

Location
IsraelIndustry
Mobile TelecomSize
3M subscribers

Reducing dropped calls 90% with SQream DB

Cellcom is Israel's leading telecom operator with around 3 million subscribers. They offer their customers a variety of services including IPTV, internet over DSL and cable.

Cellcom uses SQream DB to improve customer experience and identify network issues. They chose SQream DB to analyze the billions of raw base-station events being logged every day. With SQream DB, Cellcom QoS (Quality of Service) engineers are able to pinpoint and resolve networking issues from an easy to use SpotFire dashboard.

Network outages cost the company money and reputation

Cellcom was facing several challenges before using SQream DB. With revenue from calls and internet activity decreasing across all operators globally, Cellcom was under pressure to deliver a better product, while keeping costs down.

When network problems show up, they frustrate the customer, and this frustration can ripple into the organization's customer support and network teams. The company has thousands of base stations (RNCs and equivalent eNodeBs). While these units can report basic counters and measures, diagnosing more complex problems between various units is difficult without a more comprehensive solution.

"Identifying the root cause of the issue is quite difficult. The tools we had were unable to provide the insights needed to understand what was happening."

- RF Group Leader, Cellcom

Disconnected calls are one of the most severe issues operators face, and with Cellcom it directly affects the QoS. It is therefore the network engineering's job to identify, study and resolve these issues. The typical solution for deep diving into a network issue is installing network probes at the 4G cell site's eNodeB. These traditional solutions can be prohibitively expensive, with costs in the millions of dollars for a network of Cellcom's size.

Finding the needle in the 33 billion row-per-day haystack

A process was established by SQream to collect raw log data from all eNodeBs. These logs are typically only viewed when an engineer visits a site. With SQream DB, these proprietary logs are parsed and converted to a relational format inside the database. SQream DB was installed in a 2U Dell PowerEdge server, with NVIDIA Tesla GPUs for acceleration.

Cellcom chose to deploy SQream DB in a local Dell PowerEdge server. In fact, SQream DB can be deployed on any GPU-enabled hardware, on-premise or in the public cloud.



SQream helped Cellcom implement a SpotFire based solution, which lets the QoS engineer identify and track throughput, drops, and anomalies in near real-time.

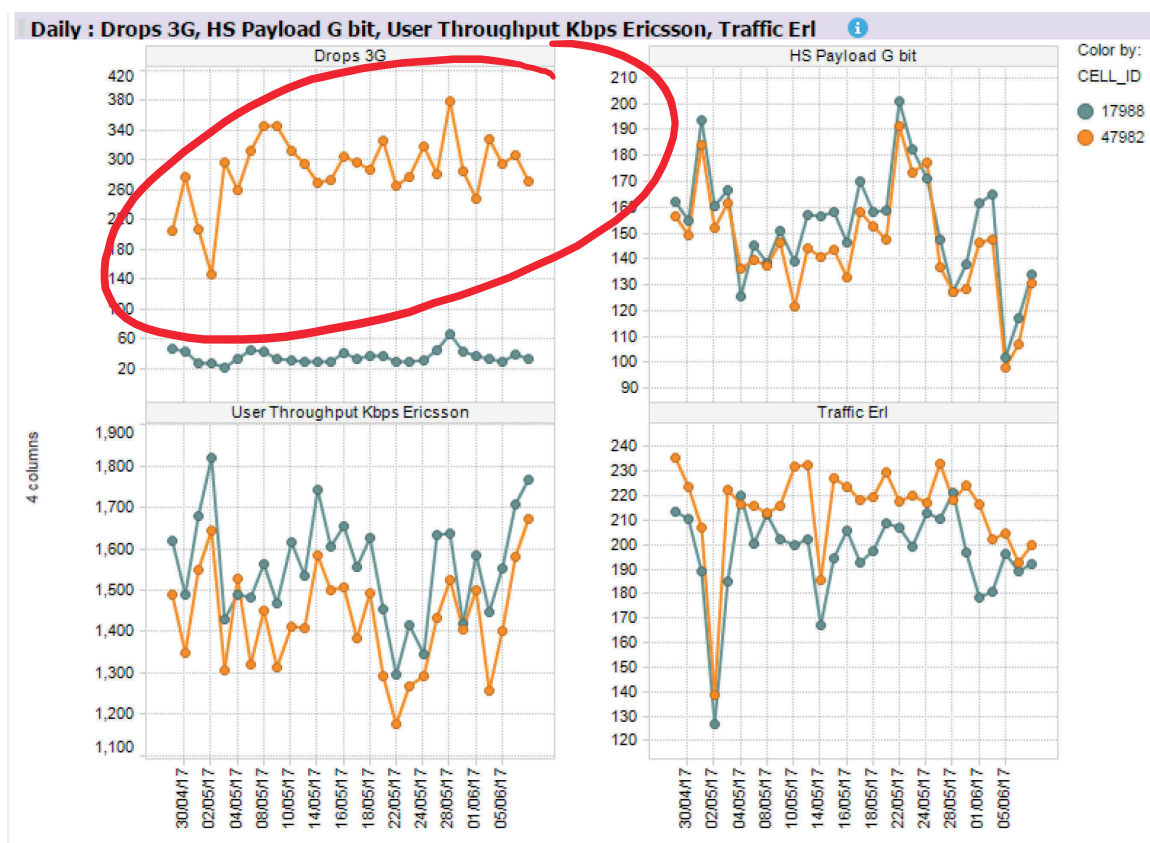


Figure 1 - High drop rate for a cell station, queried from SQream DB and SpotFire

Within hours, Cellcom's QoS engineering team got to work with SQream DB and quickly identified previously unknown issues. For example, one of the first issues identified was a high drop-rate, which was caused by a hard handover from the macro-cell to the femto-cell.

Following the discovery, the engineer was able to reduce the drop count by 90%, returning it to an acceptable rate.

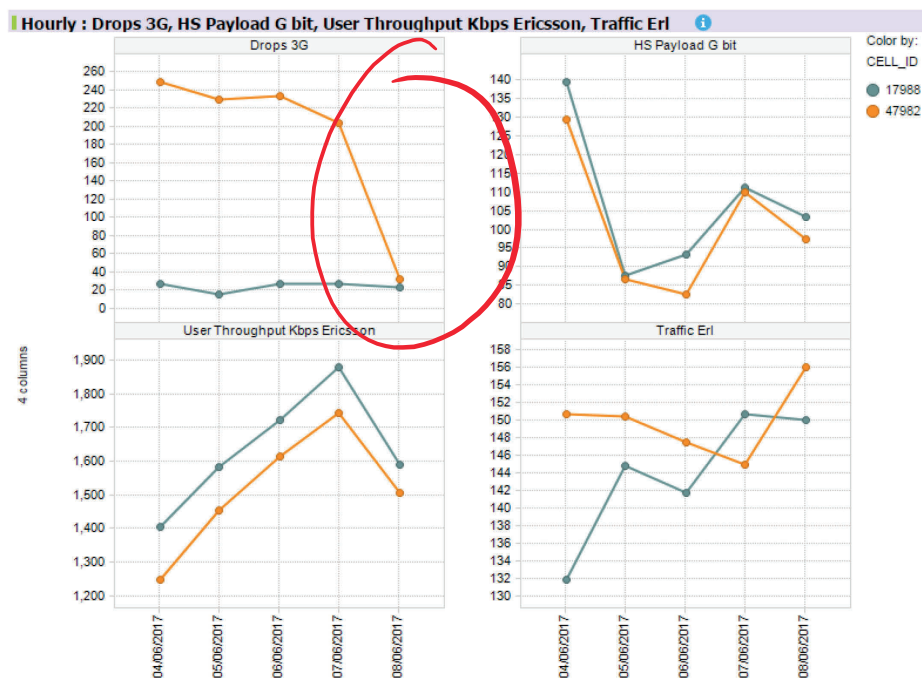


Figure 2 - Call drop rate returning to normal after intervention

Subsequently, QoS engineers found an additional 11 cells that exhibited the same behaviour and fixed the issue promptly. The fast discovery and repairs of these problems improved overall network throughput and helped improved customer experience with the growing network.

Finding problems to save precious resources

The QoS team, as well as others in the network team now use SQream DB to identify a variety of network issues, including some customer-specific issues. These were buried deep in the many billions of records generated every day by the network equipment.

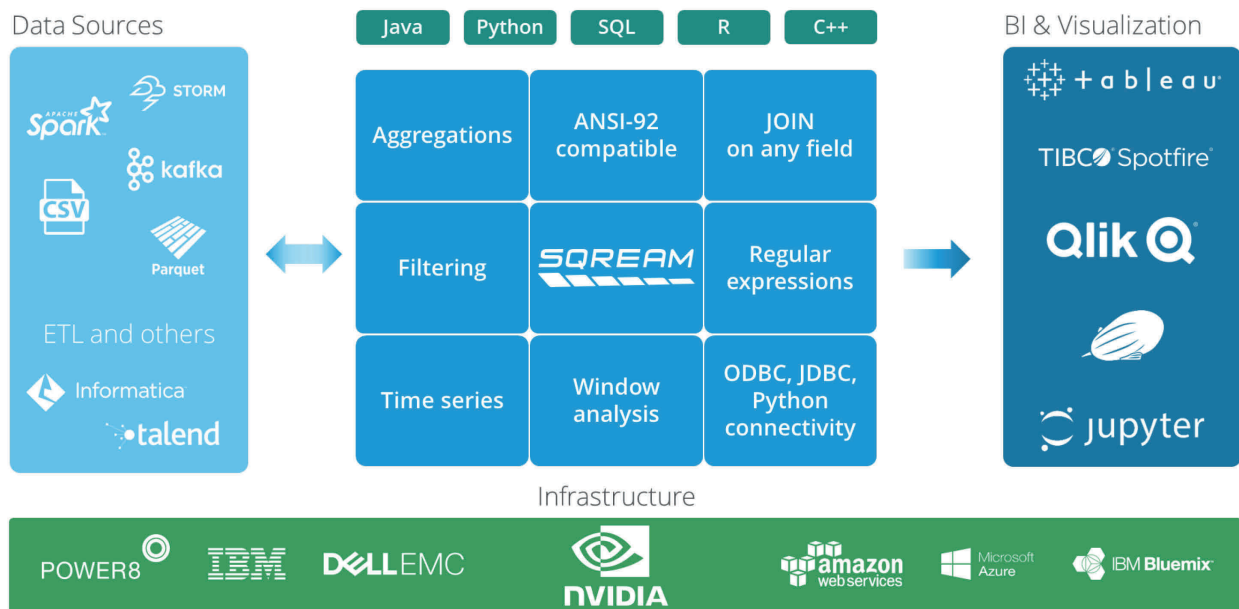
"We saw a tremendously cost-effective way to get comprehensive analytic abilities we didn't have before SQream." - RF Group Leader, Cellcom

The new GPU-oriented approach allows the engineers to pinpoint and fix issues faster than before, returning the network to health and increasing the productivity of the engineers.

SQream DB allows Cellcom to gain insight into their network health faster than before, increasing productivity, with simplified maintenance and lower costs.

SQream DB fits in the ecosystem

At Cellcom, SQream DB is used as the main analytics database for QoS. Data is ingested via an integrated Talend ETL process. SQream DB's SQL supports ODBC, JDBC, Python and .Net connectivity and allows for easy integration into most existing analytic pipelines.



Wide adoption in the Telecom industry

SQream DB has been successfully deployed in a variety of telecoms, and across several departments. SQream has helped projects in network engineering, BI, marketing, data science, and the billing departments.

SQream customers collect and analyze CDRs and IPCDRs in our GPU database, analyze network behavior, improve network performance, analyze customer trends and mobility, and improve network experience to drive new revenue.

Our system architects are available to speak with you to show you the kinds of insights you can achieve that will have a direct impact on revenue gain and expense reduction. See sqream.com/solutions/industries/telecoms/ for more information or to arrange a discussion with one of our experts please call or contact us at sqream.com/about/contact-us/.