

Using SQmediator® with Polycom® IP Phones

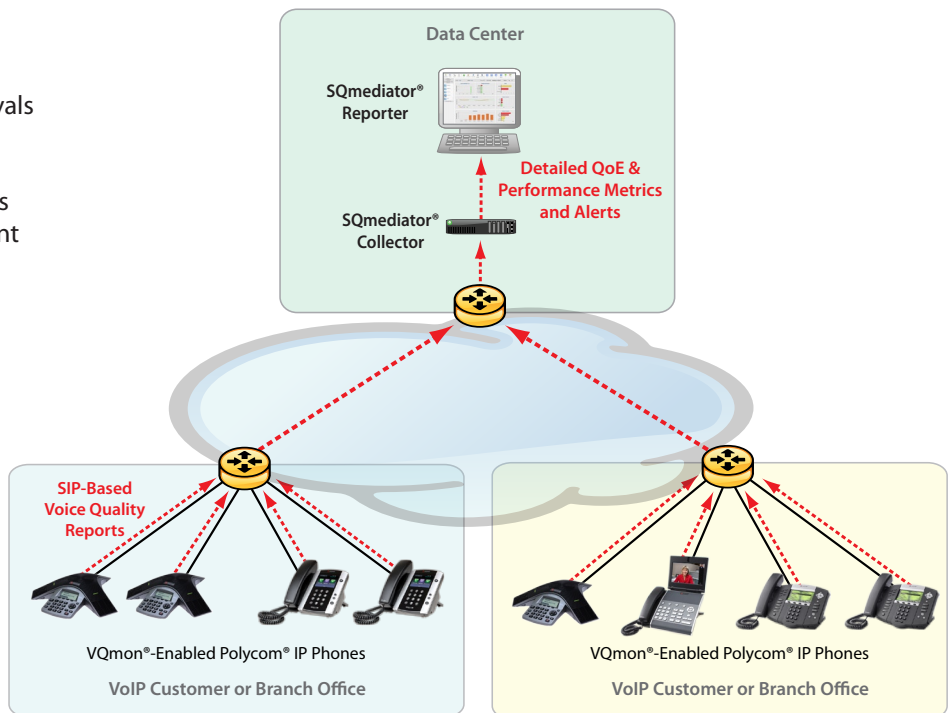
Voice over IP (VoIP) quality is highly sensitive to IP network problems such as packet loss, jitter and delay, which are often transient and difficult to troubleshoot. To manage VoIP performance effectively, it is crucial to understand not just which calls are being impaired, but also the root causes of impairments and how to prevent them.

Telchemy SQmediator® enables system administrators to non-intrusively monitor call quality and proactively diagnose the root cause of performance problems. SQmediator collects Quality of Experience (QoE) and diagnostic metrics directly from a range of Polycom IP phones, providing a real-time view of the quality of every call as experienced by end users.

Select models of Polycom VVX, SoundPoint IP and SoundStation IP series phones are equipped with Telchemy's integrated VQmon® reporting agent software. At the end of a call or at configured intervals during calls, these phones can generate RFC6035 reports with QoE scores (MOS & R-factors) and an extensive set of diagnostic metrics describing levels of packet loss, jitter, delay, and other key impairment factors.

SQmediator collects, correlates, analyzes, and displays QoE metrics sent by Polycom phones and other devices that are capable of generating RFC6035 SIP quality reports. By obtaining performance measurements directly from each handset, SQmediator provides a highly accurate view of call quality as perceived by the end user and enables network managers to remotely detect and troubleshoot many types of impairments in real time.

The figure at right depicts a sample application of SQmediator and Polycom IP phones used to monitor the performance of IP telephony services.



Example Application of SQmediator and Polycom IP Phones in a Service Provider or Enterprise VoIP Network

Solution Components

SQmediator - requires access to a database (Oracle 11g or PostgreSQL 8.4+) for use by the following system components:

- **SQmediator Collector**, which collects and correlates the quality reports sent by Polycom phones and stores them in the system database as call records.
- **SQmediator Reporter**, a browser-based multi-user GUI for retrieving and viewing call records and performance data. In single-server versions of SQmediator, the Reporter and Collector are installed on the same host. In multi-server versions, each system component is installed on a separate host, and the system can be scaled by adding additional Collectors and/or Reporters.

Polycom IP Phones - the following Polycom products are currently supported for use with SQmediator:

- Polycom VVX 300, 310, 400, 410 (license key required)
- Polycom VVX 500, 600, 1500
- Polycom SoundPoint IP 321, 331, 450, 550, 560, 650, 670 (license key required)
- Polycom SoundStation IP 5000/Duo (license key required)

On VVX 500, 600 and 1500 phones, VQmon is pre-activated by default and does not require a license key. VVX 300, 310, 400 and 410, SoundPoint IP Series, and SoundStation IP Series phones must be running at least Polycom UC Software release 4.0.3F and must have a valid Polycom license applied to enable VQmon. To obtain a VQmon evaluation license for your SoundPoint IP or SoundStation IP Series phones, please contact your Polycom authorized representative.

Configuration

Configuring Polycom IP Phones

The following is an overview of the requirements for configuring voice quality monitoring on supporting Polycom phones. For detailed instructions, refer to the *Polycom UC Software Administrator's Guide* for your Polycom UC Software release.

To operate with SQmediator, Polycom phones must be configured to forward their voice quality reports to the SQmediator Collector. This is commonly done using an XML configuration file that is downloaded to the IP phones from a provisioning server, or using a SIP proxy that supports PUBLISH requests (RFC3903).

Voice quality monitoring configuration parameters are listed in the **features.cfg** configuration template within a section labeled **<voice.qualityMonitoring>**. The parameters in this section must be edited to:

1. Specify the IP address/hostname and (optional) port number of the SQmediator Collector.
2. Specify the type of SIP reports to be generated by the phones. Three types of SIP quality reports can be enabled:
 - **Alerts** – generated when a call's listening quality (MOS-LQ) degrades below a specified threshold, or one-way delay exceeds a specified threshold. Separate thresholds can be configured for warning and critical alerts.
 - **Session Reports** – generated at the end of a call.
 - **Periodic Reports** – generated at a specified interval (5-20 seconds, default 20) during a call. Periodic reporting can greatly increase the volume of reports being generated by phones and is typically used for temporary troubleshooting purposes.

In addition to these report types, RTCP XR (RFC 3611) reporting can optionally be enabled. RTCP XR messages are exchanged with other RTCP XR capable IP phones and gateways, and can be collected by probes/analyzers (including Telchemy's **SQprobe**® software probe and **APP**™ series hardware probes) to compare endpoint and midstream measurements and isolate problems.

Configuring SQmediator

Detailed instructions for installing and configuring SQmediator are provided in the Installation Guide provided with the SQmediator software installation package. The basic steps are as follows:

1. Install a database (Oracle 11g or PostgreSQL 8.4+) to be used by SQmediator.
2. Install the SQmediator Collector and configure it using the menu-driven Collector configuration tool.
3. Install the SQmediator Reporter and configure it using the menu-driven Reporter configuration tool.
4. Start the Collector and Reporter, log into the Reporter using a web browser, and enter the Telchemy-issued license key to activate the platform.

References

- *Polycom UC Software Administrator Guide*
- *SQmediator Installation Guide*
- [RFC 6035: Session Initiation Protocol Event Package for Voice Quality Reporting](#)
- [RFC 3611: RTP Control Protocol Extended Reports \(RTCP XR\)](#)
- [RFC 3903: Session Initiation Protocol \(SIP\) Extension for Event State Publication](#)



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