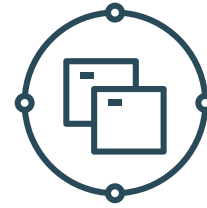


TECHNICAL BRIEF

# EDB Postgres® AI Hybrid Manager

A unified, sovereign control plane for Postgres across hybrid and multi-cloud environments



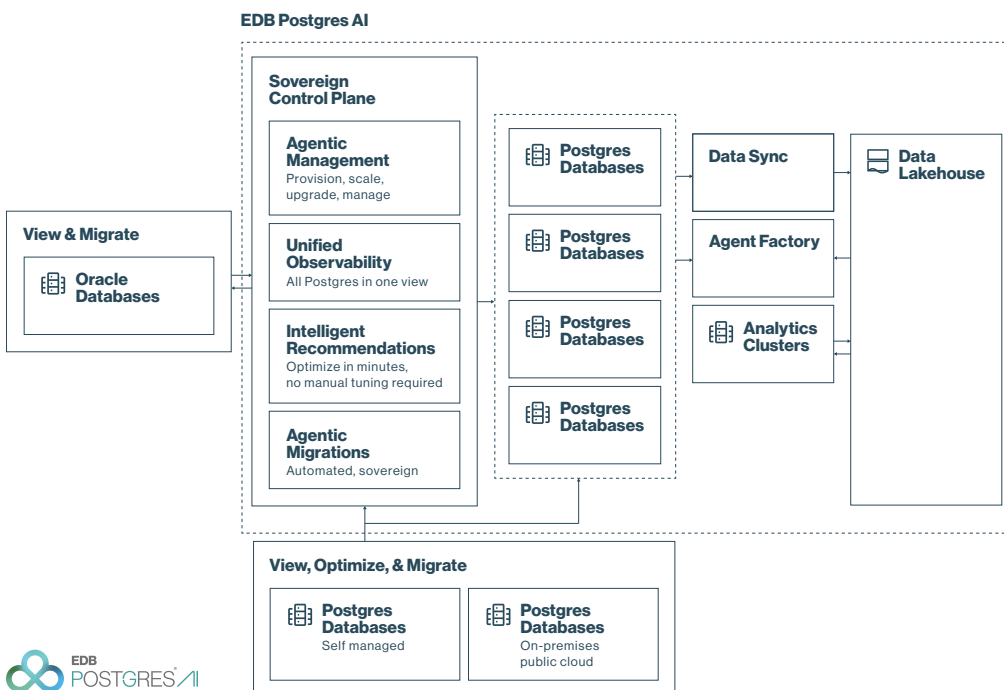
## Solution overview

PostgreSQL has become the most popular and most trusted open source database for developers. Its flexibility and resilience make it a preferred foundation for modernizing enterprises, as they can deploy Postgres across on-premises, cloud, multi-cloud, and hybrid environments. However, this distributed deployment strategy introduces a systemic issue: There is no single operational control plane governing the entire data estate.

Instead, organizations rely on a patchwork of infrastructure-as-code frameworks, Kubernetes operators, cloud services, and custom automation scripts. Each environment introduces its own abstractions, APIs, and operational models. As a result, the data estate becomes operationally inconsistent and difficult to maintain. Observability is fragmented, policies are applied unevenly, and lifecycle operations vary depending on where workloads are deployed.

This fragmentation creates measurable technical consequences. After a period of inconsistent patches, upgrades, and maintenance across environments, configuration drift emerges and makes systems harder to reason about and troubleshoot. As telemetry is siloed, performance optimization becomes reactive by default. Security posture weakens due to inconsistent policy enforcement. Most critically, the operational burden increases exponentially as environments scale.

EDB Postgres AI (EDB PG AI) addresses this by introducing Hybrid Manager, a unified, sovereign control plane that standardizes Postgres operations across all deployment environments while preserving flexibility.



# The unified platform for distributed Postgres

EDB PG AI fundamentally changes how Postgres environments are managed. By centralizing control while preserving deployment flexibility, it enables organizations to operate distributed data estates as a single platform.

For technical teams, this means reduced complexity, improved consistency, and greater efficiency. For the enterprise, it provides a scalable foundation for hybrid architectures, AI workloads, and analytical insights.

In a world in which data is increasingly distributed, the ability to manage it cohesively is not just an operational advantage—it is a strategic necessity. EDB PG AI delivers that capability.

EDB Postgres AI separates the control plane from the data plane to ensure that critical database operations and platform services are not impacted by one another. This separation is crucial for enabling consistent operations across data estates without sacrificing performance or locality.

The control plane manages all lifecycle operations, including cluster provisioning, configuration, backup orchestration, upgrades, and access control. It abstracts infrastructure-specific interfaces, allowing operators to interact with a uniform experience regardless of where the database is deployed.

As the Hybrid Manager data plane is Kubernetes based, it remains fully distributed, with Postgres instances running within their respective environments. This ensures that workloads benefit from the performance characteristics of local infrastructure, whether that is low-latency access in a specific region or optimized compute resources in a cloud environment. Telemetry is aggregated, normalized, and analyzed for centralized monitoring and alerts. This enables observability across clusters and unifies operations, which is essential for diagnosing issues and optimizing performance in distributed systems.

## Observability: Telemetry and cross-environment correlation

Observability in traditional Postgres environments is often limited by fragmentation. Metrics may be collected through separate systems such as Prometheus, cloud-native monitoring tools, or custom scripts, each providing partial visibility. EDB PG AI unifies observability into a single view, delivering more than 200 metrics for deep insights across all environments.

These metrics include detailed insights into query execution, such as execution time and inefficiencies. System-level telemetry encompasses CPU utilization, memory consumption, disk I/O throughput, and buffer cache efficiency. Metrics track WAL generation rates, replication lag, and synchronization health.

The key technical advantage is turning data and metrics into valuable insights. EDB PG AI aligns telemetry across environments, enabling operators to analyze performance holistically. For example, a query performance issue can be traced across nodes, correlated with resource utilization, and linked to configuration differences—all within a single interface.

This reduces time to detection and resolution, while enabling proactive performance management.

## Operational model: Automation and lifecycle orchestration

EDB PG AI turns Postgres management from a reactive, manual process into automation that works across teams. Instead of executing individual operational tasks, DBAs and IT teams define policies that regulate system behavior according to the enterprise's own policies, best practices, and compliance requirements.

Provisioning is standardized through preconfigured templates that encode best practices for configuration, security, and performance. These templates ensure that every cluster is deployed with consistent parameters, eliminating variability and reducing the risk of misconfiguration. In practice, this enables cluster deployment up to 10 times faster than traditional manual methods.

Once deployed, lifecycle operations are orchestrated through the control plane. Backup and recovery processes are automated according to defined retention policies, ensuring consistency across environments. Scaling operations can be triggered based on preset workload thresholds, allowing systems to adapt dynamically to demand. Upgrades are processed while maintaining uptime and availability.

## Performance optimization: Embedded intelligence and improved tuning

Performance optimization traditionally relies on manual tuning, requiring deep expertise and iterative testing. EDB Postgres AI embeds this expertise directly into the platform, enabling automated, easy-to-apply optimization.

The platform continuously analyzes query execution patterns, identifying inefficiencies such as suboptimal join strategies, missing indexes, or excessive sequential scans. It provides actionable recommendations that can easily be applied directly in the Hybrid Manger UI.

Configuration parameters are also optimized based on workload characteristics. Memory, storage, and CPU utilization are adjusted dynamically to improve performance and resource allocation.

The impact of this embedded intelligence is significant. Organizations can achieve up to 40% reduction in cost per workload, driven by improved efficiency and reduced over-provisioning. At the same time, performance improvements reduce latency and increase throughput, enabling systems to handle greater demand without additional resources.

## Security and sovereignty: Enterprise control in a distributed world

EDB PG AI is sovereign by design. Unlike cloud-managed services, which require data to reside within vendor-controlled environments, EDB PG AI operates entirely within enterprise-defined boundaries.

Security and governance are enforced through integrated mechanisms, including role-based access control, encryption policies, and audit logging. These controls are applied consistently across environments and across user types, ensuring compliance with regulatory requirements. Critical operations can be gated by approval workflows, allowing organizations to balance automation with control. This is particularly important in regulated industries, whose compliance requirements demand traceability and accountability.

## Comparative architecture analysis

The architectural differences between EDB PG AI and alternative approaches are best understood in terms of control, flexibility, and consistency.

Capability	EDB PG AI	Cloud DBaaS	DIY/manual	Kubernetes operators
<b>Control plane</b>	Unified across all environments	Vendor specific	None	Partial
<b>Deployment model</b>	Hybrid, multi-cloud, on-prem	Cloud only	Flexible but inconsistent	Kubernetes only
<b>Policy enforcement</b>	Centralized, consistent	Vendor controlled	Manual	Partial
<b>Observability</b>	Unified, cross environment	Limited to vendor	Fragmented	Fragmented
<b>Infrastructure abstraction</b>	High	High (within vendor)	None	Medium

\*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.

## Operational efficiency comparison

From an operational perspective, EDB PG AI significantly reduces complexity while improving consistency.

Operational function	EDB PG AI	Cloud DBaaS	DIY/manual	Kubernetes operators
<b>Provisioning speed</b>	Up to 10x faster	Fast	Slow	Medium
<b>Observability depth</b>	200+ unified metrics	Limited	Fragmented	Fragmented
<b>Optimization</b>	Embedded intelligence	Limited	Manual	Partial
<b>Automation model</b>	Policy-driven	Vendor controlled	Minimal	Moderate
<b>Operational overhead</b>	Low	Low-medium	High	Medium-high

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# Benchmark summary

EDB PG AI delivers measurable improvements across key metrics:

Metric	Improvement
Deployment time	Up to 10x faster deployment for production-ready databases
Cost efficiency	Up to 40% reduction per workload
Issue resolution	Up to 10x faster resolution
Observability coverage	200+ metrics unified
Operational effort	Significant reduction in manual tasks; up to 30% productivity boost

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## Technical differentiation

EDB PG AI's differentiation lies in its ability, through Hybrid Manager, to unify control without constraining deployment. It provides a true sovereign control plane, eliminating silos between your database clusters. It embeds Postgres expertise, enabling proactive performance management and continuous optimization. It enforces sovereignty by ensuring that all operations are enterprise controlled. Finally, it balances automation with governance, enabling organizations to scale without losing control.

### 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 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](http://www.enterprisedb.com).