

# Omni-Q Management Suite

Converged monitoring solution to improve service quality and assure customer satisfaction

## The Challenge

Service providers are currently investing heavily in converged networks to support the latest revenue-generating multimedia services. Customers' expectations for continued high quality of service demand that operators meet new monitoring challenges, while the issue of monitoring is now more complex due to:

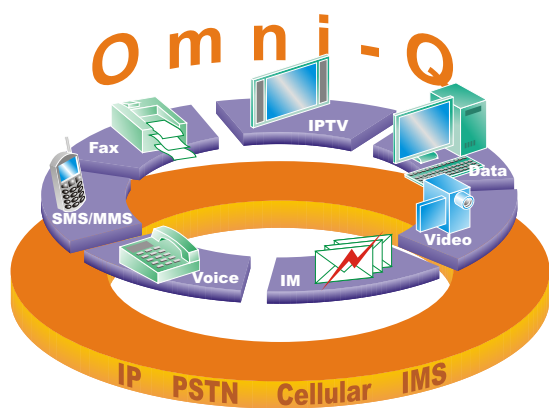
- Converging IP, PSTN and Cellular networks
- Using multiple interfaces
- Combining services such as Voice, Data, Video and IPTV

Regardless of technology or type of service, operators need to be able to monitor their services and troubleshoot problems. Omni-Q offers them a solution that easily meets any convergence challenge.

## Omni-Q: a Convergence Solution

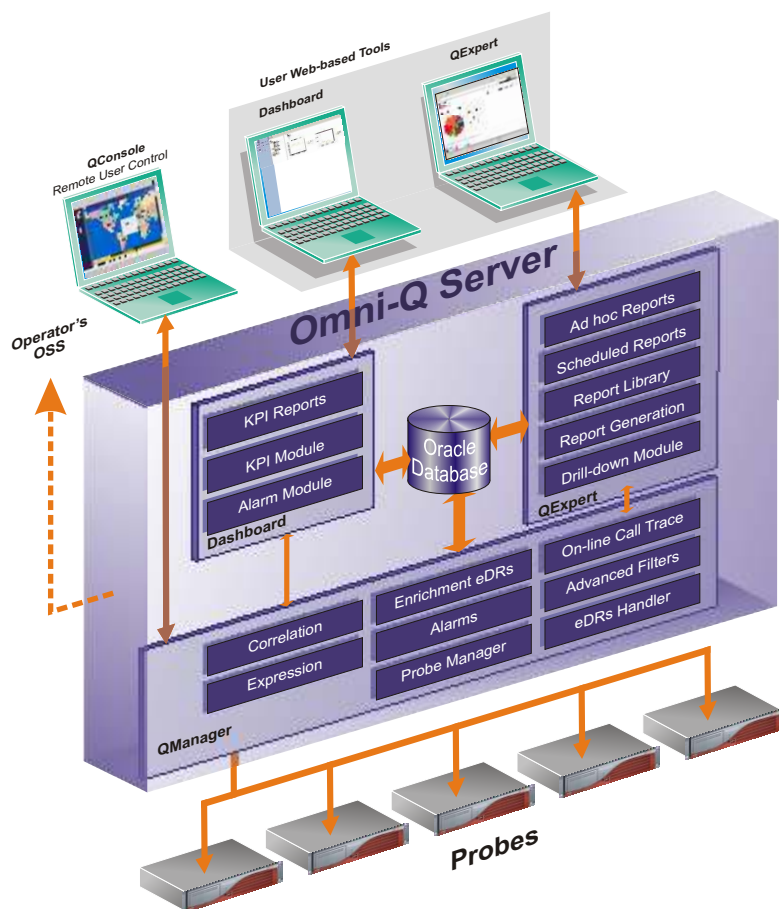
Omni-Q is a monitoring solution for multiple services (Voice, Video, IPTV and Data), employing a comprehensive array of service and network performance and measurement methodologies to continuously analyze service performance and quality.

With its enhanced correlation capabilities, Omni-Q offers the service provider full end-to-end visibility of the network across technologies. Omni-Q displays performance and quality measurements from both the signaling and the user planes, based on a broad range of active and non-intrusive hardware and software probes.



## How Does Omni-Q Work?

The QManager, Omni-Q's management server, centrally manages the Omni-Q probes. These are remotely accessed by the QConsole software, installable on any PC/laptop. All collected parameters are stored in an Oracle database for use by both the Dashboard and the QExpert, a Web-based analysis and reporting tool. Both active and non-intrusive probes are available.



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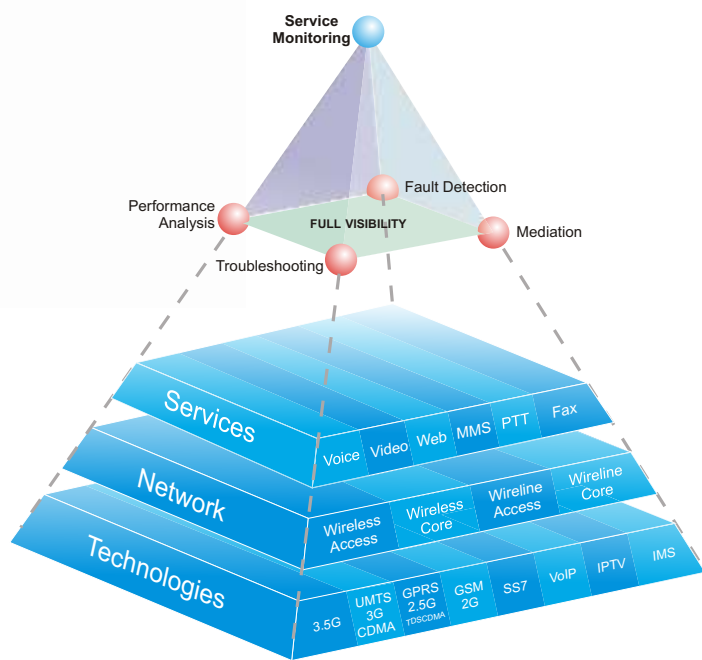
TEST-OF-THE-ART

## A Holistic Approach

The Omni-Q management suite combines in a single solution an integrated set of configuration, analysis, and reporting tools that offer the following functions:

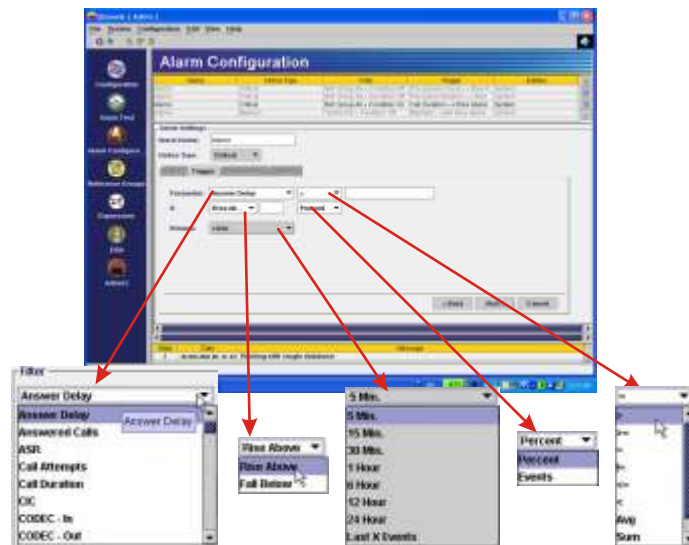
- ▶ Fault Detection
- ▶ Performance Analysis
- ▶ Drilldown and Troubleshooting
- ▶ Mediation

As a complete solution, Omni-Q covers not only various technologies, but also different layers (from network to service layers), addressing multiple needs – detection, performance analysis and troubleshooting – in a unified operational flow.



## Service Fault Detection

In today's packet network environment, operators need a reliable method of both accurately and meaningfully identifying service level faults as experienced by the end user. Omni-Q offers not only physical and network layer alarms, but also user-defined key quality and key performance indicators (KQIs and KPIs) on numerous media and signaling attributes and quality measurements. Omni-Q goes beyond the flexibility of defining alarms on single events or defined time periods. Alarm definitions allow the operator to filter by groups or by specific configurations of KQIs.



The operator can select the parameters to be included in the alarm report and the notification type when an alarm is triggered. The QManager can integrate with 3rd party OSSs, and send alarms northbound via SNMP-based traps. In addition to alarms regarding the network, system health alarms can be initiated to notify operators of Omni-Q status.

## Service Performance Analysis: Drilldown and Troubleshooting

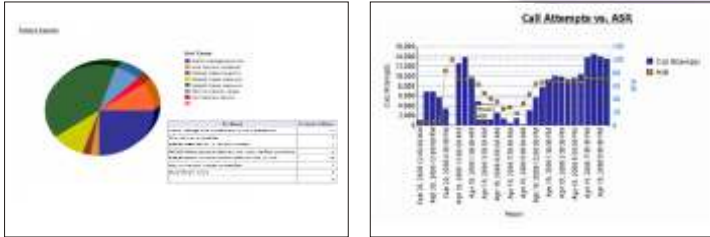
The Omni-Q management suite outperforms traditional monitoring solutions, offering users a full array of drilldown and troubleshooting tools.

Signaling and media attributes and quality measurement eDRs (enhanced detail records) collected from the probes in the QManager are stored in the solution's embedded Oracle database. These can then be used by Web-based user interfaces, either the QExpert (the analysis and reporting module) or the Dashboard (the real-time service performance display tool), to perform service performance analysis, drilldown and troubleshooting on KPIs and KQIs, and reflect the quality of the customer's experience.

### QExpert

The **QExpert** is a flexible, Web-based analysis and reporting application that allows customers to manage their information in a convenient format. The QExpert includes both a set of pre-defined VoIP and Cellular sample reports and an advanced environment to build enhanced reports with multiple charts, tables and drilldowns. QExpert offers full user flexibility in terms of selected parameters, graphic formats and scheduling. Additionally, reports can be viewed or exported in a variety of file formats.

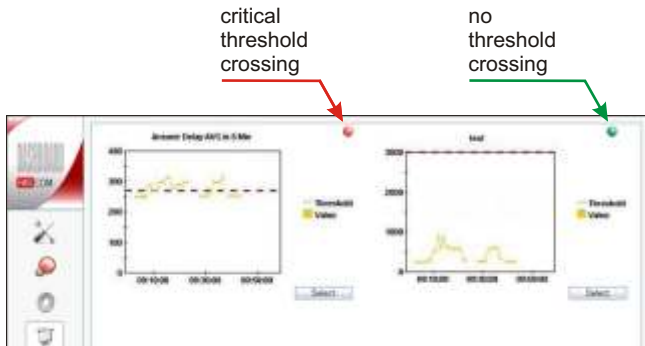
# Omni-Q Management



QExpert

## Dashboard

The **Dashboard** is a supplementary tool that displays the network's current performance and service quality. Each Omni-Q user can design the Dashboard to fit their network model – the network services and its KPIs – and see at a glance a full view of the network's functioning, KPI status, and requested alarms according to severity.



Dashboard

## Omni-Q Advanced Modules

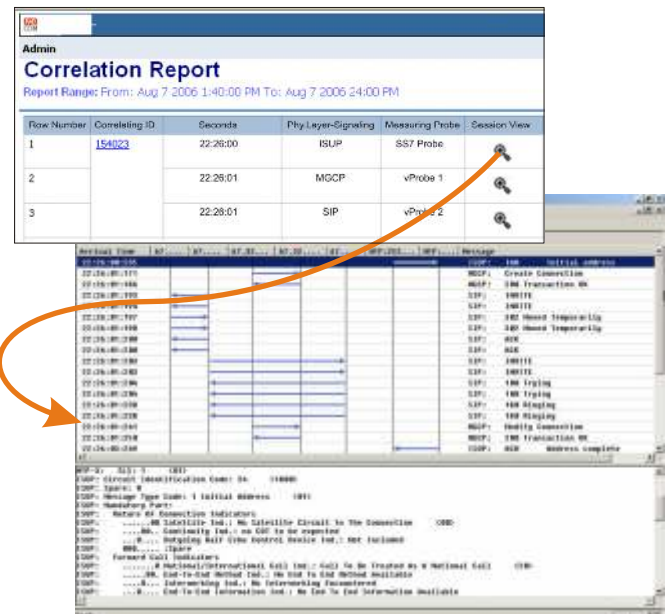
As a service performance analysis tool, Omni-Q offers operators advanced modules:

- **Online Correlation** allows users to trace a call across multiple interfaces, detecting and troubleshooting the call as it traverses the network. The QManager's online call correlation capabilities enable Omni-Q to display all the eDRs collected by different probes for a single session into one combined view. This unique feature allows Omni-Q to correlate different signaling legs at different interfaces – over IP, PSTN or Cellular – as well as correlate media and signaling eDRs.
- **Expressions** provide an Omni-Q module for creating customized KPIs. This module allows the user to configure selected parameters and perform specific calculations on them. New parameters (KPIs) may be defined by means of three main expression types – rate, duration and measurements.

- **Enrichment Tables** allow the operator to attach meaningful values to various parameters, thus enhancing the eDR information derived from the network. For example, the operator can add the customer name to a given IP address, or add the MS type to the IMEI. These enhanced fields can be used for reports, alarms, and VoIP correlation.
- **Data Aggregation** lets users aggregate data and create statistical eDRs for a defined time window. Thus, it is easy to view longer-term reports and trends or export summarized data to externalized data mining tools.
- **Online Call Trace** allows the user to view call eDRs and statistics for specified open calls. eDRs based on filters (with parameters such as phone number, prefix, etc.) can be viewed once the call starts, and statistics such as number of specified open calls or average MOS can be observed.

## Session Viewer

**From monitoring to troubleshooting with the click of a mouse:** For in-depth diagnostics, the operator can open an integrated eDR with its signaling and user plane files and drill down to specific call details. The Session Viewer displays detailed signaling flow decode, composed of a ladder diagram, full-message decode, and raw data decode, to identify and troubleshoot signaling and handshake issues.



# Omni-Q Management



In addition to flow diagram and packet details, the Session Viewer also includes voice and video playback capabilities, fax view functionality, and MOS and video statistics.

## Top-Level Overview to Single-Session Detail

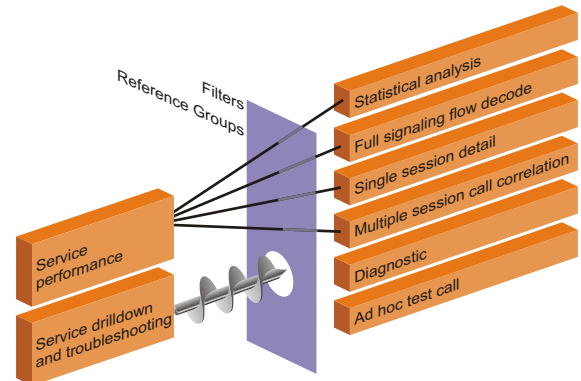
Omni-Q provides multiple levels of analysis and reporting. The operator can obtain a top-level view of various service performance and quality indicators via the aggregate and statistical analysis methods, along with drilldown visibility to a single session eDR with its detailed media or signaling flow.

## Both Test Call Generation and Live Traffic Monitoring

Omni-Q is a comprehensive solution that offers both active test call generation and live traffic monitoring in one system.

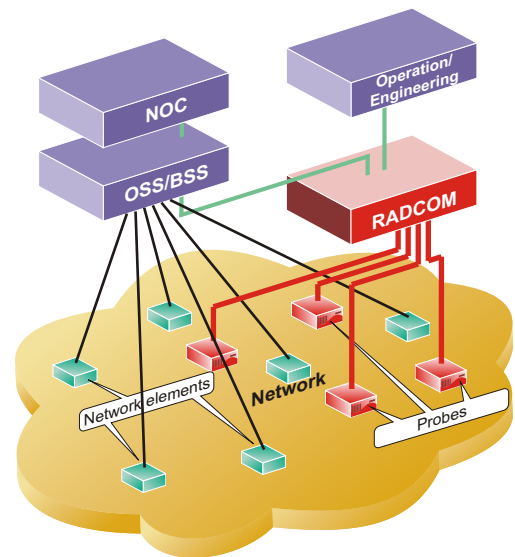
**Active test call generation:** The operator can set an automated scheduled for active test calls. For individual troubleshooting of a specific route or service, he can also initiate an immediate ad hoc test call, whereby a call is generated from a user-selected active probe.

**Live traffic monitoring:** Employing Omni-Q as a monitoring tool that enables performance analysis, the operator can also define actions for the non-intrusive probes, such as collecting user plane or signaling files, calculating PESQ or Passive MOS, aggregating eDRs of a defined time frame, etc. The actions can be activated for a specific target population, or Reference Group. The user can create Reference Groups based on attributes such as signaling Alias, E164, Endpoint, and IP address. 'Wild' characters such as \* and ? can be applied to the extracted signaling attributes, and masks and ranges can be applied to IP addresses.



## Open Mediation Solution

Based on open architecture, Omni-Q enables advanced import and export capabilities both northbound and southbound. Using SNMP traps, SOAP or CSV file APIs, Omni-Q can interact with an existing OSS/NMS or other 3rd party tool. Thus, the system allows for more complete reporting functionality, meeting the needs of diverse users, such as Operations, Engineering, Customer Support and Management.



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