

# FUJITSU Enterprise Postgres 14 for Kubernetes

## Release Notes

Linux



# Preface

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## Purpose of this document

This document provides release information for FUJITSU Enterprise Postgres for Kubernetes.

## Structure of this document

This document is structured as follows:

### [Chapter 1 New Features and Improvements](#)

Explains the new features and improvements in this version.

## Abbreviations

The following abbreviations are used in this manual:

Full Name	Abbreviations
FUJITSU Software Enterprise Postgres for Kubernetes	FEP or FUJITSU Enterprise Postgres
FUJITSU Software Enterprise Postgres	
Custom Resource	CR
Universal Base Image	UBI
OpenShift Container Platform	OCP
Mutual TLS	MTLS

## Abbreviations of manual titles

The following abbreviations are used in this manual as manual titles:

Full Manual Title	Abbreviations
FUJITSU Software Enterprise Postgres for Kubernetes Release Notes	Release Notes
FUJITSU Software Enterprise Postgres for Kubernetes Overview	Overview
FUJITSU Software Enterprise Postgres for Kubernetes User's Guide	User's Guide
FUJITSU Software Enterprise Postgres for Kubernetes Reference	Reference

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# Chapter 1 New Features and Improvements

This chapter explains FUJITSU Enterprise Postgres for Kubernetes new features and improvements added in this version.

Table 1.1 New features and improvements

Version and level	Classification	Feature
FEP 14 Operator image tag:v4.1.7 Container image tag:ubi8-14-1.7	Container	<a href="#">Update Container Images</a>
	Platform enhancement	<a href="#">Patching the Container's Base OS Image</a>
FEP 14 Operator image tag:v4.1.6 Container image tag:ubi8-14-1.6	Container	<a href="#">Update Container Images</a>
	OSS	<a href="#">Patching the PostgreSQL JDBC Driver</a>
	Platform enhancement	<a href="#">Patching the Container's Base OS Image</a>
	Security	<a href="#">Supports KMIP (Key Management Interoperability Protocol)</a> <a href="#">Audit Log Logging Feature</a>
FEP 14 Operator image tag:v4.1.5 Container image tag:ubi8-14-1.5	Container	<a href="#">Update Container Images</a>
	Platform enhancement	<a href="#">Patching the Container's Base OS Image</a>
FEP 14 Operator image tag:v4.1.4 Container image tag:ubi8-14-1.4	Container	<a href="#">Update Container Images</a>
	Platform enhancement	<a href="#">Patching the Container's Base OS Image</a>
FEP 14 Operator image tag:v4.1.3 Container image tag:ubi8-14-1.3	Container	<a href="#">Update Container Images</a>
	OSS	<a href="#">Patching PostgreSQL</a>
	Platform enhancement	<a href="#">Additional OCP Support</a>
		<a href="#">Additional Kubernetes Support</a>
<a href="#">Additional Storage Support</a>		
FEP 14 Operator image tag:v4.1.2 Container image tag:ubi8-14-1.2	Platform enhancement	<a href="#">Patching the Container's Base OS Image</a>
FEP 14 Operator image tag:v4.1.1 Container image tag:ubi8-14-1.1	Platform enhancement	<a href="#">Additional Platform Support</a>
FEP 14 Operator image tag:v4.1.0 Container image tag:ubi8-14-1.0	OSS	<a href="#">PostgreSQL Rebase</a>
	Platform enhancement	<a href="#">Additional OCP Support</a>
		<a href="#">Additional OCS Support</a>
		<a href="#">Additional Kubernetes Support</a>
	Collaboration tools	<a href="#">Installing Operator with Helm Chart</a>
		<a href="#">Additional Rancher Support</a>
	Operation	<a href="#">Disaster Recovery</a> <a href="#">Server Log Monitoring</a>

Version and level	Classification	Feature
		<a href="#">Changing the Switchover FEPAction Interface</a>
		<a href="#">Major Version Upgrade</a>
		<a href="#">On-Demand Backup</a>

## 1.1 Features Added FEP14 Operator in v4.1.7

---

This section explains the improvement in FUJITSU Enterprise Postgres for Kubernetes v4.1.7.

### 1.1.1 Container

---

This section explains the new feature related to container:

- Update container images

#### 1.1.1.1 Update Container Images

The version of each container image has been updated to:

Container Name	Version Tag
fujitsu-enterprise-postgres-operator	v4.1.7
fujitsu-enterprise-postgres-14-server	ubi8-14-1.7
fujitsu-enterprise-postgres-14-backup	ubi8-14-1.7
fujitsu-enterprise-postgres-14-restore	ubi8-14-1.7
fujitsu-enterprise-postgres-14-pgpool2	ubi8-14-1.7
fujitsu-enterprise-postgres-exporter	ubi8-14-1.6
fujitsu-enterprise-postgres-fluentd	ubi8-14-1.6
fujitsu-enterprise-postgres-fluentbit	ubi8-14-1.6
fujitsu-enterprise-postgres-cronjob	ubi8-14-1.6
fujitsu-enterprise-postgres-14-upgrade	ubi8-14-1.6

### 1.1.2 Platform Enhancement

---

This section explains the improvement related to platform enhancement:

- Patching the Container's Base OS image

#### 1.1.2.1 Patching the Container's Base OS Image

Patched the Container's Base OS image.

## 1.2 Features Added FEP14 Operator in v4.1.6

---

This section explains the improvement in FUJITSU Enterprise Postgres for Kubernetes v4.1.6.

### 1.2.1 Container

---

This section explains the new feature related to container:

- Update container images

### 1.2.1.1 Update Container Images

The version of each container image has been updated to:

Container Name	Version Tag
fujitsu-enterprise-postgres-operator	v4.1.6
fujitsu-enterprise-postgres-14-server	ubi8-14-1.6
fujitsu-enterprise-postgres-14-backup	ubi8-14-1.6
fujitsu-enterprise-postgres-14-restore	ubi8-14-1.6
fujitsu-enterprise-postgres-14-pgpool2	ubi8-14-1.6
fujitsu-enterprise-postgres-exporter	ubi8-14-1.5
fujitsu-enterprise-postgres-fluentd	ubi8-14-1.5
fujitsu-enterprise-postgres-fluentbit	ubi8-14-1.5
fujitsu-enterprise-postgres-cronjob	ubi8-14-1.5
fujitsu-enterprise-postgres-14-upgrade	ubi8-14-1.5

### 1.2.2 OSS

---

This section explains the improvement related to OSS:

- Patching the PostgreSQL JDBC driver

#### 1.2.2.1 Patching the PostgreSQL JDBC Driver

Patched the PostgreSQL JDBC driver.

### 1.2.3 Platform Enhancement

---

This section explains the improvement related to platform enhancement:

- Patching the Container's Base OS image

#### 1.2.3.1 Patching the Container's Base OS Image

Patched the Container's Base OS image.

### 1.2.4 Security

---

This section explains the new feature related to security:

- Supports KMIP (Key Management Interoperability Protocol)
- Audit log logging feature

#### 1.2.4.1 Supports KMIP (Key Management Interoperability Protocol)

Supported KMIP (Key Management Interoperability Protocol).

An encryption key stored in a key management system that supports KMIP can be used as a master encryption key for transparent data encryption.



See

.....  
Refer to "Transparent Data Encryption Using a Key Management System" in the User's Guide for details.  
.....



### 1.2.4.2 Audit Log Logging Feature

Regarding the FEP log feature, it is now possible to log the audit log in addition to the conventional server log.



See

Refer to "FEP Logging" in the User's Guide for details.

## 1.3 Features Added FEP14 Operator in v4.1.5

---

This section explains the improvement in FUJITSU Enterprise Postgres for Kubernetes v4.1.5.

### 1.3.1 Container

---

This section explains the new feature related to container:

- Update container images

#### 1.3.1.1 Update Container Images

The version of each container image has been updated to:

Container Name	Version Tag
fujitsu-enterprise-postgres-operator	v4.1.5
fujitsu-enterprise-postgres-14-server	ubi8-14-1.5
fujitsu-enterprise-postgres-14-backup	ubi8-14-1.5
fujitsu-enterprise-postgres-14-restore	ubi8-14-1.5
fujitsu-enterprise-postgres-14-pgpool2	ubi8-14-1.5
fujitsu-enterprise-postgres-exporter	ubi8-14-1.4
fujitsu-enterprise-postgres-fluentd	ubi8-14-1.4
fujitsu-enterprise-postgres-fluentbit	ubi8-14-1.4
fujitsu-enterprise-postgres-cronjob	ubi8-14-1.4
fujitsu-enterprise-postgres-14-upgrade	ubi8-14-1.4

### 1.3.2 Platform Enhancement

---

This section explains the improvement related to platform enhancement:

- Patching the Container's Base OS image

#### 1.3.2.1 Patching the Container's Base OS Image

Patched the Container's Base OS image.

## 1.4 Features Added FEP14 Operator in v4.1.4

---

This section explains the improvement in FUJITSU Enterprise Postgres for Kubernetes v4.1.4.

### 1.4.1 Container

---

This section explains the new feature related to container:

- Update container images

### 1.4.1.1 Update Container Images

The version of each container image has been updated to:

Container Name	Version Tag
fujitsu-enterprise-postgres-operator	v4.1.4
fujitsu-enterprise-postgres-14-server	ubi8-14-1.4
fujitsu-enterprise-postgres-14-backup	ubi8-14-1.4
fujitsu-enterprise-postgres-14-restore	ubi8-14-1.4
fujitsu-enterprise-postgres-14-pgpool2	ubi8-14-1.4
fujitsu-enterprise-postgres-exporter	ubi8-14-1.3
fujitsu-enterprise-postgres-fluentd	ubi8-14-1.3
fujitsu-enterprise-postgres-fluentbit	ubi8-14-1.3
fujitsu-enterprise-postgres-cronjob	ubi8-14-1.3
fujitsu-enterprise-postgres-14-upgrade	ubi8-14-1.3

## 1.4.2 Platform Enhancement

---

This section explains the improvement related to platform enhancement:

- Patching the Container's Base OS image

### 1.4.2.1 Patching the Container's Base OS Image

Patched the Container's Base OS image.

## 1.5 Features Added FEP14 Operator in v4.1.3

---

This section explains the improvement in FUJITSU Enterprise Postgres for Kubernetes v4.1.3.

### 1.5.1 Container

---

This section explains the new feature related to container:

- Update container images

#### 1.5.1.1 Update Container Images

The version of each container image has been updated to:

Container Name	Version Tag
fujitsu-enterprise-postgres-operator	v4.1.3
fujitsu-enterprise-postgres-14-server	ubi8-14-1.3
fujitsu-enterprise-postgres-14-backup	ubi8-14-1.3
fujitsu-enterprise-postgres-14-restore	ubi8-14-1.3
fujitsu-enterprise-postgres-14-pgpool2	ubi8-14-1.3
fujitsu-enterprise-postgres-exporter	ubi8-14-1.2
fujitsu-enterprise-postgres-fluentd	ubi8-14-1.2
fujitsu-enterprise-postgres-fluentbit	ubi8-14-1.2
fujitsu-enterprise-postgres-cronjob	ubi8-14-1.2

Container Name	Version Tag
fujitsu-enterprise-postgres-14-upgrade	ubi8-14-1.2

## 1.5.2 OSS

---

This section explains the improvement related to OSS:

- Patching PostgreSQL

### 1.5.2.1 Patching PostgreSQL

Patched the PostgreSQL.

## 1.5.3 Platform Enhancement

---

This section explains the new feature related to platform enhancement:

- Additional OCP support
- Additional Kubernetes support
- Additional storage support

### 1.5.3.1 Additional OCP Support

The following additional OCP is supported:

- OCP 4.10



See

.....  
Refer to "Supported Platform" in the User's Guide for details.  
.....

### 1.5.3.2 Additional Kubernetes Support

The following additional Kubernetes is supported:

- Kubernetes 1.23

Support environments are as follows:

- Alibaba Cloud Container Service for Kubernetes
- Google Kubernetes Engine
- IBM Cloud Kubernetes Service



See

.....  
Refer to "Supported Platform" in the User's Guide for details.  
.....

### 1.5.3.3 Additional Storage Support

The following additional storage is supported:

- Google Cloud Storage

## 1.6 Features Added FEP14 Operator in v4.1.2

---

This section explains the improvement in FUJITSU Enterprise Postgres for Kubernetes v4.1.2.

## 1.6.1 Platform Enhancement

---

This section explains the improvement related to platform enhancement:

- Patching the Container's Base OS image

### 1.6.1.1 Patching the Container's Base OS Image

Patched the Container's Base OS image.

## 1.7 Features Added FEP14 Operator in v4.1.1

---

This section explains new features and improvements in FUJITSU Enterprise Postgres for Kubernetes v4.1.1.

### 1.7.1 Platform Enhancement

---

This section explains the new features related to platform enhancement:

- Additional platform support

#### 1.7.1.1 Additional Platform Support

The following additional Platform is supported:

- IBM Power Systems



See

.....  
Refer to "CPU" in the User's Guide for details.  
.....

## 1.8 Features Added FEP14 Operator in v4.1.0

---

This section explains new features and improvements in FUJITSU Enterprise Postgres for Kubernetes v4.1.0.

### 1.8.1 OSS

---

This section explains the new feature related to OSS:

- PostgreSQL rebase

#### 1.8.1.1 PostgreSQL Rebase

The PostgreSQL version that FUJITSU Enterprise Postgres is based on is 14.0.



See

.....  
Refer to "A OSS Supported by FUJITSU Enterprise Postgres for Kubernetes" in the Overview.  
.....

### 1.8.2 Platform Enhancement

---

This section explains the new features related to platform enhancement:

- Additional OCP support
- Additional OCS support
- Additional Kubernetes support

### 1.8.2.1 Additional OCP Support

The following additional OCP is supported:

- OCP 4.9



.....  
Refer to "Supported Platform" in the User's Guide for details.  
.....

### 1.8.2.2 Additional OCS Support

The following additional OCS is supported:

- OCS 4.8



.....  
Refer to "Supported Platform" in the User's Guide for details.  
.....

### 1.8.2.3 Additional Kubernetes Support

The following additional Kubernetes is supported:

- Kubernetes 1.21
- Kubernetes 1.22

Support environments are as follows:

- Azure Kubernetes Service
- Amazon EKS
- Rancher Kubernetes Engine (on Linux hosts)



.....  
Refer to "Supported Platform" in the User's Guide for details.  
.....

## 1.8.3 Collaboration Tools

---

This section explains the new features related to installation:

- Installing Operator with Helm Chart
- Additional Rancher support

### 1.8.3.1 Installing Operator with Helm Chart

Supports Operator installation and upgrades with Helm Chart. This makes it easy to deploy operators to your Kubernetes cluster.



.....  
Refer to "Using the Helm Chart" in the User's Guide for details.  
.....

### 1.8.3.2 Additional Rancher Support

Supports Rancher. This makes you to deploy FEP Operators on Kubernetes clusters and deploy/update various custom resources (such as FEPCluster) from the Rancher UI.



Refer to "Using the Rancher UI" in the User's Guide for details.

## 1.8.4 Operation

---

This section explains the new features related to operation:

- Disaster Recovery
- Server Log Monitoring
- Changing the Switchover FEPAction Interface
- Major Version Upgrad
- On-Demand Backup

### 1.8.4.1 Operator Support Feature Matrix

This Operator release supports deploying FEP14 and earlier release (FEP13 and FEP12) Cluster. For supported feature on each release, please refer to table below.

Feature	FEP12	FEP13	FEP14
fep server	Y	Y	Y
backup sidecar	Y	Y	Y
restore	Y	Y	Y
pgpool2	Y	Y	Y
fep exporter	-	Y	Y
fep logging (fluentD)	-	-	Y
fep logging sidecar (fluentbit)	-	-	Y
pgBadger	-	-	Y

Y: Supported

-: Not supported

### 1.8.4.2 Disaster Recovery

By using OSS (pgBackRest) functionality to store backup data in object storage, data can be migrated to a database cluster in a different OCP environment. Even if it is difficult to operate in an OCP environment with a database cluster due to a disaster, it is possible to continue operating in a different OCP environment.



Refer to "Disaster Recovery" in the User's Guide for details.

### 1.8.4.3 Server Log Monitoring

Adds server log monitoring to the monitoring item. You can also use pgBadger to analyze logs.



Refer to "FEP Logging" in the User's Guide for details.

#### 1.8.4.4 Changing the Switchover FEPAction Interface

Previously, the parameter required the specification of the master POD, but this is no longer necessary.



Refer to "FEPAction Custom Resource Parameters" in the Reference for details.

#### 1.8.4.5 Major Version Upgrade

You can upgrade a major version of FEP by specifying the upgrade parameters when you create the latest FEP cluster.



Refer to "Major Version Upgrade" in the Overview.

#### 1.8.4.6 On-Demand Backup

On-demand backup can be taken at any time other than a preset schedule.



Refer to "On-Demand Backup" in the Overview.