EDB
Postgres for the AI Generation

Liberate Your Data from Oracle: Moving from On-Premises to the Cloud

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Introduction

Switching from using Oracle onsite to Postgres® in the cloud can bring major benefits, reducing the operational hassles of maintaining data centers, servers, and other infrastructure. Those headaches become the cloud service provider's problem. The change can also save money, provide access to advanced technology, and deliver organizations from their toxic relationship with Oracle.

But the transition isn't easy. Organizations need to retool their databases without breaking applications required to run the business. These organizations invest significantly in Oracle skills, with associated costs and learning required to move to a new platform.

A skilled, experienced partner can help enterprises transition and operate smoothly on the new infrastructure and platform. EnterpriseDB (EDB) can be your partner for successful cloud migration and operation.

Why organizations go to the cloud

Organizations that migrate to the cloud no longer have to bear data center real estate costs and capital and operating expenses (CapEx and OpEx) associated with acquiring, deploying, operating, and depreciating servers and other hardware. Enterprises that use the cloud benefit from freed resources, automated patches and updates, and improved security.

Organizations move databases to the cloud to improve performance, accommodate growing workloads, and improve cost optimization (pay for what you use). The cloud helps these organizations speed development and exploit exciting new technologies such as serverless computing or containers running on Kubernetes, OpenShift (using EDB Postgres Advanced Server), and other orchestration platforms.

And organizations aren't just moving to one cloud—they're choosing multiple providers. Some 91% of Enterprise Strategy Group (ESG) survey respondents said they use more than one cloud service infrastructure provider.

Why organizations quit Oracle

Skyrocketing licensing costs are driving many businesses away from Oracle—moving to Postgres can save up to 80%.

But cost isn't the only factor driving change. A CIO at a large printer and imaging company lays it out this way: "Typically, we want to break even in at least three years and then see a clear ROI after that. But there has to be a strategic reason as well. There has to be a clear benefit even beyond the financial."

Many Oracle customers want to get out of their relationship. Some see Oracle as a contentious and abusive partner. One IT director at a large supply chain provider told us his company is sick of Oracle threatening to audit its licenses. Additionally, disgruntled Oracle customers see Postgres as a means of attracting young talent. And those recruits, once hired, push an even greater preference for Postgres in their organizations.

Even Oracle loyalists aren't happy about their relationship with the company. "I think my opportunity to get new offerings from Oracle is very limited, but I probably still will have a significant spend on them because it's hard to migrate away," says the CIO at a large printer and imaging company. Like many Oracle customers, that company has a significant investment in Oracle that its leaders don't want to walk away from.

What are the options for moving the database to the cloud?

Oracle customers moving to the cloud appear, at first, to have multiple options. Oracle has a fully managed database service on Oracle Cloud Infrastructure (OCI).

Oracle in the Cloud
What's available today for Oracle in the cloud?

ORACLE CLOUD	aws	Microsoft Azure	Google Cloud
Fully managed database services available on OCI, including RAC and Exadata	Multiple fully managed services available, including Amazon RDS for Oracle and Amazon RDS Custom for Oracle	Connect to Oracle database workloads from Microsoft Azure via Interconnect	Reduce overhead, drive innovation, and increase agility with a variety of databases for your Oracle workloads

But on closer examination, the choices turn out to be limited. OCI lacks robust support for Kubernetes, serverless, and storage. And Oracle customers that stay with OCI are still at risk of vendor lock-in.

Bringing your Oracle database to other cloud service providers reduces but does not eliminate lock-in. But non-Oracle clouds such as AWS or Microsoft Azure don't support sophisticated workloads requiring Oracle Real Application Clusters (RAC) and Exadata—you need OCI for those.

Organizations that run Oracle on other clouds also face high licensing costs. And Oracle can change its licenses on a whim. For example, in 2017, Oracle changed some vCPU licensing in the cloud environment, and some customers saw their costs double.

Moving Oracle to the cloud is a lift-and-shift. And after all that work, you still are not recognizing the real benefits of moving to the cloud.

If not Oracle, then what?

AWS and Azure have their own native database options. AWS provides a Relational Database Service (RDS), a managed service supporting Oracle and other database platforms. And Azure provides Azure Database, along with other options. Both platforms support a variety of open source options.

However, major cloud providers are infrastructure experts rather than database experts. If you ask Microsoft how to migrate Oracle workloads to PostgreSQL, the company will hand you a 300-page PDF and leave you to do the rest.

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PostgreSQL is broadly available on various cloud and on-premises platforms and is excellent for a broad range of use cases, including traditional online transaction processing (OLTP) applications, data warehouses and lakes, big data analytics, artificial intelligence, and machine learning.

PostgreSQL also has a variety of support services and solutions offered by vendors such as AWS, Microsoft, and Google Cloud.

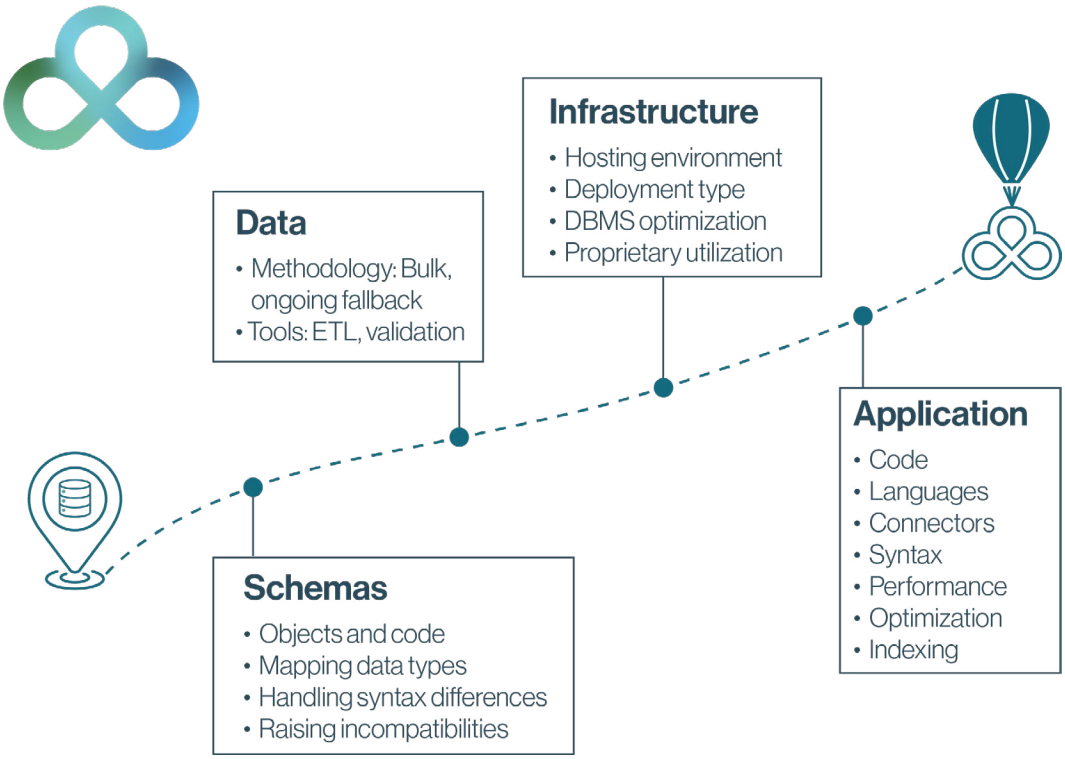
Each major cloud service provider supports its own version of PostgreSQL, but they're all implemented differently. This means that organizations that use multiple cloud providers—and nearly all organizations do just that—must learn different methods, tools, and architectures for high availability, backup/restore, and application programming interfaces (APIs). The differences make achieving consistent application performance, availability, and manageability challenging. These complexities reduce time to value.

Migrating can be hard

Migrating from Oracle on-premises to the cloud requires years of expertise. You need to migrate to software that's truly compatible with Oracle. And you need the right tools. That difficulty keeps customers tied to Oracle. A CIO at a medium-sized real estate financial services company tells us that his organization has been talking about moving away from Oracle for 15 years but has been stymied by the challenge.

Migration requires both database and infrastructure considerations. Organizations need to test application compatibility to ensure that mission-critical applications continue to run with the new database. They must migrate schemas, data, infrastructure, and applications. Each category contains multiple complications and considerations.

Migration to PostgreSQL is complicated



Each category has a morass of complexity and hard, awkward technical and human problems that you'll need to tackle for a successful migration. For example:

- When going from on-premises Oracle to PostgreSQL in the cloud, will you use virtual machines or Platform as a Service (PaaS), so that someone else runs the database for you?
- How will you ensure resilience for both the database and applications?
- Can you accommodate two-second latency for synchronous replication if deploying across availability zones?
- How will you consistently compensate for syntax differences between Oracle and PostgreSQL across multiple applications?
- How can you maintain expertise across both Oracle and PostgreSQL?
- How can you minimize or avoid downtime and risk to your data when migrating from Oracle to Postgres?

The complications don't end at the infrastructure and platform levels. Organizations need to consider how much the Oracle infrastructure spiders through their applications. Semantics and Java Database Connectivity (JDBC) drivers affect the application stack. Switching from the Oracle to the PostgreSQL JDBC driver can generate incompatibilities that must be addressed.

Moving from Oracle to PostgreSQL can also create skills challenges for application developers, who must learn the new software. Developers take time away from innovation and instead focus on avoiding risk and creating new processes. Businesses need to spend money and time on training and certification, sometimes even hiring additional talent. And while continuous, ongoing replication requires a shorter maintenance window, the technology to implement such a transition is complex, and much of it is immature.

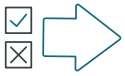
Facing these complexities, many organizations will choose to migrate first to PostgreSQL on-premises, then to the cloud, to separate the problems and reduce complexity. Other organizations make the transition all at once to get it done. Either way, organizations making the transition will inevitably make mistakes, some of which might not surface for years—landmines they've left for themselves farther down the road.

In short, migrating from on-premises Oracle to PostgreSQL in the cloud provides many advantages for organizations. But it also presents challenges.

What we are hearing from the market

Seeking benefits of a fully managed cloud service ... but worrying about limitations

- **Agility** to deploy as needed
- **Freedom** from operations and maintenance
- **Empowerment** for IT, product lines, and developers
- **Experts** on hand to solve Postgres problems



- **Lock-in** to a single cloud
- **Lack of consistency** across providers
- **Inflexible** proprietary technologies
- **Unpredictable** costs
- **Lack** of Postgres database expertise
- **Limited** deployment support

You need a partner. That's where EnterpriseDB comes in.

Organizations migrating their on-premises database platform to the cloud need a partner to help them with this difficult transition and to assist in operating the platform over time. EDB is that partner, with EDB Postgres AI Cloud Service's fully managed Postgres in the cloud, plus dedicated professional services and other supported products.

PostgreSQL is an excellent open source database platform, but, as discussed, implementations are inconsistent across different cloud providers. EDB Postgres AI Cloud Service maintains consistency across major cloud providers.

And EDB Postgres Advanced Server (EPAS) provides all the benefits of Postgres, along with Oracle compatibility, in a fully managed service. In addition to running PostgreSQL apps, EPAS provides sophisticated, embedded compatibility with Oracle database types and functionality, native PL/SQL support, and native support for multiple Oracle utility packages. EPAS drivers, such as JDBC EPAS driver, are more compatible with Oracle than native PostgreSQL drivers are.

Oracle compatibility means reduced risk of breaking applications essential to running your business. Migrating from Oracle to EPAS minimizes the need to change database applications.

Enterprises move away from Oracle to reduce TCO, and lowering licensing costs helps with that. But these organizations employ Oracle experts, and reskilling is expensive. EDB software is designed to support existing Oracle functionality, paving the path for a seamless transition.

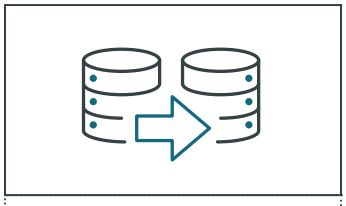
Unlike other Postgres vendors, EDB is not forcing people to reskill and not forcing them to make significant changes in applications.

For users just getting started in their migration, EDB provides a self-service migration portal where Oracle users can upload code to test it for EPAS compatibility. EDB also provides tools for data replication, migration, and validation.

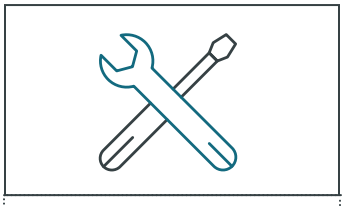
Pricing is transparent—no surprises. Users can port their existing EPAS license to the cloud at no additional charge. Additionally, users can license directly from Azure Marketplace using their existing Azure cloud equipment, and EDB will soon add support for direct buying from major cloud providers.

EDB Postgres AI Cloud Service provides multiple high-availability options, ease of use, and access to disaster recovery and business continuity options.

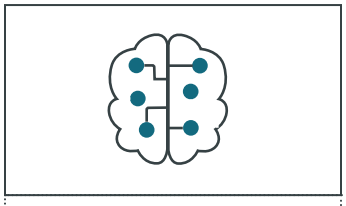
Compatibility, tooling, and expertise



EDB Postgres Advanced Server
Compatibility with Oracle database data types, PL/SQL support, packages, data dictionary views, and drivers



Migration Tools
Run schema assessments, migrate and validate data



Expertise
Over 15 years of expertise in helping customers migrate their Oracle workloads

Reduce the time and effort required to migrate from Oracle and ease the transition for your Oracle DBAs and developers.

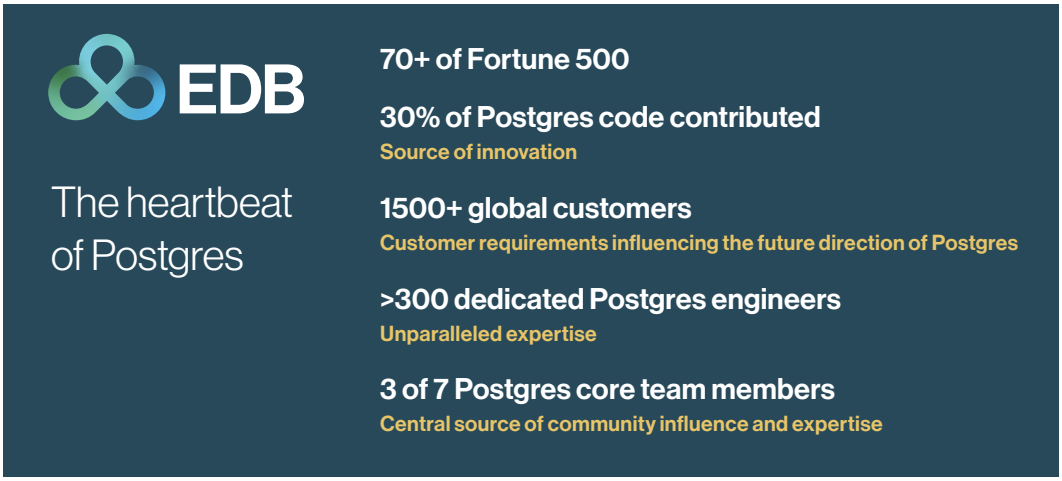
In short: EDB Postgres AI Cloud Service simplifies database management in the cloud, helping organizations achieve faster time to value, reduce Oracle costs, and modernize applications. In addition, enterprises can focus on their business and leave database deployment and operations to experts.

Earlier, we mentioned that Oracle customers stick with that provider—even when they're dissatisfied—because Oracle is considered a safe choice. Well, EDB takes the risk out of migration.

EDB has 20 years of experience with PostgreSQL. During that time, EDB has been the largest single contributor to the PostgreSQL open source project, with 30% of contributed code coming from EDB employees. The company has more than 300 dedicated Postgres engineers, and three of the seven members of the Postgres core team work for EDB. EDB is used by more than 1,500 global customers, including 70 of the Fortune 500.

Other benefits of EDB Postgres include the following:

- Licensing and support is as much as 80% cheaper compared to Oracle.
- EDB can migrate most Oracle database schemas and data in fewer than 20 days.
- Oracle Compatibility makes Postgres look, feel, and operate like Oracle, so your developers spend less time recoding applications and your DBAs can hit the ground running. Most Oracle databases are more than 95% compatible with EDB Postgres.



Conclusion

Making the transition from Oracle on-premises to cloud Postgres is rewarding but difficult. Enterprises need to ensure application compatibility, while overcoming challenges from physically moving data. Organizations face the potential need for new skills to keep operating in the new environment. The right partner can make that transition successful, and EDB can be that partner. Give EDB Postgres AI Cloud Service a try. Get started for free. Or contact us to schedule a consultation and demo.

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About EDB

EDB provides a data and AI platform that enables organizations to harness the full power of Postgres for transactional, analytical, and AI workloads across any cloud, anywhere. EDB empowers enterprises to control risk, manage costs and scale efficiently for a data and AI-led world. Serving more than 1,500 customers globally and as the leading contributor to the vibrant and fast-growing PostgreSQL community, EDB supports major government organizations, financial services, media and information technology companies. EDB's data-driven solutions enable customers to modernize legacy systems and break data silos while leveraging enterprise-grade open source technologies. EDB delivers the confidence of up to 99.999% high availability with mission-critical capabilities built in such as security, compliance controls, and observability. For more information, visit www.enterprisedb.com.