

REPORT REPRINT

SignalFx: New approach to large volumes of operations data for serverless environments

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Emphasizing its scale capabilities and developing techniques for tracking serverless environments, SignalFx is revealing a bit more detail about its back-end technology, which is designed to quickly analyze large volumes of operations data. We think the market may be maturing to a point where demand for the kind of scale SignalFx can offer is picking up.

THE 451 TAKE

While SignalFx's service has been available for a couple of years, it's now coming into its own, since it is particularly suited to modern application environments that employ dynamic components like microservices, containers and functions as a service. With newly awarded patents in hand, SignalFx is talking in more detail about its back end and how it can handle the large volumes of operations data being generated in such environments. To more aggressively chase its large target customers with messaging around these capabilities, it has brought on a new chief commercial officer, who is developing and expanding go-to-market strategies. We've observed the buzz around SignalFx waning, with less frequent mention of the vendor by customers and competitive vendors that we talk to. The renewed emphasis on chasing large customers combined with the evolution of the market toward embracing microservices and containers should give the vendor a good boost.

CONTEXT

Cofounded in 2013 by Philip Liu, who helped build monitoring systems at Facebook, SignalFx launched its offering in 2015. SignalFx is targeting the high end, such as global enterprises and online businesses, including those that aren't satisfied with a competitive new-generation monitoring tool or that have been using a homegrown monitoring system.

To better target these customers, SignalFx recently hired a new chief commercial officer, Mark Cranney, who comes from Andreessen Horowitz (and Opsware before that). Cranney plans to scale up SignalFx's sales force and marketing efforts. With 80 employees currently, up from 50 when we wrote about the company in 2016, SignalFx expects to double in size by 2018. Total funding is \$28.5m, including \$20m in a series B led by Charles River Ventures and Andreessen Horowitz.

TECHNOLOGY

With recently awarded patents at hand, SignalFx is beginning to share more details about its technology, which has some unique capabilities that are well suited to dynamic environments that generate large volumes of operations data. It describes its service as a stream processing engine, as opposed to many other big-data systems, like Hadoop and Spark, which ingest data into persistent storage and query data at rest. Instead, SignalFx is able to process data as it's being ingested. It does so using a number of techniques, starting with a normalization process that accurately orders data by time and rolls up data by sorting minimums and maximums for a more accurate average. The data is then broadcast to multiple locations, with relevant data being routed through its database to analytics jobs in progress. SignalFx reports that it uses a unique approach to storing data – in a bundled approach on SSDs – that allows it to scale larger than competitors.

SignalFx argues that it is ideally used for analyzing large volumes of data very quickly. For instance, a user could search across thousands of servers for those operating above a certain CPU usage, and get results essentially in real time. This capability is increasingly important to businesses that are collecting growing volumes of data from complex systems.

On its platform, SignalFx is now processing about 150 billion data points a day. Its largest customer is responsible for about 20% of that volume. The platform also processes multiple billions of unique combinations of time series, a metric that SignalFx says is important because it indicates the platform's ability to handle a large number of combinations at ingest and for querying.

SignalFx has put more thought than we see from most monitoring vendors into working on techniques that are likely to be useful for customers that wish to monitor their AWS Lambda environments. While the use of serverless technology is in its infancy, especially in production environments, interest appears high. In our 2016 Voice of the Enterprise: Cloud Transformation, Budgets and Outlook survey, 45.5% of respondents said that they were in a discovery and evaluation phase with serverless computing. We think that SignalFx is wisely positioning itself to be a thought leader in serverless monitoring.

For now, SignalFx collects the metrics that AWS makes available about Lambda performance, adding information from AWS Cloudwatch Logs about things like the amount of memory used. However, it is working on technology that would allow users to instrument their code to emit metrics from workloads running on Lambda. Information could include version of code, memory used, start time and lag. Some of those metrics, like start time, could be correlated with the similar information that AWS makes available so users can validate that performance data.

The process comes with some technical challenges, including that users can't ensure that a function will stay operating until the metrics are issued. To solve this problem, SignalFx is working on technology that writes the data quickly to AWS Kinesis. SignalFx reports that its customers are interested in monitoring in a serverless environment – less so in terms of traditional infrastructure monitoring, and more so in terms of tracking individual customer experience. SignalFx's instrumentation approach is designed to offer users the flexibility to track what they want.

COMPETITION

SignalFx reports that it most commonly competes with Datadog, with Wavefront following. It is actively targeting businesses using those vendors, and it reports success winning deals away from Datadog and Wavefront when those products slow down under the weight of very large deployments.

Businesses looking to SignalFx for its performance in complex microservices and container environments may look to vendors that have emerged to serve users of those technologies, including Instana, Sysdig, Outlyer and CoScale.

SignalFx says it is preparing for the potential to compete for spend with log management vendors like Splunk and Sumo Logic, which aim to solve similar problems. We are hearing more vendors position metric-centric platforms against log-centric platforms, but we continue to talk to customers that primarily view log and metric systems as complementary.

Finally, SignalFx reports that it competes against homegrown tools, often built using open source technologies. We commonly see large businesses, particularly those delivering web services, building their own monitoring platforms. We think SignalFx's biggest challenge chasing this market will be around cost, since commercial products are often cost prohibitive for the largest operations. However, SignalFx suggested that it can be competitive, particularly where it replaces a handful of internally built tools and where it can allow a significant number of internal resources to be reassigned to core projects.

SWOT ANALYSIS

STRENGTHS

SignalFx has built a unique, proprietary back end that is poised to aptly meet the needs of the growing cadre of businesses collecting increasingly more operations data.

WEAKNESSES

SignalFx hasn't articulated how it can be cost-effective compared with the DIY systems developed by many of the large customers that it's targeting.

OPPORTUNITIES

SignalFx is forward-thinking in its work toward monitoring in serverless environments, and has a chance to become a thought leader in this emerging space.

THREATS

There are many new vendors emerging to target organizations using cutting-edge technologies, including serverless, and using microservices and containers in dynamic environments; SignalFx should expect to face growing competition.