influxdata®

Nobl9 Relies on InfluxDB to Power Its Service Level Objectives Platform

NOBL9

Real-Time Insights Provide Deep Understanding Of Business Goals

Company in brief

Nobl9 built its eponymous platform to track Service Level Objectives (SLOs) in the pursuit of reliable software. The Nobl9 platform helps software developers, DevOps practitioners, and reliability engineers deliver reliable features faster. Through SLOs, Nobl9 enables businesses to link monitoring and other logging and tracing data to user happiness and business KPIs.

Case overview

Nobl9 is an SLO management platform that integrates with customers' existing observability tools. The platform currently supports twenty-four different data sources. It pulls in service level indicators (SLIs) from those sources and uses that data to calculate SLOs. The Nobl9 platform then presents SLO data to users through a web application or a command-line interface. Nobl9 uses InfluxDB as a core component of its platform to enable data ingest, analysis, visualization, alerting, and more.

Technologies used: Flux, InfluxDB Cloud, Kafka, Telegraf

The business challenge

SLOs are essentially a type of time series data, so, from the outset, the Nobl9 team knew they needed a time series database. The platform slices and dices data in many different ways, so it needed a database that could handle a heavy query load and be flexible enough to create the types of visualizations that users find effective. Because different companies have different needs when it comes to SLOs, the Nobl9 team wanted to provide their service across multiple environments.
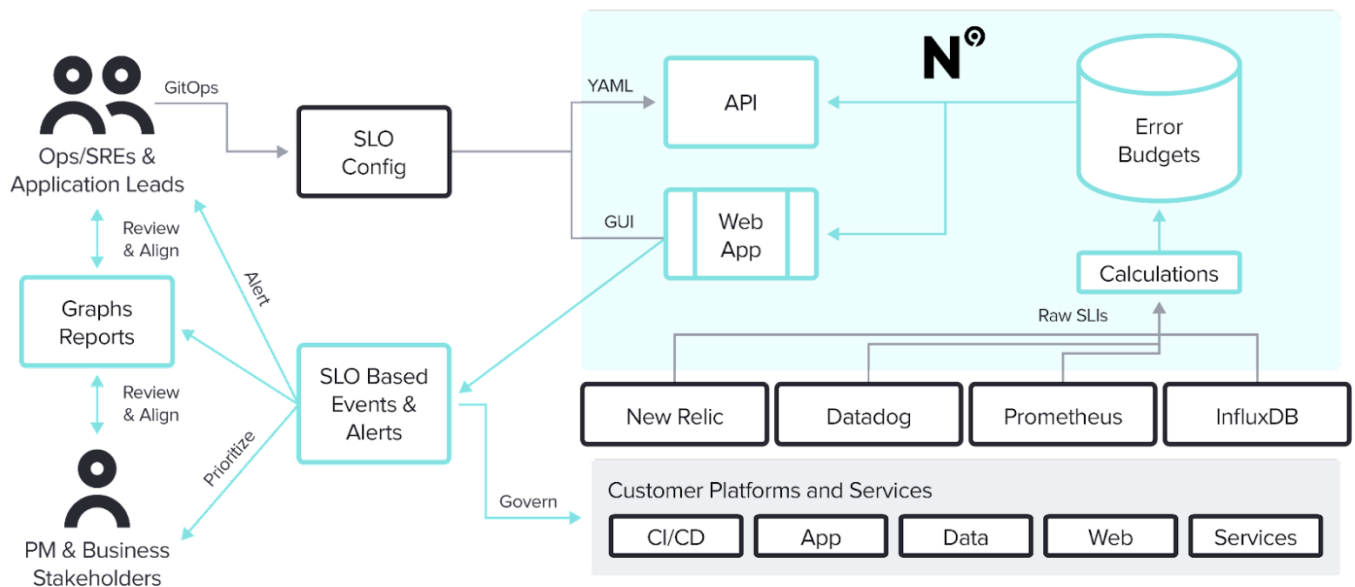
The technical challenge

Building InfluxDB into the core of the Nobl9 platform provided the company with the capabilities it needed from a time series database and data querying perspective. InfluxDB is available in multiple environments as well, so Nobl9 uses the Cloud version in its primary SaaS product, and has an enterprise version available for customers who want to host their own infrastructure. Nobl9 also uses the open-source version in its development environments. InfluxDB also offers commercial support, which was critical for the Nobl9 team and their customers as Nobl9 built out the platform.

The solution

Nobl9 utilizes InfluxDB throughout its platform to get data in and push data out, to analyze time series data, to create visualizations and reports, and to handle alerting.

Data ingest
The Nobl9 platform supports twenty-four different data sources, with more added all the time. These include a range of systems for metrics, application performance monitoring (APM), real user monitoring, cloud platform built-in metrics, log aggregation, synthetics, and data warehouses. The platform integrates with both agent-based and direct SaaS-to-SaaS connections. Nobl9 uses Telegraf as the backbone for its agent for several reasons. It has a reputation as a high-quality data pipeline utility, and many companies are already familiar with Telegraf so it has a level of familiarity that makes adoption easier. Nobl9 extended Telegraf with proprietary plugins to ensure the platform can collect from the necessary data sources. The SaaS-to-SaaS direct connection is more complex than the agent option, but it also uses Telegraf at its core.

Visualization and reporting
Once the platform calculates SLOs, it pushes that data into an InfluxDB instance to visualize them. The platform displays both up-to-the-minute data that changes dynamically as new data rolls in, as well as longer, historical timescales. It keeps data for a year or more so users can go back and review historical data. The platform has a time selector so users can refine the window for the data they want. The visualization dashboards support multiple SLOs running at once, and charts them all.

Ingest Error Rate (timeslice)
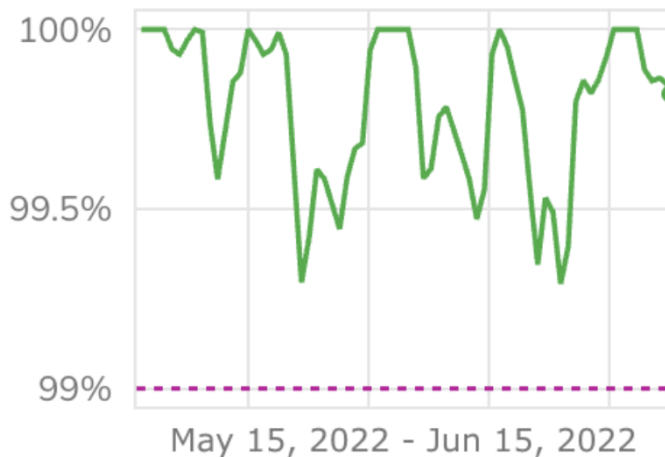
View Query

Threshold : **ok** (< 0.05)   Target : **99%**

1 Day (Rolling)

✓ Doing great!

Reliability Burn Down

100%

99.5%

99%

May 15, 2022 - Jun 15, 2022

Error Budget Remaining

12 min 86%

Burn Rate

0x

All the data feeding these dashboards gets queried out of InfluxDB using Flux. Nobl9 originally used InfluxQL to build these queries, but later moved everything to Flux. Flux provides the flexibility and supports the creativity necessary for the wide variety of SLOs and use cases required by Nobl9's users. They also use tasks to automate processes like downsampling, which generates data with lower granularity, to provide more visualization options across longer time windows. The Nobl9 team views InfluxDB as a real asset for rolling out new features and visualizations, and for modifying existing queries and features.
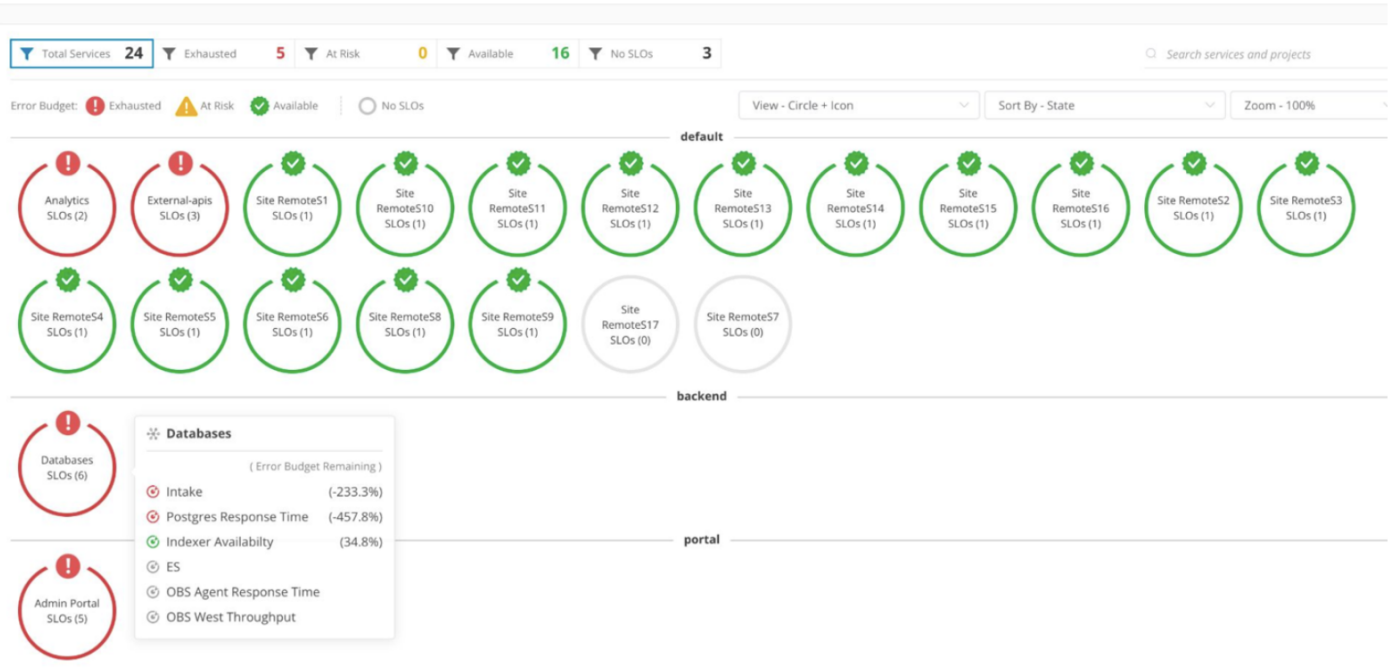
Telegraf is just an extremely flexible, very widely adopted sort of Swiss Army knife for data pipelining.

Alex Nauda, Nobl9 CTO

Data export

Another aspect of the Nobl9 platform that takes advantage of InfluxDB is exporting data. Nobl9 customers typically want to export data in real-time so they can display SLO time series alongside other metrics. Customers use a range of dashboarding and visualization tools, which may need to support a real-time, incremental export integration, or a more gradual export cadence.

The platform supports both batch and real-time data exports. The batch export functionality sends delimited files to object storage or file systems. Because of the need to authenticate within clouds, and across clouds and hosts, the Nobl9 team built custom tooling for batch exports. The platform supports several data warehouse and querying systems, with plans to add more.

The requirements for real-time exports are a bit different. This is an area where InfluxDB can be a real asset, especially if a customer also uses InfluxDB. For example, if a customer with a self-hosted solution runs its own data center, which includes an instance of InfluxDB inside Nobl9, they can send data directly from InfluxDB to Chronograf to create visualizations. They can also connect InfluxDB to any desired output source because InfluxDB integrates to a variety of tools.

Results

Nobl9 built a powerful platform on InfluxDB that tracks SLOs with ease and empowers site reliability engineers to set up automated alerting and make their software more reliable. Integrating InfluxDB into the core Nobl9 platform enables several key functions. From data ingest, to data visualization, and data export, Nobl9 leverages InfluxDB to manage its data pipeline.

What's next

As the Nobl9 team continues to iterate and improve its platform, they're exploring what they call faceted SLOs. This involves creating a single global SLO on a given SLI and providing the ability to drill down on different dimensions of that SLO. This enables users to see all the different areas within the company contributing to that SLO and in what amounts. For example, if a SLO tracks error budget, a user may want to see how that SLO breaks down by region, cloud provider region, or by data center.
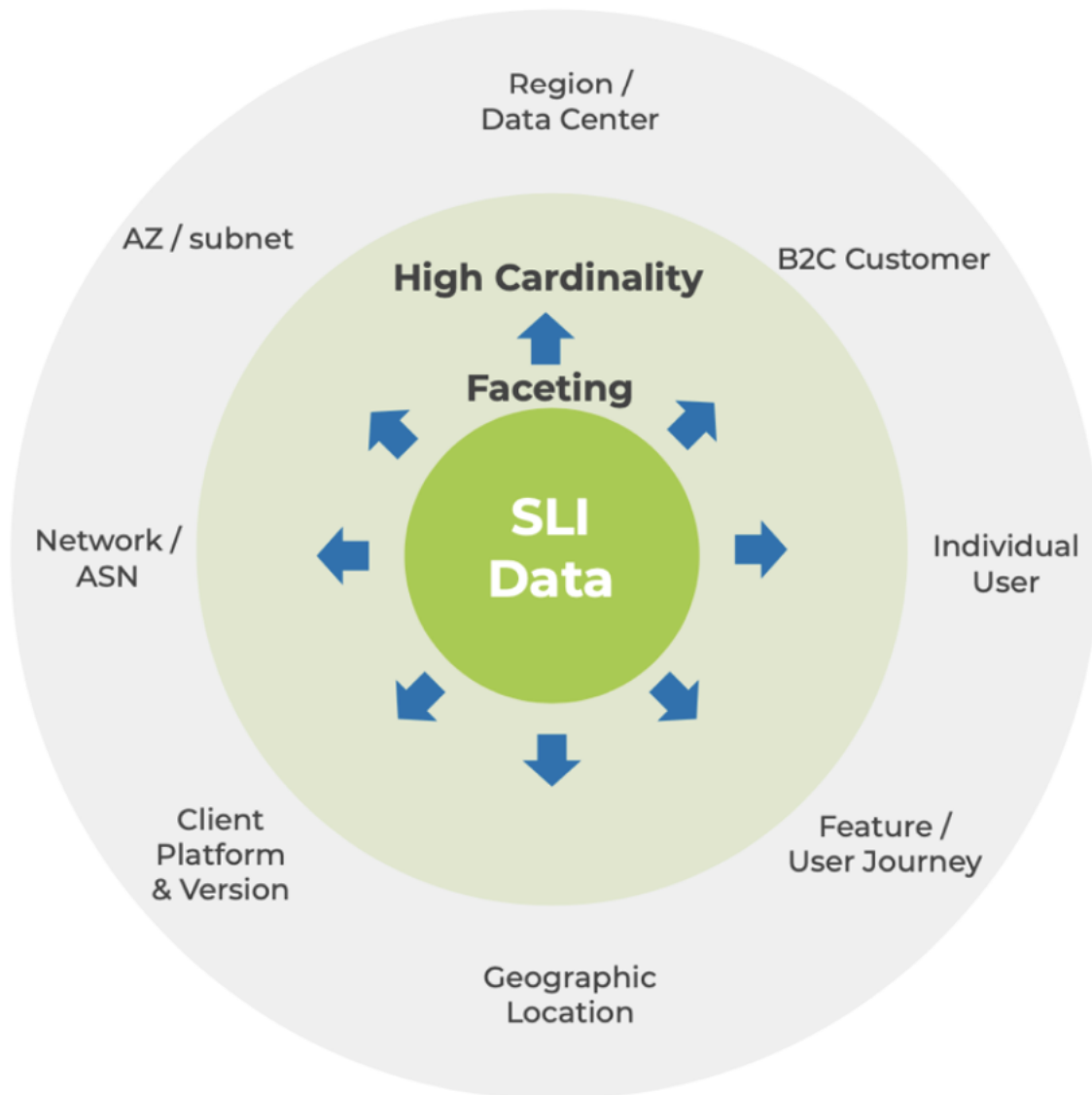
About InfluxData

InfluxData is the creator of InfluxDB, the leading time series platform. We empower developers and organizations, such as Cisco, IBM, Lego, Siemens, and Tesla, to build transformative IoT, analytics and monitoring applications. Our technology is purpose-built to handle the massive volumes of time-stamped data produced by sensors, applications and computer infrastructure. Easy to start and scale, InfluxDB gives developers time to focus on the features and functionalities that give their apps a competitive edge. InfluxData is headquartered in San Francisco, with a workforce distributed throughout the U.S. and across Europe. For more information, visit influxdata.com and follow us @InfluxDB.

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