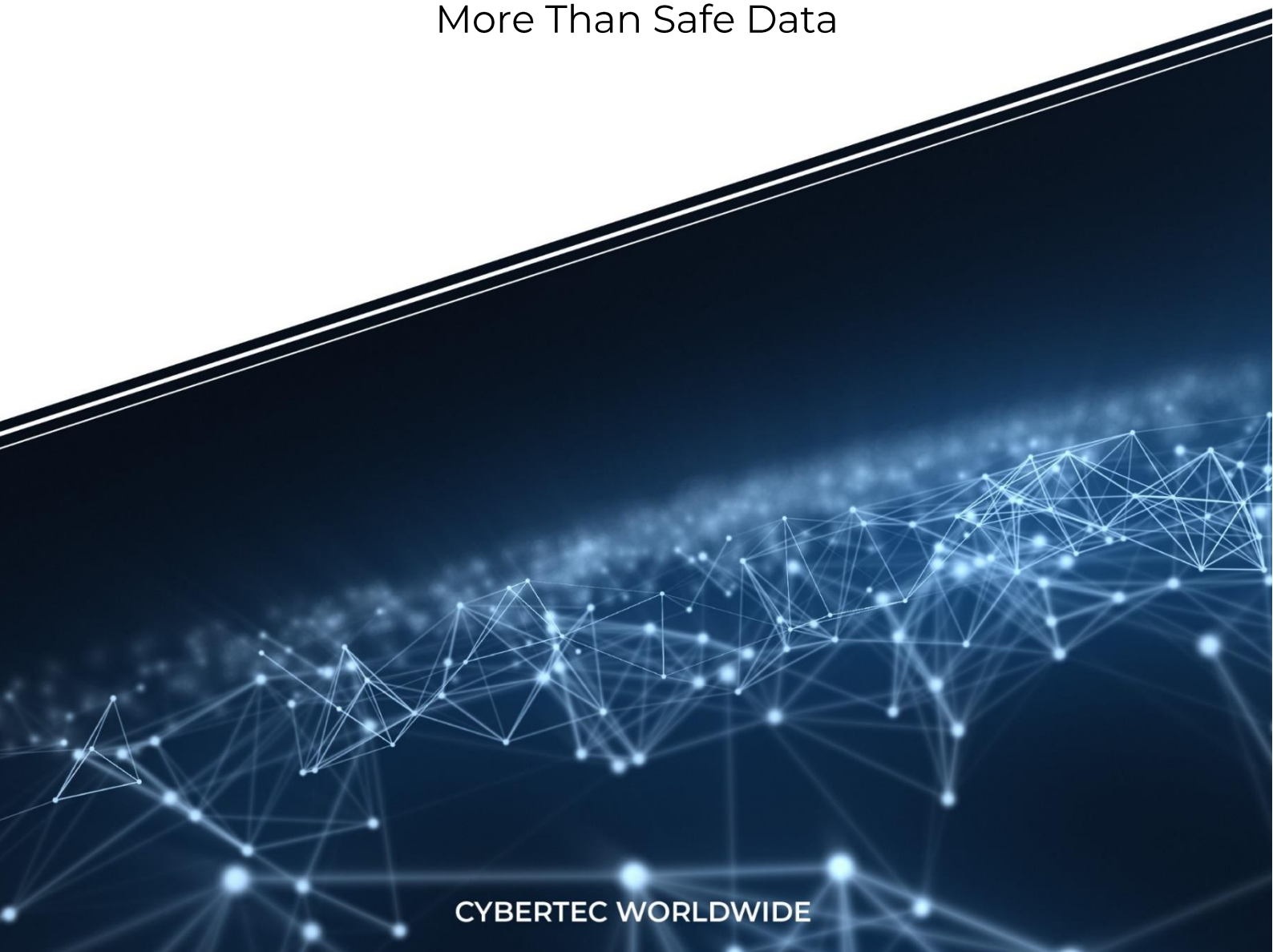


CYBERTEC PostgreSQL Enterprise Edition

More Than Safe Data



1. WHAT IS CYBERTEC PGEE?

Taking PostgreSQL to the Next Level

CYBERTEC PostgreSQL Enterprise Edition (PGEE) is a PostgreSQL distribution, optimized for large scale enterprise grade operations. Its core values are **superior security, high-performance, monitoring** and **worldwide 24/7 enterprise support**.



PGEE is available to premium customers as a subscription service for all important platforms including Red Hat Enterprise Linux (RHEL), Debian, Ubuntu as well as Docker and Kubernetes.

ADVANCED SECURITY AT AN ENTERPRISE LEVEL

Security has never been more important, and leaks can easily ruin a corporation and destroy its reputation in an instance. PGEE comes with advanced security features which exceed standard PostgreSQL essentially. Protect your data with PGEE and enjoy the safety of a professional enterprise database.

PGEE IS 100% CLOUD READY

Are you moving to the cloud? PGEE is exactly what you have been looking for. We are fully cloud ready. You can simply enjoy PGEE as SaaS/DBaaS solution.

OPTIMIZED FOR KUBERNETES

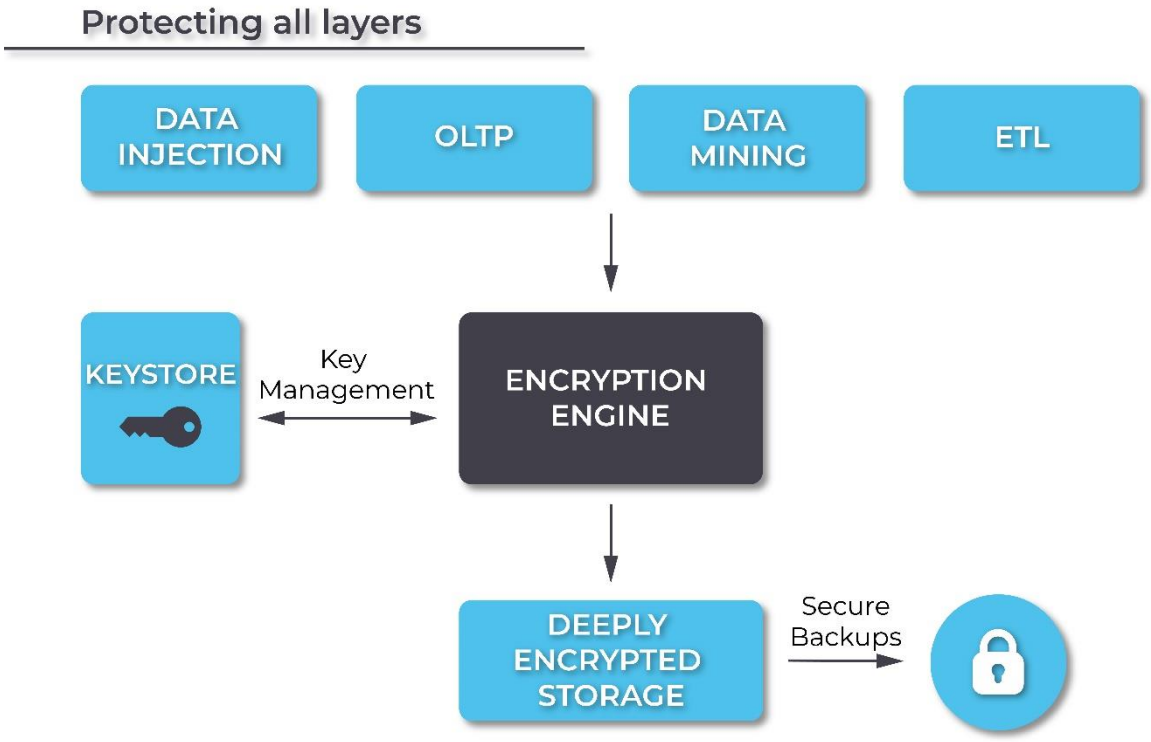
PGEE is readily available as Kubernetes operator including various technical features such as:

- backup integration (S3 storage, etc.)
- automatic replication and failover
- dynamic scalability

2. CYBERTEC PGEE: OUT-OF-THE-BOX ENCRYPTION

Encryption by Default

CYBERTEC PGEE is **fully encrypted by default**. We support full storage encryption, protecting your data at a more professional level while maintaining high performance and an excellent user experience.



Transparent Data Encryption (TDE) has been developed to bring PostgreSQL to the next level:

- better storage protection
- flexible key management
- enhanced data protection
- meet compliance related requirements

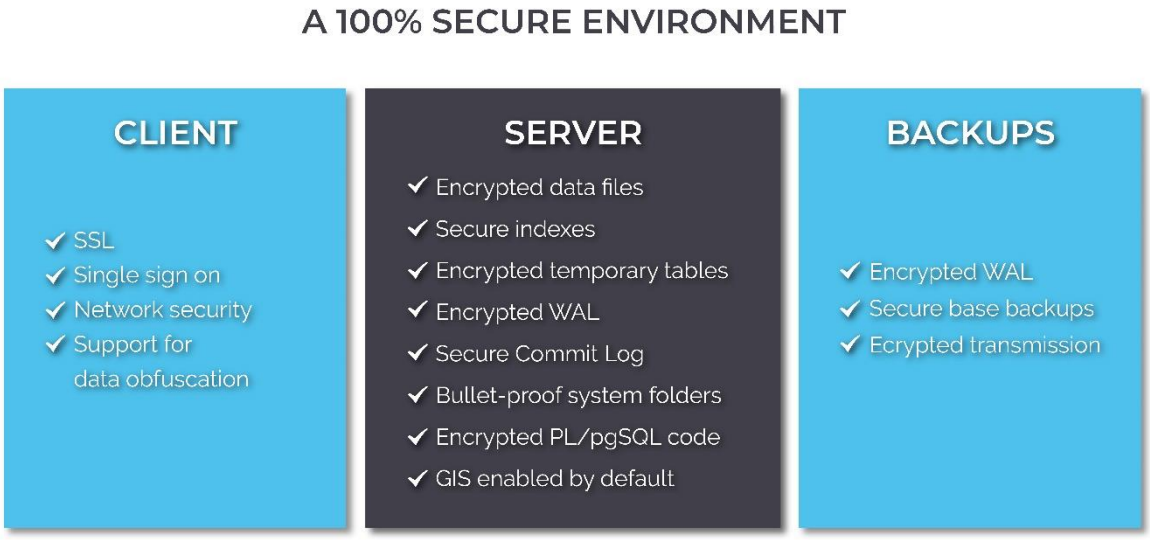
PGEE provides you with **more security** and **higher protection** for your most valuable asset: YOUR DATA!

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POSTGRESQL ENCRYPTION: FOR YOUR SECURITY

PGEE will automatically encrypt data before it is written to disk. All objects including tables, indexes, temporary tables and transaction logs are fully encrypted.

To maintain good database performance, we rely on Intel hardware acceleration which allows to encrypt and decrypt gigabytes of data each second.



3. SECURITY: ENTERPRISE READY AND ROCK SOLID

Security for Successful Enterprise Customers

PGEE features cutting-edge data security technologies that will secure the future of your enterprise. Working as PostgreSQL experts for 20 years, we exactly know, what enterprises really need when it comes to databases. Hence, we added the following features to PGEE:

STORED PROCEDURE ENCRYPTION

When you have invested a lot of money into your intellectual property, you probably do not want to give it away. Hence, PL/pgSQL_sec is integrated in CYBERTEC PGEE.

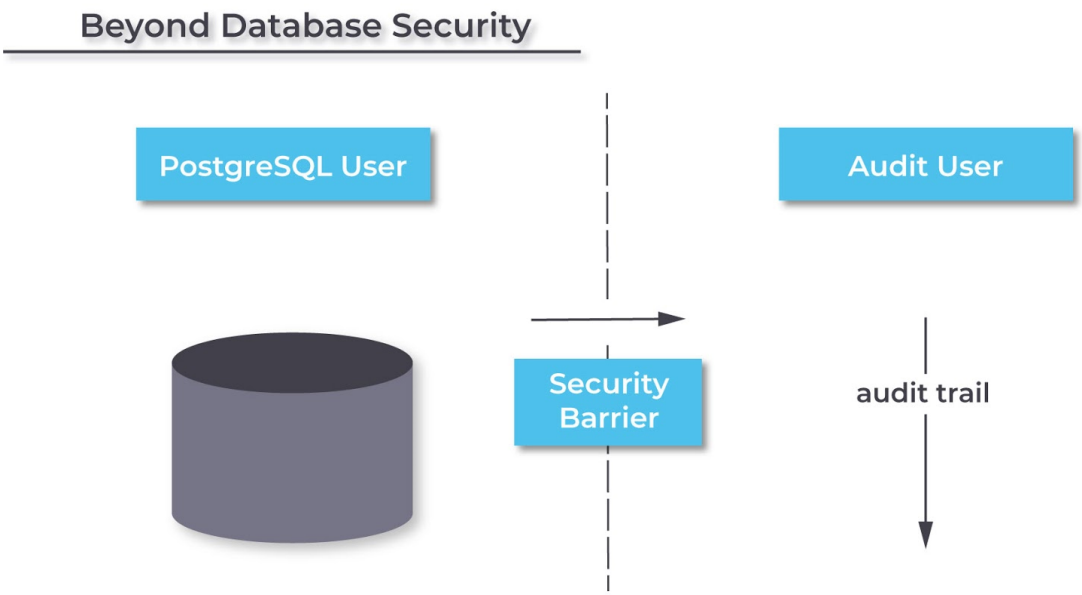
"PL/pgSQL_sec: Securing your Intellectual Property"

While standard PostgreSQL stores the code of a procedure in plain text, PL/pgSQL_sec will make sure that nobody can see your code and puts an end to reverse engineering. Code will even be encrypted in your backups while being transparent to developers.

ENTERPRISE LEVEL AUDITING

Running a critical application in finance, government or any other critical sector is impossible without proper auditing. PGEE comes with advanced auditing support (pg_audit_ext) which allows you to track client activity in detail.

The advantage over normal PostgreSQL auditing is that the audit trail is NOT stored as PostgreSQL user but is sent to a different UNIX user context to ensure that DBAs can modify this information. pg_audit_ext is therefore the most comprehensive audit solution for PostgreSQL.



DETECTING SUSPICIOUS EVENTS

PGEE helps to detect suspicious events. What happens if tables are dropped at unusual times or passwords get changed when they are not supposed to be?

"Making Good Use of Artificial Intelligence"

PGEE detects those anomalies immediately and informs you about potential threats. We use both, modern AI technologies as well as classical rule systems, to secure your databases for new challenges.

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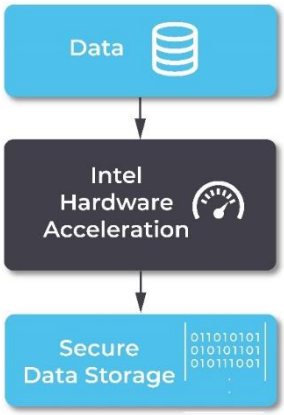
4. PERFORMANCE: NEXT GENERATION EFFICIENCY

Cutting-Edge Performance around the Clock

PostgreSQL is already an efficient database, but we have managed to make **PGEE even faster**.

To speed up your database, we have added various extensions as well as core features to the database to achieve maximum throughput.

HIGH PERFORMANCE MEETS HIGH SECURITY



PGEE offers various performance accelerations:

- CYBERTEC optimized default configuration
- supersonic fast encryption:
  - Intel hardware acceleration enabled
- aqo: adaptive query optimization
- further query optimizer improvements

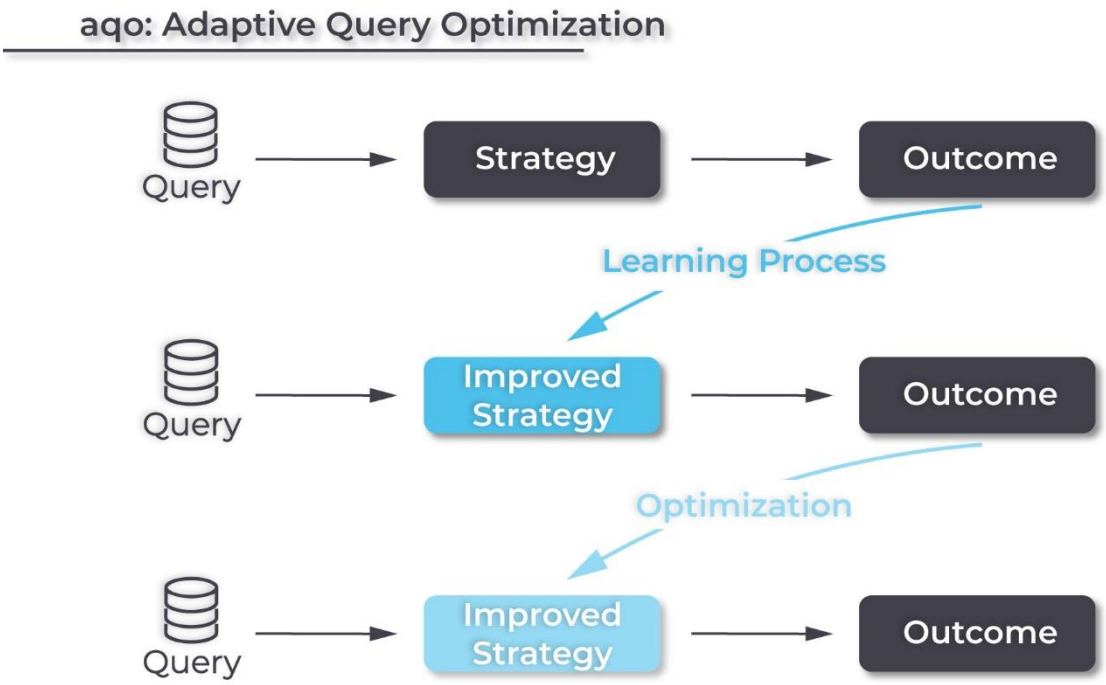
"Cutting-edge performance is coming to your enterprise"

AQO: IMPROVED OPTIMIZER PERFORMANCE

PGEE features improved optimization techniques to make your queries even faster. aqo inspects your workload and learns from past behaviour to speed up your current query.

"aqo makes your database learn from past mistakes"

All kind of queries benefit from this new, Artificial Intelligence based technology.



FURTHER OPTIMIZER IMPROVEMENTS

Large-scale data warehousing applications also benefit from our improvements. "Distributed aggregation push-down" is a technique which is especially useful to optimize Business Intelligence operations.

"Speed up aggregations up to 10x"

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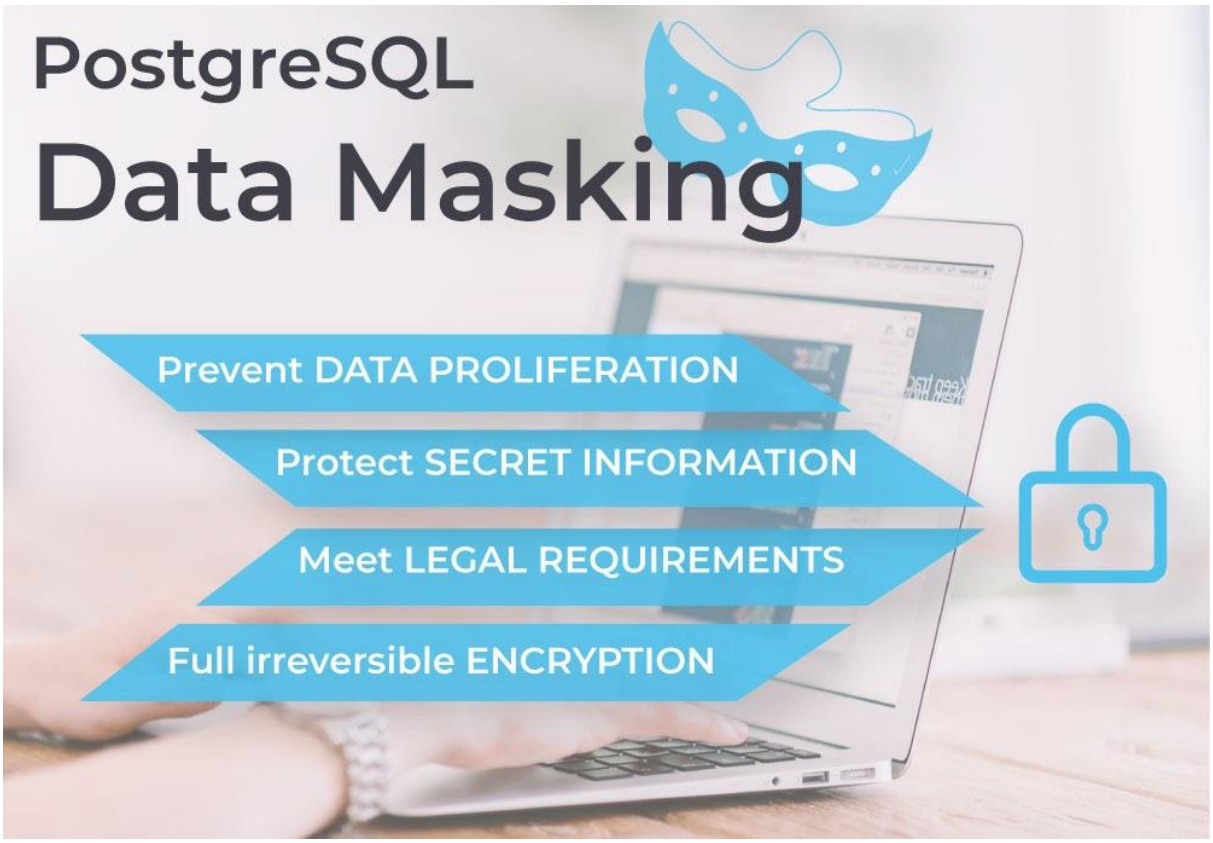
5. DATA OBFUSCATION: SECURELY PASSING ON DATA

Protecting Your Most Valuable Asset at all Time

Data privacy is a major concern for any organization that manages sensitive information or personally identifiable data. PGEE protects your data.

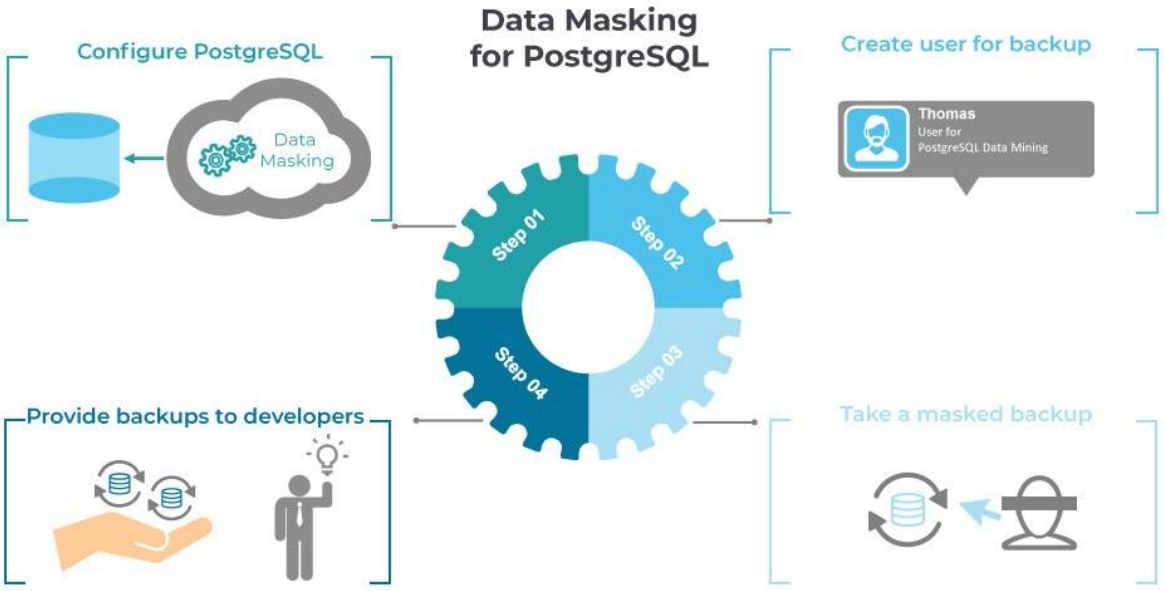
"In the past year, 77% of data breaches involved an insider", according to Verizon.

PGEE Data Masking ensures that only entrusted users are allowed to see real data - everyone else gets obfuscated data or no information at all.



WHAT CAN PGEE DATA MASKING DO FOR YOUR ENTERPRISE?

- define obfuscation rules for each column
- add your own obfuscation logic
- predict ready-to-use security rules
- create secure database backups



Developers will love this, as they can now test with real data without compromising enterprise security at any level.

HINT: We provide comprehensive consulting services. We help you to create obfuscation models and secure workflows. Contact us!

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6. MONITORING: LIVE AND IN REAL-TIME

Beyond Standard PostgreSQL

Enterprises rely on uninterrupted 24/7 services. Monitoring is key to achieving the goal of 99.999% uptime. PGEE comes with various features to allow even better monitoring. These features include but are not limited to:

- PGWatch: enterprise monitoring
- pg_show_plans: real-time execution plan monitoring
- pg_qualstats: index advisors and runtime statistics
- pg_deep_lense: advanced error reporting

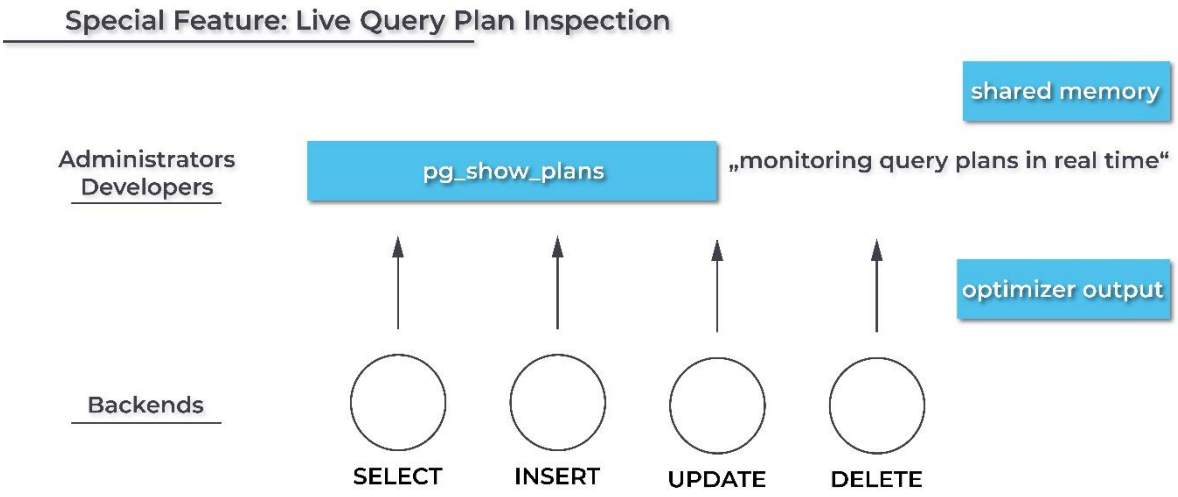
PGWATCH: POSTGRESQL MONITORING MADE EASY

PGWatch is an enterprise grade monitoring solution for PostgreSQL. It comes with a rich set of metrics (50+ database vitals). Any information you need is at your fingertip.

PGEE contains PGWatch monitoring by default. All pre-configured, all ready to use.



PG_SHOW_PLANS: WATCHING OPTIMIZER PERFORMANCE

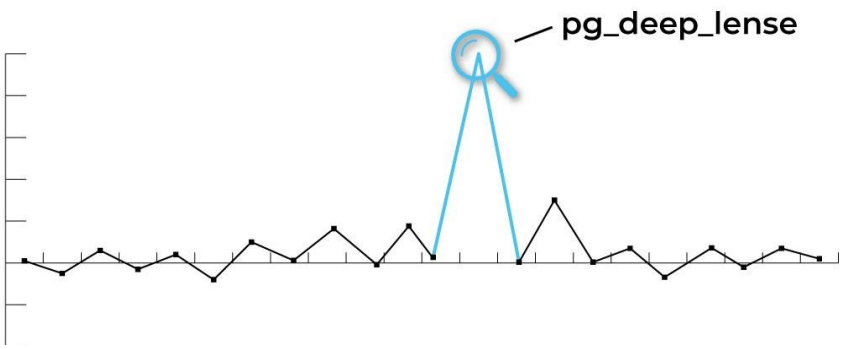


Some queries might be running for ages. The question is, what are those queries really doing? pg_show_plans allows you to inspect all active queries and expose their execution plans. It allows you to spot problems before a query even ends.

Monitoring optimizer performance has never been easier.

PG_DEEP_LENSE: INSPECTING EMERGENCIES

In most cases a database server runs perfectly for days, weeks, months, or even for years. But what happens if things suddenly go wrong? What is the root cause? pg_deep_lense helps you to track down problems and kick in as they happen. There is no more need to create gigabytes of textual logs. pg_deep_lense triggers monitoring processes if things go wrong - and only then. Do you want to figure out which locks caused issues while the database was wrong? Do you want to know which queries were active at the time of disaster? pg_deep_lense can do that for you.



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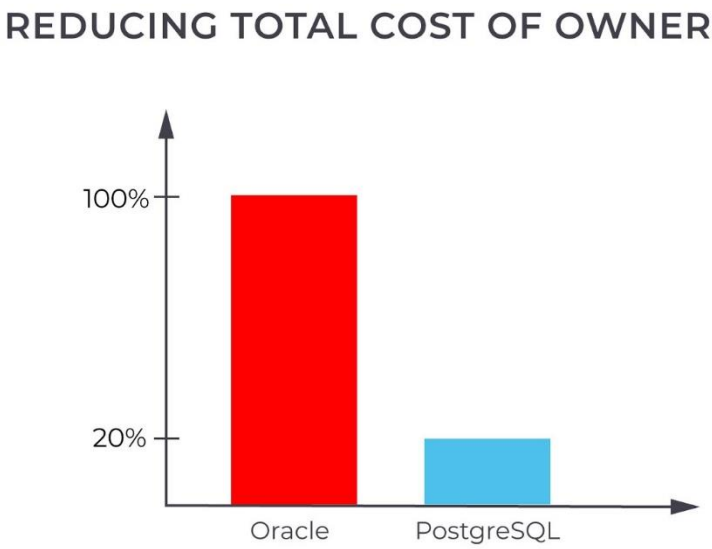
7. MIGRATION SERVICES

Moving from Oracle, MS SQL, DB2, ... to PostgreSQL

In this era of digital transformation, today's business cannot afford to pay insane amounts of money for classical, inflexible database solutions. CYBERTEC helps to move from those commercial databases to PostgreSQL.

CUTTING COSTS WHILE IMPROVING SUPPORT

PGEE is a cost-efficient enterprise database solution. Deploying PGEE will allow you to cut database costs by up to 80%:



PGEE is not simply cheaper to buy - it will also reduce support costs by a significant margin.

MOVING TO PGEE

PGEE is a perfect replacement for Oracle, MS SQL, DB2, My SQL and other commercial legacy systems. CYBERTEC offers various services to help you migrate from Oracle, MS SQL, DB2, My SQL and many more to PostgreSQL:

1. Make use of **CYBERTEC Migrator** which is a feature-complete migration framework to move to PostgreSQL fast, efficiently and with visual guidance.
   Read more: www.cybertec-postgresql.com/en/products/cybertec-migrator

2. Or make use of our various **migration services**: Our experts offer a smooth transition from the commercial to the Open Source world.
   Read more: https://www.cybertec-postgresql.com/en/services/migration-to-postgresql/

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8. ADDITIONAL ENTERPRISE FEATURES

Enterprise Job Scheduling & More Performance

Running a professional environment requires more than meets the eye. PGEE covers all important aspects which are usually not addressed by a core database system. Three key aspects are of prime importance:

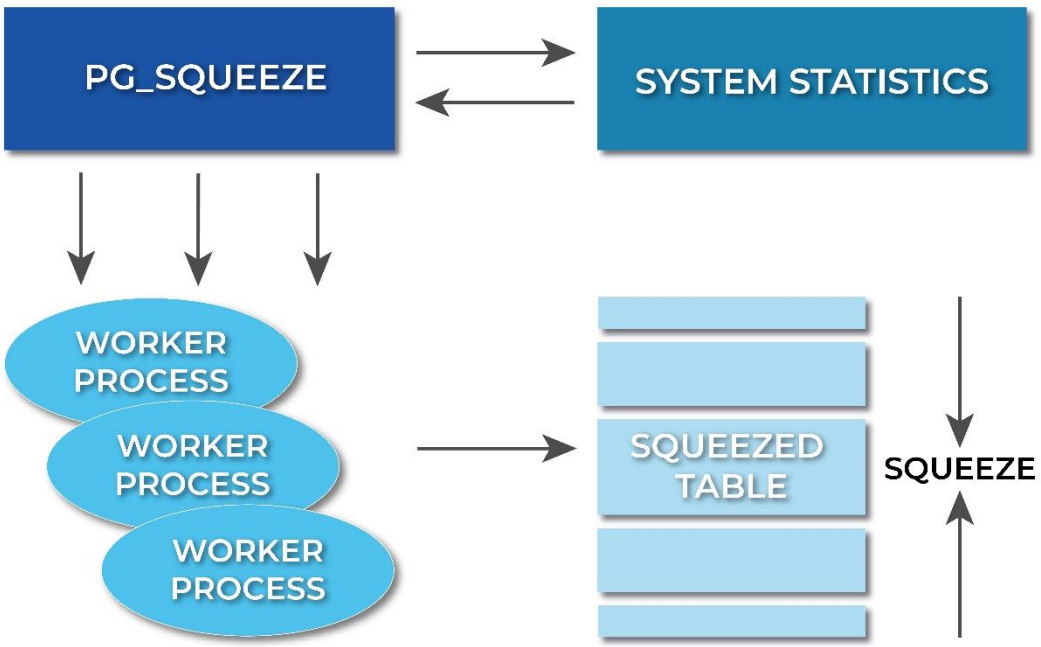
- shrinking storage footprint
- advanced job scheduling
- resource and capacity management

PGEE has a professional solution to all those problems.

PG_SQUEEZE: SHRINKING STORAGE FOOTPRINT

Storage is expensive and thus storage consumption is a real issue. In some cases, PostgreSQL tends to use a lot more space than is really required. pg_squeeze puts an end to table bloat. It reorganizes tables as needed in a close to lock-free way. No downtime is needed, as pg_squeeze will run in the background and ensure efficiency.

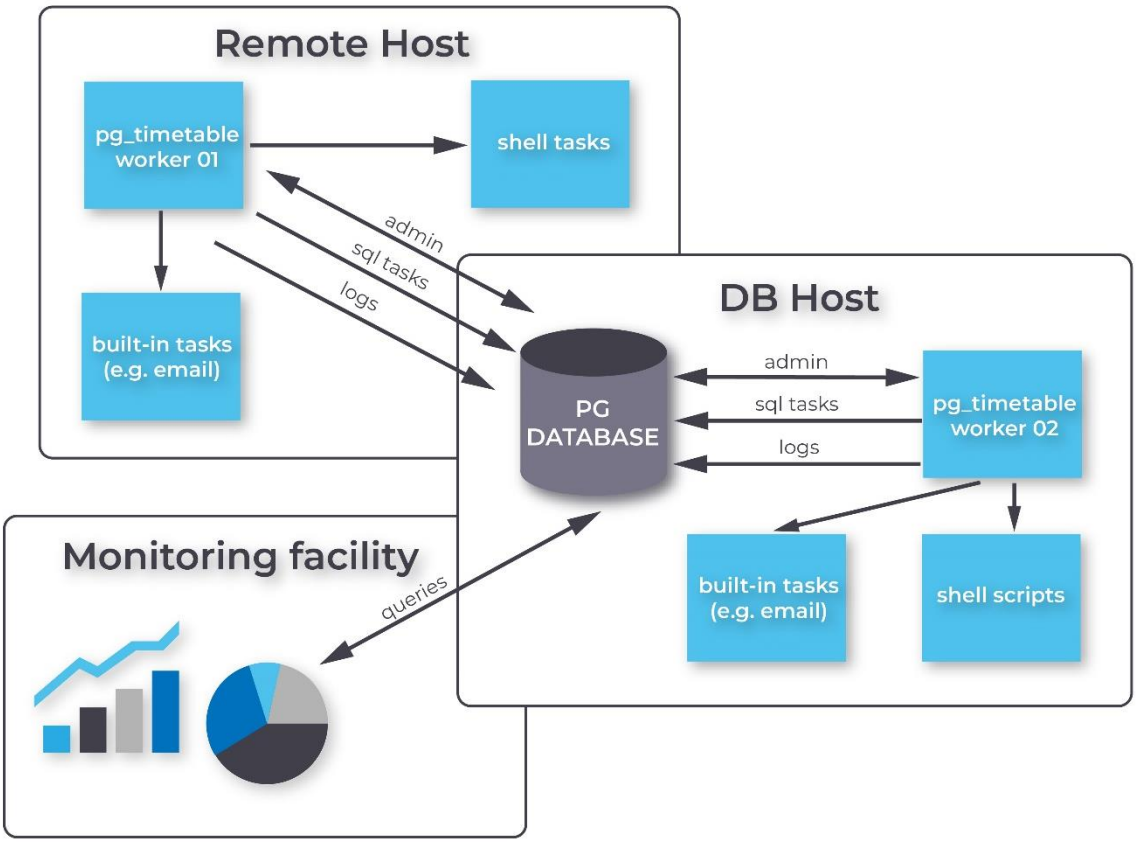
"Keep your databases efficient and small with pg_squeeze"



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PG_TIMETABLE: ENTERPRISE JOB SCHEDULING

The ability to control jobs is essential. pg_timetable is a professional tool for PostgreSQL which enables you to do a lot more than just job scheduling.



CORE FEATURES:

- schedule jobs
- execute entire workflow
- fully transactional execution
- concurrency protection
- advanced logging and job tracking
- integrate database jobs with business processes more easily

LIMIT RESOURCE CONSUMPTION

PGEE has several built-in ways in which it can limit resource allocation and allows you to limit CPU, RAM as well as storage consumption from within the database.

By restricting capacity, DBAs can protect themselves against excesses and inappropriate database use. PGEE has all you need to control and monitor resource consumption.

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9. SUPPORTING CLIENTS AROUND THE WORLD 24/7

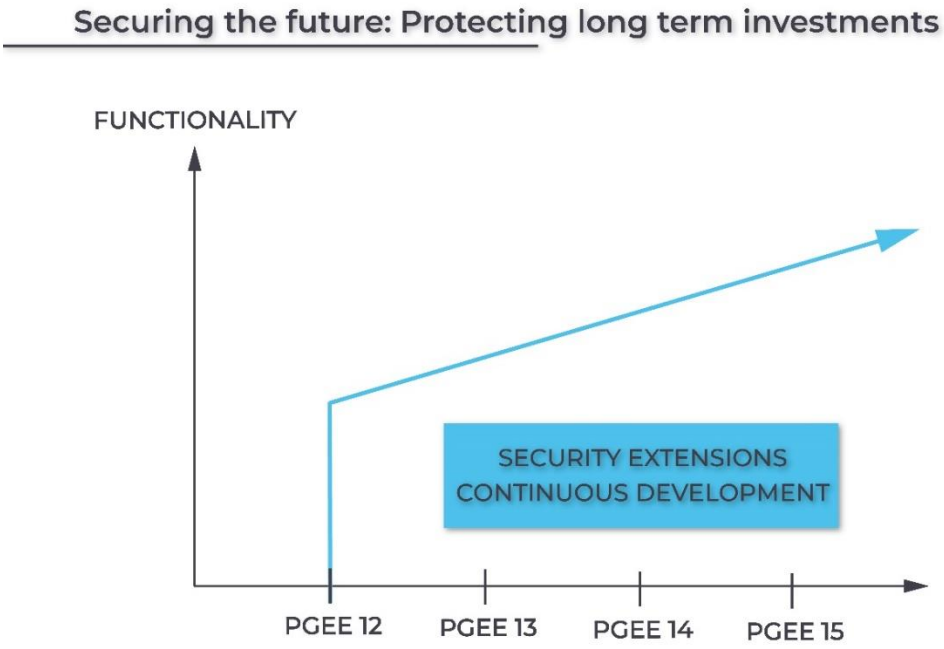
Worldwide Enterprise Support Services

CYBERTEC gives you full control over your database and helps whenever needed. PGEE comes with 24/7 Enterprise Support. Our Support covers any bugs and patches within PostgreSQL and the CYBERTEC extended toolchain, and takes care of performance tuning and extended troubleshooting. In addition, assisted monitoring, monthly consulting hours, discounted trainings and a dedicated contact person are included.

YOUR ADVANTAGES

- 24/7 support hotline
- direct access to experts
- general usage and installation questions
- all bugs will be fixed
- unbeaten response times
- cost-effective and efficient
- 5 years LTS

CONSTANT UPDATES AND FURTHER DEVELOPMENTS



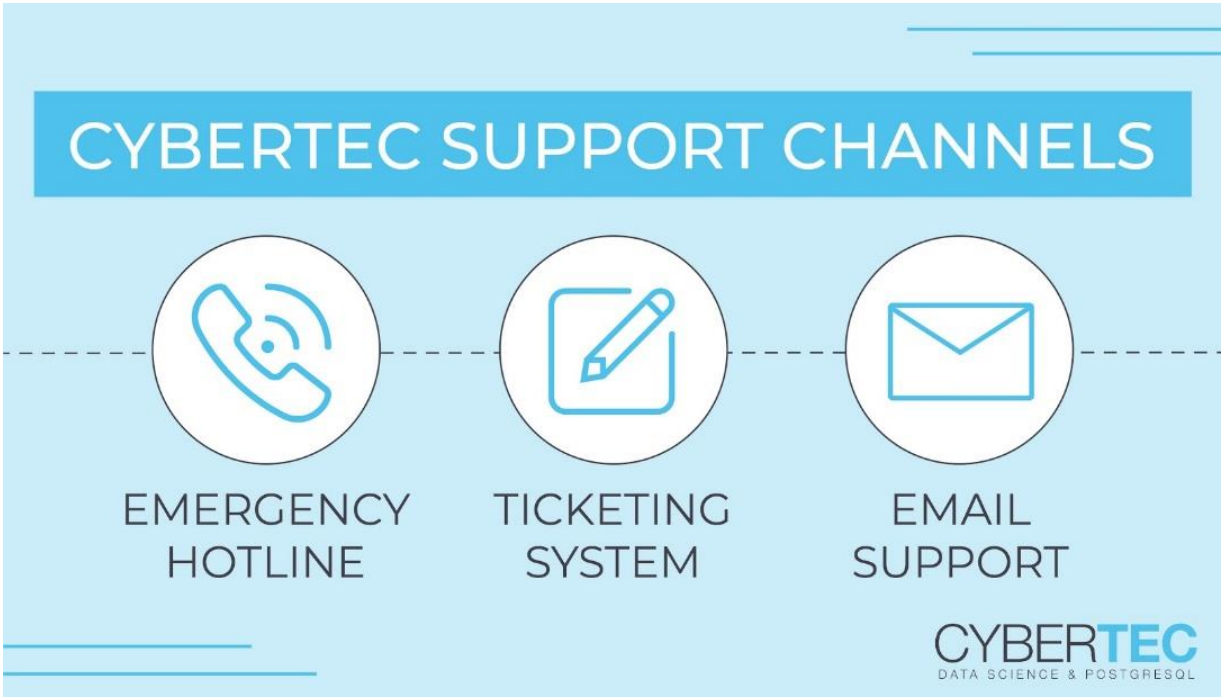
TIME-EFFICIENT COMMUNICATION

To speed up support in general and to make sure that customers don't have to wait in line, we offer various communication channels to make the support process as efficient as possible:

- Emergency hotline
- Ticketing system
- Email support

System access requirements for support services:

- VPN
- Webex session (provided by CYBERTEC)



SUPPORT OVERVIEW These services are included:	24/7 Enterprise Support
Query Tuning	✔
Bugfix / Patches	✔
Backup / Restore	✘
Backup / Restore Assistance	✔
DB/OS* Health Check on Request	✔
DB/OS* Health Check Automated / Monthly	✘
PostgreSQL Parameter Tuning	✔
User Management	SUPPORTIVE****
Tablespace Management	SUPPORTIVE****
Slow Query Detection	✔
Vacuum Tuning	✔
Monitoring / Alerting	SUPPORTIVE****
PostgreSQL Update*	SUPPORTIVE****
PostgreSQL Upgrades*	SUPPORTIVE****
PostgreSQL Deployment**	SUPPORTIVE****
Sizing	SUPPORTIVE****
DB Security Check	SUPPORTIVE****
Trouble Shooting	✔
PostgreSQL Packaging (RPM, DEB)	✔
postgres-operator	✔
Support for Extended Toolchain***	✔
Drivers for C, Python, ...	✔
4 hours consulting per month	✔
-50% on scheduled CYBERTEC trainings worldwide	✔
Key Account Manager	✔

** needs to be planned at least 4 weeks ahead*
*** needs to be planned at least 2 days ahead*
**** Patroni (vip-manager, haproxy), pgbackrest, pgbouncer, contrib, cybertec-extensions, PostGIS, pgWatch*
***** Support with individual planning, errors and problems.*

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SLA & RESPONSE TIMES

Our company offers preferential treatments for support requests via 24/7 and 9/5 emergency hotline. The following response times for emergency hotline requests are available:

PRIORITY	RESPONSE TIME	DESCRIPTION
HIGH PRIORITY	max. 30 minutes	Problems that cause downtime (such as core dumps within PostgreSQL) or problems that suggest potential data loss are classified as high-priority.
MEDIUM PRIORITY	max. 4 hours	Issues that do not endanger the 24/7 operation but which stop development or lead to problems in the foreseeable future are classified as medium priorities.
LOW PRIORITY	„next business day“	Questions that are only intended for clarification are managed under low priority.

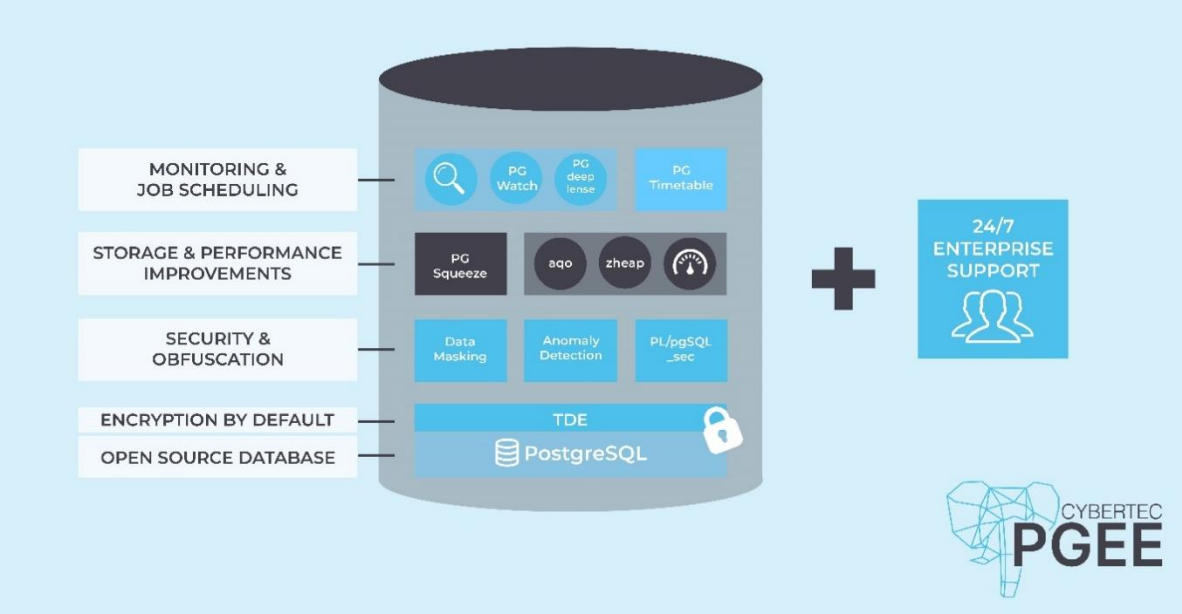
For email support as well as ticketing system, no preferential treatment can be offered. Our consultants will get to you as soon as possible.

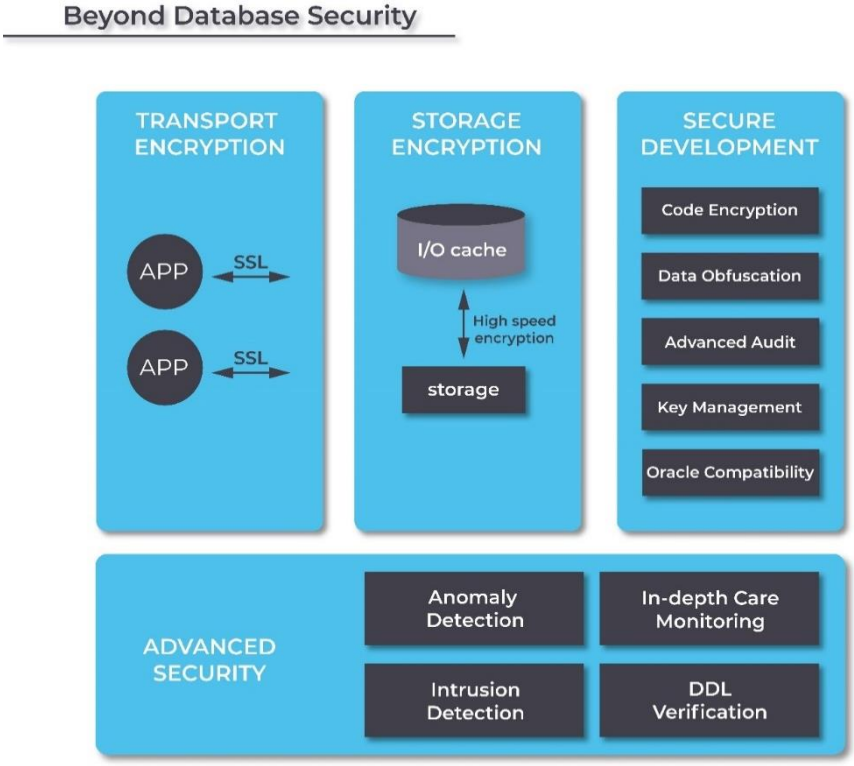
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10. CYBERTEC POSTGRESQL ENTERPRISE EDITION

AT ONE GLANCE

PGEE is a secure enterprise-grade PostgreSQL edition fully supported by CYBERTEC. It offers cutting-edge functionality on top of the standard community edition of PostgreSQL.





	Community PostgreSQL	CYBERTEC PGEE
STANDARD FUNCTIONALITY		
Support for standard SQL	✔	✔
Spatial data	✔	✔
Cloud-ready: Kubernetes, OpenShift, Docker	✘*	✔
Available platforms: RedHat Enterprise Linux (RHEL), Debian, Ubuntu	✔	✔
SECURITY FEATURES		
Transparent data encryption	✘	✔
Data masking and obfuscation	✘	✔
PL/pgSQL encryption	✘	✔
Security anomaly detection	✘	✔
Time related permissions	✘	✔
PERFORMANCE FEATURES		
Adaptive query optimization	✘	✔
Advanced default configuration	✘	✔
Intel hardware acceleration enabled	✘*	✔
MONITORING		
PGWatch	✘*	✔
Track active execution plans	✘	✔
Automatic incident inspection	✘	✔
pg_qualstats: index advisors and runtime statistics	✘*	✔

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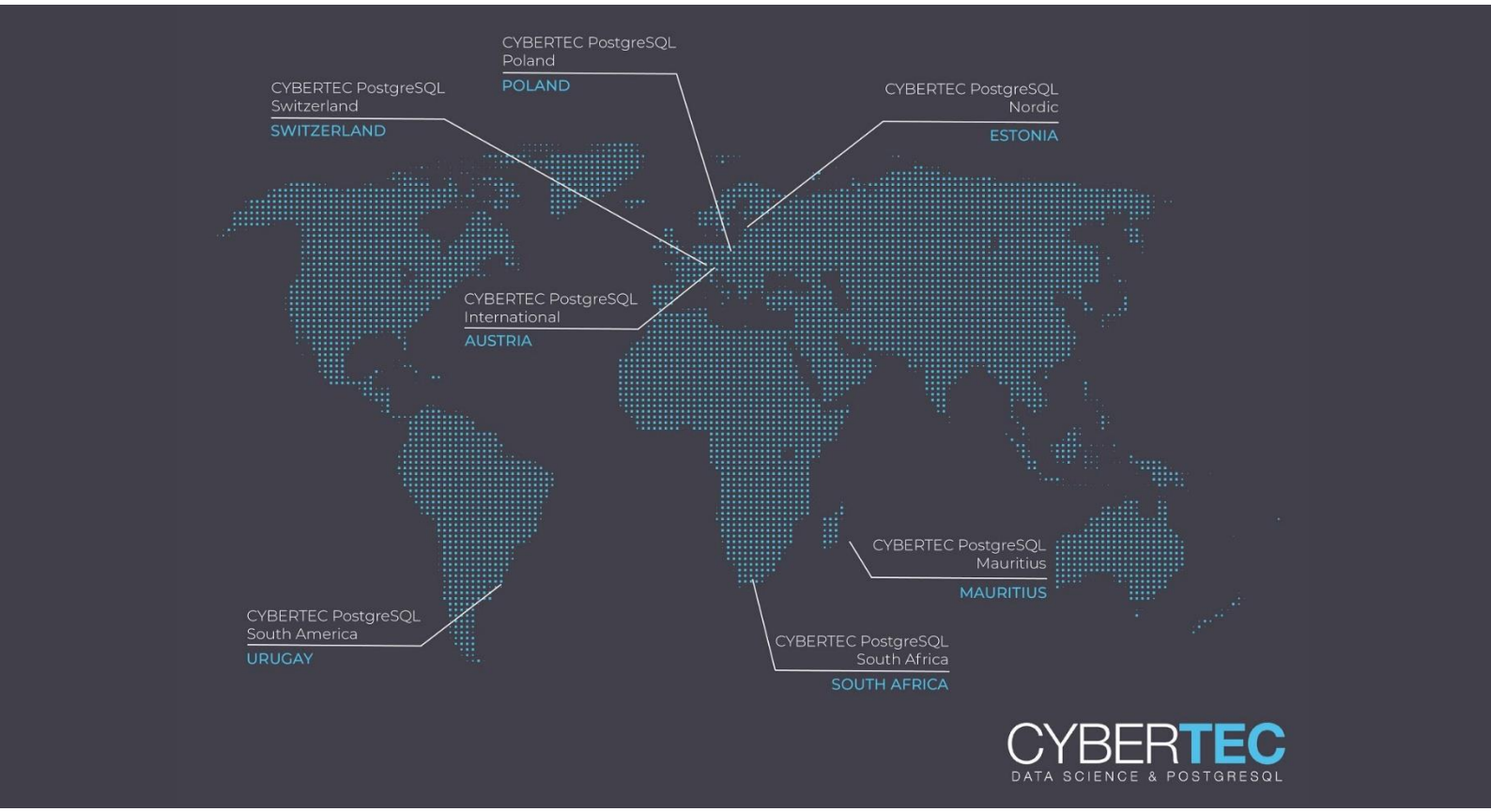
ADDITIONAL FEATURES		
Built-in job scheduling	✗	✓
Automatic storage reorganisation	✗*	✓
ADDITIONAL SERVICES		
Continuous updates available	✓	✓
Further developments	✓	✓
24/7 Enterprise Support via hotline, email or ticketsystem	✗	✓
Immediate bugfixes	✗	✓

** has to be installed or done separately*

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