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Unlocking the Power of AWS: Deploying Open Source Database Software

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Agenda

1. About Percona
2. Options to deploy databases in AWS
3. What's important to be successful?
4. Solutions from Percona
    a. Database software
    b. Monitoring and tooling
    c. Consulting
    d. Support
    e. Managed Services
5. Stories from the field
6. Summary

About Percona

Who are we? What we offer?

About Percona

Founded in 2006 by former MySQL employees

Peter Zaitsev, CEO, Co-Founder (MySQL AB)

Vadim Tkachenko, CTO, Co-Founder (MySQL AB)

Champions of open source database solutions

Software, services and support, focusing on performance

350+ employees worldwide

Open Source Databases for the Enterprise

75M+
Software Downloads

100K+
Blog Views Per Month

800+
Customers

40%
YoY MRR Growth

Trusted by…

More than a third of the Fortune 50

4 of the top 6 Retailers

3 of the top 5 Healthcare Companies

9 of the top 10 Tech Companies

6 of the top 10 Gaming Companies

4 of the top 5 Manufacturing Companies

What Makes Percona Unique

TRUE OPEN SOURCE

Innovation without vendor lock-in.

MULTI-DATABASE READY

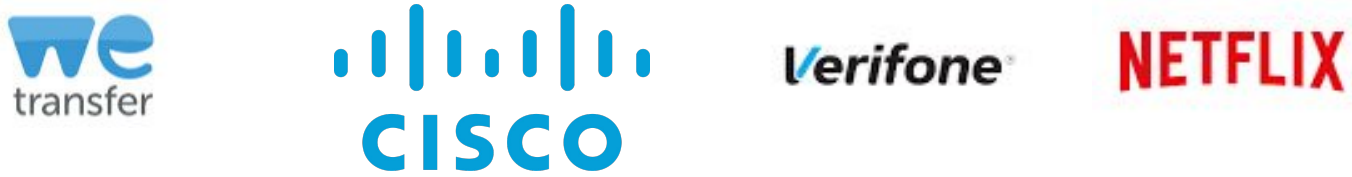
Handling multi-db complexities

WORLD CLASS EXPERTS

Unparalleled database services and support

RUN ANYWHERE

Infrastructure Agnostic & Cloud Native



More customers: https://www.percona.com/about-percona/customers

aws partner network

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MySQL

mongoDB.

PostgreSQL

MariaDB

Amazon Aurora

Amazon Relational Database Service (Amazon RDS)

Amazon Elastic Compute Cloud (Amazon EC2)

Amazon Elastic Kubernetes Service (Amazon EKS)

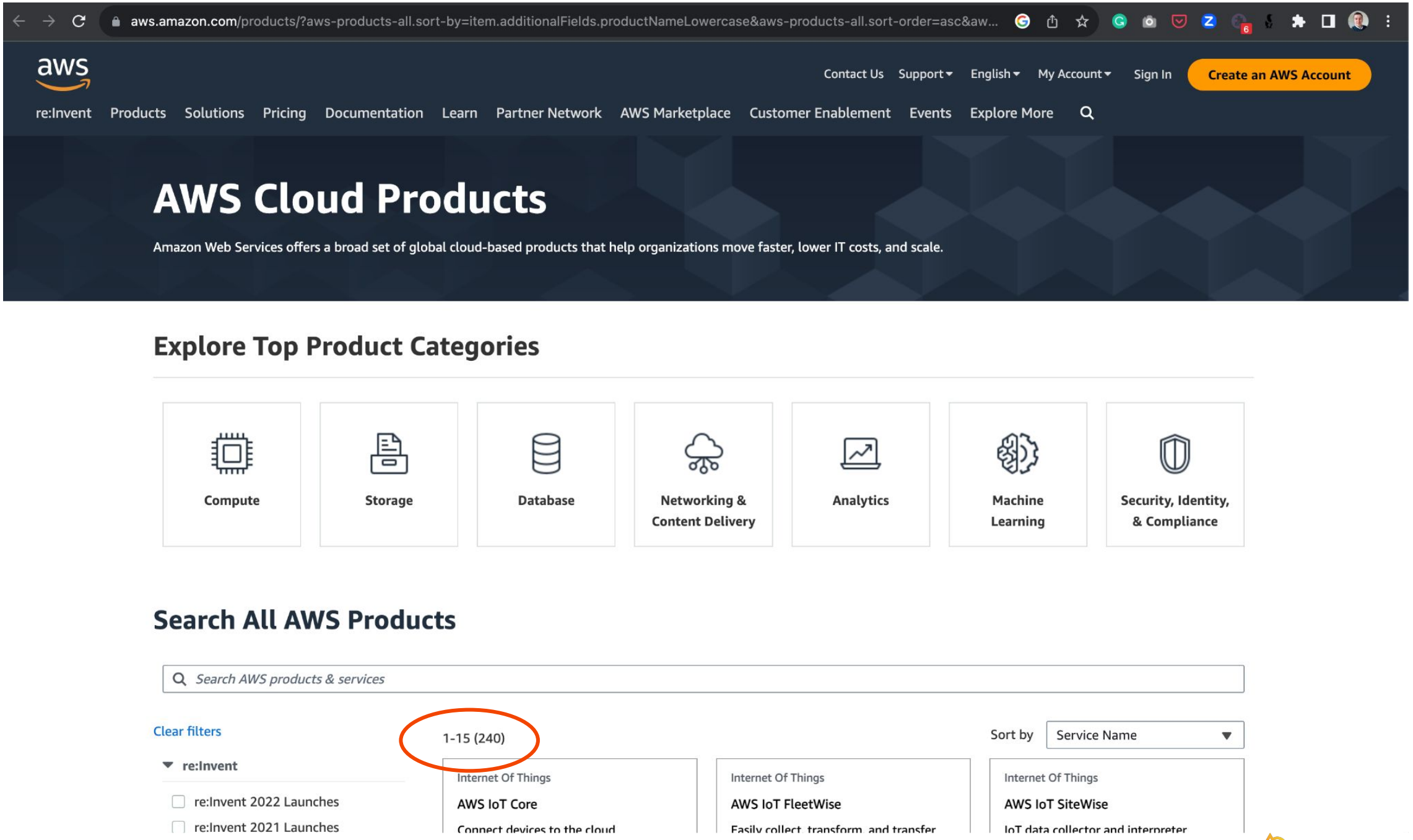
What is Cloud Computing?

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™



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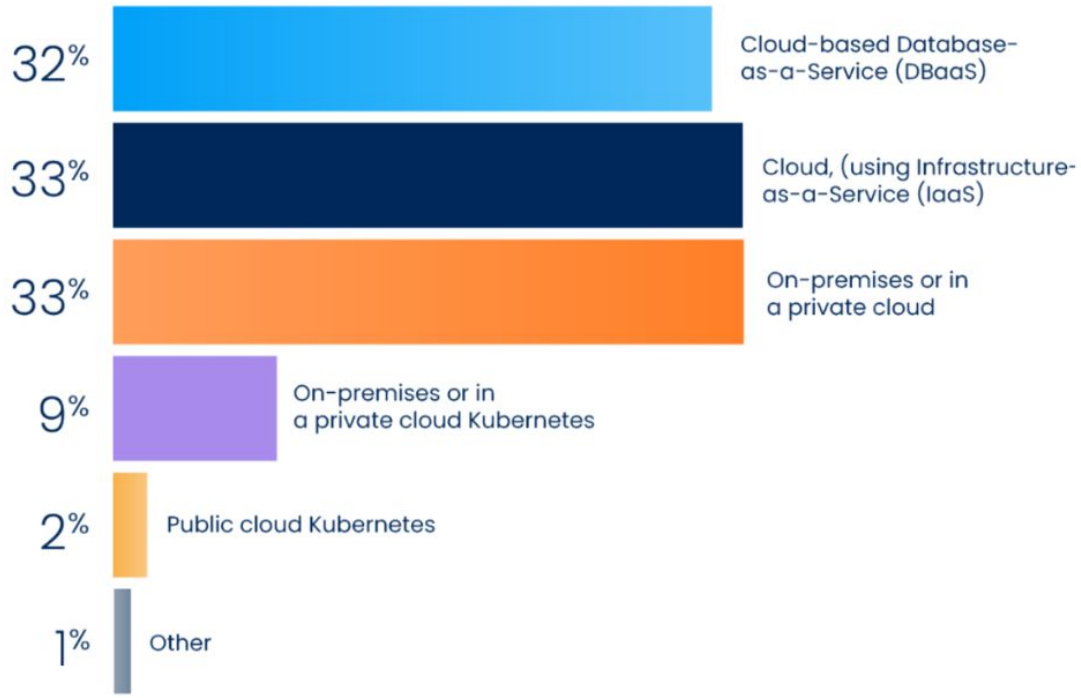
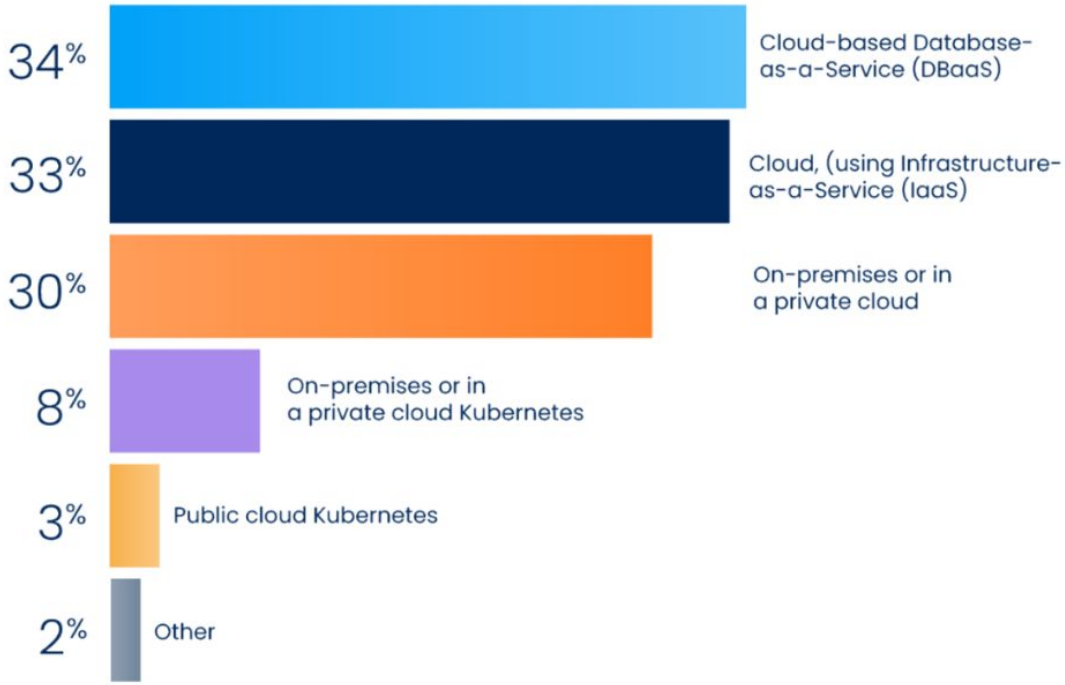
NOW

As of today, what percentage of your database instances are deploying in each of these ways?



IN THREE YEARS

In three years, what percentage of your database instances will be deployed in each of these ways?



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Options to deploy databases in AWS

MySQL, PostgreSQL and MongoDB

Infrastructure as a Service (e.g. AWS EC2)

- Freedom of choice
- Latest software features
- Portability (no lock-in)
- Cost-effective resources
- Easiest migration (lift and shift)

- Limited help from cloud provider
- Time and resource consuming
- Deep expertise needed
- Building automation is hard
- Error-prone
- Long time-to-market

Public DBaaS (e.g. AWS RDS/ RDS Aurora)

- Pre-defined setups
- Automation and best practices
- Lowest responsibility
- No error-prone
- Shortest time-to-market
- Less expertise needed

- Pre-defined setups (no flexibility)
- Cost
- Platform/vendor lock-in
- Uncontrollable maintenance
- Differences from open source
- Black-box - difficult debugging

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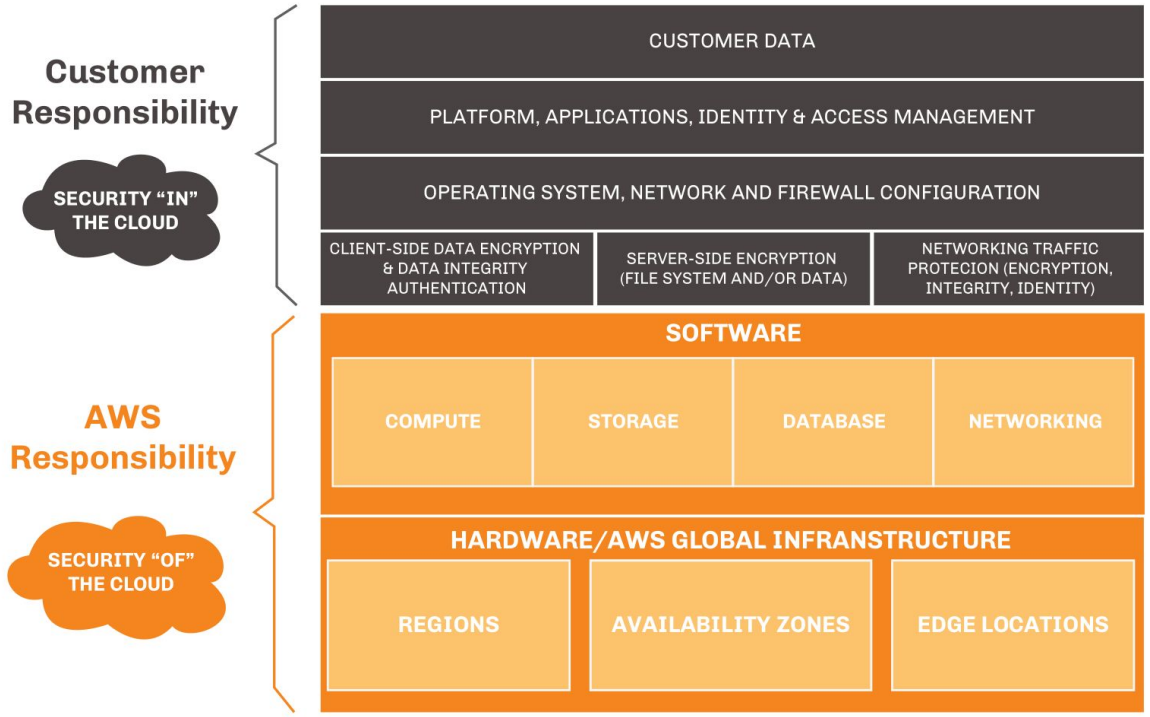
Kubernetes (e.g. AWS EKS)

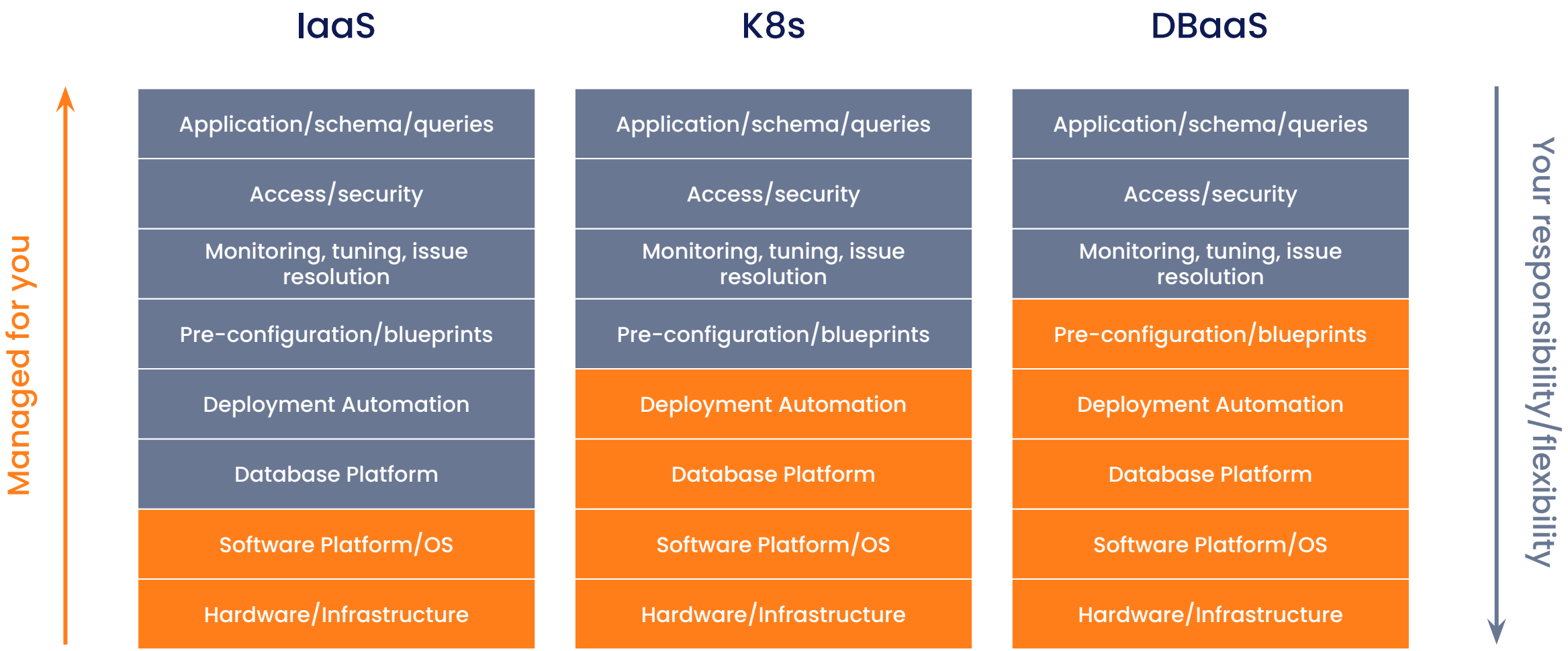
- Freedom of choice
- Portability (no lock-in)
- Cost-effective resources
- Same approach as to apps
- Can be easily automated (with Operators)

- K8s expertise needed
- Many moving parts
- Least battle-tested solution
- Require different approach to maintenance
- Limited assistance from cloud providers

What’s important to be successful?

Is AWS a silver bullet for all your database needs?





Solutions from Percona

Software

Open source database distribution

Percona Distributions

Binary compatible, drop-in replacement

for MongoDB | MySQL | PostgreSQL

No license fees, free to use

Enterprise features, without the restrictions

Works everywhere, on-premises, cloud, hybrid

Enterprise Level QA

Test and package for everyone!

Enterprise Features

Bring in the enterprise features companies need.

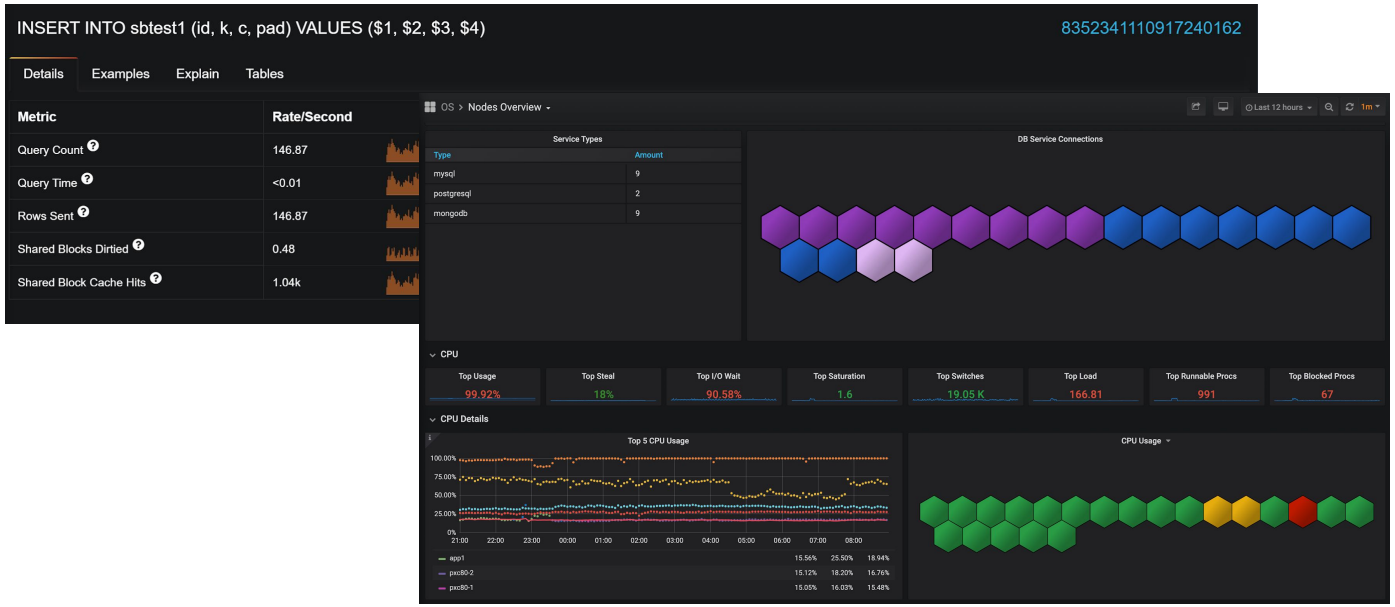
Critical Bug Fixes

Fix the bugs and make it super perform.

Percona Monitoring and Management (PMM)

PMM is the single tool that lets you easily view, monitor and manage your open source database environments

No matter how or where they are deployed - bare metal, VM, container, on-prem or in the cloud



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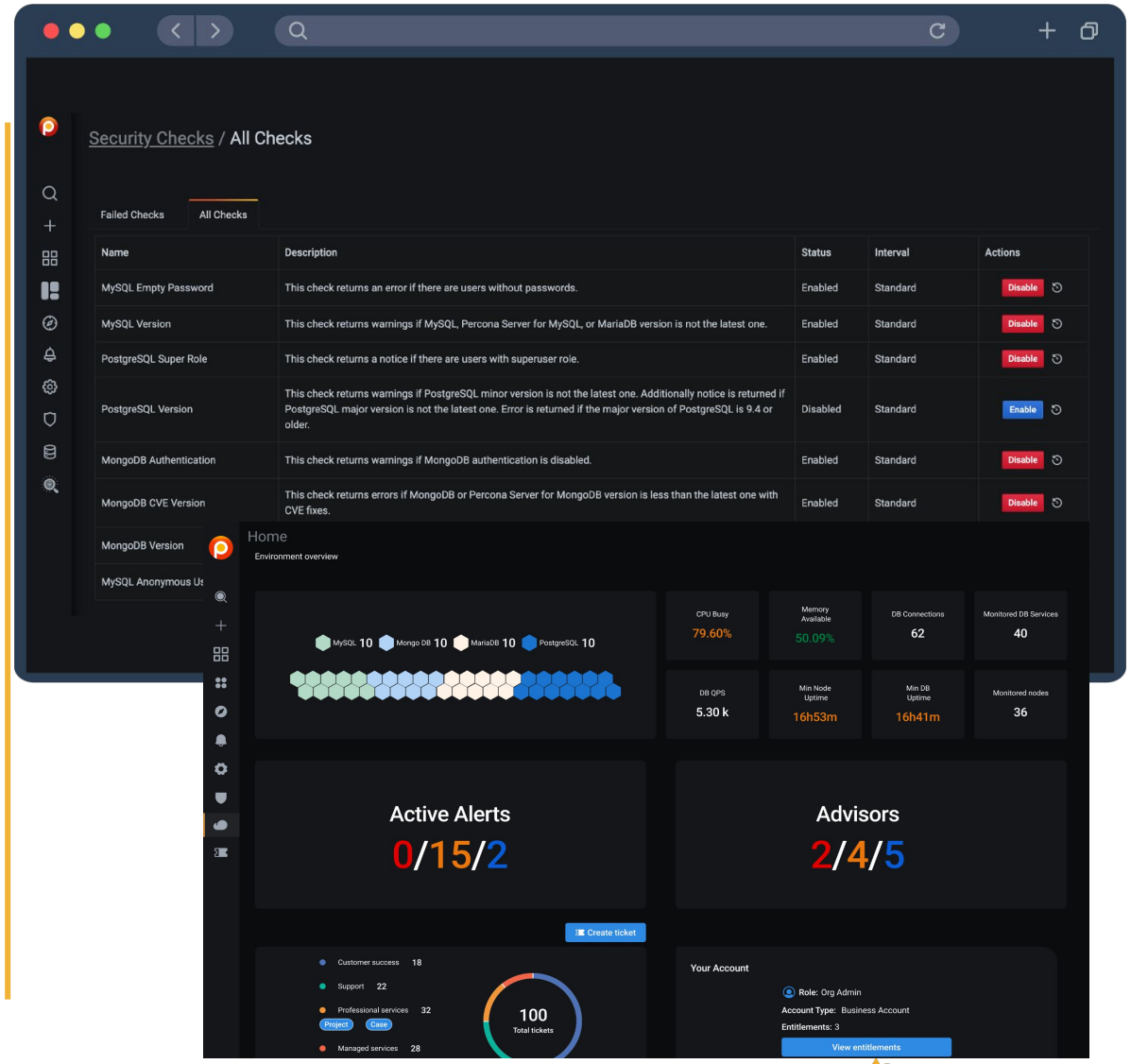
Automated Advisors

Keep your configuration secure and performant

Advisors provide automated insights and recommendations

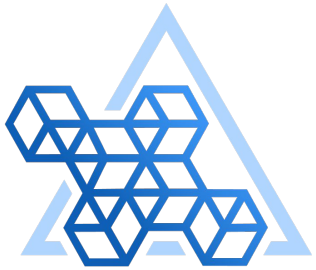
Proactively check for configuration according to best-practices



Percona Kubernetes Operators

1. Deploy easily complex database clusters
2. Topology and high availability management
3. Monitoring integration
4. Network exposure and load balancing
5. Connection pooling
6. Backups management and scheduling
7. Self-healing
8. Upgrade automation (minor, manual major)
9. Configuration adjustments
10. Out-of-the-box best practices configuration

Amazon Elastic Kubernetes Service (Amazon EKS)



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Kubernetes Operators

Solutions from Percona

Services

Database expertise, where and when you need it

Percona Consultants are recognized experts in the database community and their depth of experience make them key allies in the lifecycle of your database solution.

The aid of Percona Consultants can be leveraged in many ways:

- Architecting and designing new solutions
- Moving from Proprietary to Open Source
- Migrating to the Cloud
- Operationalizing the environment
- Tuning the environment and resolving performance issues
- Assessing overall health and resiliency
- Proof of Concepts
- Custom project scopes

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Percona Support

How it can help you

Top MySQL/PostgreSQL/MongoDB/MariaDB Support Provider

- Recognized as a neutral and vendor agnostic top expertise and support provider
- Available 24/7 immediately with down to 15 min SLA

Leverage a global team of open source database experts

- Keep critical databases performing with our acknowledged database expertise
- Empower developers by allowing them to ask **consultative questions** of our support engineers
- Focus your team on revenue generation by reducing database distractions and troubleshooting
- Implement best practices through **guidance provided by our support engineers**

DBaaS

- Percona has helped thousands of customers, achieve better performance, better cost savings, and better ROI.
- Provides the DB-specific expertise Cloud providers are missing

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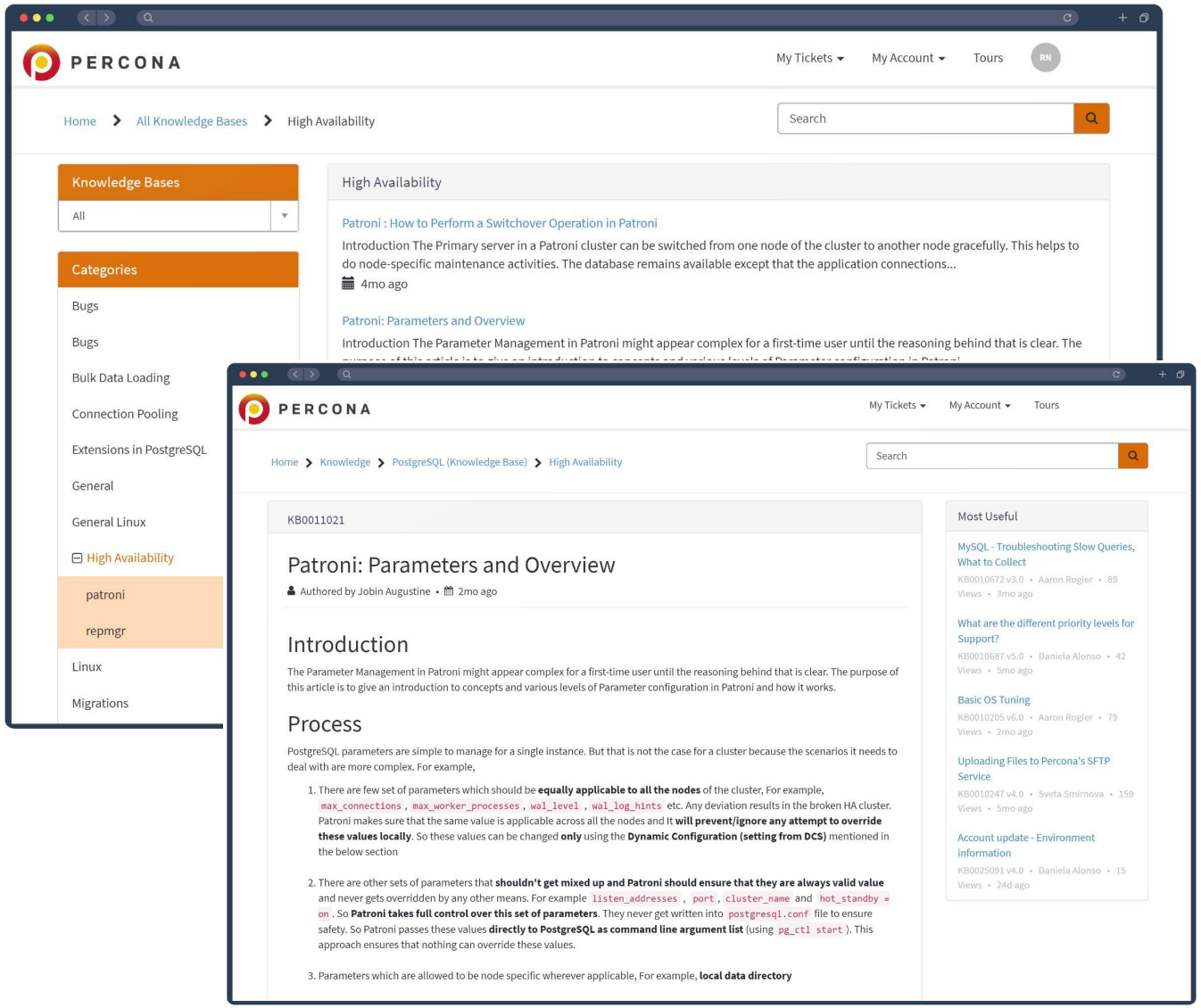
Percona Support Knowledge Base

Self-service content for database troubleshooting and performance optimization, created and curated by the Percona team.



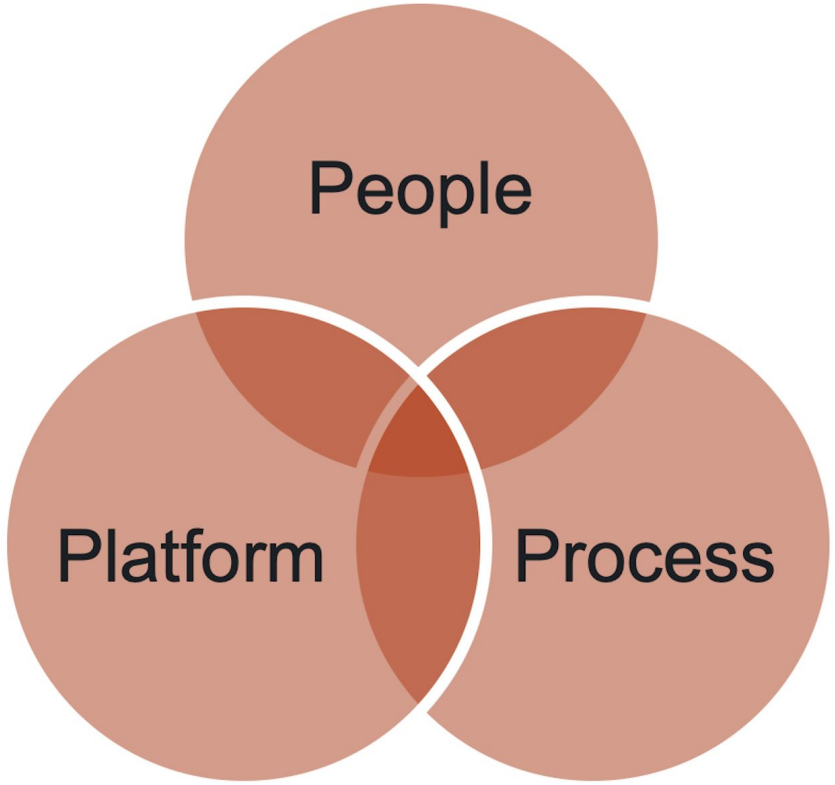
Percona Managed Services

- Hands-on
- 24x7x365 proactive monitoring & support for MySQL, PostgreSQL and MongoDB
- Dedicated team of expert DBA's - working as an extension of your team
- Established Best Practices for database operations
- Flexible engagement model tuned to your business requirements, allowing you to dictate your priorities, budget, and roadmap
- Guaranteed SLA's (15 min S1)
- Emergency support
- Available for AWS EC2, AWS RDS, and AWS RDS Aurora

What is Managed Subscription (really)

Effects:

- Your needs covered end-to-end
- Continuous improvement



Stories from the field

Story 1: HBSMU - going global through the cloud

Hamdan Bin Mohammed Smart University (HBMSU)

Going global through the cloud

- First accredited smart learning institution in the Arab world offering platform accessible all around the world.
- Offers academic and non-academic courses since 2002
- MySQL is one of the most critical components of the platform

Business drivers:

- Offer solution beyond the Middle East market - going global
- Increase and maintain reliability 24x7
- All this with limited tech resources available

Migration to AWS RDS Aurora MySQL and Percona Managed Services

Migration challenges

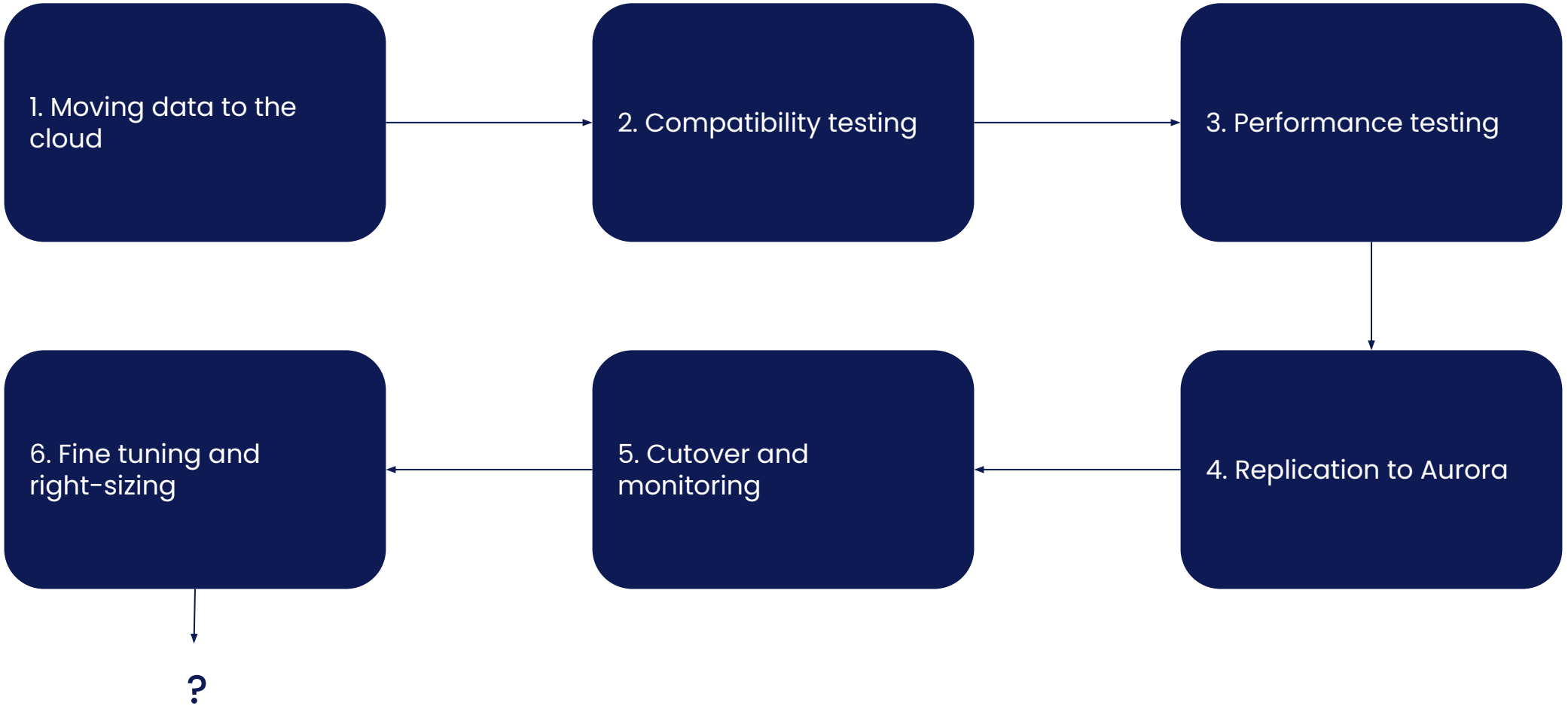
HBMSU AWS RDS Aurora migration

1. SLA's and downtime during migration
2. Smooth cutover, but sound rollback process needed
3. Performance testing, tuning and optimization on new platform
4. Cost optimization
5. Version upgrade

AWS DMS is an option, but...

Percona Professional Services - migration

HBMSU AWS RDS Aurora migration



Post-migration: Percona Managed Services

HBMSU AWS RDS Aurora migration

1. 24x7 hands-on assistance and alert-response
2. Handles what's considered HBSMU responsibility in a shared responsibility model:
    a. Security management and incident reporting
    b. Performance management, scaling, right-sizing
    c. Database change management
    d. Advices to the application team

Migration to AWS RDS Aurora MySQL and Percona Managed Services

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Stories from the field

Story 2: Limits of AWS RDS MariaDB in gaming

When DBaaS and cloud elasticity alone are not enough

Limits of AWS RDS MariaDB

- Running workload in the cloud it's easy to miss the limits
- e.g. AWS RDS dataset size limit is 64TBs
- Premature optimization (MVP development) can be harmful

- Percona customer from gaming industry hit all the limits "by surprise"
  - 64TB of data on AWS RDS MariaDB
  - r5.24xlarge instances in Multi-AZ configuration, with two replicas

The goal:

- Stabilize the system
- Create "breathing room" to find a long-term solution

When DBaaS and cloud elasticity alone are not enough

Limits of AWS RDS MariaDB

1. Multiple failures:
    a. Replication started to fail
    b. AWS DMS started to fail
    c. Performance dropped
2. Write-heavy workload
3. Any change takes a lot of time (e.g. configuration)
4. No HA, no data available in other services

Taking a system offline for a long period of time is not an option

When DBaaS and cloud elasticity alone are not enough

Limits of AWS RDS MariaDB

1. **Support subscription to**
    a. Start working on a problem immediately 24x7
    b. Provide assistance in case of further outages
    c. Validate any changes planned before execution
2. **Professional Services - Health and Performance Audit**
    a. Holistic schema and queries optimization
    b. pt-archive to start data archival process
    c. Configuration fine tuning

Stories from the field

Story 3: Moving MongoDB Enterprise to the cloud

Moving MongoDB Enterprise to the cloud - telco

Is Cloud DBaaS the only option?

- Multinational tech consulting company managing MongoDB Enterprise for a large telco
- Critical system, with 4 shards, 3 nodes each, and terabytes of data
- The customer requested to migrate it to the cloud

The goal:

- Migrate without interruptions
- Keep it cost-effective

Percona Software and array of services

Moving MongoDB Enterprise to the cloud - telco

Is Cloud DBaaS the only option?

1. MongoDB Atlas is the only MongoDB DBaaS available in the cloud
2. Atlas costs easily x2 comparing to the same IaaS infrastructure - matters with scale
3. MongoDB Enterprise on IaaS means costly licensing and maintenance efforts
4. On-prem MongoDB runs EOL version (4.2)
5. Long service interruption is not an option

Moving MongoDB Enterprise to the cloud - telco

Is Cloud DBaaS the only option?

Software + Services

Percona Distribution for MongoDB

- Enterprise-grade features for free
- Drop-in replacement
- No vendor lock-in

Percona MongoDB Operator

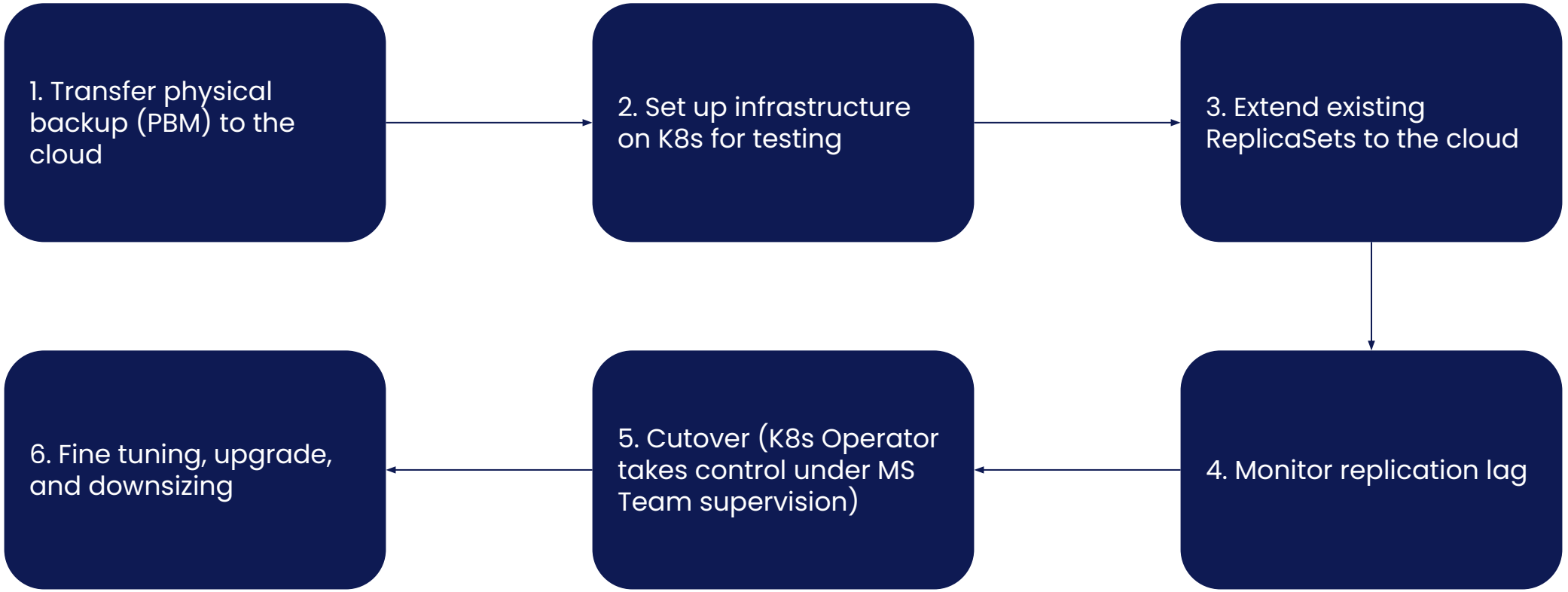
- Robust MongoDB infra on K8s
- Deployment automation
- Day 2 operations automation

- AWS EKS is at EC2 prices!

1. **Professional Services**:
   a. Handle migration heavy lifting
   b. Training
2. **Managed Services - 6 months**
   a. Taking 24x7 ownership
   b. Knowledge transfer
   c. Upgrade to the currently supported version
   d. Fine-tuning and downsizing
3. **Support - 30 months**
   a. Compliance: security patches and bugfixes
   b. Escalation path 24x7 once customer is comfortable with the solution
   c. Consultative assistance for changes in the future

Moving MongoDB Enterprise to the cloud - telco

Is Cloud DBaaS the only option?



Moving MongoDB Enterprise to the cloud - telco

Is Cloud DBaaS the only option?

1. Cost-effective alternative to MongoDB Atlas, with all features needed, and no vendor/platform lock-in (close to **50% savings**!)
2. Migration from on-prem MongoDB Enterprise with close to 0 downtime
3. De-risking new solution adoption: hand-holding in the first 6 months, supplied with training and knowledge transfer
4. 24x7 support afterwards for issues, escalations and compliance

Percona Open Source Software and Services

Stories from the field

Story 4: Patreon: From DBaaS to IaaS

Patreon: From DBaaS to IaaS

Replacing AWS RDS MySQL with AWS EC2 and Percona Server

PATREON

- Patreon powers membership businesses for creators, giving them the tools they need to acquire, manage, and energize their paying patrons.
- >150,000 creators supported >4 million patrons
- AWS RDS MySQL with multiple environments in production

The goal:

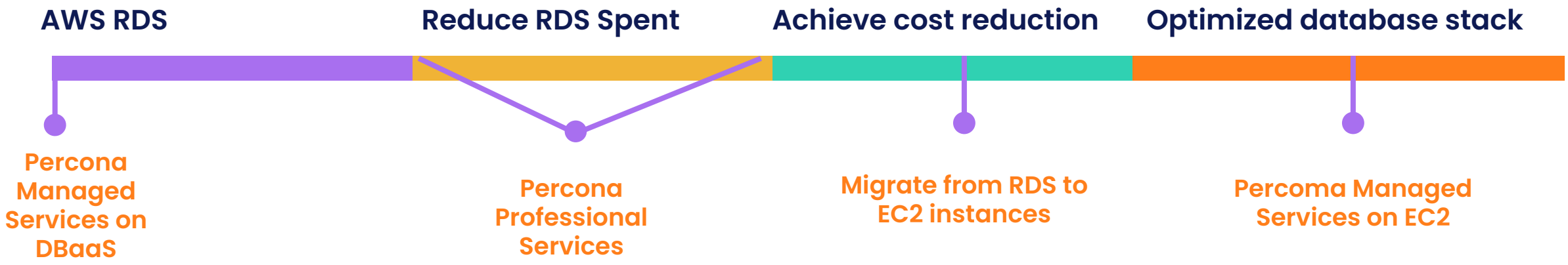
- Reduce the cost of AWS RDS MySQL
- Be in charge of maintenance windows
- Be more platform-independent

Percona Software, Managed and Professional Services

Patreon: From DBaaS to IaaS

Replacing AWS RDS MySQL with AWS EC2 and Percona Server

PATREON



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Patreon: From DBaaS to IaaS

Replacing AWS RDS MySQL with AWS EC2 and Percona Server

PATREON

1. Infrastructure costs savings: **over 50%**
2. Payot processing time **reduced by 30%**
3. Assistance on standby during the most critical hours every month (payouts processing)
4. Flexibility (especially software versions and maintenance windows)
5. The freedom to adopt a multi-cloud or hybrid deployment strategy

"Percona planned and performed Patreon's database migration. This saved Patreon over 50% of their infrastructure cost on a monthly basis.

Even after including Percona's Fully Managed Services and Support fees, Patreon spends far less on combined services and infrastructure than they did prior to their migration. "

Summary

Summary

1. Percona has you covered with open source software and services
   No matter what approach you choose, you still have a gap to close
2. It's worth looking at alternatives to Public DBaaS
   Other options may be a better fit long-term
3. Re-evaluate your database deployment decisions regularly
   Needs evolve and your approach should, too

Let’s get in touch!

www.percona.com

sales@percona.com

AWS re:Invent 2023: **Booth #616**