

REPORT REPRINT

SignalFX ventures beyond infrastructure monitoring with distributed tracing service

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Catering to its base of users embracing modern technologies and approaches, such as microservices and containers, SignalFx is adding a tracing service that takes advantage of its scalable back end.

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New application architectures and technologies, such as microservices and containers, add complexity to applications, surfacing new challenges for those tasked with improving app performance. Distributed tracing is one response that many monitoring vendors are embracing for its ability to deliver insight into the relationship between the many pieces that make up modern applications. SignalFx is among the latest vendors to add distributed tracing, integrating it with its infrastructure monitoring offering.

THE 451 TAKE

A couple of years ago, the story around distributed tracing was that it's a necessary technology for monitoring and troubleshooting in complex environments. The discussion now includes additional techniques required to glean meaning from the potentially huge volume of traces. SignalFx's approach is to collect all traces, rather than a sample, and analyze them in the context of infrastructure performance. We think the approach should be helpful in large and complex environments, where those responsible for performance otherwise struggle to pinpoint the source of problems. The offering represents a significant new service from SignalFx, which has otherwise focused on refining its infrastructure monitoring product. We think the distributed tracing service brings the kind of new utility that should encourage more use of SignalFx and make it stickier.

CONTEXT

Based in San Mateo, California, and founded in 2013, SignalFx began offering its service in 2015. Its customers include a mix of large enterprises and SMBs. Average deal size is about \$100,000, and SignalFx reports an uptick in enterprises signing three-year deals. It now has about 200 employees, including those in new offices in London, New York and Sidney.

In May, SignalFx announced a \$45m series D led by General Catalyst, with participation by Andreessen Horowitz and Charles River Ventures, bringing total funding to \$103.5m. SignalFx has been investing in growing its enterprise sales team, executing marketing activities in partnership with AWS and developing a new distributed tracing service.

PRODUCTS

SignalFx developed its distributed tracing capability to build on its strengths as a metrics-centric monitoring engine that does streaming analytics. To use the distributed tracing capability, users instrument their applications and then deploy the SignalFx Smart Gateway locally, in their virtual private cloud. The gateway collects all traces in the customer environment and analyzes them, pulling out the anomalous ones and sending those back to SignalFx as metrics. The gateway learns normal behavior of systems being monitored, adjusting dynamically over time, in order to accurately identify deviations.

SignalFx argues that collecting all traces sets it apart from the competition, many of which randomly sample traces, pulling anomalies from that random sample. Doing so could miss outliers, as well as particular traces that a user may want to examine. Because SignalFx converts the trace data into metrics, it correlates the trace insight with the infrastructure performance that SignalFx collects via its original product, potentially more accurately identifying the cause of a problem.

Typically, vendors do sampling because it becomes cost-prohibitive to collect the potentially huge volume of complete traces and send them out to the cloud for analytics. SignalFx reduces this problem by doing some of the heavy lifting locally. The approach is similar to that of LightStep, a company founded by one of the authors of the OpenTracing project. LightStep collects all traces in a locally deployed collector. One difference between the two systems is that SignalFx appears to do more of the analytics that identify anomalous traces at the gateway, while LightStep identifies outliers in its SaaS system, communicating back to the collector and instructing it to assemble transaction traces for the outliers. Both systems likely have strengths and weaknesses, but should offer some advantages over random sampling, particularly for customers with very complex application environments.

SignalFx's distributed tracing product supports OpenTracing, OpenCensus and Zipkin, and will offer adaptors for service mesh. It will offer 'auto instrumentation' for popular frameworks, starting with Java.

PACKAGING

SignalFx is offering distributed tracing, called Microservices APM, as an add-on to its traditional offering, which it is now calling Infrastructure Monitoring. The new Microservices APM is not offered as a stand-alone product, in part because SignalFx is attaching value to the correlation between the infrastructure monitoring data and the distributed tracing data. We think SignalFx will miss some opportunity by not offering the tracing service independently; it could deliver a subset of capabilities in a stand-alone product that could drive adoption by new customers attracted to the tracing product.

COMPETITION

We think LightStep represents strong competition to SignalFx's new distributed tracing offering. Both vendors are likely to be particularly helpful to users operating in large, complex environments.

Additionally, a number of leading vendors, including New Relic, SolarWinds' AppOptics, Datadog, Sematext, Google Stackdriver and Honeycomb, offer distributed tracing, usually with some integration with infrastructure monitoring or logging. Most of these services do some type of sampling as a way around collecting the huge volume of data necessary when collecting all traces.

While we don't think that distributed tracing will replace log analytics offerings, we do think that some businesses may be able to scale back the data they collect – and pay for – in their logging systems if they are able to collect all traces. End users look to traces to help pinpoint the source of performance problems, and doing so in a distributed tracing product could be more cost-effective than logging every trace.

SWOT ANALYSIS

STRENGTHS

SignalFx has developed a back end capable of ingesting and quickly analyzing a large volume of data. The new Microservices APM offering appears to demonstrate that the company is looking to leverage that back end for additional applications.

WEAKNESSES

We think SignalFx is missing an opportunity to attract new customers by not offering Microservices APM as a stand-alone service. While customers benefit by employing both SignalFx offerings, some may prefer to start with distributed tracing and grow from there.

OPPORTUNITIES

SignalFx's Microservices APM essentially represents a second-generation distributed tracing product, such that it could attract new customers that found shortcomings in some of the earlier distributed tracing offerings.

THREATS

SignalFx faces a marketing challenge in explaining how its distributed tracing approach is different from and potentially more powerful than the pack.