Fujitsu Enterprise Postgres 15 on IBM Power®

Release Notes

Linux

FUJITSU

Preface

Purpose of this document

This document provides release information for Fujitsu Enterprise Postgres.

Structure of this document

This document is structured as follows:

Explains the new features and improvements in this version.

Provides information regarding compatibility.

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Issue date and version

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Edition 1.2: August 2023
Edition 1.1: June 2023
Edition 1.0: April 2023
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Revision History

Revision	Location	Version
Added an incompatible article about migrating applications.	2.2.1 Changing the OID of the Data Type (NCHAR type) that Handles National Characters	Edition 1.2
Feature names have been improved. Before modification : Confidential management support After modification : Confidentiality management Before modification : Cloud Key Management Service Integration After modification : Cloud-based Key Management Service Integration	Table 1.1 New features and improvements	Edition 1.1
	1.1.1 Security	
	1.1.1.1 Confidentiality Management	
	1.1.1.2 Cloud-based Key Management Service Integration	

Contents

Chapter 1 New Features and Improvements

This chapter explains Fujitsu Enterprise Postgres new features and improvements added in this version.

Table 1.1 New features and improvements

Version and level	Classification	Feature
15	Security	Confidentiality Management
		Cloud-based Key Management Service Integration
	Auditing	pgaudit Improvements
	OSS	PostgreSQL Rebase
		OSS updates provided
	Platform enhancement	Additional Operating System Support for Server Feature
		Additional Operating System Support for Client Feature
		Additional Operating System Support for Server Assistant Feature
	Application Development	Add JDKs and JREs that can run JDBC drivers
	Miscellaneous (LD_LIBRARY_PATH Improvements)	Additonal the DT_RUNPATH Attribute
		About Building Applications and Extensions

1.1 Features Added in 15

This section explains new features and improvements in Fujitsu Enterprise Postgres 15.

1.1.1 Security

This section explains the new features and improvements related to security:

- Confidentiality Management

- Cloud-based Key Management Service Integration

1.1.1.1 Confidentiality Management

The confidentiality management function is provided to assist in the design and operation of access control for databases. This reduces the man-hours required to manage complicated access control.

See
....
Refer to the Security Operation Guide for more information.
....

1.1.1.2 Cloud-based Key Management Service Integration

Cloud-based key management service integration is now available. Plug-in mechanisms for calling system service communication adapters in the cloud and data encryption key sharing are now supported.

See
....
Refer to "Using Transparent Data Encryption with Key Management Systems as Keystores" in the Operation Guide for more information,
....

1.1.2 Auditing

This section describes new features and improvements related to auditing.

- pgaudit Improvements

1.1.2.1 pgaudit Improvements

The audit_log_disconnections parameter has been added.

 See
. . . .

Refer to Security Operations Guide for more information,
. . . .

1.1.3 OSS

This section explains the new feature related to OSS:

- PostgreSQL Rebase

- OSS Updates Provided

1.1.3.1 PostgreSQL Rebase

The PostgreSQL version that Fujitsu Enterprise Postgres is based on is 15.0.

 See
. . . .

Refer to "PostgreSQL Version Used for Fujitsu Enterprise Postgres" in the Installation and Setup Guide for Server for more information.
. . . .

1.1.3.2 OSS Updates Provided

The OSS provided by Fujitsu Enterprise Postgres has been updated.

 See
. . . .

Refer to "OSS Supported by Fujitsu Enterprise Postgres" in the General Description for details.
. . . .

1.1.4 Platform Enhancement

This section explains the new features related to platform enhancement:

- Additional operating system support for server

- Additional operating system support for client

- Additional operating system support for server assistant

1.1.4.1 Additional Operating System Support for Server Feature

The following additional operating system is supported:

- RHEL9

 See
. . . .

Refer to "Required Operating System" in the Installation and Setup Guide for Server for more information,
. . . .

1.1.4.2 Additional Operating System Support for Client Feature

The following additional operating system is supported:

- RHEL9

📚 See
··
Refer to "Required Operating System" in the Installation and Setup Guide for Server for more information,
··

1.1.4.3 Additional Operating System Support for Server Assistant Feature

The following additional operating system is supported:

- RHEL9

📚 See
··
Refer to "Required Operating System" in the Installation and Setup Guide for Server Assistant for more information,
··

1.1.5 Application Development

This section describes new features related to application development.

- Addition of JDKs and JREs on which the JDBC Driver can Work

1.1.5.1 Addition of JDKs and JREs on which the JDBC Driver can Work

The following JDKs and JREs have been added to the list of supported JDKs and JREs.

- JDK 17 and JRE 17

📚 See
··
Refer to "Related Software" in the Installation Guide for Client for details,
··

1.1.6 Miscellaneous (LD_LIBRARY_PATH Improvements)

Describes the LD_LIBRARY_PATH improvements.

- Additonal the DT_RUNPATH Attribute

- About Building Applications and Extensions

1.1.6.1 Additonal the DT_RUNPATH Attribute

Add DT_RUNPATH attribute to Fujitsu Enterprise Postgres programs.

This allows Fujitsu Enterprise Postgres programs to run without setting the environment variable LD_LIBRARY_PATH to the path to the installation directory/lib for Fujitsu Enterprise Postgres features.

1.1.6.2 About Building Applications and Extensions

If you are building an application that makes use of the shared libraries shipped with Fujitsu Enterprise Postgres, or an extension module for Fujitsu Enterprise Postgres, ensure that the DT_RUNPATH attribute of the program is set to the path to the directory that contains those libraries.

This allows programs to run without setting the environment variable LD_LIBRARY_PATH to the path to the Fujitsu Enterprise Postgres installation directory/lib.

See

· ·

Refer to about setting the DT_RUNPATH attribute, see:

-   "How to Build and Run an Application that Uses Shared Libraries" in the Application Development Guide

-   "Build with PGXS" and "Build without PGXS" in "Setting Up and Removing OSS" in the Installation and Setup Guide for Server

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You can also continue to set the environment variable LD_LIBRARY_PATH to the path to the Fujitsu Enterprise Postgres installation directory/lib, and run these programs without setting the DT_RUNPATH attribute.

 See

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For notes on setting the environment variable LD_LIBRARY_PATH, refer to "When DT_RUNPATH cannot be set" in "How to Build and Run an Application that Uses Shared Libraries" in the Application Development Guide.

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Chapter 2 Compatibility Information

This chapter explains incompatible items and actions required when migrating from an earlier version to Fujitsu Enterprise Postgres 15. Check compatibility before migrating and take the appropriate action.

2.1 Installation/Setup Incompatibility

Item	Pre-migration version	
	14	14 SP1
Removing Old llvm Support for JIT compilation	Y	Y

Y: Incompatibility exists

2.1.1 Removing Old llvm Support for JIT compilation

Incompatibility

In Fujitsu Enterprise Postgres 15, the following llvm which JIT compilation can use have been removed.

- llvm version 11

Action method

None.

2.2 Application Migration Incompatibility

Item	Pre-migration version	
	14	14 SP1
Changing the OID of the Data Type (NCHAR type) that Handles National Characters	Y	Y

Y: Incompatibility exists

2.2.1 Changing the OID of the Data Type (NCHAR type) that Handles National Characters

Incompatible

In Fujitsu Enterprise Postgres 15, OIDs for national character data types (NCHAR types) have changed.

Action method

If you are using a national character data type (NCHAR type), recompile the application and run it with Fujistu Enterprise Postgres 15 or later clients.

2.3 Operation Migration Incompatibility

Item	Pre-migration version	
	14	14 SP1
Abolition of Message Numbers	Y	Y

Item	Pre-migration version	
	14	14 SP1
Adding the key_name Column to the View pgx_tde_master_key	N	Y

Y: Incompatibility exists

N: Incompatibility does not exist

2.3.1 Abolition of Message Numbers

Incompatibility

In Fujitsu Enterprise Postgres 15, the message number output at the end of the message is abolished.

Message numbers are output for messages output by Mirroring Controller.

For FUJITSU Enterprise Postgres 14 SP1 or earlier

The message number was printed at the end of the message.

[example]

```
3D000: 2017-07-10 19:41:05 JST[13899]: [1-1] user=fepuser,db=fep,remote=127.0.0.1(51902)
app=[unknown] FATAL: database "fep" does not exist (10571)
```

For Fujitsu Enterprise Postgres 15

No message number is output at the end of the message.

[example]

```
3D000: 2023-04-10 19:41:05 JST [13899]: [1-1] user = fepuser,db = fep,remote = 127.0.0.1(51902)
app = [unknown] FATAL: database "fep" does not exist
```

Action method

None.

2.3.2 Adding the key_name Column to the View pgx_tde_master_key

Incompatibility

In Fujitsu Enterprise Postgres 15, add a key_name column to the view pgx_tde_master_key.

Action method

None.

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