Fujitsu Enterprise Postgres 15

Hardware requirements

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This document provides a basic estimate of hardware requirements considering a few factors. For a more accurate estimate taking into account more variables, refer to the technical documentation on our website as indicated in slide 9.

Operating system requirements

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- **Operating system**

		Fujitsu Enterprise Postgres	Fujitsu Enterprise Postgres on IBM LinuxONE	Fujitsu Enterprise Postgres on IBM Power®
Database server	RHEL	9.0 / 8.2 / 7.4	9.0 / 8.2	9.0 / 8.4
	SLES	15 SP3 / 12 SP5	15 SP3	15 SP3
	Windows Server	2022 / 2019 / 2016	-	-
Client computer	RHEL	9.0 / 8.2	9.0 / 8.2	9.0 / 8.4
	SLES	15 SP3	15 SP3	15 SP3
	Windows Server	2022 / 2019 / 2016	-	-
	Windows	11 / 10	-	-

Hardware requirements

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Minimum value

			Fujitsu Enterprise Postgres	Fujitsu Enterprise Postgres on IBM LinuxONE	Fujitsu Enterprise Postgres on IBM Power®
Database server	Memory		512 MB	512 MB	512 MB
	Disk space *	RHEL	1,785 MB	291 MB	553 MB
		SLES	664 MB		
		Windows	1,866 MB		
Client computer	Memory		160 MB	160 MB	160 MB
	Disk space *	RHEL	483 MB	115 MB	112 MB
		SLES	192 MB		
		Windows	1,236 MB		

* Disk space required for Installation

Supported system environment

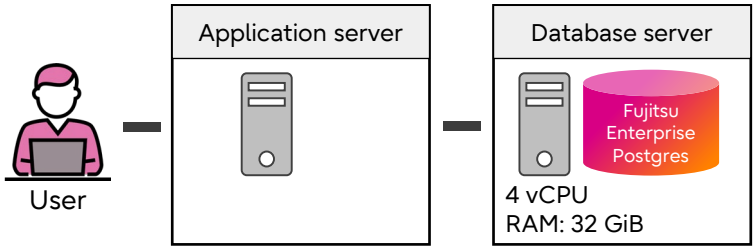
Network	TCP Internet Protocol version 4 and 6 (IPv4 and IPv6)	
File system	Linux	File systems with POSIX-compliant interface. Recommended: ext4
	Windows	NTFS

Sample server configuration

- Fujitsu Enterprise Postgres can be configured as a single server for small scale or development environments, or as a highly available multiple server system configuration.

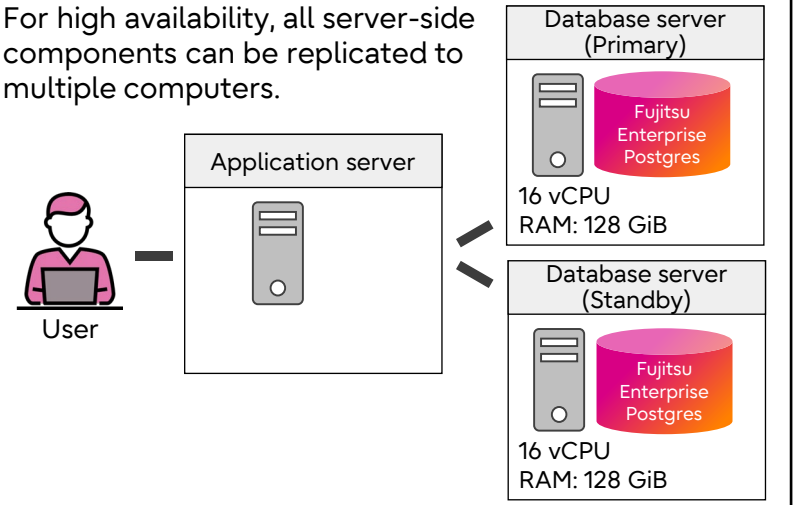
Single server configuration

All server components run on the same computer.
Useful for small-scale or development environments.



Multiple server configuration

For high availability, all server-side components can be replicated to multiple computers.



In addition to the space required to install the Fujitsu Enterprise Postgres, additional space is required to store the database.
Table size, Index size, Transaction log space, Archive log space, Backup disk space, etc.

Operator system requirements

- Available as a multi-architecture container built for **x86**, **s390x** and **ppc64le**

Supported platforms

FEP Operator is tested on the following platforms

Service	Platform
Self-managed Kubernetes Service	• Red Hat OpenShift Container Platform 4.11 - 4.13 • Rancher Kubernetes Engine (on Linux hosts) • VMware Tanzu Kubernetes Grid v1.6 • SUSE Rancher 2.7
Full-managed Kubernetes Service	• Red Hat OpenShift Service on AWS • Red Hat OpenShift on IBM Cloud • Azure Red Hat OpenShift • Azure Kubernetes Service * • Amazon Elastic Kubernetes Service * • IBM Cloud Kubernetes Service * • Alibaba Cloud Container Service for Kubernetes * • Google Kubernetes Engine *

* Kubernetes 1.24 - 1.26

Supported storage

Category	Storage
Type/interface	• Container Storage Interface • NFS • Red Hat OpenShift Container Storage
Cloud Service	• Azure Blob Storage • Amazon S3 • Google Cloud Storage

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Appendix : Estimating resources

- Estimating database disk space requirements
- Estimating memory requirements

Estimating database disk space requirements

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- In addition to tables and indexes, you should estimate disk space for other files such as transaction logs and archive logs.

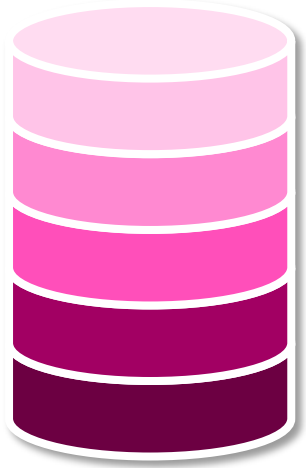

Table size	X^1 **: Record length** = Record header section + NULL map + OID + column data X^2 **: Page size requirement** = Page length × fillfactor - Page header X^3 **: Number of records per page** = X^2 / (X^1 + Pointer length) X^4 **: Number of pages required for storing records** = Total number of records / X^3 **Amount of space** = X^4 × page length × safety factor
Index size	Y^1 **: Entry length** = Entry header + key data length Y^2 **: Page size requirement** = Page length × fillfactor - Page header - Special data Y^3 **: Number of entries per page** = Y^2 / (Y^1 + Pointer length) Y^4 **: Number of pages required for storing indexes** = Total number of records / Y^3 **Space requirement** = Y^4 × Page length / usage rate
Transaction log space	Value of the ***max_wal_size*** parameter
Archive log space	Varies depending on the duration of the backup and the contents of the update transaction. To estimate the required space, use a test environment to simulate backup scheduling and database update.
Backup disk space	**Backup disk space requirements** = Size of the database cluster × 2 + Transaction log space requirements + Archive log space requirements

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Estimating memory requirements

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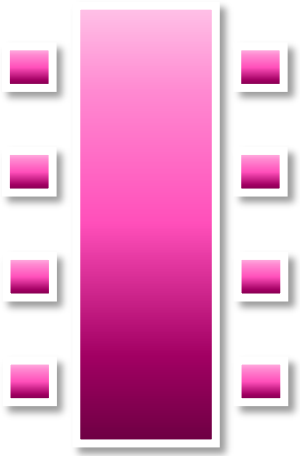
- Estimate the shared memory shared by all server processes and the process memory allocated by back-end processes.



Shared memory

Refer to "Shared Memory and Semaphores" under "Server Administration" in the PostgreSQL Documentation for information on shared memory.

Local memory

Z^1 : Process stack area
= *max_stack_depth* × (*max_connections* + *autovacuum_max_workers* + 9)

Z^2 : Memory used in database sessions that use temporary tables
= *temp_buffers* × *max_connections*

Z^3 : Memory used in database sessions that perform sort and hash table operations
= *work_mem* × *max_connections*

Z^4 : Memory used in maintenance operations
= *maintenance_work_mem*
× (numOfSessionsPerformingMaintenance + *autovacuum_max_workers*)

Z^5 : Base memory used in each process
= baseMemoryUsedInOneProcess × (*max_connections* + *autovacuum_max_workers* + 9)

Z^6 : Memory used prepare data access
= variationAmount × (*max_connections* + *autovacuum_max_workers* + 4)

localMemoryAmount = $Z^1 + Z^2 + Z^3 + Z^4 + Z^5 + Z^6$

Reference

For more, see the online manual **fast.fujitsu.com/product-manuals**

Fujitsu Enterprise Postgres 15	Installation and Setup Guide for Server • Chapter 2: Operating Environment • Appendix D: Configuring Parameters • Appendix E: Estimating Database Disk Space Requirements • Appendix F: Estimating Memory Requirements
Fujitsu Enterprise Postgres 15 on IBM LinuxONE	
Fujitsu Enterprise Postgres 15 on IBM Power®	
Fujitsu Enterprise Postgres 15 for Kubernetes	User's Guide • Chapter 1: System Requirements

This document provides a basic estimate of hardware requirements considering a few factors. For a more accurate estimate taking into account more variables, refer to the technical documentation on our website as indicated above.

Fujitsu Enterprise Postgres

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