

Fujitsu Enterprise Postgres 18  
for x86

# **Installation and Setup Guide for Server Assistant**

Windows/Linux

# Preface

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## Purpose of this document

This document describes how to install and uninstall the Fujitsu Enterprise Postgres Server Assistant.

## Intended readers

This document is intended for those who install and operate Fujitsu Enterprise Postgres.

Readers of this document are assumed to have general knowledge of:

**L**

- PostgreSQL

- SQL

- Linux

**W**

- PostgreSQL

- SQL

- Windows

## Structure of this document

This document is structured as follows:

### [Chapter 1 Overview of Installation](#)

Describes the features that can be installed, and provides an overview of installation methods

### [Chapter 2 Installation and Uninstallation of the Linux Server Assistant](#)

Describes how to install and uninstall the Linux Server Assistant

### [Chapter 3 Installation and Uninstallation of the Windows Server Assistant](#)

Describes how to install and uninstall the Windows Server Assistant

### [Chapter 4 Setup of the Server Assistant](#)

Describes the setup to be performed after installation

### [Appendix A Estimating Memory Requirements](#)

Describes the formulas for estimating memory requirements

### [Appendix B Collecting Failure Investigation Data](#)

Explains how to collect data for initial investigation.

### [Appendix C Installation and Uninstallation of the Linux Server Assistant \(Compatibility\)](#)

Describes how to install (interactive mode/silent mode) the Fujitsu Enterprise Postgres server assistant feature.

## Export restrictions

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# Chapter 1 Overview of Installation

This chapter provides an overview of Fujitsu Enterprise Postgres Server Assistant installation and uninstallation.

## 1.1 Features that can be Installed

The Server Assistant is installed on a different server (referred to as the arbitration server) to that of the database server.

The following table shows the relationship between the platforms and the features provided.

Platform	Server Assistant
Linux	Y
Windows	Y

Y: Can be installed

# Chapter 2 Installation and Uninstallation of the Linux Server Assistant

This chapter explains how to install and uninstall the Linux Server Assistant.

## 2.1 Operating Environment

This section describes the operating environment required in order to use the Linux Server Assistant.

### 2.1.1 Required Operating System

One of the following operating systems is required in order to use the Linux Server Assistant:

- RHEL8.6 or later minor version
- RHEL9.2 or later minor version
- SLES 15 SP4 or later minor version

#### 2.1.1.1 Packages Required for RHEL8

The following packages are required for operations on RHEL8.

Package name	Remarks
glibc	-
iputils	Required for Mirroring Controller.
libgcc	-
libstdc++	-
ncurses-libs	-
nss-softokn-freebl	-
rsync	Required when using Pgpool-II.
unzip	-
xz-libs	-
zlib	-

#### 2.1.1.2 Packages Required for RHEL9

The following packages are required for operations on RHEL9.

Package name	Remarks
glibc	-
iputils	Required when using Mirroring Controller.
libgcc	-
libstdc++	-
ncurses-libs	-
nss-softokn-freebl	-
rsync	Required to use Pgpool-II.
unzip	-
xz-libs	-

Package name	Remarks
zlib	-

### 2.1.1.3 Packages Required for SLES 15

The following packages are required for operations on SLES 15.

Package name	Remarks
gdb	-
glibc	-
glibc-32bit	-
iputils	Required for Mirroring Controller.
JRE 8	The following JREs are available: <ul style="list-style-type: none"> <li>- Oracle JRE Use the 64-bit version.</li> <li>- OpenJDK Past the Java TCK (Technology Compatibility Kit)</li> </ul>
libfreebl3	-
libgcc	-
libltdl7	-
liblzma5	-
libncurses5	-
libstdc++6	-
libz1	-
rsync	Required when using Pgpool-II.
sysstat	Set up the sar command after installation.
unzip	-

### 2.1.2 Related Software

---

No other software is required in order to use Fujitsu Enterprise Postgres.

The following table lists servers that can be connected to the Linux Server Assistant.

Table 2.1 Connectable servers

OS	Software name
Linux	Fujitsu Enterprise Postgres Advanced Edition 18
Windows	Fujitsu Enterprise Postgres Advanced Edition 18

### 2.1.3 Excluded Software

---

There is no excluded software.

### 2.1.4 Required Patches

---

There are no required patches.

## 2.1.5 Hardware Environment

---

The following hardware is required in order to use the Linux Server Assistant:

### Memory

At least 150 MB of memory is required.

### Mandatory hardware

None.

## 2.1.6 Disk Space Required for Installation

---

The following table lists the disk space requirements of the corresponding directories for new installation of the Linux Server Assistant. If necessary, increase the size of the file system.

Disk space required for installation

Table 2.2 RHEL

Directory	Required disk space Unit: MB
/etc	1
/var	1
<i>serverAssistantInstallDir</i>	290

Table 2.3 SLES

Directory	Required disk space Unit: MB
/etc	1
/var	1
<i>serverAssistantInstallDir</i>	10

## 2.1.7 Supported System Environment

---

This section describes the supported system environment.

### TCP/IP Protocol

Fujitsu Enterprise Postgres supports version 4 and 6 (IPv4 and IPv6) of TCP/IP protocols.

Do not use link-local addresses if TCP/IP protocol version 6 addresses are used.

## 2.2 Installation

---

This section describes how to install the Linux Server Assistant.



### Note

.....  
If you have antivirus software installed, the server may crash, fail to start, or stop responding, during installation or when starting up after installation. Set scan exception settings for the installation directory and resource allocation directory so that the files in these directories are not scanned for viruses.  
.....

### 2.2.1 Pre-installation Tasks

---

Check the following system environment before installing the Linux Server Assistant.

## Check the disk space

Ensure that there is sufficient disk space to install the Linux Server Assistant.

Refer to "[2.1.6 Disk Space Required for Installation](#)" for information on disk space requirements.

If sufficient free disk space is unavailable, reconfigure disk partitions.

## Executable Users

Installation and uninstallation is performed by superuser.

On the system, run the following command to become superuser.

```
$ su -  
Password:*****
```

## 2.2.2 Installation from RPM Package

The installation procedure is described below.

### 1. Stop the program

Reinstallation requires stopping applications and programs.

Before starting the installation, stop the following:

- Mirroring Controller arbitration process

Execute the mc\_arb command in stop mode to stop the Mirroring Controller arbitration process.

Example

```
$ mc_arb stop -M /mcarb_dir/arbiter1
```

### 2. Mount the DVD drive

Insert the Server Assistant program DVD into the DVD drive, and then execute the following command:

Example

```
# mount -t iso9660 -r -o loop /dev/dvd /media/dvd
```

Here /dev/dvd is the device name for the DVD drive (which may vary depending on your environment), and /media/dvd is the mount point (which may need to be created before calling the command).

### 3. Run the installation

The RPM packages required to install each product are stored under the mount point where you mounted the DVD.

The following shows a list of packages and the path of the storage directory.

Install all packages for the product you are installing.

Product name	Package storage directory	Package name
Server Assistant	ASSISTANT/Linux/packages/<os>	FJSVfsep-assistant-*.rpm

<os> is the OS of the operating environment. Depending on your system requirements, refer to RHEL8, RHEL9, or SLES15.

\*is the detailed name of the package, version, OS, etc.

The default installation directory names are:

To specify a path different from the default installation directory, you can use the following characters:

[a-zA-Z0-9], -, and /

Product name	Installation directory name (default)
Server Assistant	/opt/fsepv<x>assistant

"<x>" is the product version.



We recommend that you install the packages for each product in a batch.

You can use "\*" to specify a package name, or you can install all packages in a batch by specifying all package names side by side.

#### Example

To install the server assistant product in a RHEL8 environment, run the following command:

```
# cd /media/dvd/ASSISTANT/Linux/packages/RHEL8
# rpm -ivh FJSVfsep-assistant-*.rpm
```

Use --prefix to specify a path different from the default installation directory.

## 4. Check the installed product

Check the installed products by following the procedure below.

#### Example

Displays the name of the installed package.

```
# rpm -qa | grep FJSVfsep
```

For detailed package information, run the following command:

```
# rpm -qi package name
```

#### Example

In the path, "<x>" and "<x0z>" refer to the x and z of x SPz, which is expressed as the product version. For products without SPz, <x0z> is <x00>.

```
# rpm -qi FJSVfsep-assistant-essential-<x>-<x0z>-0.el8.x86_64
Name       : FJSVfsep-assistant-essential-<x>
Version    : <x0z>
Release    : 0.el8
Architecture: x86_64
Install Date: ddd MMM DD hh:mm:ss YYYY
Group      : Applications/Databases
Size       : XXX
License    : Fujitsu Limited
Signature  : (none)
Source RPM : FJSVfsep-assistant-essential-<x>-<x0z>-0.el8.src.rpm
Build Date : ddd MMM DD hh:mm:ss YYYY
Build Host : XXXXXXXXXX
Relocations : /opt/fsepv<x>assistant
Packager   : Fujitsu Limited
Vendor     : Fujitsu Limited
URL        : https://www.fujitsu.com
Summary    : Fujitsu Enterprise Postgres Server Assistant <x>
```

Description : Fujitsu Enterprise Postgres Server Assistant Essential Package
---------------------------------------------------------------------------------

## 2.3 Uninstallation

---

This section describes how to uninstall the Linux Server Assistant.



### Information

.....

If you installed interactive mode/silent mode, uninstall interactive mode/silent mode. Refer to "[C.3 Uninstallation](#)" for more information.

.....

### 2.3.1 Uninstallation RPM Packages

---

The uninstallation procedure is described below.

#### 1. Stop the program

Before starting the uninstallation, stop the following:

- Mirroring Controller arbitration process

Execute the mc\_arb command in stop mode to stop the Mirroring Controller arbitration process.

Example

```
$ mc_arb stop -M /mcarb_dir/arbiter1
```

#### 2. Check the installed product

Check the installed products by following the procedure below.

Example

Displays the name of the installed package.

```
# rpm -qa | grep FJSVfsep
```

For detailed package information, run the following command:

```
# rpm -qi Package Name
```

#### 3. Start the uninstaller

Uninstall all packages for the product to be uninstalled.

Refer to the table in "[2.2.2 Installation from RPM Package](#)" for the package set for each product.

The installation directory may remain after uninstallation. Delete them if they are not needed.

```
# rpm -e package name
```



### Point

.....

We recommend that you uninstall the packages of the products to be uninstalled in batches for each product.

.....

Example

The following shows an example of uninstalling a server assistant product.

```
# rpm -qa | grep FJSVfsep-assistant
FJSVfsep-assistant-essential-*
FJSVfsep-assistant-core-*
FJSVfsep-assistant-openjdk-*
# rpm -e FJSVfsep-assistant-openjdk-<x> FJSVfsep-assistant-core-<x> FJSVfsep-assistant-essential-<x>
```

\*is the version, OS, and so on.

"<x>" indicates the version.

# Chapter 3 Installation and Uninstallation of the Windows Server Assistant

This chapter explains how to install and uninstall the Windows Server Assistant.

## 3.1 Operating Environment

This section describes the operating environment required in order to use the Windows Server Assistant.

### 3.1.1 Required Operating System

One of the following operating systems is required in order to use the Windows Server Assistant:

Table 3.1 Operating systems

Operating system name
- Microsoft(R) Windows Server(R) 2016 Datacenter
- Microsoft(R) Windows Server(R) 2016 Standard
- Microsoft(R) Windows Server(R) 2016 Essentials
- Microsoft(R) Windows Server(R) 2019 Datacenter
- Microsoft(R) Windows Server(R) 2019 Standard
- Microsoft(R) Windows Server(R) 2019 Essentials
- Microsoft(R) Windows Server(R) 2022 Datacenter
- Microsoft(R) Windows Server(R) 2022 Standard
- Microsoft(R) Windows Server(R) 2022 Essentials
- Microsoft(R) Windows Server(R) 2025 Datacenter
- Microsoft(R) Windows Server(R) 2025 Standard
- Microsoft(R) Windows Server(R) 2025 Essentials

The following features of Windows Server(R) 2016, Windows Server(R) 2019, Windows Server(R) 2022 and Windows Server(R) 2025 are not supported:

- Server Core
- Nano Server
- Windows Server Container

### 3.1.2 Related Software

There is no software related to Fujitsu Enterprise Postgres.



#### Note

The following programs are installed during installation of Fujitsu Enterprise Postgres. Do not uninstall it because it is required for Fujitsu Enterprise Postgres to work.

- Microsoft Visual C++ 2015-2022 Redistributable version 14.44.35211.0

The following table lists servers that can be connected to the Windows Server Assistant.

Table 3.2 Connectable servers

OS	Software name
Linux	Fujitsu Enterprise Postgres Advanced Edition 18
Windows	Fujitsu Enterprise Postgres Advanced Edition 18

### 3.1.3 Excluded Software

---

There is no excluded software.

### 3.1.4 Required Patches

---

There are no required patches.

### 3.1.5 Hardware Environment

---

The following hardware is required in order to use the Windows Server Assistant:

#### Memory

At least 256 MB of memory is required.

#### Mandatory hardware

None.

### 3.1.6 Disk Space Required for Installation

---

The disk space shown below is required for new installation of the Windows Server Assistant.

Windows Server Assistant installation destination:

440 MB

Windows system drive:

350 MB

### 3.1.7 Supported System Environment

---

This section describes the supported system environment.

#### TCP/IP protocol

Fujitsu Enterprise Postgres supports version 4 and 6 (IPv4 and IPv6) of TCP/IP protocols.

Do not use link-local addresses if TCP/IP protocol version 6 addresses are used.

#### File system

You can install Fujitsu Enterprise Postgres only if the system folder is an NTFS volume.

## 3.2 Installation

---

This section describes how to install the Windows Server Assistant.



#### Note

.....

If antivirus software is installed, the system may crash, fail to start, or stop responding during installation or when starting after installation. Set the scan exclusions so that the installation directory and the resource allocation directory are not scanned for viruses.

.....

## 3.2.1 Pre-installation Tasks

---

This section describes the tasks to be performed before installing the Windows Server Assistant.

### Check the disk space

Ensure that there is sufficient disk space to install the Windows Server Assistant.

Refer to "[3.1.6 Disk Space Required for Installation](#)" for information on disk space requirements.

### hosts file settings

Using an editor, add the IP address and name of the server to be connected to the \System32\drivers\etc\hosts file in the folder where Windows is installed.

### Check the installed product and determine the installation method

In [Start] menu, click [All apps], then [Fujitsu], and then [Uninstall (middleware)]. In the displayed window, check the installed products.

If the Windows Server Assistant is already installed, determine the installation method to use:

- Reinstallation
- Multi-version installation

The shortcuts displayed on the [Start] menu might be arranged differently depending on the operating system.

### Remove applied updates(For Reinstallation)

Use the following procedure to remove applied fixes.

If you install the product without removing the fix, you will apply the same version of the fix with the same fix number, resulting in an error that has already been applied. Remove the fix and then reinstall.

#### 1. Display the applied updates

Execute the following command to display the applied updates:

```
C:\>uam showup
```

#### 2. Remove the updates

Execute the command below to remove the updates. If an update with the same update number was applied more than once, the updates are removed in order, starting from the highest version number.

```
C:\>uam remove -i update-number
```

### Confirm service

The Windows Installer service must be running.

## 3.2.2 Pre-installation Considerations

---

- The remote desktop service is installed in application server mode, it is necessary to switch to install mode by executing the command shown below before installation. Also, after the installation is completed, execute the command shown below to switch back to execute mode.

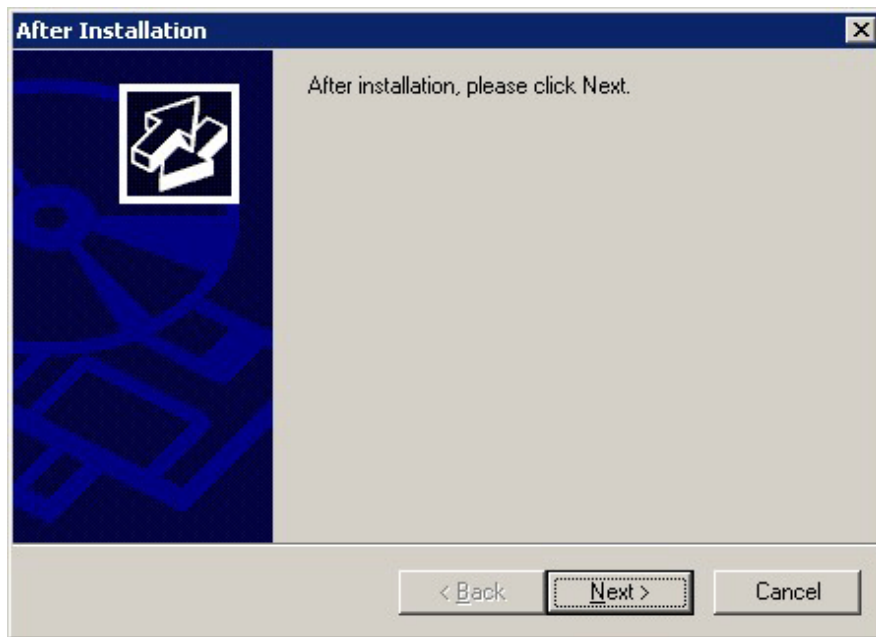
[Before the installation]

```
CHANGE USER /INSTALL
```

[After the installation]

```
CHANGE USER /EXECUTE
```

- The following window may be displayed when executing the installation program:



If this window is displayed, perform the following operations:

1. Perform the installation steps until the [InstallShield Wizard Complete] window is displayed.
2. At the window shown above, click [Next].
3. The window shown below is displayed. Click [Finish].



### Information

- If a [User Account Control] dialog box is displayed at the start of the installation, click [Yes] to continue processing:  
If [No] is clicked, permission to continue is denied and an [Error] dialog box will be displayed.  
To continue the installation, click [Retry] at the [Error] dialog box. To end the installation, click [Cancel].

- If installation is suspended or processing terminates abnormally, the [Program Compatibility Assistant] dialog box may be displayed. Click [This program installed correctly] and continue operation.

### 3.2.3 Installation in Interactive Mode

The installation procedure is described below.

The installation must be performed by a user with administrator privileges (a user ID that belongs to the Administrators group).



In interactive mode installation, the default values of the installation information are set. The following setting can be changed for a new installation or a multi-version installation.

- Installation folder

#### 1. Stop the program

Reinstallation requires stopping applications and programs.

Before starting the installation, stop the following:

- Mirroring Controller arbitration process

Execute the mc\_arb command in stop mode to stop the Mirroring Controller arbitration process.

Example

```
> mc_arb stop -M D:\mcarb_dir\arbiter1
```

#### 2. Insert the DVD

Insert the Server Assistant program DVD into the DVD drive.

#### 3. Run the installation

The installation menu is displayed. Click [Installation].

#### 4. Select the product to install

The [Installation product] window is displayed.

Select the product to install, and then click [Next].

If a selected product can only be reinstalled, refer to "[6. Check the settings](#)".

#### 5. Confirm the contents for installation

The [Confirm installation] window will be displayed.

Click [Next] to start the installation.

To modify the settings, select [Modify], and then click [Next]. Follow the on-screen instructions.

#### 6. Check the settings

The [Confirm installation] window will be displayed. Click [Install] to start the installation.

To modify the settings again, click [Back].

#### 7. Completion of installation

The completion window is displayed. Click [Finish].

## 3.2.4 Installation in Silent Mode

---

Installation in silent mode can be performed only when the installation method is one of the following:

- New installation
- Multi-version installation



Refer to the Fujitsu Enterprise Postgres product website for information on installation in silent mode, such as the installation parameters and error messages.

The installation procedure is described below.

The installation must be performed by a user with administrator privileges (a user ID that belongs to the Administrators group).

### 1. Insert the DVD

Insert the Server Assistant program DVD into the DVD drive.

The [Install Menu] window is displayed. Click [Finish].

### 2. Create an installation parameters CSV file

Create an installation parameters CSV file that uses the following specification format.

```
sectionName, parameterName, value
sectionName, parameterName, value
:
```



The template for the installation parameters CSV file is "Z:\sample\sample.csv (Z is the drive into which the DVD is inserted.).

### 3. Start the command prompt

In Windows, right-click [Command Prompt] and then select [Run as administrator].

### 4. Run the installation

Execute the following command:

```
Z:\>silent.bat c:\temp\inspara.csv
```

Z: The drive into which the DVD is inserted.

c:\temp\inspara.csv: The installation parameter CSV file name.

If the silent installer ends in an error, a message is output to the log file and return values are returned.

## 3.3 Uninstallation

---

This section describes how to uninstall the Windows Server Assistant.

## Information

- If a [User Account Control] dialog box such as the following is displayed at the start of the uninstallation, click [Yes] to continue processing:  
  
If [No] is clicked, permission to continue is denied and an [Error] dialog box will be displayed.  
To continue the uninstallation, click [Retry] in the [Error] dialog box. To end the operation, click [Cancel].
- If uninstallation is suspended or processing terminates abnormally, a dialog box of the Program Compatibility Assistant similar to the one shown below may be displayed. Click [This program uninstalled correctly] and continue operation.

### 3.3.1 Uninstallation in Interactive Mode

The uninstallation procedure is described below.

Log in using an account that has administrator privileges and then execute the command, or switch to an account that has administrator privileges and then uninstall the product.

If an error occurs while the product is being uninstalled, refer to "Uninstall (middleware) Messages" in the Fujitsu Enterprise Postgres product website, and take the required action.

#### 1. Stop the program

Before starting the uninstallation, stop the following:

Mirroring Controller arbitration process

1. Execute the mc\_arb command in stop mode to stop the Mirroring Controller arbitration process.

Example

```
> mc_arb stop -M D:\mcarb_dir\arbiter1
```

2. Unregister the Mirroring Controller arbitration process from the Windows service.

Execute the mc\_arb command in unregister mode to unregister the Mirroring Controller arbitration process from the Windows service.

Example

```
> mc_arb unregister -M D:\mcarb_dir\arbiter1
```

3. Delete registrations related to the event log.

If messages are output to the event log, DLLs are registered in accordance with "Preparatory Tasks for the Output of Error Logs to the Event Log (Windows)" in the Cluster Operation Guide (Database Multiplexing). Delete these registrations so that no unnecessary issues occur.

Ensure that you delete the DLLs before the uninstallation. If you perform the uninstallation without doing so, you may not be able to delete the DLLs at a later time.

- Delete registration for the default event source name

Example)

The example below deletes a DLL of a 64-bit product registered under the default event source name. "<x>" indicates the product version.

```
> regsvr32 /u "c:\Program Files\Fujitsu\fssepv<x>assistant64\lib\mcarbevent.dll"
```

- Delete registration for other event source names

DLL registration is performed so that messages output to the event log are output to any event source named by the user.

Accordingly, it is necessary to delete the DLL registration. Do this for any event source name.

Example)

The example below deletes a DLL of a 64-bit product registered under the event source name "Mirroring Controller arbiter1". "<x>" indicates the product version.

```
> regsvr32 /u /i:"Mirroring Controller arbiter1" "c:\Program Files\Fujitsu\nfsepv<x>assistant64\lib\mcarbevent.dll"
```

- If installing multiple versions

If error logs are set to be output to the event log, use the DLL path name that you took note of previously as explained in "Preparatory Tasks for the Output of Error Logs to the Event Log (Windows)" in the Cluster Operation Guide (Database Multiplexing) to reregister the default event source name.

## 2. Start Uninstall (middleware)

In [Start] menu, click [All apps], then [Fujitsu], and then [Uninstall (middleware)].

The shortcuts displayed on the [Start] menu might be arranged differently depending on the operating system.

## 3. Select the software

Select the product to be uninstalled from [Software Name], and then click [Remove].

## 4. Start the uninstallation

Click [Uninstall].

## 5. Finish the uninstallation

The uninstallation completion window will be displayed. Click [Finish].

The installation folder may remain after uninstallation. If it is not required, delete it.

## 6. Stop Uninstall (middleware)

Click [Close].

## 3.3.2 Uninstallation in Silent Mode

---

The uninstallation procedure is described below.

Log in using an account that has administrator privileges and then execute the command, or switch to an account that has administrator privileges and then uninstall the product.

Refer to the Fujitsu Enterprise Postgres product website for information on uninstallation in silent mode, such as the error messages.

### 1. Stop the program

Before starting the uninstallation, stop the following:

Mirroring Controller arbitration process

1. Execute the mc\_arb command in stop mode to stop the Mirroring Controller arbitration process.

Example

```
> mc_arb stop -M D:\mcarb_dir\arbiter1
```

2. Unregister the Mirroring Controller arbitration process from the Windows service.

Execute the mc\_arb command in unregister mode to unregister the Mirroring Controller arbitration process from the Windows service.

Example

```
> mc_arb unregister -M D:\mcarb_dir\arbiter1
```

### 3. Delete registrations related to the event log.

If messages are output to the event log, DLLs are registered in accordance with "Preparatory Tasks for the Output of Error Logs to the Event Log (Windows)" in the Cluster Operation Guide (Database Multiplexing). Delete these registrations so that no unnecessary issues occur.

Ensure that you delete the DLLs before the uninstallation. If you perform the uninstallation without doing so, you may not be able to delete the DLLs at a later time.

- Delete registration for the default event source name

Example)

The example below deletes a DLL of a 64-bit product registered under the default event source name. "<x>" indicates the product version.

```
> regsvr32 /u "c:\Program Files\Fujitsu\fssepv<x>assistant64\lib\mcarbevent.dll"
```

- Delete registration for other event source names

DLL registration is performed so that messages output to the event log are output to any event source named by the user.

Accordingly, it is necessary to delete the DLL registration. Do this for any event source name.

Example)

The example below deletes a DLL of a 64-bit product registered under the event source name "Mirroring Controller arbiter1". "<x>" indicates the product version.

```
> regsvr32 /u /i:"Mirroring Controller arbiter1" "c:\Program Files\Fujitsu\fssepv<x>assistant64\lib\mcarbevent.dll"
```

- If installing multiple versions

If error logs are set to be output to the event log, use the DLL path name that you took note of previously as explained in "Preparatory Tasks for the Output of Error Logs to the Event Log (Windows)" in the Cluster Operation Guide (Database Multiplexing) to reregister the default event source name.

## 2. Start the command prompt

In Windows, right-click [Command Prompt] and then select [Run as administrator].

## 3. Run the uninstallation

Execute the following command:

The installation folder may remain after uninstallation. If it is not required, delete it.

Example

```
X:> installFolder\suninst.bat
```

X: Drive on which the product is installed

## Chapter 4 Setup of the Server Assistant

The Server Assistant is a feature that is installed and used on the arbitration server, so its setup is performed as the arbitration server setup.



See

.....  
Refer to "Setting Up Database Multiplexing Mode" in the Cluster Operation Guide (Database Multiplexing) for information on setting up and operating the Mirroring Controller arbitration server.  
.....

# Appendix A Estimating Memory Requirements

This appendix explains how to estimate the memory.

## A.1 Server Assistant Memory Requirements

This section describes the formula for estimating memory requirements for the Server Assistant.

Use the following formula to obtain a rough estimate of memory requirements:

```
Memory usage of the Server Assistant
= Peak memory usage of the Mirroring Controller arbitration
processes
+ Peak memory usage of the Mirroring Controller commands

Peak memory usage of the Mirroring Controller arbitration processes=100 MB

Peak memory usage of the Mirroring Controller commands=50 MB * Number of commands executed
simultaneously
```

## Appendix B Collecting Failure Investigation Data

If the cause of an error that occurs while building the environment or during operations is unclear, data must be collected for initial investigation.

This subsection describes how to collect information for the initial investigation on the arbitration server for multiplexed database operation.

- Linux

Use the `pgx_fjqssinf` command to collect data for initial investigation.

- Windows

Use FJQSS (Information Collection Tool) to collect data for initial investigation. However, if you are asked by a Fujitsu technical support representative to collect investigation information, use the `pgx_fjqssinf.bat` command to collect the information.



See

- Linux

- Refer to "`pgx_fjqssinf`" in the Reference for informations about the `pgx_fjqssinf` command.

- Windows

- Refer to the following manual for information on how to use FJQSS.

- In the [Apps] menu, select [FJQSS (Information Collection Tool)], and then click [FJQSS User's Guide].

- Refer to "`pgx_fjqssinf`" in the Reference for informations about the `pgx_fjqssinf.bat` command.

- For details about how to collect database server information, refer to "Collecting Failure Investigation Data" in the Installation and Setup Guide for Server.

### Setting environment variables

- Windows

When using FJQSS to collect data for initial investigation, a window will be displayed for you to set the following environment variables. When using the `pgx_fjqssinf.bat` command, set the following environment variables in advance:

- ARBCTRLDIR

Set the Mirroring Controller arbitration process management directory.

For details about the Mirroring Controller arbitration server management directory, refer to "Mirroring Controller Resources" in the Cluster Operation Guide (Database Multiplexing).

# Appendix C Installation and Uninstallation of the Linux Server Assistant (Compatibility)

This chapter explains how to install and uninstall (interactive mode/silent mode) the Linux Server Assistant.

## C.1 Operating Environment

This section describes the operating environment required in order to use the Linux Server Assistant.

### C.1.1 Packages Required for RHEL8

In addition to the "[2.1.1.1 Packages Required for RHEL8](#)", you need:

Package name	Remarks
gdb	Required to run FJQSS.
glibc.i686	Required by installer.
redhat-lsb	Required by installer.
sudo	Required by installer.
sysstat	Required when using FJQSS. Set up the sar command after installation.

### C.1.2 Packages Required for RHEL9

In addition to the "[2.1.1.2 Packages Required for RHEL9](#)", you need:

Package name	Remarks
gdb	Required to run FJQSS.
glibc.i686	Required by installer.
sudo	Required by installer.
sysstat	Required if using FJQSS. Set up the sar command after installation.

### C.1.3 Packages Required for SLES 15

In addition to the "[2.1.1.3 Packages Required for SLES 15](#)", you need:

Package name	Remarks
libstdc++6-32bit	Required for silent installation.
sudo	Required by installer.

### C.1.4 Disk Space Required for Installation

The following table lists the disk space requirements of the corresponding directories for new installation of the Linux Server Assistant. If necessary, increase the size of the file system.

Disk space required for installation

Table C.1 RHEL

Directory	Required disk space Unit: MB
/etc	1 + 1 (*1)
/var	1 + 2 (*1) + 1 (*2)
/opt	300 (*1) + 1 (*2)
<i>serverAssistantInstallDir</i>	410

\*1: Uninstall (middleware) must be installed.

\*2: Required for the installation of FJQSS.

Table C.2 SLES

Directory	Required disk space Unit: MB
/etc	1 + 1 (*1)
/var	1 + 2 (*1)
/opt	10 (*1)
<i>serverAssistantInstallDir</i>	10

\*1: Uninstall (middleware) must be installed.

## C.2 Installation

This section describes how to install the Linux Server Assistant.



### Note

If you have antivirus software installed, the server may crash, fail to start, or stop responding, during installation or when starting up after installation. Set scan exception settings for the installation directory and resource allocation directory so that the files in these directories are not scanned for viruses.

### C.2.1 Pre-installation Tasks

Check the following system environment before installing the Linux Server Assistant.

#### Check the disk space

Ensure that there is sufficient disk space to install the Linux Server Assistant.

Refer to "[C.1.4 Disk Space Required for Installation](#)" for information on disk space requirements.

If sufficient free disk space is unavailable, reconfigure disk partitions.

#### Set JAVA\_HOME (SLES only)

Ensure that JRE 8 is installed, and export the JAVA\_HOME environment variable.

```
#export JAVA_HOME="Jre8InstallDir"
```

#### Executable Users

Installation and uninstallation is performed by superuser.

On the system, run the following command to become superuser.

```
$ su -  
Password:*****
```

## Check the installed product and determine the installation method

Using the operation shown below, start Uninstall (middleware), and check the installed products.

Example

```
# /opt/FJSVcir/cimanager.sh -c  
Loading Uninstaller...  
  
Currently installed products  
1. productName  
  
Type [number] to select the software you want to uninstall.  
[number,q]  
=>q  
  
Exiting Uninstaller.
```

If the Linux Server Assistant is already installed, determine the installation method to use:

- Reinstallation
- Multi-version installation

## Remove applied updates(For Reinstallation)

Use the following procedure to remove applied fixes.

If you install the product without removing the fix, you will apply the same version of the fix with the same fix number, resulting in an error that has already been applied. Remove the fix and then reinstall.

### 1. Checking the environment variable LD\_LIBRARY\_PATH

If the installation directory/lib is set in the environment variable LD\_LIBRARY\_PATH for the running user, remove the installation directory/lib from LD\_LIBRARY\_PATH.

### 2. Display the applied updates

Execute the following command to display the applied updates:

```
# /opt/FJSVfupde/bin/uam showup
```

### 3. Remove the updates

Execute the command below to remove the updates. If an update with the same update number was applied more than once, the updates are removed in order, starting from the highest version number.

```
# /opt/FJSVfupde/bin/uam remove -i update-number
```

## C.2.2 Installation in Interactive Mode

The installation procedure is described below.



Point

- The following characters can be used as input values:

Alphanumeric characters, hyphens and forward slashes

- In interactive mode installation, the default values of the installation information are set. The following setting can be changed for a new installation or a multi-version installation.
- Installation directory

## 1. Stop the program

- Reinstallation requires stopping applications and programs

Before starting the installation, stop the following:

- Mirroring Controller arbitration process

Execute the `mc_arb` command in stop mode to stop the Mirroring Controller arbitration process.

Example

```
$ mc_arb stop -M /mcarb_dir/arbiter1
```

## 2. Mount the DVD drive

Insert the Server Assistant program DVD into the DVD drive, and then execute the following command:

Example

```
# mount -t iso9660 -r -o loop /dev/dvd /media/dvd
```

Here `/dev/dvd` is the device name for the DVD drive (which may vary depending on your environment), and `/media/dvd` is the mount point (which may need to be created before calling the command).

If the DVD was mounted automatically using the automatic mount daemon (autofs), "noexec" is set as the mount option, so the installer may fail to start. In this case, use the mount command to remount the DVD correctly, and then run the installation. Note that the mount options of a mounted DVD can be checked by executing the mount command without any arguments.

## 3. Run the installation

Execute the following command:

Example

```
# cd /media/dvd
# ./install.sh
```

In the example above, `/media/dvd` is the DVD mount point.

## 4. Select the product to install

The list of installation target products is displayed.

Type the number for the product to be installed, or "all", and press Enter.



### Information

If the selected product has been installed, a window for selecting reinstallation or multi-version installation is displayed for each product. Follow the on-screen instructions to select the installation method.

## 5. Check the settings

The window for checking the installation information is displayed.

Type "y" and press Enter to start the installation.

To change the settings, type "c", press Enter, and follow the on-screen instructions. This option is not displayed if there is no information that can be modified.

## 6. Check the changed settings

If the settings have been changed, the new installation information is displayed.  
Type "y" and press Enter to start the installation.  
To change the settings again, type "c" and press Enter.

## 7. Finish the installation

When the installation is complete, a message is displayed showing the status.  
If installation was successful, the following message is displayed:

```
Installed successfully.
```

If an error occurs during the installation, read the error message and remove the cause of the error, and then reexecute the `install.sh` command.

## C.2.3 Installation in Silent Mode

Installation in silent mode can be performed only when the installation method is one of the following:

- New installation
- Multi-version installation



See

Refer to the Fujitsu Enterprise Postgres product website for information on installation in silent mode, such as the installation parameters and error messages.

The installation procedure is described below.

### 1. Mount the DVD drive

Insert the Server Assistant program DVD into the DVD drive, and then execute the following command:

Example

```
# mount -t iso9660 -r -o loop /dev/dvd /media/dvd
```

Here `/dev/dvd` is the device name for the DVD drive (which may vary depending on your environment), and `/media/dvd` is the mount point (which may need to be created before calling the command).

If the DVD was mounted automatically using the automatic mount daemon (`autofs`), "`noexec`" is set as the mount option, so the installer may fail to start. In this case, use the mount command to remount the DVD correctly, and then run the installation. Note that the mount options of a mounted DVD can be checked by executing the mount command without any arguments.

### 2. Create an installation parameters CSV file

Create an installation parameters CSV file that uses the following specification format.

```
sectionName, parameterName, value
sectionName, parameterName, value
:
```



Information

The templates for the installation parameters CSV file is "`mountPoint/sample/sample.csv`"

### 3. Run the installation

Execute the following command:

Example

```
# cd /media/dvd
# ./silent.sh /home/work/inspara.csv
```

In the example above, /media/dvd is the DVD mount point, and /home/work/inspara.csv is the installation parameter CSV.

If the silent installer ends in an error, a message is output to the log file and return values are returned.

## C.3 Uninstallation

---

This section describes how to uninstall the Linux Server Assistant.

### C.3.1 Uninstallation in Interactive Mode

---

The uninstallation procedure is described below.

If an error occurs while the product is being uninstalled, refer to "Uninstall (middleware) Messages" in the Fujitsu Enterprise Postgres product website, and take the required action.

#### 1. Stop the program

Before starting the uninstallation, stop the following:

- Mirroring Controller arbitration process

Execute the mc\_arb command in stop mode to stop the Mirroring Controller arbitration process.

Example

```
$ mc_arb stop -M /mcarb_dir/arbiter1
```

#### 2. Start Uninstall (middleware)

Execute the following command:

```
# /opt/FJSVcir/cimanager.sh -c
```

#### 3. Select the product

Enter the number for the product to be uninstalled, and press Enter.

#### 4. Start the uninstallation

To start the uninstallation, type "y" and press Enter.

To display the list of products again, type "b" and press Enter.

#### 5. Finish the uninstallation

If uninstallation is successful, the message below is displayed.

The installation directory may remain after uninstallation. If it is not required, delete it.

```
Uninstalling...

productName is being uninstalled now.
  100% #####

The following products have been uninstalled successfully:
```

```
productName

Uninstallation of "productName" has completed successfully.

Exiting Uninstaller.
```

## C.3.2 Uninstallation in Silent Mode

The uninstallation procedure is described below.

Refer to the Fujitsu Enterprise Postgres product website for information on uninstallation in silent mode, such as the error messages.

### 1. Stop the program

Before starting the uninstallation, stop the following:

- Mirroring Controller arbitration process

Execute the `mc_arb` command in stop mode to stop the Mirroring Controller arbitration process.

Example

```
$ mc_arb stop -M /mcarb_dir/arbiter1
```

### 2. Run the uninstallation

Execute the following command:

The installation directory may remain after uninstallation. If it is not required, delete it.

Example

```
# /opt/fsepv<x>assistant/setup/suninst.sh
```

In the example above, `/opt/fsepv<x>assistant` is the installation directory, and "`<x>`" indicates the product version.

## C.4 Collecting Failure Investigation Data

If the cause of an error that occurs while building the environment or during operations is unclear, data must be collected for initial investigation.

This subsection describes how to collect information for the initial investigation on the arbitration server for multiplexed database operation.

- RHEL8 and RHEL9

Use FJQSS (Information Collection Tool) to collect data for initial investigation. However, if you are asked by a Fujitsu technical support representative to collect investigation information, use the `pgx_fjqssinf` command to collect the information.

- SLES 15

Use the `pgx_fjqssinf` command to collect data for initial investigation.



See

- Refer to the FJQSS manual for information on how to use FJQSS.
- Refer to "`pgx_fjqssinf`" in the Reference for informations about the `pgx_fjqssinf` command.
- For details about how to collect database server information, refer to "Collecting Failure Investigation Data" in the Installation and Setup Guide for Server.

## Setting environment variables

When using FJQSS to collect data for initial investigation, you must set the following environment variables:

- ARBCTRLDIR

Set the Mirroring Controller arbitration process management directory.

For details about the Mirroring Controller arbitration server management directory, refer to "Mirroring Controller Resources" in the Cluster Operation Guide (Database Multiplexing).

- ARBUSER

Specify the operating system user who started the Mirroring Controller arbitration process.

- FSEP\_SA\_HOME

Set the Server Assistant installation directory.

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