FUJITSU Enterprise Postgres 9.6

Release Notes

Preface

Purpose of This Document

This document provides release information for FUJITSU Enterprise Postgres.

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.

Chapter 2 Compatibility Information

Provides information regarding compatibility.

Chapter 3 Program Updates

Explains updates incorporated in this version.

Export Restrictions

Exportation/release of this document may require necessary procedures in accordance with the regulations of your resident country and/or US export control laws.

Issue Date and Version

```
Edition 1.0: September 2017
```

Copyright

Contents

Chapter 1 New Features and Improvements

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

New features and improvements

Version and level	Classification	Feature	Provided in SE
9.6	Operations	Improvements to the GUI	Y
	Performance	Parallel scan	Y (*1)
	Application development	Support for variable format source code in COBOL programs	Y
		Support for Visual Studio 2015	Y
		Support for Oracle's compatibility features (orafce)	Y (*1)
	Platform enhancement	Additional operating system support for client feature	Y
	OSS	PostgreSQL rebase	Y

*1: Already provided in FUJITSU Enterprise Postgres 9.5 AE.

1.1 Features Added in 9.6

This section explains new features and improvements in FUJITSU Enterprise Postgres 9.6.

1.1.1 Operations

This section explains the new features related to operation.

- Improvements to the GUI

1.1.1.1 Improvements to the GUI

The WebAdmin GUI incorporates the following new features and improvements:

- Import instance

  Instances created via the command line using the initdb command can be imported into and subsequently managed by WebAdmin.

  Refer to "Importing Instances" in the Installation and Setup Guide for Server for details.

- Edit instance

  The following items for an instance can now be modified: Instance name, Port number, and Backup storage path.

  Refer to "Editing instance information" in the Installation and Setup Guide for Server for details.

- Anomaly processing

  WebAdmin now detects external changes to the port and backup_destination parameters in postgresql.conf, and provides the ability to synchronize these parameters with the corresponding items in WebAdmin.

  WebAdmin also detects external changes to Mirroring Controller configuration of cluster replication added via WebAdmin, and disables Mirroring Controller functionality for the instance for which the anomaly is detected.

  Refer to "Anomaly Detection and Resolution" in the Operation Guide for details.

- Interoperability support

    WebAdmin can now be used to manage instances of earlier versions. WebAdmin 9.6 supports FUJITSU Enterprise Postgres 9.6 and FUJITSU Enterprise Postgres 9.5 to create and manage instances.

    Refer to "Creating an Instance" > "[Server product type]" in the Installation and Setup Guide for Server for details.

- Optional backup

    Backup and restore functionality can now be disabled for an instance.

    Refer to "Creating an Instance" > "[Backup]" in the Installation and Setup Guide for Server for details.

- Auto-refresh

    The auto-refresh feature automatically refreshes the status of all instances at set intervals.

    Refer to "Using the WebAdmin Auto-Refresh Feature" in the Installation and Setup Guide for Server for details.

- Performance improvements

    Performance has been significantly improved for various operations.

See
....

Refer to "Operating Methods" in the Operation Guide for details.
....

1.1.2 Performance

This section explains the new features added to improve performance:

- Parallel scan

1.1.2.1 Parallel Scan

PostgreSQL 9.6 parallel scan is now available in FUJITSU Enterprise Postgres Standard Edition.

In addition to PostgreSQL 9.6 parallel scan, it features the CPU resource availability check, which is already provided in FUJITSU Enterprise Postgres 9.5 Advanced Edition. This prevents slowdown when excessive parallel scans are performed under high load on the server.

Information
....

CPU resource availability check

Check if sufficient system resources are available when the SQL statement is executed. (CPU usage)

Consider using parallel scan only if two or more cores of the CPU in the server are available when the SQL statement is executed.

For example, if the CPU has four cores and the total of 200% or more is available from cores 1 to 4, parallel scan is planned, otherwise it is not.
....

1.1.3 Application Development

This section explains the new features related to application development:

- Support for variable format source code in COBOL programs

- Support for Visual Studio 2015

- Support for Oracle's compatibility features (orafce)

1.1.3.1 Support for Variable Format Source Code in COBOL Programs

For embedded SQL in COBOL, variable format source code is now supported in COBOL programs. This makes it possible to precompile existing COBOL programs that use variable format source code as is.

🗐 **See**

. . . .

Refer to "Embedded SQL in COBOL" in the Application Development Guide for details.

. . . .

1.1.3.2 Support for Visual Studio 2015

Visual Studio 2015 is supported as a development environment of the FUJITSU Enterprise Postgres client feature for Windows(R).

🗐 **See**

. . . .

Refer to "Related Software" in the Installation and Setup Guide for Client for details.

. . . .

1.1.3.3 Support for Oracle's Compatibility Features (orafce)

The existing compatibility features have been kept and more compatibility features are now available.

🗐 **See**

. . . .

Refer to "Compatibility with Oracle Databases" in the Application Development Guide for details.

. . . .

1.1.4 Platform Enhancement

This section explains the new features related to platform enhancement:

- Additional operating system support for client

1.1.4.1 Additional Operating System Support for Client Feature

The following additional operating systems are supported:

- Solaris 10

- Solaris 11

🗐 **See**

. . . .

Refer to "Required Operating System" in the Installation and Setup Guide for Client for details.

. . . .

1.1.5 OSS

This section explains the new feature related to OSS:

- PostgreSQL rebase

1.1.5.1 PostgreSQL Rebase

The PostgreSQL version that FUJITSU Enterprise Postgres is based on is 9.6.2.

See

. . . .

Refer to "PostgreSQL Version Used for FUJITSU Enterprise Postgres" in the Installation and Setup Guide for Server for details.

. . . .

Chapter 2 Compatibility Information

This chapter explains incompatible items and actions required when migrating from FUJITSU Enterprise Postgres 9.5 to FUJITSU Enterprise Postgres 9.6. Check compatibility before migrating and take the appropriate action.

2.1 Installation/Setup Incompatibility

2.1.1 Changing the WebAdmin Installation Method

Incompatibility

WebAdmin is not installed automatically during server installation. Therefore, install WebAdmin separately.

Action method

None.

2.2 Application Migration Incompatibility

2.2.1 Changing how to Use the Features Compatible with Oracle Databases

Incompatibility

To use the features compatible with Oracle databases, create a new instance and execute the following command for the "postgres" and "template1" databases:

CREATE EXTENSION oracle_compatible

Action method

None.

2.3 Operation Migration Incompatibility

2.3.1 Changing masking policy definition for unsupported data types

Incompatibility

The data masking feature of FUJITSU Enterprise Postgres is updated so that an error occurs when a masking policy is defined for a column of an unsupported data type (array type or timestamp with timezone type).

FUJITSU Enterprise Postgres 9.5

> The definition of a masking policy for a column of array type or timestamp with timezone type ends normally, but an error occurs when accessing a column of a table for which the policy is defined.

FUJITSU Enterprise Postgres 9.6

> An error occurs when defining a masking policy for a column of array type or timestamp with timezone type.

Action method

If a policy that was defined in FUJITSU Enterprise Postgres 9.5 includes masking of a column of an unsupported data type (array type or timestamp with timezone type), perform one of the following in FUJITSU Enterprise Postgres 9.6:

- Ignore the error if the masking policy contains columns of only these data types, or delete the policy with the pgx_drop_confidential_policy system administration function.

- If the masking policy target contains columns of these data types and a supported data type, delete the problematic columns with the pgx_alter_confidential_policy system function.

Chapter 3 Program Updates

This version incorporates the updates implemented in PostgreSQL 9.6.0, 9.6.1, and 9.6.2.

🔖 See

. . . .

Refer to the PostgreSQL Global Development Group website for information on the updates implemented in the following releases:

[PostgreSQL 9.6.0]

```
https://www.postgresql.org/docs/9.6/static/release-9-6.html
```

[PostgreSQL 9.6.1]

```
https://www.postgresql.org/docs/9.6/static/release-9-6-1.html
```

[PostgreSQL 9.6.2]

```
https://www.postgresql.org/docs/9.6/static/release-9-6-2.html
```

. . . .

Issues that occurred in previous versions and levels are also fixed.

Refer to the following table for details of the program fixes included in this version and level.

Table 3.1 Program fixes in FUJITSU Enterprise Postgres 9.6

No.	Version and level	P number	Issue
1	9.6	PH10163	[Issue] If you try to recover the database to a past point in a streaming replication configuration, pgx_rcvall may fail and output the following message: FATAL: Demanded time series %u is not an affiliate of time series %u of the data base system. [Environment] One of the following operating systems is used: - Linux - Windows [Conditions] 1. A streaming replication environment is built, and 2. The database is recovered in the following order: 2.1 The primary server is recovered to a past point using one of the following commands, and - pgx_rcvall -e "*recoveryPointInTime*" - pgx_rcvall -n "*namedRestorePoint*" - pgx_rcvall -p 2.2 One of the following occurs, and - Failover or switchover occurs one or more times, or - A command other than pgx_rcvall is used to recover to a past point. 2.3 The new primary server is backed up using pgx_dmpall, and 2.4 Both nodes are stopped, and 2.5 In the following command, the backup obtained in 2.3 is specified for the old or new primary server to recover to a past point:

			- pgx_rcvall -e "*recoveryPointInTime*"
2		PH12548	[Issue] If the TransactionScope feature of the .NET data provider is used, the application ends with an exception. Error message: prepared transaction with identifier "@1@" does not exist @1@: Transaction identifier [Environment] The following operating system is used: - Windows [Conditions] An application is run that satisfies the following conditions: 1. TransactionScope is used, and 2. Multiple connections are generated in a scope in 1, and 3. The connections in 2 are used to access the database, and 4. The Complete method is called for the scope in 1.
3		PH12605	[Issue] In applications targeting the following versions of .NET Framework, database connections using the DbProviderFactory class output the error message below and fail. - Target .NET Framework versions: - .NET Framework 2.0 - .NET Framework 3.0 - .NET Framework 3.5 - .NET Framework 3.5 Client Profile Error message Unable to find the requested .Net Framework Data Provider. It may not be installed. [Environment] The following operating system is used: - Windows [Conditions] 1. Npgsql.dll is registered in GAC using one of the methods below, and 1.1 FUJITSU Enterprise Postgres 9.5 is installed, or 1.2 The pgx_NpgsqlRegister command is executed. 2. Version 3.5 or earlier is specified as the target framework of a Visual C# project, and 3. In the project in 2, "FUJITSU.Npgsql" is specified for the providerInvariantName argument in the GetFactory method of the DbProviderFactories class, and an instance of the DbProviderFactory class is obtained, and 4. In the project created in 2, the instance obtained in 3 is used to create and run an application that performs database connections.
4		PH12818	[Issue] If PreloadReader=True is specified for a connection string in a product based on Npgsql 2.1.x or later, the value of the HasRows property is always false even if data exists. [Environment]

				The following operating system is used:
				- Windows
				[Conditions]
				1. PreloadReader=True is specified for a connection string in .NET Data Provider, and a Connection instance is created, and
				2. The Connection instance created in 1 and a SELECT statement, for which the result set is not empty, are specified and a Command instance is created, and
				3. A DataReader instance is created from the Command instance created in 2, and
				4. The value of the HasRows property of the DataReader instance created in 3 is obtained.
5		PH13223		[Issue]
				When a multi-version installation is performed on a Windows client, execution of the pgx_NpgsqlRegister command is completed successfully, however, the .NET Data Provider feature is not registered correctly.
				As a result, .NET applications of the version that was running previously will not operate.
				[Environment]
				The following operating system is used:
				- Windows
				[Conditions]
				1. A multi-version installation is performed on a Windows client, and
				2. The pgx_NpgsqlRegister command is executed to register the .NET Data Provider feature, and
				3. A .NET application using the DbProviderFactories class that was running on the installed version is executed.
6		PH13243		[Issue 1]
				If the pg_upgrade command is executed for an instance that includes a tablespace with transparent data encryption specified, the following error is output, and the upgrade fails.
				ERROR: tablespace encryption algorithm option cannot be changed
				[Issue 2]
				If the pg_dumpall command is executed to back up an instance that includes a tablespace with transparent data encryption specified, and the psql command or pg_restore command is executed to perform a restore, the following error is output, and the restore fails.
				ERROR: tablespace encryption algorithm option cannot be changed
				[Environment]
				One of the following operating systems is used:
				- Linux
				- Windows
				[Conditions for issue 1]
				1. A tablespace with transparent data encryption specified has been defined in an old version targeted for an upgrade, and
				2. The pg_upgrade command is executed to perform an upgrade for 1.
				[Conditions for issue 2]
				1. A tablespace with transparent data encryption specified has been defined in an old version targeted for an upgrade, and

			2. The pg_dumpall command is executed to perform a backup for the tablespace with transparent data encryption specified in 1, and
			3. After the upgrade, the psql command or pg_restore command is executed to perform a restore, using the backup data obtained in 2.
7		PH13328	[Issue] A masking policy definition for an array type or timestamp with timezone type, is mistakenly completed successfully when it is supposed to end abnormally. As a result, an error is output when accessing a column of a table where a policy is defined. [Environment] One of the following operating systems is used: - Linux - Windows [Conditions] 1. A masking policy is created for an array type or timestamp with timezone type column using the pgx_create_confidential_policy system administration function.
8		PH13361	[Issue 1] When PL/Python is installed for a database, the error message below is output, and installation fails. ERROR: could not load library "*fujitsuEnterprisePostgresInstallDir*/lib/plpython2.so": libpython2.6.so.1.0: cannot open shared object file: No such file or directory [Issue 2] When PL/Perl is installed for a database, the error message below is output, and installation fails. ERROR: could not load library "*fujitsuEnterprisePostgresInstallDir*/lib/plperl.so": *fujitsuEnterprisePostgresInstallDir*/lib/plperl.so: undefined symbol: Perl_Iincgv_ptr [Environment] The following operating system is used: - Linux [Conditions for issue 2] 1. FUJITSU Enterprise Postgres is used in an RHEL7.0 or later environment, and 2. One of the following commands is executed to install PL/Python: - CREATE EXTENSION plpythonu - CREATE LANGUAGE plpythonu [Conditions for issue 2] 1. FUJITSU Enterprise Postgres is used in an RHEL7.0 or later environment, and 2. One of the following commands is executed to install PL/Perl: - CREATE EXTENSION plperl - CREATE LANGUAGE plperl

Index

FUJITSU Enterprise Postgres 9.6

Release Notes

Preface

Purpose of This Document

This document provides release information for FUJITSU Enterprise Postgres.

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.

Chapter 2 Compatibility Information

Provides information regarding compatibility.

Chapter 3 Program Updates

Explains updates incorporated in this version.

Export Restrictions

Exportation/release of this document may require necessary procedures in accordance with the regulations of your resident country and/or US export control laws.

Issue Date and Version

```
Edition 1.0: November 2017
```

Copyright

Contents

Chapter 1 New Features and Improvements

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

New features and improvements

Table 1.1 New features and improvements

Version and level	Classification	Feature	Provided in SE
9.6	Operations	Improvements to the GUI	Y
	Performance	Parallel scan	Y (*1)
	Application development	Support for variable format source code in COBOL programs	Y
		Support for Visual Studio 2015	Y
		Support for Oracle's compatibility features (orafce)	Y (*1)
	Platform enhancement	Additional operating system support for server feature	Y
		Additional operating system support for client feature	Y
	OSS	PostgreSQL rebase	Y

*1: Already provided in FUJITSU Enterprise Postgres 9.5 AE.

1.1 Features Added in 9.6

This section explains new features and improvements in FUJITSU Enterprise Postgres 9.6.

1.1.1 Operations

This section explains the new features related to operation.

- Improvements to the GUI

1.1.1.1 Improvements to the GUI

The WebAdmin GUI incorporates the following new features and improvements:

- Import instance

  Instances created via the command line using the initdb command can be imported into and subsequently managed by WebAdmin.

  Refer to "Importing Instances" in the Installation and Setup Guide for Server for details.

- Edit instance

  The following items for an instance can now be modified: Instance name, Port number, and Backup storage path.

  Refer to "Editing instance information" in the Installation and Setup Guide for Server for details.

- Anomaly processing

  WebAdmin now detects external changes to the port and backup_destination parameters in postgresql.conf, and provides the ability to synchronize these parameters with the corresponding items in WebAdmin.

  WebAdmin also detects external changes to Mirroring Controller configuration of cluster replication added via WebAdmin, and disables Mirroring Controller functionality for the instance for which the anomaly is detected.

  Refer to "Anomaly Detection and Resolution" in the Operation Guide for details.

- Interoperability support

  WebAdmin can now be used to manage instances of earlier versions. WebAdmin 9.6 supports FUJITSU Enterprise Postgres 9.6 and FUJITSU Enterprise Postgres 9.5 to create and manage instances.

  Refer to "Creating an Instance" > "[Server product type]" in the Installation and Setup Guide for Server for details.

- Optional backup

  Backup and restore functionality can now be disabled for an instance.

  Refer to "Creating an Instance" > "[Backup]" in the Installation and Setup Guide for Server for details.

- Auto-refresh

  The auto-refresh feature automatically refreshes the status of all instances at set intervals.

  Refer to "Using the WebAdmin Auto-Refresh Feature" in the Installation and Setup Guide for Server for details.

- Performance improvements

  Performance has been significantly improved for various operations.

See
....
Refer to "Operating Methods" in the Operation Guide for details.
....

1.1.2 Performance

This section explains the new features added to improve performance:

- Parallel scan

1.1.2.1 Parallel Scan

PostgreSQL 9.6 parallel scan is now available in FUJITSU Enterprise Postgres Standard Edition.

In addition to PostgreSQL 9.6 parallel scan, it features the CPU resource availability check, which is already provided in FUJITSU Enterprise Postgres 9.5 Advanced Edition. This prevents slowdown when excessive parallel scans are performed under high load on the server.

Information
....
CPU resource availability check

Check if sufficient system resources are available when the SQL statement is executed. (CPU usage)

Consider using parallel scan only if two or more cores of the CPU in the server are available when the SQL statement is executed.

For example, if the CPU has four cores and the total of 200% or more is available from cores 1 to 4, parallel scan is planned, otherwise it is not.
....

1.1.3 Application Development

This section explains the new features related to application development:

- Support for variable format source code in COBOL programs

- Support for Visual Studio 2015

- Support for Oracle's compatibility features (orafce)

1.1.3.1 Support for Variable Format Source Code in COBOL Programs

For embedded SQL in COBOL, variable format source code is now supported in COBOL programs. This makes it possible to precompile existing COBOL programs that use variable format source code as is.

 See

....

Refer to "Embedded SQL in COBOL" in the Application Development Guide for details.

....

1.1.3.2 Support for Visual Studio 2015

Visual Studio 2015 is supported as a development environment of the FUJITSU Enterprise Postgres client feature for Windows(R).

 See

....

Refer to "Related Software" in the Installation and Setup Guide for Client for details.

....

1.1.3.3 Support for Oracle's Compatibility Features (orafce)

The existing compatibility features have been kept and more compatibility features are now available.

 See

....

Refer to "Compatibility with Oracle Databases" in the Application Development Guide 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

1.1.4.1 Additional Operating System Support for Server Feature

The following additional operating system is supported:

- Windows Server(R) 2016

 Note

....

The following features of Windows Server(R) 2016 are not supported:

- Server Core

- Nano Server

- Windows Server Container

....

 See

....

Refer to "Required Operating System" in the Installation and Setup Guide for Server for details.

....

1.1.4.2 Additional Operating System Support for Client Feature

The following additional operating systems are supported:

- Solaris 10

  - Solaris 11

See
....

Refer to "Required Operating System" in the Installation and Setup Guide for Client for details.
....

1.1.5 OSS

This section explains the new feature related to OSS:

  - PostgreSQL rebase

1.1.5.1 PostgreSQL Rebase

The PostgreSQL version that FUJITSU Enterprise Postgres is based on is 9.6.2.

See
....
Refer to "PostgreSQL Version Used for FUJITSU Enterprise Postgres" in the Installation and Setup Guide for Server for details.
....

Chapter 2 Compatibility Information

This chapter explains incompatible items and actions required when migrating from FUJITSU Enterprise Postgres 9.5 to FUJITSU Enterprise Postgres 9.6. Check compatibility before migrating and take the appropriate action.

2.1 Installation/Setup Incompatibility

2.1.1 Changing the WebAdmin Installation Method

Incompatibility

WebAdmin is not installed automatically during server installation. Therefore, install WebAdmin separately.

Action method

None.

2.2 Application Migration Incompatibility

2.2.1 Changing how to Use the Features Compatible with Oracle Databases

Incompatibility

To use the features compatible with Oracle databases, create a new instance and execute the following command for the "postgres" and "template1" databases:

CREATE EXTENSION oracle_compatible

Action method

None.

2.3 Operation Migration Incompatibility

2.3.1 Changing masking policy definition for unsupported data types

Incompatibility

The data masking feature of FUJITSU Enterprise Postgres is updated so that an error occurs when a masking policy is defined for a column of an unsupported data type (array type or timestamp with timezone type).

FUJITSU Enterprise Postgres 9.5

The definition of a masking policy for a column of array type or timestamp with timezone type ends normally, but an error occurs when accessing a column of a table for which the policy is defined.

FUJITSU Enterprise Postgres 9.6

An error occurs when defining a masking policy for a column of array type or timestamp with timezone type.

Action method

If a policy that was defined in FUJITSU Enterprise Postgres 9.5 includes masking of a column of an unsupported data type (array type or timestamp with timezone type), perform one of the following in FUJITSU Enterprise Postgres 9.6:

- Ignore the error if the masking policy contains columns of only these data types, or delete the policy with the pgx_drop_confidential_policy system administration function.

- If the masking policy target contains columns of these data types and a supported data type, delete the problematic columns with the pgx_alter_confidential_policy system function.

Chapter 3 Program Updates

This version incorporates the updates implemented in PostgreSQL 9.6.0, 9.6.1, and 9.6.2.

🔲 See
....
Refer to the PostgreSQL Global Development Group website for information on the updates implemented in the following releases:

[PostgreSQL 9.6.0]

```
https://www.postgresql.org/docs/9.6/static/release-9-6.html
```

[PostgreSQL 9.6.1]

```
https://www.postgresql.org/docs/9.6/static/release-9-6-1.html
```

[PostgreSQL 9.6.2]

```
https://www.postgresql.org/docs/9.6/static/release-9-6-2.html
```
....

This software incorporates the following security updates that were modified from PostgreSQL 9.6.3 to 9.6.4:

- CVE-2017-7484: selectivity estimators bypass SELECT privilege checks

- CVE-2017-7485: libpq ignores PGREQUIRESSL environment variable

- CVE-2017-7486: pg_user_mappings view discloses foreign server passwords

- CVE-2017-7546: Empty password accepted in some authentication methods

- CVE-2017-7547: The "pg_user_mappings" catalog view discloses passwords to users lacking server privileges

- CVE-2017-7548: lo_put() function ignores ACLs

🔲 See
....
Refer to the PostgreSQL Global Development Group website for information on the security updates:

```
https://www.postgresql.org/about/news/1746/
```

```
https://www.postgresql.org/about/news/1772/
```
....

Issues that occurred in previous versions and levels are also fixed.

Refer to the following table for details of the program fixes included in this version and level.

Table 3.1 Program fixes in FUJITSU Enterprise Postgres 9.6

No.	Version and level	P number	Issue
1	9.6	PH10163	[Issue] If you try to recover the database to a past point in a streaming replication configuration, pgx_rcvall may fail and output the following message: FATAL: Demanded time series %u is not an affiliate of time series %u of the data base system. [Environment] One of the following operating systems is used: - Linux - Windows [Conditions]

				1. A streaming replication environment is built, and
				2. The database is recovered in the following order:
				2.1 The primary server is recovered to a past point using one of the following commands, and
				- pgx_rcvall -e "*recoveryPointInTime*"
				- pgx_rcvall -n "*namedRestorePoint*"
				- pgx_rcvall -p
				2.2 One of the following occurs, and
				- Failover or switchover occurs one or more times, or
				- A command other than pgx_rcvall is used to recover to a past point.
				2.3 The new primary server is backed up using pgx_dmpall, and
				2.4 Both nodes are stopped, and
				2.5 In the following command, the backup obtained in 2.3 is specified for the old or new primary server to recover to a past point:
				- pgx_rcvall -e "*recoveryPointInTime*"
2			PH12548	[Issue] If the TransactionScope feature of the .NET data provider is used, the application ends with an exception. Error message: prepared transaction with identifier "@1@" does not exist @1@: Transaction identifier [Environment] The following operating system is used: - Windows [Conditions] An application is run that satisfies the following conditions: 1. TransactionScope is used, and 2. Multiple connections are generated in a scope in 1, and 3. The connections in 2 are used to access the database, and 4. The Complete method is called for the scope in 1.
3			PH12605	[Issue] In applications targeting the following versions of .NET Framework, database connections using the DbProviderFactory class output the error message below and fail. - Target .NET Framework versions: - .NET Framework 2.0 - .NET Framework 3.0 - .NET Framework 3.5 - .NET Framework 3.5 Client Profile Error message Unable to find the requested .Net Framework Data Provider. It may not be installed. [Environment] The following operating system is used: - Windows

			[Conditions] 1. Npgsql.dll is registered in GAC using one of the methods below, and 1.1 FUJITSU Enterprise Postgres 9.5 is installed, or 1.2 The pgx_NpgsqlRegister command is executed. 2. Version 3.5 or earlier is specified as the target framework of a Visual C# project, and 3. In the project in 2, "FUJITSU.Npgsql" is specified for the providerInvariantName argument in the GetFactory method of the DbProviderFactories class, and an instance of the DbProviderFactory class is obtained, and 4. In the project created in 2, the instance obtained in 3 is used to create and run an application that performs database connections.
4		PH12818	[Issue] If PreloadReader=True is specified for a connection string in a product based on Npgsql 2.1.x or later, the value of the HasRows property is always false even if data exists. [Environment] The following operating system is used: - Windows [Conditions] 1. PreloadReader=True is specified for a connection string in .NET Data Provider, and a Connection instance is created, and 2. The Connection instance created in 1 and a SELECT statement, for which the result set is not empty, are specified and a Command instance is created, and 3. A DataReader instance is created from the Command instance created in 2, and 4. The value of the HasRows property of the DataReader instance created in 3 is obtained.
5		PH13223	[Issue] When a multi-version installation is performed on a Windows client, execution of the pgx_NpgsqlRegister command is completed successfully, however, the .NET Data Provider feature is not registered correctly. As a result, .NET applications of the version that was running previously will not operate. [Environment] The following operating system is used: - Windows [Conditions] 1. A multi-version installation is performed on a Windows client, and 2. The pgx_NpgsqlRegister command is executed to register the .NET Data Provider feature, and 3. A .NET application using the DbProviderFactories class that was running on the installed version is executed.
6		PH13243	[Issue 1] If the pg_upgrade command is executed for an instance that includes a tablespace with transparent data encryption specified, the following error is output, and the upgrade fails. ERROR: tablespace encryption algorithm option cannot be changed [Issue 2] If the pg_dumpall command is executed to back up an instance that includes a tablespace with transparent data encryption specified, and the psql command or pg_restore command is executed to perform a restore, the following error is output, and the restore fails.

			ERROR: tablespace encryption algorithm option cannot be changed
			[Environment]
			One of the following operating systems is used:
			- Linux
			- Windows
			[Conditions for issue 1]
			1. A tablespace with transparent data encryption specified has been defined in an old version targeted for an upgrade, and
			2. The pg_upgrade command is executed to perform an upgrade for 1.
			[Conditions for issue 2]
			1. A tablespace with transparent data encryption specified has been defined in an old version targeted for an upgrade, and
			2. The pg_dumpall command is executed to perform a backup for the tablespace with transparent data encryption specified in 1, and
			3. After the upgrade, the psql command or pg_restore command is executed to perform a restore, using the backup data obtained in 2.
7		PH13328	[Issue] A masking policy definition for an array type or timestamp with timezone type, is mistakenly completed successfully when it is supposed to end abnormally. As a result, an error is output when accessing a column of a table where a policy is defined. [Environment] One of the following operating systems is used: - Linux - Windows [Conditions] 1. A masking policy is created for an array type or timestamp with timezone type column using the pgx_create_confidential_policy system administration function.
8		PH13361	[Issue 1] When PL/Python is installed for a database, the error message below is output, and installation fails. ERROR: could not load library "*fujitsuEnterprisePostgresInstallDir*/lib/plpython2.so": libpython2.6.so.1.0: cannot open shared object file: No such file or directory [Issue 2] When PL/Perl is installed for a database, the error message below is output, and installation fails. ERROR: could not load library "*fujitsuEnterprisePostgresInstallDir*/lib/plperl.so": *fujitsuEnterprisePostgresInstallDir*/lib/plperl.so: undefined symbol: Perl_Iincgv_ptr [Environment] The following operating system is used: - Linux [Conditions for issue 2] 1. FUJITSU Enterprise Postgres is used in an RHEL7.0 or later environment, and 2. One of the following commands is executed to install PL/Python:

				- CREATE EXTENSION plpythonu
				- CREATE LANGUAGE plpythonu
				[Conditions for issue 2]
				1. FUJITSU Enterprise Postgres is used in an RHEL7.0 or later environment, and
				2. One of the following commands is executed to install PL/Perl:
				- CREATE EXTENSION plperl
				- CREATE LANGUAGE plperl

- CREATE EXTENSION plpythonu

- CREATE LANGUAGE plpythonu

Index