



EDB

EDB Postgres™ Advanced Server

Release 13

Installation Guide for Windows

Nov 29, 2020

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INTRODUCTION

The EDB Postgres Advanced Server Installation Guide is a comprehensive guide to installing EDB Postgres Advanced Server (Advanced Server). In this guide you will find detailed information about:

- Software prerequisites for Advanced Server 13 installation on Windows.
- Graphical installation options available through the interactive setup wizard on Windows.
- Managing an Advanced Server installation.
- Configuring an Advanced Server package installation.
- Uninstalling Advanced Server and its components.

REQUIREMENTS OVERVIEW

For information about the platforms and versions supported by Advanced Server, visit the EDB website at:

<https://www.enterprisedb.com/services-support/edb-supported-products-and-platforms#epas>

Limitations

The following limitations apply to EDB Postgres Advanced Server:

- The `data` directory of a production database should not be stored on an NFS file system.

2.1 Windows Installation Prerequisites

User Privileges

To perform an Advanced Server installation on a Windows system, you must have administrator privileges. If you are installing Advanced Server on a Windows system that is configured with `User Account Control` enabled, you can assume sufficient privileges to invoke the graphical installer by right clicking on the name of the installer and selecting `Run as administrator` from the context menu.

Windows-specific Software Requirements

You should apply Windows operating system updates before invoking the Advanced Server installer. If (during the installation process) the installer encounters errors, exit the installation, and ensure that your version of Windows is up-to-date before restarting the installer.

Migration Toolkit or EDB*Plus Installation Pre-requisites

Before using StackBuilder Plus to install Migration Toolkit or EDB*Plus, you must first install Java (version 1.8 or later). If you are using Windows, Java installers and instructions are available online at:

<http://www.java.com/en/download/manual.jsp>

INSTALLING ADVANCED SERVER WITH THE INTERACTIVE INSTALLER

You can use the Advanced Server interactive installer to install Advanced Server on Windows. The interactive installer is available from the EDB website at:

<https://www.enterprisedb.com/advanced-downloads>

You can invoke the graphical installer in different installation modes to perform an Advanced Server installation:

- For information about using the graphical installer, see *Performing a Graphical Installation on Windows*.
- For information about performing an unattended installation, see *Performing an Unattended Installation*.
- For information about performing an installation with limited privileges, see *Performing an Installation with Limited Privileges*.
- For information about the command line options you can include when invoking the installer, see *Reference - Command Line Options*.

During the installation, the graphical installer copies a number of temporary files to the location specified by the `TEMP` environment variable. You can optionally specify an alternate location for the temporary files by modifying the `TEMP` environment variable.

If invoking the installer from the command line, you can set the value of the variable on the command line. Use the command:

```
SET TEMP=temp_file_location
```

Where `temp_file_location` specifies the alternate location for the temporary files and must match the permissions with the `TEMP` environment variable.

Note: If you are invoking the installer to perform a system upgrade, the installer will preserve the configuration options specified during the previous installation.

Setting Cluster Preferences during a Graphical Installation

During an installation, the graphical installer invokes the PostgreSQL `initdb` utility to initialize a cluster. If you are using the graphical installer, you can use the `INITDBOPTS` environment variable to specify your `initdb` preferences. Before invoking the graphical installer, set the value of `INITDBOPTS` at the command line, specifying one or more cluster options. For example:

```
SET INITDBOPTS= -k -E=UTF-8
```

If you specify values in `INITDBOPTS` that are also provided by the installer (such as the `-D` option, which specifies the installation directory), the value specified in the graphical installer will supersede the value if specified in `INITDBOPTS`.

For more information about using `initdb` cluster configuration options, see the PostgreSQL Core Documentation available at:

<https://www.postgresql.org/docs/current/static/app-initdb.html>

In addition to the cluster configuration options documented in the PostgreSQL core documentation, Advanced Server supports the following `initdb` options:

`--no-redwood-compat`

Include the `--no-redwood-compat` keywords to instruct the server to create the cluster in PostgreSQL mode. When the cluster is created in PostgreSQL mode, the name of the database superuser will be `postgres`, the name of the default database will be `postgres`, and Advanced Server's features compatible with Oracle databases will not be available to the cluster.

`--redwood-like`

Include the `--redwood-like` keywords to instruct the server to use an escape character (an empty string (`''`)) following the `LIKE` (or PostgreSQL compatible `ILIKE`) operator in a SQL statement that is compatible with Oracle syntax.

`--icu-short-form`

Include the `--icu-short-form` keywords to create a cluster that uses a default ICU (International Components for Unicode) collation for all databases in the cluster. For more information about Unicode collations, please refer to the *EDB Postgres Advanced Server Guide* available at:

<https://www.enterprisedb.com/edb-docs>

3.1 Performing a Graphical Installation on Windows

A graphical installation is a quick and easy way to install Advanced Server 13 on a Windows system. Use the wizard's dialogs to specify information about your system and system usage; when you have completed the dialogs, the installer performs an installation based on the selections made during the setup process.

To invoke the wizard, you must have administrator privileges. Assume administrator privileges, and double-click the `edb-as13-server-13.x.x-x-windows-x64` executable file.

Note: To install Advanced Server on some versions of Windows, you may be required to right click on the file icon and select `Run as Administrator` from the context menu to invoke the installer with Administrator privileges.

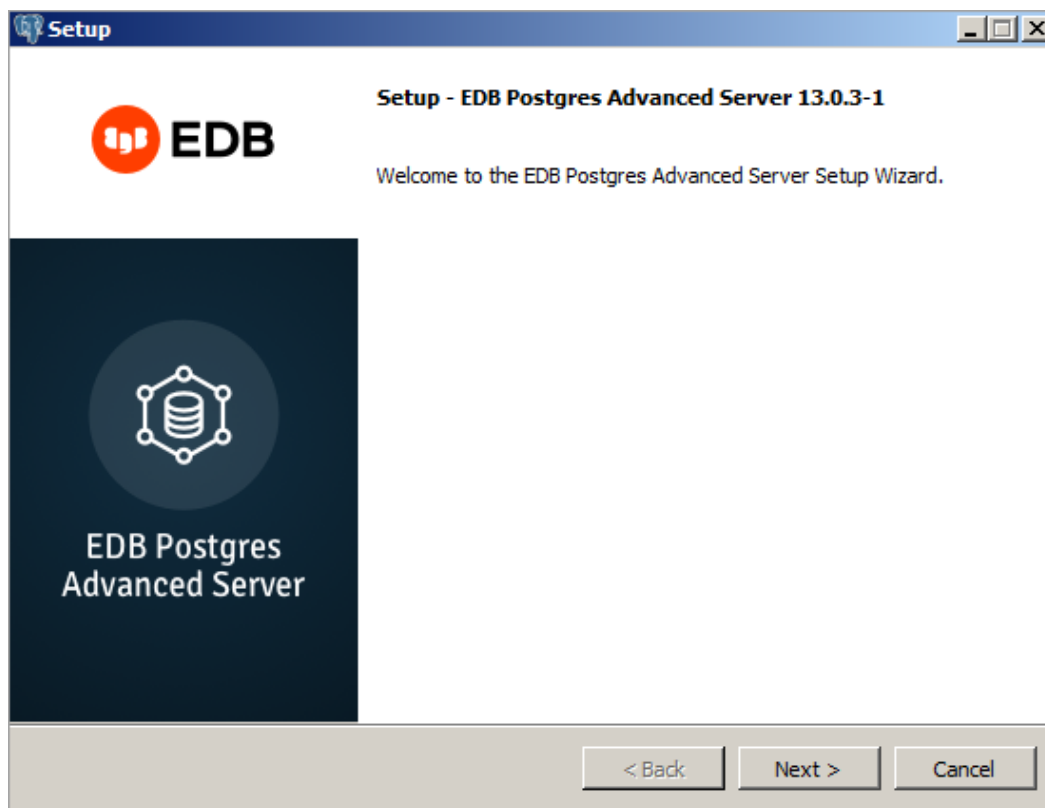


Fig. 1: *The Advanced Server installer Welcome window*

Click `Next` to continue.

The EnterpriseDB License Agreement opens.

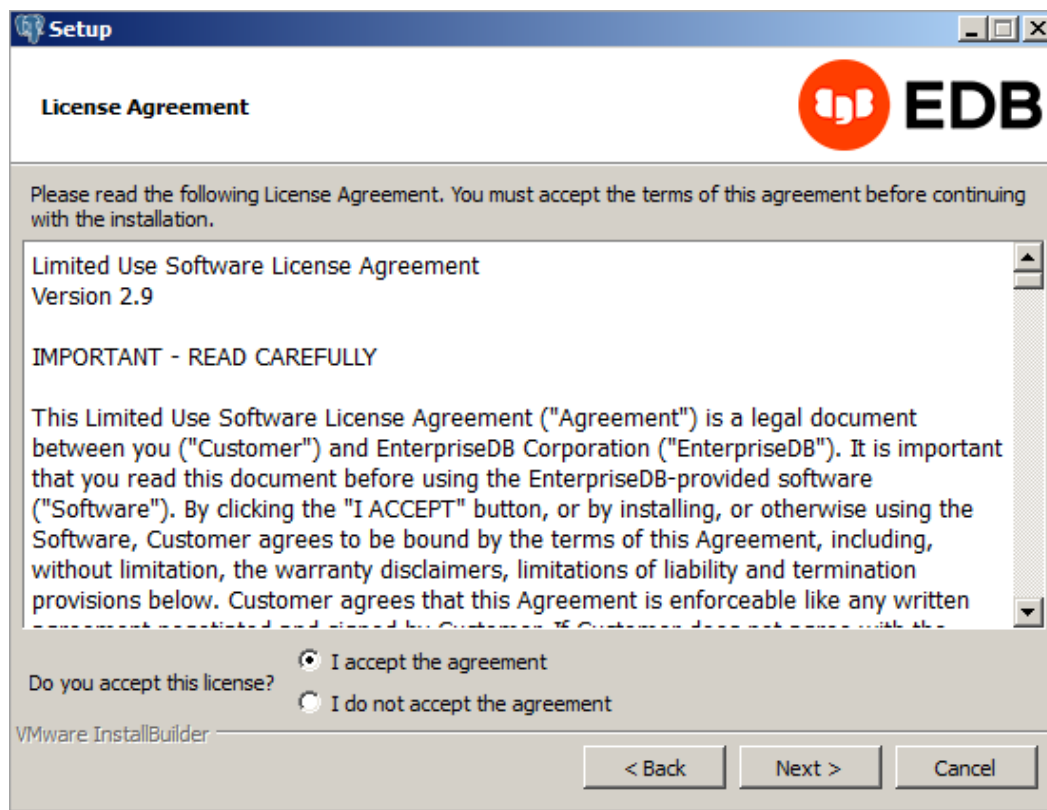


Fig. 2: The EnterpriseDB License Agreement

Carefully review the license agreement before highlighting the appropriate radio button; click **Next** to continue.

The Installation Directory window opens.

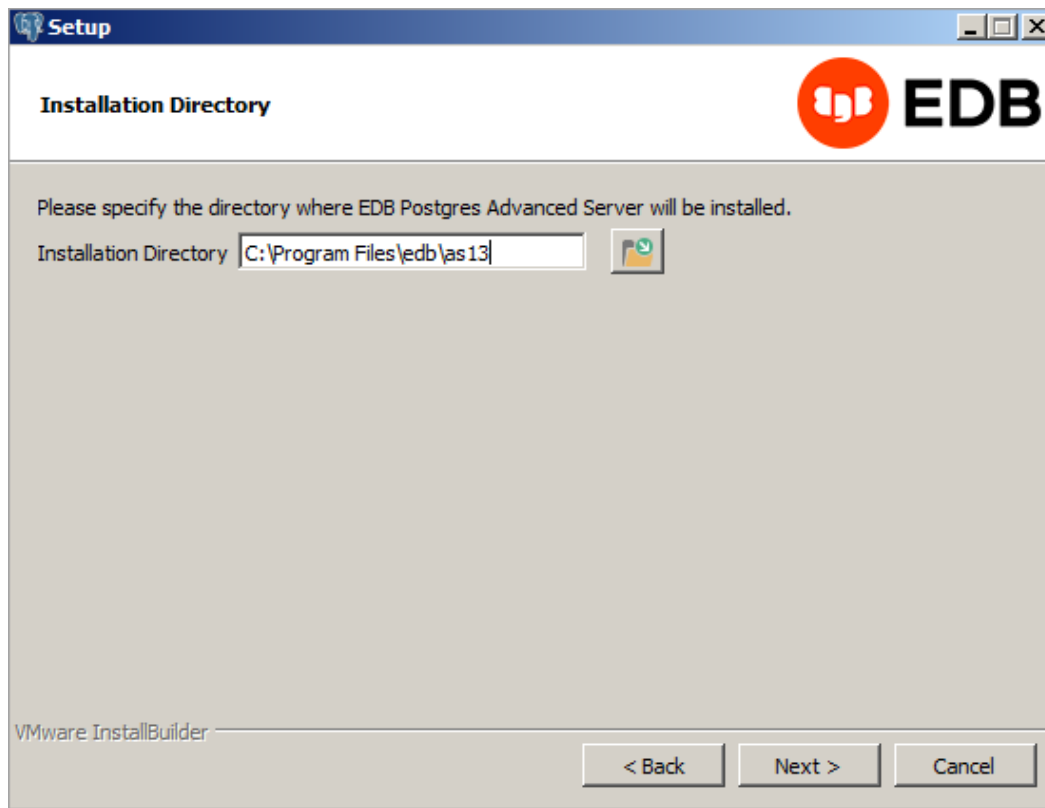


Fig. 3: *The Installation Directory window*

By default, the Advanced Server installation directory is:

```
C:\Program Files\edb\as13
```

You can accept the default installation location, and click **Next** to continue, or optionally click the **File Browser** icon to open the **Browse For Folder** dialog to choose an alternate installation directory.

Note: The data directory of a production database should not be stored on an NFS file system.

The **Select Components** window contains a list of optional components that you can install with the Advanced Server Setup wizard. You can omit a module from the Advanced Server installation by deselecting the box next to the components name.

The Setup wizard can install the following components while installing Advanced Server 13:

EDB Postgres Advanced Server

Select the **EDB Postgres Advanced Server** option to install Advanced Server 13.

pgAdmin 4

Select the **pgAdmin 4** option to install the pgAdmin 4 client. pgAdmin 4 provides a powerful graphical interface for database management and monitoring.

StackBuilder Plus

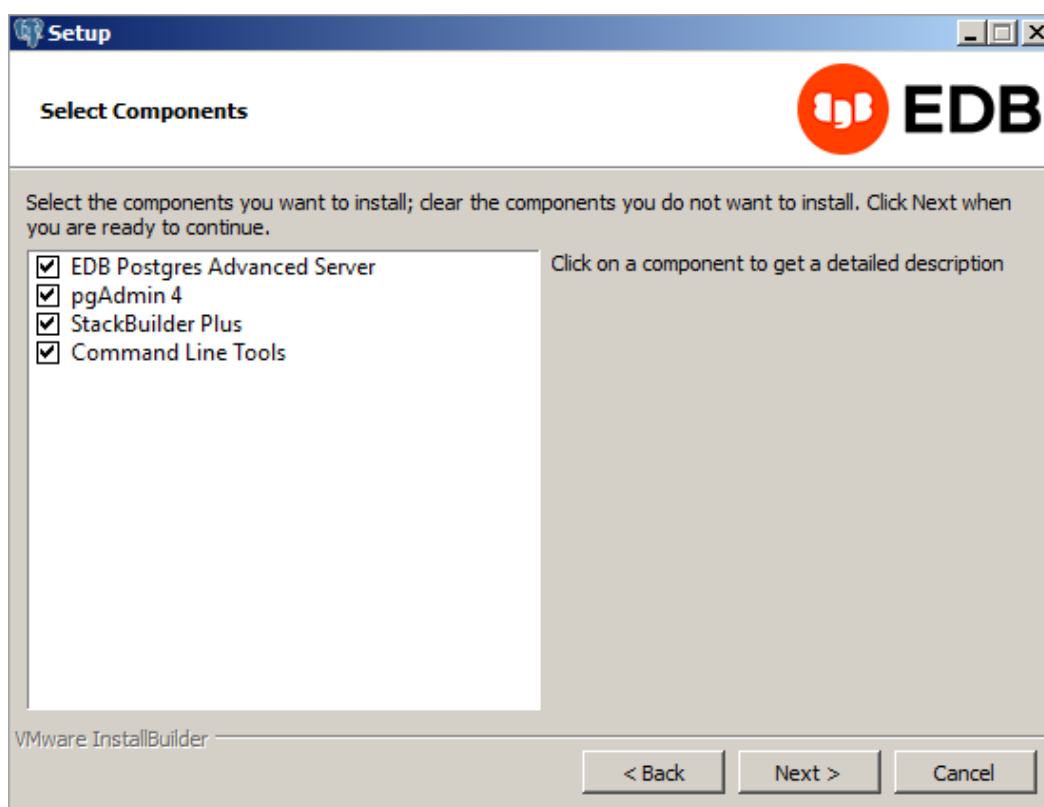


Fig. 4: The Select Components window

The `StackBuilder Plus` utility is a graphical tool that can update installed products, or download and add supporting modules (and the resulting dependencies) after your Advanced Server setup and installation completes. See *Using StackBuilder Plus* for more information about StackBuilder Plus.

Command Line Tools

The `Command Line Tools` option installs command line tools and supporting client libraries including:

- `libpq`
- `psql`
- `EDB*Loader`
- `ecpgPlus`
- `pg_basebackup`, `pg_dump`, and `pg_restore`
- `pg_bench`
- and more.

Note: The `Command Line Tools` are required if you are installing Advanced Server or pgAdmin 4.

After selecting the components you wish to install, click `Next` to open the `Additional Directories` window.

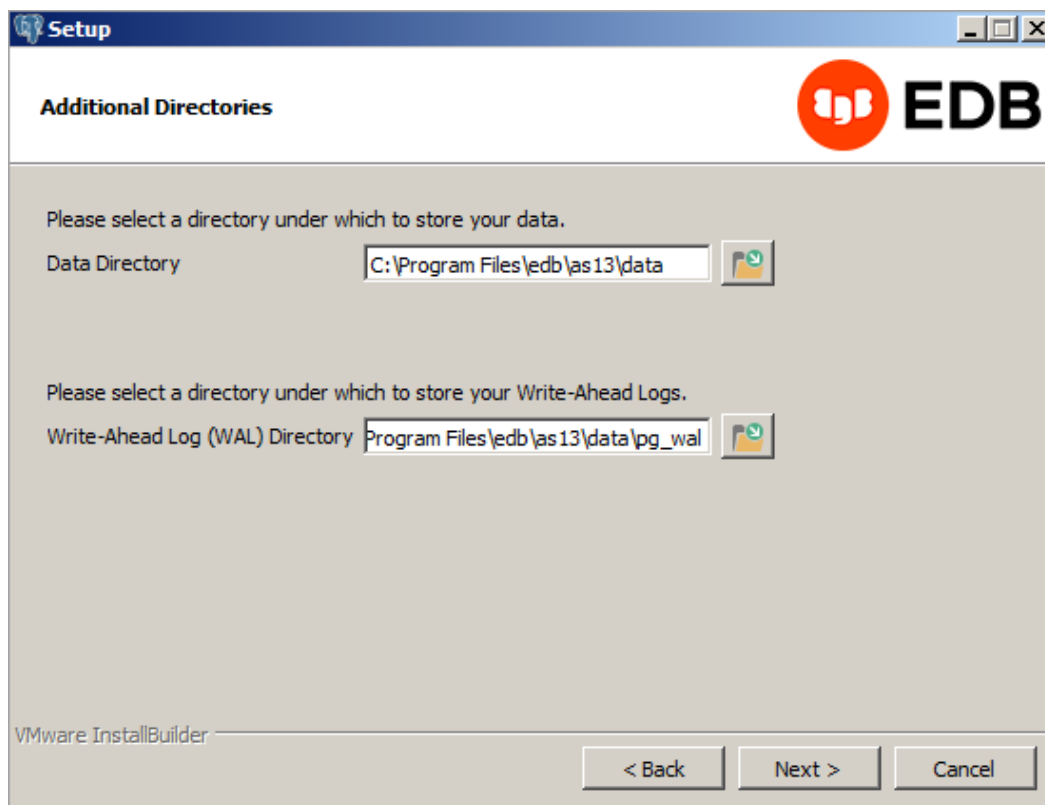


Fig. 5: *The Additional Directories window*

By default, the Advanced Server `data` files are saved to:

```
C:\Program Files\edb\as13\data
```

The default location of the Advanced Server Write-Ahead Log (WAL) Directory is:

```
C:\Program Files\edb\as13\data\pg_wal
```

Advanced Server uses write-ahead logs to promote transaction safety and speed transaction processing; when you make a change to a table, the change is stored in shared memory and a record of the change is written to the write-ahead log. When you perform a COMMIT, Advanced Server writes contents of the write-ahead log to disk.

Accept the default file locations, or use the File Browser icon to select an alternate location; click Next to continue to the Advanced Server Dialect window.

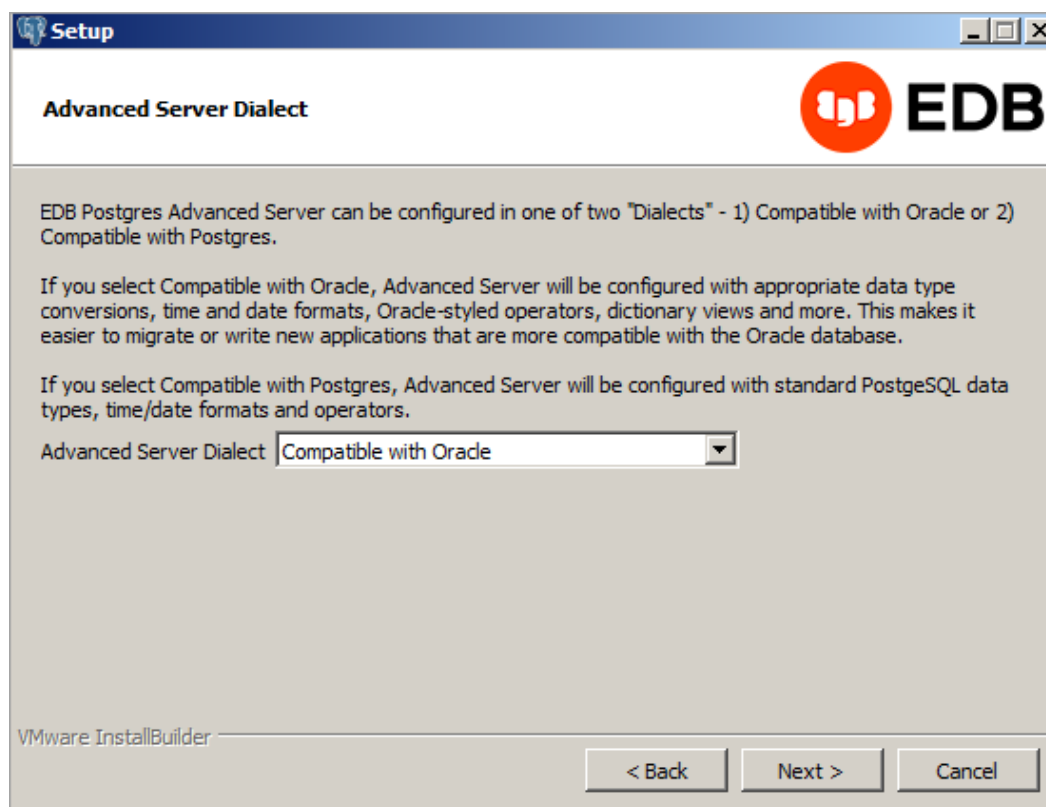


Fig. 6: *The Advanced Server Dialect window*

Use the drop-down listbox on the Advanced Server Dialect window to choose a server dialect. The server dialect specifies the compatibility features supported by Advanced Server.

By default, Advanced Server installs in Compatible with Oracle mode; you can choose between Compatible with Oracle and Compatible with PostgreSQL installation modes.

Compatible with Oracle

If you select Compatible with Oracle, the installation will include the following features:

- Data dictionary views that is compatible with Oracle databases.
- Oracle data type conversions.
- Date values displayed in a format compatible with Oracle syntax.

- Support for Oracle-styled concatenation rules (if you concatenate a string value with a NULL value, the returned value is the value of the string).
- Schemas (`dbo` and `sys`) compatible with Oracle databases added to the `SEARCH_PATH`.
- Support for the following Oracle built-in packages:

Package	Functionality compatible with Oracle Databases
<code>dbms_alert</code>	Provides the capability to register for, send, and receive alerts.
<code>dbms_job</code>	Provides the capability for the creation, scheduling, and managing of jobs.
<code>dbms_lob</code>	Provides the capability to manage on large objects.
<code>dbms_output</code>	Provides the capability to send messages to a message buffer, or get messages from the message buffer.
<code>dbms_pipe</code>	Provides the capability to send messages through a pipe within or between sessions connected to the same database cluster.
<code>dbms_ols</code>	Enables the implementation of Virtual Private Database on certain Advanced Server database objects.
<code>dbms_sql</code>	Provides an application interface to the EDB dynamic SQL functionality.
<code>dbms_utility</code>	Provides various utility programs.
<code>dbms_aqadm</code>	Provides supporting procedures for Advanced Queueing functionality.
<code>dbms_aq</code>	Provides message queueing and processing for Advanced Server.
<code>dbms_profiler</code>	Collects and stores performance information about the PL/pgSQL and SPL statements that are executed during a performance profiling session.
<code>dbms_random</code>	Provides a number of methods to generate random values.
<code>dbms_redact</code>	Enables the redacting or masking of data that is returned by a query.
<code>dbms_lock</code>	Provides support for the <code>DBMS_LOCK.SLEEP</code> procedure.
<code>dbms_scheduler</code>	Provides a way to create and manage jobs, programs, and job schedules.
<code>dbms_crypto</code>	Provides functions and procedures to encrypt or decrypt RAW, BLOB or CLOB data. You can also use <code>DBMS_CRYPTO</code> functions to generate cryptographically strong random values.
<code>dbms_mview</code>	Provides a way to manage and refresh materialized views and their dependencies.
<code>dbms_session</code>	Provides support for the <code>DBMS_SESSION.SET_ROLE</code> procedure.
<code>utl_encode</code>	Provides a way to encode and decode data.
<code>utl_http</code>	Provides a way to use the HTTP or HTTPS protocol to retrieve information found at an URL.
<code>utl_file</code>	Provides the capability to read from, and write to files on the operating system's file system.
<code>utl_smtp</code>	Provides the capability to send e-mails over the Simple Mail Transfer Protocol (SMTP).
<code>utl_mail</code>	Provides the capability to manage e-mail.
<code>utl_url</code>	Provides a way to escape illegal and reserved characters within an URL.
<code>utl_raw</code>	Provides a way to manipulate or retrieve the length of raw data types.

This is not a comprehensive list of the compatibility features for Oracle included when Advanced Server is installed in `Compatible with Oracle` mode; for more information, see the *Database Compatibility for Oracle Developer's Guide* available from the EDB website at:

<https://www.enterprisedb.com/edb-docs>

If you choose to install in `Compatible with Oracle` mode, the Advanced Server superuser name is `enterprisedb`.

Compatible with PostgreSQL

If you select `Compatible with PostgreSQL`, Advanced Server will exhibit compatibility with PostgreSQL version 13. If you choose to install in `Compatible with PostgreSQL` mode, the default Advanced Server superuser name is `postgres`.

For detailed information about PostgreSQL functionality, visit the official PostgreSQL website at:

<http://www.postgresql.org>

After specifying a configuration mode, click **Next** to continue to the **Password** window.

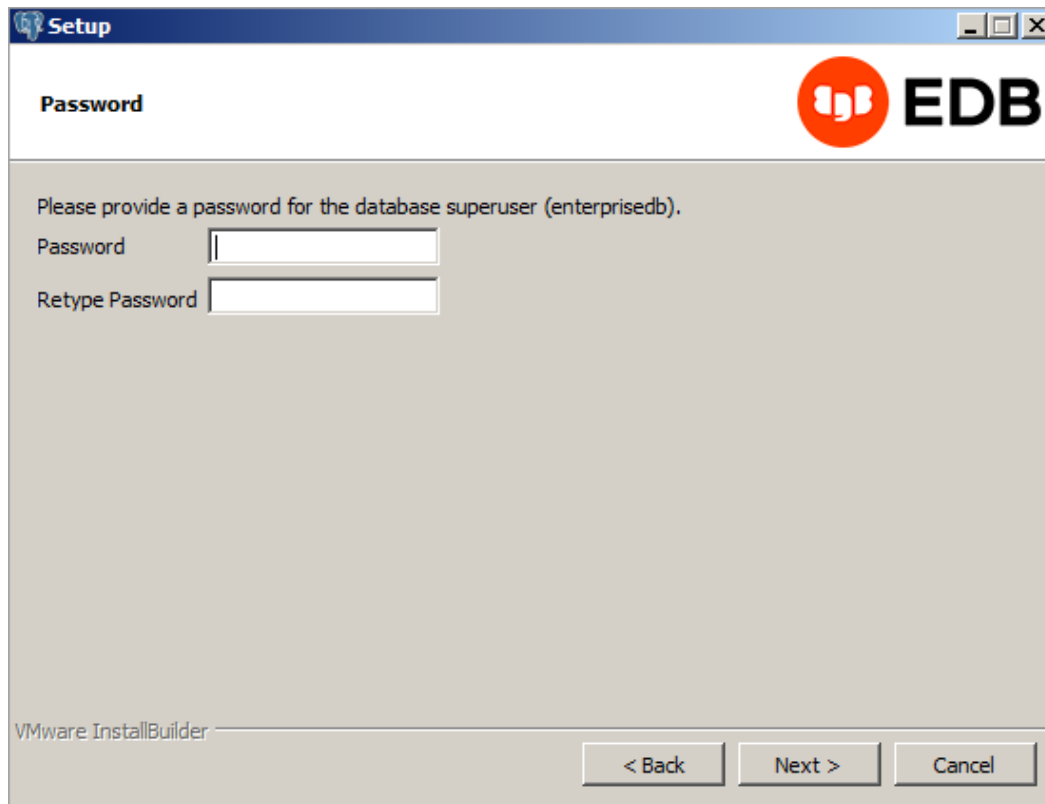


Fig. 7: *The Password window*

Advanced Server uses the password specified on the **Password** window for the database superuser. The specified password must conform to any security policies existing on the Advanced Server host.

After you enter a password in the **Password** field, confirm the password in the **Retype Password** field, and click **Next** to continue.

The **Additional Configuration** window opens.

Use the fields on the **Additional Configuration** window to specify installation details:

- Use the **Port** field to specify the port number that Advanced Server should listen to for connection requests from client applications. The default is 5444.
- If the **Locale** field is set to [Default locale], Advanced Server uses the system locale as the working locale. Use the drop-down listbox next to **Locale** to specify an alternate locale for Advanced Server.
- By default, the Setup wizard installs corresponding sample data for the server dialect specified by the compatibility mode (Oracle or PostgreSQL). Clear the check box next to **Install sample tables and procedures** if you do not wish to have sample data installed.

After verifying the information on the **Additional Configuration** window, click **Next** to open the **Dynatune Dynamic Tuning: Server Utilization** window.

The graphical Setup wizard facilitates performance tuning via the Dynatune Dynamic Tuning feature. Dynatune functionality allows Advanced Server to make optimal usage of the system resources available on the host machine on which it is installed.

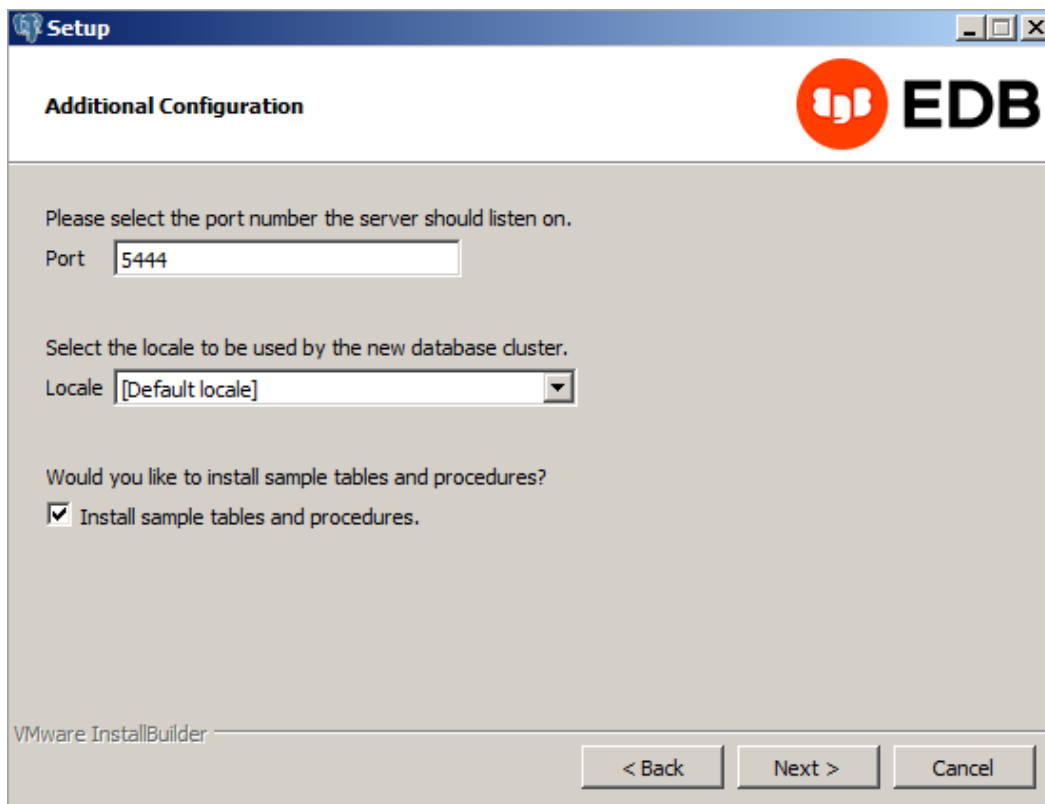


Fig. 8: *The Additional Configuration window*

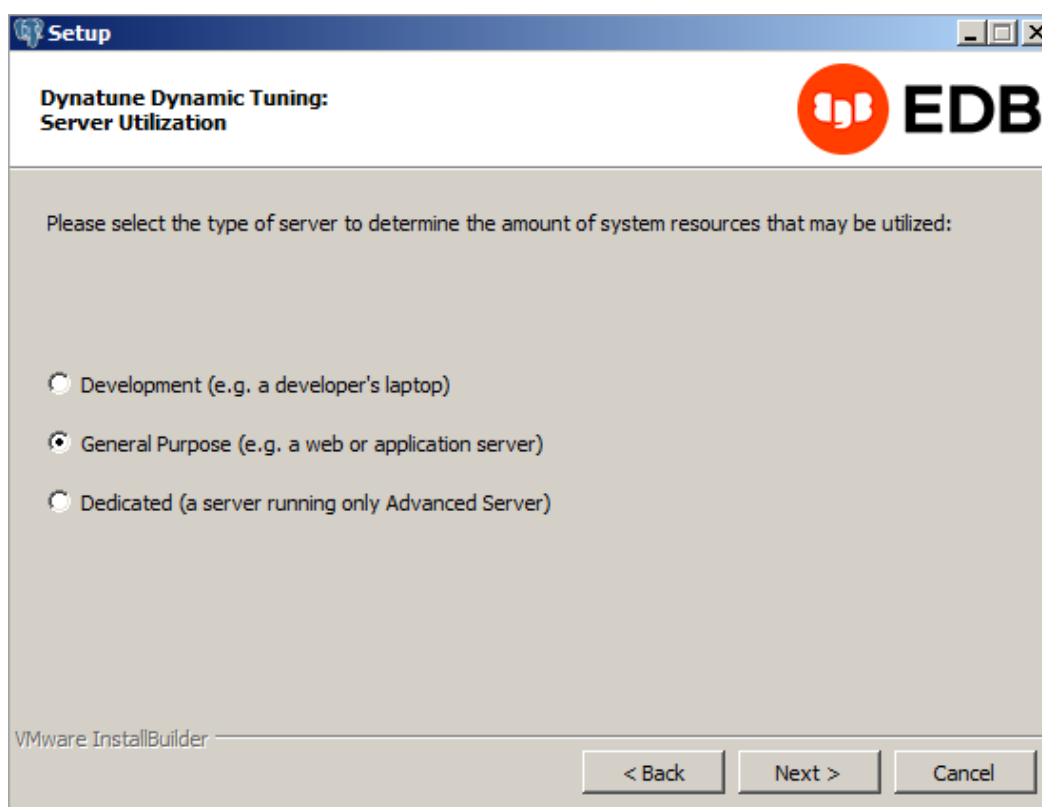


Fig. 9: *The Dynatune Dynamic Tuning: Server Utilization window*

The `edb_dynatune` configuration parameter determines how Advanced Server allocates system resources. Use the radio buttons on the `Server Utilization` window to set the initial value of the `edb_dynatune` configuration parameter:

- Select `Development` to set the value of `edb_dynatune` to 33. A low value dedicates the least amount of the host machine's resources to the database server. This is a good choice for a development machine.
- Select `General Purpose` to set the value of `edb_dynatune` to 66. A mid-range value dedicates a moderate amount of system resources to the database server. This would be a good setting for an application server with a fixed number of applications running on the same host as Advanced Server.
- Select `Dedicated` to set the value of `edb_dynatune` to 100. A high value dedicates most of the system resources to the database server. This is a good choice for a dedicated server host.

After the installation is complete, you can adjust the value of `edb_dynatune` by editing the `postgresql.conf` file, located in the data directory of your Advanced Server installation. After editing the `postgresql.conf` file, you must restart the server for your changes to take effect.

Select the appropriate setting for your system, and click `Next` to continue to the `Dynatune Dynamic Tuning: Workload Profile` window.

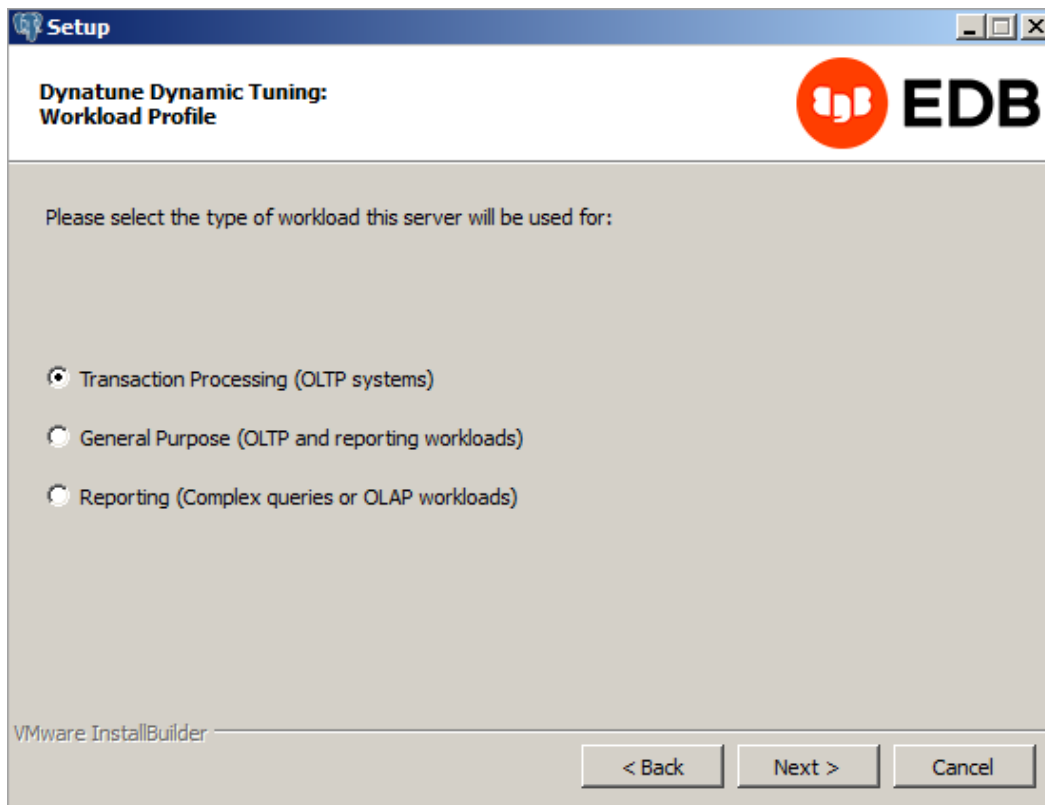


Fig. 10: The *Dynatune Dynamic Tuning: Workload Profile* window

Use the radio buttons on the `Workload Profile` window to specify the initial value of the `edb_dynatune_profile` configuration parameter. The `edb_dynatune_profile` parameter controls performance-tuning aspects based on the type of work that the server performs.

- Select `Transaction Processing (OLTP systems)` to specify an `edb_dynatune_profile` value of `oltp`. Recommended when Advanced Server is supporting heavy online transaction processing.
- Select `General Purpose (OLTP and reporting workloads)` to specify an

`edb_dynatune_profile` value of `mixed`. Recommended for servers that provide a mix of transaction processing and data reporting.

- Select `Reporting (Complex queries or OLAP workloads)` to specify an `edb_dynatune_profile` value of `reporting`. Recommended for database servers used for heavy data reporting.

After the installation is complete, you can adjust the value of `edb_dynatune_profile` by editing the `postgresql.conf` file, located in the data directory of your Advanced Server installation. After editing the `postgresql.conf` file, you must restart the server for your changes to take effect.

For more information about `edb_dynatune` and other performance-related topics, see the *EDB Postgres Advanced Server Guide* available from the EDB website at:

<https://www.enterprisedb.com/edb-docs>

Click **Next** to continue.

By default, Advanced Server is configured to start the service when the system boots. The **Pre Installation Summary** opens.

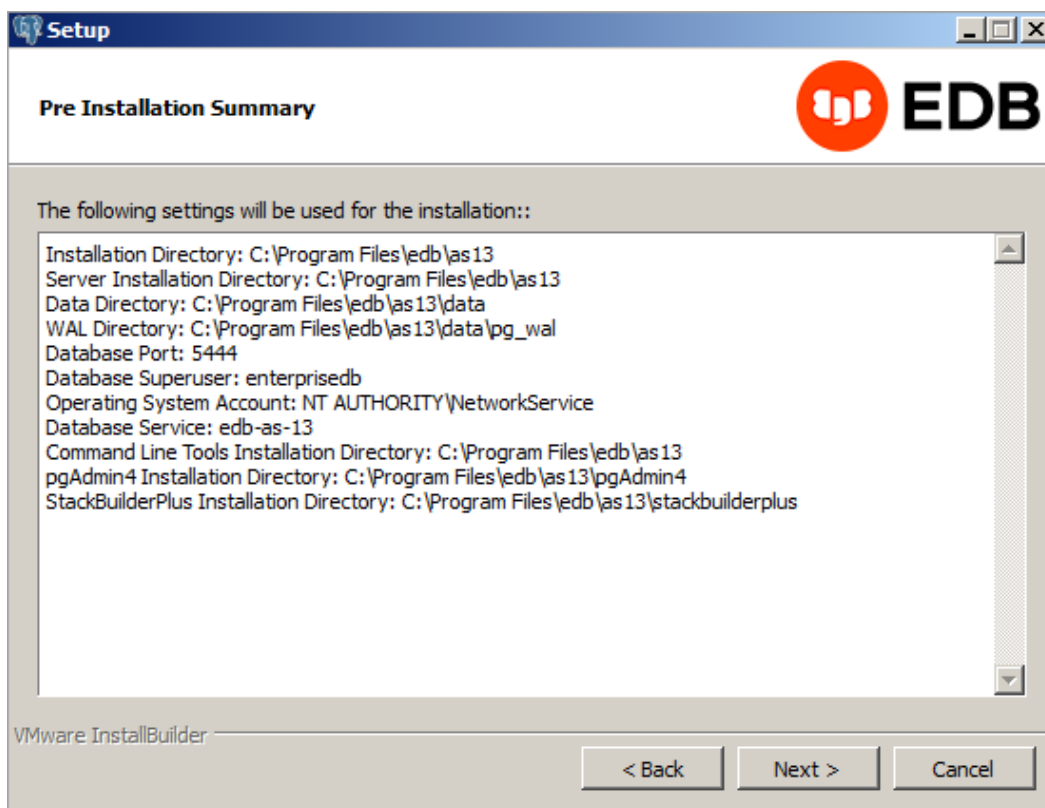


Fig. 11: *The Pre Installation Summary*

The **Pre Installation Summary** provides an overview of the options specified during the **Setup** process. Review the options before clicking **Next**; click **Back** to navigate back through the dialogs and update any options.

The `Ready to Install` window confirms that the installer has the information it needs about your configuration preferences to install Advanced Server. Click `Next` to continue.

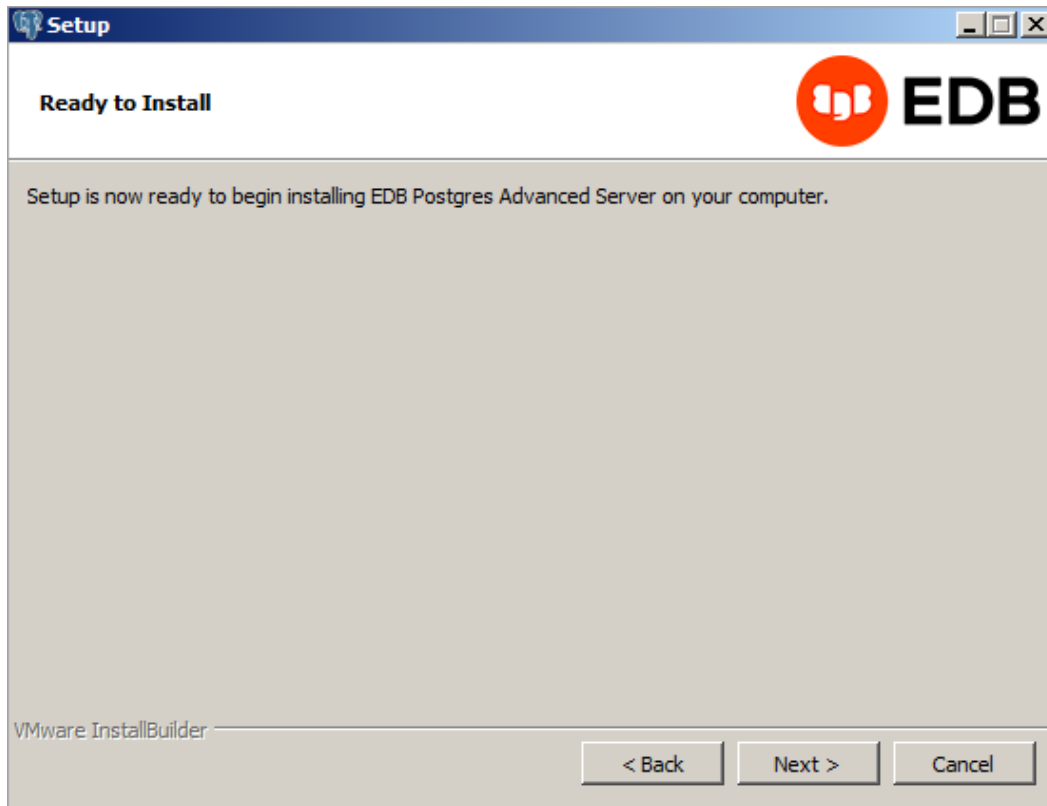


Fig. 12: *The Ready to Install window*

As each supporting module is unpacked and installed, the module's installation is confirmed with a progress bar.

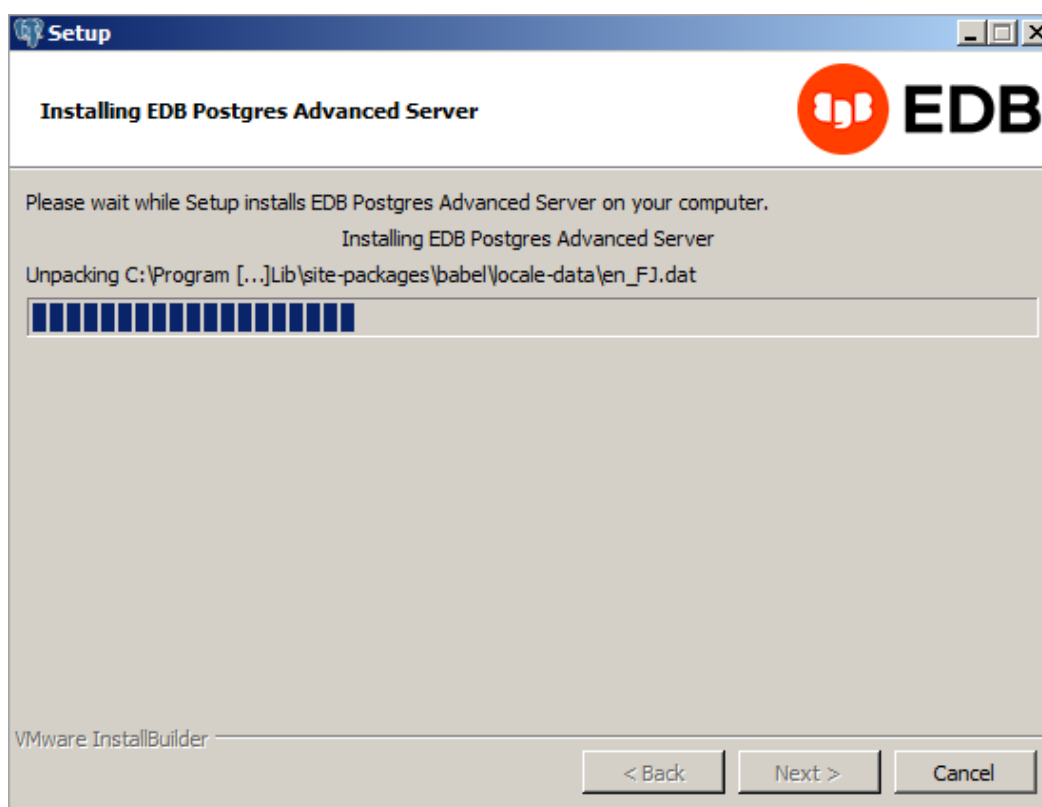


Fig. 13: *Installing Advanced Server*

Before the Setup wizard completes the Advanced Server installation, it offers to Launch StackBuilder Plus at exit?

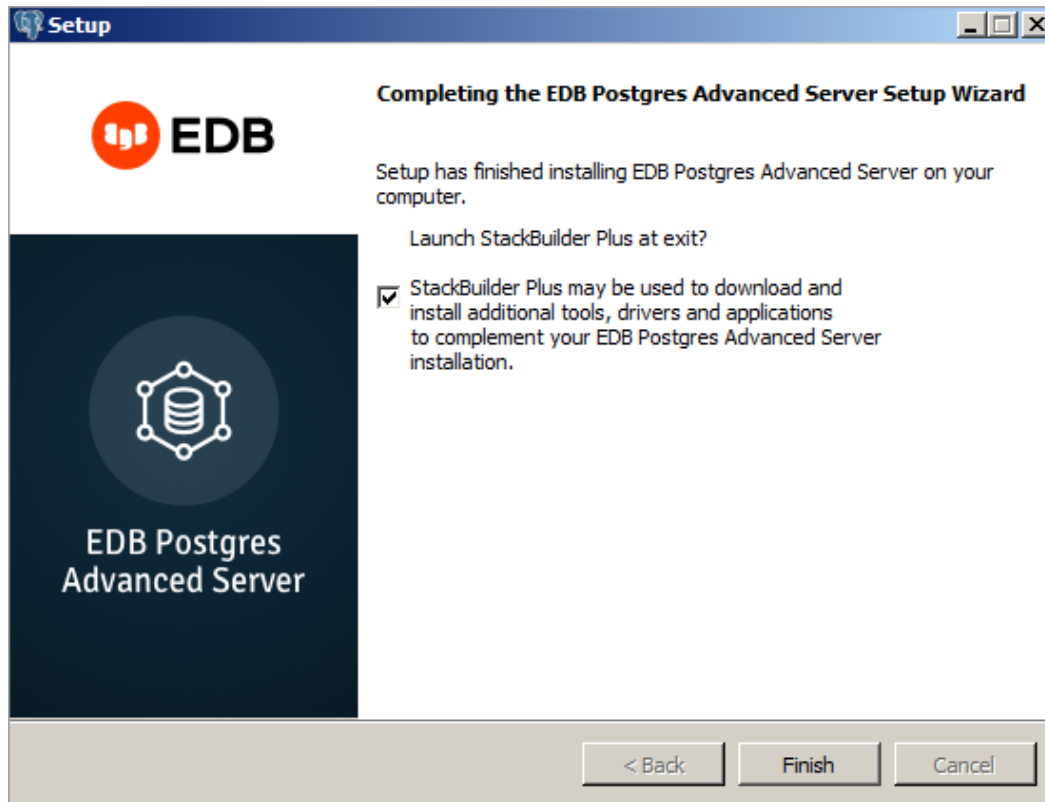


Fig. 14: The Setup wizard offers to Launch StackBuilder Plus at exit

You can clear the StackBuilder Plus check box and click Finish to complete the Advanced Server installation, or accept the default and proceed to StackBuilder Plus.

EDB Postgres StackBuilder Plus is included with the installation of Advanced Server and its core supporting components. StackBuilder Plus is a graphical tool that can update installed products, or download and add supporting modules (and the resulting dependencies) after your Advanced Server setup and installation completes. See [Using StackBuilder Plus](#) for more information about StackBuilder Plus.

3.2 Invoking the Graphical Installer from the Command Line

The command line options of the Advanced Server installer offer functionality for Windows systems that reside in situations where a graphical installation may not work because of limited resources or privileges. You can:

- Include the `--mode unattended` option when invoking the installer to perform an installation without user input.
- Invoke the installer with the `--extract-only` option to perform a minimal installation when you don't hold the privileges required to perform a complete installation.

Not all command line options are suitable for all situations. For a complete reference guide to the command line options, see *Reference - Command Line Options*.

Note: If you are invoking the installer from the command line to perform a system upgrade, the installer will ignore command line options, and preserve the configuration of the previous installation.

3.2.1 Performing an Unattended Installation

To specify that the installer should run without user interaction, include the `--mode unattended` command line option. In unattended mode, the installer uses one of the following sources for configuration parameters:

- command line options (specified when invoking the installer)
- parameters specified in an option file
- Advanced Server installation defaults

You can embed the non-interactive Advanced Server installer within another application installer; during the installation process, a progress bar allows the user to view the progression of the installation.

You must have administrative privileges to install Advanced Server using the `--mode unattended` option. If you are using the `--mode unattended` option to install Advanced Server with a client, the calling client must be invoked with superuser or administrative privileges.

To start the installer in unattended mode, navigate to the directory that contains the executable file, and enter:

```
edb-as13-server-13.x.x-x-windows-x64.exe --mode unattended --superpassword  
database_superuser_password --servicepassword system_password
```

When invoking the installer, include the `--servicepassword` option to specify an operating system password for the user installing Advanced Server.

Use the `--superpassword` option to specify a password that conforms to the password security policies defined on the host; enforced password policies on your system may not accept the default password (`enterprisedb`).

3.2.2 Performing an Installation with Limited Privileges

To perform an abbreviated installation of Advanced Server without access to administrative privileges, invoke the installer from the command line and include the `--extract-only` option. The `--extract-only` option extracts the binary files in an unaltered form, allowing you to experiment with a minimal installation of Advanced Server.

If you invoke the installer with the `--extract-only` options, you can either manually create a cluster and start the service, or run the installation script. To manually create the cluster, you must:

- Use `initdb` to initialize the cluster
- Configure the cluster
- Use `pg_ctl` to start the service

For more information about the `initdb` and `pg_ctl` commands, see the PostgreSQL Core Documentation at:

<https://www.postgresql.org/docs/current/static/app-initdb.html>

<https://www.postgresql.org/docs/current/static/app-pg-ctl.html>

If you include the `--extract-only` option, the installer steps through a shortened form of the `Setup` wizard. During the brief installation process, the installer generates an installation script that can be later used to complete a more complete installation. You must have administrative privileges to invoke the installation script.

The installation script:

- Initializes the database cluster if the cluster is empty.
- Configures the server to start at boot-time.
- Establishes initial values for Dynatune (dynamic tuning) variables.

The scripted Advanced Server installation does not create menu shortcuts or provide access to EDB Postgres Stack-Builder Plus, and no modifications are made to registry files.

To perform a limited installation and generate an installation script, download and unpack the Advanced Server installer. Navigate into the directory that contains the installer, and invoke the installer with the command:

```
edb-as13-server-13.x.x-x-windows.exe --extract-only yes
```

A dialog opens, prompting you to choose an installation language. Select a language for the installation from the drop-down listbox, and click `OK` to continue. The `Setup Wizard` opens.

Click `Next` to continue.

On Windows, the default Advanced Server installation directory is:

```
C:\Program Files\edb\as13
```

You can accept the default installation location and click `Next` to continue to the `Ready to Install` window, or optionally click the `File Browser` icon to choose an alternate installation directory.

Click `Next` to proceed with the Advanced Server installation. During the installation, progress bars and popups mark the installation progress. The installer notifies you when the installation is complete.

After completing the minimal installation, you can execute a script to initialize a cluster and start the service. The script is (by default) located in:

```
C:\Program Files\edb
```

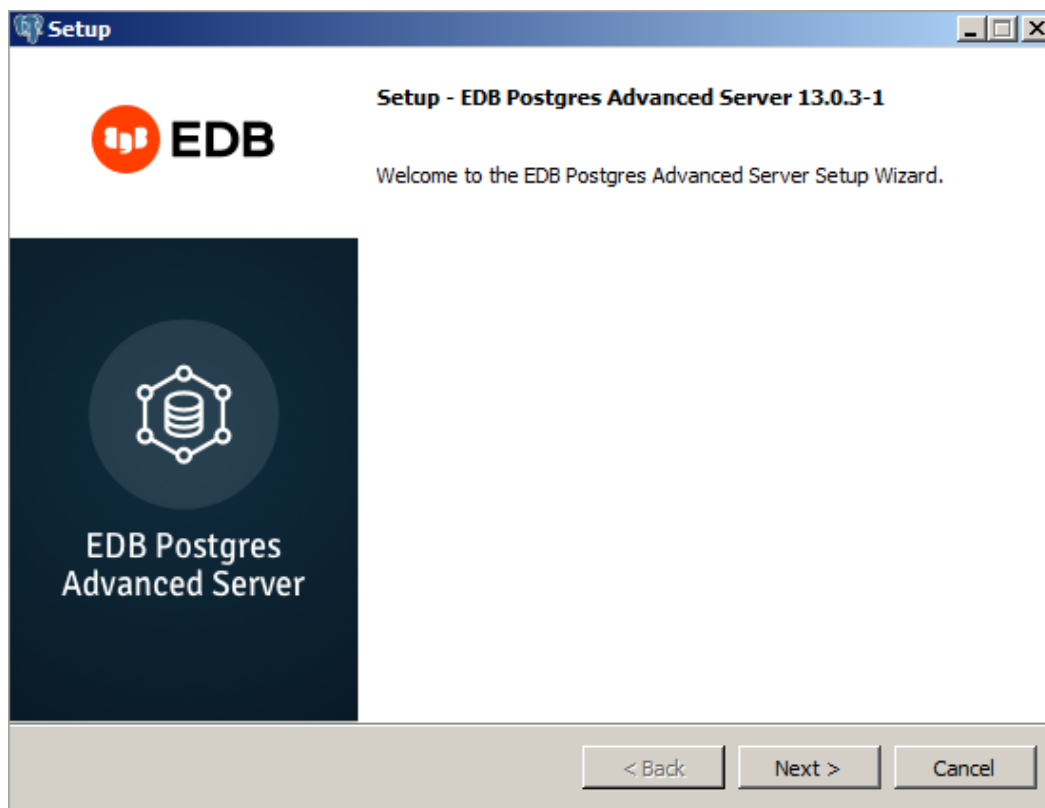


Fig. 15: *The Welcome window*

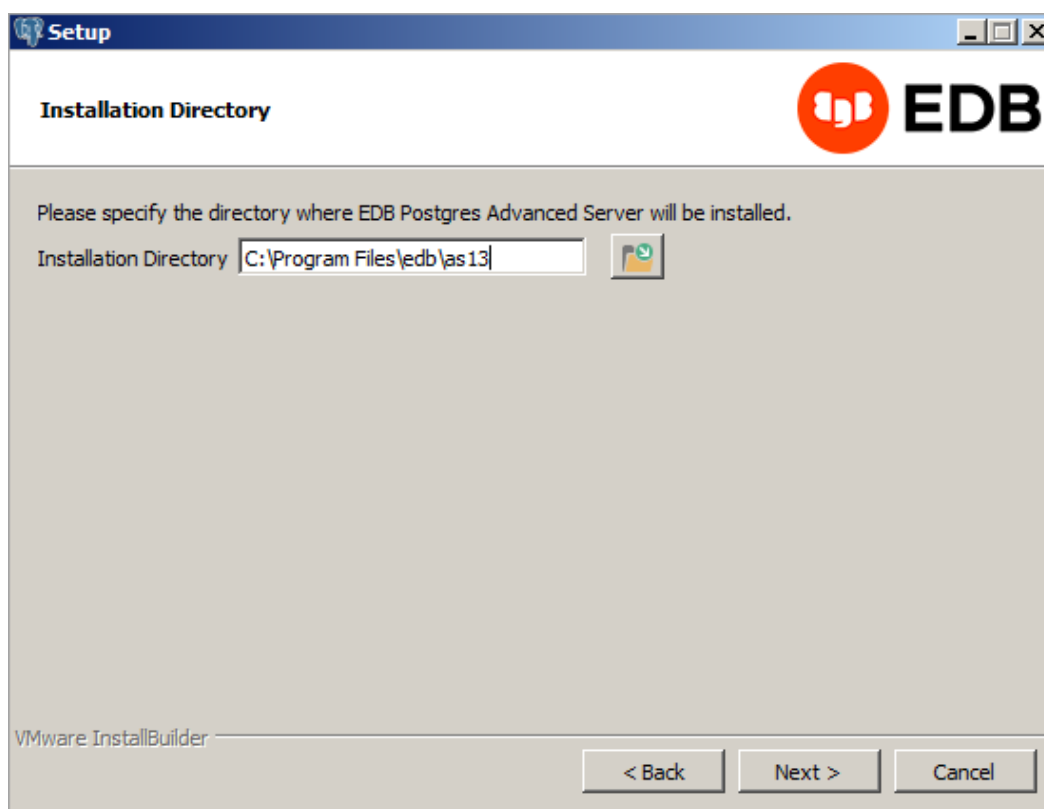


Fig. 16: *Specify an installation directory*

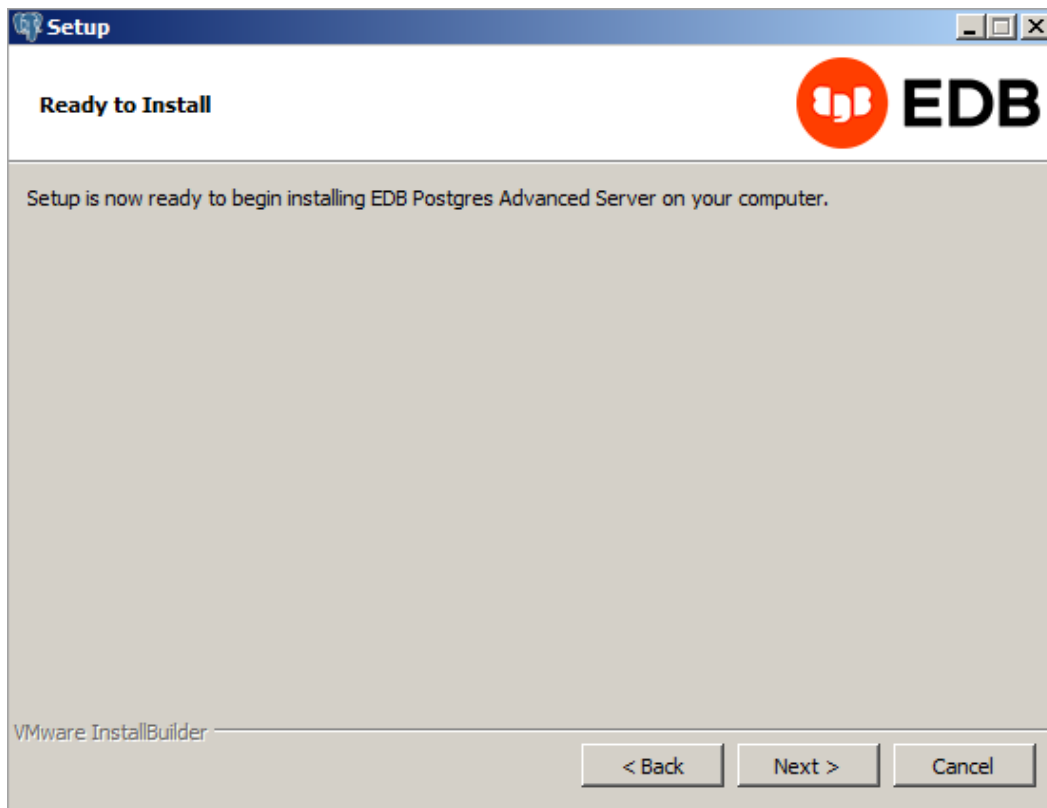


Fig. 17: The Setup wizard is ready to install Advanced Server

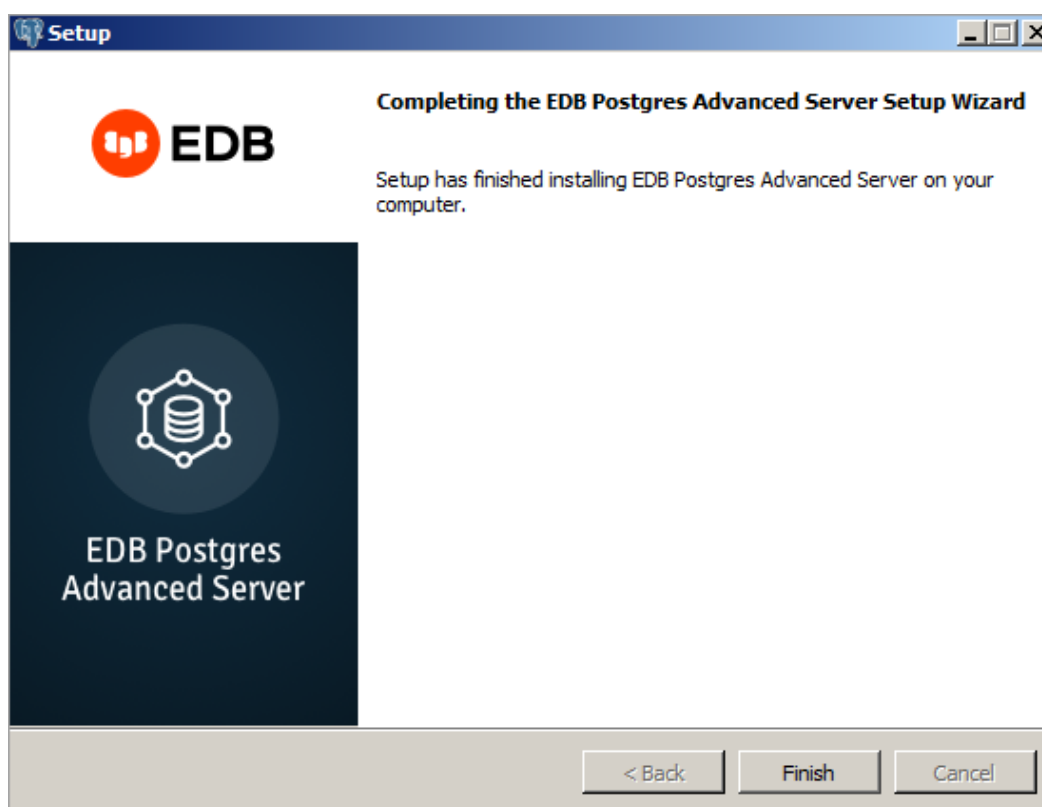


Fig. 18: *The Advanced Server installation is complete*

3.2.3 Reference - Command Line Options

You can optionally include the following parameters for an Advanced Server installation on the command line, or in a configuration file when invoking the Advanced Server installer.

```
--create_samples { yes | no }
```

Use the `--create_samples` option to specify whether the installer should create the sample tables and procedures for the database dialect specified with the `--databasemode` parameter. The default is `yes`.

```
--databasemode { oracle | postgresql }
```

Use the `--databasemode` parameter to specify a database dialect. The default is `oracle`.

```
--datadir data_directory
```

Use the `--datadir` parameter to specify a location for the cluster's data directory. `data_directory` is the name of the directory; include the complete path to the desired directory.

```
--debuglevel { 0 | 1 | 2 | 3 | 4 }
```

Use the `--debuglevel` parameter to set the level of detail written to the `debug_log` file (see `--debugtrace`). Higher values produce more detail in a longer trace file. The default is `2`.

```
--debugtrace debug_log
```

Use the `--debugtrace` parameter to troubleshoot installation problems. `debug_log` is the name of the file that contains troubleshooting details.

```
--disable-components component_list
```

Use the `--disable-components` parameter to specify a list of Advanced Server components to exclude from the installation. By default, `component_list` contains "" (the empty string). `component_list` is a comma-separated list containing one or more of the following components:

`dbserver`

EDB Postgres Advanced Server 13.

`pgadmin4`

The EDB Postgres pgAdmin 4 provides a powerful graphical interface for database management and monitoring.

```
--enable_acledit { 1 | 0 }
```

The `--enable_acledit 1` option instructs the installer to grant permission to the user specified by the `--serviceaccount` option to access the Advanced Server binaries and data directory. By default, this option is disabled if `--enable_acledit 0` is specified or if the `--enable_acledit` option is completely omitted.

Note: Specification of this option is valid only when installing on Windows. The `--enable_acledit 1` option should be specified when a discretionary access control list (DACL) needs to be set for allowing access to objects on which Advanced Server is to be installed. See the following for information on a DACL: [https://msdn.microsoft.com/en-us/library/windows/desktop/aa446597\(v=vs.85\).aspx](https://msdn.microsoft.com/en-us/library/windows/desktop/aa446597(v=vs.85).aspx)

In order to perform future operations such as upgrading Advanced Server, access to the data directory must exist for the service account user specified by the `--serviceaccount` option. By specifying the `--enable_acledit 1` option, access to the data directory by the service account user is provided.

`--enable-components component_list`

Although this option is listed when you run the installer with the `--help` option, the `--enable-components` parameter has absolutely no effect on which components are installed. All components will be installed regardless of what is specified in `component_list`. In order to install only specific selected components, you must use the `--disable-components` parameter previously described in this section to list the components you do not want to install.

`--extract-only { yes | no }`

Include the `--extract-only` parameter to indicate that the installer should extract the Advanced Server binaries without performing a complete installation. Superuser privileges are not required for the `--extract-only` option. The default value is `no`.

`--help`

Include the `--help` parameter to view a list of the optional parameters.

`--installer-language { en | ja | zh_CN | zh_TW | ko }`

Use the `--installer-language` parameter to specify an installation language for Advanced Server. The default is `en`.

`en` specifies English.

`ja` specifies Japanese

`zh_CN` specifies Chinese Simplified.

`zh_TW` specifies Traditional Chinese.

`ko` specifies Korean.

```
--install_runtimes { yes | no }
```

Include `--install_runtimes` to specify whether the installer should install the Microsoft Visual C++ runtime libraries. Default is `yes`.

```
--locale locale
```

Specifies the locale for the Advanced Server cluster. By default, the installer will use to the locale detected by `initdb`.

```
--mode { unattended }
```

Use the `--mode unattended` parameter to specify that the installer should perform an installation that requires no user input during the installation process.

```
--optionfile config_file
```

Use the `--optionfile` parameter to specify the name of a file that contains the installation configuration parameters. `config_file` must specify the complete path to the configuration parameter file.

```
--prefix installation_dir/as13
```

Use the `--prefix` parameter to specify an installation directory for Advanced Server. The installer will append a version-specific sub-directory (that is, `as13`) to the specified directory. The default installation directory is:

```
C:\Program Files\edb\as13
```

```
--serverport port_number
```

Use the `--serverport` parameter to specify a listener port number for Advanced Server.

If you are installing Advanced Server in unattended mode, and do not specify a value using the `--serverport` parameter, the installer will use port 5444, or the first available port after port 5444 as the default listener port.

```
--server_utilization {33 | 66 | 100}
```

Use the `--server_utilization` parameter to specify a value for the `edb_dynatune` configuration parameter. The `edb_dynatune` configuration parameter determines how Advanced Server allocates system resources.

- A value of 33 is appropriate for a system used for development. A low value dedicates the least amount of the host machine's resources to the database server.

- A value of 66 is appropriate for an application server with a fixed number of applications. A mid-range value dedicates a moderate amount of system resources to the database server. The default value is 66.
- A value of 100 is appropriate for a host machine that is dedicated to running Advanced Server. A high value dedicates most of the system resources to the database server.

When the installation is complete, you can adjust the value of `edb_dynatune` by editing the `postgresql.conf` file, located in the data directory of your Advanced Server installation. After editing the `postgresql.conf` file, you must restart the server for the changes to take effect.

`--serviceaccount user_account_name`

Use the `--serviceaccount` parameter to specify the name of the user account that owns the server process.

- If `--databasemode` is set to `oracle` (the default), the default value of `--serviceaccount` is `enterprisedb`.
- If `--databasemode` is `postgresql`, the default value of `--serviceaccount` is set to `postgres`.

Please note that for security reasons, the `--serviceaccount` parameter must specify the name of an account that does not hold administrator privileges.

If you specify both the `--serviceaccount` option and the `--enable_acledit 1` option when invoking the installer, the database service and pgAgent will use the same service account, thereby having the required permissions to access the Advanced Server binaries and data directory.

Note: If you do not include the `--serviceaccount` option when invoking the installer, the NetworkService account will own the database service, and the pgAgent service will be owned by either `enterprisedb` or `postgres` (depending on the installation mode).

`--servicename service_name`

Use the `--servicename` parameter to specify the name of the Advanced Server service. The default is `edb-as-13`.

`--servicepassword user_password`

Use `--servicepassword` to specify the OS system password. If unspecified, the value of `--servicepassword` defaults to the value of `--superpassword`.

`--superaccount super_user_name`

Use the `--superaccount` parameter to specify the user name of the database superuser.

- If `--databasemode` is set to `oracle` (the default), the default value of `--superaccount` is `enterprisedb`.

- If `--databasemode` is set to `postgresql`, the default value of `--superaccount` is set to `postgres`.

```
--superpassword superuser_password
```

Use `--superpassword` to specify the database superuser password. If you are installing in non-interactive mode, `--superpassword` defaults to `enterprisedb`.

```
--unattendedmodeui { none | minimal | minimalWithDialogs }
```

Use the `--unattendedmodeui` parameter to specify installer behavior during an unattended installation.

Include `--unattendedmodeui none` to specify that the installer should not display progress bars during the Advanced Server installation.

Include `--unattendedmodeui minimal` to specify that the installer should display progress bars during the installation process. This is the default behavior.

Include `--unattendedmodeui minimalWithDialogs` to specify that the installer should display progress bars and report any errors encountered during the installation process (in additional dialogs).

```
--version
```

Include the `--version` parameter to retrieve version information about the installer:

```
EDB Postgres Advanced Server 13.0.3-1 --- Built on 2020-10-23
00:12:44 IB: 20.6.0-202008110127
```

```
--workload_profile {oltp | mixed | reporting}
```

Use the `--workload_profile` parameter to specify an initial value for the `edb_dynatune_profile` configuration parameter. `edb_dynatune_profile` controls aspects of performance-tuning based on the type of work that the server performs.

- Specify `oltp` if the Advanced Server installation will be used to support heavy online transaction processing workloads.
- The default value is `oltp`.
- Specify `mixed` if Advanced Server will provide a mix of transaction processing and data reporting.
- Specify `reporting` if Advanced Server will be used for heavy data reporting.

After the installation is complete, you can adjust the value of `edb_dynatune_profile` by editing the `postgresql.conf` file, located in the `data` directory of your Advanced Server installation. After editing the `postgresql.conf` file, you must restart the server for the changes to take effect.

For more information about `edb_dynatune` and other performance-related topics, see the *EDB Postgres Advanced Server Guide* available at:

<https://www.enterprisedb.com/edb-docs>

3.3 Using StackBuilder Plus

The StackBuilder Plus utility provides a graphical interface that simplifies the process of updating, downloading, and installing modules that complement your Advanced Server installation. When you install a module with StackBuilder Plus, StackBuilder Plus automatically resolves any software dependencies.

You can invoke StackBuilder Plus at any time after the installation has completed by selecting the `StackBuilder Plus` menu option from the `Apps` menu. Enter your system password (if prompted), and the StackBuilder Plus welcome window opens.

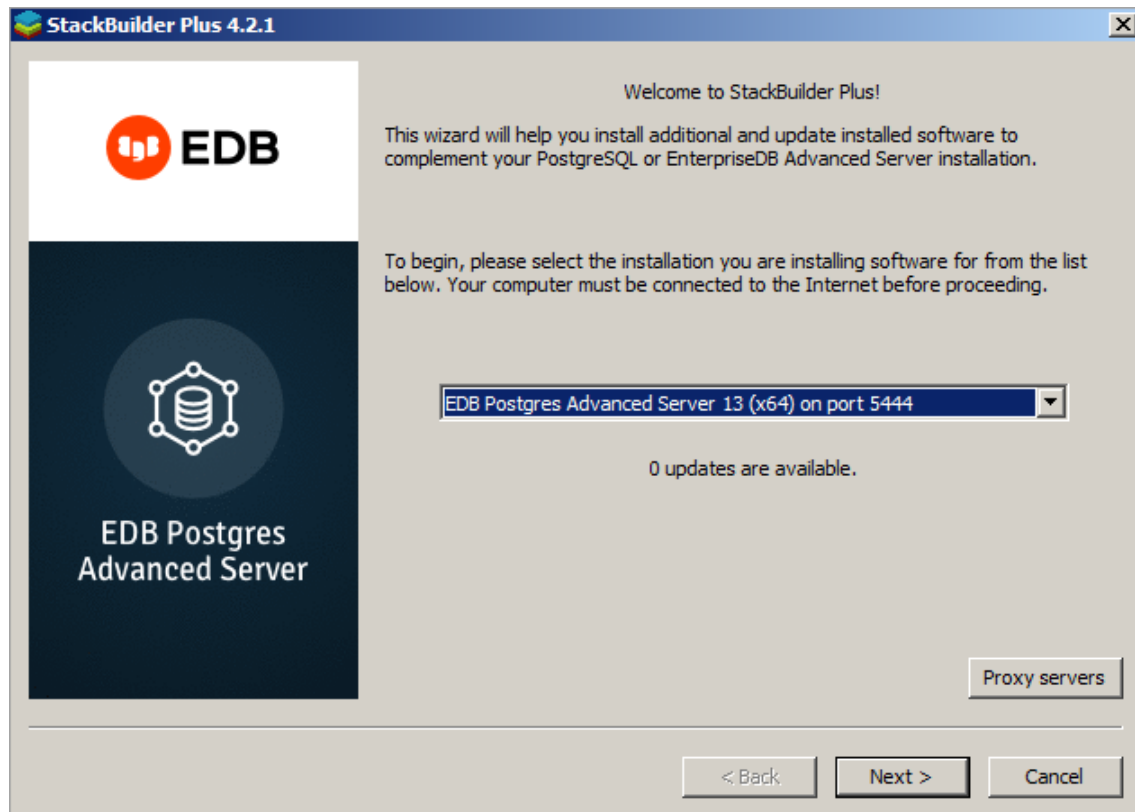


Fig. 19: *The StackBuilder Plus welcome window*

Use the drop-down listbox on the welcome window to select your Advanced Server installation.

StackBuilder Plus requires Internet access; if your installation of Advanced Server resides behind a firewall (with restricted Internet access), StackBuilder Plus can download program installers through a proxy server. The module provider determines if the module can be accessed through an HTTP proxy or an FTP proxy; currently, all updates are transferred via an HTTP proxy and the FTP proxy information is not used.

If the selected Advanced Server installation has restricted Internet access, use the `Proxy Servers` on the `Welcome` window to open the `Proxy servers` dialog.

Enter the IP address and port number of the proxy server in the `HTTP proxy` on the `Proxy Servers` dialog. Currently, all StackBuilder Plus modules are distributed via HTTP proxy (FTP proxy information is ignored). Click `OK` to continue.

The tree control on the StackBuilder Plus module selection window displays a node for each module category.

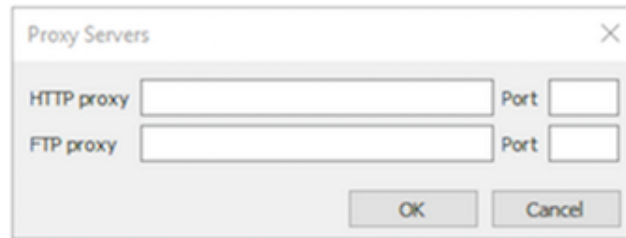


Fig. 20: The Proxy Servers dialog

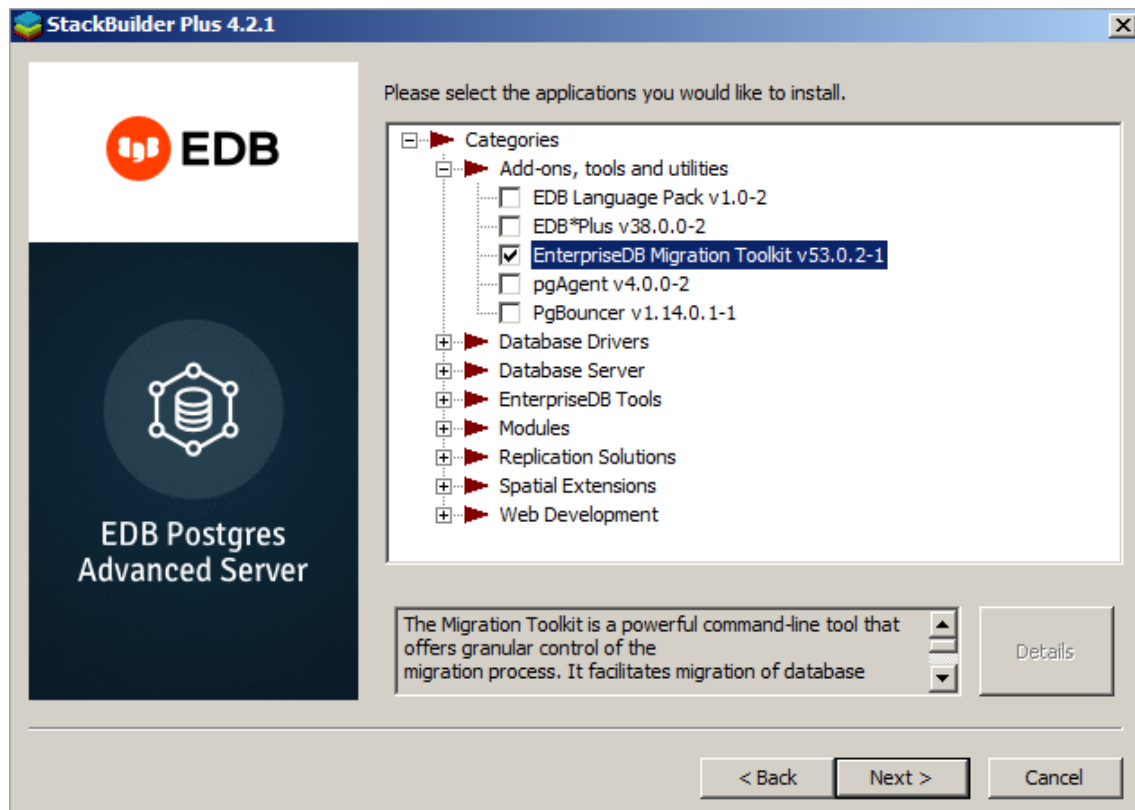


Fig. 21: The StackBuilder Plus module selection window

Expand a module, and highlight a component name in the tree control to review a detailed description of the component. To add one or more components to the installation or to upgrade a component, check the box to the left of a module name and click **Next**.

StackBuilder Plus confirms the packages selected.

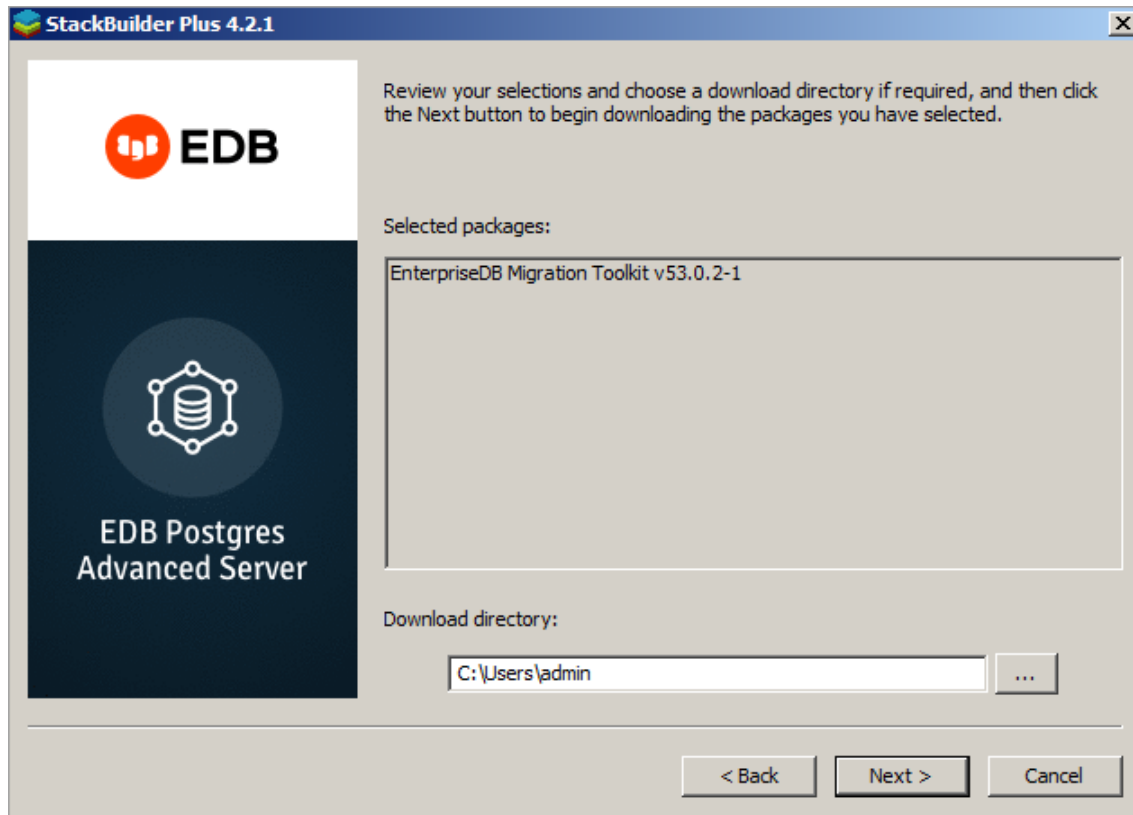


Fig. 22: A summary window displays a list of selected packages

Use the browse icon (...) to the right of the **Download directory** field to open a file selector, and choose an alternate location to store the downloaded installers. Click **Next** to connect to the server and download the required installation files.

When the download completes, a window opens that confirms the installation files have been downloaded and are ready for installation.

You can check the box next to **Skip Installation**, and select **Next** to exit StackBuilder Plus without installing the downloaded files, or leave the box unchecked and click **Next** to start the installation process.

Each downloaded installer has different requirements. As the installers execute, they may prompt you to confirm acceptance of license agreements, to enter passwords, and provide configuration information.

During the installation process, you may be prompted by one (or more) of the installers to restart your system. Select **No** or **Restart Later** until all installations are completed. When the last installation has completed, reboot the system to apply all of the updates.

You may occasionally encounter packages that don't install successfully. If a package fails to install, StackBuilder Plus will alert you to the installation error with a popup dialog, and write a message to the log file at %TEMP%.

When the installation is complete, StackBuilder Plus will alert you to the success or failure of the installations of the requested packages. If you were prompted by an installer to restart your computer, reboot now.

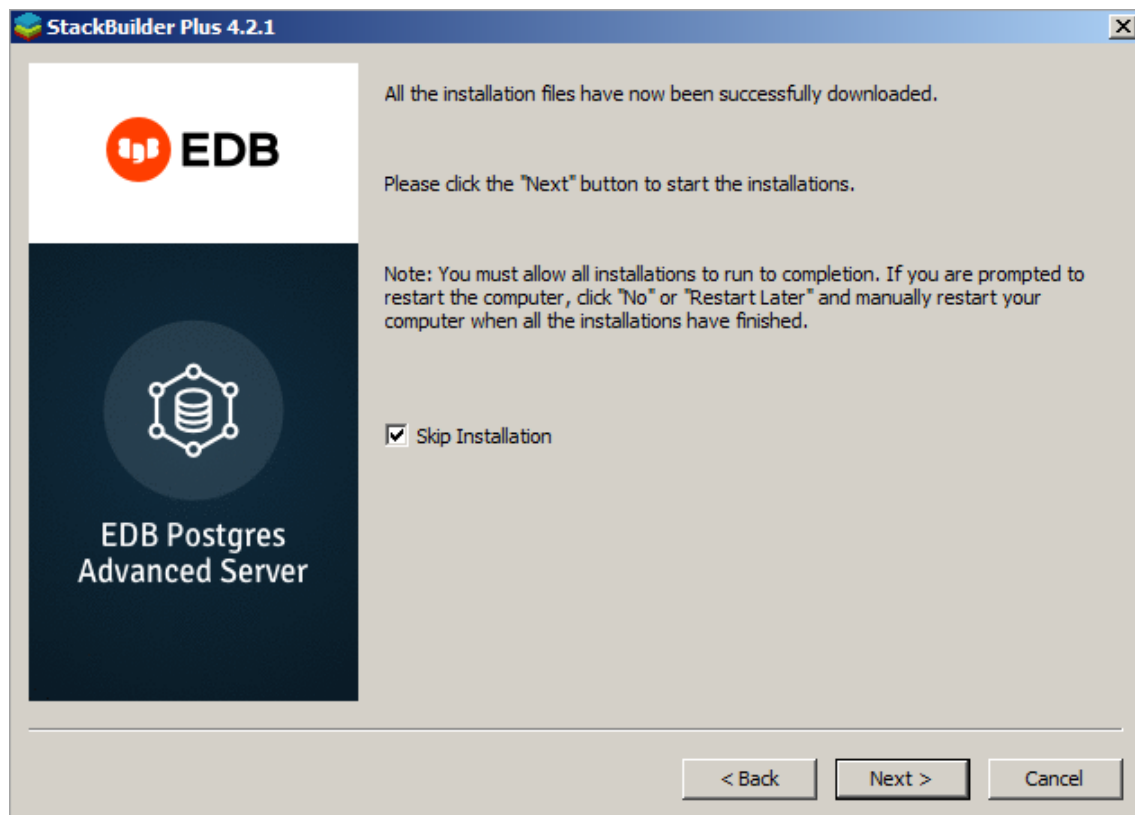


Fig. 23: Confirmation that the download process is complete

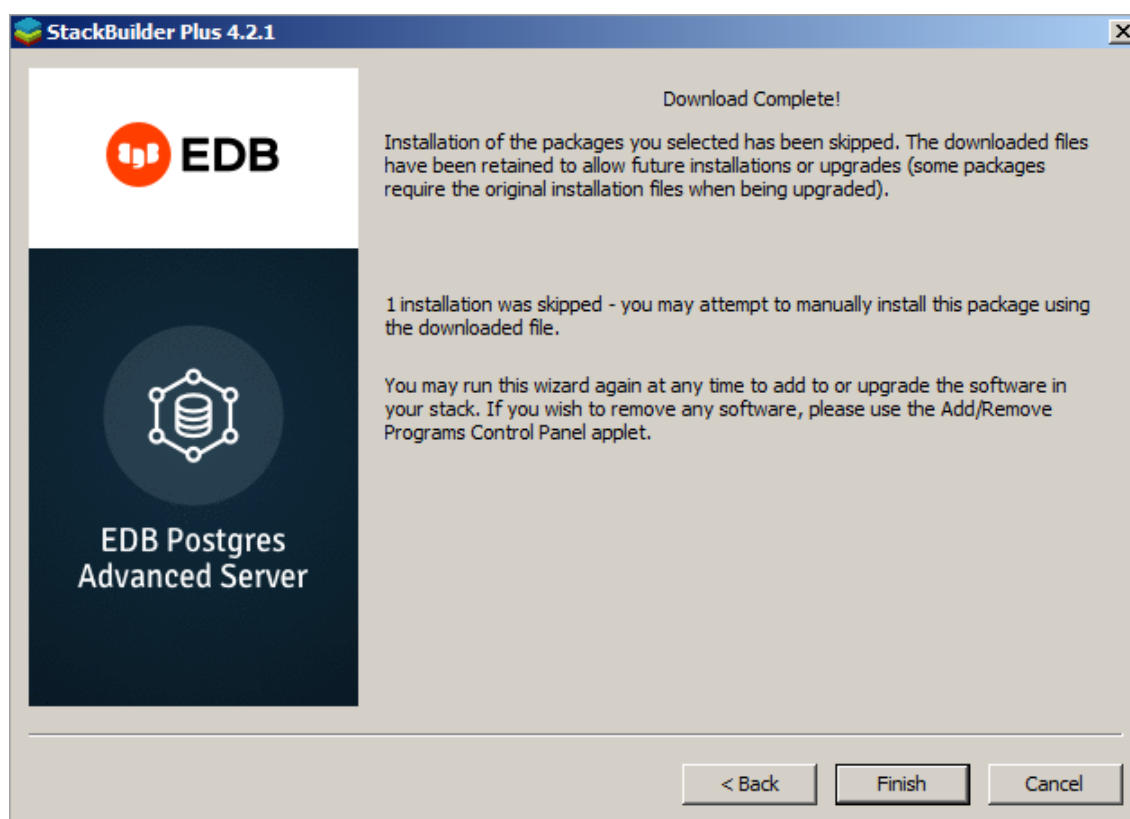


Fig. 24: *StackBuilder Plus confirms the completed installation*

3.4 Installation Troubleshooting

Difficulty Displaying Java-based Applications

If you encounter difficulty displaying Java-based server features (controls or text not being displayed correctly, or blank windows), upgrading to the latest `libxcb-xlib` libraries should correct the problem on most distributions. Please visit the following link for other possible work-arounds:

http://bugs.sun.com/bugdatabase/view_bug.do?bug_id=6532373

-mode unattended Authentication Errors

Authentication errors from component modules during unattended installations may indicate that the specified values of `--servicepassword` or `--superpassword` may be incorrect.

Errors During an Advanced Server Installation

If you encounter an error during the installation process, exit the installation, and ensure that your version of Windows is up-to-date. After applying any outstanding operating system updates, re-invoke the Advanced Server installer.

The Installation Fails to Complete Due to Existing Data Directory Contents

If an installation fails to complete due to existing content in the data directory, the server will write an error message to the server logs:

```
A data directory is neither empty, or a recognisable data directory.
```

If you encounter a similar message, you should confirm that the data directory is empty; the presence of files (including the system-generated `lost+found` folder) will prevent the installation from completing. Either remove the files from the data directory, or specify a different location for the data directory before re-invoking the installer to complete the installation.

CONNECTING TO ADVANCED SERVER WITH THE PGADMIN 4 CLIENT

pgAdmin 4 provides an interactive graphical interface that you can use to manage your database and database objects. Easy-to-use dialogs and online help simplify tasks such as object creation, role management, and granting or revoking privileges. The tabbed browser panel provides quick access to information about the object currently selected in the pgAdmin tree control.

The client is distributed with the graphical installer. To open pgAdmin, select pgAdmin4 from the EDB Postgres menu. The client opens in your default browser.

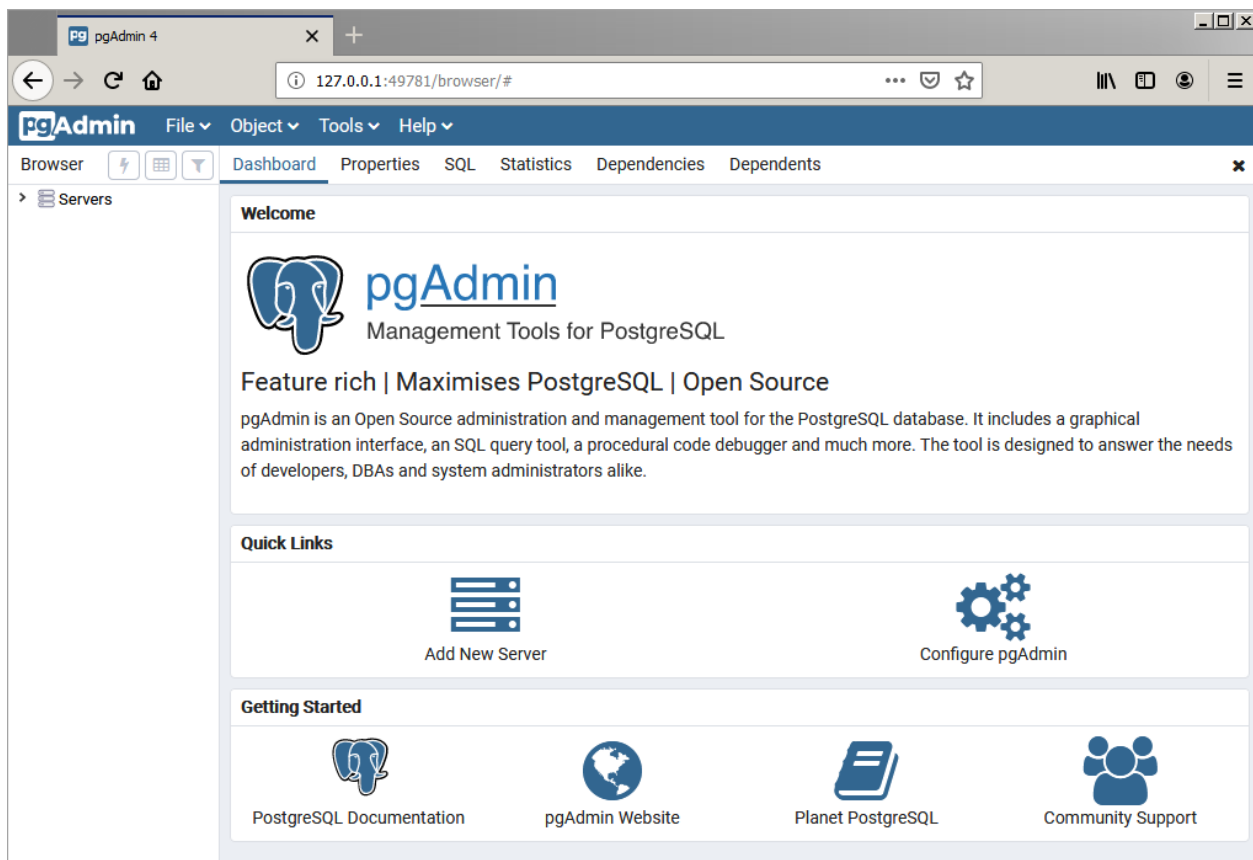


Fig. 1: The pgAdmin 4 client Dashboard

To connect to the Advanced Server database server, expand the `Servers` node of the `Browser` tree control, and right click on the `EDB Postgres Advanced Server` node. When the context menu opens, select `Connect`

Server. The Connect to Server dialog opens.

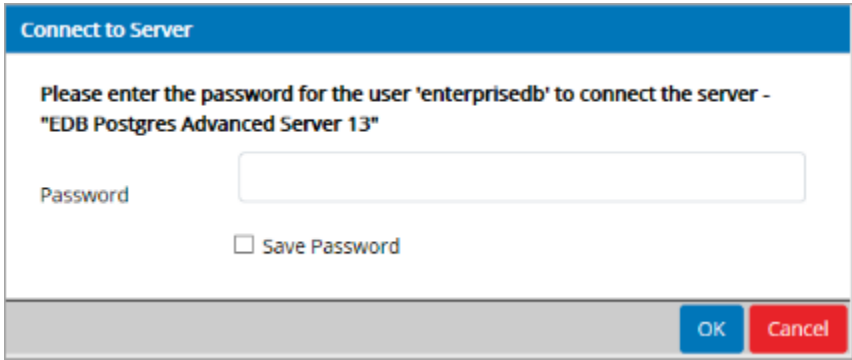


Fig. 2: The Connect to Server dialog

Provide the password associated with the database superuser in the Password field, and click OK to connect.

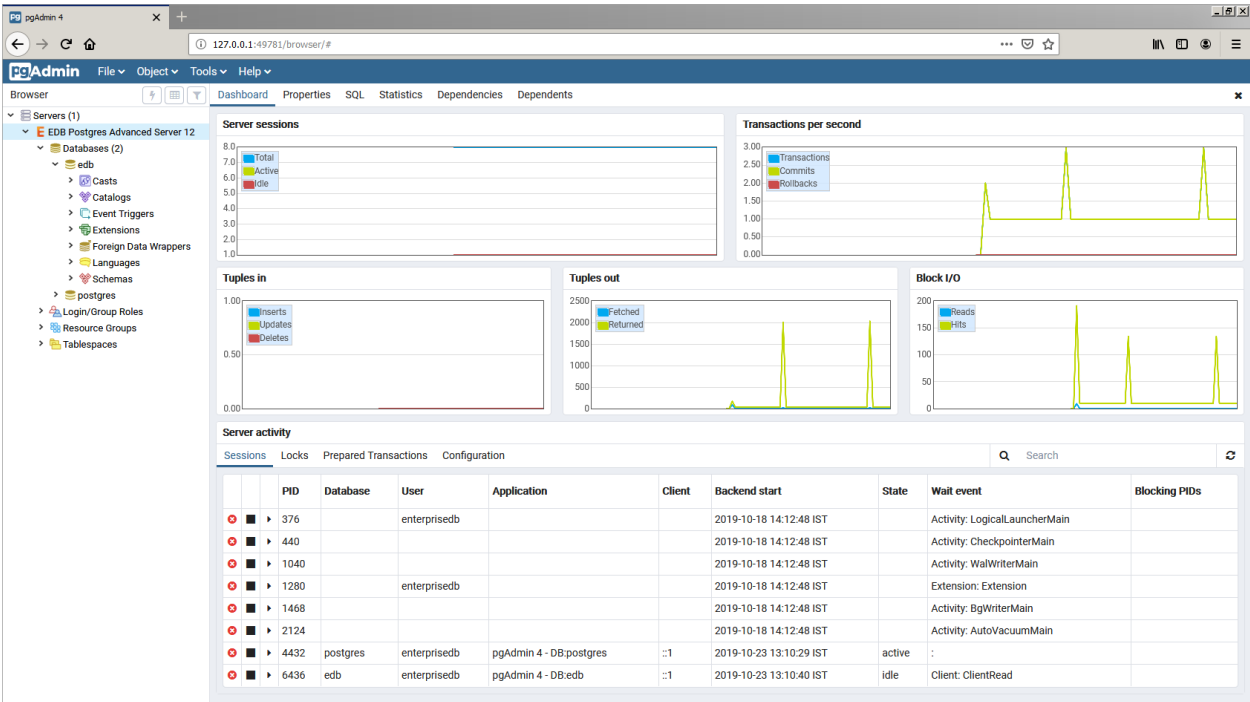


Fig. 3: Connecting to an Advanced Server database

When the client connects, you can use the Browser tree control to retrieve information about existing database objects, or to create new objects. For more information about using the pgAdmin client, use the Help drop-down menu to access the online help files.

MANAGING AN ADVANCED SERVER INSTALLATION

Unless otherwise noted, the commands and paths noted in the following section assume that you have performed an installation with the interactive installer.

5.1 Starting and Stopping Advanced Server and Supporting Components

A service is a program that runs in the background and requires no user interaction (in fact, a service provides no user interface); a service can be configured to start at boot time, or manually on demand. Services are best controlled using the platform-specific operating system service control utility. Many of the Advanced Server supporting components are services.

The following table lists the names of the services that control Advanced Server and services that control Advanced Server supporting components:

Advanced Server Component Name	Windows Service Name
Advanced Server	edb-as-13
pgAgent	EDB Postgres Advanced Server 13 Scheduling Agent
PgBouncer	edb-pgbouncer-1.14
Slony	edb-slony-replication-13

You can use the command line or the Windows Services applet to control Advanced Server's database server and the services of Advanced Server's supporting components on a Windows host.

5.1.1 Using the Windows Services Applet

The Windows operating system includes a graphical service controller that offers control of Advanced Server and the services associated with Advanced Server components. The `Services` utility can be accessed through the Administrative Tools section of the Windows Control Panel.

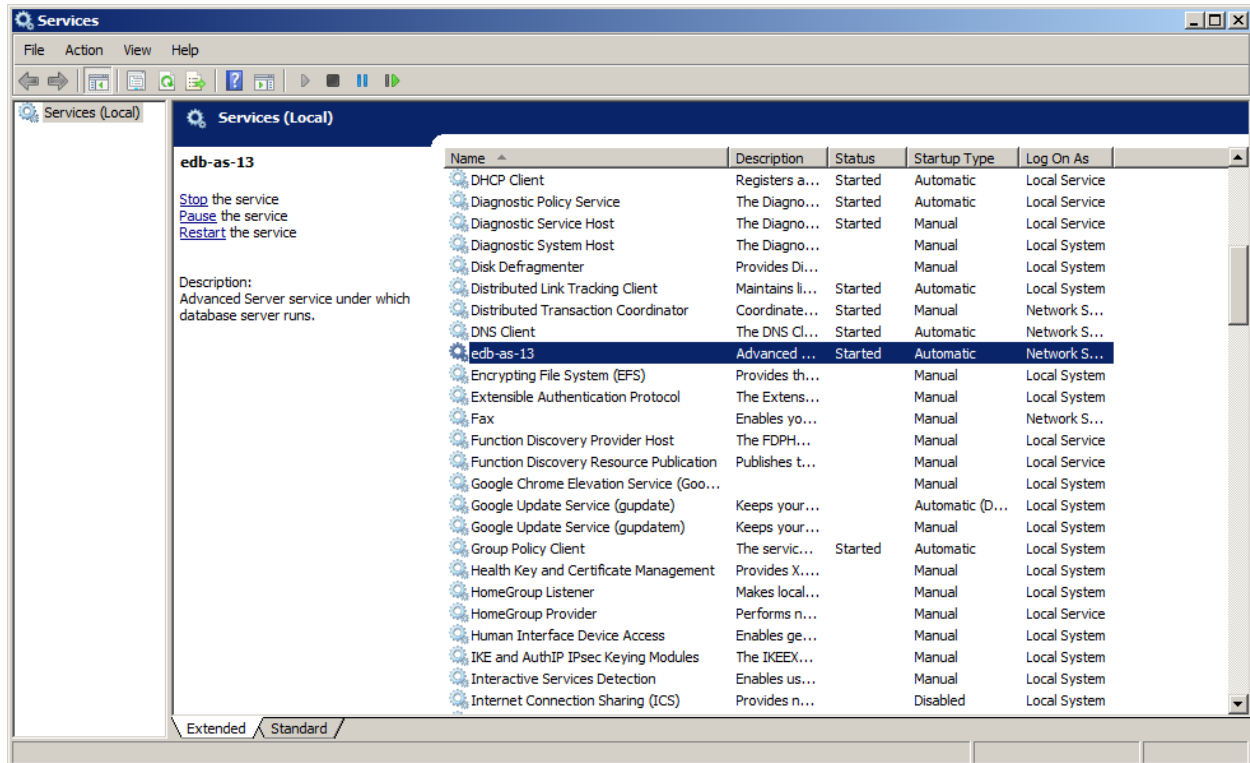


Fig. 1: The Advanced Server service in the Windows Services window

The Services window displays an alphabetized list of services; the `edb-as-13` service controls Advanced Server.

- Use the `Stop the service` option to stop the instance of Advanced Server. Please note that any user (or client application) connected to the Advanced Server instance will be abruptly disconnected if you stop the service.
- Use the `Start the service` option to start the Advanced Server service.
- Use the `Pause the service` option to tell Advanced Server to reload the server configuration parameters without disrupting user sessions for many of the configuration parameters. See [Configuring Advanced Server](#) for more information about the parameters that can be updated with a server reload.
- Use the `Restart the service` option to stop and then start the Advanced Server. Please note that any user sessions will be terminated when you stop the service. This option is useful to reset server parameters that only take effect on server start.

5.1.2 Using `pg_ctl` to Control Advanced Server

You can use the `pg_ctl` utility to control an Advanced Server service from the command line on any platform. `pg_ctl` allows you to start, stop, or restart the Advanced Server database server, reload the configuration parameters, or display the status of a running server. To invoke the utility, assume the identity of the cluster owner, navigate into the home directory of Advanced Server, and issue the command:

```
./bin/pg_ctl -D data_directory action
```

`data_directory`

`data_directory` is the location of the data controlled by the Advanced Server cluster.

`action`

`action` specifies the action taken by the `pg_ctl` utility. Specify:

- `start` to start the service.
- `stop` to stop the service.
- `restart` to stop and then start the service.
- `reload` sends the server a `SIGHUP` signal, reloading configuration parameters
- `status` to discover the current status of the service.

For more information about using the `pg_ctl` utility, or the command line options available, see the official PostgreSQL Core Documentation available at:

<https://www.postgresql.org/docs/current/static/app-pg-ctl.html>

5.1.3 Controlling Server Startup Behavior on Windows

You can use the Windows Services utility to control the startup behavior of the server. Right click on the name of the service you wish to update, and select `Properties` from the context menu to open the `Properties` dialog.

Use the drop-down listbox in the `Startup type` field to specify how the Advanced Server service will behave when the host starts.

- Specify `Automatic (Delayed Start)` to instruct the service controller to start after boot.
- Specify `Automatic` to instruct the service controller to start and stop the server whenever the system starts or stops.
- Specify `Manual` to instruct the service controller that the server must be started manually.
- Specify `Disabled` to instruct the service controller to disable the service; after disabling the service, you must stop the service or restart the server to make the change take effect. Once disabled, the server's status cannot be changed until `Startup type` is reset to `Automatic (Delayed Start)`, `Automatic`, or `Manual`.

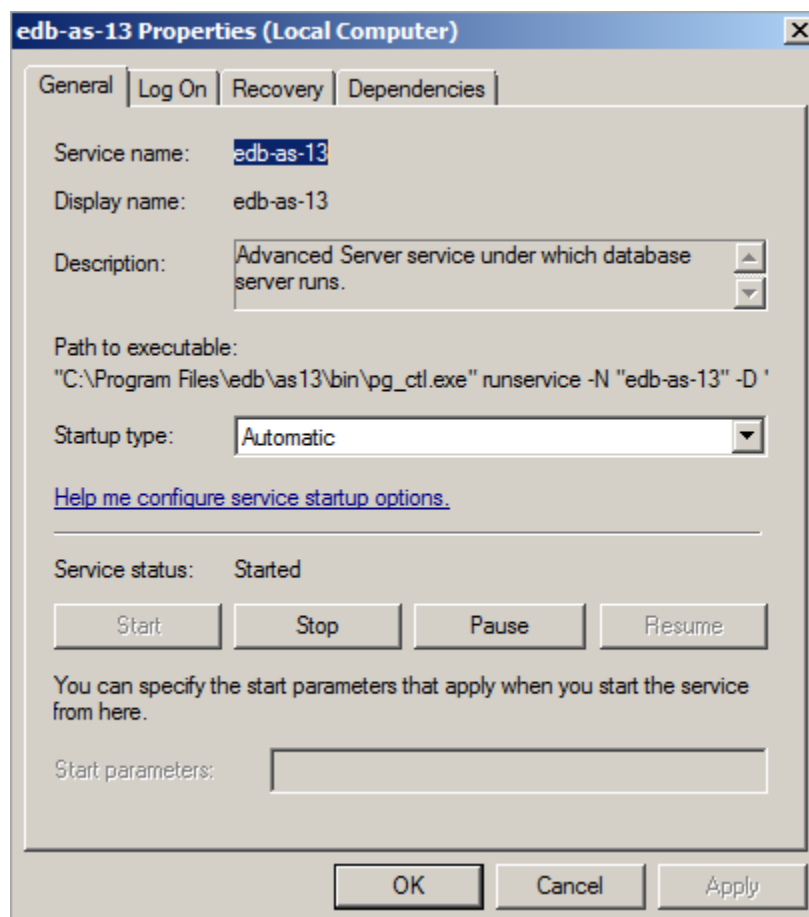


Fig. 2: Specifying Advanced Server's startup behavior

CONFIGURING ADVANCED SERVER

You can easily update parameters that determine the behavior of Advanced Server and supporting components by modifying the following configuration files:

- The `postgresql.conf` file determines the initial values of Advanced Server configuration parameters.
- The `pg_hba.conf` file specifies your preferences for network authentication and authorization.
- The `pg_ident.conf` file maps operating system identities (user names) to Advanced Server identities (roles) when using `ident`-based authentication.

For more information about Modifying the `postgresql.conf` file and Modifying the `pg_hba.conf` file, see the *EDB Postgres Advanced Server Guide* available from the EDB website at:

<https://www.enterprisedb.com/edb-docs>

You can use your editor of choice to open a configuration file, or on Windows navigate through the EDB Postgres menu to open a file.

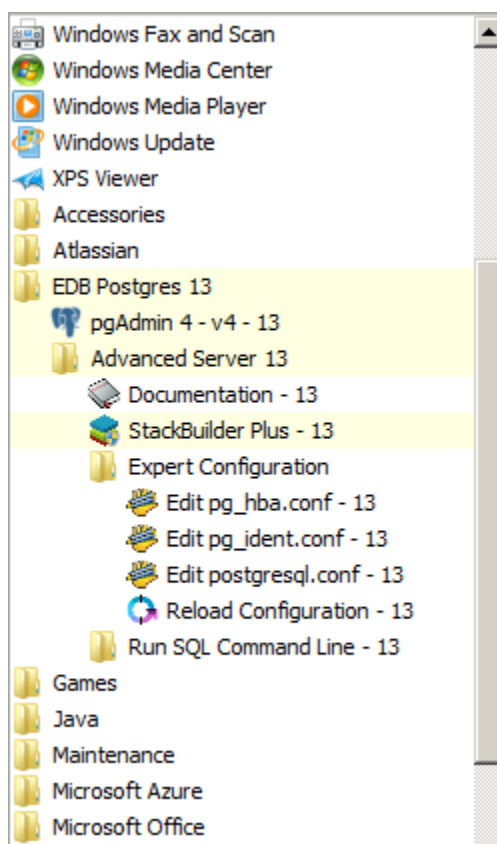


Fig. 1: Accessing the configuration files through the Windows system menu

6.1 Setting Advanced Server Environment Variables

The graphical installer provides a script that simplifies the task of setting environment variables for Windows users. The script sets the environment variables for your current shell session; when your shell session ends, the environment variables are destroyed. You may wish to invoke `pgplus_env.bat` from your system-wide shell startup script, so that environment variables are automatically defined for each shell session.

The `pgplus_env` script is created during the Advanced Server installation process and reflects the choices made during installation. To invoke the script, open a command line and enter:

```
C:\Program Files\edb\as13\pgplus_env.bat
```

As the `pgplus_env.bat` script executes, it sets the following environment variables:

```
PATH="C:\Program Files\edb\as13\bin";%PATH%
EDBHOME=C:\Program Files\edb\as13
PGDATA=C:\Program Files\edb\as13\data
PGDATABASE=edb
REM @SET PGUSER=enterprisedb
PGPORT=5444
PGLOCALEDIR=C:\Program Files\edb\as13\share\locale
```

If you have used an installer created by EDB to install PostgreSQL, the `pg_env` script performs the same function:

```
C:\Progra~1\PostgreSQL\13\pg_env.bat
```

As the `pg_env.bat` script executes on PostgreSQL, it sets the following environment variables:

```
PATH="C:\Program Files\PostgreSQL\13\bin";%PATH%
PGDATA=C:\Program Files\PostgreSQL\13\data
PGDATABASE=postgres
PGUSER=postgres
PGPORT=5432
PGLOCALEDIR=C:\Program Files\PostgreSQL\13\share\locale
```

6.2 Connecting to Advanced Server with edb-psql

edb-psql is a command line client application that allows you to execute SQL commands and view the results. To open the edb-psql client, the client must be in your search path. The executable resides in the bin directory, under your Advanced Server installation.

Use the following command and options to start the edb-psql client:

```
psql -d edb -U enterprisedb
```

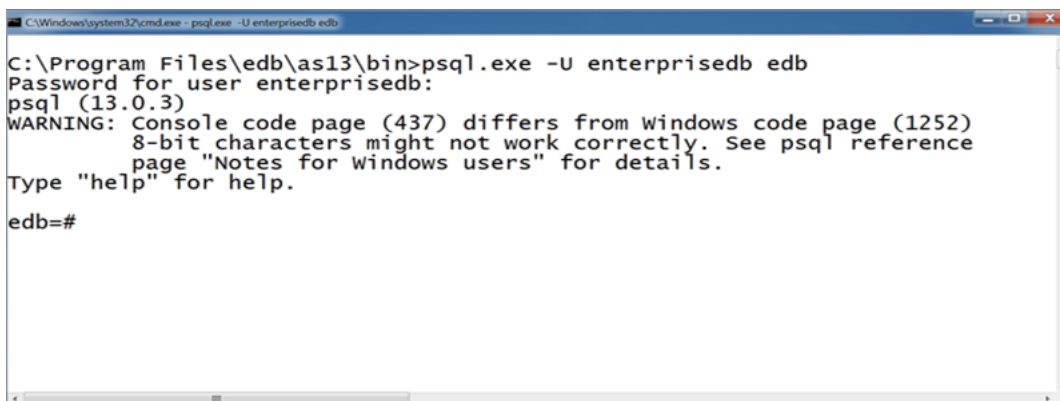


Fig. 2: *Connecting to the server*

Where:

- d specifies the database to which edb-psql will connect.
- U specifies the identity of the database user that will be used for the session.

If you have performed an installation with the interactive installer, you can access the edb-psql client by selecting EDB-PSQL from the EDB Postgres menu. When the client opens, provide connection information for your session.

edb-psql is a symbolic link to PostgreSQL community psql. For more information about using the command line client, see the PostgreSQL Core Documentation at:

<https://www.postgresql.org/docs/current/static/app-psql.html>

UNINSTALLING ADVANCED SERVER

Note that after uninstalling Advanced Server, the cluster data files remain intact and the service user persists. You may manually remove the cluster data and service user from the system.

7.1 Using Advanced Server Uninstallers at the Command Line

The Advanced Server interactive installer creates an uninstaller that you can use to remove Advanced Server or components that reside on a Windows host. The uninstaller is created in `C:\Program Files\edb\as13`. To open the uninstaller, assume superuser privileges, navigate into the directory that contains the uninstaller, and enter:

```
uninstall-edb-as13-server.exe
```

The uninstaller opens.

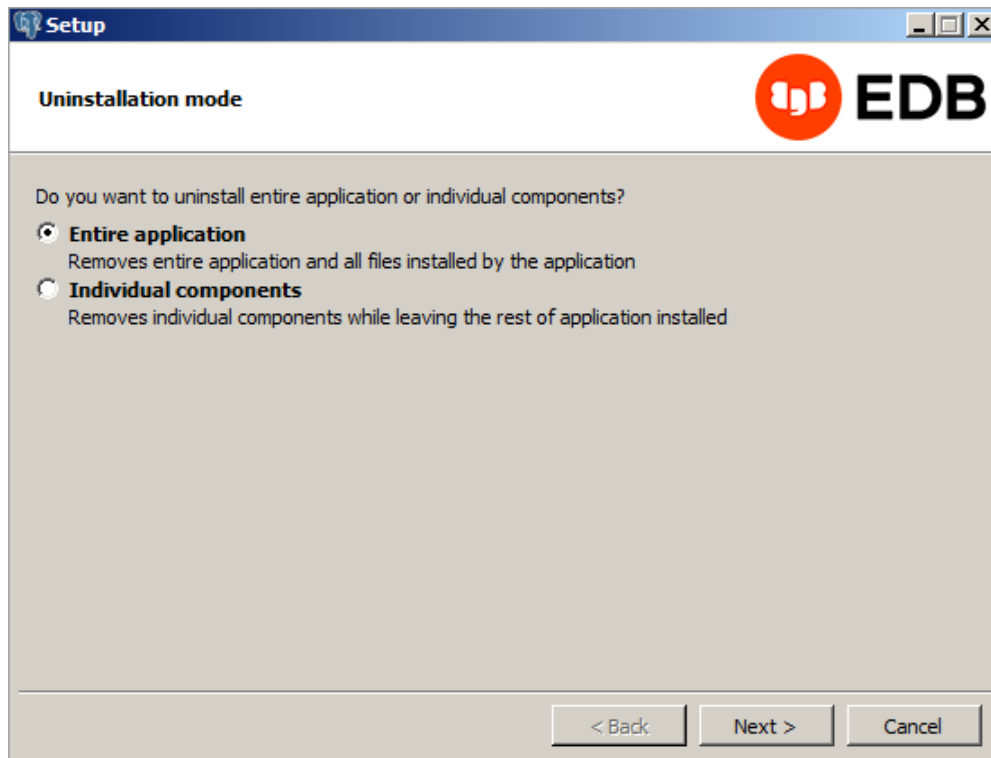


Fig. 1: *The Advanced Server uninstaller*

You can remove the `Entire` application (the default), or select the radio button next to `Individual components` to select components for removal; if you select `Individual components`, a dialog will open, prompting you to select the components you wish to remove. After making your selection, click `Next`.

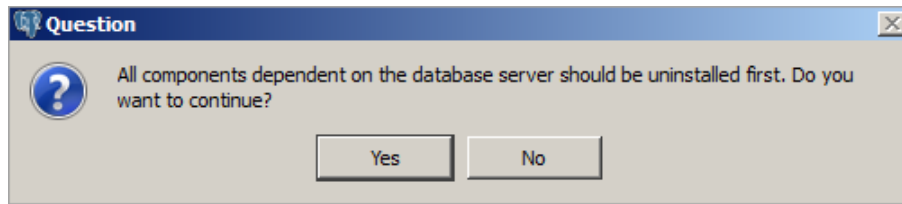


Fig. 2: *Acknowledge that dependent components are removed first*

If you have elected to remove components that are dependent on Advanced Server, those components will be removed first; click `Yes` to acknowledge that you wish to continue.

Progress bars are displayed as the software is removed. When the uninstallation is complete, an `Info` dialog opens to confirm that Advanced Server (and/or its components) has been removed.

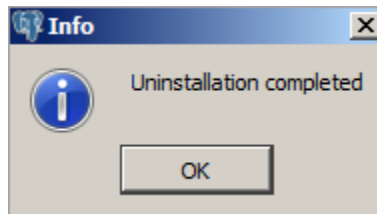


Fig. 3: *The uninstallation is complete*

CONCLUSION

EDB Postgres™ Advanced Server Installation Guide for Windows

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- EDB designs, establishes coding best practices, reviews, and verifies input validation for the logon UI for EDB products where present. EDB follows the same approach for additional input components, however the nature of the product may require that it accepts freeform SQL, WMI or other strings to be entered and submitted by trusted users for which limited validation is possible. In such cases it is not possible to prevent users from entering incorrect or otherwise dangerous inputs.
- EDB reserves the right to add features to products that accept freeform SQL, WMI or other potentially dangerous inputs from authenticated, trusted users in the future, but will ensure all such features are designed and tested to ensure they provide the minimum possible risk, and where possible, require superuser or equivalent privileges.
- EDB does not warrant that we can or will anticipate all potential threats and therefore our process cannot fully guarantee that all potential vulnerabilities have been addressed or considered.

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