EDB Postgres PgBouncer Guide

Version 1.0

Built at 2021-05-05T13:06:31

1 Installation

This section walks you through installing EDB PgBouncer on a CentOS, Debian/Ubuntu, or a Windows host.

The following table lists the latest PgBouncer versions, their supported corresponding Advanced Server versions, and the supported platforms for each PgBouncer version.

The PgBouncer version is version-specific, but the documented and supported functionality of each version is the same. The information in this guide applies to each version listed in the table below.

Pgpool Version	Advanced Server Version	Supported Platforms
`PgBouncer 1.15`	PostgreSQL and Advanced Server 13	RHEL/CentOS 7 - x86_64 and RHEL/CentOS 8 - x86_64 RHEL/CentOS 7 - ppc64le Debian 9x Stretch and Debian 10x Buster Ubuntu 18.04 Bionic Beaver and Ubuntu 20.04 LTS Focal Fossa Windows 86 x64 Interactive Installer
`PgBouncer 1.15`	PostgreSQL and Advanced Server 12	RHEL/CentOS 7 - x86_64 and RHEL/CentOS 8 - x86_64 RHEL/CentOS 7 - ppc64le Debian 9x Stretch and Debian 10x Buster Ubuntu 18.04 Bionic Beaver Windows 86 x64 Interactive Installer SUSE Linux Enterprise Server 12 SP4
`PgBouncer 1.15`	PostgreSQL and Advanced Server 11	RHEL/CentOS 7 - x86_64 and RHEL/CentOS 8 - x86_64 RHEL/CentOS 7 - ppc64le Debian 9x Stretch Ubuntu 18.04 Bionic Beaver Windows 86 x64 Interactive Installer SUSE Linux Enterprise Server 12 SP4
`PgBouncer 1.15`	PostgreSQL and Advanced Server 10 and 9.6	RHEL/CentOS 7 - x86_64 RHEL/CentOS 7 - ppc64le Debian 9x Stretch Ubuntu 18.04 Bionic Beaver Windows 86 x64 Interactive Installer
`PgBouncer 1.14`	Advanced Server 13	RHEL/CentOS 7 - x86_64 and RHEL/CentOS 8 - x86_64 RHEL/CentOS 7 - ppc64le Debian 9x Stretch and Debian 10x Buster Ubuntu 18.04 Bionic Beaver and Ubuntu 20.04 LTS Focal Fossa Windows 86 x64 Interactive Installer
`PgBouncer 1.14`	Advanced Server 12	RHEL/CentOS 7 - x86_64 and RHEL/CentOS 8 - x86_64 RHEL/CentOS 7 - ppc64le Debian 9x Stretch and Debian 10x Buster Ubuntu 18.04 Bionic Beaver Windows 86 x64 Interactive Installer

Pgpool Version	Advanced Server Version	Supported Platforms
`PgBouncer 1.14`	Advanced Server 11, 10, and 9.6	RHEL/CentOS 7 - x86_64 and RHEL/CentOS 8 - x86_64 RHEL/CentOS 7 - ppc64le Debian 9x Stretch Ubuntu 18.04 Bionic Beaver Windows 86 x64 Interactive Installer SUSE Linux Enterprise Server 12 SP4
`PgBouncer 1.13`	Advanced Server 12	RHEL/CentOS 7 - x86_64 and RHEL/CentOS 8 - x86_64 RHEL/CentOS 7 - ppc64le Debian 9x Stretch Ubuntu 18.04 Bionic Beaver Windows 86 x64 Interactive Installer
`PgBouncer 1.12`	Advanced Server 12	RHEL/CentOS 7 - x86_64 and RHEL/CentOS 8 - x86_64 RHEL/CentOS 7 - ppc64le Debian 9x Stretch Ubuntu 18.04 Bionic Beaver Windows 86 x64 Interactive Installer
`PgBouncer 1.9`	Advanced Server 11	RHEL/CentOS 7 - x86_64 RHEL/CentOS 7 - ppc64le Debian 9x Stretch Ubuntu 18.04 Bionic Beaver Windows 86 x64 Interactive Installer and Linux 86_64 Interactive Installer
`PgBouncer 1.7`	Advanced Server 10 and 9.6	RHEL/CentOS 7 - x86_64 RHEL/CentOS 7 - ppc64le Windows 86 x64 Interactive Installer and Linux 86_64 Interactive Installer

!!! Note

```
PgBouncer 1.15 is no longer supported on CentOS/RHEL/OEL 6.x platforms. It is strongly recommended that EDB products running on these platforms be migrated to a supported platform.
```

1.1 Installing PgBouncer on a CentOS Host

Before installing the repository configuration, you must have credentials that allow access to the EnterpriseDB repository. For information about requesting credentials, visit the EDB website.

Follow the steps given below to install PgBouncer:

1. To install the repository configuration, assume superuser privileges and invoke one of the following platform-specific commands:

   On CentOS 7:

   ```
   yum -y install https://yum.enterprisedb.com/edbrepos/edb-repo-latest.noarch.rpm
   ```

On CentOS 8:

```
dnf -y install https://yum.enterprisedb.com/edbrepos/edb-repo-latest.noarch.rpm
```

2. Replace the `USERNAME:PASSWORD` in the following command with the username and password of a registered EnterpriseDB user:

```
sed -i "s@<username>:<password>@USERNAME:PASSWORD@" /etc/yum.repos.d/edb.repo
```

3. Before installing PgBouncer, execute the following command to install the Extra Packages for Enterprise Linux (EPEL) release package:

   On CentOS 7:

```
yum -y install https://dl.fedoraproject.org/pub/epel/epel-release-latest-7.noarch.rpm
```

   On CentOS 8:

```
dnf -y install epel-release
```

4. For CentOS 8, enable the PowerTools repository to satisfy EPEL package dependencies:

```
dnf config-manager --set-enabled PowerTools
```

5. For CentOS 8, disable the built-in PostgreSQL module:

```
dnf -qy module disable postgresql
```

6. Use the following platform-specific command to install PgBouncer:

   On CentOS 7:

```
yum -y install edb-pgbouncer<xx>
```

   Where <xx> is the PgBouncer version you want to install.

   On CentOS 8:

```
dnf -y install edb-pgbouncer<xx>
```

   Where <xx> is the PgBouncer version you want to install.

   To install PgBouncer 1.15 on CentOS 8, the command is:

```
dnf -y install edb-pgbouncer115
```

   When you install an RPM package that is signed by a source that is not recognized by your system, yum may ask for your permission to import the key to your local server. If prompted, and you are satisfied that the packages come from a trustworthy source, enter `y`, and press `Return` to continue.

   During the installation, yum may encounter a dependency that it cannot resolve. If it does, it will provide a list of the required dependencies that you must manually resolve. PgBouncer will be installed in the `/usr/edb/pgbouncer<x.x>` directory.

Installing PgBouncer on a RHEL Host

Before installing the repository configuration, you must have credentials that allow access to the EnterpriseDB repository. For information about requesting credentials, visit the EDB website.

Follow the steps given below to install PgBouncer:

1. To install the repository configuration, assume superuser privileges and invoke one of the following platform-specific commands:

   On RHEL 7:

   ```
   yum -y install https://yum.enterprisedb.com/edbrepos/edb-repo-latest.noarch.rpm
   ```

   On RHEL 8:

   ```
   dnf -y install https://yum.enterprisedb.com/edbrepos/edb-repo-latest.noarch.rpm
   ```

2. Replace the `USERNAME:PASSWORD` in the following command with the username and password of a registered EnterpriseDB user:

   ```
   sed -i "s@<username>:<password>@USERNAME:PASSWORD@" /etc/yum.repos.d/edb.repo
   ```

3. Before installing PgBouncer, execute the following command to install the Extra Packages for Enterprise Linux (EPEL) release package:

   On RHEL 7:

   ```
   yum -y install https://dl.fedoraproject.org/pub/epel/epel-release-latest-7.noarch.rpm
   ```

   On RHEL 8:

   ```
   dnf -y install https://dl.fedoraproject.org/pub/epel/epel-release-latest-8.noarch.rpm
   ```

4. Enable the repository:

   On RHEL 7, enable the `optional, extras`, and `HA` repositories to satisfy EPEL package dependencies:

   ```
   subscription-manager repos --enable "rhel-*-optional-rpms" --enable "rhel-*-extras-rpms"  --enable "rhel-ha-for-rhel-*-server-rpms"
   ```

   On RHEL 8, enable the `codeready-builder-for-rhel-8-*-rpms` repository to satisfy EPEL packages dependency:

   ```
   ARCH=$( /bin/arch )

   subscription-manager repos --enable "codeready-builder-for-rhel-8-${ARCH}-rpms"
   ```

5. For RHEL 8, disable the built-in PostgreSQL module:

   ```
   dnf -qy module disable postgresql
   ```

6. Use the following platform-specific command to install PgBouncer:

On RHEL 7:

```
yum -y install edb-pgbouncer<xx>
```

Where <xx> is the PgBouncer version you want to install.

On RHEL 8:

```
dnf -y install edb-pgbouncer<xx>
```

Where <xx> is the PgBouncer version you want to install.

To install PgBouncer 1.15 on RHEL 8, the command is:

```
dnf -y install edb-pgbouncer115
```

When you install an RPM package that is signed by a source that is not recognized by your system, yum may ask for your permission to import the key to your local server. If prompted, and you are satisfied that the packages come from a trustworthy source, enter `y`, and press `Return` to continue.

During the installation, yum may encounter a dependency that it cannot resolve. If it does, it will provide a list of the required dependencies that you must manually resolve. PgBouncer will be installed in the `/usr/edb/pgbouncer<x.x>` directory.

Installing PgBouncer on a RHEL/CentOS 7 PPCLE Host

Before installing the repository configuration, you must have credentials that allow access to the EnterpriseDB repository. For information about requesting credentials, visit the EDB website.

Perform the following steps to install PgBouncer on a RHEL/CentOS 7 PPCLE Host:

1. Install Advance Toolchain:

```
rpm --import
https://public.dhe.ibm.com/software/server/POWER/Linux/toolchain/at/redhat/RHEL7/g
-pubkey-6976a827-5164221b

cat > /etc/yum.repos.d/advance-toolchain.repo <<EOF

# Begin of configuration file
[advance-toolchain]
name=Advance Toolchain IBM FTP
baseurl=https://public.dhe.ibm.com/software/server/POWER/Linux/toolchain/at/redhat/
7
failovermethod=priority
enabled=1
gpgcheck=1
gpgkey=ftp://public.dhe.ibm.com/software/server/POWER/Linux/toolchain/at/redhat/RHI
-pubkey-6976a827-5164221b
# End of configuration file
EOF
```

2. To install the repository configuration, assume superuser privileges and invoke the following command:

```
yum -y install https://yum.enterprisedb.com/edbrepos/edb-repo-latest.noarch.rpm
```

3. Replace the `USERNAME:PASSWORD` in the following command with the username and password of a registered EnterpriseDB user:

```
sed -i "s@<username>:<password>@USERNAME:PASSWORD@" /etc/yum.repos.d/edb.repo
```

4. Before installing PgBouncer, execute the following command to install the Extra Packages for Enterprise Linux (EPEL) release package:

```
yum -y install https://dl.fedoraproject.org/pub/epel/epel-release-latest-7.noarch.rpm
```

5. On RHEL 7, enable the `optional, extras`, and `HA` repositories to satisfy EPEL package dependencies:

```
subscription-manager repos --enable "rhel-*-optional-rpms" --enable "rhel-*-extras-rpms"  --enable "rhel-ha-for-rhel-*-server-rpms"
```

6. Invoke the following command to install PgBouncer:

```
yum -y install edb-pgbouncer<xx>
```

   Where <xx> is the PgBouncer version you want to install.

   When you install an RPM package that is signed by a source that is not recognized by your system, yum may ask for your permission to import the key to your local server. If prompted, and you are satisfied that the packages come from a trustworthy source, enter `y`, and press `Return` to continue.

   During the installation, yum may encounter a dependency that it cannot resolve. If it does, it will provide a list of the required dependencies that you must manually resolve. PgBouncer will be installed in the `/usr/edb/pgbouncer<x.x>` directory.

1.2 Installing PgBouncer on a Debian or Ubuntu Host

You must install Advanced Server before installing PgBouncer. For details about installing and configuring Advanced Server, see the EDB Advanced Server Installation Guide available at the EDB website. To install a package on a Debian or Ubuntu host, you must have credentials to access the EnterpriseDB repository. See the EDB website to request the EnterpriseDB credentials.

The following steps will walk you through using the EnterpriseDB repository to install a DEB package. When using the commands, replace the `username` and `password` with the credentials provided by EnterpriseDB.

1. Assume superuser privileges:

```
sudo su -
```

2. Configure the EnterpriseDB repository:

   On Debian 9, Ubuntu 18, and Ubuntu 20:

```
sh -c 'echo "deb https://username:password@apt.enterprisedb.com/$(lsb_release -
```

```
cs)-edb/ $(lsb_release -cs) main" > /etc/apt/sources.list.d/edb-$(lsb_release -
cs).list'
```

On Debian 10:

a. Set up the EnterpriseDB repository:

```
sh -c 'echo "deb [arch=amd64] https://apt.enterprisedb.com/$(lsb_release -cs)-
edb/ $(lsb_release -cs) main" > /etc/apt/sources.list.d/edb-$(lsb_release -
cs).list'
```

b. Substitute your EnterpriseDB credentials for the `username` and `password` placeholders in the following command:

```
sh -c 'echo "machine apt.enterprisedb.com login <username> password <password>" >
/etc/apt/auth.conf.d/edb.conf'
```

3. Add support to your system for secure APT repositories:

```
apt-get install apt-transport-https
```

4. Add the EDB signing key:

```
wget -q -O - https://apt.enterprisedb.com/edb-deb.gpg.key  | sudo apt-key add -
```

5. Update the repository metadata:

```
apt-get update
```

6. Install the Debian package:

```
apt-get -y install edb-pgbouncer<xx>
```

Where *<xx>* is the PgBouncer version you want to install.

For example, to install the PgBouncer 1.15 package for EDB Advanced Server 13, execute the following command:

```
apt-get -y install edb-pgbouncer115
```

PgBouncer will be installed in the `/usr/edb/pgbouncer<x.x>` directory.

Where <x.x> is the PgBouncer version you have installed.

1.3 Installing PgBouncer on an SLES 12 Host

Perform the following steps to install PgBouncer on a SLES 12 SP4 host using the zypper package manager.

1. Assume superuser privileges and use the following command to add the EnterpriseDB repository configuration file to your SLES host:

```
zypper addrepo https://zypp.enterprisedb.com/suse/edb-sles.repo
```

This command creates a repository configuration file named `edb.repo` in the `/etc/zypp/repos.d` directory.

2. Invoke the following command to refresh the metadata:

```
zypper refresh
```

3. Install `SUSEConnect` to register the host with SUSE to allow access to SUSE repositories:

```
zypper install SUSEConnect
```

4. Register the host with SUSE to allow access to SUSE repositories and replace `'REGISTRATION_CODE'` and `'EMAIL'` with your SUSE registration information:

```
SUSEConnect -r 'REGISTRATION_CODE' -e 'EMAIL'
SUSEConnect -p PackageHub/12.4/x86_64
SUSEConnect -p sle-sdk/12.4/x86_64
```

5. Install the following repository for PEM dependencies:

```
zypper addrepo
https://download.opensuse.org/repositories/Apache:/Modules/SLE_12_SP4/Apache:Module
o
```

6. Refresh the metadata:

```
zypper refresh
```

7. Install OpenJDK (version 1.8) for Java based components:

```
zypper -n install java-1_8_0-openjdk
```

8. Use the zypper utility to install PgBouncer.

```
zypper -n install edb-pgbouncer<xx>
```

Where <xx> is the PgBouncer version you have installed.

PgBouncer will be installed in the `/usr/edb/pgbouncer<xx>` directory.

1.4 Installing PgBouncer on a Windows Host

Graphical installers for PgBouncer are available via StackBuilder Plus (for Advanced Server hosts) or Stack Builder (for PostgreSQL hosts).

The following steps walk you through installing PgBouncer 1.15 by accessing StackBuilder Plus through Windows start menu

1. Access StackBuilder Plus through the Windows start menu; on the `Welcome` window, select your Advanced Server installation from the drop-down list. Click `Next` to continue to the application selection page.

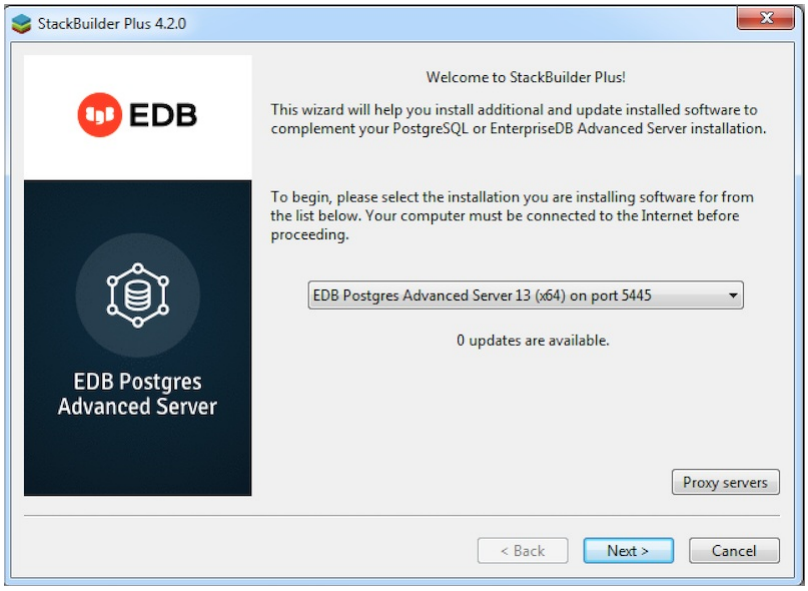

Fig. 1: The StackBuilder Plus Welcome window

2. Expand the `Add-ons, tools and utilities` node, and check the box next to the `PgBouncer v1.15.0.1-1`. Click `Next` to continue.

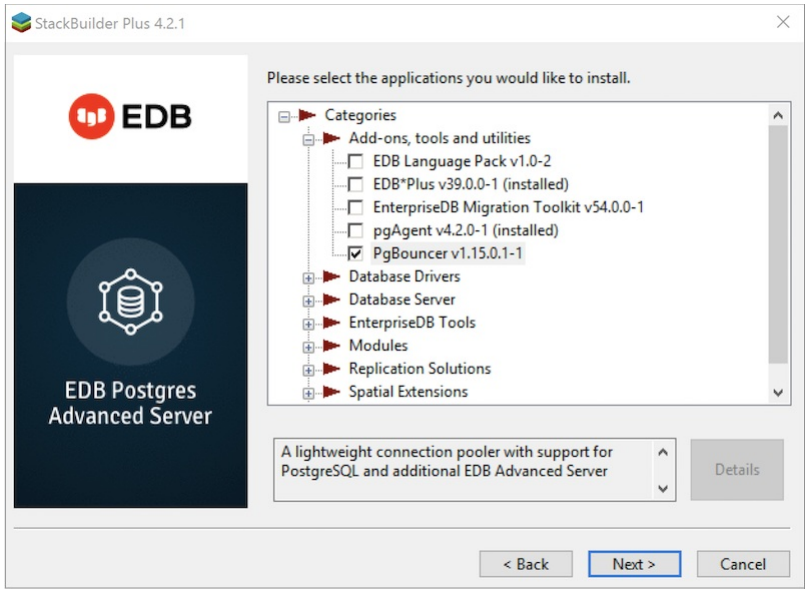

Fig. 2: Expand Add-ons, Tools and Utilities

3. The selected packages and the default download directory where the package will be installed are displayed; change the download directory location if required. Click `Next`.

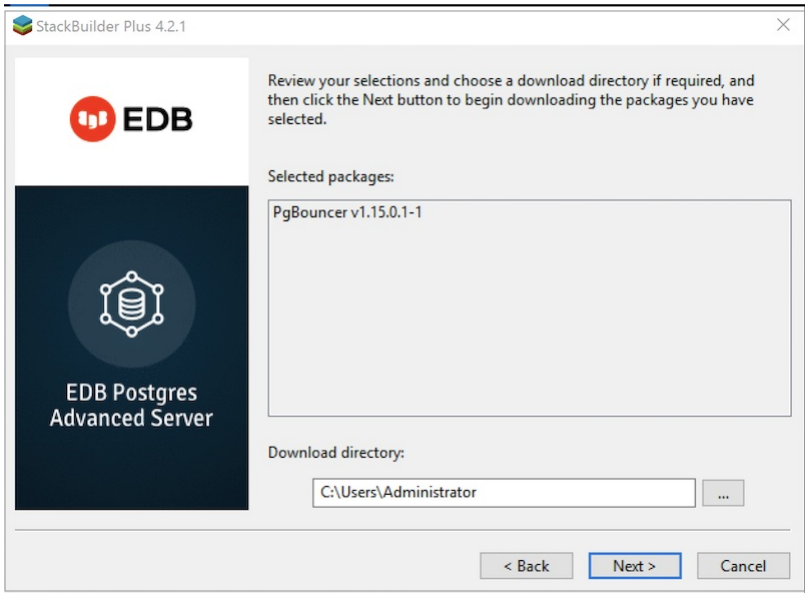

Fig. 3: Installation Directory

4. Once you have downloaded the installation files, a confirmation message is displayed. Click `Next` to start the PgBouncer installation.

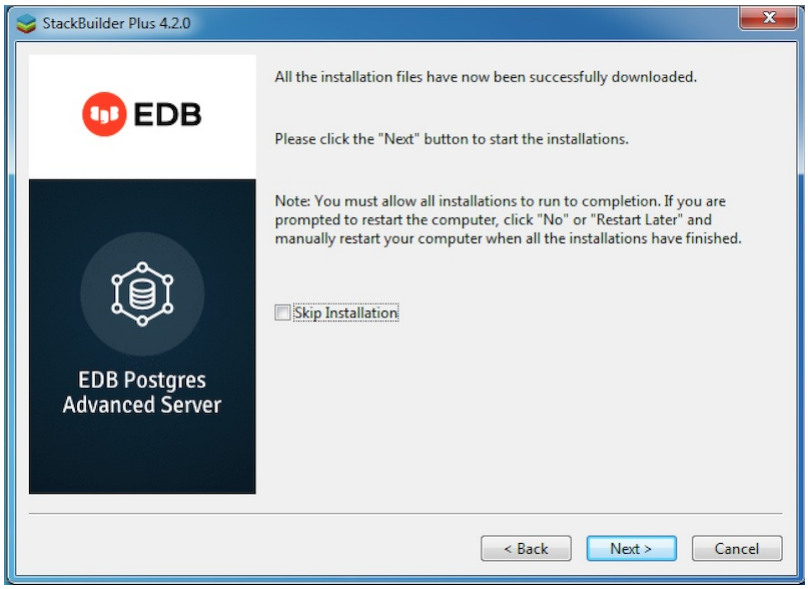

Fig. 4: Installing PgBouncer

5. Select an installation language and click `OK`.

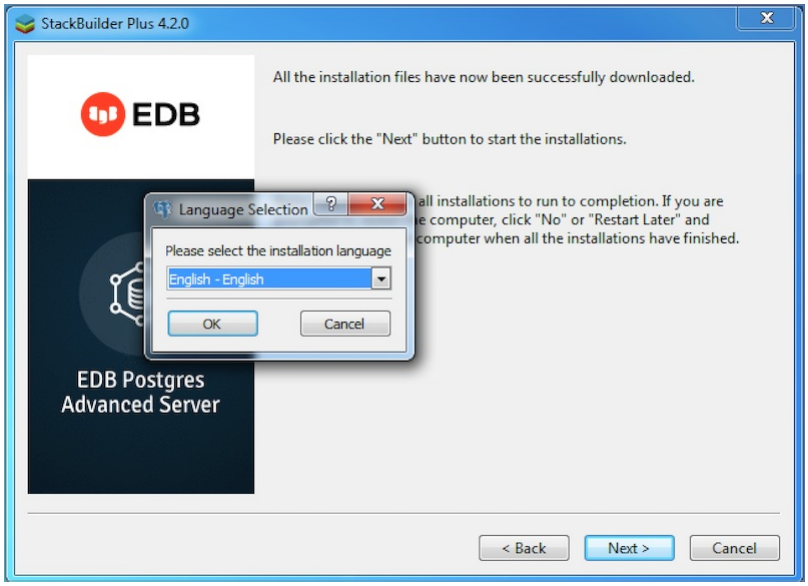

Fig. 5: The Language Selection window

6. The installer welcomes you to the setup wizard. Click `Next`.

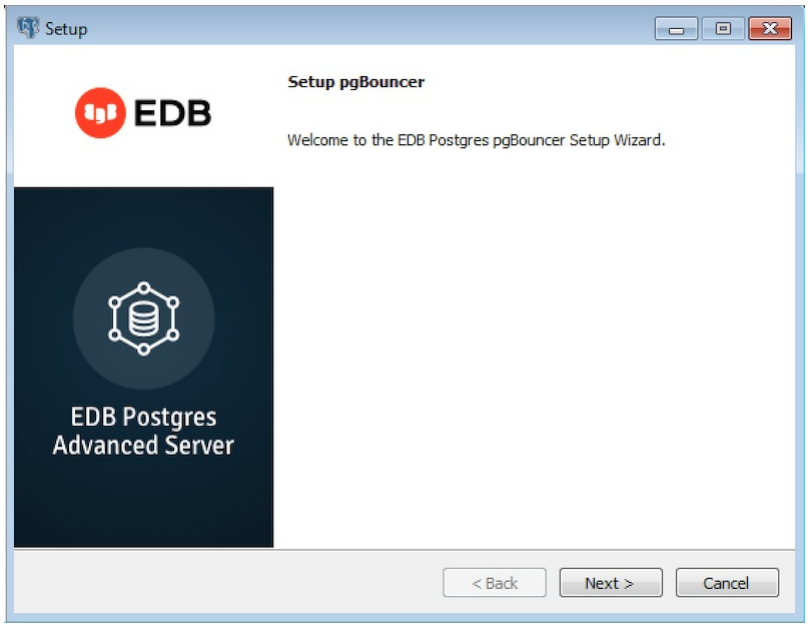

Fig. 6: The PgBouncer Welcome window

7. Use the `Installation Directory` field to specify the directory in which you wish to install PgBouncer (the default installation directory is `C:\Program Files\edb`) Then, click `Next` to continue.
8. Use fields on the `EDB Postgres Advanced Server Installation Details` window to provide connection information for the Advanced Server host:

- Use the `Host` field to identify the system on which Advanced Server resides.
- Provide the name of the role that PgBouncer will use for connections to the server in the `User Name` field.
- Provide the password associated with the role in the `Password` field.
- Use the `Port` field to identify the listener port that Advanced Server monitors for client connections.

Then, click `Next` to continue.

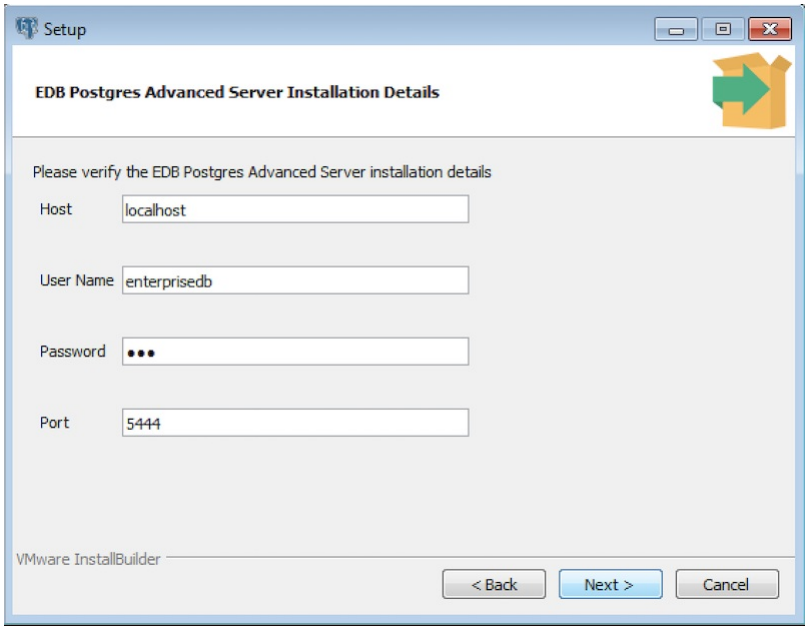

Fig. 7: The Advanced Server Installation Details window

9. Use fields on the `PgBouncer Configurations` window to provide your preferences for the PgBouncer installation:

- Use the `Listening Port` field to specify the port that PgBouncer monitors for connections.
- Use the `Operating System User` field to specify the name of the Linux operating system user that PgBouncer will change to after startup. This option is not supported on Windows hosts.

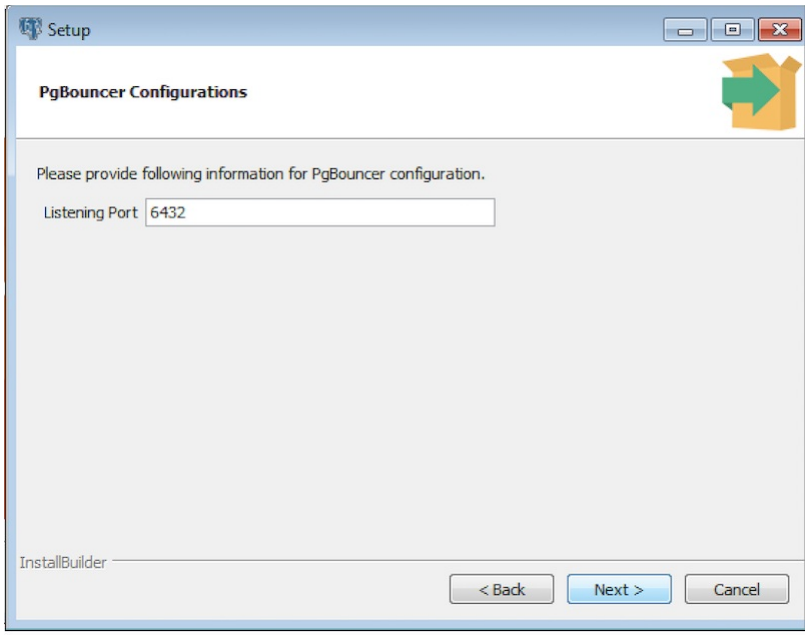

Fig. 8: The PgBouncer Configuration window

10. The `Ready to Install` window notifies you when the installer has all of the information needed to install PgBouncer on your system. Click `Next` to install PgBouncer. Progress bars inform you as the installation progresses.

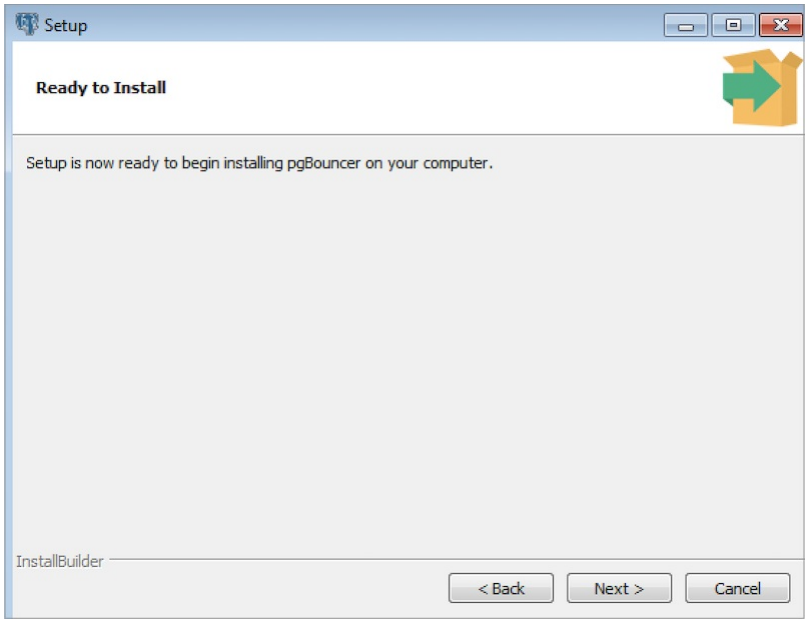

Fig. 9: The Ready to Install window

11. The installer notifies you when the setup wizard has completed the installation. Click `Finish` to exit the installer.

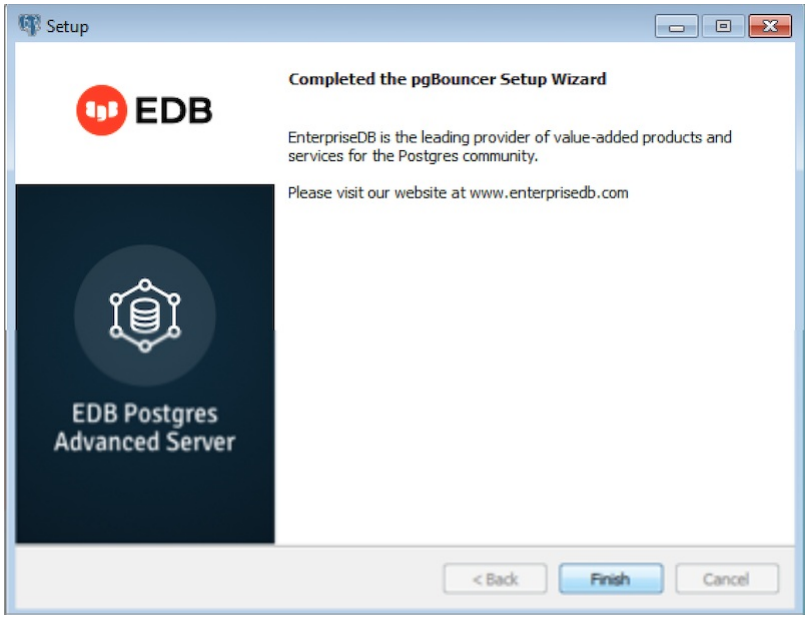

Fig. 10: The installation is complete

2 Configuration and Usage

This section walks you through how to configure and use PgBouncer.

Configuring PgBouncer

When the PgBouncer service is running, any Postgres client connecting to the PgBouncer listener port specified in the configuration file will use connection pooling. PgBouncer connection and configuration information is stored in the

`.ini` file.

On RedHat/Centos, Debian, and SLES 12 SP4, the `.ini` file is located in the following directory:

`/etc/edb/pgbouncer<x.x>/`

Where <x.x> is the PgBouncer version.

On Windows, the `.ini` file is located in the following directory:

`C:\Program Files\edb\pgbouncer<x.x>\share\`

Where <x.x> is the PgBouncer version.

The PgBouncer configuration file is divided into two sections: `[databases]` and `[pgbouncer]`.

The `[databases]` section of the configuration file contains a list of databases and the associated connection information. For Advanced Server, the configuration file contains an entry for the installation of Advanced Server that installed PgBouncer:

`edb = host=127.0.0.1 port=5444`

For PostgreSQL Server, you need to enter PostgreSQL server details as shown in the following example.

`postgres = host=127.0.0.1 port=5432`

You can specify additional database connection information in the configuration file in the form of `keyword=value` pairs. You can include the following parameters:

Parameter	Description
`name`	The name of the database to which the client application will connect.
`host`	The IP address of the host.
`port`	The port on which the host is listening.
`dbname`	The (optional) database name.
`user`	A username (if different than the information specified by the connecting client).
`password`	A password (if different than the information specified by the connecting client).

The following example demonstrates the syntax allowed in the `[databases]` section of the configuration file:

```
[databases]
edb = host=127.0.0.1 port=5444
postgres = host=127.0.0.1 port=5432
acctg = host=192.168.10.101 port=5432 user=bob password=XXXXXX
```

Include the `dbname` parameter to map the connection name to an alternate database name. For example:

`hr = host=127.0.0.1 port=5445 dbname=humanresources`

When the client provides authentication information, that information is used to connect to PgBouncer, which in turn uses the information specified in the PgBouncer configuration file to connect to the database server. The user information provided in the configuration file must match a role defined in the Postgres database cluster.

!!! Note

```
If you do not specify user details in `pgbouncer.ini`, the username and password will be authenticated by the database server and PgBouncer. As such, the username and password should be included in the `userlist.txt` file and the database cluster.
```

The `[pgbouncer]` section of the configuration file contains configuration details specific to PgBouncer:

Parameter	Description
`admin_users`	A comma-delimited list of users that are allowed to access the Admin Console (for management and monitoring purposes). By default, PgBouncer is installed with an `admin_users = enterprisedb`. For the PostgreSQL server, set this value as `admin_users = postgres`.
`auth_file`	The path to the authentication file that contains username and passwords of clients that may connect to PgBouncer. The authentication file (userlist.txt) is located in `/etc/edb/pgbouncer<x.x>/`, and contains *username/password* pairs that specify the identities that clients may use to access PgBouncer. Within the authentication file, the username and password must be specified within double-quotes. To make changes to the identities that can access PgBouncer, you can edit the existing authentication file, or specify an alternate authentication file with the `auth_file` parameter.
`auth_type`	The authentication method used by PgBouncer. May be: md5, crypt, plain, trust or any. The default value is md5.
`default_pool_size`	The amount of user connections that are allowed to access the server. The default is 20 active connections.
`group_connections`	Clients providing the same application_name will be grouped to use the same connection. The default is 0.
`ignore_startup_parameters`	A comma-delimited list of application startup packets that PgBouncer should ignore. The default is application_name.
`listen_addr`	The IP address on which PgBouncer listens for client connections. If omitted, only Unix socket connections are allowed; the client must also reside on the same host as PgBouncer and may not specify a host IP address when connecting to PgBouncer.
`listen_port`	The port that PgBouncer monitors for client connections. By default, PgBouncer listens on port 6432.
`logfile`	The path to the PgBouncer log file.
`max_client_conn`	The maximum number of connections allowed. The default is 100.
`pidfile`	The path to the process ID file.
`pool_mode`	The value of pool_mode specifies when the server connection can be made available to the connection pool. May be: session, transaction or statement. The default value is session.
`server_reset_query`	The default is DISCARD ALL which instructs PgBouncer to clean any changes made to a database session.
`stats_users`	A comma delimited list of users who are allowed to connect and run read-only queries. The default is `stats_users = enterprisedb`. For the PostgreSQL server, set this value as `stats_users = postgres`.

The following example demonstrates the syntax allowed in the `[pgbouncer]` section of the configuration file for PgBouncer 1.15 for EDB Advanced Server:

```
[pgbouncer]
```

```
logfile = /var/log/edb/pgbouncer1.15/edb-pgbouncer-1.15.log
pidfile = /var/run/edb/pgbouncer1.15/edb-pgbouncer-1.15.pid
listen_addr = *
listen_port = 6432
auth_type = md5
auth_file = /etc/edb/pgbouncer-1.15/userlist.txt
admin_users = enterprisedb
stats_users = enterprisedb
pool_mode = session
server_reset_query = DISCARD ALL
ignore_startup_parameters = application_name
max_client_conn = 100
default_pool_size = 20
group_connections = 0
```

For more information about the settings used in the `pgbouncer.ini` file, click here.

After editing the PgBouncer configuration file to reflect your environment, you must restart the PgBouncer service for the changes to take effect. For CentOS, RHEL, SUSE, and Windows platforms, the PgBouncer service name is `edb-pgbouncer-1.15`, and for Deb packages, the PgBouncer service name is `edb-pgbouncer115`; use platform-specific commands to stop, start, or restart the service as needed.

Using the PgBouncer Admin Console

The Admin Console allows you to retrieve statistical information about PgBouncer activity, and to control the PgBouncer process. You can use the edb-psql client to access the PgBouncer Admin Console by connecting to the `pgbouncer` database.

The following example connects to the `pgbouncer` database with the edb-psql client on a Linux system. PgBouncer is listening on port `6432`, with a user name of `enterprisedb`:

Enter following command after navigating to the `bin` directory under your Advanced Server installation. Please note that the required connection information will vary according to the connecting client, platform and authentication information required by the server.

```
$ ./edb-psql -p 6432 -U enterprisedb pgbouncer
```

For PostgreSQL server, the command is:

```
$ ./edb-psql -p 6432 -h /tmp -U postgres  pgbouncer
```

After connecting to the `pgbouncer` database, you can use the `SHOW CLIENTS` command to retrieve client-related information:

```
# SHOW CLIENTS;
```

The `SHOW CLIENTS` command returns:

```
--[ RECORD 1]-+--------------------
   type       | C
   user       | enterprisedb
   database   | pgbouncer
   state      | active
   addr       | unix
```

```
   port         | 6432
   local_addr   | unix
   local_port   | 6432
   connect_time | 2010-05-25 05:26:20
   request_time | 2010-05-25 05:39:46
   ptr          | 0x8655d20
   link         |
```

You can use other variations of the `SHOW` command to retrieve information about PgBouncer:

```
SHOW STATS
 SHOW SERVERS
 SHOW POOLS
 SHOW LISTS
 SHOW USERS
 SHOW DATABASES
 SHOW FDS
 SHOW CONFIG
```

You can use the following commands to control the PgBouncer process. For more information about using PgBouncer, see the PgBouncer project site.

`PAUSE`

Use the `PAUSE` command to disconnect all servers after waiting for current queries to complete.

`SUSPEND`

Use the `SUSPEND` command to flush the socket buffers and suspend the PgBouncer process.

`RESUME`

Use the `RESUME` command to resume work after a `PAUSE` or `SUSPEND` command.

`SHUTDOWN`

Use the `SHUTDOWN` command to stop the PgBouncer process and exit.

`RELOAD`

Use the `RELOAD` command to reload the PgBouncer configuration files.

3 Uninstallation

This section walks you through uninstalling PgBouncer.

Uninstalling PgBouncer on a RHEL/CentOS Host

To uninstall PgBouncer on a CentOS host, assume the identity of the root user and invoke the following command:

On RHEL/CentOS 7:

```
yum -y erase edb-pgbouncer<xx>
```

On RHEL/CentOS 8:

```
dnf -y erase edb-pgbouncer<xx>
```

Where `<xx>` is the PgBouncer version.

Uninstalling PgBouncer on a Debian or Ubuntu Host

To uninstall PgBouncer on a Debian or Ubuntu host, invoke the following command:

```
apt-get remove edb-pgbouncer<xx>
```

Where `<xx>` is the version you want to uninstall.

Uninstalling PgBouncer on an SLES 12 Host

To uninstall PgBouncer on an SLES 12 host, assume the identity of the `root` user and invoke the following command:

```
zypper remove edb-pgbouncer<xx>
```

Where `<xx>` is the version you want to uninstall.

For example, to uninstall PgBouncer 1.15, invoke the following command:

```
zypper remove edb-pgbouncer115
```

Uninstalling PgBouncer on a Windows Host

To uninstall PgBouncer on a Windows Host, perform the following steps:

1. The PgBouncer graphical installer creates an uninstaller in the installation directory. Navigate into the installation directory and assume superuser privileges. Open the uninstaller and click `Yes` to begin uninstalling PgBouncer:

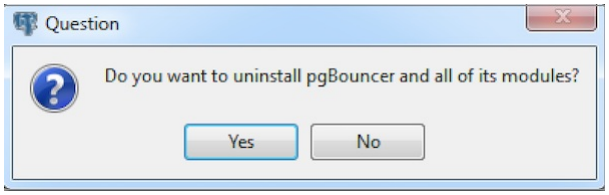

Fig. 1: The PgBouncer Uninstaller

2. The uninstallation process begins. Click `OK` when the uninstallation completes:

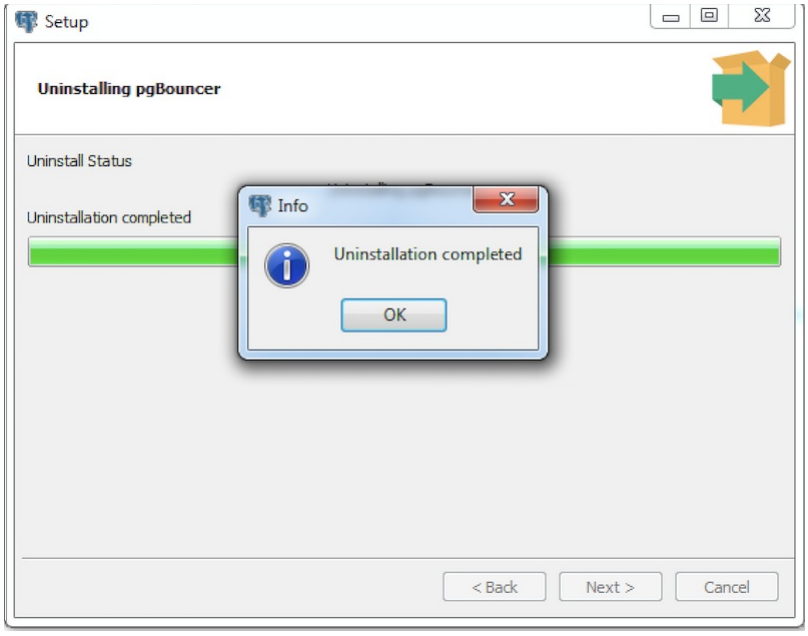

Fig. 2: Uninstallation completes