Fujitsu Enterprise Postgres 15

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Hardware requirements



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Table of contents

- Operating system requirements
- Hardware requirements
- Sample server configuration
- Operator system requirements
- Appendix: Estimating resources

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



Operating system

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



Minimum value

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



Database server (Primary)

 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

Supported storage

Service	Platform	Category	Storage
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 Pancher 2.7 	Type/interface	 Container Storage Interface NFS Red Hat OpenShift Container Storage
Full-managed Kubernetes	 Red Hat OpenShift Service on AWS Red Hat OpenShift on IBM Cloud 	Cloud Service	 Azure Blob Storage Amazon S3 Google Cloud Storage
 Service 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



Appendix : Estimating resources

- Estimating database disk space requirements
- Estimating memory requirements

Estimating database disk space requirements



Table size	 X¹: Record length = Record header section + NULL map + OID + column data X²: Page size requirement = Page length × fillfactor - Page header X³: Number of records per page = X² / (X¹ + Pointer length) X⁴: Number of pages required for storing records = Total number of records / X³ Amount of space = X⁴ × 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	Yalue of the <i>max_wal_size</i> 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



• 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
	_		 Z³: 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)
1			Z ⁵ : Base memory used in each process = baseMemoryUsedInOneProcess × (<i>max_connections</i> + <i>autovacuum_max_workers</i> + 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	
Fujitsu Enterprise Postgres 15 on IBM LinuxONE		 Appendix D: Configuring Parameters Appendix F: Estimating Database Disk Space Requirements 	
Fujitsu Enterprise Postgres 15 on IBM Power®		 Appendix F: Estimating Memory Requirements 	
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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Published: 18-06-24 WW EN