OpenWorks 2023

SkySQL

The Open, Unified and Most Productive Cloud

Database Service for Modern Apps

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MariaDB

"By 2025 750 million new Apps will be created using Cloud-native approaches"

Are Cloud Databases Ready ?

What are we hearing from our customers?

650+ Customers[1]

MariaDB

What are we hearing from our customers?

- **Can I manage data across clouds?**
  - Not just replicating data, but distributing it across clouds, including on-premise (with data sovereignty)

- **Scale Everything - users, volume, DBs**
  - SaaS - One independent database for every SaaS customer

- **Need better automation, better price-performance**
  - Work with experts, and resolve instantly

- **Can I analyze my operational data sets without complex pipelines**?

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Second Generation Cloud Database Service

- **Ultimate flexibility**
  - Many choices – be it cloud, workload type, language (SQL), or data format (JSON)

- **Simpler**
  - Easy to scale any which way, easy to derive analytical insights on all current data, easy to monitor all your databases

- **Database innovation**
  - Cloud database service that is tuned and optimized for cloud infrastructure

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Is SkySQL 2nd Generation?

You be the judge

MariaDB Enterprise Server - Powerful and Open
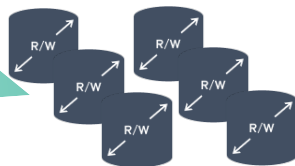
Enterprise Server
(With read replicas)

- Start small
- Easily migrate with support for database dialects like PL/SQL, SQL Server …
- Battle tested, most compatible with MySQL
- Add read replicas for read scalability

SkySQL
Unified, Automated, Simple

MariaDB

Enterprise Server
(With read replicas)

- Migrate to **Xpand** for linear and high read-write scaling
- A cloud-native distributed DB
- Built-in Columnar indexing

R/W R/W R/W R/W R/W R/W
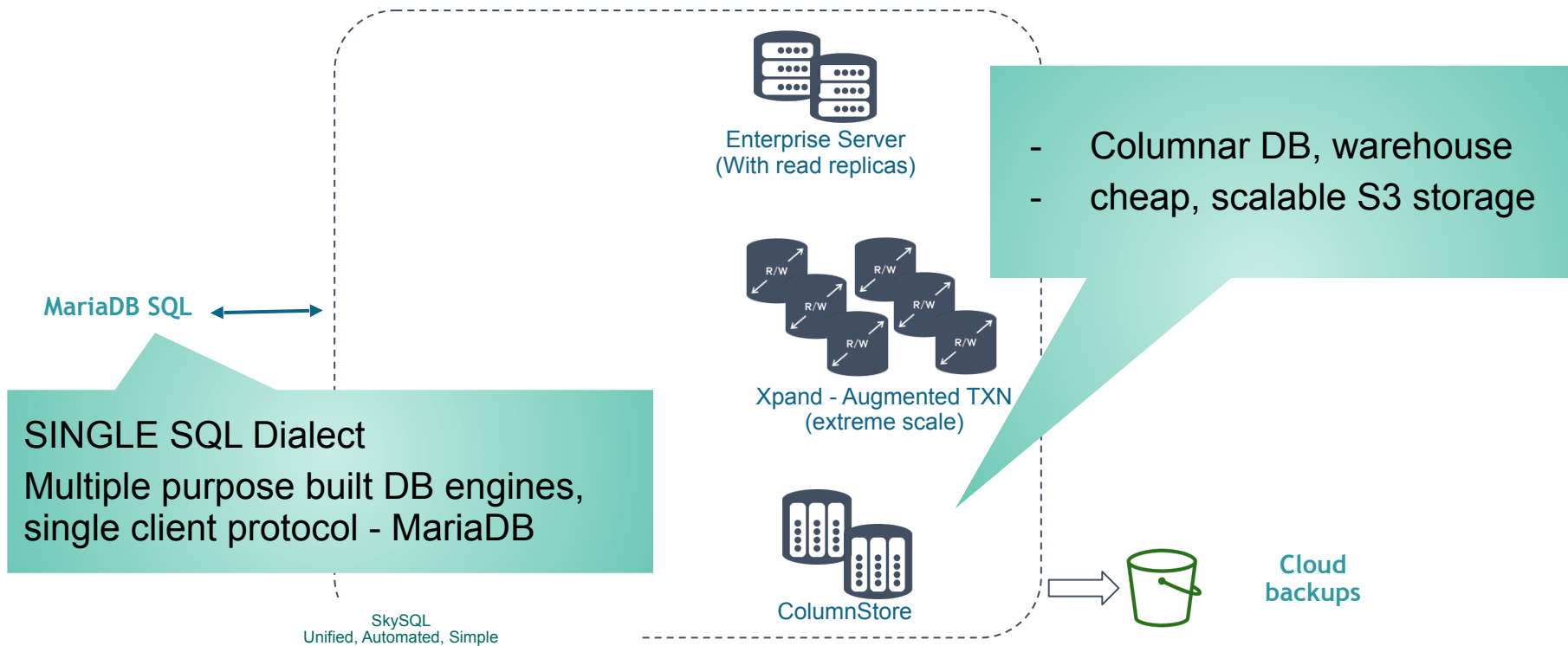
Xpand - Augmented TXN
(extreme scale)

SkySQL
Unified, Automated, Simple

*Maria*DB

MariaDB SQL

SINGLE SQL Dialect

Multiple purpose built DB engines,
single client protocol - MariaDB

SkySQL
Unified, Automated, Simple

Enterprise Server
(With read replicas)

Xpand - Augmented TXN
(extreme scale)

ColumnStore

- Columnar DB, warehouse
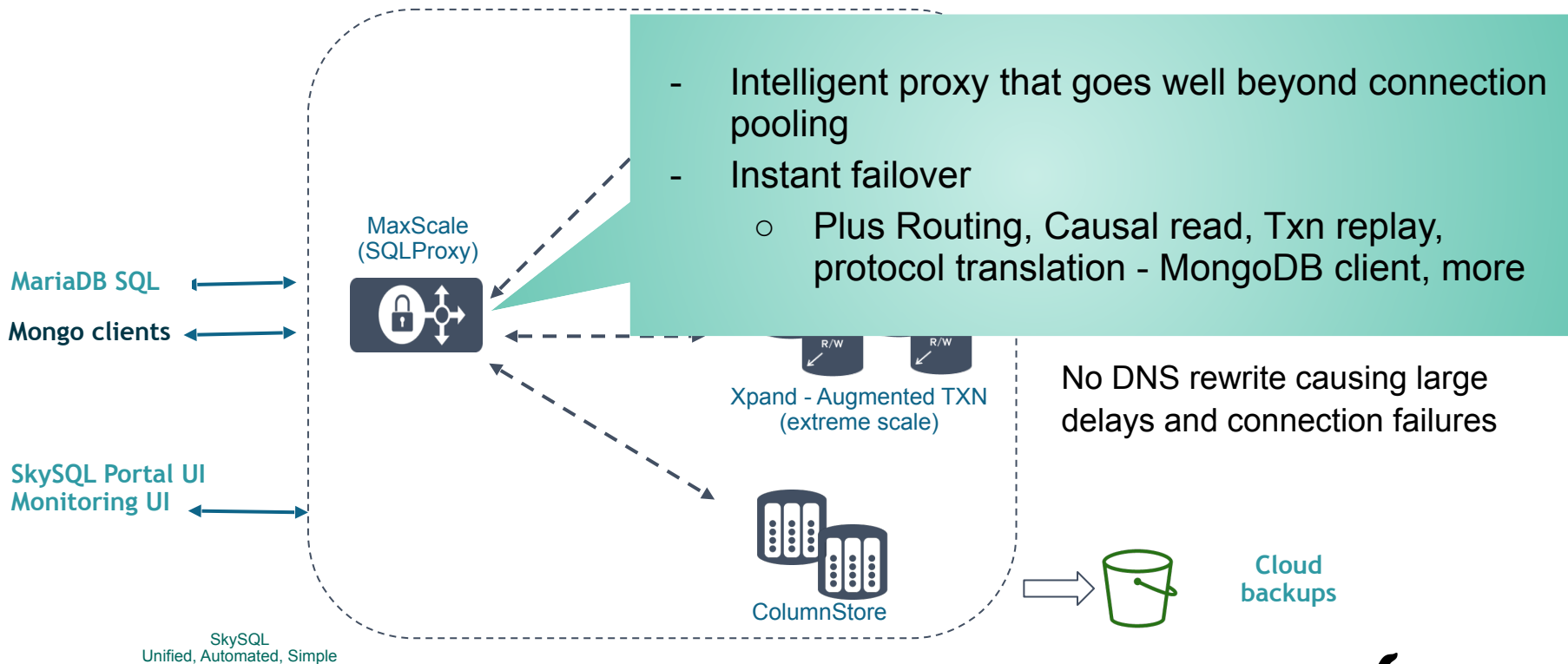- cheap, scalable S3 storage

Cloud
backups

MariaDB

Multi-level Resiliency and Continuously Available

- Clusters always replicate across Availability Zones (AZs)

- Protect against entire region-level failure
  - Replicate data sets across regions

- Protect against cloud provider-level failure
  - Replicate data across even cloud providers

- Leverages k8s self healing
  - Failed nodes are quickly replaced
  - Compute-storage isolation
  - On Disk Data redundantly placed on multiple disks
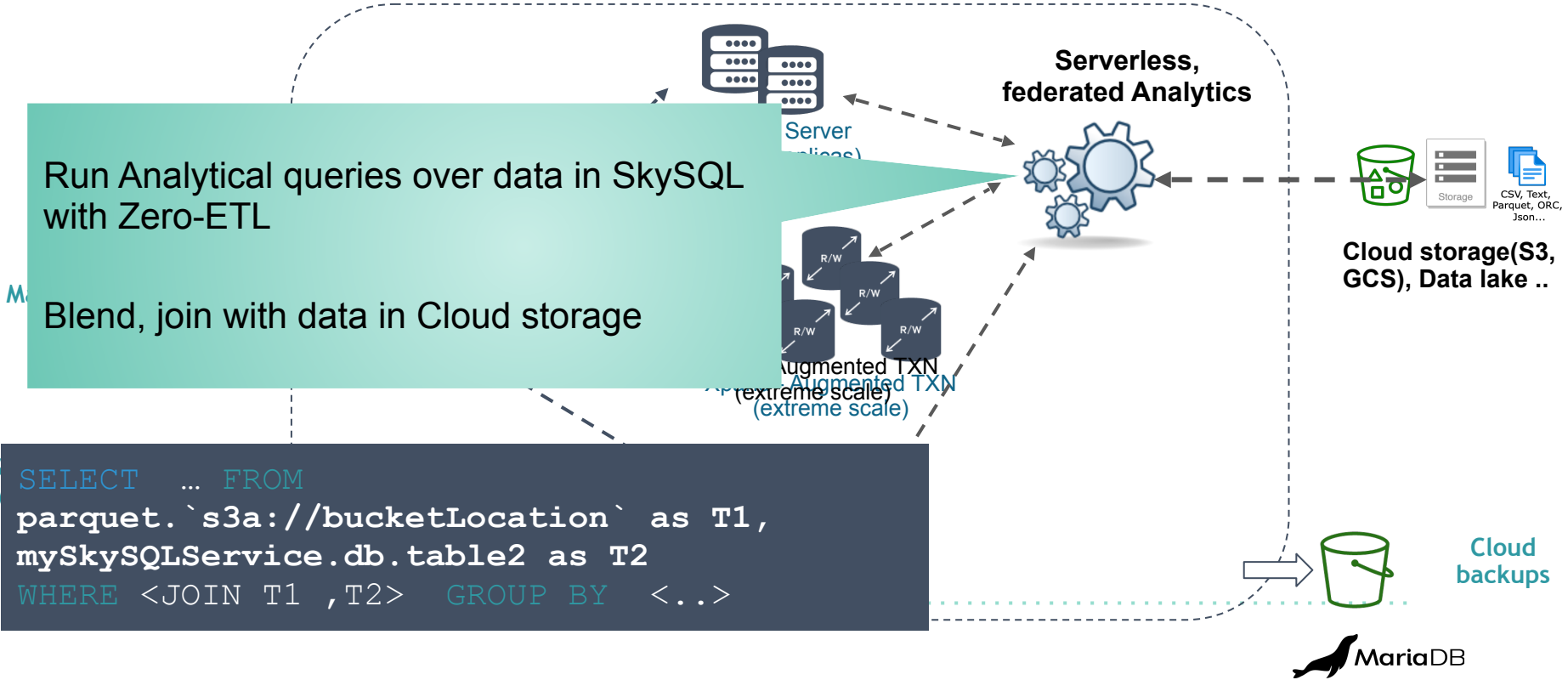
- Non-blocking backups unlike Hyperscalers

MariaDB

MariaDB SQL

Mongo clients

MaxScale
(SQLProxy)

- Intelligent proxy that goes well beyond connection pooling
- Instant failover
  - Plus Routing, Causal read, Txn replay, protocol translation - MongoDB client, more

R/W   R/W

Xpand - Augmented TXN
(extreme scale)

No DNS rewrite causing large delays and connection failures

SkySQL Portal UI
Monitoring UI

ColumnStore

Cloud
backups

SkySQL
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Analyze any Operational Data

- No data pipelines
- Analytics cannot impede online Apps

Zero-ETL, Low Interference Serverless Analytics

Serverless, federated Analytics
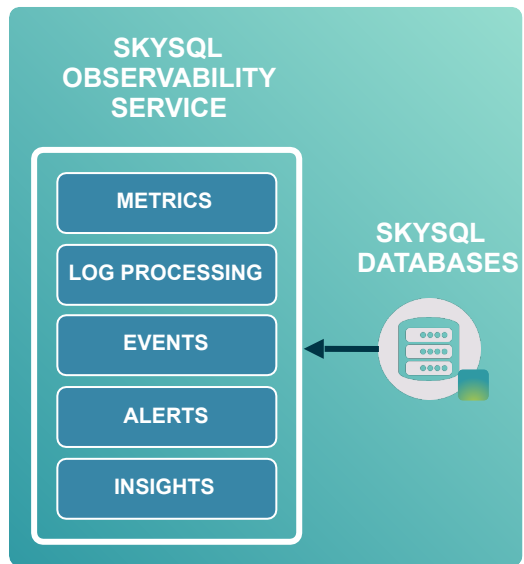
Run Analytical queries over data in SkySQL with Zero-ETL

Blend, join with data in Cloud storage

Server
(replicas)

Augmented TXN
(extreme scale)

Augmented TXN
(extreme scale)

Cloud storage(S3, GCS), Data lake ..

CSV, Text, Parquet, ORC, Json...

Storage

```
SELECT … FROM
parquet.`s3a://bucketLocation` as T1,
mySkySQLService.db.table2 as T2
WHERE <JOIN T1 ,T2> GROUP BY <..>
```

Cloud backups

MariaDB

Introducing MariaDB GeoSpatial

MariaDB

Build Modern Apps using MariaDB GeoSpatial

Serverless, federated Analytics

Enterprise Server
(With read replicas)

MaxScale
(SQLProxy)

MariaDB S

SkySQL Por
Monitoring

- High performance, big data scale GeoSpatial web services
- Vector data in MariaDB
- Raster data in Cloud storage

Augmented TXN
(me scale)
Augmented TXN
(reme scale)

ColumnStore

Cloud storage(S3, GCS), Data lake ..

CSV, Text, Parquet, ORC, Json...

Storage

Cloud backups

SkySQL
Unified, Automated, Simple

GeoSpatial REST API
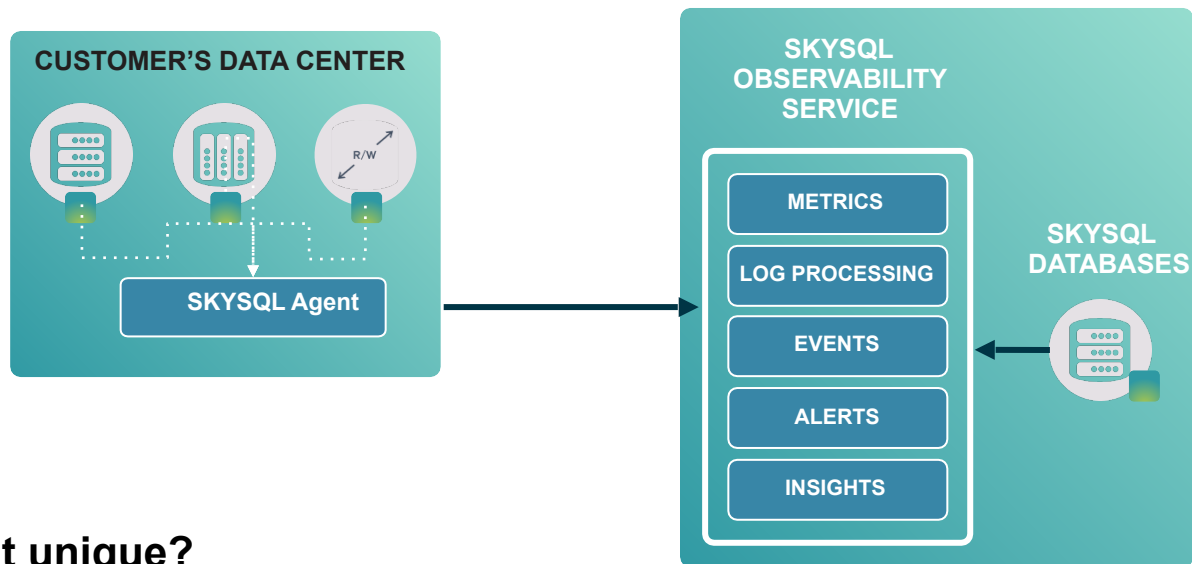
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Observe Everything, Anywhere

SkySQL Observability Service - Hybrid Cloud DB Monitoring

- A single unified monitoring and alerting system

- ML Driven Workload Analysis

- SkyDBA - Expert fractional DBA Service

SKYSQL OBSERVABILITY SERVICE

METRICS

LOG PROCESSING

EVENTS

ALERTS

INSIGHTS

SKYSQL DATABASES

Single pane of glass for all your Global DBs

MariaDB

Monitor Customer Managed DBs Anywhere

CUSTOMER'S DATA CENTER

R/W

SKYSQL Agent

SKYSQL
OBSERVABILITY
SERVICE

METRICS

LOG PROCESSING

EVENTS

ALERTS

INSIGHTS

SKYSQL
DATABASES

Single pane of glass for all your Global databases

What makes it unique?

- Tailored for MariaDB products
- Intelligent Health Assessment and Alerting
  - Rules/Alerts tailored by specialists for your workload
  - Feed-derived insights to APM tools like Datadog

= MariaDB Remote Agent

MariaDB

Reduce Costs with Auto-Scaling

- **Intelligent, policy-driven compute scaling**
  - Vertical or horizontal
  - Driven by real-time load measurement
  - CPU, memory, concurrent activity
- **Linear prediction-driven storage scaling**

Enterprise Server
(With read replicas)

R/W R/W R/W R/W R/W

Xpand - Augmented TXN
(extreme scale)

ColumnStore

Metrics, Logs

Auto-scale, Auto-tuning

MariaDB
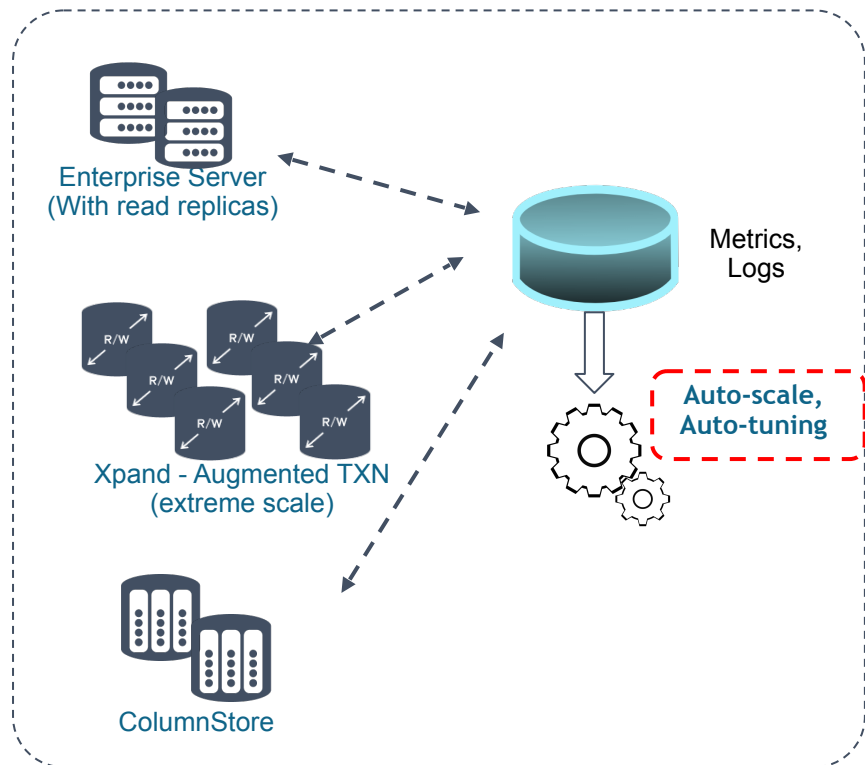
Introducing Backup As a Service

Ensure Business Continuity, Migrate with ease, Blue-Green Deployments

MariaDB

A Multi-Cloud Backup Service

- Fully Managed, Secure Backup for MariaDB running anywhere
  - On-prem, Any Cloud, SkySQL

Make Developers Productive.

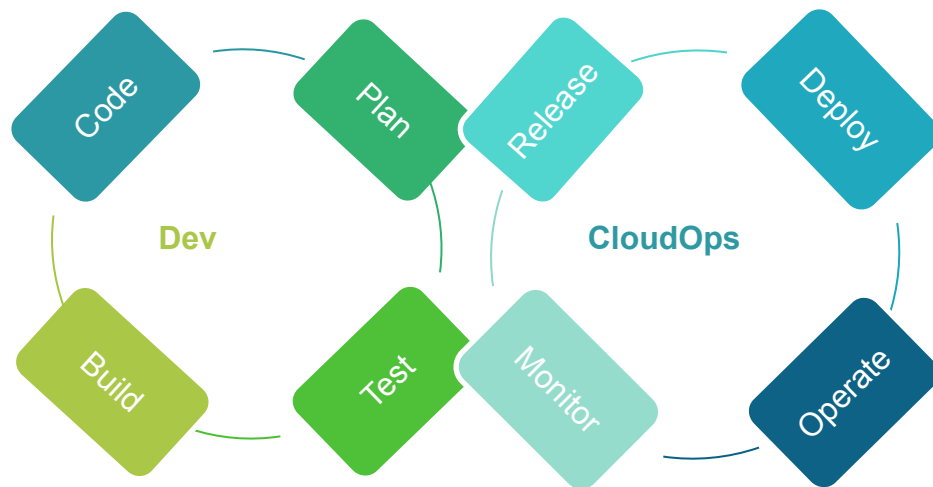# Instantly

Productivity for Developers and DevOps

- **API-first approach**
  - Prometheus for 3rd party observability
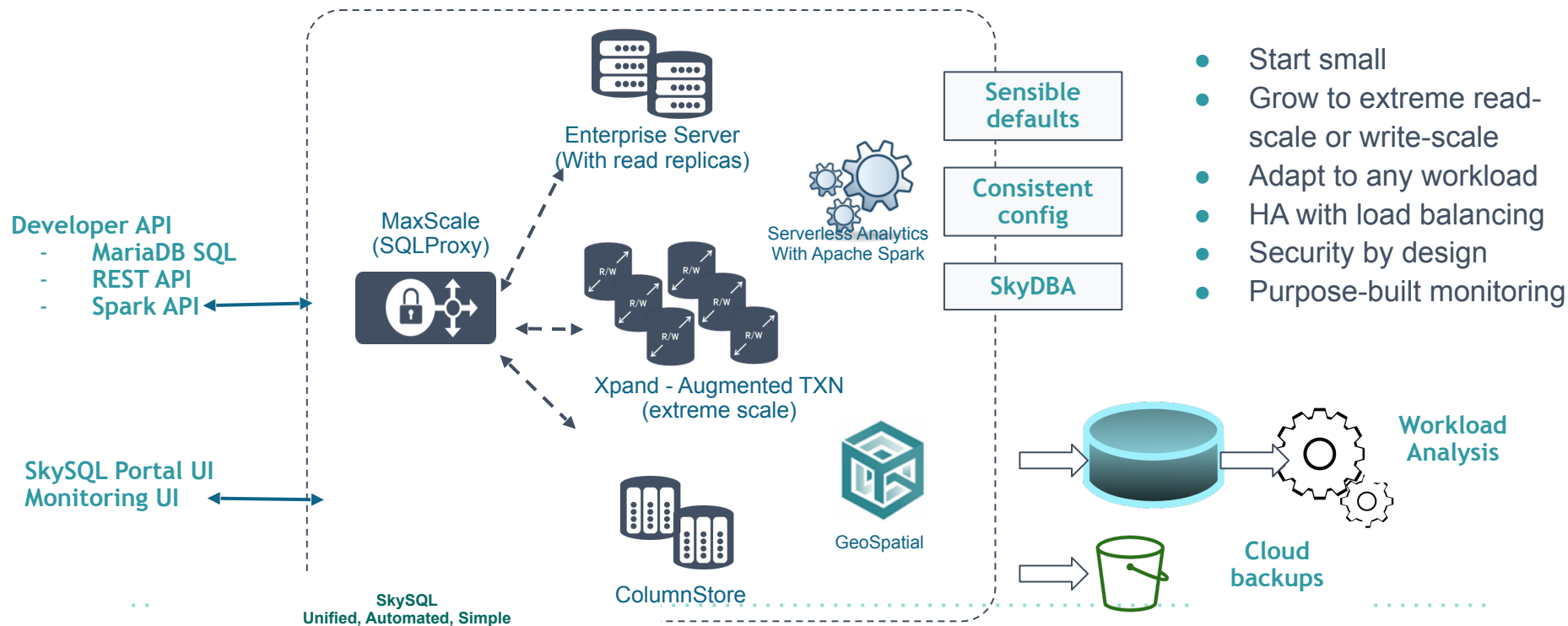 - REST APIs
  - Terraform Provider

- **Developer Tools**
  - SQL Query Editor
  - Apache Zeppelin Notebook
  - 3rd party development, integration, migration tools

- **NoSQL API - MongoDB compatible**

Dev — Code, Plan, Build, Test

CloudOps — Release, Deploy, Monitor, Operate

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SkySQL - Txn+Analytics, Any scale, Unified Ops

Developer API
- MariaDB SQL
- REST API
- Spark API

SkySQL Portal UI
Monitoring UI

MaxScale
(SQLProxy)

Enterprise Server
(With read replicas)

Serverless Analytics
With Apache Spark

Xpand - Augmented TXN
(extreme scale)

ColumnStore

GeoSpatial

Sensible defaults

Consistent config

SkyDBA

SkySQL
Unified, Automated, Simple

Workload Analysis

Cloud backups

- Start small
- Grow to extreme read-scale or write-scale
- Adapt to any workload
- HA with load balancing
- Security by design
- Purpose-built monitoring

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So, Is SkySQL a Next-Generation Cloud DBaaS?

- **Open**
    - MariaDB is one of the most open databases in the world

- **Simpler/Productive**
    - Common DBA functions automated, built-in developer tools

- **Unlimited Flexibility**
    - Purpose built engines, One SQL dialect, unified management
    - Zero-ETL Analytics, GeoSpatial …

- **Cloud native**
    - Optimized for cloud infrastructure - horizontal scalability, redundant

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Questions?

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