

Maximizing the Benefits of Database in the Cloud

How the right cloud strategy can boost business performance and resilience

Over the years, APAC organizations have been steadily ramping up their digital transformation journey. There were multiple factors to thank for: an increasingly digital economy that led to a fiercely competitive market; government initiatives such as Korea's Digital New Deal and India's Digital Program; and the rise of the Fourth Industrial Revolution.

But nothing pushed an organization towards digitization quite like COVID-19, which has upended the way we live and work. Border closures and nationwide lockdowns have sent businesses scrambling to orchestrate the near-overnight shift to remote work. Consumers, instead of window-shopping at malls, now browse eCommerce apps for both necessities and luxuries. These pandemic-led changes, in turn, have driven a large majority (87%) of APAC CIOs to implement new technologies, IT strategies, and/or methodologies¹ to stay resilient in an unprecedented time.

It is no surprise, then, that the pandemic has accelerated digital adoption by three or four years, driving up the demand for data processing, transmission, and storage. Last year, we saw CIOs in APAC spending the bulk of their time on transformational activities (86%), including aligning IT initiatives with business goals (44%) and implementing new systems and architecture (41%)².

For many, the cloud holds much promise for future infrastructure—perhaps more now than ever before. Consider how 80% of organizations will put a mechanism in place in a shift towards cloud-centric digital infrastructure today, twice as fast before the pandemic.

¹ 2021 Executive Summary: CIOs in APAC Drive Transformation in a Year Full of Change, IDG Communications, Jan 2021

² 2021 Executive Summary: CIOs in APAC Drive Transformation in a Year Full of Change, IDG Communications, Jan 2021

What does it take to have your database in the cloud?

It is clear that the future of database lies in the cloud. Gartner predicts that 75% of all databases will be deployed or migrated to a cloud platform by 2022³, driven by the growing reliance on databases for analytics.

However, while organizations are eager to choose from a wide variety of cloud-based database management systems (DBMSs) for analytical use cases, plenty of migration complexities loom at the horizon. Moving databases from legacy systems is often the trickiest part of cloud migration, even more so for large organizations, due to the sheer amount of data they own and the number of applications they use. Nimble small- and medium-sized counterparts have their own setbacks too. Take the example of a lift-and-shift migration approach, which may cause performance and latency challenges particularly with failures to optimize apps for the cloud.

Before embarking on your database migration efforts, consider:



Planned downtime

While planned downtime can be scheduled, monitored, and controlled, it still does not eliminate the costs, whether it is from lost revenue, productivity, or brand equity and/or trust. The damage? An average of US\$5.6 million in 2018⁴. Assess if your organization can afford downtimes especially in today's digital age, where both employees and customers are increasingly reliant on digital systems and online services.



The need to rethink data architecture

Ensuring compatibility of legacy systems with cloud-based applications requires more planning than one would expect. Simply replacing an aging mainframe with a new one may cause intellectual property issues, while rewriting legacy apps is tedious and will require enormous resources and time. All these can delay migration significantly and cause potential database management challenges.



The cost of database lock-in

DBMS are often big-ticket items in IT budgets. Aside from high upfront costs, many organizations are blind-sided by the associated ongoing maintenance and support costs that snowball alongside data growth. The marketplace of confusing and even misleading licensing does not help either; organizations often feel locked in with a vendor once they have chosen a solution, ultimately robbing them of the choice they wanted when moving to the cloud.



Complexity in data security and governance

Increase in breaches puts data security in the spotlight, with half of APAC security leaders cited improving the protection of confidential and sensitive data to be their top priority⁵. Organizations will need to reexamine their existing security clearance systems and grasp how these will change with the shift to the cloud. As countries roll out laws to protect consumer data, it is also imperative to have a robust understanding of these regulations and ability to ensure their systems comply.

Going fully cloud brings about significant advantages, yet it will take organizations anywhere between three to five years to get there. As such, they embrace the hybrid model as the strategic middle-ground. But that, too, comes with its unique set of challenges on top what have been mentioned. Migrating into hybrid may introduce compatibility issues between on-premises and the cloud. Some also struggle to manage databases due to the lack of transparency at locations, resulting in potential latency between datasets that may impact performance.



Maximizing cloud investments starts with having the right DBMS



Modernizing systems and moving workloads to the cloud are critical to delivering on digital initiatives and addressing market disruptions. It is also equally critical for organizations to have the right DBMS—one that is designed for modern and cloud infrastructure—to help fully maximize the performance, resilience, and cost benefits of the cloud.

Yet many continue to rely on traditional RDBMS solutions that often mean higher licensing costs; a typical licensing model requires customers to pay 100% of the available physical cores even when not in use. Other vendors may offer ‘by-the-core’ licensing models but that only apply when cores are added on. In both situations, organizations are ultimately locked into a vendor. What was initially a bid to lessen budget pressures and improve performance and security could very well turn out otherwise.

Tibero from TmaxSoft is an enterprise-class database platform that goes against the grain by only licensing the cores associated to a given virtual machine, providing a less complex and more affordable alternative to traditional RDBMS offerings in the market. Its customer-focused licensing model is not the only reason why over 600 companies worldwide chose Tibero as the RDBMS of choice.

Delivering high database performance and reliability in the cloud

Constant and consistent performance with zero downtime is made possible through Tibero Active Cluster (TAC). When multiple instances of TAC are executed, they not

only combine processing power to increase performance, but also provide seamless, instantaneous failover capabilities so that even when a node fails, operations will continue due to clustered database processing. This is further enhanced by Tibero Standby Cluster (TSC), which immediately uses redo logs to replicate the structure of the primary TAC cluster. In the event of a site failure, TSC will take over and continue delivering database services—business as usual.

Tibero gears up Kia Motors India’s manufacturing

Tibero’s seamless integration with Oracle database, combined with robust database management, helped Kia Motors India reduce TCO by at least 50% over 5 years and achieve issue resolution times of 2 hours or less—all while addressing the architecture and database needs of running a manufacturing plant around the clock.

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Driving seamless cloud migration

Easy and reliable cloud migrations begin with leveraging Tibero’s complete set of fully integrated tools, which lets organizations operate databases both locally and in the cloud, so they can carefully plan and migrate gradually under full control. Part of the T-Up Suite, these tools are designed to perform all the required analysis, migration, and verification functions needed for an effective transition.

For instance, T-Up Analyzer can assess the compatibility of various workloads and provide an in-depth report defining the scope of migration and indicating potential compatibility risk before embarking on migration; T-Up Migrator, on the other hand, simplifies and automates the creation of target objects and data transfer.

Ensuring robust security

With data in the cloud, security needs to be as robust—if not more so—than the legacy systems being replaced. Tibero features a policy-based control of table access that allows IT teams to maintain control of data security. This limits access to specific individuals or roles, selectively restricting them to use only specific data within a database to ensure the integrity of data.

To address the challenge of regulatory compliance across different countries, Tibero supports country-specific encryption algorithm standards. Significantly reducing compliance complexity provides greater possibilities for CIOs when it comes to exploring cross-border database locations and operations.

FUNCEF utilizes Tibero to keep up with evolving laws

FUNCEF turned to Tibero to comply with new consumer protection laws and delivering the same levels of reliability, availability, and performance as the previous database. More importantly, it slashed year-on-year licensing and maintenance costs by 90%.

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Enabling true compatibility

Tibero differentiates itself from competitors with a fully open system. Its broad technology compatibility with a wide variety of popular database utilities and middleware translates to database migration with minimum code changes.

IT and DevOps teams would also appreciate how Tibero fits with the tools they like to work with, giving them greater agility and flexibility in both development and deployment. Not only does it help avoid the dreaded vendor lock-in, Tibero also opens organizations to a variety of open-systems software to tap on for enhanced innovation.

Redefining licensing simplicity

Being the first global software program to be verified by the Campaign for Clear Licensing for being clear and easy to understand is testament to Tibero's customer-focused licensing. Users only need to pay for the compute power associated to a given VM, regardless of the amount of resources the database consumes.

This simple licensing model, akin to SaaS subscription pricing, gives CIOs a tight rein over budgets and significant savings in capital and operating expenses. That in turn, empowers them to direct budgets to revenue-generating initiatives instead of keeping the lights on.

Fostering a deep industry partnership with Intel

TmaxSoft and Intel have established a decades-long collaboration to enhance enterprise technology and address challenges like exponential data growth. This close partnership within labs and R&D facilities resulted in Tibero RDBMS, based on leading technologies such as the Intel® Xeon® Scalable processor, Intel® Optane™ DC persistent memory, Intel® Optane™ SSD and Intel® Ethernet Technologies.

This enables close alignment between two technologies that help support mission-critical applications and drives powerful solutions for an optimized deployment of Tibero based on Intel® Xeon® Scalable processor and adjacencies for high performance and availability.

An example of such alignment is how Intel Optane DC persistent memory helps Tibero Database increase memory capacity, scale and comparable latency with more capacity per dollar. This, in turn, creates better TCO through greater uptime, lower costs, easier life cycle management, and a simpler technology stack.

Cloud-ready for tomorrow

The global economy is becoming more digital than ever before, and organizations looking to thrive need to accelerate their move to the cloud, so they can leverage on both data and new technologies to increase performance, enhance resilience, and reduce costs. Cloud migration is never easy, but with the right DBMS solution that bridges the gap between legacy databases and workloads in cloud environments, the path ahead is clear and sure.

