning and accounting management.

Oracle Enterprise Operations Monitor is specifically designed to help IT staff quickly identify and resolve problems in complex multi-vendor communications networks. Architected for high reliability and scalability, the software-based solution includes passive probes that monitor and analyze network traffic, a mediation engine that correlates data and creates an end-to-end view of each session in real time, and an optional mediation engine connector for aggregating data at scale.

Next Steps

To learn more about how the right monitoring and troubleshooting tools can help you improve UC service quality, user satisfaction and economics visit oracle.com/industries/communications/enterprise.

