

# Fujitsu Enterprise Postgres

Datasheet





# Fujitsu Enterprise Postgres

## Fujitsu's PostgreSQL-based enterprise-enhanced database

### Fujitsu Enterprise Postgres

is a PostgreSQL-based database system that is the result of Fujitsu's experience of developing enterprise databases for almost 40 years.

Fujitsu's added enhanced features make it the database of choice for systems that require enterprise features, portability and interoperability.

Fujitsu has been a keen player in open source development since the early 80's, and has been supporting PostgreSQL for 20 years. We are proud of our commitment to the promotion of PostgreSQL as a world-class enterprise database.

### Fujitsu Enterprise Postgres

leverages PostgreSQL, enabling integration with a wide range of software, information systems, development tools, and runtime environments.

Fully compatible with PostgreSQL, we extend the benefits of the OSS version with enterprise quality. It is a cost-effective and reliable alternative, with no vendor lock-in and supported by Fujitsu's strong track record in mission-critical enterprise systems.

The improved reliability and Fujitsu's high-level support create major benefits to complement intelligent data systems for enterprises.

#### Fujitsu Enterprise Postgres

Our database provides effective solutions to common business challenges

#### Reduced installation and running costs

We employ minimized setup technology to eliminate the need for specific database expertise, reducing staff workload



#### High-level support

Our service model is the result of decades with large platform providers, plus commercial and government organizations.



# Features and benefits

Main features	Benefits
<b>PostgreSQL-based RDBMS</b>	
<ul style="list-style-type: none"> <li>100% compatible with PostgreSQL</li> <li>Compatible with other PostgreSQL databases</li> <li>Extends open source PostgreSQL</li> <li>Simple migration from proprietary databases</li> </ul>	<ul style="list-style-type: none"> <li>No vendor lock-in</li> <li>Supports Zabbix, Apache, Tomcat</li> <li>Enterprise quality</li> <li>Low migration cost</li> </ul>
<b>Security</b>	
<ul style="list-style-type: none"> <li>Transparent Data Encryption</li> <li>Data Masking</li> <li>Dedicated Audit Log</li> <li>Key management for Transparent Data Encryption</li> <li>Cloud-based key management</li> <li>Confidentiality management</li> <li>Policy-based login security</li> </ul>	<ul style="list-style-type: none"> <li>Increased security with PCI DSS-compliant 256-bit encryption</li> <li>Protects production data</li> <li>Efficient and accurate monitoring of audit log</li> <li>Reduced risk of data leakage; lower operational costs</li> <li>Improved security by storing keys in secure external services</li> <li>Easier and more efficient security operations</li> <li>Login security policies simplify management and improve DB security</li> </ul>
<b>Performance</b>	
<ul style="list-style-type: none"> <li>Vertical Clustered Index<sup>†</sup></li> <li>Global Meta Cache</li> <li>High-speed data load</li> <li>High-speed backup/recovery</li> </ul>	<ul style="list-style-type: none"> <li>Improved performance for large data sets</li> <li>Reduced overall memory usage with little performance degradation</li> <li>Loads large volumes of data using parallelism according to available CPU</li> <li>High-speed copy technology of choice can be used for backup/recovery</li> </ul>
<b>Reliability and High Availability</b>	
<ul style="list-style-type: none"> <li>Mirroring Controller</li> <li>Connection Manager</li> <li>Database Mirroring</li> <li>Database Transaction Log Mirroring</li> <li>WAL duplication</li> </ul>	<ul style="list-style-type: none"> <li>Automated instant failover</li> <li>Business continuity and fast failover without SQL relay</li> <li>Two copies of a single database reside on different server instances</li> <li>Transaction records are continuously streamed to the standby database</li> <li>Solves PostgreSQL's single point of failure</li> </ul>
<b>DevOps</b>	
<ul style="list-style-type: none"> <li>Support for COBOL applications</li> <li>System usage statistics</li> <li>WebAdmin</li> <li>Enhanced GUI for cluster management</li> </ul>	<ul style="list-style-type: none"> <li>COBOL programs can execute SQL commands with little to no change</li> <li>Users can access database's utilization metrics and statistics</li> <li>Easily manage database and its contents saving time and money</li> <li>Management tool makes setup and cluster management simpler</li> </ul>
<b>Ease of use</b>	
<ul style="list-style-type: none"> <li>Easy installation, setup and management</li> <li>Web-based and command line interfaces</li> <li>One-click backup and recovery</li> </ul>	<ul style="list-style-type: none"> <li>Reduced technical staff overheads</li> <li>Simplified operation management</li> <li>Easily performed high-level tasks</li> </ul>
<b>Fujitsu support options</b>	
<ul style="list-style-type: none"> <li>Version compatibility</li> <li>Provides patches following PostgreSQL updates</li> <li>Guaranteed support from end of sales period</li> </ul>	<ul style="list-style-type: none"> <li>Low migration cost due to compatibility verification</li> <li>Guaranteed standard support</li> <li>Optional extended support period; extendable</li> </ul>

<sup>†</sup> Fujitsu's implementation of In-Memory Columnar Index by Fujitsu Laboratories Limited

# Topics

## PostgreSQL-based database system

Fujitsu Enterprise Postgres is based on PostgreSQL, the world's most advanced feature-rich open source database system. PostgreSQL, used by millions worldwide, enables integration with a wide range of software, information utilization systems, development tools, and application runtime environments.

### Easy and cost-effective migration

Fujitsu Enterprise Postgres has been designed to be fully compatible with open source PostgreSQL databases and also offers enhanced compatibility when migrating from existing Oracle® systems.

The solution significantly reduces migration time so that budget restraints and business disruption are no longer a concern; migration has now become much more streamlined.

### Enhanced system integration

The utilization of PostgreSQL technology enables integration with a wide range of software, information utilization systems, development tools, and application runtime environments. Investing in additional software systems and high migration costs are no longer considerations. User disruption is also avoided due to the ability to retain software products that users are already familiar with.

## Ease of use

### Reduced expenditure for DB design and implementation

Fujitsu Enterprise Postgres employs a minimal setup process based on optimized resource deployment that performs dynamic hardware resource detection during installation. The software is automatically tuned with the customer's server configuration - parameter and backup settings are all completed during the system deployment.

Fujitsu's innovative development methodology has been a key factor in producing an installation process that takes just three simple steps to perform:

This simplified installation and setup process allows implementation within a very efficient time frame.

### Reduced reliance on technical staff

Many operational tasks can be carried out by non-technical staff. For example, to back up or restore instances, simply click to backup and click to restore.

## Reliability and High Availability

### Mirroring Controller

Constantly checks the status of database processes, and if a problem is detected, automatically redirects operations to the standby server, without the need for human intervention.

### Connection Manager keeps your business running

Heartbeat monitoring is performed between client and server, so business can be resumed immediately from the application side in case a failure occurs. Applications can connect to an instance without being aware of which server the instance is running on. Fast failover without SQL relay.

### WAL duplication for simple, reliable recovery

If a problem occurs or data is accidentally deleted, recovery of WAL (Write-Ahead Log) can be performed with a single click.

## Security

### Transparent Data Encryption

Secure 256-bit Transparent Data Encryption (PCI-DSS compliant) and redundancy for high reliability and asset protection that is aligned with your data management strategy.

### Data Masking

Redacts data using masking policies to obscure data returned from queries, making it available for reference without exposing the actual data. Data masking makes it safe to use production data in a test or development environment.

### Key management for Transparent Data Encryption

By storing the encryption key outside the database, you can securely store the master encryption key and reduce the risk of data leakage. The database administrator is released from the operation and management of the master encryption key.

### Cloud-based key management

Transparent Data Encryption keys can be stored in cloud key management services. Supports plug-ins to call communication adapters in the cloud and to share data encryption keys. Key management services in the cloud provide more choices for key management, lower operational costs, and increased security.

### Confidentiality management

Simpler operations for role-based access control (RBAC) setting and audit. Easier and efficient security operations, and reduced human errors, minimizing security risks.

### Policy-based login security

Prevent unauthorized logins and improve database security by setting password expiration dates and locking users who repeatedly fail to log in or are dormant to restrict access to their accounts.

### FIPS compliance

Fujitsu Enterprise Postgres with Cryptographic Module can use algorithms approved by the Cryptographic Module Security Requirements (Federal Information Processing Standard) 140, designed to ensure strengthened data encryption and communication security.

## Performance

### Vertical Clustered Index

The VCI engine integrated with Fujitsu Enterprise Postgres provides significantly faster analytical query processing with a columnar representation of row-oriented data in memory. Tests show this results in almost 5 times the throughput of analytical queries while maintaining equivalent transaction volumes.

### Global Meta Cache

System catalog and table information is cached in shared memory instead of in per-process memory. The memory usage of the overall system is reduced to enhance system performance.

## Fujitsu support

### High-level support

Standard support and extended support options available to customers for ongoing assurance, so that future support and system confidence is a guaranteed business outcome.

# Technical details

Item		Fujitsu Enterprise Postgres					
Basic architecture	Max. database capacity		Unlimited				
	Max. number of columns in table		1,600				
	Max. row length in table		1.6 TB				
	Max. number of rows in table		Unlimited				
	Max. number of indexes per table		Unlimited				
	Index storage format in table		B-tree		GiST/SP-GiST		
			hash		GIN		
			BRIN		VCI (Fujitsu's In-Memory Columnar Index)		
	Data types	Character types	CHARACTER		NCHAR		
			CHARACTER VARYING text		NCHAR VARYING		
		Numeric types	bigint	integer	smallint		
			bigserial	numeric	smallserial		
			decimal	real	serial	double precision	
		Datetime types	date	time	time with time zone		
			interval	timestamp	timestamp with time zone		
		Binary data types	bytea	Large object			
		XML	Yes				
		JSON	Yes				
		Character set	UNICODE	Yes			
		Multilingual support		Yes (149 locales)			
	Security	Transparent Data Encryption		256-bit (compliant with PCI-DSS)			
		Data Masking		Full masking / Partial masking / Regular expression masking			
		Dedicated Audit Log		Yes (compliant with PCI-DSS)			
Key management for Transparent Data Encryption							
Cloud-based key management							
Confidentiality management							
Policy-based login security							
Reliability/ High Availability	Standby		Yes				
	Split brain control		Yes				
	Instant failover		Yes				
	Transparent connection		Yes (ability to connect to a database server without knowing its stage)				
Performance	In-Memory Columnar Index		Yes (implemented via Fujitsu's Vertical Clustered Index)				
	High-speed backup/recovery		Yes				
	High-speed data load		Yes				
Application development	SQL standard		Compliant with ANSI/ISO SQL:2016				
	Oracle-compatible SQL		Outer join operator				
			DUAL table				
			Functions (SUBSTR   NVL   DECODE)				
			Built-in packages (UTL_FILE   DBMS_OUTPUT   DBMS_SQL   DBMS_ALERT   DBMS_ASSERT   DBMS_PIPE   DBMS_RANDOM   DBMS_UTILITY   PLUNIT   PLVCHR   PLVDATE   PLVLEX   PLVSTR   PLVSUBST)				
	Language		C	COBOL			
	Interface		ODBC	JDBC	.NET Framework		
	Development environment (Eclipse, etc.)		Yes				
	Stored procedures / functions		Yes				
	Access control		Deadlock automatic detection				
			Query by other transactions during updates (multiversion control)				
	Support	High quality long-term support		Guaranteed			



# Supported environments

## Fujitsu Enterprise Postgres 16

	Server operating system	Client operating system
Windows	<ul style="list-style-type: none"> <li>Windows Server 2022 (64 bit)</li> <li>Windows Server 2019 (64 bit)</li> <li>Windows Server 2016 (64 bit)</li> </ul>	<ul style="list-style-type: none"> <li>Windows Server 2022 (64 bit)</li> <li>Windows Server 2019 (64 bit)</li> <li>Windows Server 2016 (64 bit)</li> <li>Windows 11 / 10 (64 bit, 32 bit) *</li> </ul>
Linux	<ul style="list-style-type: none"> <li>Red Hat Enterprise Linux 9.2 or later minor version</li> <li>Red Hat Enterprise Linux 8.2 or later minor version</li> <li>SUSE Linux Enterprise 15 SP3 or later minor version</li> </ul>	<ul style="list-style-type: none"> <li>Red Hat Enterprise Linux 9.2 or later minor version</li> <li>Red Hat Enterprise Linux 8.2 or later minor version</li> <li>SUSE Linux Enterprise 15 SP3 or later minor version</li> </ul>
on IBM Z and LinuxONE (s390x)	<ul style="list-style-type: none"> <li>Red Hat Enterprise Linux 9.2 or later minor version</li> <li>Red Hat Enterprise Linux 8.4 or later minor version</li> <li>SUSE Linux Enterprise 15 SP3 or later minor version</li> </ul>	<ul style="list-style-type: none"> <li>Red Hat Enterprise Linux 9.2 or later minor version</li> <li>Red Hat Enterprise Linux 8.4 or later minor version</li> <li>SUSE Linux Enterprise 15 SP3 or later minor version</li> </ul>
on IBM Power® (ppc64le)	<ul style="list-style-type: none"> <li>Red Hat Enterprise Linux 9.2 or later minor version</li> <li>Red Hat Enterprise Linux 8.4 or later minor version</li> <li>SUSE Linux Enterprise 15 SP3 or later minor version</li> </ul>	<ul style="list-style-type: none"> <li>Red Hat Enterprise Linux 9.2 or later minor version</li> <li>Red Hat Enterprise Linux 8.4 or later minor version</li> <li>SUSE Linux Enterprise 15 SP3 or later minor version</li> </ul>

\*: If Windows is 32 bit, only the Windows client (32 bit) can be installed

## Fujitsu Enterprise Postgres with Cryptographic Module 16

	Server operating system	Client operating system
Windows		<ul style="list-style-type: none"> <li>Windows Server 2022 (64 bit)</li> <li>Windows Server 2019 (64 bit)</li> <li>Windows Server 2016 (64 bit)</li> <li>Windows 11 / 10 (64 bit)</li> </ul>
Linux	<ul style="list-style-type: none"> <li>Red Hat Enterprise Linux 9.2 or later minor version</li> <li>Red Hat Enterprise Linux 8.2 or later minor version</li> <li>SUSE Linux Enterprise 15 SP3 or later minor version</li> </ul>	<ul style="list-style-type: none"> <li>Red Hat Enterprise Linux 9.2 or later minor version</li> <li>Red Hat Enterprise Linux 8.2 or later minor version</li> <li>SUSE Linux Enterprise 15 SP3 or later minor version</li> </ul>
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### Our PostgreSQL experts are at hand

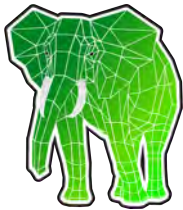
Our PostgreSQL experts contribute to the community in a variety of activities, from feature development to code reviews, and test coverage.

If you have any concerns about the security of your data or would like to find out more about Fujitsu Enterprise Postgres, please contact us at [enterprisepostgresql@fujitsu.com](mailto:enterprisepostgresql@fujitsu.com)

# Fujitsu Enterprise Postgres can help your journey

Fujitsu Enterprise Postgres is the enhanced version of PostgreSQL, for enterprises seeking a more robust, secure, and fully supported edition for business-critical applications.

It is fully compatible with PostgreSQL and shares the same operation method, interface for application development, and inherent functionality. Designed to deliver the Quality of Service (QoS) that enterprises demand of their databases in the digital world, while supporting the openness and extensibility expected of open source platforms, all at a lower cost than traditional enterprise databases.



**Fujitsu Enterprise Postgres**

Combine the strengths of open-source PostgreSQL with the enterprise features developed by Fujitsu.

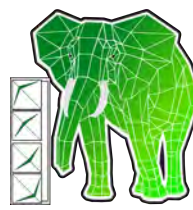
Enhanced speed, security, and support — without the costs associated with most proprietary systems.



**Fujitsu Enterprise Postgres  
for Kubernetes**

Utilize operator capabilities for provisioning and managing operations on the OpenShift Container Platform.

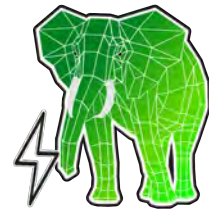
Business-ready database that integrates container operation technology for rapid development-to-production deployments.



**Fujitsu Enterprise  
Postgres**

World-class platform that embraces open source and improves data security, performance, and business continuity.

The best of open source flexibility with the peace of mind that comes from knowing it is backed by Fujitsu and IBM.



**Fujitsu Enterprise Postgres  
on IBM Power®**

Experience frictionless hybrid cloud that can help you modernize to respond faster to business demands.

Fujitsu database designed for security, performance, and reliability, combined with IBM server built for agility in the hybrid cloud.



Discover how Fujitsu Enterprise Postgres' unique and enhanced features take PostgreSQL to the next level to provide enterprise-grade security, scalability, security, and performance.

Visit [fast.fujitsu.com/key-features](https://fast.fujitsu.com/key-features)



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