

## Using SQmediator® with Yealink® Desktop IP Phones

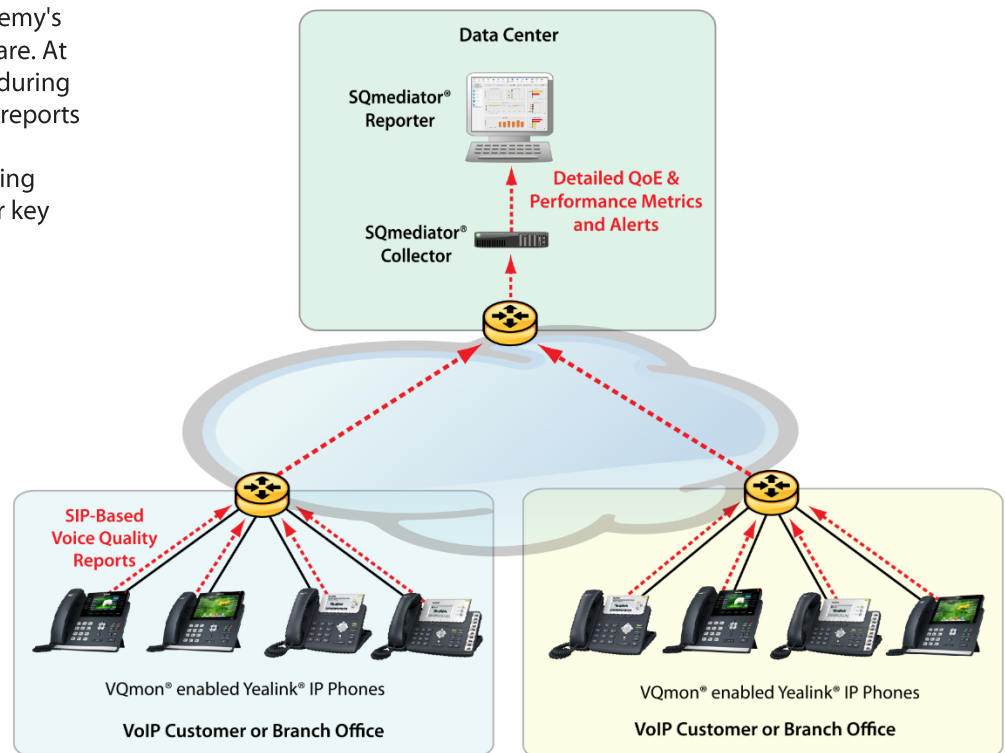
Voice over IP (VoIP) quality is highly sensitive to IP network problems such as packet loss, jitter and delay, which are often transient and difficult to troubleshoot. To manage VoIP performance effectively, it is crucial to understand not just which calls are being impaired, but also the root causes 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 Yealink desktop IP phones, providing a real-time view of the quality of every call as experienced by end users.

Yealink IP 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 Yealink 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 Yealink IP phones used to monitor the performance of IP telephony services.



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

### Solution Components

**SQmediator** – requires an Oracle or PostgreSQL relational database for use by the following system components:

- **SQmediator Collector**, a collector application that receives the quality reports sent by Yealink phones, correlates and stores them in the system database as call records.
- **SQmediator Reporter**, a management application with a dashboard interface that enables multiple concurrent users to retrieve and view 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.

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

- T2 - T4 – CP and W Series IP Phones (Firmware Version x.73.0.x or higher)

## Configuring Yealink IP Phones

To operate with SQmediator, Yealink phones must be configured to enable voice quality reporting and to send their reports to the SQmediator Collector using SIP PUBLISH. This can be done locally using a phone's web user interface, or by editing two phone configuration files that are typically downloaded to the phones from a central provisioning server. The basic steps are as follows:

1. Enable the type(s) of quality reports to send. This includes session reports, which are sent at the end of a call, and may optionally include interval reports (sent periodically during calls) and/or alert reports (sent when call quality degrades before a specified threshold). Note that interval reporting can greatly increase the volume of reports sent to the Collector and is typically recommended for temporary troubleshooting purposes only.

Session reports can be enabled in the web user interface under **Settings->Voice Monitoring->VQ RTCP-XR Session Report**, or by editing the setting **phone\_setting.vq\_rtcpxr.session\_report.enable** in the configuration file (<y0000000000xx>.cfg). A value of **1** enables session reporting (default is **0**, disabled).

To use alert reports, you will also need to specify the MOS-LQ and one-way delay thresholds used for warning and critical alerts. For details on configuring alert or interval reporting, refer to the Administrator Guide for your Yealink product.

2. Specify the name, IP address and (optionally) port number for the report collector. In the web user interface, the name and IP address are configured under **Account->Advanced->VQ RTCP-XR Collector name** and **>VQ RTCP-XR Collector address**, respectively. If the SQmediator Collector is using a port number other than the default (**5060**), enter the correct port number under **Account->Advanced->VQ RTCP-XR Collector port**.

These settings can also be configured in the <MAC>.cfg file by editing the parameters **account.X.vq\_rtcpxr.collector\_name**, **account.X.vq\_rtcpxr.collector\_server\_host** and **account.X.vq\_rtcpxr.collector\_server\_port**. For details, please refer to your Yealink Administrator Guide.

## 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/12c or PostgreSQL 9.6-10.x) 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

- *Yealink SIP IP Phones Administrator Guides*
- *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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