VICTORIAMETRICS AND CMS TEAM UP TO MONITOR THE UNIVERSE AND BEYOND

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Open source startup takes monitoring to new frontiers with superior scalability

NOV 17TH, SAN FRANCISCO: VictoriaMetrics, the open source, time series database monitoring solution, today announced its role assisting the monitoring tasks of the Compact Muon Solenoid (CMS) experiment at the European laboratory for particle physics, CERN.

Tailor made monitoring solutions

The CMS experiment is one of four particle physics detectors built at the Large Hadron Collider (LHC). Located deep underground at the border of Switzerland and France, the project is currently focused on experiments investigating Standard Model physics, extra dimensions and dark matter.

The computing infrastructure to deal with the multi-petabyte datasets produced by CMS requires best-in-class systems to monitor workload and data management, data transfers, and submission of production requests.

The CMS experiment has long relied on scalable, open source solutions to satisfy real-time and historical monitoring needs. However, after encountering storage and scalability issues with long-term monitoring solutions such as Prometheus and InfluxDB, the CMS monitoring team began the search for alternatives.

Edging out existing technology

The CMS monitoring team has engaged VictoriaMetrics following a post by CTO and Co-Founder Aliaksandr Valialkin on Medium, which benchmarked VictoriaMetrics against other popular monitoring systems, and were won over by the rigorous, scientific detail on display.

"We were searching for alternative solutions following performance issues with Prometheus and InfluxDB. VictoriaMetrics' walkthrough of use cases, and concise detail gave us excellent insight into how they could help us. The solution's backwards compatibility with Prometheus made implementation into the CMS monitoring cluster as smooth and seamless as possible." said V. Kuznetsov from Cornell University (member of CMS collaboration).

Initially implementing VictoriaMetrics as backend storage for Prometheus, the CMS monitoring team progressed to using the solution as front end storage to replace InfluxDB and Prometheus. This had the added impact of removing cardinality issues with Influx.

Since installing VictoriaMetrics, the CMS monitoring team had zero issues with cardinality, or using the software on the operational side. The CMS monitoring team gained added confidence in the open source flexibility of VictoriaMetrics after seamlessly implementing new features for vmalert, the solution's alerting system.

"Working with CMS to monitor the experiment computing infrastructure is a great honor for the team here.

The number of use cases for monitoring and observability is growing exponentially, and seeing our tech applied to cutting-edge science is testament to how critical monitoring has become. Our open source, community driven model is and will be at the core of our offering, granting us the flexibility to serve projects as complex as CMS infrastructure in the future", said Roman Khavronenko, Co-Founder of VictoriaMetrics.

Milestones gather momentum

The announcement marks the latest in a series of recent milestones for the company. Founded in 2018, by former engineers from Google, Cloudflare, and Lyft looking for ways to measure the growth of data in their organisations, VictoriaMetrics now counts Ably, Roblox, and Semrush as part of its thriving open source community.

In 2022, VictoriaMetrics announced surpassing 50 million docker pulls, 1M GitHub GitHub (https://github.com/VictoriaMetrics/VictoriaMetrics) downloads, and 6,000+ GitHub Stars.

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About VictoriaMetrics

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VictoriaMetrics is a fast and scalable open source time series database and monitoring solution, with the company behind it focusing on helping individuals and organizations address their big data challenges through state-of-the-art monitoring and observability solutions.

VictoriaMetrics' solutions are simultaneously scalable, reliable, easy to use and cost-efficient. They address the needs of organizations with increasingly complex data volumes and the demand for an ever-better observability platform. The company boasts the highest ingestion rates, fastest query performance and smallest disk storage size.

VictoriaMetrics is headquartered in San Francisco with an expanding team distributed across Europe and the United States. The rapidly growing platform has over 50M downloads, thousands of users, and 100+ community contributors to date. Customers include Grammarly, Wix, Adidas and Brandwatch. For more information, please visit victoriametrics.com (https://victoriametrics.com)

About CERN

CERN, the European Organization for Nuclear Research, is one of the world's leading laboratories for particle physics. The Organization is located on the French–Swiss border, with its headquarters in Geneva. Its Member States are: Austria, Belgium, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Israel, Italy, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Spain, Sweden, Switzerland and the United Kingdom. Cyprus, Estonia and Slovenia are Associate Member States in the pre-stage to Membership. Croatia, India, Latvia, Lithuania, Pakistan, Türkiye and

Ukraine are Associate Member States. Japan and the United States of America currently have Observer status, as do the European Union and UNESCO. The Observer status of the Russian Federation and of JINR is suspended in accordance with the CERN Council Resolutions of 8 March 2022 and 25 March 2022, respectively. Home (https://home.cern/)

Details about the CMS experiment can be found at: The CMS Experiment at the CERN LHC. JINST 3:S08004, 2008

The details of the CMS monitoring infrastructure can be found in the following paper: The CMS monitoring infrastructure and applications, C. Ariza-Porras, V. Kuznetsov, F. Legger, Computing Software Big Science 5, 5 (2021). doi.org/10.1007/s41781-020-00051-x (https://doi.org/10.1007/s41781-020-00051-x)

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