

# FUJITSU Software

## Symfoware Server V12.0.0

A decorative horizontal band with a red-to-dark-red gradient, featuring abstract white and light red curved lines and glowing points.

# Reference

Windows/Linux

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# Preface

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## Purpose of This Document

This document is a command reference, and explains Symfoware Server commands and options with features expanded on from PostgreSQL.

## Intended Readers

This document is aimed at people who manage and operate Symfoware Server. Readers of this document are also assumed to have general knowledge of:

- PostgreSQL
- SQL
- Linux
- Windows

A small blue square icon with a white letter 'L' inside, representing Linux.A small blue square icon with a white letter 'W' inside, representing Windows.

## Structure of This Document

This document is structured as follows:

### [Chapter 1 Command List and Specification Format](#)

Lists commands and describes their specification format.

### [Chapter 2 Client Commands](#)

Explains options not listed in "PostgreSQL Client Applications" in the PostgreSQL Documentation.

### [Chapter 3 Server Commands](#)

Explains commands and options not listed in "PostgreSQL Server Applications" in the PostgreSQL Documentation.

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# Chapter 1 Command List and Specification Format

This chapter lists commands and describes their specification format.

## 1.1 Command List

This chapter lists commands and options not explained in "PostgreSQL Client Applications" or in "PostgreSQL Server Applications" in the PostgreSQL Documentation.

### 1.1.1 Client Commands

The commands below have options not explained in "PostgreSQL Client Applications" in the PostgreSQL Documentation.

Command	Functional overview
<a href="#">pg_dumpall</a>	Extract a PostgreSQL database cluster into a script file

### 1.1.2 Server Commands

The commands below have options not explained in "PostgreSQL Server Applications" in the PostgreSQL Documentation.

Command	Functional overview
<a href="#">pg_ctl</a>	Initialize, start, stop, or control a PostgreSQL server
<a href="#">postgres</a>	PostgreSQL database server

The commands below are not explained in "PostgreSQL Server Applications" in the PostgreSQL Documentation.

Command	Functional overview
<a href="#">pgx_dmpall</a>	Backs up the data directory, tablespaces, and configuration files.
<a href="#">pgx_keystore</a>	Manages keystore
<a href="#">pgx_pclrsc</a>	Register, unregister, or display Symfoware database cluster with PRIMECLUSTER as resource of PRIMECLUSTER.
<a href="#">pgx_rcvall</a>	Recovers the data directory, tablespaces, and configuration files.

## 1.2 Command Specification Format

The table below shows the command specification format.

Item	Explanation
[ ]	Indicates optional element.
...	Indicates that the item can be specified repeatedly.

# Chapter 2 Client Commands

This chapter explains options not listed in "PostgreSQL Client Applications" in the PostgreSQL Documentation.

## 2.1 pg\_dumpall

---

### Name

`pg_dumpall` -- Extract a PostgreSQL database cluster into a script file

### Synopsis

```
pg_dumpall [connectionOption...] [option...]
```

### Options

`--no-tablespace-encryption`

Do not output commands to encrypt tablespaces. Running the generated SQL script will restore the originally encrypted data without being encrypted.

### See

Refer to "pg\_dumpall" in the PostgreSQL Documentation for details.

## Chapter 3 Server Commands

This chapter explains commands and options not listed in "PostgreSQL Server Applications" in the PostgreSQL Documentation.

### 3.1 pg\_ctl

---

#### Name

pg\_ctl -- Initialize, start, stop, or control a PostgreSQL server

#### Synopsis

```
pg_ctl start [-w] [-t seconds] [-s] [-D datadir] [-l filename]
           [-o options] [-p path] [-c] [--keystore-passphrase]
```

```
pg_ctl restart [-w] [-t seconds] [-s] [-D datadir] [-c]
              [-m s[mart] | f[ast] | i[mmediate] ] [-o options] [--keystore-passphrase]
```

#### Options

--keystore-passphrase

Prompt for the passphrase to open the keystore.

#### See

Refer to "pg\_ctl" in the PostgreSQL Documentation for details.

### 3.2 pgx\_dmpall

---

#### Name

pgx\_dmpall - Backs up the data directory, tablespaces, and configuration files.

#### Synopsis

```
pgx_dmpall [option...]
```

#### Description

The pgx\_dmpall command backs up the data directory, tablespaces, and configuration files. The backup data is stored in the directory specified by backup\_destination parameter of postgresql.conf. pgx\_dmpall command also deletes archived Write Ahead Logs (WAL) that are no longer necessary for recovery when the backup completes successfully.

#### Options

-c

This option only backs up configuration files. The configuration files are as follows:

- postgresql.conf (postgresql.conf)
- File for host-based authentication (pg\_hba.conf)
- Configuration file for ident authentication (pg\_ident.conf)

If an external reference, such as 'include' in postgresql.conf, is set, the reference destination files are also backed up.

**-C fast|spread**

**--checkpoint=fast|spread**

Sets checkpoint mode to fast or spread (default).

If fast is specified, the checkpoint processing at the start of backup becomes quick, but the impact on performance of running applications gets larger due to intense I/O. In spread mode, the impact on applications is smaller but the backup takes longer, because the checkpoint is performed slowly.

**-D *datadir***

Specify the data directory. If this option is omitted, the value of the environment variable PGDATA is used.

**-f *configFile***

Specify the postgresql.conf configuration file. This option is set if the data directory and the configuration file set in the 'data\_directory' parameter of the postgresql.conf file are running in separate directories.

**-U *username***

**--username=*username***

Specify the user name of the database superuser. This defaults to the name of the effective user running pgx\_dmpall.

**-w**

**--no-password**

Never issue a password prompt. If the server requires password authentication and a password is not available by other means such as a .pgpass file, the connection attempt will fail. This option can be useful in batch jobs and scripts where no user is present to enter a password.

**-W**

**--password**

Force pgx\_dmpall to prompt for a password before connecting to a database.

This option is never essential, since pgx\_dmpall will automatically prompt for a password if the server demands password authentication. However, pgx\_dmpall will waste a connection attempt finding out that the server wants a password. In some cases it is worth typing -W to avoid the extra connection attempt.

**--maintenance-db=*dbname***

Specifies the name of the database to connect to. If not specified, the postgres database will be used; if that does not exist, template1 will be used.

## Environment

PGDATA

Specify the data directory. You can overwrite using the -D option.

## Diagnostics

0: Normal exit

Other than 0: Abnormal exit

## Notes

This command can only be executed when the database server is running.

Execute this command as a PostgreSQL user account.

Do not update or delete files in the backup storage directory. Otherwise, you may not be able to recover the database.

Do not store other files in the backup storage directory.

This command uses one database connection. To establish a connection, this command uses the IPv4 loopback address 127.0.0.1 on Windows, and the UNIX domain socket on other operating systems. Therefore, permit these connections in pg\_hba.conf.

This command cannot be executed on the standby server.

## Example

In the following example, the data directory, tablespaces, and configuration files are backed up. At this time, stored WALs are no longer necessary because the backups are destroyed.

```
$ pgx_dmpall
```

## Related item

`pgx_rcvall`

## 3.3 pgx\_keystore

---

### Name

`pgx_keystore --` Manages keystore

### Synopsis

```
pgx_keystore [option...] keystore_location
```

### Description

`pgx_keystore` enables auto-open of a keystore.

### Options

`-a`

`--enable-auto-open`

Enables auto-open of a keystore. This allows the keystore to open automatically without entering the passphrase when the database server starts.

When auto-open is enabled, an obfuscated copy `keystore.aks` is created in the same directory where the keystore file `keystore.ks` is stored. To disable auto-open, delete `keystore.aks`.

`-P passphrase`

`--passphrase=passphrase`

Specify the passphrase to open the keystore. If this option is omitted, the prompt to enter the passphrase is displayed.

*keystore\_location*

Specify the absolute or relative path of the keystore file.

### Diagnostics

0: Normal exit

Other than 0: Abnormal exit

### Notes

This command can be executed whether the database server is running or stopped. It does not connect to the database server.

## Example

Enables auto-open of a keystore.

```
$ pgx_keystore -a /key/store/location/keystore.ks
```

## 3.4 pgx\_pclrsc

---



## Name

`pgx_pclrsc --` Register, unregister, or display Symfoware database cluster with PRIMECLUSTER as resource of PRIMECLUSTER.

## Synopsis

```
pgx_pclrsc -a -c name -u osuser -D directory -w directory -n nodes [options...]  
pgx_pclrsc -d -c name  
pgx_pclrsc -p [-c name]
```

## Description

`pgx_pclrsc` is an utility for registering or unregistering Symfoware database cluster with PRIMECLUSTER, or displaying settings of Symfoware database cluster registered with PRIMECLUSTER. Execute the command on a member node of the cluster. Only the super user(root) can execute this command.

## Options

`-a`

`--add`

Register the specified database cluster with PRIMECLUSTER. If the specified database cluster has already been registered with PRIMECLUSTER, then terminate abnormally.

`-c name`

`--db-cluster-name=name`

Specify database cluster name. *name* is case-sensitive, and must be within 16 bytes, and an initial letter must be ascii alphabet, and following letters must be ascii alphabet or ascii digit or underscore(\_).

`-d`

`--delete`

Unregister the specified database cluster from PRIMECLUSTER.

`-D directory`

`--pgdata=directory`

Specify an absolute path of data directory.

`--db-user=name`

Specify a database super user. Default is the user specified with '-u'.

`-n nodes`

`--member-nodes=nodes`

Specify names of all member nodes of the cluster. Specify a cluster node name with suffix "RMS" to the name. Separate names with comma(.). (e.g. -n node1RMS,node2RMS)

`-p`

`--print`

Print a list of database clusters registered with PRIMECLUSTER. If `-c` option is specified, then print settings of the database cluster.

`--response-timeout=seconds`

Specify timeout of the query for health check. It's used with a count specified with '--timeout-retry-num'. The query is "SELECT 1" to the database "template1". If '0', wait infinitely. (default: '0')

`--timeout-retry-count=count`

Specify a limit count of retrying query when timeout is occurred. If retry counter is over the limit, then PRIMECLUSTER considers status of the database server as FAULT. If a query doesn't timeout once, retry counter is reset. (default: '6')

`--trace-max-file-size=size`

Specify max size(KB) of trace file. (default: '10240')

`-u osuser`  
`--os-user=osuser`

Specify an OS user who can start/stop Symfoware database server.

`-w directory`  
`--work-dir=directory`

Specify a directory for temporary data and trace files. It's used for starting, stopping or checking Symfoware database server. If the directory doesn't exist, then create it. Owner of the directory created by the command is set to the user specified with '-u'. Permission of the directory created by the command is set to 0700.

`--watch-interval=seconds`

Specify an interval. It's used for the amount of time between health checks. (default: '3')

## Diagnostics

0 : On success

otherwise : On error

## Notes

Before unregistering a resource, stop RMS of PRIMECLUSTER.

## Example

The simplest example of registering a resource.

```
# pgx_pclrsc -a -c dbcluster1 -u postgres -D /mnt/swdsk1/pgdata -w /var/tmp/work -n  
node1RMS,node2RMS
```

## 3.5 pgx\_rcvall

---

### Name

`pgx_rcvall` - Recovers the data directory, tablespaces, and configuration files.

### Synopsis

```
pgx_rcvall [option...]
```

### Description

The `pgx_rcvall` command recovers the data directory, tablespaces, and configuration files using the data that was backed up with `pgx_dmpall` command and archived Write-Ahead-Log (WAL). If none of the options that indicate the recovery point is specified, all archived WAL are applied and the data will be recovered to the latest point.

### Options

`-B backupdir`

Specify the backup storage directory. If the data directory is damaged, this option cannot be omitted.

`-D datadir`

Specify the data directory. If this option is omitted, the value of the environment variable PGDATA is used.

`-e targetTime`

Specify this option to recover the data as of the specified date and time.

`targetTime`

Specify the time at which the data is recovered. The format is as follows:

"YYYY-MM-DD HH:MM:SS"

-l

This option displays a list of the backup data information in the backup storage directory that was obtained using the `pgx_dmpall` command. This cannot be specified together with `-p`, `-e` or `-n` option.

**-n *restorePoint***

Specify this option to recover the data to the specified restore point. Restore points are created with SQL function `pg_create_restore_point`. If multiple restore points with the same names were created, the first one after the backup was taken is used for recovery. If the specified restore point does not exist, all archived WAL are applied. This cannot be specified together with `-e` or `-p` option.

**-p**

Specify this option to recover the data as of the time when the last backup completed. This cannot be specified together with `-e` or `-n` option.

**-s *connectionString***

Construct a standby server from the backup created by `pgx_dmpall`. Specify as an argument a connection string for connecting to the primary server. This is the same as `primary_conninfo` parameter in `recovery.conf`. This option can only be specified together with `-D` and `-B`.

**-x**

Specify this option if you do not want to include transactions committed at the time specified in the `-e` option as part of the recovery.

**--keystore-passphrase**

Prompt for the passphrase to open the keystore.

## Environment

**PGDATA**

Specify the data directory. You can overwrite using the `-D` option.

**PGPORT**

Specify the port number for connecting to the database.

**PGUSER**

Specify the user name of the database superuser. This defaults to the name of the effective user running `pgx_dmpall`.

## Diagnosis

0: Normal exit

Other than 0: Abnormal exit

## Backup data information

**Date**

Date the backup data was created using the `pgx_dmpall` command.

**Dir**

This is the name of the directory in the backup storage directory that is used to store the backup data. Directory naming format: Time format (YYYY-MM-DD\_HH-MM-SS)

**Status**

This is the status of the `pgx_dmpall` command backup data.

COMPLETE: Complete

INCOMPLETE: Incomplete

## Notes

This command can only be executed when the database server is stopped, except when it is executed with `-l` option.

Execute this command as a PostgreSQL user account.

Use backup data that was taken from the recovery target data directory.

Before executing this command, disconnect all application database connections. Additionally, do not connect to the database during recovery.

Hash indexes cannot be recovered correctly in this command. If you are using the hash index, execute `REINDEX` for the corresponding index after this command finishes.

The configuration files are restored from those files that were taken by the last `pgx_dmpall` (including `-c` option).

This command connects to the database to determine whether the recovery has completed. So ensure that you set the port number with `PGPORT` environment variable in the environment where multiple instances exist.

Match the OS timezone setting when running `pgx_dmpall/pgx_rcvall` to the timezone specified by `timezone` parameter in `postgresql.conf`.

Otherwise, data might be recovered to an unexpected time when `-e` or `-p` is specified.

If you recover to a past point, a new timeline (history of database updates) begins at that point. That recovery point is the latest point in the new timeline when the recovery is completed. If you subsequently recover to the latest point, the database updates in the new timeline will be replayed.

Valid restore points are the ones that were created in the timeline where the backup had been taken. That means that if you recover to a past point, those restore points created thereafter are unavailable. Therefore, take a backup when you have restored the past data desired.

## Example

In the following example, the data directory, tablespaces, and configuration files are recovered.

```
$ pgx_rcvall -B /home/pgsql/Backupdir
```

In the following example, the data directory and tablespaces are recovered at 10:00:00 on 20-03-2007. The configuration files are recovered at the point at which the last of the data is obtained.

```
$ pgx_rcvall -B /home/pgsql/Backupdir -e "2007-03-20 10:00:00"
```

In the following example, the data directory and tablespaces are recovered upto the time of restore point "before\_match\_20120705\_1". The configuration files are restored from the latest backup.

```
$ pgx_rcvall -B /home/pgsql/Backupdir -n before_match_20120705_1
```

In the following example, the obtained backup data information in the backup storage directory is displayed in a list.

```
$ pgx_rcvall -l
```

## Related item

`pgx_dmpall`

## 3.6 postgres

---

### Name

`postgres` -- PostgreSQL database server

### Synopsis

```
postgres [option...]
```

**Options**

-K

Prompt for the passphrase to open the keystore.

**See**

Refer to "postgres" in the PostgreSQL Documentation for details.