Operating Data On K8s for a Cloud Agnostic DevOps Tools Platform

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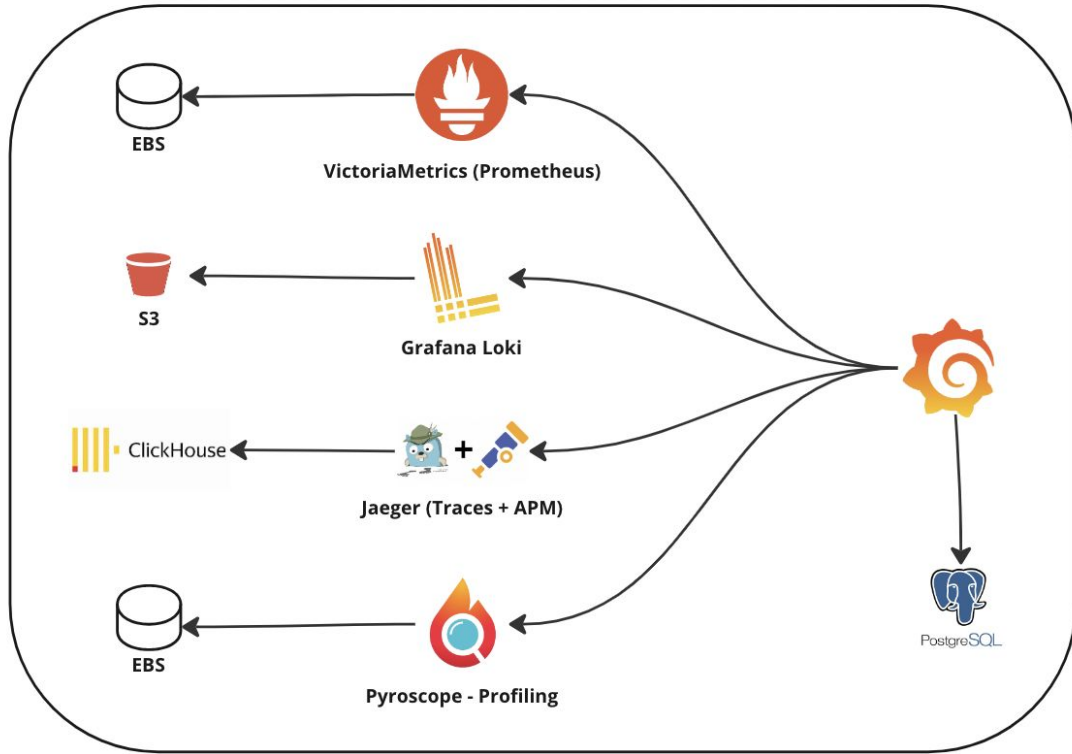### Co-founder and CEO, OpsVerse
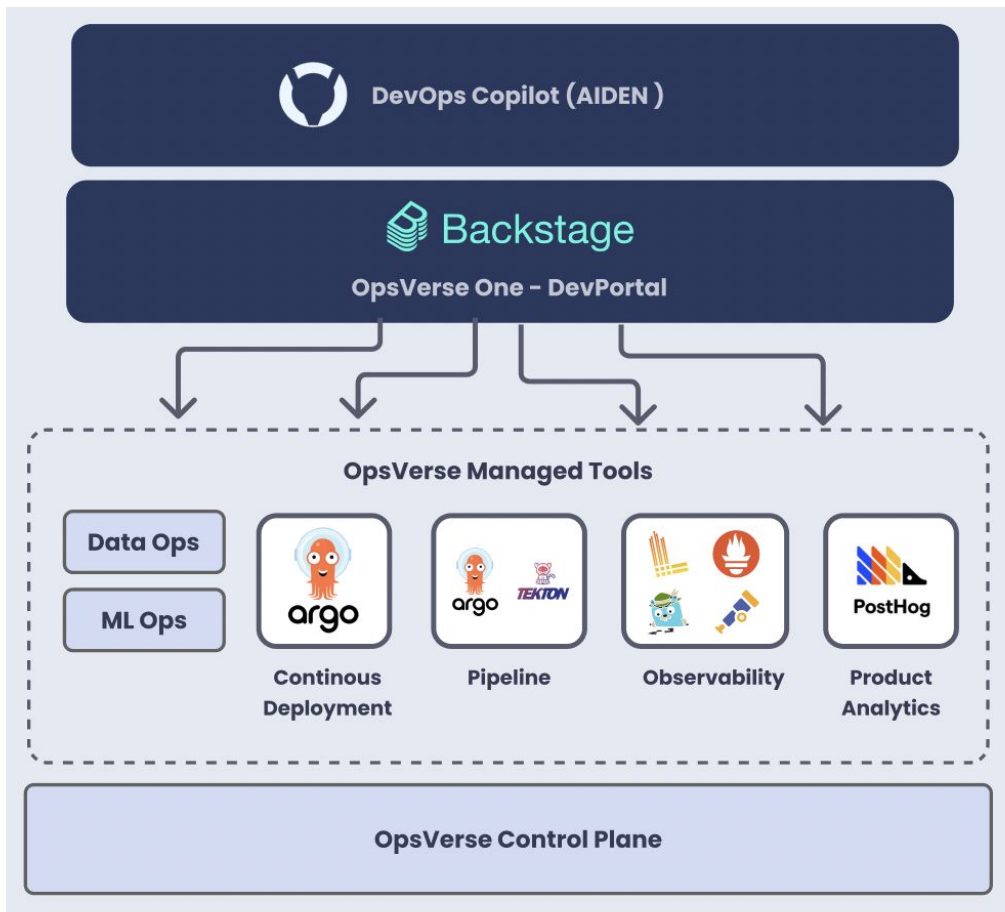
Data on the Platform

The Problem

Run a cloud agnostic,

multi-single-tenant tools platform that

has several data components

Our Solution

Kubernetes

GitOps

Cloud Agnostic Design

Use K8s

Avoid cloud services

- Use "Crossplane" when a cloud service cannot be avoided

- **Ex:** S3, DNS

Installation / Upgrades

- Operators and/or helm charts

- ArgoCD based GitOps

Operators or Not?

- Operators are easy to get started with

- Check if they are flexible enough

- Are you comfortable with the level of abstraction?

Backups / DR

- Simple sidecar approach

- Backup data to cloud storage

   (S3/GCS/AZ Storage accounts)

Observability

- K8s level telemetry (logs/metrics) gets you a fair share of observability

- Leverage existing integrations (Ex: Prometheus exporter)

- Enable tracing

ClickHouse

- **Installation**
  - Altinity ClickHouse Operator
- **Backups**
  - https://github.com/AlexAkulov/clickhouse-backup
  - Sidecar included as part of the Altinity Operator
- **Standalone Vs Distributed**
  - Few hundred million rows - single node works just fine
  - > 1 Billion - distributed setup helps

- **Installation**
  - VictoriaMetrics Operator
- **Backups**
  - https://docs.victoriametrics.com/vmbackup.html
  - OpsVerse sidecar to run and manage the backups
- **Standalone Vs Distributed**
  - 1 Million active time series - vmsingle works fine
  - > 1 Million active time series - consider vmcluster

- **Installation**
  - Bitnami Postgresql helm chart
- **Backups**
  - https://www.postgresql.org/docs/current/app-pgdump.html
  - OpsVerse sidecar to run and manage the backups

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Vector DBs? | **Will be available in the near future**

Summary

- K8s is great for managing Data tools

- K8s helps you to build cloud agnostic systems

- Use systems like "CrossPlane" to handle resources that live outside K8s

- Make a conscious decision about using operators

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DevOps Tools Platform

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