



The Database Trends That Are Transforming Your Database Infrastructure Forever

Hello!

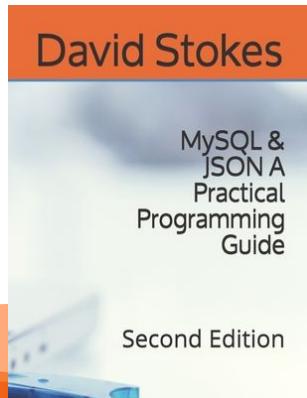


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PERCONA

**Percona is a leading provider of unbiased
open source database solutions that
allow organizations to easily, securely
and affordably maintain business agility,
minimize risks, and stay competitive.**

“

- *Databases are boring*
 - *Databases are dull*
 - *Databases are not cutting edge*

Thank GOD!

A boring database is a good database. Seriously!



Some things you don't want to be exciting

Plane trips



Tax Season



A doctor's visit



Yeah, you don't want this



1. Databases Don't Matter

Easiest to Ignore it!

Strategy = Trust & Hope

The Uncool

To many: Databases Are uncool. They are boring.
They are not interesting. Developers, managers,
executive think code, application, infrastructure



Plumbing

It's like building a house, the plumbing is there but it's often not given a ton of attention and taken for granted.

Well Until...



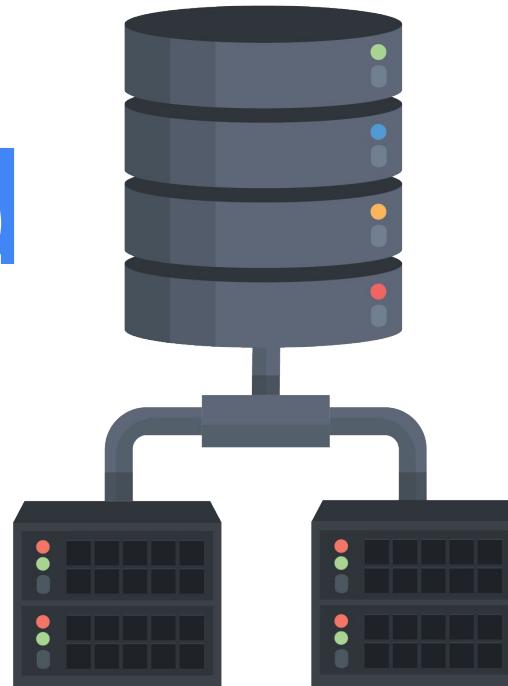


Who Ya Gonna Call?



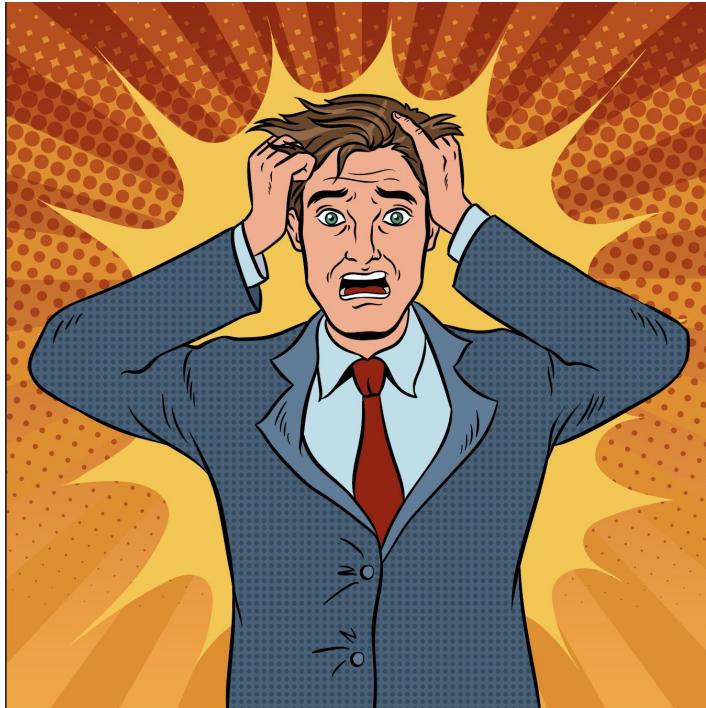
Boring is good

A well run and setup database is boring, and
that is a GREAT THING!



*Be afraid of
exciting
database
events and
environments!*

“



You need to care to avoid:

Outages

Slowdowns

Security Issues





2. Give Us Control

The DBaaS Movement

Cede Control and Your Problems Will Melt Away!

Pass the Buck

Make that boring and maddening database someone
else's problem!



The Promise of DBaaS is Compelling

Attractive Reasons:

- Focus on innovation, not infrastructure
- Reduce costs
- Scale up quickly
- Easy management

Reduces, but does not eliminate

Slowdowns

66%

Reported dealing with database related slowdowns when running DBaaS

Outages

39%

Reported dealing with database related downtime when running DBaaS

Costs

18%

Reported dealing with higher than expected costs than budgeted for in DBaaS environments

Shared Responsibility

- You are responsible for:
 - Architecting
 - Designing
 - Configuring
 - Tuning
 - Optimization

Database Operations

Op	Cloud	You
Provision	✓	
Configure	✓	
Users		✓
Server Metrics		✓
Query Metrics		✓
OSC		✓
Failover	✓	
DR		✓
HA	?	✓
Upgrade	✓	
Backup/Recovery	✓	
CDC		✓
Security		✓
Help		✓
Cost		✓

Image From Daniel Nichter's presentation and book Efficient MySQL Performance

3. Distributed Control

Owning the Full Stack

Are We Letting the Inmates Run the Asylum?

King Me!

Developers and Architects are charged with moving quicker and faster, often at the expense of the infrastructure. 68% of database tech choices are made by Engineers & Architects!



Give Me More!

More Database Technologies

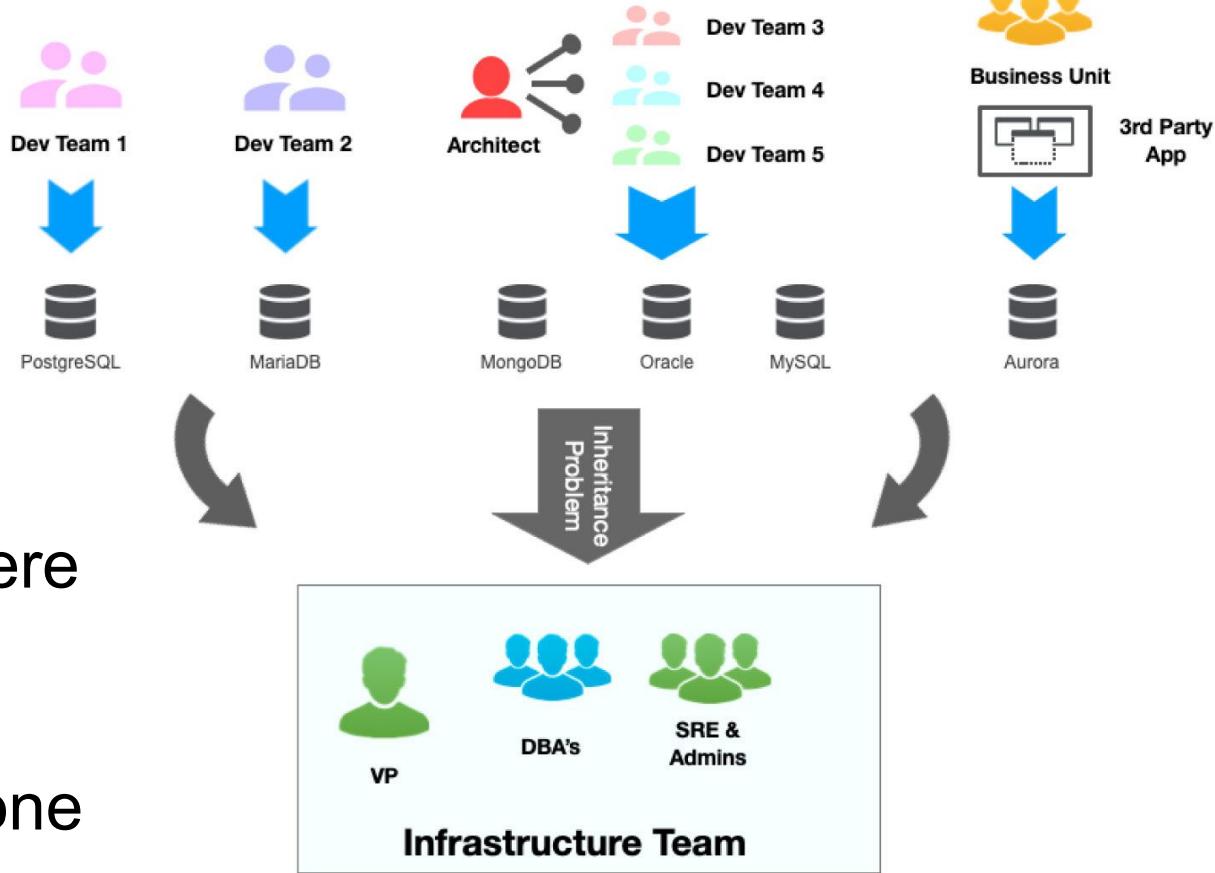
More Languages to Support
More Tools

More Infrastructure Components
And do it faster and cheaper!



Variety and choice are here to stay...

There is no one size fits all!



4. Going Native Cloud Native...

The Buzzwords that leave you with a bad hangover

Herd!

Every Application, every microservice, every small tool wants/needs its **own** database... let's manage that herd!





5. Space: The Final Frontier

We Want More and More

More comes at a cost

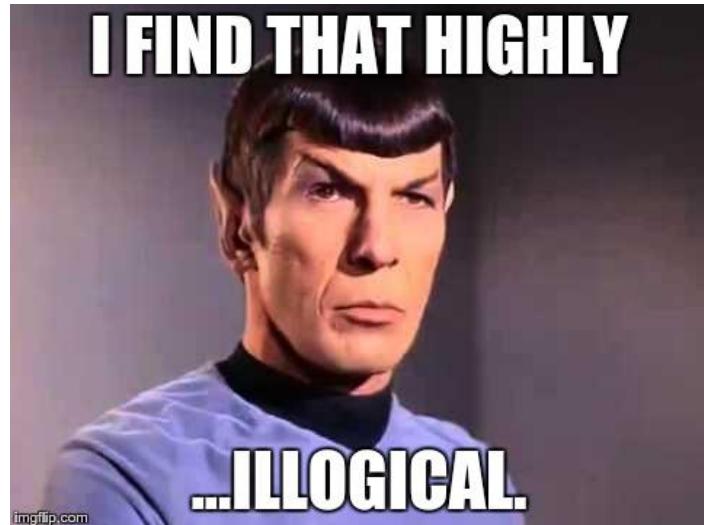
Keep Everything

Data driven decision making makes almost every scrap of data potentially valuable. We keep escalating storage needs.



But...

We expect less costs and faster performance.
Instant real time analysis, always available, with
large datasets.



6. Open Enterprises Customer Code

Using Open Source to Build Custom Fit Software

Pick me

Fierce competition for developer exists in tech cloud, and database space

Once picked, there forever?

- MongoDB -> unstructured data

- Changed license

- Upstream data needs



“

In addition, the database is a particularly attractive product, even by enterprise-software standards, because it stores and organizes all or part of a large corporation's most important data. If a company wanted to switch vendors, it would have to lift all of that data from the old database and insert it into a new one. That's not only a huge pain; it's also terribly risky, should any data get lost. Therefore, most companies tend to stick with their database vendor over time, even if that vendor raises prices. That's how **Oracle** became such a tech powerhouse throughout the 1990s.

-Billy Duberstein

Vendor Locking

One vendor or 10 or 100

Specific Needs

More and more companies are building their own forks or branches of popular open source projects meeting their specific needs. OSS is becoming more of the innovation platform to custom code.

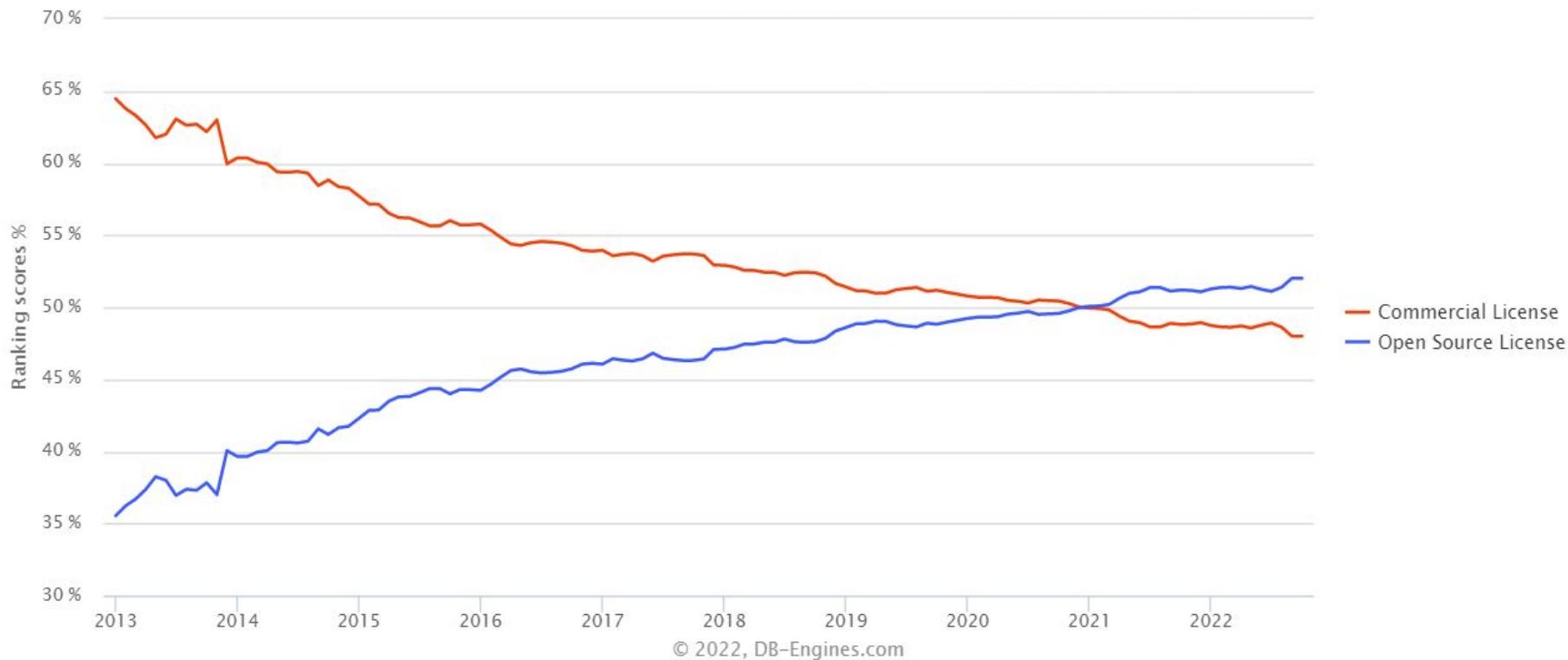


7. Hello Product Manager & SRE

Good bye DBA

A new breed of DB Professional is rising

Popularity trend



The above chart shows the historical trend of the popularity of open source and commercial database management systems.

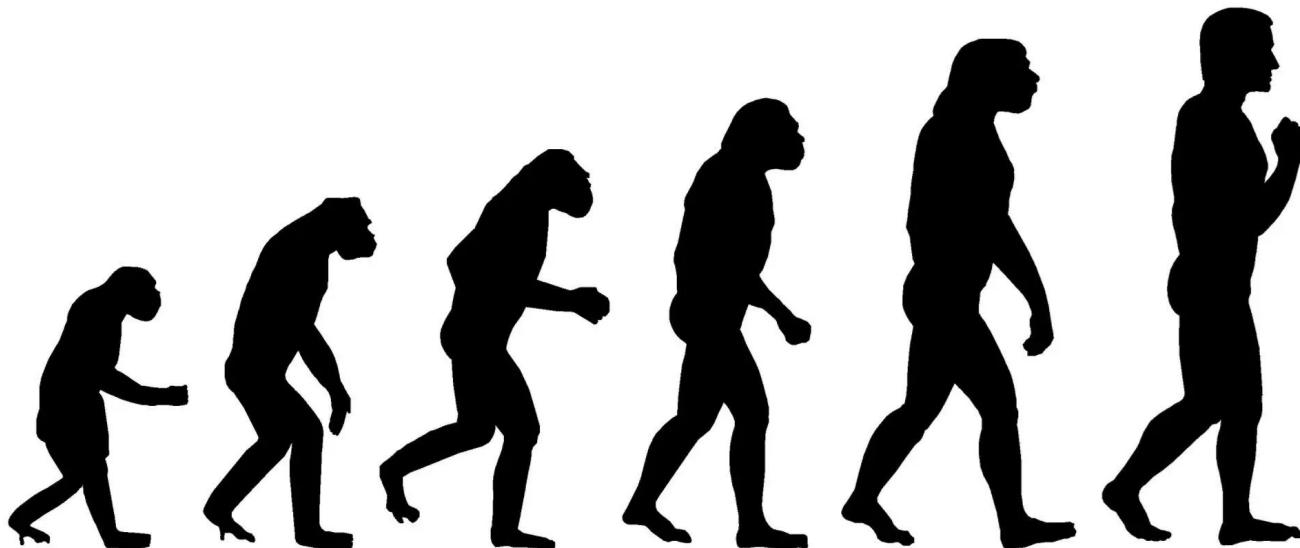
Transitioning



Database
Administrator

Site Reliability
Engineer

Program
Management



Hello New Job!

Say goodbye to a lot of the old boring parts of a DBA job. You won't be upgrading, handling restores and failovers... these will be automatic. You will be performance gurus, experts at automation, and experts in building better database designs.

Yeah, right!



“

Jevons paradox

Description

In economics, the Jevons paradox occurs when technological progress or government policy increases the efficiency with which a resource is used, but the falling cost of use increases its demand, negating reductions in resource use. The Jevons' effect is perhaps the most widely known paradox in environmental economics.

[Wikipedia](#)

8. Gimme Your Data

Hack? No, a Feature!

Giving up your Data for Nothing, by Accident

Open Access

With so many databases, so many systems, so many people controlling bits and pieces of your data some is bound to get left open.

You are relying on your least skilled user/developer to self manage their security setup.



Who do you trust?

B Bloomberg.com

Log4j Vulnerability Shows Risk of Relying on Open Source ...

Public officials have expressed new security concerns around open source software after a critical security flaw with Log4j was revealed in...

5 days ago



Log4j flaw hunt shows how complicated the software supply chain really is

A new analysis shows why the Log4j flaw for Java web applications will haunt tech people for years.



Written by Liam Tung, Contributor
on January 6, 2022 | Topic: Security

Application Security

News

Log4j Highlights Need for Better Software Dependencies

Security pros say the Log4j vulnerability is another warning call for enterprise IT to be more disciplined when keeping track of software bills of materials.



Ericka Chickowski
Contributing Writer

The security key
bad hackers
hate
the most

Log4J: Attackers continue targeting VMware Horizon servers

VMware has urged customers to apply the latest guidance as a way to resolve vulnerabilities CVE-2021-44228 and CVE-2021-4504.



Written by Jonathan Greig, Staff Writer
on January 21, 2022 | Topic: VMware

January 03, 2022

The Verge

Open source developer corrupts widely-used libraries, affecting tons of projects

... a pair of open-source libraries on GitHub and software registry npm — "faker.js" and "colors.js" — that thousands of users depend on,....

2 weeks ago



Bleeping Computer

Dev corrupts NPM libs 'colors' and 'faker' breaking thousands of apps



Open Source Revolution? The developer behind popular open-source NPM libraries 'colors' (aka colors.js on GitHub) and 'faker' (aka faker).

2 weeks ago

Silicon Republic

Open source developer corrupts his own files, impacting millions



Marak Squires developed the two libraries, colors.js and faker.js, to add colours to Node.js consoles and generate fake data for demos.

2 weeks ago

ZDNet

When open-source developers go bad



Colors.js is built into almost 19,000 other NPM packages and is downloaded 23 million times a week. In short, they're everywhere. And, when....

1 week ago

Stack

source Really Free if We Aren't Allowed to Break It

have heard by now, Marak Squires, the author of two popular libraries — colors.js and faker.js — intentionally...



Spotaged as OSS Sustainability Crisis Continues

Colors.js is an npm that has been downloaded more than 3.3 billion times, ... Many contributors to open source software assume that the...

2 weeks ago



Rage-quits JavaScript

Dispute over module

SEAN GALLAGHER - 3/24/2016

Mediacom says software bug caused widespread internet outage

by: Taj Simmons

Posted: Jul 7, 2022 / 10:08 PM CDT

Updated: Jul 7, 2022 / 10:08 PM CDT

SHARE



...

DES MOINES, Iowa — A large number of Iowans could not get online Tuesday afternoon due to a widespread Internet outage. Mediacom, the internet provider whose service went down, now believes it knows the cause of the outage.

In a statement, a Mediacom spokesperson said the outage was caused by a software bug to a large router operated by a third-party, which left the situation “beyond Mediacom’s control.” The situation left 40 percent of its Iowa service area without internet at about 3 p.m. on Tuesday.

The company said it has installed software updates and rebooted its system since the outage.

triggered
age
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iod on Tuesda

s biggest websites
pdating their

9. Money Corrupts Big Money's Impact

On Open Source is Real and will impact you!

“

Monetizing you!

*Are you now a
product?!?*

Who wants to be A Millionaire?

“Open Source” Companies are not all created equally.
Many are following the money and prioritizing
shareholders needs, even if that means creating
additional pain for free or even paying users.



You need to

Prepare to p
source toolk
using



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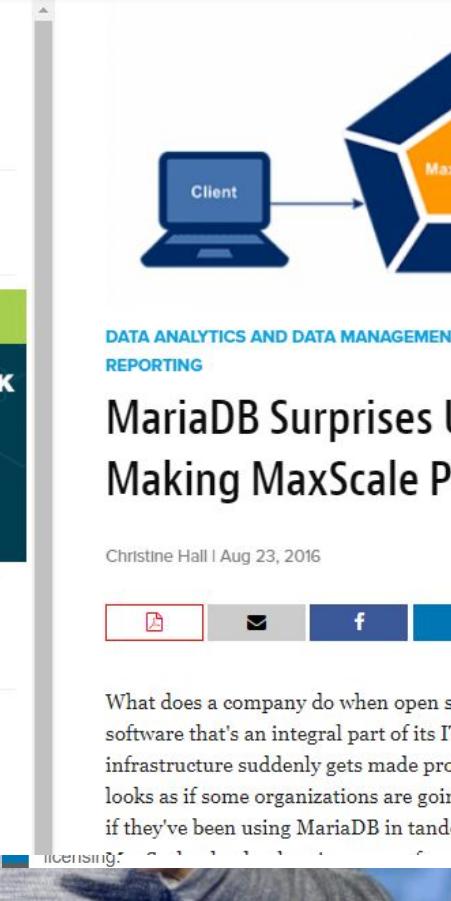
September 29

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BlackCat/ALPHV Gang Adds Wiper Functionality as Ransomware Tactic
SEP 27, 2022

Understaffing a Major Concern for IT Pros: Report
SEP 24, 2022

FEATURED



DATA ANALYTICS AND DATA MANAGEMENT > ANALYTICS AND REPORTING

MariaDB Surprises Users by Making MaxScale Proprietary

Christine Hall | Aug 23, 2016



What does a company do when open source software that's an integral part of its IT infrastructure suddenly gets made proprietary? It looks as if some organizations are going to find out, if they've been using MariaDB in tandem with

enterprise CONNECT
September 28, 2022
Digital Event

Join Us Online Wednesday!
Facing the Tough Issues On



source

stmasters
t Office
ekly.com
re here

VOIP

10. You still have to work!

Not all responsabilites go away!

Security Problems

With such easy data deployments, how do you monitor your data?

Hacks as bad practices:

- Copy prod database to my container
- Bad practices driven by deadlines
- 'Works on my PC'-itis

How much of your security have you outsourced?





Bad Schemas & Designs

The biggest problems Percona sees are related to bad schema design.

Relational theory, sets, and transactional skill lacking.

Agile Development practices may not produce good database practices.

ORMs are optimized for developers not for databases.

Example:



Thank you for Listening!

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<https://github.com/DaveStokesPercona/slides>