Installation Guide

Appeon PowerBuilder® 2021

Contents

1 Planning Your Installation

Before you install or upgrade, prepare your environment.

- Identify the components and options to install or upgrade.

- Make sure your system meets installation requirements.

- Identify software required.

In the PowerBuilder Installer, you can choose to install the following programs:

- PowerBuilder (PowerBuilder IDE, PowerBuilder Runtime, and PowerBuilder Compiler)

  This document will focus on installation of PowerBuilder IDE.

  For installation instructions of PowerBuilder Runtime, refer to Section 9.2.4.2, "Installing PowerBuilder Runtime" in *Application Techniques*.

  For installation instructions of PowerBuilder Complier, refer to Section 8.2.1, "Installing PowerBuilder Compiler" in *Users Guide*.

- PowerServer Toolkit

  If you decide to install PowerServer Toolkit, please also carefully read the PowerServer Installation Requirements.

- SnapDevelop (SnapDevelop IDE, .NET DataStore, and PowerScript Migrator)

  If you decide to install SnapDevelop, please also carefully read the Installation Guide for SnapDevelop. SnapDevelop user manuals are available online (https://docs.appeon.com/).

1.1 System Requirements

Make sure your system meets all requirements before you install PowerBuilder IDE. See the release bulletin for the most current information about required service packs.

Note

If you want to install the product using the PowerBuilder Installer (an online installation program), make sure your system also meets the requirements listed in Preparing your environment.

Table 1.1: System Requirements for PowerBuilder

Product	Computer	Minimum memory	Hard disk space	Operating system
This table provides system requirements for PowerBuilder. The disk space requirements provided are approximate. The actual disk space you need for each product might vary depending on hard disk size, partitioning, and the features you choose to install. Additional temporary space is required on the hard disk during installation for uncompressing install files.				
PowerBuilder	Intel Core i3 or higher	4 GB	4 GB for all components	**Supported by PowerBuilder IDE and Runtime:**

Product	Computer	Minimum memory	Hard disk space	Operating system
				Windows 8.1 32-bit or 64-bit
				Windows 10 32-bit or 64-bit (excluding Windows IoT and Windows Embedded Compact)
				Supported by PowerBuilder Runtime only:
				Windows Server 2012 R2
				Windows Server 2016
				Windows Server 2019

1.2 Software Requirements

Identify the software requirements for PowerBuilder.

> **Note**
>
> In the PowerBuilder Installer, if you also select to install PowerServer Toolkit; please carefully read the software requirements in the PowerServer Installation Requirements; and if you also select to install SnapDevelop; please carefully read the software requirements for SnapDevelop in the System Requirements section in the *Installation Guide for SnapDevelop*.

Table 1.2: Required Software for PowerBuilder features

Feature	Required Software
The following table lists the software required for PowerBuilder features.	
Install any required framework packages and SDKs before you install PowerBuilder. Microsoft developer software is available from the Microsoft Download Center.	
Read this table carefully to determine whether you need to install any software before you run the installer, and whether you need to install SQL Anywhere or PostgreSQL before installing PowerBuilder. If you select a feature with a prerequisite that is not yet installed, the installer displays a warning message.	
.NET Web services local host deployment (Obsolete)	**Microsoft Internet Information Services (IIS) 7.5 or higher.** **Note** On the development computer, IIS is not required for PowerBuilder applications or components unless the same computer is used as server for smart client applications, or

Feature	Required Software
	for Web service components. IIS is also not required on end users' computers.
PowerBuilder tutorials, demo databases, and sample applications	**SQL Anywhere 16 or 17 or PostgreSQL 11.3, 12, or 13.** A 32-bit ODBC driver is required as PowerBuilder IDE is a 32-bit program. If you want to use the PostgreSQL engine, make sure both the PostgreSQL client (included in Command Line Tools of the PostgreSQL Windows installer) and PostgreSQL ODBC driver (32-bit) are installed. If the installer does not detect SQL Anywhere or PostgreSQL on your computer, it displays a warning. If you choose to continue, the installer will install the demo database files but will not set up the database connection automatically. In order to run the demo application against the demo database, you will need to install SQL Anywhere or PostgreSQL first, then manually configure the database connection.
MobiLink™ synchronization	**Adaptive Server® Anywhere 9.0.2 to SQL Anywhere 17.** MobiLink is a component of Adaptive Server Anywhere and SQL Anywhere. In the SQL Anywhere setup program, select Synchronization and Messaging, and then MobiLink.
EJB client development (Obsolete)	**J2EE-compliant application server such as BEA WebLogic 8.1 and later, or IBM WebSphere 6.x.** **Oracle JDK.** The Oracle JDK is installed in the *%AppeonInstallPath%\PowerBuilder [version]\IDE\jdk1.6.0_24* directory when you install PowerBuilder.
.NET DLL Importer, Web service clients (Obsolete) and Web Service DataWindow (Obsolete) in PowerBuilder	**Microsoft .NET Framework Version 4.0 or later.**
Saving DataWindows as PDF using the Ghostscript distiller and PostScript printing	**Ghostscript and PostScript printer driver.** See Section 4.2, "Installing Ghostscript" and Section 4.3, "Installing PostScript Drivers".
Saving DataWindows as PDF using XSL Formatting Objects (FO) and Java printing	**Oracle JDK and Apache FO processor.** The Oracle JDK is installed in the *%AppeonInstallPath% \PowerBuilder [version]\IDE\Jdk1.6.0_24* directory when you install PowerBuilder.

Feature	Required Software
	The Apache FO processor is installed in the *%AppeonInstallPath% \PowerBuilder [version]\IDE\fop-0.20.5* directory when you install PowerBuilder.
Data access using the ADO.NET interface	**Microsoft .NET Framework Version 4.0 or later Redistributable Package.**
JDBC connectivity	**Oracle JDK.** The Oracle JDK is installed in the *%AppeonInstallPath% \PowerBuilder [version]\IDE\Jdk1.6.0_24* directory when you install PowerBuilder.
Runtime Packager	**Microsoft Windows Installer.** Microsoft Windows Installer is installed by default on all supported Windows platforms.

2 Preinstallation Tasks

This topic describes tasks to perform before installation.

- Log in to Windows as an administrator, as you must have administrator privileges to run the installer and install some components.

- Read the release bulletins for the latest information on the products that you are installing. Release bulletin is available on the Appeon website at https://docs.appeon.com/pb2021/release_bulletin_for_pb/index.html.

- Make sure the drive on which you install PowerBuilder is not compressed. If compression is enabled on the installation drive, the installer fails.

- Make sure you have a TEMP environment variable that points to an existing directory location with at least 2GB free space. The installer writes files to this directory during the installation and frees the space after the installation is complete.

- Close any open applications.

- Back up any files created with earlier versions of Appeon products. Make sure that any PBLs you plan to upgrade have been regenerated without error in your current version of PowerBuilder before you back them up.

  In addition to backing up your PBLs, back up any files that contain information you do not want to lose, such as database files, INI files, preference information, and modified database definition files. For more information about backing up and upgrading existing applications, see Chapter 4, *Postinstallation Tasks*.

- Read Section 1.2, "Software Requirements" to determine whether you need to install any software before installing PowerBuilder.

3 Installation Process

3.1 Online Installation

PowerBuilder Installer, a new and more efficient way to install Appeon products, was introduced in 2019. It is an online installer with a self-extracting download that leads you through the installation process. The machine will be required to connect to Internet during the installation process. For those who prefer to use the offline installer, it can be downloaded from the PowerBuilder Installer (by selecting **Download Offline Installer** in the PowerBuilder Installer).

3.1.1 Preparing your environment

PowerBuilder Installer relies on the following operating system and software to run:

- Windows 10 or 8.1

- Universal C Runtime (CRT)

  Universal CRT is installed by default on Windows 10, but not on Windows 8.1. UCRT must be installed before you can install Microsoft .NET Framework 4.6.1 SDK. If PowerBuilder Installer detects that UCRT is not installed, it will provide the package list according to your platform, and you must download and install the package in the order listed.

- Microsoft .NET Framework 4.6.1 SDK or later

  It can be downloaded from https://dotnet.microsoft.com/download/archives.

3.1.2 Downloading the PowerBuilder Installer

Download the PowerBuilder Installer executable from the Downloads page on the Appeon User Center (login is required).

3.1.3 Starting the PowerBuilder Installer

If the PowerBuilder Installer executable (PowerBuilderInstaller_bootstrapper.exe) does not start automatically, you should be able to start it manually from your download directory.

1. Double click **PowerBuilderInstaller_bootstrapper.exe** to start the PowerBuilder Installer (you must have administrator privileges to run the installer).

2. Select to agree to the license terms and click **Continue**.

3. Click **Install/Modify** under **PowerBuilder [version]**.

   For those who prefer to use the traditional offline installer, s/he can select **Download Offline Installer** and then select the programs and components s/he wants to download. This will download the offline installer.

   For those who want to upgrade the program, s/he can click **Update** and then select the EBF or MR package for the program s/he wants to upgrade.

4. Select **PowerBuilder IDE** and **PowreBuilder Compiler** from the **Programs** tab.

   PowerBuilder Installer will also check if the prerequisites have been installed; if not installed, a warning message (and installation instructions if any) will be displayed on the right of page.

   If no **PowerBuilder Runtime** has been installed on the machine before, then select to install **PowerBuilder Runtime** from the **Components** tab, as PowerBuilder IDE requires a runtime to start. If a compatible version of **PowerBuilder Runtime** has already been installed, you could use the existing version or select to install the latest version of **PowerBuilder Runtime** from the **Components** tab. **PowerBuilder Runtime** is always installed to %systemdrive%\Program Files (x86)\Appeon\Common\PowerBuilder \Runtime [version]. For more details, refer to Section 9.2.4.2, "Installing PowerBuilder Runtime" in *Application Techniques*.

   If you want to install **PowerServer Toolkit**, check the PowerServer installation requirements first.

   If you want to install **SnapDevelop**, **.NET DataStore**, and **PowerScript Migrator**, follow the installation instructions in Installation Guide for SnapDevelop.

5. Based on the program(s) you selected, the available components will be shown in the **Components** tab. Select the components you want to install.

   The required components or prerequisites are automatically selected and cannot be de-selected. The installed components/prerequisites will still be listed but cannot be selected (the selection box is greyed out). And you would also have the chance to select to install the latest version of **PowerBuilder Runtime** on the **Components** tab.

6. In the **Locations** tab, use the default download location and installation location or specify where you want the program(s) to be downloaded and installed.

7. In the **Additional Options** tab, specify a PostgreSQL or SQL Anywhere engine for running the PowerBuilder demo database.

   A 32-bit ODBC driver is required as PowerBuilder IDE is a 32-bit program.

   If you specify the PostgreSQL engine, make sure both the PostgreSQL client (included in Command Line Tools of the PostgreSQL Windows installer) and PostgreSQL ODBC driver (32-bit) have been installed.

8. Click **Install** to begin the installation.

9. When installation is complete, read the status message carefully to make sure installation is successful, and then click **Restart Now** to restart the machine immediately or click **Restart Later** to manually restart the machine later.
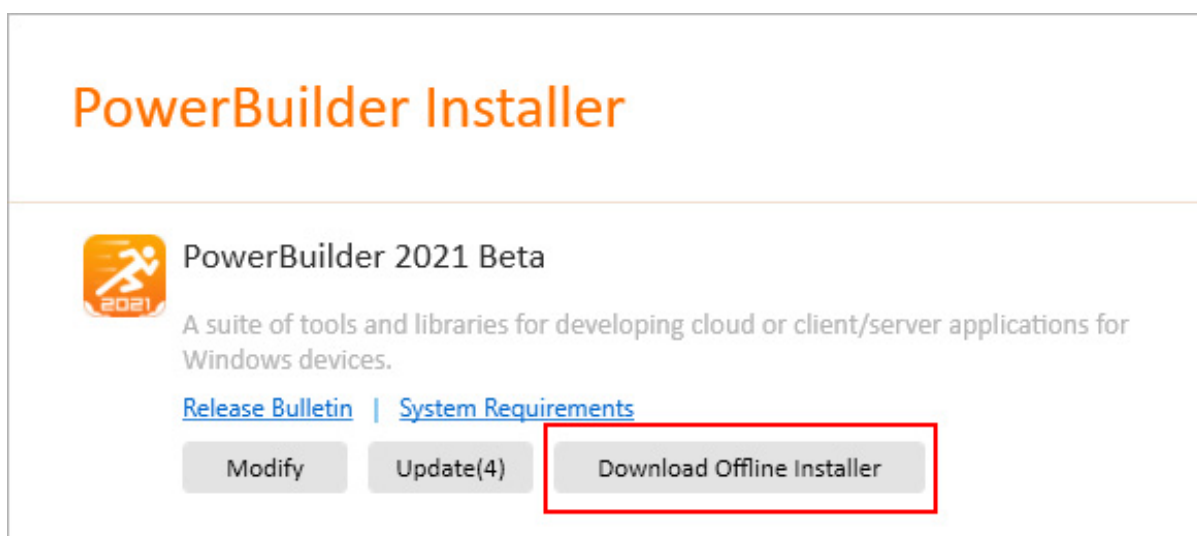
3.2 Offline Installation
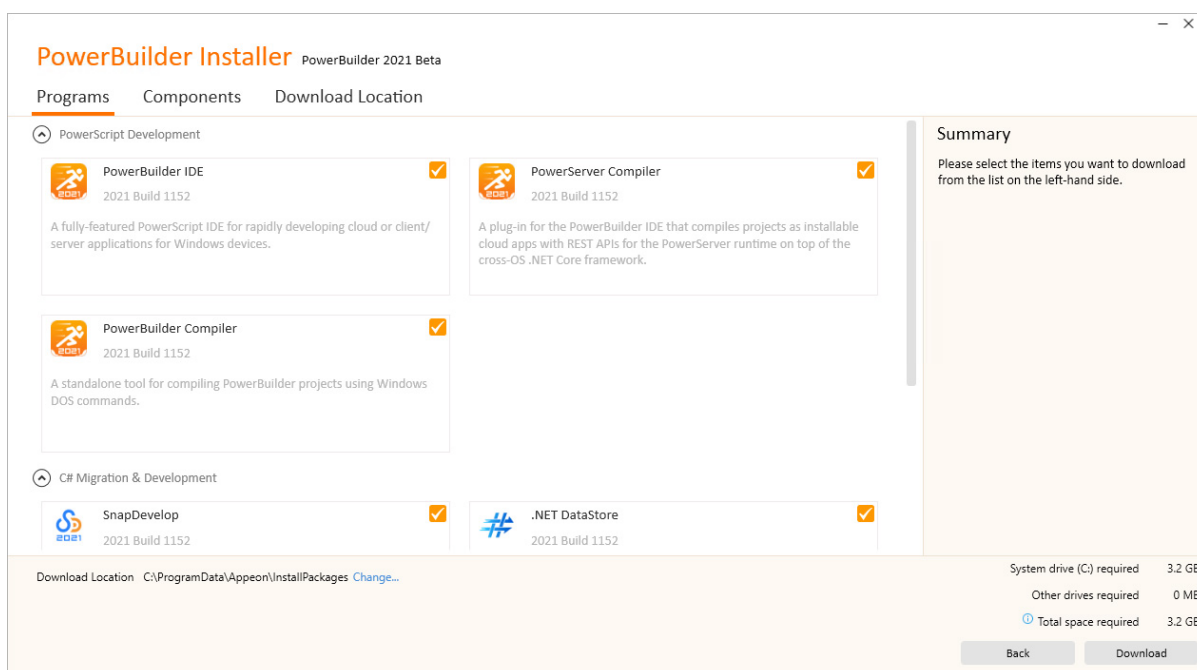
3.2.1 Downloading the Offline Installer

An offline installer is designed to help users install the product on a machine where Internet connection is not available or not reliable.

The offline installer can be downloaded from the PowerBuilder Installer. **Note**: if you cannot run PowerBuilder Installer to get the offline installer, please contact Appeon Support (<support@appeon.com>) for assistance.

Launch the PowerBuilder Installer, click **Download Offline Installer**.

Select the program(s) and component(s) to download; and specify the location where the package will be downloaded (the default location is C:\ProgramData\Appeon \InstallPackages).

When download is finished, click the **Open Folder** button to get the standalone installation package (the offline installer). Now you can distribute the offline installer to any computer to install the product.

3.2.2 Starting the Offline Installer

Follow these steps to launch the downloaded offline installer to begin the PowerBuilder installation.

1. Exit any programs that are running.

2. Run the *Autorun.exe* file in the offline installer (you must have administrator privileges to run the installer).

3. Click **Install**.

   The installer collects basic and licensing information before launching the individual installer.

3.2.3 Selecting Products and Providing Basic Information

The installer collects basic information before beginning the PowerBuilder installation.

Note

Click **Cancel** to interrupt the installation at any point during this procedure. You can then either exit or resume the installer. If you choose to exit, you can stop the current installation and continue with your other selections, or end the installer completely.

To select the PowerBuilder product and provide basic information before installing PowerBuilder:

1. On the start page of the installer, select **Install**.

2. On the Welcome page, click **Next**.

   If you have not installed prerequisites for PowerBuilder, the next page in the wizard informs you what needs to be installed. Click **Cancel** to exit the wizard, or **Next** to continue without installing the prerequisites.

3. On the License Agreement page, read the license agreement, select the **I accept the terms of the license agreement** radio button, and click **Next** to continue.

4. On the Customer Information page, enter your name and company name.

5. On the Select Products page, select **PowerBuilder IDE** and **PowerBuilder Compiler** and click **Next** to continue.

   If no **PowerBuilder Runtime** has been installed on the machine before, then select to install **PowerBuilder Runtime** as well, as PowerBuilder IDE requires a runtime to start. For installation instructions about PowerBuilder Runtime, refer to Section 9.2.4.2, "Installing PowerBuilder Runtime" in *Application Techniques*.

   If you want to install **PowerServer Toolkit**, check the PowerServer installation requirements first.

   If you want to install **SnapDevelop**, **.NET DataStore**, and **PowerScript Migrator**, follow the installation instructions in the Installation Guide for SnapDevelop.

6. On the Choose Destination Location page, click **Next** to accept the destination path shown, or click **Browse** and select a different path, click **OK**, and click **Next**.

7. On the Choose Destination Location For Shared Files page, click **Next** to accept the destination path shown, or click **Browse** and select a different path, click **OK**, and click **Next**. Use the same folder for shared files for all products in this set.

8. On the Select the Database Type page, select **PostgreSQL** or **SQL Anywhere** and then specify the location of the database engine that will be used to run the demo database (PB demo DB), and click **Next**.

   A 32-bit ODBC driver is required as PowerBuilder IDE is a 32-bit program.

9. Complete the installer for the product you selected.

3.2.4 Selecting PowerBuilder components

Continue with the installer to select which PowerBuilder components to install.

1. On the Select Components page, unselect any components you do not want to install, and click **Next**.

   You cannot unselect the **PowerBuilder Base Components** option.

   Select or unselect the check boxes of individual components, or click **Select All** or **Unselect All** to change all the check boxes.

2. On the Select Program Folder page, select the program folder to which program icons will be added, or specify a new one; then click **Next**.

3. On the Start Copying Files page, review your settings, then click **Next** to begin installing files, or **Back** to change your selections.

4. On the InstallShield Wizard Complete page, click **Finish** to return to the installer.

After installation, make sure users have write permission for their user profile directories (for example, *Public Documents* in Windows 10), and for *HKEY_CURRENT_USER* in the Windows registry.

3.2.4.1 PowerBuilder Components

The installer lets you choose which PowerBuilder components to install.

Table 3.1: Components

Component	Description
PowerBuilder Base Components	Installs the ODBC driver, ORCA Software Development Kit (SDK), the PowerBuilder Document Object Model extension, the ability to save DataWindow objects as PDF using the distill or XSL-FO methods, support for rich text, and Oracle JDK. You must install the base components: you cannot unselect this option.
Native Database Interfaces	Interfaces that enable you to interact with server databases natively. Expand the tree view to select interfaces to install.

Component	Description
ADO.NET Database Driver	Interface to connect to databases using an ADO.NET data provider.
OLE DB Driver	Interface to connect to databases using an OLE DB data provider.
JDBC Drivers	Interface to connect to databases using JDBC.
SCC Interface	Interface to connect to any source code control system that supports the Microsoft SCC interface.
PowerBuilder Native Interface (PBNI)	An SDK for developing extensions to PowerBuilder in C++. Optional wizards are installed in Visual Studio 2005 and Visual Studio .NET 2002 and 2003 if they are available on your system.
EJB Client (Obsolete)	The EJB Client PBNI extension, which enables you to develop clients for EJBs running on J2EE-compliant servers. **Note that the EJB client is considered to be obsolete.** Obsolete features are still available to use, but are no longer eligible for technical support and will no longer be enhanced.
Web Services (Obsolete)	The extensions and other files that enable you to create clients for Web services using the .NET or EasySoap Web service engines. **Note that SOAP clients (including .NET and EasySoap Web service engines) for Web services are obsolete.** Obsolete features are still available to use, but are no longer eligible for technical support and will no longer be enhanced.
PowerBuilder Tutorial	Source files for the tutorial in the Getting Started book. If you want to do the PowerBuilder tutorial or use the code examples, install SQL Anywhere or PostgreSQL if it is not already installed on your computer. When you install PowerBuilder, the installer creates an ODBC data source for the demo database. If SQL Anywhere or PostgreSQL is not installed on your system when you install PowerBuilder, the installer does not install the demo database, code examples, or tutorial files.
Demo Database	A database used in the tutorial, the Code Examples sample application, and examples in the documentation.
Code Examples	The Code Examples application, which demonstrates many coding techniques.
Translation Toolkit	Tools to help you translate applications into other languages.
PowerBuilder Resource Monitor	A utility to help determine whether there are sufficient USER/GDI resources in the operating system to open a painter.
PowerBuilder Runtime Packager	A tool that packages files required for deployment into an *MSI* file.
Help Files	Compiled CHM help file for PowerBuilder.

3.2.5 Completing Offline Installation

After all the products you selected have been installed, you return to the installer.

To complete the installation:

1. On the InstallShield Wizard Complete page, click **Finish** to complete the installation.

   If you do not unselect the check box on this page, the installer displays the readme file.

2. On the System Reboot Required page, click **Finish** to reboot your computer, or choose to reboot your computer later.

   After installing PowerBuilder, always shut down and restart your computer before using it.

PowerBuilder generates a log file *PBLog_2019.txt* in *%Windows% \System32\AppeonInstallLog* (in 32-bit OS) or *%Windows%\SysWOW64\AppeonInstallLog* (in 64-bit OS).

3.2.5.1 What the Installer Does

The installer installs files and updates the Windows registry.

The installer:

- Installs Appeon files in an *Appeon* directory

- Installs writable Appeon files to directories that are shared by all users

- Installs system files in the Windows operating system path

- Creates a program group and icons for each product installed

- Creates uninstall files to identify what needs to be removed if you uninstall a product

- Makes changes to the Windows registry

- Creates or updates the INI file *PB.INI* (for PowerBuilder)

3.2.5.1.1 Writable files shared by all users

As part of its Federal Desktop Core Configuration (FDCC) compliance configuration, PowerBuilder installs writable files that are shared by all users. On Windows 8.1/10, it is C:\Users\Public\Documents\Appeon\PowerBuilder 21.0.

The shared files include:

- PowerBuilder product readme file

- The PB Demo databases (*pbdemo2021.db* and *pbdemo2021u.db*)

- All Code Examples directories (including sample C# DLLs) and files

- The PowerBuilder compiled HTML Help files

- The Translation Toolkit directories and files

3.2.5.1.2 Files reserved for individual users

Other writable files are installed in the default *Program Files\Appeon* subdirectories, but are copied to different locations the first time a user starts PowerBuilder. In this way, each user gets a private copy of these files.

The following table lists the files that are copied and updated in the directories of users. In the table header, `UserName` is a variable that can be replaced by the user name of a PowerBuilder user. For Windows 10, the `UserName` directory is under the *C:\Users* directory.

Table 3.2:

In *C:\...\UserName* subdirectory	Files copied or updated
On Windows 8.1/10: • *AppData\Local\Appeon\PowerBuilder 21.0*	• Initialization files (*PB.INI*, *PBLAB.ini*, *PBODB.ini*)
On Windows 8.1/10: • *Documents\Appeon\PowerBuilder 21.0\Tutorial*	• Files for the PowerBuilder Getting Started tutorial

The locations of writable PowerBuilder files reserved for individual use are set in HKEY_CURRENT_USER registry entries for each PowerBuilder user. For example, the location of the *PB.INI* file that is copied to each user's local application data directory is registered under the registry key *HKEY_CURRENT_USER\Software\Sybase\PowerBuilder \21.0\InitPath.*

3.2.5.1.3 Registry changes

The installer makes the following changes to the Windows registry:

• Creates or updates the key in *HKEY_CURRENT_USER\Software* and *HKEY_LOCAL_MACHINE\Software*

• Updates system and user paths in *HKEY_CURRENT_USER\Environment*

• Adds the appropriate paths to the registry path *HKEY_LOCAL_MACHINE\Software \Microsoft\Windows\CurrentVersion\App Paths*

• Adds the paths of compiled HTMLHelp files to the registry path *HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\HTMLHelp*

3.2.6 Installing in Silent (Unattended) Mode

Install PowerBuilder from a Command Prompt window or script, without displaying messages or windows during the installation process.

Prerequisites

Complete installation planning.

1. Accept the license agreement.

2. Specify the SQL Anywhere or PostgreSQL engine.

3. Configure the **silentinstall.bat** file.

4. Run **silentinstall.bat** to install PowerBuilder.

3.2.6.1 Accepting the License Agreement

Accept the Appeon license agreement before running the silent installation.

Edit the *silentinstall.bat* file located in the installation package and change the value of AgreeToAppeonLicense from false to true.

```
set AgreeToAppeonLicense=true
```

3.2.6.2 Specifying the database engine

Specify the location of a SQL Anywhere engine or a PostgreSQL engine before running the silent installation.

Edit the *SilentInstall.ini* file located in the PowerBuilder IDE installation package and set the value of szDBClientToolDir.

For example, for SQL Anywhere:

```
szDBClientToolDir=C:\Program Files\SQL Anywhere 17\Bin64
```

For PostgreSQL, you will also need to specify the IP address, port number, user name, and password of the database.

```
szDBClientToolDir=C:\Program Files\PostgreSQL\12\bin

szIP=127.0.0.1
szPort=5432
szUserName=postgres
szPassword=$Password$
```

3.2.6.3 Silent Install Commands

This topic describes the *silentinstall* command syntax for PowerBuilder.

To run the silent installation from a Windows Command Prompt, run this command in the installation package:

```
silentinstall.bat
[ "opt=product" "dir=directoryName" "log=logFileName" ]
[ { help | /? } ]
```

The parameters can be listed in any order and are case insensitive. Parameter values are also case insensitive.

Table 3.3:

Silent installation parameter	Description
opt	Specifies the name of the products to install. • **All** Installs PowerBuilder IDE, PowerBuilder Runtime, PowerBuilder Compiler, PowerServer Toolkit, SnapDevelop IDE, .NET DataStore, and PowerScript Migrator. • **PB** Installs only PowerBuilder IDE • **PBRT** Installs only PowerBuilder Runtime

Silent installation parameter	Description
	• **PBC** Installs only PowerBuilder Compiler
	• **PSTK** Installs only PowerServer Toolkit
	• **SDEV** Installs only SnapDevelop IDE
	• **DWEXP** Installs only .NET DataStore
	• **MIGR** Installs only PowerScript Migrator
	Multiple products can be separated by a slash ("/"), for example, opt=PB/PBRT/PBC/PSC/SDEV.
`dir`	Indicates the main installation directory. If you omit this parameter, silentinstall installs the product to the *sysDriver\Program Files\Appeon\productName* directory, where `sysDriver` is the main computer drive, and `productName` is PowerBuilder.
`log`	Names the log file for the installation. If you omit this parameter, the log file is written to the system *Temp* directory with the file name, *silentinstall.log*.
`help` or `/?`	Displays command syntax and parameters instead of running the command.

The following example uses all parameters for the silent installation command:

```
silentinstall.bat "opt=pb" "dir=D:\appeon\pb190" "log=D:
\appeon\install.log"
```

When installing PowerBuilder, the silent installation writes warnings to its log file if the computer does not have the correct version of any of these items:
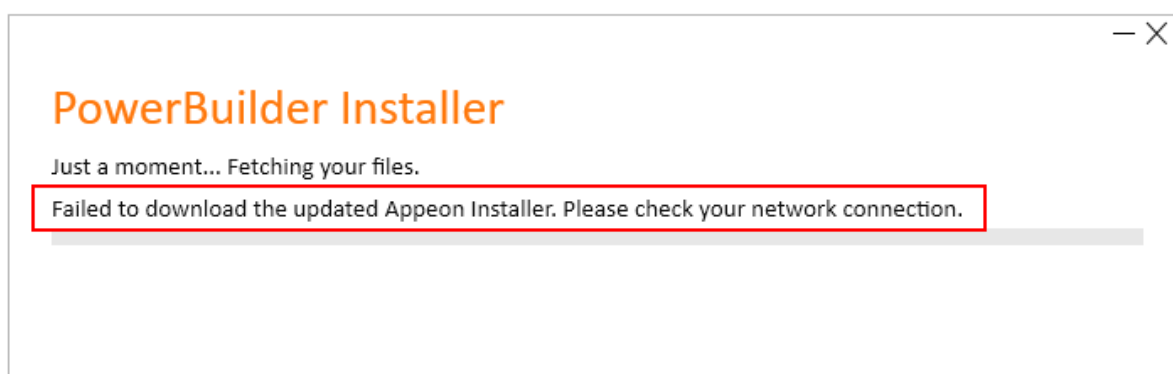
• SQL Anywhere or PostgreSQL

• Microsoft .NET Framework

• Microsoft .NET Framework SDK

• Microsoft IIS

3.3 Common installation issues

3.3.1 Failed to download the PowerBuilder Installer

Phenomenon:

When you run PowerBuilder Installer from the Web browser or when you run the downloaded PowerBuilderInstaller_bootstrapper.exe from the local computer, you may get the following error: "**Failed to download the updated PowerBuilder Installer. Please check your network connection**".

Figure 3.1: Error message

Cause 1:

The current machine has no Internet connections, or the current machine connects to Internet through a proxy that requires login credentials (which is unsupported by PowerBuilder Installer currently).

Solution:

Make sure the current machine has access to the Internet without using a proxy or requiring any login credentials.

If the machine is not allowed to access Internet at all, you can run the PowerBuilder offline installer to install the product on this machine. For how to get the PowerBuilder offline installer, refer to Section 3.2.1, "Downloading the Offline Installer".

Cause 2:

The firewall or anti-virus software on the current machine allows access to PowerBuilderInstaller_bootstrapper.exe only, but not the other files that are required by PowerBuilderInstaller_bootstrapper.exe.

Solution:

Step 1: Try to access https://file.appeon.com/download/Installer/PowerBuilder/PowerBuilderInstaller.zip in your Web browser.

If you get a "404 File or directory not found" error, then take Step 2 to resolve this error.

Step 2: Configure the firewall and/or the anti-virus software to allow access to **https://file.appeon.com/download/Installer/***.

This will allow access to all files that are necessary for running PowerBuilder Installer.

Cause 3:

The firewall or anti-virus software does not allow the PowerBuilder Installer files (mainly **PowerBuilderInstaller_setup.exe** and **PowerBuilderInstaller.exe**) to access Internet and download files.

Solution:

The **PowerBuilderInstaller_setup.exe** and **PowerBuilderInstaller.exe** files will be first downloaded to the local computer, and then they will need to access Internet to download and install more files. Therefore, you need to make sure the following three files have proper rights to access Internet.

1. %USERPROFILE%\AppData\Local\Temp\%RarSFX#%
   PowerBuilderInstaller_setup.exe

   %USERPROFILE%: the current Windows user profile folder, for example, C:\Users
   \appeon\.

   %RarSFX#%: If there are more than one RarSFX folder, use the one with the largest
   number at the end of the folder name. For example, C:\Users\appeon\AppData\Local
   \Temp\RarSFX4.

2. %AppeonInstallPath%\PowerBuilder Installer\update**PowerBuilderInstaller_setup.exe**

3. %AppeonInstallPath%\PowerBuilder Installer**PowerBuilderInstaller.exe**

   %AppeonInstallPath%: normally "C:\Program Files\Appeon" in 32-bit Windows and "C:
   \Program Files (x86)\Appeon" in 64-bit Windows.

   These two files may not exist until after PowerBuilder Installer is successfully
   downloaded. But you can still specify them in the firewall or anti-virus software before
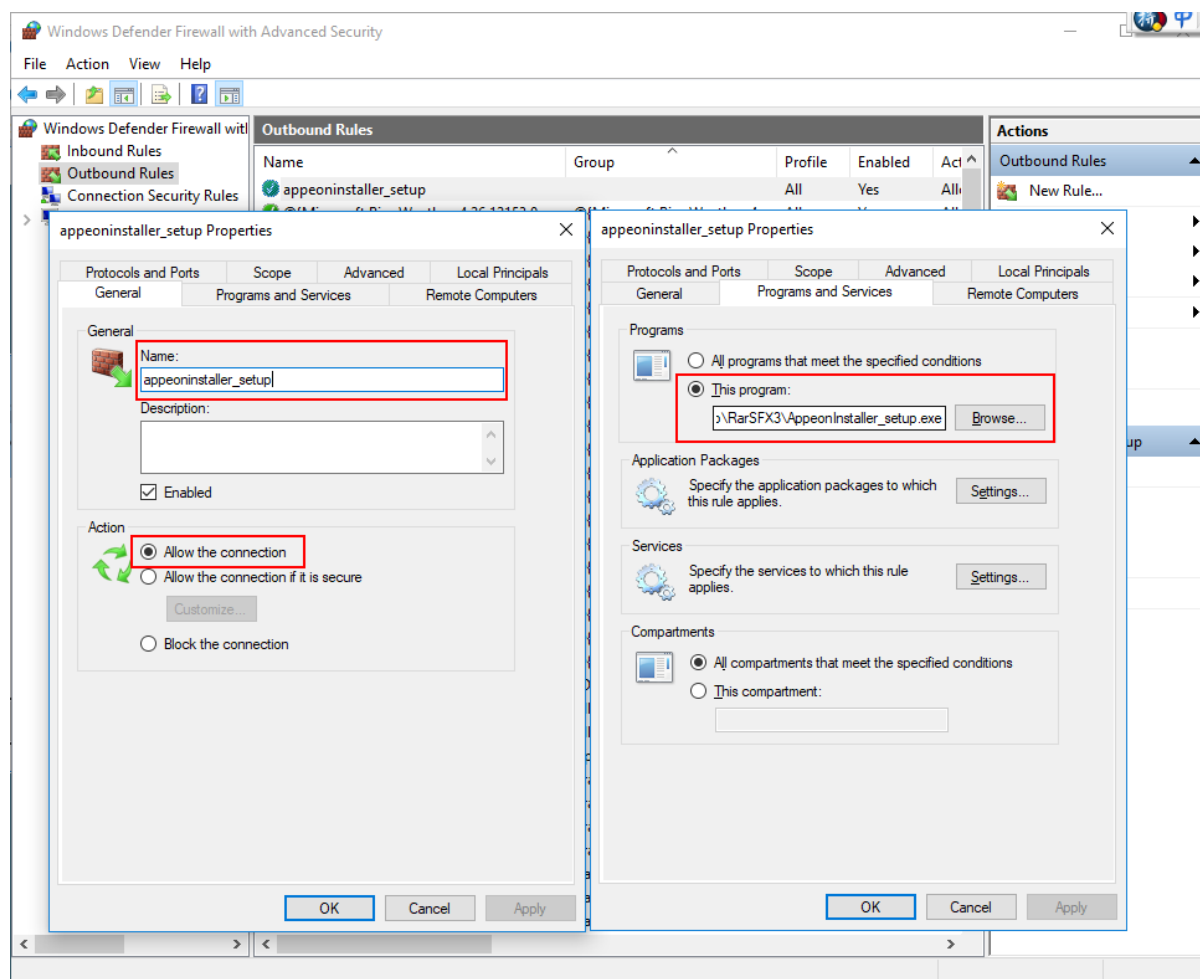   they are downloaded.

Step 1: Configure the firewall and/or anti-virus software to allow the above three files to
connect to Internet and download files.

The following takes "Windows Defender Firewall with Advanced Security" as an example to
show you how to do that.

In **Outbound Rules** of Windows Defender Firewall with Advanced Security, create new
rules with the following settings:

1. In the **Name** text box on the **General** tab, specify a name (for example
   PowerBuilderInstaller_setup) for the rule.

2. In the **Action** section on the **General** tab, select **Allow the connection**.

3. In the **Programs** section on the **Programs and Services** tab, select **This program** and
   specify the absolute path of the file, for example, C:\Users\appeon\AppData\Local\Temp
   \RarSFX4\PowerBuilderInstaller_setup.exe.

4. Repeat the above three steps to add the second and third rules which point to the absolute
   path of the following two files respectively:

   • C:\Program Files\Appeon\PowerBuilder Installer\update
     \PowerBuilderInstaller_setup.exe (in 32-bit Windows), or

     C:\Program Files (x86)\Appeon\PowerBuilder Installer\update
     \PowerBuilderInstaller_setup.exe (in 64-bit Windows)

   • C:\Program Files\Appeon\PowerBuilder Installer\PowerBuilderInstaller.exe (in 32-bit
     Windows), or

     C:\Program Files (x86)\Appeon\PowerBuilder Installer\PowerBuilderInstaller.exe (in
     64-bit Windows)

Figure 3.2: Create the Outbound Rules

Step 2: Run PowerBuilder Installer again to verify that the error is resolved.

3.3.2 PowerBuilder Installer blocked by Windows Defender SmartScreen

Phenomenon:

When you run PowerBuilder Installer in some environments, Windows Defender SmartScreen shows a warning indicating that the installer is an unrecognized app, or the anti-virus software displays warnings like "This file might be dangerous".

Figure 3.3: Windows Defender SmartScreen

Cause:

Windows Defender SmartScreen and some anti-virus software determine whether a file is potentially malicious by checking if the file is well known and downloaded by many users, while PowerBuilder Installer is available to the public not long ago.

Solution:

If Windows Defender SmartScreen or the anti-virus software offers the "**Run Anyway**" option, you should be safe to select this option to proceed with the installation, because PowerBuilder Installer is digitally signed by "Appeon Inc." and is free of adware, spyware or any form of malware.

If PowerBuilder Installer has an established reputation and you still see the warning, you may need to update the malware definitions of Windows Defender SmartScreen or the anti-virus software on your local machine. Take Windows Defender SmartScreen as an example, you can update the definitions by the following steps:

1. Run the Command Prompt as administrator and change directory to C:\Program Files \Windows Defender

2. In the command window, execute "MpCmdRun.exe -removedefinitions -dynamicsignatures"

3. In the command window, execute "MpCmdRun.exe -SignatureUpdate"

3.3.3 Failed to run an old version of PowerBuilder Installer

If you run an old version of PowerBuilder Installer such as 2019 and see the following error: "An unexpected error has just occurred: Object reference not set to an instance of an object.",

it is probably because the old installer is no longer supported; you can download and run the latest PowerBuilder Installer instead.

4 Postinstallation Tasks

Before using PowerBuilder after installation, you might need to perform some migration or configuration tasks.

- Upgrading applications to the current version of PowerBuilder

  If you have applications and PowerBuilder library files (PBLs) that you created in an earlier version of PowerBuilder, you can upgrade them to the current version. Before upgrading, make sure your PBLs can be successfully regenerated under the earlier version, and make backup copies.

  PowerBuilder is Unicode enabled, and some changes are made to your code when you upgrade an application from PowerBuilder 9.x or earlier. For details, see Section 2.2.9, "Upgrading targets" in *Users Guide*.

  Also read the PowerBuilder release bulletin and the Upgrading PowerBuilder Applications technical document.

- Setting up your DBMS

  Your DBMS might require additional setup procedures for use with PowerBuilder. For details, see Part I, "Connecting to Your Database".

- Upgrading databases for jConnect for JDBC

  Might be required to prepare SQL Anywhere or Adaptive Server® Enterprise databases for jConnect 5.5.

- Installing Ghostscript

  Required if you want to use the distill method for saving DataWindows as PDF.

- Installing PostScript drivers

  Required if you want to use the distill method for saving DataWindows as PDF.

4.1 Upgrading Databases for jConnect for JDBC

Prepare SQL Anywhere or Adaptive Server Enterprise databases for jConnect by installing additional tables and stored procedures.

jConnect provides these scripts to install the required stored procedures and tables. Refer to the installation guide for jConnect for detailed information.

4.2 Installing Ghostscript

Install Ghostscript if you plan to use the distill method for saving DataWindows as PDF.

To install Ghostscript:

1. Into a temporary directory on your computer, download the self-extracting executable file for the version of Ghostscript you want from one of the sites listed on the Ghostscript website at http://ghostscript.com/.

2. Run the executable file to install Ghostscript on your system.

   The default installation directory is *C:\Program Files\gs*.

4.3 Installing PostScript Drivers

This topic describes how to install and use PostScript drivers for saving DataWindows as PDF.

Using the distill method for saving DataWindows as PDF requires a PostScript printer or printer driver installed on your system. Use the Windows Add Printer wizard to install a PostScript printer. If a PostScript printer was never installed on your computer or the required Microsoft *pscript5.dll* file is not available, the wizard might prompt you to insert a Windows operating system installation CD.

- To add a PostScript printer to your system:

  1. Select **Settings Printers** from the Windows **Start** menu.

  2. Double-click **Add Printer**.

  3. Specify a local printer.

  4. Specify **FILE:** as the port.

  5. Select a manufacturer (for example, HP) and a printer with the designation PS (such as HP LaserJet Series 4050 PS).

     Note

     Some printers do not handle images correctly. For example, the HP Color LaserJet PS does not display images in the PDF output, and the HP LaserJet 4/4M Plus PS 600 displays color images using greyscale.

     ---

  6. Accept the default name or enter a shorter name for the printer.

  7. Complete the wizard.

- To use the print driver in the DataWindow painter:

  1. Select the **Distill Custom PostScript** check box on the Data Export property page for PDF export.

  2. On the Print Specifications page, specify the printer name (added to the Printer Settings dialog in the previous procedure).

- To use the print driver in a script, set the Distill.CustomPostScript and Printer properties.

  For example:

```
dw_1.Object.DataWindow.Export.PDF.Distill.CustomPostScript=1
dw_1.Object.DataWindow.Printer="HP LaserJet Series 4050 PS"
```

4.4 Installing PowerBuilder demo applications and database

The PowerBuilder demo applications and database are installed by default, unless you de-selected the **PowerBuilder Tutorial**, **Demo Database**, and **Code Examples** components during installation.

If the PowerBuilder demo applications and database are not installed during the PowerBuilder installation process, you can manually download the demo app source code and database from the Appeon website later: Example App, Example Graph App, Example Sales App and the SQL Anywhere database or PostgreSQL database file.

But before you can successfully run the downloaded demo application, you will need to set up an ODBC data source to connect with the demo database.

To set up the ODBC data source with the SQL Anywhere demo database,

1. Install SQL Anywhere 17.

2. Create the ODBC data source that includes the following settings.

   Data Source Name: PB Demo DB V2021

   User ID: dba

   Password: sql

   Action: Start and connect to a database on this computer
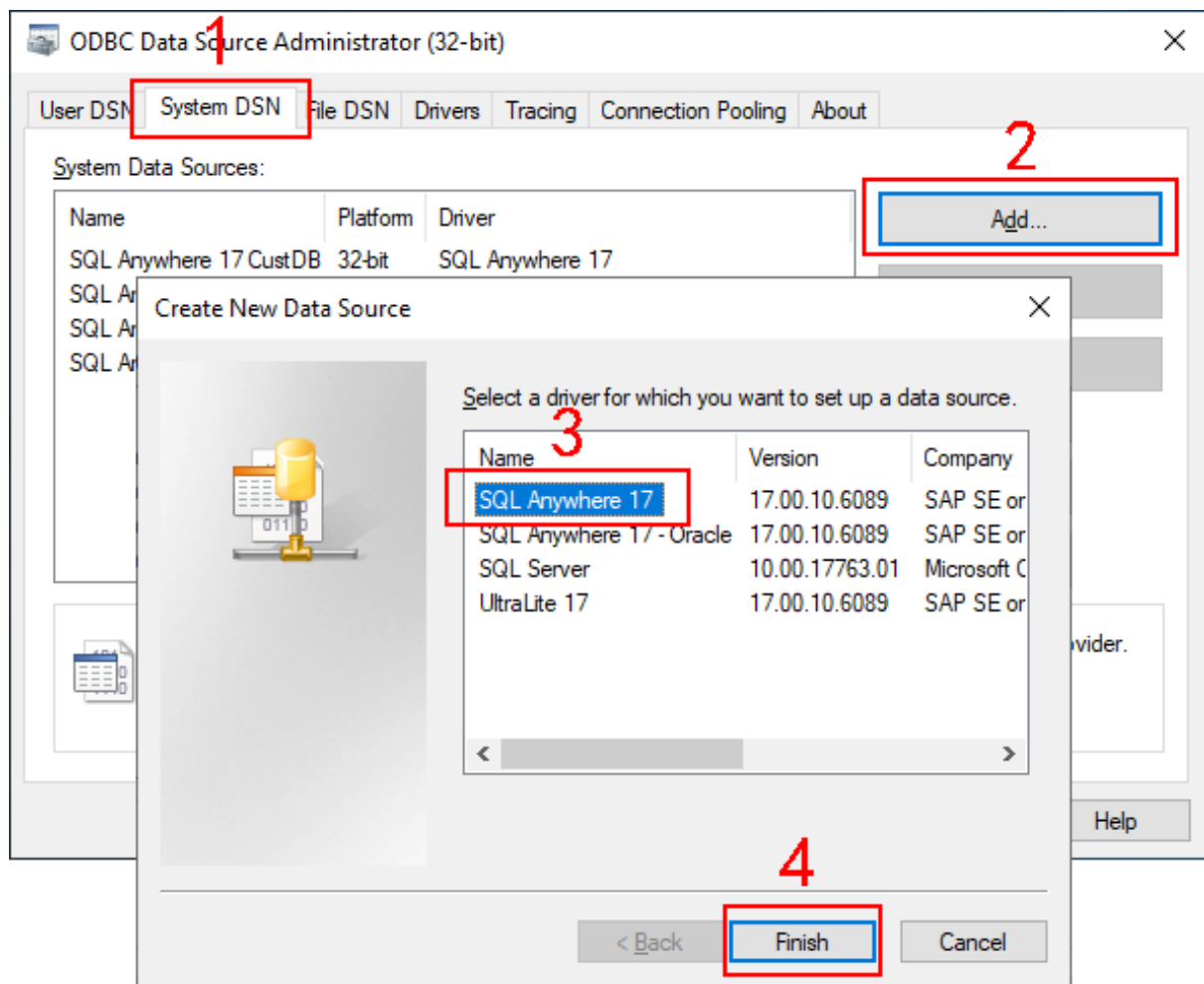
   Database file: [path to the database file]
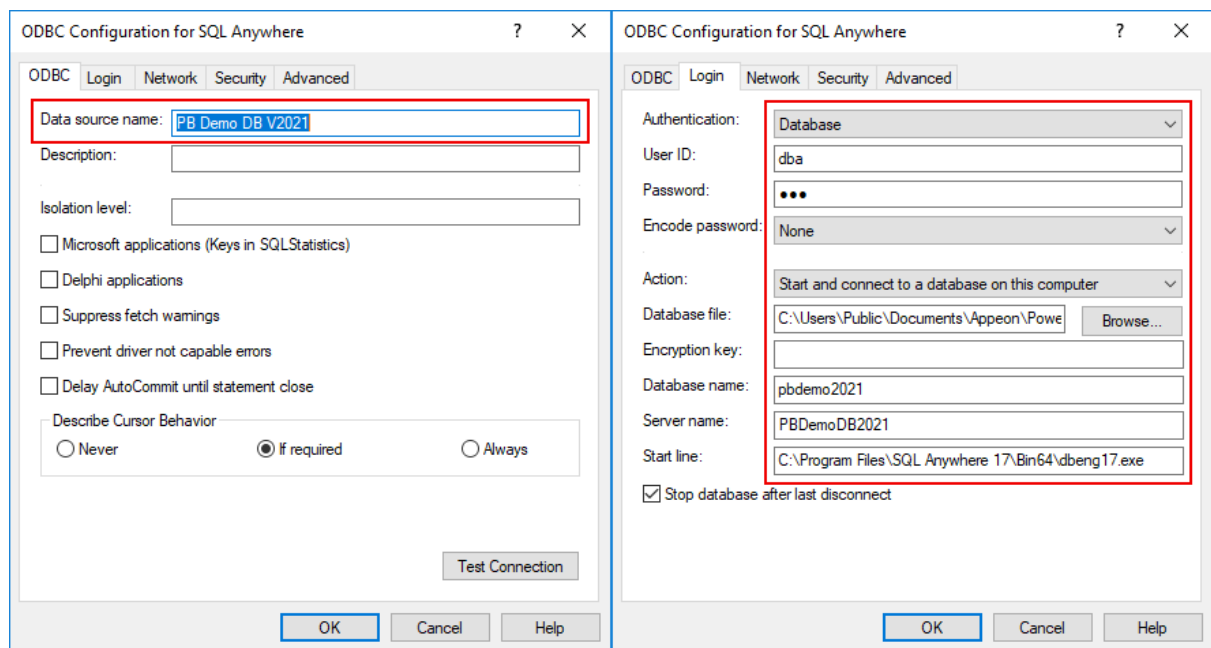
   Database name: pbdemo2021

   Server name: PBDemoDB2021

   Start line: [path to the SQL Anywhere engine]

Figure 4.1:

Figure 4.2:

To set up the ODBC data source with the PostgreSQL demo database,

1. Install PostgreSQL 12 and PostgreSQL ODBC driver (32-bit).

   Make sure the **Command Line Tools** component is selected during the PostgreSQL 12 installation.

2. Restore the PostgreSQL demo database file. For example,

   ```
   "C:\Program Files\PostgreSQL\12\bin\pg_restore" --host=127.0.0.1 --port=5432
    --username="postgres" --clean --if-exists --dbname=PBDemo --verbose "C:\DB
   \pbpostgres2021.dmp"
   ```

3. Create the ODBC data source that includes the following settings.

   Data Source: PB Postgres V2021
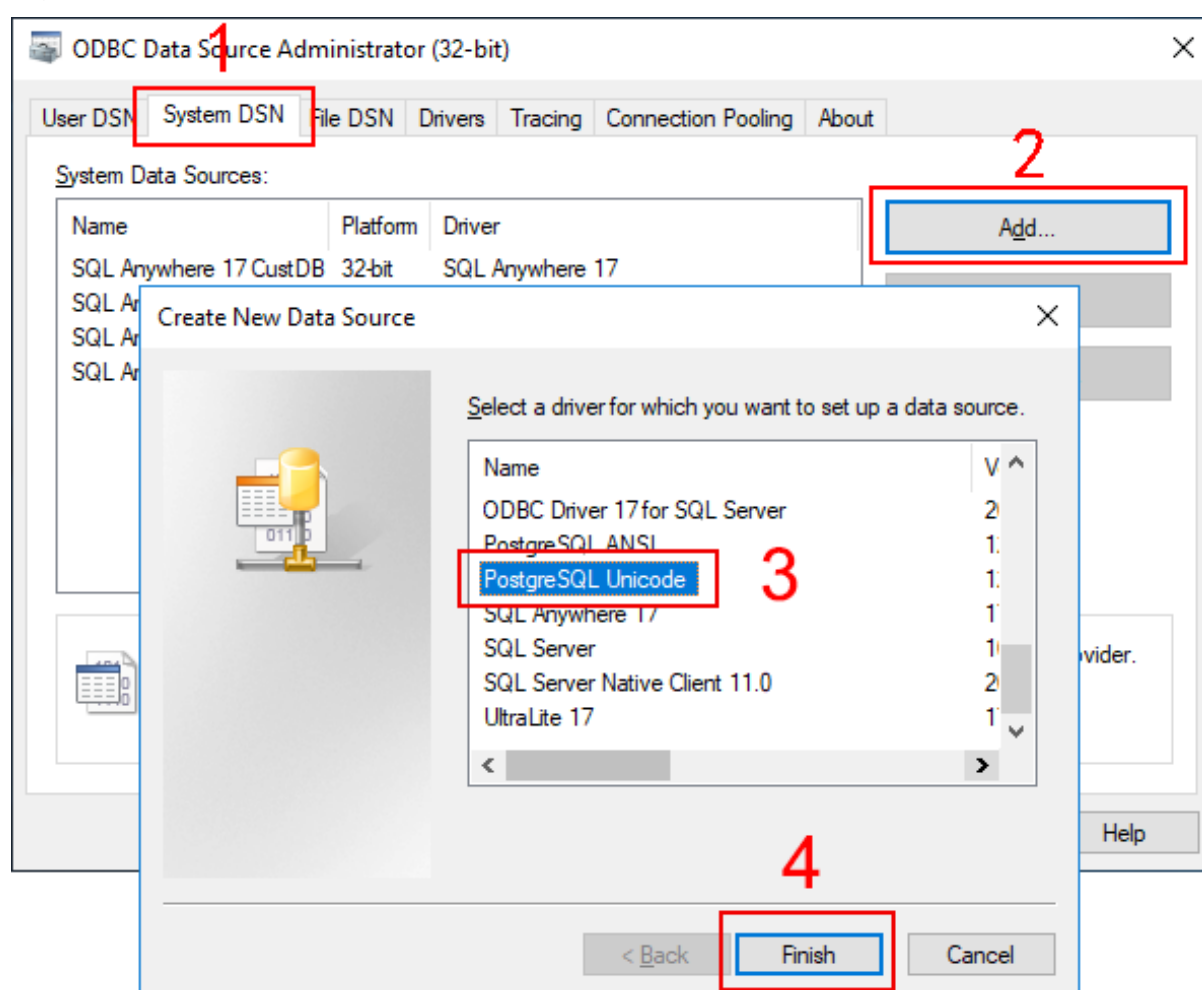
   Database: PBDemo

   Server: [IP address for the database]

   Username: [user name for the database, postgres, by default]

   Port: [port number for the database, 5432, by default]

   Password: [password for the database, postgres, for example]

   Figure 4.3:

Figure 4.4:

5 Activating PowerBuilder

Starting from PowerBuilder 2017, developers are required to log in and activate PowerBuilder IDE first before using it. If you do not have a valid account to log in, please contact your license administrator to create an account for you. Depending on whether the machine where PowerBuilder IDE is installed has Internet access or not, the account should be assigned with an online license or offline license.

5.1 Online activation

Online activation requires you to input an account which is assigned with a valid online license. And Internet access is required during the activation process, because the online license will be activated by the Appeon license server.

> **Note**
>
> This section talks about **PowerBuilder IDE** activation only. If you want to activate **PowerServer**, please follow the Activating PowerServer 2021 or later section in the Appeon License User Guide; and if you want to activate **SnapDevelop**, please follow the Activating SnapDevelop section in the Appeon License User Guide.

5.1.1 Activating with an online license

To activate PowerBuilder IDE using an account assigned with an online license, follow these steps:

Step 1 -- Launch PowerBuilder IDE. When you launch PowerBuilder IDE for the first time after installation, the **Log in to PowerBuilder** window displays automatically.

Step 2 -- Click **Activate** in the **Log in to PowerBuilder** window.

Step 3 -- Enter the user name and password for your account, and then click **Log In**.

Make sure the current machine can connect to Internet, as your account will be validated and the binding license will be activated by the Appeon license server immediately. Once validation and activation are successful, you will be logged in to the PowerBuilder IDE.

To view the account and license information, click your account name on the right top of the PowerBuilder IDE and then click **Account Management** in the popup menu.

5.1.2 Refreshing an online license

When your online license is renewed or upgraded by your license administrator, you will need to refresh the online license information in the PowerBuilder IDE accordingly.

You refresh an online license by clicking the **Refresh license** link in the account information window (available by selecting the **Account Management** popup menu). Internet access is required.

5.1.3 Logging out to de-activate

Once you log in to PowerBuilder IDE successfully, which also means your online license is activated successfully, you should stay logged in unless you absolutely need to log out

to de-activate the license (for example, you need to move PowerBuilder IDE to a different machine).

To de-activate an online license, you log out of PowerBuilder IDE by clicking the **Sign out** link in the account information window (available by selecting the **Account Management** popup menu). Internet access is required.

Once logout is successful, you will be shown with the **Log in to PowerBuilder** window again.

When you uninstall PowerBuilder IDE with Internet connection, you will be automatically logged out of PowerBuilder IDE when the uninstall process starts; when you uninstall PowerBuilder IDE without Internet connection, you will be prompted to contact your license administrator to de-activate your license on the website and then the uninstall process starts.

5.2 Offline activation

Offline license is created to meet the needs where the machine with PowerBuilder IDE installed does not have Internet connection.

An account assigned with an offline license can either be used to log in to PowerBuilder IDE with or without Internet connection. When an account with an offline license is logged in with Internet connection, the process is as easy as the account with an online license.

Please notice that cloud-based machines or virtual machines cannot be activated using an offline license; only online license can be used.

Note

This section talks about **PowerBuilder IDE** activation only; if you want to activate **SnapDevelop**, please follow the Activating SnapDevelop section in the Appeon License User Guide.

5.2.1 Activating an offline license

To activate an offline license, follow these steps:

Step 1 -- In the **Log in to PowerBuilder** window, click **Activate offline license manually**.

Step 2 -- Enter the user name and password for your account, and select whether to activate the license with or without Internet connection.

- If **Activation with Internet connection** is selected, make sure your current machine can access Internet. The offline license will be activated by the Appeon license server immediately after you click **Activate**.

- If **Activation without Internet connection** is selected, you will need to take the following steps to activate the offline license:

  1. Click **Generate Client Request** to create the client request (a text string), and then click **Copy Client Request** to copy the string to the clipboard.

  2. Transfer the string to a machine with Internet connection, and visit the **License Activation** web page by this URL: https://www.appeon.com/license/get/activation-

code?type=activation. On the web page, paste the string to the text box and then click **Submit**. A server response (another text string) is generated.

3. Transfer the server response string back to PowerBuilder IDE, and paste the string to the **Server Response** text box, and then click **Activate**.

4. Click **OK** when the activation completes.

Once the offline license is activated successfully, you will be logged in to the PowerBuilder IDE.

To view the corresponding license information, click the menu **Help** | **Offline License Management | License Info** in the PowerBuilder IDE.

5.2.2 Renewing an offline license

When an offline license is renewed by your license administrator, you will need to renew the offline license information in the PowerBuilder IDE accordingly.

To renew an offline license, follow these steps:

Step 1 -- In the PowerBuilder IDE, select **Help** | **Offline License Management | Renew**.

Step 2 -- Select whether to renew the offline license with or without Internet connection.

- If **Renew with Internet connection** is selected, make sure your current machine can access Internet. The offline license will be renewed by the Appeon license server immediately after you click **Renew**.

- If **Renew without Internet connection** is selected, you will need to take the following steps to renew the offline license:

  1. Click **Generate Client Request** to generate a request string.

  2. Click **Copy Client Request** to get the request string, and transfer the string to a machine with Internet connection.

  3. On the machine with Internet connection, visit the **License Renewal** web page by this URL: https://www.appeon.com/license/get/activation-code?type=renewal. On the web page, paste the string to the text box and then click **Submit**. A response string will be generated if the license is renewed successfully by the Appeon license server.

  4. Transfer the response string back to the PowerBuilder IDE, and paste the string to the **Server Response** text box, and then click **Renew**.

  5. Click **OK** when the renewal completes.

The renewal license will take effect the day after the current license expires.

5.2.3 Upgrading an offline license

When an offline license is upgraded, for example, from a Professional Edition to a CloudPro Edition, you will need to upgrade the offline license information in the PowerBuilder IDE accordingly.

To upgrade an offline license, follow these steps:

Step 1 -- In the PowerBuilder IDE, select **Help** | **Offline License Management | Upgrade**.

Step 2 -- Select whether to upgrade the offline license with or without Internet connection.

- If **Upgrade with Internet connection** is selected, make sure your current machine can access Internet. The offline license will be upgraded by the Appeon license server immediately after you click **Upgrade**.

- If **Upgrade without Internet connection** is selected, you will need to take the following steps to upgrade the offline license:

  1. Click **Generate Client Request** to generate a request string.

  2. Click **Copy Client Request** to get the request string, and transfer the string to a machine with Internet connection.

  3. On the machine with Internet connection, visit the **License Upgrade** web page by this URL: https://www.appeon.com/license/get/activation-code?type=upgrade. On the web page, paste the string to the text box and then click **Submit**. A response string will be generated if the license is upgraded successfully.

  4. Transfer the response string back to the PowerBuilder IDE, and paste the string to the **Server Response** text box, and then click **Upgrade**.

  5. Click **OK** when the upgrade completes.

5.2.4 De-activating an offline license

Once you log in to PowerBuilder IDE successfully, which also means the offline license is activated successfully, you should stay logged in unless you absolutely need to de-activate the license (for example, you need to move PowerBuilder IDE to a different machine).

To de-activate an offline license, follow these steps:

Step 1 -- In the PowerBuilder IDE, select **Help** | **Offline License Management** | **Deactivate**.

Step 2 -- Depending on whether the machine has Internet connection, select to deactivate the license with or without Internet connection.

- If **Deactivation with Internet connection** is selected, make sure your current machine can access Internet. The offline license will be deactivated immediately after you click **Deactivate** and confirm the deactivation in the dialog box.

- If **Deactivation without Internet connection** is selected, you will need to take the following steps to deactivate the offline license:

  1. Click **Deactivate / Copy Deactivation Request** to generate and copy the request string. Although the offline license is deactivated from PowerBuilder IDE immediately after you click **Deactivate**, you should not stop here, because you should also deactivate the license from the Appeon license server to release the license for the subsequent use.

     The string is by default saved to the Users\[username]\AppData\Local\Temp \PBLicenseDeactivate\DeactivateCode.txt file.

2. Transfer the string to a machine with Internet connection.

3. On the machine with Internet connection, visit the **License Deactivation** web page by this URL: https://www.appeon.com/license/get/activation-code?type=deactivation. On the web page, paste the copied string to the text box and then click **Submit**. You will be prompted if the license is de-activated successfully from the Appeon license server.

6 Uninstalling PowerBuilder

This topic describes how to uninstall PowerBuilder.

When you start to uninstall PowerBuilder IDE, you will be asked to deal with the license first:

- If you are using an online license, when you uninstall PowerBuilder IDE with Internet connection, you will be automatically logged out of PowerBuilder IDE when the uninstall process starts; when you uninstall PowerBuilder IDE without Internet connection, you will be prompted to contact your license administrator to de-activate your license on the website and then the uninstall process starts.

- If you are using an offline license, you can either uninstall PowerBuilder IDE without deactivating the license (if you want to continue using the license on this computer), or uninstall PowerBuilder IDE with the license deactivated (if you want to move the license to a different computer).

For how to log out of PowerBuilder IDE or deactivate an offline license, refer to Log out or De-activating an offline license.

Use one of the following methods to run the uninstall program for the product you want to uninstall:

- Add or Remove Programs dialog box

  1. Make a backup copy of any files you might want to reuse (such as DB, INI, and PBL files) if you plan to reinstall.

  2. Open the Control Panel from the Start menu and double-click the **Add/Remove Programs** button.

  3. On the Install/Uninstall tab page, select the product to uninstall, click **Add/Remove**, and click **Yes** when prompted to confirm that you want to uninstall the tool.

  4. If you are prompted to delete a shared file, click the appropriate response.

     If the usage count for a system file in the registry indicates that the file is no longer being used, the uninstall program asks if you want to delete the file. Some applications do not increment the usage count; therefore, **do not delete a file unless you are sure it is not being used by another application**.

- Silent uninstallation

  Run the *silentuninstall.bat* file, similarly like how you configure and run the the *silentinstall.bat* (see Section 3.2.6.3, "Silent Install Commands").

The uninstall program removes:

- Shared and standard program files

- Folder items

- Program folders

- Program directories

- Program registry entries

The uninstall program deletes file and icon groups, as well as system and user path settings in the registry and INI files. Simply deleting directories does not fully uninstall these products.

> **Note**
>
> The installer increments the usage count in the registry for each shared Appeon DLL and each shared system DLL. The uninstall program decrements that count. The uninstall program does not try to delete a shared DLL until the usage count reaches zero.

> **Note**
>
> Unlike the installer, the uninstall program has no **Back** or **Cancel** button. Once you click **Yes** in the procedure below, the program cannot be stopped.