

# Introduction to Appeon

Appeon® 6.5.1 for PowerBuilder®

DOCUMENT ID: DC50000-01-0651-01

LAST REVISED: November 25, 2011

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# Contents

1 About This Book .....	1
1.1 Audience .....	1
1.2 How to use this book .....	1
1.3 Related documents .....	1
1.4 If you need help .....	2
2 Introduction to Appeon .....	3
2.1 Distributions .....	3
2.2 Editions .....	4
2.3 Feature Difference between Editions .....	4
2.4 Appeon Components .....	5
2.5 Product Features .....	6
2.5.1 Product capabilities .....	6
2.5.2 PowerBuilder application .....	6
2.5.3 Integration .....	7
2.5.4 Performance .....	7
2.5.5 Security .....	8
3 Getting Started with Appeon .....	9
3.1 Overview .....	9
3.2 Read the Appeon Release Bulletin .....	10
3.3 Install Appeon 6.5.1 for PowerBuilder .....	10
3.4 Explore the Appeon demo applications .....	10
4 Working with Appeon .....	11
4.1 Overview .....	11
4.2 Familiarize yourself with Appeon Developer .....	11
4.3 Familiarize yourself with Appeon Enterprise Manager (AEM) .....	11
4.4 Explore the Appeon Code Examples and the Appeon ACF Demo .....	11
4.5 Explore the Appeon Sales Application Demo .....	11
4.6 Move your application to the Web .....	11
Index .....	13



# 1 About This Book

## 1.1 Audience

This book is written for users of Appeon® 6.5.1 for PowerBuilder® and serves as a starting point to introduce Appeon's features and functionalities as well as guide users through all the documents included in the release of Appeon 6.5.1 for PowerBuilder. Please read the documents listed in the order that they are presented.

## 1.2 How to use this book

There are four chapters in this book.

Chapter 1: About This Book

A general description of this book.

Chapter 2: Introduction to Appeon

Introduces Appeon's features and functionalities.

Chapter 3: Getting Started with Appeon

A quick reference guide that outlines the process that should be followed to install and set up Appeon.

Chapter 4: Working with Appeon

Outlines a process for familiarizing yourself with Appeon and then deploying your own applications.

## 1.3 Related documents

Appeon provides the following user documents to assist you in understanding Appeon for PowerBuilder and its capabilities:

- **Appeon Demo Applications Tutorial:**

Introduces Appeon's demo applications, including the Appeon Sales Application Demo, Appeon Code Examples, Appeon ACF Demo, and Appeon Pet World, which show Appeon's capability in converting PowerBuilder applications to the Web.

- **Appeon Developer User Guide (or Working with Appeon Developer Toolbar):**

Provides instructions on how to use the Appeon Developer toolbar.

Working with Appeon Developer Toolbar is an HTML version of the Appeon Developer User Guide.

- **Appeon Server Configuration Guide:**

Provides instructions on how to configure Appeon Server Monitor, establish connections between Appeon Server and database server and configure AEM for maintaining Appeon Server and Appeon deployed Web applications.

- **Appeon Supported Features Guide (or Appeon Features Help):**

Provides a detailed list of supported PowerBuilder features which can be converted to the Web with Appeon as well as which features are unsupported.

Appeon Features Help is an HTML version of the Appeon Supported Features Guide.

- **Appeon Installation Guide:**

Provides instructions on how to install Appeon for PowerBuilder successfully.

- **Appeon Migration Guide:**

A process-oriented guide that illustrates the complete diagram of the Appeon Web migration procedure and various topics related to steps in the procedure, and includes a tutorial that walks the user through the entire process of deploying a small PowerBuilder application to the Web.

- **Appeon Performance Tuning Guide:**

Provides instructions on how to modify a PowerBuilder application to achieve better performance from its corresponding Web application.

- **Appeon Troubleshooting Guide:**

Provides information on troubleshooting issues; covering topics such as product installation, Web deployment, AEM and Web application runtime.

- **Introduction to Appeon:**

Guides you through all the documents included in Appeon 6.5.1 for PowerBuilder.

- **New Features Guide (or What's New in Appeon):**

Introduces new features and changes in Appeon 6.5.1 for PowerBuilder.

What's New in Appeon is an HTML version of the New Features Guide.

## **1.4 If you need help**

Each Sybase installation that includes a support contract has one or more designated people who are authorized to contact Sybase Technical Support or an Authorized Sybase Support Partner. If you have any questions about this product or need assistance during the installation process, ask a designated person to contact Sybase Technical Support or an Authorized Sybase Support Partner listed in your support contract. You may access the Technical Support Web site at <http://www.sybase.com/support>.

## 2 Introduction to Appeon

### 2.1 Distributions

There are two distributions of the product available, and the product manuals have been written to be applicable to both distributions. Please read the following section carefully before reading through the product manuals or using the product.

#### **What are the different product distributions?**

There are two product distributions widely available. In certain markets or regions, only one distribution may be available. There is a “Sybase Distribution” that is custom-made for Sybase, Inc., and it is marketed, sold, and supported by Sybase (and its partners). There is also an “Appeon Distribution” that is marketed, sold, and supported directly by Appeon Corporation.

#### **Why are the product distributions important?**

The two distributions have some slight differences, and as such some features discussed in the product manuals will be available in one distribution but not the other, and vice versa. When a product feature is not available on a distribution, it is clearly marked to make the reader aware of this fact.

#### **What is the main difference between the product distributions?**

The Appeon Distribution and Sybase Distribution are quite similar. Most features and the product usability are identical. Key product attributes such as scalability, performance, security, and reliability are equally powerful. The main difference between the two distributions is as follows:

##### **Sybase Distribution**

- Supports the following application servers: Sybase EAServer, Oracle WebLogic, IBM WebSphere, JBoss.
- Sybase EAServer is bundled into the distribution and does not need to be obtained or downloaded separately.
- During the installation process, if the user chooses, Sybase EAServer is automatically installed and configured to work in conjunction with Appeon product.
- The product is supported through Sybase world-class technical support.

##### **Appeon Distribution**

- Supports the following application servers: Sybase EAServer, JBoss, TmaxSoft JEUS, Oracle WebLogic, IBM WebSphere, Microsoft IIS (using .NET framework).
- No applications servers are bundled into the product.
- The user must obtain, download, install, and configure the appropriate application server by themselves.
- The product is supported directly by Appeon technical support.

## Which product distribution am I using?

If you obtained Appeon for PowerBuilder from Sybase, Inc. you are using the Sybase Distribution. If you obtained your distribution directly from Appeon Corporation, you are using the Appeon Distribution. You can confirm which distribution you are using by clicking the “Help” icon in the Appeon Developer toolbar appearing in the PowerBuilder IDE or launching the “Appeon Help” from the Windows “Start” menu.

## 2.2 Editions

Appeon 6.5.1 for PowerBuilder contains the following editions.

**Table 2.1: Appeon edition**

OS	Editions	Application Servers
Windows	Enterprise Edition	Sybase EAServer
	Workgroup Edition	Microsoft .NET Framework \IIS <sup>a</sup>
	Developer Edition	Oracle WebLogic
	Trial Edition	IBM WebSphere
		TmaxSoft JEUS <sup>a</sup>
		JBoss
Unix (IMB AIX, Sun Solaris, HP Unix), Linux (RedHat Linux)	Enterprise Edition	Sybase EAServer
	Workgroup Edition	Oracle WebLogic
		IBM WebSphere
		TmaxSoft JEUS <sup>a</sup>
		JBoss

<sup>a</sup>Not available in Sybase Distribution. For differences of distributions, refer to [Distributions](#).

## 2.3 Feature Difference between Editions

Because of differences between different application servers (EAServer, .NET Framework \IIS, WebLogic, WebSphere, JBoss, or JEUS) and different platforms (Windows and Linux \Unix), some features are only available in certain circumstance. Refer to the following table for details.

**Table 2.2: Feature difference**

Feature	EAServer		WebLogic\WebSphere \JEUS\JBoss	.NET (IIS)
	Windows	Linux\Unix	Windows\Linux\Unix	Windows
PowerBuilder NVOs <sup>a</sup>	Yes	Yes	-	-
Save As WMF format	Yes	Yes	-	-
AppeonDataWindow and AppeonDataStore	Yes	Yes	-	-
Distributed DataWindows	Yes	-	-	-



Feature	EAServer		WebLogic\WebSphere \JEUS\JBoss	.NET (IIS)
	Windows	Linux\Unix	Windows\Linux\Unix	Windows
Web Demos	Yes	Yes	Yes	-
EJB Components	Yes	Yes	Yes	-
Com/Com+/NET Components	-	-	-	Yes
DataWindow Data Caching <sup>b</sup>	Yes	Yes	Yes	Yes
LDAP Security	Yes	Yes	Yes	Yes <sup>c</sup>

<sup>a</sup>PB NVOs are supported by EAServer only, and at the same time the corresponding version of PBVM must be installed.

<sup>b</sup>All types of Appeon Server support Application Server data cache and client-side data cache, but support Web server data cache on Windows platform only. If data caching feature is enabled in Web server, but if it does not work due to improper configuration or unsupported platform (such as Unix, Linux), then the Application Server data cache is automatically enabled.

<sup>c</sup>.NET (IIS) Version supports only Microsoft Active Directory, while J2EE edition supports IBM LDAP, Netscape LDAP, Sun LDAP, and Microsoft Active Directory.

## 2.4 Appeon Components

Appeon for PowerBuilder extends the capabilities of Sybase PowerBuilder so that a PowerBuilder application can be deployed to the Web. The deployment process produces a true n-Tier Web application with a J2EE-based or .NET-based back-end and an HTML UI front-end. The source PowerBuilder application that will be deployed to the Web may be an existing 2-tier application or a new 3-tier Web application in PowerBuilder. A 3-tier Web application can be constructed quickly and easily, using only your PowerBuilder skills. Either way, Appeon is the fastest way to: 1) convert PowerBuilder applications into bona fide Web applications, and 2) convert PowerBuilder developers into highly productive Web application developers.

Appeon is composed of a developer tool and a set of runtime server components: Appeon Developer, Appeon Server (which includes the Appeon Enterprise Manager), Appeon Server Web Component, and Appeon Help:

- **Appeon Developer.** An extension to PowerBuilder that enables the Web application generation, maintenance, and upgrades within the PowerBuilder IDE. It is only available in the Appeon for PowerBuilder for Windows editions.
- **Appeon Server for J2EE Server.** Composed of J2EE and PowerBuilder server components that provide runtime services for the deployed Web application such as data connectivity, complete DataWindows support, transaction management, printing, and security.
- **Appeon Server for .NET\*.** Composed of Microsoft .NET components that provide runtime services for the deployed Web application such as data connectivity, complete DataWindows support, transaction management, printing, and security.

*\* Not available in Sybase Distribution. For differences of distributions, refer to [Distributions](#).*

Appeon Server also includes Appeon Enterprise Manager (AEM), which is essentially the user interface for Appeon Server. This UI is implemented as a JSP Web application enabling the system administrator to manage deployed Web applications and Appeon Server over the Internet, an intranet or an extranet.

- **Appeon Server Web Component.** A series of JavaScript-based Web components generating PowerBuilder-style GUI in standard Microsoft Internet Explorer.
- **Appeon Help.** Provides easy access to all user documents. It saves time and conveniently places the help information, such as, the Appeon supported features, at your fingertips. It is only available in the Appeon for PowerBuilder for Windows editions.

Appeon provides several additional tools (included in the installation package) to aid you in deploying existing PowerBuilder applications to the Web:

- **Appeon Workarounds PBL.** Provides you several Appeon workaround functions that can help work around the unsupported features, such as DataWindow GetFullState, SetFullState, GetChanges and SetChanges functions. Refer to the *Appeon Workarounds Guide | Appeon Workarounds PBL Reference* for the functions provided in Appeon Workarounds PBL.
- **Appeon Sales Application Demo.** Familiarize yourself with the Appeon Developer toolbar in PowerBuilder and with the deployment process by converting the Sales Application Demo to the Web with the *Appeon Demo Applications Tutorial*.
- **Appeon Code Examples and Appeon ACF Demo.** Explore examples of some of the rich PowerBuilder and PFC functionalities that Appeon can support on the Web. Appeon Code Examples also serves as a reference for how to best implement these supported PowerBuilder features. An application that is compliant with Appeon-supported features can be deployed to the Web in a few minutes with the click of a button.

## 2.5 Product Features

### 2.5.1 Product capabilities

Appeon transforms PowerBuilder into the most productive Web development tool for the J2EE platform. It is capable of migrating existing PowerBuilder applications to the Web with unprecedented speed, where 80-95% of existing PowerBuilder application code and objects are automatically converted. It is also capable of building new rich Web applications with the unbeatable 4GL productivity of PowerBuilder that is at least 4 times faster than ASP.NET or typical JSP authoring tools. The only skill required are your existing PowerBuilder skills that you have mastered over the years. All future Web application maintenance is carried out in the familiar PowerBuilder IDE using only those skills.

### 2.5.2 PowerBuilder application

Appeon provides robust support for both PowerBuilder non-visual and visual features, including the PFC framework. Moreover, Appeon for EAServer edition supports

PowerBuilder non-visual objects (NVO). No other product supports as many PowerBuilder features as Appeon and faithfully replicates the rich PowerBuilder UI in standard HTML and JavaScript.

Currently Appeon extends the supported features to encompass Client/Server-centric features and boost the performance to make it ideal for larger and more complex Web migrations.

### 2.5.3 Integration

Appeon provides extremely flexible integration options both at the client and server so that you can integrate nearly any application imaginable.

**Client-side integration:** Appeon Web applications can invoke non-visual OLE objects, Windows APIs and DLLs, and other executable programs that are installed on the Windows-based client computer. This support enables Appeon Web applications to integrate with essentially any application installed on the client computer and to work with any peripherals that are connected to the client computer.

**J2EE integration:** Appeon Web applications are based on J2EE technology and deploy to a J2EE application server. This architecture enables Appeon Web applications to natively integrate with all J2EE Web and distributed Client/Server applications.

**CORBA integration:** Appeon's server architecture supports CORBA standards and IIOP protocol. This support enables Appeon Web applications to seamlessly integrate with server components written in a number of languages, including C/C++, Java, and PowerBuilder.

**Web services:** Web services are supported in conjunction with PowerBuilder 9 or later. This support enables Appeon Web applications on the server-side to integrate with any Web services-enabled application, including .NET Web and Client/Server applications.

Appeon uniquely empowers you to marry Microsoft technologies and J2EE in one happy union. Unlike other solutions, you are not forced to decide between Microsoft technologies or Java, and you do not need to Web service-enable your system to take advantage of extensive integration options.

For more information about Appeon architecture and integration, please read the Appeon Whitepaper, *Understanding the Architecture of Appeon*, which can be downloaded from the Appeon Website: <http://www.appeon.com/support/documents-32572814ace53119-34.html>.

### 2.5.4 Performance

Even though Appeon Web applications offer extremely rich UIs and very powerful PowerBuilder functionality, there are a number of built-in features to ensure it performs and scales well, especially when deployed outside of a LAN environment.

**Bandwidth & connectivity:** All communication between the browser and server utilizes the HTTP standard (connectionless protocol) and 10X data compression is applied automatically.

**Scalability:** Appeon middle-tier offers the superior scalability of J2EE architecture. It can be clustered/load-balanced to support any number of users. In addition, database access utilizes connection-pooling technology to minimize the load on your database by as much as 10 times.

Unlike "quick n' dirty" migration solutions, Appeon's architecture empowers your system to scale in all senses of the word. It can deploy the most demanding applications, handle large

numbers of users, and work across geographies without restrictions on network connection type and quality. Appeon is designed to serve your organization as it grows not only in headcount but globally as well.

For more information about Appeon architecture and performance, please read the Appeon Whitepaper, *Understanding the Architecture of Appeon*, which can be downloaded from the Appeon Website: <http://www.appeon.com/support/documents-32572814ace53119-34.html>.

### **2.5.5 Security**

Appeon supports strict Web security standards and practices. Built-in user authentication ensures that all users of your Web application have authorized access. This can be configured to work with your existing or a new LDAP server. All data transmitted between the Web client and server can be encrypted using HTTPS/SSL. Since Appeon Web applications can be deployed using just HTML and JavaScript over HTTP port 80, there is no need to relax your firewall security measures at all.

For more information about Appeon architecture and security, please read the Appeon Whitepaper, *Understanding the Architecture of Appeon*, which can be downloaded from the Appeon Website: <http://www.appeon.com/support/documents-32572814ace53119-34.html>.

## 3 Getting Started with Appeon

### 3.1 Overview

Take time to read the documents mentioned below in order to get the most of using Appeon. You can view the PDF or HTML version of the documents.

**Table 3.1: User documents**

When you want to	Refer to
Get a general idea of the Appeon products suite	Introduction to Appeon
Obtain important installation and general information on Appeon 6.5.1 for PowerBuilder	Release Bulletin (Only PDF is provided.)
Check system requirements  Note: DO NOT start installation if the computer does not meet the specified requirements.  Install Appeon 6.5.1 for PowerBuilder and other accessories	Appeon Installation Guide
Try the Appeon demo applications. (Sales Application Demo, Appeon Code Examples, and the Appeon ACF Demo)	Appeon Demo Applications Tutorial (Only PDF is provided.)
Learn the basic processes of developing new Web applications with Appeon  Learn the basic processes of deploying PowerBuilder applications	Appeon Migration Guide
Familiarize yourself with the Appeon Developer toolbar that is integrated into PowerBuilder	Appeon Developer User Guide
Establish database connection with Appeon Server Use <i>AEM</i> to configure the server	Appeon Server Configuration Guide
The new features and enhancements for the latest version of Appeon; new levels of support or product compatibilities	What's New in Appeon for PowerBuilder
Work on custom PowerBuilder application migration: remove or rewrite unsupported features	Appeon Supported Features Guide
Configure third-party Web servers to work with Appeon Server	Web Server Configuration Guide (Only HTML help is provided.)
Find workarounds for Appeon unsupported features	Appeon Workarounds Guide (Only HTML help is provided.)
Tune the performance of the Web applications	Appeon Performance Tuning Guide
Troubleshoot any problems you encounter along the way	Appeon Troubleshooting Guide

In addition to the documents listed above, valuable information can be obtained from the following website:

- For information about PowerBuilder, EAServer, and Sybase Adaptive Server® Anywhere: visit Sybase website at <http://www.sybase.com/>;
- For information about Microsoft .NET Framework and IIS: visit Microsoft Website at <http://www.microsoft.com>;
- For information about WebLogic: visit Oracle WebLogic website at <http://www.oracle.com/>;
- For information about WebSphere: visit IBM website at <http://www.ibm.com/>.
- For information about JEUS: visit TmaxSoft website at <http://us.tmaxsoft.com/jsp/product/detailcontents.jsp?psCd=00PD04&menuCd=00PDMSJE>.
- For information about JBoss: visit <http://www.jboss.org/jbossas>.

Since Appeon for PowerBuilder heavily integrates and interacts with these products, it is necessary for the user to have a solid understanding of them.

## 3.2 Read the Appeon Release Bulletin

After reading through this Introduction document, the *Release Bulletin* should be the next document you read. This critical document provides an update of all of the latest technical issues and new content that may not be included in the latest version of Appeon for PowerBuilder. Please read carefully and pay special attention to the *Known Problems* section.

## 3.3 Install Appeon 6.5.1 for PowerBuilder

*Appeon Installation Guide* contains complete instructions that guide you through the installation of Appeon 6.5.1 for PowerBuilder.

The PowerBuilder and Web versions of the Appeon Sales Application Demo, the Appeon Code Examples, and the Appeon ACF Demo are included with the Appeon Developer and the Appeon Server installations.

Detailed instructions on preparation for installation, system requirements, and server configurations are provided in the *Appeon Installation Guide*.

## 3.4 Explore the Appeon demo applications

The *Appeon Demo Applications Tutorial* is a step-by-step guide that walks you through the Sales Application Demo, the Appeon Code Examples and the Appeon ACF Demo. These demos are automatically installed during the Appeon Developer Setup. Use the tutorial to explore the demos and familiarize yourself with the Appeon product from a developer and end-user perspective.

## 4 Working with Appeon

### 4.1 Overview

Appeon 6.5.1 for PowerBuilder includes several user guides and support documents intended to help you through the process of moving PowerBuilder applications to the Web. The following sections outline the support document relevant to each stage of the process. Read these in the order they are given.

### 4.2 Familiarize yourself with Appeon Developer

The *Appeon Developer User Guide* walks you through all the features of Appeon Developer including configuration, using the analysis tool to bring your application into compliance with Appeon supported features, and deploying your PowerBuilder application to the Web. It is important for you to gain a thorough understanding of Appeon Developer before proceeding to convert any of your own applications to the Web.

### 4.3 Familiarize yourself with Appeon Enterprise Manager (AEM)

The *Appeon Server Configuration Guide* provides the user with instructions and tips for using *Appeon Enterprise Manager (AEM)* to configure the server properties and application properties. This includes database/connection cache and security properties. It is important for you to gain a thorough understanding of *AEM* before attempting to deploy any of your own applications to the Web.

### 4.4 Explore the Appeon Code Examples and the Appeon ACF Demo

The *Appeon Applications Demo Tutorial* provides the user with instructions and tips for gaining an understanding of the PowerBuilder and PFC features that Appeon supports. It also includes the coding requirements for implementing those features. However, it does not highlight every single PowerBuilder and PFC feature that Appeon supports. For a detailed description of all supported features, see *Appeon Features Help*. Especially when building new Web applications in PowerBuilder with Appeon, we suggest that you model your application based on the code and features illustrated in the examples.

### 4.5 Explore the Appeon Sales Application Demo

The *Appeon Applications Demo Tutorial* provides detailed information about the Appeon Sales Application Demo, which demonstrates Appeon's ability to convert the complex UI and event-driven logic of an average PowerBuilder application.

### 4.6 Move your application to the Web

The *Appeon Migration Guide* includes detailed requirements to begin the conversion process and walks you through the entire process of deploying a small PowerBuilder application to the Web.

*Appeon Features Help* outlines the details of what is supported and the optimal code for implementing those features. It is highly recommended that you refer to Appeon Features Help when attempting to rewrite or remove unsupported features.

Keep in mind that there are a small number of obscure and intricate unsupported features that cannot be detected in the Unsupported Features Analysis report. Deploy your application to the Web and verify that it is functioning to the correct specifications. If something is not functioning, refer back to *AppeonFeaturesHelp* to see if it is an unsupported feature.

The *Appeon Migration Guide* and *Appeon Features Help* will be your trusted companions throughout the conversion process.

Once your application has been deployed to the Web, the *Appeon Performance Tuning Guide* will help you boost the performance of any windows that are either too "heavy" or contain some obscure feature slowing down performance. Appeon recommends that all users study this guide before evaluating the performance of their Web application. No matter how simple or complex your application windows are, there are many ways that you can boost performance without sacrificing any functionality (from the end-user perspective).



# Index

## A

Appeon components, [5](#)

Appeon distribution, [3](#)

## D

distribution, [3](#)

## E

edition, [4](#)

explore Appeon ACF Demo, [11](#)

explore Appeon Code Examples Demo, [11](#)

explore Appeon demo applications, [10](#)

explore Appeon Sales Application Demo, [11](#)

## F

familiarize yourself with AEM, [11](#)

familiarize yourself with Appeon Developer,  
[11](#)

feature difference between editions, [4](#)

## I

install Appeon for PowerBuilder, [10](#)

integration, [7](#)

## M

move your application to Web, [11](#)

## P

performance, [7](#)

PowerBuilder application, [6](#)

product capabilities, [6](#)

product features

    integration, [7](#)

    performance, [7](#)

    PowerBuilder application, [6](#)

    product capabilities, [6](#)

    security, [8](#)

## R

read Appeon Release Bulletin, [10](#)

## S

security, [8](#)

Sybase distribution, [3](#)