OVERVIEW
The shift to data-driven, cloud-native services hasn’t often gone as efficiently as expected. Identifying, isolating and rectifying the problems was difficult enough on premises with traditional monolithic systems and the myriad of proprietary tools for debugging, integrating, monitoring and managing them. Still, with the shift to cloud-native systems based on microservices architectures realized as distributed, containerized services, the problems are intractable for traditional tools.

The latest generation of enterprise-wide tools from vendors like Datadog, AppDynamics, New Relic and others are architected to handle cloud-native monitoring and management using key advancements in observability. These include open-standard APIs and dynamic and distributed tracing against an extensive set of metrics – logged and often analyzed in real time.

The problem for data management, integration and analytics professionals is that they are not IT operations managers. Yet, they need affordable, easy-to-use, self-explanatory, no-code tools they can use directly within their hybrid and cloud-native systems and workflows rather than rely on IT Ops. Further, they need tools to deliver a comprehensive picture of their data systems to IT Ops within their enterprise-wide, single-pane-of-glass observability systems.

The MariaDB SkySQL Observability Service (OS) is a fully managed, cloud-native service purpose-built for MariaDB databases and services running on premises, on AWS or Google Cloud, or hybrid on-prem and cloud. SkySQL fully instruments MariaDB Community Server, Enterprise Server and its storage engines (InnoDB and ColumnStore) and MariaDB Xpand distributed SQL. SkySQL OS delivers real-time performance and capacity insights through templated, customizable dashboards fed by rules-based alerts on a full range of metrics covering all aspects of MariaDB operations, down to individual queries.

BENEFITS
- Get a unified view of all your databases’ health in near real time across clouds and data centers
- Identify performance and IO bottlenecks, constrained resources and faults
- Understand and optimize the use of underlying database resources to reduce cost and improve performance
- Avoid having to provision infrastructure for monitoring
- Have your monitoring continuously and automatically adapt to changing database versions
- Increase accuracy and compress timelines for data center consolidation and cloud migration capacity planning
- Improve DevOps cycle time by identifying database-related issues with new features and functionality

FEATURES
- Template-based customizable dashboards
- Extensive audit, error and slow query log collection from all your MariaDB databases and MaxScale
- Alerts driven by out-of-the-box yet customizable health assessment rules
- Notifications delivered to dashboards and email
- Observability API conforming to OpenMetrics and Prometheus standards
- Accessible only with credentials from an allow-listed IP address with TLS 1.2 wire encryption

TECHNICAL SPECIFICATIONS
Single-Pane-of-Glass Dashboards for Real-Time Insights
SkySQL OS is designed for DBAs, developers, business analysts and other database managers and power users wanting a comprehensive and consolidated view of MariaDB databases and data services across all data centers and clouds. Monitor and manage overall and individual workload capacity, utilization trends, queries per second, peak CPU and data cache use. Out-of-the-box yet customizable dashboards reflect collective centuries of MariaDB DBA and SkyDBA experience supporting MariaDB products across a wide range of topology configurations and workloads.

Collect and Analyze All Your MariaDB Metrics
SkySQL OS uses remote agent managers, downloaded and run on all remote MariaDB databases, sending database metrics, audit and error
logs, MaxScale logs, and slow query logs back to SkySQL OS for up to seven years. Slow query logs can be configured to monitor single and multi-node transactions and analytics and replicated transactions. Logs are encrypted at rest using AES-256 and stored in various JSON formatted or plain text files. They are exportable not only to SkySQL OS but are also consumable by Fluent Bit, a highly scalable logging and metrics processor and forwarder, and any cloud service that uses it.

**Data-Driven Alerting and Notification System**

SkySQL OS leverages configurable monitoring agents placed in SkySQL and remotely in on-premises systems to collect large historical metrics data. SkySQL OS has built-in workload analytics (WLA), featuring ML-based algorithms trained to detect and track drifts and novel anomalies. With SkySQL OS, you can dig deeper through these trends to build correlations across hundreds of performance metrics to generate actionable and timely alerts. Twenty-plus predefined alerts are available out of the box, based on MariaDB DBAs’ experiences with hundreds of customer environments. These alerts can be modified, or additional ones can be created from scratch. The data collected is encrypted at rest and in transit to SkySQL OS dashboards, external third-party visualization and monitoring tools and email notifications.

**Open and Extensible Third-Party Integrations**

Observability APIs enable all SkySQL OS data on MariaDB servers and database services to easily plug into full-stack observability tools and enterprise-wide visualization and analysis tools, including Datadog, Dynatrace, AppDynamics, Grafana, and many others.

**Enterprise Security and Data Protection**

All data collected by SkySQL OS is protected with compliant and industry-standard security methodologies. Further, SkySQL OS access is restricted to a defined list of IP ranges and allowed only with secure MariaDB ID authentication credentials. SkySQL OS users can limit the metrics data and logs collected by the SkySQL OS agent daemon. Connections between the SkySQL OS agent daemon and the MariaDB cloud service are encrypted using TLS 1.2 (SHA-256).

**Simple Setup**

SkySQL OS is an independent, individual service within SkySQL that can be onboarded in seven simple steps:

1. Subscribe to SkySQL.
2. Generate a SkySQL API key at download.mariadb.com.
3. Download the MariaDB Agent Manager from the same page.
4. Run the MariaDB Agent Manager for the database servers to deploy the required agents.
5. Input the server name, topology name and mandatory credentials.
6. The SkySQL Monitoring page will show the new SkySQL and/or on-prem services as distinct icons.
7. Use the configuration templates or the wizard tool to configure agents on your database servers.

**PRODUCT ARCHITECTURE**

**USE CASES**

**DevOps**

DevOps is all about rapidly developing and deploying incremental new features and functionality. The database is an integral part of this process. SkySQL OS can’t prevent developers from using the wrong data type for a primary key or a DBA from suboptimal partitioning and indexing a large database. But SkySQL OS can quickly identify these problems – which is critical to rapidly fixing the results. SkySQL OS requires no formal or extensive training yet delivers the functionality found in advanced, enterprise-wide observability tools built for database professionals. For example, developers can use SkySQL OS to determine if their code has crafted inefficient or poorly constructed queries; SkySQL OS can evaluate performance and resource utilization down to the individual query. Similarly, DBAs can determine if overall database partitions or growth in overall size hamper performance or resource utilization by looking at historical patterns at the cluster, node and individual SQL query levels.
Data Center Consolidation and Cloud Migration

Overestimating capacity can generate unnecessarily high project estimates that elongate timelines and make funding unlikely. SkySQL OS helps you construct and tune your databases to efficiently support high availability and scalability from the outset – and ensure the ROI of your new consolidated or cloud deployment is clear to stakeholders.

EVALUATE THE SKYSQL OS FOR YOURSELF

We invite you to try SkySQL today. Want a personalized demo to see what SkySQL OS can do for your organization? Request a demo here.