

Reduce costs and simplify operations with a robust open database platform

A Blueprint for transforming to a modern database platform

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Executive summary

Databases are a critical part of every business, continuously capturing data about your customers, your employees and your products and services. Digital transformation depends on that data, and that need grows every day. The right database platform needs to meet your requirements for performance, accessibility, security and cost effectiveness. Considering a move to another database platform, even a better one for your business, is a tough choice and one that many businesses struggle with.

While databases are key to running a successful business, organizations are also frequently frustrated with the high cost and lack of flexibility of today’s traditional proprietary database platforms. Vendor lock-in is a problem, license and support costs are high and continue to rise, and you’re tied to one platform and one tool set. You need to have database specialists in your IT staff, and your staff is often more focused on keeping things running than on strategic initiatives that grow your business. Choices are limited and there appear to be few good options to improve capability and to cut costs.

Cost control Our proprietary database platform is too expensive; we need an alternative.	Faster time to value We need an enterprise-grade database platform that connects to our existing systems.	Lack of resources We have decided to move to an open source database but don't have the skills in-house for migration.	Security and control I want the security and performance of an on-premises database platform.
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Overcoming challenges

Many businesses recognize the need to move to a new database platform and struggle with the challenges associated with database migrations. HPE Pointnext, the services organization of Hewlett Packard Enterprise (HPE), has observed that many businesses struggle with these challenges.

- **IT must do more with less resources, and proprietary database platforms are complex and expensive.** IT executives are looking for secure, stable, and flexible alternatives to avoid vendor lock-in.
- **Business requires a production-ready database platform: available, reliable, highly scalable, manageable, mature.** As development organizations move to a DevOps model, the database platform must keep up in terms of fast deployment, security and simplified management.
- **A database platform sits at the center of IT, and must integrate with all data types, applications and use cases.** Digital transformation depends on integrating many types of data, extending support to AI and machine learning.
- **Organizations gain from an open database platform, but migration can be challenging and time consuming if you have not chosen a compatible platform and a professional partner to assist with the migration.** Staffing is often optimized for steady-state environments, and lack skills for a one-time large scale task such as migration.
- **The benefits of a public cloud based consumption model are strong, but many workloads need to remain under IT control, and on-premises.** Off-premises public cloud is not always viable for critical corporate or customer data, either due to cost, privacy, regulation, or governance.
- **IT must be more strategic, and must use its scarce resources and skills to focus on business outcomes.** As IT aligns with business needs, less strategic tasks must be offloaded to ensure internal staff are focused on strategic initiatives.

One area requiring specific scrutiny is the degree of technical risk, because many OSDBMS products do not contain the same functionality as many commercial DBMS products.

– Source: [State of the Open-Source DBMS Market](#), Gartner, February 28, 2018 ID: G00301457

Faced with ballooning needs and proprietary database costs, businesses are now ready to consider non-proprietary alternatives based on open source to reduce costs and to take advantage of new tools and services that are available. They also need to make sure their database platform can connect to existing applications and datasets and manage both structured and unstructured data. HPE Pointnext has been optimizing database deployments for over 30 years. We understand the challenges you face, as well as the capabilities of options in the marketplace.

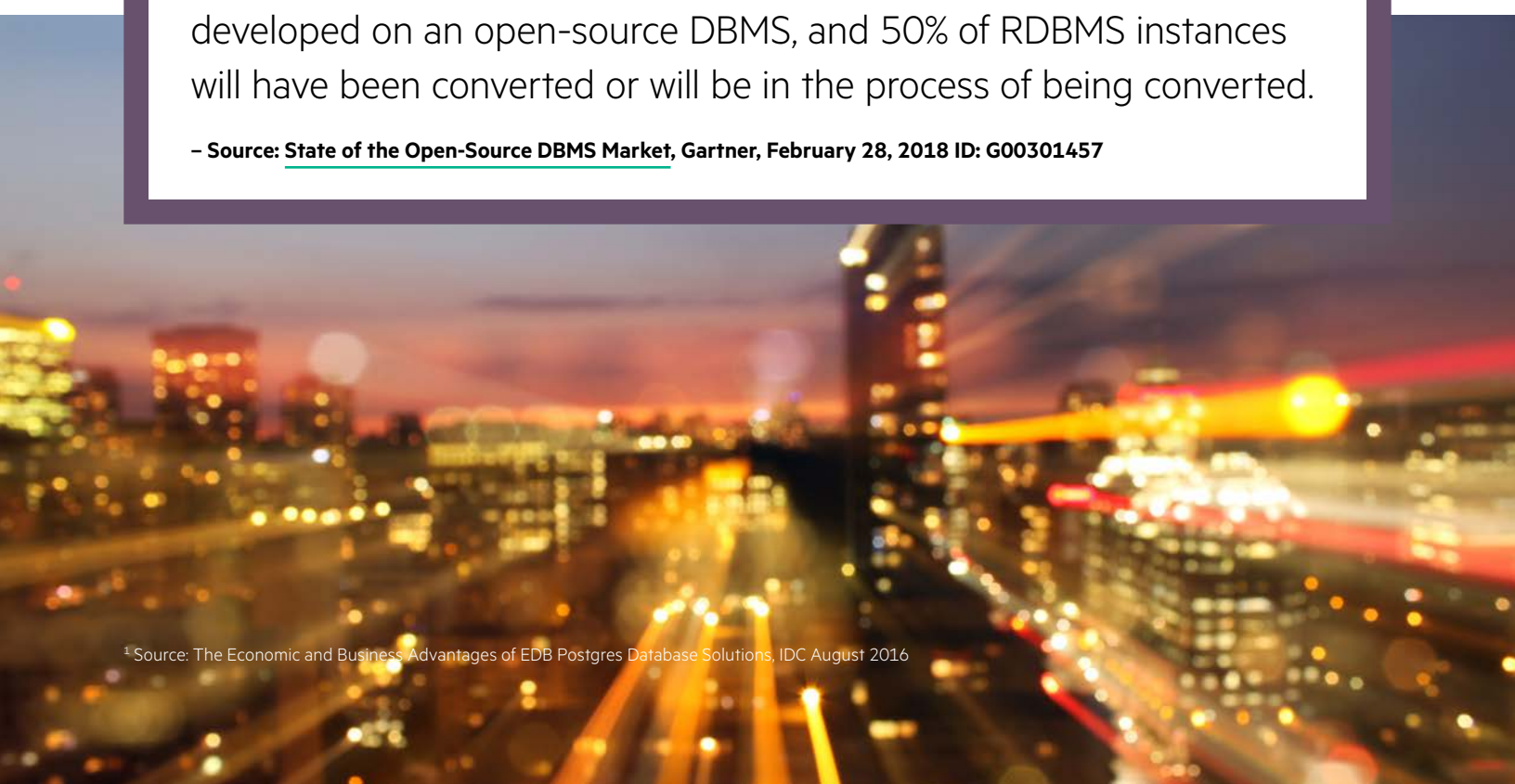
Getting better TCO with an open source database

To address cost and complexity issues, many businesses are choosing modern database platforms that use open source technologies along with industry-standard servers and storage. You can reduce TCO BY up to 65% just by moving to an open-source database platform (OSDB)¹. And, you maintain security on-premises while avoiding the lock-in of a proprietary database platform.

By 2022, more than 70% of new in-house applications will be developed on an open-source DBMS, and 50% of RDBMS instances will have been converted or will be in the process of being converted.

– Source: [State of the Open-Source DBMS Market](#), Gartner, February 28, 2018 ID: G00301457

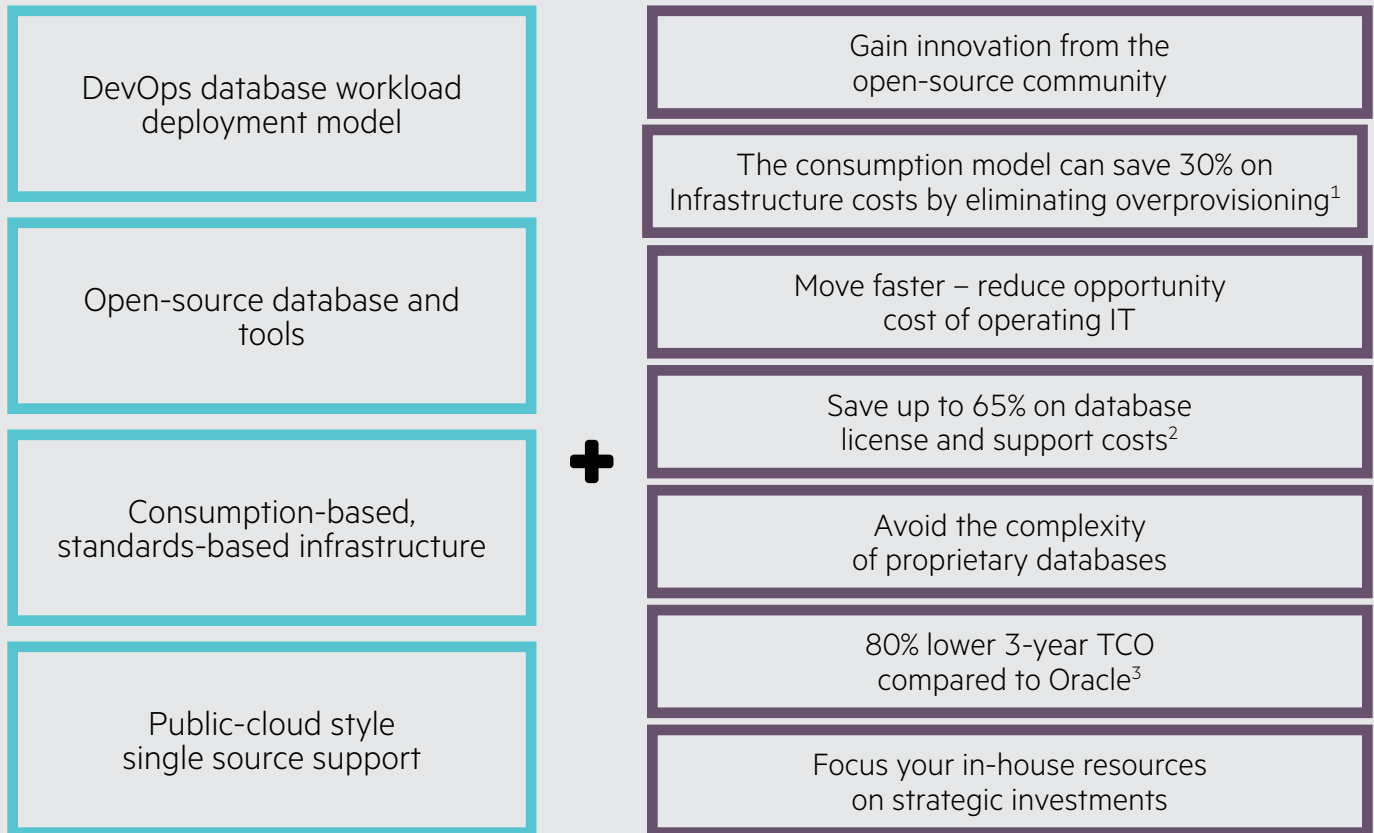
¹ Source: The Economic and Business Advantages of EDB Postgres Database Solutions, IDC August 2016



HPE and HPE Pointnext have been active in the open source community since it’s inception, and contribute to many communities and distributions. As the cost and lock-in dangers of proprietary databases have increased, the number of viable open source alternatives have also increased. They offer alternatives to large, proprietary, complex and expensive relational database management systems (RDBMSs) for addressing most enterprise data management problems. They have varying degrees of compatibility with traditional RDBMSs and offer a wide variety of deployment options including public, private and hybrid clouds, as well as virtualized and container environments.

For example, the EDB Postgres platform is an enterprise-class data management platform that offers the capability to manage multiple data types, ease application migration, connect with existing systems, and deploy rapidly across multiple environments. It’s also the first integrated open-source-based operational data management platform that brings together all of the components required for managing structured and unstructured data in a model that reduces complexity while increasing agility.

The benefits are reflected below



¹ Forrester, The Total Economic Impact™ of HPE GreenLake Flex Capacity, May 2018

² The Economic and Business Advantages of EDB Postgres Database Solutions, IDC August 2016

³ enterprisedb.com/blog/comparing-edb-postgres-and-oracle

Open source database, along with platform infrastructure, are now available in the on-premises, consumption model. This eliminates the struggle of managing proprietary license deployment and enduring unexpected costs from license audits. The HPE GreenLake Database with EDB Postgres solution simplifies your experience and substantially reduces costs over proprietary database platforms. This pay-per-use offering is delivered on-premises and is built on open-source and standards-based technologies that can easily grow with you.

Transforming to a Modern Database Platform Overview

HPE Pointnext has developed a comprehensive blueprint to help enterprises overcome database cost, scalability and performance challenges. With a modern database platform, organizations have the centralized, common platform from which to drive digital transformation. This guide reviews some of the business challenges of migrating to and capitalizing on modern database platforms, and shares guiding principles from HPE Pointnext.

Based on real-world experience, these six principles help you leverage the open-source technology, standards-based infrastructure, rich administrative and support service and innovative consumption-based pricing to gain unmatched visibility and control over your database cost envelope. Each principle includes an overview, a checklist of recommended steps, and the outcomes that can be expected.



Guiding Principle 1: Evaluate potential cost savings opportunity with an open source database (OSDB) platform

BUSINESS CHALLENGE: IT must do more with less resources, and complex and expensive proprietary database platforms consume a disproportional amount of my shrinking resources.

IT analysts are noting an uptick in the adoption of open-source Postgres databases in mission-critical applications, with 77% of businesses deploying applications on Postgres platforms. Postgres has matured, and can be viewed as an enterprise-ready database platform.

Today's industry-standard servers deliver database performance and reliability formerly found only on proprietary systems. They provide performance, reliability and ease of operation at a lower cost. Businesses are also moving to all-flash storage, driven by the need for increased performance and the fact that the price of flash storage is reaching parity with spinning disks. HPE Pointnext helps organizations of all sizes make these transitions.

With proprietary databases, TCO can be high and licensing can be inflexible. At the same time, customers of traditional database platforms such as Oracle are seeking better ROI from their platform, and may feel compelled to move to the cloud.

EDB Postgres Business value highlights

42%

Lower three-year cost of operations

65%

Lower three-year cost of database licensing and maintenance

16%

More efficient database administration

168%

Three-year ROI

4 months

Payback period

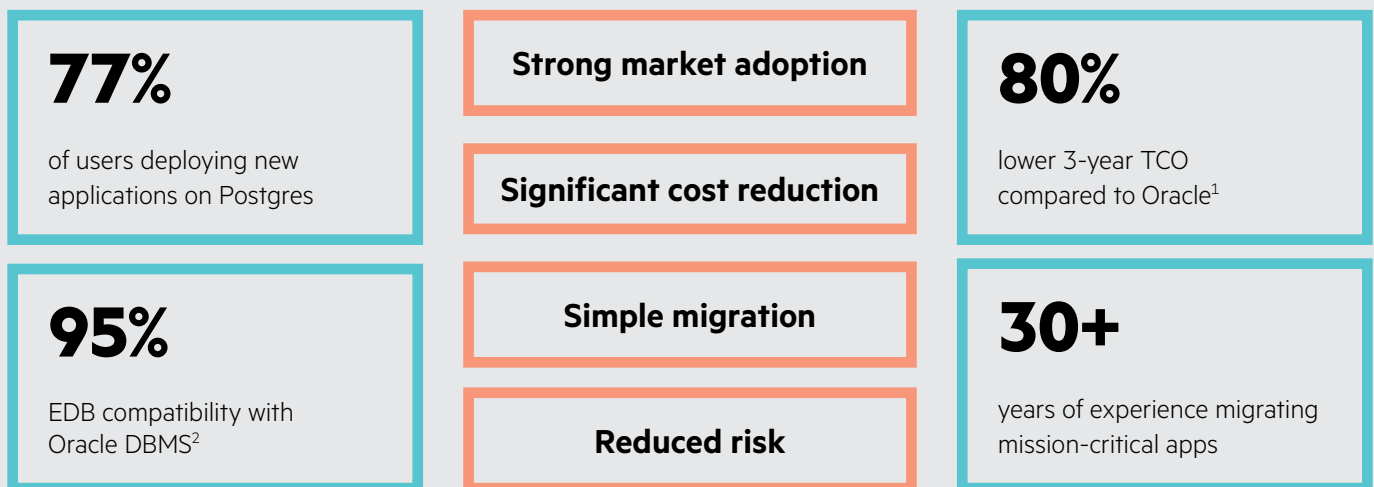
There are many cost factors in determining the ROI of a new platform. The first is understanding infrastructure and operations costs for your current environment. That spans the entire stack and accompanying IT database, operations and infrastructure tasks. With an open-source alternative, however, license costs no longer restrain database usage.

Checklist:

1. Perform an assessment of current hardware and support costs. Consider whether your infrastructure supports current and future scalability and performance needs.
2. Assess current database license and support costs. Consider whether the roadmap of proprietary database platforms align with your current and future needs and budget.
3. Evaluate staff capabilities. Qualified staff is difficult to find, maintaining their skills and retaining them in a competitive market is challenging.

Expected Results

- Demonstrated lower TCO opportunity with an open source approach.
- Tremendous database license and support cost savings.
- Opportunity identified for operational savings since training and updating staff leverages the high compatibility of EDB Postgres to Oracle.
- Industry standard servers and storage options identified, providing significant cost saving opportunities while retaining high service levels.



¹ enterprisedb.com/blog/comparing-edb-postgres-and-oracle

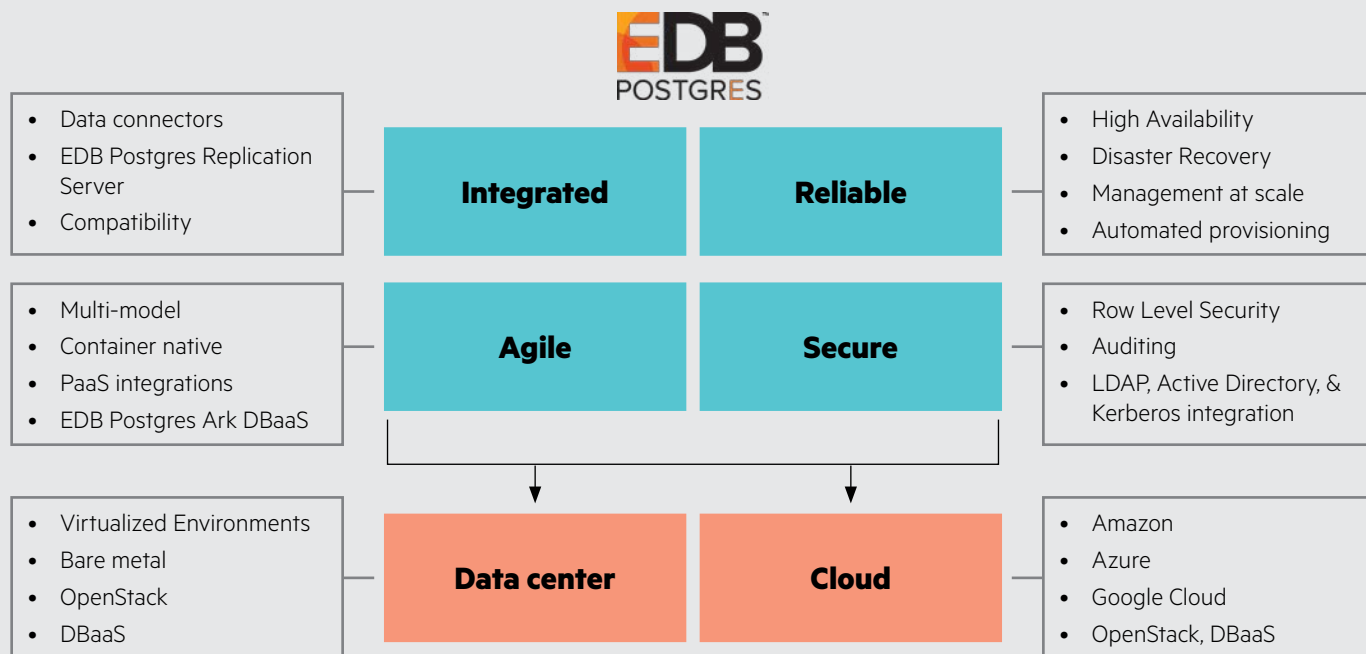
² enterprisedb.com/database-compatibility-technology-oracle

Guiding Principle 2: Evaluate operational requirements to support application portfolio

BUSINESS CHALLENGE: Business requires a production-ready database platform: available, reliable, highly scalable, manageable, secure.

Current and planned workloads must be inventoried as well as evaluated for required service levels, security, and governance. In addition, as the organization moves to a more cloud-native architecture, requirements for ease of deployment must be factored in. Legacy approaches, such as needing capital budget and long lead times, are no longer viable.

HPE Pointnext has a rich history of supporting database and platform migrations. Recommendations for migrations always include a cross functional team to determine criteria, set priorities, and generate consensus across business units. The team is also critical to identifying future needs and including them in the planning process. They can also identify “shadow IT” investments that can be brought back into the mainstream IT environment, reducing costs and ensuring better regulatory compliance.



Checklist:

1. Evaluate and select an open-source database platform with robust management systems.
2. Concurrently evaluate current infrastructure, considering how current infrastructure supports current workloads and meets business requirements for stability, availability, reliability, performance and scalability.
3. Define need to scale to support future workloads and how infrastructure will support future growth and needs.

Expected Results:

- Operating requirements can be met with open-source technologies.
- Industry standard servers and storage deliver performance, scalability, reliability and ease of operations.
- Infrastructure scales from simple to complex environments that support growing and demanding workloads.
- Enterprise-grade support that scales to the most demanding environments, locally and globally.



Guiding Principle 3: Evaluate data type requirements for new database platform

BUSINESS CHALLENGE: A database platform sits at the center of IT, and must integrate with all data types, applications and use cases.

The emergence of Big Data means that businesses have more data on more topics in more places than ever before. They increasingly need solutions to manage data sprawl and help internal customers realize the full value of their information.

Digital transformation demands large scale data integration, breaking down application-specific database siloes. HPE Pointnext has been actively supporting data integration projects since the advent of data warehousing in the 1990's. In our view, the database platform becomes the data hub for the enterprise.

Optimize your solution with database services

HPE offers a range of database-specific services that assist with systems and database operations, management, maintenance and planning. Optional services include database and application analysis, planning, migration, implementation and project management.

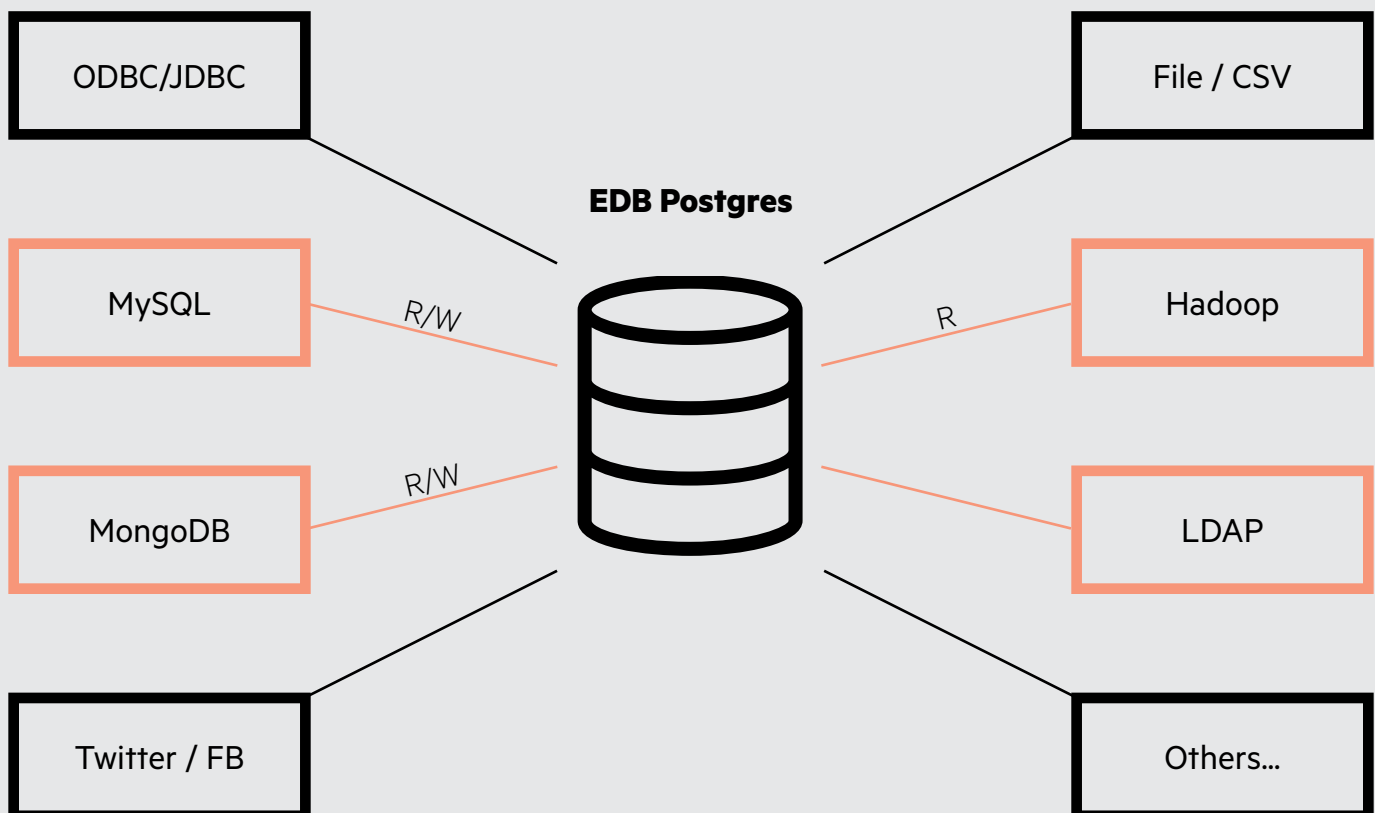
By choosing a database like EDB Postgres, organizations have a platform that integrates with both legacy and new technologies. This includes the latest ones like Hadoop and aligns with new database types like document, graph and time series. EDB Postgres means your team can work with data types and technologies that you need for your unique use cases.

Checklist:

1. Capture data and file types that need to be supported.
2. Inventory required and supporting applications.
3. Define your future requirements for technology and data.

Expected Results:

- Platform defined that can integrate legacy and new technologies.
- Ensure the platform can support current and future data types.
- Ensure that staff can work with data types and technologies they need when they need them.



Guiding Principle 4: Plan and execute migration

BUSINESS CHALLENGE: Organizations gain from an open database platform, but migration can be challenging and time consuming if you have not chosen the right OSDB and the right professional services partner to help ensure a smooth migration.

If you are planning a next-generation all-flash data center an experienced professional services organization can help you accelerate your transition and minimize risks. HPE Pointnext has helped businesses around the world carry out large-scale data migrations, moving critical data safely and efficiently, with minimal disruption.

HPE Pointnext best practices, tools, methodologies and experienced professionals can help you with every step of the migration from identifying requirements and planning the move, to automating and executing the transition, to protecting the new implementation.

Checklist:

1. Take a phased approach to migration, identifying which application and database pairs depend on other systems, which are simple or complex and which provide the most business value. The process should include:
 - Rapid assessment and data platform solution modeling
 - Review open source data platform solutions
 - Evaluate IT staff capabilities and availability
2. Deploy a proof of concept (POC) to validate architecture and migration strategies.

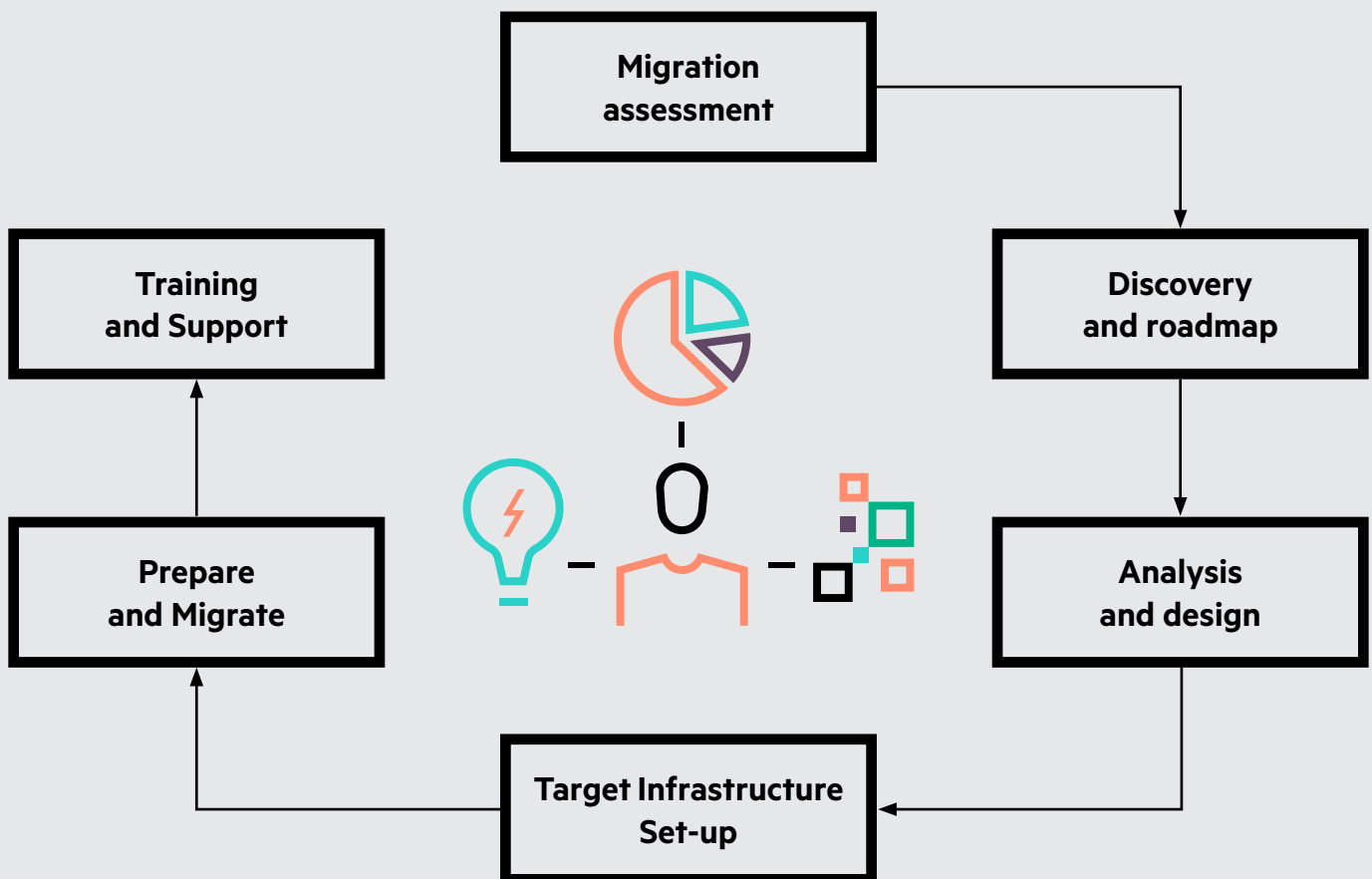
Although best practices exist for planning and implementing public cloud migrations, they must be adapted for each specific situation to be successful.

– Source: [State of the Open-Source DBMS Market](#), Gartner, February 28, 2018 ID: G00301457

3. Create a detailed infrastructure design and migration design and strategy.
4. Identify target infrastructure and OS installation and setup.
5. Prepare for migration and migrate to new database platform.
6. Provide staff training and ongoing support.

Expected Results:

- A proven and tested migration approach leveraging reference architectures and custom tools that yields a predictable, ontime and low risk migration.
- Improved productivity, economics and business agility.
- A predictable, on-time and low risk migration.
- Staff ready to support the transition.
- Reduced costs by engaging with a partner who has skills and tools to reduce risk and expedite emigrations.



Guiding Principle 5: Choose appropriate consumption model

BUSINESS CHALLENGE: The benefits of a consumption model are strong, but many workloads need to remain under IT control, on their terms

There are three basic approaches to consuming IT resources. They include:

- **Traditional IT:** On-premises compute, a capital expense consumption model
- **Public cloud:** An off-premises subscription or pay-per-use consumption model
- **On-premises consumption based:** Public cloud like on-premises solution, a pay-per-use, elastic IT consumption model commonly referred to consumption-based IT.

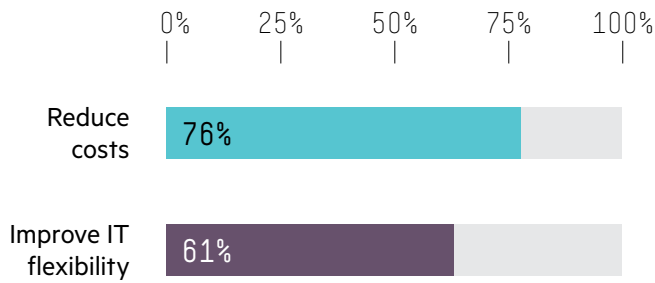
By 2020, consumption-based procurement in data centers will account for as much as 40% of enterprises' IT infrastructure spending.

– Source: [IDC FutureScape: Worldwide Datacenter 2018 Predictions, Nov 2017 DOC # US43152417](#)



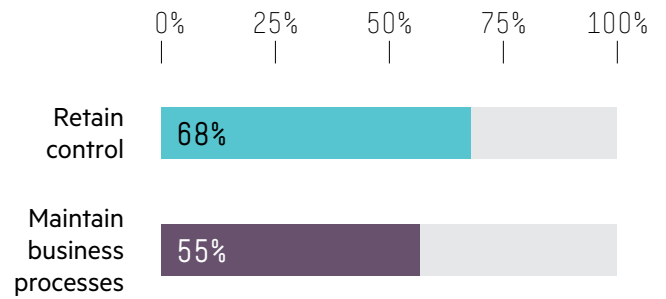
Businesses are often reluctant to place their databases and workloads off-premises due to performance, cost, security and regulatory considerations. The benefits of consumption-based IT include the ability to quickly deploy projects, deliver higher value to line of business customers, increase operational efficiencies, improve financial transparency and to more directly associate costs to consumption.

Top reasons cited to utilize **cloud solutions:**



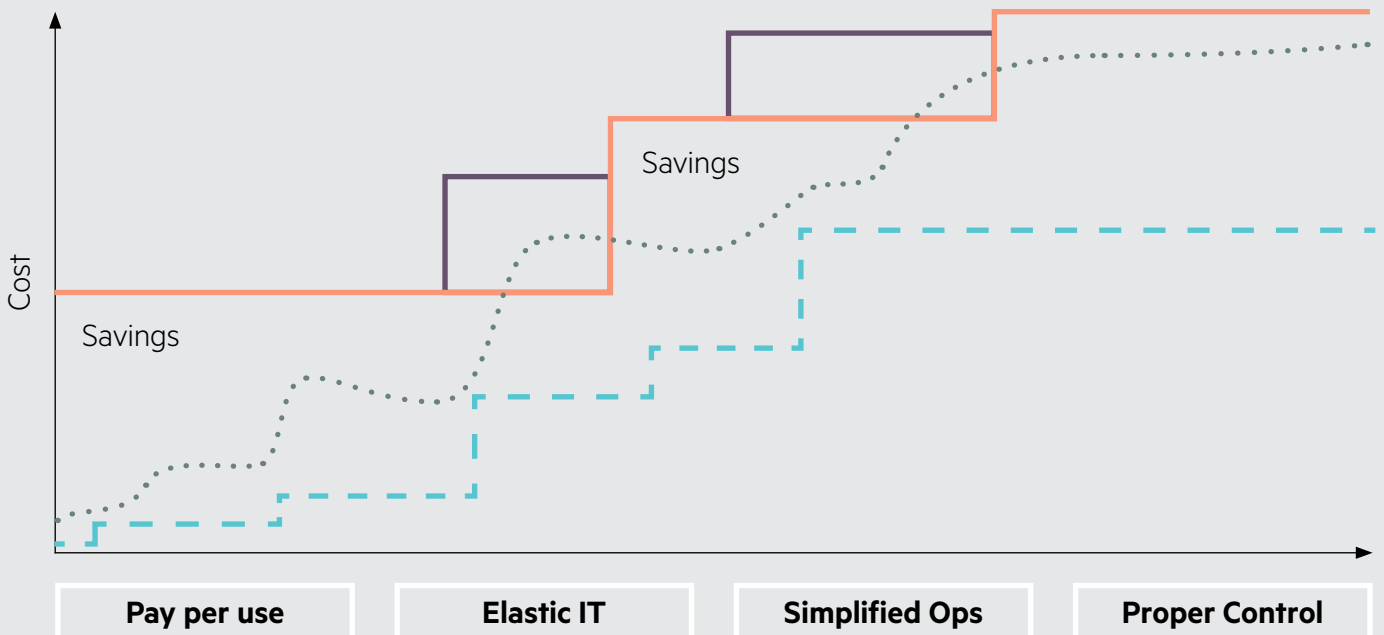
Source: Frost & Sullivan 2017 Cloud User Survey

Top reasons cited to utilize **on-premises solutions:**



Source: 451 Research, "Best of both worlds," November 2016

For maximum impact, HPE Pointnext suggests that on-premises consumption should include not only infrastructure but the software, support, and a wide range of administrative services that offload the organization's IT staff. Through the HPE GreenLake Flex Capacity program, HPE Pointnext has been delivering consumption-based infrastructure for many years. We understand what is required to deliver a completely supported, on-premises infrastructure solution. The diagram illustrates how capacity is both metered and extended so to maintain high utilization without running out of performance headroom for peak loads.



Checklist:

1. Review and document consumption model options.
2. Determine the right mix of options for your business.
3. Define capacity planning and management based on usage data to ensure resources are available for peaks.

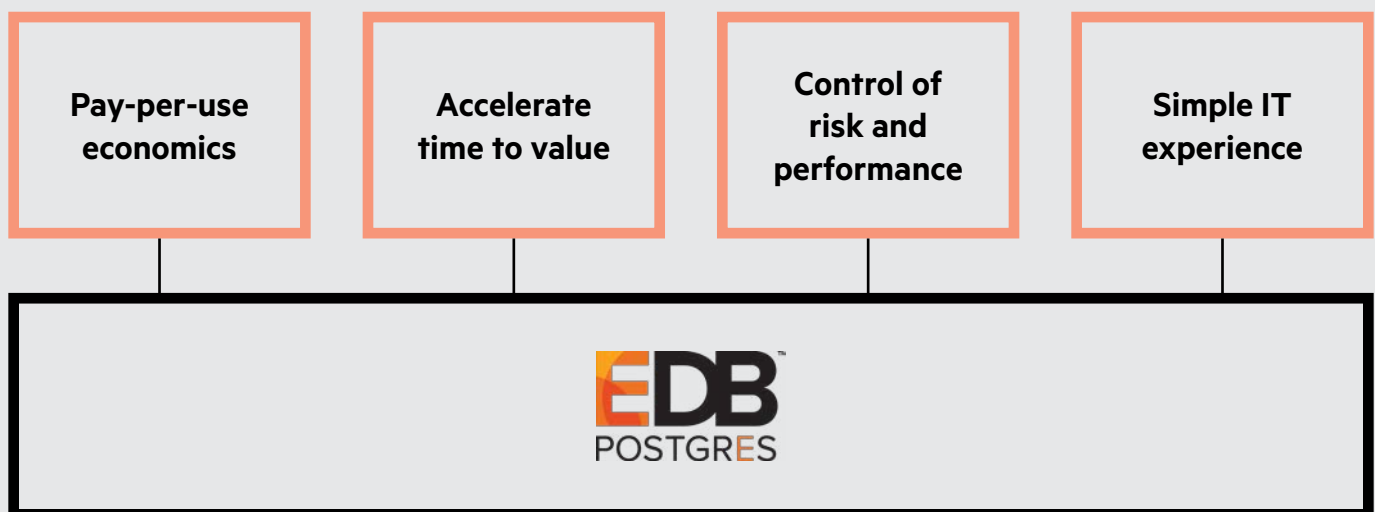
Expected Results:

- Maintain security and control where it’s needed, with an on-premises solution.
- Ensure capacity and scalability on demand.
- Align costs with business needs and eliminate upfront payments.
- Simplify operations, management, security and control.
- Provides staff with the time to focus on innovation and current and future needs of the business.

Usage-based payment model

HPE wraps hardware, software, and services into a single outcome-oriented metric with payments that are usage based.

Key features of a consumption-based database platform

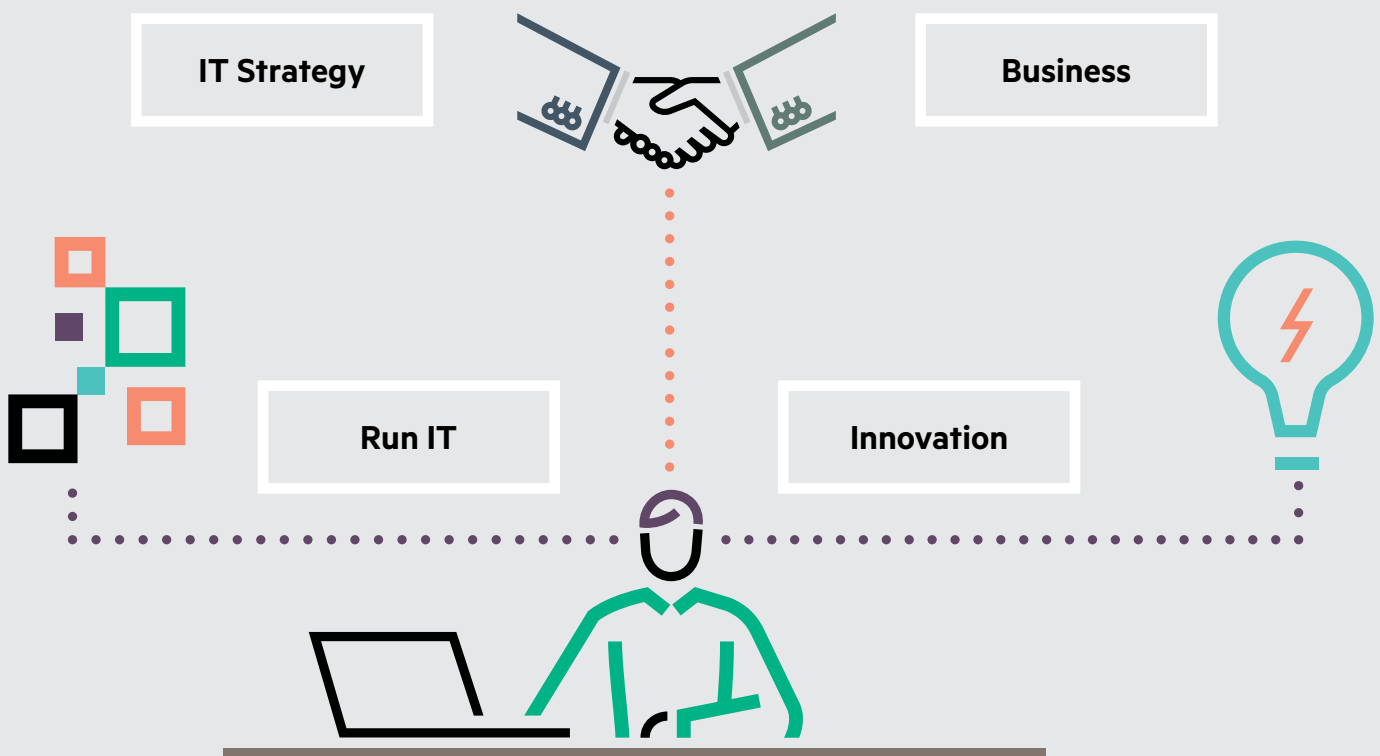


Guiding Principle 6: Offload non-strategic operations tasks to a partner

BUSINESS CHALLENGE: IT must be more strategic, and must use its scarce resources and skills to focus on business outcomes

The rapid adoption of new technologies and solutions including Cloud, Big Data and mobility, creates a complex environment for any IT organization. HPE Pointnext recommends evaluating in-house roles relative to strategic needs. In many cases, external expertise can help you focus in-house resources on the most strategic tasks. Benefits of this approach include:

- Easing the adoption of new technologies and solutions
- The need to focus in-house resources on strategic operations rather than infrastructure operations



As mentioned above, there are two sides to what IT needs to do – operate IT and focus on innovation. HPE Pointnext enables this through HPE Adaptive Management Services, a new collaborative approach where in-house IT owns the IT strategy and hands off operations to HPE experts. Because of the extensive vendor partnerships held by HPE Pointnext, this service can cover the entire stack, from applications through infrastructure.

IT organizations can pick from a catalog of services to leverage the skills, people, and processes of HPE's global Operations Centers across monitoring, operations and administration of infrastructure and applications. This reduces in-house staff demands and complexity so that you can focus on innovation to grow your business. Since HPE Adaptive Management Services are an integral component of HPE GreenLake solutions, customers get customized, pre-integrated support services for consumption-based on-premises infrastructure.

Checklist:

1. Identify any ongoing or potential staffing challenges.
2. Prioritize in-house skills, evaluate the benefits of staffing and offloading migration and routine operating tasks to a partner.
3. Define best fit skills to find alternative external source to deliver
4. Inventory of current and future skills needed.

Expected Results:

- Better allocation of staff resources.
- Increased ability of staff to focus on business needs.
- Administrative tasks offloaded to an external resource; staff contributes more to strategic planning and innovation.

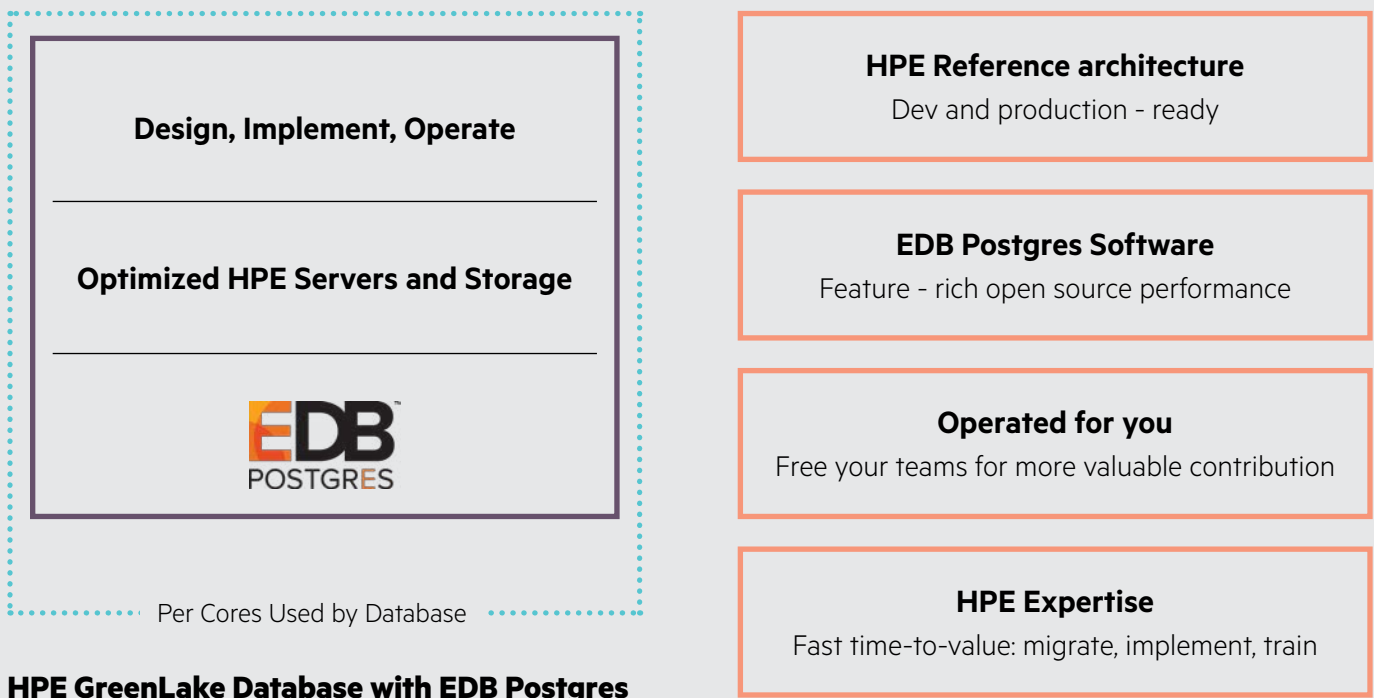
HPE GreenLake Database with EDB Postgres is **operated for you**, but you remain in control. You experience no disruption and no staff transfer.

Customer value and outcome

The HPE GreenLake solutions offer HPE technology at its core. And because HPE Pointnext experts have already designed the complete solution, they know exactly how to implement it quickly, and operating for you while delivering top performance. As your business grows, they will evolve your solution to stay ahead of performance bottlenecks while enabling long-term agility and investment protection.

Outcome based IT consumption, such as HPE GreenLake solutions, deliver a range of benefits that you can't get from alternatives solely built from scratch or consumed from the public cloud. Delivering the best of both worlds, HPE GreenLake Database with EDB Postgres from HPE Pointnext enables:

- **Faster time to value** from a complete, purpose-built solution that is quick to implement and supports rapid database migration with minimal risk.
- **Better economics** from a flexible, pay-per-use model that offers up to a 65% lower TCO over proprietary infrastructures.
- **On-premises solution** that provides proper control over data compliance, performance and security
- **Simplified IT**, operated for you to free up resources and add business value and reliable integration with leading open-source EDB Postgres database software.



The HPE GreenLake Database with EDB Postgres solution includes HPE ProLiant DL380 servers and HPE 3PAR storage that is scaled to your current needs and expandable as you grow. It includes industry-leading EDB Postgres database platform for enhanced performance, security and has native database compatibility with Oracle for easy migration. Backed by a full suite of planning and design services from HPE Pointnext, this solution will integrate with your existing applications while providing the extensible database platform you need for rapid, disruptive, digital transformation.

With much of the design, implementation, and day-to-day operations handled for you, the HPE GreenLake Database with EDB Postgres solution enables you to focus your IT resources on data insights and usage while maintaining security and control of an in-house database solution.

HPE provided operational stability and cost reduction, while increasing flexibility. In addition, they maintained communication during the project with various points of contact throughout our organization.

- Source: Global banking customer - IDC MarketScope: Worldwide Network Consulting Services 2017 Vendor Assessment, IDC, June 2017, Doc# US41623217e

Peace of mind with industry-leading hardware and software

Hardware

- HPE DL380 and 3PAR storage, designed for EDB performance
- Infrastructure scaled to customer needs and expandable as needs grow
- Reliability built in with firmware upgrades, patch management, and 24x7 remote monitoring



Software

- Industry-leading open source database platform (Gartner Magic Quadrant for last 5 years)
- Enhanced performance and security requirements for enterprise workloads
- Native database compatibility with Oracle for easy migration
- Supports structured and unstructured data in federated model



Conclusion

Moving to a new database platform can present many challenges and require resources, time and skills that you may not have in your organization. HPE Pointnext offers services to meet your needs, including helping you evaluate potential cost savings and operational and data type requirements. Leveraging proven reference architectures, robust custom-built tools and experience gained from thousands of database projects, the experts at HPE Pointnext can help you with database design, database migration, application migration and integration services, to enable a smooth and successful deployment of EDB Postgres on the HPE GreenLake platform.

HPE GreenLake Database with EDB Postgres delivers a complete, consumption-based, open-source database solution that offers enterprise-grade capabilities to manage structured and unstructured data. It's delivered on HPE hardware that is tuned to deliver the best performance, and offers a range of benefits that you can't get from solutions built from scratch or consumed from the public cloud. The HPE Pointnext Adaptive Management Services teams provide 24x7 monitoring of your hardware, software and databases, and day-to-day operation of your database environment.

Just as importantly, the HPE GreenLake Database with EDB Postgres solution lets you make the most of your in-house IT team by offloading non-strategic tasks to a trusted partner. Now you can focus on innovation and core business needs while retaining the security and control that comes with an on-premises database platform.



Additional resources

Visit us at [HPE Pointnext](#)

Learn more about [HPE GreenLake](#)

Read about [HPE GreenLake with EDB Postgres](#)



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