FUJITSU

FUJITSU Enterprise Postgres

Datasheet

PostgreSQL-based, high-reliability relational database management system

Fujitsu's contribution to PostgreSQL

Fujitsu has been a keen player in open source development since the early eighties. As a long-term contributor to the development of open source database systems, Fujitsu is proud of its commitment to the promotion of PostgreSQL as a world-class enterprise database.

Fujitsu has been supporting PostgreSQL in various ways since 2004. One of the earliest contributions of Fujitsu to PostgreSQL was features in version 8.0. Since then, Fujitsu has been a proactive participant in the PostgreSQL community, providing Platinum sponsorship of key PostgreSQL events such as PGCon, PGConf.ASIA, and pgDay Asia, and supporting various PostgreSQL user groups.

Fujitsu is one of the founding members of the PostgreSQL Enterprise Consortium (PGECons) in Japan. Together with various like-minded enterprises, Fujitsu is involved in deepening the foothold of PostgreSQL in enterprises.

FUJITSU Enterprise Postgres

FUJITSU Enterprise Postgres is a PostgreSQL-based relational database management system for enterprises. It offers open source value and enterprise quality as well as mission-critical use.

FUJITSU Enterprise Postgres leverages PostgreSQL, a feature-rich open source database management system, used by millions of users globally, enabling integration with a wide range of software, information utilization systems, development tools, and application runtime environments.

By being fully compatible with open source PostgreSQL, it can enjoy the benefits of open source with enterprise quality. The database system will be free from vendor lock-in, will be cost-effective and reliable. Fujitsu's strong track record in mission-critical enterprise systems supports this technology.

The improved high reliability along with the advantage of Fujitsu's high-level support has created substantial benefits to further compliment intelligent business data systems for enterprises.

FUJITSU Enterprise Postgres provides effective solutions to common business challenges

Reduced installation and running costs

FUJITSU Enterprise Postgres employs minimized setup technology to eliminate the need for specific database expertise, reducing staff workload.

High-level support

Fujitsu has offered database systems, customer support and service for many years, and continues to offer the very best customer support based on its many years of expertise in developing and supporting database systems.
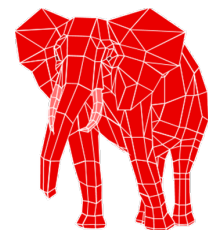
FUJITSU Enterprise Postgres
Open source value • Enterprise quality

The PostgreSQL-based database system is the outcome of Fujitsu's experience of developing enterprise databases for almost 40 years and contributions to the PostgreSQL community for the world's most advanced open source database system. The strength of PostgreSQL with Fujitsu's added enhanced features make FUJITSU Enterprise Postgres the database of choice for systems that require enterprise features combined with portability. and interoperability.

Features and benefits

Main features	Benefits
PostgreSQL-based RDBMS	
• 100% compatible with PostgreSQL	• No vendor lock-in
• Compatible with other PostgreSQL databases	• Supports Zabbix, Apache, Tomcat
• Extends open source PostgreSQL	• Enterprise quality
• Simple migration from proprietary databases	• Low migration cost
Security	
• Transparent data encryption	• Increased security with PCI DSS-compliant 256-bit encryption
• Data masking	• Protects production data
• Dedicated audit log	• Efficient and accurate monitoring of audit log
Performance	
• In-Memory Columnar Index†	• Improved performance for large data sets
• Global Meta Cache	• Reduced overall memory usage with little performance degradation
• High-speed data load	• Loads large volumes of data using parallelism according to available CPU
• High-speed backup/recovery	• High-speed copy technology of choice can be used for backup/recovery
Reliability and High Availability	
• Mirroring Controller	• Automated instant failover
• Connection Manager	• Business continuity and fast failover without SQL relay
• Database Mirroring	• Two copies of a single database reside on different server instances
• Database Transaction Log Mirroring	• Transaction records are continuously streamed to the standby database
• WAL duplication	• Solves PostgreSQL's single point of failure
DevOps	
• Support for COBOL applications	• COBOL programs can execute SQL commands with little to no modification
• System usage statistics	• Users can access database's utilization metrics and statistics
• WebAdmin	• Easily manage database and its contents saving time and money
• Enhanced GUI for cluster management	• Management tool makes setup and cluster management simpler
Ease of use	
• Easy installation, setup and management	• Reduced technical staff overheads
• Web-based and command line interfaces	• Simplified operation management
• One-click backup and recovery	• Easily performed high-level tasks
Fujitsu support options	
• Version compatibility	• Low migration cost due to compatibility verification
• Provides patches following PostgreSQL updates	• Guaranteed standard support
• Guaranteed support from end of sales period	• Optional extended support period; extendable

† Implemented via Vertical Clustered Index (VCI) 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 of users globally, 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.

Previously, migration has proved problematic and in many cases been avoided due to the high workload and expenditure required.

This problem is resolved by significantly reducing migration time so that budget restraints and business disruption are no longer a concern; the migration process 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 database design and implementation

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

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

1. Launch the installer (the installation is completed using automatically tuned values).

2. Launch WebAdmin (GUI management tool).

3. Use WebAdmin to create new instances and configure backup and recovery options.

This simplified installation and setup process allows FUJITSU Enterprise Postgres to be implemented 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.

Security

Secure data encryption and redundancy

Secure 256-bit transparent data encryption (PCI-DSS compliant) and redundancy are available for achieving high reliability and asset protection that is aligned with your data management strategy.

Data masking

Data masking is the obscuring of data in a database 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.

Performance

In-Memory Columnar Index

The VCI engine, which is integrated with FUJITSU Enterprise Postgres, provides significantly faster analytical query processing by storing a columnar representation of row-oriented data in memory. Our tests show that for a 280 GB dataset on a 56-core Linux node, 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.

Reliability and High Availability

Mirroring Controller

The status of database processes is constantly checked, and if a database problem is detected, operations are automatically redirected 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 database problem occurs or if data is accidentally deleted, recovery of the WAL (Write-Ahead Log) can be performed with a single click.

Fujitsu support

High-level support

Standard support is provided. There is also an extended support option 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		NCHAR VARYING	
			text			
		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)			
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:2011			
	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, Visual Studio, etc.)		Yes			
	Stored procedures / functions		Yes			
	Access control	Deadlock automatic detection	Yes			
		Query by other transactions during updates	Multiversion control			
Support	High quality long-term support		Guaranteed			

Supported environments

	Server operating system	Client operating system
Windows	• Windows Server 2022 (64 bit) • Windows Server 2019 (64 bit) • Windows Server 2016 (64 bit)	• Windows Server 2022 (64 bit) • Windows Server 2019 (64 bit) • Windows Server 2016 (64 bit) • Windows 11 / 10 / 8.1 (64 bit, 32 bit) [1][2]
Linux	• Red Hat Enterprise Linux 7.4 or later • Red Hat Enterprise Linux 8.2 or later • SUSE Linux Enterprise 15 SP3 • SUSE Linux Enterprise 12 SP5	• Red Hat Enterprise Linux 7.4 or later • Red Hat Enterprise Linux 8.2 or later • SUSE Linux Enterprise 15 SP3 • SUSE Linux Enterprise 12 SP5
on IBM Z and LinuxONE (s390x)	• Red Hat Enterprise Linux 8.2 or later • SUSE Linux Enterprise 15 SP3	• Red Hat Enterprise Linux 8.2 or later • SUSE Linux Enterprise 15 SP3
on IBM Power (ppc64le)	• Red Hat Enterprise Linux 8.4 or later • SUSE Linux Enterprise 15 SP3	• Red Hat Enterprise Linux 8.4 or later • SUSE Linux Enterprise 15 SP3

*1: Windows 10 Home/Education/Pro/Enterprise, Windows 8.1 Pro/Enterprise
*2: Windows 11 does not support the 32-bit version