The State of Open Source Databases

Peter Zaitsev, CEO
Percona
Thank you
What a Year!

Huge changes for Open Source and Open Source databases
RedHat Acquired by IBM

Image Source: https://techcrunch.com/story/ibm-acquires-red-hat/
Open Source Corporate Activity

- Elastic and Pivotal complete IPOs
- Mulesoft Acquired for $6.5bn, GitHub for $7.5bn
- MongoDB tripled its market up in 2018 $7.7bn
- Cloudera and Hortonworks merge to form Hadoop powerhouse
Open Source Software Traction

- **Y axis:** COSSCI market cap range
- **X axis:** Year
- **Green line:** COSSCI market cap trend
- **Blue bars:** Number of COSSCI companies

Source: [https://twitter.com/asynchio/status/1103408136860327936](https://twitter.com/asynchio/status/1103408136860327936)
Unicorns Changing from Open Source Licenses

MongoDB changes Software License to SSPL (Server Side Public License)

Elastic, Confluent, and Redis Labs releasing some components with Source Available License
Cloud and Open Source

Are Cloud Providers abusing Open Source software?

Should Software Vendors be able to maintain DBaaS Monopoly?

Are Open Source Software Users interests are the same as Vendors?

How should Cloud Providers be compelled to contribute to Open Source?
Are you ready to share the pie?

Do we want to create a bigger pie, or have it all to ourselves?

Or
Open Source is a Strategic Priority

69% of respondents say Open Source is of strategic importance to Enterprise infrastructure

68% of respondents increased Open Source Software usage over the last year

59% of respondents will increase usage further in the coming year

### Top Databases

Only Open Source databases are showing growth!

<table>
<thead>
<tr>
<th>Rank</th>
<th>May 2019</th>
<th>Apr 2019</th>
<th>May 2018</th>
<th>DBMS</th>
<th>Database Model</th>
<th>Score May 2019</th>
<th>Score Apr 2019</th>
<th>Score May 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1.</td>
<td>1.</td>
<td>1.</td>
<td>Oracle</td>
<td>Relational, Multi-model</td>
<td>1285.55</td>
<td>+5.61</td>
<td>-4.87</td>
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<td>2.</td>
<td>2.</td>
<td>2.</td>
<td>2.</td>
<td>MySQL</td>
<td>Relational, Multi-model</td>
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<td>3.</td>
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<td>4.</td>
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<td>4.</td>
<td>4.</td>
<td>PostgreSQL</td>
<td>Relational, Multi-model</td>
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<td>+77.99</td>
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<td>5.</td>
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<td>5.</td>
<td>5.</td>
<td>MongoDB</td>
<td>Document</td>
<td>408.07</td>
<td>+6.10</td>
<td>+65.96</td>
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</tbody>
</table>

Source: [https://db-engines.com/en/ranking](https://db-engines.com/en/ranking)
PostgreSQL

Database of the Year and Proprietary Database Migration Target of Choice
Reasons to Adopt Open Source Databases

The top three reasons to adopt Open Source databases:

- Cost Savings (80%)
- Avoiding vendor-lock-in (62%)
- Community (53%)
Fears of Open Source Technologies

The main fears when adopting Open Source database technology:

- Lack of support (54%)
- Bugs (41%)
- Security and compliance (35%)
64% of respondents rely on self-support when running Open Source database technology

Only 36% use external support
License Preferences

Permissive Licenses are the most preferred by respondents

Source Available licenses are considered closer to proprietary licenses than Open Source
Relational Databases are Still Rocking it

- 97% of respondents use Open Source Operational Relational Databases
- 48% of respondents use Search Engines
- 37% of respondents use Document Databases
Public Clouds

- 50% of respondents are now running databases in the public cloud
- 70% of that 50% are using AWS
38% of all users who responded run some databases in a DBaaS environment. 74% of those are on AWS.

Amazon RDS is still twice as popular as Amazon Aurora for both MySQL and PostgreSQL.
Multi-Cloud

- 38% of companies (large companies with more than 5000 employees) are adopting multi-cloud strategy.
Market Trends
DBaaS is Winning Hearts and Minds

Convenience

Agility

Operational simplicity
Multi-Platform

Using Multiple Public Cloud Providers

Private Clouds on premises

Deployments on the Edge
Cloud Native

- Kubernetes emerges as de-facto standard
- Supported everywhere
- Allows you to build the next generation of databases
- Get some DBaaS benefits without vendor lock-in
Security, Privacy, and Compliance

Executives are now paying attention

Laws and regulations are getting teeth around the world

Many serious data breaches
Record Start to 2019 for Database Breaches

First Three Months of 2019 Compared to Q1 of the Previous Four Years

Number of Incidents by Year

Number of Records Exposed by Year

Source: https://pages.riskbasedsecurity.com/2019-q1-breach-quickview-report
Insider Mistakes are the Leading Cause

<table>
<thead>
<tr>
<th>Threat Vector</th>
<th>Records Exposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inside-Accidental</td>
<td>1,262,020,967</td>
</tr>
<tr>
<td>Outside</td>
<td>620,107,852</td>
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<tr>
<td>Inside-Unknown</td>
<td>36,453,278</td>
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<tr>
<td>Unknown</td>
<td>112,920</td>
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<tr>
<td>Inside-Malicious</td>
<td>71,071</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,918,766,088</strong></td>
</tr>
</tbody>
</table>

Source: https://pages.riskbasedsecurity.com/2019-q1-breach-quickview-report
Not If, But When?

To Sum It Up

- Continuing Growth of Open Source Database Adoption
- Increasing Tension between Users and Vendors
- Increasing Concerns of Cloud Vendor Lock-in and Costs
- Increasing Demands for Simplicity, Scalability, Security
- Kubernetes as New Hope