EDB POSTGRES AI

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Enhancing Global Trade: EDB Postgres® AI Drives Efficiency at the London Stock Exchange

LONDON STOCK EXCHANGE

CUSTOMER: **LONDON STOCK EXCHANGE**

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Head of Database Services for the Capital Markets Division at the London Stock Exchange

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OVERVIEW

Meeting the needs of one of the most demanding data environments in the world requires a reliable and flexible solution.

The London Stock Exchange is the largest stock exchange in Europe and the sixth largest in the world, averaging tens of millions of active trades per day. It also has the widest global reach, playing host to over 3,000 companies spread across 70 countries. In 2019, the exchange's parent organization, the London Stock Exchange Group, saw a total income of £2.3 billion.

Roberto Giordano is the head of Database Services for the Capital Markets division at the London Stock Exchange. His team's primary mission is to manage database services – regardless of location or technology – for LSE trading platforms, where latency measured in microseconds. In a presentation at Postgres Vision 2020, Giordano said his team adhered to a "follow-the-sun model" that leveraged resources based in several locations in Europe, Asia, and America.

Postgres is a key component of Giordano's database estate. In response to a question following his presentation, he maintained that rather than use the community edition of Postgres, his team prefers to deploy EDB Postgres Advanced Server (EPAS) to "support critical services in a highly regulated business" because "we really need to rely on world class support services." As a rough approximation, he estimated that his team ran 100 Postgres instances.

Why Postgres at scale? Along with reliable, responsive support, Giordano cited three key reasons: Simplicity, reliability, and affordability.

Keeping it simple in a complex environment

Postgres' simplicity begins with provisioning – or as Giordano puts it, "building new environments and deploying new environments is really, really, really simple."

His team has enhanced that ease of provisioning with automation in the form of Ansible playbooks to build environments from scratch. Starting with a bare metal server or a virtual machine with just the OS installed, "we install the EDB Postgres Advanced Server suite. This also includes standby database creation, because we always use streaming replication."

Simplicity also extends to maintenance, including patching and upgrading. Patching is particularly important, due to internal policy. "We run a highly regulated business," Giordano said, noting that his team is compelled to patch several times per year. The process is automated and uses the satellite repositories from EDB. "We actually accomplish this quite easily," he said.

Finally, there's simplicity of monitoring, which Giordano said stems EDB's decision to include Postgres Enterprise Manager as part of the suite at no extra cost. The team deploys and configures PEM agents as part of the initial setup of environments, enabling PEM to send SNMP traps to the central monitoring system. With additional effort, his team has empowered PEM to provide visibility into how streaming replication is performing – and to set up alerts when something doesn't work. PEM is also useful for managing planned downtime.

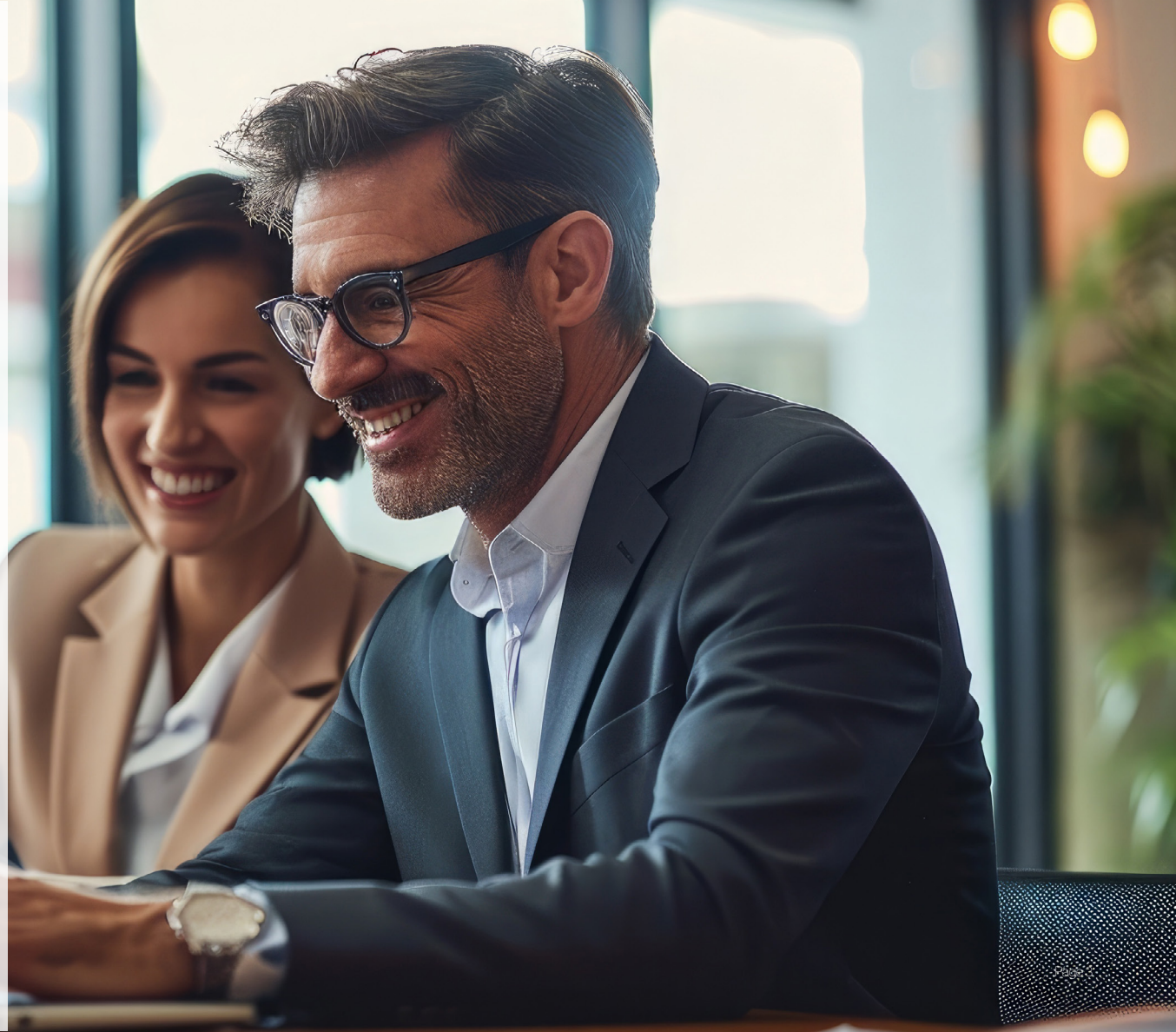
Reliability through replication

As part of the team's standard provisioning process, every Postgres database instance in Giordano's group gets a standby database. If there are no special requirements, and streaming replication is configured in the default asynchronous mode, no further effort is required.

On the other hand, if there's a specific requirement for automatic failover – such as an RPO (recovery point objective) of zero, which means no data can be lost – synchronous streaming replication must be implemented. In that case, Giordano recommended considering EDB Failover Manager (EFM). "EFM is a main piece that is going to put you in a position to reach automatic failover in both intersite and intrasite mode," he said.

For synchronous streaming replication, Giordano said that his team recently moved from OS clustering to EFM "just because we think that EFM is a simpler solution." OS clustering has specific storage and network requirements – and, typically, requires a sysadmin for setup and maintenance. "With EFM you probably are not going to need all these things," he said.

Regarding intersite high availability using EFM, Giordano said he has reached an RPO equal to zero using synchronous streaming replication to a secondary data center. At the same time, the RTO (recovery time objective) within the same data center is just a few seconds, comparable to what can be achieved using an OS clustering setup.



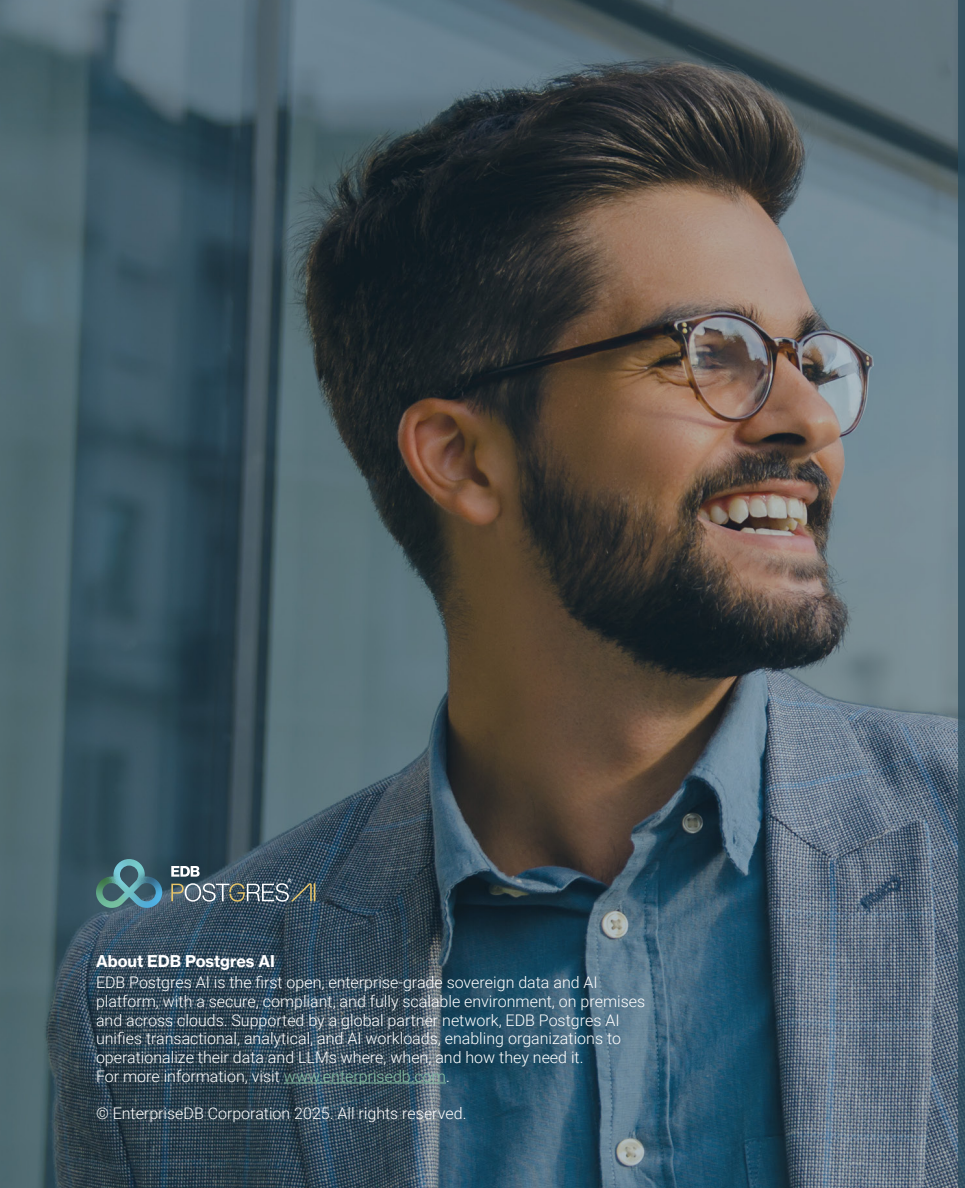
Flexibility and training for a critical advantage

Giordano saw EDB's customer training as a valuable benefit to the investment. He said that in recent months, he had engaged EDB about providing training for his team, which works in various locations around the world. The training was conducted with a combination of live classes, e-learning, and remote classes.

Giordano was more than pleased with the result. "I think every member of my team just had a very, very good experience with this ad hoc training initiative. It was specifically created for our scope. Together with the training, they also provided the possibility to actually get a certification about the material that was presented."

He liked that the model was similar for EDB support, with a recurring annual fee rather than a big entrance fee at the beginning of a business relationship. "This is really easy from a management perspective in order to do your budget…it is almost a cloud-like model," he said. "There is a lot of flexibility. For instance, you can move licensing between different servers with really no technical difficulties."

As for affordability, Giordano was particularly enthusiastic about the fact that "EDB has a very clear and flexible license model. This is very important to us, because there are situations with other vendors where the licensing model is not very straightforward." With EDB, "no matter if you deploy on bare metal infrastructure, if you deploy on premises, if you deploy on virtual machines on premises, or in the cloud, the license model is the same," he added.



Taking stock of the EDB experience

Trading platforms and the applications that run on them stand among the most demanding environments in the world, thanks to the enormous pressure to reduce latency, downtime, and the risk of data loss. The fact that Giordano opted for Postgres speaks volumes about the growing maturity of open source – and the reputation of EDB, which Giordano called "the best player in this space."

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About EDB Postgres AI
EDB Postgres AI is the first open, enterprise-grade sovereign data and AI platform, with a secure, compliant, and fully scalable environment, on premises and across clouds. Supported by a global partner network, EDB Postgres AI unifies transactional, analytical, and AI workloads, enabling organizations to operationalize their data and LLMs where, when, and how they need it.
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