Datasheet
FUJITSU Enterprise Postgres

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 V8.0. 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 the enterprise arena.

The open source PostgreSQL-based database system is the outcome of Fujitsu's experience of developing enterprise databases for over 35 years and contributions to the PostgreSQL open source community for the world's most advanced open source database system. The strength of PostgreSQL and enhanced features together make FUJITSU Enterprise Postgres.
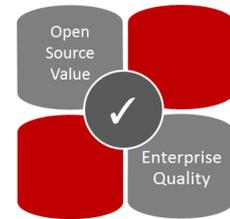
FUJITSU Enterprise Postgres

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 utilisation 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

FUJITSU Enterprise Postgres Provides Effective Solutions to Common Business Challenges

Reduced installation and running costs
FUJITSU Enterprise Postgres employs minimised 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.

Features and benefits

Main features	Benefits
PostgreSQL-based RDBMS	
■ 100% compatible with PostgreSQL	■ No vendor lock-in
■ Compatible with other open source PostgreSQL databases	■ Supports Zabbix, Apache, Tomcat
■ Extends open source PostgreSQL	■ Enterprise quality
■ Simple migration from proprietary databases	■ Low migration cost
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
Security	
■ 256-bit transparent data encryption	■ Increased security
■ PCI-DSS compliant	■ Complies with Payment Card Industry Data Security Standard
■ Data masking	■ Protects production data
■ Dedicated audit log	■ Efficient and accurate monitoring of audit log
High reliability and performance	
■ In-Memory Columnar Index*	■ Improved performance for large data sets
■ 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
■ DB Mirroring Controller	■ Automated failover
■ WAL duplication	■ Solves PostgreSQL's single point of failure
Fujitsu support options	
■ Version compatibility	■ Low migration cost due to compatibility verification
■ Provides patches following open source PostgreSQL updates	■ Guaranteed standard support
■ Guaranteed support from end of sales period (extendable)	■ Optional extended support period

* 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 utilisation 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 utilisation of PostgreSQL technology enables integration with a wide range of software, information utilisation 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 optimised 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. FUJITSU Enterprise Postgres uses masking policies to obscure data returned from queries, making it available for reference without exposing the actual data.

The data masking feature can be implemented in a variety of methods, including: character shuffling, nulling or deletion, encryption, masking, and word substitution.

Data masking makes it safe to use production data in a test or development environment.

High Reliability and 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.

WAL duplication for simple, reliable recovery
If a database problem occurs or if data is accidentally deleted, recovery can be performed with a single click.

DB 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.

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. 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	smallint	real
			integer	double precision
			bigint	serial
			decimal	bigserial
			numeric	smallserial
		Datetime types	timestamp	interval
			date	time
			timestamp with time zone	
		Binary data types	bytea	
		XML	Yes	
	Character set	UNICODE	Yes	
	Multilingual support		Yes (149 locales)	
Security	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	Standby		Yes	
Performance	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	Other standard interfaces
	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
Linux	Red Hat Enterprise Linux 7 (Intel64)[*1]	Red Hat Enterprise Linux 7 (Intel64)[*1]
	Red Hat Enterprise Linux 6 (Intel64)[*2]	Red Hat Enterprise Linux 6 (Intel64)[*2]
		Red Hat Enterprise Linux 6 (x86)[*2]
	SUSE Linux Enterprise 12 [*3]	SUSE Linux Enterprise 12 [*3]
Solaris	Solaris 11	Solaris 11
	Solaris 10	Solaris 10
Windows	Windows Server 2019	Windows Server 2019
	Windows Server 2016 (64-bit)	Windows Server 2016 (64-bit)
	Windows Server 2012 R2 (64-bit)	Windows Server 2012 R2 (64-bit)
	Windows Server 2012 (64-bit)	Windows Server 2012 (64-bit)
	Windows Server 2008 R2 (64-bit)	Windows Server 2008 R2 (64-bit)
	Windows Server 2008 (64-bit)	Windows Server 2008 (64-bit)
		Windows 10/8.1/7 (64-bit)
		Windows 10/8.1/7 (32-bit)

*1: RHEL 7.2 or later   *2: RHEL 6.5 or later   *3: SLES 12 SP4 or later

More information

Fujitsu products, solutions and services

Products
In addition to FUJITSU Enterprise Postgres, Fujitsu provides a range of platform solutions. They combine reliable Fujitsu products with the best in services, know-how and worldwide partnerships.

Fujitsu Dynamic Infrastructures
With the Fujitsu Dynamic Infrastructures approach, Fujitsu offers a full portfolio of IT products, solutions and services, ranging from clients to data centre solutions, Managed Infrastructure, and Infrastructure as a Service. How much you benefit from Fujitsu technologies and services depends on the level of synergy you choose. This takes IT flexibility and efficiency to the next level.

Computing products
www.fujitsu.com/global/services/computing/
- PRIMERGY: Industrial standard server
- SPARC servers: UNIX server
- PRIMEQUEST: Mission-critical x86 server
- ETERNUS: Storage system
- BS2000 mainframes

Software
www.fujitsu.com/products/software/middleware/
- Interstage: Application infrastructure software
- Symfoware: Data management software
- Systemwalker: Operation management software
- Open source: Open source software

More information
To learn more about Fujitsu, please contact your Fujitsu sales representative, Fujitsu business partner, or visit our website: www.fujitsu.com

Fujitsu green policy innovation
Fujitsu Green Policy Innovation is our worldwide project for reducing burdens on the environment. Using our global know-how, we aim to resolve issues of environmental energy efficiency through IT. Please find further information at:

www.fujitsu.com/global/about/environment/

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