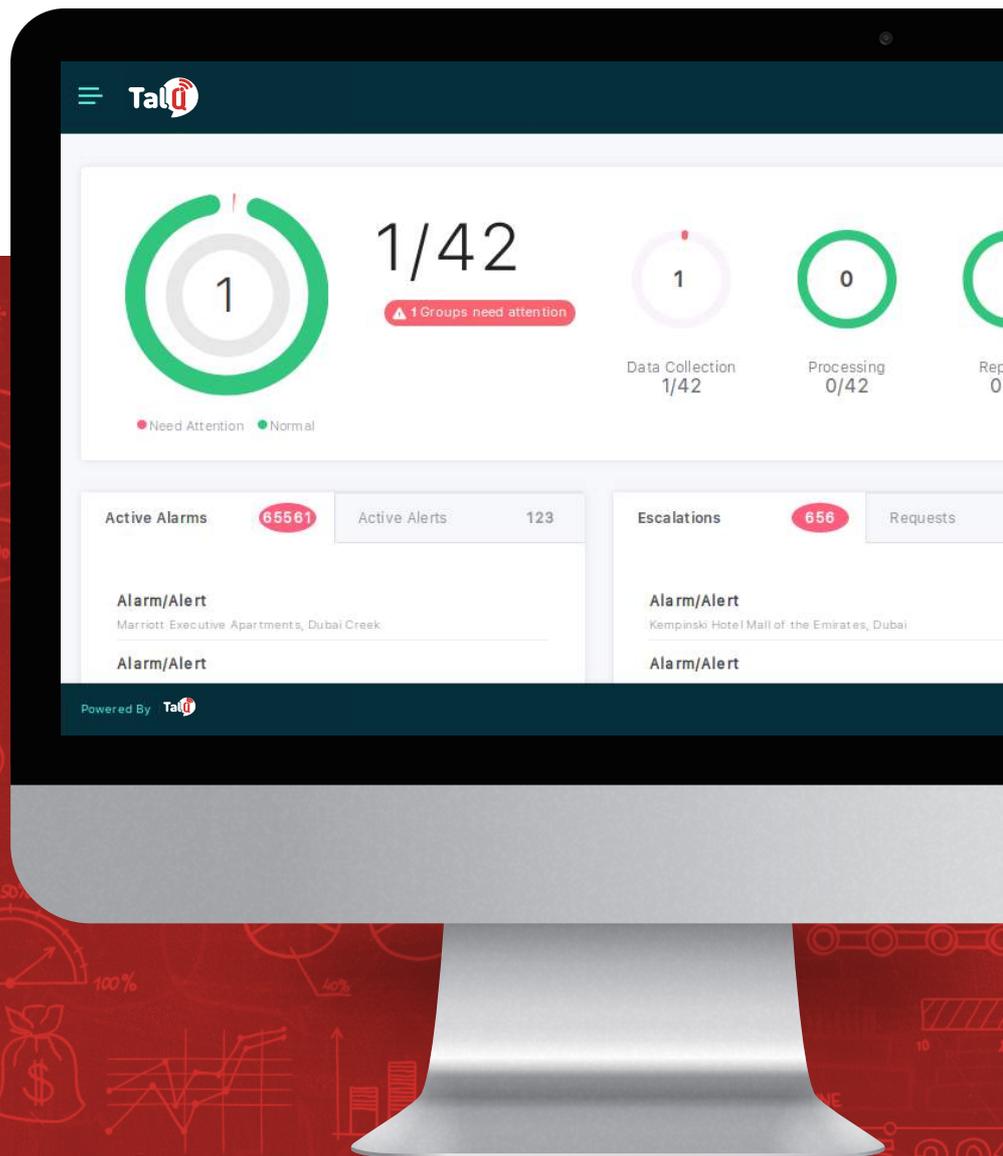QBurst

TalQ

Cloud-based Call Accounting System

Solution Overview

TalQ is a cloud-based call accounting system designed for the hospitality industry. The solution features a data collection device with a built-in voice mail server that interfaces seamlessly with the on-premises private branch exchange. TalQ consolidates call detail records data from deployments across the world and generates reports for three broad categories.

- Cost detail reports
- Revenue detail reports
- Call answering performance reports

The self-contained solution collects call detail records from internal networks, property management systems, voice mail systems, and other guest request systems. The collected data is analyzed and converted into reports and visualizations for improved decision making.

Solution Architecture

TalQ comprises three main components.

- Data collection hardware (called mediator), which is deployed at data source premises
- Web dashboard for reporting
- Data processing subsystem for receiving and processing data

Mediator Data Flow Architecture
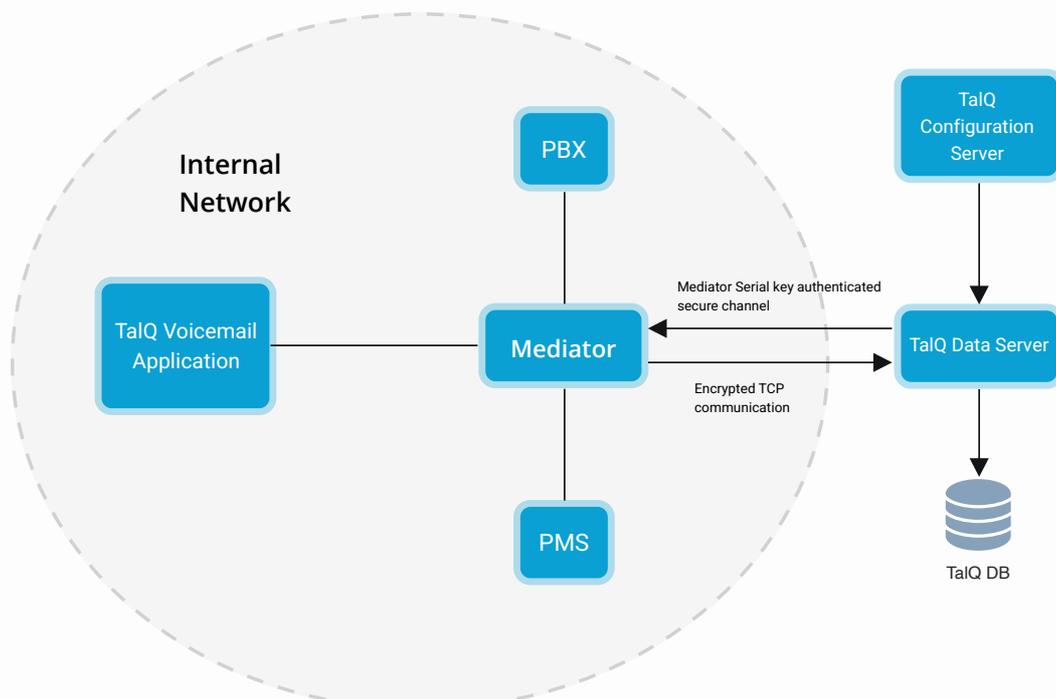
Options for data collection:

- **Data collection device (mediator) deployed on-premises:** The mediator is capable of intercepting call records and sending data to the cloud in near real-time. TalQ is designed to work with an SLA of 5 seconds in case mediator is used as the data collection device.

- **Customer provided storage:** Customers can make their data available in the form of FTP servers deployed inside their internal network. TalQ retrieves this data by connecting through VPN to their internal FTP servers. This is done periodically and near real-time capabilities cannot be achieved.
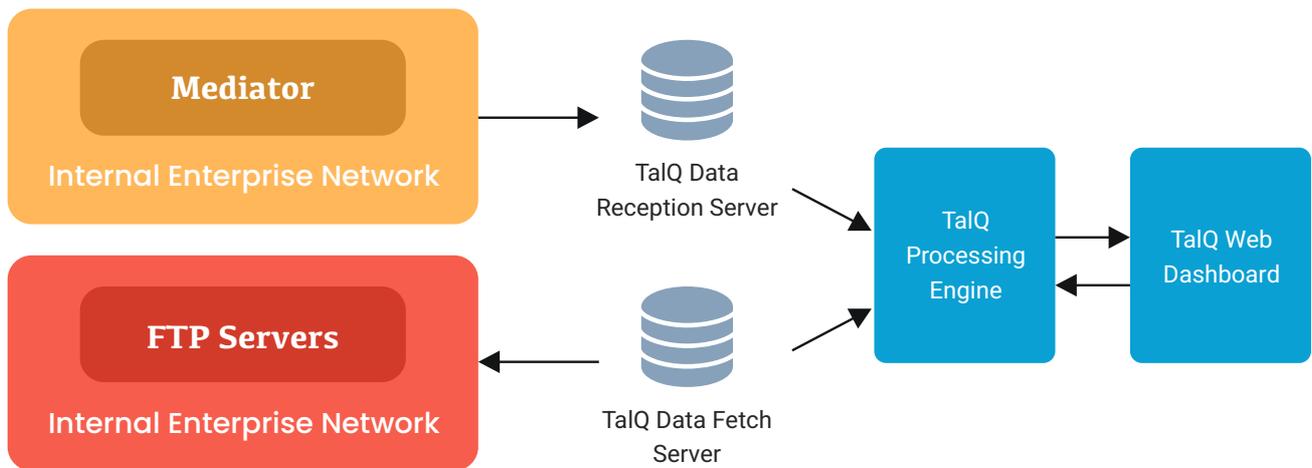
Key Features

- **Data collection (mediator or fetch based)**
  This feature involves collecting data from different sources either through mediators or through active fetching using FTP or SFTP servers.

- **Data processing and analysis**
  The solution processes, analyzes, and converts data into a common format called the TalQ Standard Record Format (SRF) using site-specific configurations.

- **Data storage and archiving**
  The data collected is stored in raw and processed format for reporting as well as future auditing requirements. The database enables reporting, analysis, alerts, and alarms across the entire data set, groups, clusters and individual sites.

- **Outputs using data - reporting, alerts, and alarms**

  Reports can be scheduled on a daily, weekly, and monthly basis. Alerts and alarms can be defined based on data set, group, cluster, and site.

- **Dashboards and platform management**

  Integrates and displays data such as system health, operational and sales metrics, reports, alerts and alarms, escalations, documents, helpdesk, and chat support.

- **Bundled voicemail system**

  Integrates with the existing PBX system on-premises and serves as a voice mail system using the mediator as the voicemail server. Additional features include wake up call, admin and guest extension configuration, and IVRS.

User Roles and Access Levels

TalQ defines user roles and access levels as follows:

- **Partner level users:** Access to all the sites and groups.

- **Group level users:** Access to sites belonging to a particular group. For example, group users for a particular business can only access details pertaining to the business.

- **Cluster level users:** Access to sites belonging to a particular cluster inside a group. Cluster is a logical sub group of sites inside a group.

- **Site level users:** Access functionalities of the site they belong to.

Each user role is further categorized based on privileges.

- **View-only users:** Can only view configurations - extensions, cost tariff, and charge tariff.

- **Normal users:** Can submit add/edit/delete configurations. Changes are applied only after admin approval.

- **Admin users:** Can make changes to the configurations and approve changes recommended by normal users.

Interfaces

User Interface

TalQ features three dashboards for multiple user roles.

- **Partner admin Dashboard:** Enables users to view the health of the entire system including alarms, alerts escalations, and reports.

- **Client Admin Dashboard:** Enables users to view the health of a particular group of sites, alarms, alerts, escalations, and reports.

- **Cluster Admin Dashboard:** Enables users to view the health of a particular cluster of sites, alarms, alerts, escalations, and reports.

- **Site Admin Dashboard:** Enables users to view health, alarms, alerts, escalation, and reports of a particular site.
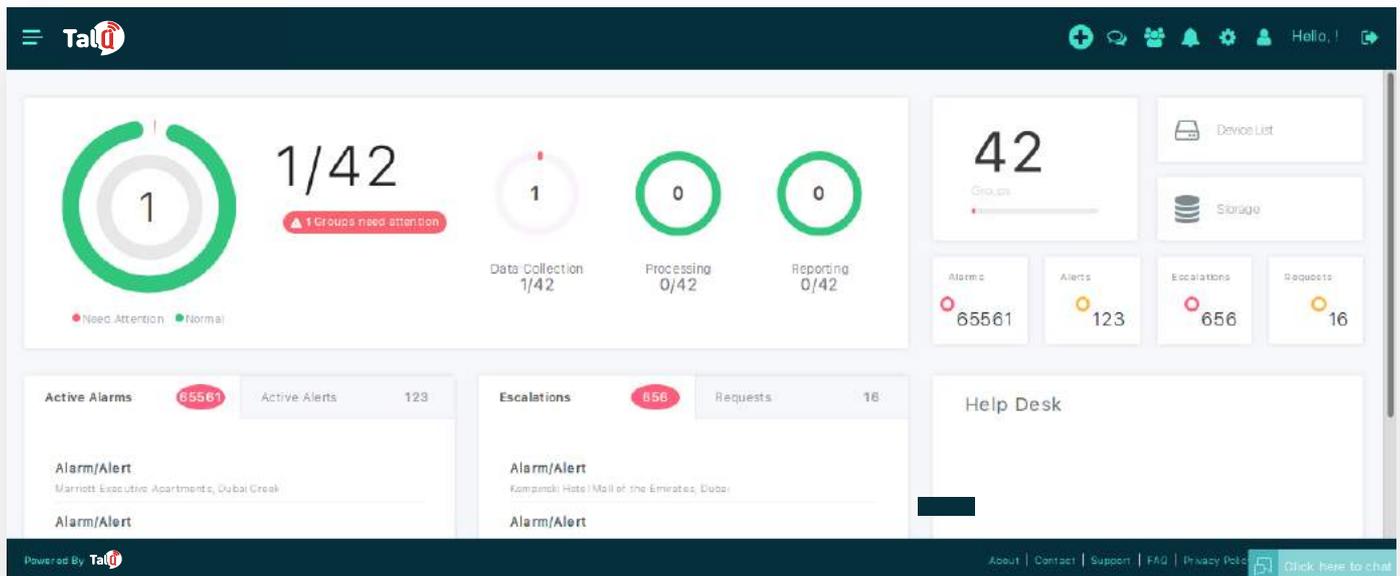
Hardware Interfaces

TalQ interfaces with hardware components through a mediator. The Mediator connects with various hardware interfaces such as:

- **PBX:** The Mediator connects to Hospitality PBX using direct serial or TCP connection by conforming to the standard communication protocols specified. The Mediator works in a unidirectional or bi-directional mode.

- **PMS:** The Mediator interfaces with Property Management Systems (PMS) through direct serial or TCP connections. The PMS works with Mediator in conjunction with other hardware interfaces such as PBXs and FOHs. The Mediator works in a bi-directional mode where it receives and dispatches guest data related PMS records and CDR records. The Mediator application is certified by Oracle for its message and connection integrity with FIAS standard protocols.

- **FOH:** The Mediator can connect with FOH in conjunction with other PBXs or PMSs. The Mediator connects with FOH through direct serial or TCP mode. The Mediator is configured to route RAW CDR from PBX to FOH. The Call Data Records are costed as per rules and specifications before sending to the FOH.

- **VoiceMail:** The Mediator supports the VoiceMail systems in conjunction with its associated PMS. The Mediator supports its connection through direct serial or TCP. In this configuration, all the records and control data is relayed transparently between these interfaces.

Software Interfaces

TalQ can interface with different APIs to pull data. Details of such interfaces are given below.

- For cloud PBX, TalQ interfaces with APIs to pull data.
- Certain PBX systems expose their data through custom APIs instead of direct access. TalQ accesses such APIs for supported PBXs.

List of supported PBXs

- Mitel 3300 Lightware 31 Rel 2 (Ext. Reporting Level 1)
- Alcatel 4400 Hotel-Hospital application (K tickets)
- Siemens HiPath 4000 (UAE)
- Nortel Meridian1 X11 R18 + NEW
- Avaya Definity Customised
- Alcatel 4400 Via V24 (R3)
- Alcatel 4400 Hotel-Hospital application
- Logical Site

- DTS Harris20 Data Track Format
- Avaya Definity Dubai
- Nortel Meridian1 X11 R18 + NEW
- Mitel 3300 Release 7 (Ext. Reporting Level 2)
- Broadsoft Hotel
- Siemens Hicom 150E Release 2+
- Philips Telecom Sopho IS3000
- Alcatel 4400 Via V24 (R3.1+)
- Avaya IP Office R2.0+
- Cisco Unified Communications Manager CDRs

Operating Environment

TalQ's data collection component operates inside the client premises with all the restrictions imposed by an enterprise network. TalQ mediator uses Debian 9.0 as its base operating system with additional components built in to aid its use as a data collection component.

The remainder of the TalQ software can be deployed on AWS servers with Debian 9.0 as the base operating system.

Data Security

- Mediator installation is performed securely with a serial key generated during site creation.
- Connection to PBXs and PMSs are established through internal networks. These connections are supported through an ethernet or serial channel. Since these connections are within the client's network, the security of data transfers is completely under control of the clients firewall.
- The Mediator data transfer to TalQ servers are secured using an authenticated TCP push mechanism through an encrypted TLS channel.

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