Open Source Databases for Modern Business

Santa Clara, California | April 23th – 25th, 2018
Peter Zaitsev, CEO Percona
My Favorite Topic

Open Source Databases
# Open Source Databases
Leading in Growth

<table>
<thead>
<tr>
<th>Rank</th>
<th>DBMS</th>
<th>Database Model</th>
<th>Score</th>
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<td>Apr 2018</td>
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<tr>
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<td>Relational DBMS</td>
<td>1289.79</td>
<td>+0.18</td>
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<td>MySQL</td>
<td>Relational DBMS</td>
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<td>Relational DBMS</td>
<td>395.47</td>
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<td>MongoDB</td>
<td>Document store</td>
<td>341.41</td>
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342 systems in ranking, April 2018

Source: [https://db-engines.com/en/ranking](https://db-engines.com/en/ranking)
Long Term Popularity Trend

![Graph showing popularity trend for commercial and open source licenses from January 2013 to January 2018. The commercial license shows a declining trend while the open source license shows a rising trend.](image-url)
Dominate New Generation of Databases

Popularity broken down by database model, April 2018

© 2018, DB-Engines.com
Database Popularity per Stack Overflow

Stack Overflow Popularity

- **MySQL**
  - 2017: 55.6
  - 2018: 58.7

- **SQL Server**
  - 2017: 38.6
  - 2018: 41.2

- **PostgreSQL**
  - 2017: 26.5
  - 2018: 32.9

- **MongoDB**
  - 2017: 21.0
  - 2018: 25.9

- **SQLite**
  - 2017: 19.7
  - 2018: 26.6

Source: [https://insights.stackoverflow.com/survey/2017](https://insights.stackoverflow.com/survey/2017)
Percona’s Mission

To Champion Unbiased Open Source Database Solutions
Our Vision

- Best Open Source is 100% free and Open Source
- Enterprise Grade Open Source
- No Vendor Lock-In
- The best and longest lasting Open Source projects start and end with the community

Summary:
- Open
- Accessible
- Free
- Portable
- Enterprise Grade
- Strong Community
Our Goal

• Provide and Promote 100% Free and Open Source Enterprise Ready Database Platforms

• Enhance the community and the ecosystem by making existing Open Source even better by:
  • Making Enterprise Features Accessible to the Masses
  • Providing Content, Best Practices, and Education to All
  • Enhancing Existing Open Source Software to meet the needs of 90% of the application workloads
State of Leading Open Source Databases
MySQL is as strong as ever

Most popular Open Source Database
Most popular database choice in the cloud
MySQL 8 (just released!) looks amazing
Internally we have seen explosive growth of MySQL in the enterprise space over the last 2 years.
Percona Database Software for MySQL

Summary:
• 100% Free & Open
• Enterprise Grade
• 30%+ Growth
• Solution of Choice
• Strong Community

“Our data is crucial to running our operation. We have a complicated interconnected customer, reservation, inventory, dry-cleaning, and shipping data that must be available at a minute’s notice. Percona’s solutions guarantee that it is – which keeps our applications and customers happy.”

Carlo Barbara, Director, Engineering, Rent the Runway
First MySQL variant to support MyRocks

Born inside Facebook
Optimized for Modern Hardware
Saves costs
Great for the cloud
MariaDB is doing great

• It is not just a MySQL Variant, it is its own database
• Distinct focus on Oracle Compatibility Features
• Won distribution politics war and presents in most Linux distributions
MariaDB at Percona

Substantial number of Percona customers choose MariaDB for some applications

About 40% growth YoY

About 15% of our customers use MariaDB
MongoDB is Showing Great Traction

Huge improvements in stability, scale, ease of use
MongoDB, Inc. had successful IPO, continues growth
By far the most popular document store
MongoDB 4.0 will support transaction, making it great fit for even more enterprise workloads
MongoDB at Percona

- Enterprise-grade, drop-in replacement for MongoDB
- Free and open source enterprise features
- 2x growth in the number of downloads
- 3x growth in Percona’s enterprise customer base
- Percona Server for MongoDB 3.6 now available
Modern Businesses increasingly need more than just one database solution
Open Source Innovation

Many databases have particular compelling features making them attractive for specific workloads

• One of the biggest mistakes we have seen is trying to modify everything to fit one database
  • If all you have is a hammer, everything looks like a nail.
Polyglot Persistence at Percona

- Over 2x growth in customers using more than one database in the last year
- More than 50% of customers run more than one database in their data center
- More than 25% use combination of MySQL, MariaDB, MongoDB
- Percona’s Universal Support Contract provides efficient coverage for multiple technologies
But…

Something is missing from Percona’s Open Source Database Portfolio
What would that be?

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PostgreSQL!
Percona PostgreSQL Support

Introducing:

• Percona Support Services for PostgreSQL
• On-premises and in the cloud (all major DBaaS)
• Available with Universal Support Contract
• Available starting July 1st
Modern Database Deployments
Evolutionary

The cloud, As a Service, and containerization have caused the entire industry to evolve.
Cloud Growth

Worldwide Public Cloud Services Revenue Forecast (Billions of U.S. Dollars)
Source: Gartner (October 2017)
Database as a Service

14x Est Growth 2017-2020
Containers

Docker Adoption Behavior

Dockers adoption is up 40% in one year

Percent of Datadog Users

Month (segmentation based on end-of-month snapshot)

Source: Datadog
Our Roles are Evolving, and Have Been Evolving
Example: The DBA for the Cloud

Cloud DBA
- Database Architecture & Design
- Application Design & Performance
- Monitoring & Alerting
- Platform & Database Operations

Classic DBA

Revenue & Growth Focus:
Time spent on application and database performance and design.

Operations Focus:
Time spent on backups, upgrades and patching.
Percona Sees Changes First Hand

More than 50% of customers have public cloud presence
More than 25% of those customers are using DBaaS
33% of companies looking to run databases in containers
How is Percona looking to help?
Percona Products for Mesosphere DC/OS

Introducing:
• Beta version of Percona Server for MongoDB
• Partnership with Mesosphere
• Certified solution
• Available today
Partnership with all major cloud vendors

- In November 2017 Percona announced a partnership with Amazon
- Today we announce a partnership with Microsoft
- Support, partnerships, and expertise with the top 3 public cloud vendors
Percona Database Support for DBaaS

Introducing:

• Support packages to meet the needs of those running DBaaS
• Support focused and priced for Cloud DBaaS providers
• Available starting July 1st
Percona DBA Service for DBaaS

Introducing:

• 24x7 proactive Managed Service designed to get the most out of DBaaS deployments
  • Amazon RDS/Aurora
  • Google CloudSQL
  • Microsoft Azure Database

• Flexible DBA service geared towards applications
• Available now
Modern Worries

What Is Biggest Concern on Minds of Customers and Users?
Security and Compliance

#1 Concern of Percona Customers in 2018
#1 Concern among CTO’s and CIO’s
One breach can put you out of business
GDPR, HIPPA, PCI are not just for enterprise
Advanced Encryption at Rest

Announcing the Latest GA of Percona Server for MySQL with Enterprise Encryption Features

Includes Open Source Centralized key management for MySQL with Hashicorp Vault
Secure Support Tools

Encryption and Anonymization with Percona Toolkit

Securely share data in Percona Monitoring and Management
What Is 2nd Biggest Concern on Customers & Users Minds?
Getting Ahead of Problems Introduced by New Development Before They Take Production Down
Bridging the Gap Between Developers and DBA’s

Building 100% Free and Open Source Database Focused Monitoring Solution

New features released almost every month

“The online gaming industry is quite competitive, and customers require an experience that meets high expectations. Without always-available data, our customers can’t use our betting services. Our high-performance database environment is critical to providing our customers with an excellent experience. Using Percona Monitoring and Management allows us to see the metrics related to database performance, and Percona Support is critical for achieving the most optimized database.”

Ezra Levi, DB Tech Lead at SBTech
Track Impact of Application Deployments
Where Does That Leave Us Today?

Open source databases growth and usage is as strong as ever
We continue to see growth, especially in enterprises
Running multiple open source databases is becoming increasingly common
Percona can help with your key challenges

Meet you where you are
• On premise, Cloud, DBaaS, Containers

Support you running your open source database of choice

We are evolving as an industry thanks to advances in technology

Now let’s hear from a few people trying to evolve us even more
Cool Technologies Lightning Talks

Nikolay Samokhvalov - PostgreSQL Tools
  • Automatization of Postgres Administration

Sugu Sougoumarane - Vitess
  • High Performance, Scalable, and Available MySQL Clustering System for the Cloud

Shuhao Wu - Ghostferry
  • Ghostferry: the Swiss Army Knife of Live Data Migrations with Minimum Downtime

Andy Pavlo - Pelaton Self Driving Database
  • What is a Self-Driving Database Management System? (Andy Pavlo)
Thank You!