



PERCONA

Databases run better with Percona

Introduction to Running Databases in Kubernetes with Percona Everest

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Senior QA engineer in Percona

Working in Percona Everest
Passionate about QA and automation
Specializing in database technologies
Deep interest in kubernetes



Manish Chawla

Agenda

- Database challenges in Kubernetes
- Kubernetes Operators
- Percona Everest as a Platform
- Percona Everest Demo

K8s was built for stateless applications

Databases are stateful applications that require

- Replication
- Persistent storage
- Backups
- High availability

StatefulSets in K8s support stateful applications, however there are some challenges for databases

Database challenges in K8s:



**Maintaining stateful
applications**



**Data
consistency**



**Integrating with
infrastructure**



Complexity

Kubernetes Operators is the solution

Consists of

- **CRDs** – Custom Resource Definitions to create custom resource objects.
- **Custom Controllers** – Continuously monitor custom resource objects, detects changes and takes action to get to the desired state.

Operators can do

- Automated Backups
- Scaling
- Self healing
- Upgrades

Percona Operators simplify setting up and maintaining robust, enterprise-grade MySQL, PostgreSQL, and MongoDB clusters on Kubernetes

Try Percona Operators:

- Percona Operator for MySQL
- [Percona](#) Operator for [MongoDB](#)
- [Percona](#) Operator for PostgreSQL



github.com/percona

Open Source



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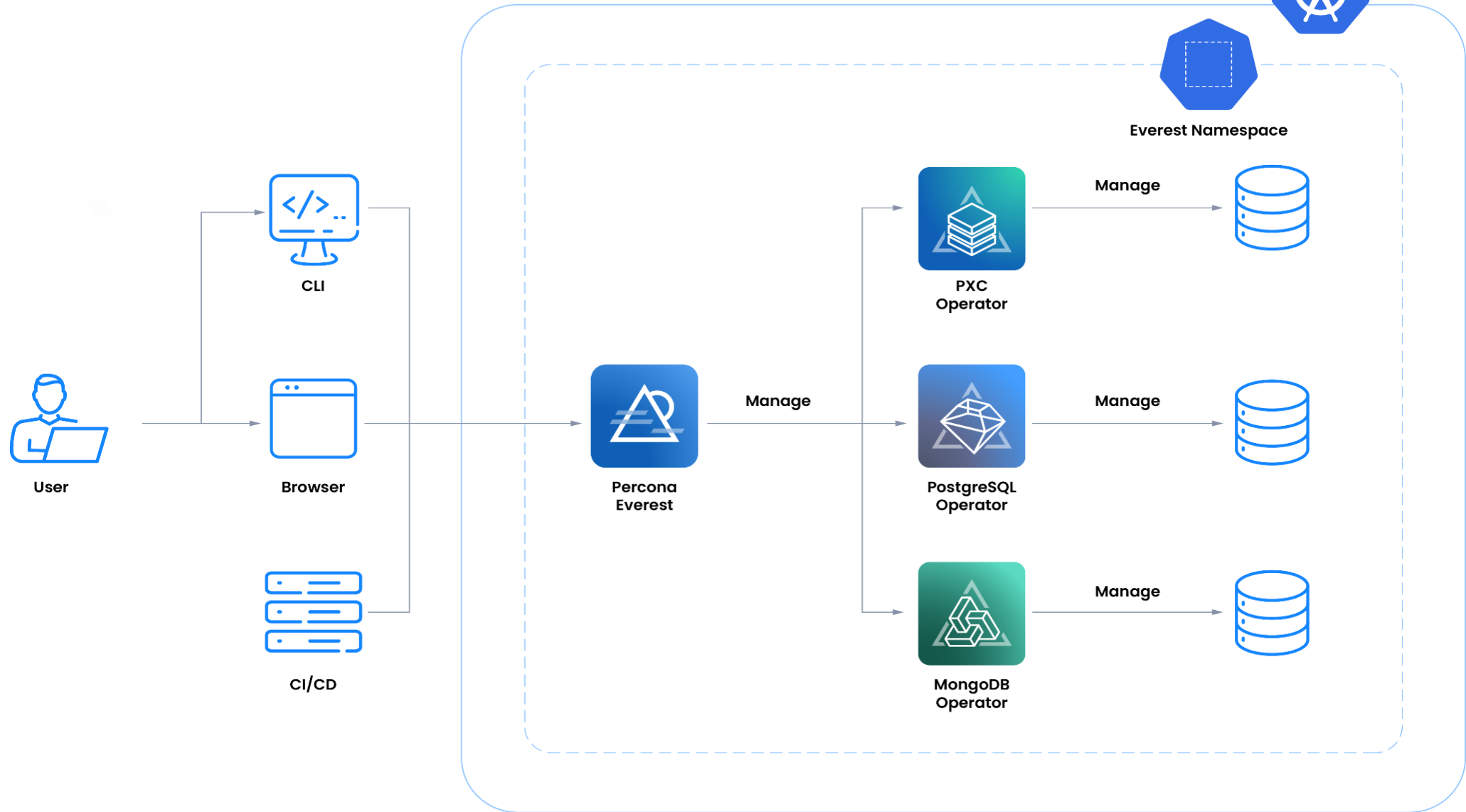
Kubernetes
Operators

**First Open Source, Cloud
Native Database Platform**



**PERCONA
Everest**







Multi- database Support



MySQL



MongoDB



PostgreSQL



More soon... Clickhouse, Valkey



Deployments



Amazon Web Services



Google Cloud



OpenShift (any K8s)



Kubernetes Vanilla



Multi-Cloud



On-Premise



Disaster Recovery



Scheduled backups



On-demand backups

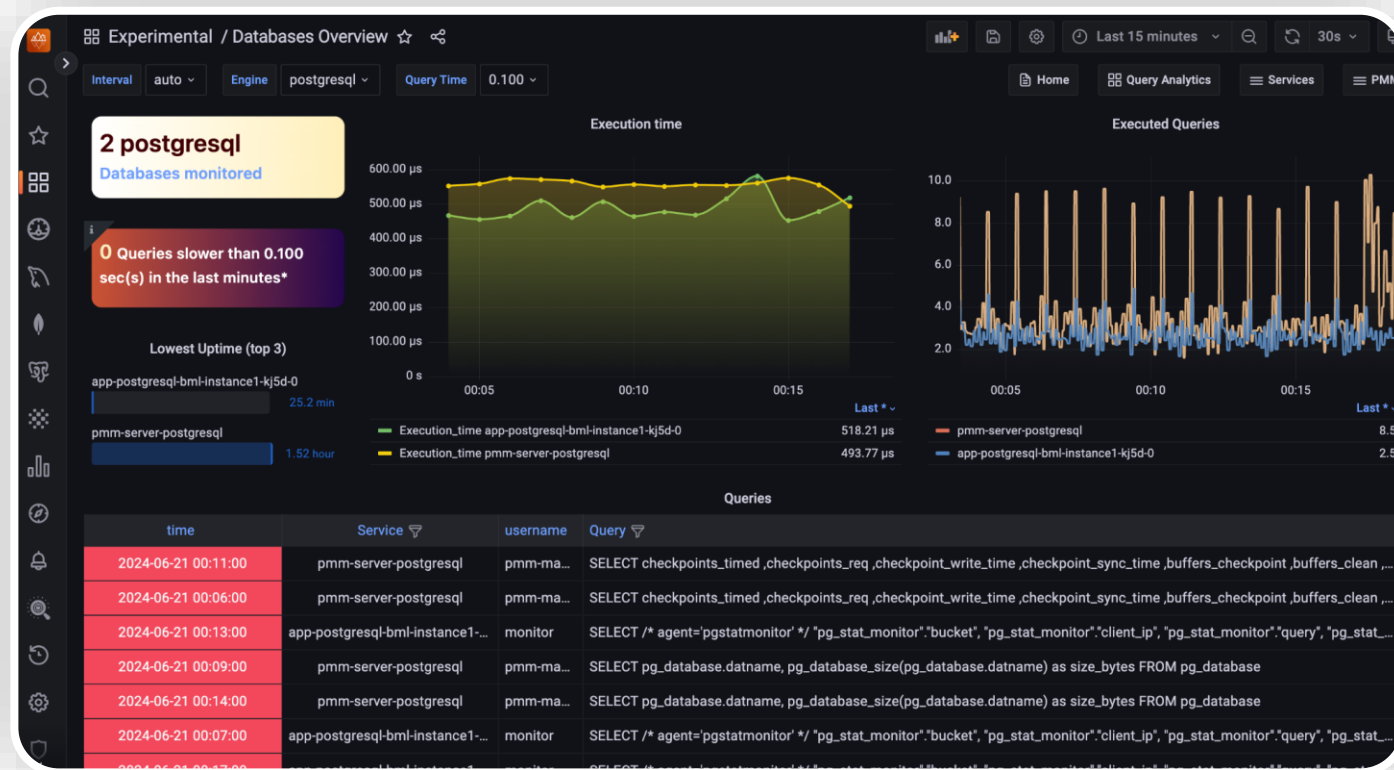


Point in time recovery



Physical backups soon

Integration With **Percona** Monitoring And Management

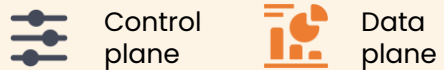


Open and customizable

- Private Deployments
- Customizable Database Setup

Public DBaaS

Vendor Account

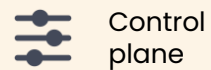


Your Account



Public DBaaS BYOC

Vendor Account

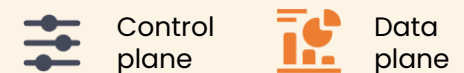


Your Account



Percona Everest

Your Account



Self-service for everyone

- RBAC
(Role-Based Access Control)
- Faster TTM

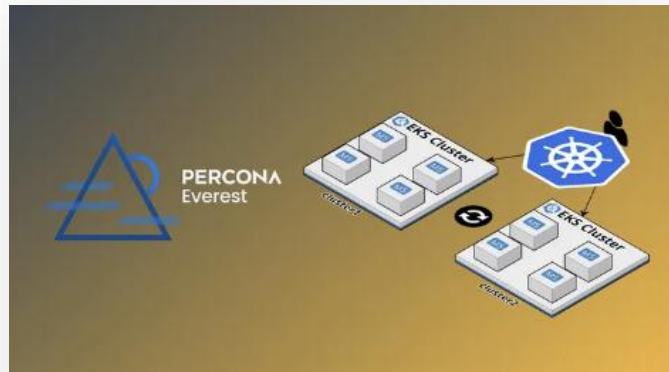


Ready to integrate **with your Platform**

- REST API
- CI/CD



Currently working on...



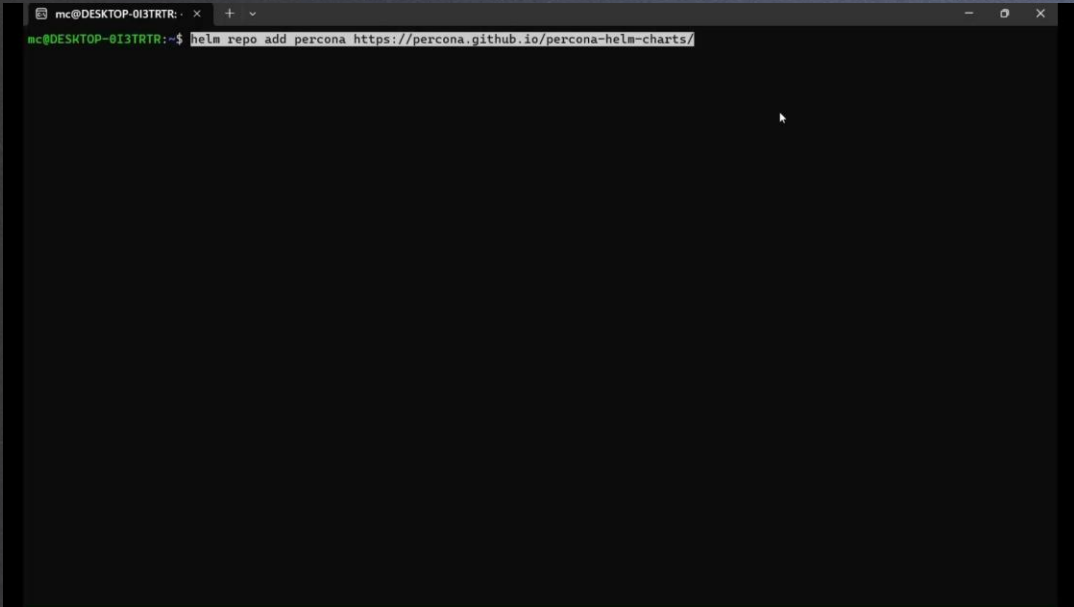
**Percona Everest:
multi-clusters**



**Percona Everest:
Storage autoscaling**



**Percona Everest:
DB deployment from
"external" backup**

A terminal window with a dark background. The title bar shows 'mc@DESKTOP-013TRTR:'. The command prompt is 'mc@DESKTOP-013TRTR:~\$'. The command entered is 'helm repo add percona https://percona.github.io/percona-helm-charts/'.

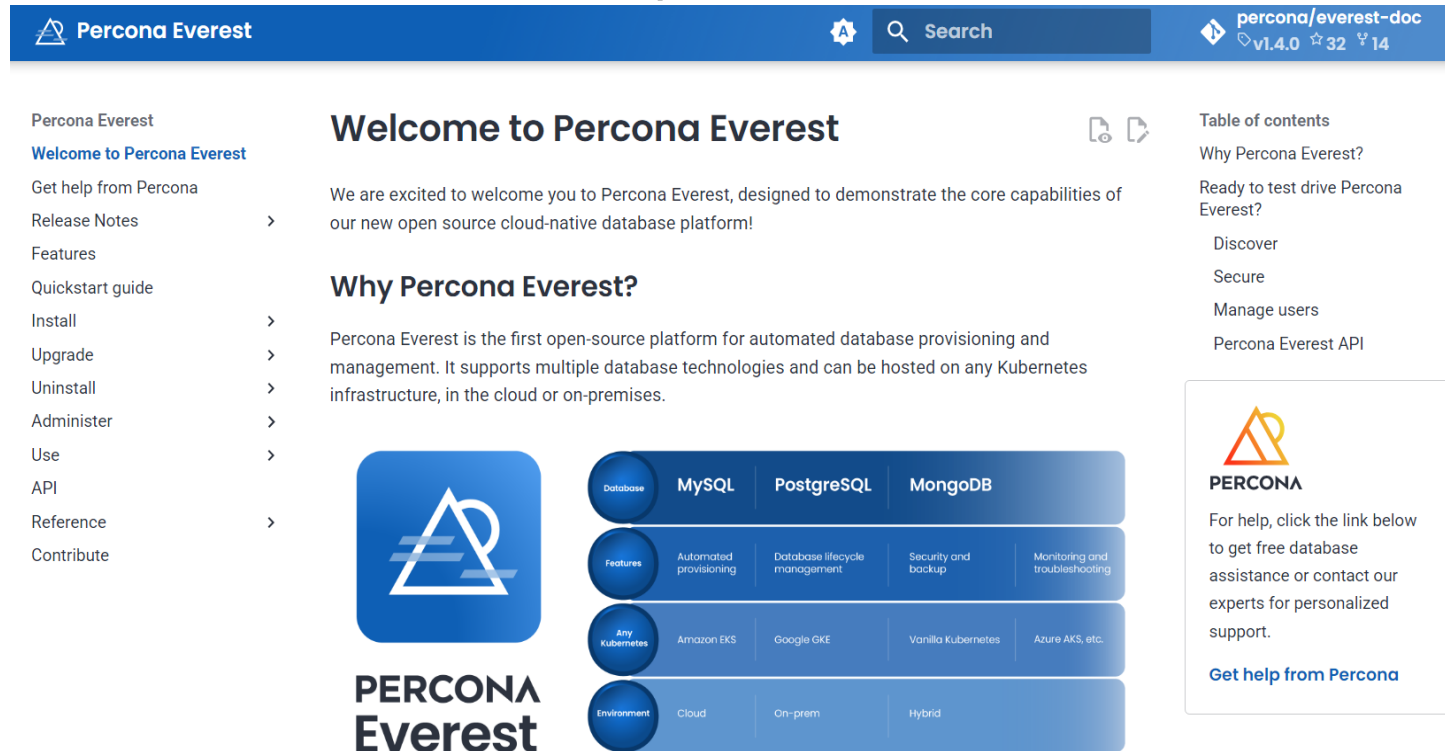
```
mc@DESKTOP-013TRTR:~$ helm repo add percona https://percona.github.io/percona-helm-charts/
```

Live Demo:

<https://learn.percona.com/percona-everest-demo>

Important Links

Documentation: docs.percona.com/everest



The screenshot shows the Percona Everest documentation page. The header is blue with the Percona Everest logo, a search bar, and the version 'percona/everest-doc v1.4.0' with 32 stars and 14 forks. The left sidebar contains a navigation menu with links like 'Welcome to Percona Everest', 'Get help from Percona', 'Release Notes', 'Features', 'Quickstart guide', 'Install', 'Upgrade', 'Uninstall', 'Administer', 'Use', 'API', 'Reference', and 'Contribute'. The main content area has a 'Welcome to Percona Everest' heading, a brief introduction, and a 'Why Percona Everest?' section. Below this is a grid of features and supported databases. The right sidebar includes a 'Table of contents' and a 'Get help from Percona' section.

Percona Everest

Welcome to Percona Everest

We are excited to welcome you to Percona Everest, designed to demonstrate the core capabilities of our new open source cloud-native database platform!

Why Percona Everest?

Percona Everest is the first open-source platform for automated database provisioning and management. It supports multiple database technologies and can be hosted on any Kubernetes infrastructure, in the cloud or on-premises.

Database	MySQL	PostgreSQL	MongoDB	
Features	Automated provisioning	Database lifecycle management	Security and backup	Monitoring and troubleshooting
Any Kubernetes	Amazon EKS	Google GKE	Vanilla Kubernetes	Azure AKS, etc.
Environment	Cloud	On-prem	Hybrid	

PERCONA Everest

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For help, click the link below to get free database assistance or contact our experts for personalized support.

[Get help from Percona](#)

Cli releases: github.com/percona/everest/releases

Helm charts: percona.github.io/percona-helm-charts

Contributions

Submit a bug report or feature request at the community forum
forums.percona.com

Contribute to Percona Everest code
github.com/percona/everest/blob/main/CONTRIBUTING.md

Contribute to Percona Everest Documentation
github.com/percona/everest-doc



Thank You!