TOP TIPS

For Meeting the Challenges of Cloud Computing

Cloud platforms such as Amazon RDS, Microsoft Azure, and Google Cloud's Anthos can automate many basic operational database deployment tasks. However, they don't remove all of the challenges that come with a successful deployment, or guarantee that your original set-up will be pain-free as your business expands.

As your applications grow, your workload and the demands on your database also increases. Whether you deploy MySQL, MariaDB, MongoDB, or PostgreSQL, there are many elements you need to consider. The more prepared you are, the better placed you will be to realize the benefits of cloud computing.

TIP - 01 Control Your Costs

Although promoted as a cheap and convenient alternative, cloud costs can quickly spiral out of control. Our recent survey showed that 22% of companies spent more than they planned on cloud hosting in the last year.

Most companies don't realize that they already have the power to lower their costs. Reducing costs isn't just about negotiating contracts or switching services. If your applications, databases, and systems are running slowly, the instinct is often to purchase more capacity to compensate and meet your end-user expectations. But, in an infinitely scalable computing platform, this can quickly become expensive and doesn't fix underlying issues. Cloud vendors are thrilled for you to mitigate your performance issues by buying additional capacity.

Instead of scaling by credit card, you should be ensuring that your database is tuned correctly and optimized. With optimized systems in place, you could cut your cloud database spend by 25-50%.

TIP - 02 Choose a Reliable Provider (and Educate Your Team)

The reliability, capacity, and capability of a cloud provider are as crucial as the price tag. In recent years, we have seen the massive impact that cloud outages can have on businesses. All major cloud providers have experienced outages, but two things can make the effects of outages worse:

- **First**: As a result of lowering the entry barrier for cloud services, more people with only a cursory knowledge of how to architect, setup, and configure databases in the cloud are becoming the "admin," in charge of ensuring they are production-ready.
- **Second**: Many cloud vendors market their platforms as "Fully Managed", leading people to assume they are absolved of responsibility for their database. However, applications' availability is a shared responsibility, and poor set-up and maintenance can result in applications not being correctly configured and unable to survive major outages.

You need to ensure you understand what you and your provider are responsible for before entering into a contract.

TIP - 03 Take Security Seriously

Is the cloud safe? Cloud services are only as secure as YOU make them!

One simple but key factor that plays a vital role in cloud security is password supervision. The more people who can access your cloud account, the less secure it is. Anyone with access to your cloud password will be able to access all of the information you store there.

You must develop and implement a strict security plan, employing multi-factor authentication and forcing frequent password updates, particularly during staff turnover. Be sure you allocate the appropriate level of access rights only to those who require them to do their job.

TIP - 04 Keep it Private

Cloud computing brings various new regulatory, privacy, and security challenges, which require additional steps and consideration to protect your sensitive data in the cloud.

Firstly, you need to be aware of relevant jurisdictional privacy laws. To fully understand your risks and obligations, you must know the legal requirements regarding where your data originates and where it ends up being stored or processed.

Secondly, you should determine which technical and administrative controls your cloud provider will implement to protect your data. Contracts should clearly outline data protection standards to prevent non-compliance. Measures should include technical controls such as end-to-end encryption or tokenization.

Finally, utilize reviews, risk assessments, and audits to confirm that your cloud provider meets the data protection standards set out in your contract. Establish a dedicated contact at your cloud service provider to ensure issues and questions can be addressed immediately.

TIP - 05 Embrace Hybrid and Multi-Cloud Options

This year, the number of companies using more '*two or more cloud providers*' increased, jumping from just 10% in 2019 to **14%** in 2020. Interestingly, larger companies reported that **28%** (from 17% last year) now use two providers or more.

So, why the growth?

A multi-cloud approach allows companies to choose the vendors that offer the most flexibility, reliability, and features, at the lowest price point. It's hard for a single cloud provider to meet every business' exact needs, so using just one cloud provider may no longer be the best option.

However, moving your workloads and facilitating hybrid cloud and multi-cloud operations across on-premises and public cloud providers can result in a more complicated setup. Each platform has a unique interface, requiring configuration and management.

Your internal IT team must have specific expertise in this area, or if you have a knowledge gap, you should consider bringing in a skilled consulting partner who can help you take full advantage of a multi-cloud platform.

The cloud promises easy setup, simplified management, guaranteed availability, and on-demand scalability, but it's essential to understand the agreement and support available to you.

Cloud providers create and maintain cloud database infrastructure, but they do not provide the necessary technical expertise required to get the best business value out of your database. It is ultimately your responsibility to develop, implement, and optimize the architecture that serves your business goals. Having plans that address your unique challenges and bringing in experts when needed will help you ensure a successful cloud experience.

For further information on how Percona can help you embrace the cloud please visit our dedicated web page. You can also check out the Percona Database Performance Blog for practical and technical insights into using open source software in the cloud.

Contact Us

Percona Support services are accessible 24x7x365 online or by phone to provide assistance with issues and help you keep your databases running optimally.

We can provide onsite or remote Percona Consulting for current or planned projects, migrations, or emergency situations. Every engagement is unique and we work alongside you to plan and create the most effective solutions for your business.

Percona Managed Services can support and help you manage your existing database infrastructure; whether hosted on-premise, or at a co-location facility, or if you purchase services from a cloud provider or database-as-a-service provider.

To learn more about how Percona can help, and for pricing information, please contact us at +1-888-316-9775 (USA), +44 203 608 6727 (Europe), or email us at sales@percona.com.