Open Source Database Trends

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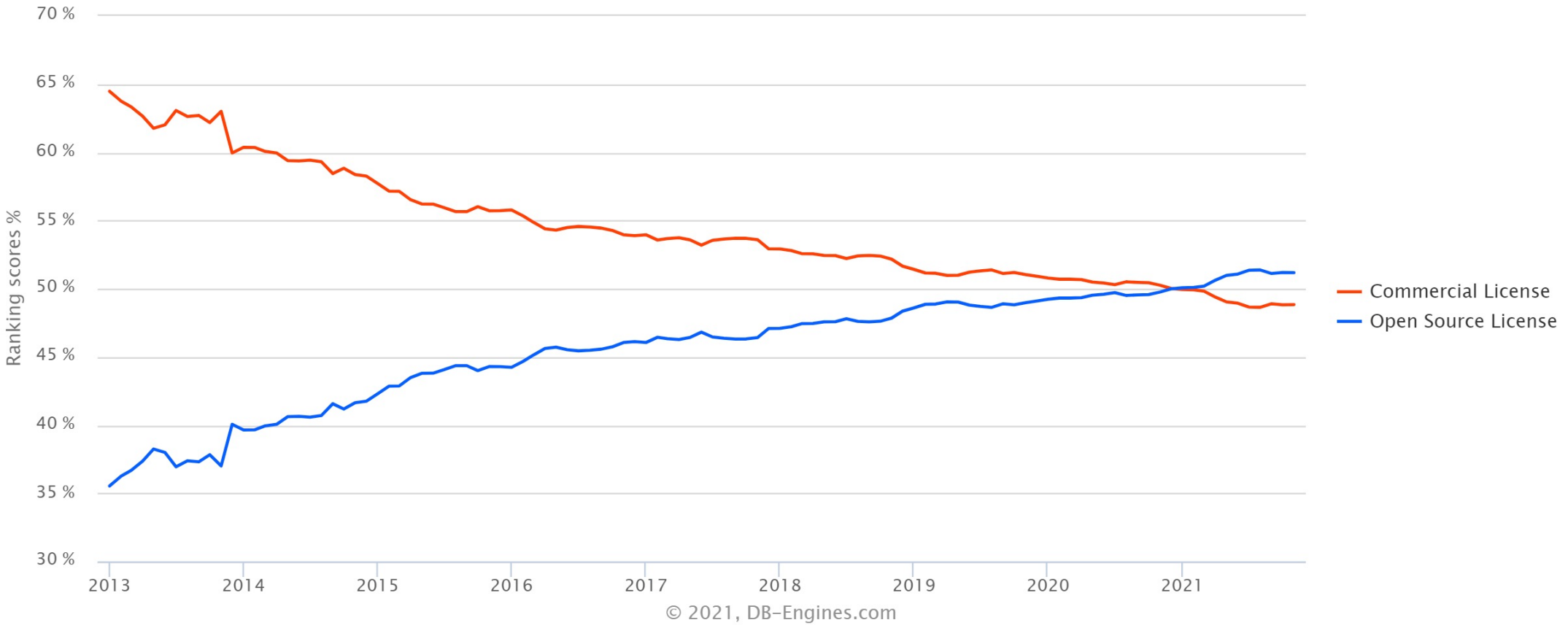
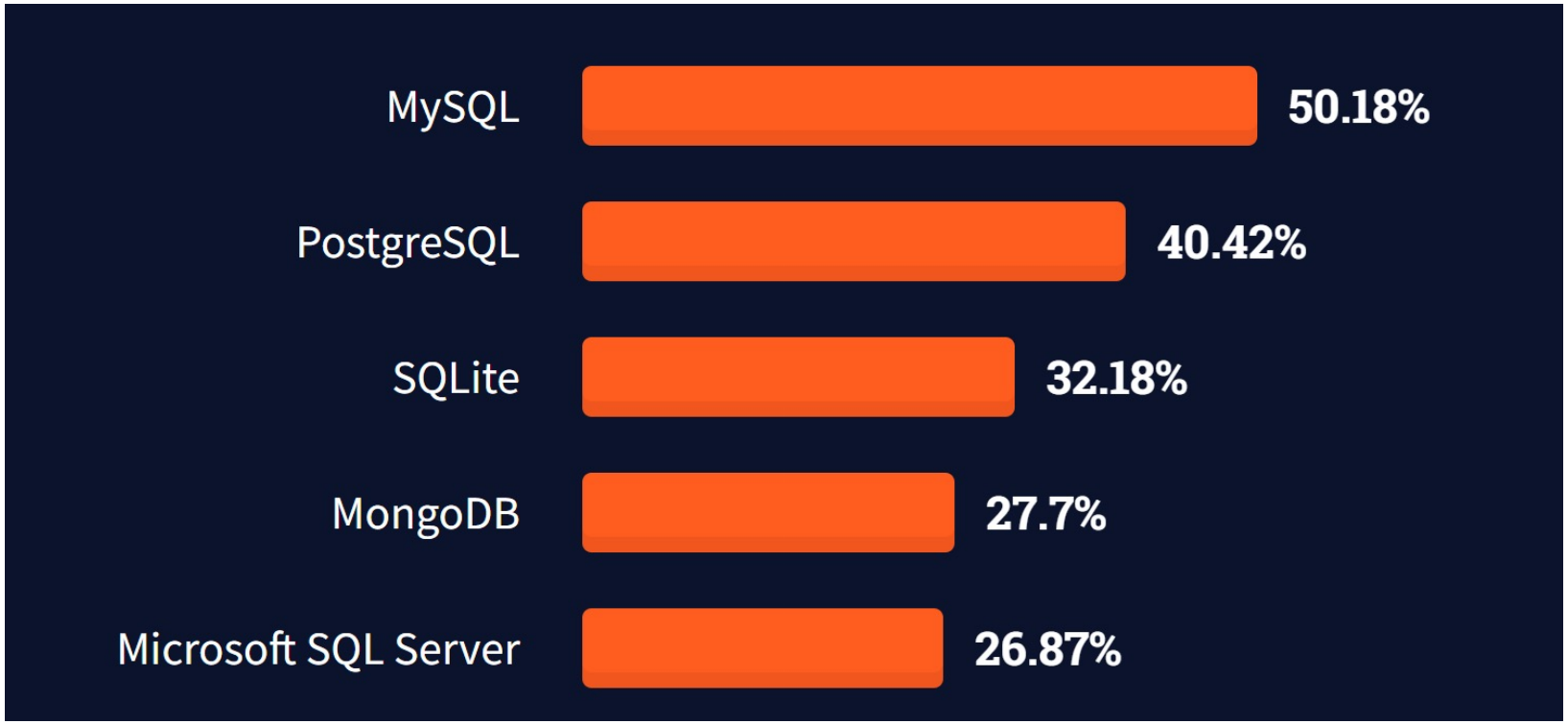
Lets Look at Some Data

381 systems in ranking, November 2021

Rank			DBMS	Database Model	Score		
Nov 2021	Oct 2021	Nov 2020			Nov 2021	Oct 2021	Nov 2020
1.	1.	1.	Oracle	Relational, Multi-model	1272.73	+2.38	-72.27
2.	2.	2.	MySQL	Relational, Multi-model	1211.52	-8.25	-30.12
3.	3.	3.	Microsoft SQL Server	Relational, Multi-model	954.29	-16.32	-83.35
4.	4.	4.	PostgreSQL	Relational, Multi-model	597.27	+10.30	+42.22
5.	5.	5.	MongoDB	Document, Multi-model	487.35	-6.21	+33.52
6.	6.	↑ 7.	Redis	Key-value, Multi-model	171.50	+0.15	+16.08
7.	7.	↓ 6.	IBM Db2	Relational, Multi-model	167.52	+1.56	+5.90
8.	8.	8.	Elasticsearch	Search engine, Multi-model	159.09	+0.84	+7.54
9.	9.	9.	SQLite	Relational	129.80	+0.43	+6.48
10.	10.	10.	Cassandra	Wide column	120.88	+1.61	+2.13

Popularity trend





Stack Overflow Most Popular Databases

https://insights.stackoverflow.com/survey/2021#technology-most-popular-technologies

Great Momentum for Commercial Open Source

- RedHat $34B (acquired IBM)
- MongoDB $34B (current valuation)
- GitHub $7.5B (acquired Microsoft)
- GitLab $16B (current valuation)
- Databricks $38B (current valuation)
- Elastic $16.4B (current valuation)
- Hashicorp $5B (current valuation)
- Confluent $17.2B (current valuation)
- Cloudera $5.3B (current valuation)
- Atlassian $100B (current valuation)

What Is the Biggest Factor Impacting Open Source Now?

Many will Say:
Cloud

Maximize and Simplify Adoption

Change Opportunities for Monetization

Cloud Impact

Remember...

Marten Mickos: ”Open Source Is Not a Business Model”

Hijacking GPL

Open Source Software Authors who did not want others to build commercial solution on their software could use GPL…. Not any more

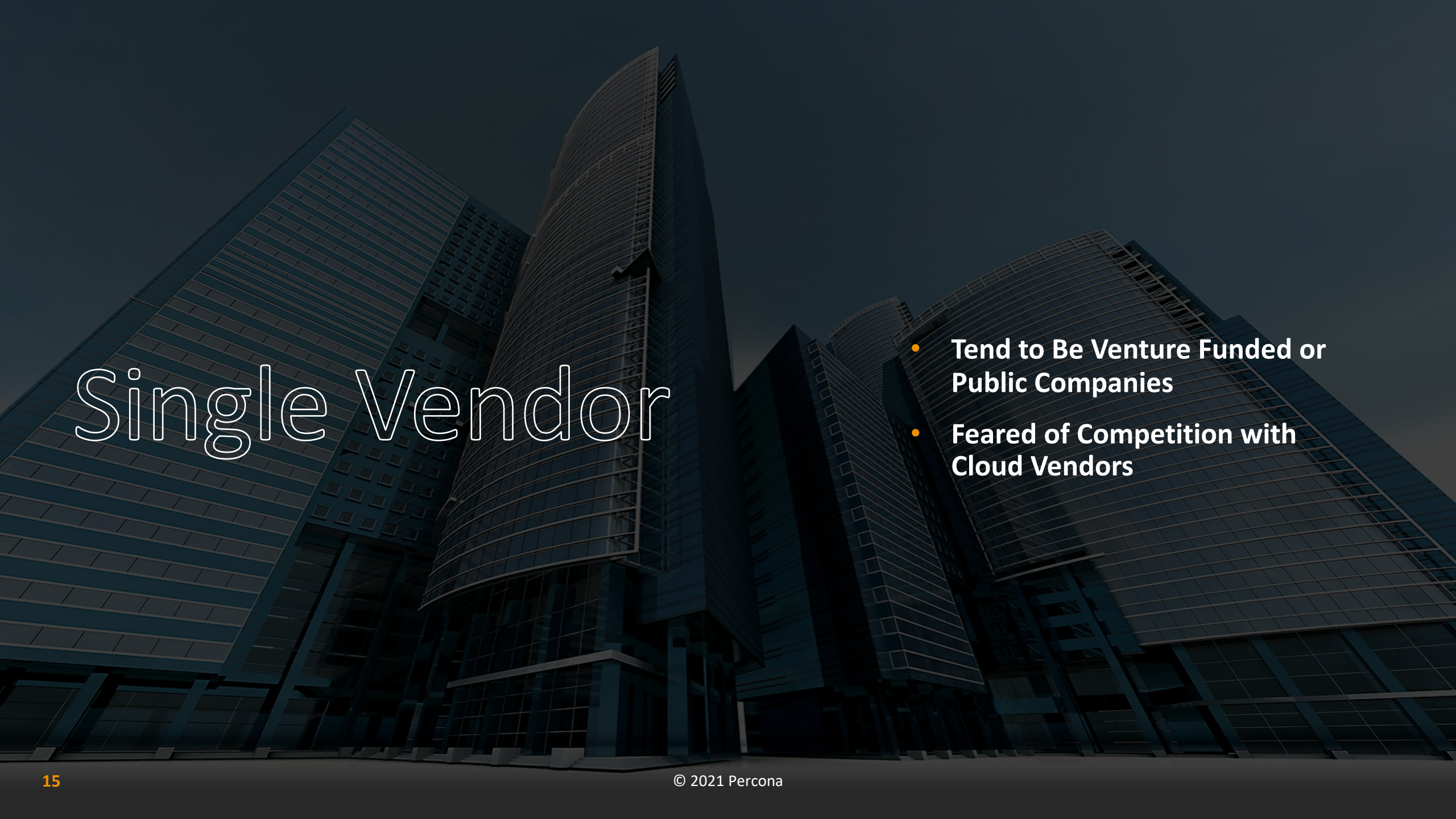
Open Source Ownership and Governance

- **Foundation Driven (Multiple Vendors)**
- **Single Vendor Driven**

CLOUD HELPS TO ACCELERATE ADOPTION

CLOUD CHANGES WHO CAPTURES THE VALUE

Foundation Based Open Source



Single Vendor

- Tend to Be Venture Funded or Public Companies
- Feared of Competition with Cloud Vendors

Fully or Partially Abandoning Open Source Licenses

Primary Goal of the License Change?

- Creating Monopoly on DBaaS Market

STATE OF ART SIMPLICITY

HIGH LEVEL OF AUTOMATION

MAXIMIZES DEVELOPERS FOCUS ON APPLICATION

Why DBaaS?

What Is the Problem with Monopoly on DBaaS?

No Different from Proprietary Software

Using DBaaS is a very different skill compared to rolling your own database setup

Not All Is Lost

Have We Been Here Before?

2000s

2020s

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Operating Systems

Open Source Catches Up Again

- Lock-in with Cloud Vendor
- Use Proprietary Solutions
- Highly Differentiated Cloud
- Hostage
- No Vendor Choice

- Freedom to Run Anywhere
- Use Open Source
- Cloud Is Commodity
- Customer
- Choice of Vendors

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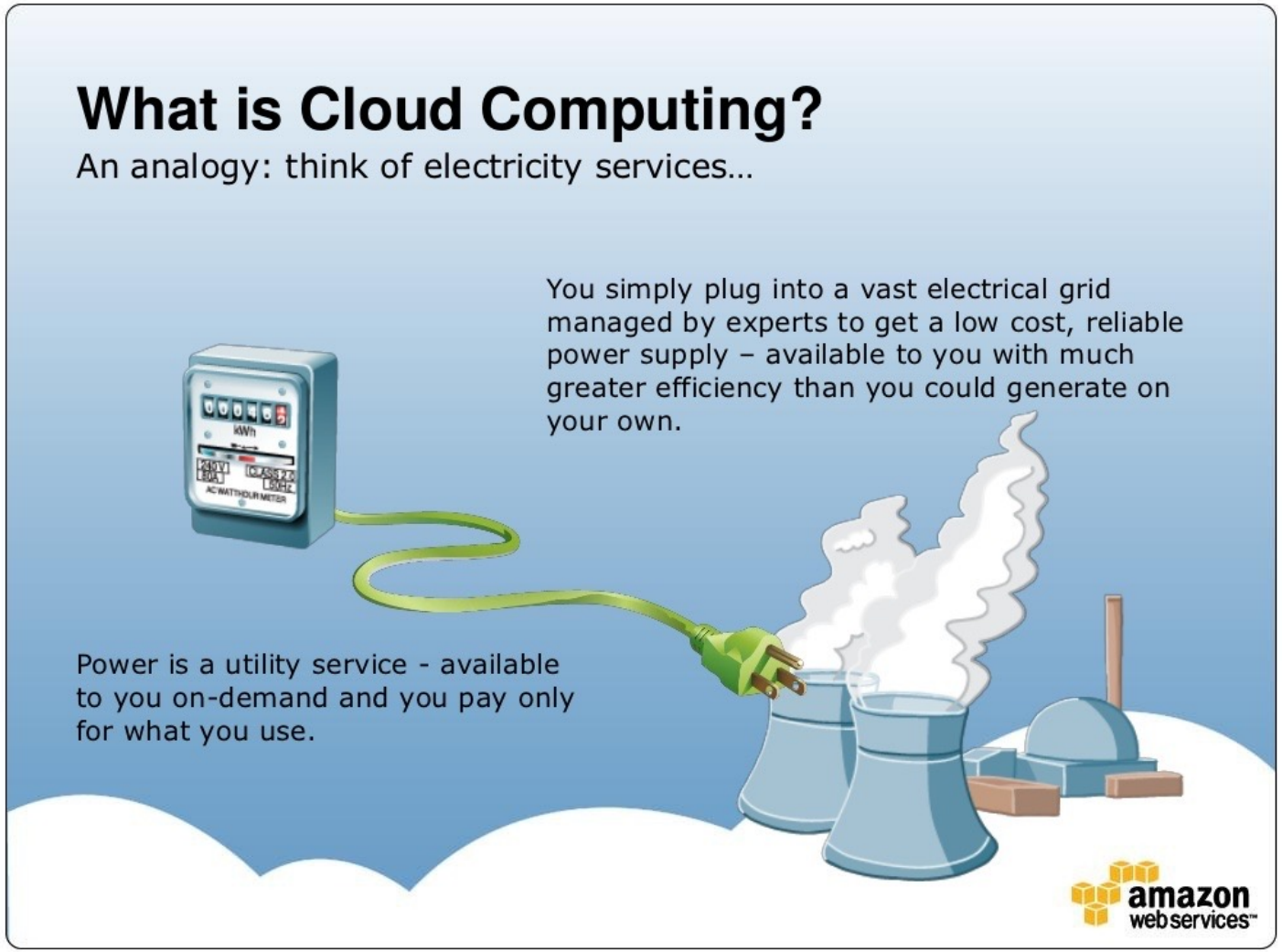
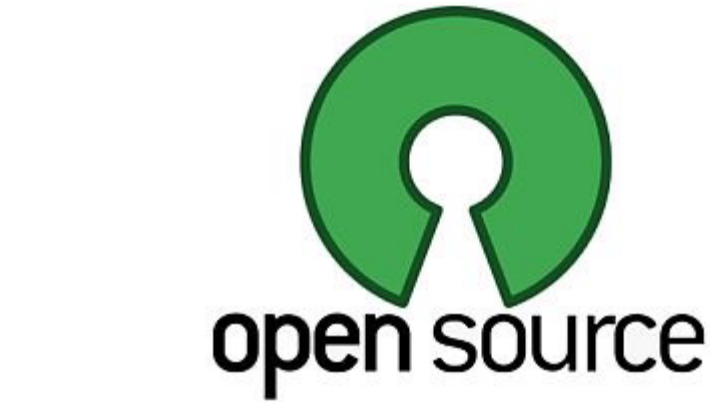
Giving Cloud Its Originally Intended Role of Commodity Infrastructure



So Do We Have



Not Yet...

But We're Taking Our Baby Steps

Kubernetes

- Kubernetes is universally available
- Kubernetes is getting better for stateful applications
- Kubernetes Operators are available for most popular Open Source Databases

kubernetes

Day 1 and Day 2 Automation, Toil Reduction Similar to DBaaS

UX is Different, Requires Kubernetes Expertise

What's Up with Kubernetes Operators?

Can We Build DBaaS on Kubernetes?

Database as a Service.

kubernetes

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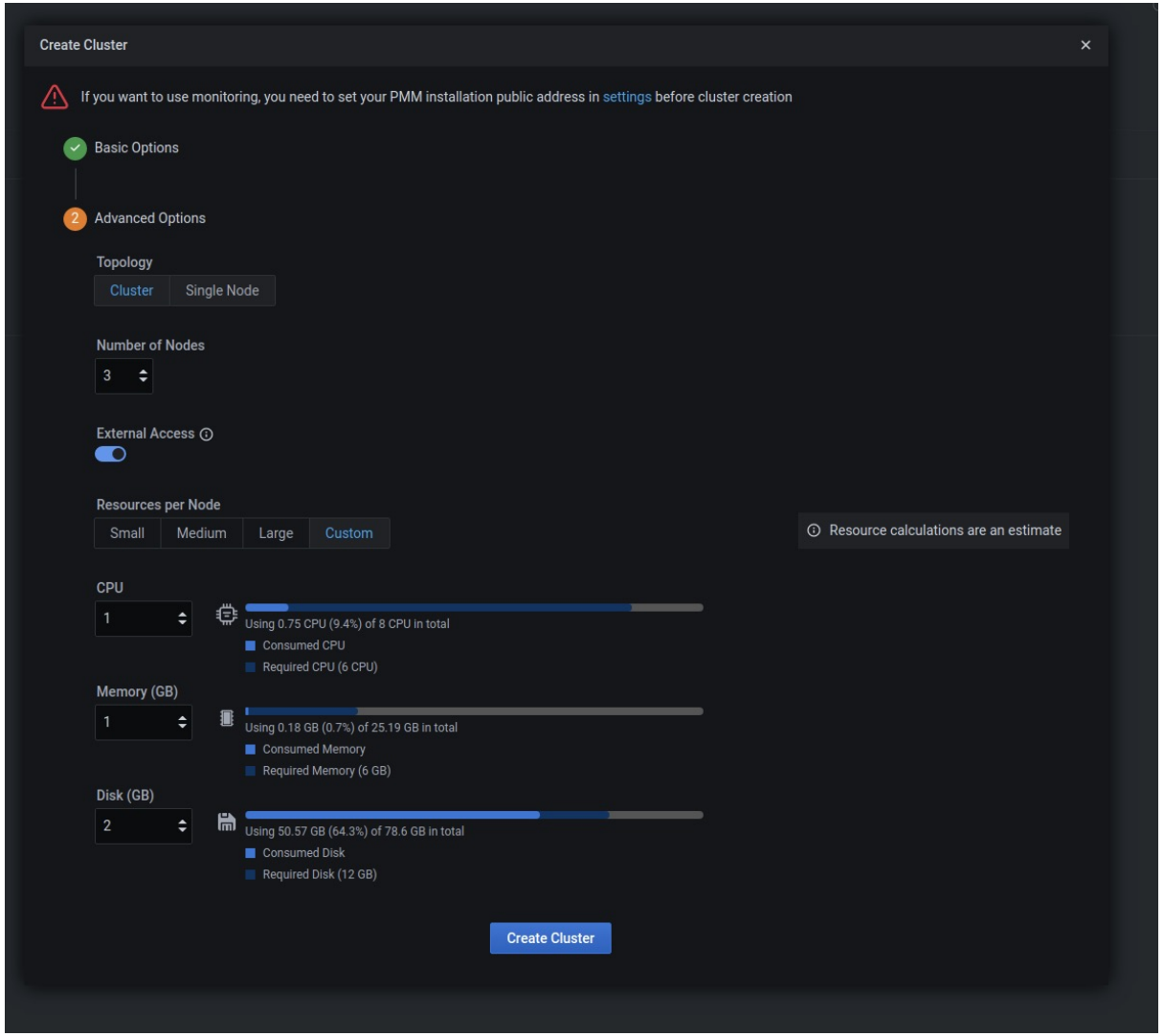
Many Modern DBaaS Are Built This Way

Completely Open Source DBaaS

- **Percona is building Open Source Database as a Service in Percona Monitoring and Management (PMM)**
- **We expect to be one of Many**

PERCONA Monitoring and Management

Work in Progress...



https://www.percona.com/doc/percona-monitoring-and-management/2.x/setting-up/server/dbaas.html

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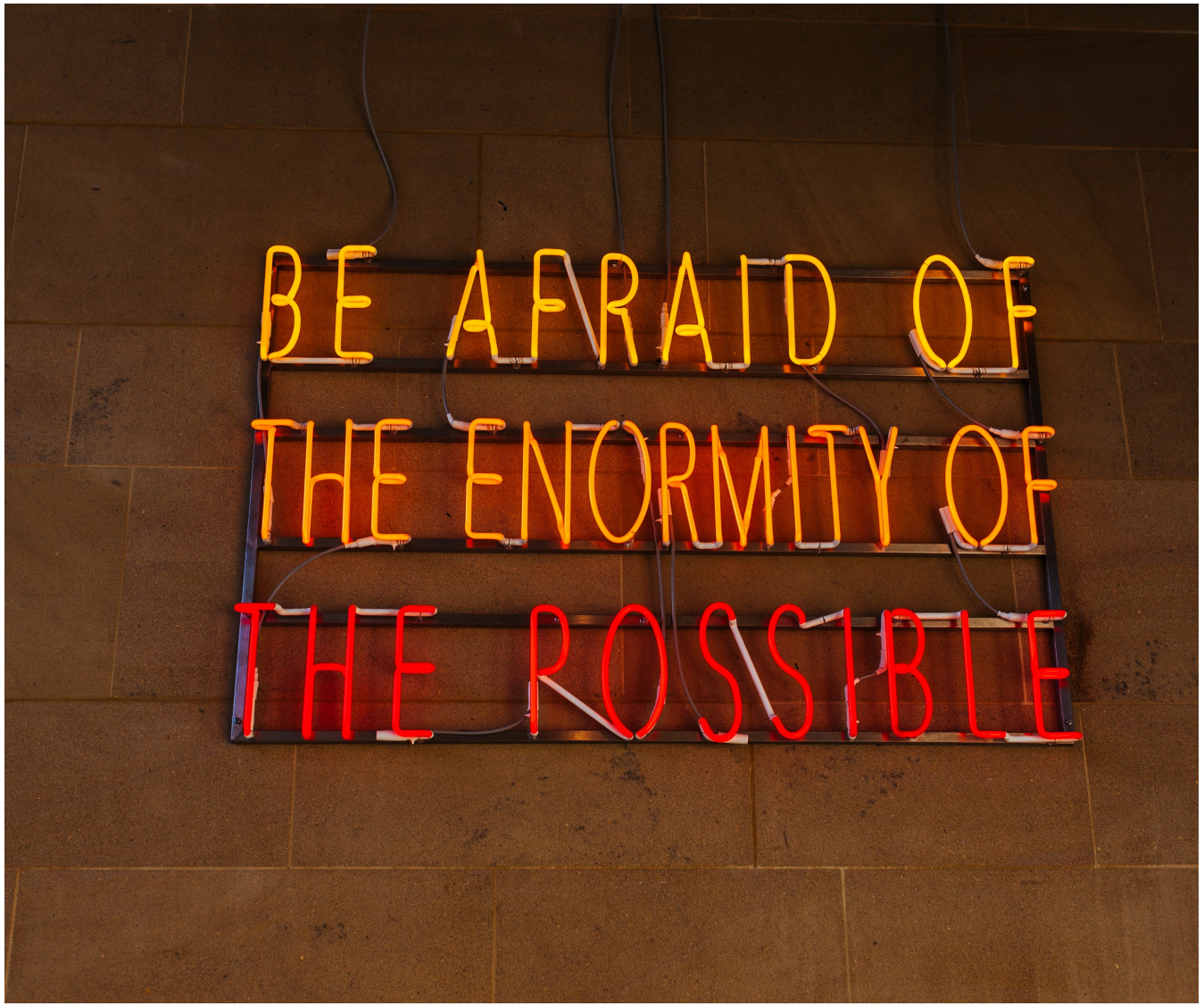
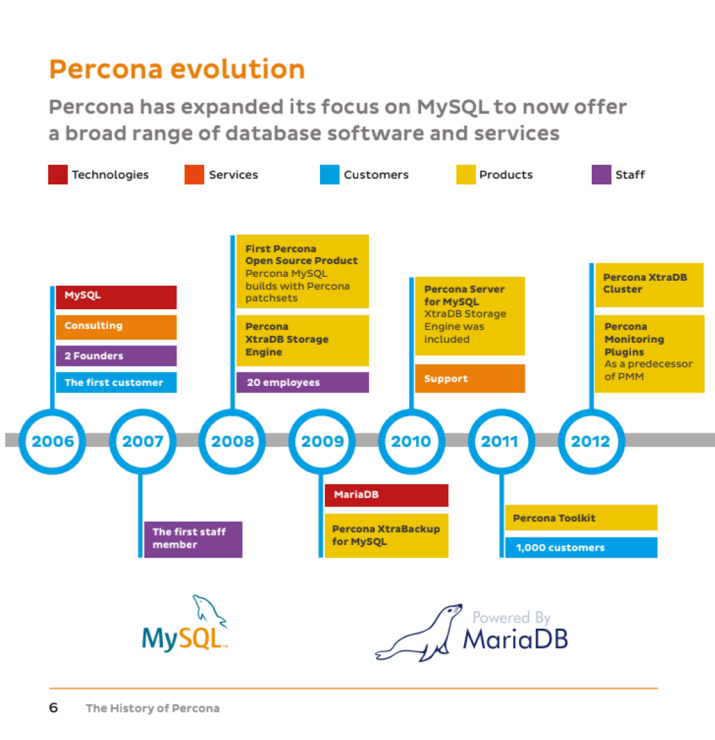
Can it be Done ?

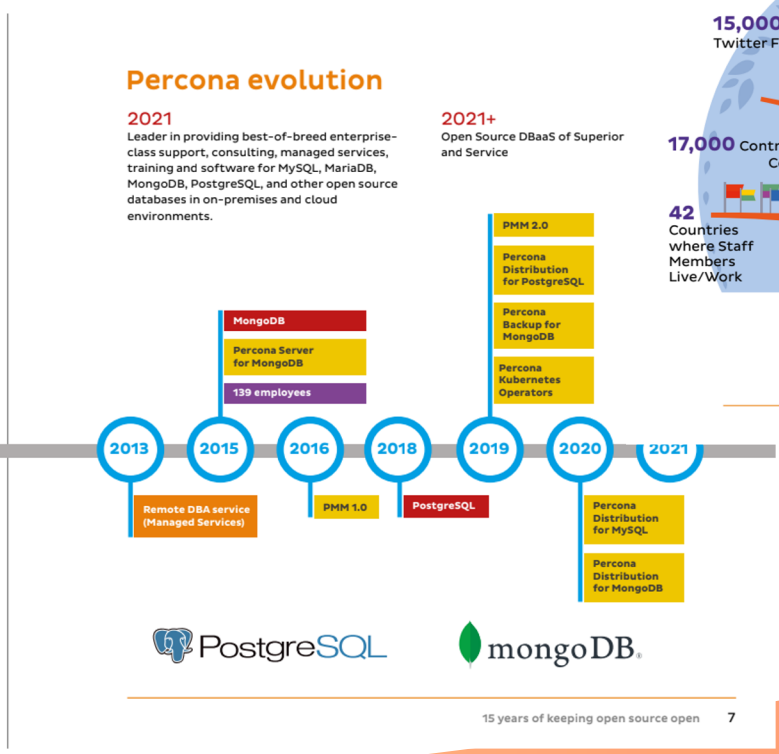


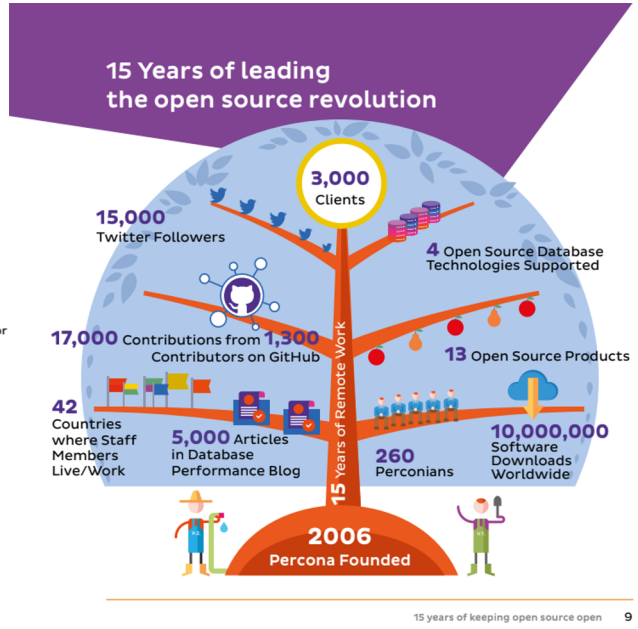
Radical Open Source Experiment Going on for 15 years

THE HISTORY OF
PERCONA

15 YEARS OF KEEPING
OPEN SOURCE OPEN





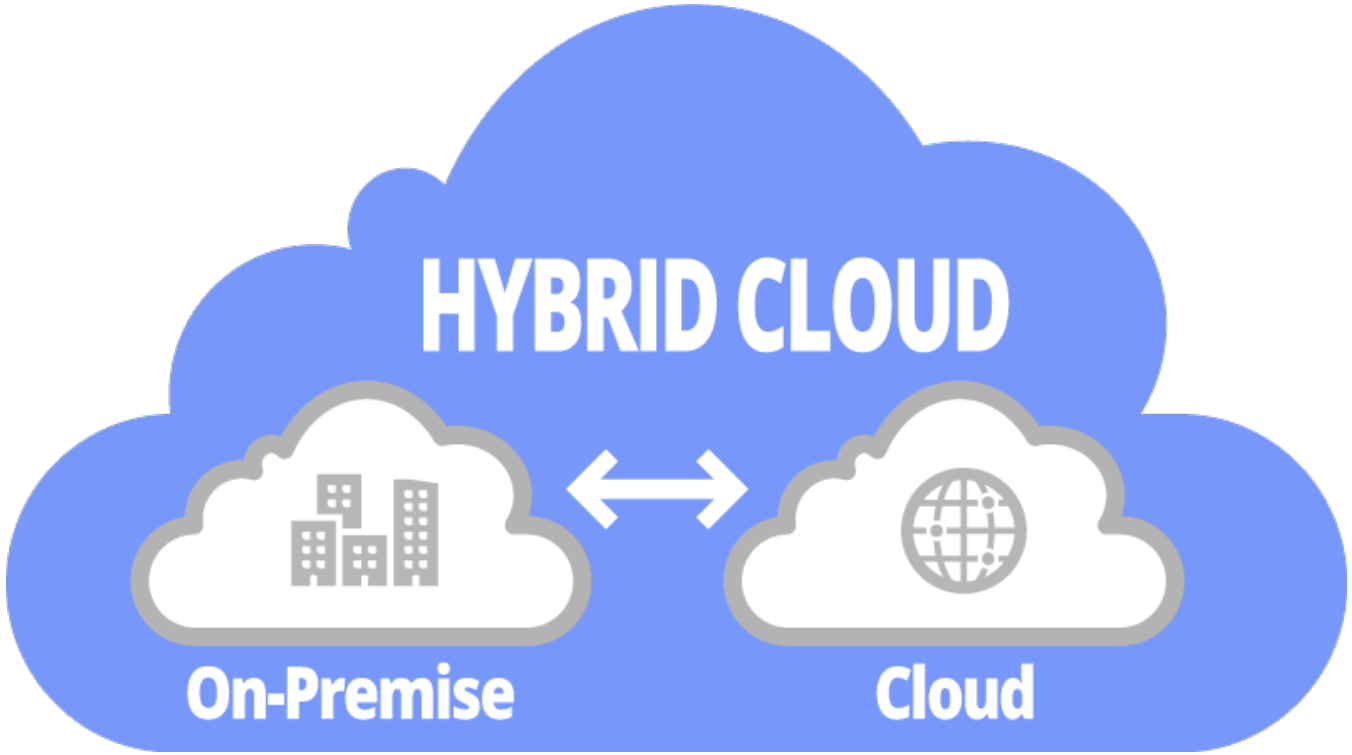


https://per.co.na/15y

More Database Technology Trends

Huge Variety of Available Database Technologies

Distributed



Hybrid Cloud, Multi Cloud

Serverless

There are still servers, of course but not as concept developer works wih

Object Store Backed

Use S3 (and Similar) Elastically Scalable Data Storage instead of File System

Self Running

Security
Compliance
Governance

PostgreSQL to rule them all

https://www.mangodb.io/

Trends

What other Trends are you seeing ?

Thank you, Let’s Connect!

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