DATABASES ON AWS: HOW CLOUD DATABASES FIT IN A MULTI-CLOUD WORLD

What is the state of the cloud within your company? Some legacy enterprises maintain clouds entirely on premise, and newer companies are completely native to the cloud. Most companies, however, are somewhere in between.

Likewise, your developers probably know that they'll eventually be tasked with moving both applications and databases to the cloud. Unfortunately, migration is not a straightforward process. Complicating matters more is determining which databases are best for your needs. For years, it has been a use-what-works situation, wherein one database may exist in Oracle, a couple more in MySQL, one in Microsoft SQL, and even more basic databases in Microsoft Excel. In recent years, you may have added a cloud-based database from a smaller tech company that gives you more specificity and flexibility.

But the game is starting to change, as AWS, the cloud branch of Amazon, is taking up more space in the cloud – literally. AWS has started buying up smaller databases in an effort to compete with Oracle and Microsoft, the mainstays of database technology. This article explores the differences in using a multi-cloud or an AWS-only approach to database management.

Short history of database technology

In database technology, history is short. The leaders thus far have been Oracle and Microsoft. Oracle owns and supports two of the most popular databases worldwide: Oracle and MySQL. Microsoft's SQL Server rounds out the world's top three.

Unfortunately, as data has grown exponentially into big data, Oracle and Microsoft haven't managed to stay atop the swelling tides. The result is that these long-standing legacy databases frequently are not the best choice for 21st-century data needs. The industry generally agrees that Oracle has missed the market transition to big data, ignoring the cloud for a long time, and only now are they attempting to migrate by and large, with inevitable problems.

In contrast, Microsoft saw the cloud and reacted in time, albeit not as quickly as smaller, flexible providers. With the release of Azure in 2010, Microsoft has maintained a number-two position in the multi-cloud. Microsoft continues to release many more databases in an attempt to stay current and offer many options to its customers, encouraging them to stay with a single cloud vendor.

What is the multi-cloud?

As big data has emerged, the staid options of Microsoft and Oracle aren't always the best options for databases. Cloud technology and open-source programming together have created a world of near-endless choice when it comes to what databases you need.

The multi-cloud is a catch-all term that refers to the use of multiple cloud computing and cloud storage options within one heterogeneous architecture, such as an enterprise. Databases can now exist, serverless, in the cloud, and companies have sprung up offering wide-scale solutions to the big-data-holdbacks of Oracle and Microsoft. Or, companies provide specific niche database solutions, worth the smaller subscription fees.

When it comes to databases, you may want to use more than cloud option for a variety of reasons: different databases require different strengths and capabilities, and not every cloud database is built the same. You may want to reduce your reliance on a single vendor and increase your flexibility, especially as a way of mitigating for inevitable disasters.

Of course, there are drawbacks as well. Security and governance get more complicated, as there are more moving parts to watch and defend. Plus, there's the psychological paradox of choice that shows that more choice isn't always helpful – your IT team may feel overwhelmed at the options, determined to find a "perfect" solution when there are dozens of perfectly adequate ones.

The Amazon way: AWS shaking things up

Many companies today live in the multi-cloud, even without intending it. But with more awareness comes more responsibility. If you're building a new database or seeking to migrate large databases to a better solution, can be overwhelming: which to choose? How do you know if there's not a better option in the market somewhere?

AWS is seeking to eliminate this pain point by acquiring a variety of databases. The goal is similar to the tried-and-true Amazon approach of providing everything customers may need.

By serve a wide variety of database needs, AWS can attract and maintain the most customers. Their mission is twofold: AWS continues developing their own internal databases while also acquiring smaller database technology, usually from small start-ups who offer a niche or specialty. After acquisition, AWS ensures these newer databases complements their internal offerings and support.

They approach is customer-centric: by acquiring or developing so many options, customers can choose exactly what they need for developing, instead of making their needs conform to just a few options. One example is PostgreSQL. This open-source database has been around for years, but in

has surged in popularity recently, as AWS has built support around it.

Another customer-forward move is their migration support. Having migrated more than 64,000 databases in two years, AWS has tangible plug-and-play options so you can move terabytes of data from your infrastructure to the Amazon cloud – and it's much faster than pushing this data across a wire.

Plus, AWS continues to lead the charge when it comes to serverless functions. As they grow their serverless ecosystem, more metadata can be mined, which can lead to improvements in innovation, efficiency, and customer-driven focus and needs.

Choosing a database in the cloud

Sifting through the thousands of cloud options isn't easy. When you opt for a single-vendor, like AWS or Azure, you can take advantage guidance and migration selection the company provides.

As always, consider your company's needs – what your product is, what your competitive edge is, and, perhaps most importantly, what your customers expect. Do your customers need the scalability and flexibility that the cloud offers?

Some keys that might help you narrow the options to make an overwhelming decision a little more straightforward include pricing, customer support and testimonials (do they align with your needs and expectations?), how the database was designed, portability and compatibility, and even API adaptation. Prioritizing one or two factors over the others, and that can guide your decision.

Today, AWS still offers the most databases under the single umbrella. Azure is a solid second choice, rapidly adding databases and serverless options, and Google is also upping its offerings to stay competitive. Still, your company may prefer the cutting-edge innovation of a multi-cloud solution, even with its inherent drawbacks.