

Appeon Developer User Guide

Appeon® 6.5.1 for PowerBuilder®

DOCUMENT ID: DC20238-01-0651-01

LAST REVISED: April 19, 2012

Copyright © 2012 by Appeon Corporation. All rights reserved.

This publication pertains to Appeon software and to any subsequent release until otherwise indicated in new editions or technical notes. Information in this document is subject to change without notice. The software described herein is furnished under a license agreement, and it may be used or copied only in accordance with the terms of that agreement.

No part of this publication may be reproduced, transmitted, or translated in any form or by any means, electronic, mechanical, manual, optical, or otherwise, without the prior written permission of Appeon Corporation.

Appeon, the Appeon logo, Appeon Developer, Appeon Enterprise Manager, AEM, Appeon Server and Appeon Server Web Component are registered trademarks of Appeon Corporation.

Sybase, Adaptive Server Anywhere, Adaptive Server Enterprise, iAnywhere, PowerBuilder, Sybase Central, and Sybase jConnect for JDBC are trademarks or registered trademarks of Sybase, Inc.

Java and JDBC are trademarks or registered trademarks of Sun Microsystems, Inc.

All other company and product names used herein may be trademarks or registered trademarks of their respective companies.

Use, duplication, or disclosure by the government is subject to the restrictions set forth in subparagraph (c)(1)(ii) of DFARS 52.227-7013 for the DOD and as set forth in FAR 52.227-19(a)-(d) for civilian agencies.

Appeon Corporation, 1/F, Shell Industrial Building, 12 Lee Chung Street, Chai Wan District, Hong Kong.

Contents

1	About This Book	1
1.1	Audience	1
1.2	How to use this book	1
1.3	Related documents	2
1.4	If you need help	3
2	Introduction	4
2.1	Appeon Developer toolbar in PowerBuilder	4
2.2	Web application development with Appeon Developer	5
3	Before You Begin	7
3.1	Installing Appeon for PowerBuilder	7
3.2	Configuring application database connectivity	7
3.3	Starting Appeon Server	7
4	Configuring Appeon Developer	9
4.1	Using Appeon Developer Configuration Wizard	9
4.1.1	Configuring basic settings	10
4.1.2	Selecting PBL file(s)	11
4.1.3	Configuring deployment settings	13
4.1.4	Selecting DB Type(s)	14
4.1.5	Declaring transaction object(s)	14
4.1.6	Selecting image files	17
4.1.7	Selecting INI files	17
4.1.8	Selecting DLL/OCX files	18
4.1.9	Configuring command line options	19
4.1.10	Configuring language options	20
4.1.11	Specifying log mode	21
4.1.12	Summary	22
4.2	Using Configure Tool	23
4.2.1	Managing application profiles	23
4.2.1.1	Application Profiles tab page	24
4.2.1.2	Application profile settings	25
4.2.2	Managing database type profiles	43
4.2.3	Managing server profiles	46
4.2.3.1	Server Profiles tab page	47
4.2.3.2	Appeon Server profile settings	47
4.2.3.3	Web Server profile settings	50
4.2.4	Managing deployment profiles	55
4.2.4.1	Deployment Profiles tab page	56
4.2.4.2	Deployment profile settings	56
4.2.5	Managing connection cache profiles	58
5	Using UFA Tool	62
5.1	Analyzing an application	63
5.1.1	Tasks required before you perform feature analysis	63
5.1.2	Accessing the UFA tool	65
5.1.3	Performing feature analysis	67
5.1.4	Undetected Unsupported Features	69
5.2	Working with UFA Report	72

5.2.1	Modifying unsupported features	72
5.2.2	Manipulating the UFA Report	74
5.2.2.1	Opening or saving a UFA Report	74
5.2.2.2	Selecting report view mode	75
5.2.2.3	Searching for UFA Report items	75
5.2.2.4	Filtering UFA Report items	76
5.2.2.5	Specifying report display level	78
5.2.2.6	Defining the priority settings of unsupported features	79
5.2.2.7	Customizing the general settings of the UFA Report	80
5.3	Working with Heavy Window Report	81
5.3.1	How a heavy window is measured	81
5.3.2	Reading Heavy Window Report	81
5.3.3	Making heavy windows lighter	82
6	Deploying PowerBuilder Applications	83
6.1	Deployment performance	83
6.1.1	Speed of Web Deployment Process	83
6.1.2	Deployment duration for full deployments	84
6.1.3	Deployment duration for incremental deployments	84
6.2	Deployment process	85
6.2.1	Preparing the PowerBuilder application	85
6.2.2	Specifying the deployment settings	85
6.2.2.1	Selecting the deployment mode	87
6.2.3	Deploying the PowerBuilder application	89
7	Debugging Apeon Web Applications	95
7.1	Important Requirements	95
7.2	Introduction to the debugging procedure	95
7.3	Starting Apeon Debugger	96
7.3.1	Views in Apeon Debugger	97
7.4	Setting breakpoints	98
7.4.1	Code lines that can be set as breakpoints	98
7.4.2	Methods for setting breakpoints	99
7.5	Running the application in debug mode	100
7.6	Examining an application at a breakpoint	100
7.6.1	Special variable and expression handlings	100
7.6.2	Adding variables or expressions to Watch view	101
7.6.3	Changing the value of a variable or expression	102
7.6.4	Evaluating an expression	103
7.6.5	Examining context in Call Stack view	103
7.6.6	Stepping through the application	103
7.7	Fixing the code/stopping the debug procedure	103
8	Running Web Applications	104
8.1	Requirements	104
8.1.1	Windows account privileges	104
8.1.2	Internet Explorer settings	104
8.1.2.1	Settings for temporary Internet files	104
8.1.2.2	Advanced settings for temporary Internet Explorer files folder	106
8.1.2.3	Advanced settings for proxy server	107

8.1.2.4 Security settings for ActiveX controls and Appeon Xcelerator plug-in download	108
8.1.3 Language setting requirements	111
8.1.4 Disabling anti pop-up software	112
8.2 Accessing Web applications	112
8.2.1 URLs for Web applications	112
8.2.2 Running Web applications	112
8.2.2.1 Launching Web applications from <i>Run</i> button	113
8.2.2.2 Selecting a run mode	114
8.3 Appeon DataWindow menu	115
8.3.1 Enabling Appeon DataWindow menu	115
8.3.2 Using Appeon DataWindow Menu	115
8.3.2.1 Find	115
8.3.2.2 Sort and filter	116
8.3.2.3 DataWindow printing	119
8.3.2.4 SaveAs	120
8.3.2.5 Additional Enhanced Features	121
9 Using Information Manager	123
9.1 Viewing the reports and logs	123
10 Packaging and Installing Web Applications	126
10.1 Packaging a Web application	126
10.1.1 What can be packaged?	126
10.1.2 Important requirements	127
10.1.3 Packaging instructions	127
10.1.4 Modifying the deploy-config file	136
10.2 Installing and uninstalling a Web application	137
10.2.1 Points to note before installation	137
10.2.2 Installing an application	137
10.2.3 Uninstalling an application	147
11 Undeploying Web Applications	154
11.1 Undeploying instructions	154
11.1.1 Undeploying with the Deployment Profile mode	155
11.1.2 Undeploying with the Appeon Server mode	158
12 Developing with Code Insight	162
12.1 Activating Code Insight	162
12.1.1 Configuring Code Insight	163
12.1.2 Enabling Code Insight	165
12.2 Coding with Code Insight	166
13 Launching Appeon Enterprise Manager	168
13.1 Requirements	168
13.2 Launching Appeon Enterprise Manager	168
14 Appeon for PowerBuilder Help	170
15 Extended Toolkit	172
15.1 DLL/OCX Files Package Tool	172
15.1.1 Packaging DLL/OCX files	172
15.1.2 Installing and uninstalling DLL/OCX files	176
15.1.2.1 Installing DLL/OCX files	176
15.1.2.2 Uninstalling DLL/OCX files	179

15.2 Appeon Silent Installer (Windows EAServer only)	181
15.2.1 Creating folder structure of Silent Installer	181
15.2.2 Copying installation program of EAServer, Appeon Server, Appeon Server EBF or Web applications	183
15.2.3 Customizing configuration file	183
15.2.3.1 Installation Types	184
15.2.3.2 EAServer and ASA Path	184
15.2.3.3 EAServer Host Name, Port, Username and Password	185
15.2.3.4 Appeon Server Port, Username and Password	186
15.2.3.5 Web Server Path	186
15.2.3.6 Setup Log Path	187
15.2.3.7 Web Applications	187
15.2.3.8 Web Application Uninstall Program Path	188
15.2.3.9 Resource Language	189
15.2.3.10 SilentInstall.txt example	189
15.2.4 Burning installation CDs	191
15.2.5 Running Appeon Silent Installer (for End Users)	192
15.2.5.1 Installing Appeon Server, EAServer and/or Web applications	192
15.2.5.2 Uninstalling Appeon Server, EAServer and/or Web applications	192
15.2.5.3 FAQs	192
15.3 Appeon Developer Toolbar Register Tool	193
16 Technical Support	195
Index	197

1 About This Book

1.1 Audience

This book is written for PowerBuilder developers using Apeon Developer.

1.2 How to use this book

There are sixteen chapters in this book.

Chapter 1: About This Book

A general description of this book.

Chapter 2: Introduction

An overview of Apeon Developer.

Chapter 3: Before you begin

Some important instructions that you **MUST** follow before using Apeon Developer.

Chapter 4: Configuring Apeon Developer

Instructions for configuring Apeon Developer.

Chapter 5: Using UFA Tool

Instructions for analyzing the unsupported features in a PowerBuilder application.

Chapter 6: Deploying PowerBuilder Applications

Instructions for deploying PowerBuilder applications to the Web.

Chapter 7: Debugging Apeon Web Applications

Instructions for using Apeon Debugger to debug an Apeon Web application.

Chapter 8: Running Web Applications

Instructions for running Web applications after deployment.

Chapter 9: Using Information Manager

Instructions for viewing reports and log files generated in the Apeon migration process.

Chapter 10: Packaging and Installing Web Applications

Instructions for using Web application packaging tool to generate installation packages.

Chapter 11: Undeploying Web Applications

Instructions on how to undeploy Apeon Web applications.

Chapter 12: Developing with Code Insight

Instructions on how to use the Apeon Code Insight feature.

Chapter 13: Launching Apeon Enterprise Manager

Instructions for launching Apeon Enterprise Manager from Apeon Developer.

Chapter 14: Apeon for PowerBuilder Help

Instructions for launching the Apeon HTML help file.

Chapter 15: Extended Toolkit

Instructions for using the extended tools provided by Appeon: the DLL/OCX Files Package tool, the Appeon Silent Installer, and the Appeon Developer Toolbar Register tool.

Chapter 16: Technical Support

Important information for technical support

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 in Appeon 6.5.1.
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

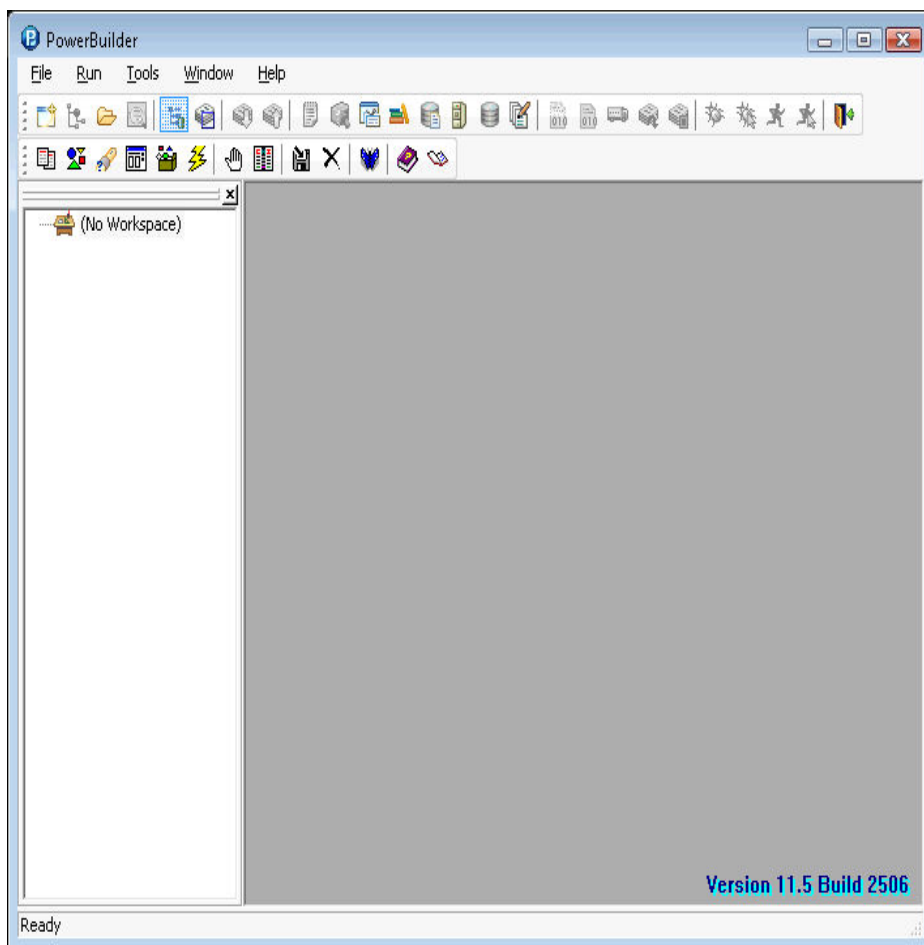
Each Sybase installation that includes a support contract has one or more designated people who are authorized to contact Sybase Technical Support or an Authorized Sybase Support Partner. If you have any questions about this product or need assistance during the installation process, ask a designated 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

Apeon Developer, a component of Apeon for PowerBuilder, extends the capabilities of PowerBuilder, allowing a new or existing PowerBuilder application to be converted into a *bona fide* Web application using only PowerBuilder skills.

Apeon Developer provides a set of tools that enable the entire PowerBuilder-to-Web process to take place within the PowerBuilder IDE. These tools are accessed via a toolbar in the PowerBuilder IDE, which automatically loads each time PowerBuilder is opened.

Figure 2.1: Apeon Developer toolbar embedded in the PowerBuilder IDE



Apeon Developer converts a PowerBuilder application by parsing the PBLs (source code) of PowerBuilder applications and generating a set of corresponding HTML, JavaScript and XML files. When deployed by Apeon Server, these generated files form an exact Web-based replica of the source PowerBuilder application. Any user can open a standard Microsoft Web browser and access the Web-based version of the original PowerBuilder application over the Internet, an intranet, or an extranet.

2.1 Apeon Developer toolbar in PowerBuilder

All Apeon Developer tools conform to the US Government Section 508 Accessibility Guidelines.

The following figure represents the user interface of the Apeon Developer toolbar.

Figure 2.2: Apeon Developer toolbar

The Apeon Developer toolbar has 13 buttons. The following table describes the functionality of each button.

Table 2.1: Apeon Developer toolbar functions

Button	Name	Function
	Config Wizard	Provides a wizard for quick configuration of Apeon Developer for Web conversion.
	Configure	Sets configurations of Apeon Developer for Web conversion.
or	Analyze	Analyzes application source code for unsupported features before deployment. This analysis can cover the whole application, at object level or within an inheritance hierarchy. (It displays as in PowerBuilder 11.5)
	Code Insight	Develops PowerBuilder applications that are free of Apeon unsupported features.
	Deploy	Starts the complete process of deploying a PowerBuilder application to the Web.
	Run	Runs the deployed Web application in Internet Explorer.
	Apeon Debugger	Debugs the Apeon Web application.
	Information	Manages logs and reports.
	Package	Packages application files for installation.
	Undeploy	Undeploys Web applications from Web Server(s) and Apeon Server(s).
	AEM	Launches Apeon Enterprise Manager (AEM).
	Help	Searches, browses, prints, copies and pastes useful information in the Apeon user guides.
	Get Support	Displays the product version and the support information. The Check Update button in it will allow you to check the Apeon updates.

Apart from Code Insight and Information, only one Apeon Developer toolbar function can be launched at any given time. This prevents an Apeon Developer process from interfering with another.

2.2 Web application development with Apeon Developer

For either developing a new Web application, or migrating an existing PowerBuilder application onto the Web, you need to perform three key tasks in Apeon Developer: Analyze, Modify and Deploy Automatically.

If you use Appeon for PowerBuilder for developing a new Web application, the first step is to write a new PowerBuilder application (refer to *Web RAD with Appeon for PowerBuilder* in the *Appeon Migration Guide*). It is recommended that the new PowerBuilder application conforms to Appeon coding styles, as laid out in Appeon Features Help, then you will expend less effort in the first two tasks: Analyze and Modify.

- Task 1: Analyze

You need to analyze the application PBLs for unsupported PowerBuilder objects and features, using the PowerBuilder IDE extended with Appeon Developer. General rules of thumb regarding how the application should be structured are outlined *Basic and Architectural Requirements* in *Appeon Features Help*. The application must meet these requirements before the analysis can begin.

The first step results in an analysis report highlighting unsupported PowerBuilder objects and code within the application.

- Task 2: Modify

Next, work around or remove unsupported PowerBuilder objects and code that prevent the Web application from running, using standard PowerBuilder programming. Appeon Features Help and Appeon Code Examples (an Appeon demo PowerBuilder application) will guide you through this process by providing information regarding supported PowerBuilder features as well as example code for implementing these features.

Then, perform a *full build* of the application in PowerBuilder, ensure that there are no bugs in the PowerBuilder code and that the application functions correctly.

The second task results in a PowerBuilder application that is ready for automatic conversion to the Web.

- Task 3: Deploy Automatically

At the push of a button, you can now automatically generate a precise replica of the PowerBuilder application, that deploys to the Web n-Tier architecture and can be accessed by standard Internet Explorer Web browsers.

Then, automatically deploy the generated Web application files to Appeon Server. The third task results in a *bona fide* Web application with the look and feel of the source PowerBuilder application.

For detailed information about Web conversion, please refer to the *Appeon Migration Guide*.

3 Before You Begin

3.1 Installing Apeon for PowerBuilder

Follow the *Apeon Installation Guide* carefully; make sure that both Apeon Developer and Apeon Server have been installed.

Verify that Apeon Developer has been installed to the Developer PC.

Verify that Apeon Server has been installed to the application server, such as, Sybase EAServer, Oracle WebLogic, IBM WebSphere, TmaxSoft JEUS, JBoss, or Microsoft .NET Framework\IIS. Once Apeon Server has been installed, the machine hosting Apeon Server is then referred to as Apeon Server.

If using a separate Web Server (e.g. Apache) instead of the application server built-in Web server, verify that the Apeon Server Web Component has been installed to the Web Server.

Verify that all system requirements have been met for the Developer PC, Web Server, Apeon Server, and the Database Server. Refer to the *Apeon Installation Guide* for details.

3.2 Configuring application database connectivity

Perform the following database configurations for all prospective PowerBuilder applications that will be deployed with Apeon Developer:

1. Set up the database used by the PowerBuilder application to interface with Apeon Server and the JDBC driver. Refer to the documentation from the appropriate database vendor for instructions.
2. Create the connection cache in Apeon Server. Apeon provides systematic instructions for certified database systems. Refer to *Setting up Apeon Server connection caches* in the *Apeon Server Configuration Guide* for more information.
3. Map the transaction object in the target PowerBuilder application to the newly created connection cache for the prospective Web application. You can either dynamically set up the mapping via PowerScript following the instructions in *Dynamic transaction object to connection cache mapping* in the *Apeon Server Configuration Guide* or establish the mapping statically in Apeon Developer or AEM.

3.3 Starting Apeon Server

Apeon Developer interacts with Apeon Server and Web server during Web deployment. Web applications are deployed to one or more Apeon Servers and one or more Web servers. You should verify that the Apeon Server and Web server are running before deployment. If you use the application server built-in Web server as the Web server, you only need to start application server/Apeon Server. For example, if you use EAServer as the Apeon Server and EAServer HTTP Server as the Web server, you only need to start EAServer/Apeon Server. Otherwise, start both the Web server and Apeon Server. Refer to the documents provided by the Web server vendor for how to start the Web server, and refer to the following instructions to start the Apeon Server.

Table 3.1: How to start Appeon Server

Appeon Server	Operating System	Detailed Instructions
EAServer	Windows	Select Windows Start Programs Appeon 6.5 for PowerBuilder Appeon Server for EAServer Start EAServer.
	UNIX/ Linux	Run the appeonserverstart.sh file in the \$appeon/bin/ folder, for example: \$ \$JAGUAR/appeon/bin/appeonserverstart.sh You can run EAServer/Appeon Server in different modes, debug and normal, using different Java runtime versions and different Java VMs. For details on how to specify the mode options in the above syntax, refer to the <i>EAServer System Administration Guide</i> .
WebLogic	Windows	Select Windows Start Programs Appeon 6.5 for PowerBuilder Appeon Server for WebLogic Instances <i>InstanceName</i> Start WebLogic
	UNIX/ Linux	Run the appeonserver.sh file in the \$appeon/bin/ folder, for example: \$ \$BEA_HOME/user_projects/domains/mydomain/appeon/bin/appeonserver.sh
WebSphere	Windows	Select Windows Start Programs Appeon 6.5 for PowerBuilder Appeon Server for WebSphere Start WebSphere
	UNIX/ Linux	Run the appeonserver.sh file in the \$appeon/bin/ folder, for example: \$ \$WebSphere/AppServer/appeon/bin/appeonserver.sh
JEUS	Windows	Select Start Programs Appeon 6.5 for PowerBuilder Appeon Server for JEUS Start JEUS.
	UNIX/ Linux	Run the appeonserver.sh file in the \$appeon/bin/ folder, for example: \$ \$tmaxsoft/JEUS6.0/appeon/bin/appeonserver.sh
JBoss	Windows	Select Start Programs Appeon 6.5 for PowerBuilder Appeon Server for JBoss Instances <i>InstanceName</i> Start JBoss.
	UNIX/ Linux	Run the appeonserver.sh file in the \$appeon/bin/ folder, for example: \$ \$jboss-5.1.0GA/appeon/bin/appeonserver.sh
.NET	Windows	Select Start Programs Appeon 6.5 for PowerBuilder Appeon Server for .NET IIS Manager.

4 Configuring Appeon Developer



The settings configured in Appeon Developer are critical; they are used throughout the entire PowerBuilder-to-Web process. Appeon Developer settings determine which PowerBuilder application will be converted to the Web, and the manner in which it will be deployed.

Before you attempt to use any other functionality on the toolbar, complete the following tasks:

1. Set up an application profile for each of the PowerBuilder applications intended for conversion. Each application profile tells Appeon Developer important information about the application, such as which PBLs compose the PowerBuilder application, the database type, etc.

During the application profile setup, set up a profile for the database type used by the application. This enables Appeon Developer to generate the correct database syntax.

2. Set up at least one Appeon Server profile and one Web Server profile. This enables Appeon Developer to utilize the Appeon Server and Web Server for deployment.
3. Set up at least one deployment profile, which links at least one Appeon Server and one Web Server together. This tells Appeon Developer where to deploy the Web application.

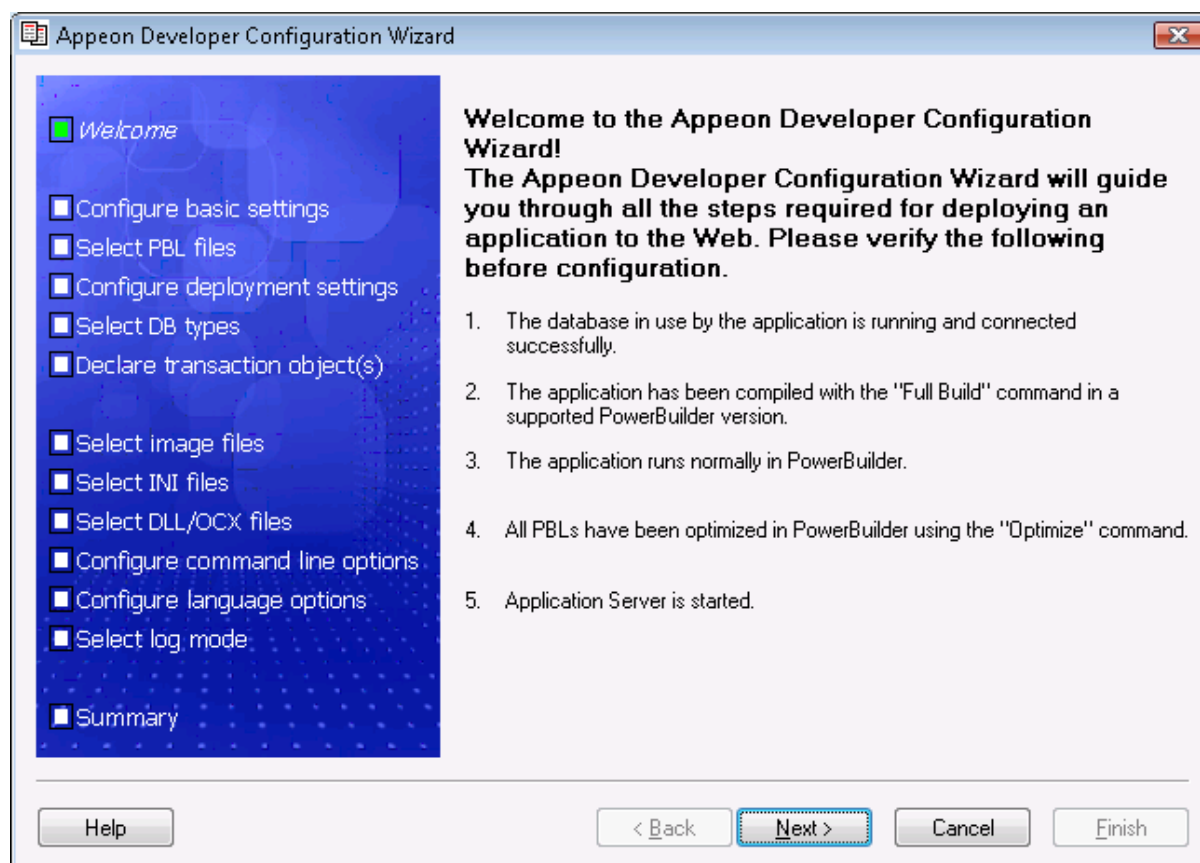
Appeon provides a Config Wizard () to quickly configure an application. With your specifications, the wizard creates the application profile, database type profile, Appeon Server profile, Web server profile, connection cache profile, and transaction object mapping. After creation, all these profiles can be modified in the Configure tool (). Besides modifying the above profile settings, the Configure tool provides you with advanced settings, such as performance settings, parsing options, Web Services profiles, runtime settings etc.

4.1 Using Appeon Developer Configuration Wizard

The settings in Appeon Developer Configuration Wizard are the same as those in the Configure tool, therefore, only basic description will be provided in this section. For detailed description, refer to [Section 4.2, “Using Configure Tool”](#).

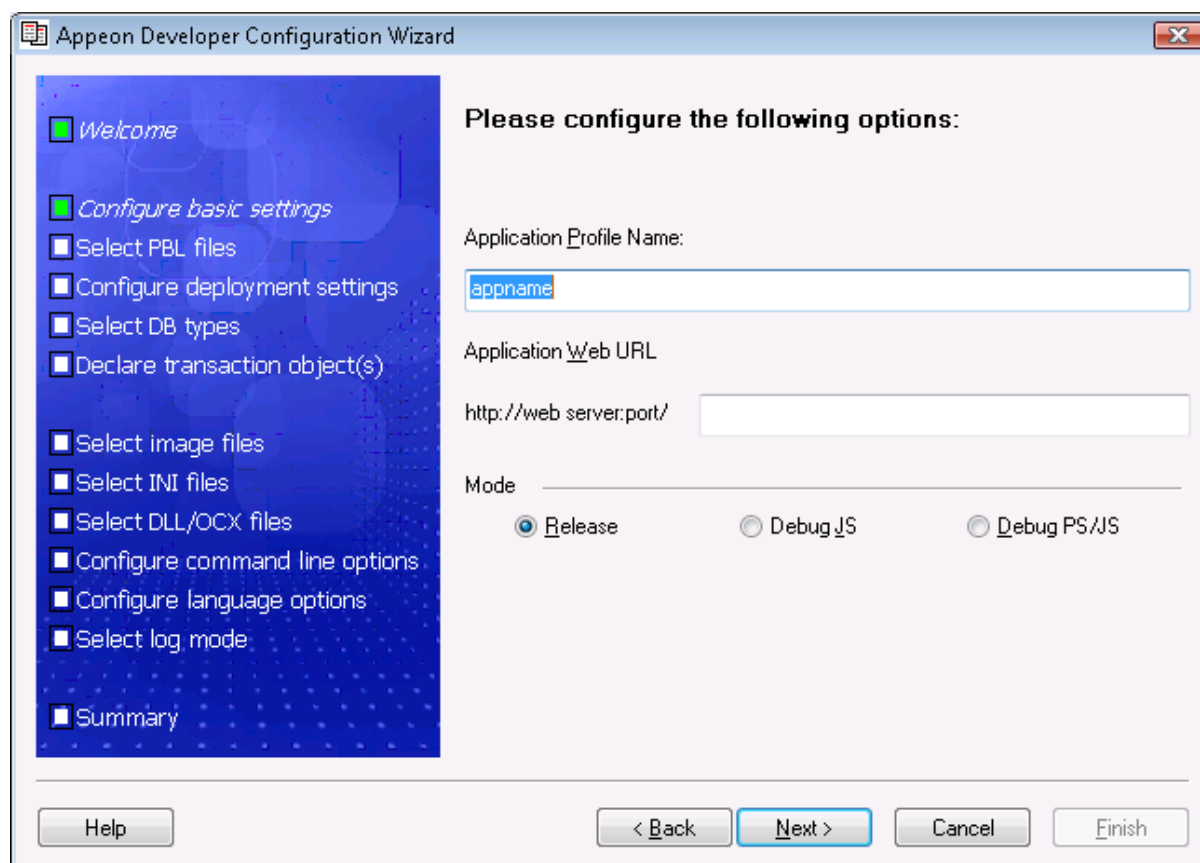
Click the *Config Wizard* button () on the Appeon Developer toolbar to launch the Appeon Developer Configuration Wizard.

Carefully read the notes and requirements on the Welcome page of the Appeon Developer Configuration wizard. Click *Next* to proceed.

Figure 4.1: Welcome page

4.1.1 Configuring basic settings

The basic settings refer to the settings of an application that are essential for deployment, including the application profile name, Web URL, and file generation mode. For more information about them, refer to [Section 4.2.1.2.1, "Basic Settings"](#) in [Section 4.2, "Using Configure Tool"](#).

Figure 4.2: Configure basic settings of an application

Step 1: Specify the application profile name.

The application profile name is used to identify the PowerBuilder application during the entire PowerBuilder-to-Web process.

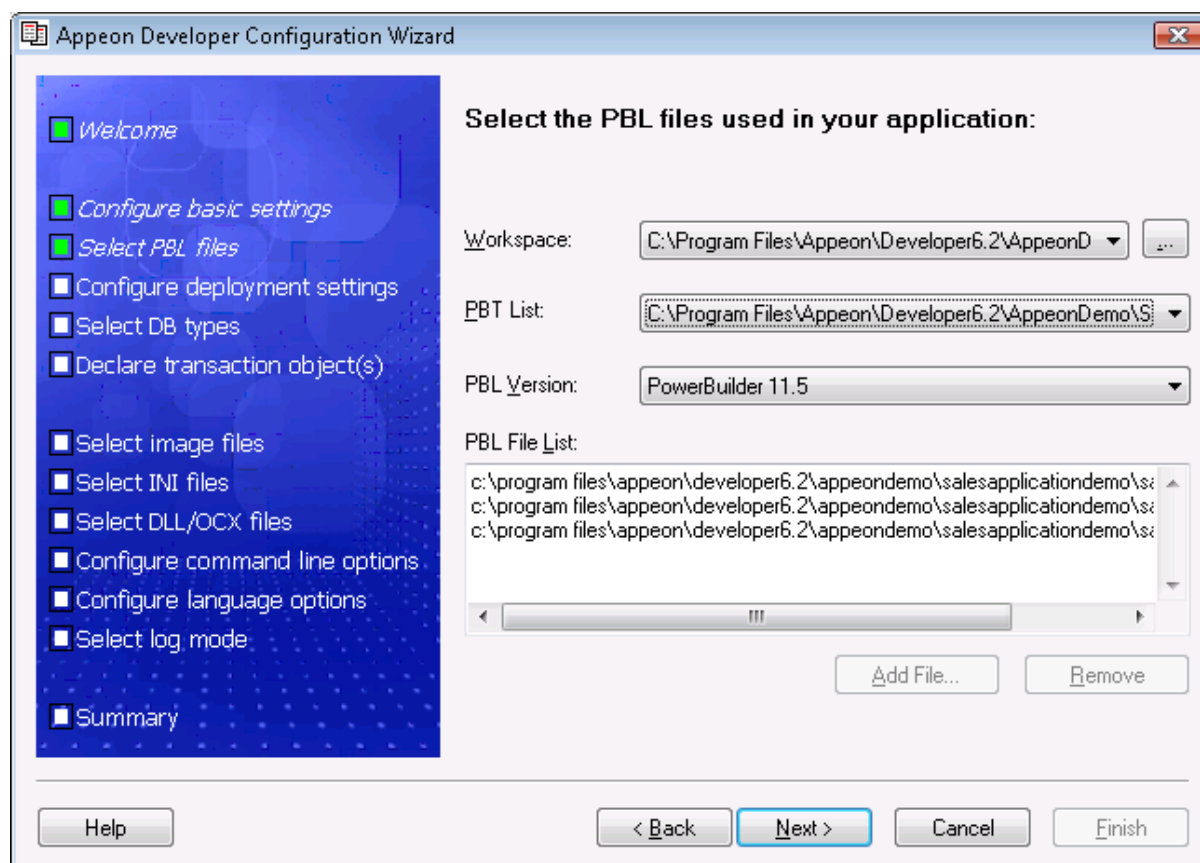
Step 2: Specify the application Web URL.

The specified text is also used as the name of the folder created under the Web root of the Web server for storing the Web application files when the application is deployed.

Step 3: Choose a Web file generation mode.

4.1.2 Selecting PBL file(s)

Specify the version and the location of the PowerBuilder application source code.

Figure 4.3: Select PBLs

You can add application PBLs using one of the following methods:

Method 1: Select the workspace and the PBT file to automatically add PBL files. Detailed steps are as follows:

- Step 1: Select the workspace. Select a recent workspace from the dropdown list, or click *Current Workspace* to get the workspace that currently opens in the PowerBuilder IDE, or click *Browse* to select a workspace.

When a workspace is selected, all PBT files contained in the selected workspace are added to the PBT List.

- Step 2: Select the PBT file.

When a PBT file is selected, all PBL files contained in the selected PBT are added to the PBL File List.

This is the recommended method to add PBLs, as it reduces the likelihood of forgetting to add a required PBL.

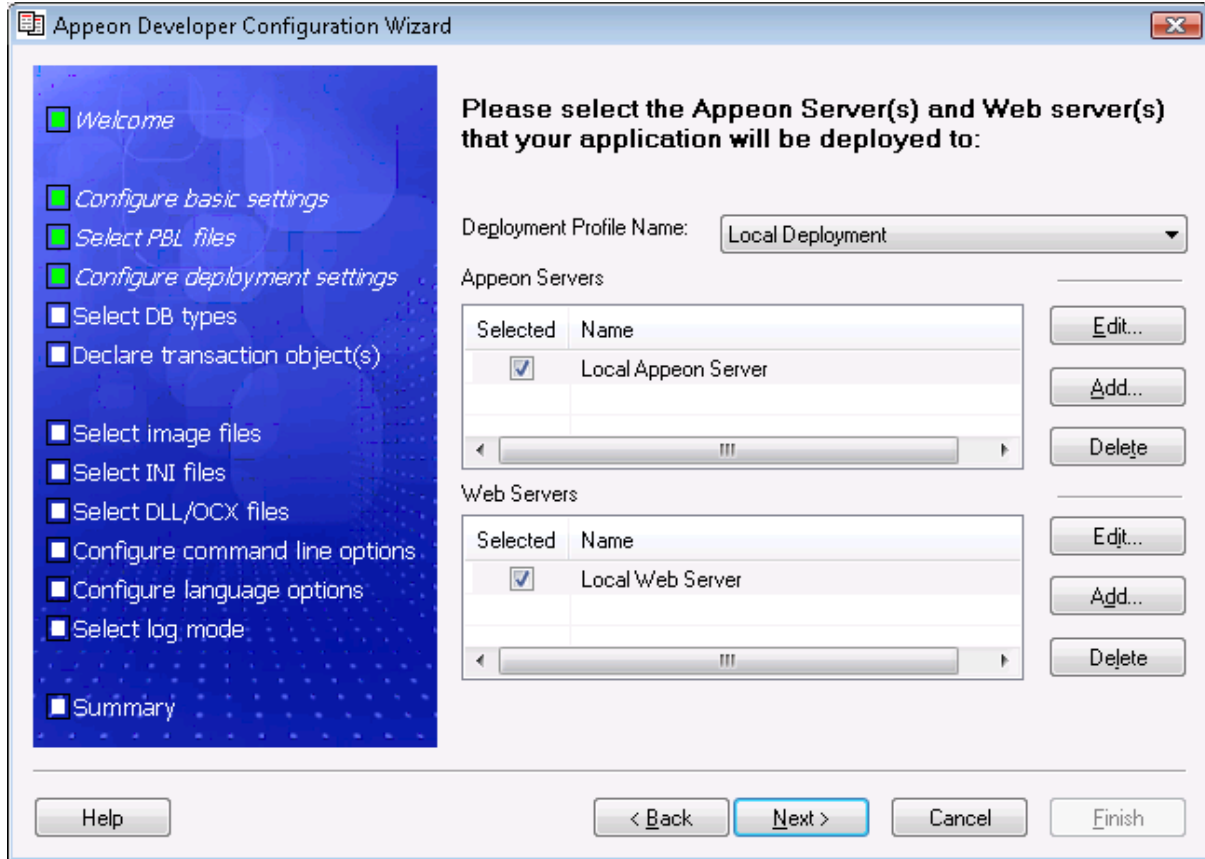
Method 2: You can also add PBL files without specifying the workspace and PBT file first.

- Click *Add File* to add one or multiple PBL files. This is the only method you can take when using the Configure tool. Refer to [Section 4.2.1.2.1, “Basic Settings”](#) for detailed instructions.

4.1.3 Configuring deployment settings

The deployment settings associate the Appeon Server(s) and Web server(s) as a group used for application deployment.

Figure 4.4: Select the Appeon Server and Web server



Step 1: Select an existing deployment profile.

To create or modify a deployment profile, you must use the Configure tool. For detailed instructions, refer to [Section 4.2.4.2, “Deployment profile settings”](#).

Step 2: Select the check boxes to include the Appeon Server(s) and the Web server(s) in the deployment profile.

All the Appeon Server profiles and Web server profiles you have created are listed. More than one Appeon Server and one Web server can be selected.

If the required Appeon Server profiles or Web server profiles are not available, click the *Add* button to create them. Refer to [Section 4.2.3.2, “Appeon Server profile settings”](#) for detailed instructions on creating an Appeon Server profile and refer to [Section 4.2.3.3, “Web Server profile settings”](#) for detailed instructions on creating a Web server profile.

Step 3: Click *Next* to proceed.

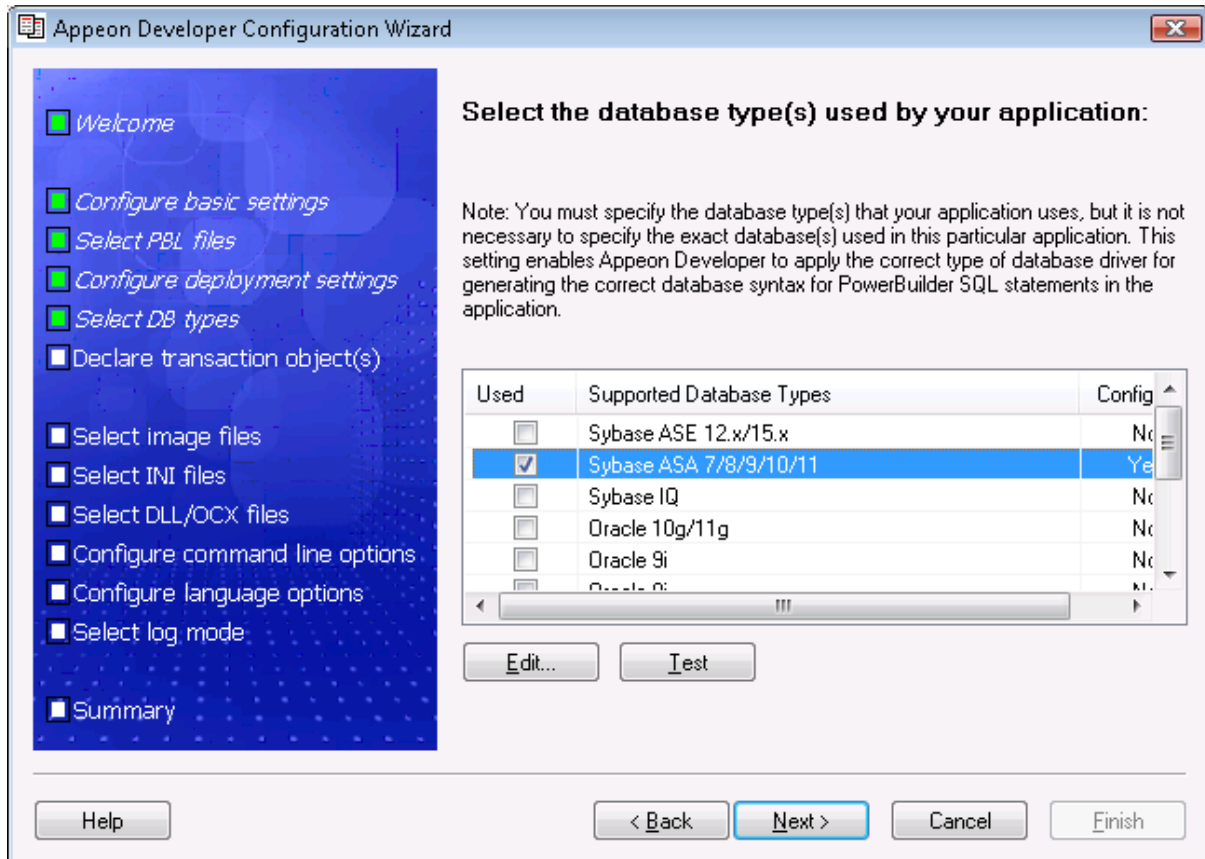
When *Next* is clicked, the wizard will test the connection to the Appeon Server and the Web server. If connection is successful, the deployment profile is saved with the associated Appeon Server(s) and Web server(s).

4.1.4 Selecting DB Type(s)

The database type is required during the application deployment if the application connects to one or more databases.

Select the database type(s) used by the application by selecting the *Used* column of the database type.

Figure 4.5: Database types

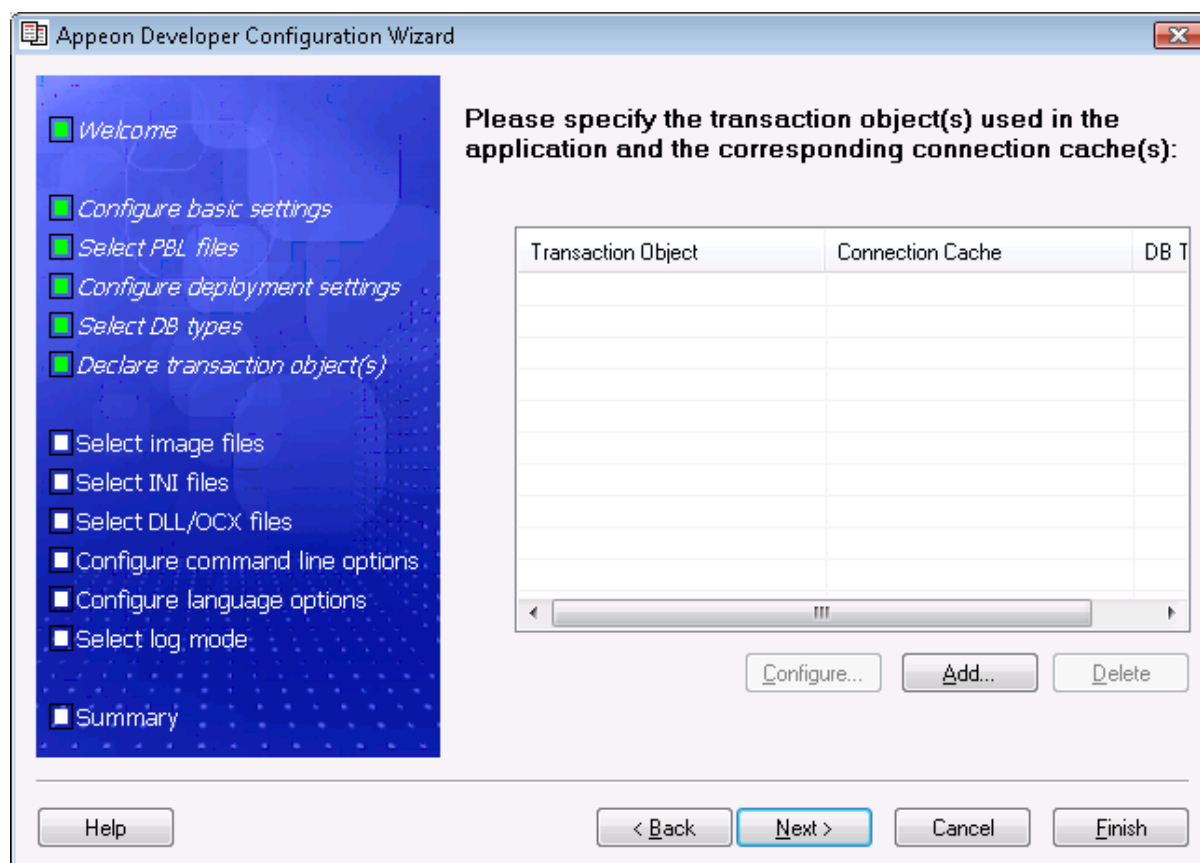


If the database type is not configured (The *Configured* column is indicated with "No", you should select it and click the *Edit* button to create a profile for it. For detailed instructions on creating a database type profile, refer to [Section 4.2.2, "Managing database type profiles"](#).

4.1.5 Declaring transaction object(s)

When the application is deployed to the Web, Appeon Server handles the database connection using connection caches rather than transaction objects defined in the PowerBuilder application. You must associate the transaction objects used by the PowerBuilder application with proper connection caches created in Appeon Server.

You can create, modify or delete the mapping between transaction objects and connection caches either in Appeon Developer or AEM.

Figure 4.6: Specify transaction objects

Click *Add* to create the mapping of the transaction object and the connection cache of an application.

Figure 4.7: Add a transaction object

Add Transaction Object

Transaction Object:

Database Type:

Connection Cache:

Verify that the specified connection cache exists in all Appeon Servers used in the deployment. The cache name is case sensitive.

Connection Cache

Appeon Server:

Selected	Name	DB Host

Step 1: Input the transaction object name used by the application to the Transaction Object text box.

Step 2: Select the database type from the Database Type list box.

Step 3: Specify the connection cache name in the Connection Cache text box. The connection cache should connect to the same database that the transaction object connects to.

Make sure the connection cache exists in all Appeon Servers selected for this application deployment. If the connection cache does not exist, you can create it by following instructions in [Section 4.2.5, “Managing connection cache profiles”](#). After you create a connection cache, you can select the Selected column to associate the connection cache with the transaction object.

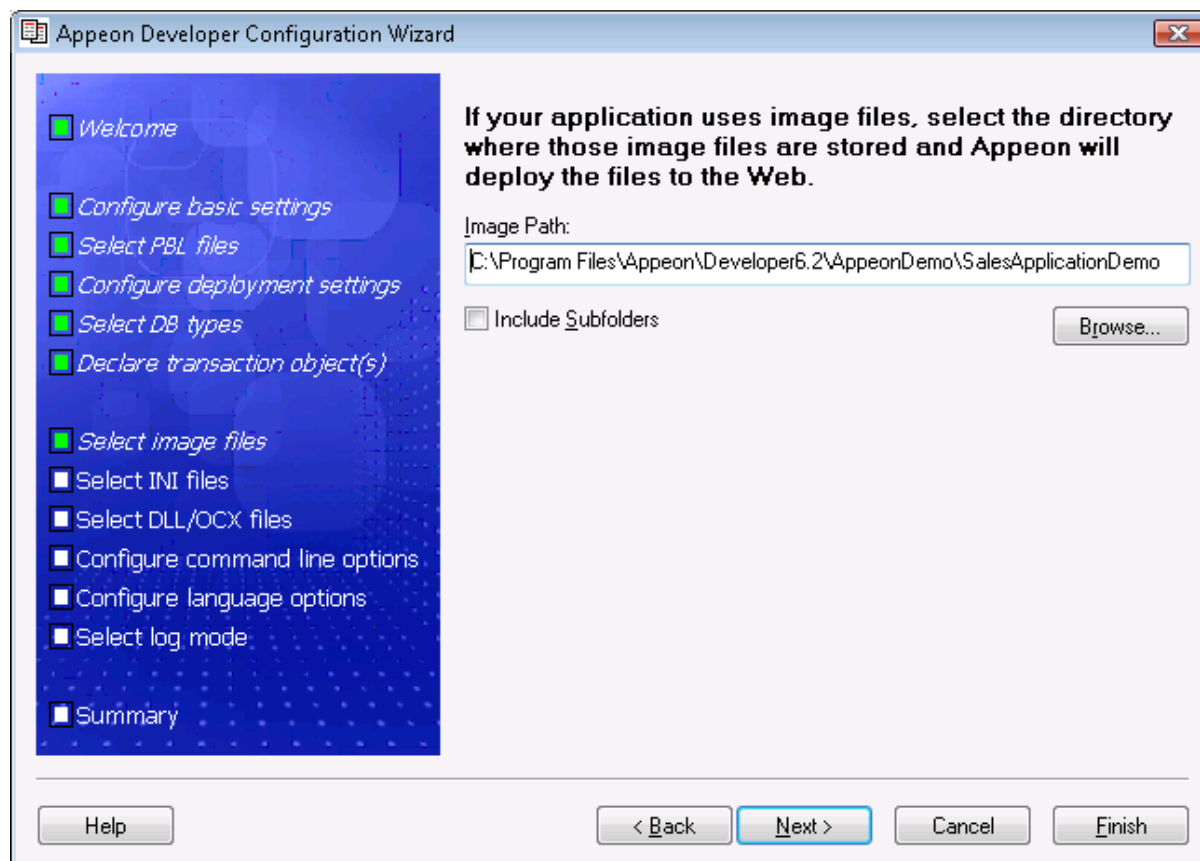
Note: The Connection Cache tool will be available if Appeon Server is installed to Microsoft .NET Framework\IIS or EAServer 5.x, and not be available if Appeon Server is installed to EAServer 6.x, WebLogic, WebSphere, JBoss, or JEUS. You should go to the corresponding application server administration console to configure the data source for EAServer 6.x, WebLogic, WebSphere, JBoss, or JEUS. For detailed instructions, refer to Database Connection Setup in the *Appeon Server Configuration Guide*.

4.1.6 Selecting image files

Click *Browse* to specify which folder contains the image files that will be used in the Web application. Select *Include Subfolders* to deploy the sub-folders under the specified directory.

For detailed information about the image files, refer to [Deploy Images](#).

Figure 4.8: Select image files

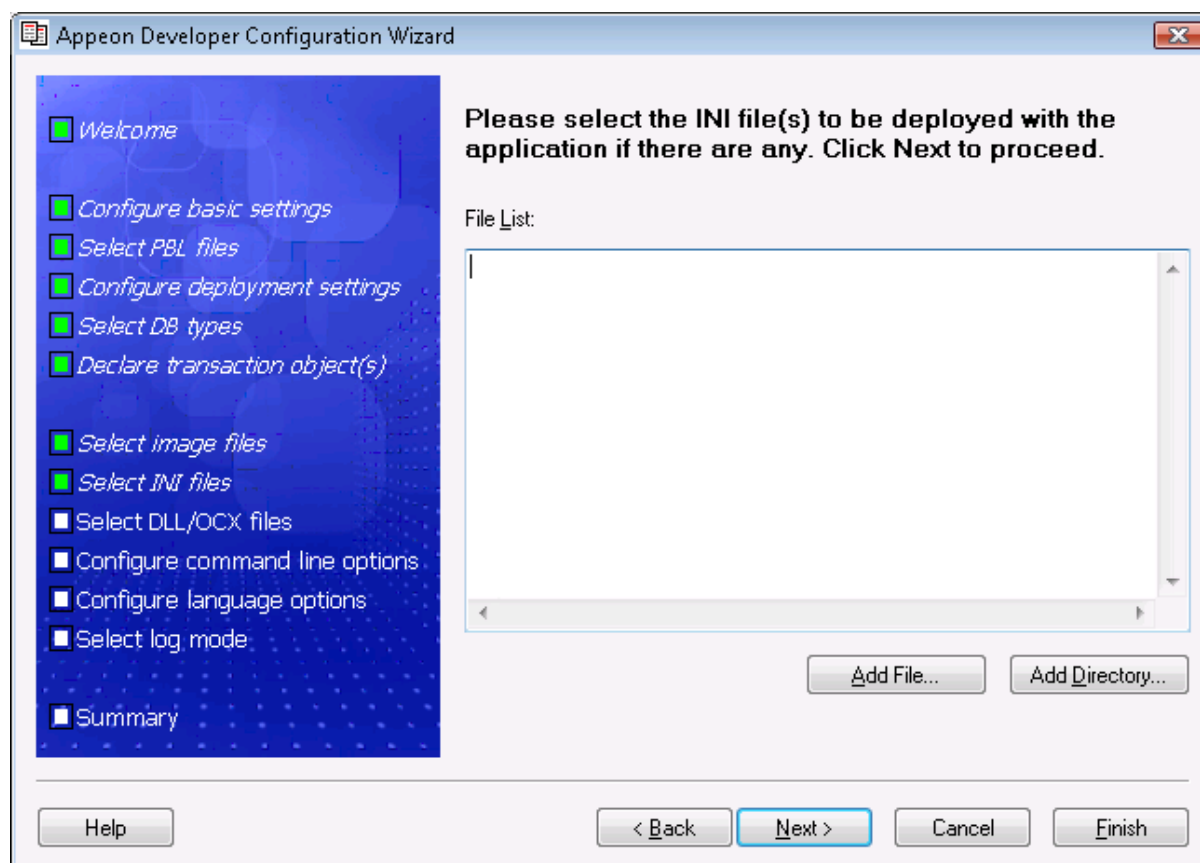


4.1.7 Selecting INI files

If a PowerBuilder application uses an initialization (INI) file which contains user preferences, specify the INI file so that Apeon can deploy the file for the application.

Click *Add* to add one or multiple INI files or click *Add Directory* to add all INI files in the selected directory.

For detailed information about the INI files, refer to [Deploy INI Files](#).

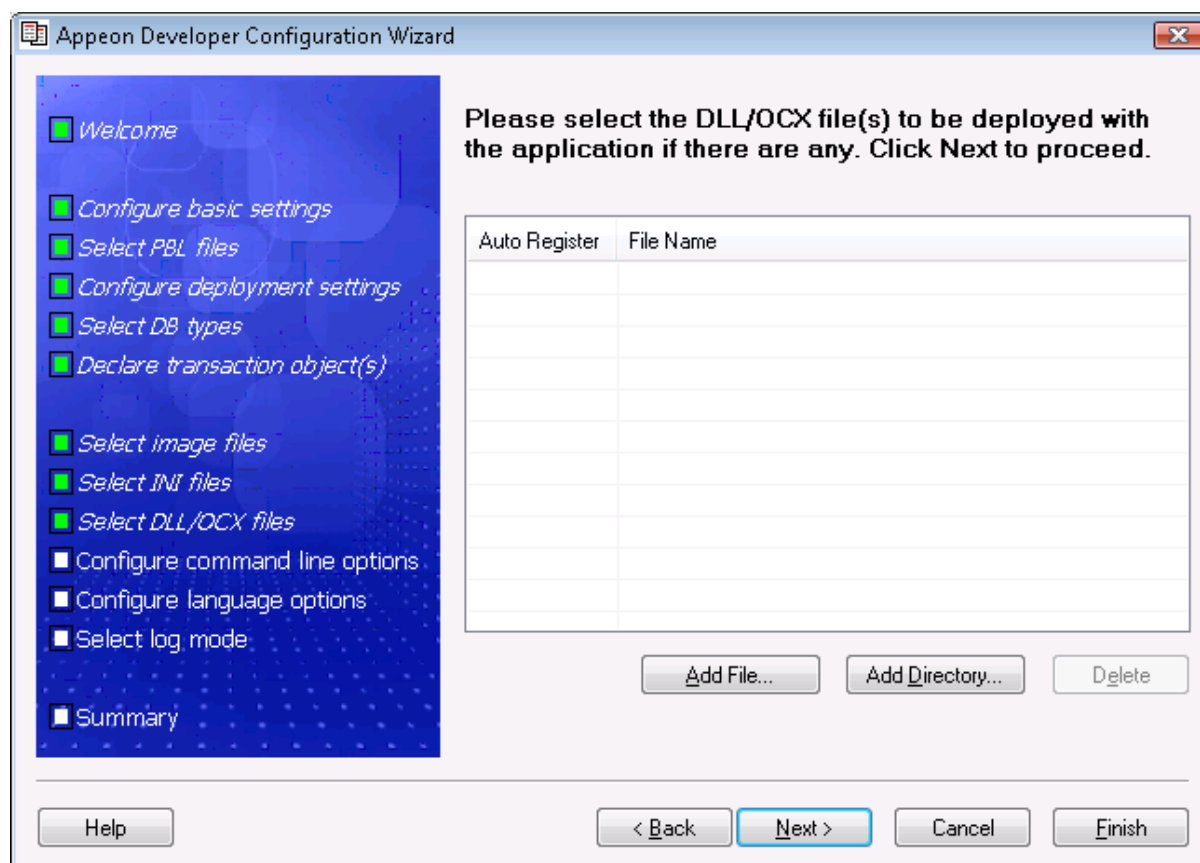
Figure 4.9: Select INI files

4.1.8 Selecting DLL/OCX files

If your application calls any custom user DLL/OCX files, you can specify them here and deploy them to the Web server. Or you can use the DLL/OCX File Packaging tool provided by Appeon to package the files and install them to the client. For detailed instructions, refer to [Section 15.1.1, “Packaging DLL/OCX files”](#).

Click *Add File* or *Add Directory* to add DLL/OCX files to the table. Then select the *Auto Register* column if the file needs to be automatically registered after it is downloaded to the client. If you choose not to automatically register a file, you can register it manually after it is downloaded.

For more information about the DLL/OCX files, refer to [Deploy External Non-System DLL/OCX Files](#).

Figure 4.10: Select DLL/OCX files

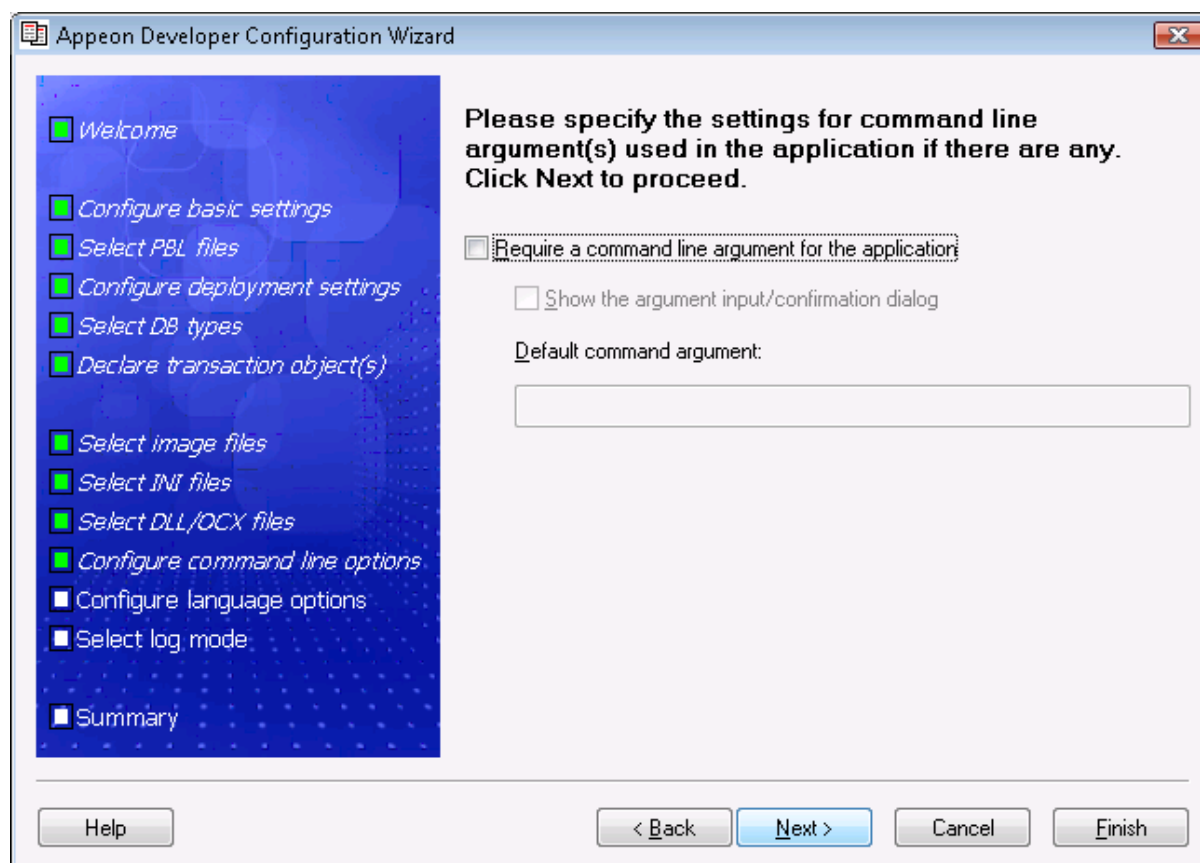
4.1.9 Configuring command line options

If an application needs to use command line arguments, enable the command line argument option here.

Step 1: Click the *Require a command line argument for the application* check box to enable the command line argument option.

Step 2: Select the *Show the argument input/confirmation dialog* option and/or input the default arguments in the *Default command argument* text box.

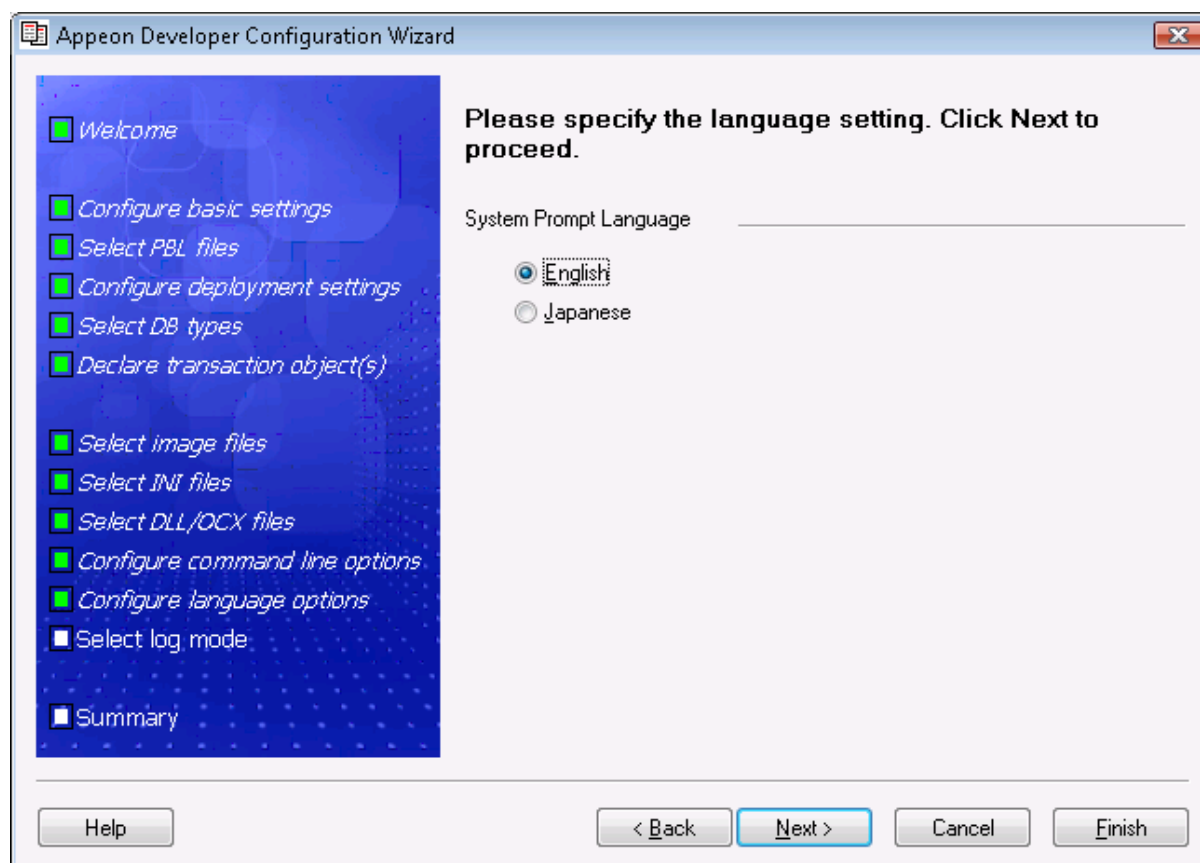
Note: They are effective only if you run the application from the Appeon Developer toolbar. For more information, refer to [Command Line Arguments](#).

Figure 4.11: Command line settings

4.1.10 Configuring language options

Select a language from the *System Prompt Language* dropdown listbox.

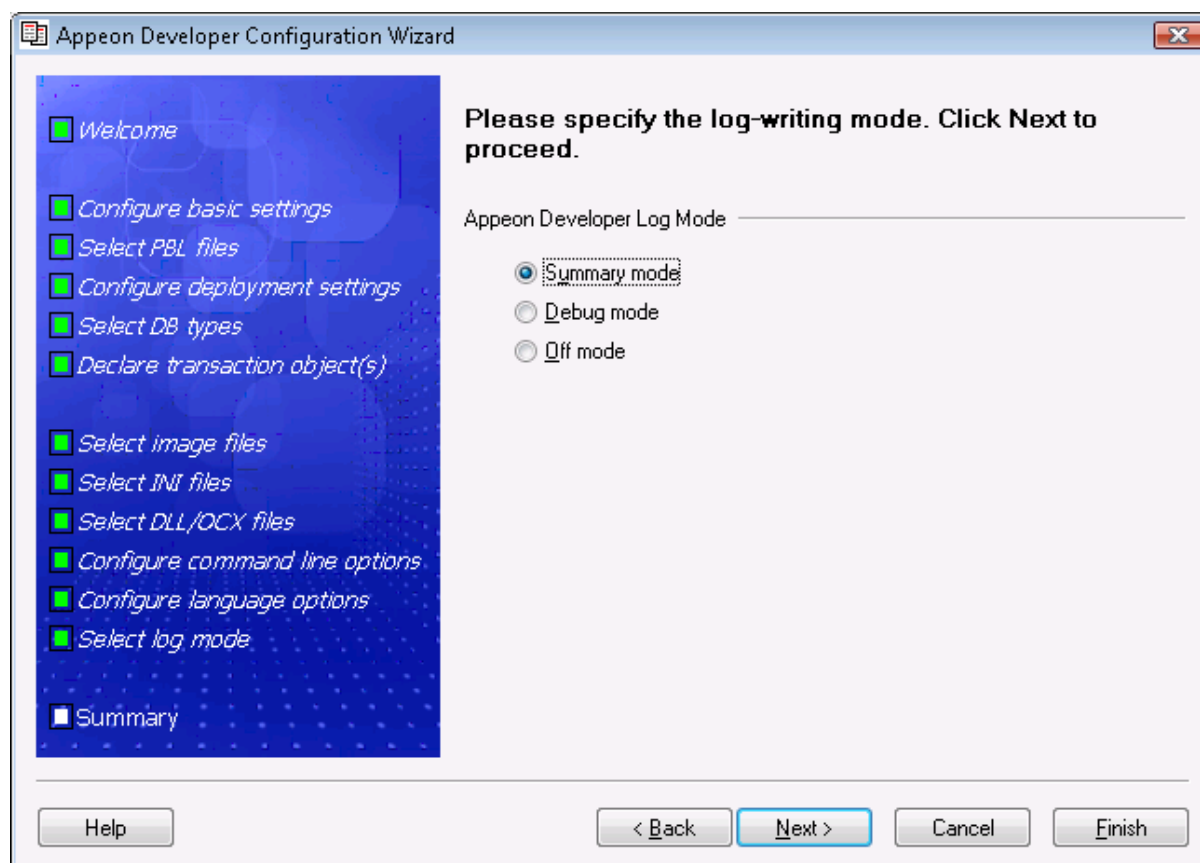
System prompts are error messages, informational messages, warnings, notices, and prompts that are displayed when you run Apeon Web applications.

Figure 4.12: System Prompt Language

4.1.11 Specifying log mode

The log-writing mode determines the content of the log files generated by Appeon Developer, including the deployment logs and feature analysis logs.

Select the desired mode from the Appeon Developer Log Mode box. For detailed information of log modes, refer to [Appeon Developer log-writing mode](#).

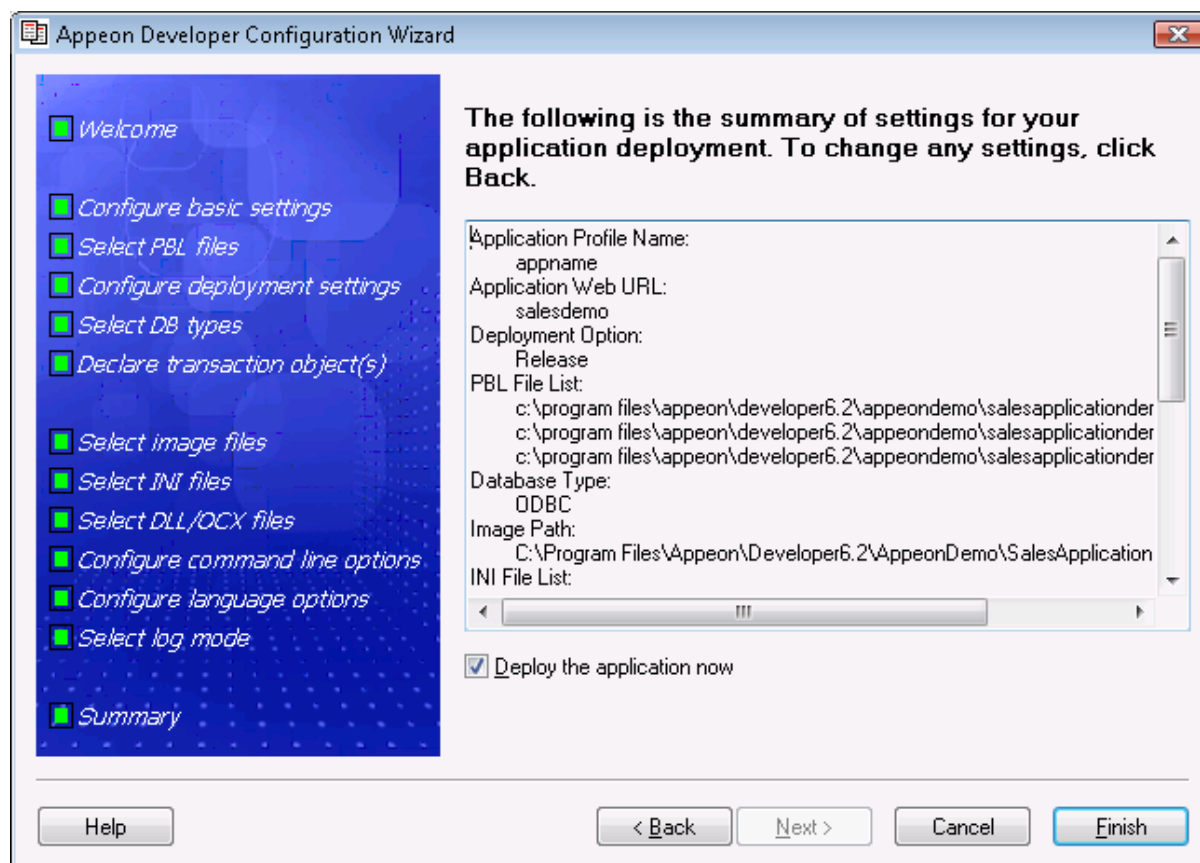
Figure 4.13: Log-writing mode

4.1.12 Summary

Review the settings. Click *Finish* to complete the configuration.

If the *Deploy the application now* option is selected, the Appeon Deployment Wizard will be launched for you to deploy the application. For detailed information, refer to [Chapter 6, Deploying PowerBuilder Applications](#).

After the configuration is complete, the application will be added to the *Application Profiles* tab of the *Configure* tool where you can manage or change any settings of the application. For detailed instructions, refer to [Section 4.2, “Using Configure Tool”](#).

Figure 4.14: Summary page

4.2 Using Configure Tool

The *Configure* tool allows you to modify the settings of existing application profiles, database type profiles, Apeon Server profiles, Web server profiles, deployment profiles and connection cache profiles, and specify the advanced settings for an application profile, such as the performance settings, parsing options, Web service profiles, and runtime settings.

4.2.1 Managing application profiles

The *Configure* tool provides an *Application Profiles* tab for you to modify the settings specified in the Apeon Developer Configuration Wizard, and use the following advanced functions:

- Specify the default application profile
- Select the file generation mode for an application
- Delete an application profile
- Boost the application runtime performance
- Specify parsing options
- Specify runtime settings
- Configure Web Service profiles

4.2.1.1 Application Profiles tab page


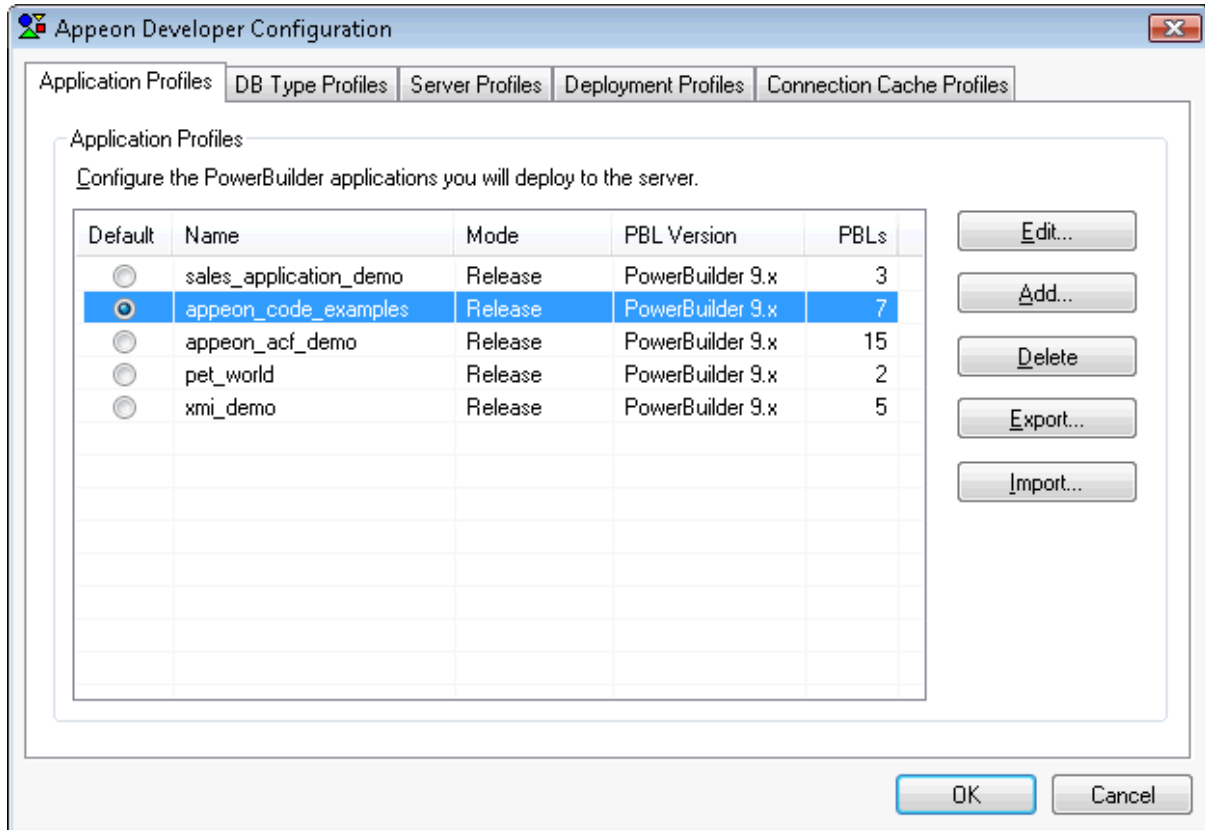
When you click the *Configure* button () on the Apeon Developer toolbar, the *Apeon Developer Configuration* window pops up with the *Application Profiles* tab selected by default, as shown in the following figure.

Figure 4.15: Apeon Developer Configuration Window



4.2.1.1.1 Specifying the default application profile

To specify which application profile will be used as the default application profile, select the *Default* radio button.

The PowerBuilder application defined in the default application profile is selected for unsupported features analysis, PowerBuilder-to-Web conversion, application packaging, and application undeployment.

4.2.1.1.2 Selecting a Web file generation mode

To specify a mode for Web file generation, click the *Mode* list box. If you change the mode, you must perform a full deployment to make the new mode effective.

Table 4.1: File generation mode

Mode	Description	Use in the...
Debug PS/JS	Generates unencrypted JavaScript files for debug use.	Web application debugging and tuning stage.

Mode	Description	Use in the...
	The PowerBuilder source code is provided as comments in the JavaScript files for easy reference.	
Debug JS	Generates unencrypted JavaScript files for debug use. No PowerBuilder source code is provided in the JavaScript files.	Web application debugging and tuning stage.
Release	Generates encrypted JavaScript files.	Production stage.

4.2.1.1.3 Deleting an application profile

Click the *Delete* button to delete a selected application profile.

Note: You cannot delete the default application profile.

After the application profile is deleted, delete the temporary folder for the application profile on the Developer machine. The folder has the same name as the application profile and is created in the \Project folder under the root directory where Apeon Developer is installed (e.g. C:\Program Files\Apeon\Developer6.5\).

4.2.1.1.4 Exporting/Importing an application profile

The Export and Import buttons are mainly to back up and restore the configuration of application profile(s), for instance, if you want to transfer the configuration of application profile(s) to another Apeon Developer.

- Click the *Export* button to export the selected application profile(s). In the pop-up dialog box, type a file name, then the selected application profile(s) will be saved into the file as XML file format.

To select multiple application profiles, you can use Shift+click or Ctrl+click, or drag the mouse pointer to create a selection.

- Click the *Import* button to import application profile(s) from the XML file which is generated by using the *Export* button.

If the application profile being imported has the same name as an existing application profile, you will be asked to overwrite or ignore the existing application profile.

4.2.1.2 Application profile settings

The *Application Profiles Configuration* window provides seven tab pages for you to edit the required application information:

Table 4.2: Application Profiles settings

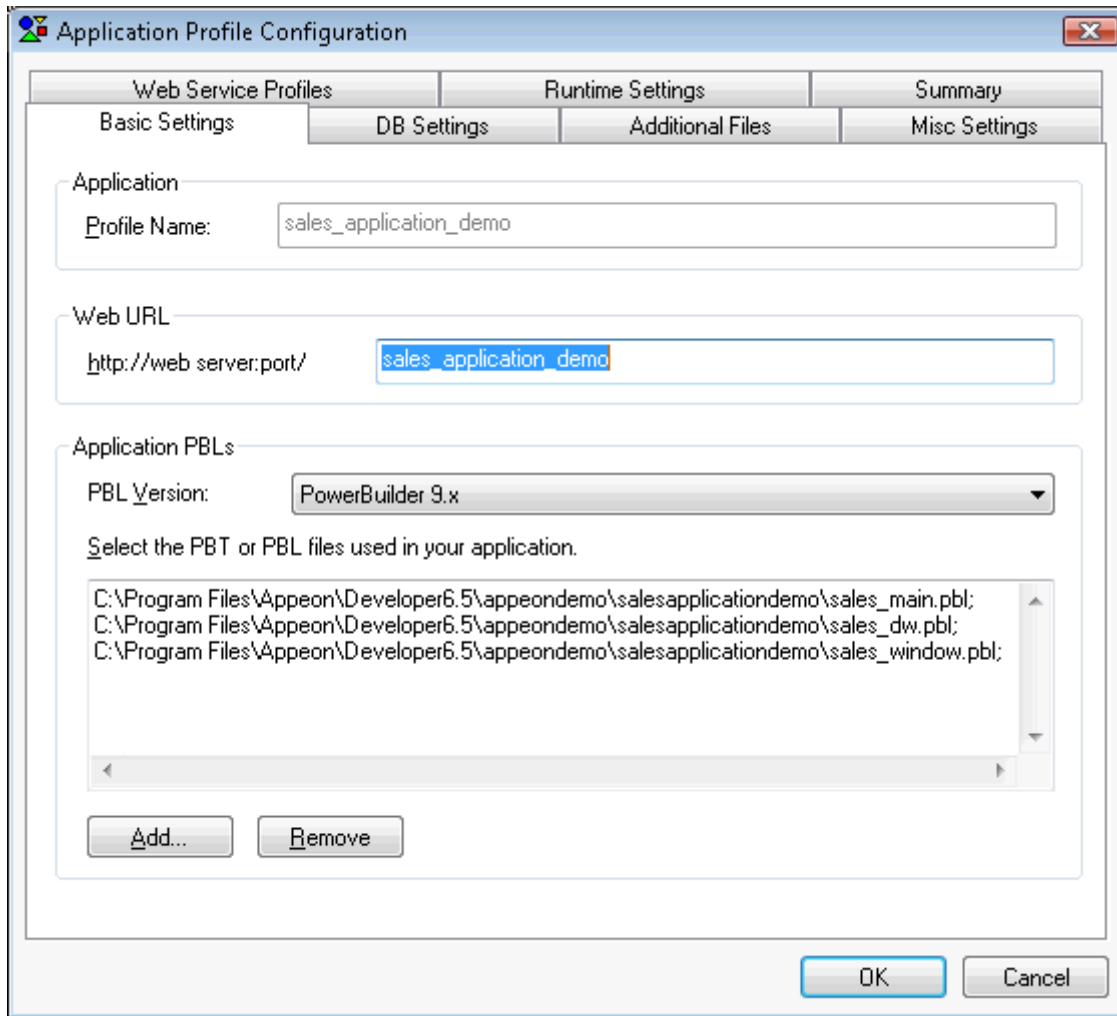
Tab	Settings	To make changes effective, you must...
Basic Settings tab	The application profile name, Web URL, PBL version and PBL location of an application. See Section 4.2.1.2.1, “Basic Settings” .	Perform a full or incremental deployment on the application.

Tab	Settings	To make changes effective, you must...
DB Settings tab	The database types, transaction objects and the corresponding connection caches. See Section 4.2.1.2.2, “DB Settings” .	Perform a full or incremental deployment on the application.
Additional Files tab	INI files, .NET/COM components, image files and DLL/OCX files. See Section 4.2.1.2.3, “Additional Files” .	Perform a full or incremental deployment on the application.
Misc Settings tab	Command line arguments, application language, runtime performance, parsing option, and log-writing mode. See Section 4.2.1.2.4, “Misc Settings” .	Perform a full deployment on the application.
Web Service Profiles tab	The WSDL file, service name and port for the Web service(s). See Section 4.2.1.2.5, “Web Service Profiles” .	Perform a full or incremental deployment on the application.
Runtime Settings tab	Company name and application name displayed in the web application downloading page. See Section 4.2.1.2.6, “Runtime Settings” .	Perform a full or incremental deployment on the application.
Summary	A summary view of the settings. See the Section 4.2.1.2.7, “Summary” section for more details.	Perform a full deployment on the application.

4.2.1.2.1 Basic Settings

After you click *Add* or *Edit* on the *Application Profiles* tab, the *Application Profile Configuration* window is displayed with the *Basic Settings* tab selected by default, as shown in the following figure.

The *Basic Settings* tab allows you to modify the Web URL, application PBL version and PBL location.

Figure 4.16: Basic Settings

Application Profile Name -- The application profile name is used to identify the PowerBuilder application during the entire PowerBuilder-to-Web process. It is also used in the appeondb database on Appeon Server to identify the DataWindow syntax, profile, and registry information for an Appeon Web application.

The Profile Name cannot contain double-byte characters (such as Chinese, Korean, or Japanese characters) or special characters (such as \, /, :, *, ?, ", <, >, or |).

Web URL -- A URL of the Appeon Web application can contain a combination of letters, underscores ("_"), and numbers. The specified URL is also used as the name of the folder created under the Web Root of the Web Server for storing the Web application files when the application is deployed.

Avoid setting application Web URLs as existing folder names in the Web server Web root because: (1) If a Web application uses an existing folder under the Web root as the Web URL, a large number of Web files belonging to the application will be deployed to that folder, making it difficult to use the folder for its original purpose. (2) If a Web application uses a folder that is reserved for the Web server or Appeon Server, some important files belonging to the Web server or Appeon Server may be replaced or even removed when the application is undeployed. The following are folder names reserved for the Web server or Appeon Server that should not be used as application Web URLs: appeon, classes, docs, images, ir, wst, and WEB-INF.

The Web URL for an application profile can be changed, and the Web files stored at the Web Server can have different versions for the Client to access, but Appeon only remembers the Web URL in the last deployment, and performs the application packaging and application undeployment based on the Web files generated in the corresponding Web folder.

Application PBL files -- Select the PBL version and add application PBL files using any of the following methods:

- Click the *Add* button and choose to add an application Target file (*.pbt).
By adding PBLs using an application Target, all PBLs in the Target are automatically added to the application PBLs list. This is the recommended way to add PBLs, as it reduces the likelihood of forgetting to add a required PBL.
- Click the *Add* button and add PBL files without using an application Target.
You can add one or multiple PBL files at the same time. To select multiple files, hold down the Ctrl key and choose which files to add.
- Copy and paste (Ctrl+C and Ctrl+V) the path list of PBLs into the Application PBLs field.

4.2.1.2.2 DB Settings

The *DB Settings* tab allows you to specify the database types and the transaction objects that the application uses, as shown in the following figure. When configuring the database types, it is not necessary to specify the actual databases that the application uses, it can be any database of the same type. However, when specifying the transaction objects, you must specify the actual transaction objects that the application uses.

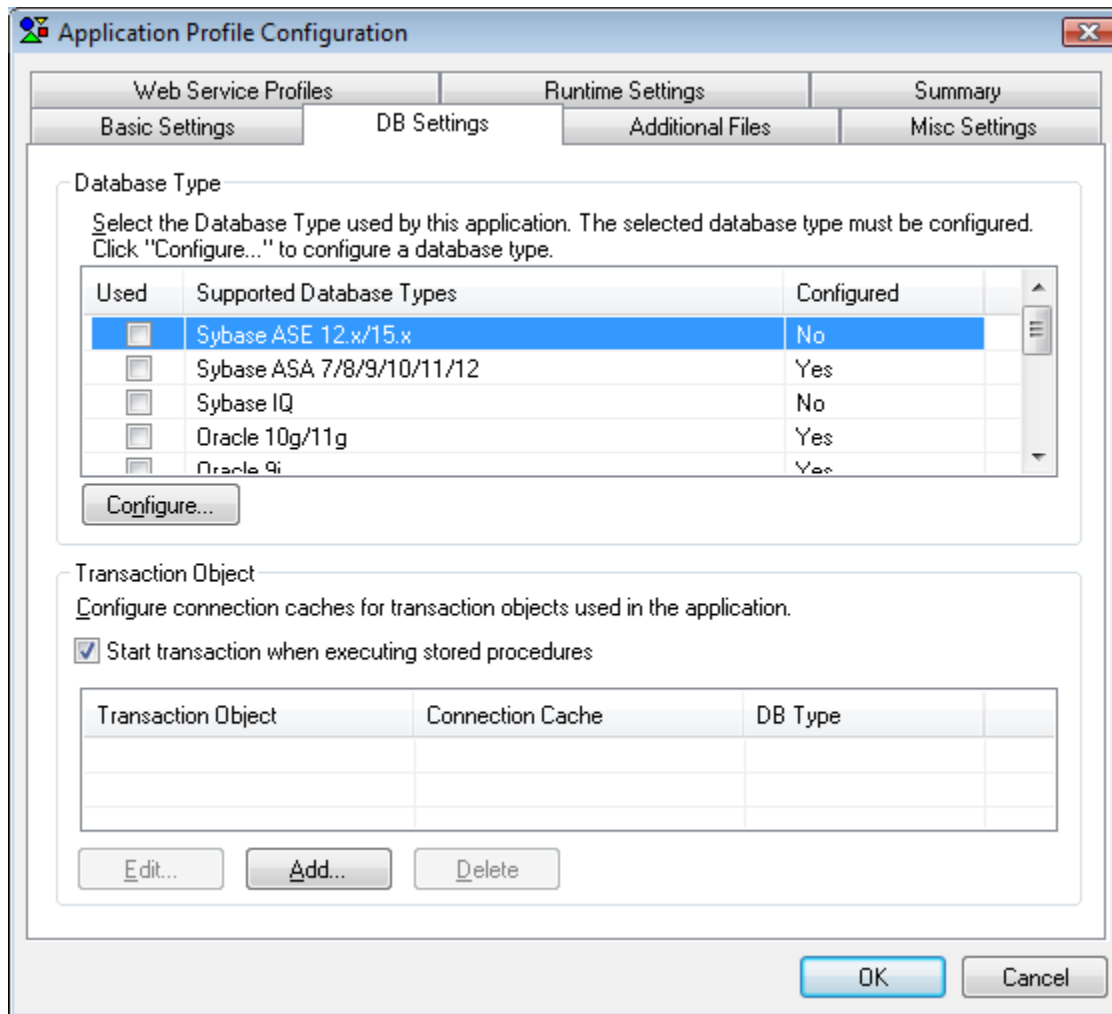
What the DB Type is used for

PowerBuilder SQL statements must be converted into the correct database syntax before they can be used to retrieve data from the database that the Web application connects to. The DB Type settings enable Appeon Developer to apply the correct database driver type for generating correct database syntax for PowerBuilder SQL statements.

Set the database types for the application

Select the database type(s) used by the application, as shown in the following figure.

Figure 4.17: Database types



The following table describes each element on the DB Type tab.

Table 4.3: Database type settings

Column	Description
Used	You can click the check boxes to select the database types used by the application. More than one database type can be selected, but only the configured database types are selectable.
Supported Database Types	This column lists all the database types that are supported by Apeon.
Configured	This column is identical to the Configured column in the Section 4.2.2, “Managing database type profiles” tab. It indicates whether a profile has been configured for the database type. If this column of the desired database type is "No", you must click the <i>Configure</i> button to configure a profile for it before you can use it. Configuring a database type profile in this tab is the same as configuring it in the <i>DB Type Profiles</i> tab. Once a database type profile is configured successfully, the Configured column in both this tab and the <i>DB Type Profiles</i> tab changes from "No" to "Yes".

Specify the transaction object and the connection cache

Click *Add* or *Edit* to configure a transaction object and specify the corresponding connection cache. Refer to [Section 4.1.5, “Declaring transaction object\(s\)”](#) for detailed description.

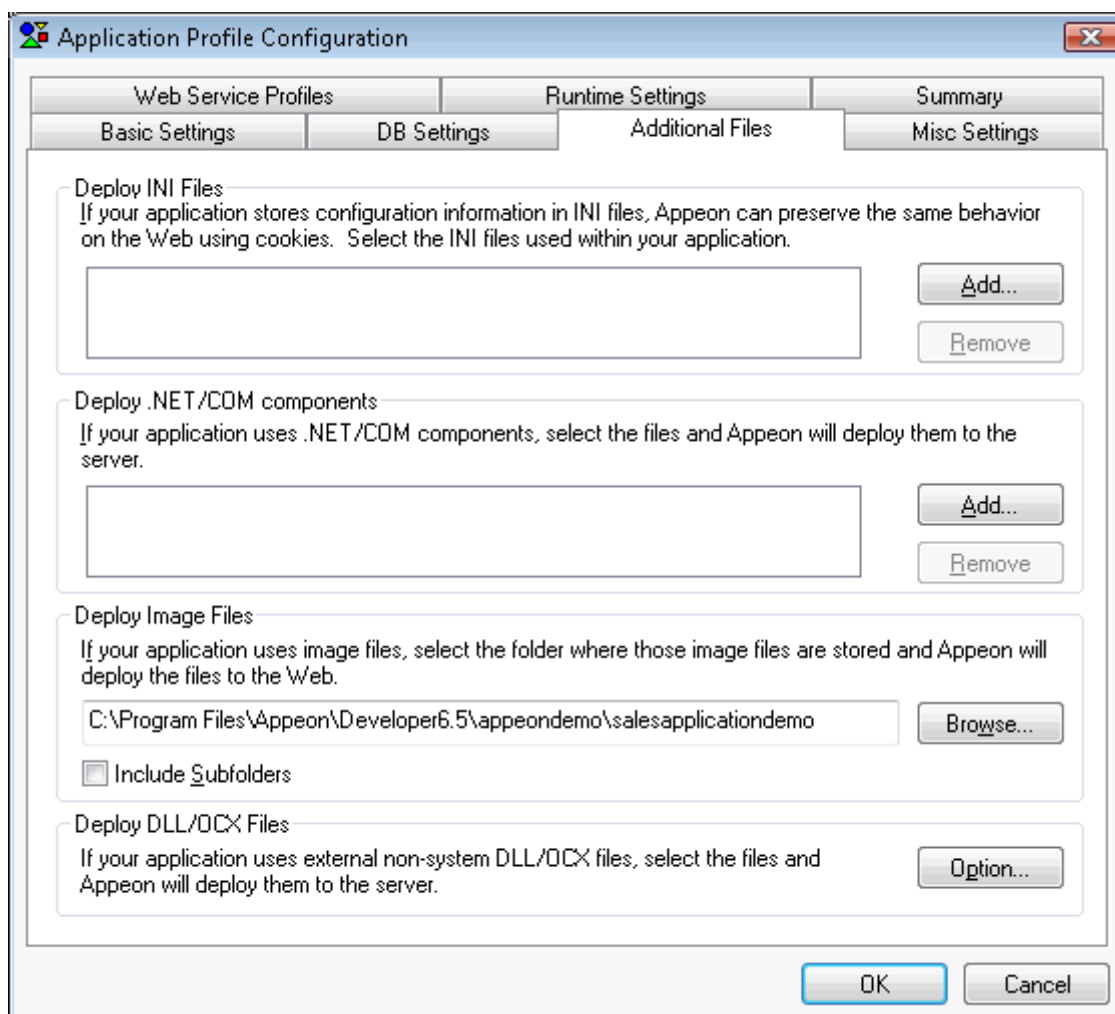
Start transaction when executing stored procedures

It is strongly recommend that you keep this option enabled. The only circumstance you may consider disabling it is when there is commit statement executed inside a stored procedure (SP) and there is no need to commit in the PB code; reason is by default Appeon Server will start a transaction once an SP is executed, and the end user will be able to see details of this transaction in the AEM Active Transaction tool; when commit is executed inside the SP, the transaction will end and disappear from the database end, but as there is no commit in the PB code, this transaction will still appear as an active transaction in AEM, which will mislead end users to think this is an uncommitted transaction. To avoid this misunderstanding, you can disable this option, so Appeon Server will not start a transaction when an SP is executed.

4.2.1.2.3 Additional Files

"Additional files" refer to the files that are outside the application source code and are necessary for running the PowerBuilder application, including INI files, .NET/COM components, image files, and DLL/OCX files.

Figure 4.18: Additional Files tab



Deploy INI Files

If a PowerBuilder application uses an initialization (INI) file which contains user preferences, specify the INI file in this tab so that Appeon can deploy the file for the application.

Click *Add* to add the INI file(s) into the Deploy INI Files list box.

How INI files are supported in Appeon

During deployment, the specified INI file(s) are converted to XML file(s) and deployed to Appeon Server. The XML file(s) act as mock INI file(s). When a Client runs the deployed application for the first time, a copy of the XML file is created in Appeon Server and keeps the Client's profile information.

For a Client to use the correct profile information in its subsequent visits to the application, the Client browser must be cookie-enabled. Otherwise, each time the Client visits the application, a new copy of the XML file is created in Appeon Server, and the new copy only contains the information of the original INI file.

You can delete XML files that are unused for a period using Appeon Enterprise Manager (AEM). For more information on how to maintain XML files in Appeon Server, refer to *Auto Cleanup* in the *Appeon Server Configuration Guide*.

Deploy .NET/COM components

If a PowerBuilder application uses .NET/COM components which contains executable files (.exe), and COM/COM+ components, specify the .NET/COM components file in this tab so that Appeon can deploy the file for the application.

Click *Add* to add the .NET/COM components file(s) into the Deploy .NET/COM components list box.

Deploy Images

Click *Browse* to specify which folder contains the image files that will be used in the Web application. If you do not specify the path of the image files, the path to the application PBL files will be displayed as the default path of the image files.

The image files can be in any format supported by PowerBuilder, apart from:

- unsupported run-length encoded (RLE), and
- unsupported Windows metafile (WMF)

All the image files in the specified folder will be deployed to the *%Web Deployment Path %/images* folder in the Web Server. *%Web Deployment Path%* stands for the folder storing the Web application files. The image files may fail to be displayed on the Web if the file names are stored in the database or dynamically generated. To resolve this, you can copy the image files directly to the *%Web Deployment Path%/images* folder, but make sure that the file names are all lowercase; otherwise, the Web application may fail to load them.

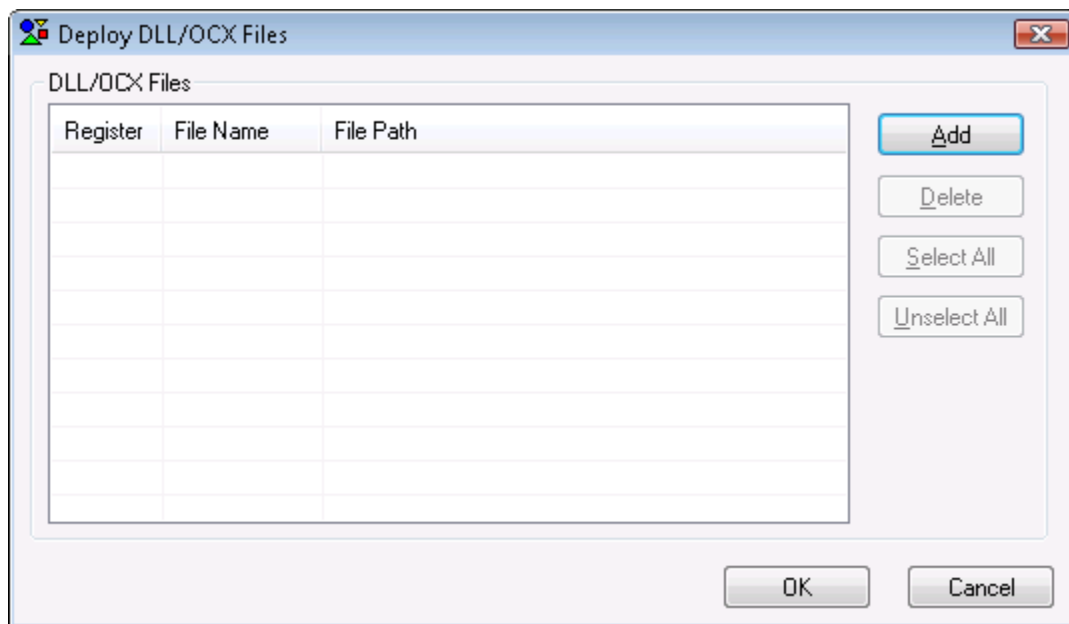
Deploy External Non-System DLL/OCX Files

If your application calls any custom user DLL/OCX files, which are also called external non-system DLL/OCX files in this tab, you can specify them here and deploy them to the Web server.

If there are many large-size DLL/OCX files in your application and they could be slow to download from the Web server at runtime, you may prefer to use the DLL/OCX File Packaging tool provided by Appeon to package the files into one setup program (see [Chapter 15, Extended Toolkit](#) for detailed instructions), then distribute the setup program to the users, and have users install the files to each Client.

Click *Options* in the *Deploy DLL/OCX Files* group box to open the *Deploy DLL/OCX Files* dialog box (as shown in the following figure) and select the required DLL/OCX files to be deployed.

Figure 4.19: DLL/OCX Automatically Deploy and Download



The following table introduces the elements on the *Deploy DLL/OCX Files* dialog box.

Table 4.4: Deploy DLL/OCX Files dialog box

Column	Description
Register	Allows you to select whether the file will be automatically registered after it is downloaded to the Client at runtime. Click <i>Select All</i> to select all files and <i>Unselect All</i> to de-select all of them. If you choose not to automatically register a file, you can register it manually after it is downloaded.
File Name	Lists the added files. Click the header of this column to display the files in alphabetical order.
File Path	Displays the file location.

The following table describes how to use the *Deploy DLL/OCX Files* dialog box.

Table 4.5: Deploy DLL/OCX Files dialog box

To Do This	Do This
To add files	Click the <i>Add</i> button. A standard <i>File Selection</i> dialog box is displayed. Select the files from your local machine. The files can be stored in any location.

To Do This	Do This
To remove files	Select a file or multiple files by pressing Ctrl or Shift keys, and click the <i>Delete</i> button to remove the selected files from the list.
To save the settings	Click <i>OK</i> . Appeon will copy the files to a temporary folder and then deploy them to the Web Server during deployment.

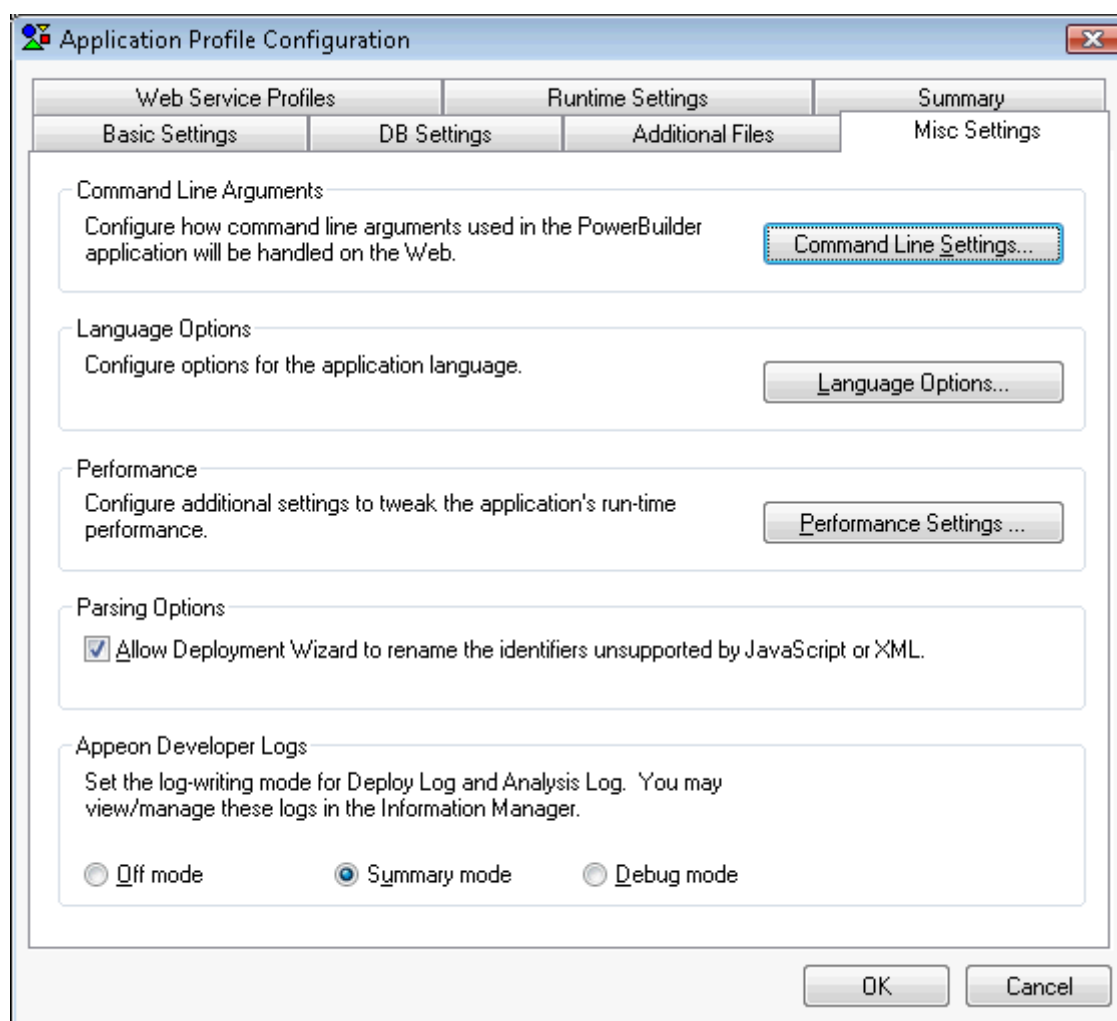
How the deployed DLL/OCX files work on Web

To successfully call the deployed DLL/OCX files on the Web application, you need to make sure that the DLL/OCX files are successfully downloaded and installed to the Client during the initial run of the deployed Web application.

Appeon Enterprise Manager (AEM) provides options for manually or automatically downloading and installing the DLL/OCX files, and for specifying the installation location (by default the files are saved to the %SystemRoot%\system32\AppeonPlugin folder at the Client. %SystemRoot% indicates the folder where Windows is installed, typically C:\Windows). For detailed instructions, refer to the *Appeon Server Configuration Guide*.

4.2.1.2.4 Misc Settings

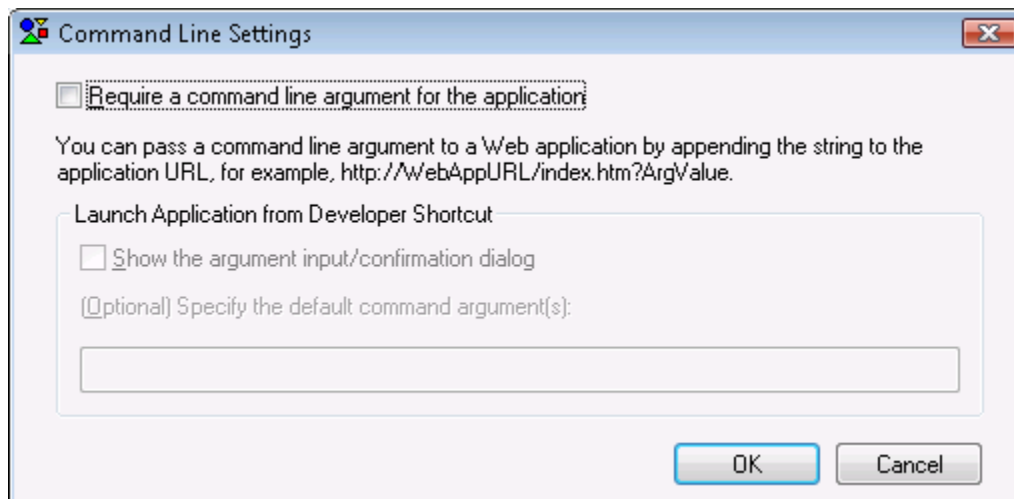
The *Misc Settings* tab page enables you to modify settings for command line arguments, application language, and log-writing mode, and allows you to configure the runtime performance and parsing options.

Figure 4.20: Misc settings

Command Line Arguments

If an application needs to use command line arguments, enable the command line argument option, as shown in the following figure.

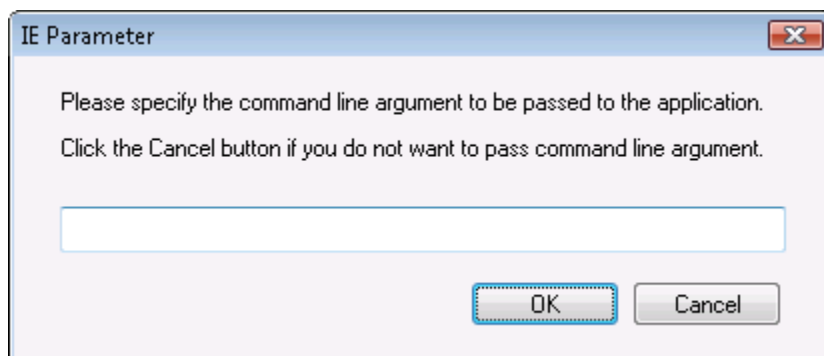
Click *Command Line Settings* on the *Misc Settings* tab. The *Command Line Settings* dialog box is displayed, as shown in the following figure.

Figure 4.21: Command Line Settings dialog box

- **Require a command line argument for the application** option: Enables the command line argument option.

With this check box selected, the following two options will be enabled. Note that they are effective only if you run the application from the Apeon Developer toolbar.

- *Show argument input/confirmation dialog* option: A dialog box is displayed after you launch an application from the Apeon Developer toolbar but before the application starts. This dialog box enables you to specify the arguments for the application.
- *Specify the default command arguments field*: The specified default arguments are directly attached to the application URL when the application is run from the Apeon Developer toolbar.
- *If both options are selected*: A dialog box pops up with the default arguments filled in, as shown in the following figure. You can either change the default arguments or leave them alone.

Figure 4.22: Command line argument dialog box

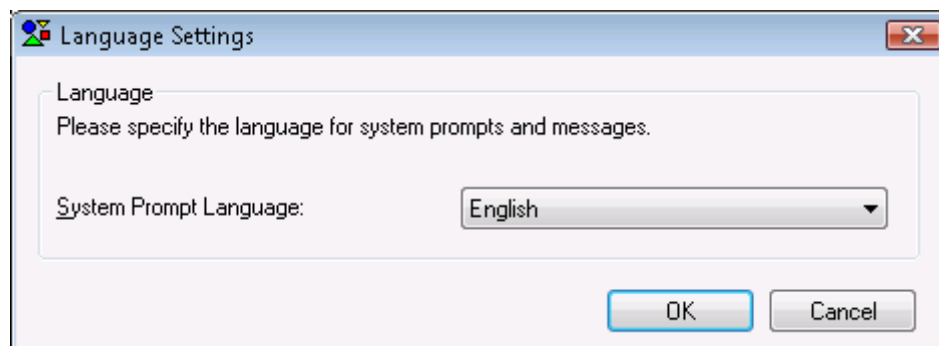
To run a Web application with arguments from Clients, type the application URL with the arguments in the Internet Explorer address bar.

The format of a Web application URL with arguments is: `http://WebAppURL/index.htm?ArgValue`. *ArgValue* indicates the arguments that will be passed to the application. The arguments must be separated by commas if there are more than one argument.

Application Language

Step 1: Click *Language Options* on the *Misc Settings* tab. The *Language Settings* dialog box is displayed, as shown in the following figure.

Figure 4.23: Application language settings



Step 2: Select a language from the *System Prompt Language* dropdown listbox.

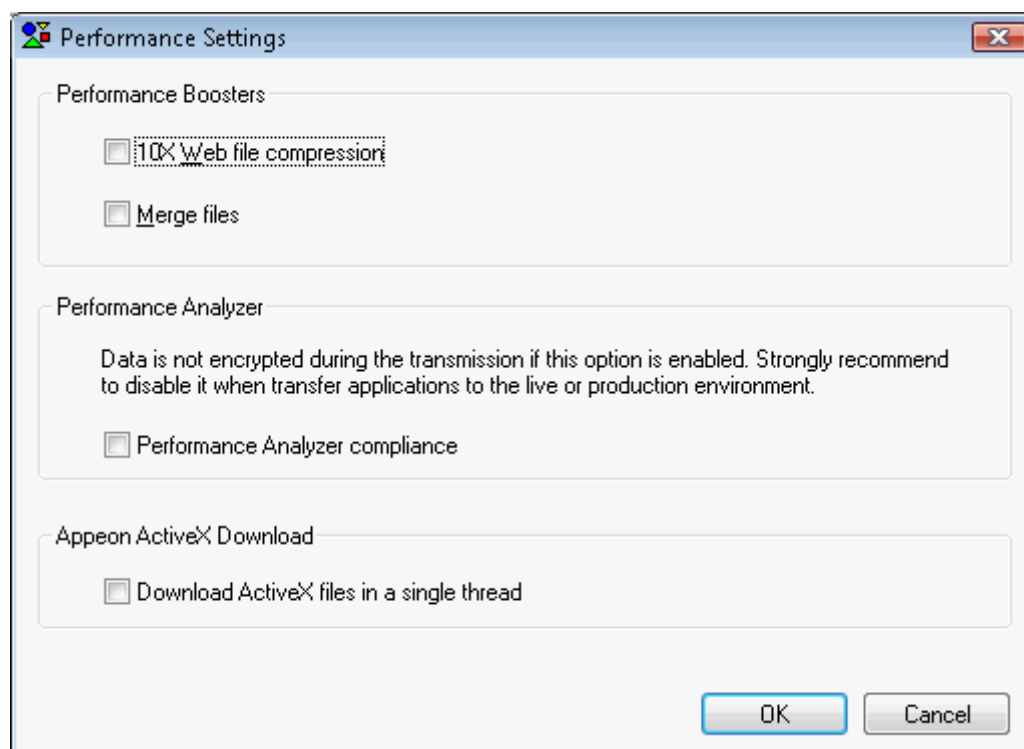
System prompts and messages are error messages, informational messages, warnings, notices, and prompts that are displayed when you run Appeon Web applications.

Performance Settings

Appeon recommends that you take advantage of the performance settings to boost the application's runtime performance. To produce the best performance, perform the following steps:

Step 1: Click the *Performance Settings* on the *Misc Settings* tab. The *Performance Settings* dialog box is displayed, as shown in the following figure.

Figure 4.24: Performance settings



Step 2: Select the performance features based on your needs.

The following table describes how to use the performance features.

Table 4.6: Performance features

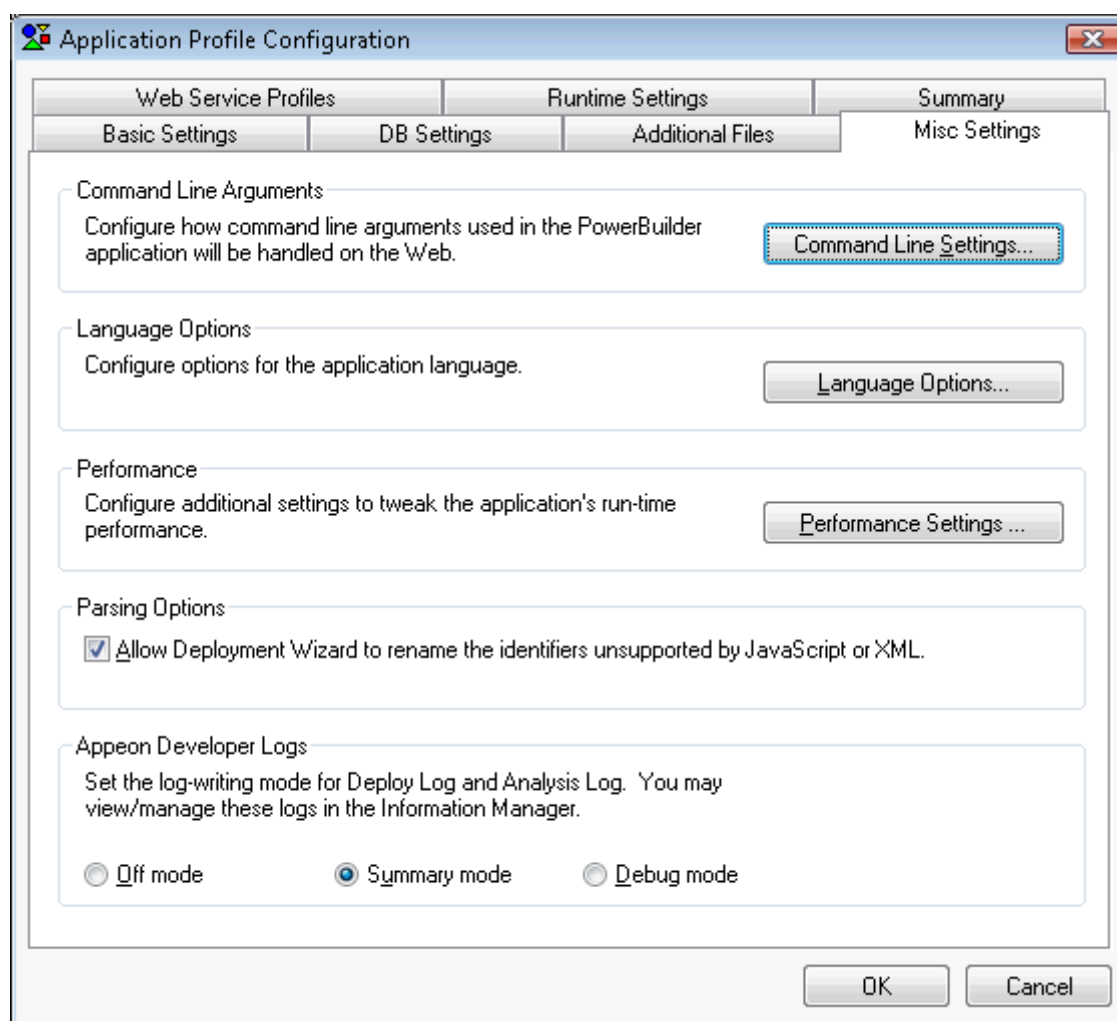
Setting	Description	When To Use
10X Web File Compression	Compresses files when they are transferred over the network.	Always
Merge files	Merges the small files during the application deployment. The small files will be downloaded to the client in one file package at one call, instead of being downloaded one by one at separate calls.	In the production stage.
Performance Analyzer compliance	Enables the application to be deployed in a method compliant with the Performance Analyzer tool. The application deployed with this option can run with the Performance Analyzer tool at runtime to diagnose the performance issues. For more about the Performance Analyzer tool, see <i>Appeon Performance Analyzer</i> in <i>Appeon Performance Tuning Guide</i> . Note: as the data is not encrypted during transmission at runtime, therefore, this option is recommended to use only at the test or development stage.	In the development stage.
Download ActiveX files in a single thread	Downloads the two ActiveX files in the same thread at runtime. Using the same thread to download the two ActiveX files can speed up the download under particular network conditions.	Always

Parsing options

Unsupported identifiers refer to identifiers that are supported in PowerBuilder but unsupported in Appeon, due to the different naming convention between PowerScript and JavaScript/XML. For detailed explanation of such unsupported identifiers, refer to *Identifiers* in the *Appeon Features Help*.

With this automatic-renaming option enabled, when the Appeon Deployment Wizard deploys an application, it automatically detects unsupported identifiers in the application and renames these identifiers to supported ones in the Web files it generates for the application, while keeping the application source code unchanged. After the deployment, you can get the list of all identifiers that are renamed in the deployment log in [Chapter 9, Using Information Manager](#).

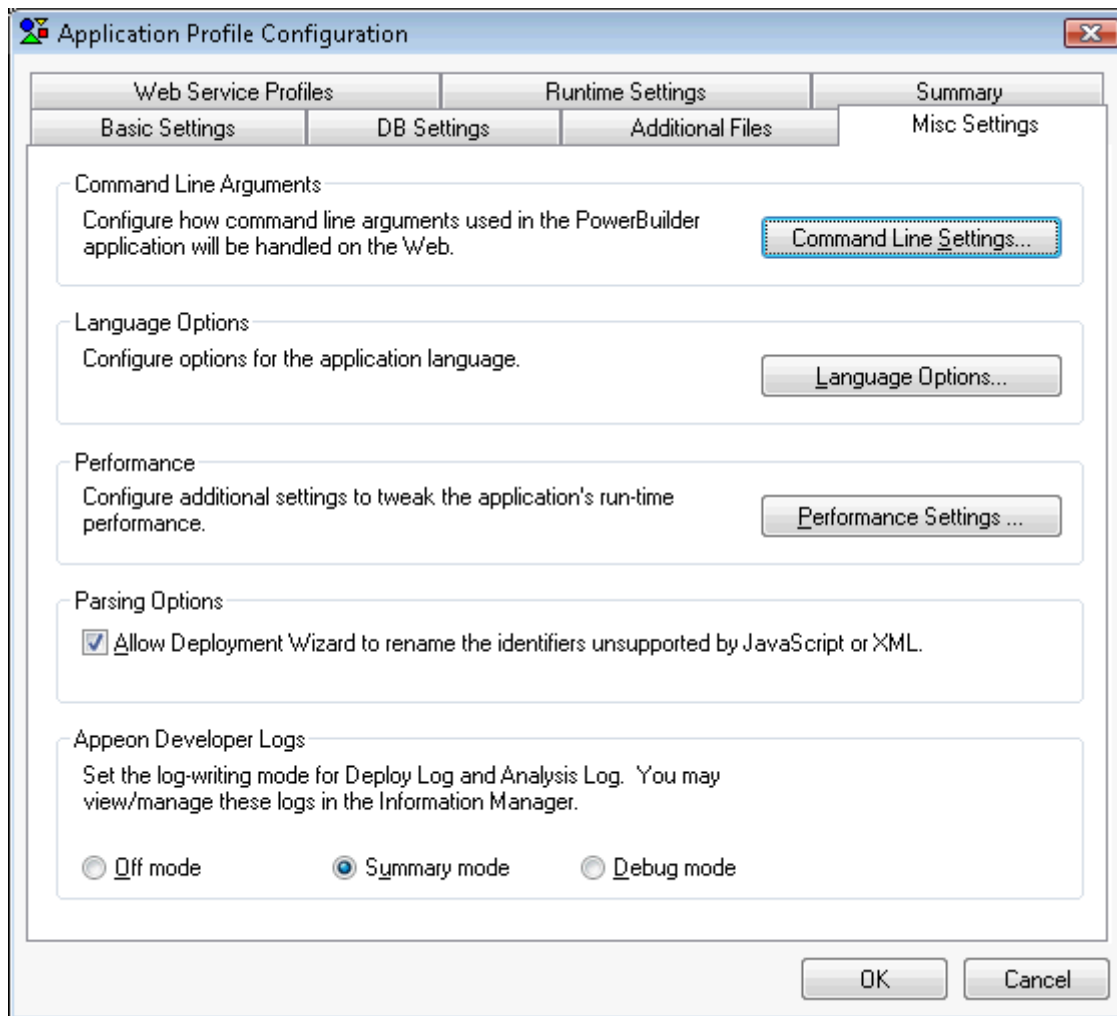
The automatic-renaming feature will not work if the option is disabled. In this case, you must rename the unsupported identifiers by yourself, following the guidance of the UFA report and Appeon Features Help.

Figure 4.25: Parsing options

Appeon Developer log-writing mode

The log-writing mode determines the content of the log files generated by Appeon Developer, including the deployment logs and feature analysis logs. Select the desired mode from the Appeon Developer Logs box, as shown in the following figure.

Figure 4.26: Log-writing mode



The logging options enable you to select the level of information contained in the logs according to your needs:

Table 4.7: Log writing options

Mode	Description
Off mode	Generates no log files. This mode offers the fastest performance since nothing is written to a log file.
Summary mode (Default)	Generates log files with basic execution information. This is useful for tracking errors that have occurred, but inadequate for detailed troubleshooting. Use this mode once the application is stable.
Debug mode	Generates log files with detailed execution information for troubleshooting obscure and esoteric issues. This is useful for technical support, but performance speed will slow down when using this mode.

You can view or delete these log files. For detailed instructions, refer to [Chapter 9, Using Information Manager](#).

4.2.1.2.5 Web Service Profiles

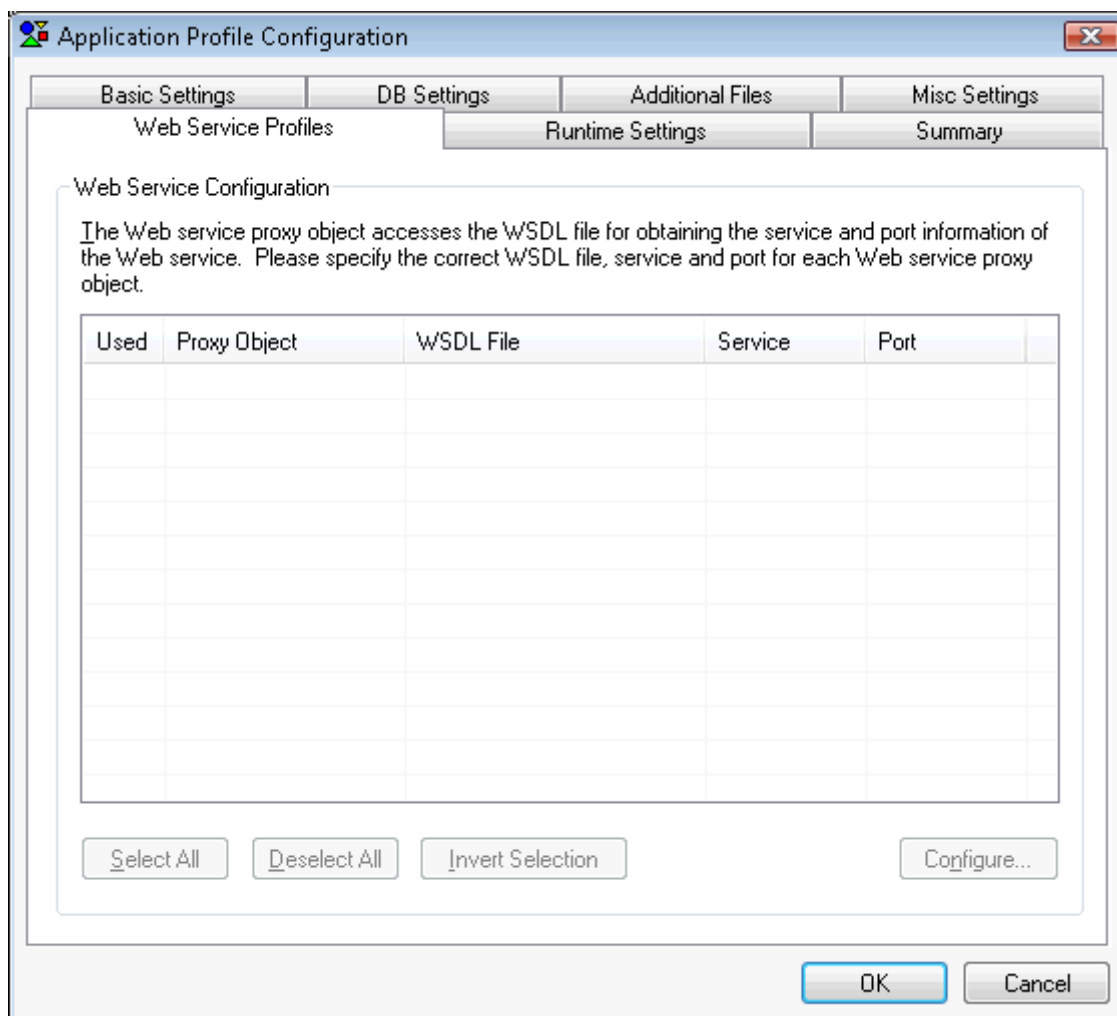
A Web service profile contains the settings for the Web service(s) to be invoked in the Apeon deployed application, including the WSDL file, service name and port to be used by the Web service.

After you specify the PBL files of the application in the Basic Settings tab, the Web service proxy objects, WSDL files, service, and port, which are used in the application, are automatically added to the Web Service Profiles tab, as shown in the following figure.

A valid WSDL file must meet the following requirements:

- The WSDL file must be a .wsdl or .asmx file.
- The WSDL file must reside on the local computer. Apeon cannot access the WSDL file in a remote machine.
- WSDL files used in the same application cannot have the same name, even if they reside in different locations.

Figure 4.27: Web Server Profiles tab



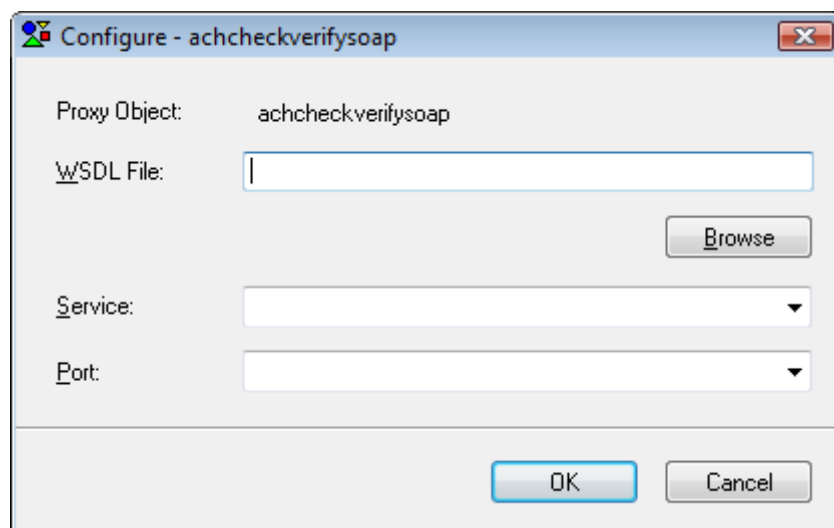
Choose which proxy object(s) will be invoked in the deployed application by selecting the Used column of the object. Click *Select All* to select all objects; click *Deselect All* to deselect

all objects; or click *Invert Selection* to select all objects which were not selected and deselect the previously selected objects.

If the WSDL file, service and port are not automatically specified for a proxy object, follow the steps below to select them:

Step 1: Select the proxy object and click *Configure*. The Configure dialog pops up, as shown in the following figure.

Figure 4.28: Configure dialog box



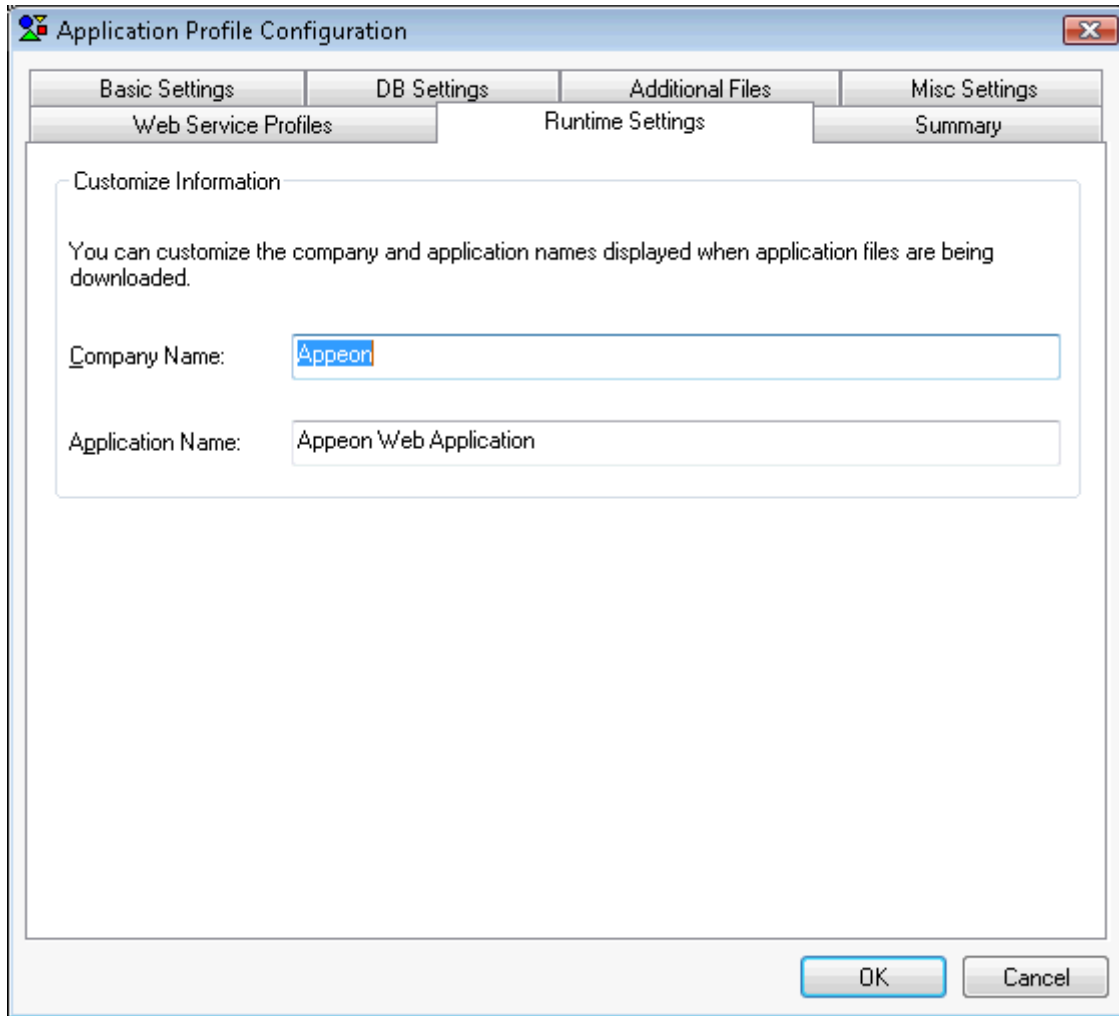
Step 2: Click *Browse* to select a WSDL file on the local computer, and then select the service and port.

A WSDL file may contain multiple services and each service may contain multiple ports.

Step 3: Click *OK* to save the configuration and return to the *Web Service Profiles* tab.

4.2.1.2.6 Runtime Settings

The Runtime Settings tab specifies the customized information that will be displayed on the Appeon Download Center when the application starts. You can specify the company and application names according to your actual needs.

Figure 4.29: Runtime Settings dialog box

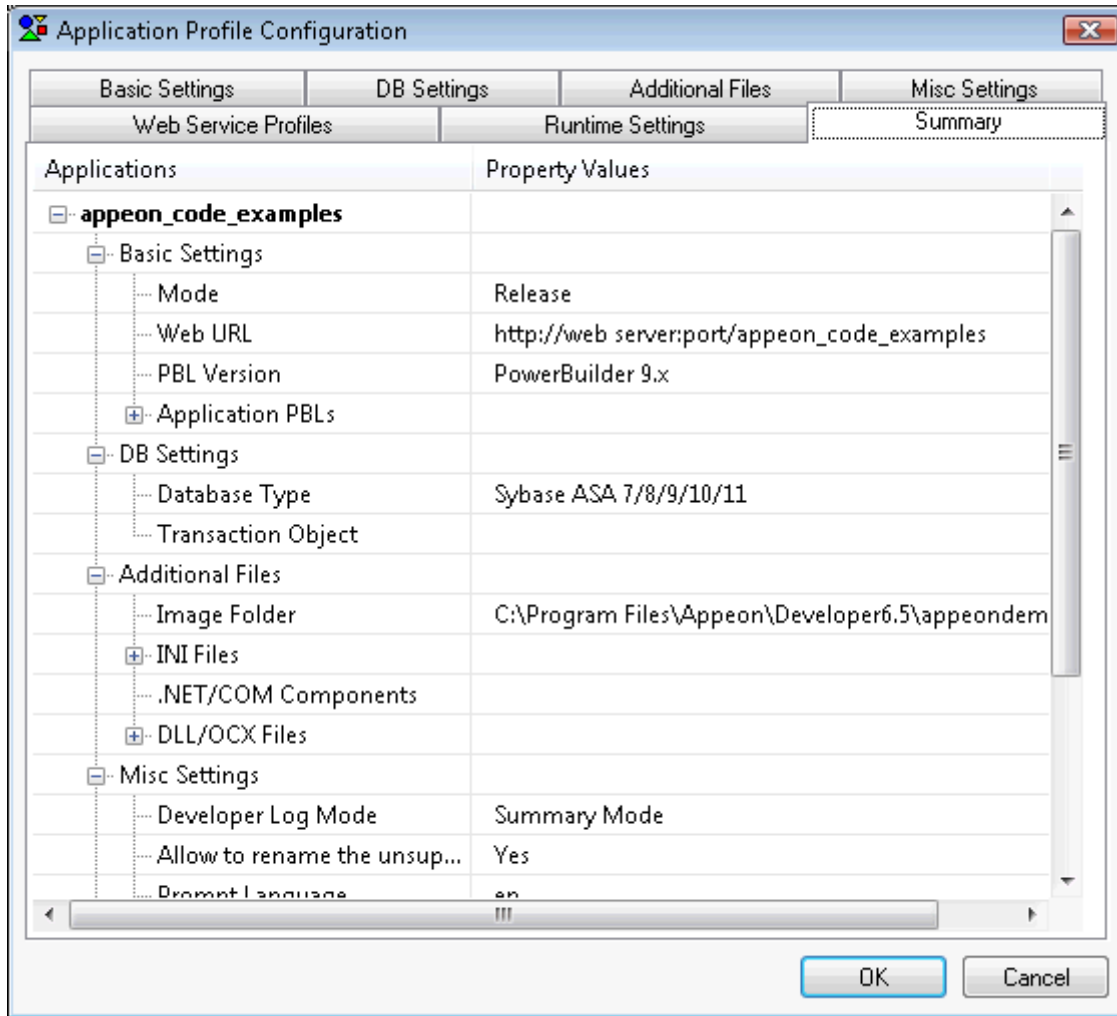
4.2.1.2.7 Summary

The Summary tab offers a summary view of all configurations of an application profile. It lists the configurations in a treeview structure, and allows you to review and modify their values directly.

Use the following two methods to input or modify the configuration (property values):

- For properties that you can input or select values by using a text field, radio buttons, or dropdown list, such as Mode, Web URL, PBL version etc., you can directly double click their *Property Values* column and then input, modify or select values.
- For properties that you can add/delete multiple items by using a dialog box, such as application PBLs, INI files etc., you can right click the property name in the *Application* column and then select *Add* or *Delete All* from the popup menu.

The configuration changes you make in this Summary tab page will be immediately synchronized to the other tab pages, but only after you click the *OK* button, the changes will be saved.

Figure 4.30: Summary tab

4.2.2 Managing database type profiles

Database type profiles configuration is the easiest way to manage the database types that Appeon Deployment Wizard supports for application deployments. You can configure database type profiles in the *DB Type Profiles* tab, and apply a database type profile for an application deployment by selecting the profile in the Appeon Developer Configuration Wizard or in the [DB Settings](#) tab of the application profile settings.

Database type profiles in Appeon Developer are different from database profiles in PowerBuilder:

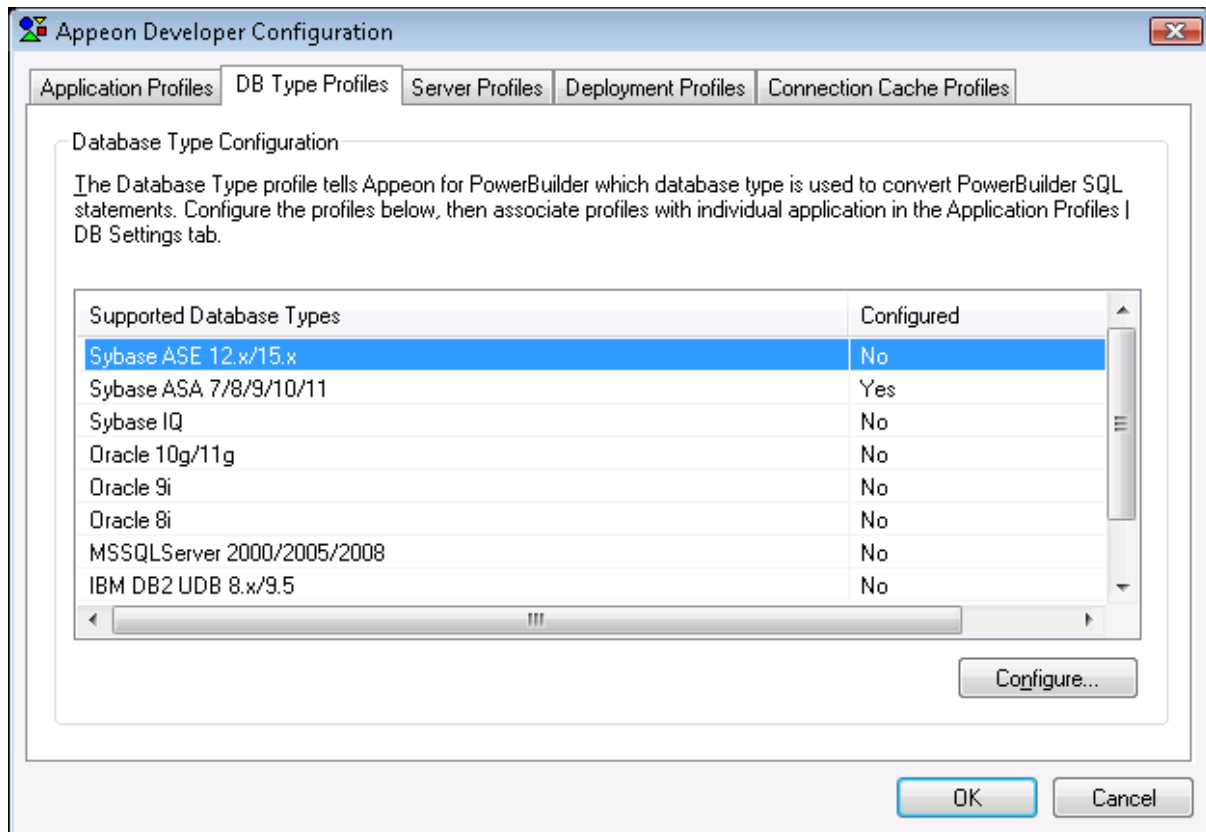
- You only need to configure one database type profile for a given database type. For example, if application A connects to ASA database d1 and application B connects to ASA database d2, you can use the database type profile *Sybase ASA 7/8/9/10/11/12* for both applications, although the connection information in the profile *Sybase ASA 7/8/9/10/11/12* sets up connection to ASA database d1.
- Database type profiles are not used for setting up connections with application databases. Instead, they are mainly used by Appeon Deployment Wizard to call the relevant database driver for converting PowerBuilder SQL statements.

To modify a database type profile, take the following steps:

Step 1: Click the *Configure* button on the Apeon Developer toolbar, and select the *DB Type Profiles* tab in the Application Developer Configuration page as shown in the following figure.

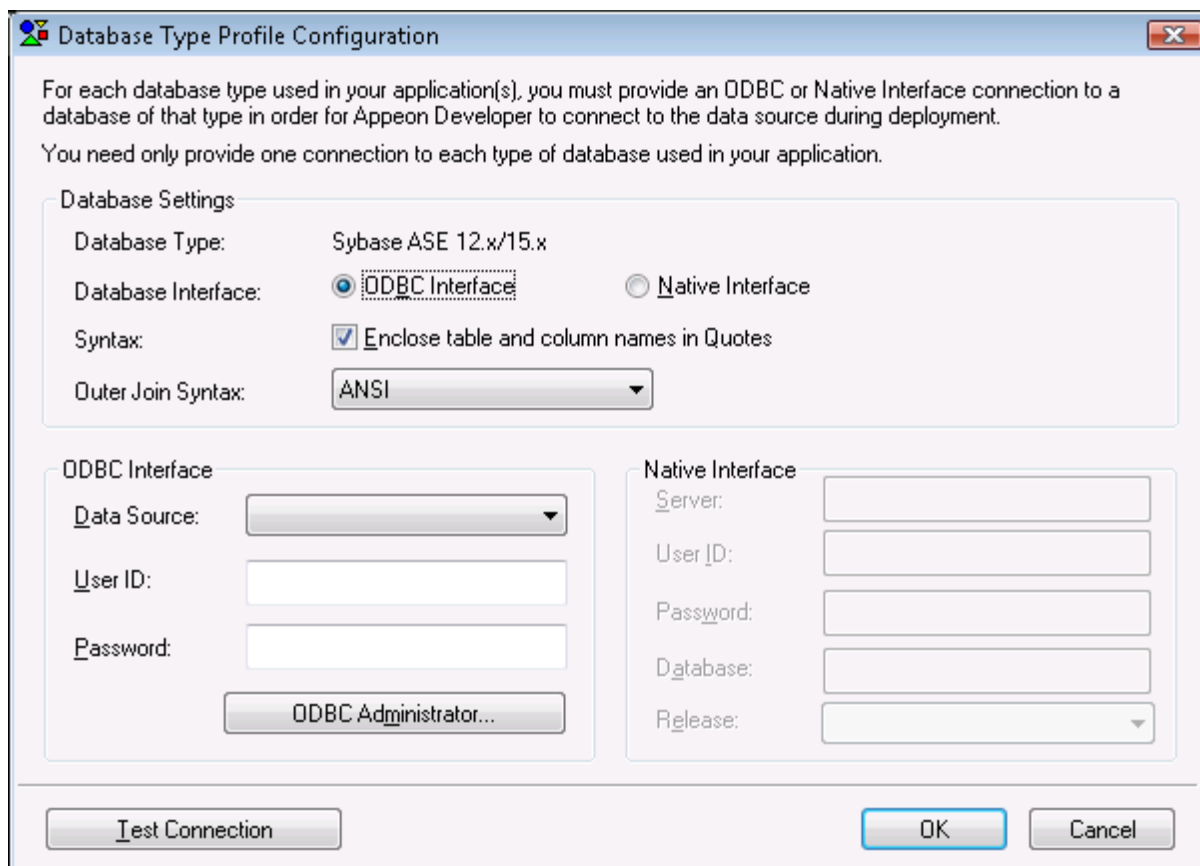
The *Database Type* column lists all the database types that are supported by Apeon; and the *Configured* column indicates whether a database type profile has been configured.

Figure 4.31: DB Type Profiles



Step 2: Select a database type profile (for example, Sybase ASE 12.x/15.x), and click the *Configure* button to configure the database type profile (as shown in the following figure).

Figure 4.32: Database Type configuration



Step 3: Specify the information needed for setting up the database type profile.

Outer Join Syntax: Specify how Appeon format the SQL syntax for outer joins, you can select corresponding format from the drop-down list in the Database Settings frame. Regardless of the settings in PowerBuilder, it is recommended to use ANSI as the outer join syntax format in Appeon.

ODBC Interface: Select this option if you use an ODBC interface. Specify the ODBC data source, User ID, and Password.

Table 4.8: ODBC interface settings

Setting	Instructions
Data Source	All the data sources configured in Windows ODBC Administrator are listed. Select a proper data source of the configured database type from the dropdown list. It is not necessary to specify the actual databases that the application uses. Click <i>ODBC Administrator</i> to configure an ODBC data source if it is not available.
User ID	Type in a recognized (set) user name to login to the database. If no user name has been set, leave this field blank.
Password	Type in the password used to log in to the database. If no password has been set, leave this field blank.

Native Interface: Select this option if you use a native database interface. Specify the server name/IP, User ID, Password, and the database name.

Note: Not all the listed database types are supported by Appeon for the native database interface. If Sybase IQ, Sybase ASA 7/8/9/10/11/12 or IBM DB2 is your database type, the *Native Interface* option is disabled.

Table 4.9: Native database interface settings

Setting	Instructions
Server	Enter the machine name or IP address of the server where the target database resides.
User ID	Type in a recognized (set) user name to login to the database. If no user name has been set, leave this field blank.
Password	Type in the password used to login to the database. If no password has been set, leave this field blank.
Database	Specify the name of the database that will be used by the application.
Release	(ASE only) Specify the version number of ASE database.

Step 4: Specify the "Enclose table and column names in double quotes" option. It determines whether Appeon Developer encloses the names of tables, columns, indexes, and constraints in double quotes when it generates the database syntax during deployment.

Notes:

- 1) When this option is selected, verify that the `quoted_identifier` setting is set to ON in the database server.
- 2) Clear the check box of this option when the updated table name of DataWindow contains the owner name.

Step 5: Click *Test Connection* to test the connection to the database.

4.2.3 Managing server profiles

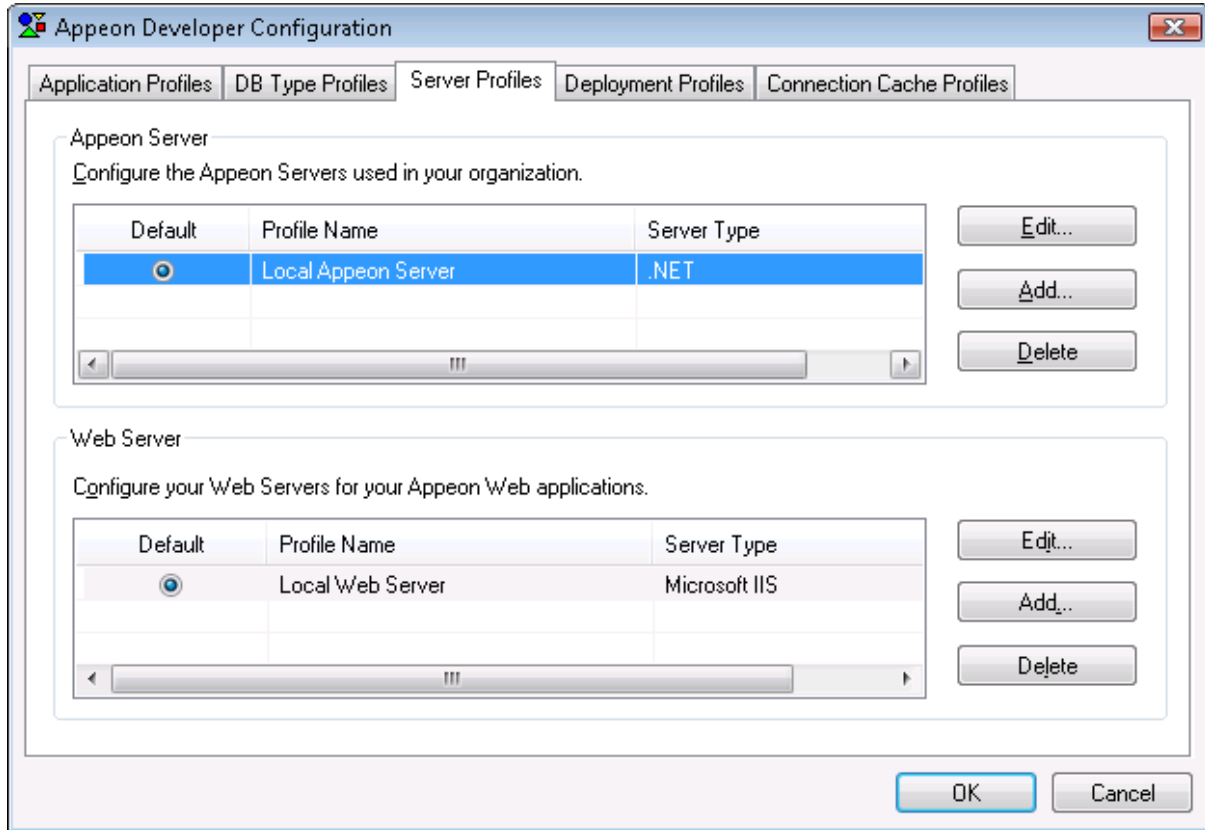
A server profile is a set of parameters for Appeon Developer to connect to, and deploy applications to, a particular Appeon Server or Web server. Creating and using server profiles is the easiest way to manage your application deployments because you can:

- Select one or more Appeon Server profiles and Web Server profiles to set up a deployment profile.
- Easily add, edit, and remove server profiles.
- Test connections in server profiles. If the connection is successful, it means that the application can be deployed to the server configured in the server profile.
- Manage which applications are accessible from the Appeon Developer shortcut *Run* button. The shortcut lists the applications that are deployed to the default server profiles.

4.2.3.1 Server Profiles tab page

There are two main parts in the *Server Profiles* tab page, as shown in the following figure. The upper part is for management of Appeon Server profiles, while the lower part is for management of Web server profiles.

Figure 4.33: Server Profiles



4.2.3.1.1 Default server profiles

You can select an Appeon Server profile or a Web Server profile as the DEFAULT server profile in the *Server Profiles* tab page. Appeon Developer's *Run* shortcut reads the default server profiles and lists the applications that are deployed to default server profiles, enabling you to quickly access them. Applications that are deployed to non-default server profiles are not available in the shortcut. For details about the shortcut, refer to [Chapter 8, Running Web Applications](#).

4.2.3.1.2 Edit, add or delete server profiles

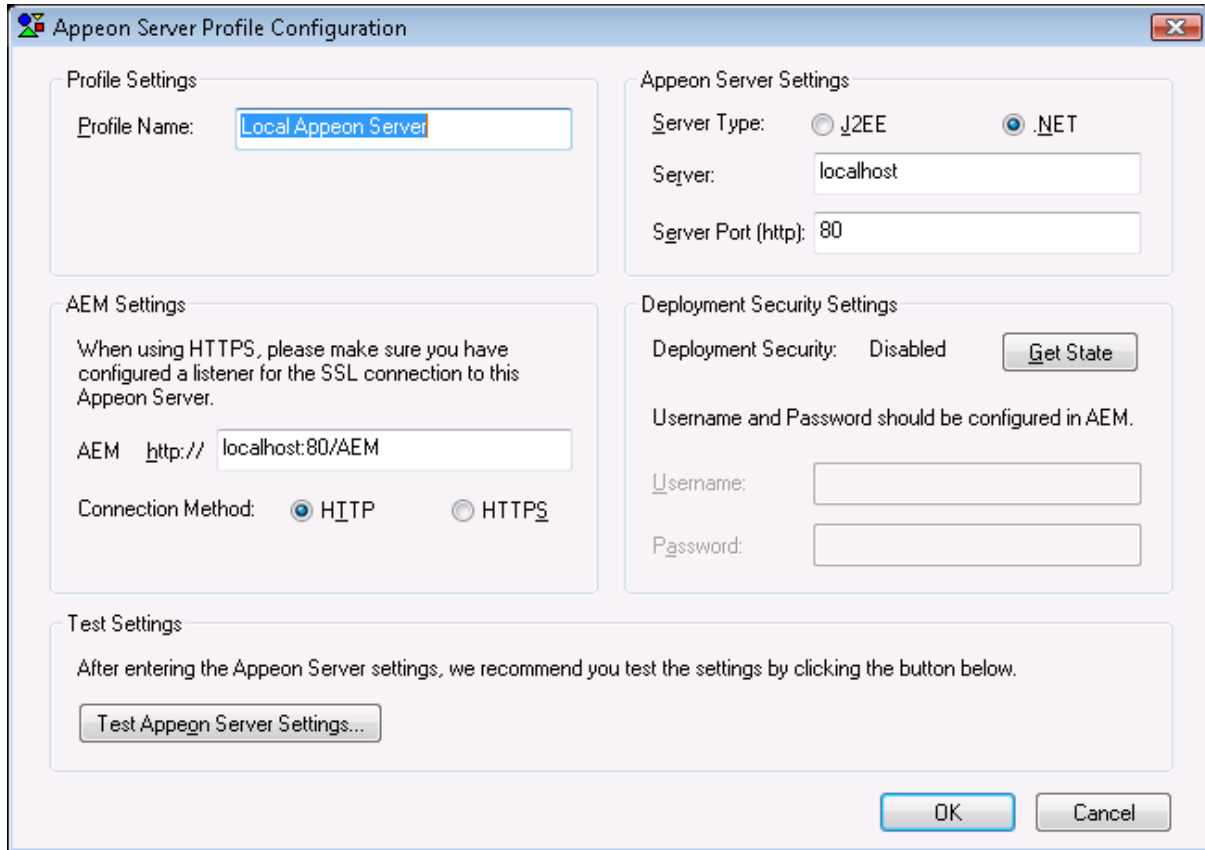
Two sets of *Edit*, *Add*, and *Delete* buttons are available in the *Server Profiles* tab page for you to modify, create, or remove Appeon Server or Web Server profiles. [Section 4.2.3.2, “Appeon Server profile settings”](#) and [Section 4.2.3.3, “Web Server profile settings”](#) provide instructions on how to configure the properties for an Appeon Server or Web Server profile when you modify or create a new server profile.

4.2.3.2 Appeon Server profile settings

Before you edit or add an Appeon Server profile, make sure the Appeon Server specified in the profile is running, and that the Appeon Developer computer can successfully connect to the Appeon Server computer.

If you want to deploy to an Appeon Server cluster, you must create profiles for each participating Appeon Server and deploy the application to all Appeon Servers in the cluster. The following figure shows the *Appeon Server Profile Configuration* window that displays when you click the *Edit* or *Add* button in the *Appeon Server* group box of the *Server Profiles* tab page.

Figure 4.34: Appeon Server Profile



The following table lists detailed instructions for how to specify the properties for an Appeon Server profile.

Table 4.10: Appeon Server profile properties

	Property	Instructions
Profile Settings	Profile Name	Assign a name to the Appeon Server profile. You should use names that are easy to remember and identify (for example "Appeon Server for Test" or "Remote Appeon Server").
Appeon Server Settings	Server Type	Select J2EE if Appeon Server is installed to EAServer, JBoss, JEUS, WebLogic, or WebSphere; select .NET if Appeon Server is installed to Microsoft .NET Framework.
	Server	Enter the IP address or the machine name of Appeon Server.
	Server Port (http)	Enter the HTTP port number used by Appeon Server. Note: Do not enter an HTTPS port here, Appeon Developer must use an HTTP port to connect with Appeon Server,

	Property	Instructions
		though the Appeon Web application can be connected with an HTTPS port.
AEM Settings	AEM URL	<p>The URL for Appeon Enterprise Manager (AEM) will be automatically generated after you specify the Server and Server Port. The URL will be in the following format: <code>http://server:port/AEM</code>, (for example, <code>http://localhost:9988/AEM</code>).</p> <p>Note:</p> <ol style="list-style-type: none"> 1) If you use EAServer as Appeon Server, the Appeon installation program creates an HTTP listener (localhost:9988) for Appeon Server. If the Appeon Server configured is a local computer, the following URL should always work: <code>http://localhost:9988/AEM</code>. 2) Do not use a "localhost" listener in a production environment.
	Connection method	<p>Select HTTP or HTTPS to connect to AEM.</p> <p>If the Web server is configured as an SSL Web Server, check the <i>HTTPS (secure)</i> option. Otherwise, check the <i>HTTP (insecure)</i> option.</p>
Deployment Security Settings	Deployment Security	The Get State button can get the state of the Deployment Security settings in AEM. If Deployment Security is set to ON, the state will be "Enabled" and you must specify the deployment user name and password. By default, the Deployment Security in AEM is OFF, so the state is "Disabled".
	Username	<p>Enter the username used to deploy the application.</p> <p>The username and password for the deployment security feature are configured in the Appeon Enterprise Manager (AEM).</p> <p>The username can be left blank if the deployment security feature is turned off in AEM.</p>
	Password	<p>Enter the password used to deploy the application.</p> <p>The username and password for the deployment security feature are configured in the AEM.</p> <p>The password can be left blank if the deployment security feature is turned off in AEM.</p>

After profile configuration, perform the following steps to make sure the Appeon Server profile can be successfully used for application deployments:

- Check whether the deployment security settings are configured correctly. The username and password in the deployment security settings must be the same as those configured in

AEM. Make sure you get the correct deployment username and password from the AEM administrator.

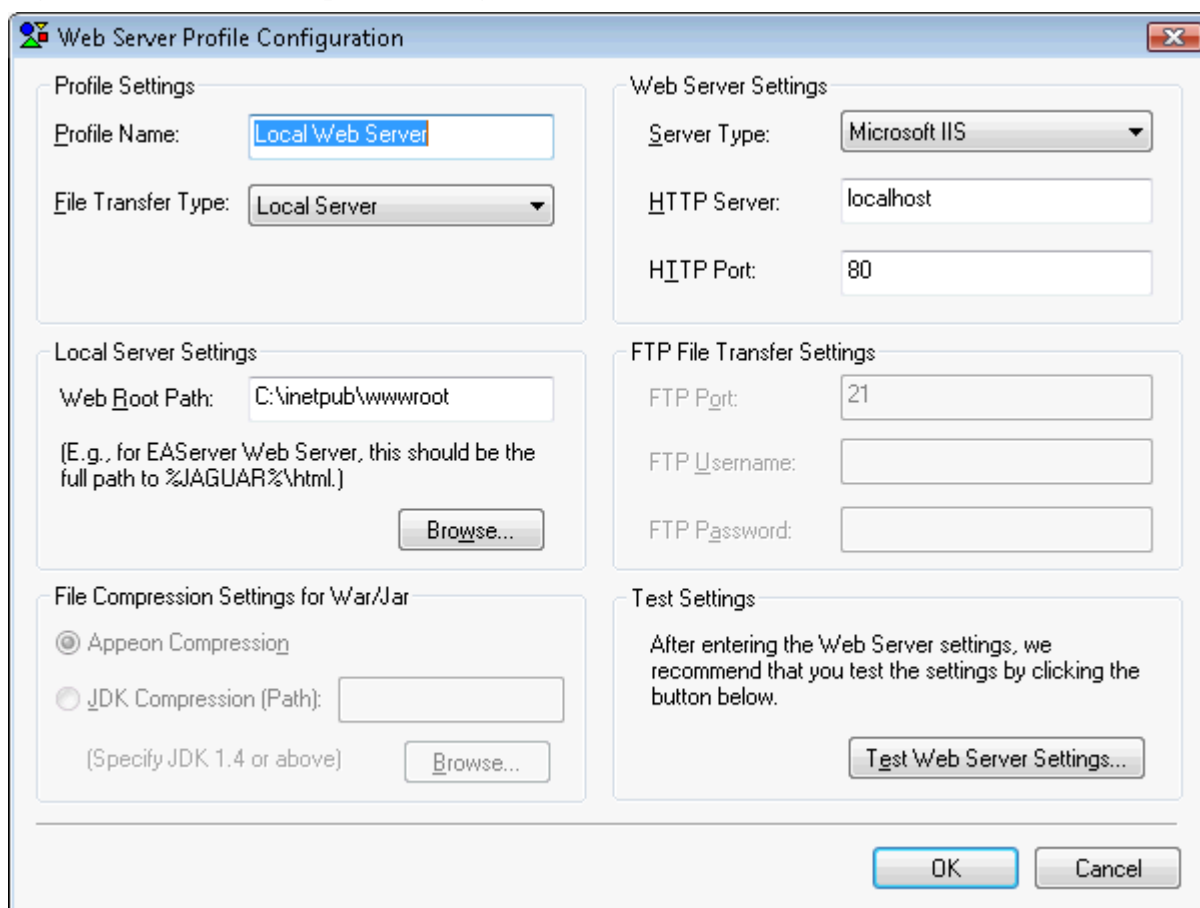
- Test Appeon Server settings by clicking the *Test Appeon Server Settings* button. Do NOT proceed to the next step until the testing succeeds.

4.2.3.3 Web Server profile settings

Before you edit or add a Web Server profile, make sure the Web Server specified in the profile is running and that the Appeon Developer computer can successfully connect to the Web Server computer.

The following figure shows the *Web Server Profile Configuration* window that displays when you click the *Edit* or *Add* button in the *Web Server* group box of the *Server Profiles* tab page.

Figure 4.35: Web Server profile configuration window



The following table lists detailed instructions for how to specify the properties for a Web Server profile.

Table 4.11: Instructions for creating a Web Server profile

	Property	Instructions
Profile Settings	Profile Name	Assign a name to the Web Server profile. You should use names that are easy to remember and identify such as "Web Server for Test" or "Production Web Server".

	Property	Instructions
	File Transfer Type	Use Local Server if the Web Server is on the local machine. Use Remote Server if the Web Server locates remotely.
Web Server Settings	Server Type	Select the Web server type. Appeon supports the following Web Server types: Apache, EAServer, IIS, JBoss, WebLogic, WebSphere, and JEUS.
	HTTP Server	Enter the IP address or the machine name of Web Server.
	HTTP Port	Enter the Web Server port number. Note: Do not enter an HTTPS port here, even though the Web server is configured as an SSL Web server, because Appeon Developer must use an HTTP port to connect with Web server. However, you can access the deployed application with the HTTPS port.
Local Server Settings	Web Root Path	Enter the home directory of the Web server (for example: for EAServer, the home directory is C:\Program Files \Sybase\EAServer6\html; for IIS, the home directory is C:\Inetpub\wwwroot; for Weblogic 8, the home directory is C:\bea\user_projects \domains\appeon_domain\applications; for Weblogic 9/10, the home directory is C:\bea \user_projects\domains\appeon_domain\autodeploy; for WebSphere, the home directory is C:\IBM \WebSphere6\AppServer\installableApps). Click the <i>Browse</i> button to select the home directory of the Web server.
FTP File Transfer Settings	FTP Port	Enter the FTP server port number. The typical FTP port is port 21. If you use a remote Web Server, Appeon Developer will upload the files to Web Server using FTP protocol. Note that Appeon Developer works as a passive FTP client when uploading files. So you need to make sure that you are using passive FTP and the FTP data port and command port are configured properly in the firewall.
	FTP Username	Enter the username for FTP login. If the FTP server offers anonymous access then the username should be <i>anonymous</i> .
	FTP Password	Enter the password for FTP login. If no password is set for the FTP server or the FTP Username is anonymous, leave this field blank.

	Property	Instructions
File Compression Settings for War/Jar	Appeon Compression	Select to use the Appeon compression method to compress the Web files into War or Jar packages when deployed to JBoss, WebSphere, JEUS, or WebLogic Web server.
	JDK Compression	Select to use the JDK compression method to compress the Web files into WAR or JAR packages when deployed to JBoss, WebSphere, JEUS, or WebLogic Web server. Click <i>Browse</i> to specify the location of JDK 1.4 or above, for example, C:\j2sdk1.4.2_04\ To ensure the most compatibility, JDK compression is recommended for J2EE servers such as JBoss, WebSphere, JEUS, and WebLogic.

After the profile configuration, perform the following steps to make sure the Web Server profile can be successfully used for application deployments:

- Test Web Server settings by clicking the *Test Web Server Settings* button. Do NOT proceed to the next step until the testing succeeds.

If the Web Server is a remote server, refer to [Section 4.2.3.3.1, “Two requirements for FTP settings”](#) to make sure the configuration for the Web Server profile is successful.

If the Web Server is an SSL Web server, refer to [Section 4.2.3.3.2, “If the Web Server is an SSL Web Server”](#) to make sure the configuration for the Web Server profile is successful.

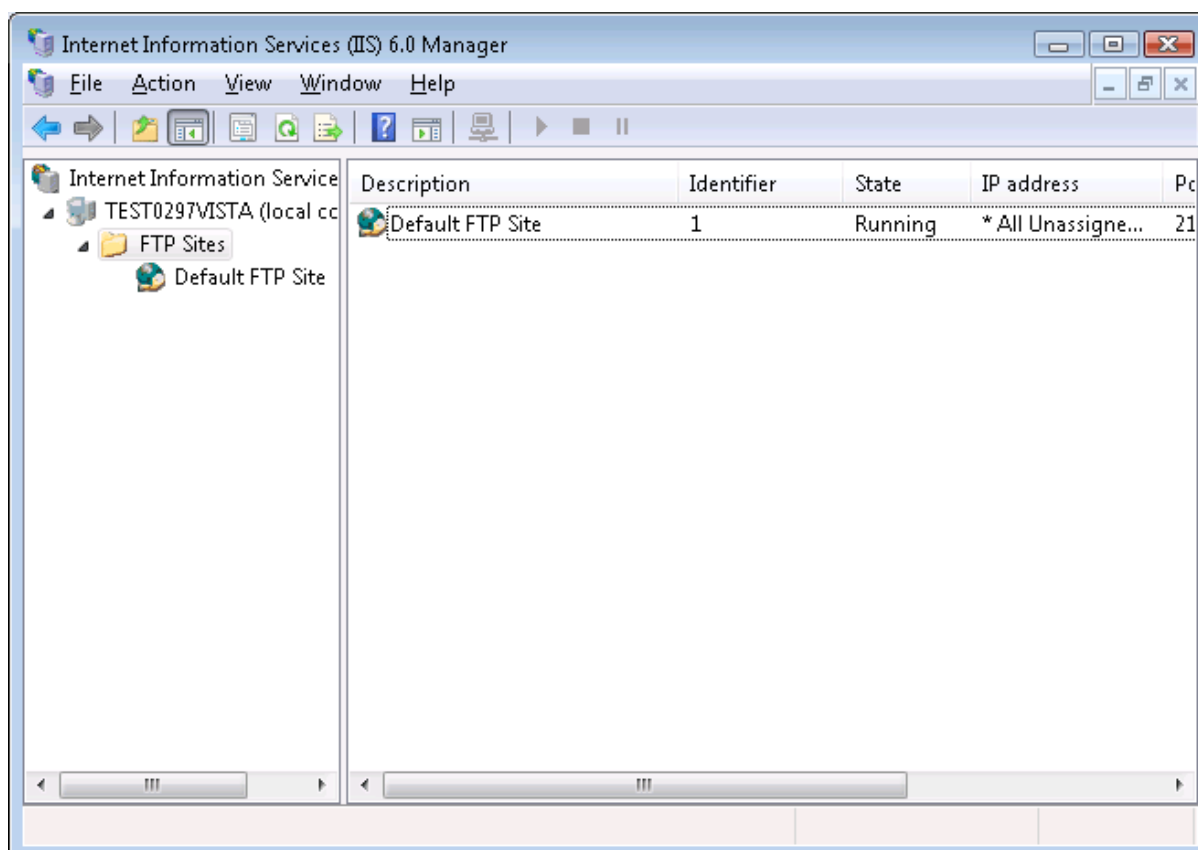
4.2.3.3.1 Two requirements for FTP settings

If you configure a Web Server profile for a remote Web Server, make sure the FTP settings in the Web Server profile meet the following two requirements:

- The user name and password for accessing the FTP server should have permission to read and write files to the FTP server of the Web Server.
- The FTP home directory should be mapped to the Web root of the Web Server.

The following steps use the Microsoft IIS FTP service as an example to show you how to fulfill the requirements. You should find that the settings for other FTP types are similar to the settings for Microsoft IIS FTP.

Step 1: On the FTP server (Web Server), open the Internet Services Manager in Administrative Tools, as shown in the following figure.

Figure 4.36: FTP configuration

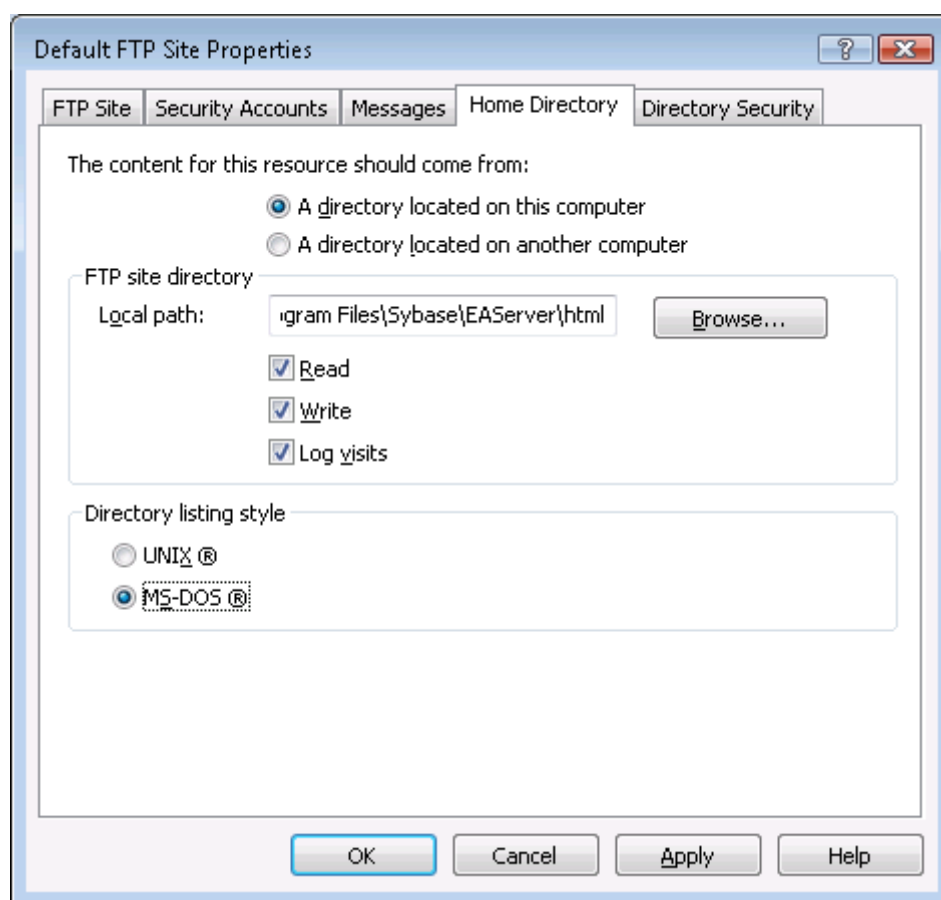
Step 2: Right click on *Default FTP Site* and select *Properties* in the popup menu. The *Default FTP Site Properties* window is displayed.

Step 3: Go to the *Home Directory* tab and verify that:

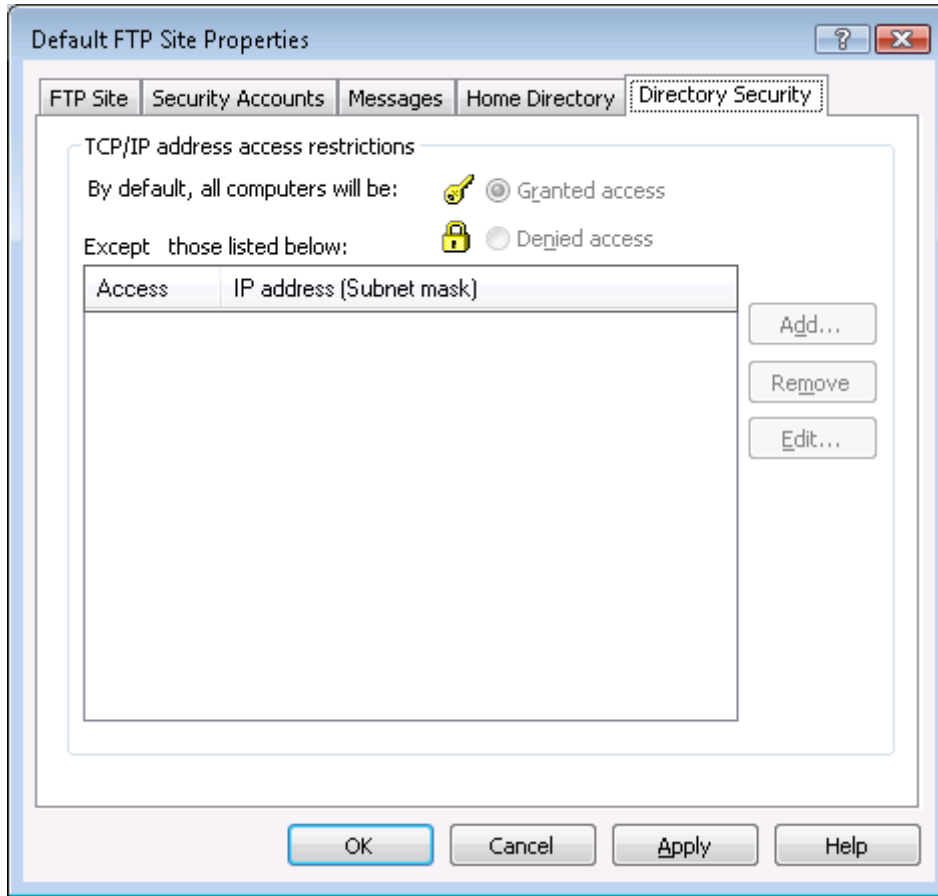
- The Local Path is the full path to the Web Server document root.

If the Web Server is an Apeon Server Web Server running on Windows, the local path is the full path to EAServer document root: %JAGUAR%\html\ (As shown in the following figure), if the Web Server is an IIS server, the local path is C:\Inetpub\wwwroot. %JAGUAR% is the EAServer installation directory (for example: C:\Program Files \Sybase\EAServer\).

- The Write property of the FTP Site Directory is enabled.

Figure 4.37: FTP site properties

Step 4: Go to the *Directory Security* tab and verify that the *Granted Access* option is checked, as shown in the following figure.

Figure 4.38: Directory security

4.2.3.3.2 If the Web Server is an SSL Web Server

If the Web Server is an SSL or secure Web Server, you can configure the Web Server profile following the configuration instructions for non-SSL Web Servers, except for the following two points:

1. You need to configure an HTTPS listener and port number for the Web Server.
2. You must specify an HTTP (not HTTPS) listener and its port number in the HTTP server settings of the Web Server profile, because Appeon Developer must use the HTTP protocol when deploying Web files to the server. After the application is deployed to the Web server, you can input "https" instead of "http" and the HTTPS port in the URL to access the application, (for example, `https://192.0.0.80:8181/appeondemo/`).

4.2.4 Managing deployment profiles

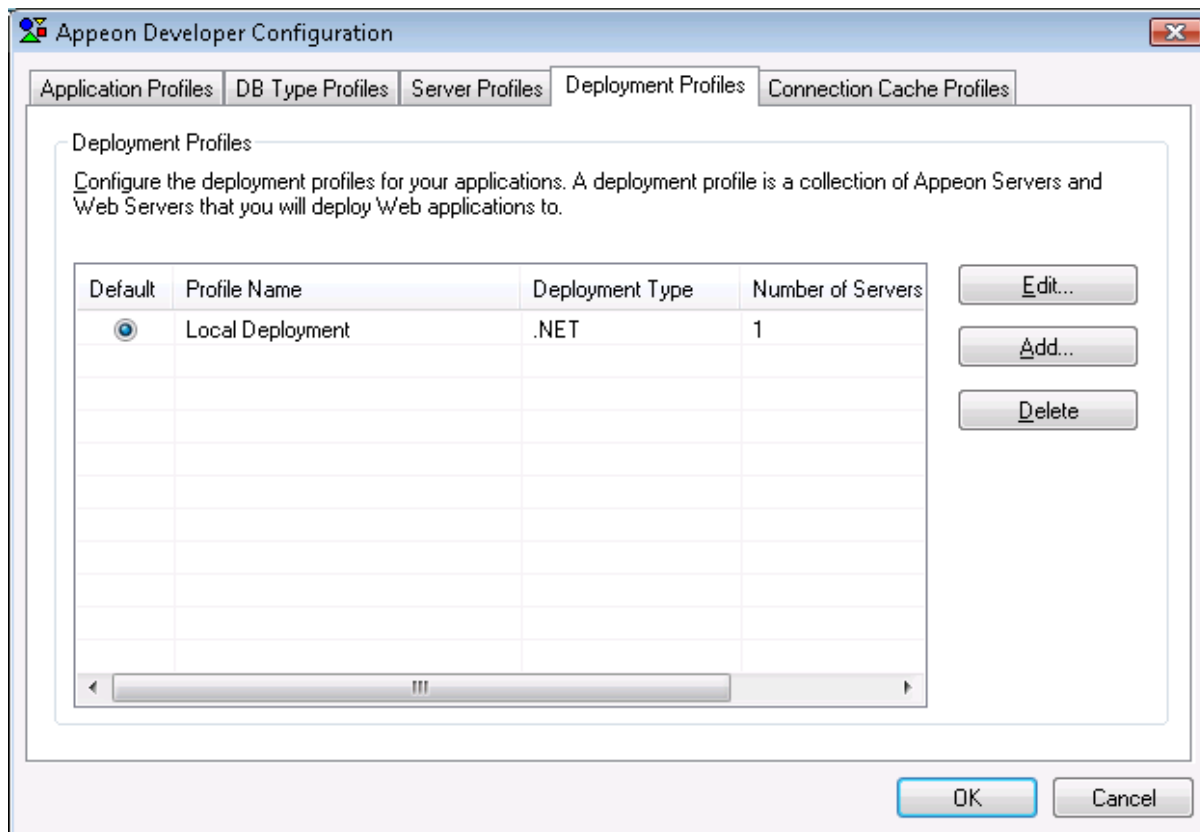
A deployment profile associates specified Web Server(s) and Appeon Server(s) as a group used for Web deployment. You may create several deployment profiles (e.g. local deployment, test deployment, production deployment, and so on), and set the most commonly used profile as the default profile.

A deployment profile is based on server profiles. Before configuring the deployment profiles, make sure you have set up one server profile for each of the Appeon Servers and Web Servers to be used for Web conversion. You can add as many deployment profiles as you need, but there can be only one default deployment profile.

4.2.4.1 Deployment Profiles tab page

On the *Deployment Profile* tab, you can edit, add, or delete deployment profiles and specify a default deployment profile.

Figure 4.39: Deployment Profile tab page



The following table describes the task you can perform on the *Deployment Profile* tab.

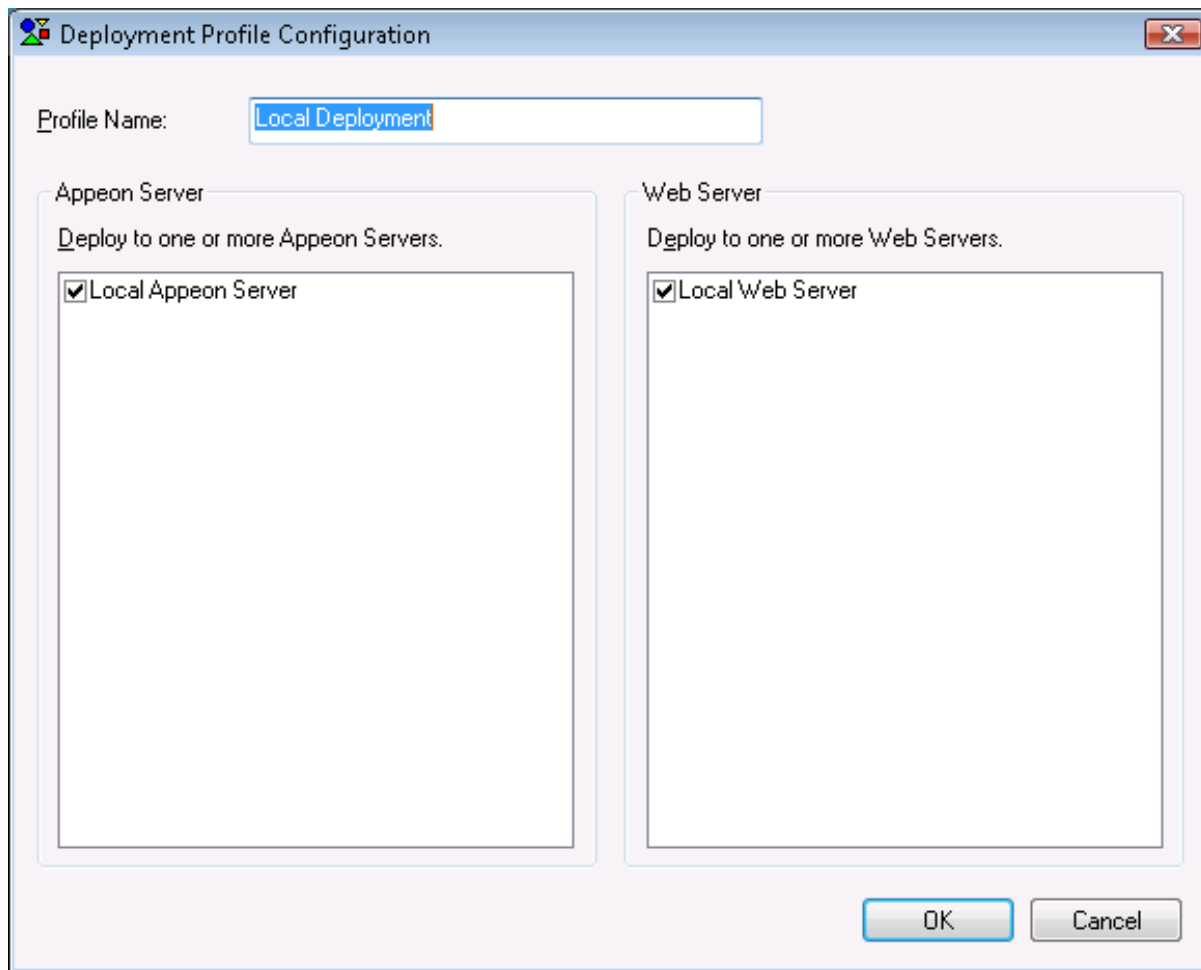
Table 4.12: Instructions to use the Deployment Profile tab

Use this button	To
Default radio button	Specify the default deployment profile used for Web deployment.
Edit button	Modify an existing deployment profile. This will open the Deployment Profile Configuration dialog box.
Add button	Create a new deployment profile. This will open the Deployment Profile Configuration dialog box.
Delete button	Remove a deployment profile.

4.2.4.2 Deployment profile settings

In the *Deployment Profile Configuration* dialog box, set up the necessary configuration, as shown in the following figure.

Figure 4.40: Deployment Profile



The following table describes the settings on the *Deployment Profile Configuration* dialog box.

Table 4.13: Deployment Profile settings

In this field	You can
Profile Name	Type the deployment profile name. You can use names that are easy to remember and identify such as <i>Test Deployment</i> , <i>Remote Deployment</i> .
Appeon Server	Select a check box to include the Appeon Server in the deployment profile. All the Appeon Server profiles you have created are listed. More than one Appeon Server can be selected.
Web Server	Select a check box to include the Web Server in the deployment profile. All the Web Server profiles are listed. More than one Web Server can be selected. Note: If the server type of Appeon Server profile is .NET, then the server type of Web Server profile must be Microsoft IIS.

Click *OK* to save the new settings and return to the *Deployment Profiles* tab.

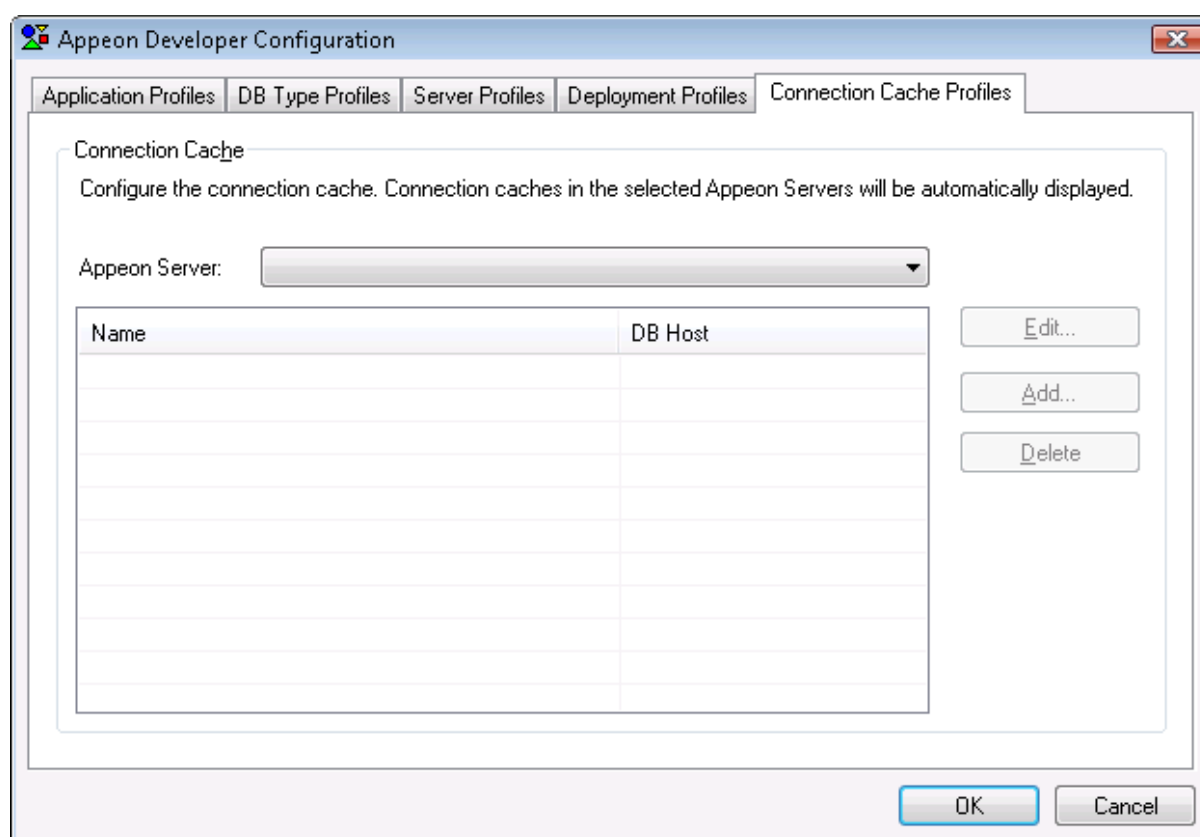
4.2.5 Managing connection cache profiles

Note: This Connection Cache Profiles tool works for EAServer 5.x and Microsoft .NET Framework\IIS, but does not work for EAServer 6.x, JBoss, JEUS, WebLogic, and WebSphere.

To create connection cache\data source for EAServer 6.x, JBoss, JEUS, WebLogic, and WebSphere, refer to *Database Connection Setup* in the *Appeon Server Configuration Guide*.

Appeon Web applications use JDBC connection caches created in Appeon Server to connect to the database. *Connection Cache Profile* tab allows you to maintain a storage of connection caches which you can specify to use for Appeon applications. Its function is the same as the one provided in AEM, and changes made in the tab or AEM are automatically synchronized.

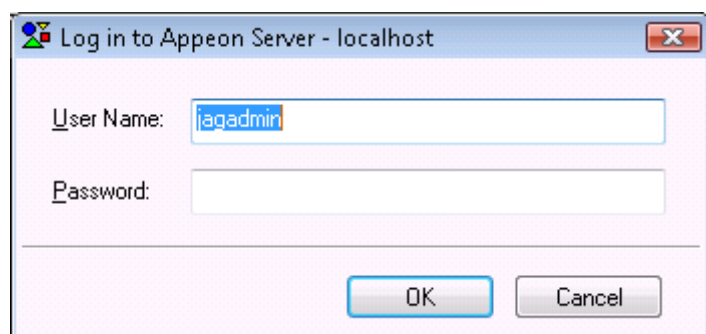
Figure 4.41: Connection cache profile



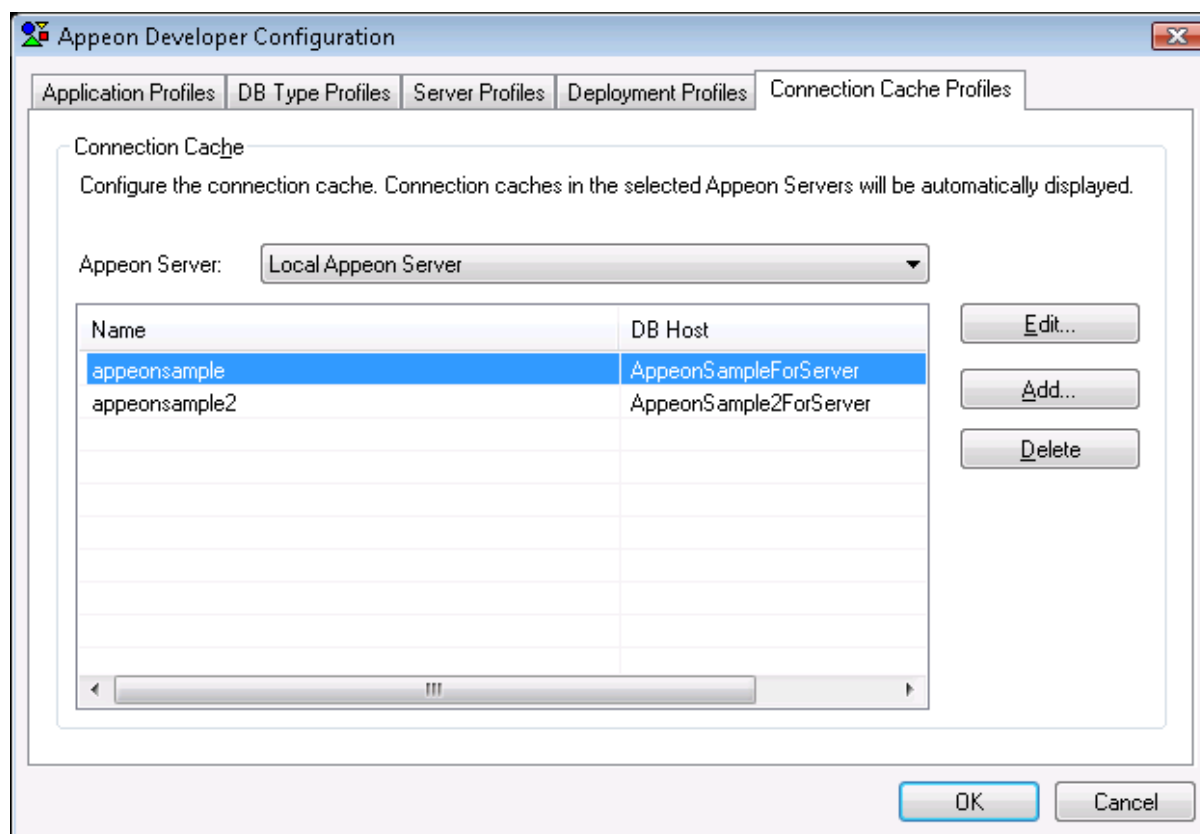
Follow the instructions below to create a connection cache on the Connection Cache Profile tab:

Step 1: Select an Appeon Server from the *Appeon Server* list box. Only the configured Appeon Server profiles are listed.

Step 2: When it is EAServer 5.x, input the correct user name and password to log in to the Appeon application server.

Figure 4.42: Login dialog box

The connection caches existing on the application server will be displayed.

Figure 4.43: Connection caches existing on the application server

Step 3: Click the *Add* button to create a connection cache in the application server. The *Add* dialog box is displayed.

Figure 4.44: Add a connection cache

The following table provides instructions for how to specify the connection cache settings.

Table 4.14: Instructions to specify connection cache settings

Settings	Instructions
Name	Type the name of the connection cache. The connection cache name can contain a combination of letters, underscores ("_"), dot ("."), and numbers. Do not use double-byte characters (such as Chinese, Korean or Japanese characters) or leave a leading or trailing space.
Driver	Select the driver type for the connection cache.
Host	Type the database host.
Port	Type the database port.
Database Name	Type the database name.
ODBC Data Source	Type the data source name only when the driver type is ODBC-JDBC Bridge.

Settings	Instructions
User Name	Type the database login username. The username is set on the database server.
Password	Type the database login password. The password is set on the database server.
Maximum Connection Pool Size	Specify the maximum number of connections Appeon Server opens and pools on startup.
Minimum Connection Pool Size	Specify the minimum number of connections Appeon Server opens and pools on startup.
Connection Timeout	Specify the timeout period for the connection.
Command Timeout	Specify the timeout period for the commands.
Connection Lifetime	<p>Specify the lifetime period for the pooled connection.</p> <p>To be specific, you can specify the timeout period from the time a connection is created to the time when the connection returns to the pool. If the actual lifetime of a connection exceeds that specified in Connection Lifetime, the connection will be terminated. It is recommended to be used in cluster configuration when forcing the load balancing between a running server and a server just brought online.</p> <p>If the value is set to 0, the pooled connection allows the maximum connection timeout.</p>
Other Options	<p>Specify the connection_authentication property for ASA database.</p> <p>The value should be "authentic_code=####". "authentic_code" is the key word, text after "=" should be the authorization code.</p> <p>Appeon Server will automatically set the connection_authentication property when connecting with the ASA database.</p> <p>This setting is effective to ASA database only.</p>
Dynamic Database Connection	<p>Select whether to enable dynamic database connection.</p> <p>When it is on, the LogID and LogPass of the Transaction object will be used to connect to the database; when it is off, the user name and password specified in the Connection Cache will be used to connect to the database.</p>
Pooling	Select whether to use the connection pool.

Refer to *Setting up Appeon Server connection caches* in the *Appeon Server Configuration Guide* for how to specify the settings for different JDBC drivers and database types.

5 Using UFA Tool

Unsupported Features Analysis (UFA) tool helps you analyze an application for unsupported features and heavy windows. Correspondingly, two reports will be generated: one is the Unsupported Features Analysis report (UFA Report) and the other is the Heavy Window report.

The following table gives brief descriptions of both reports.

Table 5.1: UFA Report and Heavy Window report

	UFA Report	Heavy Window Report
Purpose of the report	Enables you to work around or remove unsupported features in order to make the PowerBuilder application suitable for Apeon Web migration.	Gives you an idea of which windows to tackle for performance tuning and what PowerBuilder features to thin out. The general principle is: the lighter the window is, the better the window will perform in the Web application.
What is reported	Most of the unsupported PowerBuilder coding features including keyword, event, data type, system function, control (itself and its property, function, event), object (itself and its property, function, event). IMPORTANT: There are still some unsupported features that cannot be reported. These undetected features, though only a small number, may make up the largest proportion of your workload depending on how they are used, so we strongly recommend you carefully check the list in Section 5.1.4, “Undetected Unsupported Features” .	Complex windows that most affect the performance of the deployed Web application.
How to generate the report	Use the Unsupported Features Analysis tool, or perform the first two tasks in Apeon Deployment Wizard.	Use the Unsupported Features Analysis tool, or perform the first two tasks in Apeon Deployment Wizard. Requirement: the <i>Generate Heavy Window Report</i> option must be enabled in the Apeon Deployment Wizard.
Features	These features apply for both reports:	

	UFA Report	Heavy Window Report
	<p><u>Automatic incremental analysis.</u> After the first analysis, the subsequent analysis is automatically incremental to save time, but the report generated still contains all the information as if it were a full analysis.</p> <p><u>Analysis at application, PBL or object level.</u> You can choose to generate UFA Report or Heavy Window report for an application, PBL(s) in the application, or object(s) in the application.</p>	

This chapter describes:

- How to use the UFA tool to analyze an application and generate the UFA Report.
- Undetected unsupported features. There are a small number of unsupported features that the UFA Report cannot detect.
- How to use the UFA tool to work around unsupported features effectively.
- How to use the UFA tool to manipulate the UFA Report. For example, you can adjust the view of the UFA Report so it suits your preferences.
- The usage of Heavy Window Report.

5.1 Analyzing an application

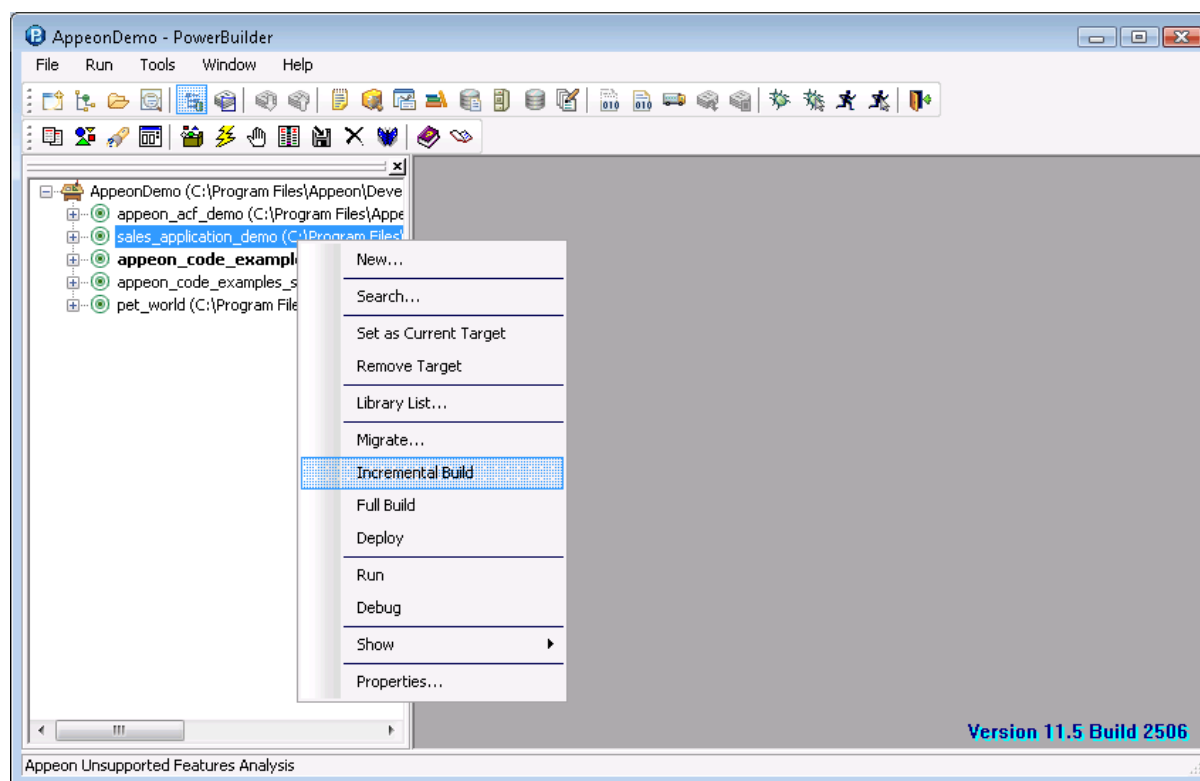
5.1.1 Tasks required before you perform feature analysis

Step 1: Make sure the computer is powerful enough to support feature analysis.

Unsupported Features Analysis is CPU and memory intensive. A faster CPU can speed up the process. Additional memory is useful for ensuring that RAM will not be exhausted when analyzing a large application. Regarding system requirements for the Developer machine, refer to *System Requirements* section in the *Appeon Installation Guide*.

Step 2: Close any unnecessary running programs or Windows services in order to have the maximum amount of memory available for Features Analysis.

Step 3: Perform an incremental build or object regeneration for the PowerBuilder application. Right-click on the application target and select a build option (for example, *Incremental Build*) as shown in the following figure.

Figure 5.1: Incremental Build

The following table shows you which type of build options you should select for the application.

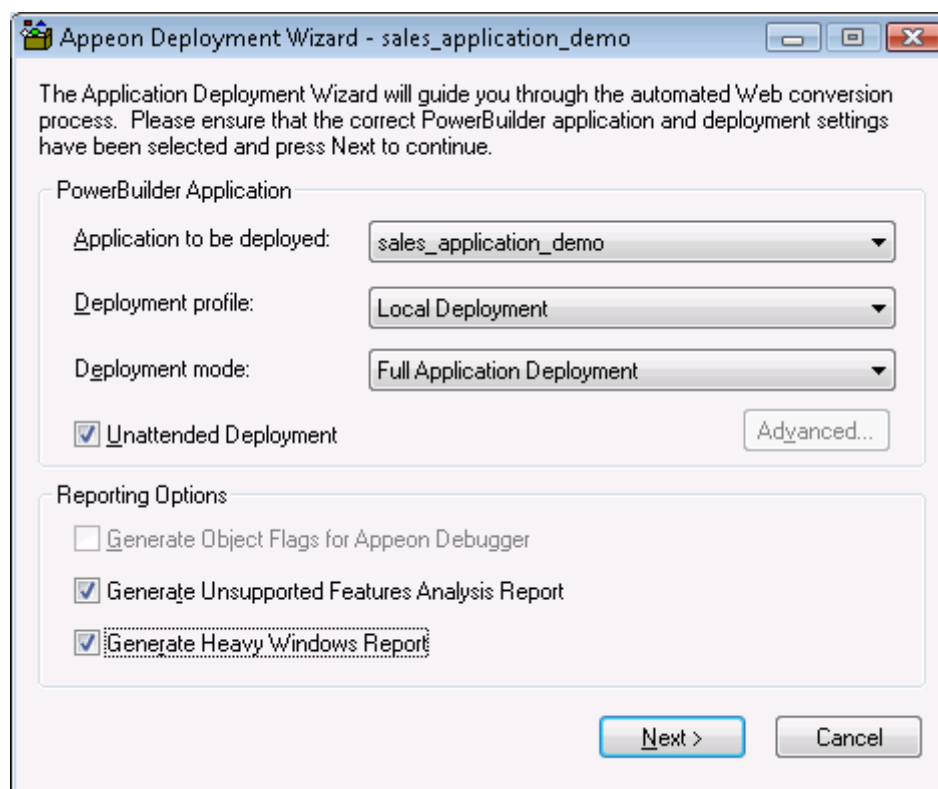
Table 5.2: Recommended build options

Build Option	What It Does	Recommended For
Regenerate	Refreshes the timestamp for a PowerBuilder object.	Object-level Features Analysis. If the object is regenerated, the object will be analyzed even if no change has made to it.
Incremental	Refreshes the objects that have been changed.	Application-level Features Analysis.
Full	Refreshes all objects.	Not recommended.

Step 4: Perform PBL optimization for the PowerBuilder application.

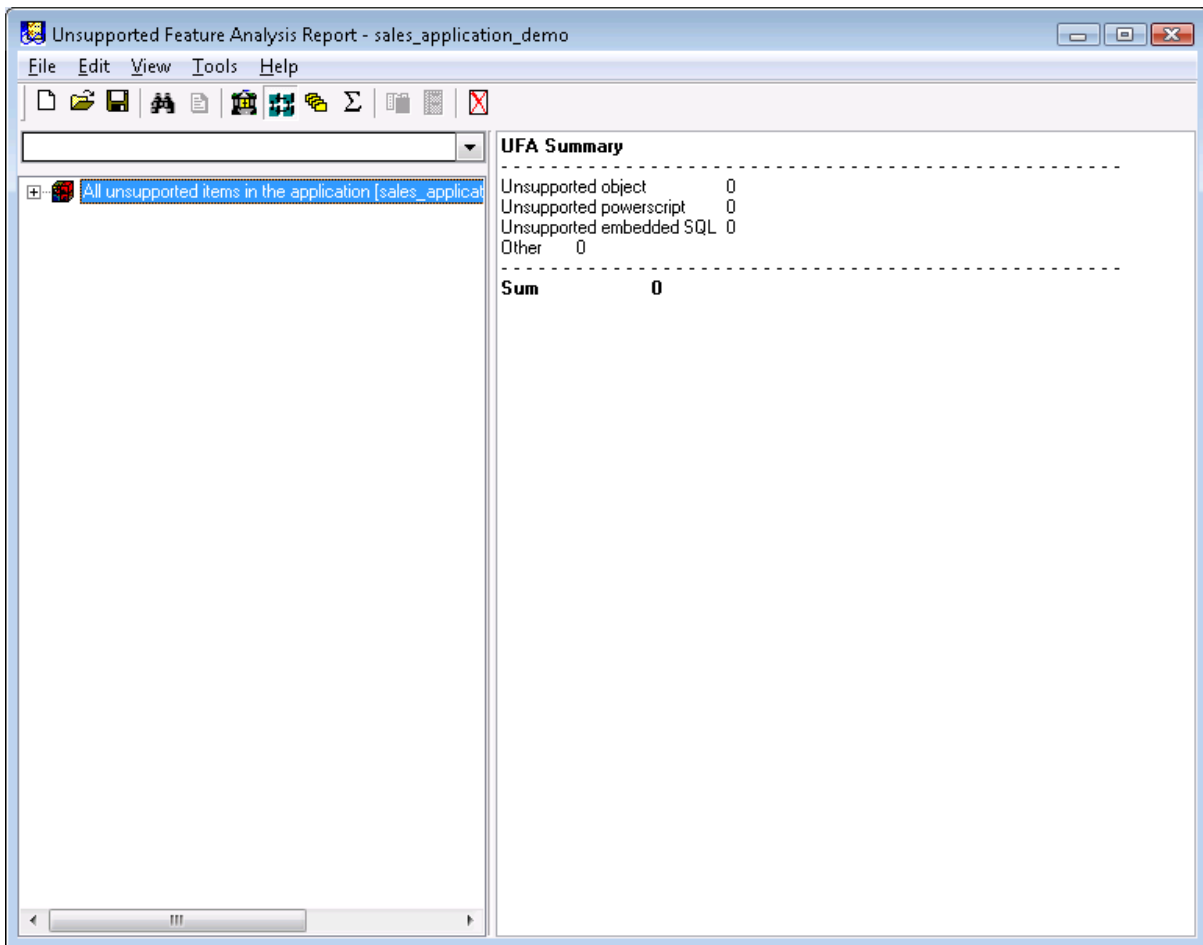
The purpose of PBL optimization is to remove gaps from libraries and defragment the storage of objects to get rid of potential problems in PBL files.

Step 5: (Required only if you want to generate a Heavy Window Report) Check the *Generate Heavy Window Report* option in the Application Deployment Wizard.

Figure 5.2: Enable Heavy Window Report

5.1.2 Accessing the UFA tool

Click the *Analyze* button (🔍) in the Apeon Developer toolbar to launch the UFA tool. The Unsupported Feature Analysis Report window (UFA Report window) will be displayed.

Figure 5.3: UFA Report Window

UFA Report window provides a variety of menus to help you manage unsupported features. The following table gives a brief description of these menus. Some of them are also listed as shortcut menus on the toolbar.

Table 5.3: UFA Report Window

Menu	Description
File	Generates a UFA report. See Section 5.1.3, “Performing feature analysis” . Opens or saves a UFA report. See Section 5.2.2.1, “Opening or saving a UFA Report” .
Edit	Opens and modifies the unsupported source code in the PowerBuilder painter. See Section 5.2.1, “Modifying unsupported features” . Searches for the unsupported features. See Section 5.2.2.3, “Searching for UFA Report items” . Filters the unsupported features according to objects, unsupported feature types or priorities. See Section 5.2.2.4, “Filtering UFA Report items” . Expands or collapses treeview. Displays the report in the specified level. See Section 5.2.2.5, “Specifying report display level” .

Menu	Description
View	Selects a display mode of the objects in the Unsupported Feature List treeview. See Section 5.2.2.2, “Selecting report view mode” .
Tools	<p>Accesses the workaround for the selected unsupported feature.</p> <p>Defines the priority settings of UFA Report items. See Section 5.2.2.6, “Defining the priority settings of unsupported features”.</p> <p>Customizes the general settings of the UFA Report. See Section 5.2.2.7, “Customizing the general settings of the UFA Report”.</p>
Help	Provides the version number of the UFA tool.

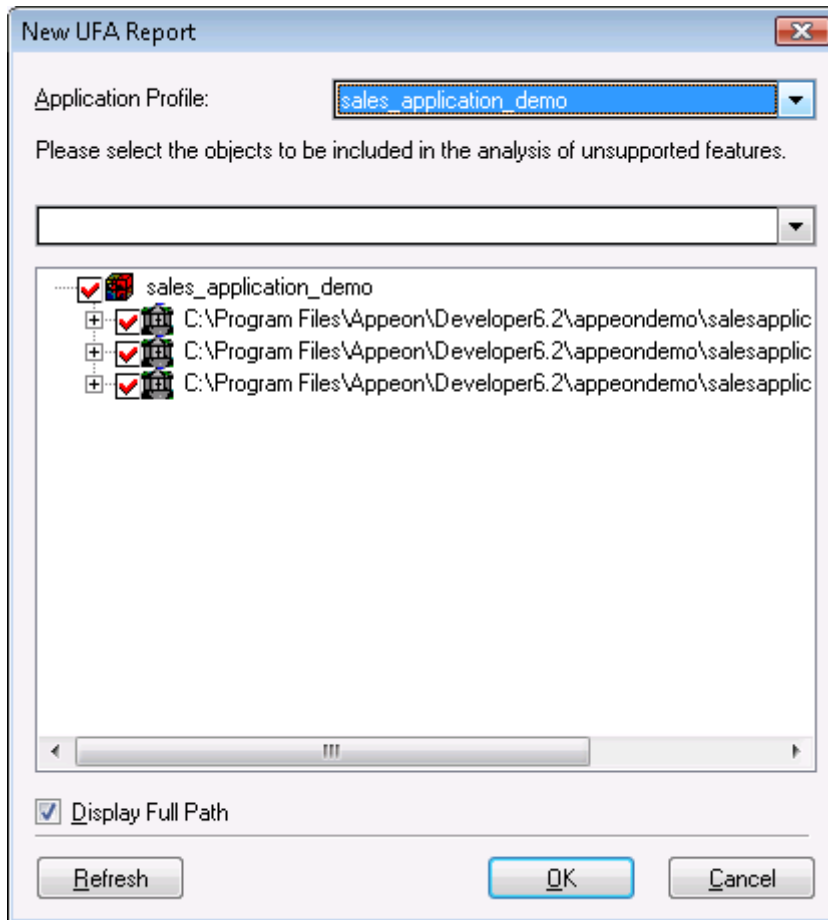
5.1.3 Performing feature analysis

There are two ways you can perform a feature analysis of an application:

- Use the Unsupported Features Analysis tool. This option enables you to do a feature analysis of the whole application, or PBL(s) in the application, or objects in the application.
- Use the first two tasks in Appeon Deployment Wizard. When you use Appeon Deployment Wizard to deploy an application, the first task the wizard performs is a feature analysis of the whole application.

This section mainly gives instructions on the first option (using the Unsupported Features Analysis tool). For more information about the second option, refer to [Section 6.2, “Deployment process”](#).

Step 1: Select the File | New Report menu in the UFA Report window. The New UFA Report dialog box will appear, as shown in the following figure.

Figure 5.4: New UFA Report dialog box

The following table gives a brief description of the elements in the New UFA Report dialog box.

Table 5.4: New UFA Report window

Element	Description
Application profile dropdown list	Provides a list of application profiles for you to select and analyze. Only application profiles configured in the <i>Apeon Developer Configuration</i> window will be listed.
Search field	Searches for PBLs or objects that contains the text you enter.
Treeview of objects	Gives the treeviews of PBLs and objects for the application selected in the <i>Application</i> dropdown list and allows you to select the whole application or only some objects to analyze.
Display Full Path option	Gives you options to display or hide the full path of the PBLs and objects in the treeview.
Refresh button	Refreshes the PBL and object list in the treeview.

Step 2: Select the application that you want to analyze from the *Application profile* dropdown list.

The default target to analyze is the default application profile in the *Apeon Developer Configuration* window.

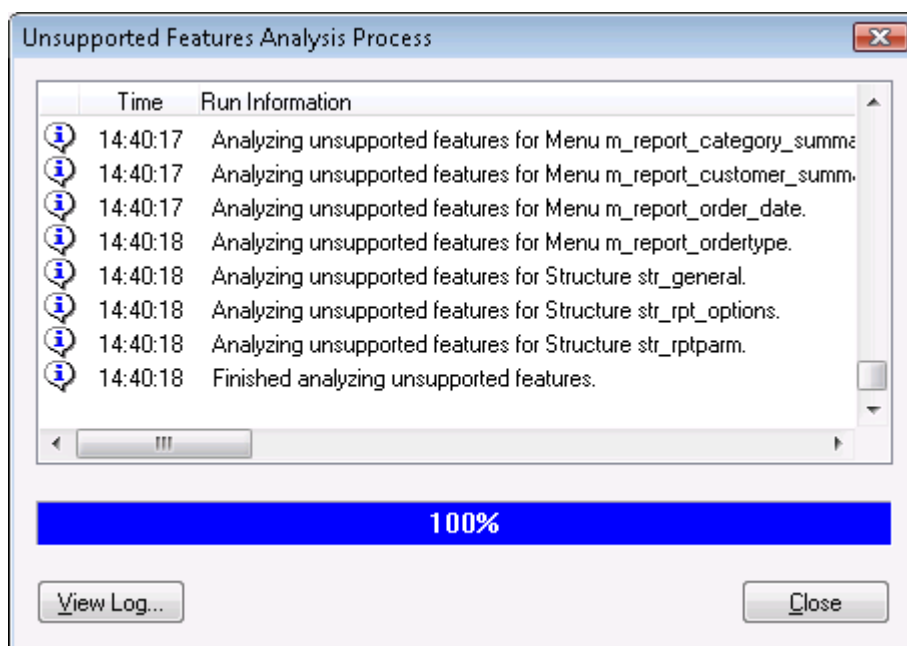
Step 3: Check the PBLs and/or objects in the treeview for which you want to generate the UFA Report.

The treeview lists all the PBLs and objects contained in the selected target. By default, all objects are selected.

Step 4: Click the *OK* button to start the feature analysis.

The feature analysis of the selected objects begins, as shown in the following figure.

Figure 5.5: Unsupported Features Analysis Process dialog



Step 5: Click *Close* when the analysis is completed. The UFA Report is loaded into the UFA Report Window.

5.1.4 Undetected Unsupported Features

Apeon Unsupported Features Analysis is capable of highlighting the majority of unsupported features contained in the PowerBuilder application. There are still a small number of features that Unsupported Features Analysis will not detect, so they will not be listed in the UFA Report.

An application containing unsupported features can still be converted to the Web and may work correctly, depending on the type and number of unsupported features. If the Web application does not work correctly and the UFA Report does not indicate any unsupported features that are likely to cause such problems, the problems may be caused by unsupported features that have not been detected. In this case, it is strongly recommended that you carefully read the undetected features listed below and examine your application to determine if it contains any of these features.

Table 5.5: Undetected features

Naming conventions	<ul style="list-style-type: none"> • Duplicate object names. No two objects should have the same name in an application, whether they are of the same type or not. The Unsupported Features Analysis cannot detect whether object names are duplicated in an application.
---------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

	<ul style="list-style-type: none"> • More than one Application object. Having more than one Application object in an application is unsupported. Unsupported Features Analysis cannot detect whether more than one Application object is present. • Applications named as objects or controls. Application names that have the same name as PowerBuilder control/object types are not supported. Unsupported Features Analysis cannot detect whether this unsupported issue is present in an application.
Null values	<ul style="list-style-type: none"> • Unsupported operation • Expressions with Null value
ASCII characters	<p>Unsupported special ASCII characters:</p> <ul style="list-style-type: none"> • Vertical tab (~v)
Non-visual UserObject	A NonVisualObject object assigned to an autoinstantiated NVO or an autoinstantiated NVO assigned to a NonVisualObject object.
Variables and constants	<ul style="list-style-type: none"> • Instance variables have identical names as global variables. • longlong variable • PUBLIC, PROTECTED, PRIVATE qualifier in the variable declaration
Forced conversion	Forced conversion between types
Window	Multiple MDI windows in an application.
Overloading, overriding functions	<ul style="list-style-type: none"> • Dynamic calling for overloaded functions • Dynamic calling for overriding functions
Using the return value of some supported functions	The return value of the Open or OpenSheet functions
User functions	Remote procedure call (RPC)
Operators	The operator '^' with embedded SQL statements.
Stored procedure	<ul style="list-style-type: none"> • Stored procedures declared in the conditional statement • DB2 stored procedures • Stored procedures placed inside an Oracle package • Oracle stored procedures with Apeon unsupported features
Cursor declare requirement	<ul style="list-style-type: none"> • Cursor declared in the conditional statement

	<ul style="list-style-type: none"> If a cursor is declared for retrieving rows from table X, the table X (insert, delete, update) is modified during the cursor declare-close period. 												
Cursor statements	<ul style="list-style-type: none"> The following two syntax: <ol style="list-style-type: none"> UPDATE TableName SetStatement WHERE CURRENT OF CursorName; DELETE FROM TableName WHERE CURRENT OF CursorName; 												
DataWindow data expressions	<ul style="list-style-type: none"> Unsupported features in the DataWindow dot notations. You must make sure the specifications about dot notations are satisfied in the application. Otherwise, it will cause errors. The return values of the DataWindow dot notations are assigned to user objects. 												
DataWindow expression function	<table border="1"> <tr> <td>lastpos</td> <td>lastposw</td> <td>mode</td> <td>pageAcross</td> </tr> <tr> <td>pageCountAcross</td> <td>profileint</td> <td>profilestring</td> <td>stdev</td> </tr> <tr> <td>var</td> <td>varp</td> <td></td> <td></td> </tr> </table>	lastpos	lastposw	mode	pageAcross	pageCountAcross	profileint	profilestring	stdev	var	varp		
lastpos	lastposw	mode	pageAcross										
pageCountAcross	profileint	profilestring	stdev										
var	varp												
Partly supported features	Some partly supported features (such as DataWindow Modify and Describe functions).												
User interface interactions	Unsupported features in the UI such as shortcut key.												
Enumerated data type	Default values of enumerate type variable												
Data source	The data sources of dynamically created DataWindows are stored procedures with input parameters.												
Dynamic calls	<ul style="list-style-type: none"> Dynamically call the method of a menu object. Dynamically call the method that contains reference arguments. 												
Others	<ul style="list-style-type: none"> PBX PSR, for example: dw.dataobject='*.psr' Unsupported DBParm parameters Encoding parameter of the Blob functions filename & importtype arguments of ImportFile, ImportString, & ImportClipboard (filename can only be a text file (TXT)) Property defined in the string variable Structure member has comment property 												

System events

For a complete list of undetected system events, refer to *Undetected Features in Apeon Features Help*.

5.2 Working with UFA Report

This section describes:

- How to modify unsupported features. You can use the UFA Report to effectively remove unsupported features in the application.
- How to manipulate the UFA Report in the UFA Report Window. You can adjust the view of the UFA Report so it suits your preferences.

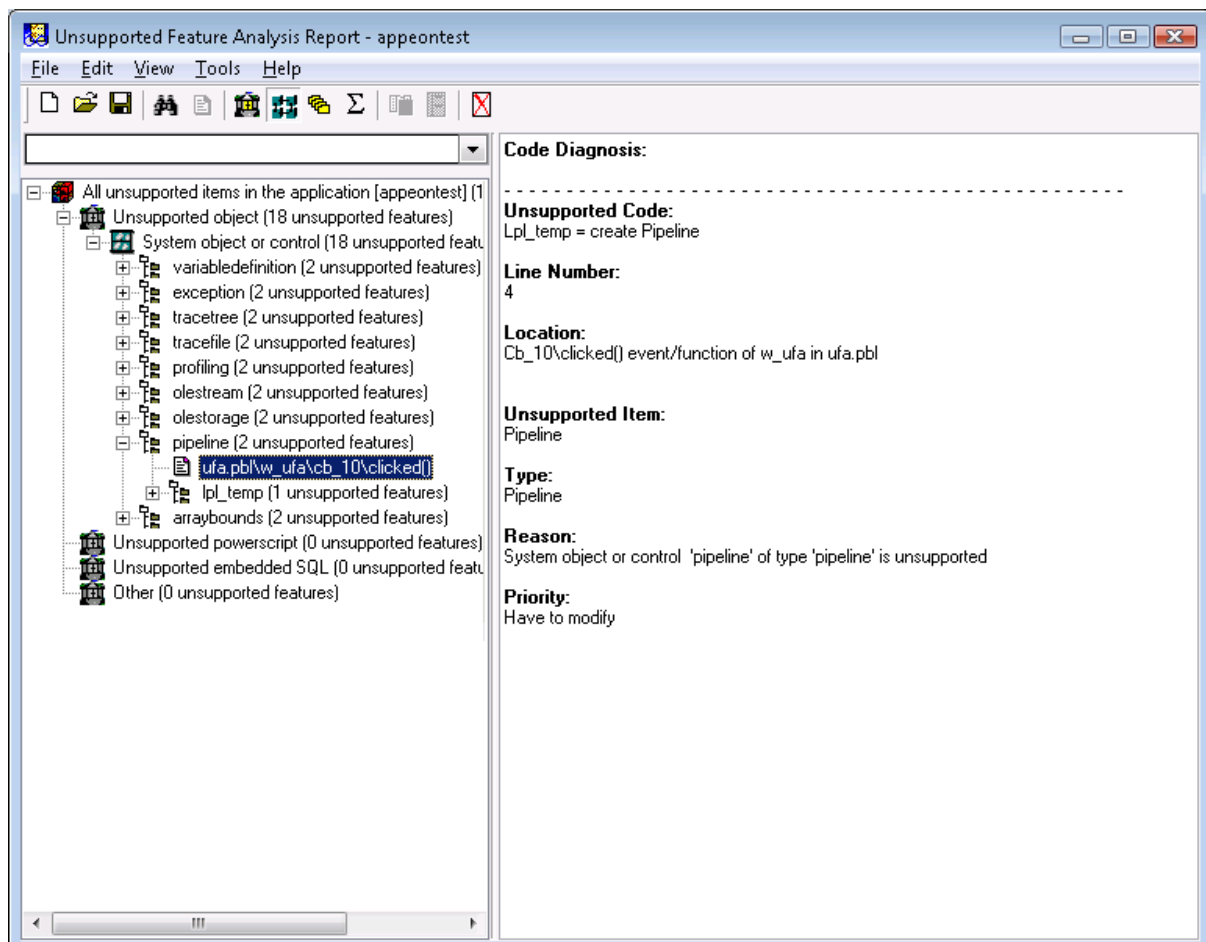
5.2.1 Modifying unsupported features

When the UFA Report is loaded, you can view all the unsupported features in the left treeview and modify them one by one.

Step 1: Expand the unsupported feature list treeview and select the unsupported item.

The detailed analysis of the selected method will be displayed on the right of the window, as shown in the following figure.

Figure 5.6: Unsupported feature details

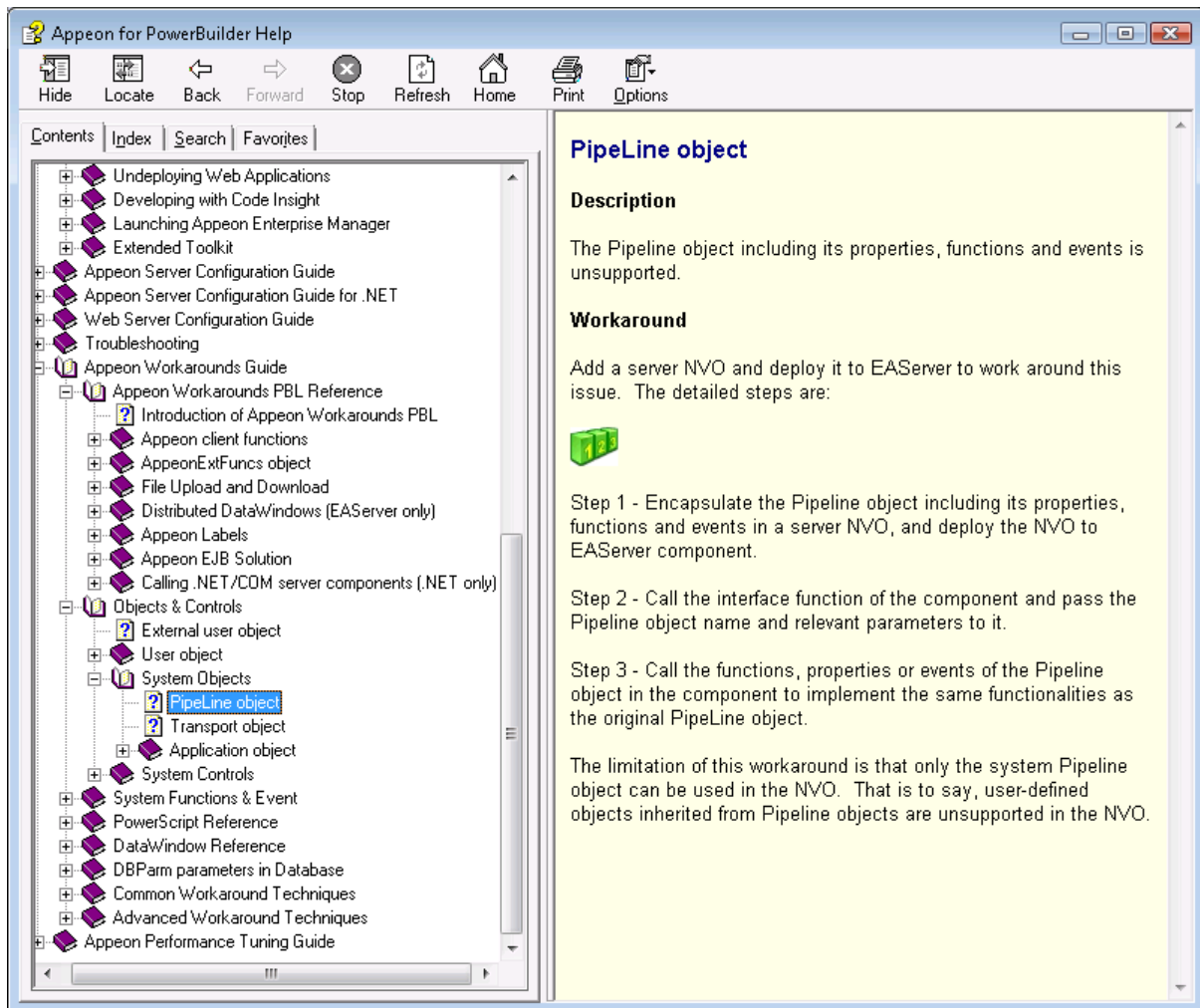


The right text box shows a detailed code diagnosis on the unsupported code in seven aspects: the Unsupported Code, Line Number, Location, Unsupported Item, Type, Reason, and Priority.

Step 2: View the workaround for the unsupported item by right-clicking the unsupported item in the unsupported feature list treeview and selecting *Workarounds solutions*.

- Go To Workarounds Online: Opens the online *Apeon Workarounds Guide* at URL: <http://www.appeon.com/support/documents/workarounds/6.0/>.
- Go To Local Workarounds: Opens the local *Apeon Workarounds Guide* installed with Apeon Help, as shown in the following figure.

Figure 5.7: Local Workarounds Guide



Step 3: Modify the unsupported source code in the PowerBuilder painter according to the *Apeon Workarounds Guide*.

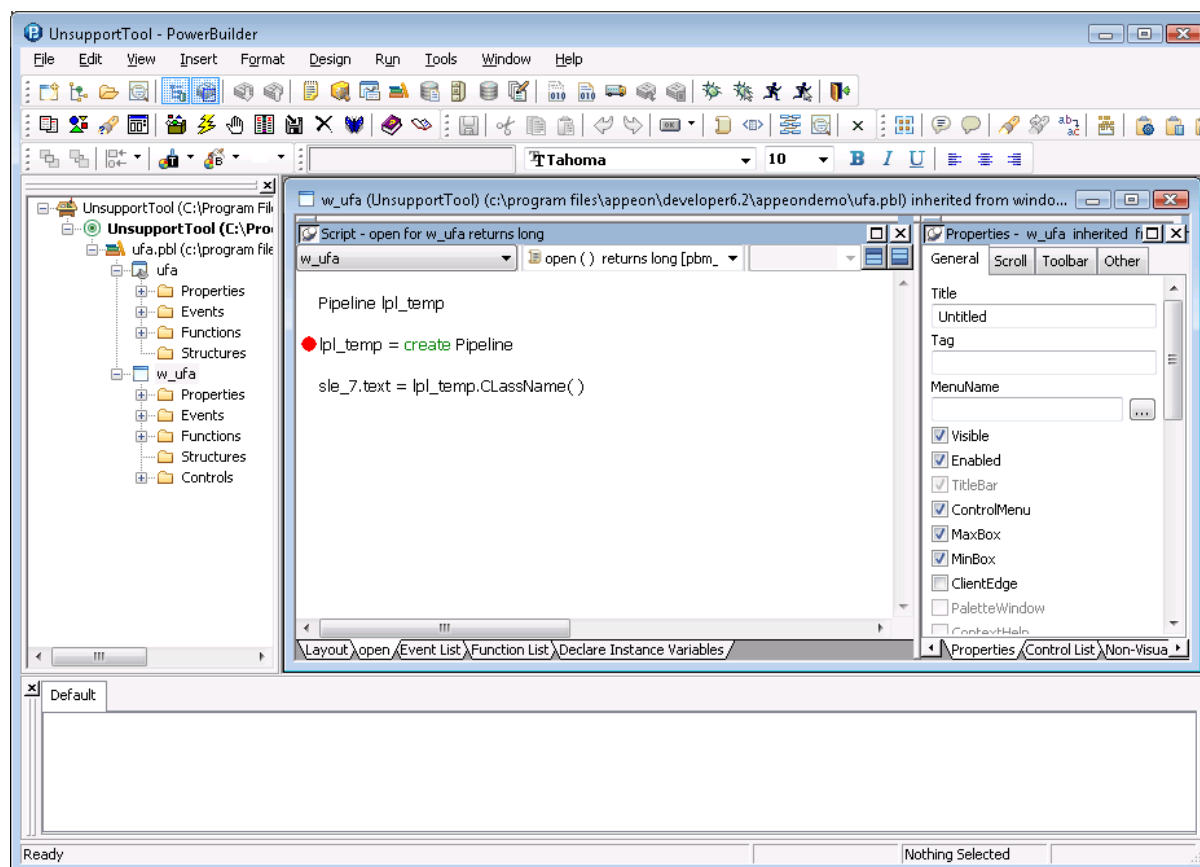
Right click the unsupported item in the unsupported feature list treeview, and select *Edit* or *Edit Source* to open the source code in the PowerBuilder Script view.

- Edit: Displays the source code of the event or function, which contains the unsupported feature. This button is available only if the unsupported code resides in an event or function and it is not DataWindow-related.

- **Edit Source:** Displays all source code of the object, which contains the unsupported feature. This button is always available.

The PowerBuilder Script view automatically opens, as shown in the following figure.

Figure 5.8: Unsupported code in the PowerBuilder painter

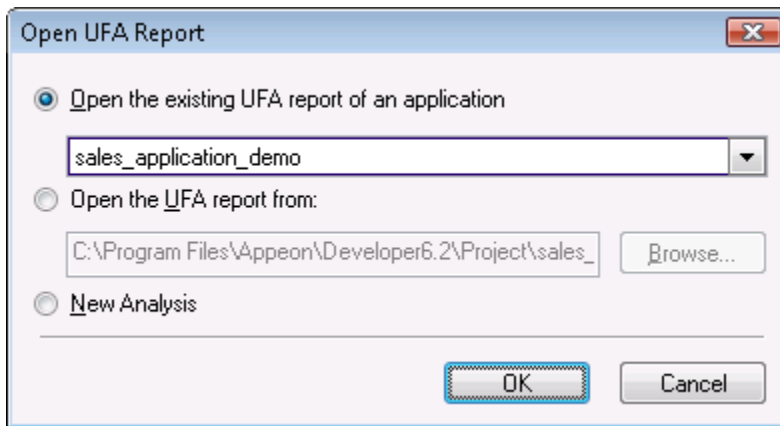


5.2.2 Manipulating the UFA Report

5.2.2.1 Opening or saving a UFA Report

You can open or save a UFA Report using the *File* menu in the *UFA Report Window*.

- To open an existing UFA Report, select the *File | Open* menu. The *Open UFA Report* dialog box is displayed. If there is no UFA report available, select *New Analysis* and click *OK* to analyze an application.

Figure 5.9: Open UFA Report

- To save a UFA Report, select the File | Save menu.
- To save a UFA Report with a new name, select the File | Save As menu.

5.2.2.2 Selecting report view mode

You can view the UFA Report in four different modes. Go to the *View* menu in the *UFA Report Window* and select the desired mode:

- **Category:** Enables you to view the unsupported features in the following categories: Unsupported Objects, Unsupported PowerScript, Unsupported Embedded SQL and Others.
- **Hierarchy:** Enables you to view the unsupported features in hierarchical order: PBL, Object, Control, Method (Event/Function).
- **Priority:** Enables you to view the unsupported features in priorities (you can go to the Tools | Define Priority menu to define the priorities of the PowerBuilder features): Have to modify, Suggest to modify, Can be ignored.
- **Summary:** Enables you to view summary information of each unsupported feature.

You can set the default view mode in the Tools | Options menu. For detailed descriptions, refer to [Section 5.2.2.7, “Customizing the general settings of the UFA Report”](#).

5.2.2.3 Searching for UFA Report items

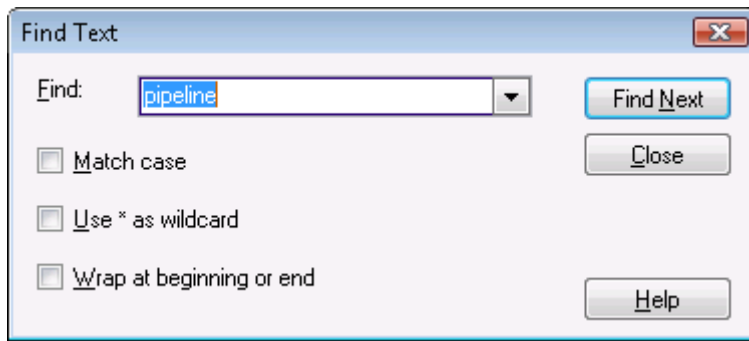
To do a quick search, you can directly enter the text that you want to search in the search field of the UFA Report window. Or follow steps below to use the standard Find Text dialog box:

Step 1: Select the Edit | Find menu. Or right click in the unsupported feature list treeview and select *Find*.

Step 2: In the Find Text box, enter the text that you want to search.

Step 3: Select any other options that you want.

Step 4: Click *Find Next*.

Figure 5.10: Find Text

5.2.2.4 Filtering UFA Report items

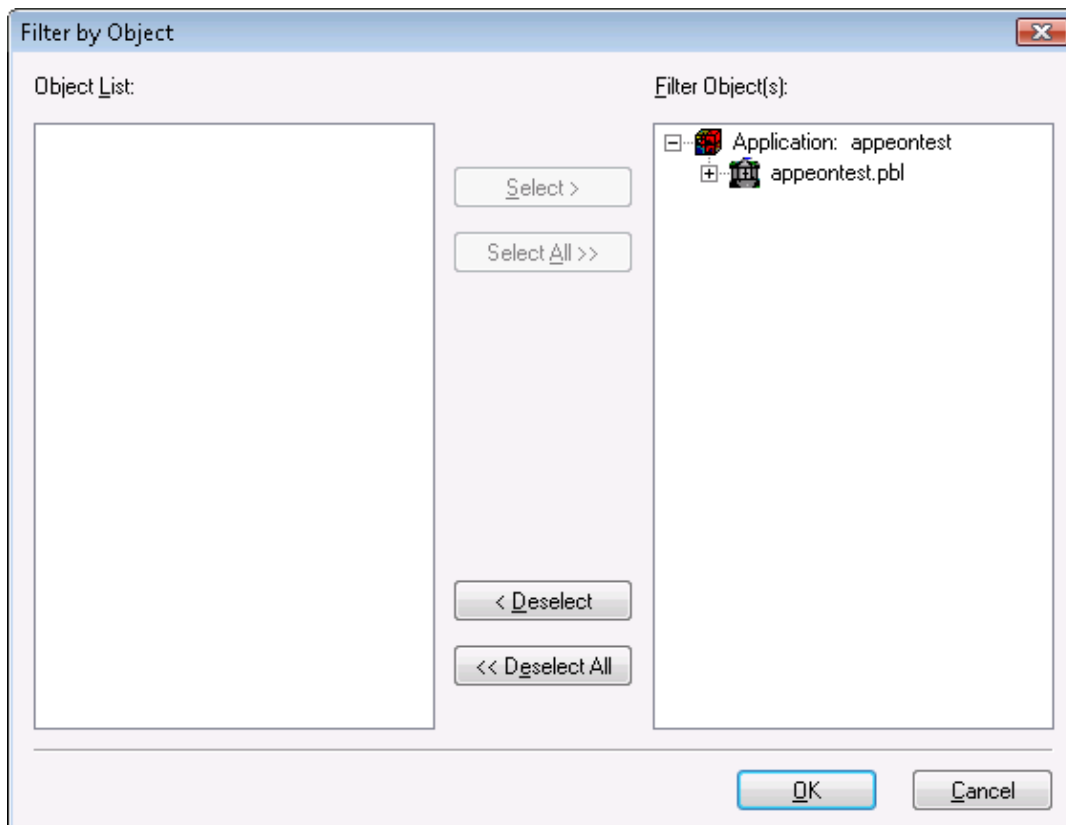
Filtering helps you restrict the number of the unsupported features displayed in the UFA Report and quickly find the target unsupported features, especially when there are a large number of unsupported features in the application.

You can filter the unsupported features by the objects they reside in, or by the feature types, or by the priorities they are specified to.

5.2.2.4.1 Filtering by objects

Step 1: Select the Edit | Filter by Object menu. Or right click in the unsupported feature list treeview and select *Filter by Object*.

The *Filter by Object* dialog box is displayed, as shown in the following figure.

Figure 5.11: Filter by object

Step 2: Make sure the unsupported objects you want to display in the report are on the right listbox, whereas the unsupported objects you want to hide are on the left listbox. Click *OK*.

To quickly select all objects of the same type, right click the list and select an object type.

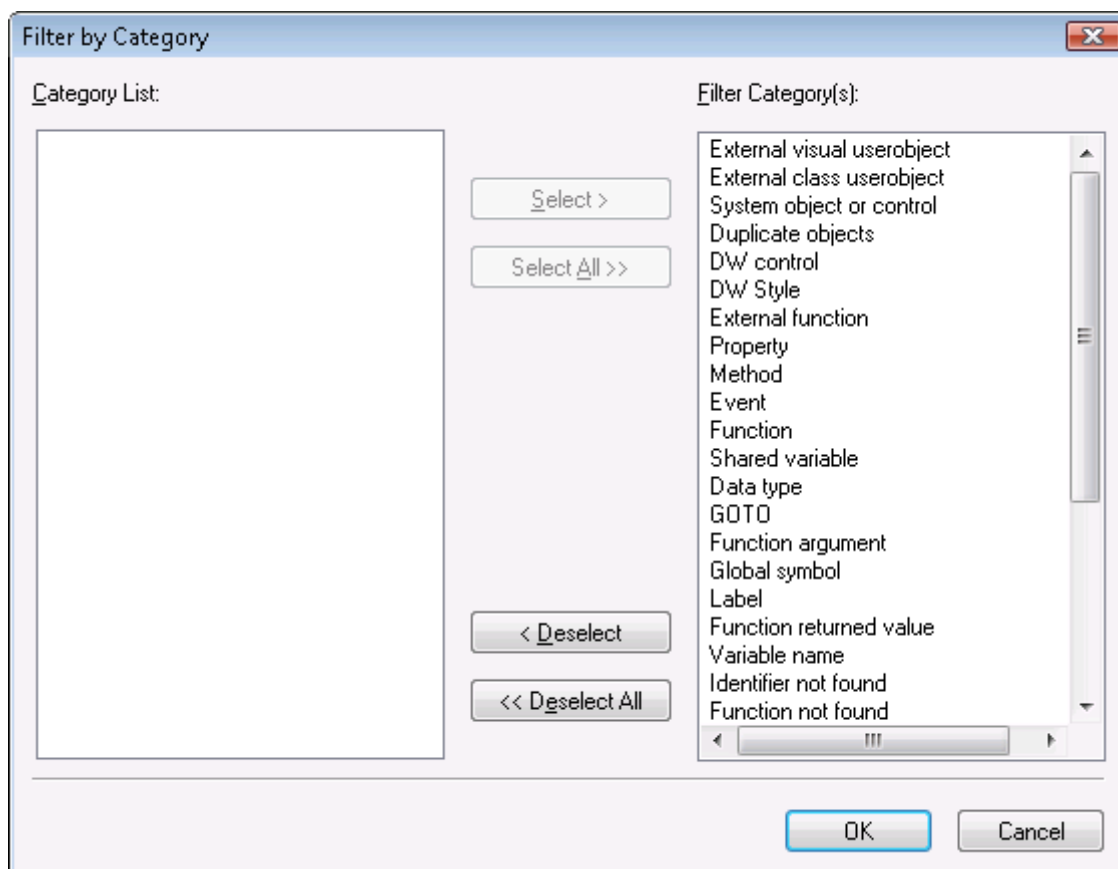
The UFA Report hides the unsupported objects that are on the left listbox in the *Filter by Object* window.

5.2.2.4.2 Filtering by categories

Step 1: Select the Edit | Filter by Category menu. Or right click in the unsupported feature list treeview and select *Filter by Category*.

The *Filter by Category* dialog box is displayed, as shown in the following figure.

Figure 5.12: Filter by Category



Step 2: Make sure the categories of the unsupported features you want to display in the report are on the right listbox, whereas the categories of the unsupported features you want to hide are on the left listbox. Click *OK*.

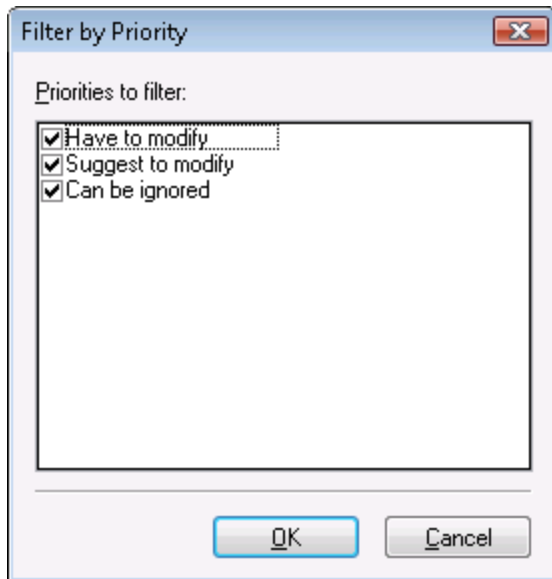
The UFA Report hides unsupported features that belong to the categories that are on the left in the *Filter by Category* window.

5.2.2.4.3 Filtering by priorities

Step 1: Select the Edit | Filter by Priority menu. Or right click in the unsupported feature list treeview and select *Filter by Priority*.

The *Filter by Priorities* dialog box is displayed, as shown in the following figure.

Figure 5.13: Filter by Priority



Step 2: Uncheck the priorities of the unsupported features which you want to hide. For example, if you want to hide the features that can be ignored, uncheck the *Can be ignored* option.

Step 3: Click *OK*.

The UFA Report only displays unsupported features of the specified priorities.

5.2.2.5 Specifying report display level

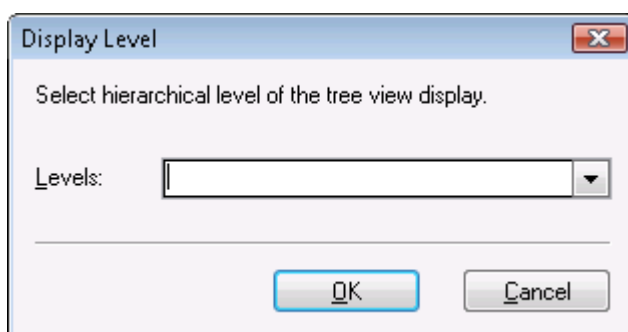
You can quickly expand or collapse a node of the unsupported feature list treeview by selecting Expand Sub-node or Collapse Sub-node from the Edit menu or from the popup menu on any node.

You can also specify the display level using the following steps:

Step 1: Select the Edit | Display Level menu.

Step 2: In the Display Level box, enter the number of the level at which the unsupported feature list treeview will display.

Figure 5.14: Display Level



Step 3: Click *OK*.

The UFA Report only displays unsupported features of the specified level.

5.2.2.6 Defining the priority settings of unsupported features

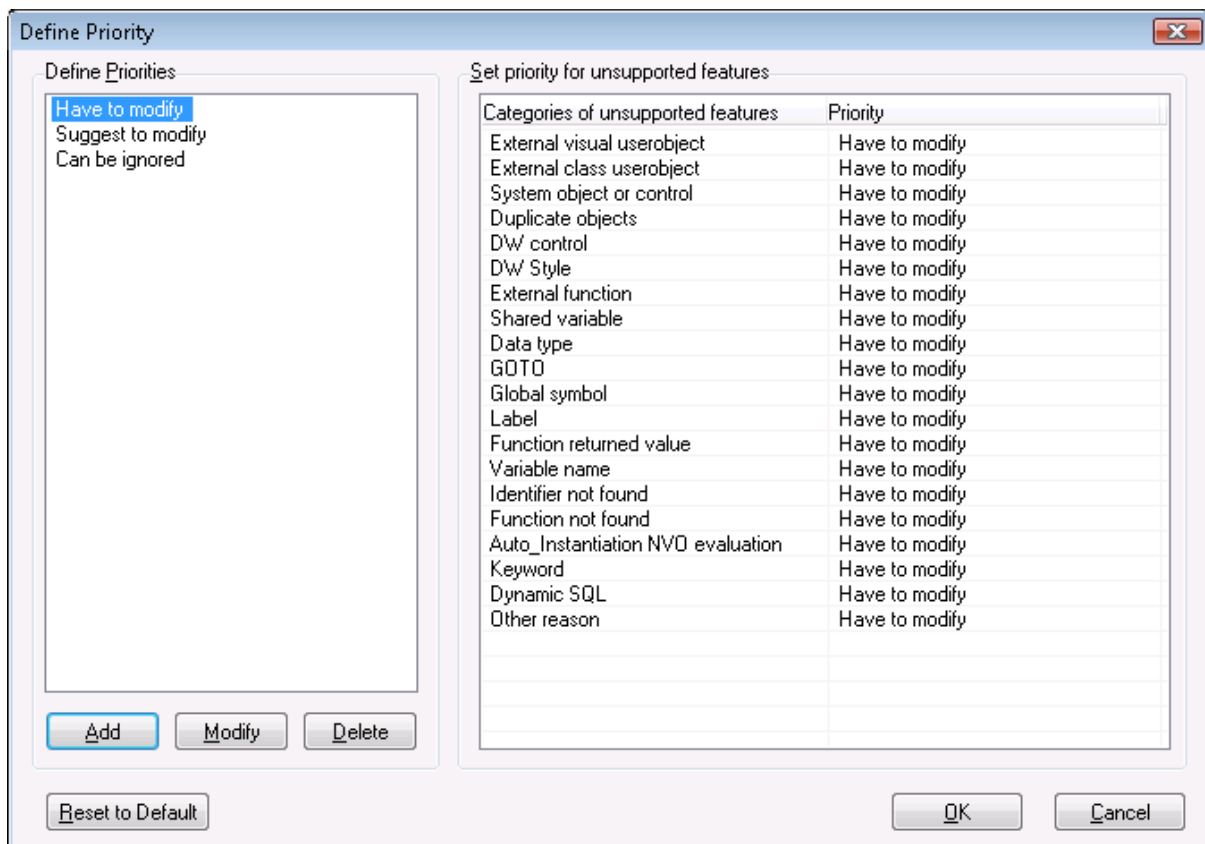
By default, Apeon divides all unsupported features into three priority levels:

- **Have to modify:** The features flagged with *Have to modify* are important in the application and will cause significant functionality loss if they are not modified or worked around.
- **Suggest to modify:** The features flagged with *Suggest to modify* will not necessarily cause functionality loss if they are not modified or worked around. You can decide whether to modify them according to their functionalities in the application.
- **Can be ignored:** The features flagged with *Can be ignored* are small or trivial features which will not compromise application functionality even if they are not modified or worked around.

To customize or change priority levels for unsupported features, take the following steps:

Step 1: Select the Tools | Define Priority menu. The *Define Priority* window is displayed, as shown in the following figure.

Figure 5.15: Define Priority dialog box



Step 2: Add, modify or delete the system default priorities in the left Priority Level box.

Step 3: Change priority levels of unsupported feature types by selecting a priority level in the *Priority Name* column.

Step 4: Click *Save* to save the priority settings.

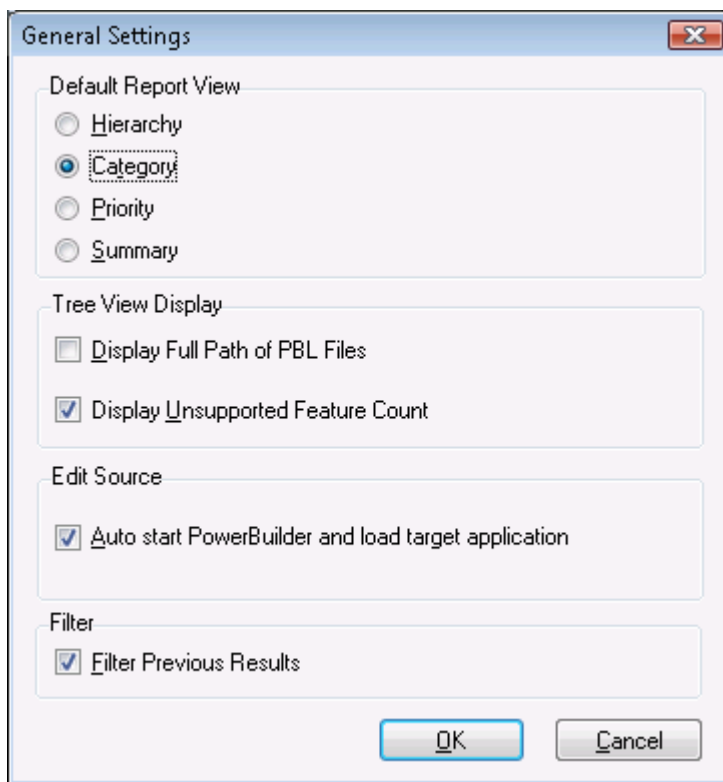
Click *Reset to Default* to restore the system default priority settings.

5.2.2.7 Customizing the general settings of the UFA Report

You can define your preference settings of the *UFA Report Window*. These settings include default report view mode, display formats of PBLs, feature count, unsupported source code edition, and filtering. The new settings will be saved as the default settings.

Select the Tools | Options menu in the *UFA Report Window*. The *General Settings* window is displayed, as shown in the following figure.

Figure 5.16: General Settings dialog box



- *Default Report View group box*: Select the default view mode of the UFA Report. For detailed description of each view mode, refer to [Section 5.2.2.2, “Selecting report view mode”](#).
- *Display Full Path of PBL Files*: Displays the full path and the file name of the PBLs in the UFA Report.
- *Display Unsupported Feature Count*: Displays the total number of the unsupported features in the UFA Report.
- *Auto start PowerBuilder and load target application*: Enables PowerBuilder to automatically start and load the target application when you click the *Edit* or *Edit Source* button in the UFA Report Window.

- *Filter Previous Results*: Allows you to filter only the results of a previous filter. It narrows a filter that resulted in too many data the first time. If you want to search all data of the report, leave this option as unselected.

5.3 Working with Heavy Window Report

You can access the Heavy Window Report from the Information Manager if the *Generate Heavy Window Report* option is enabled in the Apeon Deployment Wizard before the feature analysis or the application deployment is performed.

5.3.1 How a heavy window is measured

Two factors determine the heaviness of a window:

- The number of controls in the window.
- The complexity of the controls in the window (for example, a DataWindow with several DropDownDataWindows makes the window significantly heavier than a DataWindow without DropDownDataWindows).

Apeon assigns different weights to different types of controls. (Example: the weight of a DataWindow is 1.0, the weight of a computed field is 0.06, and the weight of a tab page is 0.15.) The weight of a window is determined by summing up the total weight of all the controls contained within it.

The time required to open a window increases proportionally with the weight of the window. As our tests show, it takes 0.5 of a second to open a window that weighs 8.0 using a computer with the following specifications: P4 1.8 GHz 512 K cache CPU and 256 MB RAM. It takes approximately 0.6 second to open a window that weighs 10.0. In different environments the time it takes to open a window can vary. Note that the elapsed time does not include the time used to connect to the database and retrieve data.

By default, the Heavy Window Report flags all windows that weigh 8.0 (default minimum load value) or more.

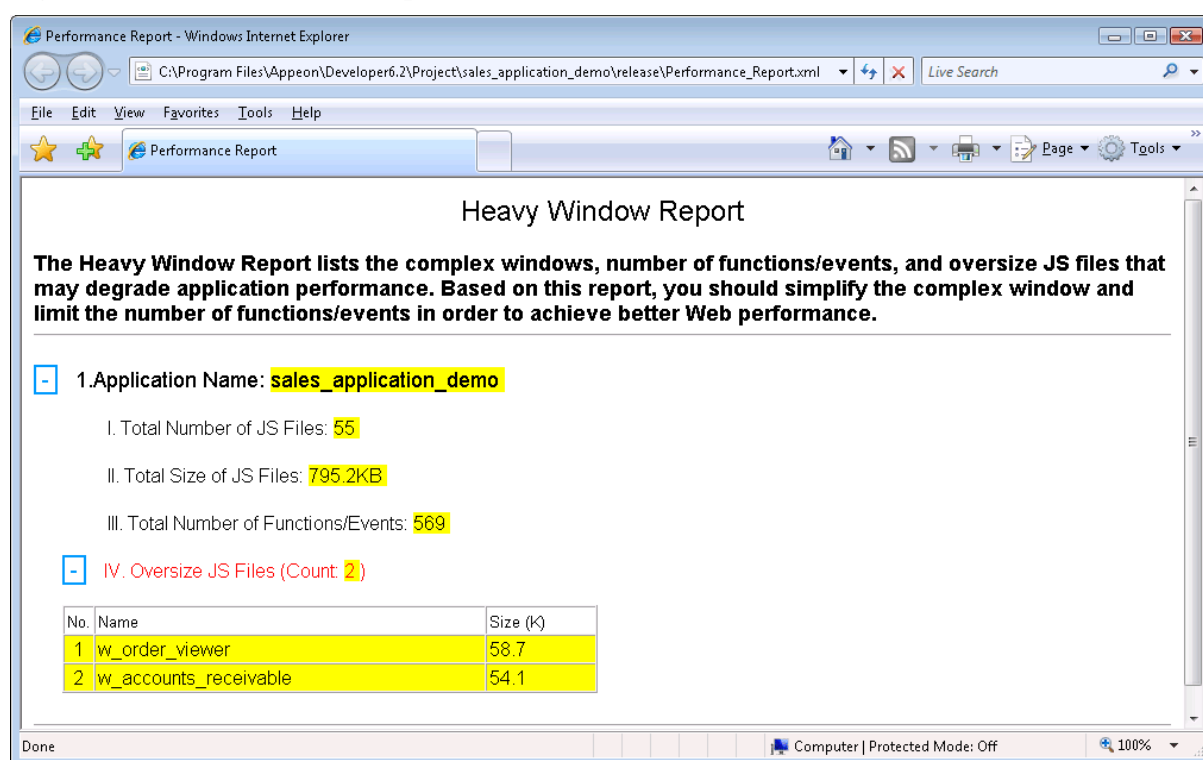
The weight of the different control types, as well as the default minimum load value, are all stored in the PerformanceStatConfig.xml file in the %Apeon%\Developer6.5 path. You can change the settings in the XML file based on actual requirements. (Example: change the minimum load value to 6.0 to get a report of all the windows that take about 0.4 second or more to open). However, Apeon strongly recommends that you do not change the default value of each type of control because each default value is a fixed value based on multiple testing of each control's complexity. Most controls will significantly increase the loading time of a window as their number increases. If you change the default value of the controls, the minimum load value may not compute correctly. For example, the minimum load value adds up to 10.0, but the actual loading time may be much more or less than 0.6 of a second.

5.3.2 Reading Heavy Window Report

By using the Heavy Window Report, you can grasp a general idea of how many heavy windows are contained in the application. This report lists the oversize JavaScript files generated for the application and the heavy windows, including the number of complex

controls and the minimum load value of each window, as shown in the following figure. This helps you measure the performance of each window.

Figure 5.17: Heavy Window Report



5.3.3 Making heavy windows lighter

For instructions on how to make heavy windows lighter, refer to *Thinning out "heavy" Windows* in the *Apeon Performance Tuning Guide*.

6 Deploying PowerBuilder Applications

Appeon Deployment Wizard deploys PowerBuilder applications to Web applications. The deployment should take place only after the application has undergone careful analysis and is in compliance with the *Basic and Architectural Requirements* defined in *Appeon Features Help*.

The Appeon Deployment Wizard handles Web deployment in five steps:

1. Exports the PowerBuilder application source code.
2. Analyzes the PowerBuilder application to verify that it does not contain unsupported features.
3. Parses the PowerBuilder source code (PBL files) into Web application files that are stored on the local machine.
4. Uploads the DataWindow syntax to Appeon Server.
5. Transfers local Web files to the Web Server by either file copy or FTP.

Notes:

1) Deploying to an SSL Web Server is no different than deploying to a standard Web Server. You only need to make sure that the SSL Web Server is set up correctly and is fully functional. For detailed instructions on configuring a Web Server as an SSL Web Server, refer to the corresponding documents provided by the Web server vendor.

2) If you want to re-deploy an application which is now running online:

- You can incrementally deploy the application while keeping the application running online, if non-database related source code and image files are changed.
- You must shut down the running Web application and then full or incrementally deploy the application if the INI files or database-related source code are changed. Otherwise, the application may have runtime problems such as database connection failure or missing tables or fields.

6.1 Deployment performance

Web deployment is a process that can be very CPU and memory intensive, so we recommend that you use a developer computer that conforms to the recommended specifications outlined in *System Requirements* section of the *Appeon Installation Guide* for a Developer PC to run Appeon Developer.

Be sure to close any unnecessary programs and Windows services in order to have an optimal amount of memory available for the deployment process.

6.1.1 Speed of Web Deployment Process

The table below benchmarks the time taken or speed to compile various applications in PowerBuilder and deploy to the Web with Appeon. In general, the results indicate that the

speed of the Appeon Web deployment process is similar to the speed of the PowerBuilder compilation/build process.

Table 6.1: Appeon Web Deployment Time Benchmarks

	PB EXE w/ PBDs	PB EXE w/ DLLs	Appeon
Sales Application Demo (5.55M)	20 seconds	50 seconds	22 seconds
Appeon Code Example Demo (20.5M)	1 minutes 3 seconds	12 minutes 37 seconds	1 minutes 12 seconds
ACF Demo (21.5M)	2 minutes 5 seconds	24 minutes 46 seconds	2 minutes 12 seconds

As a general rule of thumb, each additional megabyte of PBLs will add approximately 8 seconds to the full deployment process. For example, it would take 4 minutes to deploy a 30MB PFC application. This would only apply for the initial or full deployment. All subsequent deployments should take no more than few minutes or even possibly as little as a few seconds.

This rule of thumb applies to hardware configurations that meet the minimum Developer PC requirements stated in the *Appeon Installation Guide*. Machines with a slower clock-speed will take longer to perform the deployment.

6.1.2 Deployment duration for full deployments

Remember the following main points regarding the deployment time:

- The process is very CPU and memory intensive.
- The size and complexity of the application affect the deployment time.

The following is an example of how long it takes to deploy an application with 3.69 MB in PBLs and images using full deployment:

Table 6.2: Deployment duration

Deployment Task	Elapsed Time
Task 1: Application Source Code Export	8 seconds
Task 2: Web File Generation	27 seconds
Task 3: Web Deployment	15 seconds (for a local deployment)
Test environment: a single CPU Intel P4 1.8 GHz with 256 MB RAM and 60 GB IDE hard drive	

All generated Web files deployed to the server are a combined 1.25 MB in size.

6.1.3 Deployment duration for incremental deployments

Since the initial full deployment can be time-consuming, Appeon provides an Incremental Deployment for maintaining or upgrading an already-deployed application. This feature

only re-deploys to the Web the incremental changes that have been made in the application. Apeon can detect whether an object has been modified and re-deploy only the changed objects.

6.2 Deployment process

6.2.1 Preparing the PowerBuilder application

Apeon recommends that you perform a build and PBL optimization on the PowerBuilder application before performing an Apeon Web Application Deployment. The following table shows you which type of build options you should select for the application.

Table 6.3: Build options

Build Option	What It Does	When To Perform
Incremental build	Refreshes the objects that have been changed.	Before a full or incremental deployment.
Full build	Refreshes all objects.	Not recommended.
Optimize PBLs	Removes unused space in the PBLs as stored on disk, and reduces object fragmentation.	After building the application but prior to deployment.

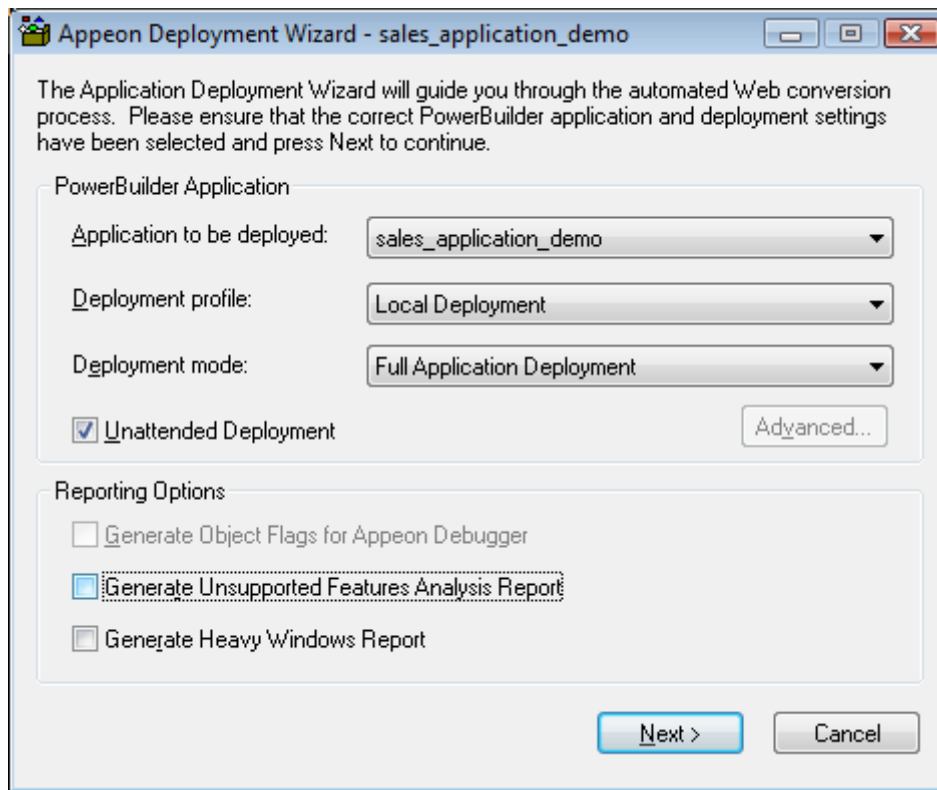
Performing an incremental build in PowerBuilder is necessary because when modifications are made to a parent class, the child class does not reflect the changes unless one of three things occurs:

1. The child class is opened and saved.
2. An incremental build is performed.
3. A full build is performed.

6.2.2 Specifying the deployment settings

Click the *Deploy* button () in the Apeon Developer toolbar. The Apeon Deployment Wizard is displayed.

Figure 6.1: Appeon Deployment Wizard



The following table describes how to specify the deployment settings for an application:

Table 6.4: Appeon Deployment Wizard settings

Setting	Description
Application to be deployed list box	Select an application to be deployed. The default application is listed by default. The application chosen for deployment will become the default application under Application Profiles in Appeon Developer Configuration.
Deployment Profile list box	Select a deployment profile to be used in Web deployment. The selected deployment profile determines which Appeon Server(s) and Web Server(s) the application will be deployed to. You must make sure the Appeon Server(s) and Web Server(s) are started before you perform the deployment.
Deployment Mode list box	Select one of the three available deployment modes: <ul style="list-style-type: none"> • Full Application Deployment • Incremental Application Deployment • Deploy Already Generated Application
Unattended Deployment check box	Specify whether the whole deployment process will automatically proceed without displaying the <i>Next</i> button or waiting for interaction.

Setting	Description
	If you want to view the messages or reports generated at each step, you can set the unattended deployment to false; the wizard will require you to click the <i>Next</i> button to start the next task until the whole conversion is complete.
Advanced button	Select the types of objects or files that will be uploaded to servers: DataWindow objects, other objects, INI files, external DLL/OCX files, or image files. By default, all objects and files will be uploaded. This button is effective only for the <i>Deploy Already Generated Application</i> option. When use this function, verify that the target servers are the same ones used in the application deployments.
Generate Object Flags for Apeon Debugger	Specify whether to flag the objects for debug with Apeon Debugger. This option is available for the Debug PS/JS and Debug JS modes. Deselecting it will have the following two effects: 1. The deployment process will be faster; 2. The objects will not be able to be debugged in Apeon Debugger, though they can still be debugged in other debugging tools, such as Microsoft Visual InterDev.
Generate Unsupported Features Analysis Report check box	Specify whether to generate an unsupported feature analysis report during deployment. This report lists all unsupported PowerBuilder coding features in the application. You can use this report to remove or work around the unsupported features. For detailed instructions, refer to Section 5.2, “Working with UFA Report” .
Generate Heavy Window Report check box	Specify whether to generate a Heavy Window Report during deployment.

6.2.2.1 Selecting the deployment mode

The following table describes the three different deployment modes and guides you in choosing the proper deployment mode.

Table 6.5: Deployment mode

Deployment Mode	What It Does	Elapsed Time	When To Use It
Full deployment	Exports all PowerBuilder application objects and code, generates the corresponding Web files for the application, and deploys all Web files to the server.	Depends on the size and complexity of the PowerBuilder application.	1. The first time an application is deployed to the Web. 2. After making changes to any ESQL.

Deployment Mode	What It Does	Elapsed Time	When To Use It
Incremental deployment	Exports objects, re-generates and re-deploys Web files for the changed objects only. The Deployment Wizard continues even if it finds unsupported features during this process.	Up to 80% less time than a full deployment.	After making changes to an already fully-deployed application's source code or features in the application profile.
Deploy Already Generated Application	Bypasses the object exporting and file generation tasks and only re-deploys the Web files for the changed objects or for the entire application.	Much less time than a Full or Incremental Deployment.	When you intend to: 1) deploy the Web files for the changed objects to the server after an Incremental Deployment has been cancelled during Web deployment (Task 3). 2) refresh the set of Web files on the server after a Full Deployment has been cancelled during Web deployment (Task 3). 3) deploy the application to a different server.

Apeon Developer will automatically set the default deployment mode by detecting whether a folder named after the application exists in the %Apeon%\Developer6.5\Projects\ directory on the Developer machine. If the folder is detected, the application will be regarded as an already deployed application and incremental deployment mode is selected; otherwise, full deployment mode is selected. This detection can mislead Developer into selecting incremental deployment mode, because the folder will exist in the following situations:

Table 6.6: Situations when the folder exists

The folder will exist if you have ...	In this case, choose ...
Performed an unsupported feature analysis on the application before it has undergone a full deployment. The folder is created during analysis.	Incremental deployment mode.
Undeployed an Apeon deployed application from servers using the Application Undeployment Wizard. The folder is preserved.	Full deployment mode.
Deployed the application using a previous version of Apeon Developer. The folder is preserved unless you delete it manually. This legacy folder can be detected by the new Apeon Developer.	Full deployment mode.

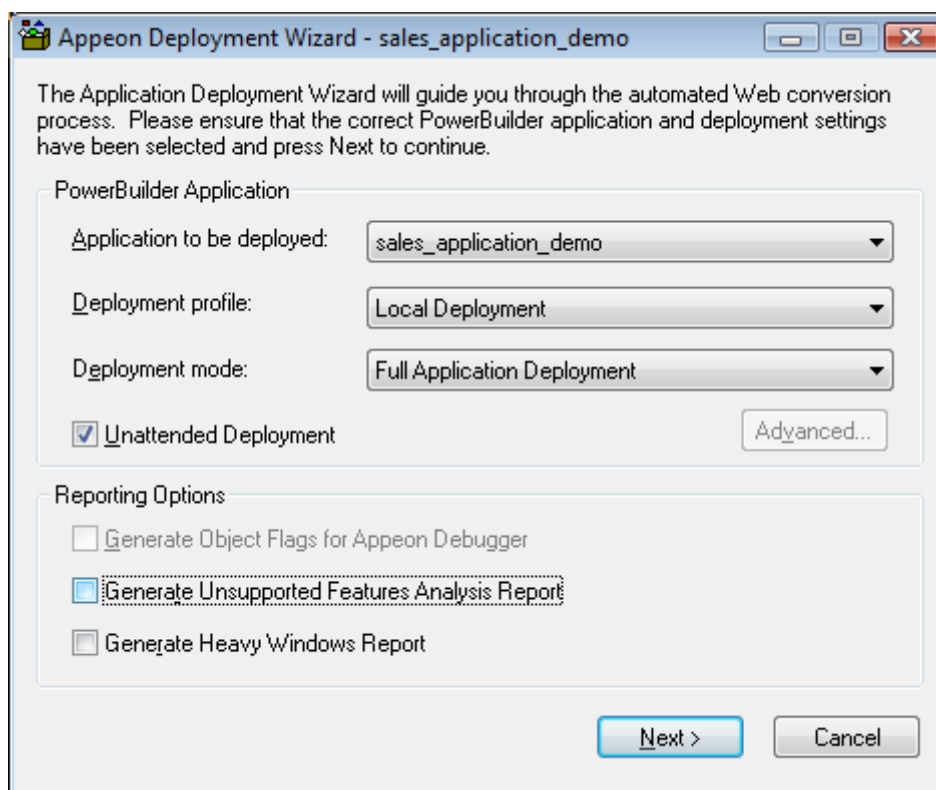
6.2.3 Deploying the PowerBuilder application

The deployment process of an application contains three major deployment tasks. Different deployment modes perform different tasks. The following table describes the tasks performed during each deployment mode.

Table 6.7: Different tasks performed during each deployment mode

Deployment Task	Full Deployment	Incremental Deployment	Deploy Already Generated Application
Task 1: Application Source Code Export Exports the source code of the original PowerBuilder application.	Y	Y	N
Task 2: Web File Generation Analyzes unsupported features and generates Web files.	Y	Y (Partial)	N
Task 3: Web Deployment Deploys generated Web files to Apeon Server.	Y	Y (Partial)	Y

Figure 6.2: Full application deployment

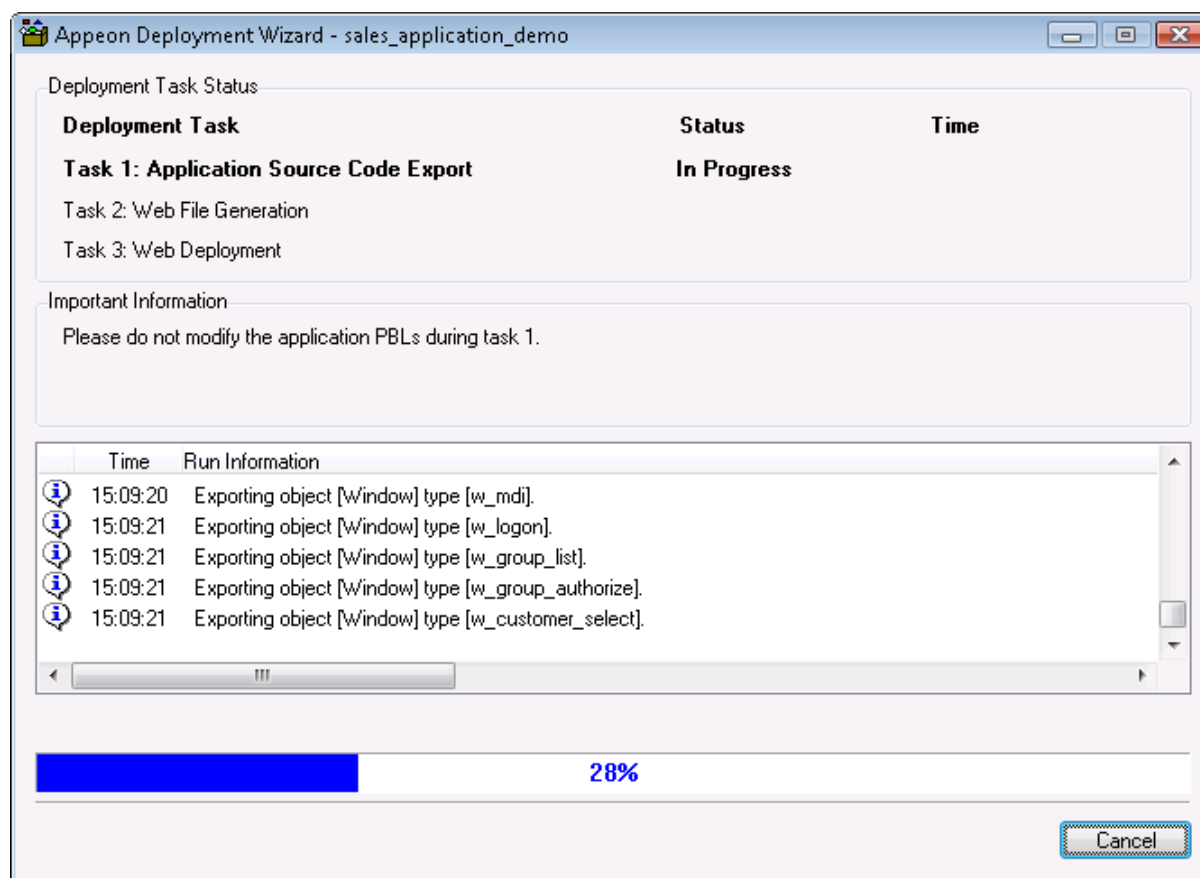


As shown in the above figure, the application to be deployed is the *sales_application_demo*, and the deployment mode is *Full Application Deployment*.

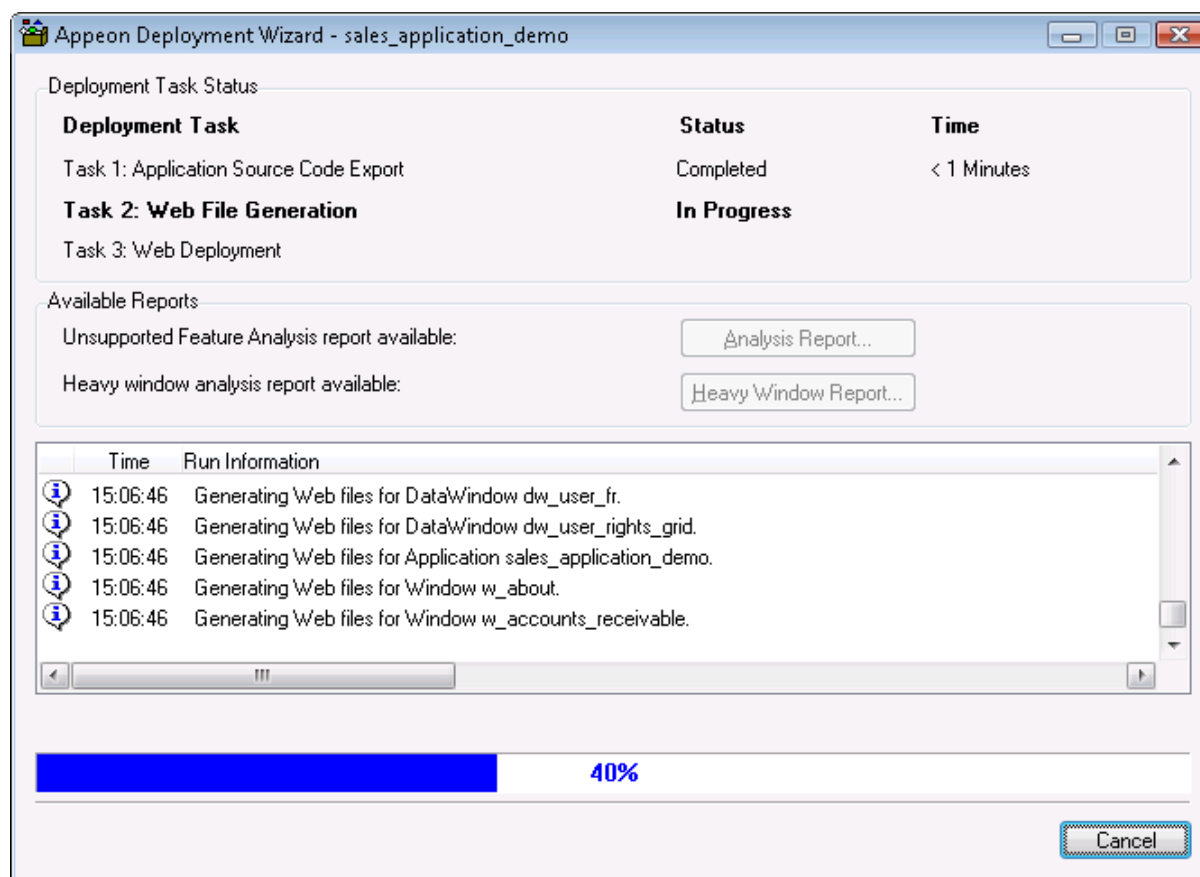
The following are the complete steps in the deployment process:

Step 1: Click *Next*. The Apeon Deployment Wizard begins Task 1, Application Source Code Export, as shown in the following figure.

Figure 6.3: Task 1: Application Source Code Export

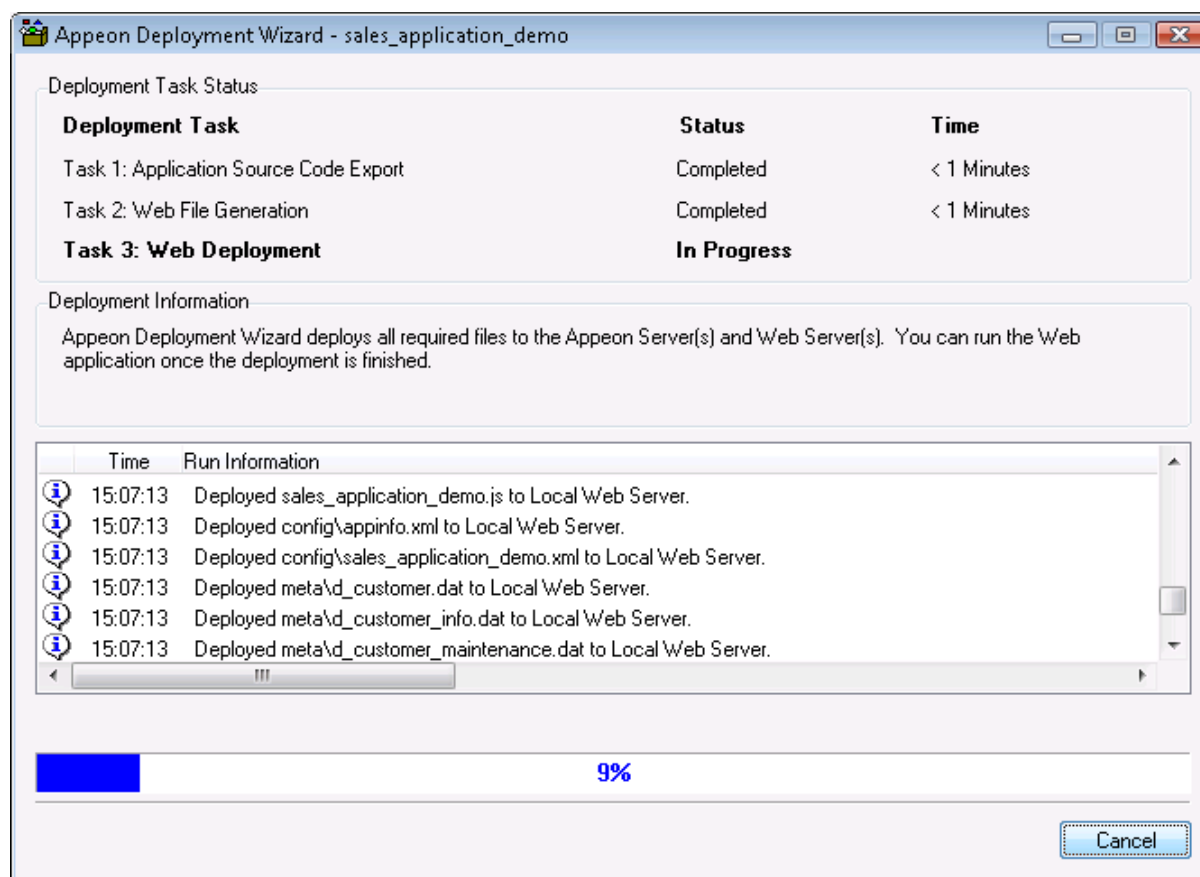


After Task 1 is completed, Task 2, Web File Generation, will automatically start (as shown in the following figure) if the *Unattended Deployment* option is selected, otherwise, you must click *Next* at the bottom of the Apeon Deployment Wizard to begin Task 2.

Figure 6.4: Task 2: Web File Generation

After Task 2 is completed, Task 3, Web Deployment, will automatically start (as shown in the following figure), or click *Next* at the bottom of the Apeon Deployment Wizard to begin Task 3 if the *Unattended Deployment* option is not selected.

Confirm that the Web Server and Apeon Server have been started and correctly configured in Apeon Developer Configuration; otherwise, deployment will fail. If deployment fails, a *Retry* button appears so you can retry Task 3 without running through a full deployment again.

Figure 6.5: Task 3 Web Deployment

Click the *Cancel* button or press the Esc key to terminate Task 3. If you cancel Task 3 during a Full Deployment, only some of the Web files will have been uploaded to the server and the application will not run correctly. To correct this, select *IncrementalDeployment* or *Deploy Already Generated Application* as the deployment mode the next time you attempt to deploy the application.

Step 2: After Task 3 has been completed, click the *Next* button at the bottom of the Apeon Deployment Wizard to display the Web deployment report page, as shown in the following figure.

Figure 6.6: Apeon Deployment Wizard

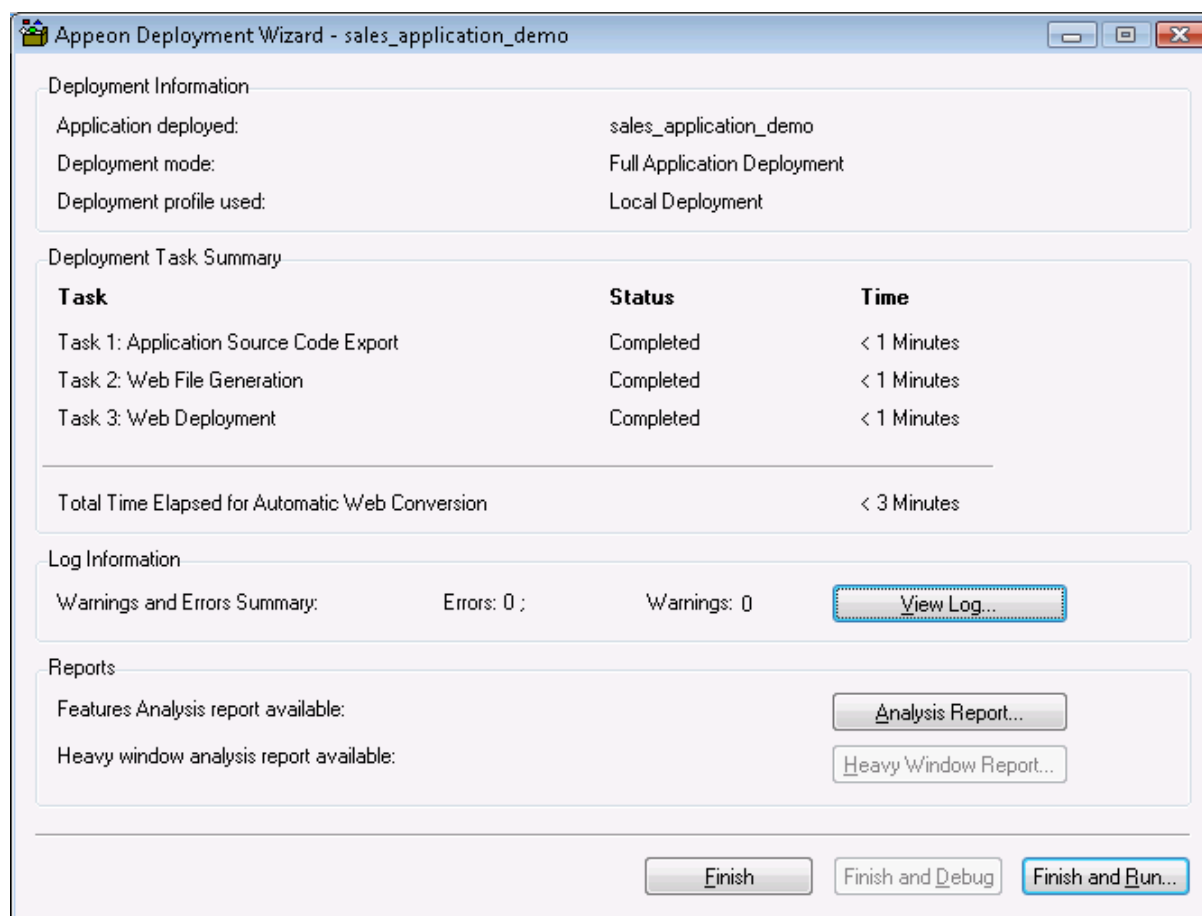


Table 6.8: Deployment report page

Element	Description
Deployment Information	Displays the name of the application deployed, the deployment mode used, and the deployment profile used.
Deployment Task Summary	Displays the status and time of each of the three deployment tasks, as well as the total time for the entire PowerBuilder-to-Web conversion process.
Log Information	<p>Displays the number of errors and warnings that occurred during the deployment process.</p> <p>Click the <i>View Log</i> button to view the errors and warnings generated during the deployment process. The log file can be managed in the Information Manager. For detailed instructions, refer to Chapter 9, Using Information Manager.</p>
Available Reports	<p>Displays the reports (Analysis Report and Heavy Window Report) generated during the deployment process (mainly Task 2).</p> <ul style="list-style-type: none"> <i>Analysis Report</i> button: This report is available if the <i>Generate Unsupported Feature Analysis Report</i> option on the Apeon Deployment Wizard is selected before deployment. After you click this button, the UFA Report Window will be displayed. For

Element	Description
	<p>detailed instructions, refer to Section 5.2, “Working with UFA Report”.</p> <ul style="list-style-type: none">• <i>Heavy Window Report</i> button: This report is available if the <i>Generate Heavy Window Report</i> option on the Appeon Deployment Wizard is selected before deployment. After you click this button, the Heavy Window Report will be displayed. For detailed instructions, refer to Section 5.3, “Working with Heavy Window Report”.

Step 3: Click the *Finish* button to close the Appeon Deployment Wizard, or click *Finish and Debug* to close the Appeon Deployment Wizard and open Appeon Debugger to debug the application, or click the *Finish and Run* button to close the Appeon Deployment Wizard and automatically launch the newly deployed Web application.

7 Debugging Appeon Web Applications

Sometimes a deployed application does not behave well although the original application does. In these situations, you can examine the execution results of the JavaScript code in the deployed application using Appeon Debugger.

The usage of Appeon Debugger is similar to that of PowerBuilder Debugger. You set breakpoints or watch variables in the PowerBuilder source code, same as in PowerBuilder Debugger. The main difference is that Appeon Debugger runs the generated JavaScript code but not the PowerBuilder source code, and shows the execution results of the JavaScript code.

This chapter assumes that you are familiar with the functions of PowerBuilder Debugger; therefore it does not provide descriptions of common debugging features, but focuses on introducing the specialties of Appeon Debugger. For common debugging features, refer to the *Debugging an application* section in the *PowerBuilder User's Guide*.


7.1 Important Requirements

To start and use Appeon Debugger successfully, be aware of the following important prerequisites:

1. Microsoft script debugger must have been correctly installed and registered on the same machine and script debugging is enabled in Internet Explorer. Otherwise, you may encounter problems in starting and using Appeon Debugger. For detailed instructions and solutions, refer to the *Appeon Debugger* section in the *Appeon Troubleshooting Guide*.
2. A script in the deployed application must meet all of the following requirements to be debugged; otherwise Appeon Debugger will simply ignore it:
 - The script is deployed in the Debug JS or Debug PS/JS mode, using the local Appeon Developer, and having the *Generate Object Flags for Appeon Debugger* option enabled in the Appeon Deployment Wizard.

If you have changed the application PBLs, or the local Web files and the remote Web files are not the same, you must re-deploy the application with the *Generate Object Flags for Appeon Debugger* option enabled. Or the newly-added code will not be selectable in Appeon Debugger.

- The original PowerScript code of the script is supported by Appeon.

If the code is unsupported, it is marked with a  icon in the Appeon Debugger Source view, and cannot be set as breakpoint, nor be located with the *Run To Cursor* or *Set Next Statement* commands in the debugger.

7.2 Introduction to the debugging procedure

Although Appeon Debugger is used for debugging the JavaScript in the deployed application, breakpoints are not set in the JavaScript, but directly in the PowerBuilder code loaded in the Appeon Debugger Source view. The generated JavaScript is invisible throughout the entire process, however the results shown in the Watch view are the execution results of the JavaScript.

The debugger procedure with Appeon Debugger is the typical 5-step procedure as with PowerBuilder Debugger:

Step 1 - Start the debugger.

Step 2 - Set breakpoints.

Step 3 - Run the application in debug mode.

Step 4 - Examine the application at the breakpoints by watching variables and expressions, and monitoring the call stack. You may also step through the application after a breakpoint to closely examine the effects of each code.

Step 5 - Fix the code.

The actions performed in each step are not very different from those required in PowerBuilder Debugger. However, there are some special requirements related with the actions, and the action results are from the running of JavaScript. Continue reading the following sections for detailed descriptions of these debugging steps.

7.3 Starting Appeon Debugger

To start Appeon Debugger:

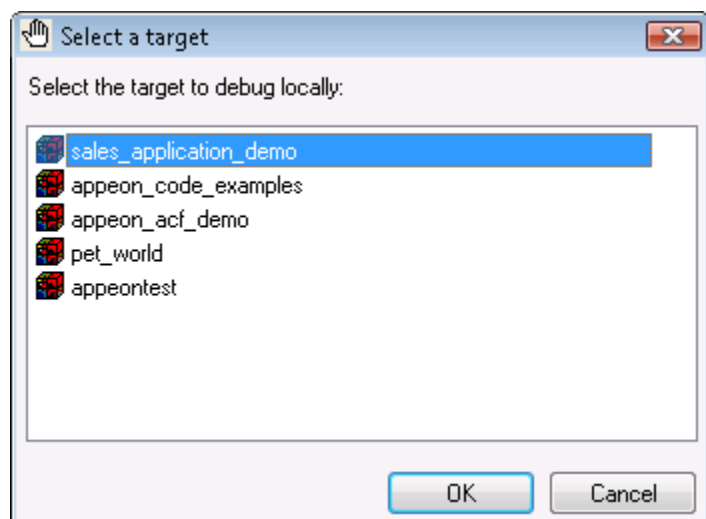
Step 1 - Close the other Appeon Developer tools.

Step 2 - Start Appeon Server and the Web server that host the Web application.

Step 3 - Click *Appeon Debugger* (🖱️) on the Appeon Developer toolbar.

The "Select a target" window is displayed.

Figure 7.1: Select an application

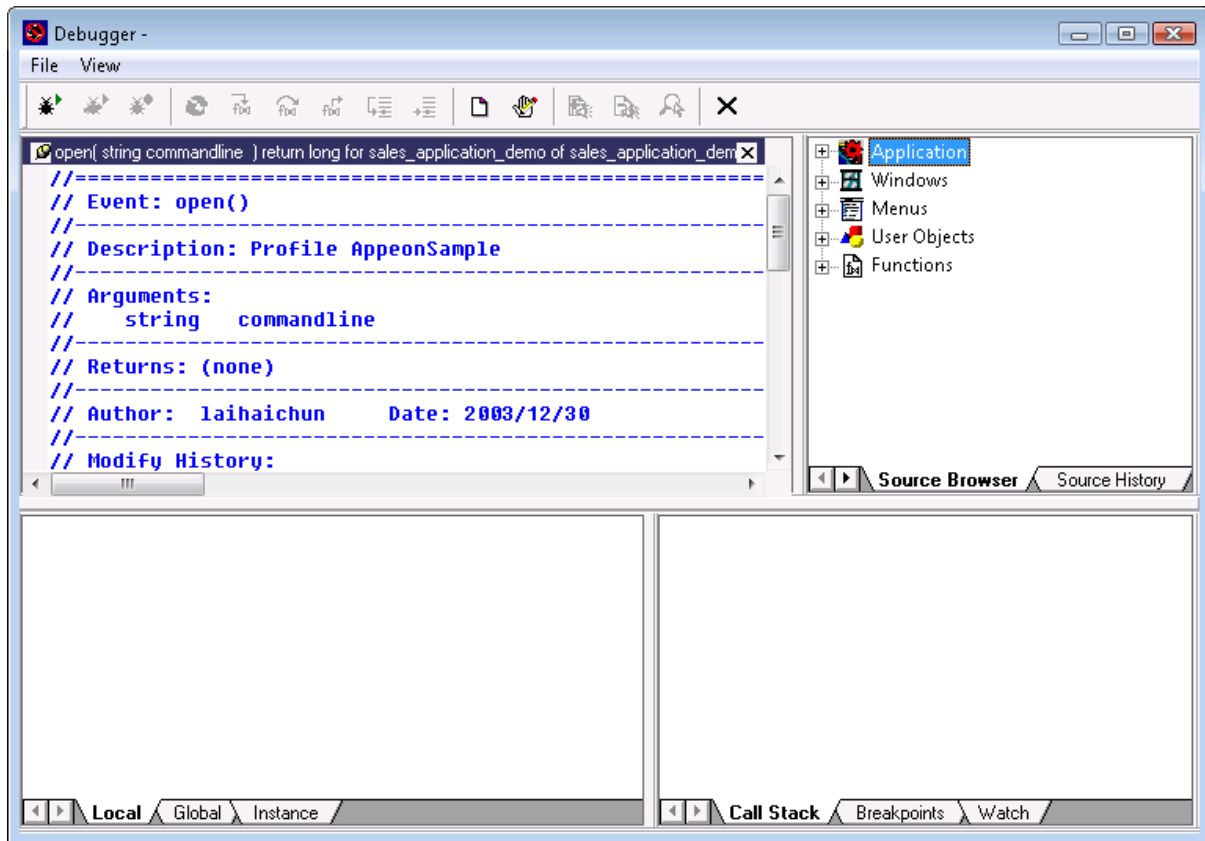


Step 4 - Select an application from the list and click *OK*.

Appeon Debugger starts and the selected application is loaded in the Appeon Debugger.

The menu bar of the debugger provides three simple menus: File, View and Help. The toolbar is almost the same as that in PowerBuilder Debugger, except that the "Start Remote" button is currently unavailable.

Figure 7.2: Appeon Debugger



7.3.1 Views in Appeon Debugger

Appeon Debugger contains all the views provided by PowerBuilder Debugger except for Instances View and Objects in Memory view. Each Appeon Debugger view shows almost the same information as its counterpart in PowerBuilder Debugger. The following table summarizes the general differences between the two.

Table 7.1: Comparing the views in Appeon Debugger and PowerBuilder Debugger

Views	Unique to Appeon Debugger (Unavailable in PowerBuilder Debugger)	Unique to PowerBuilder Debugger (Unavailable in Appeon Debugger)
Source	Identifies Appeon unsupported features with the icon (⏏)	<ul style="list-style-type: none"> • Ancestor Script popup menu item • Descendant Script popup menu item
Source Browser	None	List of system events, or the events and functions defined in parent classes, or some special events (such as Menu OnCreate event)
Source History	None	None
Variables	The values of variables unsupported by Appeon are marked as "unsupported".	<ul style="list-style-type: none"> • Parent and Shared views • Parent popup menu item

Views	Unique to Appeon Debugger (Unavailable in PowerBuilder Debugger)	Unique to PowerBuilder Debugger (Unavailable in Appeon Debugger)
	The Global view displays all global variables used in the application, while PowerBuilder Debugger only displays instantiated global variables.	<ul style="list-style-type: none"> • Shared popup menu item • Break on changes popup menu item
Call Stack	None	None
Breakpoints	None	<ul style="list-style-type: none"> • Setting special breakpoints • Setting occasional or conditional breakpoints • Setting a breakpoint when a variable changes
Watch	Appeon Debugger handles some expressions in a unique way.	Break on changes popup menu item

Although the views of Appeon Debugger and PowerBuilder Debugger look similar, they cannot be used together. For example, the breakpoints set in Appeon Debugger cannot be recognized by PowerBuilder Debugger, and vice versa.

7.4 Setting breakpoints

7.4.1 Code lines that can be set as breakpoints

Pay attention to the following **do's** and **don'ts** before setting breakpoints:

1. **Do** set breakpoints to the code lines supported by Appeon.
2. **Do** set simple breakpoints to script, **don't** set special breakpoints, such as breakpoints triggered when a statement has been executed a specified number of times (an occasional breakpoint), when a specified expression is true (a conditional breakpoint), or when the value of a variable changes.
3. To set a SQL statement that spans multiple lines as a breakpoint, **do** set the breakpoint at the first line, **don't** set breakpoints at the other lines. If you try to set a breakpoint at the other lines, the breakpoint will be set to the line that follows the SQL statement.
4. To set a PowerScript non-SQL statement, which spans multiple lines with continuation characters (&) as a breakpoint, **do** set the breakpoint at the last line of the statement, and if it is set at the other lines, the breakpoint icon is still added to the last line.

Note: you can set a breakpoint to the FOR statement, but the application will be suspended for only once when this statement is executed.

7.4.2 Methods for setting breakpoints

You can set breakpoints in the Source, Breakpoints, Variables, or Watch view, before or after the application starts to run in debug mode.

Method #1: Setting a breakpoint in the Source view

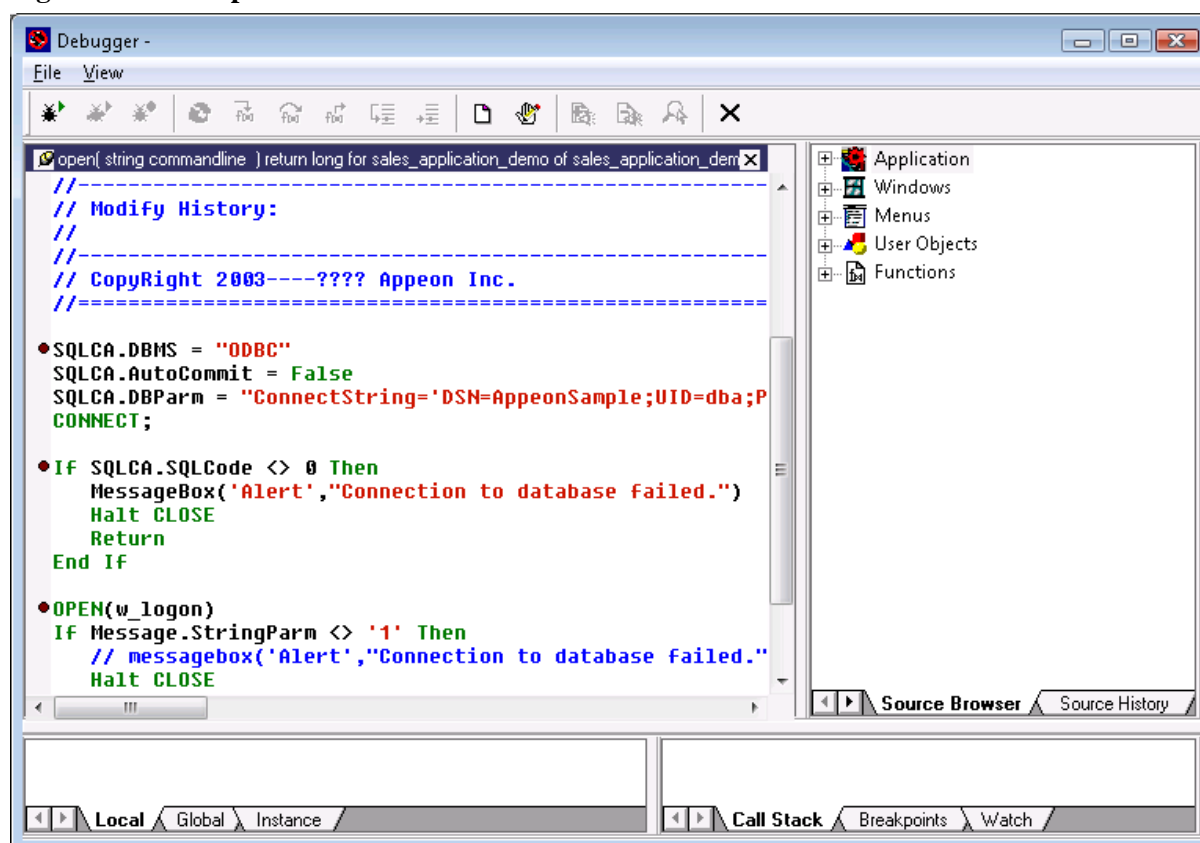
Step 1 - Select the script to display in the Source View.

Select a function or event in the Source Browser view to display its script in the Source View, or right click on the Source view and select *Select Script* from the popup menu to select the script to be displayed.

Step 2 - Right click a line in the Source view and select *Insert Breakpoints* from the popup menu.

Once a breakpoint is set, a red circle displays at the beginning of the line.

Figure 7.3: Breakpoints are set



Method #2: Setting a breakpoint in the Breakpoints, Variables, or Watch view

Step 1 - Right click the Breakpoints, Variables, or Watch view;

Step 2 - Select *Breakpoints* from the popup menu to add a breakpoint using the Edit Breakpoints dialog.

Method #3: Removing or adding a breakpoint at runtime

When the application is already running in debug mode, you can still change the way the debug works by removing or adding breakpoints at runtime:

Double-click a line in the Source view, or select *Insert Breakpoint* from the popup menu in the Source view.

7.5 Running the application in debug mode


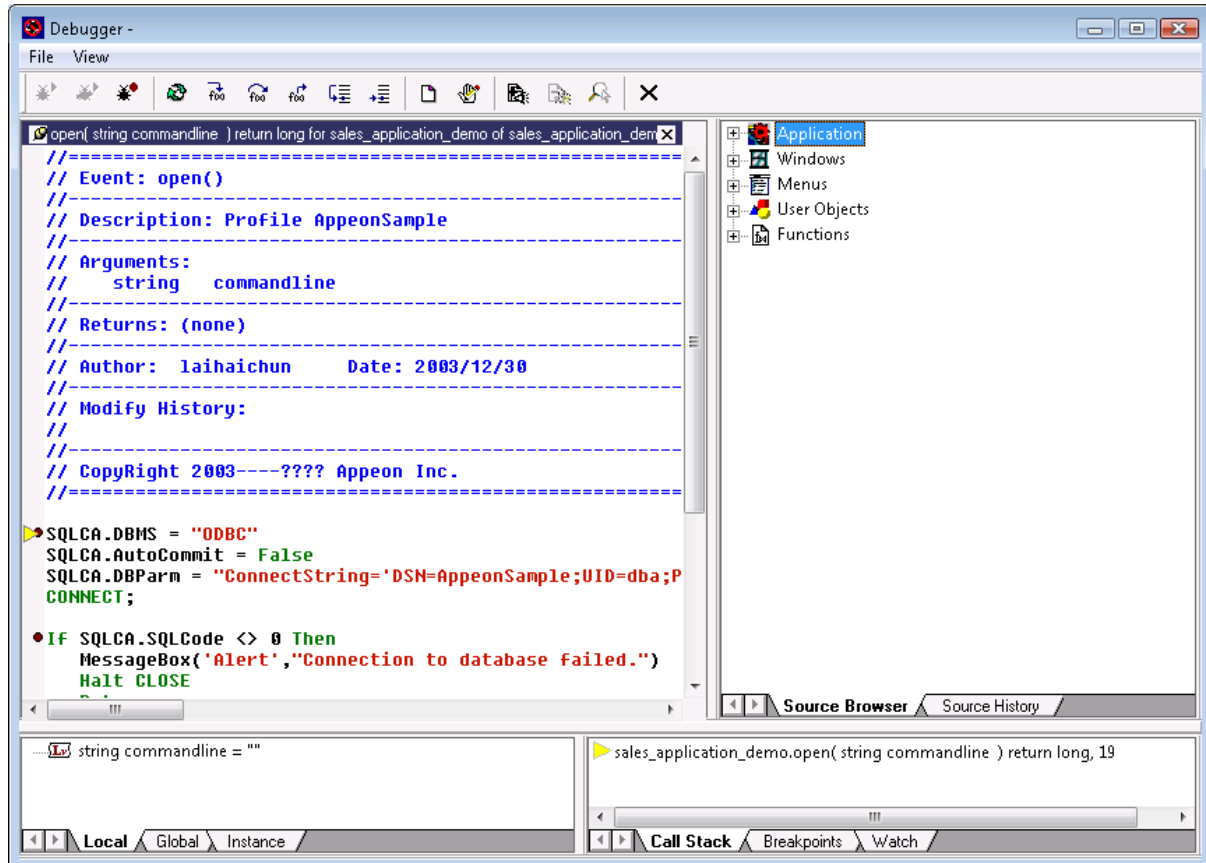
Click *Start* () on the Appeon Debugger toolbar. The application starts to run in the Internet Explorer. It works normally until it reaches a statement containing a breakpoint. At this point it stops so that you can examine the application in the Appeon Debugger.

Figure 7.4: Application running in debugger mode



7.6 Examining an application at a breakpoint

Appeon Debugger provides a Quick Watch function, and the Variables, Watch and Call Stack views that work the same as PowerBuilder Debugger for examining the state of the application. It does not provide Break on Changes and TipWatch functions, nor the Object in Memory view.

7.6.1 Special variable and expression handlings

Appeon Debugger watches the variable and expression results out of JavaScript code but not PowerBuilder code. This is the main difference with PowerBuilder Debugger. Despite the difference, the results shall be mostly the same as in PowerBuilder Debugger. If the results are different, there are two possible reasons:

1. The deployment of the application contains an error. In this case, determine the cause of the error and correct the problem.

2. Appeon Debugger handles some variables and expressions differently from PowerBuilder Debugger. Such differences are introduced below. Be aware of them, so not be false alarmed and conduct unnecessary complex examination work.

Appeon Debugger does NOT support the following when examining variables:

- Expanding the values of ClassDefinition, PowerObject, and Any variables;
- Expanding the runtime values of System variables. Instead, it just expands the inherent properties of such variables.

For example, with a Window type variable w_1, PowerBuilder Debugger shows all the values of all the controls and variables contained in w_1, while Appeon Debugger only shows the values of the Window properties of for w_1.

Appeon Debugger gives different results when evaluating the following expressions:

- It reports errors for expressions that contain unsupported code;
- If the same expression is added multiple times -- in different context -- into the Watch, Appeon Debugger regards it as one expression, and evaluates its value according to the context of the breakpoint;
- Appeon Debugger does not validate expressions. Therefore, if an expression does not pass validation in PowerBuilder, PowerBuilder Debugger does not give evaluation results, however Appeon Debugger may give a result, sometimes even an incomprehensible result, such as "[object]+3" for the expression "this + 3".
- If two expressions are interconnected, because the evaluation results of the expressions are dependent on the orders they are executed, and the ordering may follow different rules in PowerBuilder Debugger and Appeon Debugger, Appeon Debugger may produce different results from PowerBuilder Debugger.

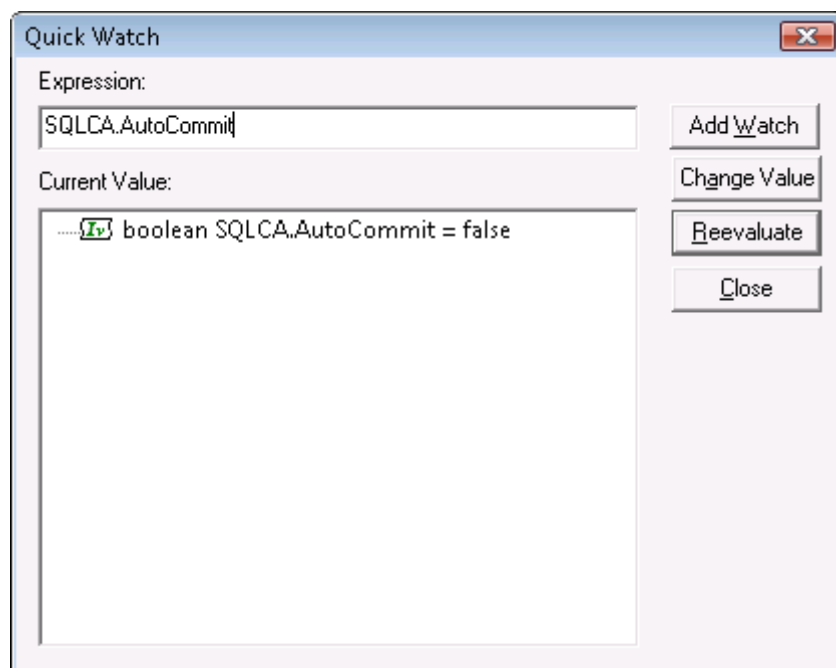
7.6.2 Adding variables or expressions to Watch view

Method #1: Adding variables or expressions to Watch with the Quick Watch

Step 1: Select a variable or expression or place the cursor to a variable or expression in the Source view, right click and select *Quick Watch* from the popup menu or press Shift+F9.

The variable or the expression will be added to the Expression box on the Quick Watch dialog.

Step 2: Click the *Add Watch* button to add the variable or expression to the Watch view.

Figure 7.5: Quick Watch***Method #2: Adding variables or expressions directly in the Watch***

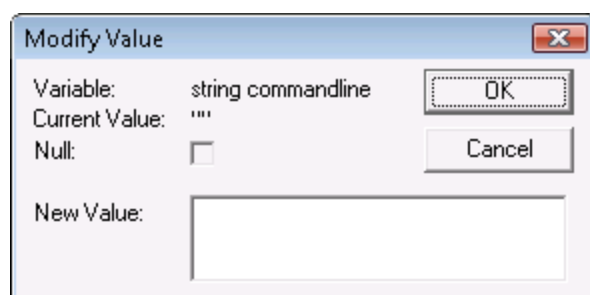
Step 1: Right click the Watch view and select *Insert* from the popup menu.

Step 2: Type valid PowerScript expression in the New Expression dialog box, and click *OK* to add it to the Watch view.

7.6.3 Changing the value of a variable or expression***To change the value of a variable in the Watch view:***

Step 1: Double click a variable or right click a variable and select *Edit Variable*. The Modify Value dialog box will be displayed.

Step 2: In the Modify Value dialog box, type a new value for the variable in the New Value box, click *OK* to close the Modify Value dialog box and continue debugging the application with the variable set to the new value.

Figure 7.6: Modify value***To modify an expression in the Watch view:***

Step 1: Double-click an expression or right click an expression and select *Edit Expression*. The Modify Expression dialog box will be displayed.

Step 2: In the Modify Expression dialog box, type the new expression in the New Value box and click *OK*.

Notice that it is unsupported to select the Null check box in the Modify Value or Modify Expression dialog to set the value of the variable or expression to null.

7.6.4 Evaluating an expression

To evaluate an expression in the Quick Watch dialog box and add it to the Watch view:

Step 1 - Change the variable or expression in the Expression box.

Step 2 - Click *Reevaluate* to display the new value in the tree view.

Step 3 - (Optional) Click *Add Watch* to add the expression to the Watch view.

7.6.5 Examining context in Call Stack view

You can examine the context of the application by clicking the code lines in the call stack.

To show a different context from the Call Stack view:

- Double-click a line or right click a line and select *Set Context*

Once a function is selected in the Call Stack view, the Variable views, the Source view, and the Watch view will all be updated.

7.6.6 Stepping through the application

You can use the Step In, Step Over, Step Out, Run To Cursor, and Set Next Statement commands to step through an application. Using these commands in Appeon Debugger is no different from using them in PowerBuilder Debugger.

7.7 Fixing the code/stopping the debug procedure

Once you locate the cause of the erroneous execution results, you can stop the debugging procedure, return to the PowerBuilder application to fix the code, and re-deploy the application to verify that the error has been corrected.

To stop the debugging process: close Internet Explorer where the application is running, or select *Stop* on the toolbar. The breakpoints you set to the application will be saved when Appeon Debugger is closed, and will be available when Appeon Debugger is re-opened.

When fixing the code, you must return to the PowerBuilder IDE and make code changes in the original PowerBuilder application. Redeploy the application and run the application in Internet Explorer to verify if the problem has been corrected. If the problem still exists and you need to return to Appeon Debugger, make sure you redeploy the application with the *Generate Object Flags for Appeon Debugger* option enabled. Otherwise, the latest code changes will not be reflected in Appeon Debugger.

8 Running Web Applications

Apeon Web applications are accessed via Microsoft Internet Explorer.

Confirm that the Web Server(s) and Apeon Server(s) hosting the Web applications are running, and verify that the Web browser meets the necessary requirements outlined in the *Apeon Installation Guide*.

8.1 Requirements

8.1.1 Windows account privileges

When you run an Apeon Web application for the first time, the Xcelerator plug-in (ActiveX controls for improving the runtime performance of Web applications) must be downloaded to the client.

Different Internet Explorer versions require different privileges for installing the ActiveX control. For example, if using IE 8.0 or 9.0 on Windows Vista/7/2008, you do not need administrative privileges to download and register the ActiveX control. You can log into the machine as a normal user. However, if using IE 8.0 or 9.0 on Windows XP/2003, or if using IE 7.0 or earlier, you must log in as a member of the Administrator group so you have the permissions to successfully download and register the ActiveX control.

If you are using IE 8.0 or 9.0 on Windows XP/2003, or if using IE 7.0 or earlier, ask your administrator to assign the current login account to the Administrators group, so that it can successfully download and register the Xcelerator plug-in. After that, you can use any account to log into Windows and run the application.

8.1.2 Internet Explorer settings

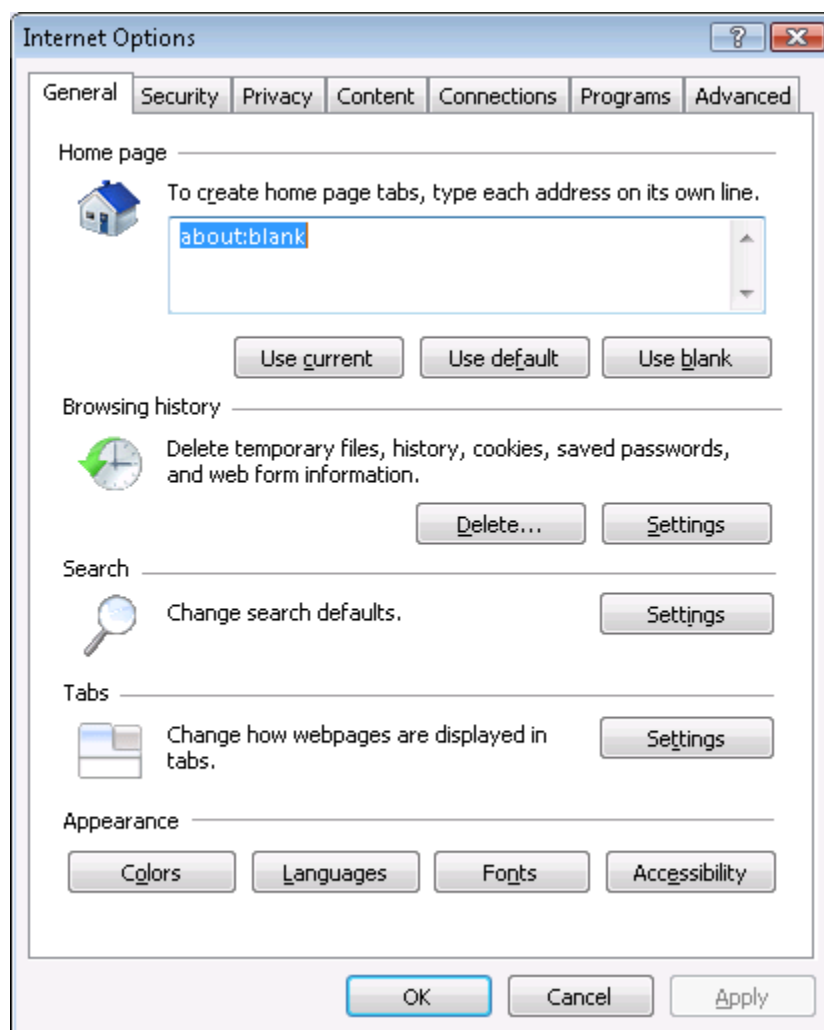
Settings in Internet Explorer can affect the deployed Web application. Sometimes outdated files that are cached in the browser can interfere with how a Web application functions and can cause errors when they are re-deployed many times. Internet Explorer's settings may also block proxy connections or ActiveX control downloads when the Web application is opened. Therefore, you need to make sure you configure Internet Explorer's settings accordingly. Note that you may need to have the administrator rights to modify certain settings.

8.1.2.1 Settings for temporary Internet files

Sometimes cached files in Internet Explorer can cause problems when accessing the converted Web application after deployment. In order to avoid the risk of providing *stale* data, it is imperative that Internet Explorer has the cache options set to *Automatically* and that there is sufficient disk space on the Client to enable the Web files to be cached.

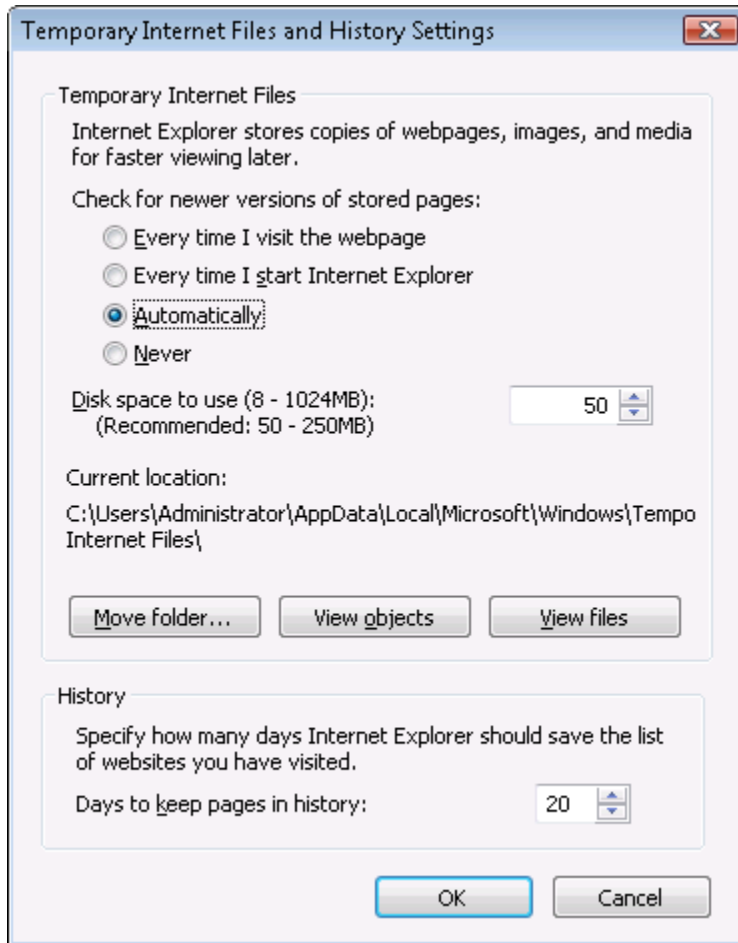
To set the cache options:

Step 1: Open Internet Explorer and select Tools | Internet Options, as shown in the following figure.

Figure 8.1: Internet Options in Internet Explorer

Step 2: Click the *Settings* button in the *Temporary Internet Files* group box.

Step 3: Select the radio button to *Automatically* check for newer versions of stored pages, as shown in the figure below.

Figure 8.2: Temporary Internet File Settings

Step 4: Verify that the *Disk space to use* scroll box is set to at least 200 MB. Click *OK* in the **Settings** window.

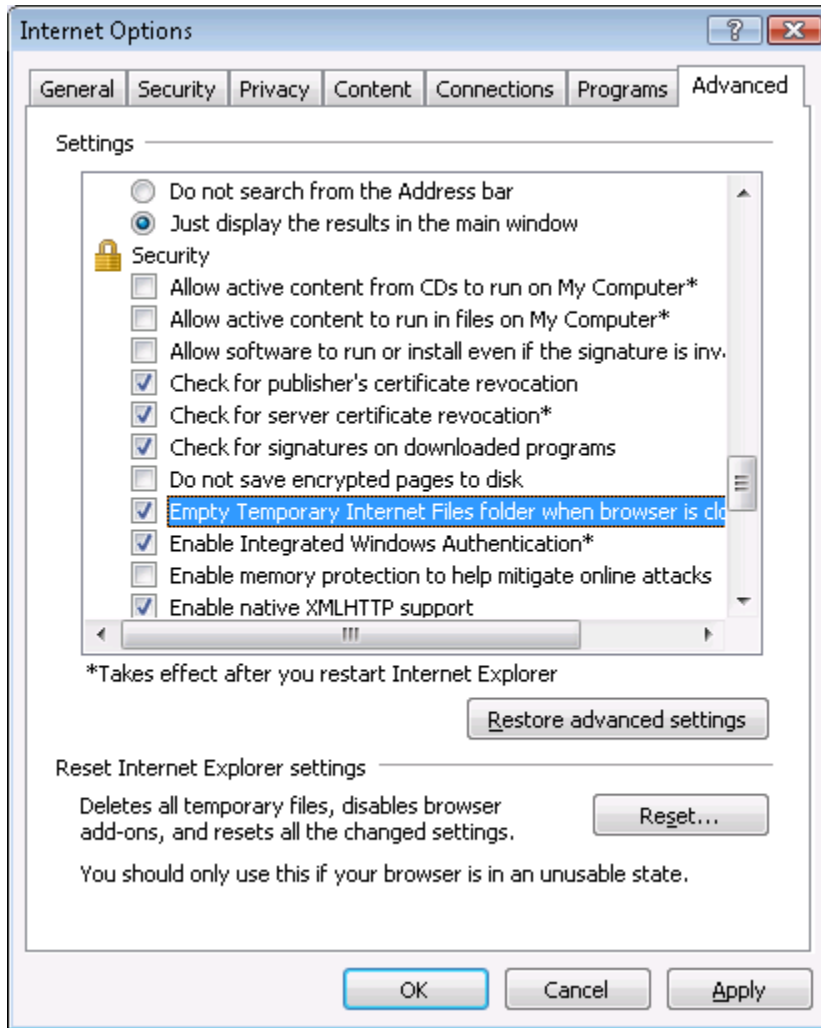
8.1.2.2 Advanced settings for temporary Internet Explorer files folder

During development, the Temporary Internet Files folder should be set to automatically empty each time Internet Explorer is closed. This will force Internet Explorer to re-download the entire application every time it is opened, to ensure the latest version of the application is present, and to prevent interference from outdated cached files.

Here are the necessary steps required to configure Internet Explorer to flush its temporary files each time the browser is closed:

Step 1: Click the *Advanced* tab in the *Internet Options* window, as shown in the following figure.

Step 2: Check the *Empty Temporary Internet files folder when browser is closed* check box under the *Security* section, as shown in the following figure.

Figure 8.3: Empty Temporary Internet Files folder when browser is closed

Step 3: Click *Apply* in the *Advanced* tab and then *OK* in the *Internet Options* window to allow the settings to take effect.

Allowing the temporary Internet files folder to be emptied each time the browser is closed, is recommended only during the development stage. Once your Web application is ready for production deployment, and frequent changes are not being made to the application, this setting can be disabled once again (unchecked). This setting should be reset once development is complete so the Web application can be cached in each Client PC for better Client-side performance. Using this set of guidelines, caching files should be enabled when they are needed for performance improvement, and disabled during the development and debugging stages.

8.1.2.3 Advanced settings for proxy server

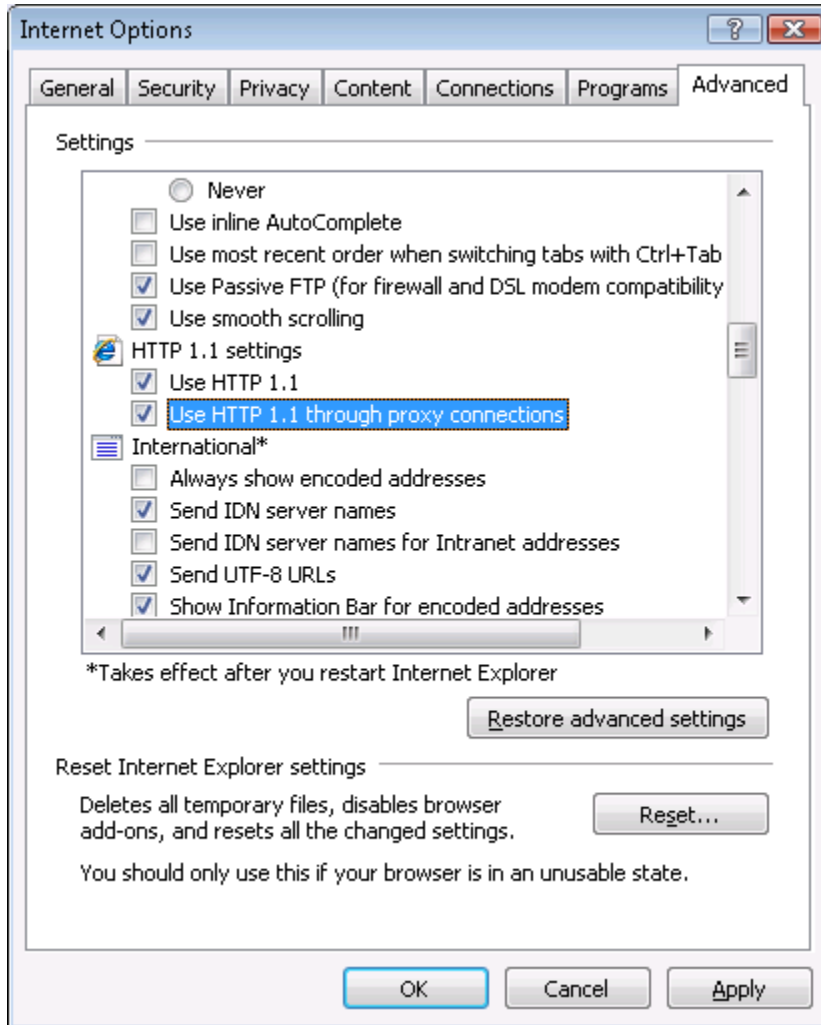
If the Client visits the Web application through a proxy server, you need to select the *Use HTTP 1.1 through proxy connections* option under the HTTP 1.1 settings section, as shown in the following figure.

The following steps detail the configuration needed in Internet Explorer:

Step 1: Click the *Advanced* tab in the *Internet Options* window, as shown in the following figure.

Step 2: Check the *Use HTTP 1.1 through proxy connections* check box under the HTTP 1.1 settings section, as shown in the following figure.

Figure 8.4: Proxy connection settings



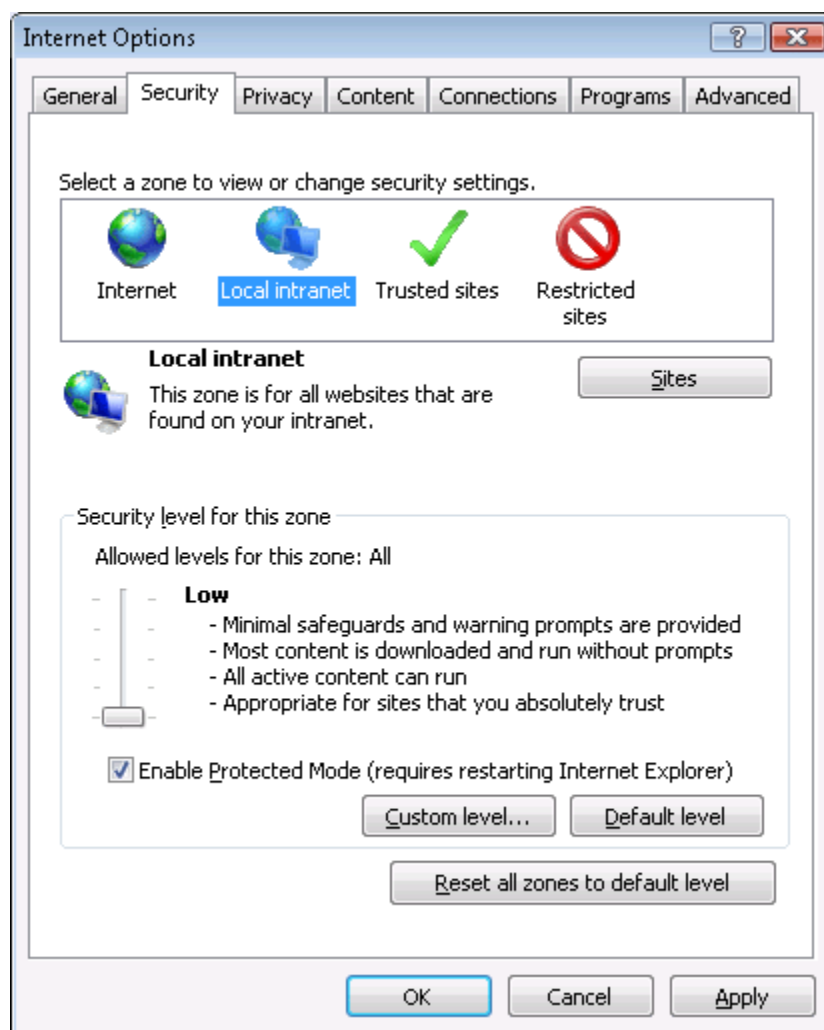
Step 3: Click *Apply* in the *Advanced* tab and then *OK* in the *Internet Options* window to allow the settings to take effect.

8.1.2.4 Security settings for ActiveX controls and Apeon Xcelerator plug-in download

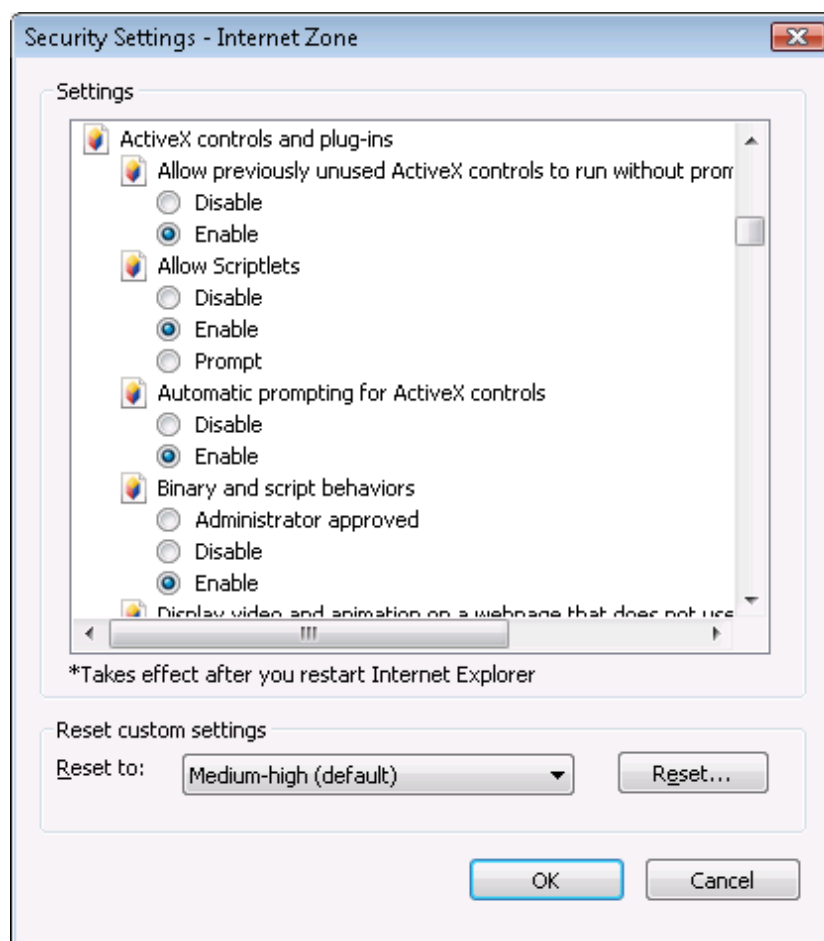
If the Web application calls OLE objects, DLL files, or runs executable programs on the Client, then when the Web application is run for the first time on the Client the user will need to download an ActiveX control (for executing functions that involve client-side integration) and the Apeon Xcelerator plug-in (for improving the runtime performance of Web applications) from the Web Server. To ensure that Internet Explorer will not block the download, configure Internet Explorer's settings, using the following steps:

Step 1: Open Internet Explorer and select Tools | Internet Options | Security tab.

Step 2: Verify that you selected an appropriate Web content zone. Apeon recommends you select the *Trusted sites* zone and add the Web application URL to the *Trusted sites*.

Figure 8.5: Select a Web content zone

Step 3: Click the *Custom Level* button in the *Security* tab. The Security Settings page is displayed, as shown in the following figure.

Figure 8.6: Security Settings page

Step 4: Check the *Enable* or the *Prompt* (recommended) radio button for the following options:

- Download signed ActiveX controls and plug-ins (and Download unsigned ActiveX controls in Windows XP)
- Initialize and script ActiveX controls not marked as safe
- Run ActiveX controls and plug-ins
- Script ActiveX controls marked safe for scripting
- File download
- Active scripting
- Allow active content to run in files on My Computer (If the version of Internet Explorer is 6.0 SP2)

If *Enable* is selected, the ActiveX control will download automatically without prompting. If *Prompt* is selected, your approval will be required before downloading takes place.

Note: If running the Apeon Web application for the first time in Internet Explorer 8 on Windows XP, be sure to set "Download signed ActiveX control" to Enable (Do not set to Prompt or Disable), otherwise, Internet Explorer will crash.

8.1.3 Language setting requirements

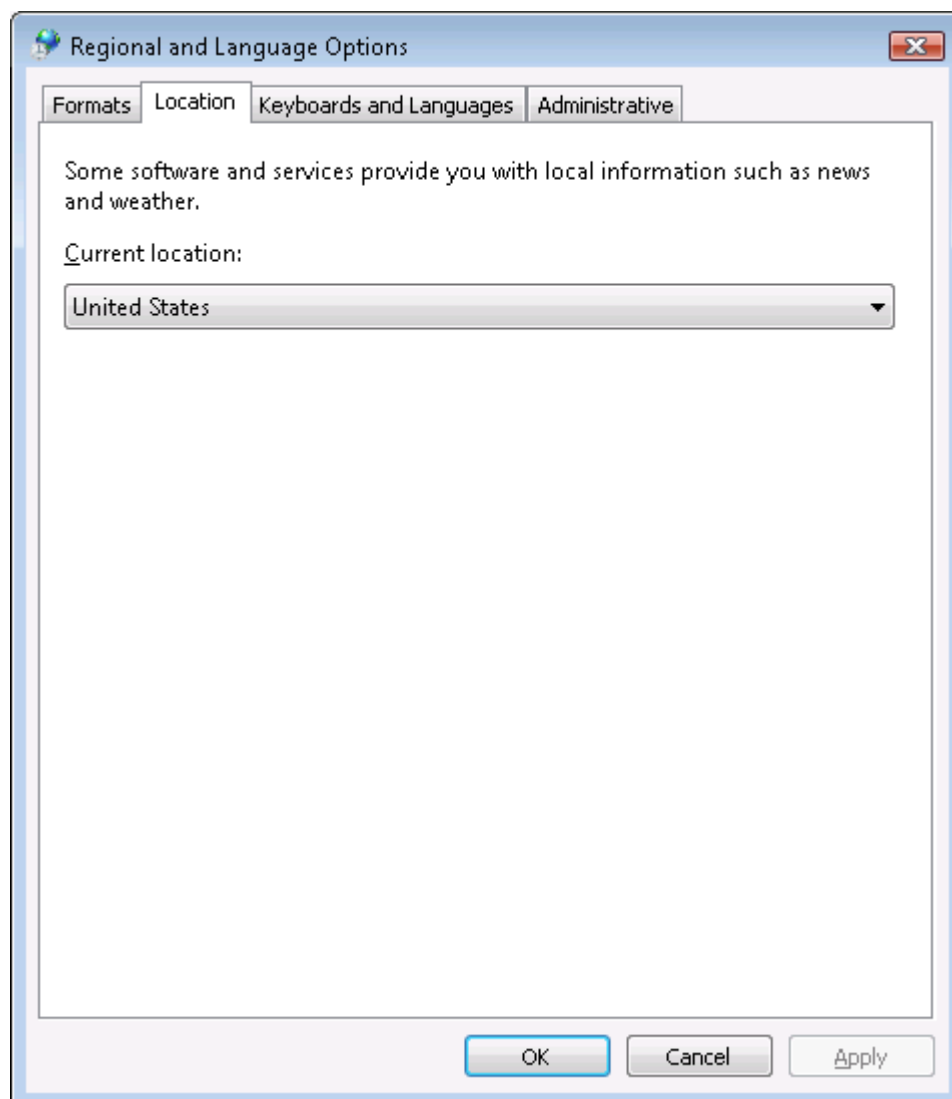
The language of the data in the database used by the application should match the Windows operating system language settings on the machine where Apeon Server is installed. If the language settings conflict, problems will occur when the Web application is run.

Verify that the language of the data in the database used by the Apeon-deployed Web application matches the language settings of the client operating system:

Step 1: Select Windows Start Menu | Settings | Control Panel.

Step 2: Click *Regional Options*, as shown in the following figure.

Figure 8.7: Regional Options



Step 3: Verify that the language selected in the *Your locale (location)* list box and the language checked as default in *Language settings for the system* settings are the same. The language can be from different regions as long as it is the same language.

This configuration is not required for English language applications.

8.1.4 Disabling anti pop-up software

If anti-popup software (example: Popup Stopper by Panicware) is installed and is active on the Client machine, it will not allow any browser pop-ups to occur. This can cause certain operations to become disabled in the converted Web applications such as the enhanced Web features detailed below, or other operations that automatically load an Internet Explorer window or popup. To prevent any problems, it is recommended that users disable any anti-popup software while using the converted Web applications.

8.2 Accessing Web applications

8.2.1 URLs for Web applications

A typical URL for a Web application is similar to one of the following:

- `http://192.0.0.80:8080/appeondemo/x32_index.htm`
- `http://192.0.0.80:8080/appeondemo/x64_index.htm`

A complete Web application URL consists of four parts:

Table 8.1: Web URL

Web URL	Description
Protocol	Uses " <i>http://</i> " typically. If your Web Server is configured as an SSL Web Server, use " <i>https://</i> ".
IP address or domain name	Uses the IP address or domain name of the Web Server. Using <i>localhost</i> listeners in a production environment is not recommended, although the Apeon installation program has created an HTTP listener (<i>localhost: 9988</i>) for <i>EAServer\Apeon Server</i> .
HTTP port	(Optional) Specifies the port number that your Web Server accepts for HTTP connections. If it is not specified, the default port is 80. If several Web Servers are running on the same machine, make sure that the port specified is a port of the Apeon Web Server.
Web file path	Specifies the path of the entry page (<i>x32_index.htm</i> for 32-bit system, or <i>x64_index.htm</i> for 64-bit system) of the Web application, relative to the home directory of the Web server. It is the path set for the Web application URL in Application Profiles, for example, " <i>demo/</i> " or " <i>demo/x32_index.htm</i> " (<i>x32_index.htm</i> can be omitted).

8.2.2 Running Web applications

There are two methods to run a Web application:

- **Typing the URL of the Web application in Internet Explorer address bar:** You can always use this method to access the application, on the condition that the computer meets [Section 8.1, "Requirements"](#).

- **Launching the Web application from the Apeon Developer Run button:** *Run* is a shortcut to Apeon applications that are deployed to the default Apeon Server and Web Server.

This section explains how to launch a Web application from the Apeon Developer *Run* button.

8.2.2.1 Launching Web applications from *Run* button

You can launch the Web application by clicking the *Run* button in the Apeon Developer toolbar. Apeon Developer automatically remembers the URLs of the Web applications that are deployed to the default Apeon Server and Web Server.

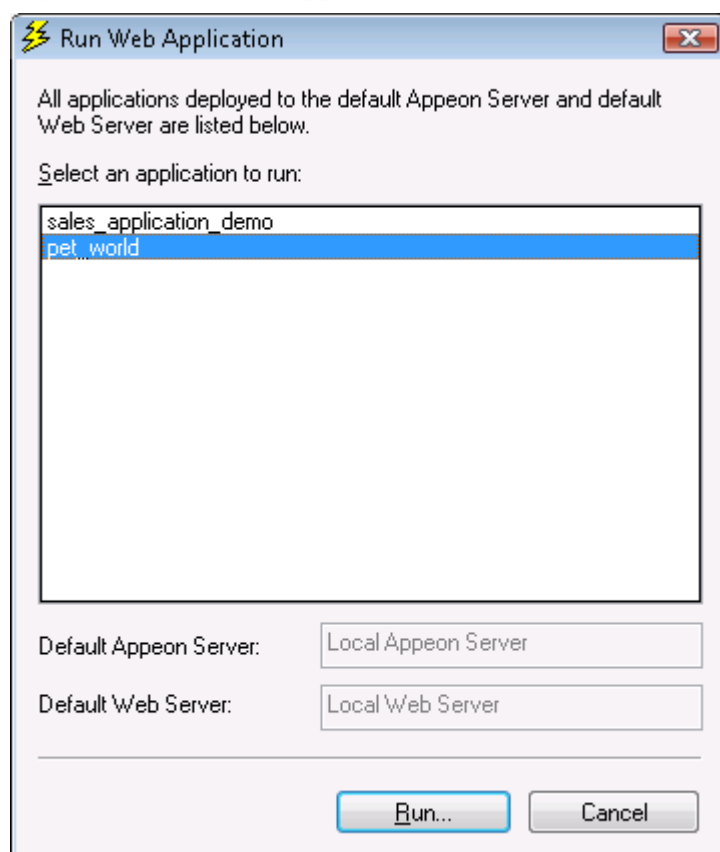
To run a Web application from the Apeon Developer toolbar:

Step 1: Verify that the default Apeon Server and Web Server in the Server Profiles settings have been started.

Step 2: Click the *Run* button (⚡) on the Apeon Developer toolbar.

If more than one application is deployed, the *Run Web Application* window is displayed as shown in the following figure, prompting you to select which application to run.

Figure 8.8: Run Web Application window



Only applications deployed to the Default Apeon Server and Default Web Server are listed in the *Run Web Application* window.

If you have deployed an application to several different Web file folders on the same Web Server, Apeon Developer will only remember the URL used in the last deployment,

although the URLs to access the other Web file folders used in the previous deployments will also be valid.

Step 3: Select a Web application from the list and click *Run*.

8.2.2.2 Selecting a run mode

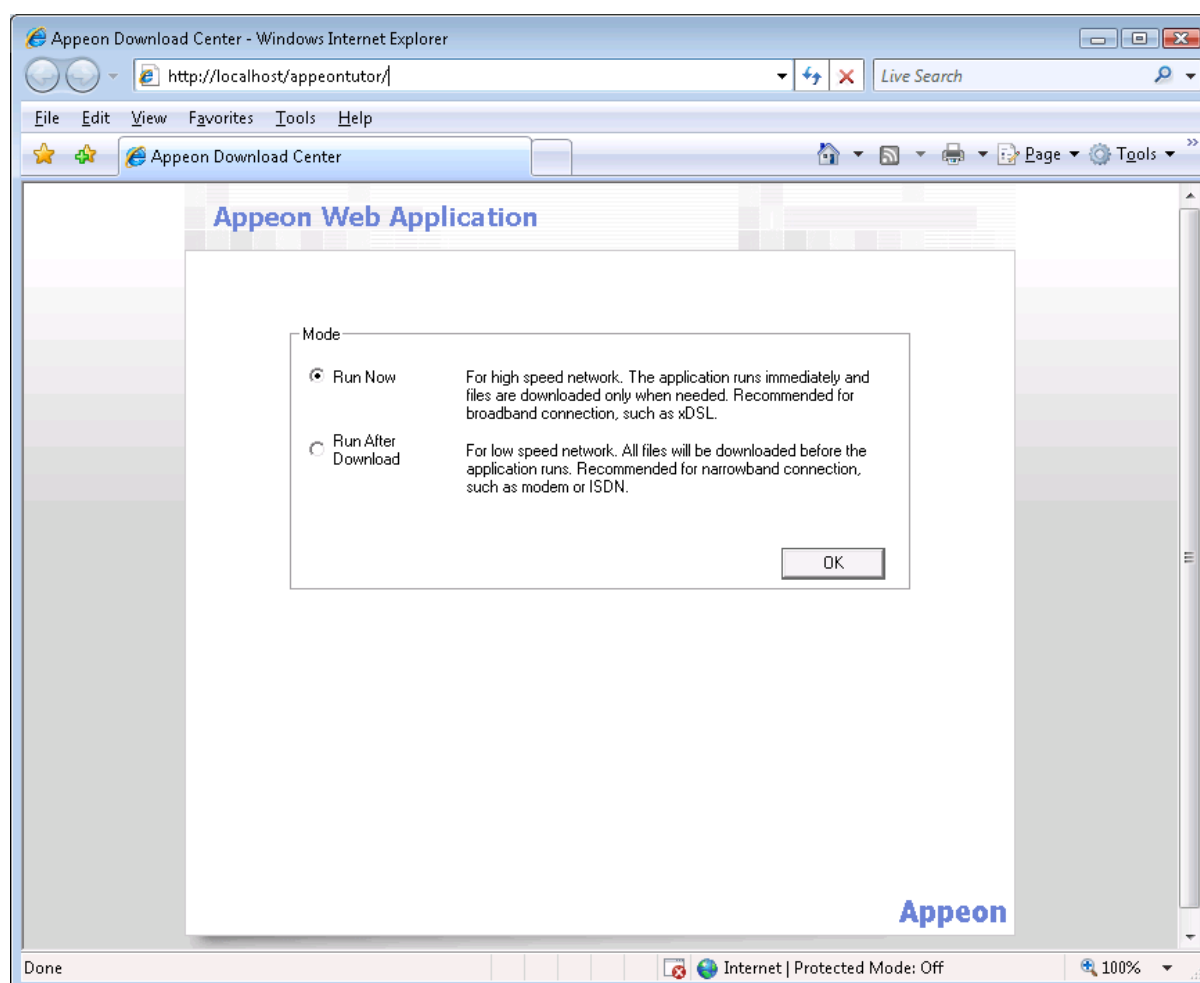
When you run a Web application for the first time, a run mode selection page will be displayed, if you have enabled the *Allow user to select run mode* option in AEM (see *Appeon Server Configuration Guide* for details).

This page allows you to select from the following run modes (as shown in the following figure):

- **Run Now:** The application runs immediately and files will be downloaded only when used. This mode is recommended for high speed network.
- **Run After Download:** Files will be downloaded before the application runs. This mode is recommended for low speed network.

You can also set a run mode to be the default mode in AEM (see *Appeon Server Configuration Guide* for details).

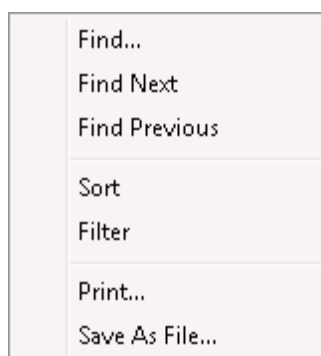
Figure 8.9: Run Mode window



8.3 Appeon DataWindow menu

Appeon provides a Web enhancement, the Appeon DataWindow menu, for all DataWindows deployed with Appeon. When right-clicking on a deployed DataWindow, you can access the Appeon DataWindow popup menus: Find, Find Next, Find Previous, Sort, Filter, Print, and Save As File, as shown in the following figure.

Figure 8.10: Appeon DataWindow popup menu



8.3.1 Enabling Appeon DataWindow menu

To use the Appeon DataWindow menu, you must enable it by using two PowerBuilder global functions: *appeonpopmenu* and *appeonpopmenuon* that are defined in *appeon_workarounds.pbl*. For detailed instructions on how to use *appeonpopmenu* and *appeonpopmenuon* functions in a DataWindow, refer to *Appeon Client Functions* in the *Appeon Workarounds Guide*.

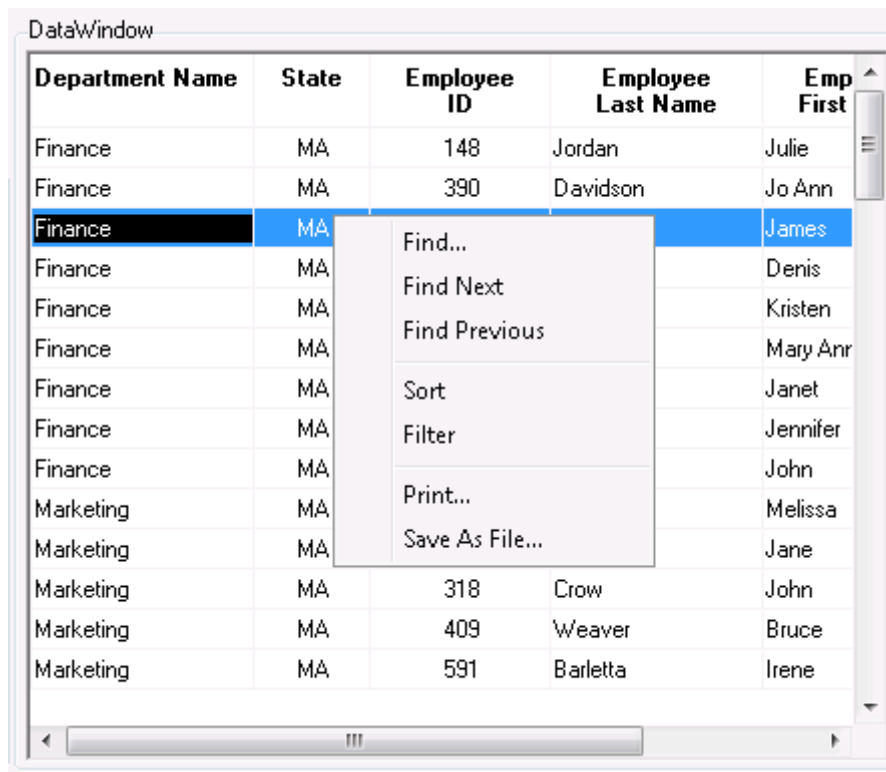
8.3.2 Using Appeon DataWindow Menu

Appeon DataWindows menu have the following features: Find, Find Next, Find Previous, Sort, Filter, Print, and Save As File. Perform the following steps to use the menu in the Web DataWindows.

8.3.2.1 Find

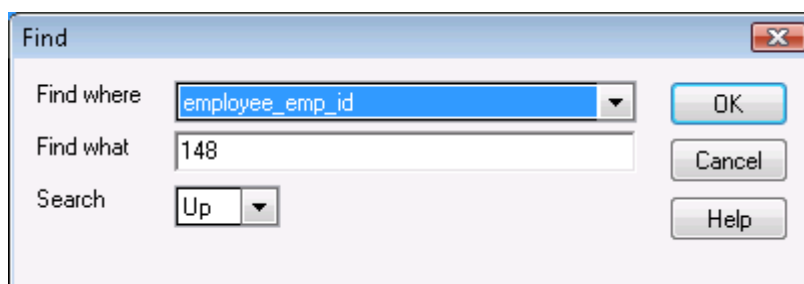
The user can search for data using the Find, Find Next and Find Previous functions.

Step 1: Right-click the Web DataWindow and select *Find* from the popup menu, as shown in the following figure.

Figure 8.11: Find

Step 2: Select the column and search scope and input criteria for the search.

Use the Find function to find all rows where the orders count column is equal to 2, as shown in the following figure.

Figure 8.12: Find

Step 3: The first row that matches the search criteria will be highlighted.

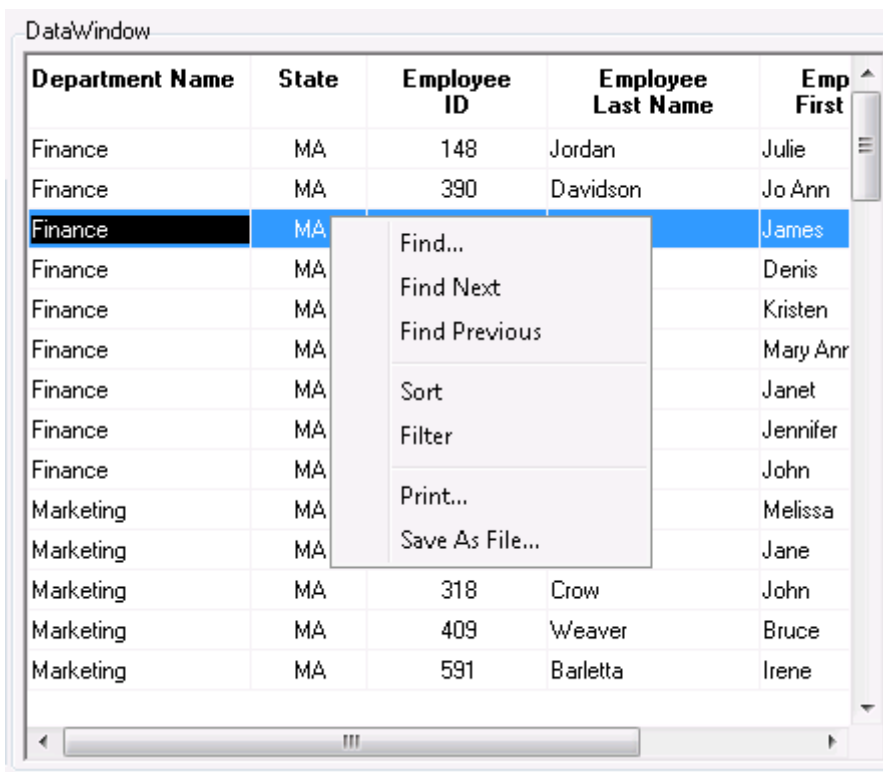
Step 4: Right-click and select *Find Previous* or *Find Next* to highlight the rows (one at a time) that match the criteria.

8.3.2.2 Sort and filter

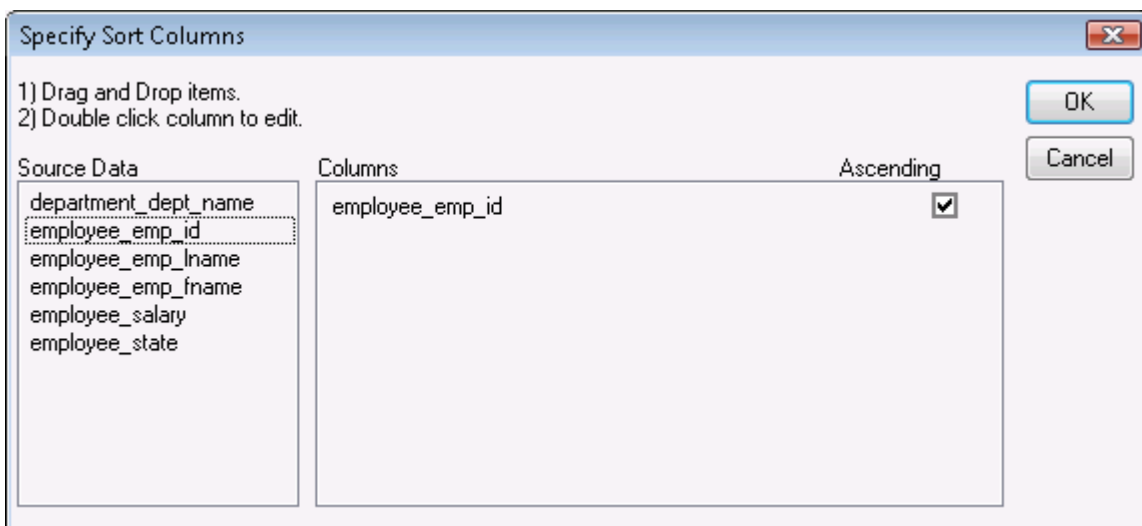
The user can sort data by the column in ascending or descending order, or filter data using a number of functions.

To sort data:

Step 1: Right-click the Web DataWindow and select *Sort* from the popup menu, as shown in the following figure.

Figure 8.13: Sort

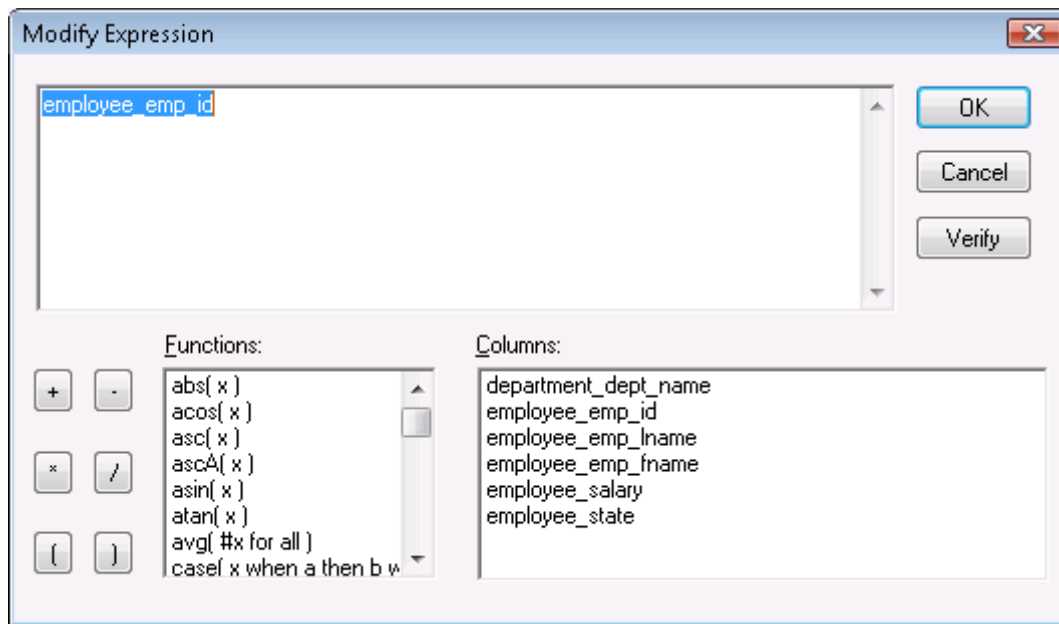
Step 2: Specify the column used to sort the data in the DataWindow by clicking on the column name in the left list box. The column name appears on the right, as shown in the following figure.

Figure 8.14: Specify sort column

Step 3: Check the *Ascending* check box to sort the data in ascending order or uncheck the *Ascending* check box to sort the data in descending order. Click *OK* to accept the changes. The DataWindow automatically refreshes and the data is sorted.

If you want to edit the selected column, double click it to open the "Modify Expression" dialog, as shown in the following figure.

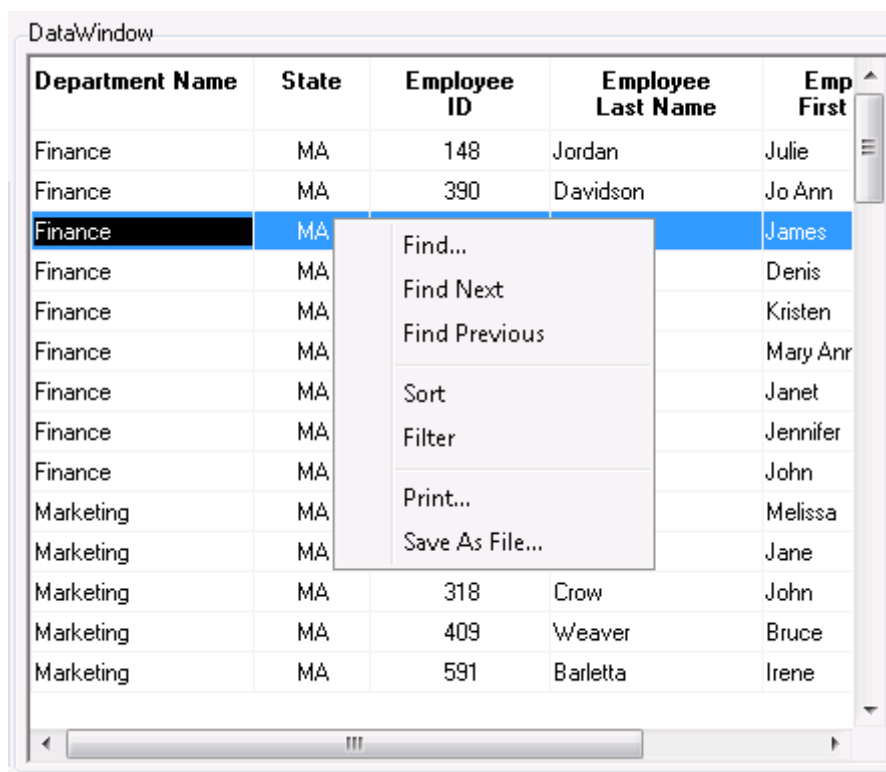
Figure 8.15: Modify Expression dialog



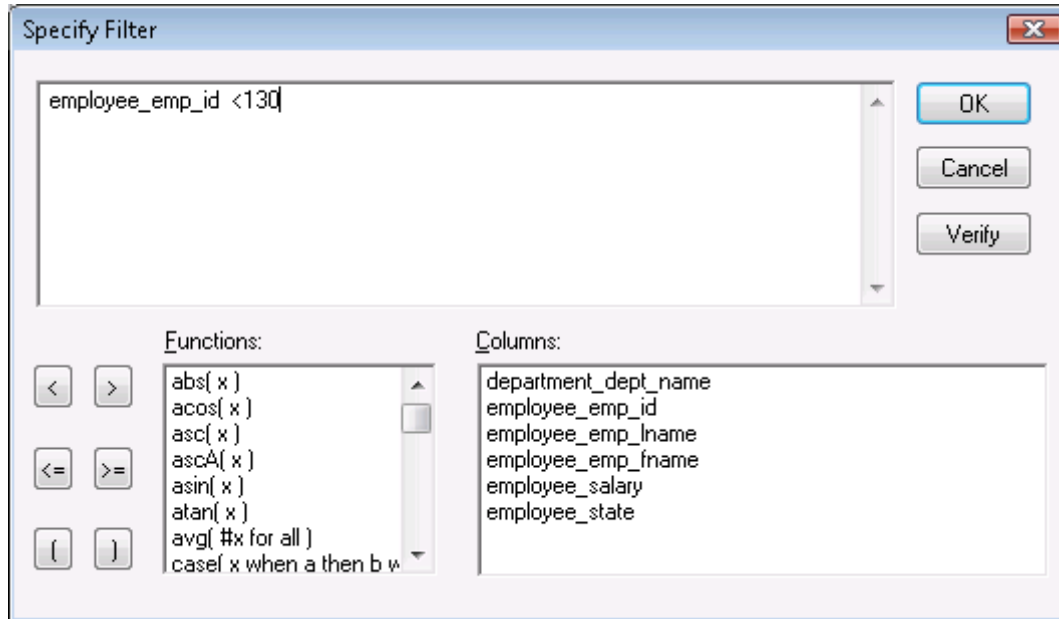
To filter data:

Step 1: Right-click the Web DataWindow and select *Filter* from the popup menu, as shown in the following figure.

Figure 8.16: Filter

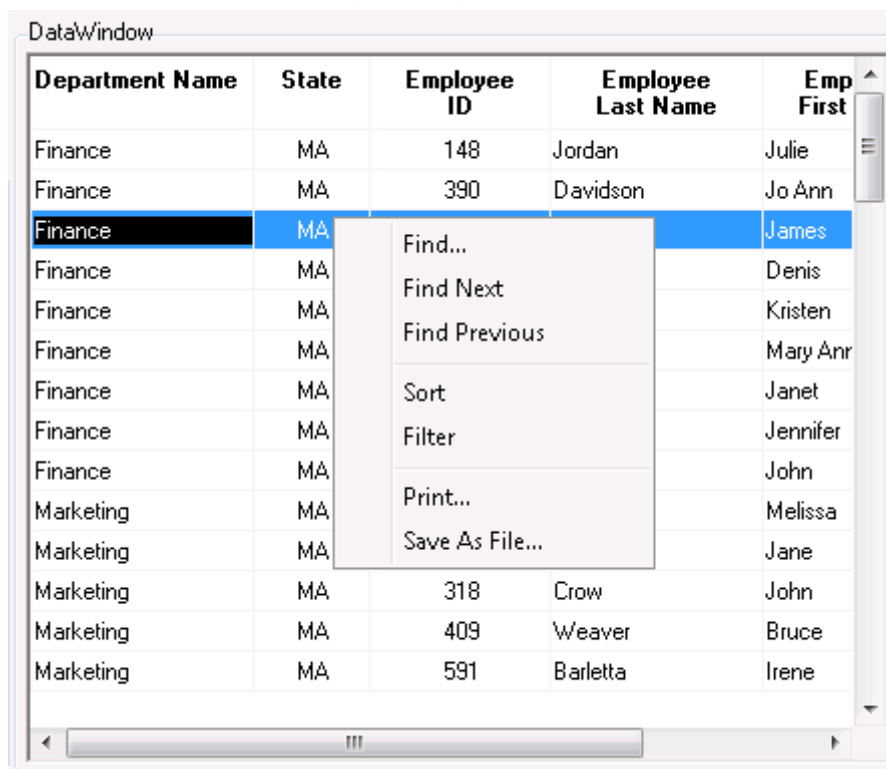


Step 2: Specify the filter by selecting the functions and columns. Click *Verify* to test whether the filter expression is valid. Click *OK* to accept the filter, as shown in the following figure. The DataWindow automatically refreshes and the data is filtered.

Figure 8.17: Specify Filter**8.3.2.3 DataWindow printing**

The Print menu provides user ability to print DataWindows directly on printers connected to the Client.

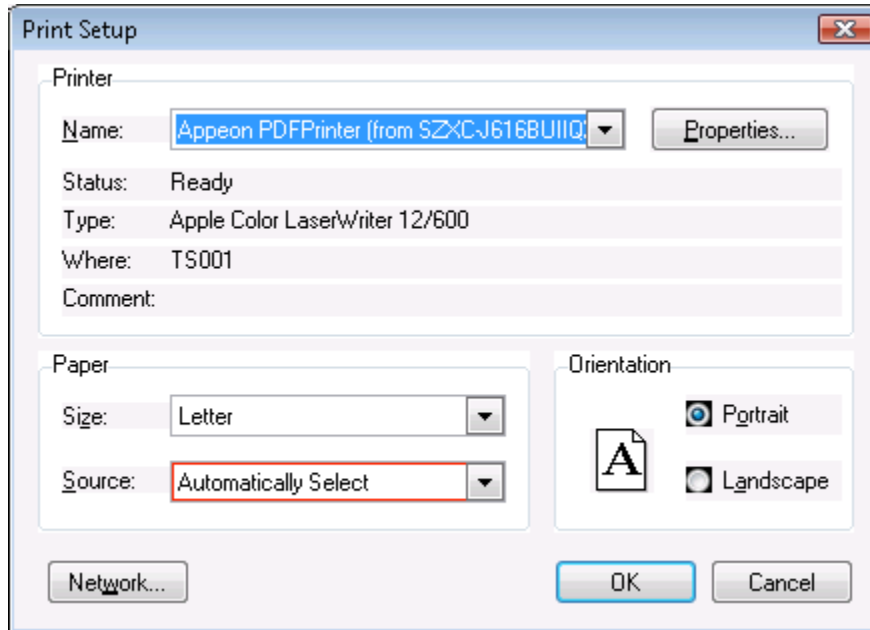
Step 1: Right-click the DataWindow and select *Print* from the popup menu, as shown in the following figure.

Figure 8.18: Print file with physical printers

Step 2: Specify the printer settings and paper settings in the **Print Setup** window, as shown in the following figure. Click *OK*.

The DataWindow will be printed directly to the local printer.

Figure 8.19: Print setup window

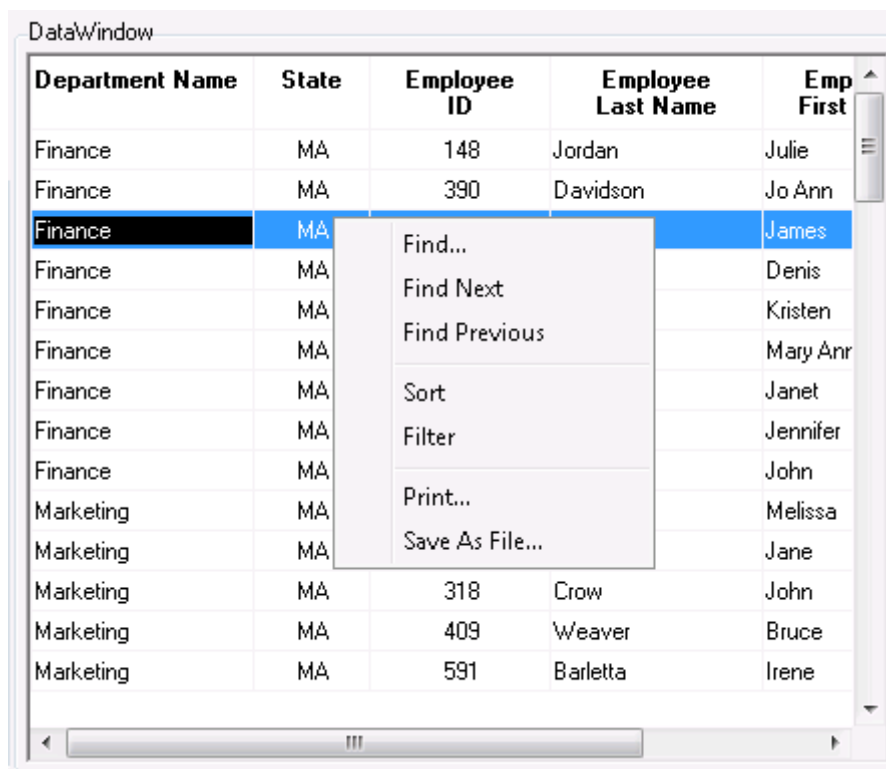


8.3.2.4 SaveAs

The user can save the contents of a DataWindow in different file formats.

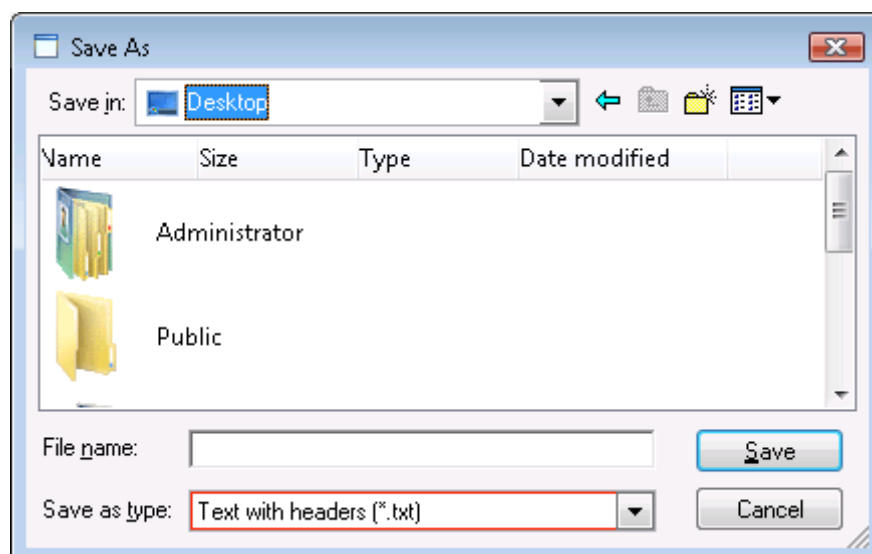
Step 1: Right-click the DataWindow and select *Save As File* from the popup menu, as shown in the following figure.

Figure 8.20: Save As File



Step 2: Specify the file location, file name and file type in the Save As window, as shown in the following figure.

Figure 8.21: Save As window



Note:

If the DataWindow without any data is saved as the HTML file or the XML file, on the Web the DataWindow header will not be saved, whereas it will be saved on PB.

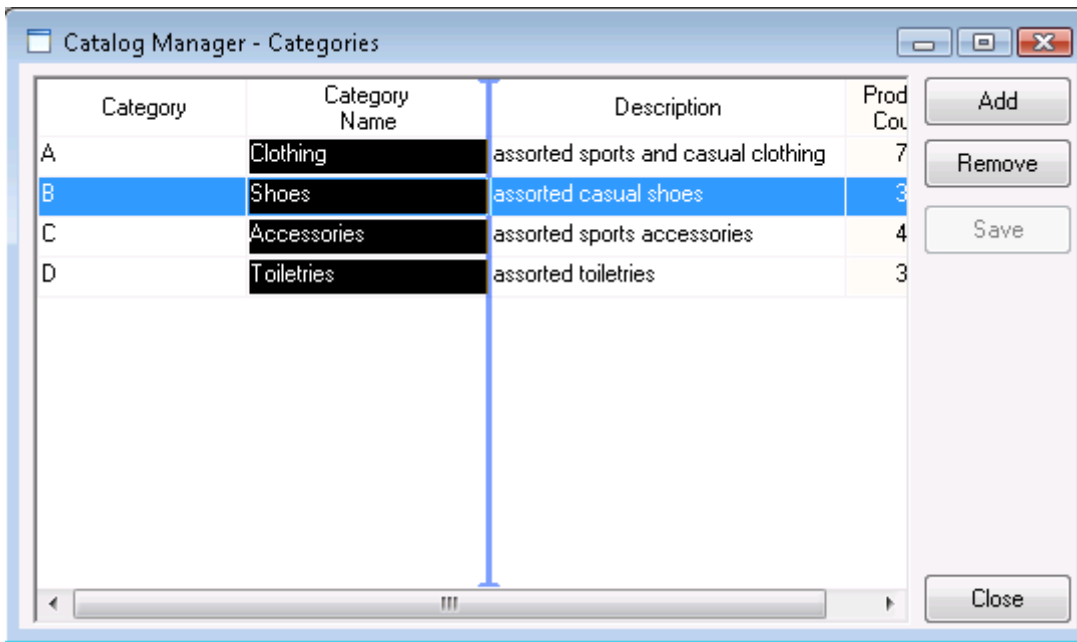
8.3.2.5 Additional Enhanced Features

In addition to the popup menu (Find, Find Next, Find Previous, Sort, Filter, Print, Save As File), Apeon offers more features for users to manage DataWindows on the Web. Users can place DataWindow columns in a different order by dragging and dropping them to new positions. When navigating an editable DataWindow, users can use the popup menu to quickly edit the contents. These features are always available and require no extra coding to be enabled. The following steps show you how to access them:

Step 1: Select a column header in the Web DataWindow and the selected location is highlighted, as shown in the following figure.

Step 2: Drag and drop it to the desired location, and the location to be dropped is highlighted as well.

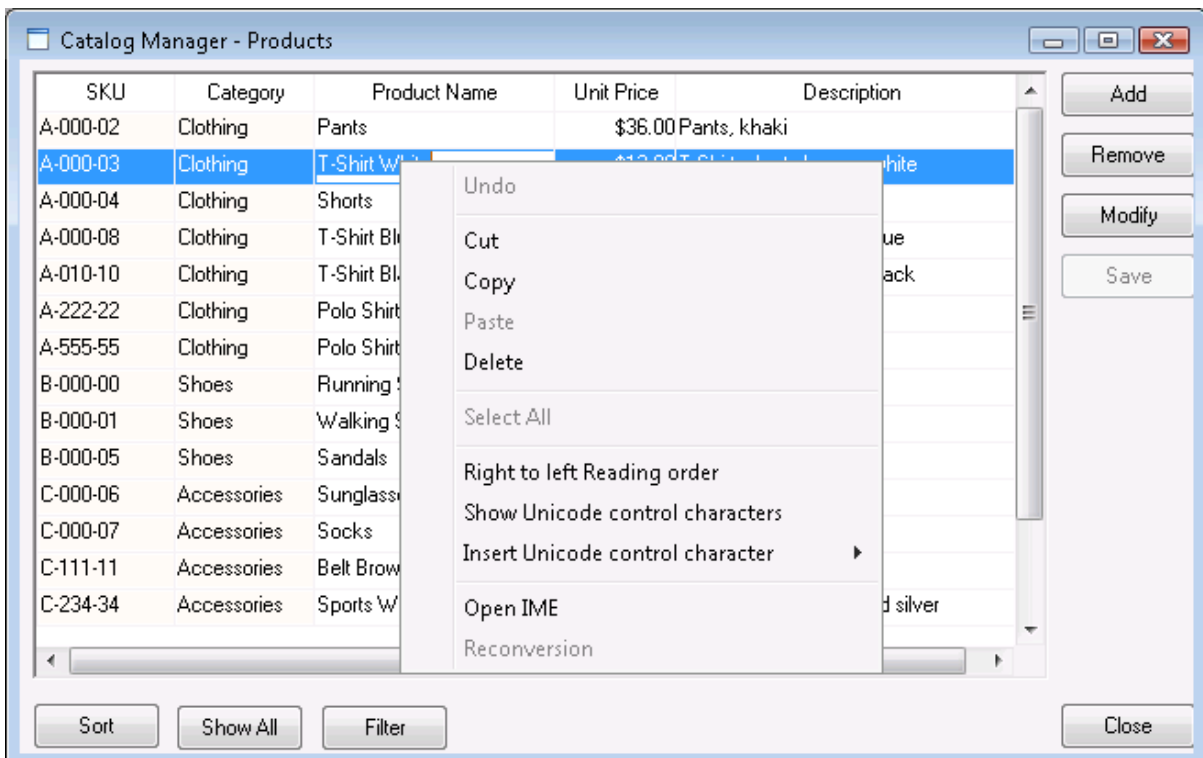
Figure 8.22: Select a column header



Step 3: Right click on an item in an editable HTML DataWindow and a menu pops up, as shown in the following figure.

The user can select the following menu items from the popup menu to perform quick editing: Undo, Cut, Copy, Paste, Delete, Select All.

Figure 8.23: Popup menu for quick edition



9 Using Information Manager

Information Manager provides easy access to all the available reports or log files generated during the application migration process, including debug, development, and deployment. The reports are categorized as follows: Analysis and Performance. The log files are categorized as follows: Deploy Log and Analysis Log.

The following table provides a brief description of all the reports generated during the Web migration process and the report types they are associated with.

Table 9.1: Report Description

Report Type	Description
Analysis	<p>Analysis Report is generated during a feature analysis or application deployment, and records the unsupported features in the application.</p> <p>After you click this button, the UFA Report Window will be displayed. For detailed instructions, refer to Section 5.2, “Working with UFA Report”.</p>
Performance	<p>Heavy Window Report is generated during a feature analysis or application deployment, and records the complex windows in the application. For detailed instructions, refer to Section 5.3, “Working with Heavy Window Report”.</p>

The following table provides a brief description of all the log files generated during the Web migration process, and the log types they are associated with.

Table 9.2: Log Type Description

Log Type	Description
Deploy Log	<p>Deploy Log is generated during application deployment, and records the deployment process status.</p> <p>All log files are named according to the following format:</p> <p>Log Type (i.e. <i>DeployWizardLog</i>, or <i>FeatureAnalysisLog</i>) + time when the log file is generated (yyyy/mm/dd/hh/mm/ss) + xml.</p> <p>For example, <i>DeployWizardLog_20050220101918.xml</i>.</p>
Analysis Log	<p>Analysis Log is generated during the feature analysis process, and records the analyzing status.</p>

9.1 Viewing the reports and logs


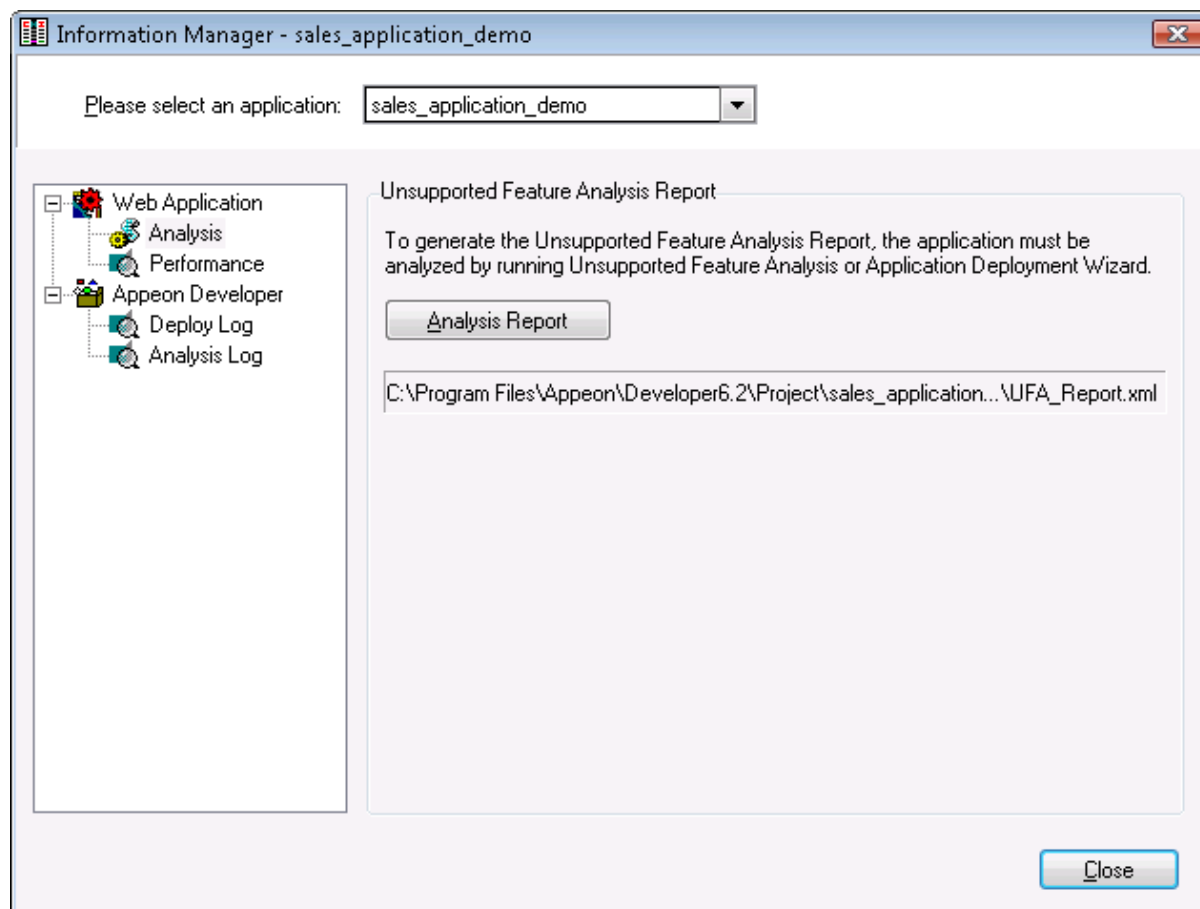
Step 1: Click the *Information* button  on the Apeon Developer toolbar and the *Information Manager* is displayed, as shown in the following figure.

Figure 9.1: Information Manager

Step 2: Select the application in the top dropdown listbox.

Step 3: Select a report type or log type in the left box and the corresponding report button or log files are displayed in the right box.

If there is more than one log file generated, the log files are listed in order according to the date and time of generation; the latest log will be listed at the top.

You can open one log at a time, or open several logs at one time: select a continuous range of log files by holding down Shift and click log files, or select a disconnected range of log files by holding down Ctrl and clicking log files. Then click *View* to open the selected log files.

The *View* and *Delete* buttons will be disabled if no log files were generated.

Note: For Deploy Log, you can click *View All* to view all information such as errors, warnings, and process description, or click *View Warning* to view warnings only, or click *View Errors* to view errors only.

Step 4: Click the report button or log file to view the report or log.

You can continue with other operations while the Information Manager opens. For example, you can perform feature analysis, deploy the application, or run the Web application. If any new reports or logs are generated when the Information Manager is still open, the new reports or logs are not reflected in the Information Manager immediately. You need to refresh Information Manager in either of the following ways:

- Close the Information Manager and open it again, or

- Select a different application and then select the original application again in the Information Manager.

10 Packaging and Installing Web Applications

The application packaging tool helps PowerBuilder developers to generate portable installation **packages** for their Appeon deployed Web applications. With the installation package, the user can directly install the Web application to servers without installing Appeon Developer and using it to do Web deployments; this will save time. The PowerBuilder developers do not need to provide the source PowerBuilder application to the user; this protects the author's intellectual property rights.

DO NOT try to copy the generated Web files from one Appeon Server or Web Server to another Appeon Server or Web Server simply by copying and pasting the files. This copy and paste method cannot guarantee that the Web application will work. If you need to distribute an Appeon Web application to multiple Appeon Servers and Web Servers located in different network areas, instead of performing deployment using Appeon Developer in each area, Appeon recommends that you:

1. Deploy the target PowerBuilder application using the Appeon Deployment Wizard (See [Chapter 6, *Deploying PowerBuilder Applications*](#)).
2. Pack all the application files using the Appeon Web Application Package Wizard (See [Section 10.1, "Packaging a Web application"](#)).
3. Copy the installation package to a machine running Windows and run the installation package to install the application to any number of target servers located in the same network area. (see [Section 10.2, "Installing and uninstalling a Web application"](#)). Note that the generated installation packages run on the Windows platform only.

You can customize the installation/uninstallation wizard provided by Appeon to suit your needs. (See the Web_App_Install_Help.chm help file under the help folder of the generated package.)

10.1 Packaging a Web application

10.1.1 What can be packaged?

The package wizard allows you to pack the following files and settings:

- Mandatory Web application files
Include all Web files, DataWindow syntax, INI files, image files, DLL/OCX files etc.
- Mandatory application profile, Appeon Server profile, and Web server profile settings
Include the profile name, Web URL, PowerBuilder version, file encryption, performance settings, server type, Appeon Server version, Appeon Server and Web server connection settings, AEM, connection caches etc. All these settings will be saved to the configuration files in the INI folder of the generated package. Of these configuration files, you can modify the config.xml file using the config.exe tool. For detailed information, refer to [Section 10.1.4, "Modifying the deploy-config file"](#).
- Optional EAServer components

When the Appeon Server is of type EAServer, you can package the local or remote EAServer components used by the application. Note that EAServer components work with EAServer application server only.

10.1.2 Important requirements

Before using the Appeon Web Application Package Wizard, verify that

1. The target PowerBuilder application has been deployed as required:

You must have performed a **full deployment** on the target PowerBuilder application on the **same Developer machine** where you will use the packaging wizard to pack this application later, this will generate a complete set of files on the local Developer machine where the package wizard will be able to obtain and pack files.

2. The deployed application can run correctly.

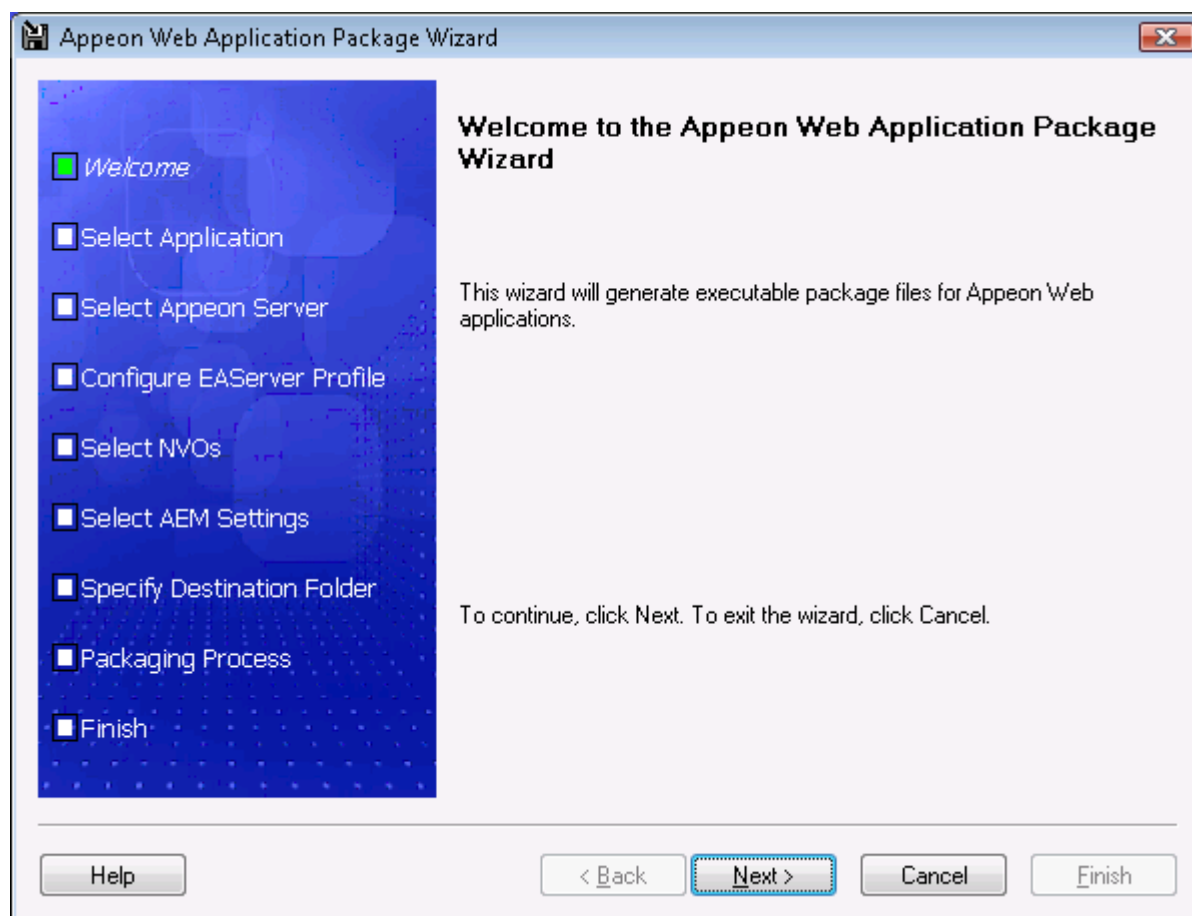
10.1.3 Packaging instructions

To package a Web application and the related settings, take the following steps:

Step 1: Start the servers, as the package wizard will pack settings of Appeon Server, AEM and NVOs.

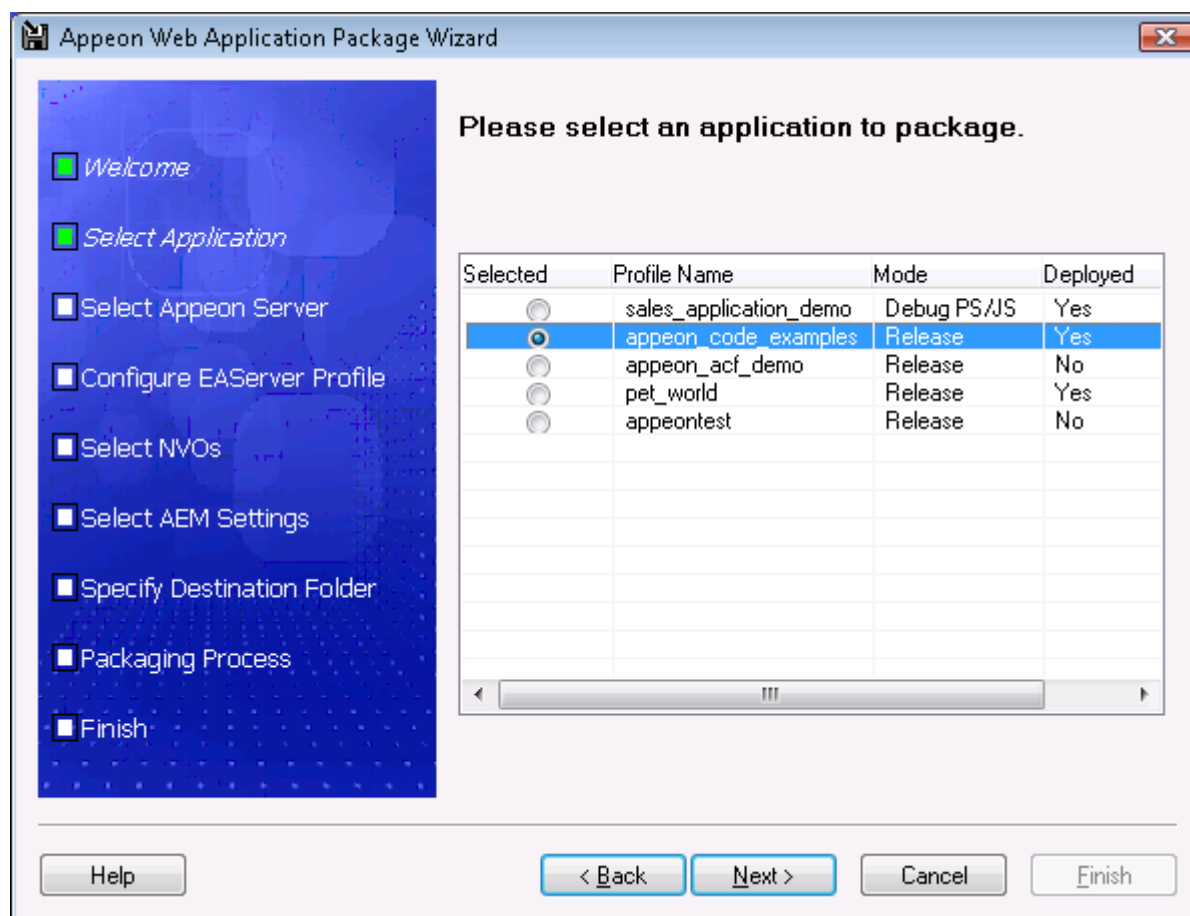
Step 2: Click the *Package* () button on the Appeon Developer toolbar.

The Appeon Web Application Package Wizard is displayed, as shown in the following figure. Click *Next* to proceed.

Figure 10.1: Welcome page

Step 3: Select the profile of the application that you want to package.

Select the profile that is identified with "Yes" in the Deployed column and click *Next*.

Figure 10.2: Select an application

The following table gives a brief introduction of the columns:

Table 10.1: Web Application Package Wizard

Column	Description
Selected	Identical to the default application profile selected in the Apeon Developer Configuration window.
Profile Name	All the application profiles configured in the <i>Apeon Developer Configuration</i> window are listed in the order that the application profiles are created.
Mode	Identical to the current mode the application profile is set to in the Apeon Developer Configuration window. Note that as the package wizard indicates, packaged applications should be available in <i>Release</i> mode. This mode prevents most forms of reverse engineering, and like application packaging, it protects the author's intellectual property.
Deployed	Indicates whether the application has been deployed using the local Apeon Developer. Only applications that have been deployed using the local Apeon Developer can be packaged.

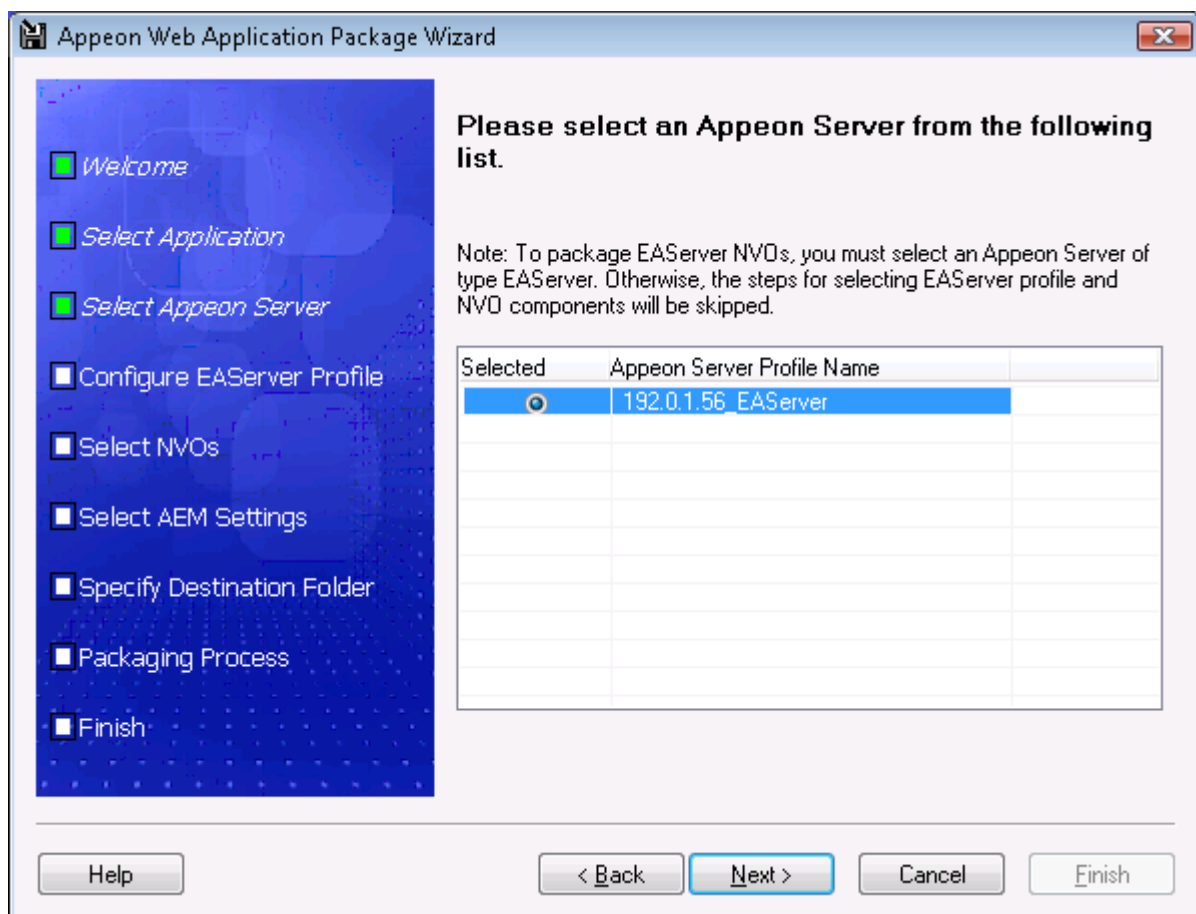
Step 4: Select the Apeon Server whose settings will be packaged and click *Next*.

The Apeon Server settings, such as the server type and the Apeon Server version, will be saved to the config.xml file in the INI folder of the generated package. If necessary, modify this file using the config.exe tool after the packaging is complete (refer to [Section 10.1.4, “Modifying the deploy-config file”](#)).

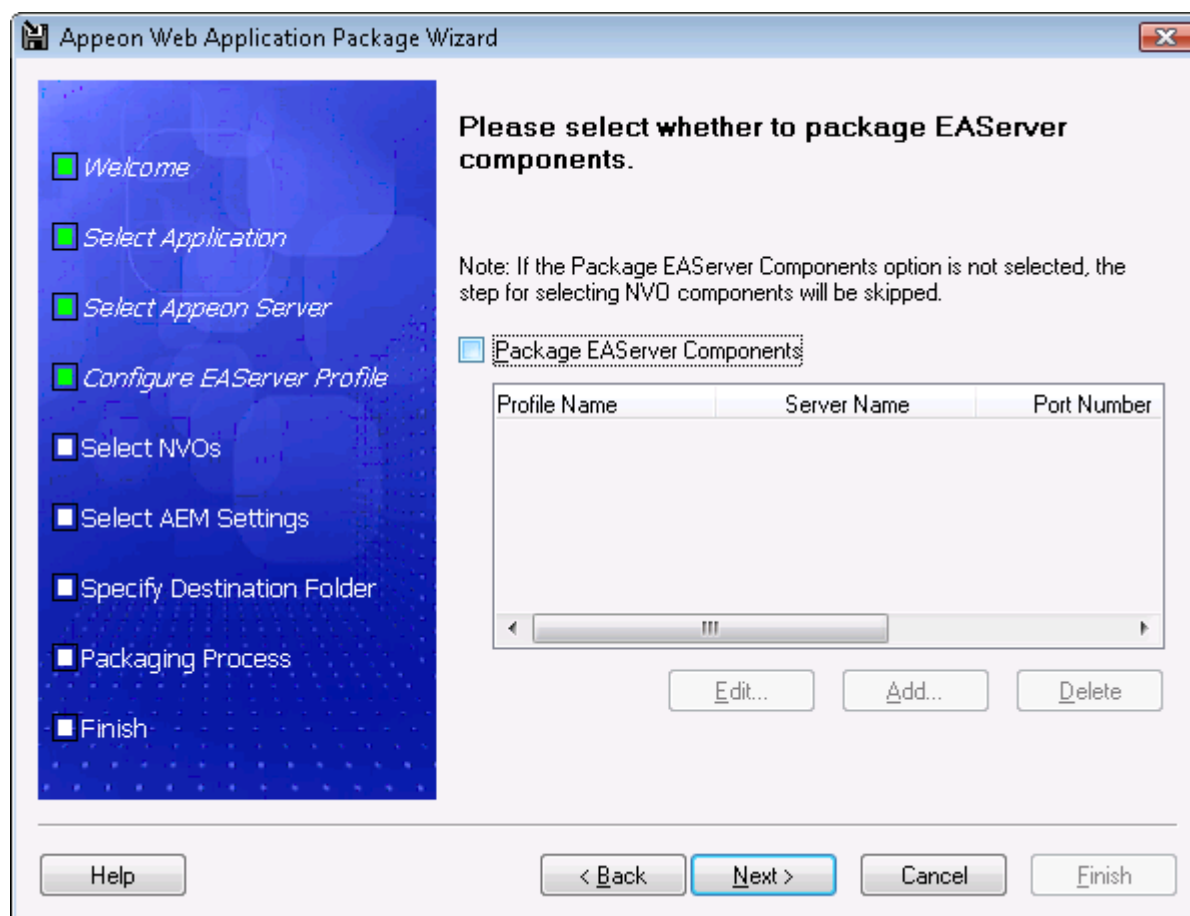
All the configured Apeon Servers selected into the default deployment profile in the Apeon Developer Configuration window are listed, as shown in the following figure.

The selected Apeon Server determines that its AEM settings will be packaged and that the packaged application can only be installed to Apeon Servers of the same version, such as 6.2 or 6.5, but not necessarily the same type.

Figure 10.3: Select an Apeon Server



Step 5: If the selected Apeon Server is of type EAServer, select whether to package EAServer components.

Figure 10.4: Configure EAServer profiles

If EAServer components are used in the application, select the *Package EAServer Components* option and then create connection profiles for EAServers which host the components. Follow instructions below to create EAServer profiles:

- Click *Add* to create an EAServer profile.
- In the Edit EAServer Profile dialog box, input the following connection parameters: profile name, host name or IP address, port number, user name and password.
- Click *Test* to ensure that the connection is successful.
- Click *OK* to save the new EAServer profile.

Figure 10.5: Edit EAServer profile

Profile Name:

Server Name:

Port Number:

Login Name:

Password:

Note: Input the real IP address in the Server Name field. It cannot be "127.0.0.1" or "localhost".

Step 6: If the *Package EAServer Components* option is selected in the previous step, select which components to package and click *Next*.

The selected NVOs will be packaged as *ComponentName.jar* and saved under the */NVO/* server profile name/package name folder.

Figure 10.6: Select NVOs

Apeon Web Application Package Wizard

Please select EAServer components to package:

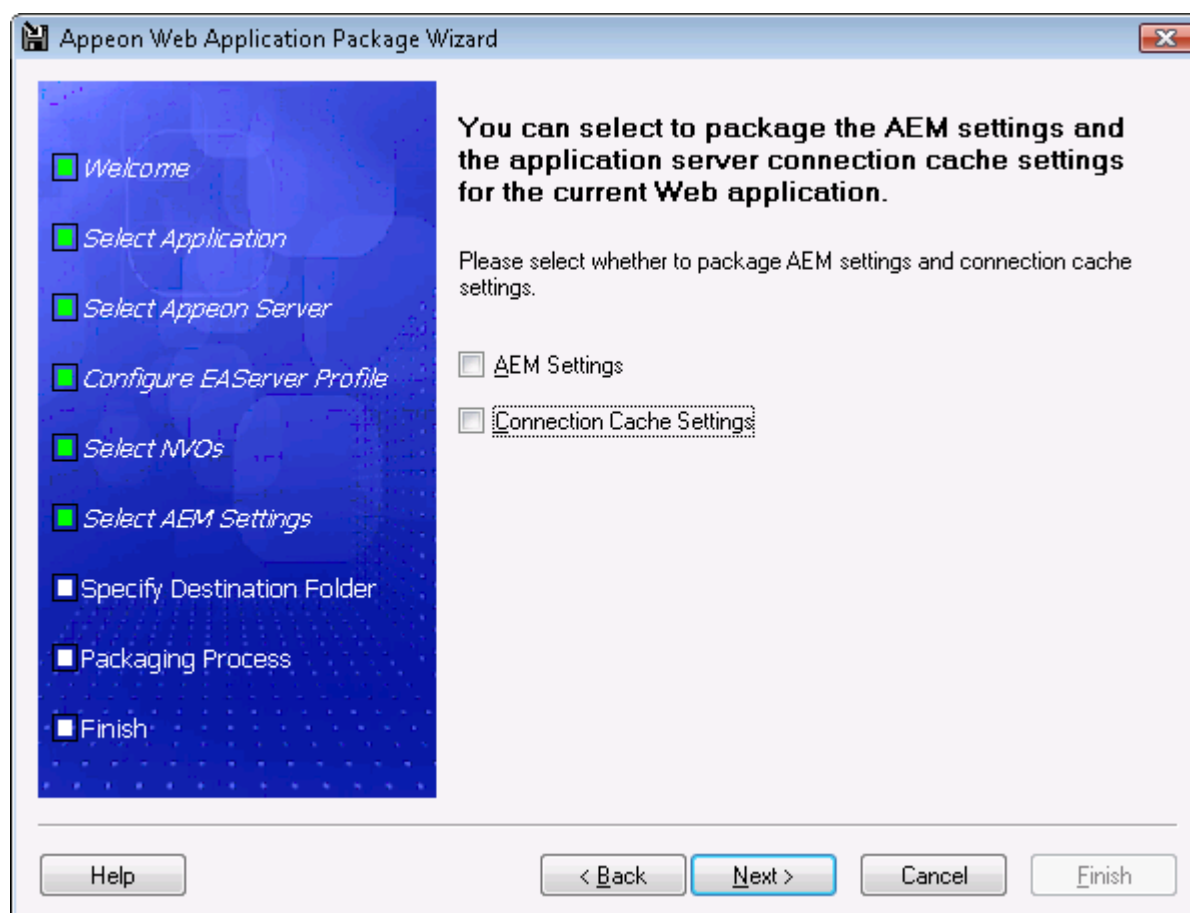
- Welcome
- Select Application
- Select Apeon Server
- Configure EAServer Profile
- Select NVOs
- Select AEM Settings
- Specify Destination Folder
- Packaging Process
- Finish

Package List

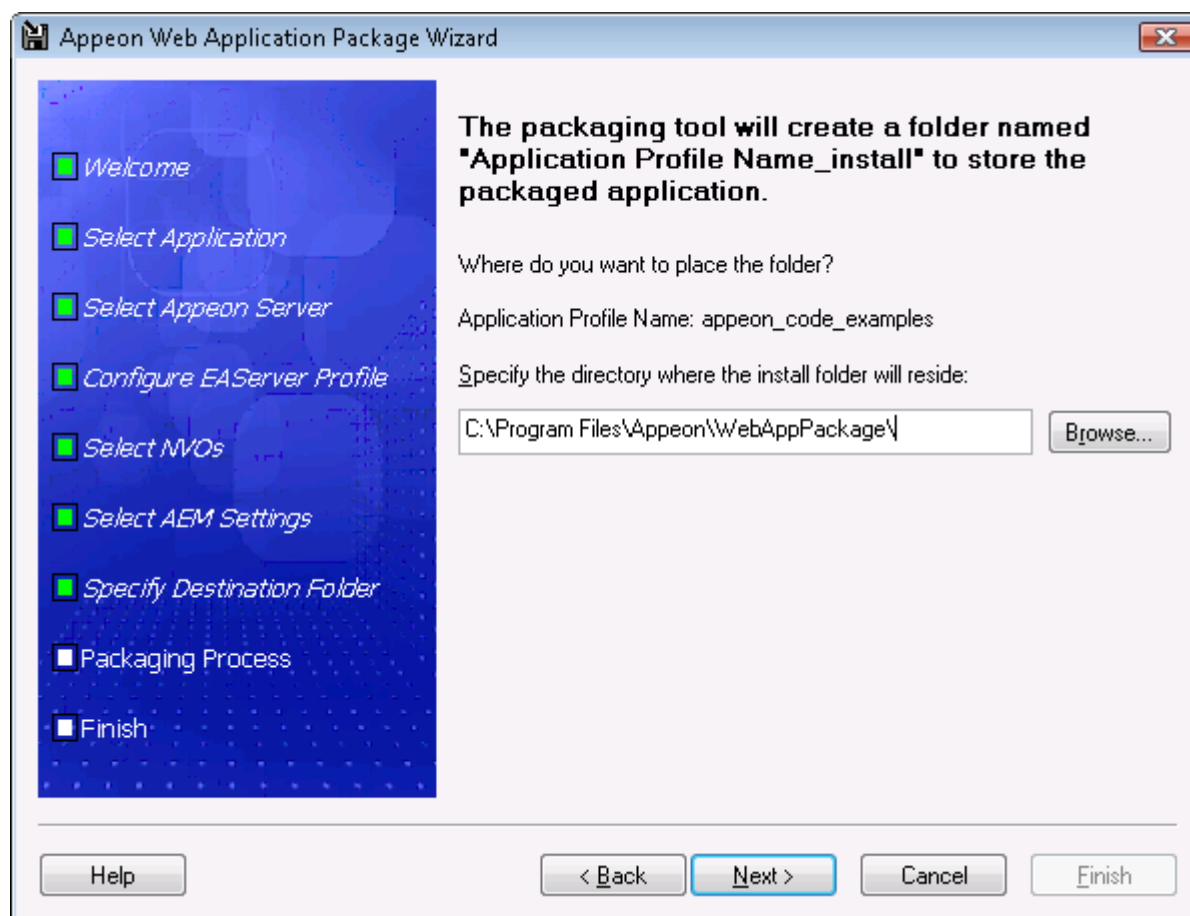
Step 7: Select whether AEM settings and connection caches for the current application will be packaged and click *Next*.

The AEM settings will be saved in the AEM.xml file and connection caches will be saved in the config.xml file.

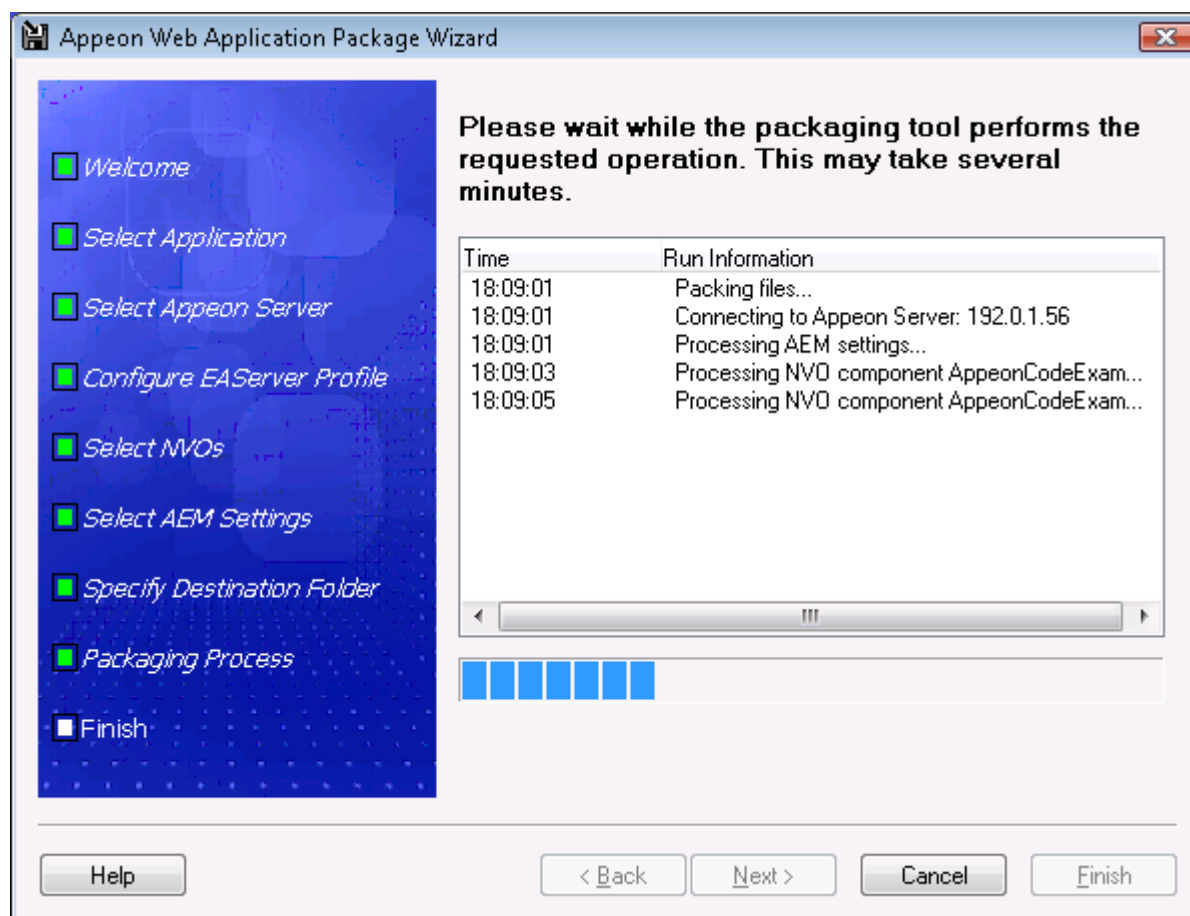
Figure 10.7: Select AEM settings and connection caches



Step 8: Specify the destination folder for the installation package and click *Next*.

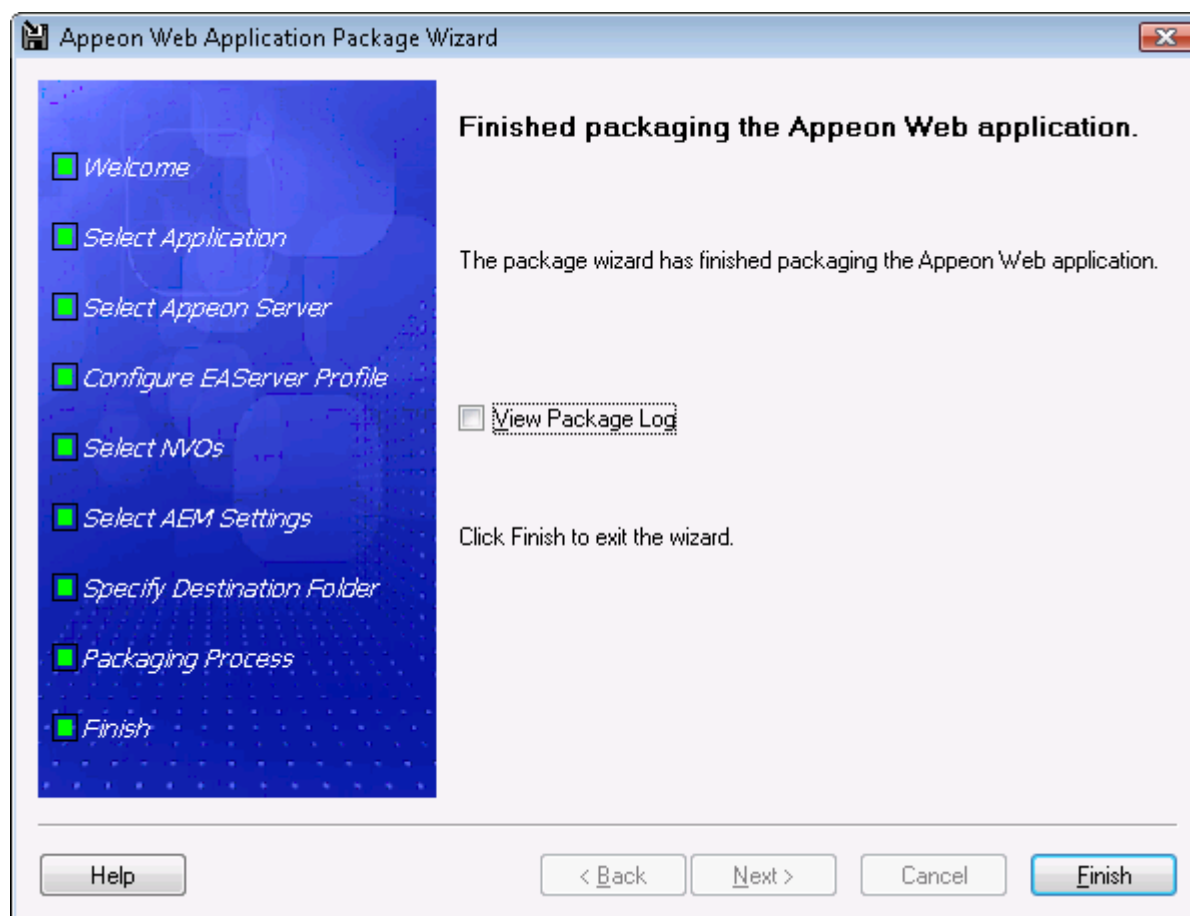
Figure 10.8: Specify destination location for the package

Step 9: Wait while the wizard is packing files and settings.

Figure 10.9: Web application packaging status window

Step 10: Once the operation is complete, click *Finish* to exit the package wizard.

To view the log information generated during the packaging process, select the *View Package Log* box and the click *Finish*. The log file will be displayed.

Figure 10.10: Web application packaging finished

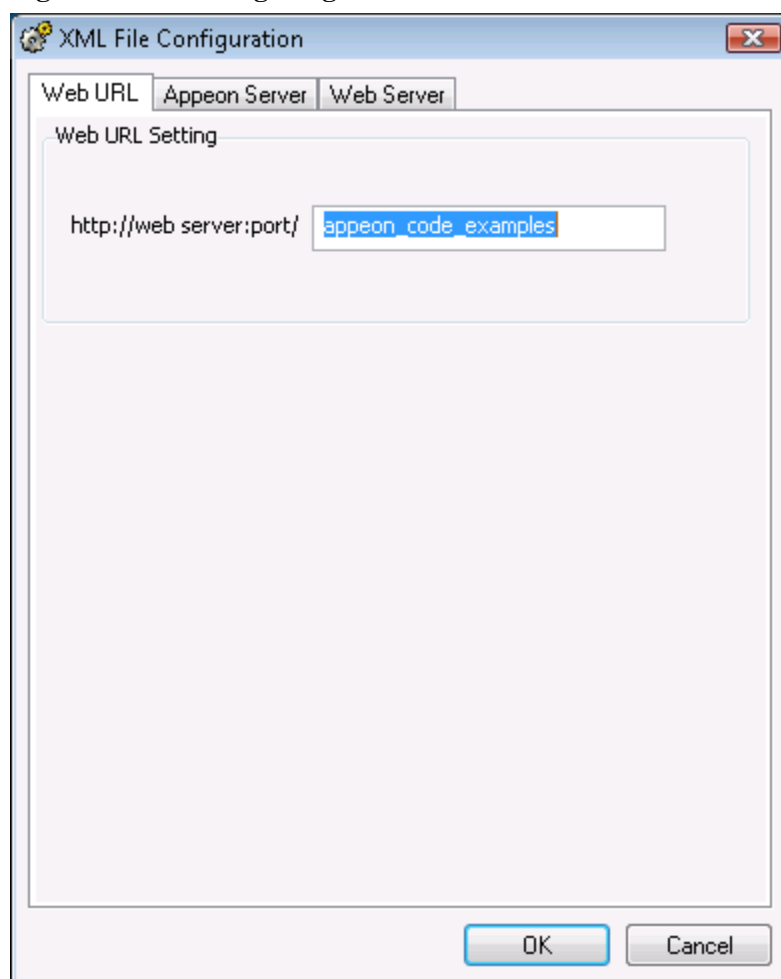
After the application is successfully packaged, all the necessary application files will be packaged and generated in the specified destination folder. You can install the application to any Apeon Servers and Web Servers.

10.1.4 Modifying the deploy-config file

The deploy-config file (config.xml) is created during the packaging process and includes the default settings of the application: application profile, Apeon Server profile, Web server profile, EAServer profile, EAServer components, and connection caches. You can modify the config.xml file using the config.exe tool to have identical settings of the target environment, so that the user can run the installation very conveniently without needing to specify them.

When you run the config.exe file in the generated package, an XML File Configuration dialog is displayed and loads the Web URL setting, Apeon Server settings, and Web server settings from the config.xml file. You can modify these settings on the corresponding tab pages and then click *OK* to save them to the config.xml file. The instructions to modify these settings are the same as to modify in the Apeon Developer Configuration window (see [Section 4.2, “Using Configure Tool”](#) for detailed instructions).

Important Note: If using JEUS as the target Web server, be sure to use the default Application Profile Name and Web URL. Changing the default Application Profile Name and Web URL will cause the Web files inaccessible.

Figure 10.11: Configuring the XML file

10.2 Installing and uninstalling a Web application

10.2.1 Points to note before installation

Be aware of the following points before installing an Appeon application:

- The Setup program of the Web application runs on the Windows platform only. To install applications to servers running on Unix/Linux, you must run the Setup program on the Windows platform and then install the application to remote servers running on Unix/Linux.
- The target Web servers must have the Appeon Server Web Component correctly installed.
- The packaged EAServer components, if any, can only be installed to EAServer application server.

10.2.2 Installing an application

You can copy the generated package to any computer running Windows and install the application to any number of Appeon Servers and Web servers. Installing an application using the generated package is the same as deploying an application using the Appeon Deployment Wizard.

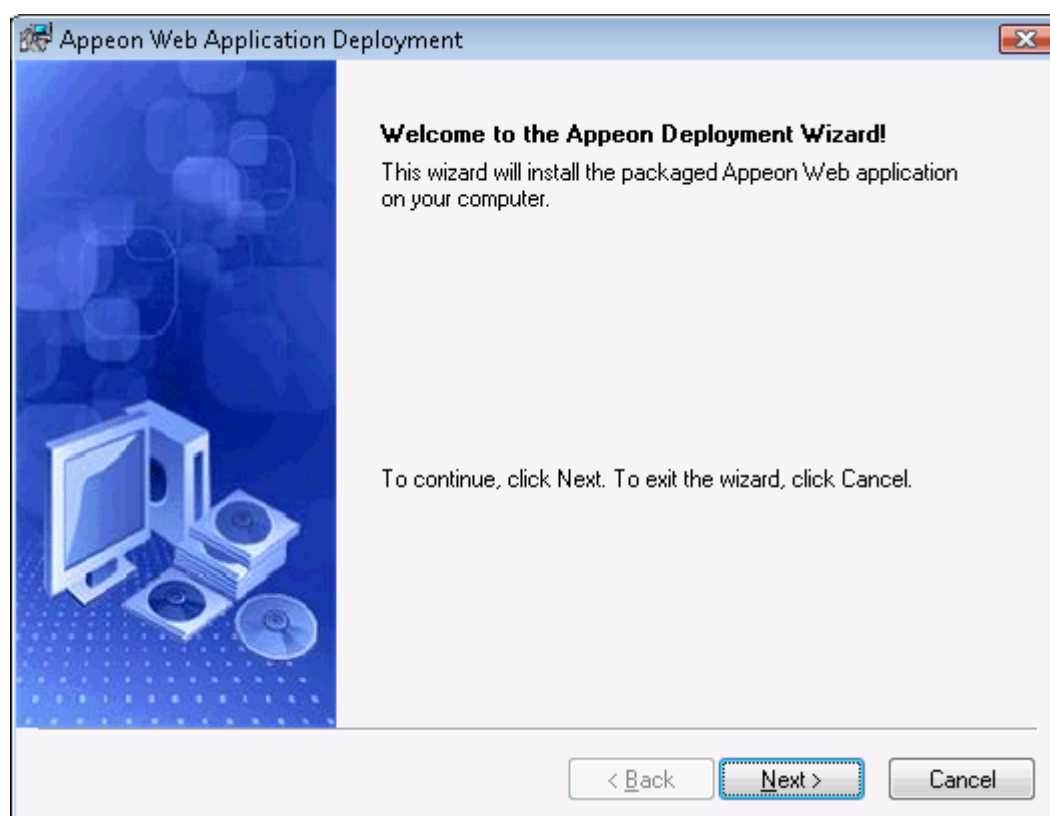
Step 1: Start the target Apeon Server(s) and Web server(s) where you want to install the application.

Verify that the target Web servers already have Apeon Server Web Component installed.

Step 2: Run the Setup.exe file in the generated package.

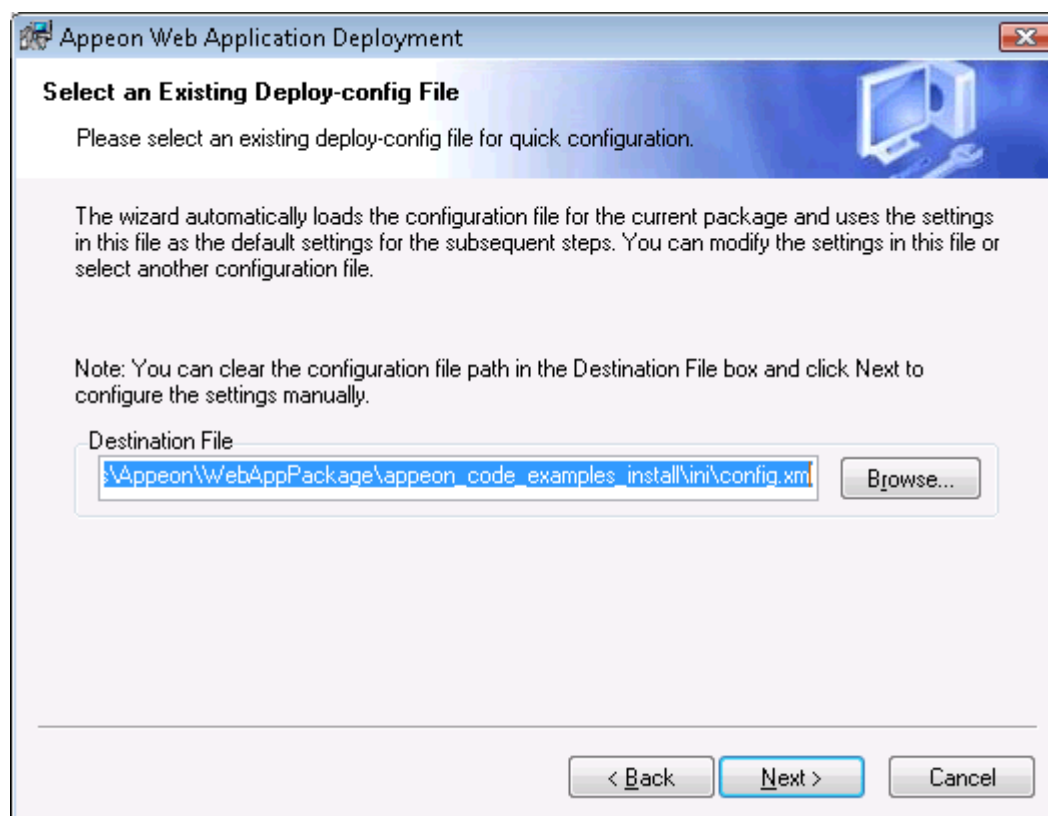
The Apeon Web Application Deployment wizard is displayed. Click *Next* to proceed.

Figure 10.12: Welcome page



Step 3: Select the deploy-config file (config.xml) to ease your configuration of the installation wizard. The installation wizard will use the settings in the config.xml file.

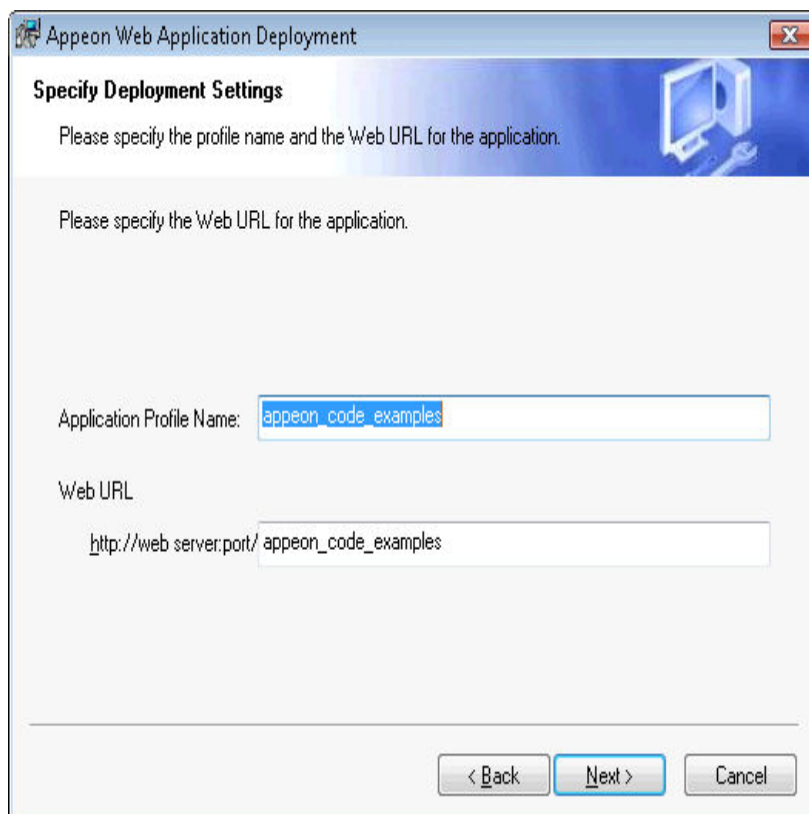
If you do not want to use the deploy-config file, simply skip this option and click *Next* to configure the settings step by step.

Figure 10.13: Select the configuration file

Step 4: Input the Application Profile Name and the Web URL for the application and click *Next*.

The Application Profile Name is used as the application name to identify an application. If you want to install multiple instances of the same application on the same server, you can run the setup package repeatedly and specify different Application Profile Name here. For example, input `apeon_code_examples_test` as the Application Profile Name in the first installation, and input `apeon_code_examples_production` as the Application Profile Name in the second installation. The Application Profile Name will be used as the application name to distinguish the multiple application instances on the same server, so they can be run independently from each other.

Important Note: If using JEUS as the target Web server, be sure to use the default Application Profile Name and Web URL. Changing the default Application Profile Name and Web URL will cause the Web files inaccessible.

Figure 10.14: Specify Application Profile Name and Web URL

Apeon Web Application Deployment

Specify Deployment Settings

Please specify the profile name and the Web URL for the application.

Please specify the Web URL for the application.

Application Profile Name:

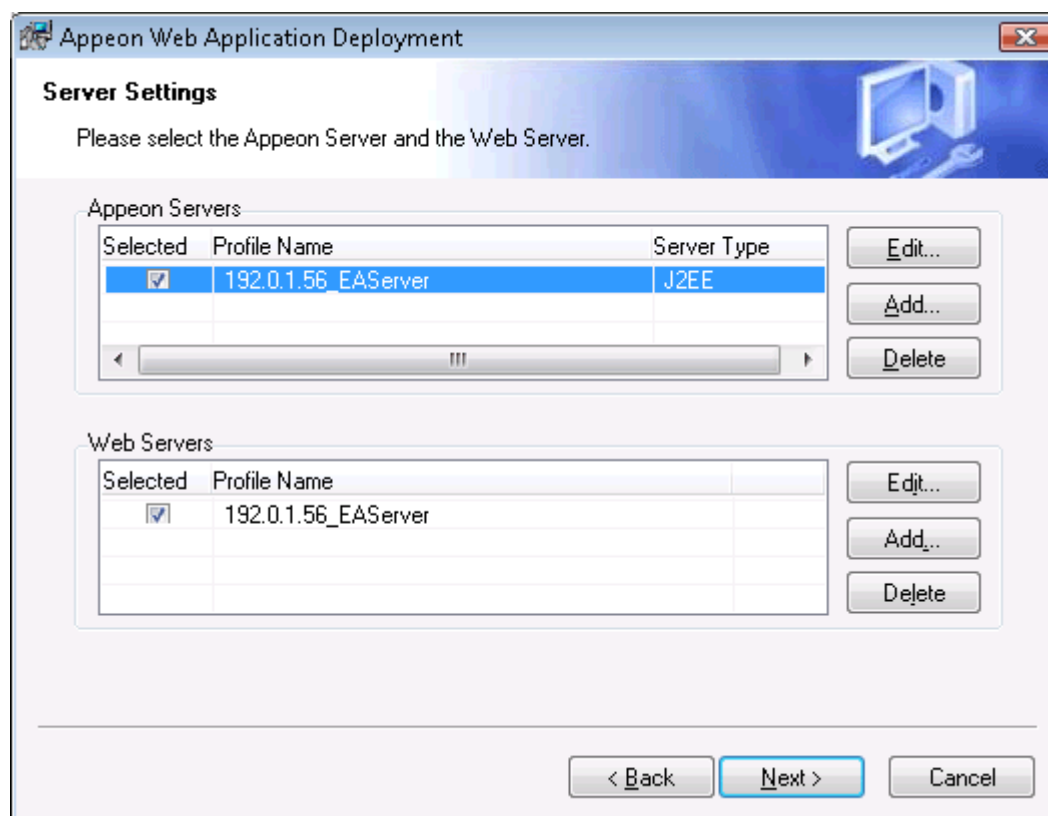
Web URL

< Back Next > Cancel

Step 5: Configure and select profiles for the Apeon Server(s) and the Web server(s) where the application will be installed.

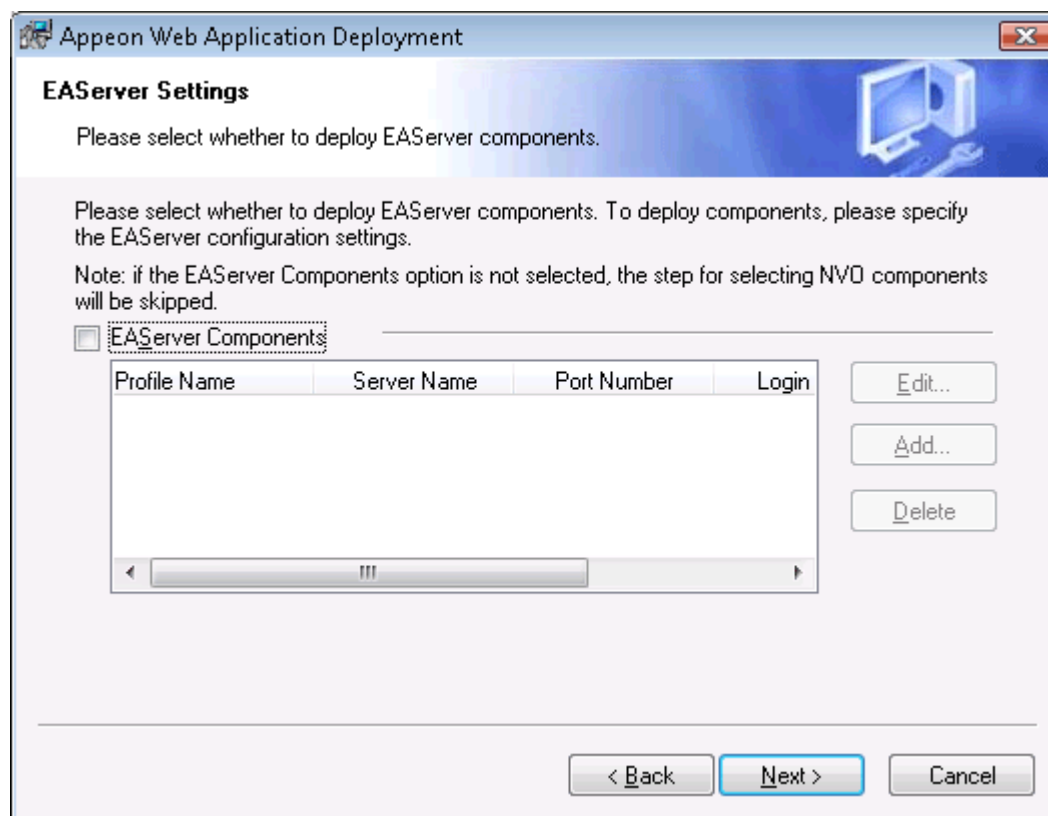
To install the application to more than one Apeon Servers, please make sure the Apeon Servers are of the same version (such as 6.2 or 6.5) as the Apeon Server selected for packaging.

To install the application to an Apeon Server cluster, please create an Apeon Server profile for each Apeon Server in the cluster. For detailed instructions on how to create the Apeon Server profile and Web server profile, refer to [Section 4.2.3, “Managing server profiles”](#).

Figure 10.15: Specify server settings

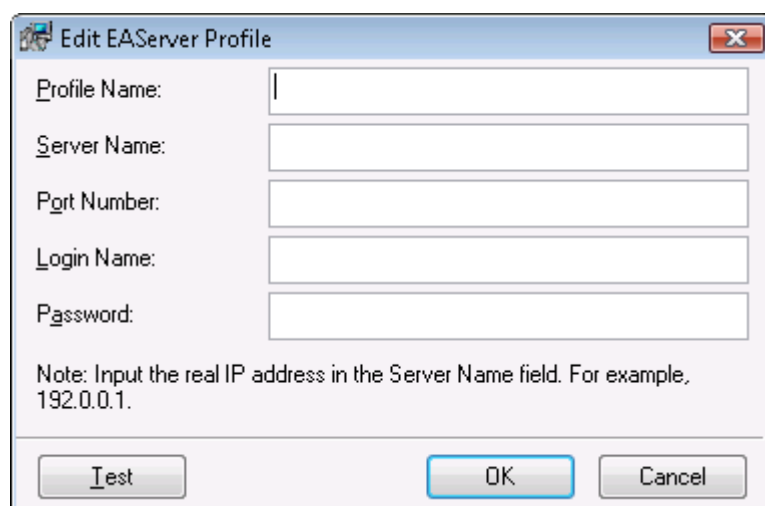
Step 6: Select whether to deploy EAServer components.

After NVO components are deployed, you must generate stub/skeleton in EAServer. Detailed instructions are provided in *Generating Stub/Skeleton in EAServer* in the *Apeon Migration Guide*.

Figure 10.16: Specify EAServer settings

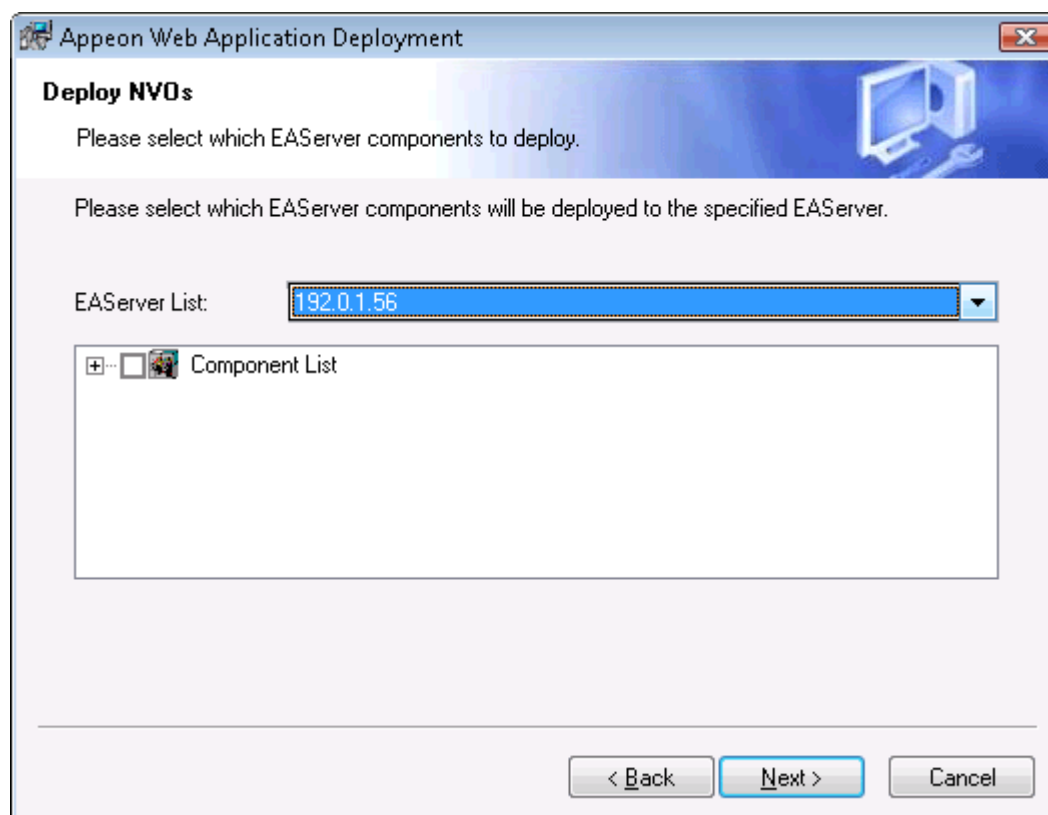
If EAServer components are used in the application, select the *EAServer Components* option and then create connection profiles for EAServers where you want to deploy the components. Follow instructions below to create EAServer profiles:

- Click *Add* to open the Edit EAServer Profile dialog box.
- Input the connection parameters: profile name, host name or IP address, port number, user name and password.
- Click *Test* to verify the connection and the click *OK* to finish the creation.

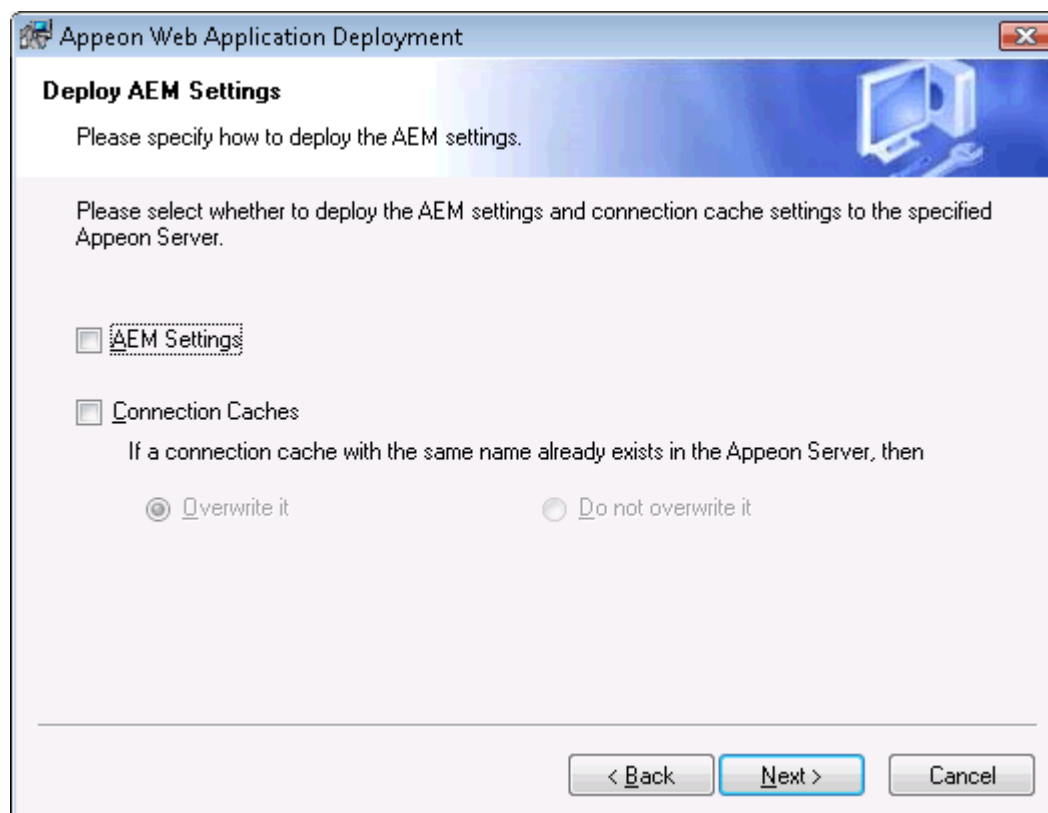
Figure 10.17: Edit EAServer Profile

Step 7: If the *EAServer Components* option is selected in the previous step, select the EAServer profile from the list and the components to deploy. Click *Next* to proceed.

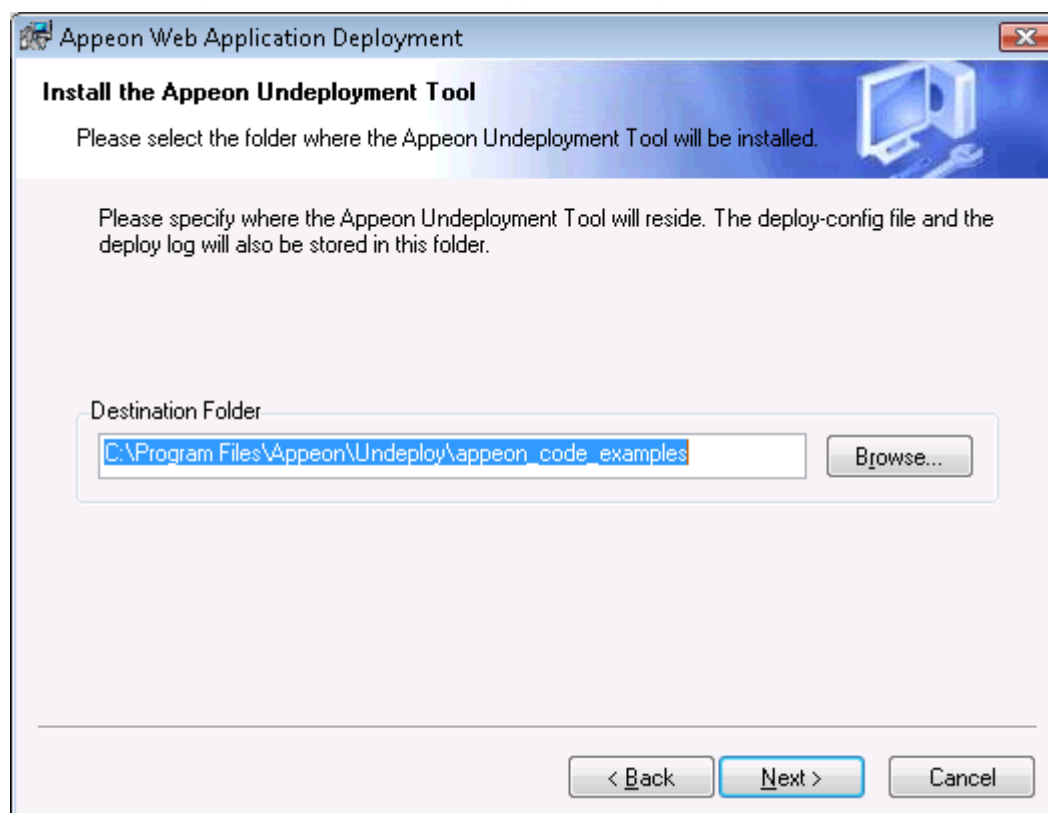
Figure 10.18: Deploy NVOs



Step 8: Select whether to install AEM settings and connection caches for the current application and click *Next*.

Figure 10.19: Deploy AEM settings

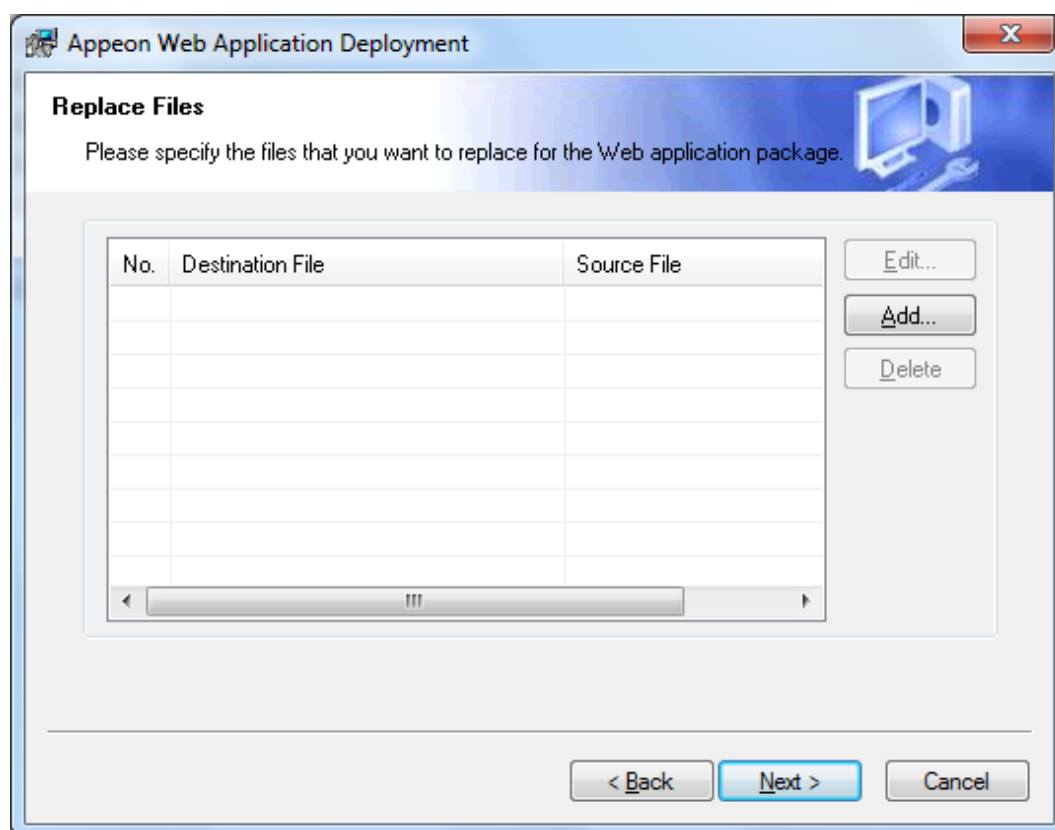
Step 9: Specify the destination folder for the undeployment tool and the log file and click *Next*.

Figure 10.20: Specify location for the Apeon Undeployment Tool

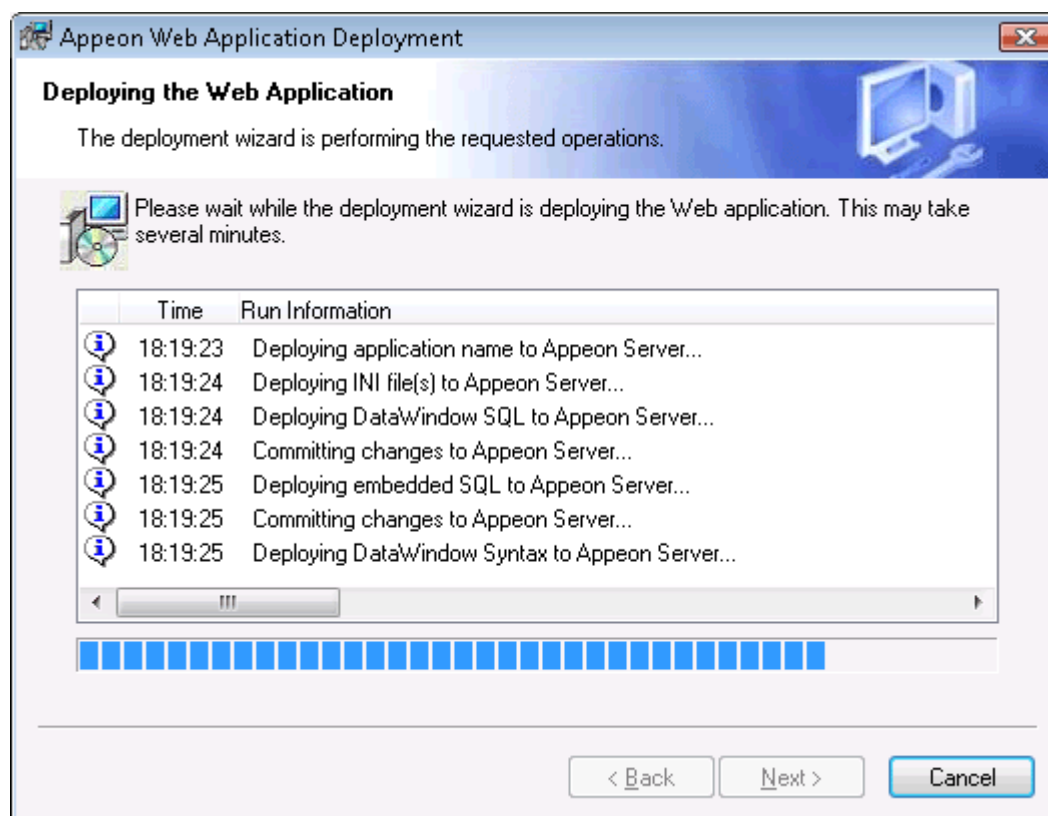
Step 10: Specify the destination file and source file that you want to replace for the Appeon Web application package, and click *Next*.

Files (also called "destination file") under the "wcode" folder of Appeon Web application package can be replaced by files of the same type (also called "source file"), so that the source file will be installed instead of the destination file. When you click the *Add* button, the *File Replacement* dialog box is opened. To select the destination file, click *Browse* to display the Open file dialog which will automatically open the "wcode" folder of Appeon Web application package, so you can conveniently select a file from the "wcode" folder or from its subfolder. To select the source file, click *Browse* to navigate to the folder where the source file is stored.

Figure 10.21: Specify files to replace for Web package



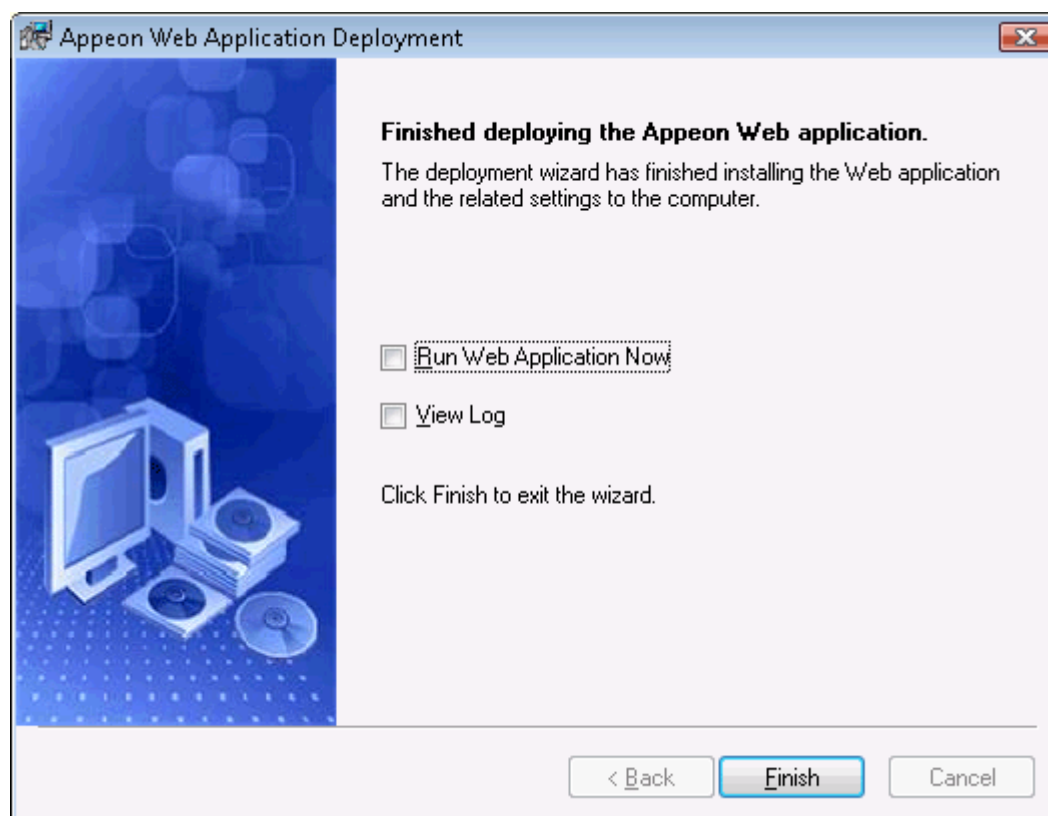
Step 11: Wait while the wizard is installing files and settings.

Figure 10.22: Deploying the application

Step 12: Once the operation is complete, click *Finish* to exit the installation wizard.

To run the Web application immediately, select the *Run Web Application Now* option and click *Finish*. Or you can run the application later from the Windows Start | Programs | Apeon Web Application | *ApplicationName*.

To view the log information generated during the installation process, select the *View Log* box and then click *Finish*. The log file will be displayed.

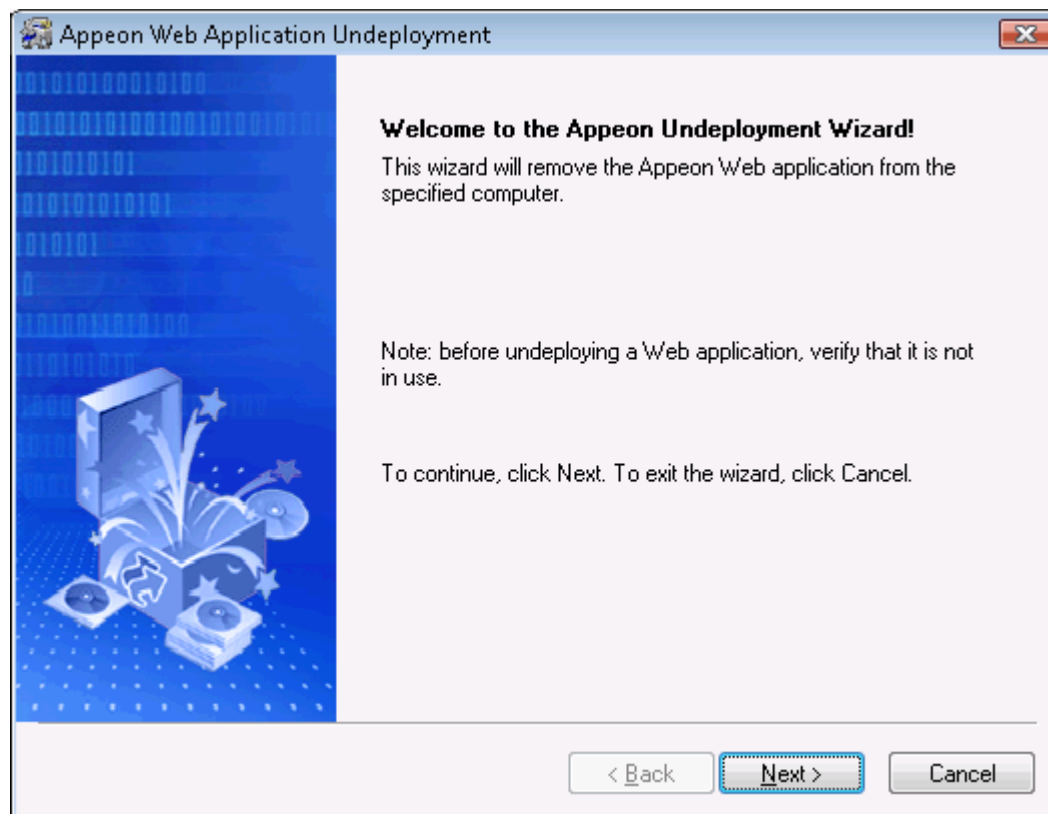
Figure 10.23: Deployment complete

10.2.3 Uninstalling an application

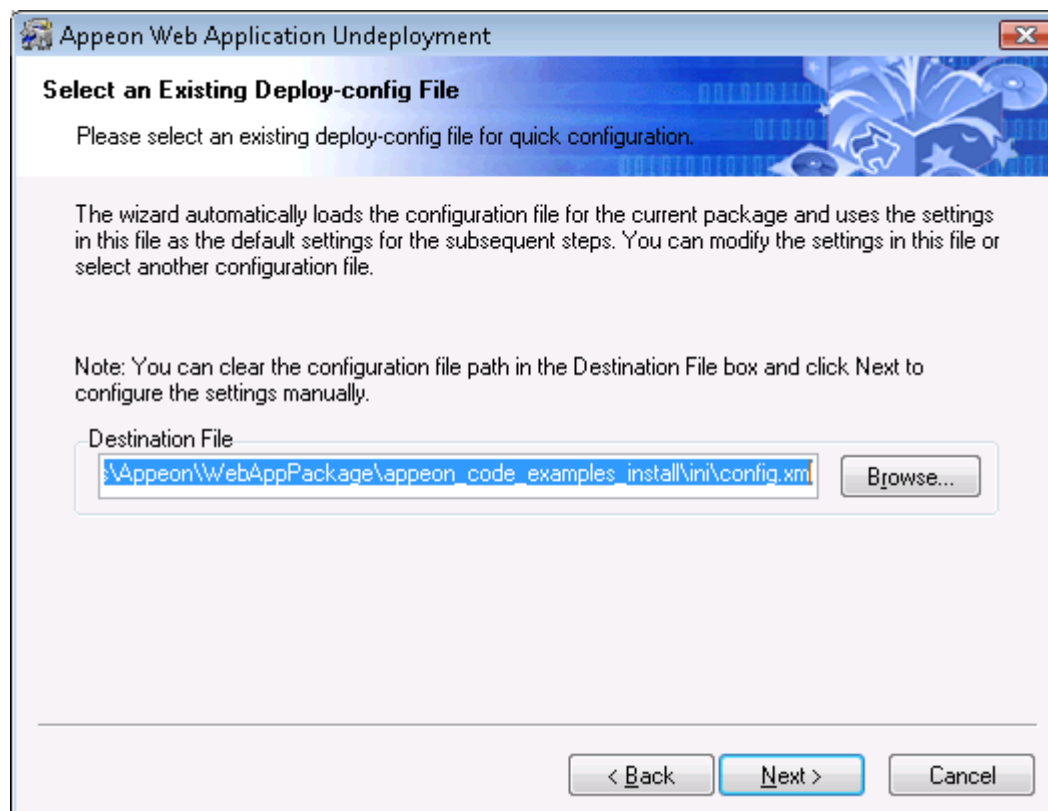
Step 1: Start the Apeon Server(s) and/or Web server(s) where you intend to uninstall the application.

Step 2: Select Windows Start | Programs | Apeon Web Application | Undeploy *ApplicationName*.

The Apeon Web Application Undeployment Wizard is displayed. Click *Next* to proceed.

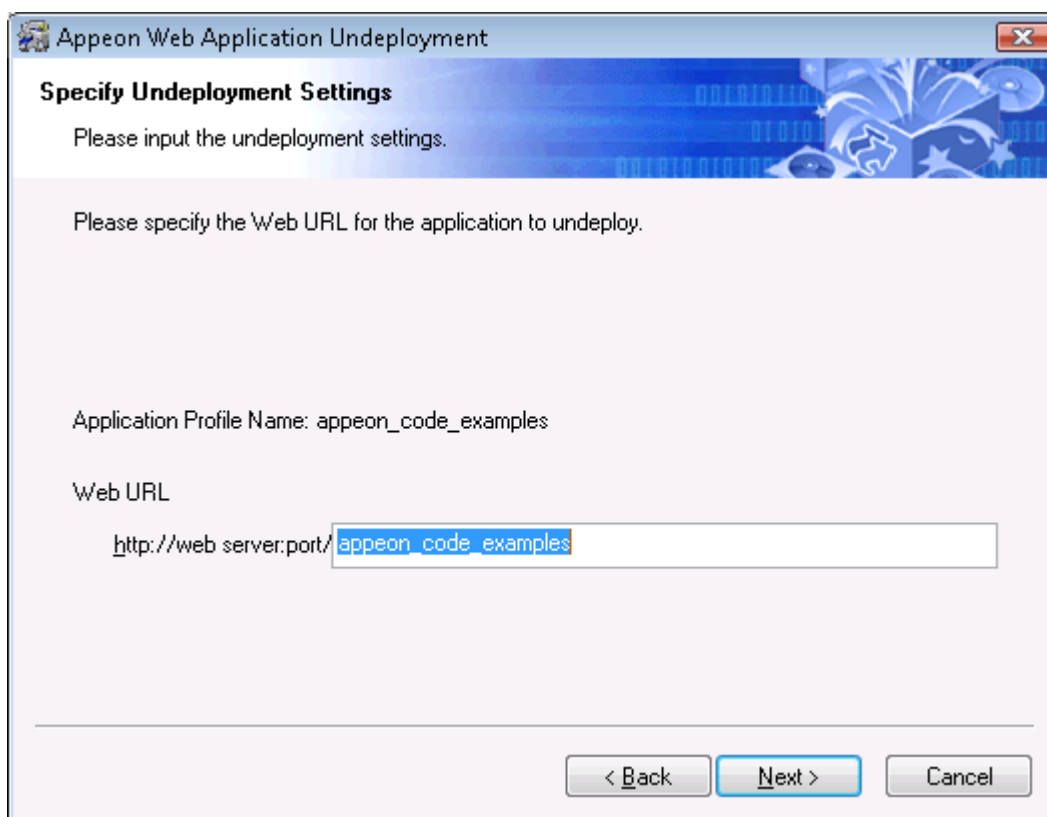
Figure 10.24: Apeon Web Application Undeployment wizard

Step 3: Select an existing deploy-config file to automatically use the configuration previously used for the deployment wizard.

Figure 10.25: Select the configuration file

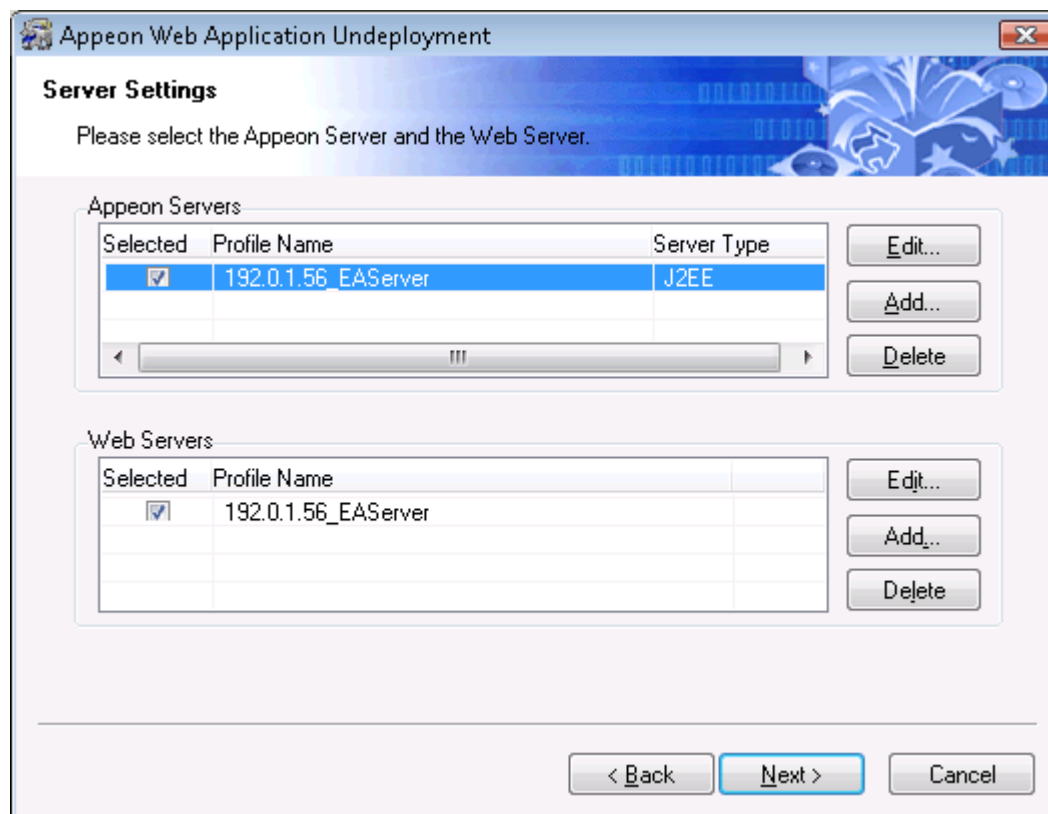
Step 4: Specify the Web URL.

Figure 10.26: Specify Web URL

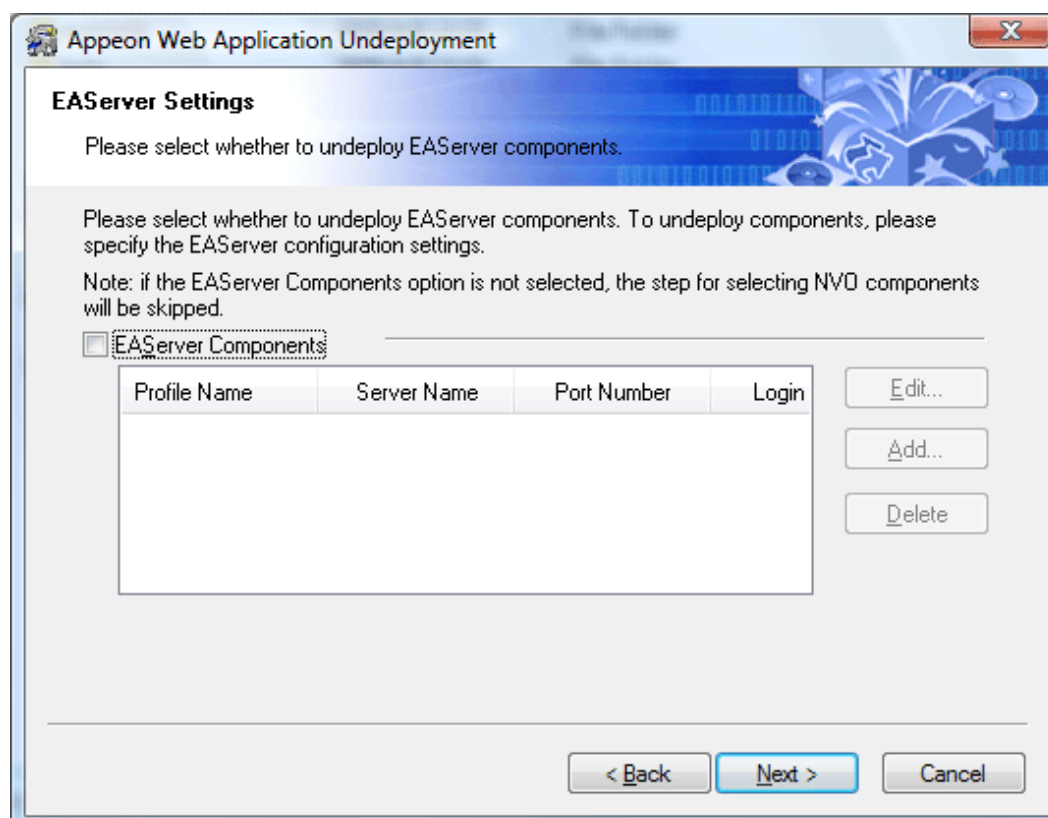


Step 5: Select the Appeon Server(s) and Web server(s) where application will be undeployed.

To create the Appeon Server profile and Web server profile, refer to [Section 4.2.3, "Managing server profiles"](#).

Figure 10.27: Specify server settings


Step 6: Select whether to undeploy EAServer components.

Figure 10.28: Undeploy EAServer components

Select the *EAServer Components* option and then create connection profiles for EAServers where you want to undeploy the components. Follow instructions below to create EAServer profiles:

- Click *Add* to open the EAServer Connection dialog box.
- Input the connection parameters: profile name, host name or IP address, port number, user name and password.
- Click *Test* to verify the connection and the click *OK* to finish the creation.

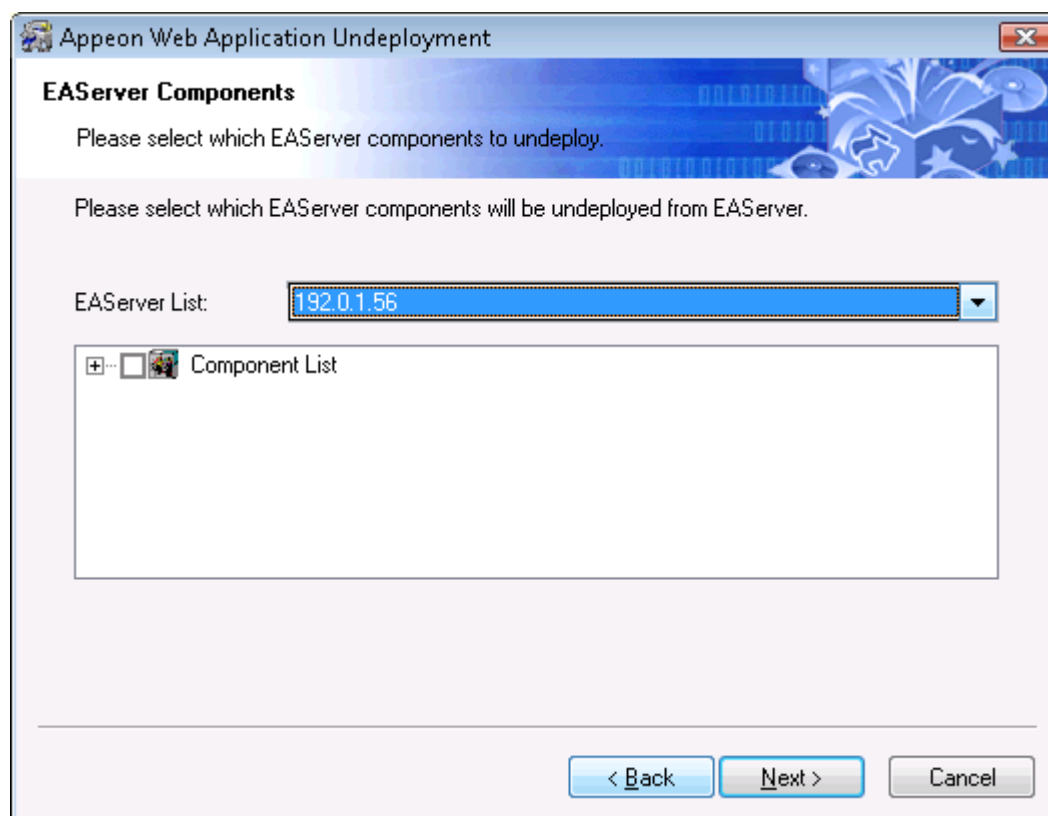
Figure 10.29: Edit EAServer profile



The screenshot shows a dialog box titled "Edit EAServer Profile". It contains the following fields and controls:

- Profile Name:** A text input field.
- Server Name:** A text input field.
- Port Number:** A text input field.
- Login Name:** A text input field.
- Password:** A text input field.
- Note:** "Input the real IP address in the Server Name field. For example, 192.0.0.1."
- Buttons:** "Test", "OK", and "Cancel".

Step 7: If the *EAServer Components* option is selected in the previous step, select the EAServer profile from the list and the components to undeploy. Click *Next* to proceed.

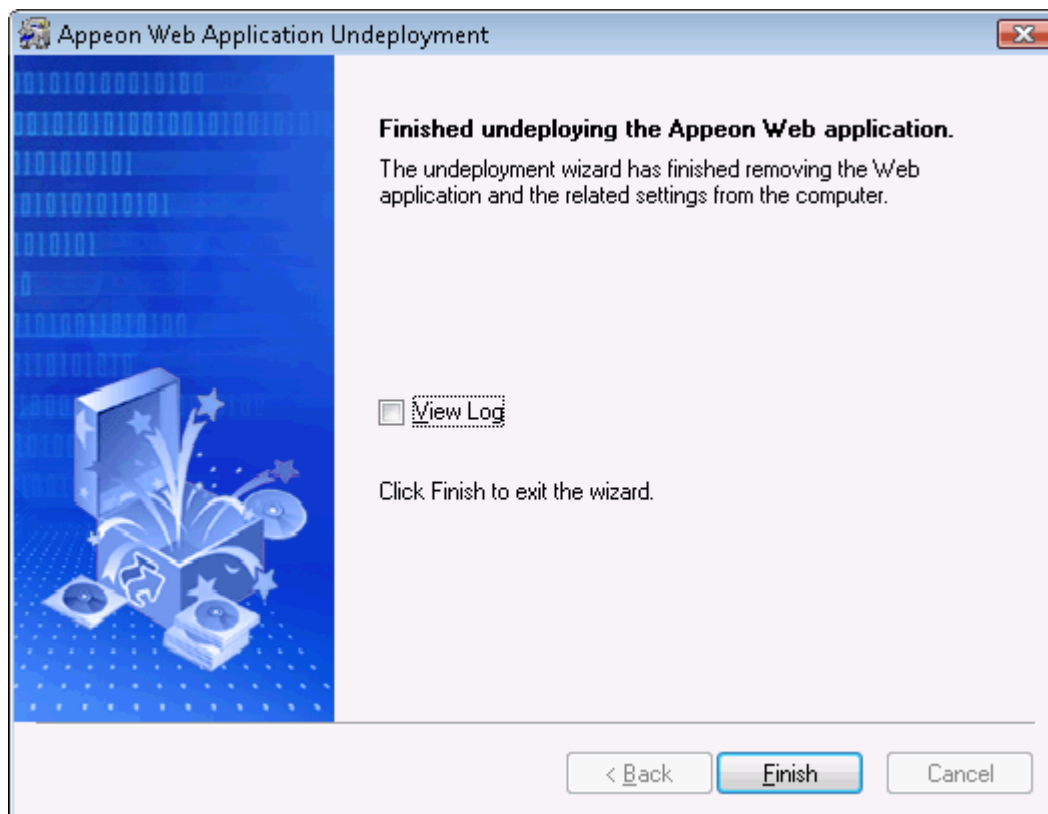
Figure 10.30: Select EAServer components

Step 8: Wait while the wizard is removing files and settings.

Step 9: Once the operation is complete, click *Finish* to exit the undeployment wizard.

To view the log information generated during the uninstall process, select the *View Log* box and then click *Finish*. The log file will be displayed.

Figure 10.31: Undeployment complete



11 Undeploying Web Applications

The Application Undeployment Wizard removes a deployed application from the associated Apeon Server(s) and Web Server(s), including all DataWindows from the Apeon Server(s), all Web files from the Web Server(s), and all Transaction Object mappings from AEM. This is the only way that an Apeon deployed application should be removed. Any other method may not fully remove the application, and may cause errors.

11.1 Undeploying instructions

Step 1: Verify that the Apeon Server and the Web Server(s) hosting the Web application to be undeployed are running before you proceed with undeployment.

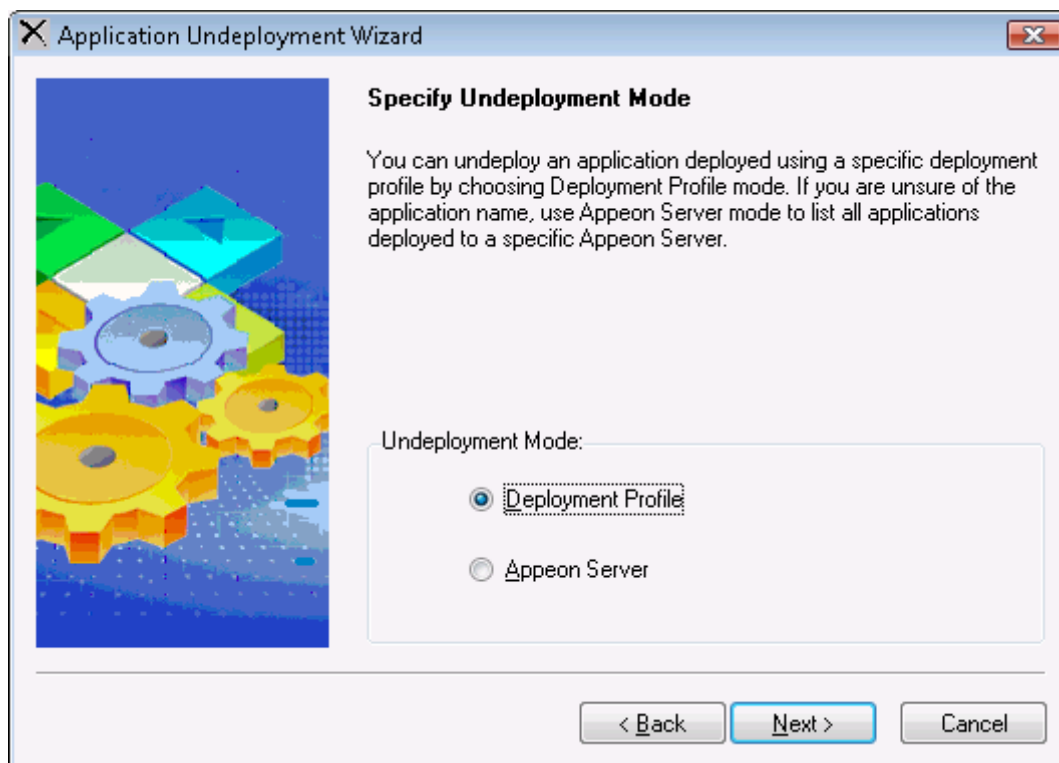
Step 2: Click the *Undeploy* button (X) in the Apeon Developer toolbar. The Application Undeployment Wizard is displayed, as shown in the following figure.

Figure 11.1: Application Undeployment Wizard



Step 3: Click *Next* to continue. The *Specify Undeployment Mode* window is displayed, as shown in the following figure, prompting you to select an undeployment mode.

Figure 11.2: Specify Undeployment Mode window



The following table shows when and how to use each mode.

Table 11.1: Undeployment modes

	When To Use It	How To Use It
Deployment Profile mode	If you clearly know which application you want to delete from which server.	Select an application to be undeployed and its associated deployment profile. For detailed instructions, refer to Section 11.1.1, “Undeploying with the Deployment Profile mode” .
Apppeon Server mode	When you are uncertain of the name of the application you want to undeploy, or an application profile does not exist for the application you want to undeploy, but you clearly know the Apppeon Server hosting the Web application intended for undeployment.	Specify an Apppeon Server by selecting an Apppeon Server profile. The selected Apppeon Server will refer to all the Web applications that are deployed. Then you can choose one Web application for undeployment. For detailed instructions, refer to Section 11.1.2, “Undeploying with the Apppeon Server mode” .

11.1.1 Undeploying with the Deployment Profile mode

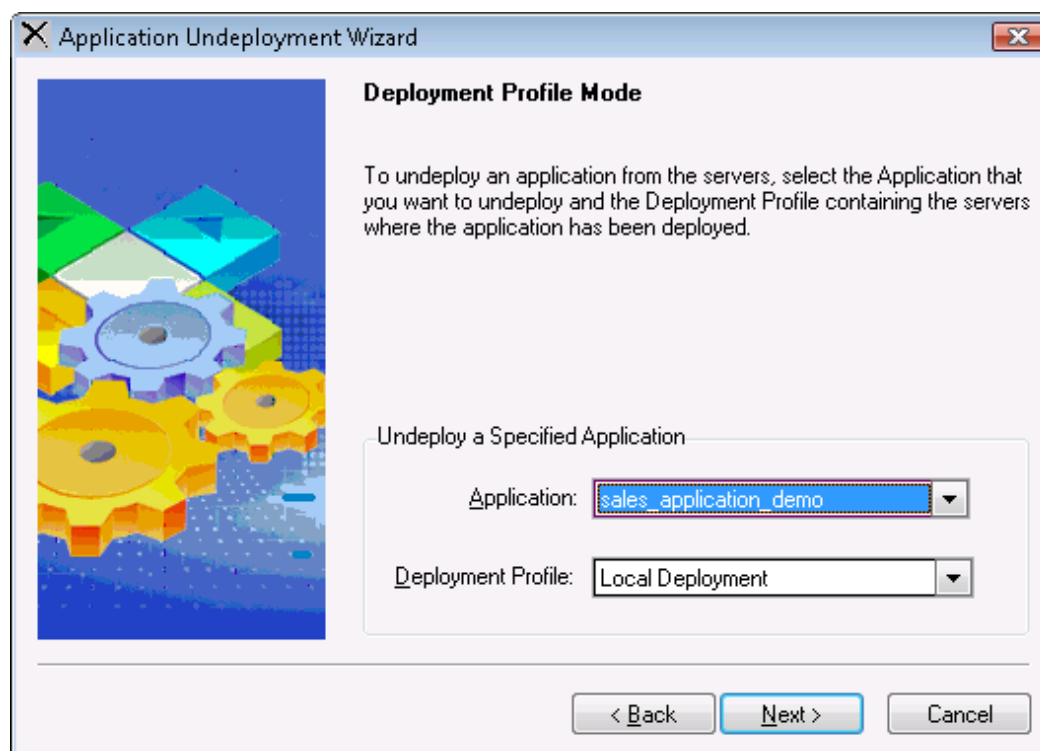
Step 1: Select the *Deployment Profile* radio button in the *Specify Undeployment Mode* window, and click *Next* to continue.

Step 2: Select a Web application from the Application list box, as shown in the following figure.

The Application list box lists all the application profile names. Be sure to choose one that has been deployed and is intended for undeployment. The application and the deployment profile used in the last deployment will be selected by default.

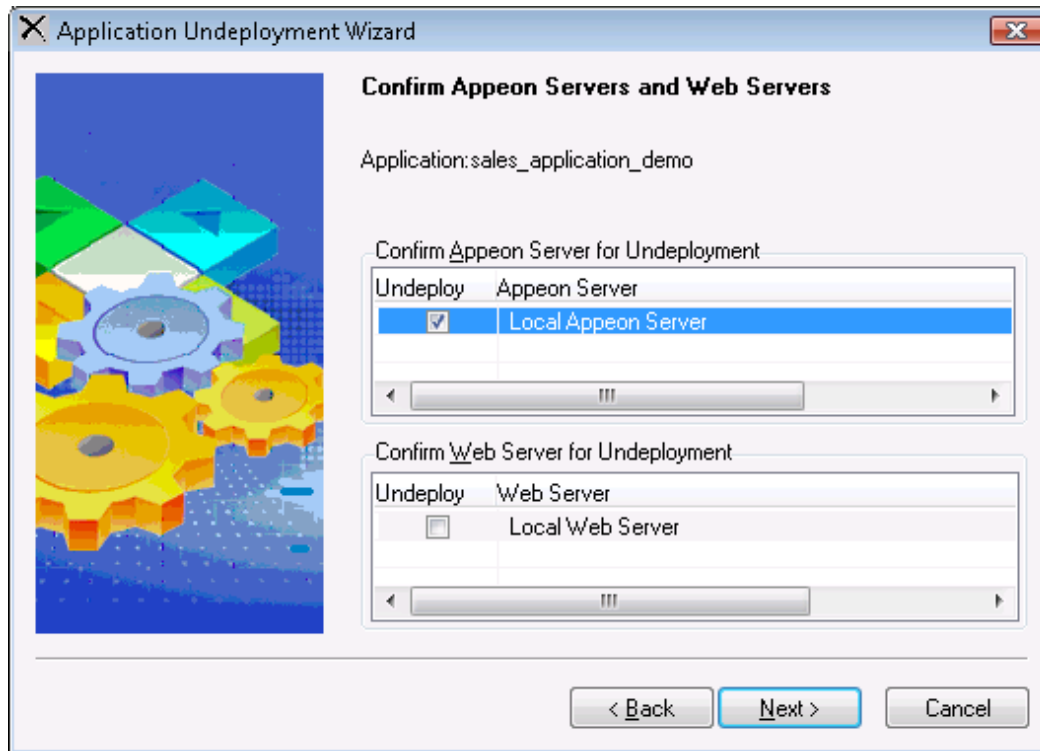
Step 3: Select the deployment profile that is used to deploy the Web application from the Deployment Profile list box, as shown in the following figure. Click *Next* to continue.

Figure 11.3: Deployment Profile Mode window



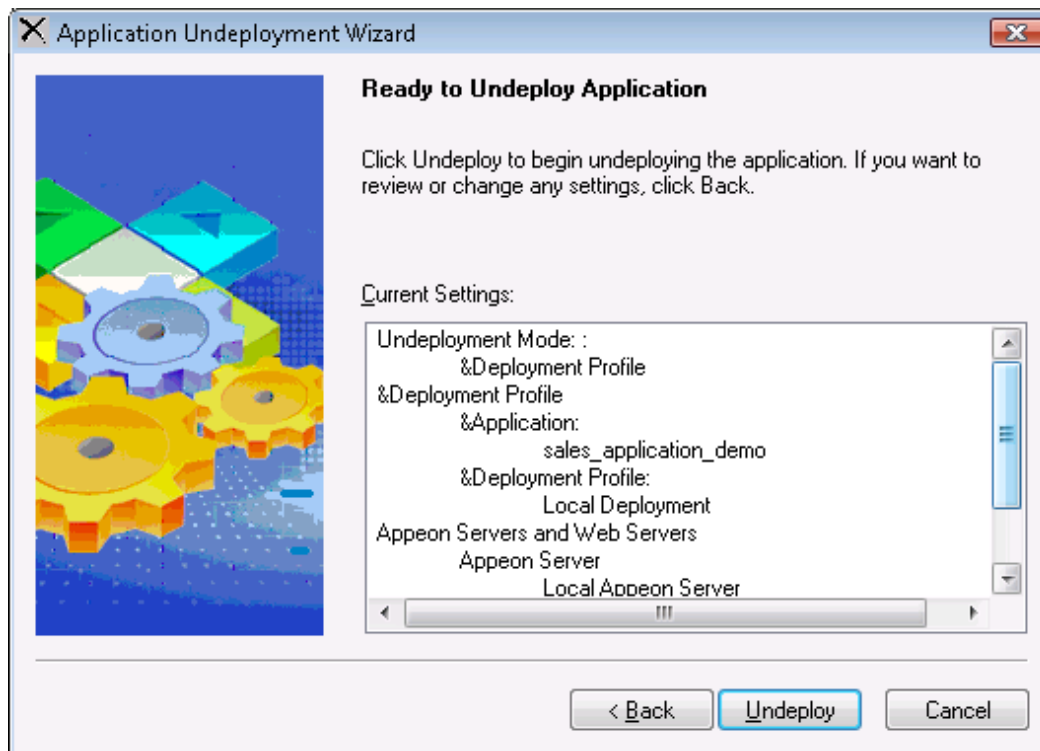
Step 4: Select the Apeon Server(s) or Web Server(s) that are intended for undeployment, as shown in the following figure. The Apeon Server(s) and Web Server(s) defined in the deployment profile selected in the previous step are listed. Click *Next* to continue.

Figure 11.4: Confirm Apeon Servers and Web Servers



Step 5: Click *Undeploy* to confirm the undeployment settings and start the undeployment process, as shown in the following figure.

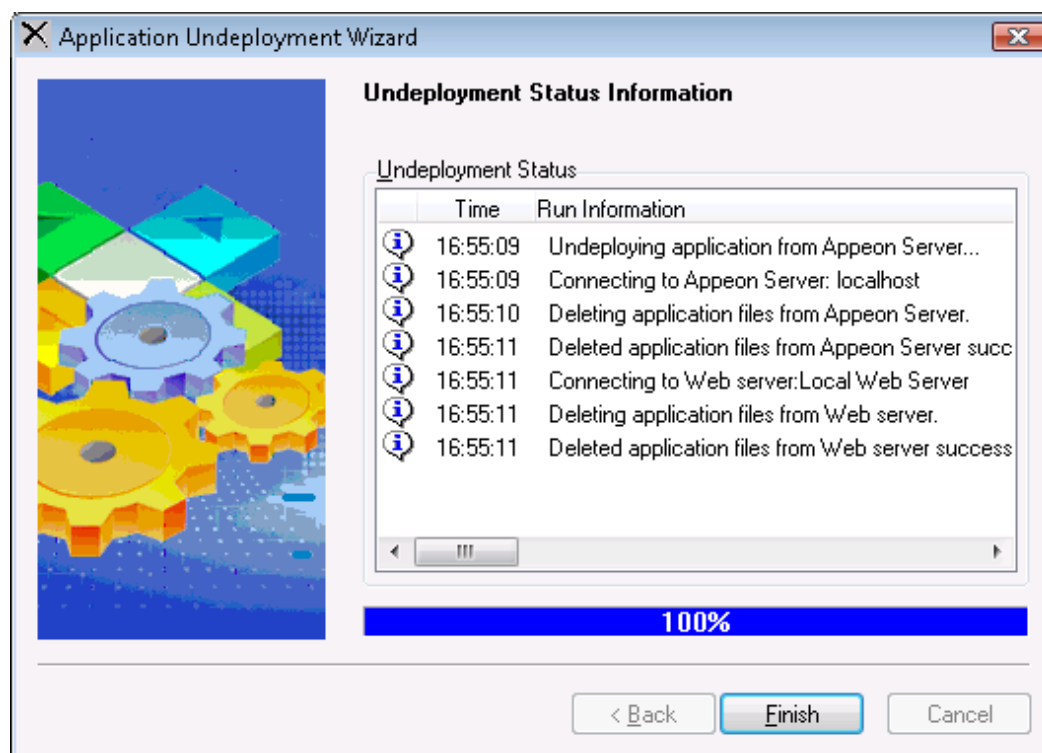
Figure 11.5: Confirm undeployment settings



The undeployment process begins, as shown in the following figure.

Step 6: Click *Finish* to close the dialog box.

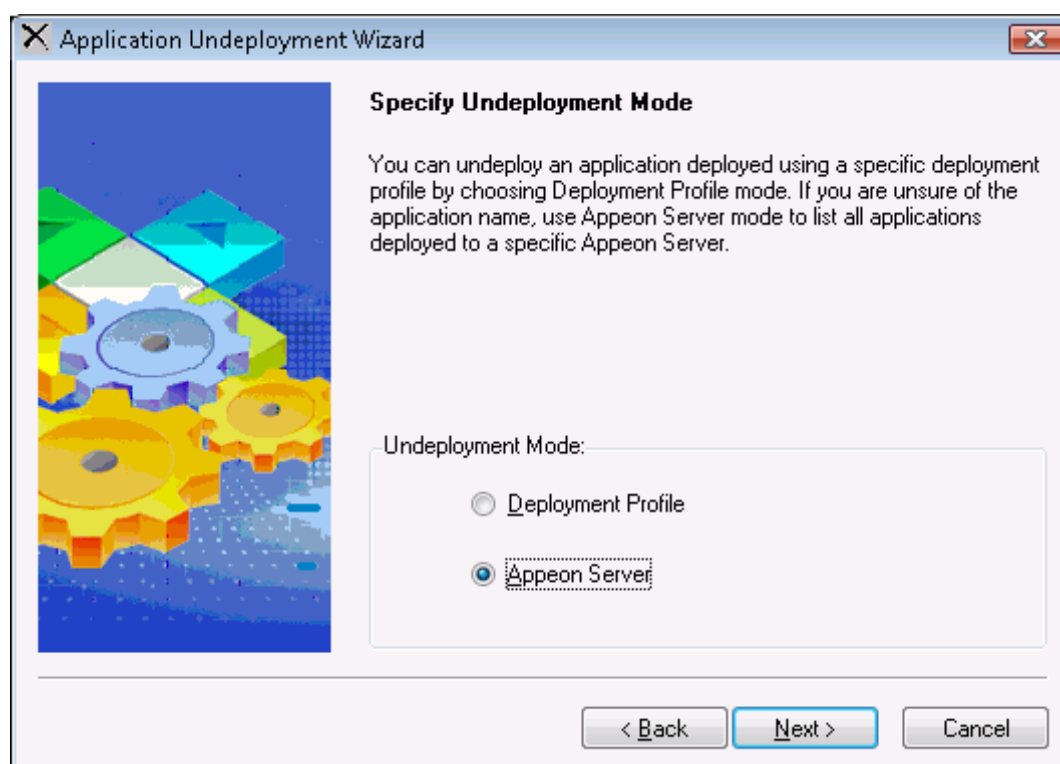
Figure 11.6: Undeployment in Progress



11.1.2 Undeploying with the Appeon Server mode

Step 1: Select the *Appeon Server* radio button in the *Specify Undeployment Mode* window as shown in the following figure, and click *Next* to continue.

Figure 11.7: Specify Undeployment Mode window



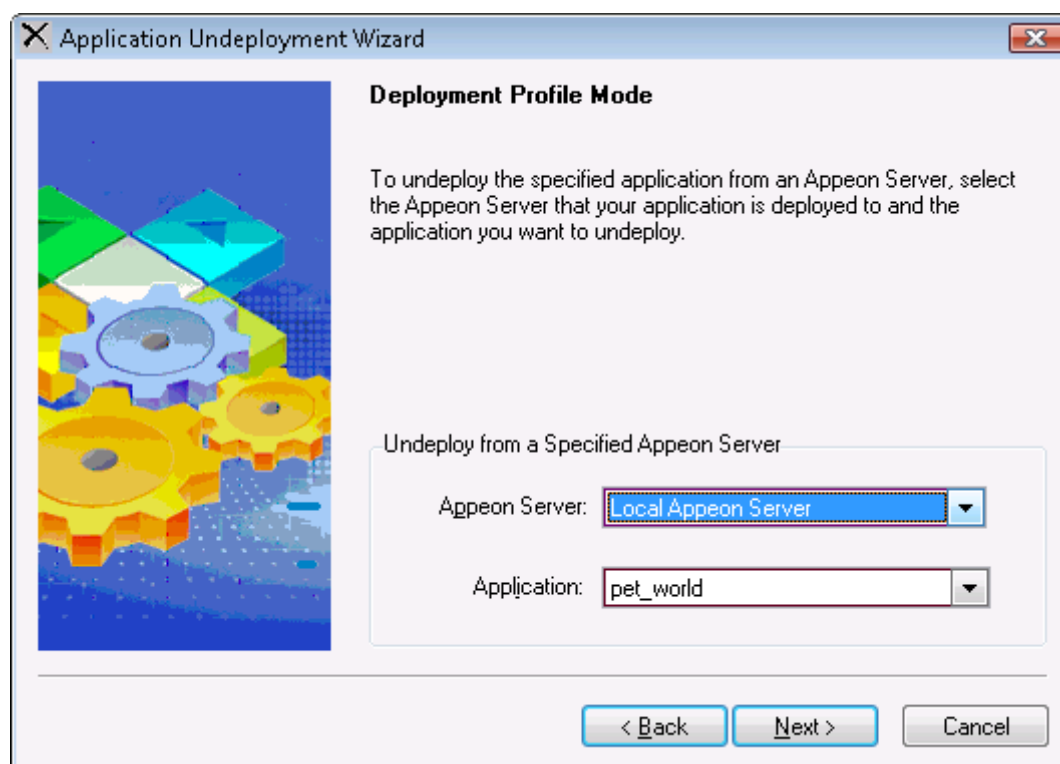
Step 2: Select the Apeon Server that contains the Web application to be undeployed from the Apeon Server list box, as shown in the following figure.

The Apeon Server list box lists all the Apeon Server profile names. Make sure the selected Apeon Server is running.

Step 3: Select the application to be undeployed from the Application list box and click *Next*, as shown in the following figure.

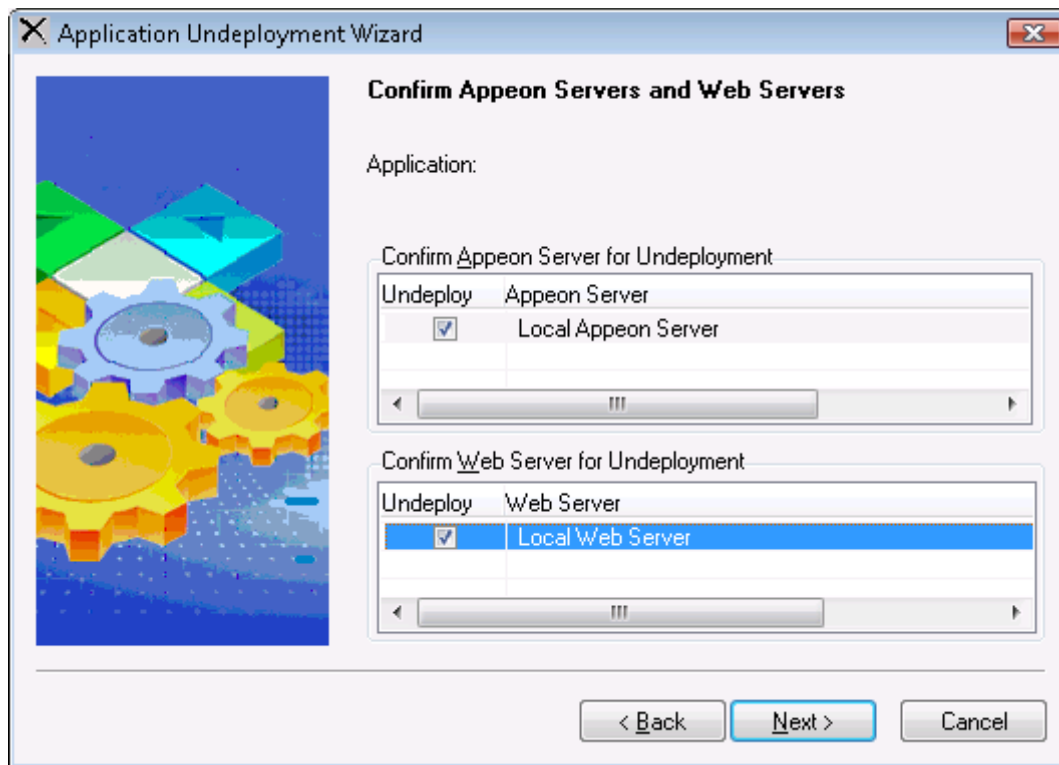
The Application list box lists all the Web applications deployed to the selected Apeon Server.

Figure 11.8: Apeon Server Mode window



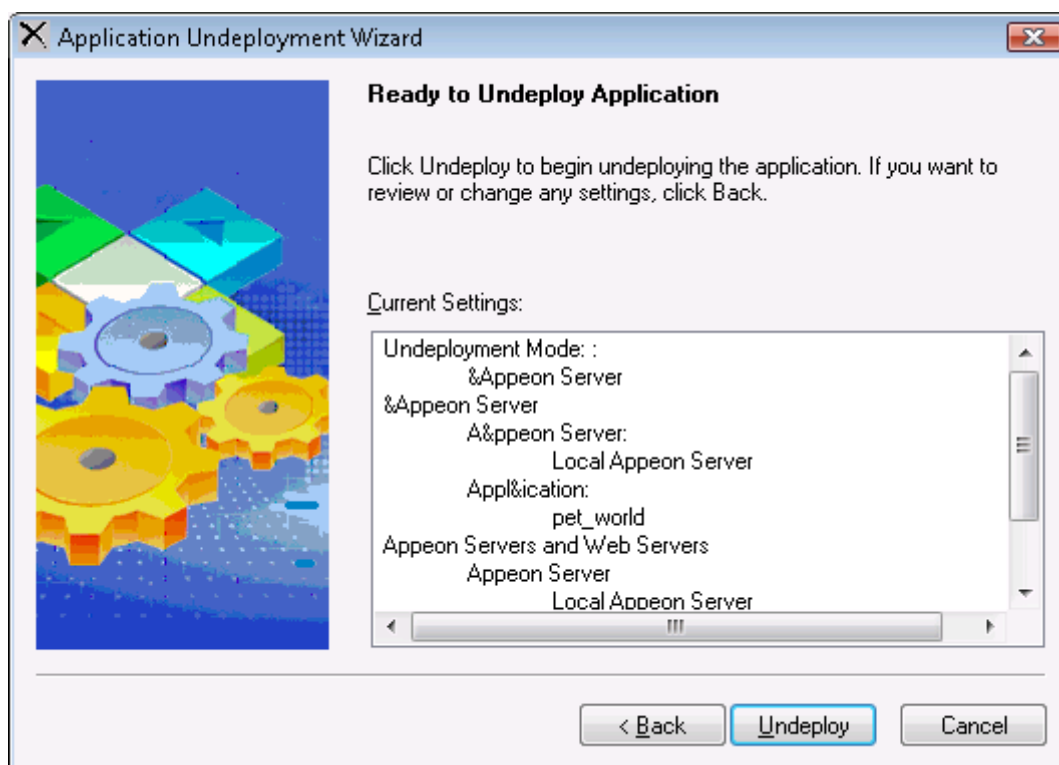
Step 4: Select the Apeon Server(s) or Web Server(s) that are intended for undeployment, as shown in the following figure. The Apeon Server(s) and Web Server(s) defined in the default deployment profile are listed. Click *Next* to continue.

Figure 11.9: Ready to Undeploy Application window



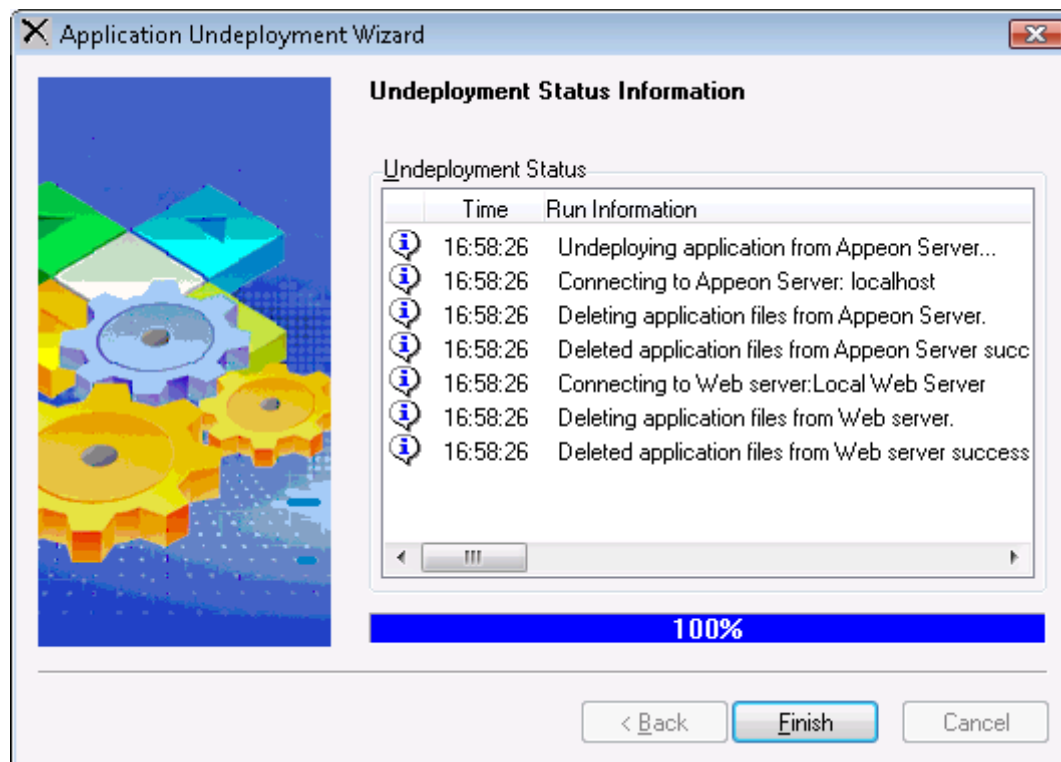
Step 5: Click *Undeploy* to confirm the undeployment settings and start the undeployment process, as shown in the following figure.

Figure 11.10: Undeployment settings



The undeployment process begins, as shown in the following figure.

Figure 11.11: Appeon Web Application Undeployment



Step 6: Click *Finish* to close the dialog box, as shown in the above figure.

12 Developing with Code Insight

Code Insight is a tool designed to help you write Apeon-supported PowerScript code more quickly by providing a lookup and paste service inside the PowerBuilder Script view. You can use it to develop PowerBuilder applications that are free of Apeon unsupported features and tailored to Web migration.

The usage of Code Insight is similar to that of PowerBuilder AutoScript. The following table describes the differences between the PowerBuilder AutoScript and Apeon Code Insight.

Table 12.1: Comparison between AutoScript and Code Insight



	PowerBuilder AutoScript	Apeon Code Insight
Effective for	Functions, events, variables, properties, and templates for PowerBuilder DO, FOR, IF, and CHOOSE statements.	Items referred in dot notations
What pops up	A list of properties, variables, methods, or statements.	1) A list of properties, variables, or methods. 2) The Apeon unsupported properties, variables or methods that are marked with a red icon left to them.
Ways to use it	Two ways to use AutoScript: <ul style="list-style-type: none"> • Turn automatic popup on to pop up a list automatically when you pause while typing, or • Invoke AutoScript only once when you need it by selecting the menu items. 	Only one way to use Code Insight: <p>Step 1: Activate Code Insight;</p> <p>Step 2: Configure the default PBT file;</p> <p>Step 3: Enable Code Insight.</p> <p>Refer to the following sections for detailed instructions.</p>
Priority	When Code Insight is activated, AutoScript will be automatically turned off.	




12.1 Activating Code Insight

Click the *Code Insight* button () in the Apeon Developer toolbar to launch Code Insight.

At the click of the *Code Insight* button, an icon will appear in the status area of the task bar. Code Insight has five status icons:

Table 12.2: Status of Code Insight

Icon	Status	Description
	Disabled	Code Insight is disabled.
	Loading	Code Insight is analyzing the default PBT and generating the supported and unsupported feature list based on the analysis result.

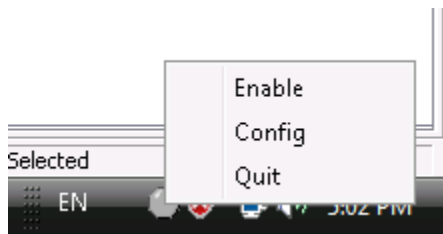
Icon	Status	Description
	Off	Code Insight is enabled but ineffective.
	On	Code Insight is enabled and effective in the current application.
	Gray	This icon appears anytime the PowerBuilder IDE loses focus, even if Code Insight is disabled.

12.1.1 Configuring Code Insight

Before you can enable Code Insight for a PowerBuilder application, you need to configure the PBT file of the desired application as the default PBT file. You can also specify the Appeon feature sets and the feature types for which feature list will be displayed.

Step 1: Click on the icon of Code Insight, and the status-area-icon menu pops up with three items: Enable (or Disable), Config, and Quit, as shown in the following figure.

Figure 12.1: The status-area-icon menu



Step 2: Click *Config* to open the *Code Insight Configuration* window, as shown in the following figure.

Figure 12.2: Code Insight Configuration window - PBT Files tab

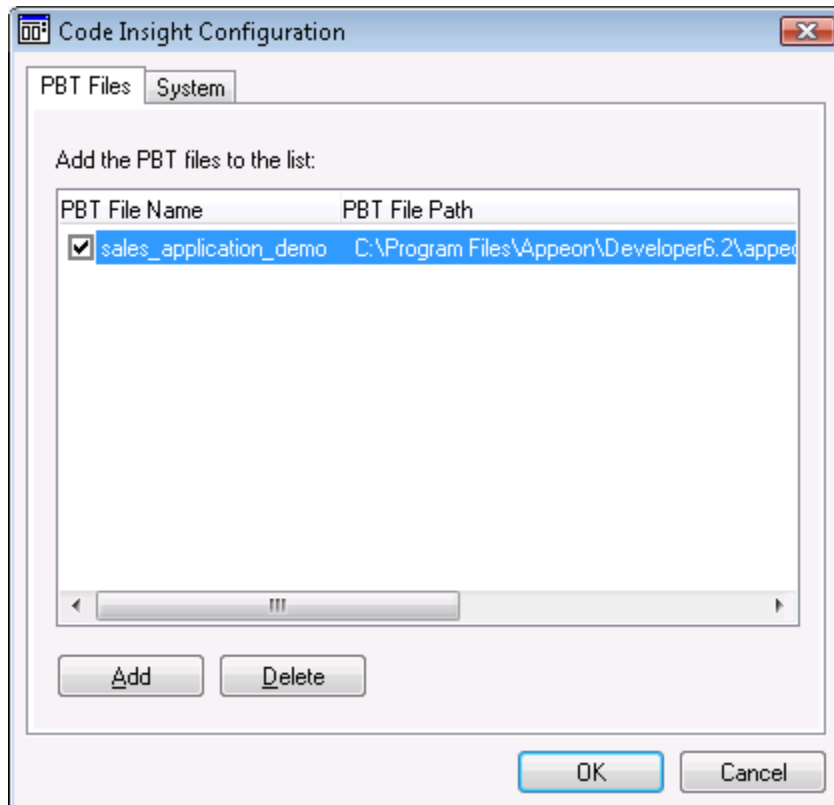
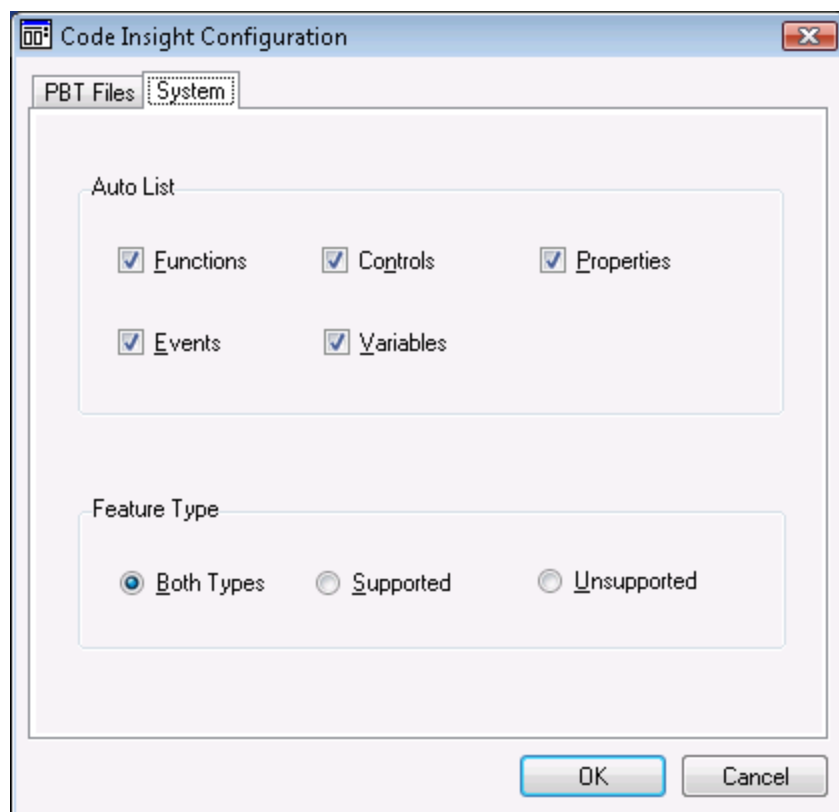


Figure 12.3: Code Insight Configuration window - System tab



The *Code Insight Configuration* window contains two tab pages where you can manage the PBT files and specify what displays in the list.

Table 12.3: Code Insight Configuration window

Select this tab	To do this	Detailed Steps
PBT File tab page	Add the PBT files.	<ol style="list-style-type: none"> 1. Click <i>Add</i>. 2. Search and select the PBT file in the common dialog box. 3. Click <i>Open</i> in the common dialog box. 4. Click <i>OK</i>.
	Delete the PBT files.	<ol style="list-style-type: none"> 1. Select the PBT file you want to delete. 2. Click <i>Delete</i> to delete the selected PBT file. 3. Click <i>OK</i>. <p>NOTE: The default PBT file cannot be deleted.</p>
	Set the default PBT file.	<ol style="list-style-type: none"> 1. Select the check box in front of a PBT file. 2. Click <i>OK</i>.

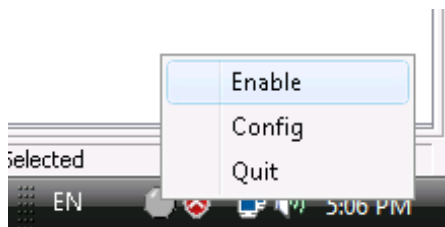
Select this tab	To do this	Detailed Steps
		<p>NOTE: 1) only one PBT file can be set to the default PBT.</p> <p>2) Code Insight can only be effective to the default PBT.</p>
System tab page	Specify what to display in the list.	<ol style="list-style-type: none"> In the <i>Auto List</i> group box, opt to automatically display functions, events, properties, controls and/or variables in the list. In the <i>Feature Type</i> group box, opt to display only the unsupported features and/or the supported features in the list. Click <i>OK</i>.

12.1.2 Enabling Code Insight

After you complete the configuration, you can enable Code Insight and use it to develop the PowerBuilder application.

Click on the icon of Code Insight and select *Enable* from the status-area-icon menu, as shown in the following figure.

Figure 12.4: Enable Code Insight



The Code Insight icon appears in one of the following statuses:

Table 12.4: Enable Code Insight

Status	Detailed Steps
	<p>Code Insight remains disabled.</p> <p>This happens when the PBT File list in the Code Insight Configuration window is empty. Make sure you have added the PBT file to the list.</p>
	<p>Code Insight is enabled but ineffective in the current application. To make it effective, make sure you have</p> <ol style="list-style-type: none"> Configured the PBT file of the current application as the default PBT file in the Code Insight Configuration window. Opened an object of the current application in a painter (not in the Source editor) by double-clicking it in the Workspace or selecting <i>Edit</i> from the popup menu.

Status	Detailed Steps
	After taking the above steps, Code Insight becomes effective (On).
On	Code Insight is enabled and effective . You can develop an application with the assistance of Code Insight.

12.2 Coding with Code Insight

When Code Insight is enabled and effective (On) for an application, you can start editing the objects of the application using Code Insight. For example, take the following steps to add a new control and use Code Insight to edit it:

Step 1: Add a button to the current object in the painter.

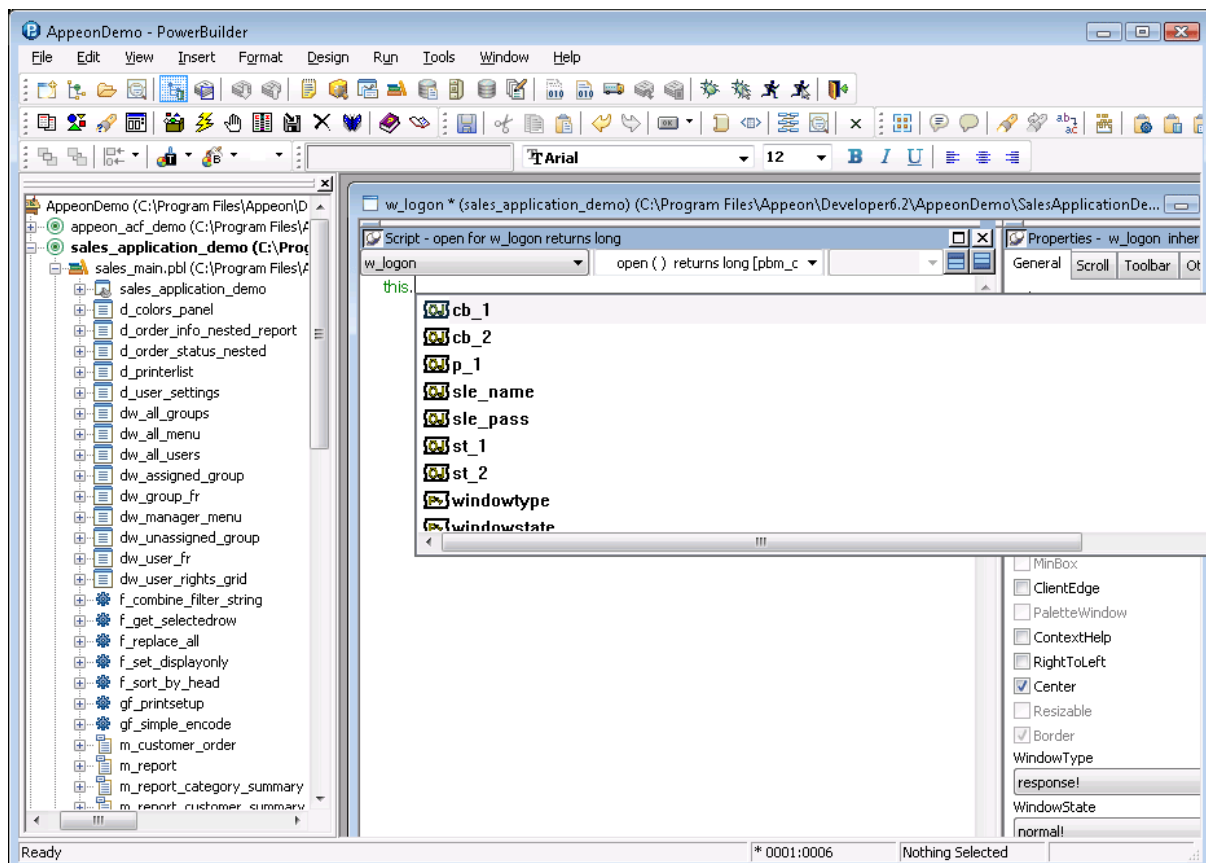
Step 2: Save the object by clicking the *Save* button on the PowerBar.

Note: Saving the object enables Code Insight to generate the supported and unsupported feature list for the new content. Code Insight cannot detect the new content unless the object is saved.

Step 3: Double click the button to open the Script view and pause for a few seconds after typing an identifier followed by a dot (for example, pause after **This.**).

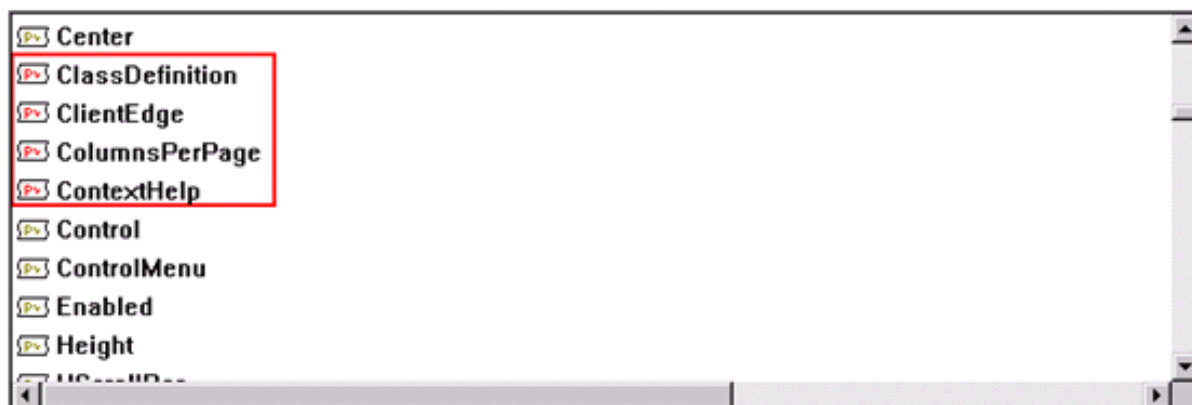
If there is more than one property, variable, method, or statement that could be inserted, the Code Insight feature list pops up for you to select a supported property, variable or method, as shown in the following figure.

Figure 12.5: Develop an application with Code Insight



The unsupported properties, variables or methods in the popup list will have a red icon in front, as shown in the following figure. Avoid using the unsupported features.

Figure 12.6: Appeon unsupported features displayed in popup window



Step 4: Select a supported property, variable or method from the popup list.

You can use Code Insight to help develop an application free of unsupported features and suitable for migration.

13 Launching Appeon Enterprise Manager

Appeon Enterprise Manager (AEM) is a Web-based application that manages the converted Web applications and Appeon Server over the Internet, an intranet or an extranet. It includes a comprehensive set of easy-to-use tools for system configuration, system maintenance, performance optimization, and application security.

AEM is included when Appeon Server is installed.

AEM is accessible from any Client's Web browser or it is possible to access AEM through the *AEM* button that resides on the Appeon Developer toolbar. Clicking the *AEM* button will automatically open a Web browser window and load the AEM entry page.

13.1 Requirements

Before launching AEM, verify that:

1. The Appeon Server hosting AEM has been started.
2. You have correctly specified the host name and port of the Appeon Server in the Appeon Server Profile Configuration page.

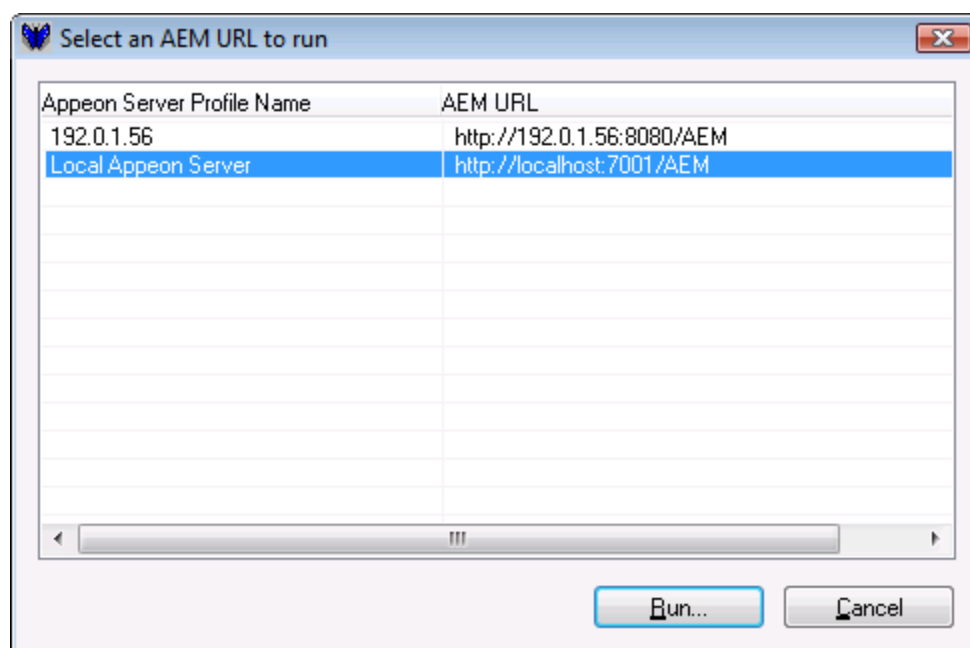
13.2 Launching Appeon Enterprise Manager

Step 1: Click the *AEM* button (🦋) on the Appeon Developer toolbar.

If more than one Appeon Server profile is configured, the *Select an AEM URL to run* page is displayed, as shown in the following figure. All Appeon Server profiles and corresponding AEM URLs are listed. The Appeon Server configured as the default server is highlighted and selected.

If only one Appeon Server profile is configured, the entry page of AEM is displayed.

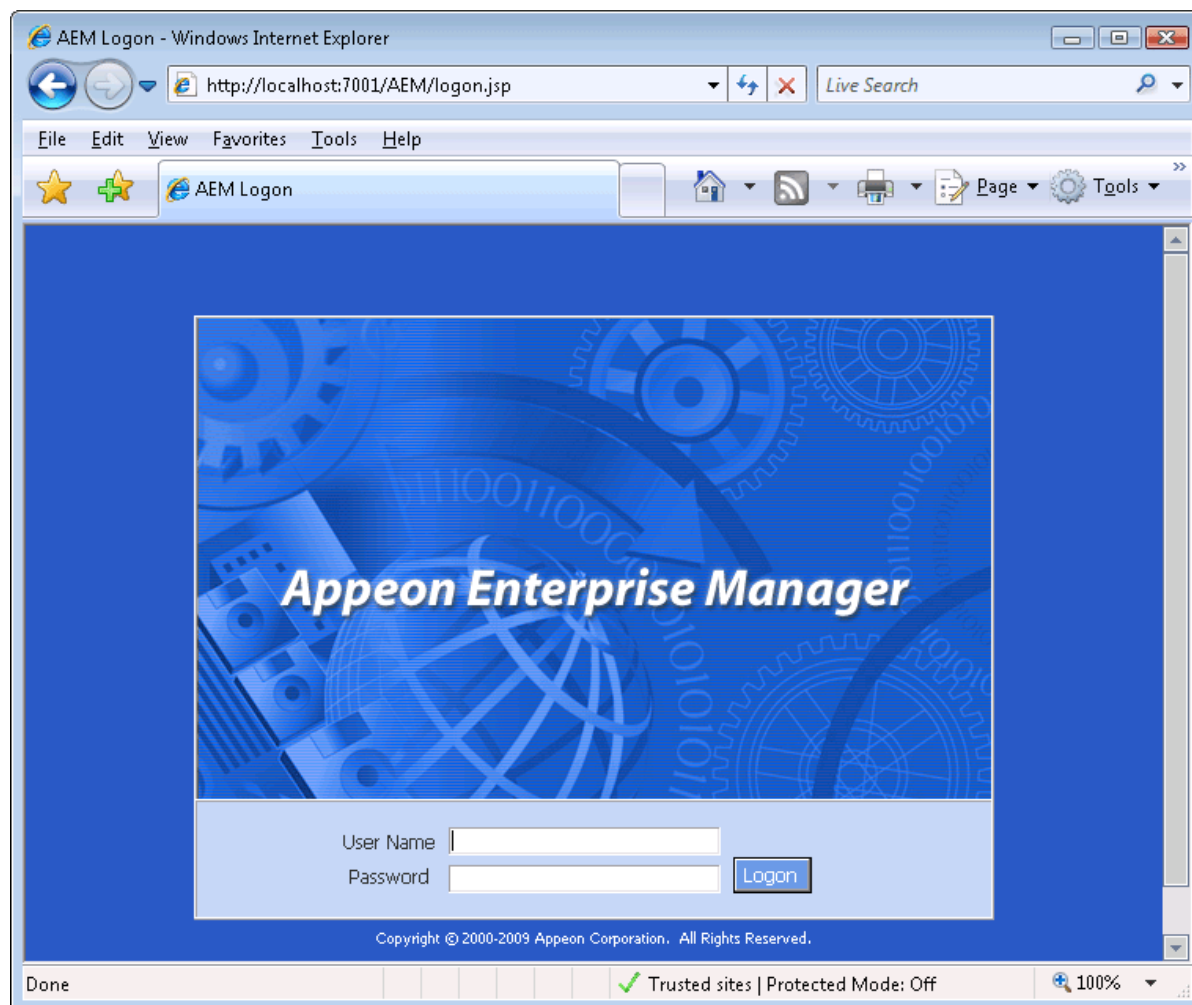
Figure 13.1: Select an AEM URL to run



Step 2: Select an AEM URL and click *Run*, as shown in the following figure.

The entry page of AEM is loaded in an Internet Explorer page, as shown in the following figure.

Figure 13.2: Appeon Enterprise Manager entry page



The AEM URL is automatically entered into the Internet Explorer address bar when you click the *Run* button. You can configure AEM's URL and connection method (https or http) in the Appeon Server Profile Configuration page.

The default username is *admin* and the default password is *admin*. The username and password settings for AEM can be modified in Security settings in AEM. Refer to *Security* in the *Appeon Server Configuration Guide* for more information.


14 Appeon for PowerBuilder Help

Appeon provides a comprehensive HTML help system that contains:

- Introduction to Appeon
- What's New in Appeon, the HTML version of the New Features Guide.
- Appeon Installation Guide
- Appeon Migration Guide
- Appeon Features Help, the HTML version of the Supported Features Guide
- Working with Appeon Developer, the HTML version of the Appeon Developer User Guide
- Appeon Server Configuration Guide
- Web Server Configuration Guide
- Appeon Troubleshooting Guide and Error Messages
- Appeon Workarounds Guide and Workarounds PBL Reference
- Appeon Performance Tuning Guide

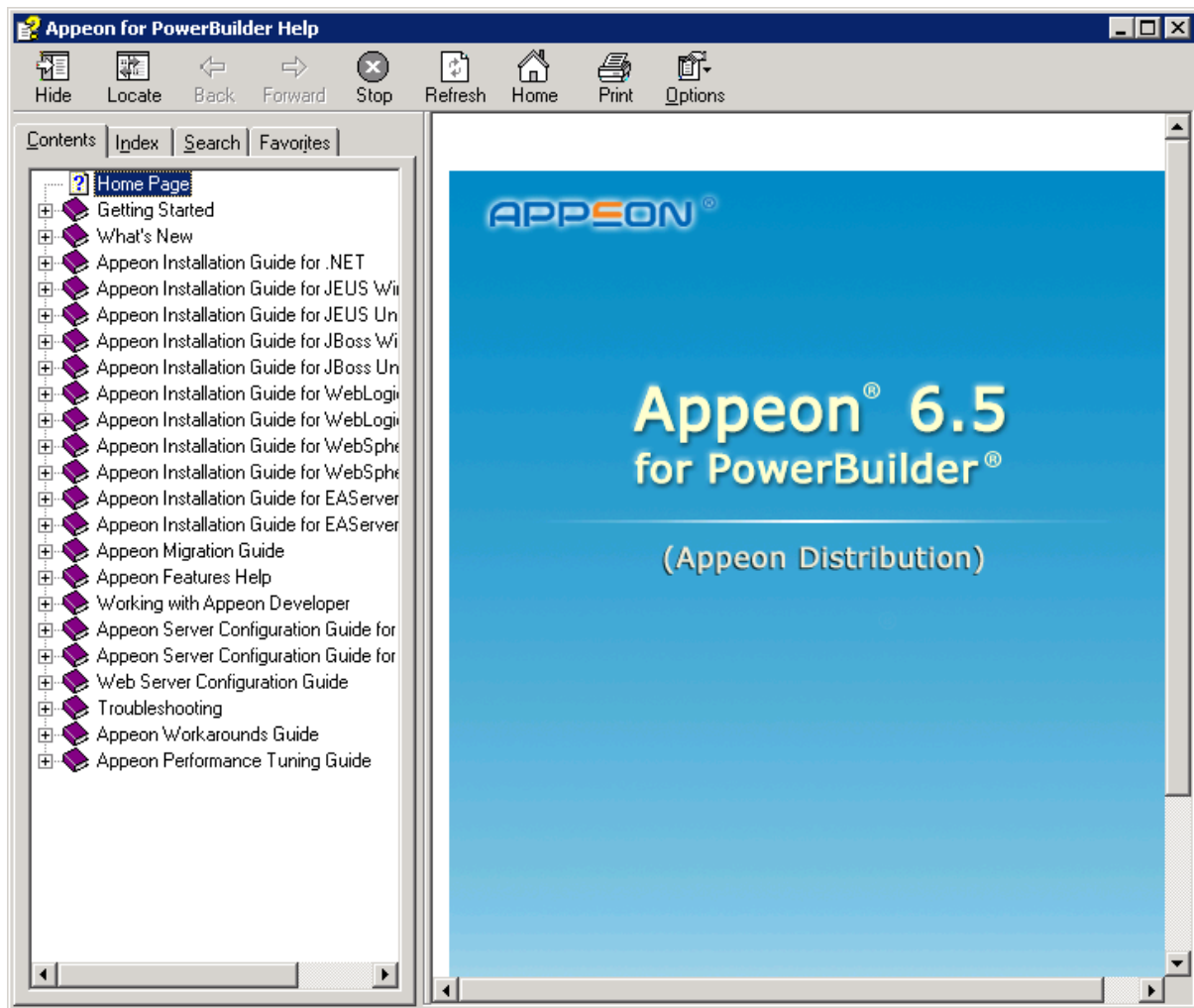
Appeon for PowerBuilder Help is in compiled HTML format, so that you can search by index or by typing keywords, navigate back and forth, or print a specified page.

To access Appeon HTML Help:

Step 1 - Click the *Help* button () in the Appeon Developer toolbar.

Step 2 - Click the corresponding help book to access the detailed help information, as shown in the following figure.

Figure 14.1: Appeon for PowerBuilder Help



15 Extended Toolkit

Appeon provides extended tools to ease your PowerBuilder-to-Web process. These tools include:

- **DLL/OCX Files Package Tool:** It is designed as a solution for packaging and installing large-sized DLL/OCX files.
- **Appeon Silent Installer:** Installs EAServer, Appeon Server, Appeon Server EBF (Emergency Bug Fix), and Appeon Web applications in the silent mode.
- **Appeon Developer Toolbar Register Tool:** Enables you to register (or unregister) one Appeon Developer version to more than one PowerBuilder version or different Appeon Developer versions to different PowerBuilder versions.

15.1 DLL/OCX Files Package Tool

DLL and OCX files are frequently used in PowerBuilder client/server application. Appeon offers you two ways to distribute DLL/OCX files.

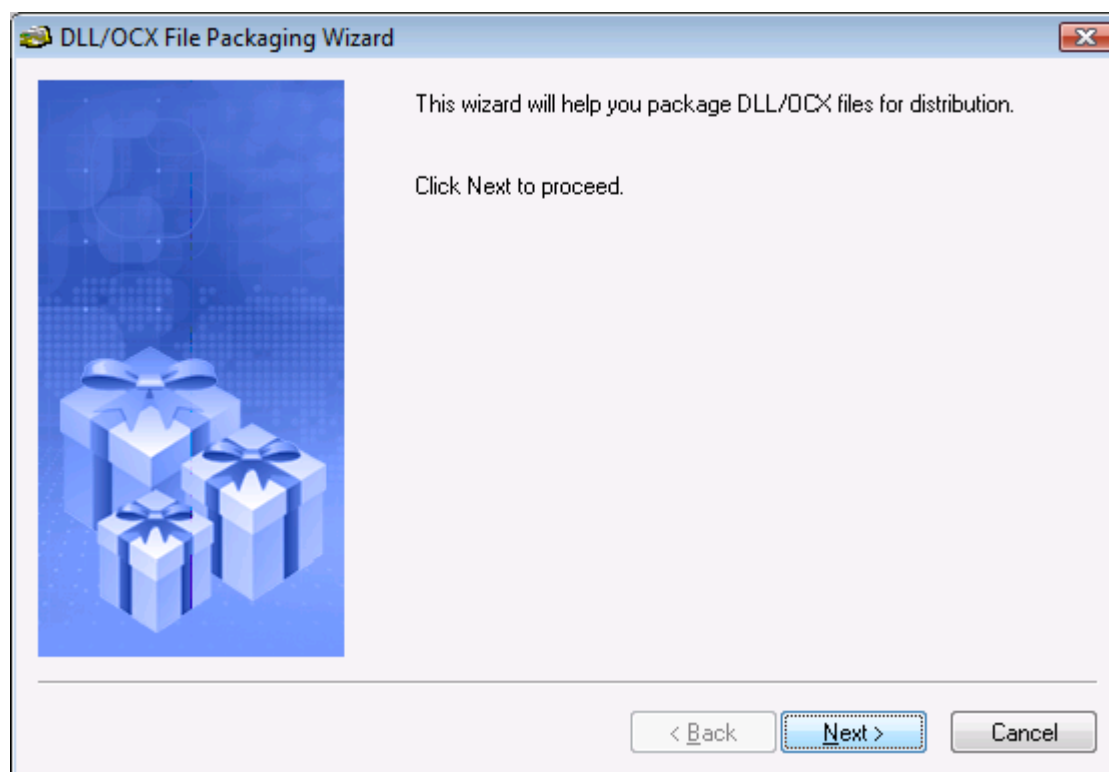
Table 15.1: Two ways to distribute DLL/OCX files

	When to use	Which tool to use...
Deploy DLL/OCX files to the server and then download them to the client at runtime.	There are only a few DLL/OCX files or the files are small.	In the Additional Files tab of the Application Profiles Configuration window. Refer to Deploy External Non-System DLL/OCX Files for details.
Package DLL/OCX files and install them to the client before the application is run for the first time.	There are many DLL/OCX files or the files are large; and the client machine is fixed.	Use the DLL/OCX file packaging wizard. Refer to the following sections for detailed information.

15.1.1 Packaging DLL/OCX files

Step 1 - Run the EonDLLOCX.exe file under the \Toolkit\DLL&OCX Package folder in the Appeon Developer installation directory.

The DLL/OCX File Packaging Wizard starts, as shown in the following figure. Click *Next* to proceed.

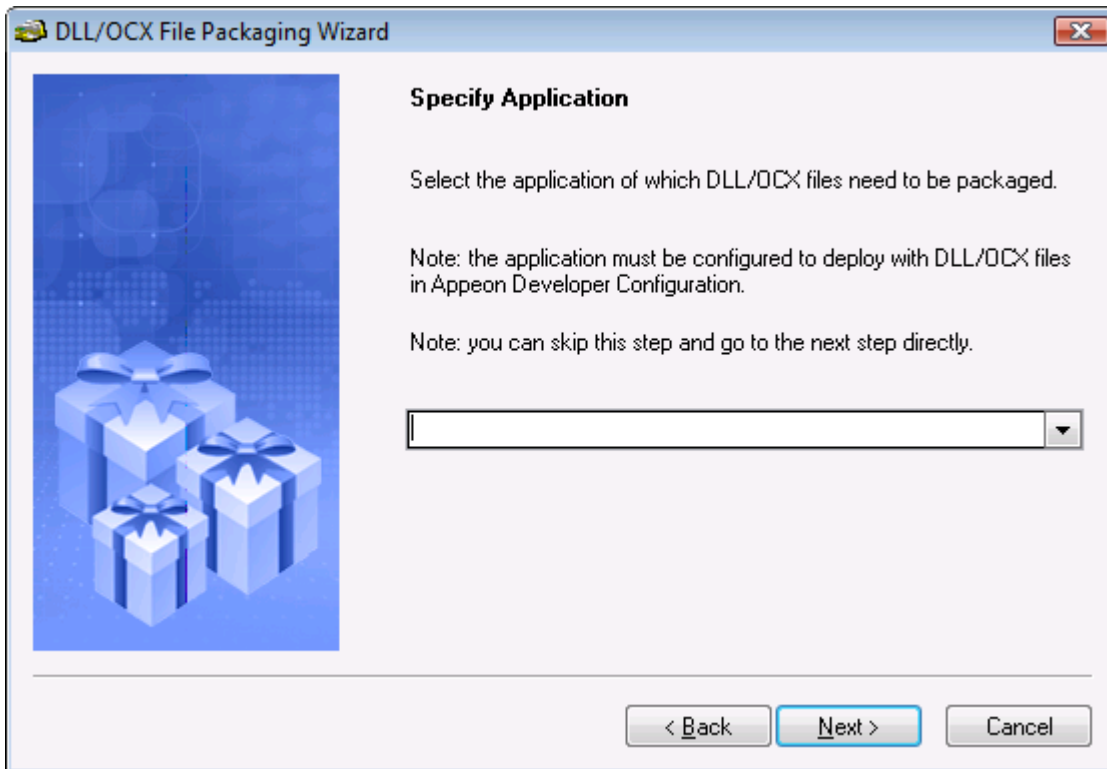
Figure 15.1: DLL/OCX File Packaging Wizard

Step 2 - Select an application and click *Next*.

Only application profiles that are already configured with DLL/OCX files will be listed. For configuring DLL/OCX files for an application profile, refer to [Deploy External Non-System DLL/OCX Files](#). When *Next* is clicked, the pre-configured DLL/OCX files will be automatically added for you.

Or, skip the selection and click *Next* to manually add the DLL/OCX files.

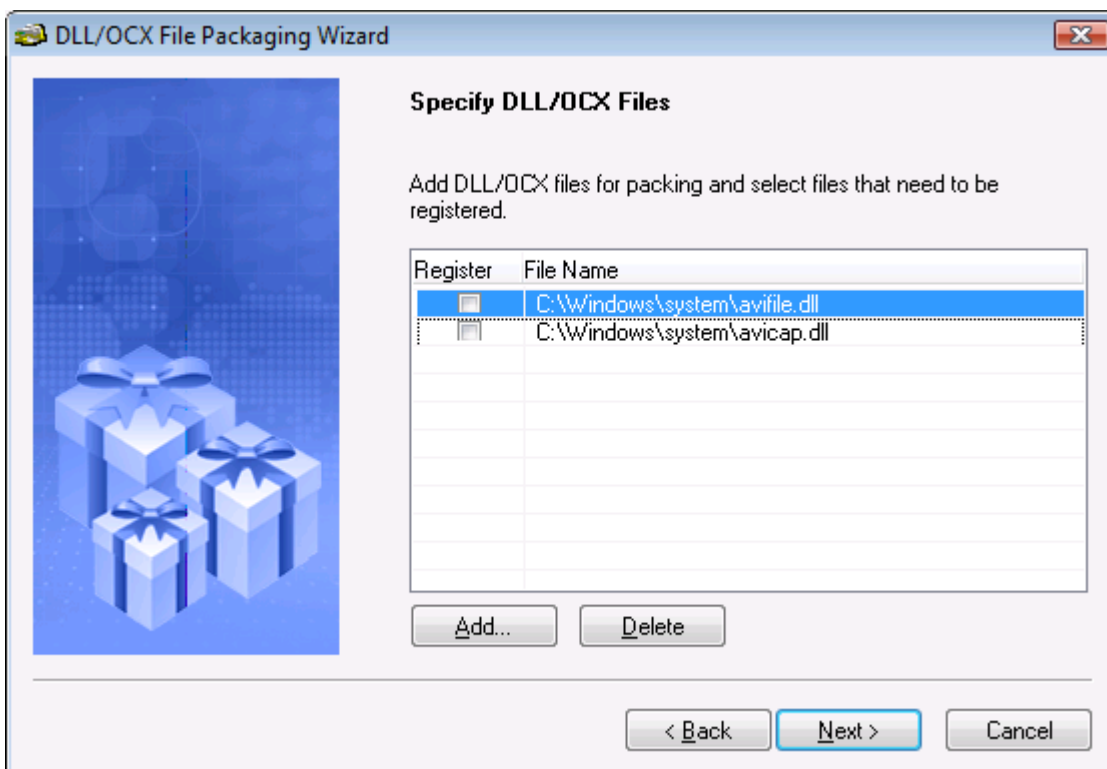
Figure 15.2: Select an application



Step 3 - Click *Add* to add the DLL/OCX files, select the *Register* box to automatically register the file when installed, and click *Next* to proceed.

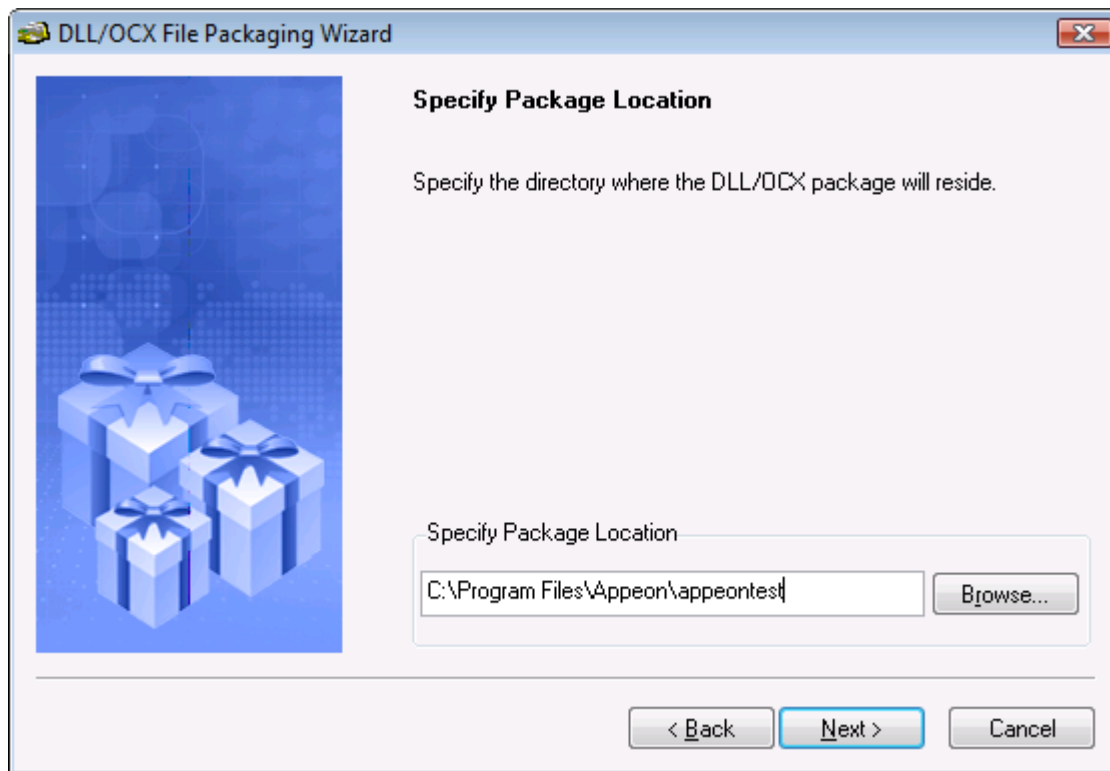
The DLL/OCX files will be automatically added if you select the application of which files are already configured in the previous step.

Figure 15.3: Add DLL/OCX files



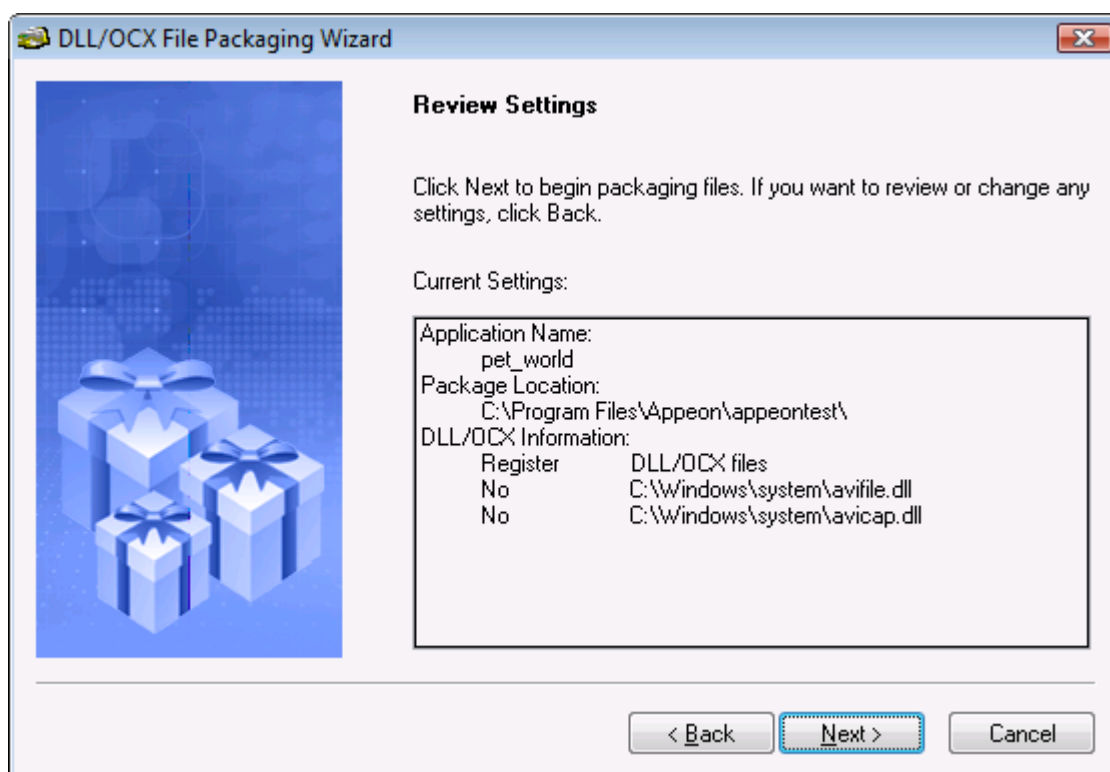
Step 4 - Specify the location where the package will be created. A folder named Package will be created under this location.

Figure 15.4: Specify the package location



Step 5 - Review the settings and click *Next* to generate the package.

Figure 15.5: Review settings

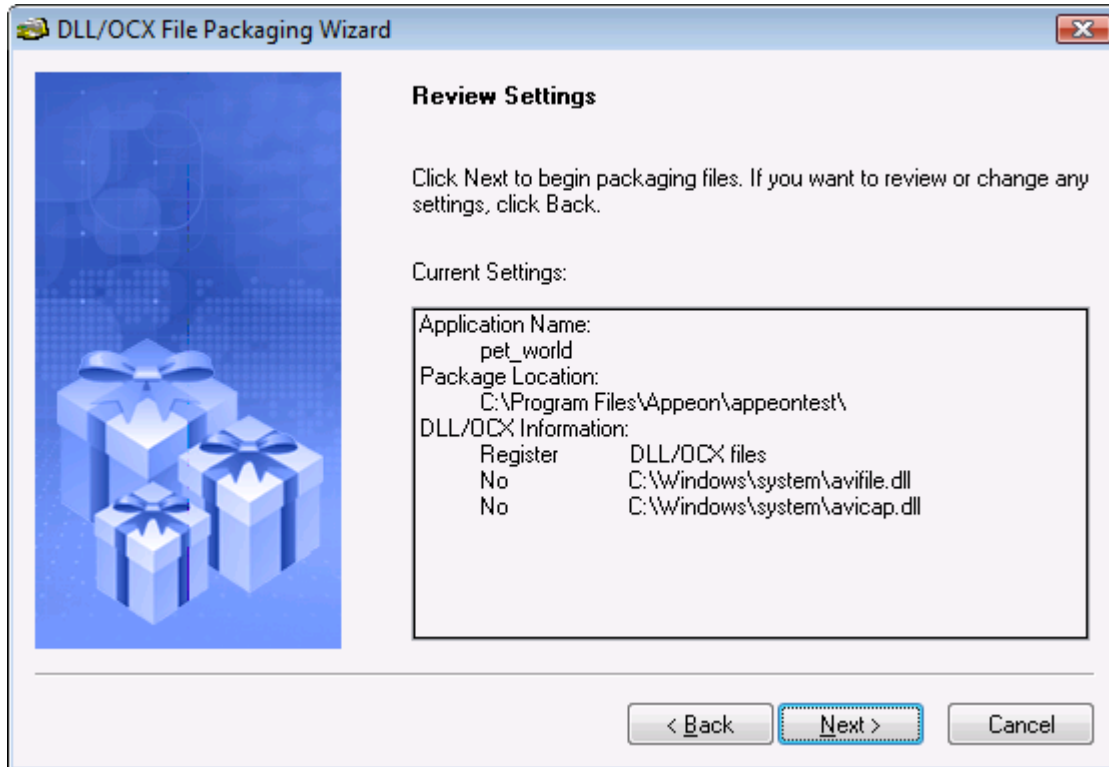


Step 6 - Wait until the file packaging process is complete.

Step 7 - When packaging is complete, click *Finish* to close the wizard.

To view the log information generated during the process, select the *View Log* box and then click *Finish*. The log file will be automatically opened. You can also manually open the DLL/OCX.log file in the generated package.

Figure 15.6: Packaging complete



15.1.2 Installing and uninstalling DLL/OCX files

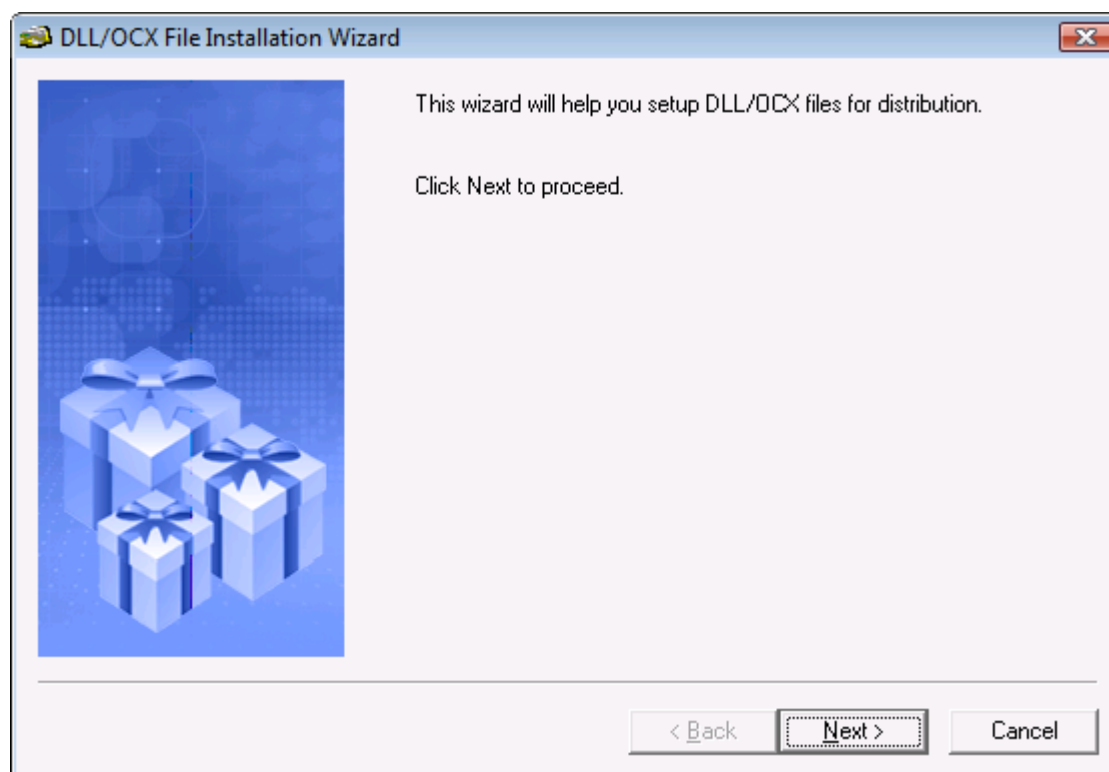
You will use the same setup program (Setup.exe file) in the generated package for installing and uninstalling DLL/OCX files:

- If the DLL/OCX files are not installed on the client, when you run the setup program, you will be guided to install the files. Refer to [Section 15.1.2.1, “Installing DLL/OCX files”](#) for detailed instructions.
- If the DLL/OCX files are already installed on the client, when you run the setup program, you will be guided to reinstall or uninstall the files. If you select to reinstall the files, you will run through the same process as a new installation, as described in [Section 15.1.2.1, “Installing DLL/OCX files”](#). If you select to uninstall the files, refer to [Section 15.1.2.2, “Uninstalling DLL/OCX files”](#) for detailed instruction.

15.1.2.1 Installing DLL/OCX files

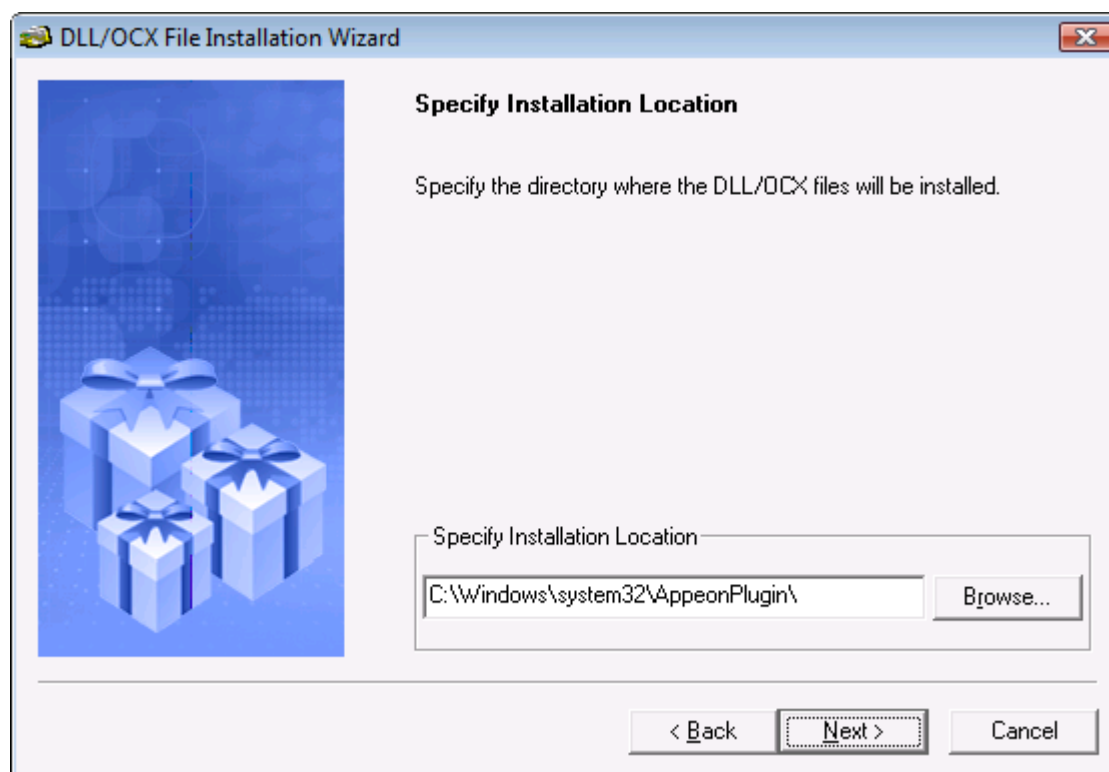
Step 1: On a client machine, run the Setup.exe file in the generated package.

The DLL/OCX File Installation Wizard starts, as shown in the following figure. Click *Next* to proceed.

Figure 15.7: DLL/OCX File Installation Wizard

Step 2: Specify the location where the DLL/OCX files will be installed. Click *Next* to start the installation process.

The default installation location is %SystemRoot%\system32\AppeonPlugin (%SystemRoot % indicates the folder where Windows is installed, typically C:\Windows); if you specify a custom location in AEM (see *Appeon Server Configuration Guide* for details), then specify the same location here.

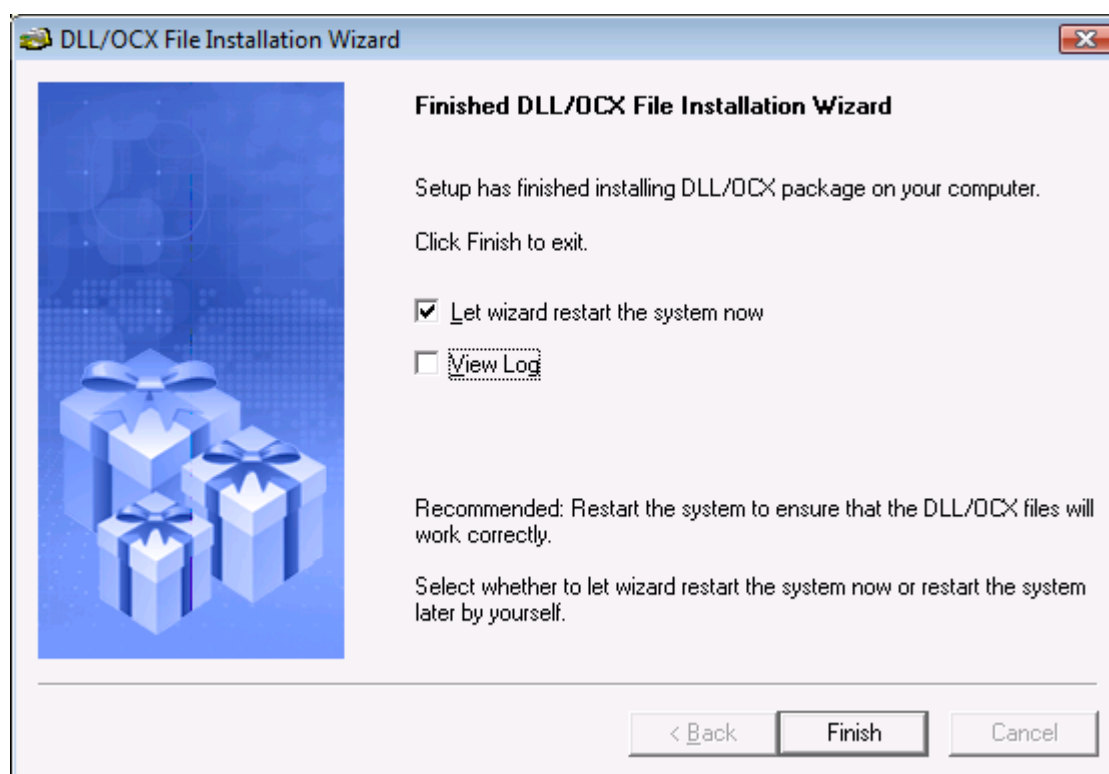
Figure 15.8: Specify the installation location

Step 3: Wait until the installation is complete.

During the installation process, the DLL/OCX files will first be copied to the specified location and then registered if they have been selected for auto-registration during the packaging process.

Step 4: When the installation is complete, select the *Let wizard restart the system now* option and click *Finish* to close the installation wizard and restart your machine.

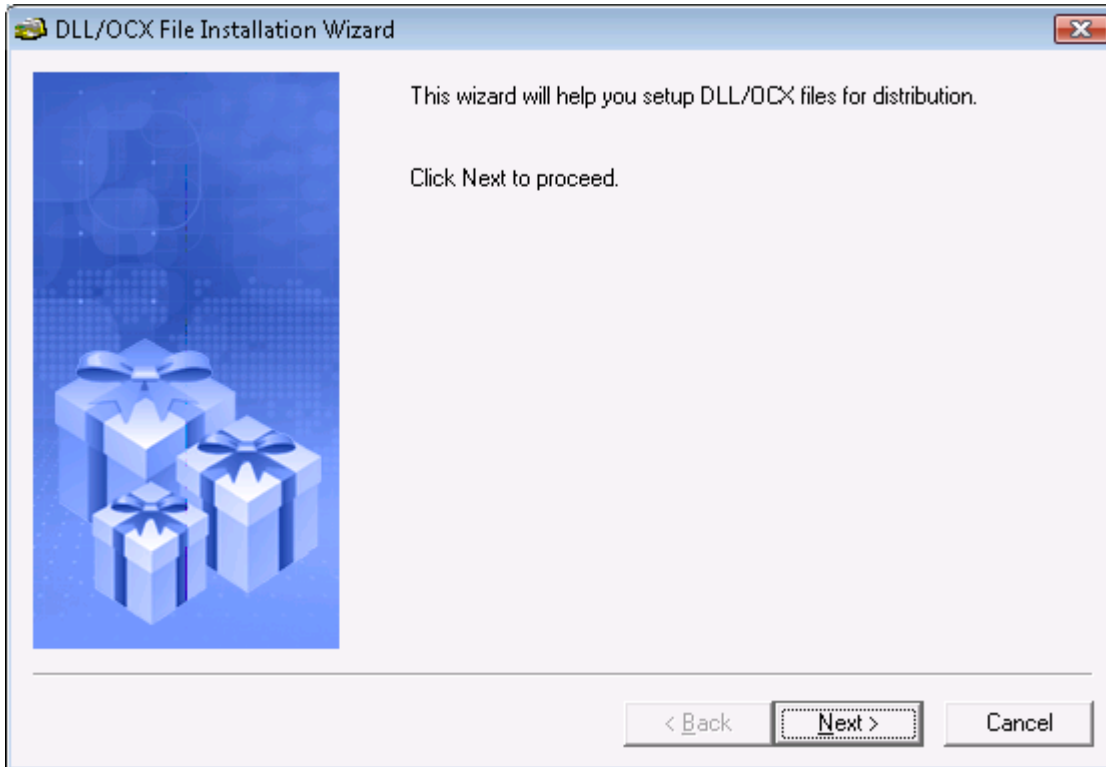
To view the log information generated during the process, select the *View Log* box and click *Finish*. The log file will be automatically opened. You can also manually open the DLLOCX.log file in the generated package.

Figure 15.9: Installation complete

15.1.2.2 Uninstalling DLL/OCX files

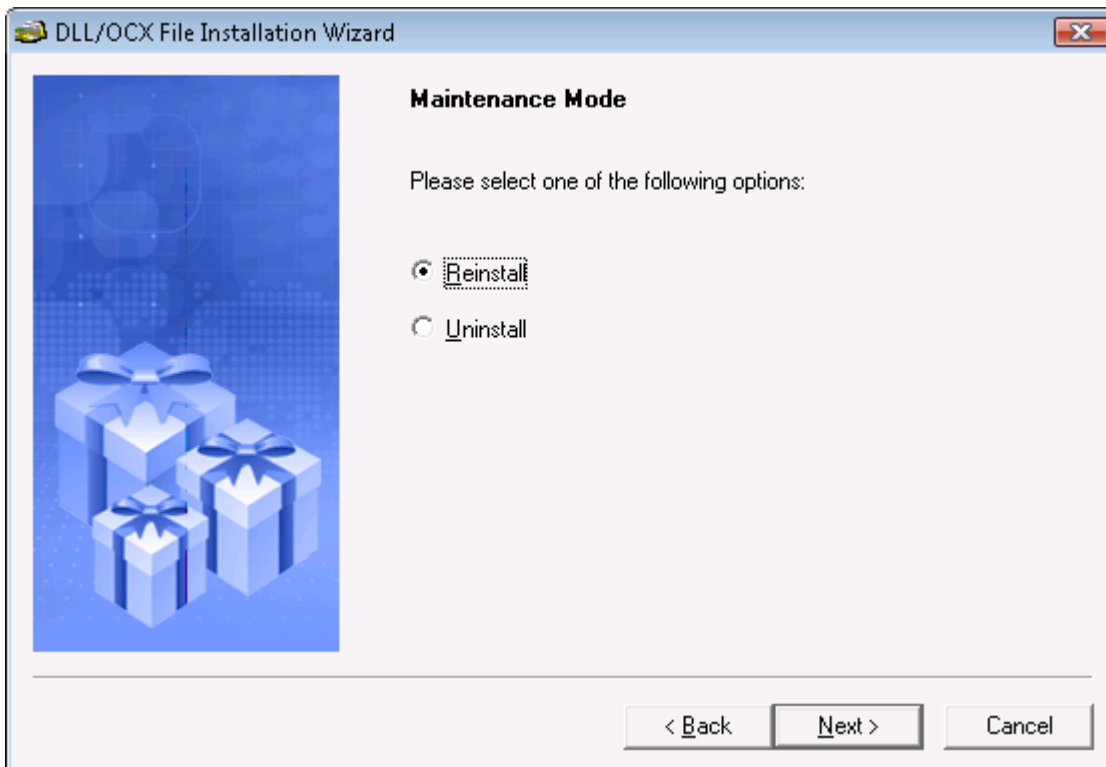
Step 1: On a client machine, run the Setup.exe file in the generated package.

The DLL/OCX File Installation Wizard starts, as shown in the following figure. Click *Next* to proceed.

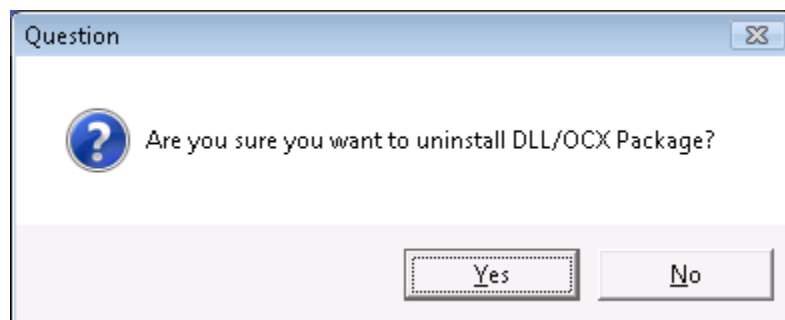
Figure 15.10: DLL/OCX File Installation Wizard

Step 2: Select *Uninstall* and click *Next* to proceed.

If you select to reinstall the files, you will run through the same process as a new installation, as described in [Section 15.1.2.1, “Installing DLL/OCX files”](#).

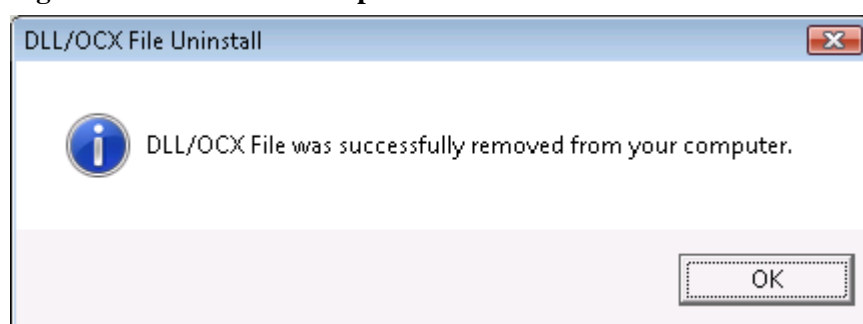
Figure 15.11: Reinstall or uninstall

Step 3: Click *Yes* to confirm the uninstall.

Figure 15.12: Uninstall confirmation

Step 4: Wait until the uninstall is complete.

Step 5: When uninstall is complete, click *OK* to exit.

Figure 15.13: Uninstall complete

15.2 Appeon Silent Installer (Windows EAServer only)

Note: this tool does not work in .NET, JBoss, JEUS, WebLogic and WebSphere versions.

To help ISVs create an easy-to-use Appeon installation package for the end users, Appeon specially provides a silent installer which can be customized to install EAServer, Appeon Server, Appeon Server EBF (Emergency Bug Fix), and Appeon Web applications in the silent mode.

This guide provides some useful instructions for **ISVs** on:

- Creating folder structure of Silent Installer
- Copying installation program of EAServer, Appeon Server, Appeon Server EBF or Web applications
- Customizing configuration file
- Burning installation CDs

Additional instructions are also provided for **end users** on:

- Running Appeon Silent Installer (for End Users)

15.2.1 Creating folder structure of Silent Installer

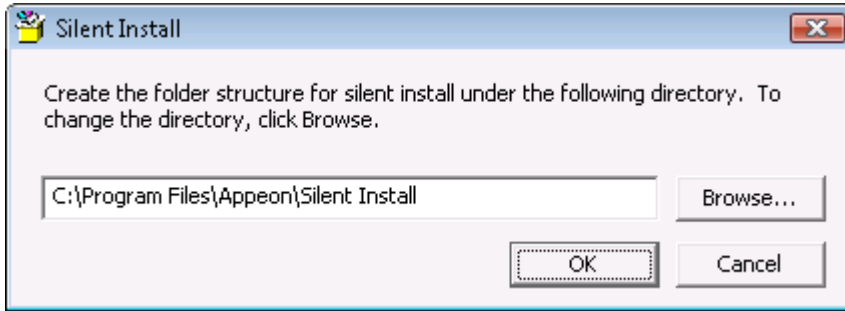
The installation program files of EAServer, Appeon Server, Appeon Server EBF, and Web application must be placed in the required folder structure, so that Appeon Silent Installer can

run them. For your convenience, Apeon provides a compressed folder structure which can be decompressed under any directory. To decompress and create the folder structure and the required files, take the following steps:

Step 1 -- Run SilentInstall.exe in the "\Toolkit\Silent Install" under the Apeon Developer installation directory, for example, C:\Program Files\Apeon\Developer6.5\Toolkit\Silent Install.

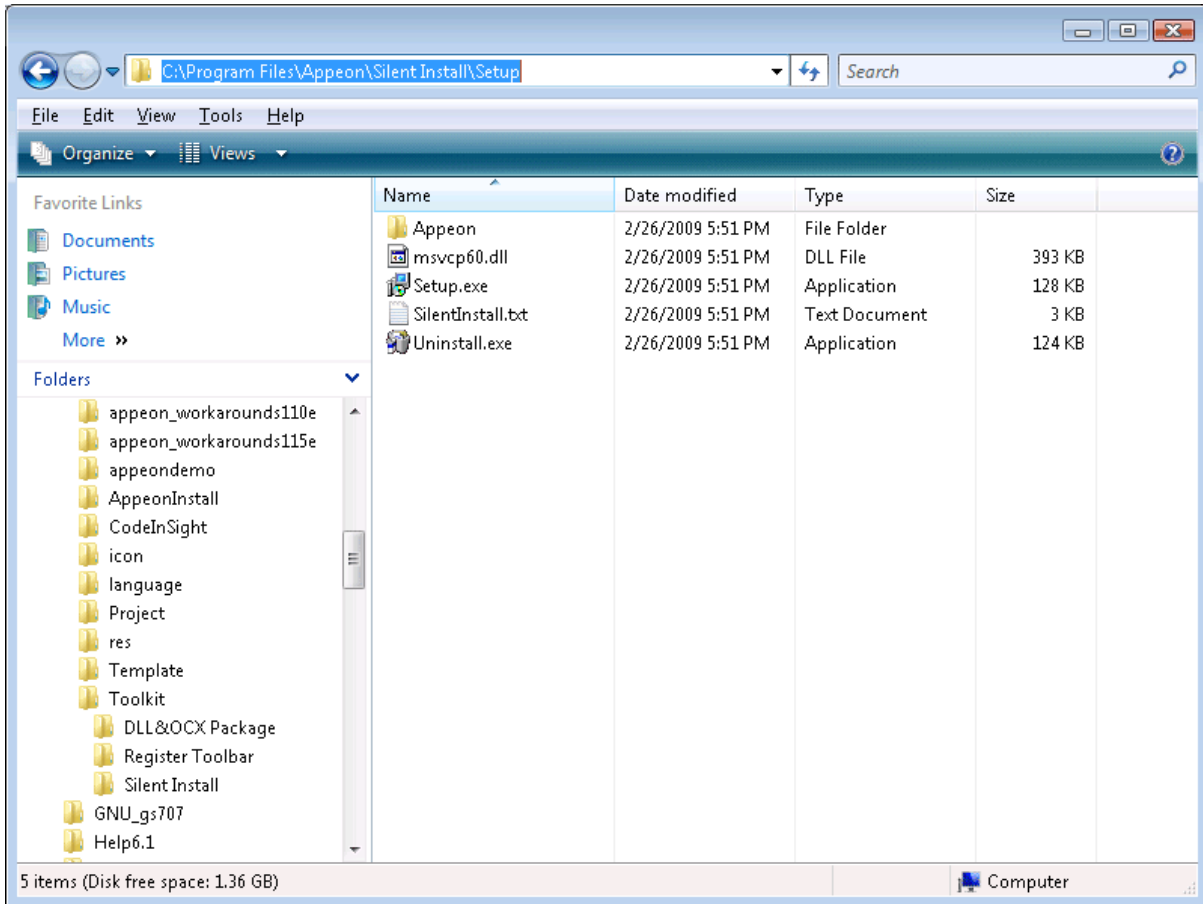
Step 2 -- Select where to create the folder structure. Click *OK*.

Figure 15.14: Specify the location



After the creation, a folder named "Setup" is created with the following sub-folders and files:

Figure 15.15: Folder structure



The following is a brief introduction to each folder in the Apeon Silent Installer:

- AS: It stores the installation program of Appeon Server.
- AS EBF: It stores the installation program of Appeon Server EBF.
- EAServer: It stores the installation program of EAServer.
- WebApp: It stores the Web application files packaged by the Appeon application packaging tool.
- Appeon: It contains the "AS", "AS EBF", "EAServer" and "WebApp" directory.
- Setup.exe: The setup program for launching the silent installation.
- SilentInstall.txt: The configuration file which can be modified to customize the installation.
- Uninstall.exe: The uninstall program for silently removing what has been installed with Appeon Silent Installer.
- msvcp60.dll: The DLL file for Appeon Silent Installer.
- Setup: The root directory of the Silent Installer. It contains the "Appeon" folder, the Setup.exe, Uninstall.exe, SilentInstall.txt, and msvcp60.dll files.

15.2.2 Copying installation program of EAServer, Appeon Server, Appeon Server EBF or Web applications

After the required folders and files are generated, you can start copying the installation program files of Appeon Server, EAServer and Web applications to the corresponding folder.

To copy the EAServer installation program to Appeon Silent Installer:

Copy all files and folders from the directory where setup.exe file resides to the "EAServer" folder of Appeon Silent Installer.

To copy the Appeon Server installation program to Appeon Silent Installer:

Copy all files from the "ASP" folder on the Appeon installation CD to the "AS" folder of Appeon Silent Installer.

To copy the Appeon Server EBF installation program to Appeon Silent Installer:

Copy all files from the "asebf" folder on the Appeon installation CD to the "AS EBF" folder of Appeon Silent Installer.

To copy Web application packages to Appeon Silent Installer:

Step 1 -- Verify that the Web application packages have already been generated using the Appeon application packaging tool. If no package is generated, follow steps in [Section 10.1, "Packaging a Web application"](#) in the *Packaging and Installing Web Applications* chapter.

Step 2 -- Copy the generated packages to the "WebApp" folder of Appeon Silent Installer.

15.2.3 Customizing configuration file

With Appeon Silent Installer, you can customize the installation program using the configuration file (SilentInstall.txt). The following is a detailed description of each parameter in the SilentInstall.txt file. Each parameter contains no default value.

15.2.3.1 Installation Types

Specify whether to install EAServer, Appeon Server and Web applications.

Table 15.2: Parameter for installing EAServer

Parameter	EAServer
Description	Specifies whether to install EAServer. If you do not want to install EAServer using this setup program, make sure that a supported EAServer was installed already.
Accepted Values	Yes -- Install EAServer. No -- Not to install EAServer, instead use an existing EAServer.
Default Value	None
Example	EAServer ="yes"

Table 15.3: Parameter for installing Appeon Server

Parameter	AppeonServer
Description	Specifies whether to install Appeon Server.
Accepted Values	Yes No
Default Value	None
Example	Appeon Server="yes"

Table 15.4: Parameter for installing Appeon Server EBF

Parameter	AppeonServerEBF
Description	Specifies whether to apply Appeon Server EBF.
Accepted Values	Yes No
Default Value	None
Example	Appeon Server EBF="yes"

Table 15.5: Parameter for installing Web Application

Parameter	WebApplication
Description	Specifies whether to install Web applications.
Accepted Values	Yes No
Default Value	None
Example	WebApplication="yes"

15.2.3.2 EAServer and ASA Path

Specify the path of EAServer and ASA. ASA is required because Appeon Server has an ASA database for storing the sensitive system data.

Table 15.6: Parameter for EAServer path

Parameter	EAServerPath
Description	If the <i>EAServer</i> parameter is set to "No", this specifies the path of an existing EAServer. The specified path will be validated. If the <i>EAServer</i> parameter is set to "Yes", this indicates where EAServer will be installed.
Accepted Values	A valid path
Default Value	None
Example	EAServerPath="C:\Program Files\Sybase\EAServer"

Table 15.7: Parameter for ASA path

Parameter	ASAPath
Description	Specifies the ASA installation path. The specified path will be validated.
Accepted Values	A valid path
Default Value	None
Example	ASAPath="C:\Program Files\Sybase\Shared\ASA802"

15.2.3.3 EAServer Host Name, Port, Username and Password

Specify the EAServer host name, port number, user name and password.

Table 15.8: Parameter for EAServer name

Parameter	EAServerName
Description	Specifies the IP address of EAServer.
Accepted Values	A valid IP address
Default Value	None
Example	EAServerName="localhost"

Table 15.9: Parameter for EAServer port

Parameter	EAServerPort
Description	Specifies the port number of EAServer.
Accepted Values	A valid port
Default Value	None
Example	EAServerPort="9000"

Table 15.10: Parameter for EAServer username

Parameter	EAServerUserName
Description	Specifies the user name to connect to EAServer.
Accepted Values	A valid user name on EAServer.
Default Value	None

Example	EAServerUserName="jagadmin"
---------	-----------------------------

Table 15.11: Parameter for EAServer password

Parameter	EAServerPassWord
Description	Specifies the password to connect to EAServer.
Accepted Values	A valid password for the current user name.
Default Value	None
Example	EAServerPassWord=""

15.2.3.4 Apeon Server Port, Username and Password

Specify the Apeon Server port number, user name and password.

Table 15.12: Parameter for Apeon Server port

Parameter	AppeonServerPort
Description	Specifies the HTTP port number of Apeon Server.
Accepted Values	A valid port If both <i>EAServer</i> and <i>AppeonServer</i> parameters are set to "Yes", port "9988" is the only available port that can be used.
Default Value	None
Example	AppeonServerPort="9988"

Table 15.13: Parameter for Apeon Server username

Parameter	AppeonServerUserName
Description	Specifies the user name for deploying an application to Apeon Server. This deployment user name can be created using the Security tool in AEM.
Accepted Values	A valid deployment user name on Apeon Server.
Default Value	None
Example	AppeonServerUserName=""

Table 15.14: Parameter for Apeon Server password

Parameter	AppeonServerPassWord
Description	Specifies the password for deploying an application to Apeon Server.
Accepted Values	A valid deployment password for the current user name.
Default Value	None
Example	AppeonServerPassWord=""

15.2.3.5 Web Server Path

Specify the Web root of the Web server.

Table 15.15: Parameter for Web server Web root

Parameter	WebServerRootPath
Description	Specifies the document root of the Web server. If the <i>WebApplication</i> parameter is set to "No", this parameter will not take effect. If the <i>WebApplication</i> parameter is set to "Yes", the specified document root will be validated.
Accepted Values	A valid path
Default Value	None
Example	WebServerRootPath="C:\Program Files\Sybase\EAServer\html"

15.2.3.6 Setup Log Path

Specify the log file path.

Table 15.16: Parameter for log file path

Parameter	LogPath
Description	Specifies the path for the setup log file (APBLog.txt).
Accepted Values	A valid path
Default Value	None
Example	LogPath="c:\log"

15.2.3.7 Web Applications

Specify the number of Web applications, application name, connection cache, transaction object and database type.

Table 15.17: Parameter for number of Web application

Parameter	WebApplications
Description	Specifies the number of Web applications that you want to install.
Accepted Values	Any number greater than zero
Default Value	None
Example	WebApplications="2"

If more than one application will be installed, create the following parameters through incrementing by "1", for example, "WebApplication2", "EAServerNVO2", "ConnectCache2" and "AEM2" for the second application, "WebApplication3", "EAServerNVO3", "ConnectCache3" and "AEM3" for the third application etc.

Table 15.18: Parameter for Web application 1

Parameter	WebApplication1
Description	Specifies the actual name of the first Web application.

Accepted Values	An alphanumeric string
Default Value	None
Example	Examples for the first application: WebApplication1 = "appeon_sales_application_demo" Examples for the second application: WebApplication2 = "appeon_code_examples"

Table 15.19: Parameter for EAServer NVO 1

Parameter	EAServerNVO1
Description	Specifies whether to install NVO components.
Accepted Values	Yes No
Default Value	None
Example	EAServerNVO1="Yes"

To make connection caches work on the target Appeon Server, be sure to install the required database drivers to the target Appeon Server. For more information on database drivers, refer to *Database Connection Setup* in the *Appeon Server Configuration Guide*.

Table 15.20: Parameter for Connection cache 1

Parameter	ConnectCache1
Description	Specifies whether to install connection caches.
Accepted Values	0 -- Not to install connection caches. 1 -- Install and overwrite existing connection caches. 2 -- Install but not to overwrite existing connection caches.
Default Value	None
Example	ConnectCache1="1"

Table 15.21: Parameter for AEM 1

Parameter	AEM1
Description	Specifies whether to install AEM settings.
Accepted Values	Yes No
Default Value	None
Example	AEM1="Yes"

15.2.3.8 Web Application Uninstall Program Path

Specify the directory for the Web application uninstall program. A shortcut for the uninstall program will be created in Windows Start menu.

Table 15.22: Parameter for the uninstall program path

Parameter	UninstallWebAppPath
Description	Specifies where the uninstall program for Web applications will reside.
Accepted Values	A valid path.
Default Value	None
Example	UninstallWebAppPath="C:\uninstallwebapp"

15.2.3.9 Resource Language

Specify the language of the messages displayed during the installation or uninstallation process.

Table 15.23: Parameter for the resource language

Parameter	Language
Description	Specifies the language of UI messages.
Accepted Values	EN -- English JP -- Japanese
Default Value	EN
Example	Language="EN"

15.2.3.10 SilentInstall.txt example

The following example shows a sample SilentInstall.txt file.

```
#####
# Configure installation type: Yes or No
#####
EAServer = "Yes"
Appeon Server="Yes"
Appeon Server EBF="Yes"
WebApplication="Yes"
#####
# Enter the path of the EAServer installed or you want to install.
#####
EAServerPath="C:\Program Files\Sybase\EAServer"
#####
# Enter the ASA path
#####
```

```
ASAPath=" "C:\Program Files\Sybase\Shared\ASA802"

#####

# Enter the Port, Username, and Password of EAServer

#####

EAServerName="localhost"

EAServerPort="9000"

EAServerUserName="jagadmin"

EAServerPassWord=" "

#####

# Enter the Port, Username, and Password of Appeon Server

#####

AppeonServerPort="9988"

AppeonServerUserName=" "

AppeonServerPassWord=" "

#####

# Enter the Web root of Web server

#####

WebServerRootPath="C:\Program Files\Sybase\EAServer\html"

#####

# Enter the path of Setup Log: APBLog.txt

#####

LogPath="c:\log"

#####

# Enter the Web application number

#####

WebApplications="1"

#####

# Web Application Configuration

# ConnectCache:

# 0: not install

# 1: install, overwrite if exist

# 2: install, not overwirte if exist
```

```

# EAServerNVO: Yes or No

# AEM: Yes or No

#####

WebApplication1="Web Application Name1"

EAServerNVO1="YES"

AEM1="YES"

ConnectCache1="1"

#####

# Uninstall Path

#####

UninstallWebAppPath = "C:\uninstallwebapp"

#####

# Language

#[default] = "EN"

# "EN" English

# "JP" Japanese

#####

Language="EN"

```

15.2.4 Burning installation CDs

After configuration is completed, you can burn installation CDs with the customized silent installer (the entire "setup" folder) and distribute CDs to your end users.

The Apeon Silent Installer can be provided in one, two or three CDs:

- In one CD: Installing the Apeon Server ("AS" folder), Apeon Server EBF ("AS EBF" folder), EAServer ("EAServer" folder) and the Web application ("WebApp" folder).
- In two CDs: One for installing the Apeon Server ("AS" folder), Apeon Server EBF ("AS EBF" folder), and EAServer ("EAServer" folder), and the other for installing the Web application ("WebApp" folder).
- In three CDs: One for installing the Apeon Server ("AS" folder) and Apeon Server EBF ("AS EBF" folder), one for installing EAServer ("EAServer" folder), and one for installing the Web application ("WebApp" folder).

Each CD must contain the following four files right under the Setup folder (that is, place the following files in the same directory level of the "AS", "EAServer" and "WebApp" folder):

- Setup.exe

- SilentInstall.txt
- Uninstall.exe
- msvcp60.dll

15.2.5 Running Appeon Silent Installer (for End Users)

This section provides some additional instructions for **end users** on using the Appeon Silent Installer to install/uninstall EAServer, Appeon Server, Appeon Server EBF and/or Web applications

15.2.5.1 Installing Appeon Server, EAServer and/or Web applications

Before running the Appeon Silent Installer, be aware that

1. The Setup.exe program can only be run on the Windows platform.
2. The Appeon Server and the Web server must reside on the same machine.

Start the silent installation by running the Setup.exe file on the installation CD.

By default, the configuration file in the same location of the Setup.exe file will be used during the installation process. To use a configuration file residing in a different location, run the Setup.exe file from the command line and append the configuration file location, for example, *Setup.exe d:/setuptmp/SilentInstall.txt*.

15.2.5.2 Uninstalling Appeon Server, EAServer and/or Web applications

To silently uninstall EAServer, Appeon Server, Appeon Server EBF, and/or Web applications:

Run Uninstall.exe on the installation CD. The uninstall program will automatically load the SilentInstall.txt file on the same CD and remove what has been installed with Appeon Silent Installer.

To uninstall Web applications from Windows Start menu:

Select Windows Start | Programs | Appeon Web Application | Undeploy Appeon Web Application. Or run the uninstall program under the location specified by the "UninstallWebAppPath" parameter.

You will go through the same process as those in [Section 10.2.3, “Uninstalling an application”](#) in the "Packaging and Installing Web Applications" chapter.

15.2.5.3 FAQs

1. What happens if EAServer is started during the process of silent installation?
Appeon Silent Installer will shut down the EAServer and continue the installation.
2. What happens if EAServer or Appeon Server was already installed during the process of silent installation?
Appeon Silent Installer will overwrite the existing EAServer or Appeon Server.

3. What happens if the names of NVO packages for a Web application are duplicated?

Apeon Silent Installer will still deploy the first NVO package, but will not deploy the second NVO package. This activity will be recorded in the log file.

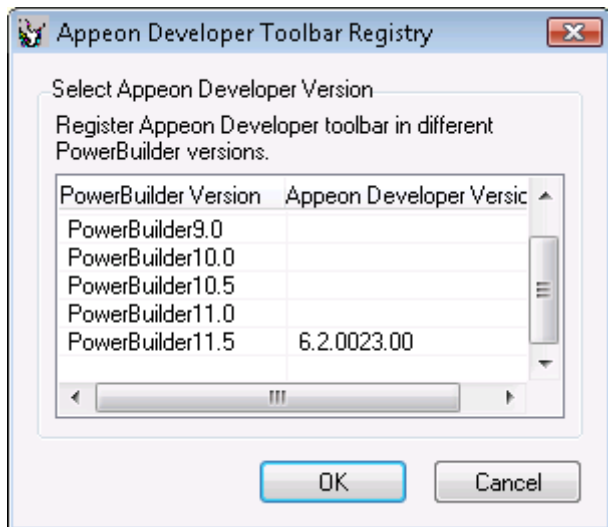
15.3 Apeon Developer Toolbar Register Tool

Apeon Developer can run with PowerBuilder 8, 9, 10, 10.5, 11, 11.5, 12, and 12.5 at the same time and multiple Apeon Developer versions can run on the same machine. The Apeon Developer Toolbar register tool enables you to register (or unregister) one Apeon Developer version to more than one PowerBuilder version or different Apeon Developer versions to different PowerBuilder versions, so that you can easily and flexibly select which Apeon Developer version and PowerBuilder version to use.

Following are steps to use the Apeon Developer Toolbar register tool:

Step 1: Select Start | Programs | Apeon 6.5 for PowerBuilder | Apeon Developer | Toolbar Register Tool.

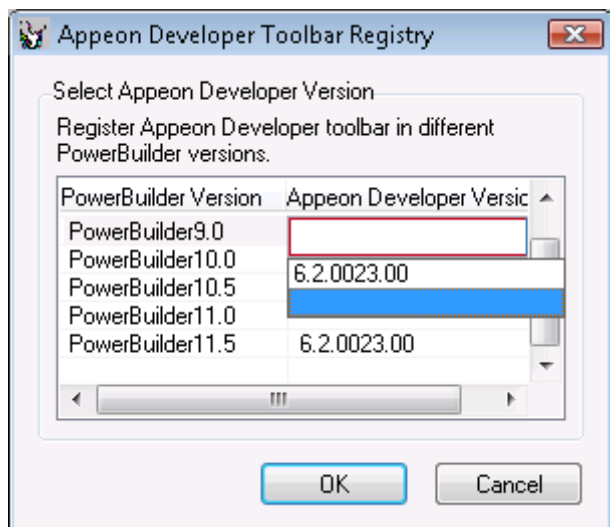
Figure 15.16: Registry tool



The PowerBuilder versions existing on this computer will be listed.

Step 2: Select the Apeon Developer version to be registered in the PowerBuilder version.

If you want to unregister an Apeon Developer version from a PowerBuilder version, clear the selection in the Apeon Developer Version column.

Figure 15.17: Register toolbar to PowerBuilder

Step 3: Click *OK* to register (or unregister) the selected Apeon Developer version with the PowerBuilder version.

16 Technical Support

In order to get more efficient technical support, please confirm which distribution you are using. Basically, 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 *Get Support* icon in the Appeon Developer toolbar appearing in the PowerBuilder IDE or launching the Appeon Help from the Windows start menu. For more information about the differences of distribution, please refer to the *Distributions* section in *Introduction to Appeon*.

Get support for Sybase Distribution

Each Appeon installation that has purchased a support contract from Sybase has one or more designated people who are authorized to contact Sybase Technical Support. If you cannot resolve a problem using the manuals or online help, please have the designated person contact Sybase Technical Support or the Sybase subsidiary in your area. You can also find technical support information by visiting <http://www.sybase.com/support/> and clicking on the *Contact Support* link. When logging a case please make sure to inform the technical support you are using Sybase Distribution and be prepared to provide the following files listed in the following table to Sybase Technical Support. This will aid debugging.

Get support for Appeon Distribution

If your Appeon for PowerBuilder copy is directly purchased from Appeon Corporation, please contact your Email to <support@appeon.com>. Make sure that you will inform the technical support you are using Appeon Distribution and be prepared to provide the following files listed in the following table to Appeon Technical Support. This will aid debugging.

Table 16.1: Files required for technical support

File Type	File Name
Appeon Server configuration file	For EAServer\WebLogic\WebSphere\JEUS\JBoss: All files in the %appeonserver%\repository\ <instancename>\config folder. For .NET IIS: All files in the %appeonserver%\AEM\config folder. %appeonserver% indicates the Appeon Server installation path.</instancename>
Appeon Server log file	For EAServer\WebLogic\WebSphere\JEUS\JBoss: All files in the %appeonserver%\repository\ <instancename>\log folder. For .NET IIS: All files in the %appeonserver%\AEM\Log folder.</instancename>
Appeon Server Repository DB	For EAServer: %appeonserver%\db\AppeonServer.db

File Type	File Name
	For .NET IIS: All files in the %appeonserver%\AEM\db folder. For WebLogic\WebSphere\JEUS\JBoss: %appeonserver%\db\appeondb.script
Appeon license file	For EAServer\WebLogic\WebSphere\JEUS\JBoss: %appeonserver%\license.appeon For .NET IIS: %appeonserver%\AEM\bin\license.appeon
Web Server configuration file	httpd.conf
Web Page file	Web server path\application name>window name.html Web server path\application name>window name.js Web server path\application name\all DataWindows on window.xml Note: If the window named includes inheritance, then also supply all ancestor HTML and JavaScript files.
PowerBuilder exported source code file	PowerBuilder application path\exported window name.srw PowerBuilder application path\exported DataWindow names.srd Note: Exported windows should include exported ancestor windows and exported ancestor user objects.

Index

A

access UFA tool, [65](#)
access Web applications, [112](#)
activate Code Insight, [162](#)
add variables or expressions to Watch view, [101](#)
Additional Files, [30](#)
analyze an application, [63](#)
Apeon DataWindow menu, [115](#)
Apeon Developer toolbar in PowerBuilder, [4](#)
Apeon Developer toolbar register tool, [193](#)
Apeon for PowerBuilder help, [170](#)
Apeon Server port, username and password, [186](#)
Apeon Server profile settings, [47](#)
Apeon Silent Installer, [181](#)
application profile settings, [25](#)
 Additional Files, [30](#)
 basic settings, [26](#)
 DB settings, [28](#)
 Misc Settings, [33](#)
 runtime settings, [41](#)
 summary, [42](#)
 Web service profiles, [40](#)
application profile tab, [24](#)
 delete an application profile, [25](#)
 export or import an application profile, [25](#)
 select a Web file generation mode, [24](#)
 specify default application profile, [24](#)

B

basic settings, [26](#)
burn installation CD, [191](#)

C

change value of a variable or expression, [102](#)
code lines that can set breakpoints, [98](#)
code with Code Insight, [166](#)
configure Apeon Developer, [9](#)
configure application database connectivity, [7](#)
configure basic settings, [10](#)
configure Code Insight, [163](#)
configure command line options, [19](#)
configure deployment settings, [13](#)

configure language options, [20](#)
copy installation programs, [183](#)
create folder structure of Silent Installer, [181](#)
customize configuration file, [183](#)
customize general settings of UFA report, [80](#)

D

DataWindow printing, [119](#)
DB settings, [28](#)
debug Apeon Web applications, [95](#)
declare transaction objects, [14](#)
define priority settings of unsupported features, [79](#)
delete an application profile, [25](#)
deploy PowerBuilder application, [83](#), [89](#)
deployment duration for full deployments, [84](#)
deployment duration for incremental deployments, [84](#)
deployment performance, [83](#)
deployment process, [85](#)
deployment profile settings, [56](#)
deployment profiles tab, [56](#)
develop with Code Insight, [162](#)
disable anti pop-up software, [112](#)
DLL/OCX files package tool, [172](#)

E

EAServer and ASA path, [184](#)
EAServer host name, port, username, password, [185](#)
enable Apeon DataWindow menu, [115](#)
enable Code Insight, [165](#)
evaluate an expression, [103](#)
examine an application at a breakpoint, [100](#)
examine context in Call Stack view, [103](#)
export or import an application profile, [25](#)
extended toolkit, [172](#)

F

filter UFA report items, [76](#)
find, [115](#)
fix code/stop the debug procedure, [103](#)

H

how a heavy window is measured, [81](#)

I

install an application, [137](#)
install and uninstall a Web application, [137](#)
install and uninstall DLL/OCX files, [176](#)

install Apeon for PowerBuilder, [7](#)
install Apeon Server, EAServer and Web applications, [192](#)
install DLL/OCX files, [176](#)
installation types, [184](#)
internet explorer settings, [104](#)

L

language setting requirements, [111](#)
launch Apeon Enterprise Manager, [168](#), [168](#)
launch Web application from Run button, [113](#)

M

make heavy window lighter, [82](#)
manage application profile, [23](#)
manage connection cache profile, [58](#)
manage database type profiles, [43](#)
manage deployment profiles, [55](#)
manage server profiles, [46](#)
manipulate UFA report, [74](#)
method for setting breakpoint, [99](#)
Misc Settings, [33](#)
modify deploy-config file, [136](#)
modify unsupported features, [72](#)

O

open or save UFA report, [74](#)

P

package a Web application, [126](#)
package and install Web applications, [126](#)
package DLL/OCX files, [172](#)
package instructions, [127](#)
perform feature analysis, [67](#)
prepare PowerBuilder application, [85](#)

R

read heavy window report, [81](#)
resource language, [189](#)
run Apeon silent installer, [192](#)
run application in debug mode, [100](#)
run Web application, [104](#), [112](#)
runtime settings, [41](#)

S

SaveAs, [120](#)
search for UFA report items, [75](#)
select a run mode, [114](#)
select a Web file generation mode, [24](#)

select DB types, [14](#)
select DLL/OCX files, [18](#)
select image files, [17](#)
select INI files, [17](#)
select PBL files, [11](#)
select report view mode, [75](#)
server profile tab, [47](#)
set breakpoint, [98](#)
setup log path, [187](#)
sort and filter, [116](#)
special variable and expression handlings, [100](#)
specify default application profile, [24](#)
specify deployment settings, [85](#)
specify log mode, [21](#)
speed of Web deployment process, [83](#)
start Apeon Debugger, [96](#)
start Apeon Server, [7](#)
step through application, [103](#)
summary, [22](#), [42](#)

T

technical support, [195](#)

U

undeploy instructions, [154](#)
undeploy Web applications, [154](#)
undeploy with Apeon Server mode, [158](#)
undeploy with Deployment Profile mode, [155](#)
undetected unsupported features, [69](#)
uninstall an application, [147](#)
uninstall DLL/OCX files, [179](#)
URL for Web applications, [112](#)
use Apeon DataWindow menu, [115](#)
 DataWindow printing, [119](#)
 find, [115](#)
 SaveAs, [120](#)
 sort and filter, [116](#)
use Information Manager, [123](#)
use UFA tool, [62](#)

V

view report and log, [123](#)
views in Apeon Debugger, [97](#)

W

Web application uninstall program patch, [188](#)

Web applications, [187](#)
Web Server path, [186](#)
Web Server profile settings, [50](#)
Web service profiles, [40](#)