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# **SkySQL vs AWS RDS vs GCP Cloud SQL**

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# RDS vs Cloud SQL vs SkySQL Services

Primary-Replica

Distributed SQL



RDS (2011)

Aurora (2014)



Cloud SQL (2011)

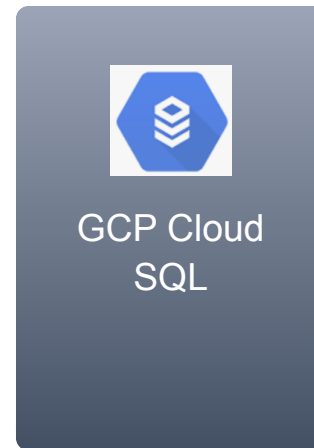
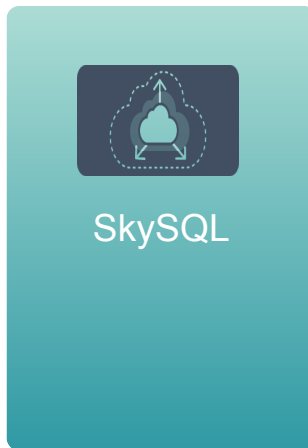


Enterprise Server (2010)

Xpand (2007)

# What's the right Cloud Database for You?

- Price / Performance
- Scalability
- Resiliency (Failover, Backup, Recovery)
- Security & Compliance
- Service and Support
- Management and Administration
- Integrations and Interoperability



# What's the right Cloud Database for You?

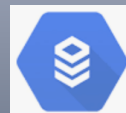
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SkySQL

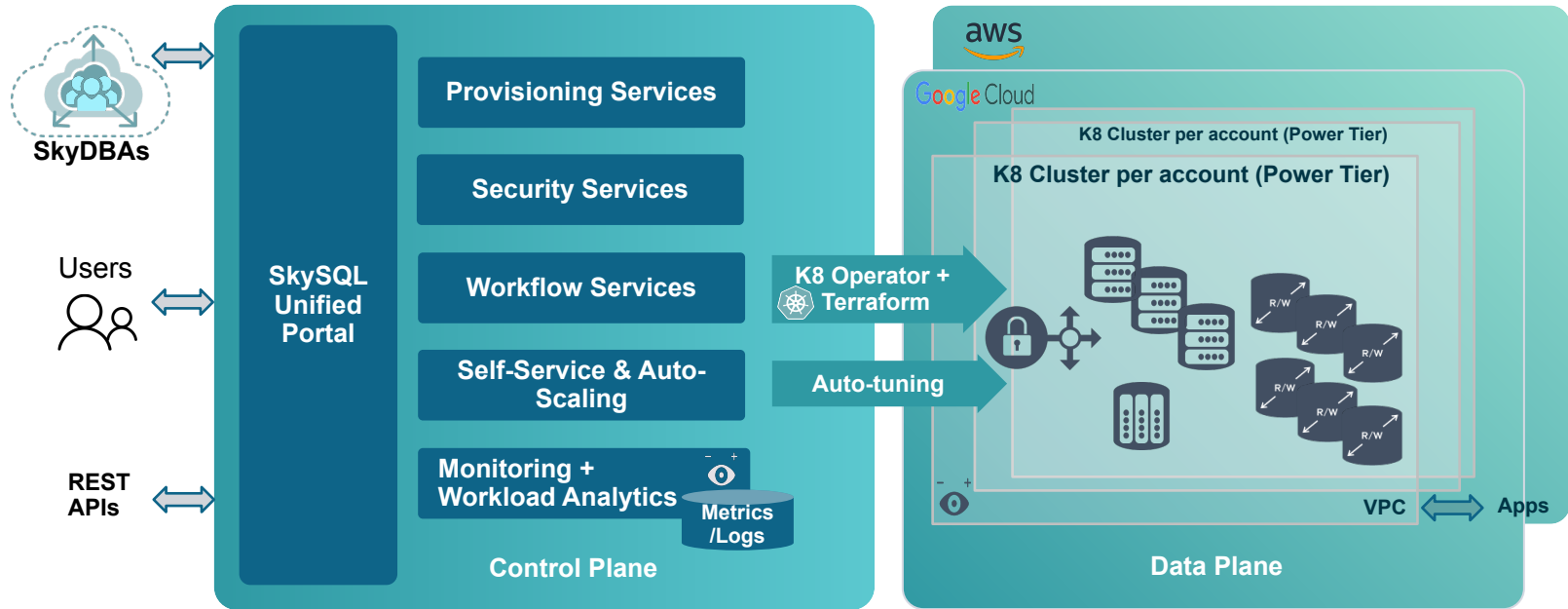


AWS RDS



GCP Cloud  
SQL

# SkySQL Cloud Database Service Architecture



- Cloud Native K8S self-healing and scaling capabilities (Commodity H/W will fail)
- Multi-Cloud abstraction and orchestration

# Price / Performance (TPC-C): RDS MariaDB vs. SkySQL ES Standalone

RDS: db.r5.2xlarge (8 vCPU, 64GiB memory), 500 GB, 10K IOPS - \$1763.30 / month

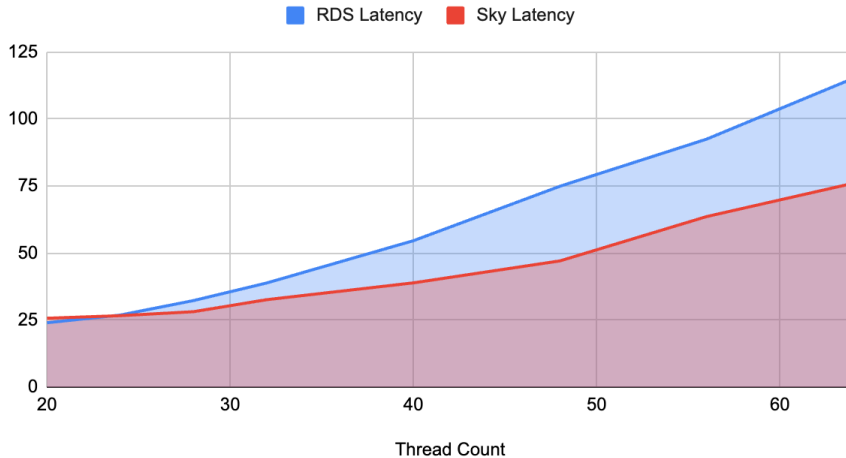
SkySQL: sky-8x64 (8 vCPU, 64GB memory), 500 GB, 10K IOPS - \$1432.11 / month

**Price - 23% better**

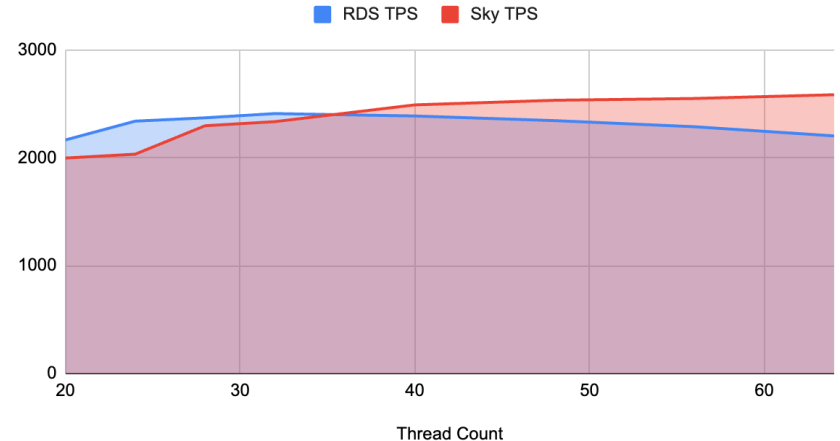
**Latency - 30% better**

**Throughput - 15% better**

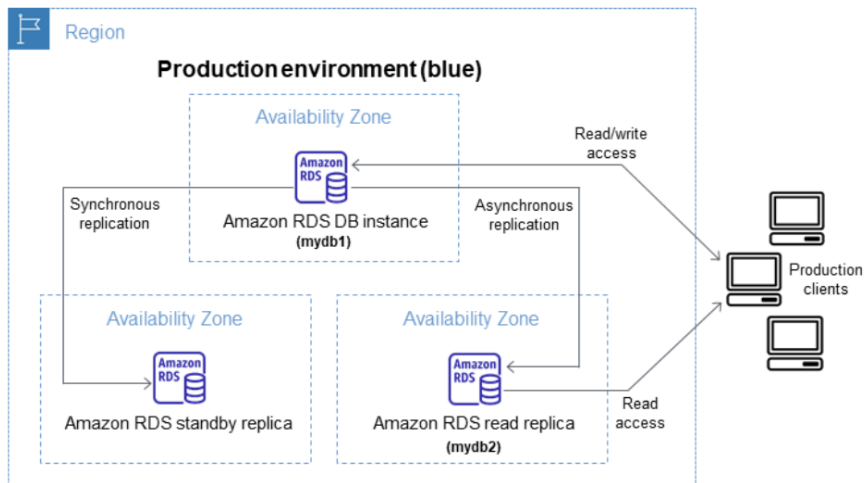
## RDS Vs Sky Latency (TPCC) - LOWER IS BETTER



## RDS Vs Sky Throughput (TPCC) - HIGHER IS BETTER



# Resilience and Scalability - AWS RDS MariaDB

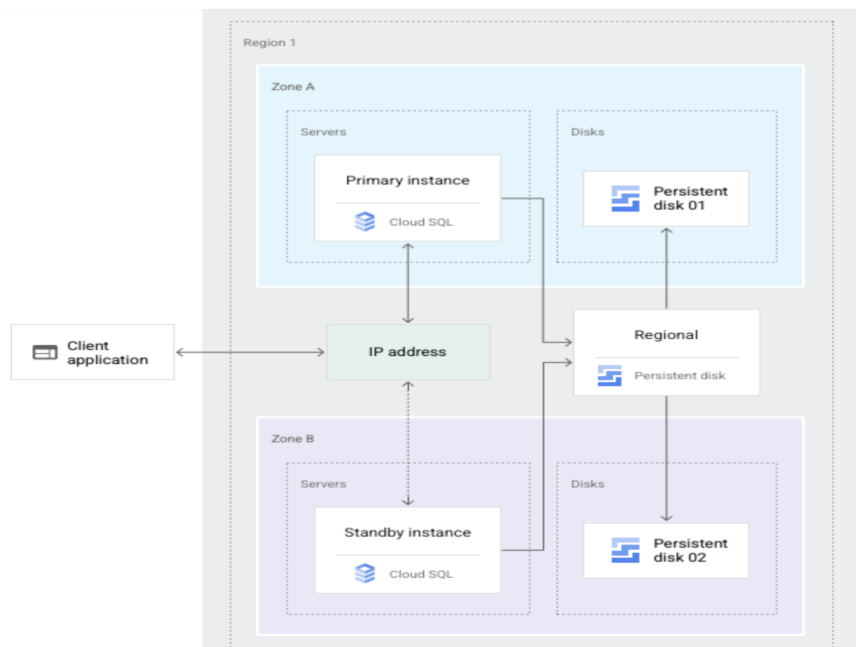


- Standby Replica for Failover in Multi-AZ setup
- Cannot be used for read scaling
- Synchronous writes
- Default Failover is DNS based (Disruptive)
- Async Replica for Read Scaling
- App has to manage read consistency



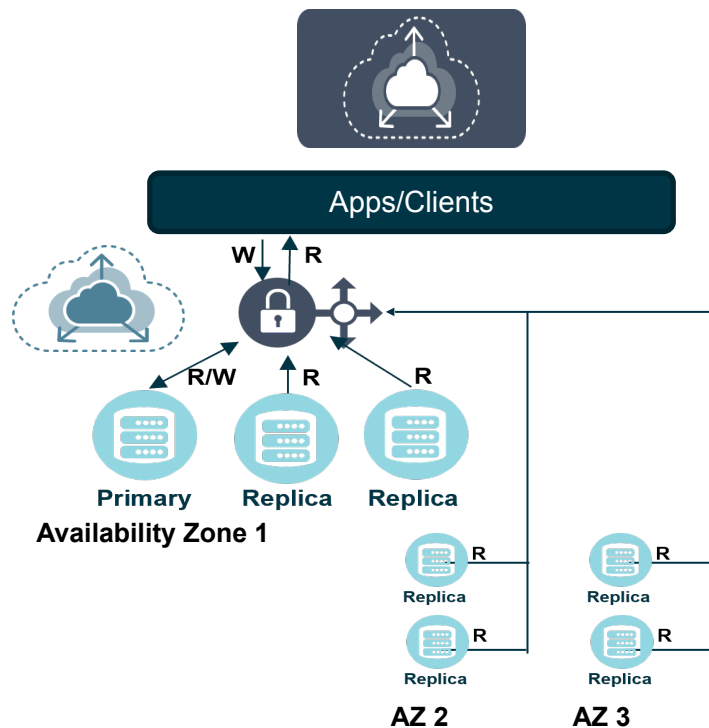


# Resilience and Scalability - GCP Cloud SQL MySQL



- Regional standby for failover
- Cannot be used for read scaling
- Synchronous writes
- Automatic failover for HA configuration
  - Based on DNS - (can take up to 60+ seconds)
- Async Replica for Read Scaling
- App has to manage read scaling and read consistency
- Self-service: Scaling up of instance types (Disruptive)

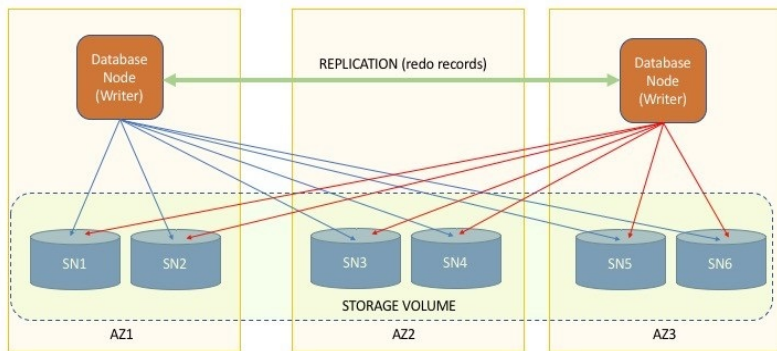
# Continuous Availability and Scalability - SkySQL ES



- Intelligent Proxy
  - HA configuration for Proxy
- Automatic failover
- Automatic transaction replay for data consistency
- All replicas are active w/ read/write splitting
- Causal reads
  
- Self-service & Autonomous (Non Disruptive):
  - Scale instance types
  - Scale read replicas
  - Scale up storage

# Scalability and High Availability - AWS Aurora

## Aurora with Distributed Storage Volumes<sup>1</sup>

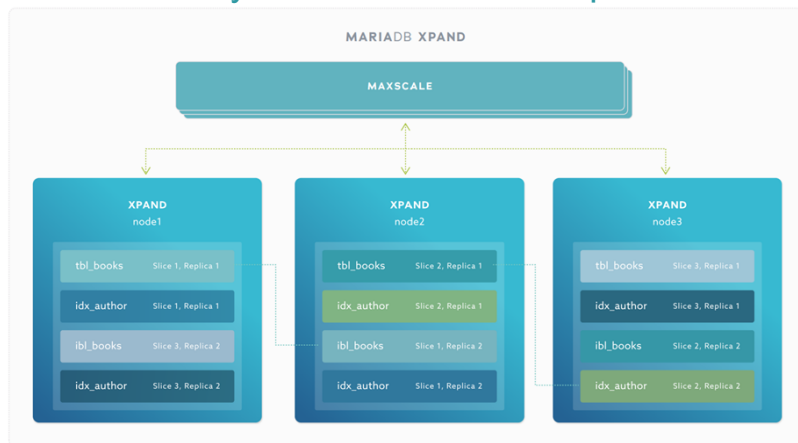


AZ – Availability Zone  
SN – Storage Node

- Primary writer with read replication
- Opaque and complex storage layer that also does compute
- IOPS cost is substantial
- Failover could take up anywhere from 30 seconds up to a minute

# Scalability and Continuous Availability - Distributed SQL

## SkySQL with MariaDB Xpand



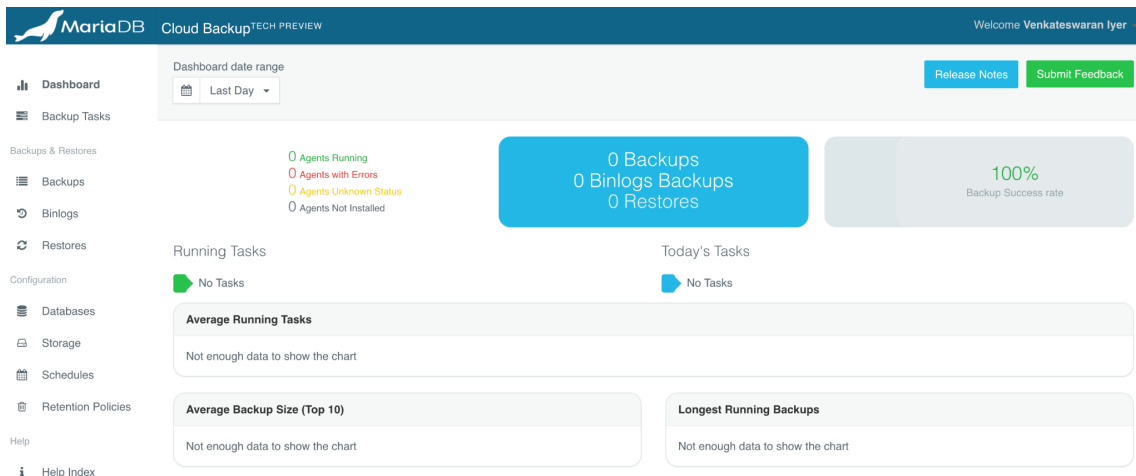
- Truly distributed writes w/ shared nothing architecture
  - Every node is equal
- Parallel multi-region multi-cloud replication
- Auto-scales Compute *and* Storage *and* Horizontal HA Nodes
- Sub-second Failover with last transaction replay and PITR
- Built-in Columnar indexing

# SkySQL - Administration - Cloudbackup (Tech Preview)

- Self-service backup scheduling tool
- 30 Days free backups
- Logical and Physical backups
- No locks during backups
- Use as a migration tool from on-premise

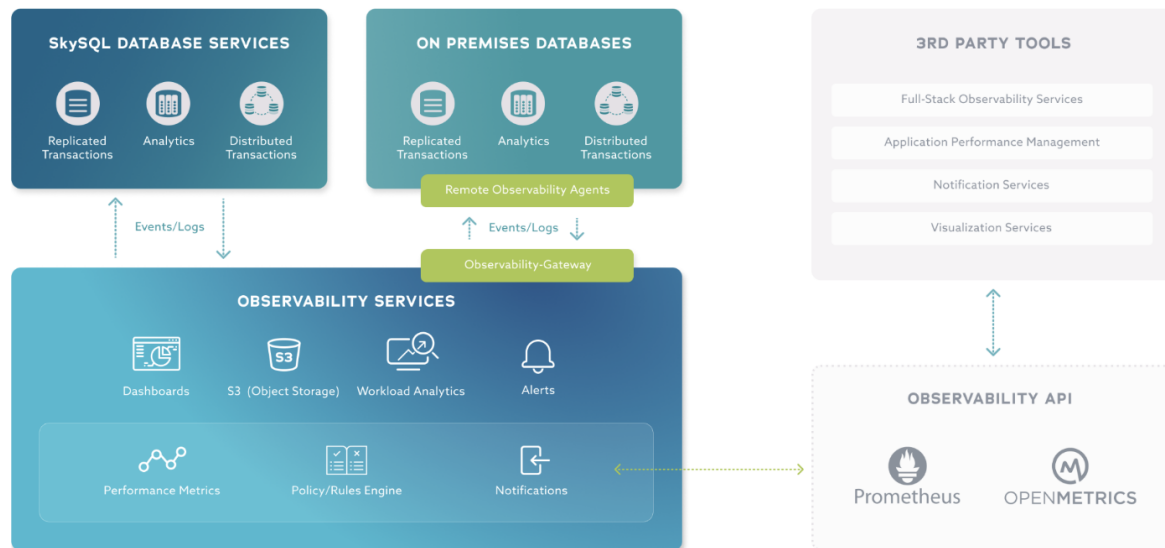


## Cloud Backup



# SkySQL - Integrated Insights Management

- Integrated monitoring for both on-premise and SkySQL managed databases
- Predefined and custom alerting capabilities
- Slow Query Insights
- Observability API
- ML based workload anomalies and predictions

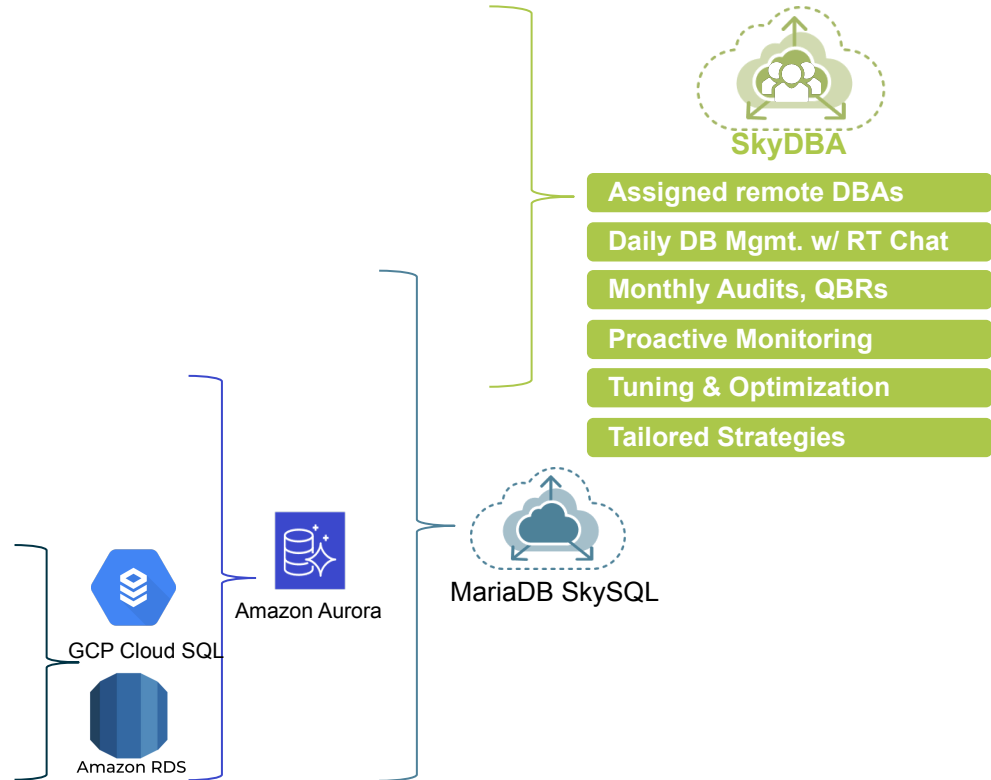


# SkySQL Service and Support Comparison

## On-Premises

User Management	DIY
Schema operations & upgrades	DIY
Deep troubleshooting/analysis	DIY
Proactive monitoring & incident response	DIY
Security Audits	DIY
Query & App Optimization	DIY
Performance tuning	DIY
Configuration optimizations	DIY
Scalability	DIY
High Availability	DIY
Database backup & restore	DIY
Database software installation & patching	DIY
OS patching	DIY
OS installation	DIY
Server maintenance	DIY
Hardware maintenance	DIY

DIY = Do it yourself



# SkySQL - Key Takeaways

- SkySQL is managed DbaaS built for Developers, Enterprises and SaaS applications
- Best price performant offering in the market
- Only solution with continuous availability
- Unparalleled scalability for both reads/writes
- Multi-cloud with full governance, security and compliance
- Unparalleled Support and SkyDBA services



# NEXT STEPS

Check out these sources to learn more about MariaDB

- **OpenWorks sessions to watch On Demand**
  - SkySQL - The Open, Unified and Most Productive Cloud Database for Modern Applications
  - Better Together: MariaDB SkySQL running on Google Cloud Platform
  - SkySQL Serverless Analytics Powered by Spark
  - SkySQL Observability Architecture
  - Getting started with Geospatial Data in the Cloud using SkySQL Geospatial PaaS
  - How Hughes Achieved Scalability and High Availability for Their IoT Smart Plug with SkySQL + Xpand
  - Panel: Best Practices for Migrating Your On-Premises MariaDB Deployment to SkySQL
- **Try SkySQL for free**
  - [Try the full SkySQL service with a \\$500 credit, including ticketed support](#)



**THANK YOU**



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