Why to Choose Open Source Database Solutions in 2025

Takis Stathopoulos, PhD

Enterprise Architect, Percona

Takis Stathopoulos

Enterprise Architect
Tackling the more complex, challenging and interesting large scale cases

Solutions Architect
Delivering Complex Enterprise projects

IT Infrastructure Architect and Team Leader
Transforming from proprietary to Open Source

Research Engineer
Linux Kernel patch for testing a new network traffic control framework

Open Source has won!

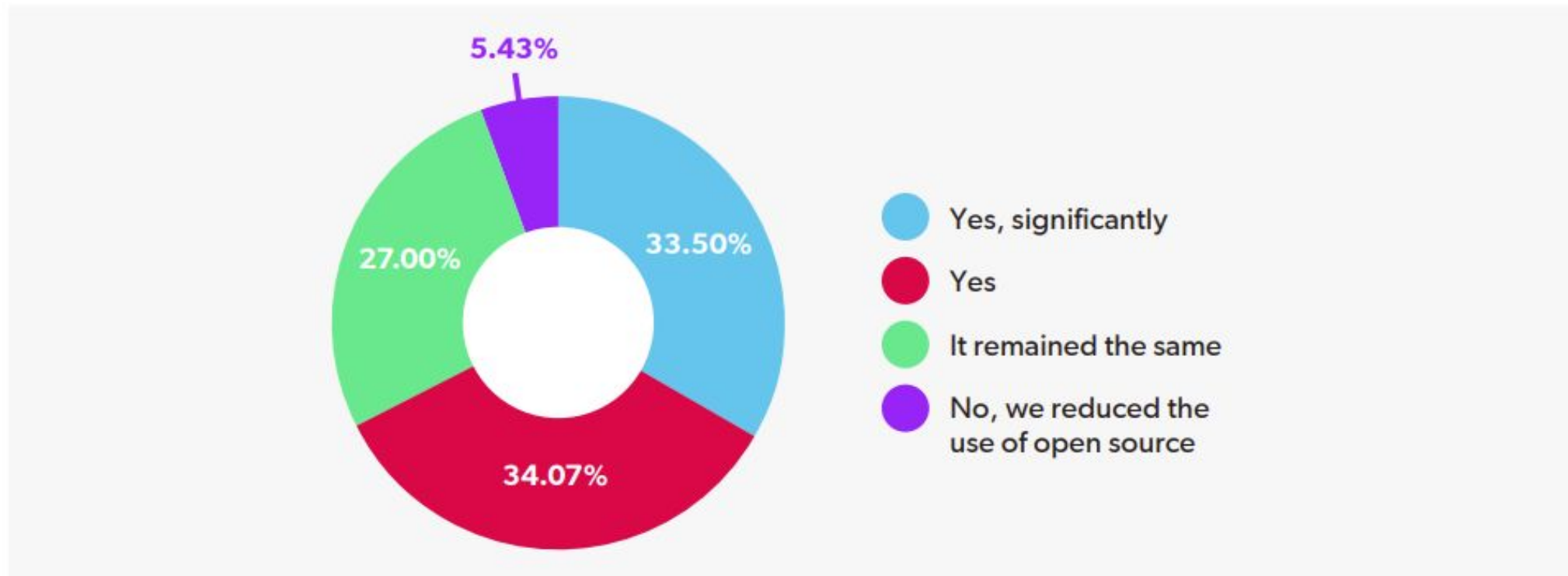# Open Source is everywhere

What will it be different in 2025?

- New workloads
- A more complex landscape
- Open Source corporate headwinds
- Cost-efficient growth

Has Your Organization Increased the Use of Open Source Software Over the Last Year?

5.43%

33.50% — Yes, significantly

34.07% — Yes

27.00% — It remained the same

No, we reduced the use of open source

https://opensource.org/blog/announcing-the-2024-state-of-open-source-report

Open Source vs Proprietary

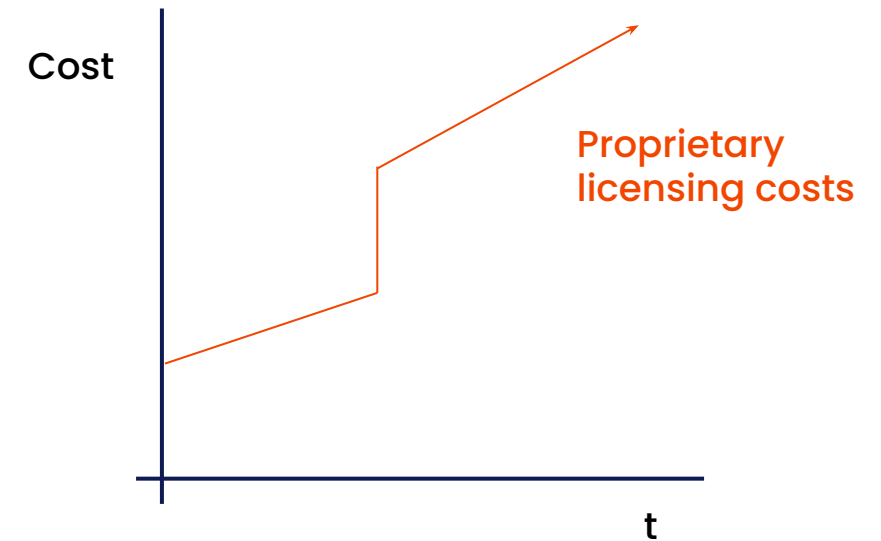| Reason for Using OSS	Percentage
No License Cost, Overall Cost Reduction	36.64%
Functionality Available to Improve Development Velocity	30.71%
Stable Technology with Community Long-Term Support	27.64%
Access to Innovations and Latest Technologies	26.86%
To Reduce Vendor Lock-In	21.29%
Open Standards and Interoperability	20.93%
To Modernize Technology Stack	20.00%
Fast Moving / Constant Enhancements, Releases, and Patches	14.21%
Community-Oriented and Transparent	12.86%
Ability to Contribute to, and Influence Direction of, Open Source Projects	10.43%
Large Selection of Options for Similar Functionality	8.14%
Makes It Easier to Hire or Retain Employees	6.14%

No License Cost, Overall Cost Reduction

Functionality to improve developer velocity

Access to Innovations and Latest Technologies

51.5% of respondents working in government or public services said no license cost and overall cost reduction was their reason for using OSS.

https://opensource.org/blog/announcing-the-2024-state-of-open-source-report
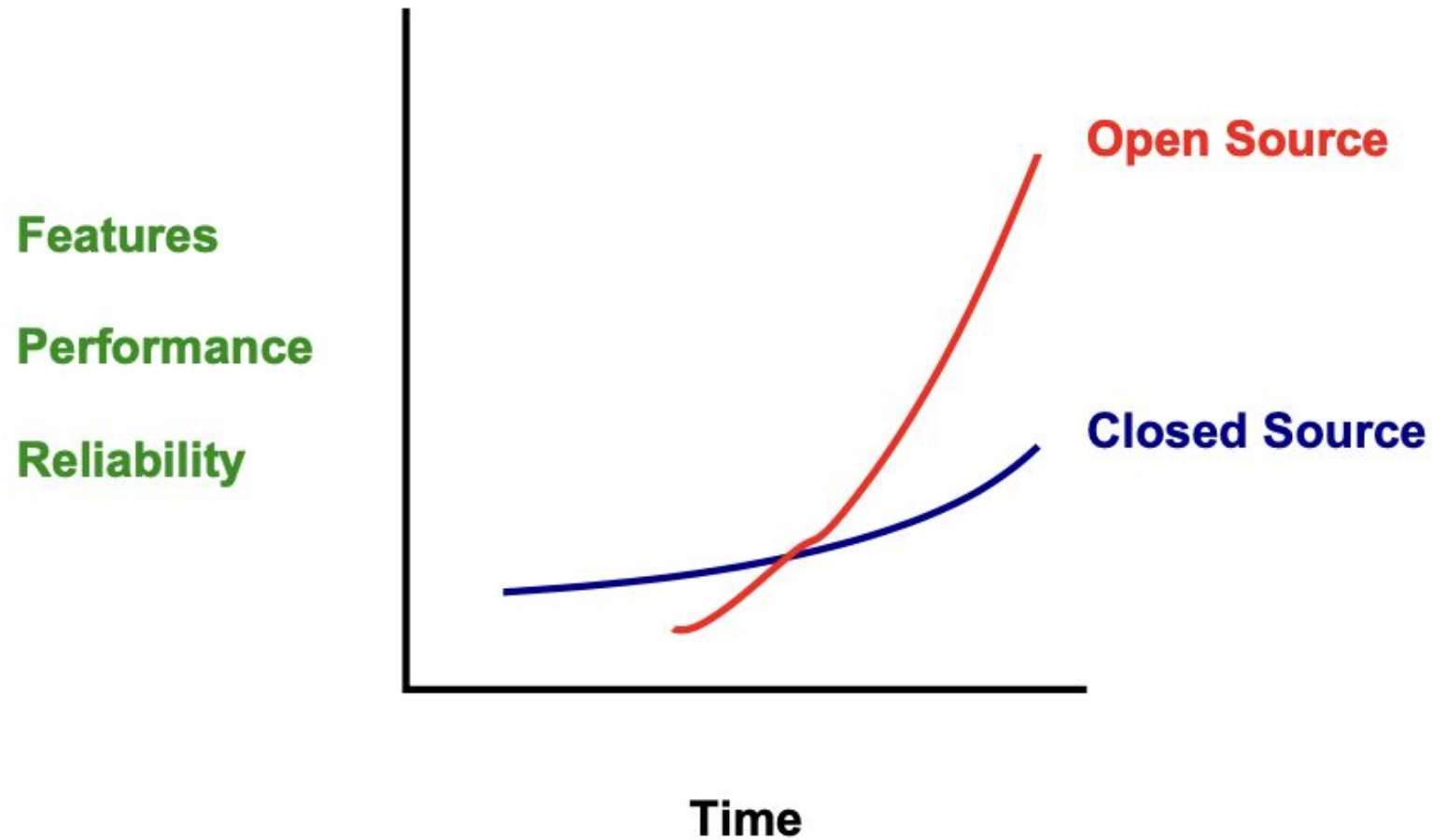
Lower TCO

- **No license cost**
  - Reverse the trend

- **Overall cost reduction**
  - Support?
  - Training and Know-how

- **Support Optionality. Power to:**
  - Select Support Vendor
  - Select Support
  - Select Scope

Cost

Proprietary licensing costs

t

Innovation Rate

Source: https://momjian.us/main/writings/pgsql/forever.pdf

New workloads

- **AI**
- **Vectors**
- **Machine learning**
- **Time Series**
- **GIS**
- **...**

Freedom to innovate

- Deploy where you want, and how you want

- Modify, extend, optimize

- Test as long as you want

- Standardize only once successful

- Skip lengthy procurement and buying process

A complex landscape

Different kinds of Open

Source Code License: GPL, Apache, BSD, Public Domain, …

Cost: Free as in **Beer** or Free as **Freedom**?

Ownership

- Trademarks
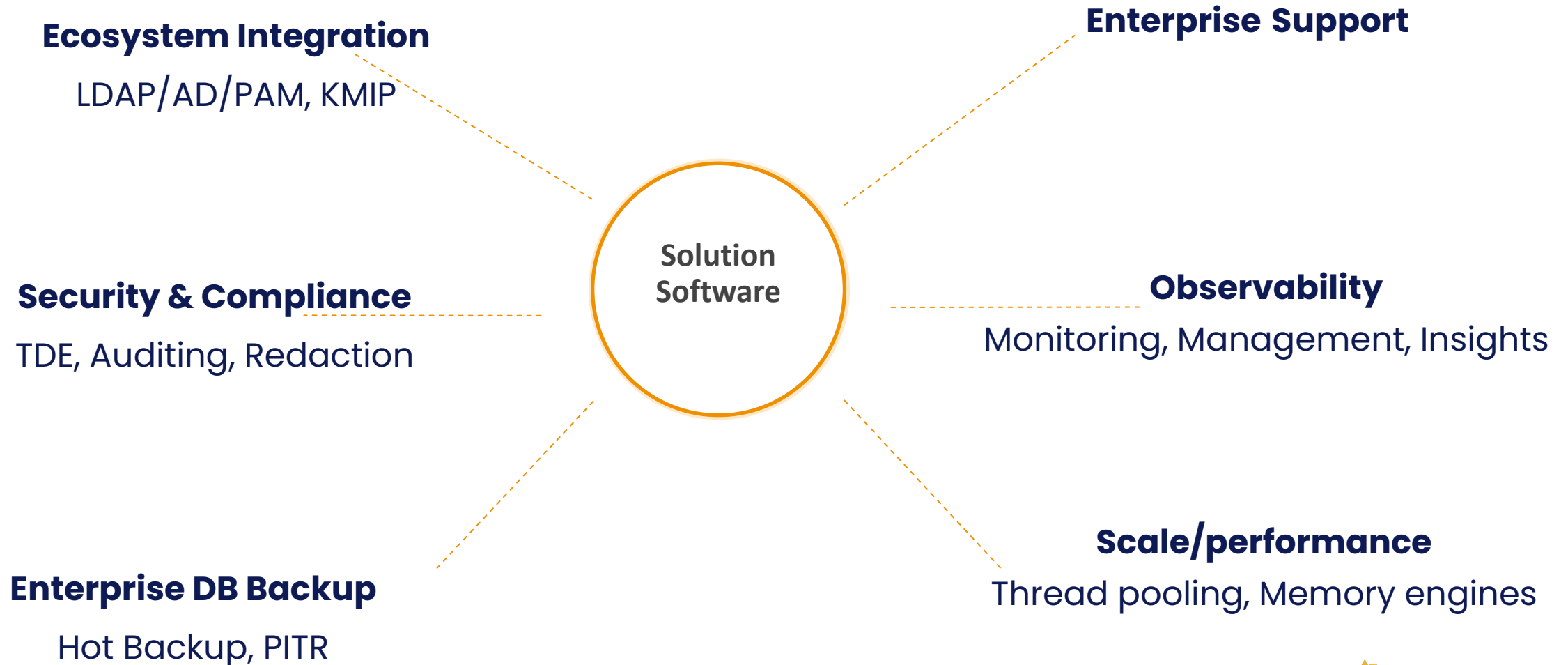- Source Code
- Intellectual Property

1. Free Redistribution
2. Source code available
3. Derived Works
4. Integrity of The Author's Source Code
5. No Discrimination Against Persons or Groups
6. No Discrimination Against Fields of Endeavor
7. Distribution of License
8. License Must Not Be Specific to a Product
9. License Must Not Restrict Other Software
10. License Must Be Technology-Neutral

Is your selected solution open?

Ecosystem Integration

LDAP/AD/PAM, KMIP

Enterprise Support

Security & Compliance

TDE, Auditing, Redaction

Solution Software

Observability

Monitoring, Management, Insights

Enterprise DB Backup

Hot Backup, PITR

Scale/performance

Thread pooling, Memory engines

PERCONA

Evaluation factors
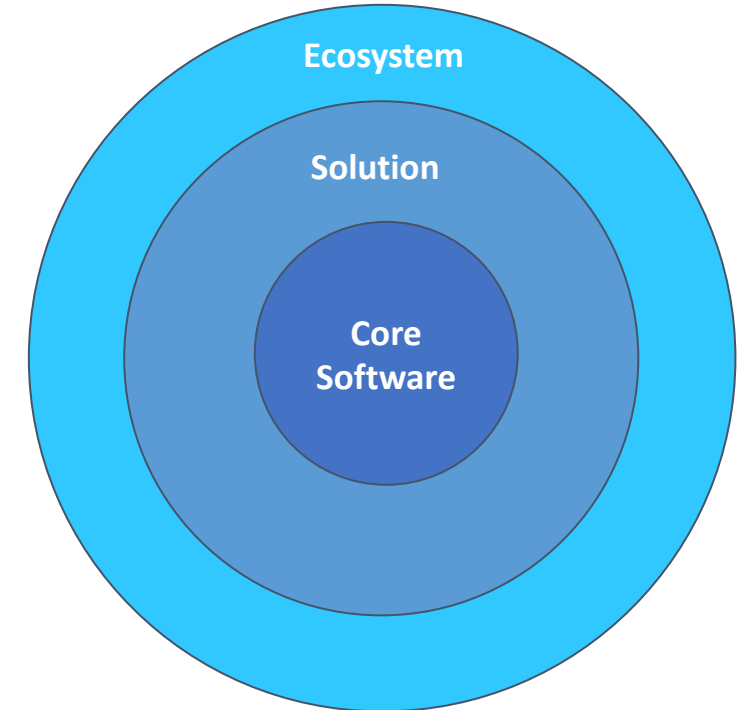
Is the **core software** free to innovate?

- Develop and expand?
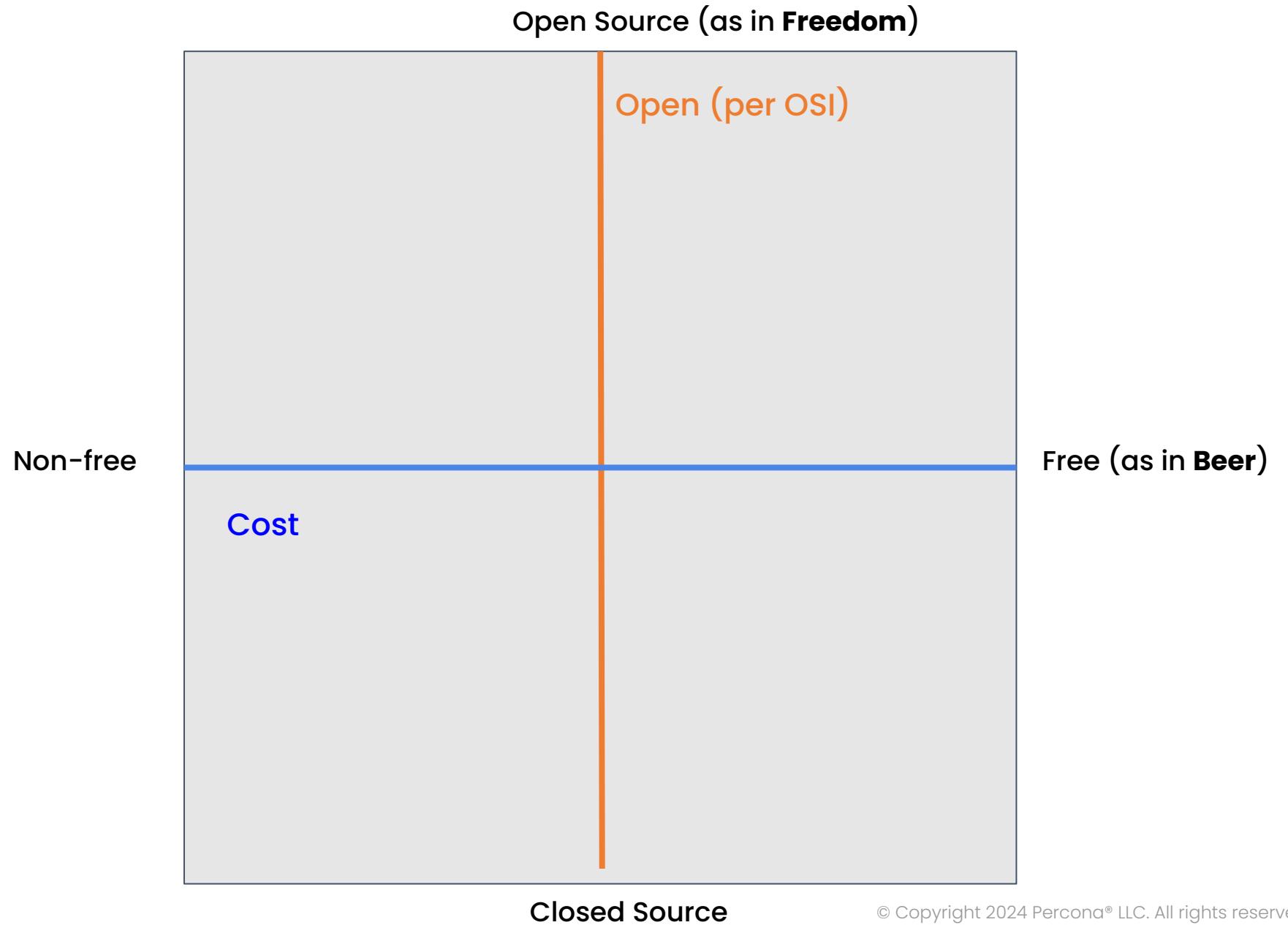- Use?

Is the **full solution software** open?

- Monitoring
- Compatibility
- Compliance

Is the **ecosystem** deployment open?

- Automations
- Extensions/plugins
- Know-how

An evaluation framework

Open Source (as in **Freedom**)

Open (per OSI)

Non-free

Free (as in **Beer**)

Cost

Closed Source

Open Source (as in Freedom)

MySQL CE

PS for MySQL

AWS RDS MySQL
Google Cloud MySQL

Non-free   **Free (as in Beer)**

AWS RDS Aurora for MySQL

MySQL EE

Closed Source

MySQL CE
MySQL EE
Percona Server for MySQL
AWS RDS MySQL
AWS RDS Aurora MySQL
Google Cloud SQL MySQL

Open Source (as in Freedom)

PostgreSQL

EDB Postgres Advanced
Server

Percona Distribution for
PostgreSQL

EDB Postgres Advanced
Server

Postgres Pro Enterprise

Fujitsu Enterprise
Postgres

Google Cloud SQL
PostgreSQL

AWS RDS Aurora
PostgreSQL

AlloyDB for PostgreSQL

PostgreSQL

Percona
Distribution for
PostgreSQL

AWS RDS PostgreSQL
Google Cloud PostgreSQL

Non-free

Free (as in Beer)

AWS RDS Aurora
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Closed Source

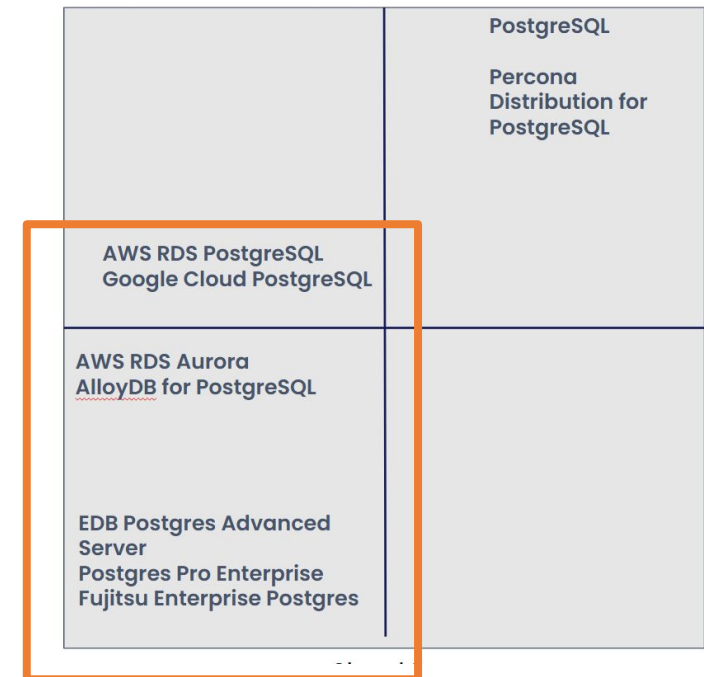# Solution partially built on open

Open Core business model

- Some functionality open and free

Other functionality closed and proprietary

- Potential for Vendor Lock-in

A different kind of proprietary?

- Potentially with greater data portability

PostgreSQL

Percona Distribution for PostgreSQL

AWS RDS PostgreSQL
Google Cloud PostgreSQL

AWS RDS Aurora
AlloyDB for PostgreSQL

EDB Postgres Advanced Server
Postgres Pro Enterprise
Fujitsu Enterprise Postgres

Closed ecosystems built on open software

Cloud providers and packaged Solutions

Build on Vanilla Open Source or

- Cloud providers trying to differentiate
- Develop vendor specific proprietary editions

However ecosystem is proprietary:

know-how, free to use in any platform, licensing costs, vendor-lock in

Cost and Know-how implications

What is Cloud Computing?
An analogy: think of electricity services...

You simply plug into a vast electrical grid managed by experts to get a low cost, reliable power supply – available to you with much greater efficiency than you could generate on your own.

Power is a utility service - available to you on-demand and you pay only for what you use.

amazon web services™

Cloud is not a utility service anymore

Open Source corporate headwinds

2023: is Corporate Open Source Viable?

Redis Adopts Dual Source-Available Licensing

MARCH 20, 2024

Rowan Trollope

Future Redis releases will continue to offer free and permissive use of the source code under dual RSALv2 and SSPLv1 licenses; these releases will combine advanced data types and processing engines previously only

COMPANY

HashiCorp adopts Business Source License

HashiCorp adopts the Business Source License to ensure continued investment in its community and to continue providing open, freely available products.

AUG 10 2023 | ARMON DADGAR

MongoDB Issues New Server Side Public License for MongoDB Community Server

New License Leads the Way for Open Source in the Cloud Era

NEW YORK, NY - October 16, 2018 – Today MongoDB, Inc. (Nasdaq: MDB), the leading modern, general purpose database platform, issued a new software license, called Server Side Public License (SSPL), for MongoDB Community Server. The license clearly and explicitly states the conditions of deploying MongoDB - or any other open source project licensed under the SSPL - as a service. All versions of MongoDB's Community Server released after today, including patch fixes for prior versions, will be licensed under the SSPL.

03 JUNE 2021   NEWS

Elastic License Update

By Steve Kearns

Share

In January 2021, we announced that starting with version 7.11, we would be changing the Apache 2.0 portions of Elasticsearch and Kibana source code to be dual licensed under Elastic License and SSPL, at the users' discretion. As part of that change, we created Elastic License 2.0 (ELv2) as a permissive, fair-code license, which allows free use, redistribution, modification, and derivative works, with only three simple limitations, outlined in our original announcement.

Redis history

2009	2010	2015 – v4	2018 – v5	2024 – v7.4
REmote DIctionary Server **Salvatore Sanfilippo**	**VMware (later Pivotal) sponsors the project**	**Redislabs employs Salvatore and becomes the main sponsor**	**SSPL for Redis Modules**	**RSALv2**

Valkey is created – 2024

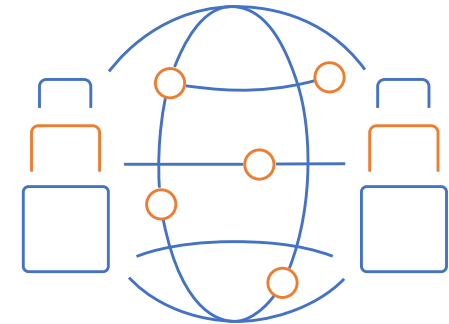| 20 March	28 March	16 April	15 September	Est. +3 months
Redis License Change	Valkey Community	Valkey 7.2 Release	Valkey 8.0 Release	Valkey 8.2 Release

Introducing the Valkey project

Fully compatible
with Redis OSS 7.2

Vendor Neutral
BSD-3 Licensed

Built by contributors in
the open source
community

Backed by industry leaders

The tide is turning
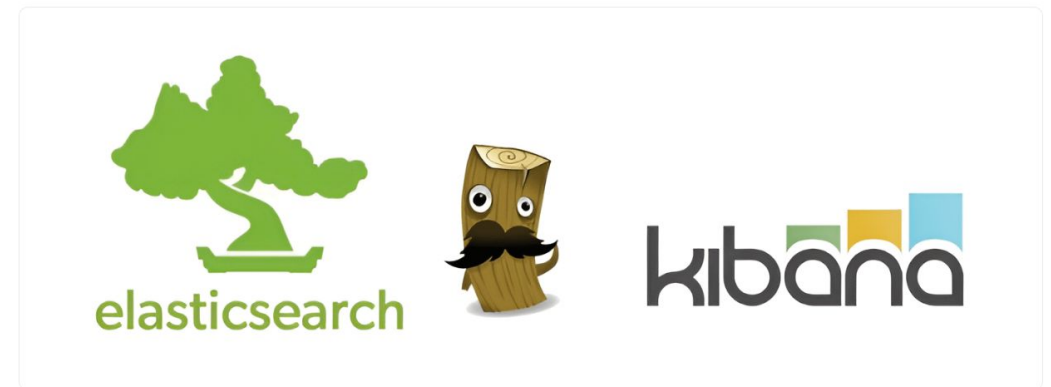
Valkey is a viable and robust solution

Open Source is not going anywhere

Has proved again the power of ecosystem

Elasticsearch Is Open Source. Again!

By **Shay Banon**

29 August 2024

[D.N.A] Elasticsearch and Kibana can be called Open Source again. It is hard to express how happy this statement makes me. Literally jumping up and down with excitement here. All of us at Elastic are. Open source is in my DNA. It is in Elastic DNA. Being able to call Elasticsearch Open Source again is pure joy.

Cost-efficient growth

Case studies and examples

From **Cloud-repatriation** to **Cloud Agnostic** and **Cloud Native**

Cost efficiency

- Longer runway for startups
- Increase Profits

Cloud Agnostic

- Heavy investment in MongoDB Atlas (400 clusters in prod)
- Now they must run in a location without Atlas (e.g. OCI)

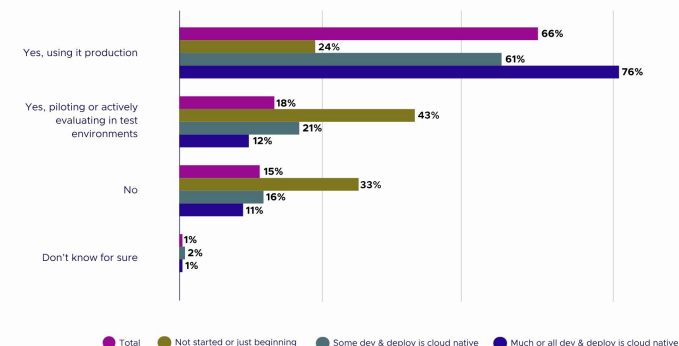### K8s as the Cloud Native Cloug Vendor Agnostic layer

Moving from niche to the mainstream

- Cost, Complexity, Vendor Strategy

https://arstechnica.com/information-technology/2024/10/basecamp-maker-37signals-says-its-cloud-exit-will-save-it-10m-over-5-years/

https://www.cncf.io/reports/cncf-annual-survey-2023/

Conclusions

Key Takeaways

- Different kinds of Open exist
  - Open Software (OSI definition)
  - Open-based solutions (but not fully open)
  - Open Ecosystems (K8s as an example)
- Potential Lock-in comes in different ways
  - Data, Functionality, Automations, Convenience
- Open Source is again on the rise
  - Source Available and Open Core is still happening
  - But less successful as time goes by

Predictions for 2025

License changes and switching to Source Available will be less viable

- The are still going to happen

Open Source and Foundations on the rise

- E.g. CNCF
- vs vendor-provided Open Source

Permissive license mature projects e.g. PostgreSQL on the rise

- Rich, diverse, ecosystems
- Need to read the fine lines!

People making more conscious architecture decisions

- Cloud is great, K8s is great

Different use cases need different kinds of great:

- rapid
- cost-effective
- portable

Gracias!