Live platform for streaming IP network and CDR analytics achieves real-time fraud detection, rating, and least-cost routing

BACKGROUND

Veracity Networks is a facilities-based telecommunications provider delivering video, phone and internet services on their next-generation network throughout Utah, with a reputation for maintaining and improving its Tier-1 network infrastructures while setting industry standards in network stability and customer support.

Success has led Veracity to provide Quad-play IP services for residential and business customers, supported by the introduction of sophisticated IP-based networks and services platforms. With customer growth and satisfaction/retention now a priority in an increasingly competitive landscape, existing systems were struggling to provide full responsiveness to business and technological change, and were unable to scale to deliver the real-time monitoring and process automation required for today’s IP-based service delivery networks.

SQLstream is the only real-time stream processing platform capable of analyzing and rating our CDR records in real time, which is vital in meeting the type of reporting and analytics needs we have.

CHRIS MODESITT, CTO OF VERACITY NETWORKS
NEEDS

Veracity were seeking to maximize the capability of their Sonus-based SBC secure SIP access and Broadsoft VoIP platform, making their operations more efficient. They were looking for a stream processing platform for real-time, continuous analysis of CDR and IPDR records, to finally achieve:
- real-time rating
- continuous monitoring of QoS
- real-time policy management
- real-time fraud detection and prevention.

SOLUTION

With SQLstream’s streaming Big Data stream processor, Veracity Networks was able to accelerate the collection, analysis and visualization of their call detail records to real-time, eliminating operational latency. SQLstream enabled streaming CDR and IPDR records from their Sonus equipment and Broadsoft platforms to be processed on the fly and to deliver real-time operational intelligence, aggregated data and analytics streams. The first applications include:
- real-time call rating. Real-time rating of calls based on call route and update of policies for quality-based pricing and discounts / refunds
- call performance monitoring. Existing performance monitoring tools aggregate data by 15 minutes, sometimes by 5 minutes, using measures such as average call duration (very low call durations may indicate a problem). This is insufficient. Most IP-based problems are bursty by nature, lasting only a few seconds, but sufficient to force a quality issue or dropped call. SQLstream can provide real-time monitoring of both equipment performance and CDR analysis in order to identify issues more quickly
- fraud detection. Detection of suspect switch login activity and monitoring of usage and billing information in real-time, in order to detect fraudulent calling patterns as they occur.

Arriving CDR/IPDR records are now processed through the following stages in the Veracity streaming pipeline:
- real-time data acquisition from Sonus and Broadsoft equipment
- data conditioning: cleansing, filtering and parsing
- data enrichment, including augmentation with customer and geospatial data
- data aggregation and analytics, with dual views (for internal operators, and customer reports such as usage/billing)
- streaming dashboard visualization of alerts, alarms and trends
- streaming output integration with operational platforms for automated updates.

RESULTS

SQLstream enabled Veracity Networks to roll out a range of low-cost, real-time applications with an immediate impact on Quality of Experience, Quality of Service, and network performance:
- Reduced churn and improved retention
- Reduced infrastructure costs
- Optimized call quality AND cost
- Eliminated bad debt and customer dissatisfaction.