SOLUTION BRIEF

EDB Postgres® AI

Turning Data Operations into Autonomous Competitive Advantage in an Agentic Age

Executive summary

EDB Postgres AI (EDB PG AI) represents a redefinition of enterprise data infrastructure. By embedding intelligence directly into Postgres, it eliminates many of the constraints associated with traditional and fragmented systems. Organizations can reduce cost, improve security, and accelerate innovation while maintaining full control over their data.

In a landscape in which data is a primary driver of competitive advantage, the ability for the database to operate autonomously is becoming essential. EDB PG AI's agentic database provides the foundation for this transformation, enabling enterprises to move beyond managing data and toward fully leveraging it as a strategic asset.

What this means for enterprises

Enterprises are entering a new phase of transformation, defined not by how much data they collect but by how effectively they can operationalize it for AI, analytics, and real-time decision-making. Despite significant investments in data infrastructure, most organizations remain constrained by systems that require constant manual intervention, fragmented architectures, and increasing operational overhead. The result is a widening gap between the demand for data-driven innovation and the ability to deliver it.

As agents become a common workforce in the enterprises, those agents will use databases 24/7/365. This means that the database evolves from a storage layer to an active intelligence layer. It becomes the ground truth of the agentic enterprise. To serve agents at that scale, the database itself must become autonomous, capable of managing its own performance, capacity, and security without human intervention.

EDB PG AI represents a shift from managing infrastructure to enabling outcomes with its agentic database. It transforms Postgres from a manually managed system to a self-optimizing database. The intelligence lives inside the platform, not bolted on top of it.

By embedding intelligence directly into the database platform, EDB PG AI enables organizations to reduce operational burden, consolidate data environments, and accelerate AI adoption while maintaining full control over governance, security, and deployment. This changes how enterprises manage and scale data, moving from reactive infrastructure management to an intelligent, proactive operating model within defined enterprise guardrails.

Why now

Ninety-five percent of enterprises want to be their own AI and data platforms, and 37 percent are choosing PostgreSQL.

The urgency for adopting an autonomous data platform is driven by several converging trends:

- Enterprise investment in AI-capable database systems is expected to triple by 2028, according to NVIDIA, reflecting the increasing importance of data infrastructure in supporting AI initiatives. However, there is a clear execution gap, with many organizations struggling to scale their workloads effectively.
- At the same time, operational constraints are becoming more pronounced. The demand for data-driven capabilities continues to grow, but the availability of skilled database teams does not. Automation is no longer a convenience; it is a necessity for maintaining operational efficiency and competitiveness.
- Regulatory pressures further reinforce the need for a flexible and controlled data platform. Organizations must be able to adapt to evolving requirements while maintaining high standards of security and compliance. Solutions that require data to leave controlled environments or that introduce additional complexity are increasingly untenable.

The strategic impact is fast and scalable in a new way

EDB PG AI shifts enterprises from managing infrastructure to enabling outcomes. By automating routine operations, consolidating data systems, and supporting modern workloads, organizations can focus on delivering value rather than maintaining systems. This shift has implications beyond the technology function, affecting how organizations innovate, compete, and grow.

The ability to operate a unified, intelligent data platform creates a foundation for sustained advantage. It reduces friction in the development and deployment of new capabilities, improves responsiveness to changing market conditions, and enhances the organization's ability to leverage data as a strategic asset.

The business challenges: Expanding business needs conflict with limited capacity

Modern enterprises are facing a structural imbalance between rapidly expanding data demands and limited operational capacity. Data environments have evolved beyond traditional relational systems to include a wide range of data types, such as vector data for AI, time-series data for real-time analytics, and semi-structured data for modern applications. Each new workload introduces additional complexity, often requiring specialized systems that increase fragmentation and operational overhead; the database demands constant administration work that consumes DBA capacity without creating new business value.

At the same time, database and platform teams are under increasing pressure to deliver more with the same or fewer resources. A significant portion of their time is spent on reactive activities such as performance tuning, troubleshooting, and capacity management. These tasks are essential but do not directly contribute to innovation or business value. As a result, organizations struggle to prioritize strategic initiatives such as AI deployment, advanced analytics, and application modernization.

Regulatory requirements add another layer of complexity. Enterprises must ensure data sovereignty, compliance, and auditability across increasingly distributed environments. Cloud-only solutions often fail to meet these requirements, particularly in regulated industries such as financial services and government. Organizations need a solution that combines flexibility with control, enabling them to operate across hybrid and on-premises environments without compromising governance.

The solution: Agentic database capabilities

EDB PG AI introduces a new paradigm by embedding intelligence directly into your Postgres system, transforming it into an autonomous, multi-model data platform. Instead of relying on external tools or manual intervention, the database continuously monitors, analyzes, and optimizes its own performance within defined guardrails set by the enterprise. This allows it to adapt dynamically to changing workloads and conditions while maintaining compliance and control.

The platform integrates multiple capabilities into a single, unified system. It supports a wide range of data types, including relational, document, time-series, geospatial, and vector data, all accessible through a single SQL interface. This eliminates the need for multiple specialized databases and reduces the complexity associated with managing and integrating disparate systems. At the same time, it incorporates intelligent optimization, self-scaling, automated lifecycle management, and built-in security features, creating a cohesive and intelligent data environment.

By combining these capabilities, EDB PG AI enables organizations to operate more efficiently, respond more quickly to business demands, and support modern workloads without introducing additional infrastructure.

Where EDB PG AI is superior

Capability Area	EDB PG AI	Oracle Autonomous Database	Cloud Postgres (Aurora/Azure)	Specialized Database Stack
Open standard foundation	Built on Postgres (no lock-in; broad ecosystem)	Proprietary Oracle stack	Partial (Postgres compatible but vendor bound)	Fragmented, multiple vendors
Deployment flexibility	Hybrid, on prem, private cloud, multi-cloud	Cloud only	Cloud only	Varies, often complex
Data sovereignty and control	Full control with sovereign guardrails	Limited (Oracle-controlled cloud)	Limited (cloud provider control)	Complex governance across systems
Autonomous operations	Embedded intelligence trained on 20+ years of Postgres expertise	Native but Oracle specific	Limited automation, external tooling required	No unified automation
Multi-model support	Native: relational, JSON, vector, time series, geospatial in one engine	Limited multi-model	Requires multiple databases	Requires multiple databases
AI readiness	Native vector engine + MCP (agent-ready architecture)	Partial AI support	Limited native AI capability	Requires separate vector DB
Operational efficiency	Up to 80% reduction in manual tuning; proactive optimization	Strong automation	Moderate automation	High manual overhead
Performance for modern workloads	Optimized for hybrid search, vector; automated tuning (significant performance gains)	Strong for Oracle workloads	General-purpose performance	Manual per DB, not unified
Platform consolidation	Single engine replaces multiple specialized databases	Oracle-centric consolidation only	Limited consolidation; niche databases recommended	No consolidation (adds sprawl)
Vendor complexity	Low (one platform, open ecosystem)	High lock-in	Medium	High (increases vendors)
Security and governance	Built in, policy driven, with autonomous remediation	Strong but Oracle bound	Shared responsibility model	Fragmented across tools
Total cost of ownership	Lower, through consolidation and efficiency	High licensing costs	Unpredictable cloud consumption costs	Highest (multiple systems plus integration)

*Competitive comparisons are based on publicly available information and are subject to change as vendor offerings evolve and new information is made available. All product names, trademarks, and registered trademarks are the property of their respective owners.

Business outcomes

The impact of EDB PG AI's agentic database can be understood across four key dimensions: efficiency, cost, risk, and innovation.

1. EDB PG AI significantly improves operational **efficiency** by reducing the need for manual intervention. Tasks that traditionally required constant attention, such as tuning and performance optimization, are handled automatically by the system. This shift allows technical teams to focus on higher-value activities, such as developing new applications and enabling advanced analytics. Evidence from internal analysis indicates that organizations can catch 80% of potential performance bugs before apps hit production. EDB PG AI's automation engine monitors thresholds in real time and executes scaling, indexing, and tuning actions automatically, with optional approval workflows that give teams full control over every action.
2. The platform delivers meaningful **cost reductions** by consolidating multiple data systems into a single engine and optimizing database performance and resource utilization. Organizations can manage significantly larger data volumes with fewer resources, reducing infrastructure costs and simplifying operations. This consolidation also eliminates the need for multiple licensing agreements and integration layers, further lowering total cost of ownership.
3. EDB PG AI enhances security and governance and reduces **risk** by embedding these capabilities directly into the platform. Autonomous security mechanisms continuously monitor for risks and apply remediation within defined policies, significantly reducing the time required to address vulnerabilities (5x faster than manual remediation). Built-in audit logging and compliance features ensure that organizations can meet regulatory requirements without additional tooling. Importantly, all automation operates within enterprise-defined guardrails, ensuring that control is never relinquished.
4. The platform accelerates **innovation** by enabling organizations to operationalize AI and advanced analytics more effectively. With native support for vector data and other AI-related workloads, organizations can build and deploy AI applications without introducing new infrastructure. This reduces the friction associated with moving from experimentation to production and allows teams to deliver value more quickly.

Competitive differentiation

EDB PG AI is differentiated by its architectural approach. While many solutions offer elements of automation or multi-model support, few integrate these capabilities into a single, cohesive platform. Competitors such as Oracle Autonomous Database provide automation but are limited to cloud-only environments and proprietary ecosystems, leading to vendor lock-in. Cloud-managed PostgreSQL services offer convenience but lack the depth of embedded intelligence and often require data to reside outside enterprise control.

Specialized databases address specific workload requirements but contribute to fragmentation and complexity. In contrast, EDB PG AI unifies these capabilities within a single solution, reducing the need for multiple systems and simplifying the overall architecture. Its Postgres foundation supports a widely adopted open standard, enabling flexibility and reducing dependency on proprietary technologies. Unlike bolt-on automation layers or external observability tools, EDB's autonomous intelligence is embedded natively, meaning it acts on the database from within, not from the outside looking in.

Another key differentiator is its sovereign-by-design architecture. Organizations can deploy the platform in environments that meet their specific regulatory and operational requirements, whether on premises, in the cloud, or across hybrid environments. Your agility is not limited to a single cloud vendor.

	Legacy databases	Cloud-managed databases (DBaaS)	Specialized database stack	EDB PG AI
Shared responsibility model	Manual, DBA driven	Vendor-managed	Multiple purpose-built systems	Autonomous administration, unified platform
Commercial readiness	Full control, familiar tools	Reduced operational overhead, ease of use	Optimized for specific workloads (vector, document, time series)	Self-optimizing, multi-model, deploy anywhere, AI-ready
Vendor lock-in	High operational burden, slow scaling, limited AI readiness	Limited control, data sovereignty concerns, vendor lock-in, unpredictable pricing model	Fragmentation, integration complexity. higher cost, governance risks	Requires architectural shift
Business impact	Increasing cost, slower innovation	Moderate efficiency, higher long-term dependency	High complexity, increased risk	Lower cost, efficient operations, faster innovation

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What this means strategically

Most database platforms address operational challenges individually and reactively, requiring additional tools, integrations, and manual intervention as workloads grow. EDB PG AI addresses them systemically and natively, not layering them on top through external observability tools or bolt-on automation. Building intelligence into the platform creates a fundamentally different operating model:

- **The database scales itself:** CPU, disk, and memory adjust up automatically to workload demand.
- **Performance is continuously optimized:** Indexes are built, queries are tuned, and bottlenecks are resolved before they become incidents.
- **Security is self-reinforcing:** Risks are identified and remediated in minutes, within policies the enterprise defines.
- **Teams are free from reactive maintenance:** DBAs redirect capacity from operational firefighting to strategic innovation.

This is the difference between maintaining a database and operating a self-driving data platform.

EDB Postgres AI: The sovereign data and AI platform for the agentic enterprise

EDB PG AI brings together a unified data layer, governance, sovereign control and orchestration, and an agent runtime environment, giving enterprises a trusted foundation for AI on infrastructure they own and control. The platform unifies transactional, analytical, and AI workloads in a single Postgres-based architecture—eliminating ETL, data movement, and operational fragmentation. And you choose where and how to deploy: on-premises, cloud, managed, or certified appliance.

The outcome: production-ready sovereign AI in days or weeks, not months.

EDB POSTGRES AI

EDB Postgres® AI (EDB PG AI) is the sovereign data and AI platform for the agentic enterprise. Built on Postgres, the world's leading open source database, EDB PG AI unifies transactional, analytical, and AI workloads in a single governed architecture, on-premises and across clouds. To learn more, visit www.enterprisedb.com.