



Market Insight Report Reprint

Chronosphere aims to tame runaway observability data and costs

September 9 2022

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The company's SaaS platform combines the benefits of open-source cloud monitoring with customer inputs to cut through the noise of undifferentiated metrics and traces. While designed to work with large-scale microservices-based applications, Chronosphere also monitors noncontainerized environments, providing mixed deployments with a single tool.

451 Research

S&P Global

Market Intelligence

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Introduction

The cloud-native impact on monitoring and the resulting data volumes means observability data is seen as growing faster than application data. Moreover, enterprises are typically generating (and therefore paying for) two or three times more data than they actually need, says Chronosphere, which is looking to flatten this growth curve with its SaaS observability platform.

THE TAKE

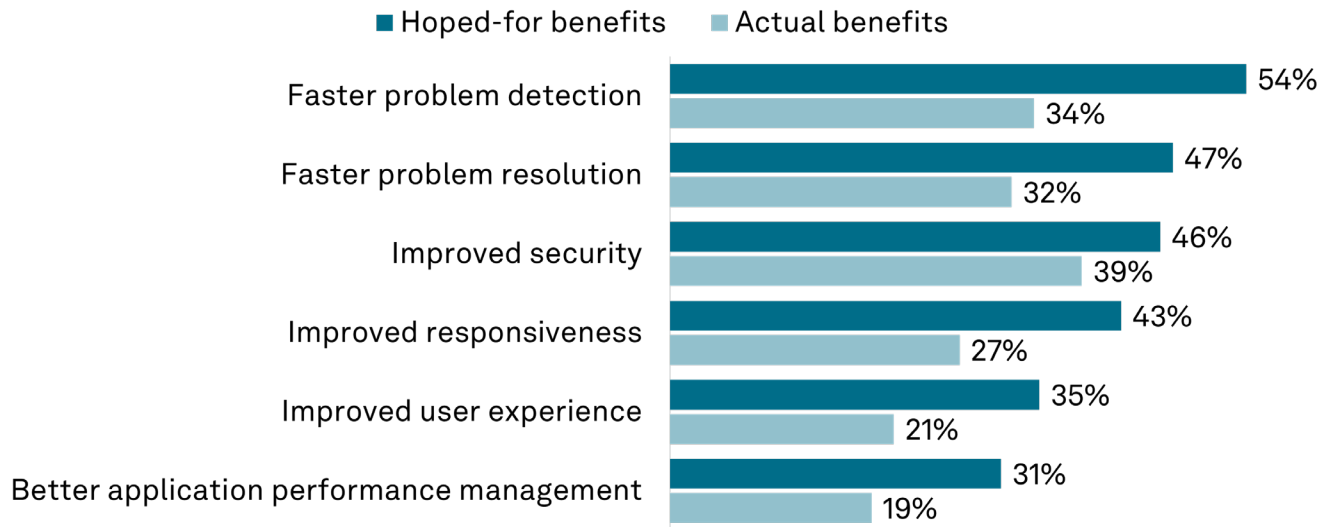
Cloud-native architectures allow for faster software releases, delivering incremental value more quickly. However, as cloud-native adoption accelerates and deployments become more granular, distributed and interdependent, visibility and control of the software life cycle is an imperative. Observability — loosely speaking, the ingestion, storage and analysis of structured event data for problem detection and resolution — is positioned as the tool for this problem set. The market dynamic now playing out is whether there is room for independent, long-term, scalable and profitable businesses (as Chronosphere is positioning itself) or whether the incumbent application performance monitoring (APM) vendors will sweep them up or aside as they retool for the opportunity.

Context

With atomic compute units getting increasingly smaller, there are more things to observe and larger volumes of monitoring data as a result. Cloud native's ephemeral infrastructure means there are no uniform storage and usage patterns for monitoring data. While Prometheus and OpenTelemetry are fine for sending metrics and traces out of containerized environments, they require a lot of people to run as applications grow and there are significant issues around availability, resiliency and cost as organizations grow. There are a greater number of interdependencies, which results in a higher cardinality of data and a greater need to correlate and connect infrastructure to applications based on business metrics.

Even at the same scale as a VM-based deployment, a cloud-native deployment will have a higher monitoring bill. Chronosphere says its goal is to flatten this data growth curve to take out some of the sting via its control plane, which it claims can reduce data sets with techniques like aggregation, adjusting retention and tuning resolution so that organizations only pay for the data they need to keep.

Figure 1: What Outcomes Should Observability Tools Deliver, and What Are Outcomes Enterprises Gaining Today?



Source: 451 Research's Voice of the Enterprise: Cloud Native, Observability 2022

Technology

Chronosphere provides a single-tenant observability service purpose-built for cloud-native, Kubernetes-based applications. It is compatible with open-source Prometheus and OpenTelemetry, can pull metrics and traces from Kubernetes nodes, and includes a control plane to help customers configure the frequency, duration and retention of metrics and traces as a way to manage data volume growth, where much of its intellectual property resides. For customers already using Prometheus for monitoring, the company notes that it only takes a few hours to get familiar with Chronosphere — then dashboards can be built or imported from Grafana.

The vendor's back end is built on a proprietary version of M3, which is an open-source, scalable remote storage time-series database whose key contributors include the Chronosphere founders as well as personnel from Uber Technologies Inc. It ingests data, provides alerting, visualization and querying, across metrics, and — since the end of 2021 — distributed traces.

The control plane is where customers can implement cost accounting, rate limiting and policies for data retention and resolution, and configure access management for different teams and users. Chronosphere enables customers to set limits on metric cardinality and retention on a per-team basis to allow for cost control, which is pertinent given the volume of operational data that Kubernetes apps can produce. A profiler shows which metrics and traces have the highest cardinality (and thus cost the most) and gives customers tools to set policies in terms of which applications need longer-term storage and higher-resolution metrics, aligning the granularity/cost of data collected to the business value of the service producing it.

On the back end, M3 provides highly available long-term storage for those applications that need it. Chronosphere runs on AWS, Microsoft Corp.'s Azure or Google Cloud Platform and the vendor says it recommends the service run in a cloud or region apart from the customer's primary stack for the sake of availability. The service is built for use by central observability and site reliability engineering (SRE) teams — its key use cases are problem notification, problem triage and root cause analysis (for developers), and observability data control (for observability personnel). The company believes its differentiation is on addressing the root cause of customer-facing issues, and it does not have a hyper focus on metrics, logs and traces (this is the data) — the main event is introspecting applications to understand what is going on. In this case, less is more: prioritizing more important data enables faster detection and resolution.

Business model

Founders Martin Mao (CEO) and Rob Skillington (chief technology officer) both came from Uber, where they worked on the vendor's observability stack, creating the M3 metrics engine. Chronosphere has raised \$255 million, has 220 employees and operates hubs in New York City, Seattle and Vilnius, Lithuania. Customers pay only for the data stored after being transformed in the firm's control plane (writes per second, instead of for every emitted data point). The result is that charges are based on the amount of data after rate limiting and resolution reduction are implemented, and this is where Chronosphere can impart cost savings versus a service that would charge based solely on volume emitted.

Average selling price for large customers is into the seven figures, while ASP for smaller customers is typically in the low six figures. The company says three-year deals are the norm, with more than 200% net revenue retention. It doesn't do free — every customer is a paying customer. Chronosphere claims a 16 times revenue increase last year. Its current focus is on North America — Europe will be its next target. Customers include Snap Inc., DoorDash Inc., Tecton, Abnormal Security, Genius Sports Ltd. and Robinhood, among others.

The firm says some customers have reported a 4x reduction in mean time to detect problems. As a SaaS platform, Chronosphere targets organizations that have been self-hosting their monitoring tooling and want to shift some of the managerial burden to a vendor and customers that have been using legacy application performance monitoring (APM) and infrastructure monitoring tools and find they are no longer suitable for cloud-native environments. It is targeting technical (platform engineering leaders, ITOps, observability teams and SREs) and economic buyers with procurement responsibility.

Competition

The key rivalry for Chronosphere comes from APM providers and open-source, do-it-yourself approaches — principally Datadog Inc. and Grafana Cloud. The company also encounters, although less frequently, VMware Inc. (with Tanzu Observability), New Relic Inc., Dynatrace Inc. and Cisco Systems Inc.'s AppDynamics. However, Chronosphere expects to run into these players more over time as their customers seek modern observability offerings.

SWOT Analysis

STRENGTHS

Our research finds that 36% of enterprises have deployed observability tools in production, with a further 18% exploring observability as a proof of concept, which suggests most of the opportunity in this sector lies ahead. With observability now very much part of the lingua franca of modern cloud-native approaches, it is little wonder that Chronosphere apparently can't keep up with demand for and interest in its product and is ramping its operations as fast as it can.

WEAKNESSES

Many organizations are trying to consolidate the number of monitoring tools in their environments, rather than add others, which would appear to favor incumbent suppliers. However, there is also interest in tooling that is designed specifically with cloud-native technologies in mind as enterprises grapple with the challenges that complex, cloud-native apps present.

OPPORTUNITIES

Observability represents an opportunity for vendors to breathe new life into the decades-old concept of application and infrastructure performance monitoring. Chronosphere argues that legacy monitoring approaches are best suited for VM-based deployments with application monoliths. For the complexity of microservices-based application environments running in containers, cloud-native monitoring — observability — is required.

THREATS

Since observability is defined by its outcomes, assessing the value of observability tools requires an outcome-oriented approach: practitioners want faster problem detection and resolution, improvements to security, and greater responsiveness, among other benefits. However, they do not always feel their tools are delivering these benefits (as shown in Figure 1 above).

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