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Bring new life to your databases with an Oracle migration



Google Cloud

Editor's note

Organizations today are being forced to make difficult decisions. Innovation has moved down the list for many companies, replaced with realities like making sure your business systems stay up and running during a disaster, managing unexpected shifts in demand, and above all, staying in business.

In the short term, this means looking for cost savings wherever possible, and making sure you're up and running, no matter what circumstances come your way. In the longer term, it means identifying areas to reduce capital expenditures—including things like data center commitments, migration costs, and other overhead.

Google Cloud database solutions can help with both the short- and longer-term issues. Our solutions provide the opportunity to reduce the load that managing legacy applications is placing on your IT department and ensure you can manage unforeseen demand, all while making sure your databases are up and running, no matter what circumstances come your way.

In this whitepaper we'll look in detail at some Google Cloud database solutions that can help you re-host, re-platform, or re-write your enterprise database with Google Cloud. You'll see how we can help you plan for both the short- and long-term health of your Oracle workloads.



Table of Contents

Editor's note	i
Chapter 1: Finding the balance between management and innovation	1
Chapter 2: Finding the right database solution options... 2	
2.1 Rehost	
2.2 Replatform	
2.3 Rewrite	
Chapter 3: Next steps	8

Chapter 1

Finding the balance between management and innovation

In the past, to save money, be more efficient, and ensure business continuity, organizations would try to standardize on a single technology, like Oracle for databases. However, as companies grow and environments get more complex, this option becomes more and more difficult. Standardizing also forces you to make a concession that not many organizations want: It makes you choose your application development tools based on what the infrastructure requires—the exact opposite of how it should be.

Then there's the elephant in the room: Cost. The licensing fees for enterprise databases like Oracle have been a huge burden for many companies. And those fees are just the beginning. You also have to find and retain the specialized talent to keep this infrastructure up and running.

This is where the cloud comes in. By now, we're all aware that the cloud has many cost and flexibility benefits: There's no upfront hardware investment required, and you only pay for what you use; it's easy to provision, and you simply ramp up or down depending on your usage.

Until now, however, there hasn't been an easy option for companies looking to get out from under their licensing and other Oracle costs, even when moving to the cloud. Google Cloud's database portfolio changes all that, providing options that work for any organization, of any size, with any budget, to meet you where you are. Let's investigate some Google Cloud solutions, what each one involves, and how they can help your business.

Standardizing makes you choose your application development tools based on what the infrastructure requires.

Chapter 2

Finding the right database solution options

There's no "one size fits all" when it comes to migrating Oracle workloads. Some applications can be shifted to the cloud with little concern, while other specialized workloads may require certified hardware and come with complicated licensing and support contracts. Likewise, if you have a mission-critical application, the best option may be to just shift it to the cloud and minimize the impact to your business. If you have a bit more time and resources, you may be able to make minor changes to an application and significantly reduce your costs by migrating it to a cloud-native or open-source database in the cloud.

This is why we offer a solution for every potential need.

- **Rehost:** If you want to keep your workloads in Oracle, but start gaining the benefits of the cloud while decreasing your licensing costs, our rehosting option lets you lift and shift with compatible databases.
- **Replatform:** If you're interested in moving some or all of your workloads to a managed open-source database like PostgreSQL or MySQL, a partial or full replatform option might work best.
- **Rewrite:** And if you want to migrate to a cloud-native database like Spanner—now or somewhere down the line—we can help you rewrite.

Let's take a look at each option in more detail.

2.1 Rehost

One of the first questions many organizations have when considering a move to the cloud is, *"But what if I need to keep my workloads on my current technology, like Oracle?"*

There's no "one size fits all" when it comes to migrating Oracle workloads.

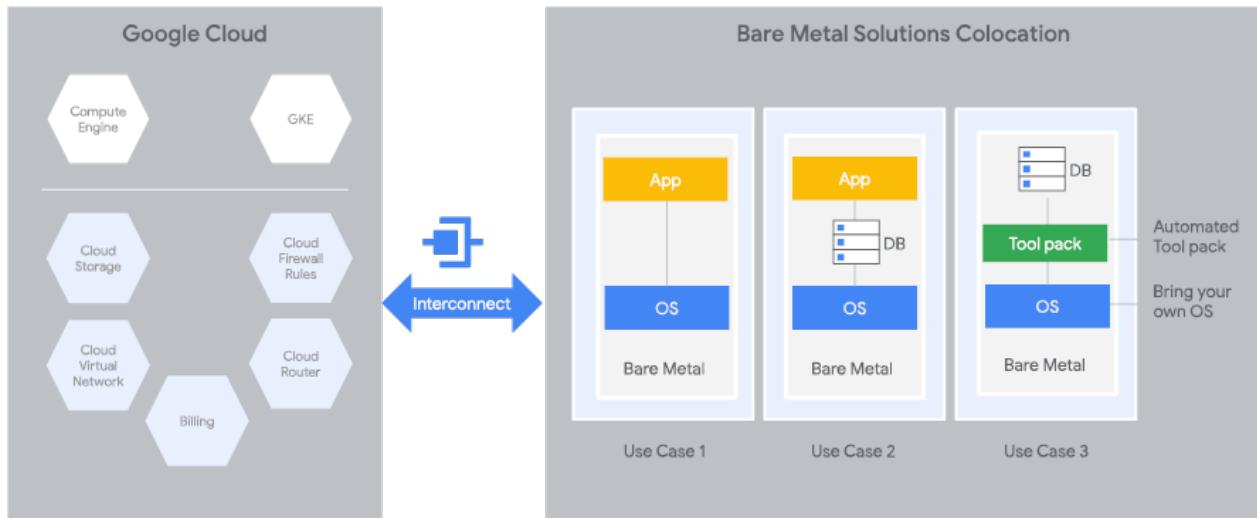
This is a great question, and has been an issue in the past. Not anymore. If you have workloads that must stay in Oracle, you can rehost in Google Cloud. This Bare Metal Solution keeps your Oracle workloads as they are, running on an Oracle-certified platform, simply managed on Google Cloud instead of in your data centers.

This is the best option for workloads that have to stay on Oracle. In these times, it also has another, very real benefit: Bare Metal Solution can leverage the same configuration and settings as your existing environment, which keeps migration complexity low. In an era where taking on extra risk isn't something most businesses want to do, this is the lowest risk solution.

But just because it's low risk doesn't mean the benefits are reduced. You get the familiar benefits of shifting to the cloud: paying only for the infrastructure that you use, scaling up and down easily, and shifting your costs from capital expenditures (CapEx) to operating expenditures (OpEx). But the benefits don't end there.

Bare Metal Solutions: a closer look

Bare Metal Solution has all the infrastructure you need to run your specialized workloads, such as Oracle databases, close to Google Cloud. This infrastructure is connected to all native Google Cloud services with a dedicated, low-latency, and highly resilient interconnect. Bare Metal Solution uses OEM hardware that's certified to run multiple enterprise applications, most of which can be migrated with little or no change, which provides both speed and simplicity when migrating while minimizing the overall risks.



2.2 Replatform

What if you want to do more? Many companies are looking for ways to reduce the costs of their Oracle workloads even further.

If you're like most organizations, you have some workloads that need to stay on Oracle for the time being and some that don't.

Re-platforming might be your best option. If you're looking to shift off of Oracle, but maybe not everything at once, a partial migration is a great option.



Do you have workloads that you want to keep in Oracle for now? Just lift and shift them. You get all the benefits we discussed in the rehosting section above, with very little risk.

Do you have other workloads that you want to migrate off of Oracle? Great—any workloads you shift off of Oracle will deliver significant additional benefits. You can move those workloads to [BigQuery](#) or [Cloud SQL](#), depending on your specific needs.

Reduced costs

Yes, you absolutely save when you rehost Oracle workloads on Google Cloud. But when you shift those workloads off Oracle, the savings multiply quickly. You're obviously able to reduce licensing costs, but that's not where it stops. Any workloads you shift off of Oracle reduce your operating costs as well.



Increased efficiency

When you move to a managed service, the benefits add up. With on-demand provisioning, right-sized capacity as you go, and automated reliability and security by default, you can now spend more time developing and deploying. Plus it's easy to keep your system up to date with the latest upgrades, without putting your applications at risk.

Use the right tools for the right job

Organizations have often been forced to use a single database for all workloads, whether they're analytical or transactional workloads. By migrating those workloads into the right databases and data warehousing solution, you can increase database and analytics performance and release features faster.

An option for every need

If your needs center more around operational and transactional capabilities, CloudSQL has the functionality to keep you up and running smoothly. If analytics are what you need, BigQuery has all the functionality and features you need.

Customer spotlight

[AutoTrader \(UK\)](#) aims to help simplify the car-buying journey for consumers, retailers, and manufacturers by connecting buyers and sellers. Auto Trader's innovative in-house applications provide detailed reviews of dealerships, listings for new and used cars, vehicle valuation tools, and integrations with car finance and insurance partners, among other services.

To release new features to customers faster, Autotrader launched multiple initiatives, including: moving out of their data centers to increase agility and reduce complexity, migrating to the cloud to decrease resource management requirements, and moving off proprietary databases and adopting open-source options.

One of AutoTrader's earlier projects was to strategically become database agnostic in the way they developed applications. AutoTrader has long held the view that database changes should be deployable with the application code, and that product teams should be empowered to make those changes in the same pipeline they deploy their code. But, with a large monolithic Oracle database at its heart, this was difficult and slowed the delivery time for new releases. By moving business logic from the database to the application, they broke dependencies on proprietary database capabilities, enabling them to migrate their Oracle database into many smaller CloudSQL stores. This meant the teams could make changes with less risk and, by moving to a managed service where Google Cloud handled the ongoing maintenance of those individual stores, AutoTrader can focus more on improving its products.

After migrating to a microservice application stack on Google Kubernetes Engine and open-source databases, including Cloud SQL for relational workloads and MongoDB for NoSQL workloads, AutoTrader's release cadence improved by over 140% (year over year), enabling an impressive peak of 458 releases in a single day. Auto Trader's fast-paced delivery platform managed over 36,000 releases in a year with an improved success rate of 99.87%, and it continues to grow.

2.3 Rewrite

If you really want all the benefits the cloud has to offer, the final step is moving to a cloud-native database like Cloud Spanner. Not only do you eliminate all your Oracle licensing costs, but you get the benefits of a database truly designed with the cloud in mind. Only Spanner pairs non-relational scale and availability with familiar relational SQL semantics, so you can get up and running without having to retrain or hire new resources.

Fully managed

Since Spanner is a fully managed service, it's easy to deploy, no matter the scale or stage of deployment your company is at. It also means that maintenance and replication are built-in and happen automatically.

Scalability with consistency

Spanner is truly a globally scalable option—it has the structure of a relational database, with the scaling of a non-relational one. It's horizontally scalable across rows, regions, and continents, whether you have one node or thousands. So, no matter how or where your business grows, you'll be able to scale up (and down) as much as you need.

High availability

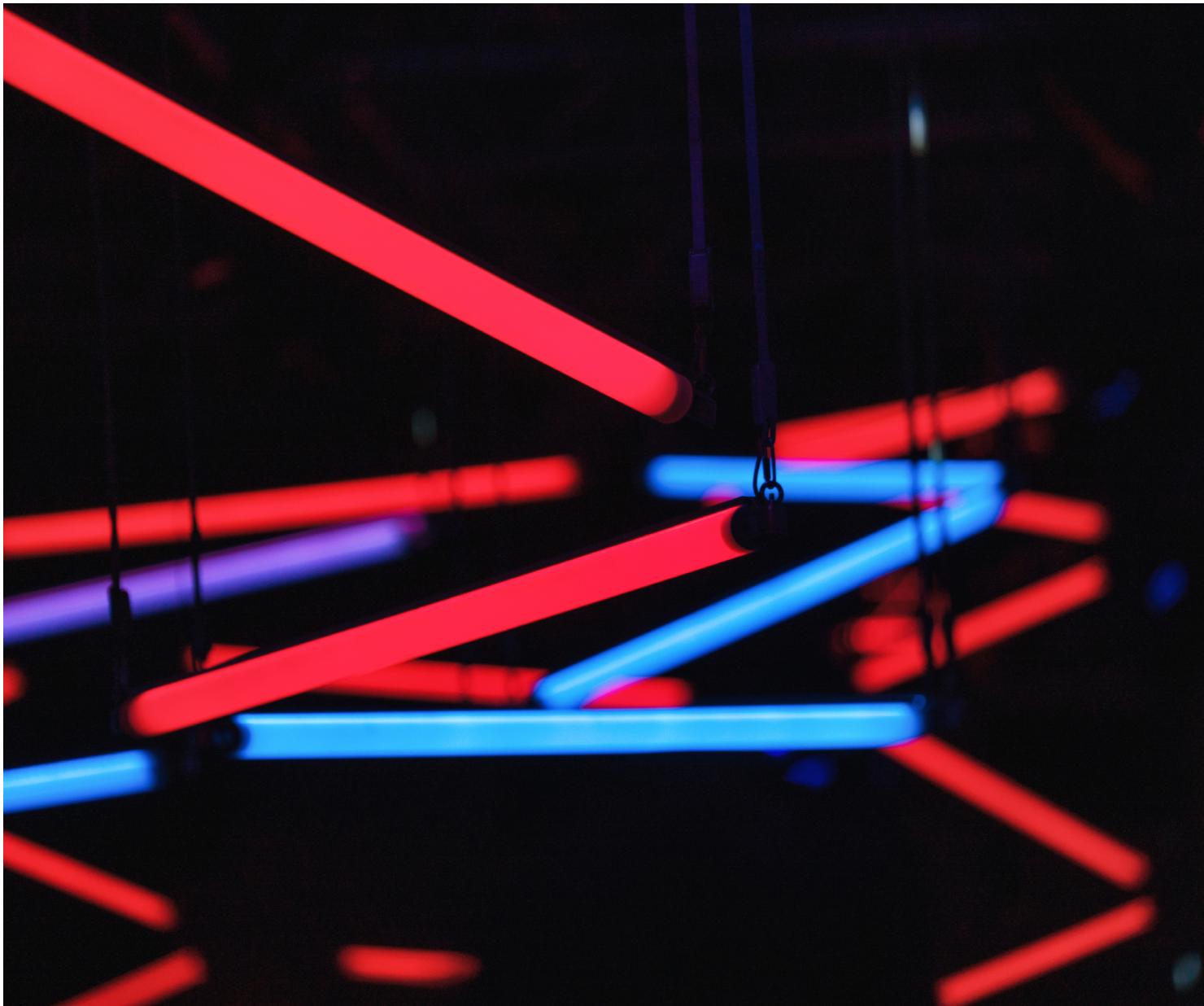
Everyone says their product is highly available. But, with your critical workloads and data, you can't afford to leave it to chance. Spanner offers an industry-leading 99.999% (five 9s) availability SLA, complete with absolutely zero planned downtime.

Comprehensive security



The security benefits that Spanner delivers can't be ignored, either. Features like encryption by default (in transit and at rest), granular identity and access management, comprehensive audit logging, custom-manufactured hardware, and hardware tracking and disposal keep you secure and free your IT department to focus on other, business-critical tasks. And it all happens on our Google-owned and controlled global network.

As with any migration, rewriting can involve some complexity depending on the applications you're porting to Spanner. But we have migration specialists and partners to help you through the transition and get you to the long-term benefits faster.



Chapter 3

Next steps

There are many reasons that you might consider moving your Oracle workloads to the cloud, especially now. Whether it's for business continuity or cost savings, or anything in between, we want to make sure you can move your Oracle workloads in the ways that suit you best.

With Google Cloud database solutions, you can migrate your Oracle workloads to the cloud in the ways that match where you are in your cloud journey. You can keep them all running on Oracle, move to fully managed, open database options, port them to Spanner, or use almost any combination of these solutions—whatever works best for your business and use cases. You'll save significantly when it comes to licensing fees, and gain the scalability, security, and business continuity you've come to expect from Google Cloud.

We want to make sure you can move your Oracle workloads in the ways that suit you best.

Learn more

- **Webinar:** [Business modernization with Oracle workloads in Google Cloud](#)
- **Report:** [Analyzing the economic benefits of Google Cloud Spanner](#)
- **Report:** [Gartner Magic Quadrant for Operational Database Management Systems](#)



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