

# MinervaDB: The full-stack Database Infrastructure Operations Experts for web-scale



# MinervaDB Introduction

- An open source, vendor neutral and independent consulting, support, managed remote DBA services provider for MySQL, MariaDB, MyRocks, PostgreSQL and ClickHouse with core expertise in performance, scalability, high availability, database reliability engineering and database security.
- Our consultants have several years of experience in architecting and building web-scale database infrastructure operations for internet properties from diversified verticals like CDN, Mobile Advertising Networks, E-Commerce, Social Media Applications, SaaS, Gaming and Digital Payment Solutions.



# Flexible – On demand Database Ops. Team

- Hire our MySQL / MariaDB / PostgreSQL consultants only when you need them , We don't insist for long-term contracts and our client engagement policies are friendly.
- Not every business need a resident full-time MySQL DBA, Hiring and retaining MySQL DBAs are expensive and exhaustive. So here comes the value by engaging with MinervaDB, We are pioneers in hiring and managing Sr. Level MySQL / MariaDB / PostgreSQL consultants worldwide with several years of experience in performance, scalability, high availability and database reliability engineering.



# Why engage MinervaDB for Database Infrastructure Operations ?



- Vendor neutral and independent, Enterprise-class consulting, 24\*7 support and remote DBA services for MySQL, MariaDB, MyRocks, PostgreSQL and ClickHouse.
- Virtual corporation with an global team of seasoned professionals – We have consultants operating from multiple locations worldwide, All of us work from home and stay connected via email, Google Hangouts, Skype, private IRC, WhatsApp, Telegram and phone. Being an virtual corporation we can hire the best talent from anywhere in the world, This makes an truly 24\*7 operational team.
- Competitive pricing – We are an virtual corporation so we don't charge the customers for our infrastructure cost, What you pay us goes purely for our unmatched technology team.
- We operate 24\*7 – Our team operates from multiple locations worldwide so we are available 24\*7.
- Pay As You Go billing model – You pay us only for the hours worked, We don't ask for advances ever !! We are committed to delivering cost efficient consulting, support and services for our customers globally
- Vacation DBA Service – We can support your database infrastructure operations when the resident DBA is on a holiday / vacation so you can guarantee an optimal work-life balance for your DBA.
- Big Data Analytics and Columnar Store expertise – MariaDB ColumnStore and ClickHouse
- Cloud DBA Services – IaaS and DBaaS including: Oracle Cloud, Google CloudSQL, Amazon Aurora, AWS RDS®, EC2®, Microsoft Azure® and Rackspace® Cloud.
- Sharding and horizontal partitioning solutions – Building scalable database infrastructure for planet-scale internet properties.



# MinervaDB Business Focus

- MinervaDB Enterprise-Class Consulting and Professional Services
- MinervaDB Enterprise-Class 24\*7 Consultative Support
- MinervaDB Enterprise-Class Remote DBA Services
- Database Infrastructure Operations Performance Audit / Health Check
- Database Infrastructure Capacity Planning and Sizing
- Database Infrastructure Performance Optimization and Tuning
- Database Infrastructure Operations Security Audit
- Data Recovery Services and Data Ops. Emergency Support Services
- Database Infrastructure Migration and Upgrades
- Database Infrastructure DevOps. and Automation



# MinervaDB Consulting & Professional Services

- Database architecture and internals
- Performance Benchmarking
- Capacity Planning and Sizing
- Performance Audit, Health Check, Diagnostics and Forensics
- Performance Optimization and Tuning
- Scale-out / Replication and Sharding Solution
- Database Infrastructure Operations Automation
- Database Infrastructure Upgrades and Migration Services



# MySQL Consulting Services





- **On-demand MySQL consulting services** – We are available when you need us and our contracts are flexible, You can hire us for as low as 40 hours.
- **Onsite and remote MySQL consulting services** – We are available both onsite and remote for MySQL consulting engagements (24\*7).
- Emergency MySQL consulting services available 24\*7.
- **Database architecture and internals** – We have deep understanding about MySQL and InnoDB internals, This helps us to architect and build optimal, scalable, highly available and reliable database applications.
- **Performance benchmarking** – We do stress testing of the system proactively to avoid incidents which can directly impact your business.
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- **Capacity planning and sizing** – Not more nor less, We size your systems optimally and this include recommendations on CPU, memory, storage and network.
- **Performance health check, diagnostics and forensics** – We will be the first one to know your performance bottleneck and fix before it become ugly.
- **Performance optimization** – We do full-stack optimization which include Linux, MySQL and PHP.



- **Index optimization services** – We are not big fans of over indexing, Optimal indexing is good and makes your queries faster.
- **SQL tuning** – We are experts in re-writing your SQL for performance, Indeed we often see the major performance improvements by just tuning expensive SQL.
- **Disk I/O tuning** – We are experts in designing optimal storage infrastructure architecture and disk I/O distribution.
- **Scale-out and replication solutions** – We build horizontally scalable systems which are highly available too.
- **Database archiving and de-duplication services** – We are pioneers in managing large-scale database infrastructure, This involves optimal data archiving and de-duplication.
- **High availability and site reliability** – Architecting and building highly available and reliable database infrastructure operations for web-scale.
- Galera Cluster operations and troubleshooting.
- Continuent Tungsten operations and troubleshooting.
- MySQL load balancing solutions using HAProxy, ProxySQL, MySQL Router.
- **Data recovery services** – Building robust disaster recovery solutions, zero data loss systems and multi-location backup retention.
- **Sharding and partitioning** – Building systems horizontally scalable for web-scale platforms.



- **Database clustering solutions** – Grow your MySQL infrastructure horizontally for performance, scalability and reliability.
- Building and troubleshooting web-scale database infrastructure operations using MyRocks / RocksDB.
- **Database security** – Database firewall, transaction audit and secured data operations.
- **Database upgrades and migration** – Seamless upgrades and migration of database infrastructure on zero downtime.
- **Cloud DBA Services** – IaaS and DBaaS including: Oracle Cloud, Google CloudSQL, Amazon Aurora, AWS RDS<sup>®</sup>, EC2<sup>®</sup>, Microsoft Azure<sup>®</sup> and Rackspace<sup>®</sup> Cloud.



# MariaDB Consulting & Professional Services



# Architecture, Engineering and Operations

- Architecting MariaDB Operations for Performance, Web-Scale and Reliability.
- Capacity Planning and Sizing
- Optimal and Scalable SQL Engineering Services
- Flexible Managed DBA Services
- Choosing Storage Engines for MariaDB Performance, Scalability and High Availability
- Designing Schema for Performance and Scalability
- Database Reliability Engineering Consultancy Services

## Remote DBA Services Consultancy Services

- Optimal Installation and Configuration of MariaDB Infrastructure Operations
- MariaDB Infrastructure Operations Performance Monitoring (24\*7)
- Proactive and Reactive Troubleshooting
- MariaDB Backup and Restoration
- Building Highly Available, Reliable and Fault Tolerant MariaDB Infrastructure Operations
- MariaDB Operations Audit

## • MariaDB High Availability and Database Reliability Engineering Solution

- MariaDB Replication Solutions
- MariaDB Galera Cluster Consulting and Managed Services
- MariaDB MaxScale Consulting



# MariaDB Performance and Scalability Solutions

- MariaDB Performance Benchmarking
- Capacity Planning and Sizing
- MariaDB Performance Health-Check, Diagnostics and Forensics
- MariaDB Performance Optimization and Tuning – Configuring MariaDB system variables for performance
- SQL Optimization
- Index Optimization and Tuning
- MariaDB Scale-out and Sharding Solution

## How business gets benefitted from our MariaDB health check-up, diagnostics reports and recommendations ?

- You can hire us only for auditing the selected MariaDB instances.
- Proactive and result oriented approach for MariaDB maximum availability and reliability.
- Detailed MySQL infrastructure operations audit report, interpretation and recommendation for performance, scalability, availability and database infrastructure operations reliability.
- On-demand – You can schedule for an on-demand MySQL infrastructure operations health check-up once registered as our customer (customer registration will be free forever).
- **Security Audit and Recommendations for your Database Infrastructure Operations.**
- Flexible payment options – PayPal, Wire, Cheque and Cash.
- Vendor neutral and independent – MySQL, MariaDB, Percona Server, MyRocks, InnoDB / XtraDB, TokuDB and RocksDB.



# PostgreSQL Consulting & Professional Services



# Architecture, Engineering and Operations

- Architecting PostgreSQL Operations for Performance, Web-Scale and Reliability.
- Capacity Planning and Sizing
- Optimal and Scalable SQL Engineering Services
- Flexible Managed DBA Services
- Choosing Storage Engines for PostgreSQL Performance, Scalability and High Availability
- Designing Schema for Performance and Scalability
- Database Reliability Engineering Consultancy Services

## Remote DBA Services Consultancy Services

- Optimal Installation and Configuration of PostgreSQL Infrastructure Operations
- PostgreSQL Infrastructure Operations Performance Monitoring (24\*7)
- Proactive and Reactive Troubleshooting
- PostgreSQL Backup and Restoration
- Building Highly Available, Reliable and Fault Tolerant PostgreSQL Infrastructure Operations





# PostgreSQL Performance and Scalability Solutions

- PostgreSQL Performance Benchmarking
- Capacity Planning and Sizing
- PostgreSQL Performance Health-Check, Diagnostics and Forensics
- PostgreSQL Performance Optimization and Tuning – Configuring PostgreSQL parameters for performance and scalability
- SQL Optimization
- Index Optimization and Tuning
- PostgreSQL Scale-out and Replication Solution

# PostgreSQL High Availability and Database Reliability Engineering Solution

- PostgreSQL Replication Solutions:
  - Custom PostgreSQL Replication Solutions – Master – Master, Master-Slave and Master-Slave-Delayed Slave (Rollback Solution)
  - Self-Healing and Auto-failover PostgreSQL Replication Solution
- PostgreSQL custom Backup and Disaster Recovery Solutions
- PostgreSQL Load-Balancer Consulting
- PostgreSQL Database Recovery Services



# Why engage MinervaDB for PostgreSQL Performance Audit, Health-Check and Diagnostics / Forensics ?



# A low cost and instant gratification health check-up for your PostgreSQL infrastructure operations

- Highly responsive and proactive PostgreSQL performance health check-up, diagnostics and forensics.
- Detailed report on your PostgreSQL configuration, expensive SQL, index operations, performance, scalability and reliability.
- Recommendations for building an optimal, scalable, highly available and reliable PostgreSQL infrastructure operations.
- Per PostgreSQL instance performance audit, detailed report and recommendations.
- Proactive and result oriented approach for PostgreSQL maximum availability and reliability.
- On-demand – You can schedule for an on-demand PostgreSQL infrastructure operations health check-up once registered as our customer (customer registration will be free forever).
- **Security Audit – Detailed Database Security Audit Report** which includes the results of the audit and an actionable **Compliance and Security Plan** for fixing vulnerabilities and ensuring the ongoing security of your data.



# Enterprise-Class 24\*7 Consultative Support for MySQL



- Recommendations for optimal MySQL installation and configuration – Do it right the first time !!
- MySQL Bug fixing (Community Fixes) and patching.
  - *Community Fixes means that where possible we will report bugs and any MinervaDB-created bug fixes to the upstream software vendor or open source project.*
- You can report unlimited support incidents from 12 logins.
- Recommendations for optimal schema design, indexing and SQL engineering – Building high performance MySQL applications.
- Recommendation for capacity planning and sizing – We guide you in optimally sizing CPU, memory, disk and network for application performance, scalability and reliability.
- Recommendations and guidance for high database availability and disaster recovery – We support customers in building highly available and reliable applications.
- Recommendations and guidance for database sharding and clustering solutions – Horizontal scalability and reliable web-scale database infrastructure operations.
- Recommendations and guidance for scale-out and replication solutions – We support both synchronous and asynchronous replication.
- Recommendations and guidance for database security – Database transaction audit, password control, firewall implementation and privacy management.
- **Galera Cluster Infrastructure Operations Support** – Custom installation / configuration, performance optimization / tuning and Galera Cluster operations troubleshooting



# Enterprise-Class 24\*7 Consultative Support for MariaDB



- Proactive MariaDB support – Recommendations for custom MariaDB installation, configuration, schema development, SQL engineering, optimal indexing, performance tuning, building fault tolerant & self healing replication solutions and database security.
- MariaDB Bug fixing (Community Fixes) and patching.
  - *Community Fixes means that where possible we will report bugs and any MinervaDB-created bug fixes to the upstream software vendor or open source project.*
- You can report unlimited support incidents from 12 logins.
- Recommendations for optimal schema design, indexing and SQL engineering – Building high performance MariaDB applications.
- Recommendation for capacity planning and sizing – We guide you in optimally sizing CPU, memory, disk and network for application performance, scalability and reliability.
- Recommendations and guidance for high database availability and disaster recovery – We support customers in building highly available and reliable applications.
- Recommendations and guidance for database sharding and clustering solutions – Horizontal scalability and reliable web-scale database infrastructure operations.
- Recommendations and guidance for scale-out and replication solutions – We support both synchronous and asynchronous replication.
- **Galera Cluster Infrastructure Operations Support** – Custom installation / configuration, performance optimization / tuning and Galera Cluster operations troubleshooting.



# Enterprise-Class 24\*7 Consultative Support for PostgreSQL





- **Proactive PostgreSQL support – Recommendations for custom PostgreSQL installation, configuration, schema development, SQL engineering, optimal indexing, performance tuning, building fault tolerant & self healing replication solutions and database security.**
- PostgreSQL Bug fixing (Community Fixes) and patching.
  - *Community Fixes means that where possible we will report bugs and any MinervaDB-created bug fixes to the upstream software vendor or open source project.*
- You can report unlimited support incidents from 12 logins.
- Recommendations for optimal schema design, indexing and SQL engineering – Building high performance PostgreSQL applications.
- Recommendation for capacity planning and sizing – We guide you in optimally sizing CPU, memory, disk and network for application performance, scalability and reliability.
- Recommendations and guidance for high database availability and disaster recovery – We support customers in building highly available and reliable applications.
- Recommendations and guidance for database sharding and clustering solutions – Horizontal scalability and reliable web-scale database infrastructure operations.
- Recommendations and guidance for database security – Database transaction audit, password control, firewall implementation and privacy management.
- Recommendations and guidance for database systems upgrades and migration – Optimal PostgreSQL upgrades and migration in zero down time.



# Database SRE from MinervaDB



# Database Infrastructure Site Reliability Engineering Services (SRE) from MinervaDB:

- Custom installation and configuration of our customer database technologies stack addressing performance, scalability and high availability.
- Performance Benchmarking to proactively measure latency and throughput to troubleshoot database system performance bottleneck proactively.
- Capacity planning and sizing – Building database systems for performance and reliability.
- Performance audit, diagnostics, forensics and health-check – Proactive performance troubleshooting.
- Building self-healing and fault-tolerant database infrastructure operations for high availability and reliability.
- Database Infrastructure backup and data recovery services.
- Secured Data Ops. services – Data privacy / encryption, policy based user logins, deploying custom data access firewalls and transaction audit.
- Database technologies stack seamless upgrades and migration.



# Remote DBA Services from MinervaDB



- Optimal Installation and configuration - Custom installation and configuration for MySQL, MariaDB and PostgreSQL
- Optimal schema design and SQL engineering - Design and build optimal schema and SQL for performance and scalability.
- Optimal indexing - Design optimal indexes and re-write / tune SQL to use indexes efficiently.
- Capacity planning and sizing - Proactively sizing CPU, memory, storage and network for future growth.
- Performance health check and diagnostics - Proactive performance audit and health check to avoid potential performance bottleneck.
- Performance optimization and tuning - Tuning hardware, Linux and MySQL for performance, scalability and reliability.
- Disk I/O tuning - Tuning disk for transaction performance, faster recovery and reliability.
- Scale-out and replication - Synchronous and asynchronous replication solution addressing performance, scalability and reliability.
- High availability and site reliability engineering services - Multi-DC MySQL high availability and reliability expertise.
- Galera Cluster operations and troubleshooting.
- Continuent Tungsten operations and troubleshooting.
- MySQL load balancing solutions using HAProxy, ProxySQL, MySQL Router.
- Sharding and clustering solutions - Architecting and developing custom sharding solution.
- Database security - Database firewall, transaction audit and secured data operations.
- Database upgrades and migration - Seamless upgrades and migration of database infrastructure on zero downtime.



# Data Privacy and Security Consulting Services



We are experts in implementing regulations which require data masking of PII (personally identifiable information), PANs (Primary Account Number) and other confidential data so that only authorised personnel can access the data. We deliver data Masking and De-identification solutions which provides specific functions to mask and de-identify confidential data so your IT organization can comply with privacy regulations, including:

- **GDPR:** General Data Protection Directive
- **PCI DSS:** Payment Card Industry Data Security Standard
- **HIPAA:** Health Insurance Portability and Accountability Act
- **HITECH:** Health Information Technology for Economic and Clinical Health Act
- **Data Protection Act:** United Kingdom
- **SOX:** Sarbanes Oxley
- **FERPA:** Family Educational Rights and Privacy Act
- And many more



# ClickHouse Consulting and Consultative Support (24\*7)





# Enterprise-class ClickHouse Consulting, Support and Managed Services

- Consulting – We are experts in building optimal, scalable (horizontally and vertically), highly available and fault tolerant ClickHouse powered streaming data analytics platforms for planet-scale internet / mobile properties and Internet of Things (IoT) . Our elite-class consultants work very closely with your business and technology teams to build custom columnar database analytics solutions using ClickHouse.
- Database Architect services – We architect, engineer and deploy data analytics platform for you. We will take care of your data analytics ecosystem so that you can focus on business.
- ClickHouse Enterprise Support – We have 24\*7 enterprise-class support available for ClickHouse, Our support team will review and deliver guidance for your data analytics platforms architecture, SQL engineering, performance optimization, scalability, high availability and reliability.
- ClickHouse Training.
- Pay only for hours we have worked for you, This makes us affordable for startups and large corporations equally.



Technology Focus	Tools and Technologies
Linux	Ubuntu, Debian, CentOS, Red Hat Linux, Oracle Linux and SUSE Linux.
MySQL	MySQL GA, MySQL Enterprise, InnoDB, MySQL Enterprise Backup, MySQL Cluster CGE, MySQL Enterprise Monitor, MySQL Utilities, MySQL Enterprise Audit, MySQL Enterprise Firewall and MySQL Router.
Percona	Percona Server for MySQL, XtraDB, TokuDB, RocksDB, Percona Toolkit, Percona XtraBackup and PMM(Percona Monitoring & Management).
MariaDB	MariaDB Server, RocksDB, MariaDB Galera Cluster, MariaDB Backup, MariaDB MaxScale and MariaDB ColumnStore.
PostgreSQL	PostgreSQL Performance Benchmarking, Capacity Planning / Sizing, PostgreSQL Performance Optimization, PostgreSQL High Availability / Database Reliability Engineering, PostgreSQL Upgrades / Migration and PostgreSQL Security
Cloud DBA Services	IaaS and DBaaS including: Oracle Cloud, Google CloudSQL, Amazon Aurora, AWS RDS®, EC2®, Microsoft Azure® and Rackspace® Cloud
Performance Monitoring and Trending Platforms	MySQL Enterprise Monitor, Icinga, Zabbix, Prometheus and Grafana.
High Availability, Scale-Out, Replication and Load Balancer	MySQL Group Replication, MySQL Cluster CGE, InnoDB Cluster, Galera Cluster, Percona XtraDB Cluster, MariaDB MaxScale, Continuent Tungsten Replicator, MHA (Master High Availability Manager and tools for MySQL), HAProxy, ProxySQL, MySQL Router and Vitess.
Columnar Database Systems	ClickHouse, MariaDB ColumnStore
DevOps. and Automation	Vagrant, Docker, Kubernetes, Jenkins, Ganglia, Chef, Puppet, Ansible, Consul, JIRA, Graylog and Grafana.



# MinervaDB Customers



## Partial list of customers (from approximately 500 globally)

- Netflix
- National Geographic
- Garmin
- Yahoo Japan
- Pinterest
- GAP
- Zynga
- Yatra.com
- Flipkart
- ESPN
- Mashable
- Justdial
- Verisign
- Victoria's Secret
- Walmart Labs
- Sequoia Capital
- Electronic Arts
- Pinterest
- Sprint Global
- Shutterfly
- PayPal
- eBay
- Go-jek
- Kirin
- Fitbit
- Chevrolet
- AirBus
- GE Digital
- Capgemini
- Paytm
- PetSmart
- OLA
- Bukalapak
- Midtrans
- BharatPe
- Dean Food Group
- MIX
- Sony
- Flip
- Instacart
- Bluedart
- Shell Petroleum
- Classplus
- WrestleMania
- Nike
- MPL
- Unilever
- AOL
- Forbes
- Apigee
- Priceline.com
- Freshdesk
- Lastminute.com
- Vodafone PLC
- The BestBuy Inc.
- Honda
- GoDaddy
- APC
- Prada
- Sabre Corporation



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