



MORE THAN SAFE DATA



CYBERTEC WORLDWIDE

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# CYBERTEC POSTGRESQL ENTERPRISE EDITION

## MORE THAN SAFE DATA

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.

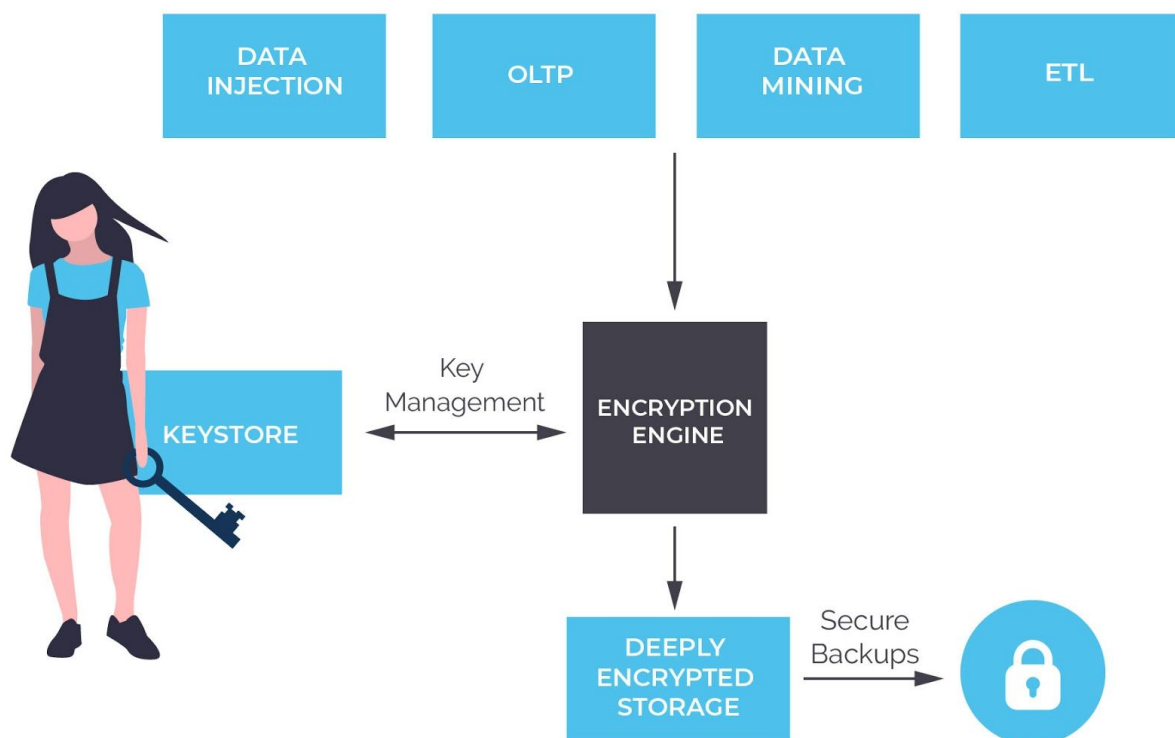
### OPTIMIZED FOR KUBERNETES

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

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

## CYBERTEC PGEE: Out-of-the-box encryption

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:

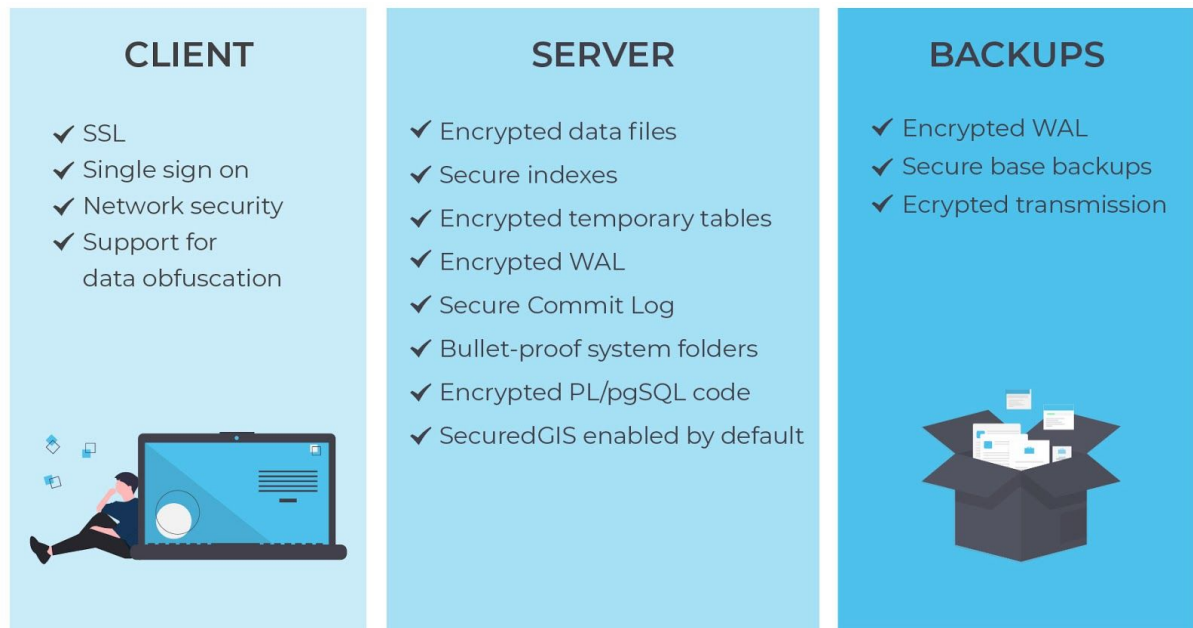
- better storage protection
- flexible key management
- enhanced data protection
- meet compliance related requirements

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

## 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.



## Security: Enterprise ready and rock solid

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.

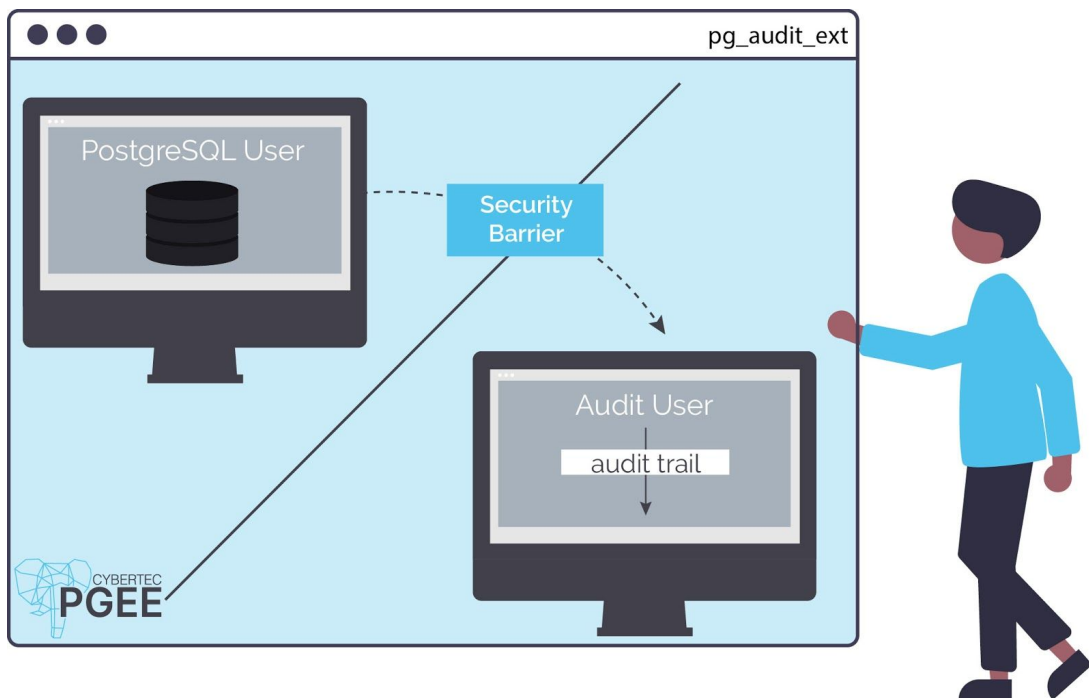
### “PL/pgSQL\_sec: Securing your Intellectual Property”

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 cannot 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.

## Performance: Next generation efficiency

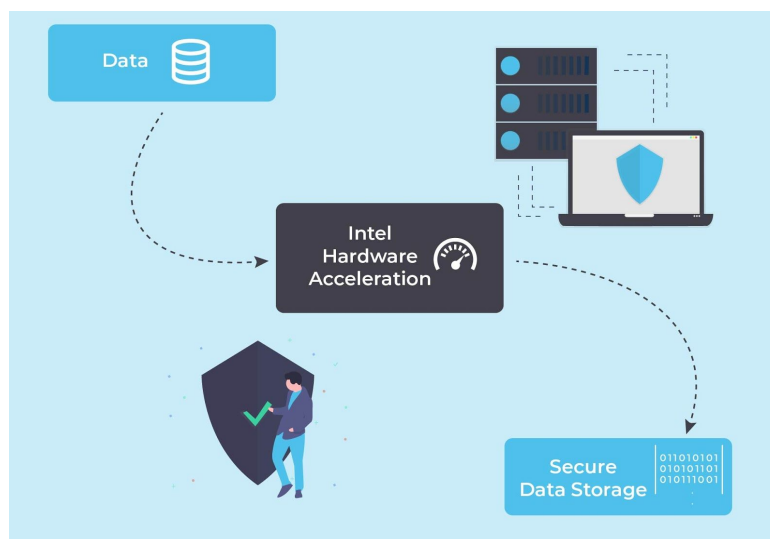
PostgreSQL is already an efficient database, but we have managed to make **PGEE even faster**.

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”

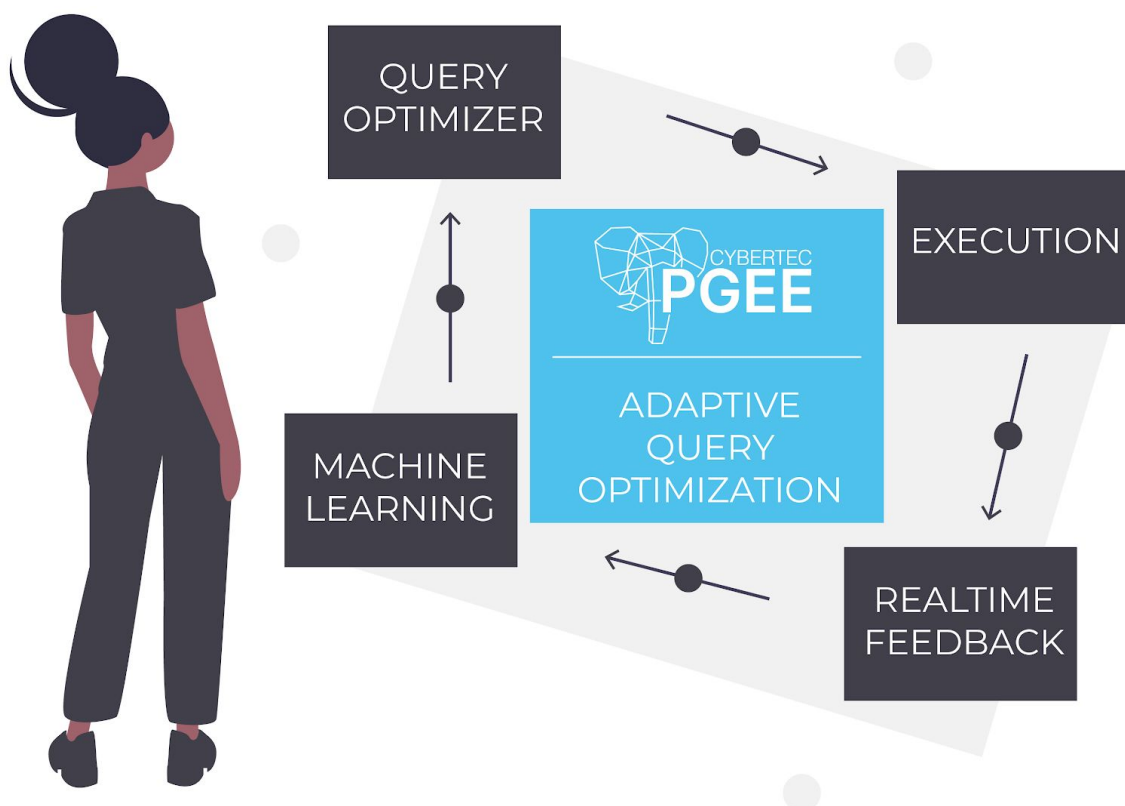


## AQO: IMPROVED OPTIMIZER PERFORMANCE

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”

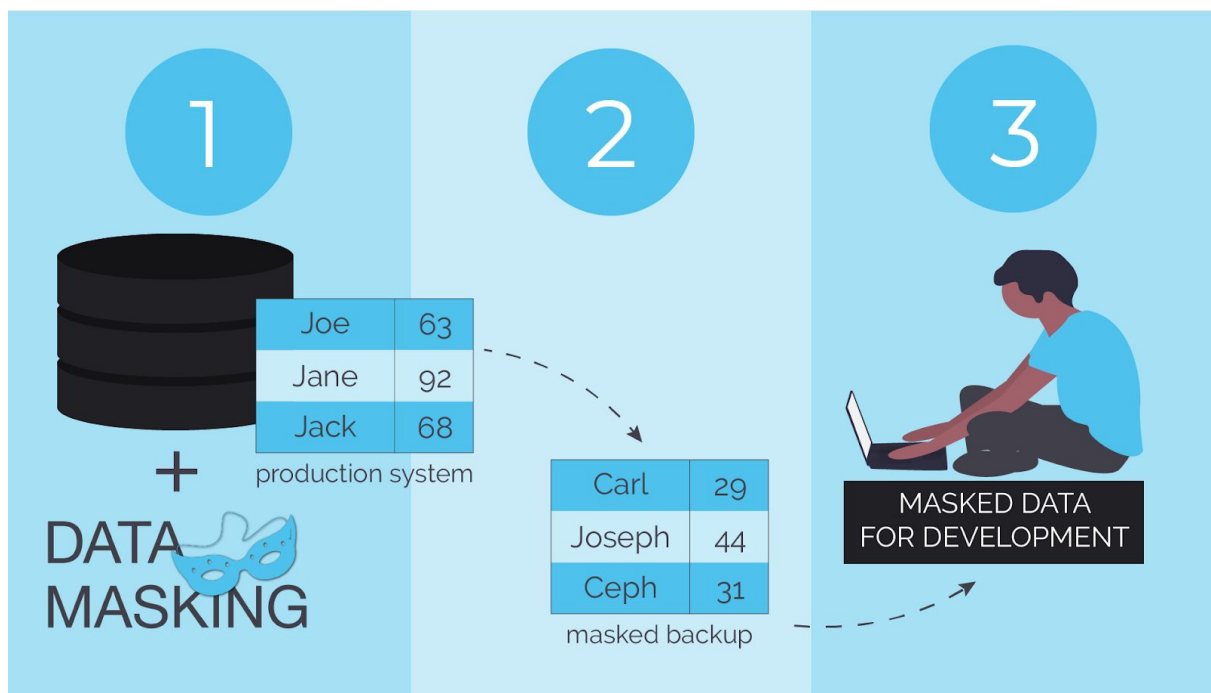


## Data obfuscation: Securely passing on data

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.

## Monitoring: Live and in real-time

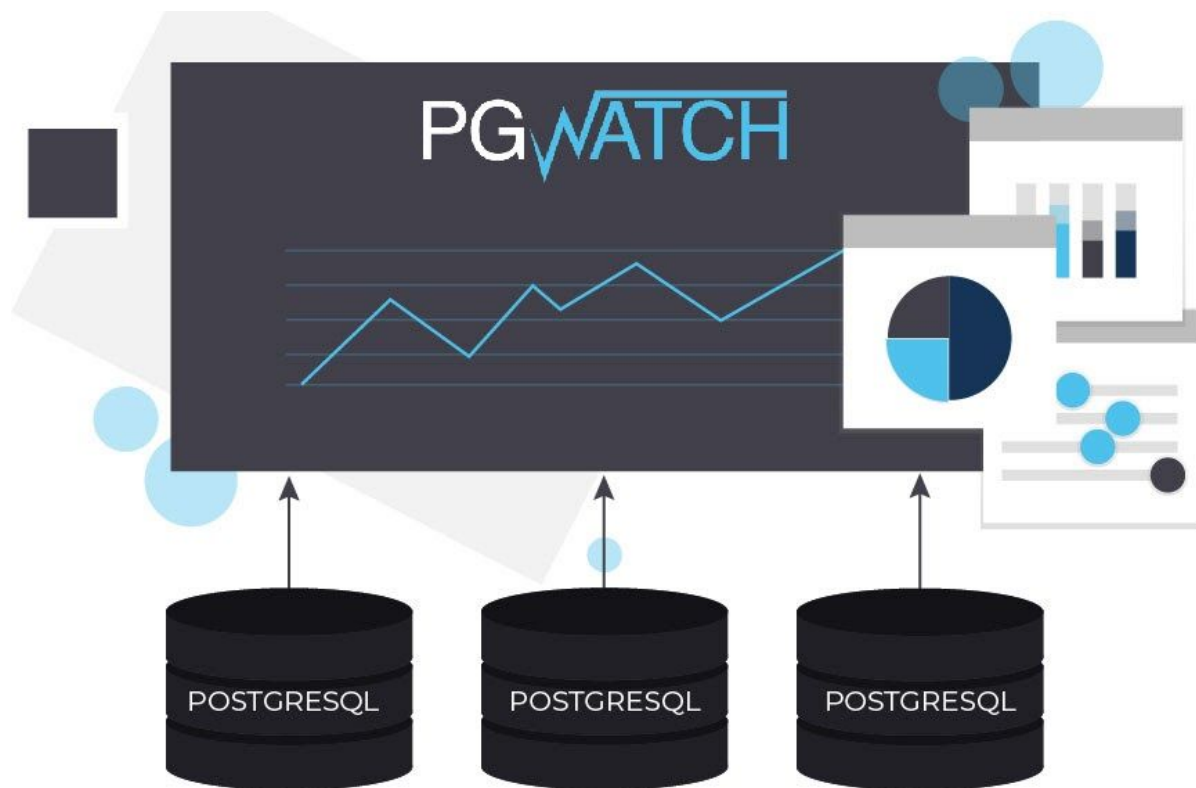
Enterprises rely on uninterrupted 24/7 services. Monitoring is key to achieving the goal of 99.999% uptime. PGEE comes with various features to allow even better monitoring. These features include but are not limited to:

- PGWatch: enterprise monitoring
- pg\_show\_plans: real-time execution plan monitoring
- pg\_qualstats: index advisors and runtime statistics
- pg\_deep\_lense: advanced error reporting

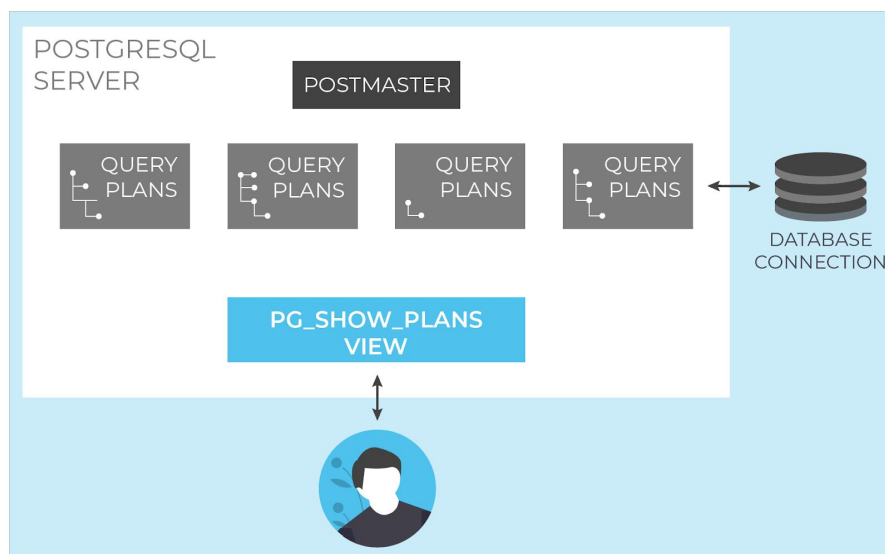
### PGWATCH: POSTGRESQL MONITORING MADE EASY

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.



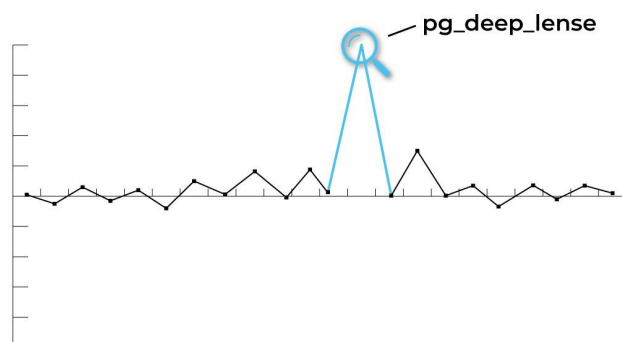
## PG\_SHOW\_PLANS: WATCHING OPTIMIZER PERFORMANCE



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.



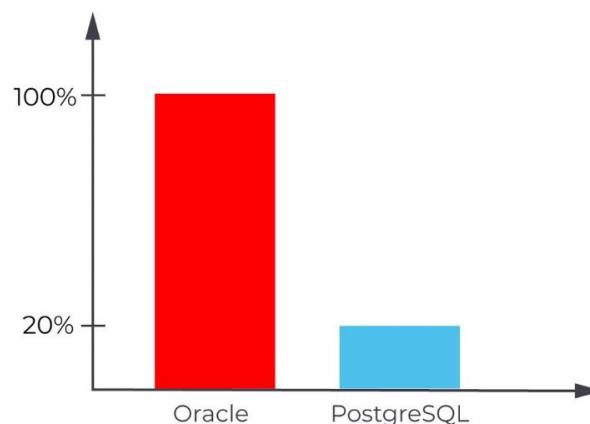
## Migration services

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%:

#### REDUCING TOTAL COST OF OWNERSHIP



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 feature-complete migration framework to move to PostgreSQL fast, efficiently and with visual guidance.  
Read more: [www.cybertec-postgresql.com/en/products/cybertec-migrator](http://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: [www.cybertec-postgresql.com/en/products/cybertec-migrator](http://www.cybertec-postgresql.com/en/products/cybertec-migrator)

## Additional enterprise features

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:

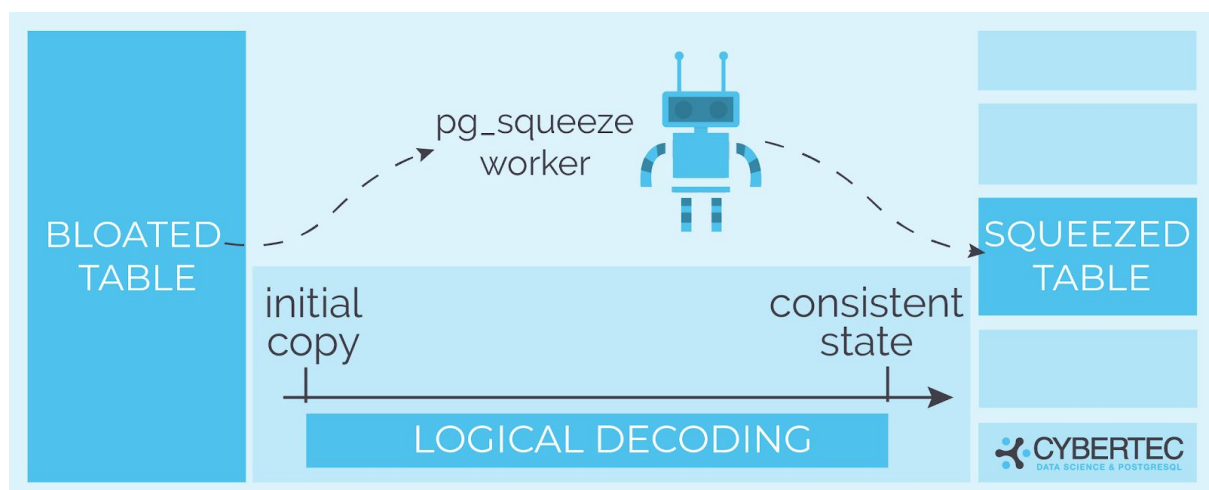
- shrinking storage footprint
- advanced job scheduling
- resource and capacity management

PGEE has a professional solution to all those problems.

### PG\_SQUEEZE: SHRINKING STORAGE FOOTPRINT

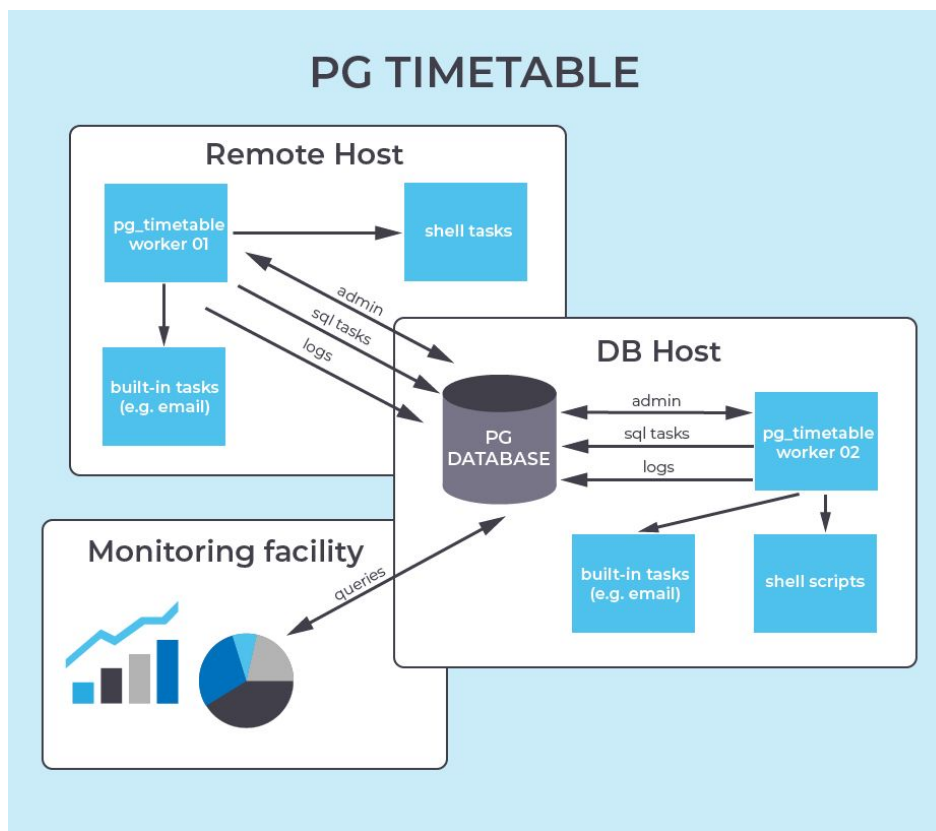
Storage is expensive and thus storage consumption is a real issue. In some cases, PostgreSQL tends to use a lot more space than is really required. `pg_squeeze` puts an end to table bloat. It reorganizes tables as needed in a close to lock-free way. No downtime is needed, as `pg_squeeze` will run in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

“Keep your databases efficient and small with `pg_squeeze`”



## 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.

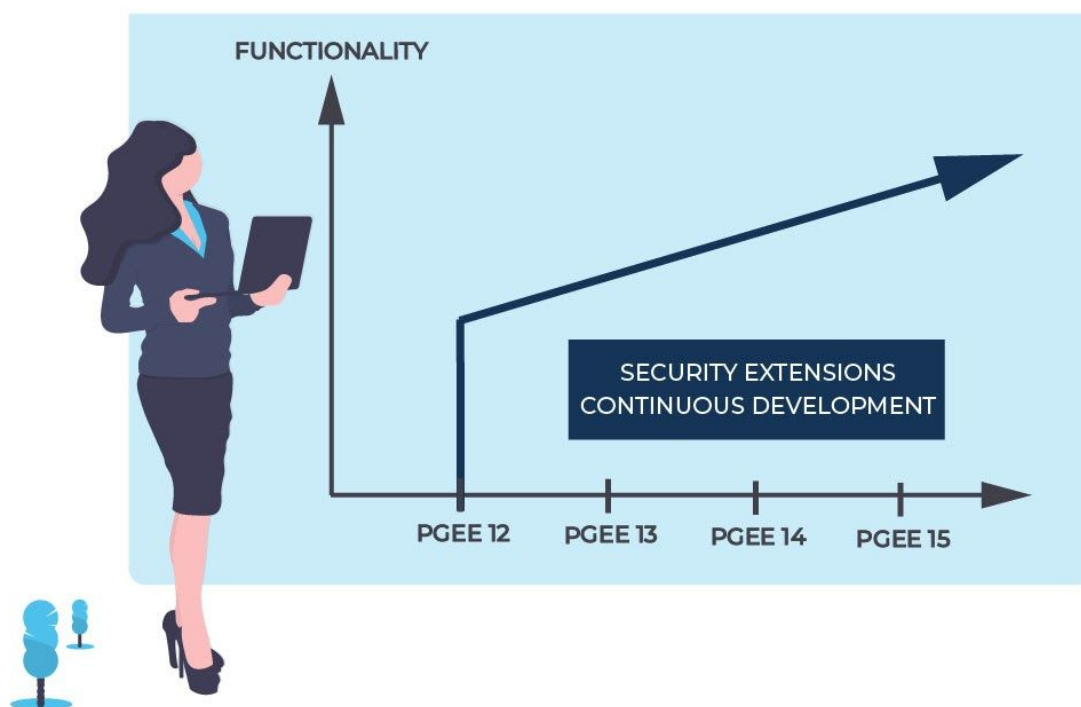
## Supporting clients around the world 24/7

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 time
- cost-effective and efficient
- 5 years LTS

### CONSTANT UPDATES AND FURTHER DEVELOPMENTS





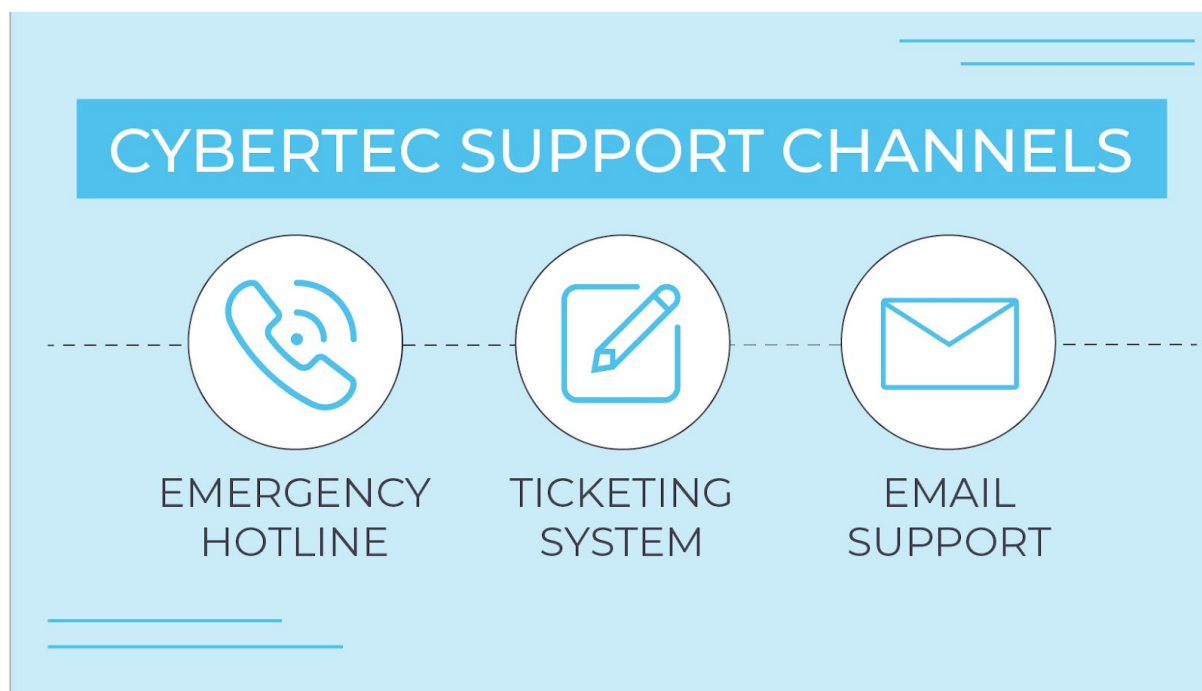
## TIME-EFFICIENT COMMUNICATION

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	YES
Bugfix/Patches	YES
Backup/Restore	NO
Backup/Restore - Assistance	YES
DB/OS*-HealthCheck / on Request	YES
DB/OS*-HealthCheck (auto)/ Monthly	NO
PostgreSQL Parameter Tuning	YES
User Management	SUPPORTIVE****
Tablespace Management	SUPPORTIVE****
Slow-Query-Detection	YES
Vacuum-Tuning	YES
Monitoring/Alerting	SUPPORTIVE****
PostgreSQL-Update*	SUPPORTIVE****
PostgreSQL-Upgrades*	SUPPORTIVE****
PostgreSQL-Deployment**	SUPPORTIVE****
Sizing	SUPPORTIVE****
DB-Security-Check	SUPPORTIVE****
Trouble Shooting	YES
PostgreSQL Packaging (RPM, DEB)	YES
postgres-operator	YES
Drivers for C, Python.....	YES
Extended Product Support ***	<b>YES</b>
4 Consulting hours/month	YES
-50% on our scheduled trainings worldwide	YES
Key Account Manager	YES

\* needs to be planned at least 4 weeks ahead

\*\* needs to be planned at least 2 days ahead

\*\*\* Please see "Product Support", Page 2. Additionally: Patroni (vip-manager, haproxy), pgbackrest, pgbouncer, contrib, PostGIS

\*\*\*\* Support with individual planning, errors and problems.

## SLA & RESPONSE TIMES

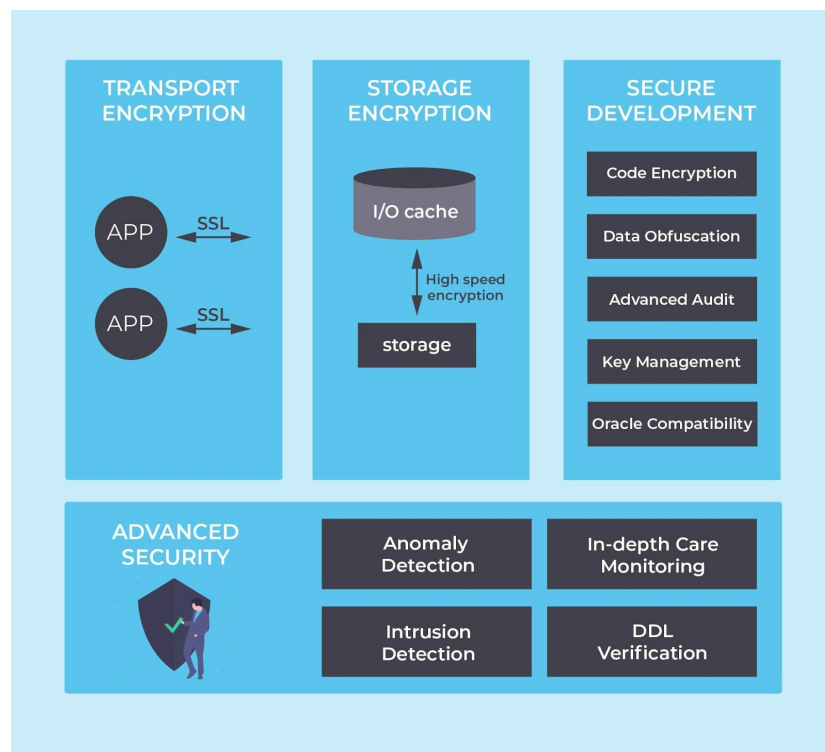
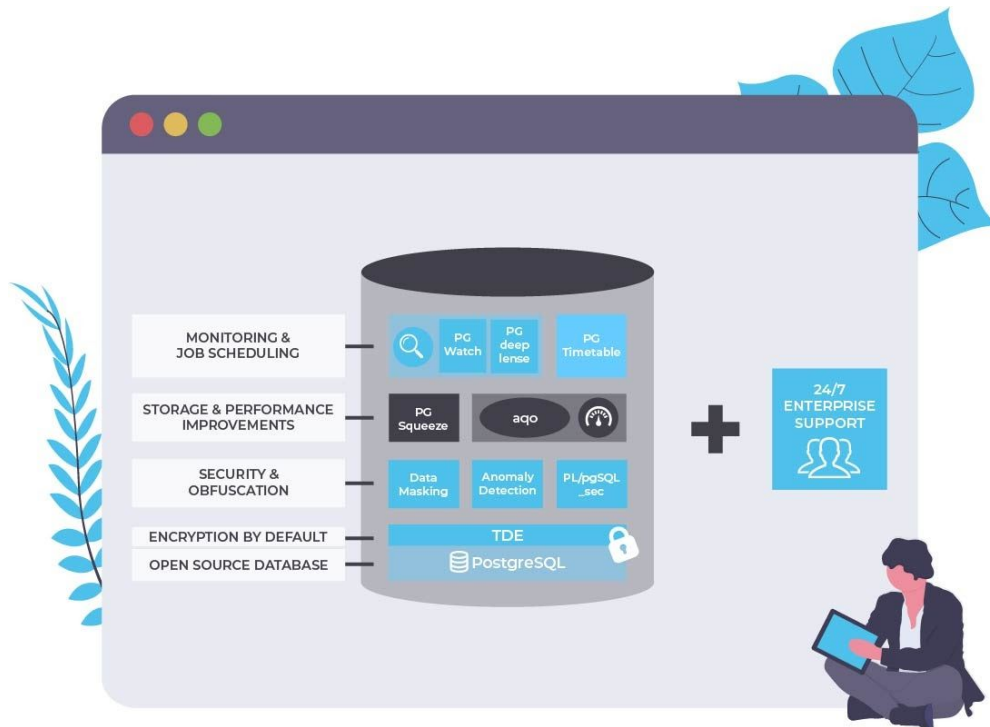
Our company offers preferential treatments for support requests via 24/7 and 9/5 emergency hotline. The following response times for emergency hotline requests are available:

PRIORITY	RESPONSE TIME	DESCRIPTION
<b>HIGH PRIORITY</b>	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.
<b>MEDIUM PRIORITY</b>	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.
<b>LOW PRIORITY</b>	„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.

# CYBERTEC PostgreSQL Enterprise Edition

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
<b>STANDARD FUNCTIONALITY</b>		
Support for standard SQL	✓	✓
Spatial data	✓	✓
Cloud-ready: Kubernetes, OpenShift, Docker	✗*	✓
Available platforms: RedHat Enterprise Linux (RHEL), Debian, Ubuntu	✓	✓
<b>SECURITY FEATURES</b>		
Transparent data encryption	✗	✓
Data masking and obfuscation	✗	✓
PL/pgSQL encryption	✗	✓
Security anomaly detection	✗	✓
Time related permissions	✗	✓
<b>PERFORMANCE FEATURES</b>		
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	✕*	✓
ADDITIONAL FEATURES		
Built-in job scheduling	✕	✓
Automatic storage reorganisation	✕*	✓
ADDITIONAL SERVICES		
Continuous updates available	✓	✓
Further developments	✓	✓
24/7 Enterprise Support via hotline, mail or ticketsystem	✕	✓
Immediate bugfixes	✕	✓

\* has to be installed or done separately



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