

# Installation Guide for .NET

Appeon® for PowerBuilder® 2016 (on .NET)  
FOR WINDOWS

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# Contents

1 About This Book .....	1
1.1 Audience .....	1
1.2 How to use this book .....	1
1.3 Related documents .....	1
1.4 If you need help .....	3
2 Introduction .....	4
2.1 Overview .....	4
2.2 System architecture .....	4
2.3 Appeon editions .....	7
2.4 Appeon components .....	8
2.4.1 Appeon Developer .....	8
2.4.2 Appeon Server .....	8
2.4.3 Appeon Server Web Component .....	8
2.4.4 Appeon Workspace (for Appeon Mobile only) .....	8
2.4.5 Appeon Help .....	9
3 Installation Requirements .....	10
3.1 Client requirements .....	10
3.1.1 Software requirements .....	10
3.1.2 Hardware requirements .....	10
3.2 Appeon Server requirements .....	10
3.2.1 Software requirements .....	10
3.2.2 Hardware requirements .....	11
3.2.3 (Optional) Web Server requirements .....	11
3.3 Appeon Developer requirements .....	11
3.3.1 Software requirements .....	11
3.3.2 Hardware requirements .....	12
3.4 Database Server requirements .....	12
3.5 Offline synchronization requirements .....	13
3.5.1 Client Database requirements .....	13
3.5.2 Synchronization Server requirements .....	13
3.5.3 Server Database requirements .....	13
4 Installing Appeon for PowerBuilder 2016 .....	14
4.1 Overview .....	14
4.2 Installation scenarios .....	14
4.2.1 Overview .....	14
4.2.2 Developer PC .....	15
4.2.3 Remote Appeon Server and Web server .....	15
4.2.4 Appeon Server Cluster .....	16
4.3 Two installation methods .....	16
4.4 Appeon new installation .....	17
4.4.1 Starting the installation .....	17
4.4.2 Appeon Server installation .....	22
4.4.2.1 Prerequisites .....	22
4.4.2.2 Installation instructions .....	38
4.4.2.3 Appeon Server Instance Configuration .....	46
4.4.3 Appeon Developer installation .....	58

4.4.3.1 Prerequisites .....	58
4.4.3.2 Installation instructions .....	58
4.4.4 Appeon Help installation .....	64
4.4.5 Appeon Server Web Component installation (for remote Web servers only) .....	67
4.4.5.1 Prerequisites .....	67
4.4.5.2 Installation instructions .....	67
4.5 Appeon upgrade installation .....	70
4.5.1 Before you upgrade .....	70
4.5.2 Upgrading to Appeon for PowerBuilder 2016 .....	71
4.5.2.1 Upgrading Appeon Server .....	71
4.5.2.2 Upgrading Appeon Developer .....	74
4.5.2.3 Upgrading Appeon Server Web Component .....	75
4.5.3 Upgrade configuration settings manually .....	75
4.5.3.1 Settings lost in upgrade (for Appeon Demos) .....	76
4.6 Troubleshoot Appeon installation problems .....	76
5 Configuring Appeon Server Cluster .....	77
6 Post-Installation Configuration Tasks .....	78
6.1 Overview .....	78
6.2 Configuration for Web client PC .....	78
6.2.1 Verifying Web browser settings .....	79
6.2.1.1 Verifying Chrome/Firefox/Opera settings .....	79
6.2.1.2 Configuring IE settings .....	81
6.2.2 Logging in as administrator or normal user .....	83
6.3 System language settings .....	83
7 Uninstalling Appeon for PowerBuilder 2016 .....	85
7.1 Overview .....	85
7.2 Uninstalling Appeon Developer .....	85
7.3 Uninstalling Appeon Server .....	87
7.4 Uninstalling Appeon Server Web Component (for remote Web servers only) .....	90
7.5 Uninstalling Appeon Help .....	92
Index .....	95

# 1 About This Book

## 1.1 Audience

This book is for a PowerBuilder programmer to set up the Web and/or mobile development and runtime environment by installing the different components of Appeon for PowerBuilder.

## 1.2 How to use this book

There are seven chapters in this book.

Chapter 1: About This Book

A general description of this book.

Chapter 2: Introduction

An overview of Appeon for PowerBuilder 2016 for .NET and its system architecture.

Chapter 3: Installation Requirements

The system requirements for installing Appeon for PowerBuilder 2016 for .NET.

Chapter 4: Installing Appeon for PowerBuilder 2016

Instructions for installing and upgrading Appeon Server, Appeon Developer, and Appeon Server Web Component.

Chapter 5: Configuring Appeon Server Cluster

Instructions for configuring an Appeon Server cluster.

Chapter 6: Post-Installation Configuration Tasks

Instructions on configurations required for Appeon system architecture that affect the running of Web applications.

Chapter 7: Uninstalling Appeon for PowerBuilder 2016

Instructions for uninstalling Appeon for PowerBuilder 2016 for .NET.

## 1.3 Related documents

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

- Introduction to Appeon:  
Gives general introduction to Appeon for PowerBuilder and its editions.
- Getting Started (for Appeon Mobile):  
Guides you through installing PowerBuilder and Appeon for PowerBuilder, and developing and deploying a mobile application.
- New Features Guide:  
Introduces new features and changes in Appeon for PowerBuilder.

- **Appeon Mobile Tutorials:**  
Gives instructions on deploying, running, and debugging the mobile application, distributing native mobile apps, and configuring the Appeon Server cluster.
- **Appeon Mobile (Offline) Tutorials:**  
Gives instructions on setting up the Appeon Mobile (Offline) environment, and configuring, deploying, running, updating, and debugging the offline application.
- **Appeon Installation Guide:**  
Provides instructions on how to install Appeon for PowerBuilder successfully.
- **Mobile UI Design & Development Guide:**  
Introduces general guidelines on designing and developing the mobile app and UI.
- **Migration Guidelines for Appeon Web:**  
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 you through the entire process of deploying a small PowerBuilder application to the Web.
- **Supported PB Features:**  
Provides a detailed list of supported PowerBuilder features which can be converted to the Web/Mobile with Appeon as well as which features are unsupported.
- **Appeon Developer User Guide:**  
Provides instructions on how to use the Appeon Developer toolbar in Appeon for PowerBuilder.
- **Workarounds & API Guide:**  
Provides resolutions for unsupported features and various APIs to facilitate you to implement the features (including Web and mobile) that are not easy or impossible to implement in the PowerBuilder IDE.
- **Appeon Workspace User Guide:**  
Gives a general introduction on Appeon Workspace and provides detailed instructions on how to use it.
- **Appeon Server Configuration Guide:**  
Provides instructions on how to configure Appeon Server Monitor, establish connections between Appeon Servers and database servers, and configure AEM for maintaining Appeon Server and the deployed applications.
- **Web Server Configuration Guide:**  
Describes configuration instructions for different types of Web servers to work with the Appeon Server.

- **Troubleshooting Guide:**  
Provides information on troubleshooting issues; covering topics, such as product installation, application deployment, AEM, and Appeon application runtime issues.
- **Appeon Performance Tuning Guide:**  
Provides instructions on how to modify a PowerBuilder application to achieve better performance from its corresponding Web/mobile application.
- **Testing Appeon Web Applications with QTP:**  
Provides instructions on how to test Appeon Web applications with QTP.

## **1.4 If you need help**

If you have any questions about this product or need assistance during the installation process, access the Technical Support Web site at <http://www.appeon.com/support>.

## 2 Introduction

### 2.1 Overview

Apeon for PowerBuilder is the first and revolutionary solution that leverages the PowerBuilder IDE for building an application and deploying it as a Windows client/server app, a Windows browser-based Web app, and an iOS/Android native mobile app. PowerBuilder is a very mature and productive 4GL development environment, running on the Windows platform, and offering distinguished features such as MDI windows, DataWindows, menus, and toolbars. All of these powerful features will be available in the deployed application.

From the native source code of PowerBuilder applications, Apeon for PowerBuilder can generate n-tier applications that can run on the Web or mobile environment. The application that run on the Web environment can automatically and precisely replicate the Client/Server user interface with HTML running in standard Windows Web browsers, while the application that run on the mobile environment can automatically take the typical mobile user interface for the iOS and Android OS. The application business logic including DataWindows, Embedded SQL and dynamic SQLs is deployed to a Java-based or .NET-based back-end. These applications offer the rich user experience of the original PowerBuilder applications and deliver the superior Quality Of Service (QOS) of the n-tier architecture and J2EE platform, as well as greater availability, scalability, security and reliability.

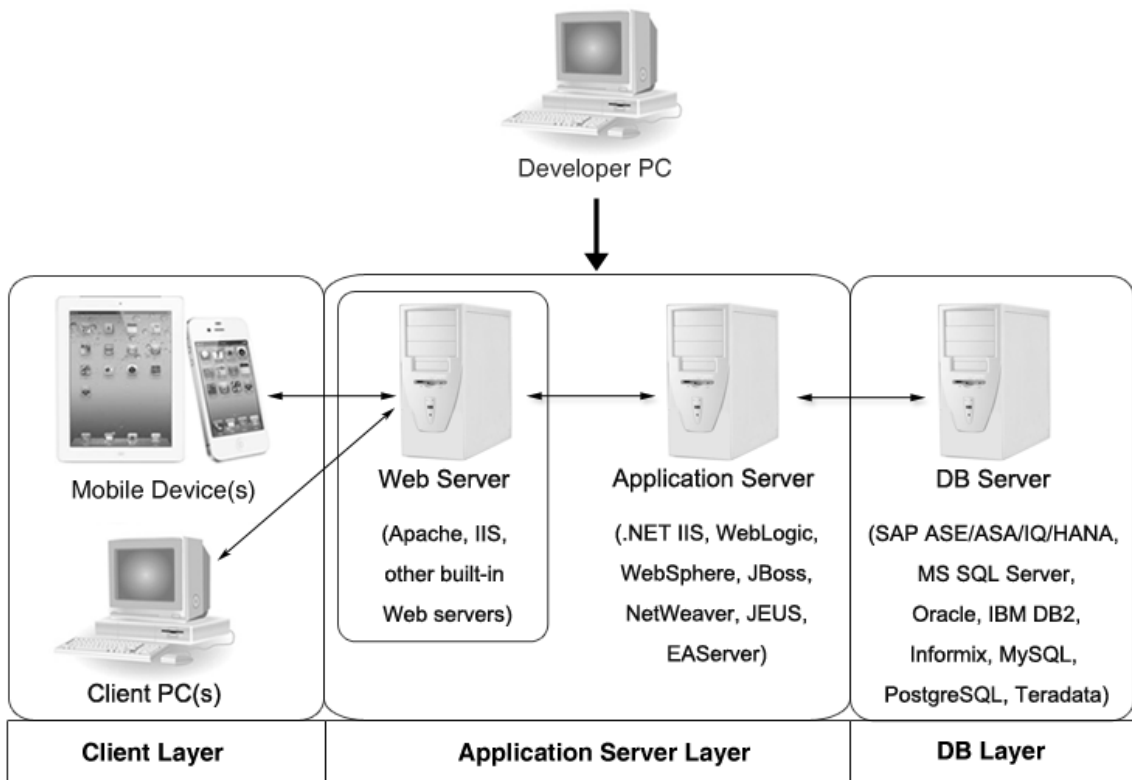
Apeon for PowerBuilder allows the entire application conversion process to be executed within the PowerBuilder IDE. It does not require the developer to write a single line of code. Only standard PowerBuilder programming skills are required.

### 2.2 System architecture

Apeon for PowerBuilder works with standard n-tier architecture. Each tier serves a specific purpose in the architecture, though it may not necessarily reside in the same physical machine. For example, the Web server, application server and database server can reside in one machine or in different machines. A single tier may also be spread across multiple physical machines. For example, the application server can consist of a cluster of Apeon Server computers to provide load balancing and failover.



**Figure 2.1: System architecture**



Appeon applications deploy to the standard n-tier architecture - the client tier, middle tier (application server), and data tier (database) are logically separated. Each tier should have appropriate Appeon components and/or third-party software installed according to its role within the architecture. The following table briefly lists the tiers, roles, their purposes and the required Appeon/third-party software.

**Table 2.1: Tiers in the Appeon architecture**

Tier	Role	Purpose	Appeon Componer	Third-party Software
Client tier	Mobile Device	Runs the Appeon native mobile applications.	Appeon Workspace (Optional)	None
	Client PC	Runs the Appeon Web applications in Web browsers.	Appeon Xcelerator plug-in	Microsoft Internet Explorer, Microsoft Edge, Mozilla Firefox, Google Chrome, or Opera
Developer PC	Developer PC	Deploys your PowerBuilder application to the server.	Appeon Developer	PowerBuilder
Middle tier	Web Server	Responds incoming requests from the client tier, and dispatches requests to the application server.	Appeon Server Web Component	IIS

Tier	Role	Purpose	Appeon Componer	Third-party Software
		Hosts the presentation layer of the deployed Web applications.		
	Application Server	Hosts the DataWindows of the Appeon deployed applications, and provides the necessary run-time services to the deployed applications, such as DataWindow retrieval and update, Embedded SQLs, dynamic SQLs, security authentication etc. Appeon application middle-tier can invoke Java components, external DLL functions, and C++ components. Furthermore, it supports Web Services for the most flexibility integrating with J2EE and .NET.	Appeon Server	.NET IIS
Data tier	Database Server	Hosts the application database.	None	Oracle, SAP ASA/SQL Anywhere, SAP ASE, SAP HANA, Microsoft SQL Server, IBM DB2, MySQL, Informix, PostgreSQL, or Teradata.

- Client Tier

**Mobile device:** The mobile application client layer is implemented using universal C++ libraries and JavaScript libraries. The C++ libraries render the mobile-style UI and provide interface for calling the device native features, information and hardware (camera, GPS, etc.), and support accessing the client/offline database and running the offline application. The JavaScript libraries support the PowerScript or UI logic coded in the Window object, user object (including NVOs), menu object and any other visual objects. These client libraries are automatically included in Appeon Workspace or the packaged mobile app.

**Client PC:** The Web application client layer consists of two plug-ins and some C++/JavaScript libraries which are originally built into Appeon Server Web Component and then automatically downloaded to the client when the application is run for the first time. The two plug-ins manage the download and caching of the Web application and also act as the bridge to interact between the C++/JS libraries and the Web page. The C++/JS libraries render the PowerBuilder-style Web graphical user interface in the Web browsers.

- Middle Tier

The middle tier, which hosts the business logic, is implemented with J2EE or .NET components. These components execute the DataWindows, Embedded SQLs, and dynamic SQLs of the deployed application. The middle tier deploys to the Java or .NET compliant Appeon Server, leveraging dozens of many-years of investments in DataWindows and other business logic.

- Data Tier

The database stores the raw data for the application and stored procedures, if any. The existing database from the PowerBuilder application can be simply re-used without modification so long as it is an Appeon-certified database.

## 2.3 Appeon editions

Appeon for PowerBuilder 2016 provides the following editions for the Windows platform.

**Table 2.2: Appeon editions**

Edition	Component	Description
Enterprise Edition	<ul style="list-style-type: none"> <li>• Appeon Server</li> <li>• Appeon Server Web Component</li> <li>• Appeon Workspace (for Appeon Mobile only)</li> <li>• Appeon Help</li> </ul>	<ol style="list-style-type: none"> <li>1) Appeon Developer is not provided.</li> <li>2) The Appeon Server clustering service is provided.</li> <li>3) Product activation is required within 30 days.</li> </ol>
Workgroup Edition	<ul style="list-style-type: none"> <li>• Appeon Server</li> <li>• Appeon Server Web Component</li> <li>• Appeon Workspace (for Appeon Mobile only)</li> <li>• Appeon Help</li> </ul>	<ol style="list-style-type: none"> <li>1) Appeon Developer is not provided.</li> <li>2) Product activation is required within 30 days.</li> </ol>
Developer Edition	<ul style="list-style-type: none"> <li>• Appeon Developer</li> <li>• Appeon Server</li> <li>• Appeon Server Web Component</li> <li>• Appeon Workspace (for Appeon Mobile only)</li> <li>• Appeon Help</li> </ul>	<ol style="list-style-type: none"> <li>1) The maximum number of online users is 5.</li> <li>2) Product activation is required within 30 days.</li> </ol>
Trial Edition	<ul style="list-style-type: none"> <li>• Appeon Developer</li> <li>• Appeon Server</li> <li>• Appeon Server Web Component</li> </ul>	<ol style="list-style-type: none"> <li>1) Trial Edition has a 30-day time bomb.</li> <li>2) The Appeon Server clustering service is provided.</li> </ol>

Edition	Component	Description
	<ul style="list-style-type: none"> <li data-bbox="400 241 890 315">• Appeon Workspace (for Appeon Mobile only)</li> <li data-bbox="400 344 608 383">• Appeon Help</li> </ul>	3) The maximum number of online user is unlimited.

## 2.4 Appeon components

### 2.4.1 Appeon Developer

Appeon Developer is a plug-in to the PowerBuilder IDE installed to the developer's PC. It provides a set of tools that enable the mobile and Web application generation, maintenance, and upgrades within the PowerBuilder IDE. These tools are accessed via a toolbar in the PowerBuilder IDE, which automatically loads each time PowerBuilder is started.

### 2.4.2 Appeon Server

Appeon Server is a set of server components that is deployed to the application server. It provides the Appeon applications with necessary run-time services such as data connectivity, DataWindow support, transaction management, and security.

Appeon Server also includes Appeon Enterprise Manager (AEM) and Appeon Server Web Component.

AEM is the management console for Appeon Server and the deployed applications. When you install Appeon Server, AEM is automatically installed.

During the Appeon Server installation, the Appeon Server Web Component is automatically installed, therefore, if you are using one IIS server as both the Web server and the application server, you will NOT need to run the Appeon Server Web Component installation.

### 2.4.3 Appeon Server Web Component

Appeon Server Web Component resides in the Web server. It consists of the Web server redirector plug-in (that dispatches the user requests to the Appeon Server) and a set of runtime libraries for the Web application (that supports the PowerBuilder-style UI in the Web browser).

If you use a third-party Web server (such as Apache or IIS) and/or physically separate the Web server and the Appeon Server, for example, for load balancing purpose, you will need to install Appeon Server Web Component to the Web server and configure the Web server with the redirector plug-in. For detailed instructions on configuring the Web server, refer to Web Server Configuration Guide.

### 2.4.4 Appeon Workspace (for Appeon Mobile only)

Appeon Workspace is installed on the mobile device to help simplify the distribution and installation of the native mobile app. It consists of a set of mobile client libraries and a graphical user interface. The mobile client libraries generate the mobile-style UI, support the PowerScript and UI logic, provide interfaces for calling the mobile SDK, and support accessing the client/offline database and running the offline mobile application. The graphical

user interface allows end users to install and run the mobile application from Appeon Server conveniently, so developers do not need to register their mobile applications in the online application store, and the end users do not need to install them from there.

Appeon Workspace is distributed as a native mobile app thru the online app stores (such as Apple App Store, Google Play) or over-the-air, and it is also automatically included when you package and compile the Appeon mobile application as the iOS application archive (IPA) file or Android application package (APK) file.

### **2.4.5 Appeon Help**

Appeon Help provides easy access to all user documents. It saves time and conveniently places the help information, such as, the Appeon supported features, at your fingertips.

Appeon Help is a Microsoft compiled HTML help (.chm) which can be installed and viewed on the Windows OS only. To view the Appeon documentation on all OS, you can visit the [online web help](#) at the Appeon web site.

## 3 Installation Requirements

### 3.1 Client requirements

#### 3.1.1 Software requirements

##### Requirements for the mobile device:

- Apple iOS 7.1.2, 8, 8.1, or 9  
iOS devices: iPad 2/3/4/Mini/Air, iPhone 4/4S/5/5C/5S/6/6 Plus, iPod touch 4/5, iPad Pro 12.9-inch.
- Google Android 4.x, 5.0, or 6.0  
Android devices that have been certified by Appeon include Samsung Galaxy Tab S2, Samsung Galaxy Note 8.0 GT-N5100, Samsung Galaxy Note 10.1 GT-N8000, Google Nexus 6P, Google Nexus 7, LG Nexus 4 E960 (smartphone), Samsung Galaxy Tab 3 10.1 GT-P5210, Samsung Google Nexus 10, ASUS ZenPad S8.0, and ASUS MeMo Pad FHD 10 ME 302C.

##### Requirements for the Web client PC:

- Microsoft Internet Explorer (8.0 thru 11), Microsoft Edge (27 thru 38), Mozilla Firefox (29 thru 47), Google Chrome (35 thru 53), or Opera (30 thru 39)
- Windows Vista SP2, Windows 7, Windows 8.1, or Windows 10  
IE can also support Microsoft Windows 2000 SP4, & Windows Vista SP2, though the other browsers may not.
- (Optional) Adobe Acrobat Reader 6.0 or above (for viewing printed PDF DataWindows or reports)

#### 3.1.2 Hardware requirements

##### Requirements for the Web client PC:

- Intel processor(s) running at 1.8 GHz or faster
- At least 2 GB Free RAM

### 3.2 Appeon Server requirements

#### 3.2.1 Software requirements

- (Recommended) Windows Server 2012 R2, Windows Server 2008 R2, or Windows Server 2003 SP2  
(Optional) Windows 10, Windows 8.1, Windows 7, or Windows Vista SP2
- Microsoft .NET Framework 4.x

- Microsoft IIS 6.0, 7.0, 7.5, 8.0, or 10

### 3.2.2 Hardware requirements

- Intel processor(s) running at 1.8 GHz or faster
- At least 2 GB Free RAM (4 GB Free RAM recommended)
- 500 MB hard drive space (for Apeon Server installation)

### 3.2.3 (Optional) Web Server requirements

- (Recommended) Windows Server 2012 R2, Windows Server 2008 R2, or Windows Server 2003 SP2  
(Optional) Windows 10, Windows 8.1, Windows 7, or Windows Vista SP2
- Microsoft IIS 6.0, 7.0, 7.5, 8.0, or 10
- 50 MB hard drive space (for Apeon Server Web Component installation)

If you physically separate the Web server and the Apeon Server, you will need to make the Web server work with the Apeon Server by installing and configuring the Apeon plug-in. For detailed instructions, refer to Web Server Configuration Guide.

## 3.3 Apeon Developer requirements

### 3.3.1 Software requirements

- (Recommended) Microsoft Internet Explorer (9.0 thru 11)  
(Optional) Microsoft Edge (27 thru 38), Mozilla Firefox (29 thru 47), Google Chrome (35 thru 53), or Opera (30 thru 39)  
IE is recommended because it works on all Windows OS, while the other browsers may not work on certain Windows OS, please check [Client requirements](#) to determine which OS these browsers can support.  
IE 8 is not recommended because Apeon Debugger does not support IE 8, though you can run the Apeon Web app in IE 8 successfully.
- Windows Vista SP2, Windows 7, Windows 8.1, or Windows 10
- SAP PowerBuilder 9.0.3 (build 8784), 10.2.1 (build 9914), 10.5.2 (build 7826), 11.2 (build 8669), 11.5 (build 3127), 12.0 (build 3517), 12.5 (build 2511), 12.5.2 (build 5006), or 12.6 (build 4058)

If you do not have the required build, download and run the PowerBuilder EBF program from the SAP Software Download Center.

- ODBC database driver or a native database driver for the database server used by your application. Note that you cannot use a native database driver for SAP ASA/SQL Anywhere.

- (Optional) SAP ASA/SQL Anywhere 8.0.2, 9.0, 10.0.1, 11.0, 12.0 or 16.0 (for running the PowerBuilder demos included in Apeon installation).

### 3.3.2 Hardware requirements

- Intel processor(s) running at 1.8 GHz or faster
- At least 2 GB Free RAM (4 GB Free RAM recommended)
- 2 GB hard drive space (for Apeon Developer installation only)

Each PowerBuilder application conversion project will require additional hard drive space based on the size of the PowerBuilder application.

### 3.4 Database Server requirements

Apeon for PowerBuilder 2016 can connect to any of the following database servers:

- SAP ASA/SQL Anywhere 8.0.2, 9.0, or 10.0.1 with ODBC Driver, or SQL Anywhere 11.0, 12.0 or 16.0 with SQL Anywhere .NET Data Provider driver
- SAP Adaptive Server Enterprise (ASE) 12.5.x or 15.x with ASE native driver
- SAP HANA 1.00.36 with ODBC Driver
- IBM DB2 UDB 9.7 with IBM DB2 native driver
- Informix 7.x, 8.x, 9.x, 10.x or 11.x with IBM Informix .NET Provider
- Microsoft SQL Server 2000 SP4, 2005 SP1, 2008 or 2012 with MS SQL Server native driver
- MySQL 5.5.x or 5.6.x with ADO.NET Data Provider driver
- Oracle 8i, 9i, 10g, 11g or 12c with Oracle native driver
- Teradata 13.1.0.0 with Teradata .NET Data Provider driver
- PostgreSQL 9.2 with PostgreSQL psqLODBC driver

Notes:

1. SAP IQ database is supported in the Apeon for J2EE edition only, not in the Apeon for .NET edition.
2. Usually, whether the database can be connected via a 32-bit driver and/or a 64-bit driver is determined by the database itself, so we recommend you make sure of this by checking the documents provided by the corresponding database vendor. If the database can be connected by both drivers, then you can decide which driver to install and use according to the Apeon Server version: if you have installed a 32-bit Apeon Server, then you should install and use the 32-bit driver, otherwise, install and use the 64-bit driver.



## 3.5 Offline synchronization requirements

### 3.5.1 Client Database requirements

Apeon for PowerBuilder 2016 supports the following client/offline databases:

- UltraLite 12.0.1

According to [SAP SQL Anywhere Supported Platforms](#), UltraLite supports Android-ARM only, and does not support Android-X86. Which means, if your Android device is powered by Intel or AMD x86 processors, rather than RISC-based ARM chips, then your device will not have offline accessibility to the local UltraLite database.

- SQLite 3.x

### 3.5.2 Synchronization Server requirements

Apeon for PowerBuilder 2016 supports the following offline synchronization server:

- MobiLink Server (included in SQL Anywhere 12.0.1 components)

Note: MobiLink can synchronize an UltraLite database, but cannot synchronize a SQLite database. To synchronize a SQLite database, you would need to develop your own synchronization solution.

### 3.5.3 Server Database requirements

MobiLink Server can connect to the consolidated databases that MobiLink supports.

For detailed information, refer to **MobiLink consolidated database** in SQL Anywhere online help (<http://infocenter.sybase.com/help/index.jsp?topic=/com.sybase.help.sqlanywhere.12.0.1/mlserver/ml-consdb.html>).

## 4 Installing Appeon for PowerBuilder 2016

### 4.1 Overview

Appeon for PowerBuilder 2016 (on .NET) consists of five major components: Appeon Developer, Appeon Server, Appeon Server Web Component, Appeon Help, and Appeon Workspace.

**Table 4.1: Appeon components**

Component	Description	Installed on
Appeon Developer	A plug-in to the PowerBuilder IDE installed to the developer's PC.	PowerBuilder on Windows operating system.
Appeon Server	A set of server components deployed to the application server providing runtime services for the application, such as data connectivity, DataWindows support, transaction management, and security.  Appeon Server also includes Appeon Enterprise Manager (AEM) and Appeon Server Web Component.	IIS on Windows operating system.
Appeon Server Web Component	A set of Web server redirectors that dispatches the user requests to Appeon Server, and a set of runtime libraries that supports a PowerBuilder-style Web UI within standard Windows Web browsers.	IIS on Windows operating system.
Appeon Help	The compiled HTML help of all Appeon user documents which saves time and conveniently places the help information at your fingertips.	Windows operating system.
Appeon Workspace (for Appeon Mobile only)	A native mobile application installed on the mobile device to simplify distributing, downloading, and running the Appeon mobile applications.	Mobile Device.

### 4.2 Installation scenarios

#### 4.2.1 Overview

Appeon for PowerBuilder 2016 works with n-tier architecture: different Appeon components should be installed to the computer(s) according to their roles in the network. In this section, some practical scenarios are described to demonstrate how Appeon for PowerBuilder 2016 should be installed according to network architecture.

## 4.2.2 Developer PC

**Table 4.2: Developer PC installation**

Scenarios	Requirements	Appeon Components
One physical machine, Computer 1, serves as Developer PC, Web server, application server and database server	Computer 1: Microsoft Windows Server 2012 R2, 2008 R2, or 2003 Microsoft Internet Explorer, Microsoft Edge, Mozilla Firefox, Google Chrome, or Opera Microsoft .NET Framework Microsoft IIS SAP PowerBuilder SAP ASA/SQL Anywhere SAP ASE, Oracle, Microsoft SQL Server, IBM DB2, Informix, Teradata, MySQL, PostgreSQL, or SAP HANA depending on the application database	Computer 1: Appeon Developer Appeon Server

## 4.2.3 Remote Appeon Server and Web server

**Table 4.3: Remote Appeon Server and Web server installation**

Scenarios	Requirements	Appeon Components
In this example, 2 computers are used:  Computer 1 serves as Developer PC.	Computer 1: Microsoft Windows 10, 8.1, 7, or Vista Microsoft Internet Explorer, Microsoft Edge, Mozilla Firefox, Google Chrome, or Opera SAP PowerBuilder SAP ASA/SQL Anywhere	Computer 1: Appeon Developer
Computer 2 serves as Web server, application server and database server.	Computer 2: Microsoft Windows Server 2012 R2, 2008 R2, or 2003 Microsoft .NET Framework Microsoft IIS SAP SQL Anywhere, SAP ASE, Oracle, Microsoft SQL Server, IBM DB2, Informix, Teradata, MySQL, PostgreSQL, or SAP HANA depending on the application database	Computer 2: Appeon Server

## 4.2.4 Appeon Server Cluster

**Table 4.4: Appeon Server cluster installation**

Scenarios	Requirements	Appeon Components
In this example, N (N>=4) computers are used: Computer 1 is used for Developer PC.	Computer 1: Microsoft Windows 10, 8.1, 7, or Vista Microsoft Internet Explorer, Microsoft Edge, Mozilla Firefox, Google Chrome, or Opera SAP PowerBuilder SAP ASA/SQL Anywhere	Computer 1: Appeon Developer
Computer 2 is the database server.	Computer 2: SAP SQL Anywhere, SAP ASE, Oracle, Microsoft SQL Server, IBM DB2, Informix, Teradata, MySQL, PostgreSQL, or SAP HANA depending on the application database	Computer 2: None
Computer 3 is the Web server.	Computer 3: Microsoft IIS	Computer 3: Appeon Server Web Component
Computers 4 to n are a group of Appeon Servers.	Computers 4 to n: Microsoft Windows Server 2012 R2, 2008 R2, or 2003 Microsoft .NET Framework Microsoft IIS	Computers 4 to n: Appeon Server (After installing Appeon Server to each IIS, configure the Appeon Servers as a cluster. Refer to <a href="#">Configuring Appeon Server Cluster</a> for details)

## 4.3 Two installation methods

Appeon for PowerBuilder 2016 provides two installation methods: "new installation" and "upgrade installation".

- If your computer has not installed any version of Appeon for PowerBuilder, the setup program automatically takes the new installation method.
- If your computer has Appeon 6.2 or an earlier version installed, you must uninstall the version, prepare the environment for Appeon for PowerBuilder 2016 installation, and then use the setup program to install. The setup program takes the new installation method.

- If your computer has Appeon 6.5 or a later version installed, the setup program automatically takes the upgrade installation method.

## 4.4 Appeon new installation

### 4.4.1 Starting the installation

Step 1: Double click the **Setup.exe** file in the installation package. The **Appeon for PowerBuilder 2016 Setup** program starts. The entry page has several options to guide you through the various installation tasks.

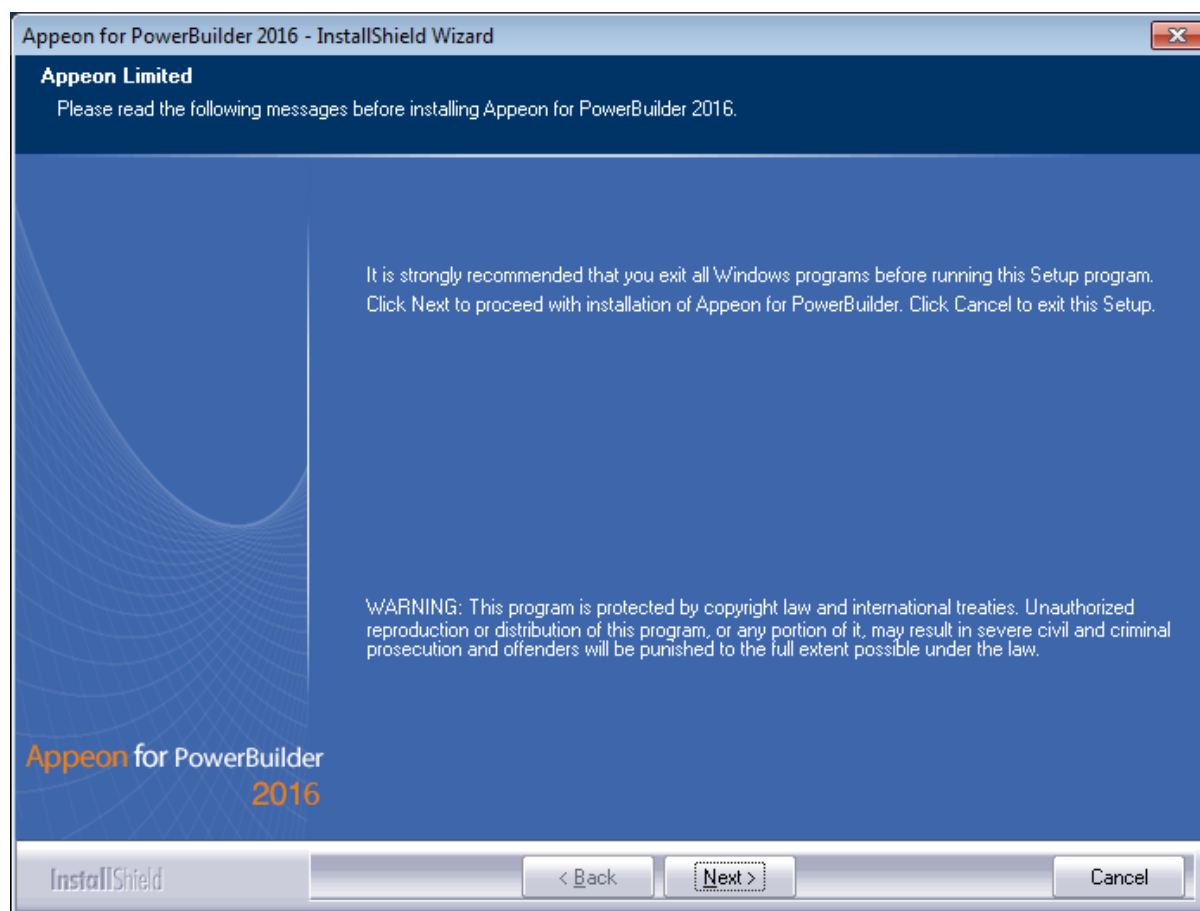
- **Install:** Click this button to start installing the product.
- **View Server Settings:** Click this button to ensure that the application server settings are appropriate for the Appeon Server installation.
- **View Training Video:** Click this button to watch the video to learn how to install the product.
- **View Product Manuals:** Click this button to read the user manuals for the product.
- **View Readme:** Click this button to read the key system requirements and installation information for the product.
- **Visit Our Web Site:** Click this button to visit the Appeon web site.
- **Exit:** Click this button to exit the setup program.

Note: Make sure there is enough space on the C: drive for storing temporary files for installation. Otherwise an error message will pop up, saying "1607: Unable to install InstallShield Scripting Runtime".

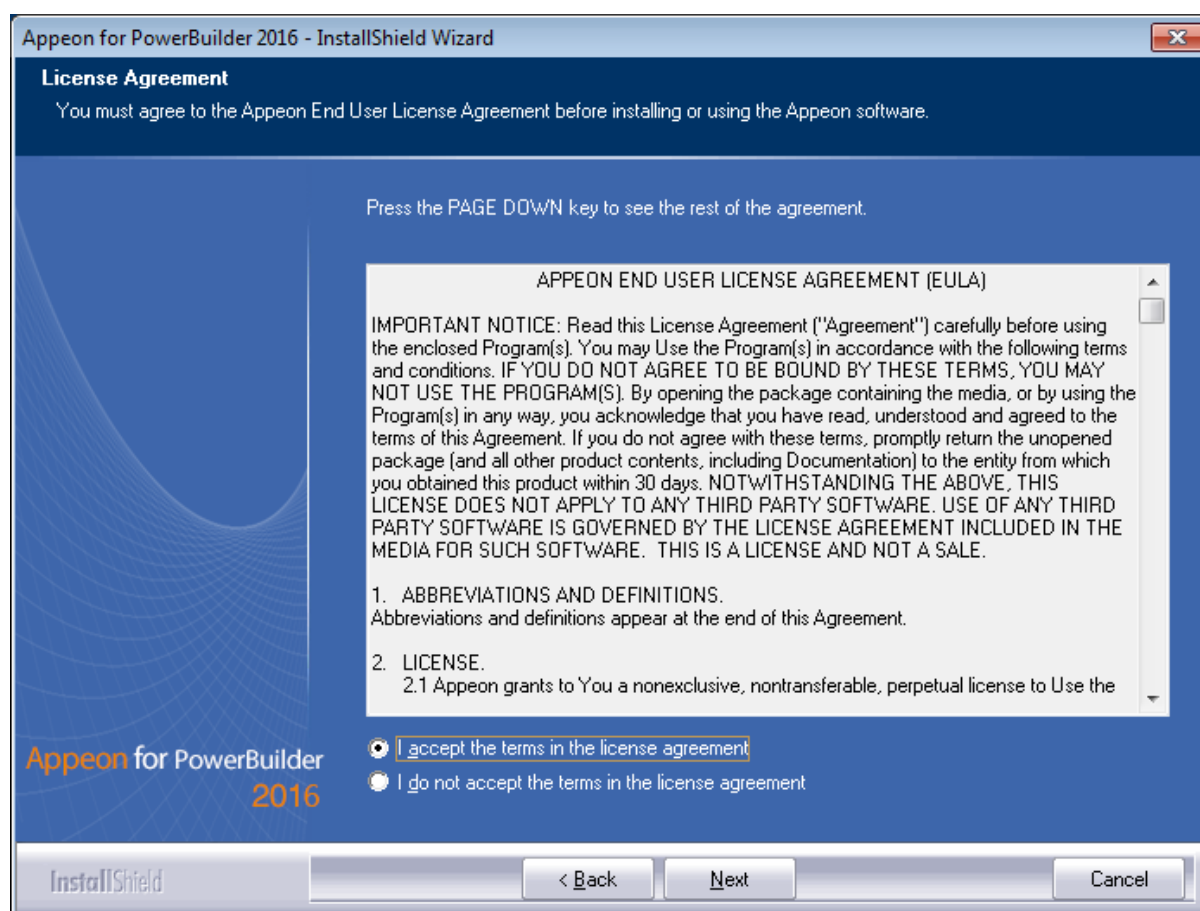
Step 2: Click **Install**.

**Figure 4.1: Install Appeon for PowerBuilder**

Step 3: Click **Next** on the introduction screen.

**Figure 4.2: Introduction page**

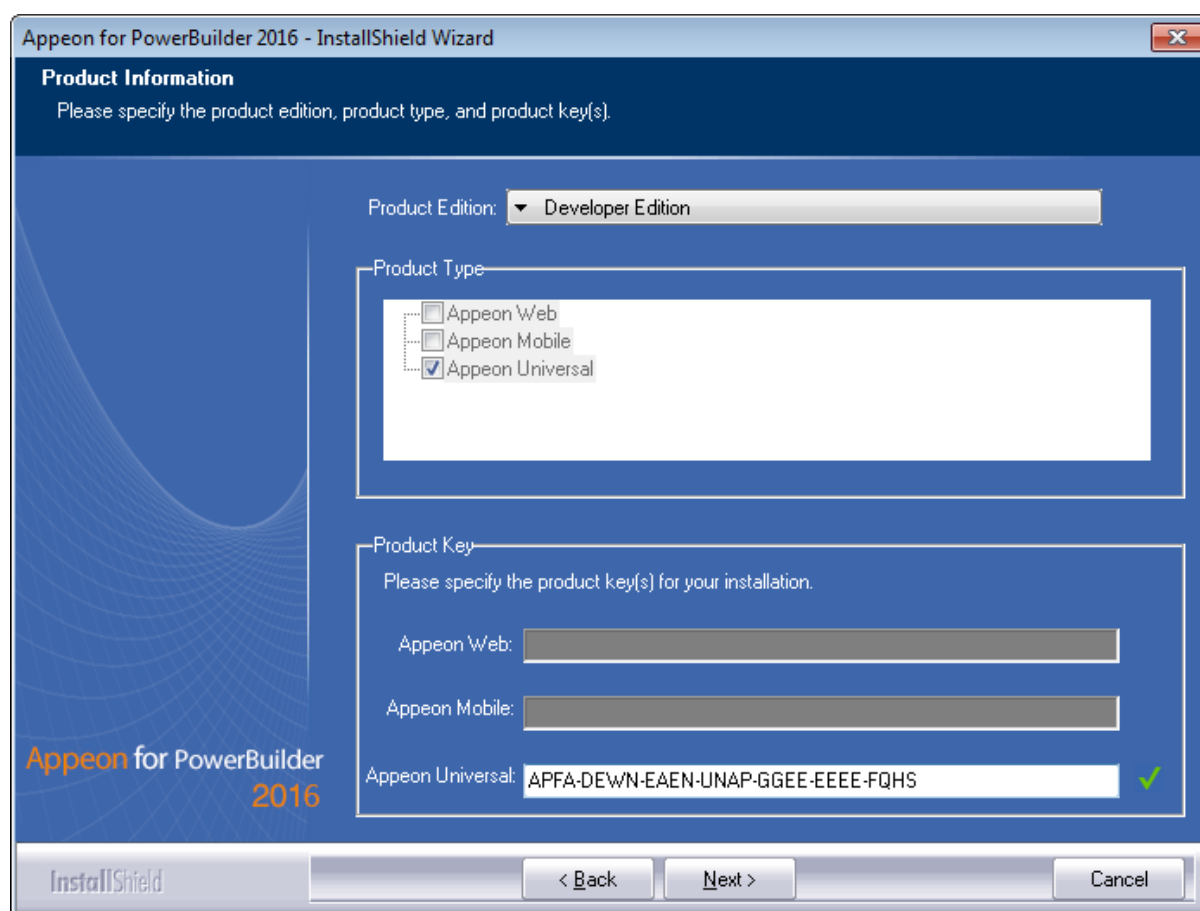
Step 4: Accept the terms in the license agreement page and click **Next**.

**Figure 4.3: License Agreement page**

Step 5: According to the license you purchase, select the product edition and the product type: **Apeon Web**, **Apeon Mobile**, or **Apeon Universal**, and then enter the product key which is shipped with the Apeon product. Click **Next**.

If you select the **Trial** or **Developer** edition, **Apeon Universal** will be automatically selected so you can experience both the Web and Mobile deployments at no additional charge.

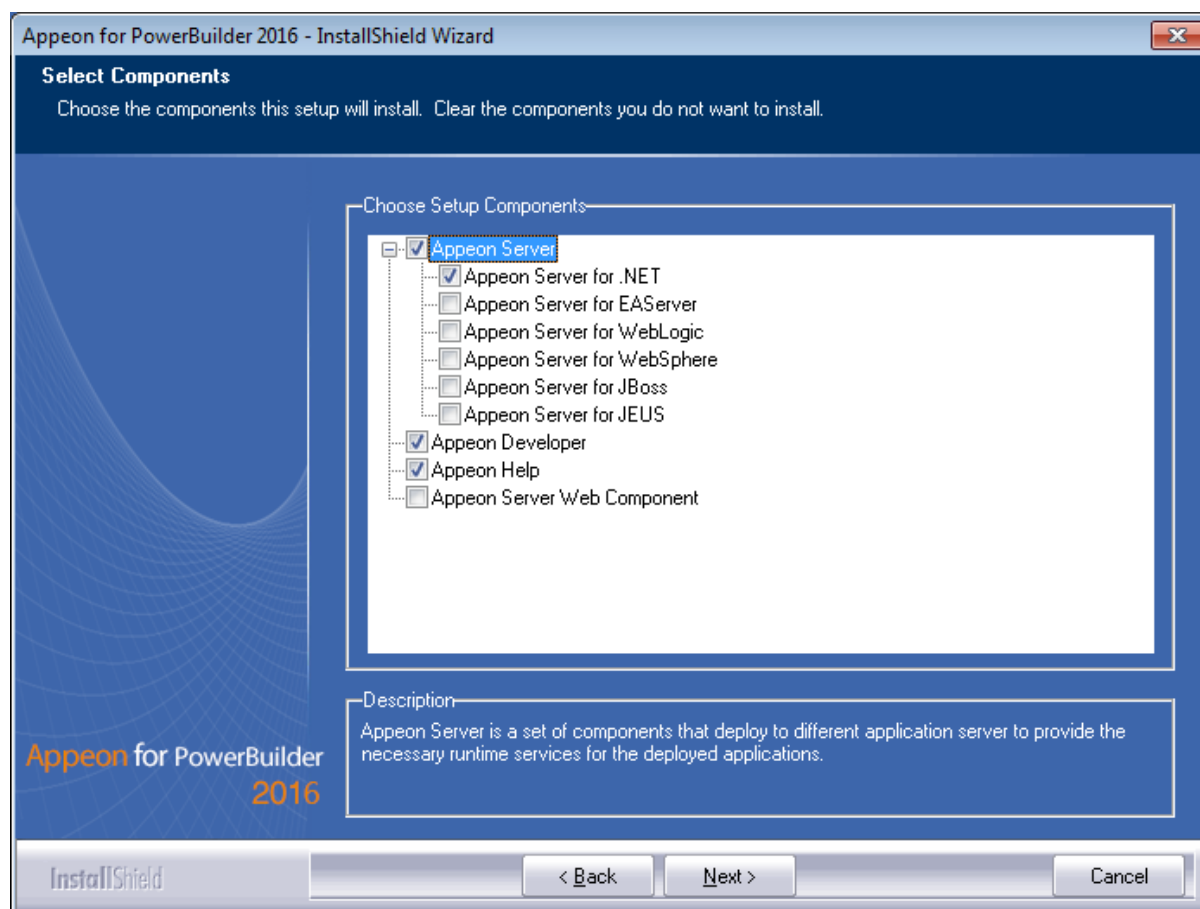


**Figure 4.4: Product edition, type and key page**

Step 6: Select the component(s) you want to install and click **Next**. The Setup program will install the selected component(s) in the order listed.

For the .NET IIS server, be sure to select **Appeon Server for .NET**, as shown in the following figure.

For the Trial or Developer edition, if more than one application server such as .NET IIS, WebLogic etc. is installed on the same computer, you can repeatedly run the setup program to install Appeon Server to these application servers, for example, you can first run the setup program and select **Appeon Server for .NET** to install Appeon Server to the .NET IIS server, you can then run the setup program again and select **Appeon Server for JBoss** to install Appeon Server to the JBoss application server.

**Figure 4.5: Select components**

Refer to the following sections to complete the installation of each component.

- For Appeon Server installation instructions, refer to [Appeon Server installation](#).
- For Appeon Developer installation instructions, refer to [Appeon Developer installation](#).
- For Appeon Help installation instructions, refer to [Appeon Help installation](#).
- For Appeon Server Web Component installation instructions, refer to [Appeon Server Web Component installation](#).

If you are using one IIS as both the Appeon Server and the Web server, then you will not need to install Appeon Server Web Component, because it is included in Appeon Server and will be installed automatically during Appeon Server installation.

## 4.4.2 Appeon Server installation

### 4.4.2.1 Prerequisites

Before you install Appeon Server make sure

1. .NET Framework 4.x is successfully installed.
2. IIS 6.0, 7.0, 7.5, 8.0, or 10 is correctly installed with necessary components.

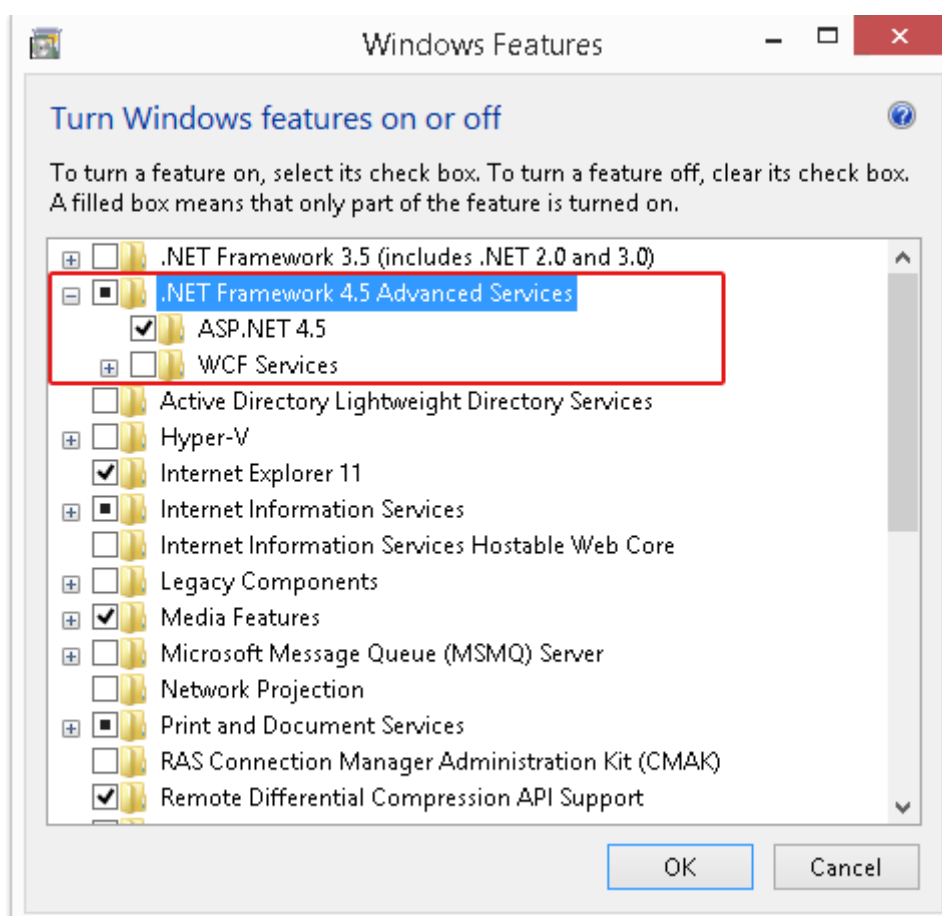
If you want to install **Apeon File Server** later, you will also need to install the components listed under **IIS 6 Management Compatibility**.

#### 4.4.2.1.1 Installing .NET Framework 4.x

If you are using one of the latest versions of the Windows or Windows Server operating system, the .NET Framework might already be installed on your computer. Specifically, the .NET Framework 3.5.1 is included with Windows 7, the .NET Framework 4.5 is included with Windows 8/8.1 and Windows Server 2012. Apeon for PowerBuilder 2016 requires **.NET Framework 4.x** to be installed.

- If you are using Windows 7 or earlier version, you need to manually install **.NET Framework 4.x**. You can download and install .NET Framework 4.x from <http://www.microsoft.com/en-us/download/details.aspx?id=17851>.
- If you are using Windows 8 or 8.1, you need to enable the **.NET Framework 4.5** through Control Panel.
  1. In Control Panel, click **Programs > Turn on or off Windows features**.
  2. In the **Windows Features** dialog box, select the **.NET Framework 4.5 Advanced Services** checkbox, and then expand the list and select the item **ASP.NET 4.5**.

**Figure 4.6: .NET Framework 4.5 Advanced Services**



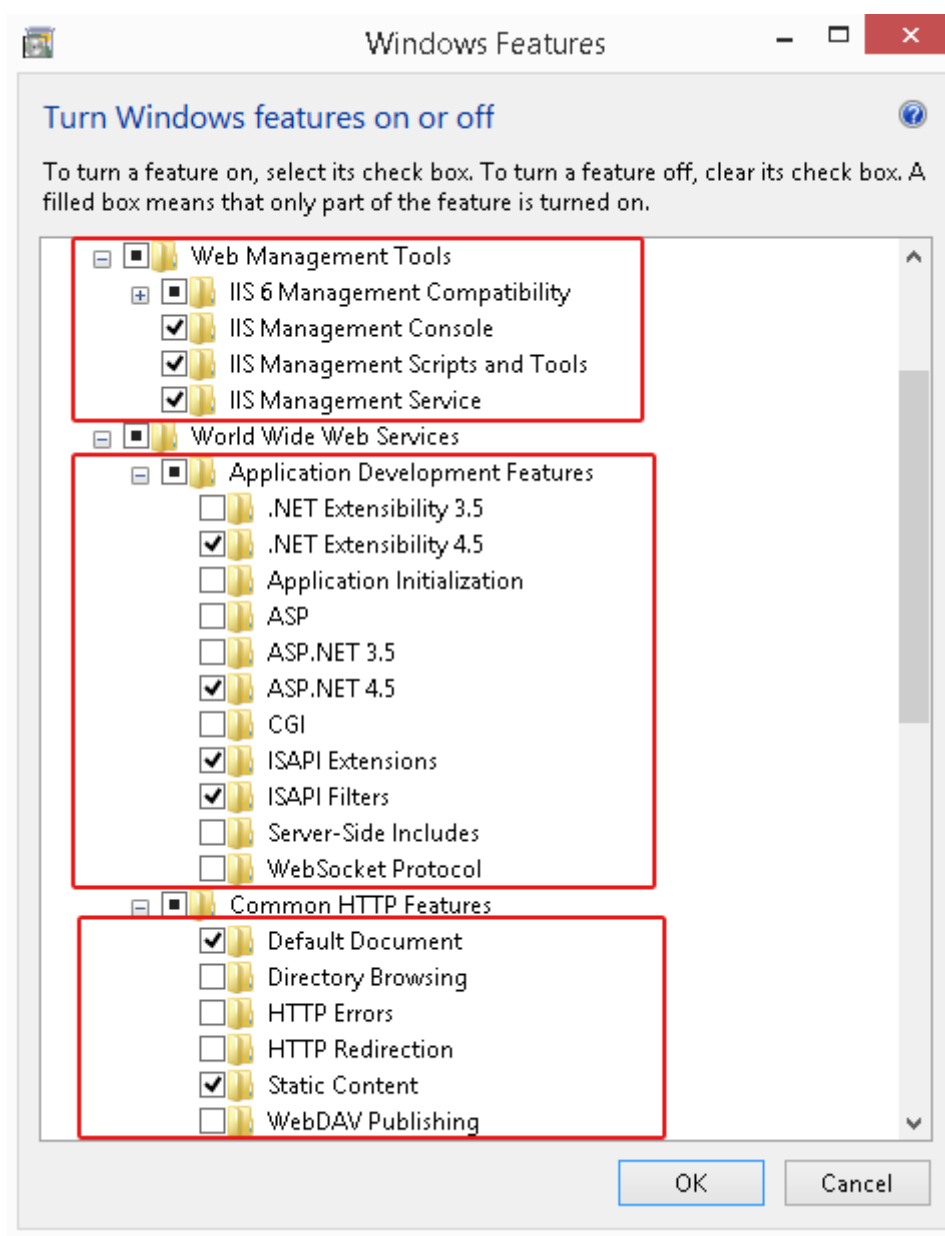
3. Click **OK** to let Windows finish the installation and reboot the system.

#### 4.4.2.1.2 Installing IIS 10 on Windows 10

IIS 10 is included with Windows 10, but it is not installed on Windows 10 by default. You need to manually install it. Follow the instructions below and make sure that the following highlighted features are installed; these features are not selected to install by default, you will need to manually select them during the IIS installation.

1. In Control Panel, click **Programs > Turn on or off Windows features**.
2. In the **Windows Features** dialog box, select the check box of **Internet Information Services**, then expand the list and select the items listed under **Application Development Features** and under **Common HTTP Features** as shown in the figure below. Click **OK**. These features of IIS provide runtime support for Appeon Server.

Note: The aforementioned features are the necessary features for Appeon Server. If you want to better manage your IIS or to install Appeon File Server, you should select the items listed under **IIS 6 Management Compatibility**.

**Figure 4.7: Windows features in Windows 10**

3. Click **OK** to let Windows finish the installation and reboot the system.

#### 4.4.2.1.3 Installing IIS 8.0 on Windows 8

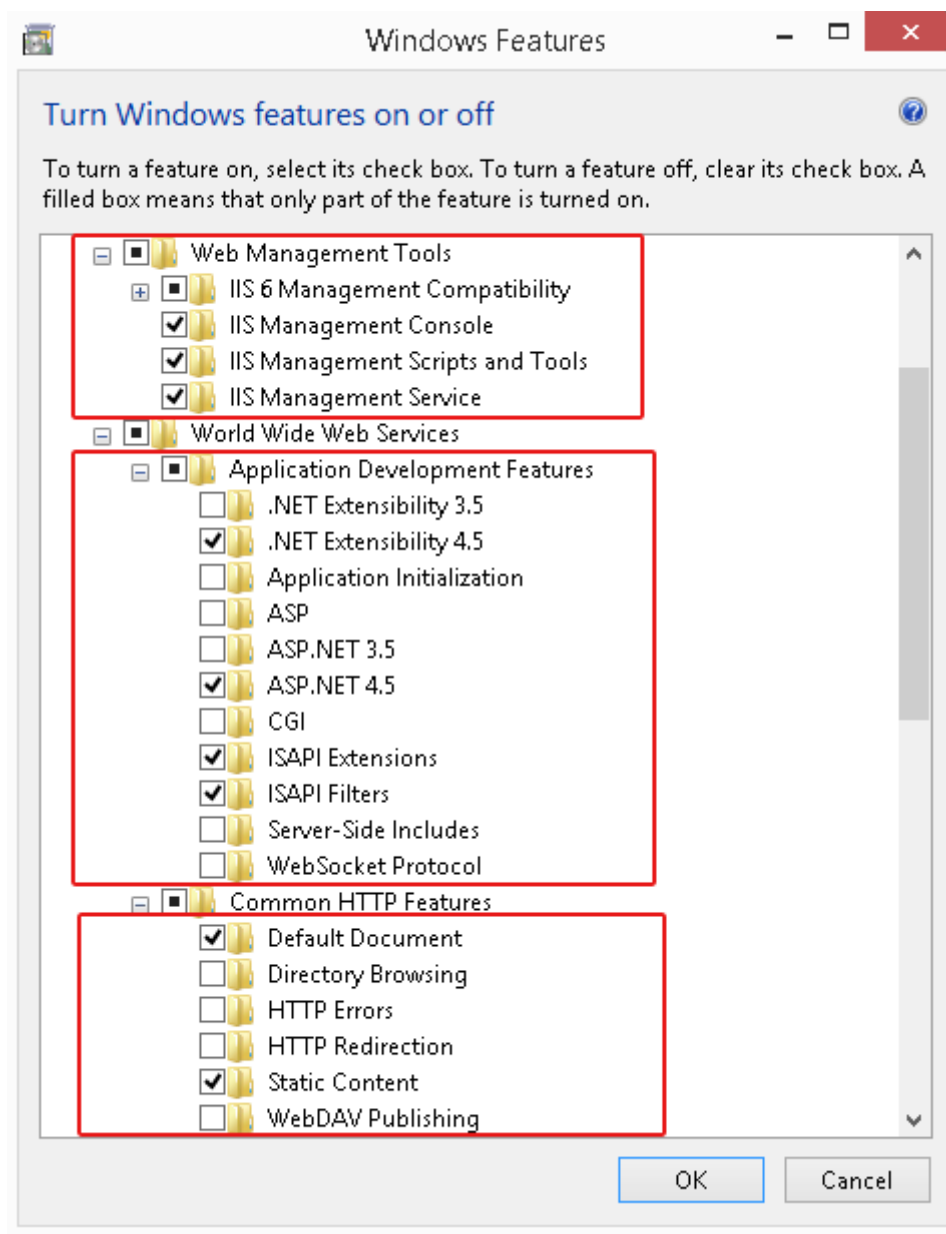
IIS 8.0 is included with Windows 8/8.1, but it is not installed on Windows 8/8.1 by default. You need to manually install it. Follow the instructions below and make sure that the following highlighted features are installed; these features are not selected to install by default, you will need to manually select them during the IIS installation.

1. In Control Panel, click **Programs > Turn on or off Windows features**.
2. In the **Windows Features** dialog box, select the check box of **Internet Information Services**, then expand the list and select the items listed under **Application Development**

**Features** and under **Common HTTP Features** as shown in the figure below. Click **OK**. These features of IIS provide runtime support for Apeon Server.

Note: The aforementioned features are the necessary features for Apeon Server. If you want to better manage your IIS or to install Apeon File Server, you should select the items listed under **IIS 6 Management Compatibility**.

**Figure 4.8: Windows features in Windows 8**



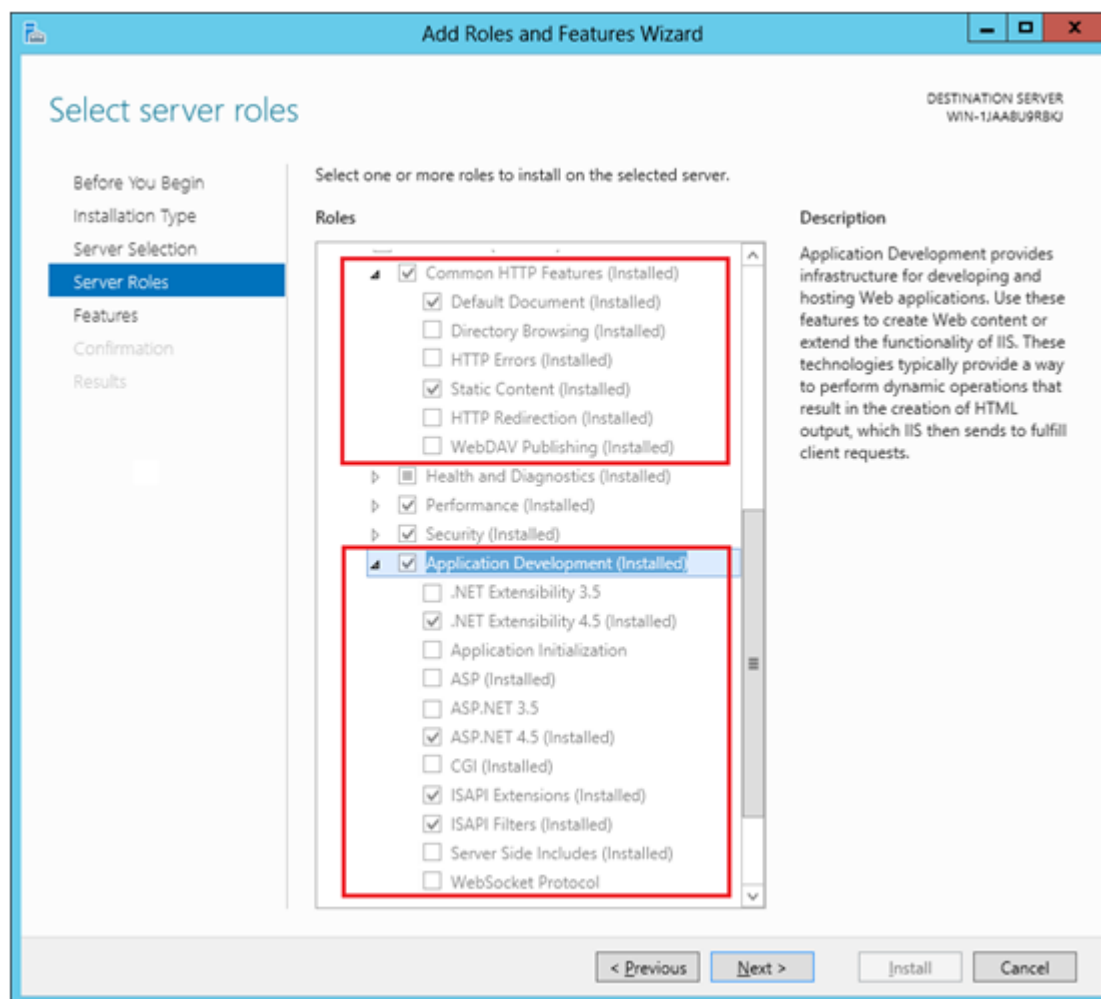
3. Click **OK** to let Windows finish the installation and reboot the system.

#### 4.4.2.1.4 Installing IIS 8.0 on Windows Server 2012

IIS 8.0 is included with Windows Server 2012, but it is not installed on Windows Server 2012 by default. You need to manually install it. Follow the instructions below and make sure that the following highlighted features are installed; these features are not selected to install by default, you will need to manually select them during the IIS installation.

1. In Control Panel, click **Turn on or off Windows features** to enter **Add Roles and Features Wizard**. Click **Next** until you enter the **Server Roles** page.
2. In the **Server Roles** page, select the check box of **Web Server (IIS) -> Web Server**, then expand the list and select the items under the **Application Development Features** and under **Common HTTP Features** (as shown in the red boxes in the figure below). Click **OK**. These features of IIS provide runtime support for Apeon Server.

**Figure 4.9: Windows features in Windows 2012**

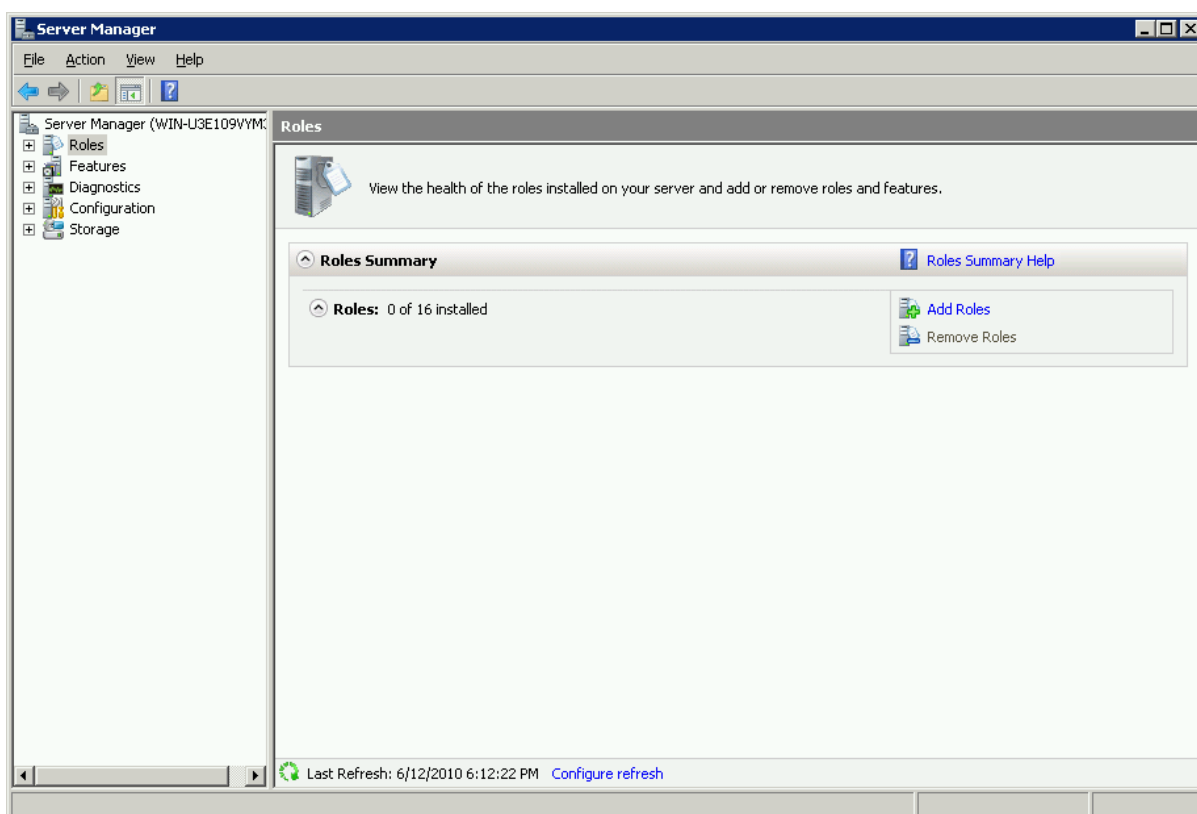


3. Click **OK** to let Windows finish the installation and reboot the system.

#### 4.4.2.1.5 Installing IIS 7.5 on Windows Server 2008 R2

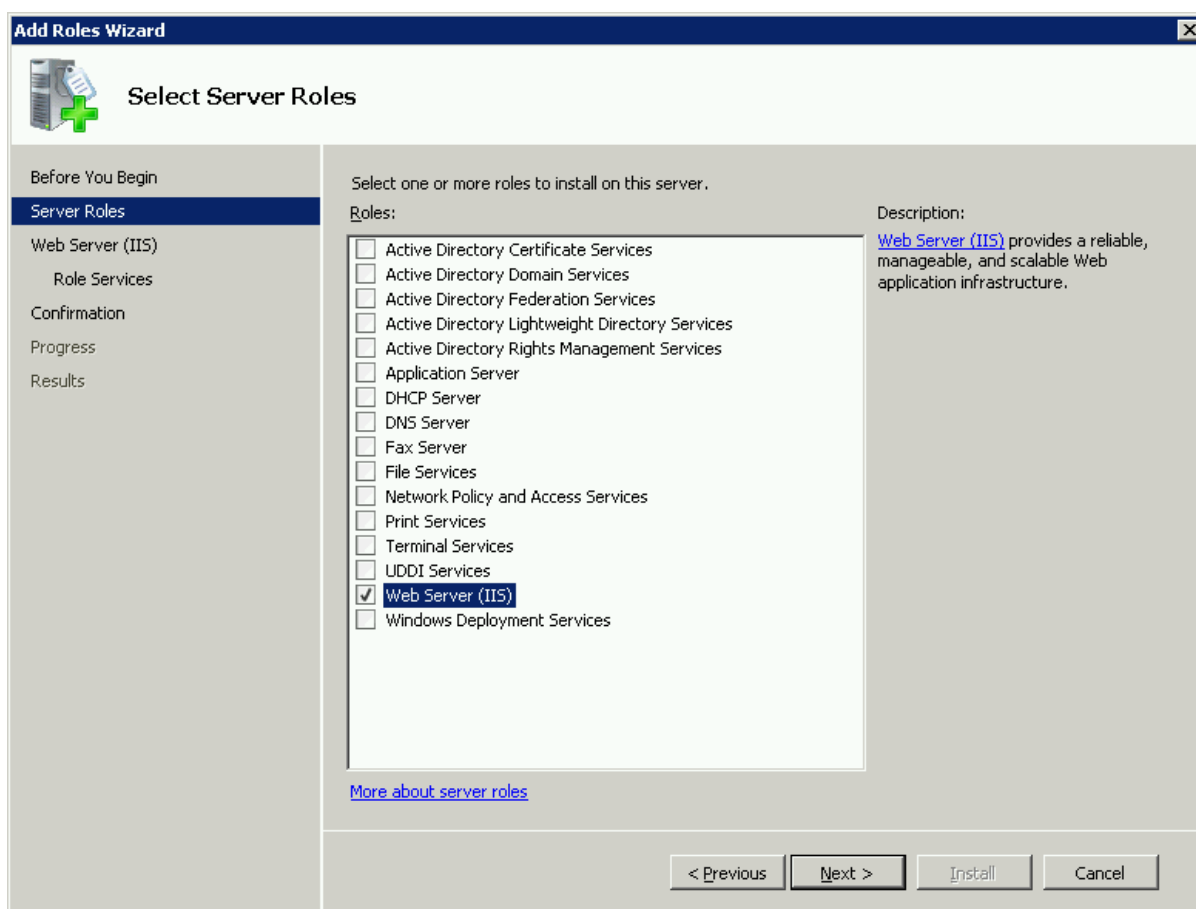
IIS 7.5 is included with Windows Server 2008 R2, but it is not installed on Windows Server 2008 R2 by default. You need to manually install it. Follow the instructions below and make sure that the following highlighted features are installed; these features are not selected to install by default, you will need to manually select them during the IIS installation.

1. Click **Start**, point to **Administrative Tools** and then click **Server Manager**. Click **Roles** under **Server Manager**, and the **Roles Summary** view is displayed.

**Figure 4.10: Server manager**

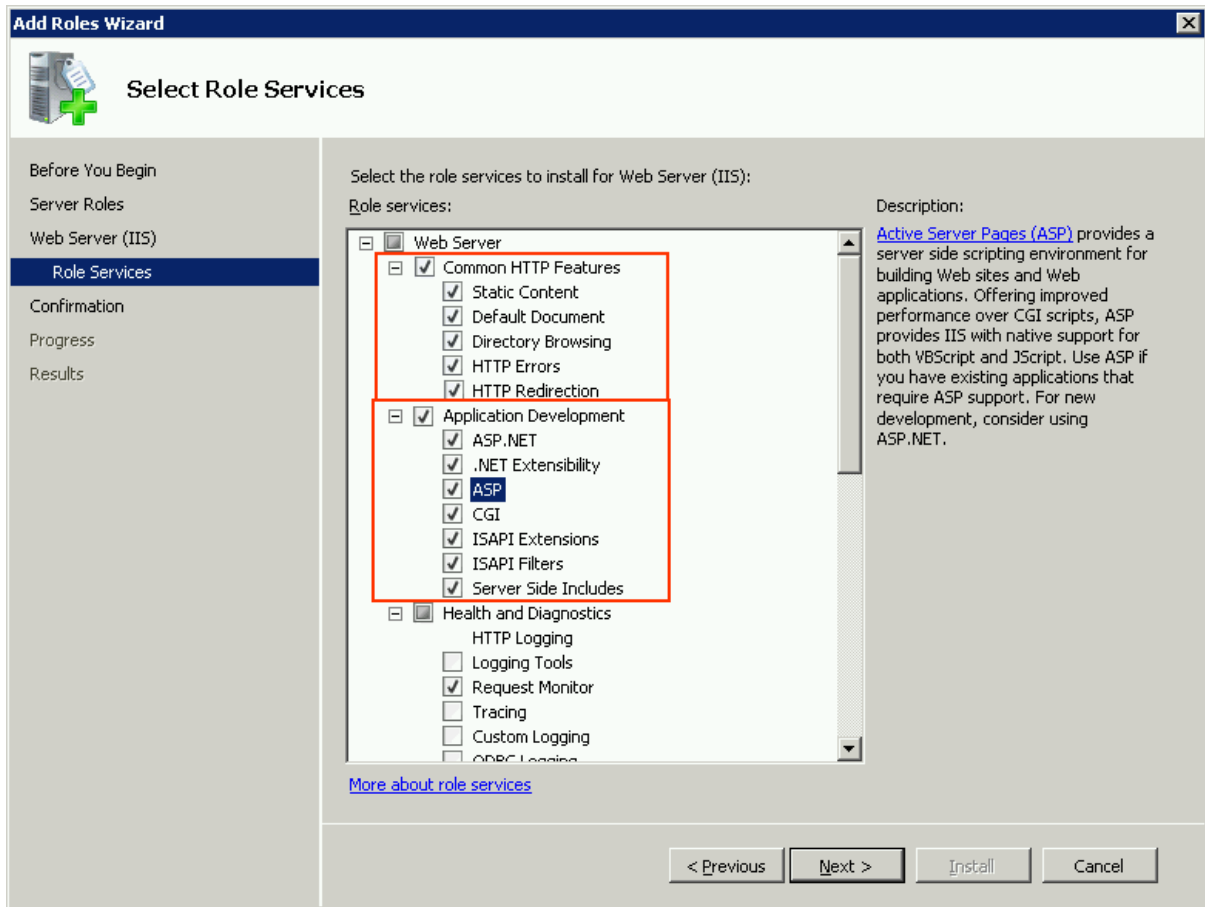
2. In **Roles Summary**, click **Add Roles**, and follow the instructions of the **Add Roles Wizard**.
3. Select **Web Server (IIS)** in **Select Server Roles**, and click **Next**.



**Figure 4.11: Select Web Server (IIS)**

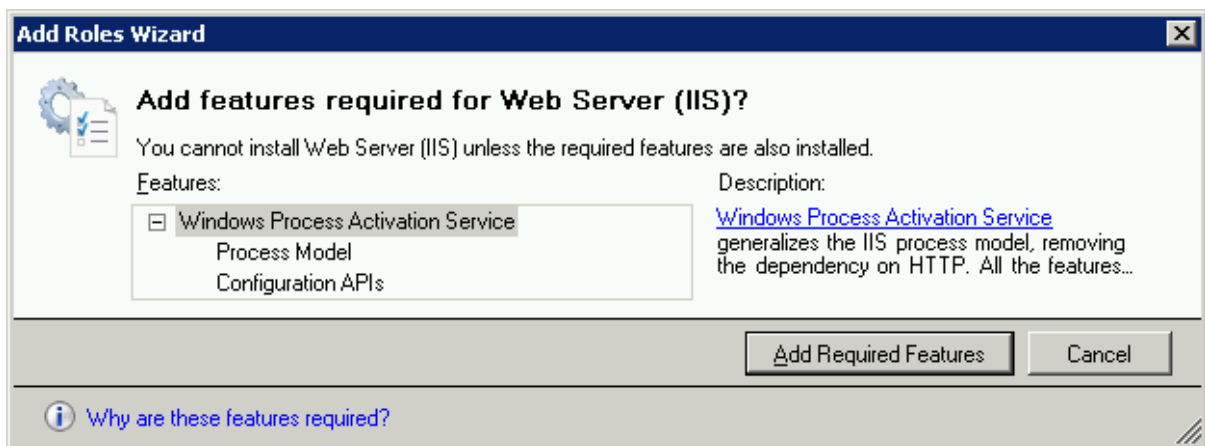
4. In the **Select Role Services** page, select the items listed under **Common HTTP Features** and **Application Development** (as shown in the red boxes in the figure below).

**Figure 4.12: Select Application Development features**



5. Since IIS depends on the **Windows Process Activation Service (WAS)** feature, the following informational dialog displays. Click **Add Required Features** to continue when the **Add Roles Wizard** notifies you on any required dependencies.

**Figure 4.13: Add Required Features**



6. Go through the installation with the wizard and reboot the system.

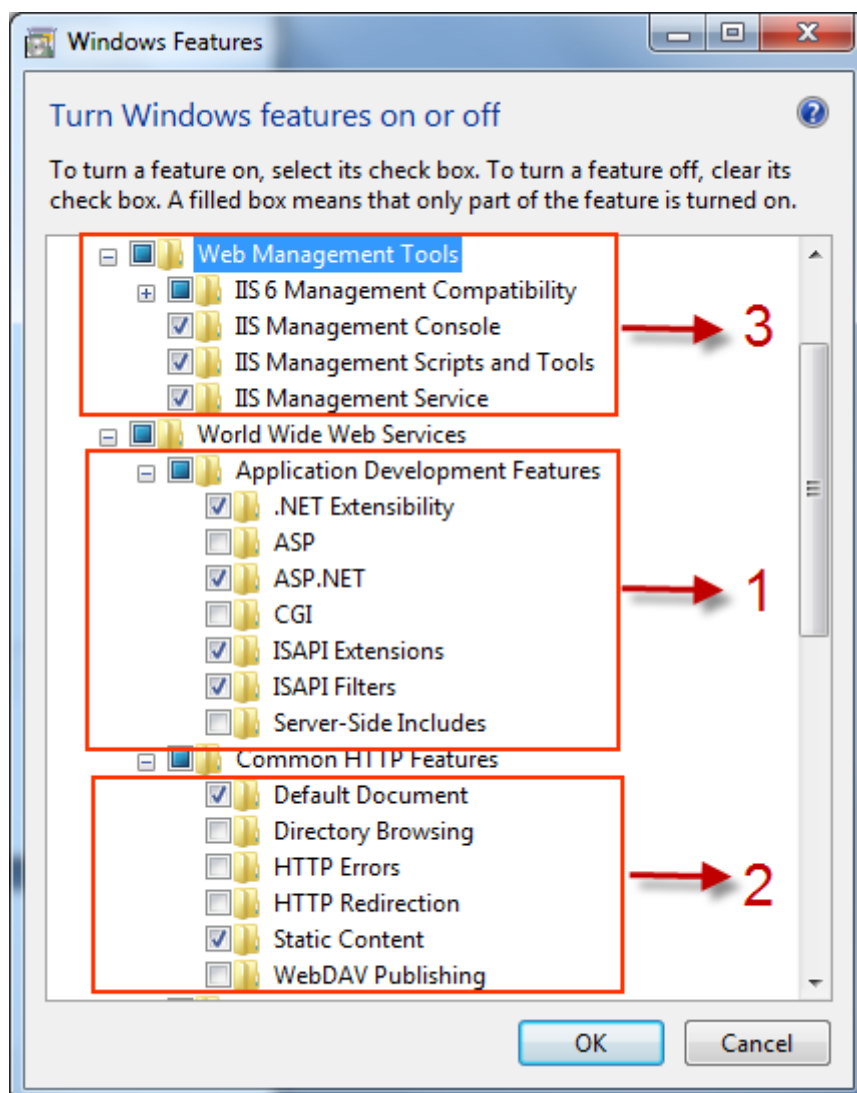
#### 4.4.2.1.6 Installing IIS 7.5 on Windows 7

IIS 7.5 is included with Windows 7, but it is not installed on Windows 7 by default. You need to manually install it. Follow the instructions below and make sure that the following highlighted features are installed; these features are not selected to install by default, you will need to manually select them during the IIS installation.

1. Click **Start > Control Panel > Programs > Turn on or off Windows features**.
2. In the **Windows Features** dialog box, select the check box of **Internet Information Services**, then expand the list and select the items listed under **Application Development Features** and under **Common HTTP Features** (as shown in the red boxes marked with "1" and "2" in the figure below). Click **OK**. These features of IIS provide runtime support for Apeon Server.

Note: The features checked above are the necessary features for Apeon Server. If you want to better manage your IIS or to install Apeon File Server, you can select the items listed under **IIS 6 Management Compatibility** (as shown in the red box marked with "3" in the figure below).

**Figure 4.14: Windows features**



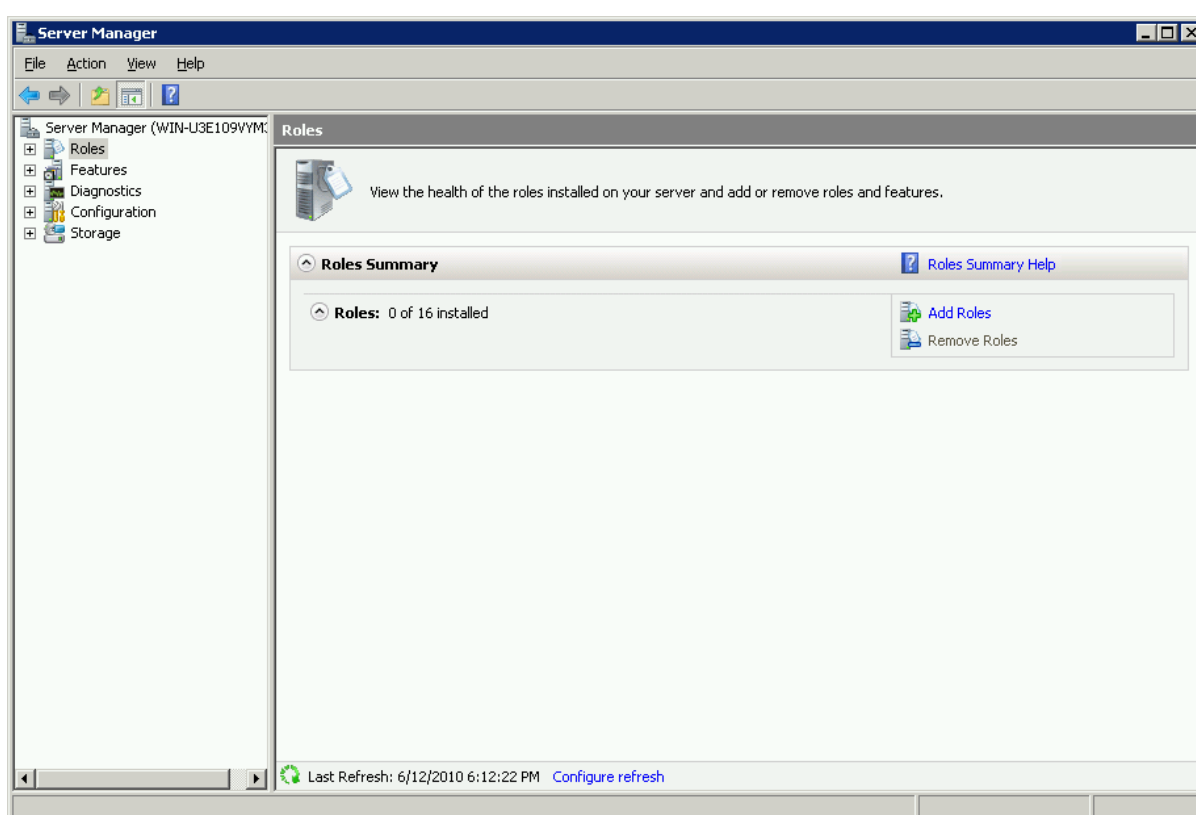
3. Click **OK** to let Windows finish the installation and reboot the system.

#### 4.4.2.1.7 Installing IIS 7.0 on Windows Server 2008

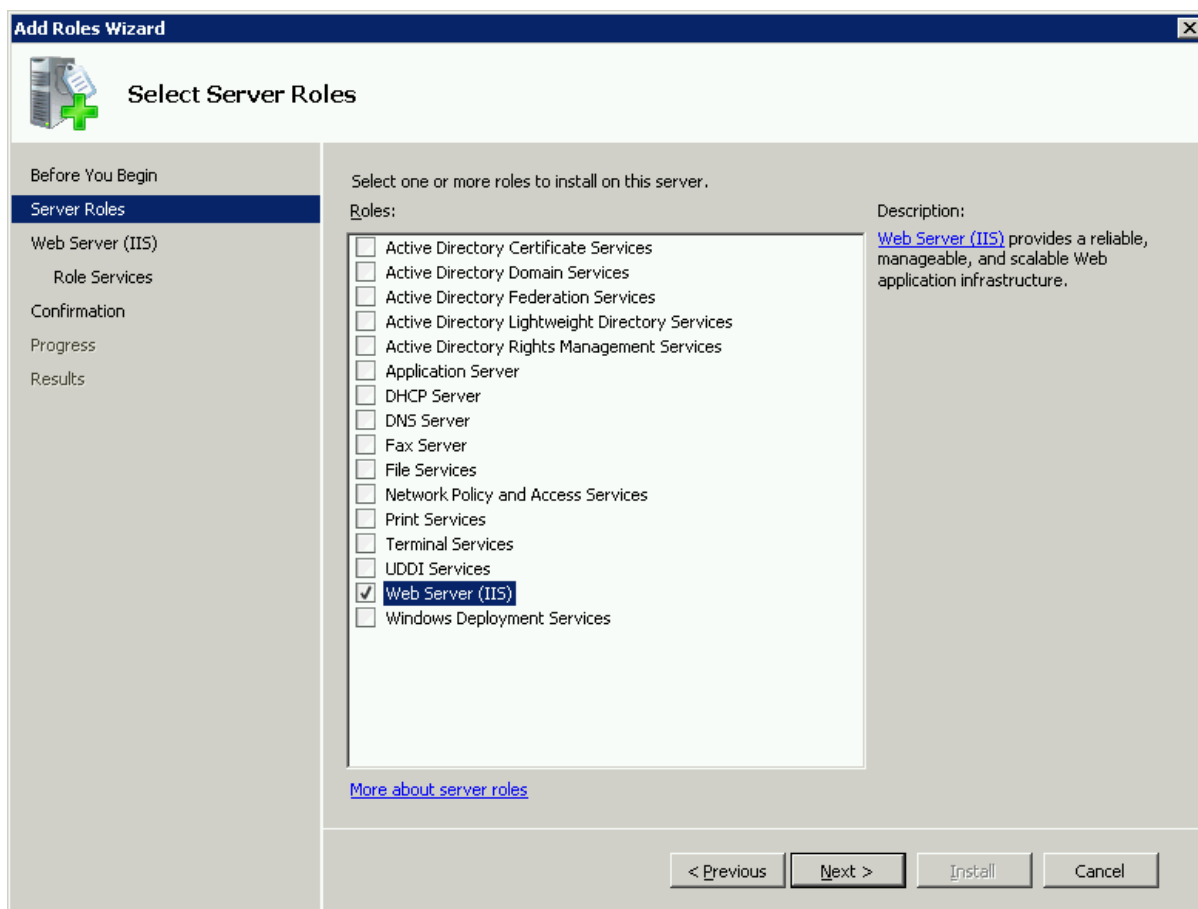
IIS 7.0 is included with Windows Server 2008, but it is not installed on Windows Server 2008 by default. You need to manually install it. Follow the instructions below and make sure that the following highlighted features are installed; these features are not selected to install by default, you will need to manually select them during the IIS installation.

1. Click **Start**, point to **Administrative Tools** and then click **Server Manager**. Click **Roles** under **Server Manager**, and the **Roles Summary** view is displayed.

**Figure 4.15: Server manager**

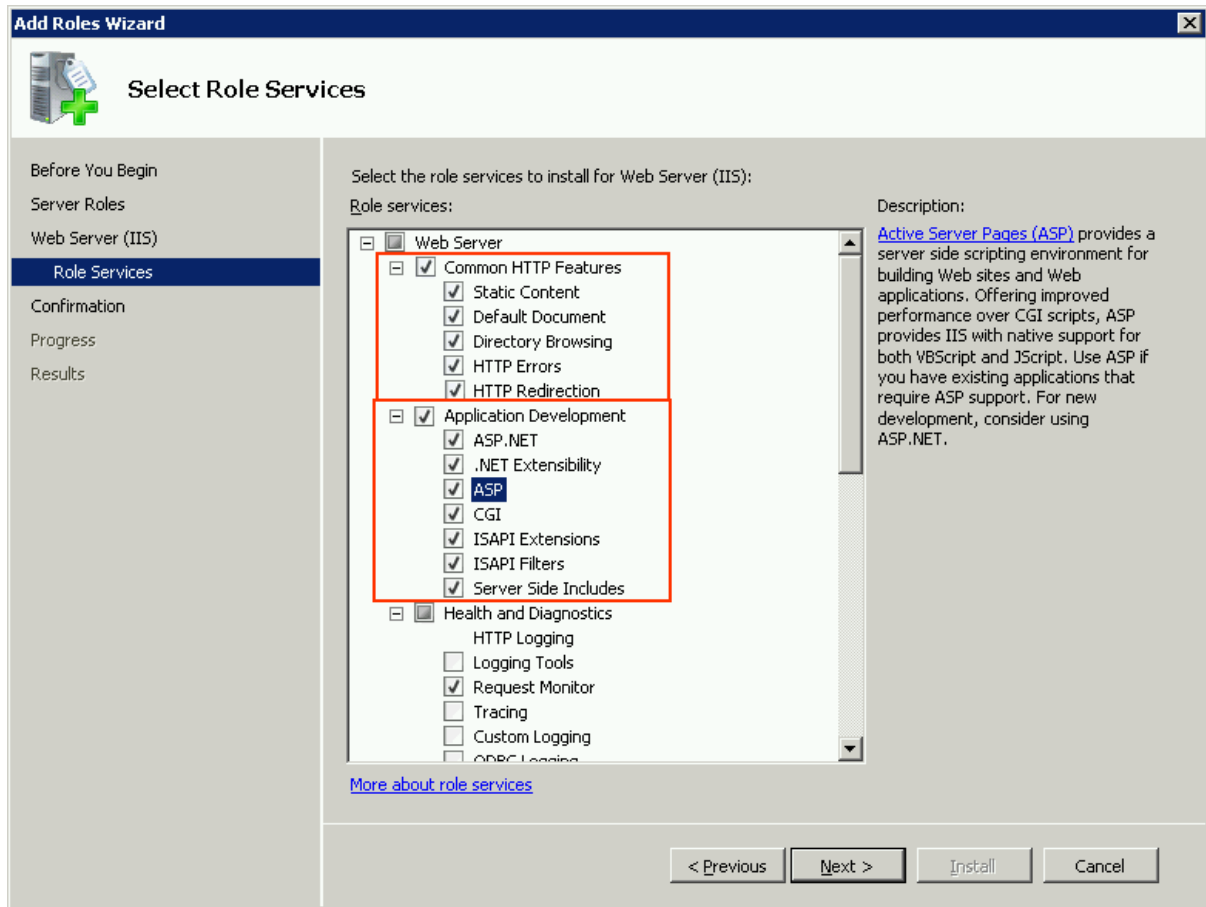


2. In **Roles Summary**, click **Add Roles**, and follow the instructions of the **Add Roles Wizard**.
3. Select **Web Server (IIS)** in **Select Server Roles**, and click **Next**.

**Figure 4.16: Select Web Server (IIS)**

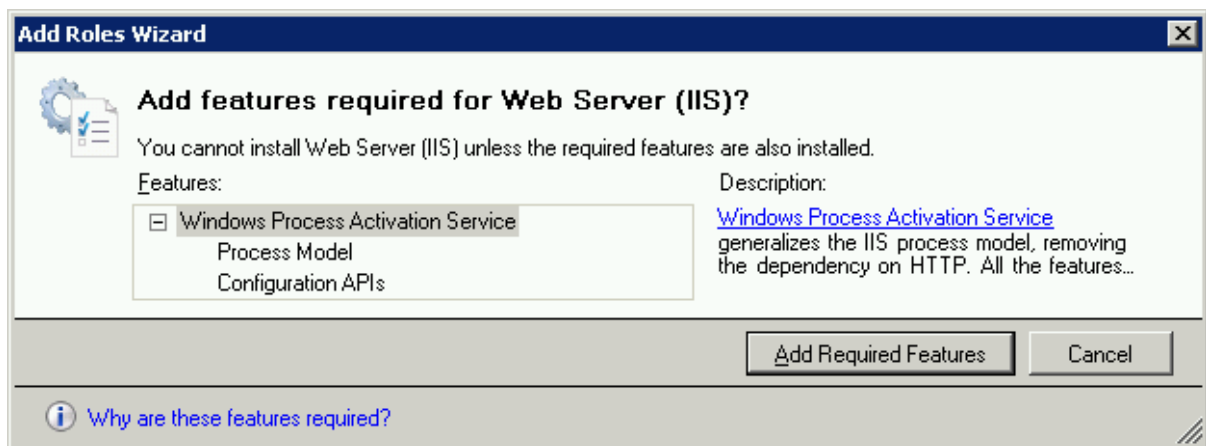
4. In the **Select Role Services** page, select the items listed under **Common HTTP Features** and **Application Development** (as shown in the red boxes in the figure below).

**Figure 4.17: Select Application Development features**



5. Since IIS depends on the **Windows Process Activation Service (WAS)** feature, the following informational dialog displays. Click **Add Required Features** to continue when the **Add Roles Wizard** notifies you on any required dependencies.

**Figure 4.18: Add Required Features**



6. Go through the installation with the wizard and reboot the system.

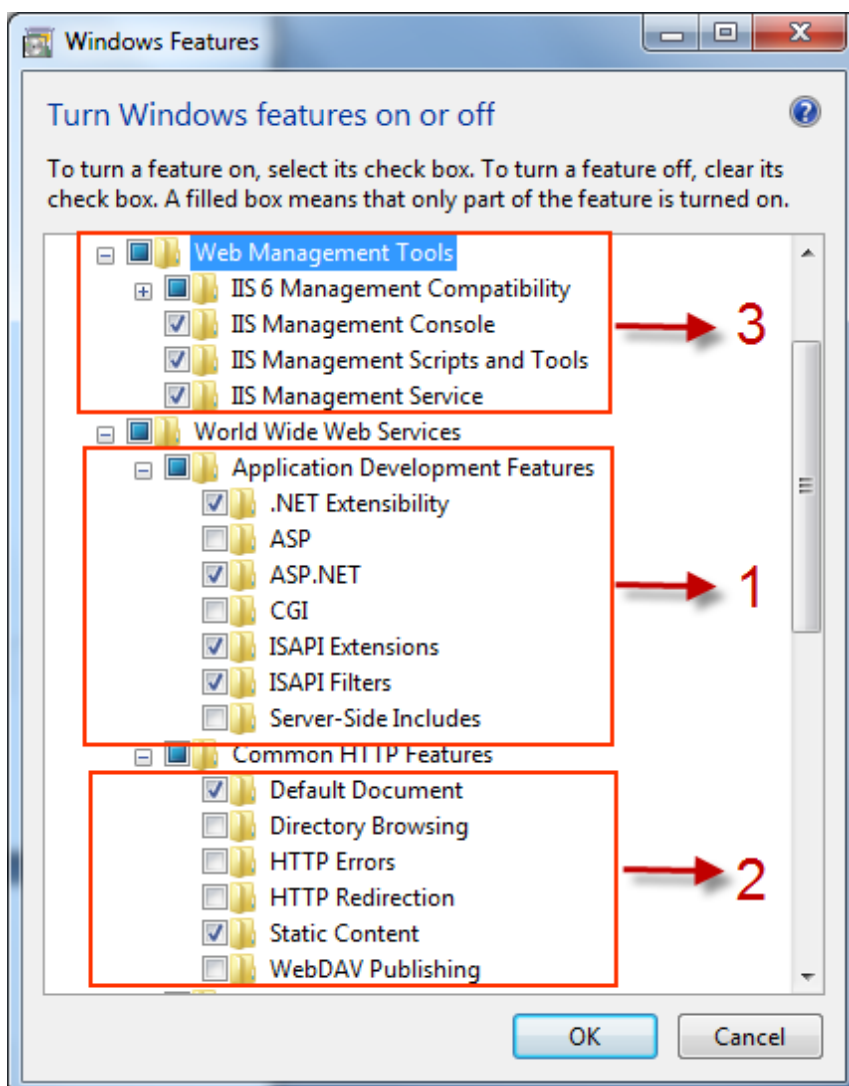
#### 4.4.2.1.8 Installing IIS 7.0 on Windows Vista

IIS 7.0 is included with Windows Vista, but it is not installed on Windows Vista by default. You need to manually install it. Follow the instructions below and make sure that the following highlighted features are installed; these features are not selected to install by default, you will need to manually select them during the IIS installation.

1. Click **Start > Control Panel > Programs > Turn on or off Windows features**.
2. In the **Windows Features** dialog box, select the check box of **Internet Information Services**, then expand the list and select the items listed under **Application Development Features** and under **Common HTTP Features** (as shown in the red boxes marked with "1" and "2" in the figure below). Click **OK**. These features of IIS provide runtime support for Apeon Server.

Note: The features checked above are the necessary features for Apeon Server. If you want to better manage your IIS or install Apeon File Server, you can select the items listed under **IIS 6 Management Compatibility** (as shown in the red box marked with "3" in the figure below).

**Figure 4.19: Windows features**



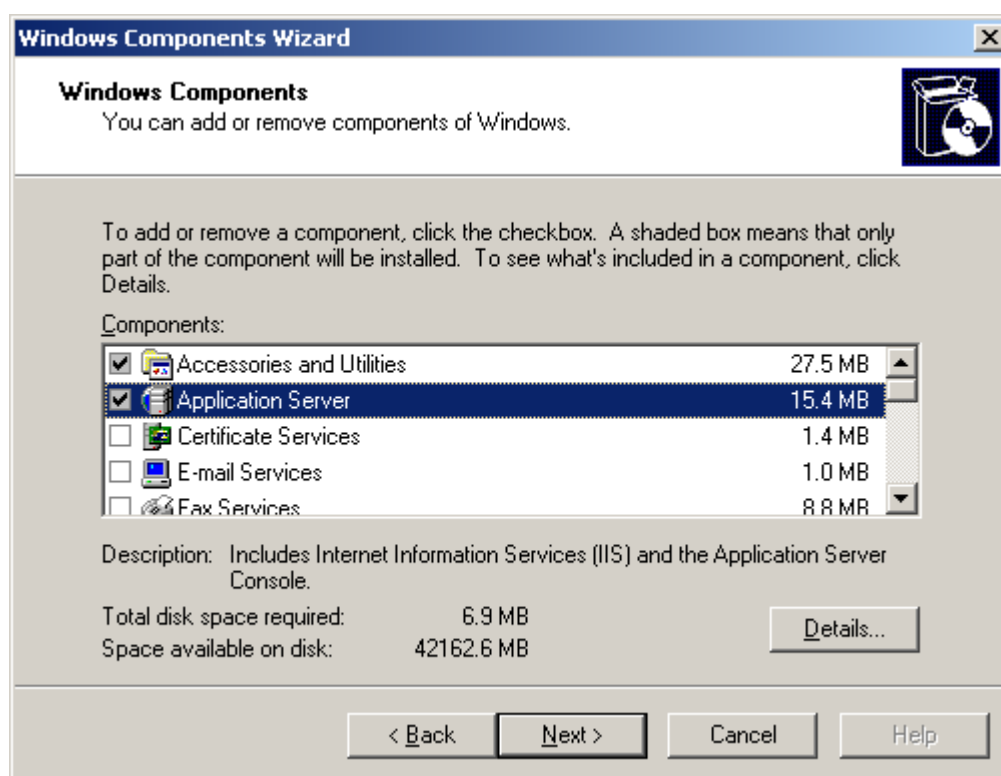
3. Click **OK** to let Windows finish the installation and reboot the system.

#### 4.4.2.1.9 Installing IIS 6.0 on Windows Server 2003

IIS 6.0 is included with Windows Server 2003, but it is not installed on Windows Server 2003 by default. You need to manually install it. Following are the key steps to complete the IIS install.

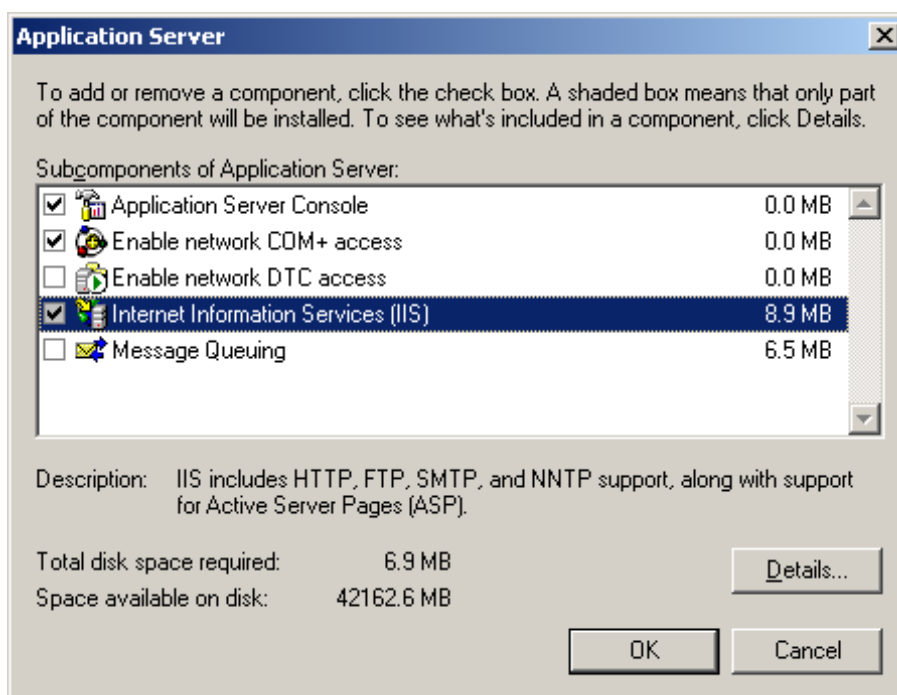
1. Go to **Control Panel | Add/Remove Programs**.
2. Click **Add/Remove Windows Components**.
3. In the **Components** list box, click **Application Server** (as shown in the figure below), then click **Next**.

**Figure 4.20: Select "Application Server"**



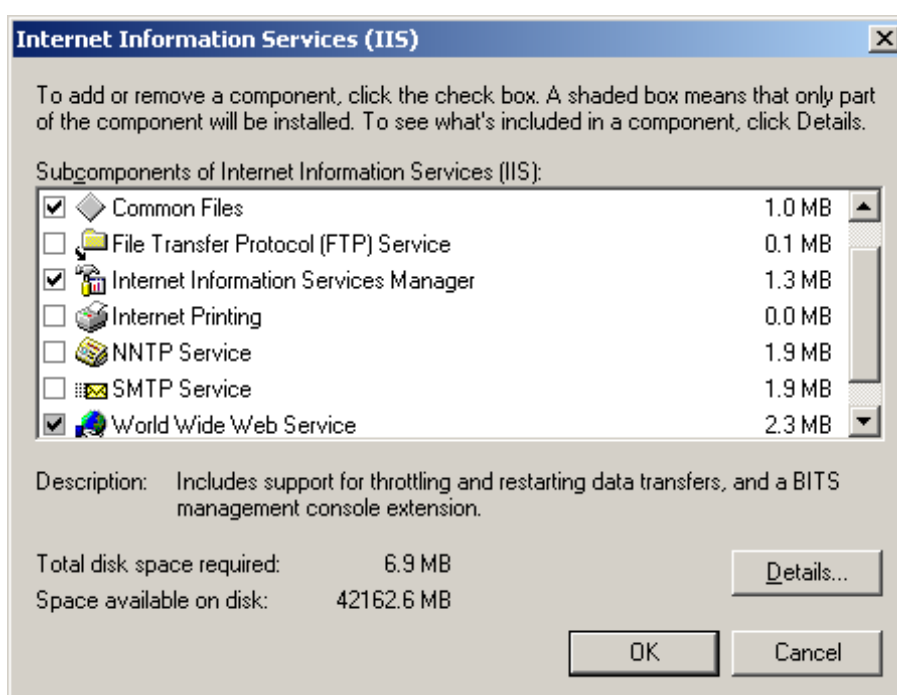
4. Select **Internet Information Services (IIS)** (as shown in the figure below).



**Figure 4.21: Select "Internet Information Services (IIS)"**

5. Click **Details** and select the following components:

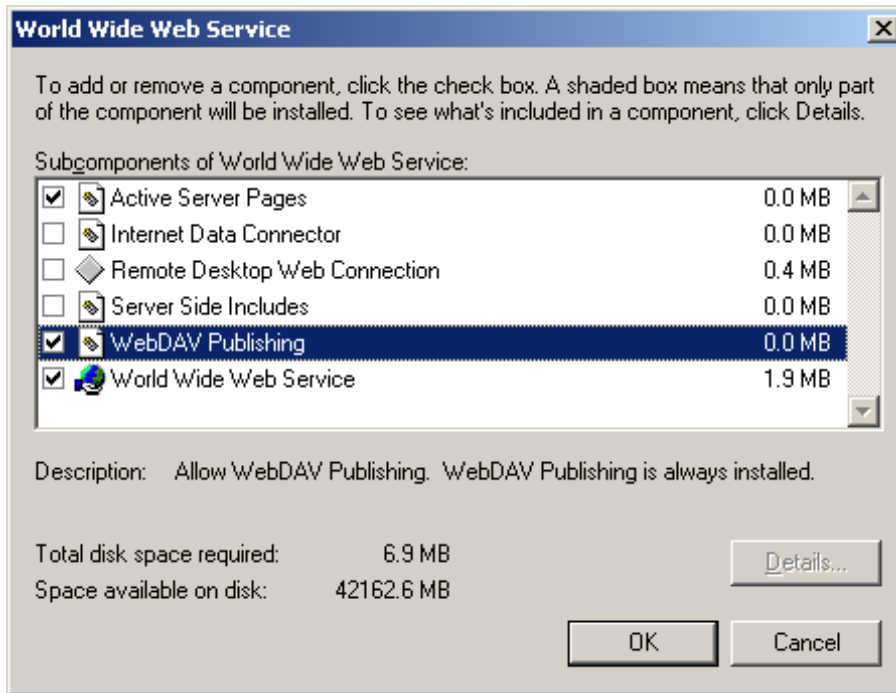
- Common Files
- Internet Information Services Manager
- World Wide Web Service

**Figure 4.22: Select components under Internet Information Services**

6. Select **World Wide Web Service** and click **Details** to select the following components (as shown in the following figure):

- Active Server Pages
- WebDAV Publishing
- World Wide Web service

**Figure 4.23: Select components under World Wide Web Service**



7. Click **OK** to install IIS 6.0 and reboot the system.

#### 4.4.2.2 Installation instructions

During the Apeon Server installation, the setup program will automatically configure the .NET IIS server so Apeon Server and IIS can work with each other. In very few cases, the automatic configuration may fail due to reasons such as environmental issues, user privileges, configuration changes etc., as a result Apeon Server is not working properly. When this happens, you can go through the configurations in Section 1.2, "Install Apeon Server to .NET IIS" in *Troubleshooting* to fix the problem.

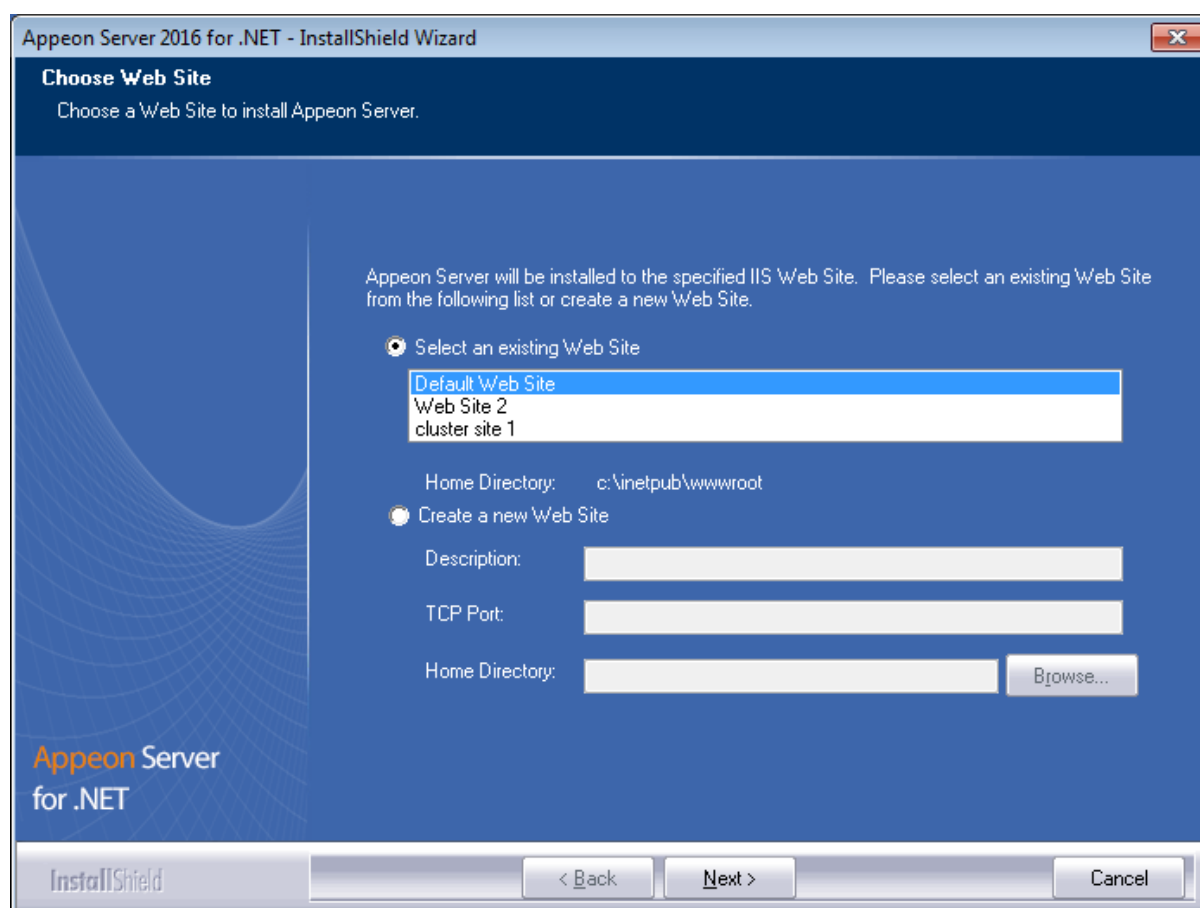
Step 1: Launch the **Apeon for PowerBuilder 2016 Setup** program and select to install **Apeon Server for .NET** (see [Starting the installation](#)). Wait until Apeon Server completes the preparation.

Step 2: Specify the IIS Web site where Apeon Server will be installed and click **Next**.

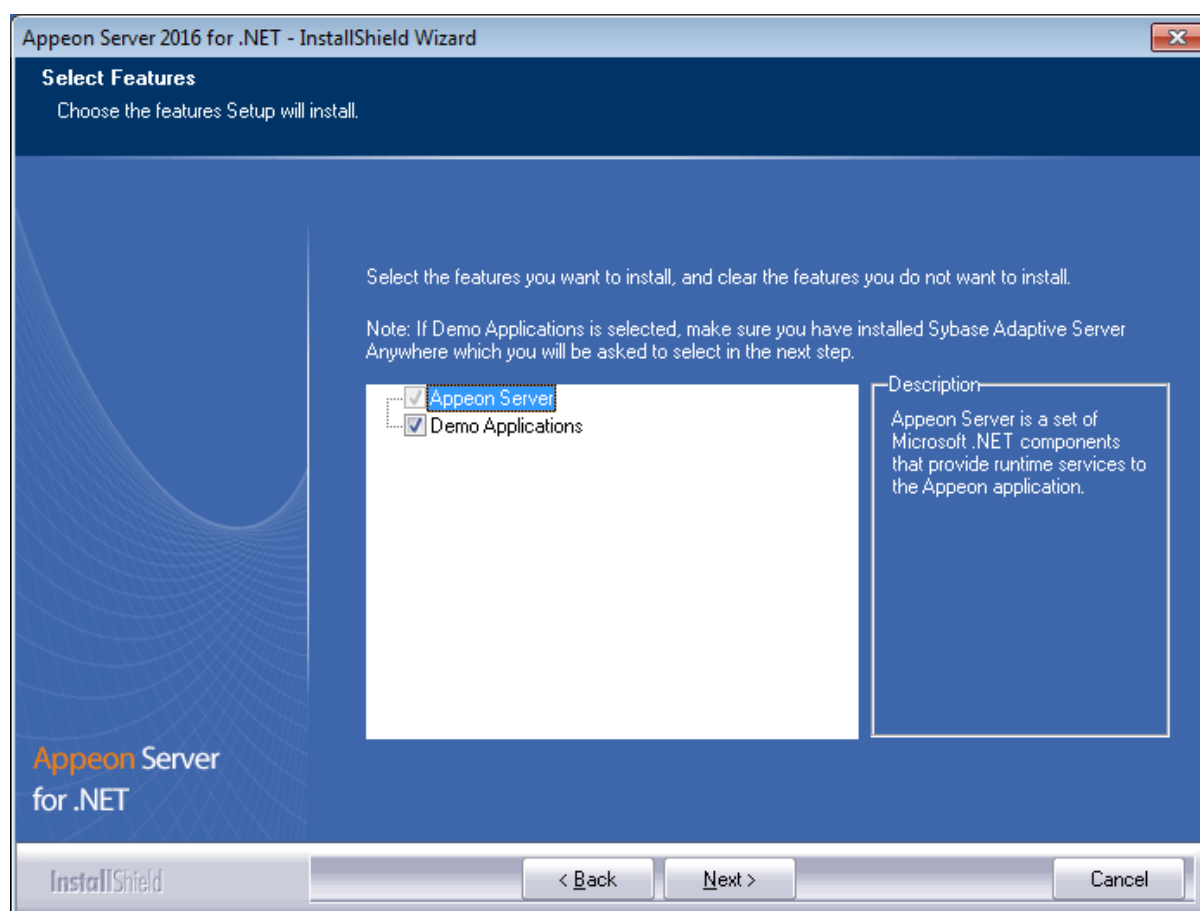
Apeon Server can be installed to an existing Web site or a new Web site. If you want to install Apeon Server to a new Web site, create one by selecting the **Create a new Web Site** option and inputting the Web site description, TCP port, and home directory. The **Description**, **TCP Port**, and **Home Directory** of the new Web site cannot be the same as the existing Web site.

**Table 4.5: New IIS Web site**

Setting	Instructions
Description	Type a name to be used as the new Web site name.
TCP Port	Type a port number to be used as the new Web site port.
Home Directory	Click <b>Browse</b> to specify a root path of the new Web site.

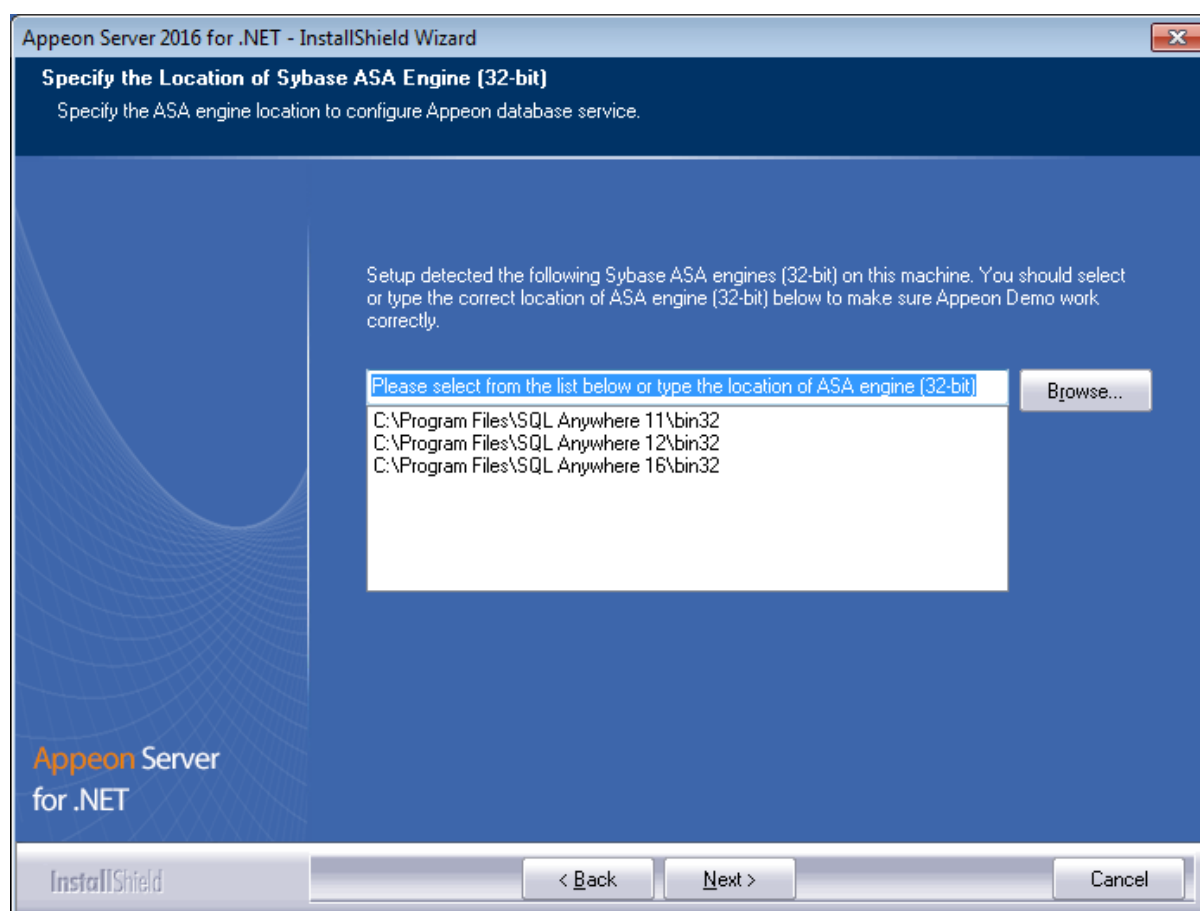
**Figure 4.24: Choose a Web site**

Step 3: Select whether to install the demo application and click **Next**.

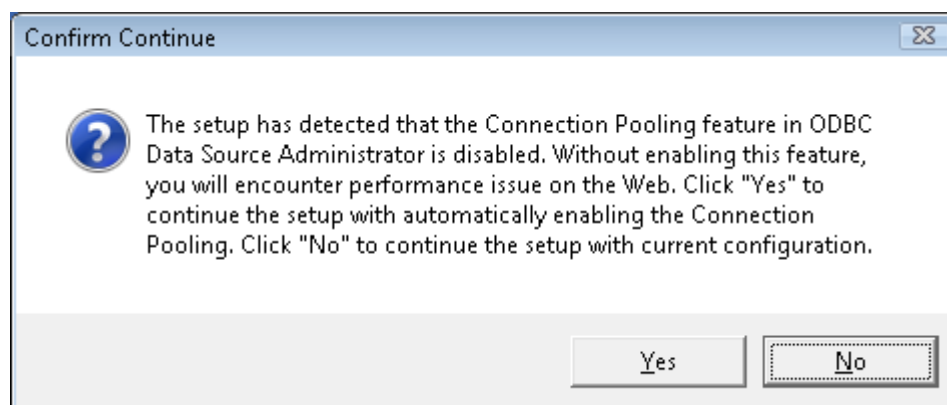
**Figure 4.25: Custom Setup**

Step 4: If you selected to install the demo application, specify the path for the SAP ASA/SQL Anywhere engine and click **Next**. Appeon demo application requires ASA/SQL Anywhere to run.

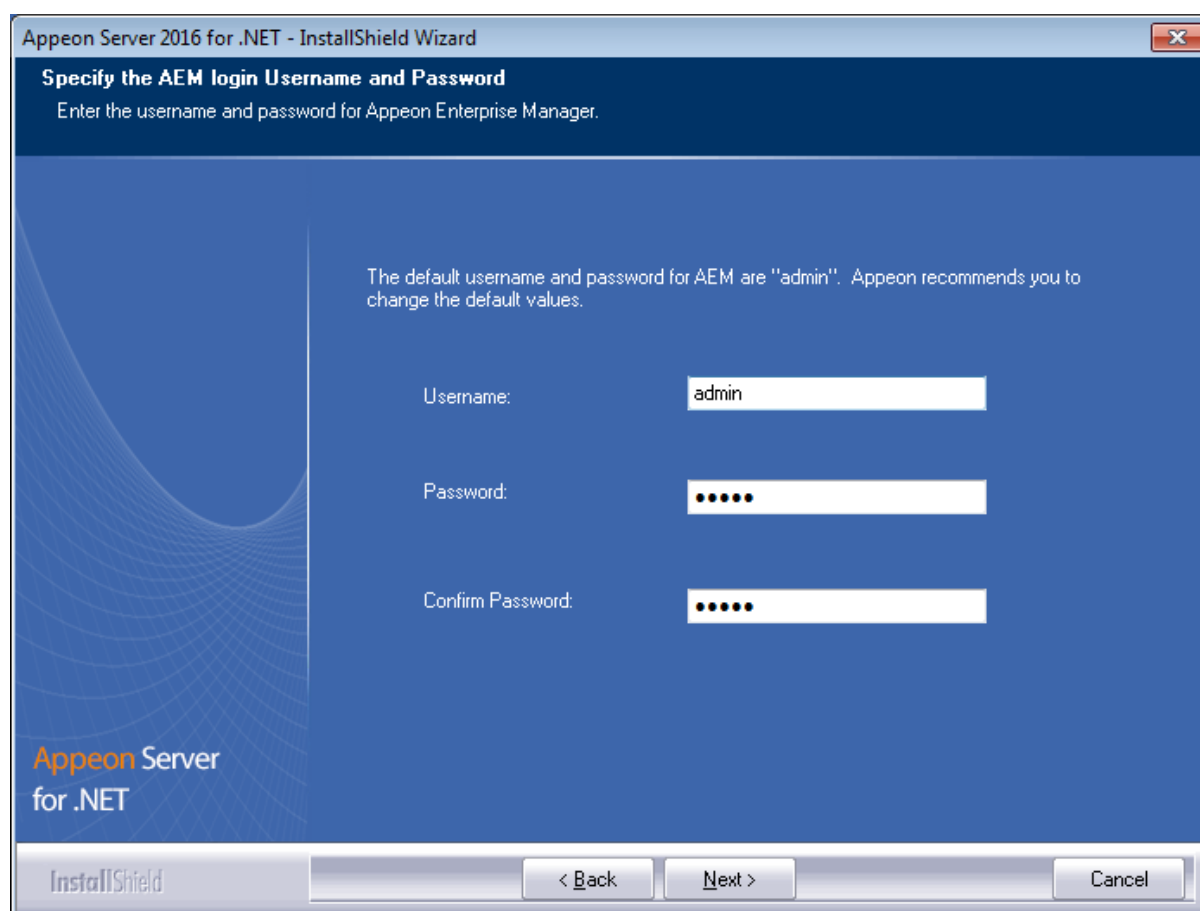
Notes: Depending on the version of Appeon Server (32-bit or 64-bit), Setup lists all copies of ASA/SQL Anywhere engines of the corresponding version (32-bit or 64-bit) detected in your machine.

**Figure 4.26: ASA/SQL Anywhere location**

If you encounter the following message, Apeon recommends you click **Yes** to allow the setup program to enable the connection pooling in ODBC Data Source Administrator, this eliminates the likelihood of having any performance issues at runtime.

**Figure 4.27: Detect connection pooling**

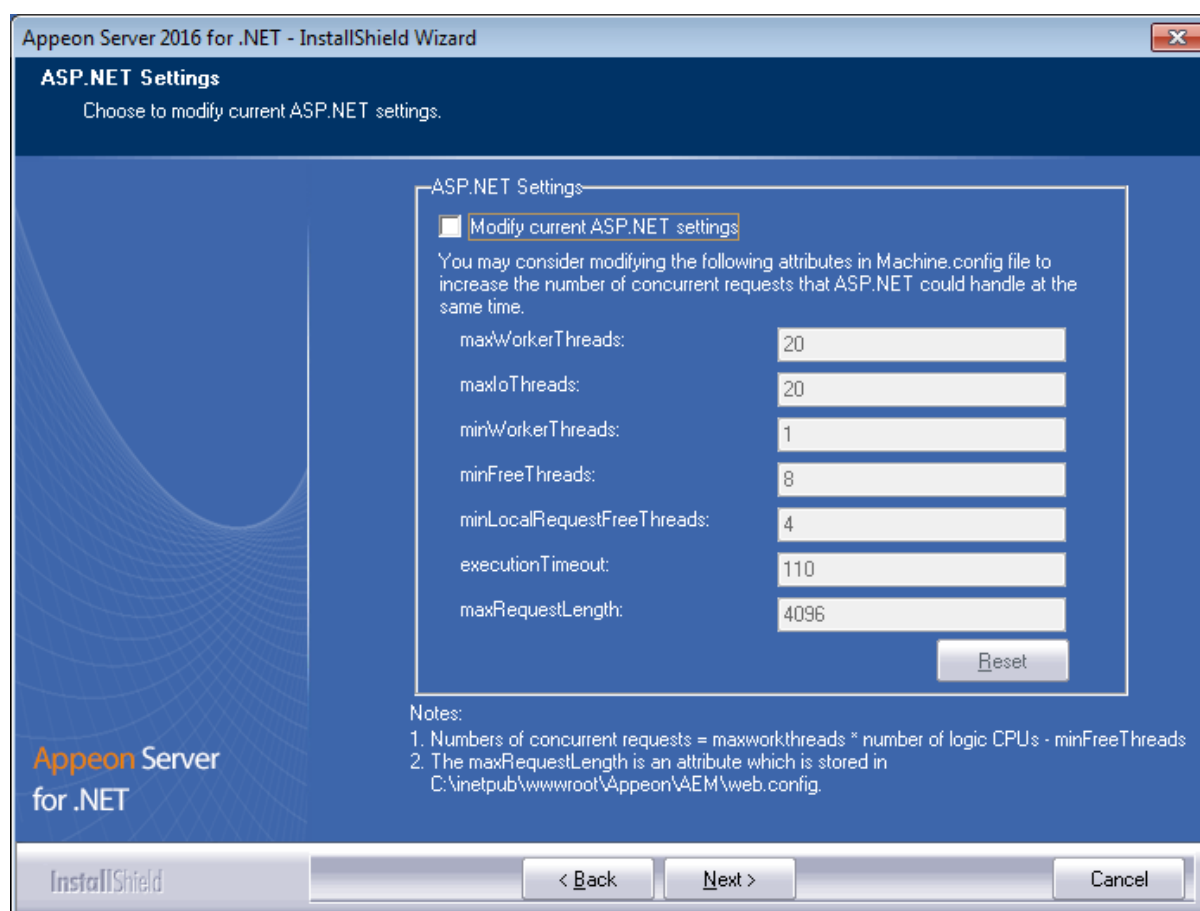
Step 5: Specify the AEM login user name and password.

**Figure 4.28: AEM login username and password**

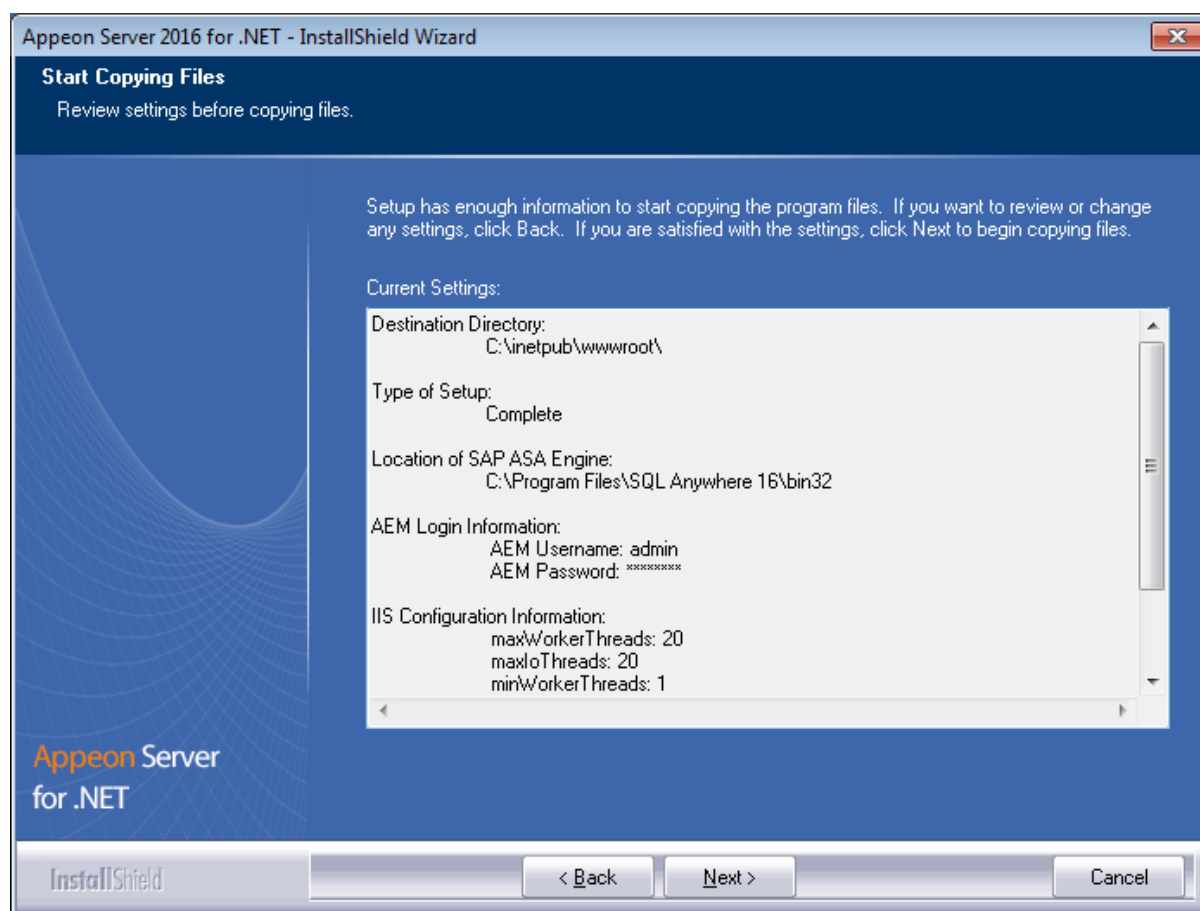
The screenshot shows a window titled "Appeon Server 2016 for .NET - InstallShield Wizard". The main heading is "Specify the AEM login Username and Password" with the instruction "Enter the username and password for Appeon Enterprise Manager." Below this, a message states: "The default username and password for AEM are 'admin'. Appeon recommends you to change the default values." There are three input fields: "Username:" containing "admin", "Password:" with masked characters, and "Confirm Password:" also with masked characters. The bottom of the window features an "InstallShield" logo and three buttons: "< Back", "Next >", and "Cancel".

Step 6: Modify the settings for ASP.NET when necessary.

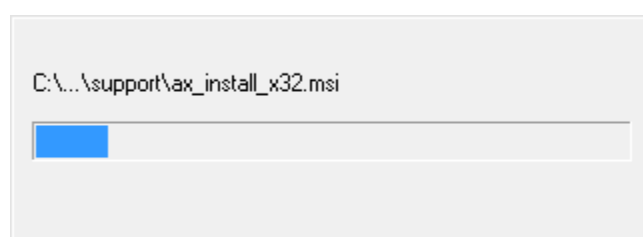
Select the **Modify current ASP.NET settings** checkbox and then modify the attribute values; or click **Reset** to restore the default values. These values are used to determine the maximum number of concurrent users that Appeon Server can support, therefore, setting proper values can help improve the Appeon Server performance. For detailed instructions, refer to Section 3.5.2, "Microsoft IIS server" in *Appeon Performance Tuning Guide*.

**Figure 4.29: ASP .NET settings**

Step 7: Check the summary of settings. Click **Back** to change any unwanted settings or click **Next** to have Setup begin copying files.

**Figure 4.30: Summary of settings**

At the click of the **Next** button, the setup program begins copying files to your computer, as shown in the figure below.

**Figure 4.31: Appeon Server installation process**

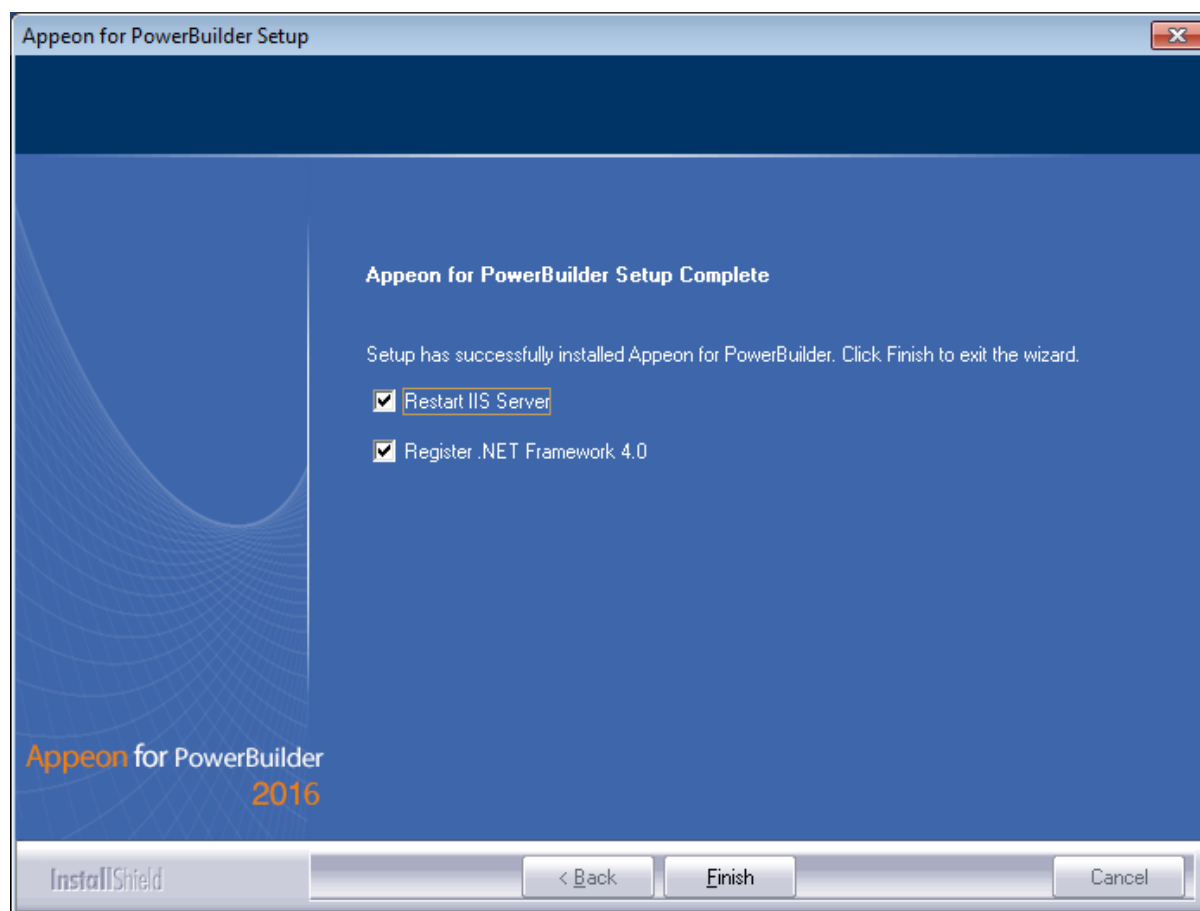
Step 8: Wait until the installation is complete.

If you have selected to install Appeon Server as well as the other components (such as Appeon Developer, Appeon Help etc.), the setup program will install Appeon Server first, and then install the other components before it displays the setup complete screen (as shown below).

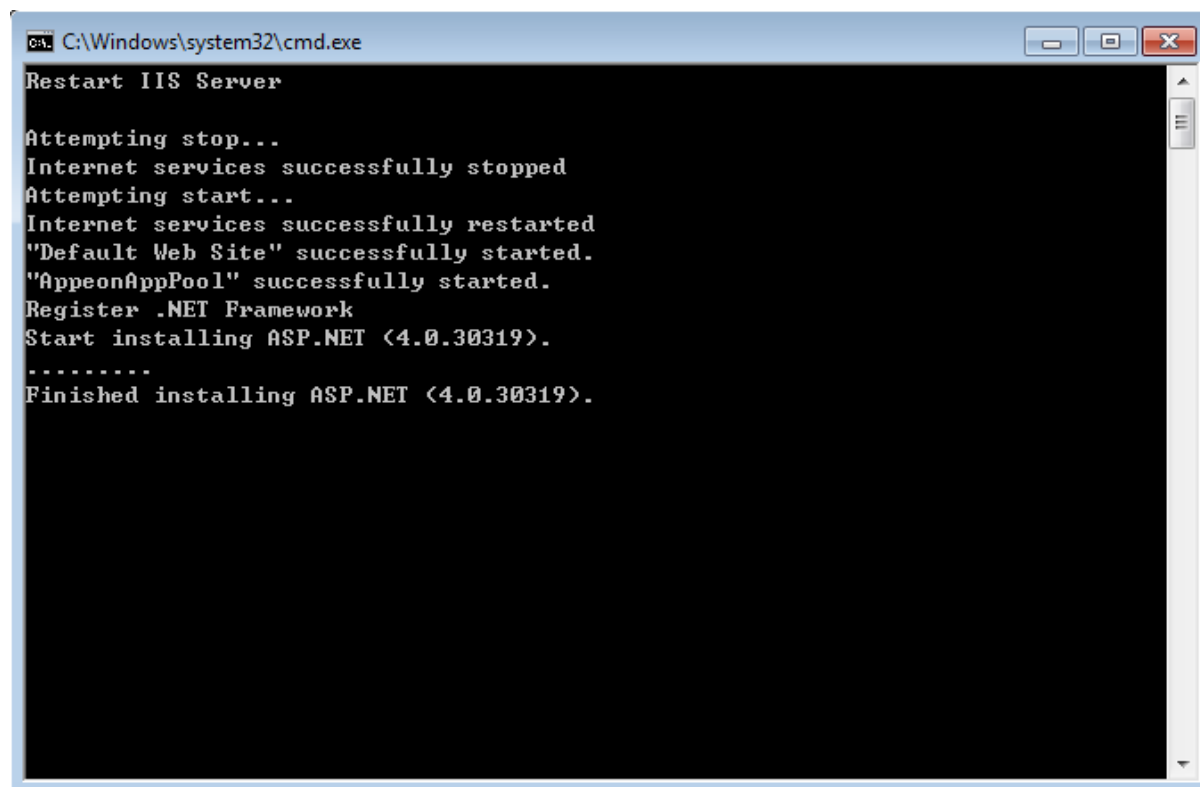
Step 9: Click **Finish** to complete the installation of Appeon Server.

It is recommended that you keep **Restart IIS Server** and **Register .NET Framework 4.0** selected when clicking **Finish**.



**Figure 4.32: Setup complete**

The setup program will restart the IIS server and then register .NET Framework, as shown in the following figure.

**Figure 4.33: Register .NET Framework**

```
C:\Windows\system32\cmd.exe
Restart IIS Server
Attempting stop...
Internet services successfully stopped
Attempting start...
Internet services successfully restarted
"Default Web Site" successfully started.
"AppeonAppPool" successfully started.
Register .NET Framework
Start installing ASP.NET (4.0.30319).
.....
Finished installing ASP.NET (4.0.30319).
```

During the Appeon Server installation, the Appeon Enterprise Manager (AEM) (installed to %appeonserver%\AEM) and the Appeon Server Web Component (installed to %appeonserver%\weblibrary\_ax) are automatically installed. %appeonserver% indicates the Appeon Server installation directory, for example, C:\Inetpub\wwwroot\appeon.

### 4.4.2.3 Appeon Server Instance Configuration

#### 4.4.2.3.1 Overview

During the Appeon Server installation, you can select to install Appeon Server to an IIS Web site, but you may want to create the Appeon Server instances on the other IIS Web sites on that machine, so that the machine hardware resources can be better utilized, and the Appeon application on different Web sites can run more stably and independently, as the Appeon Server instances work independently from each other, and use different Application Pool and work process, like they are installed on different machines.

The following sections will talk about how to use the **Appeon Server Instance Configuration Wizard** to create the Appeon Server instance on IIS Web site(s) on the same machine.

Before creating the Appeon Server instance, you must have already installed Appeon Server to an IIS Web site which will be used later by the Appeon Server Instance Configuration Wizard as the template to create the instance.

To create an Appeon Server instance by the **Appeon Server Instance Configuration Wizard**, you can directly create an instance on the existing IIS Web site(s) or create a new IIS Web site and then create an instance on it. See the following sections for detailed instructions.

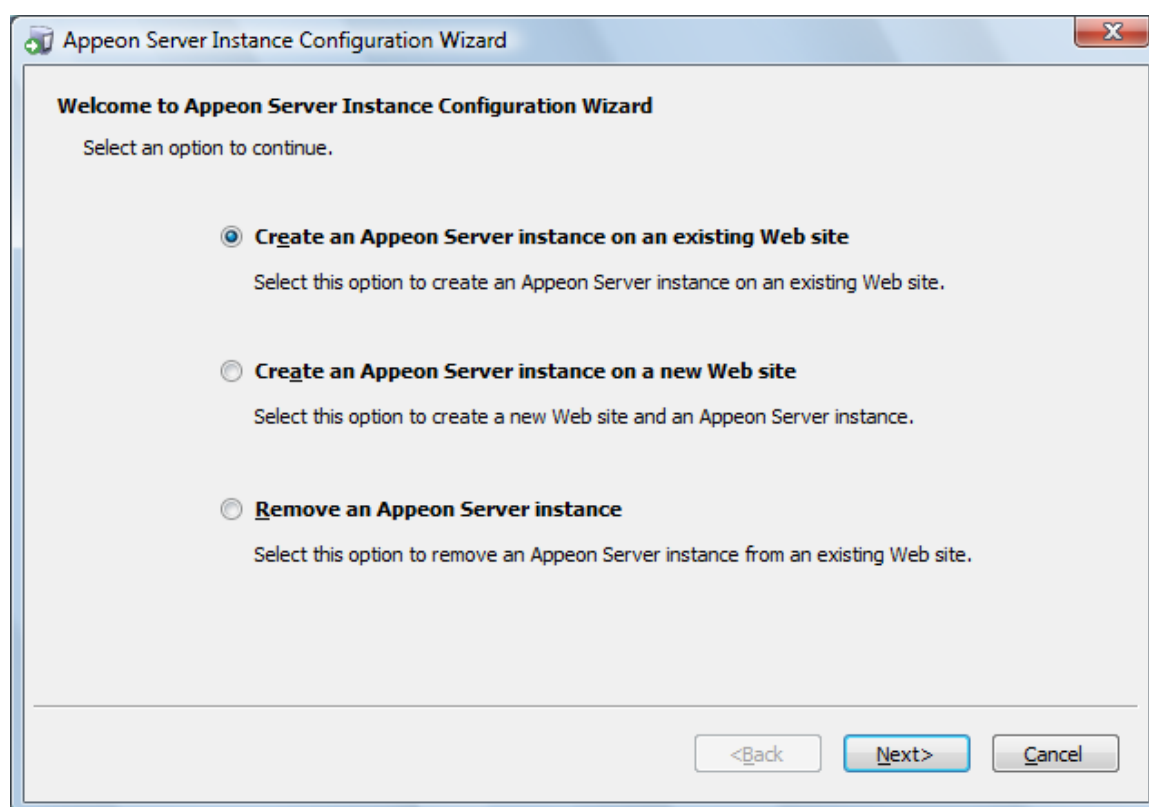
#### 4.4.2.3.2 Creating an Appeon Server instance on an existing Web site

To create an Appeon Server instance on an existing IIS Web site, follow the steps below:

Step 1: Launch the **Instance Configuration Wizard** by running **InstanceConfiguration.exe** from %appeonserver%\Toolkit\instance configuration\.

Step 2: In the **Appeon Server Instance Configuration Wizard** (referred as "Wizard" later in this section), select **Create an Appeon Server instance on an existing Web site** and click **Next**.

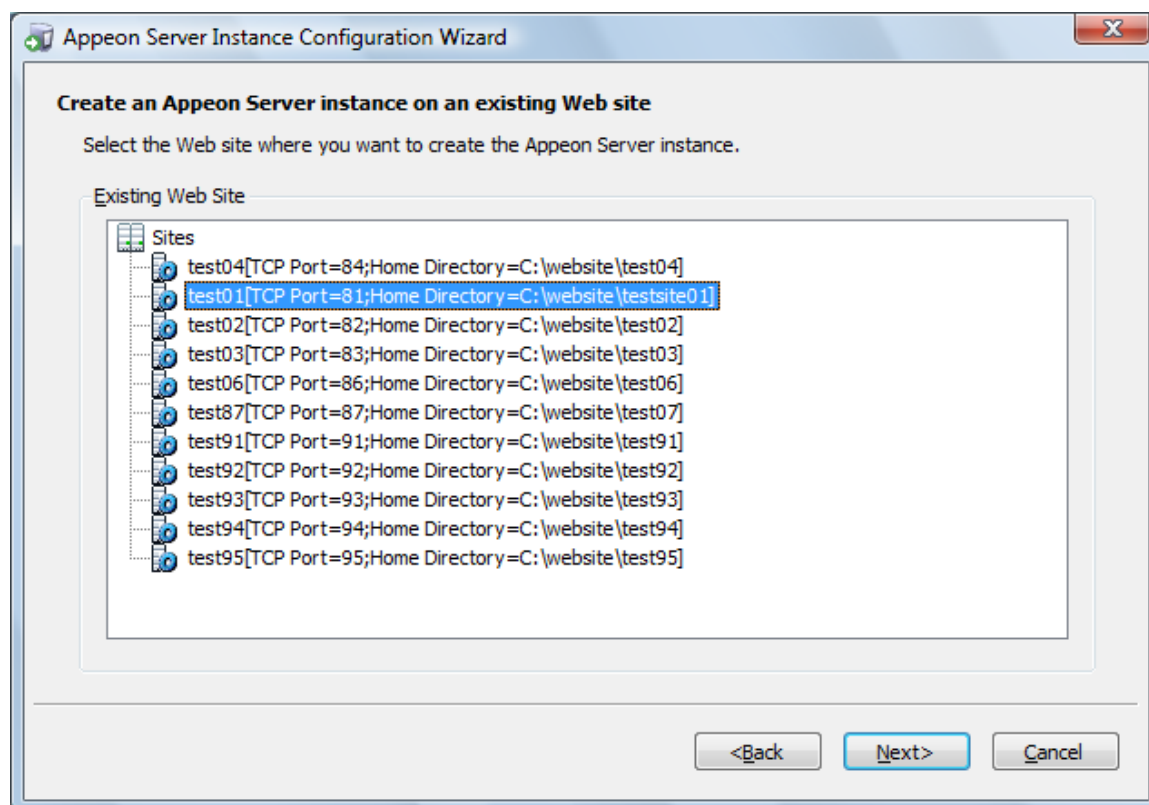
**Figure 4.34: Create an Appeon Server instance on an existing Web site**



Step 3: From the **Existing Web Site** list, select a Web site where you want to create the Appeon Server instance and click **Next**.

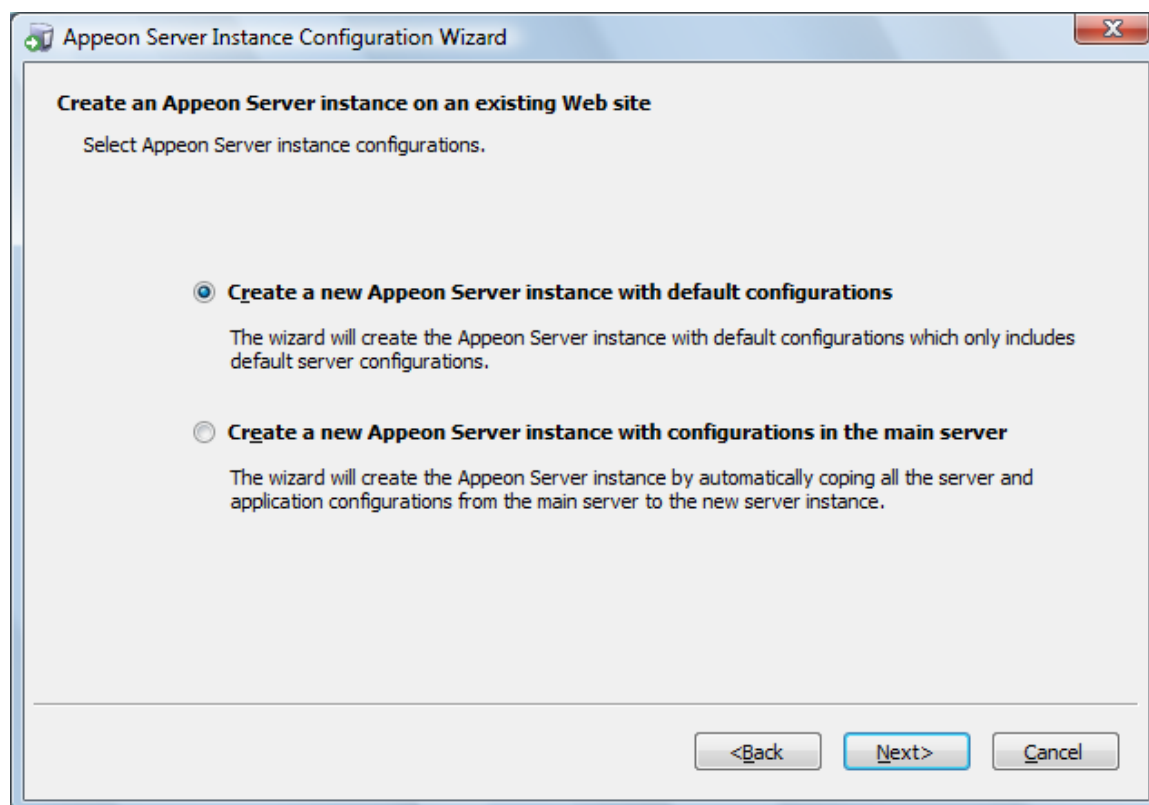
The Wizard automatically detects and lists all existing Web sites where no Appeon Server instance is installed.

**Note:** More than one IIS Web site is allowed to share the same home directory; but if one of these Web sites already has an Appeon Server instance installed, then the other Web sites (that use the same home directory) cannot have the Appeon Server instance installed.

**Figure 4.35: Select a Web site**

Step 4: Select to create the Apeon Server instance based on the default configurations or on the existing configurations and then click **Next**.

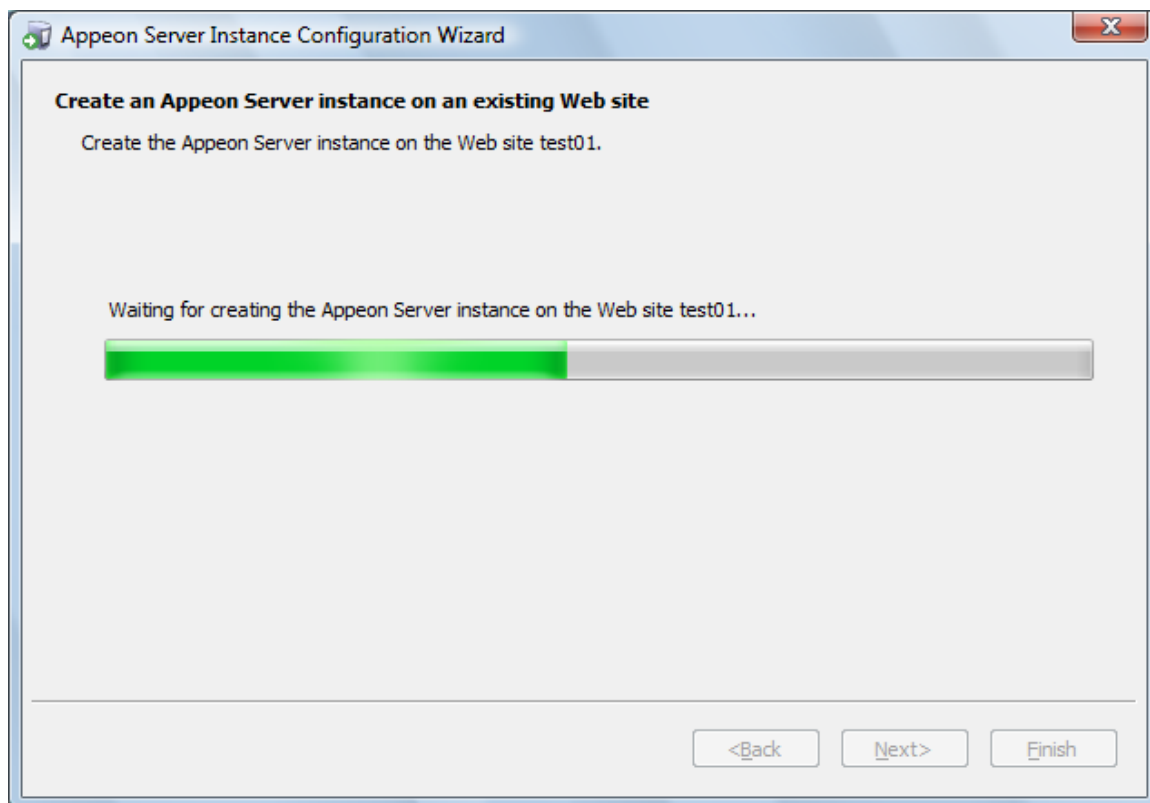
- **Create a new Apeon Server instance with default configurations** indicates the Apeon Server instance to be created will have the default configurations of Apeon Server.
- **Create a new Apeon Server instance with configurations in the main server** indicates the Apeon Server instance to be created will have all of the existing configurations, including the default configurations and the configurations made later, such as AEM configurations.

**Figure 4.36: Select the configuration template**

The Wizard is now creating a new Appeon Server instance on the selected Web site with the selected configurations.

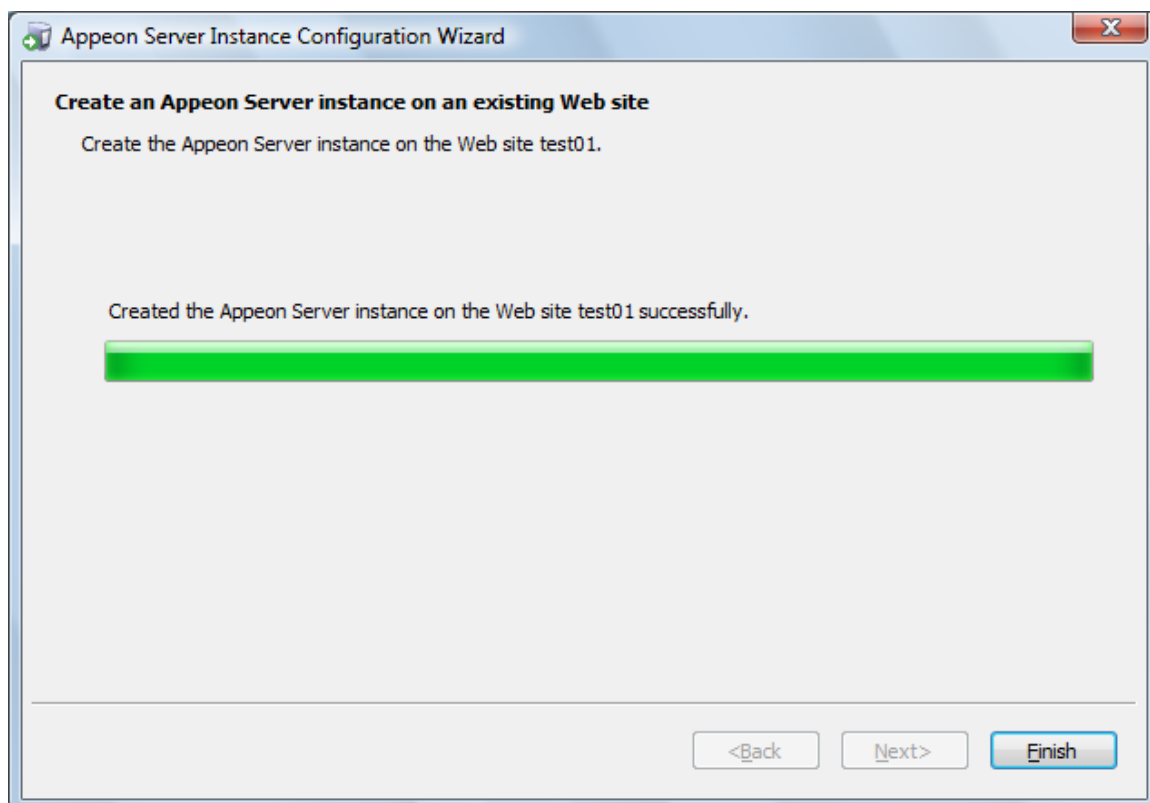
If you are on Windows Vista and if you receive error messages such as "Failed to create the Appeon folder", please resolve the error by applying SP1 or above.

**Figure 4.37: Creating the Appeon Server instance**



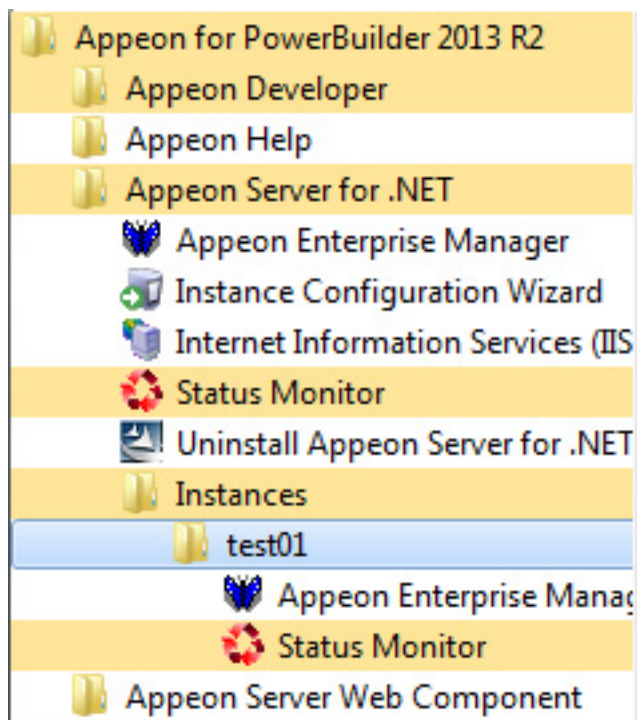
Step 5: Click **Finish** to exit the program.

**Figure 4.38: Creation complete**



If the Appeon Server instance is created successfully, a shortcut for the new instance will be added to the **Start** menu, as shown in the following figure.

**Figure 4.39: Shortcut for new instance**

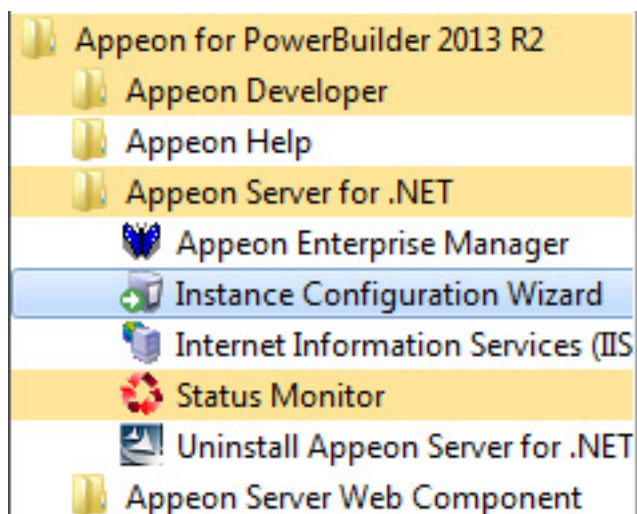


#### 4.4.2.3.3 Creating an Appeon Server Instance on a new Web site

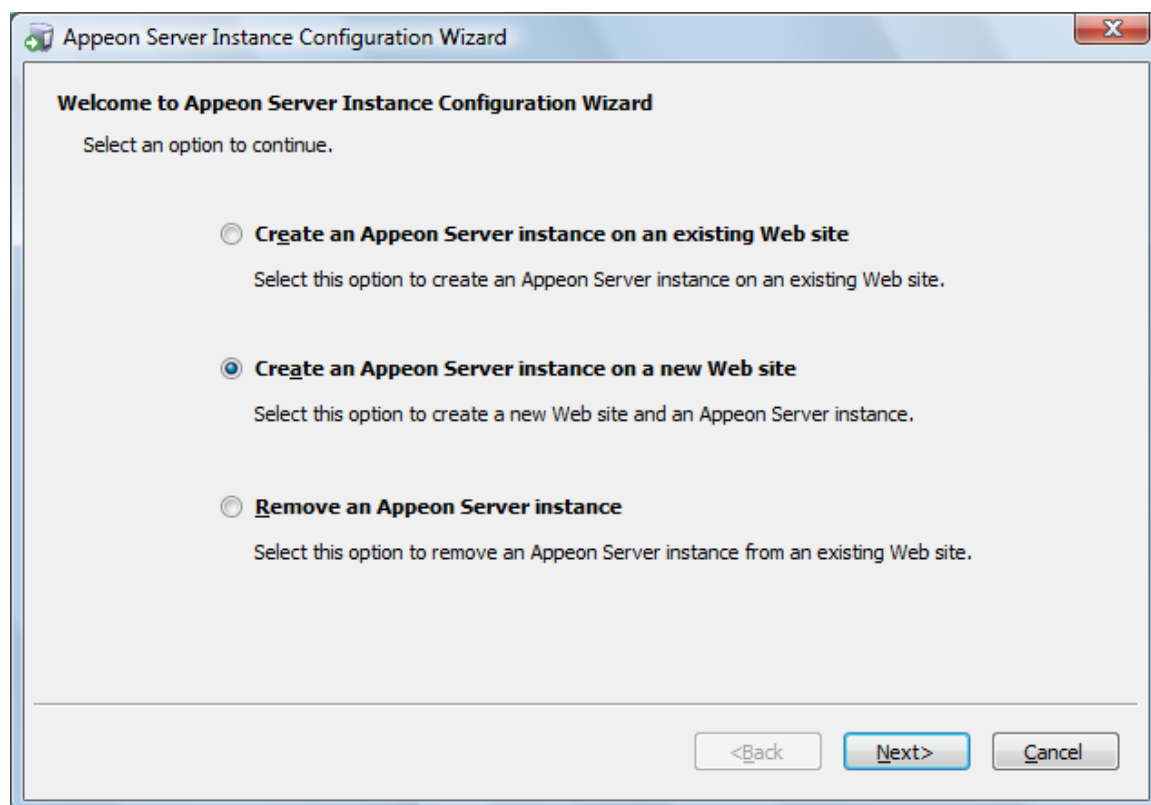
To create an Appeon Server instance on a new IIS Web site, follow the steps below:

Step 1: Run the **Instance Configuration Wizard** from **Start | All Programs | Appeon for PowerBuilder 2016 | Appeon Server for .NET | Instance Configuration Wizard**.

**Figure 4.40: Run instance configuration wizard**

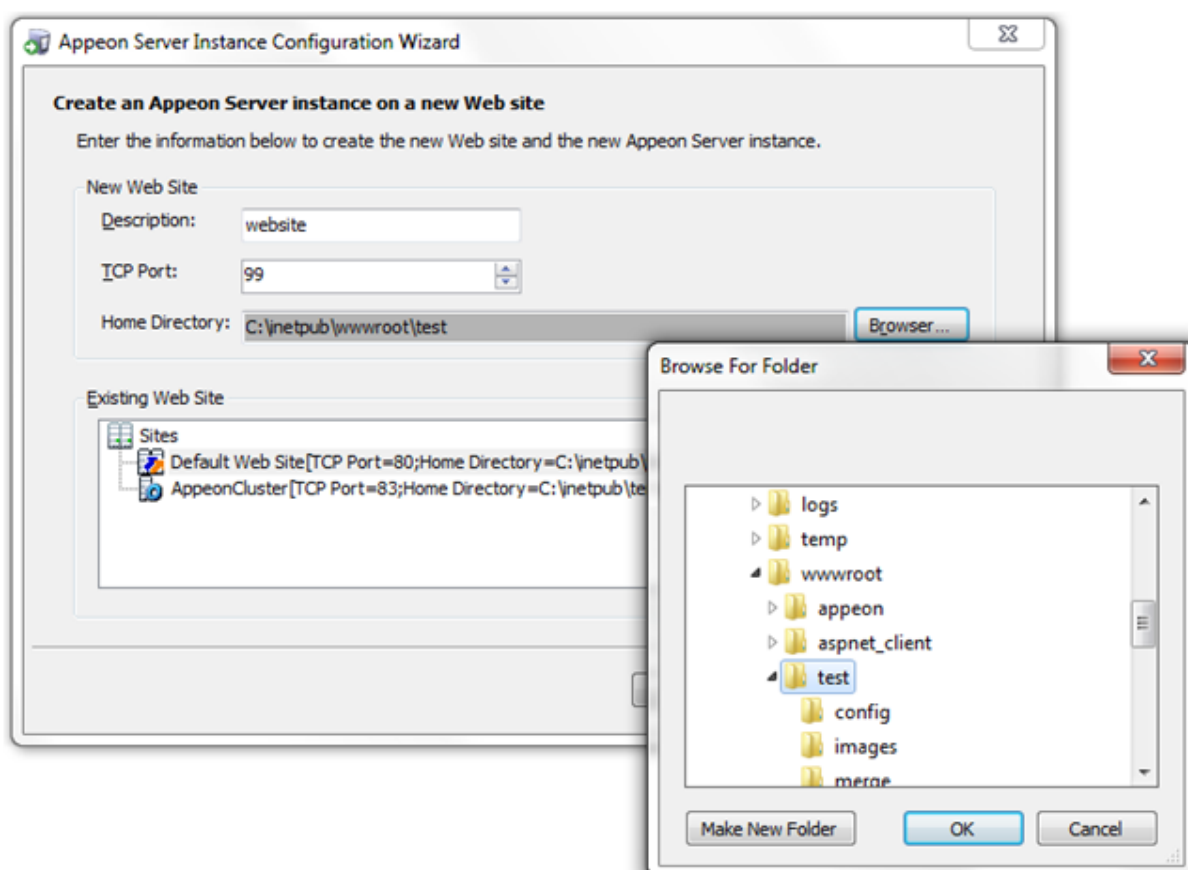


Step 2: In the **Appeon Server Instance Configuration Wizard** (referred as "Wizard" later in this section), select **Create an Appeon Server instance on a new Web site** and click **Next**.

**Figure 4.41: Create an Appeon Server instance on a new Web site**

Step 3: Specify the information needed for creating a new Web site and click **Next** to proceed.



**Figure 4.42: Create a Web site**

To create a new Web site, specify the **Description**, **TCP Port**, and **Home Directory**.

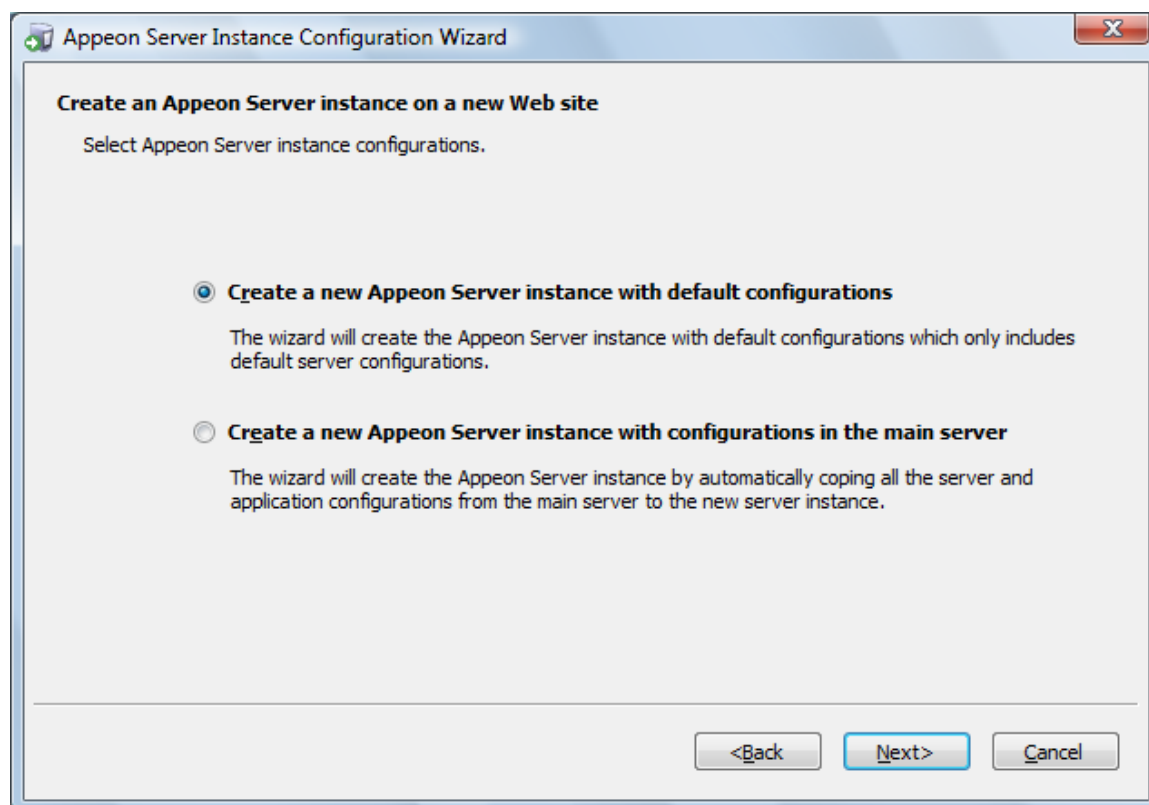
**Table 4.6: New IIS Web site settings**

Setting	Instructions
Description	Type a name to be used as the new Web site name.
TCP Port	Type a port number to be used as the new Web site port.
Home Directory	Click <b>Browse</b> to specify a root path of the new Web site.

Notes: The Description and TCP Port of the new Web site cannot be the same as the existing Web site, and the Home Directory cannot be the same as the existing Web site where an Apeon Server instance has already been installed. You can view the Description, TCP Port and Home Directory of the existing Web sites in the **Existing Web Site** group box.

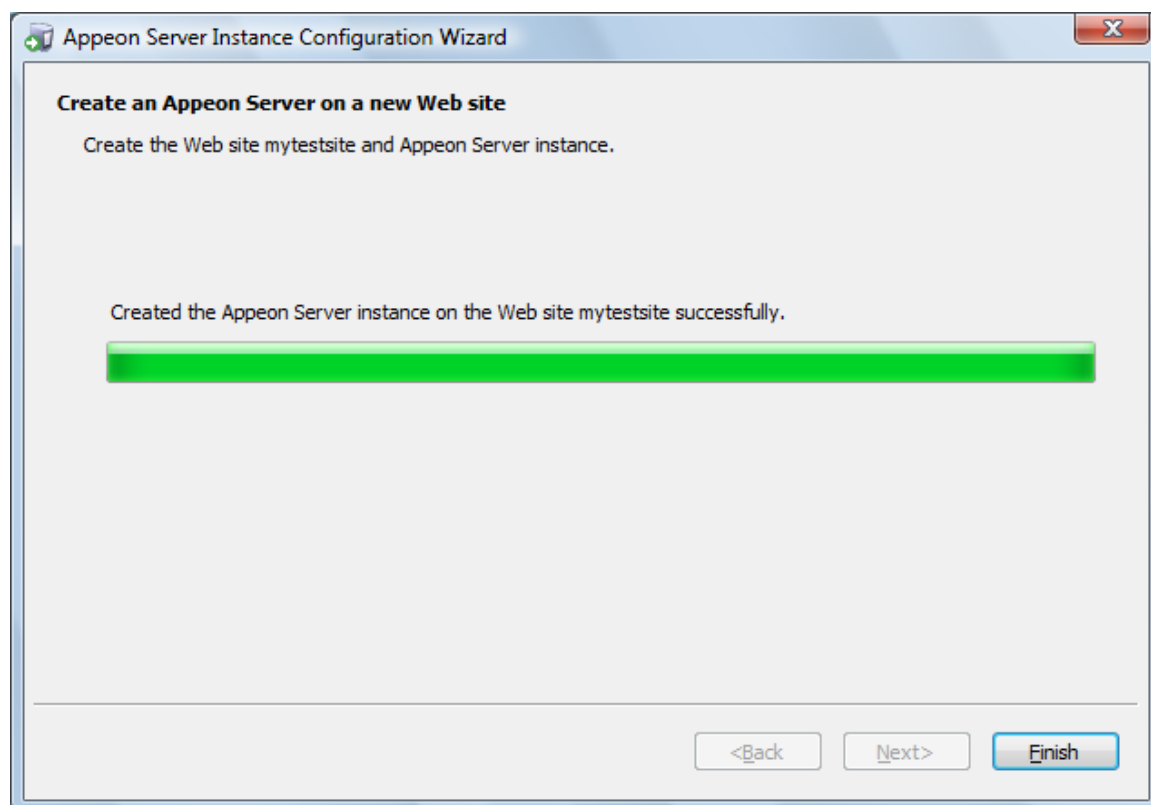
Step 4: Select to create the Apeon Server instance based on the default configurations or on the existing configurations and then click **Next**.

- **Create a new Apeon Server instance with default configurations** indicates the Apeon Server instance to be created will have the default configurations of Apeon Server.
- **Create a new Apeon Server instance with configurations in the main server** indicates the Apeon Server instance to be created will have all of the existing configurations, including the default configurations and the configurations made later, such as AEM configurations.

**Figure 4.43: Select the configuration template**

The Wizard will be creating a new Web site and then creating an Appeon Server instance on this new Web site.

Step 5: Click **Finish**.

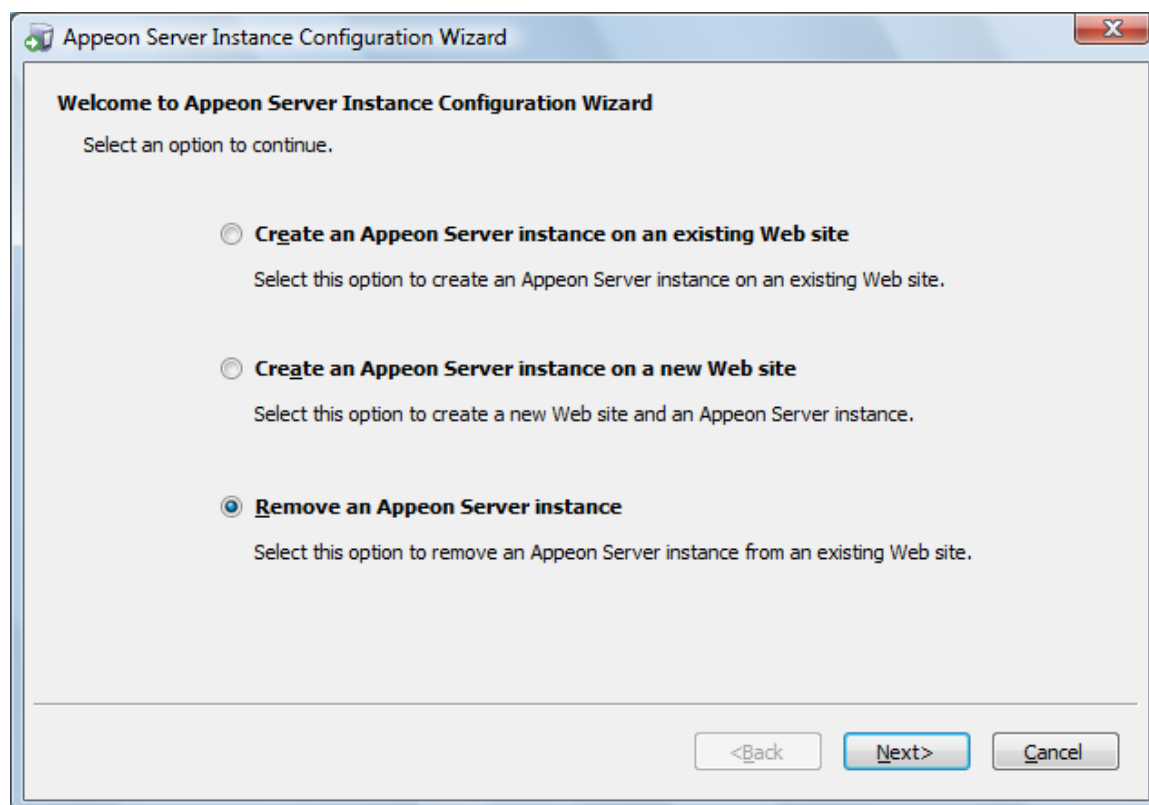
**Figure 4.44: Creation complete**

#### 4.4.2.3.4 Removing an Appeon Server Instance

To remove an Appeon Server instance from the IIS Web site, follow the steps below:

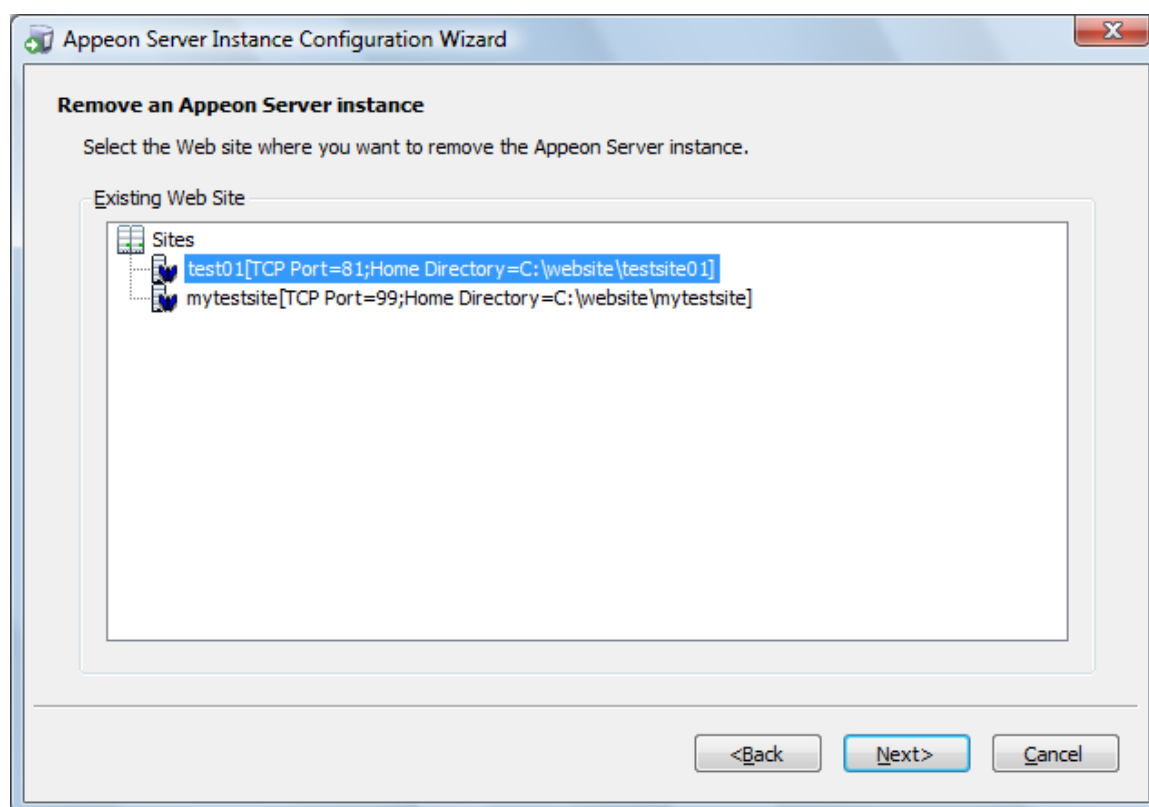
Step 1: Run the **Instance Configuration Wizard** from **Start | All Programs | Appeon for PowerBuilder 2016 | Appeon Server for .NET | Instance Configuration Wizard**.

Step 2: In the **Appeon Server Instance Configuration Wizard** (referred as "Wizard" later in this section), select **Remove an Appeon Server instance** and click **Next**.

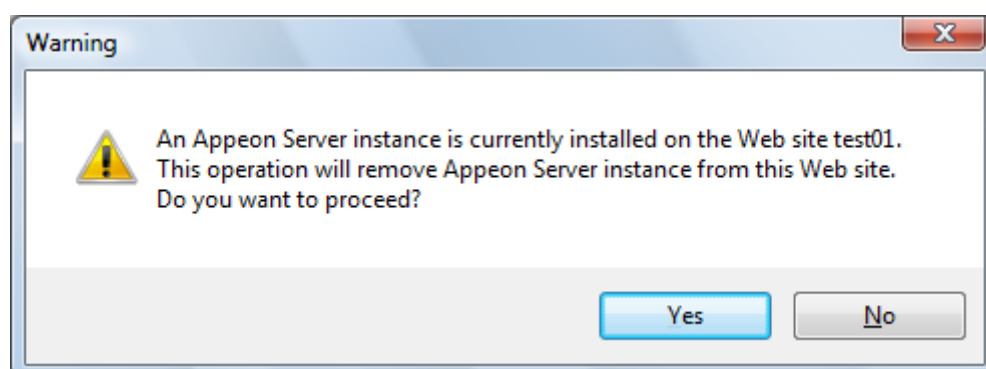
**Figure 4.45: Remove an Appeon Server instance**

Step 3: Select the Web site where you want to remove the Appeon Server instance and click **Next**.

The Wizard automatically detects and lists all of the Web sites where an Appeon Server instance has been created.

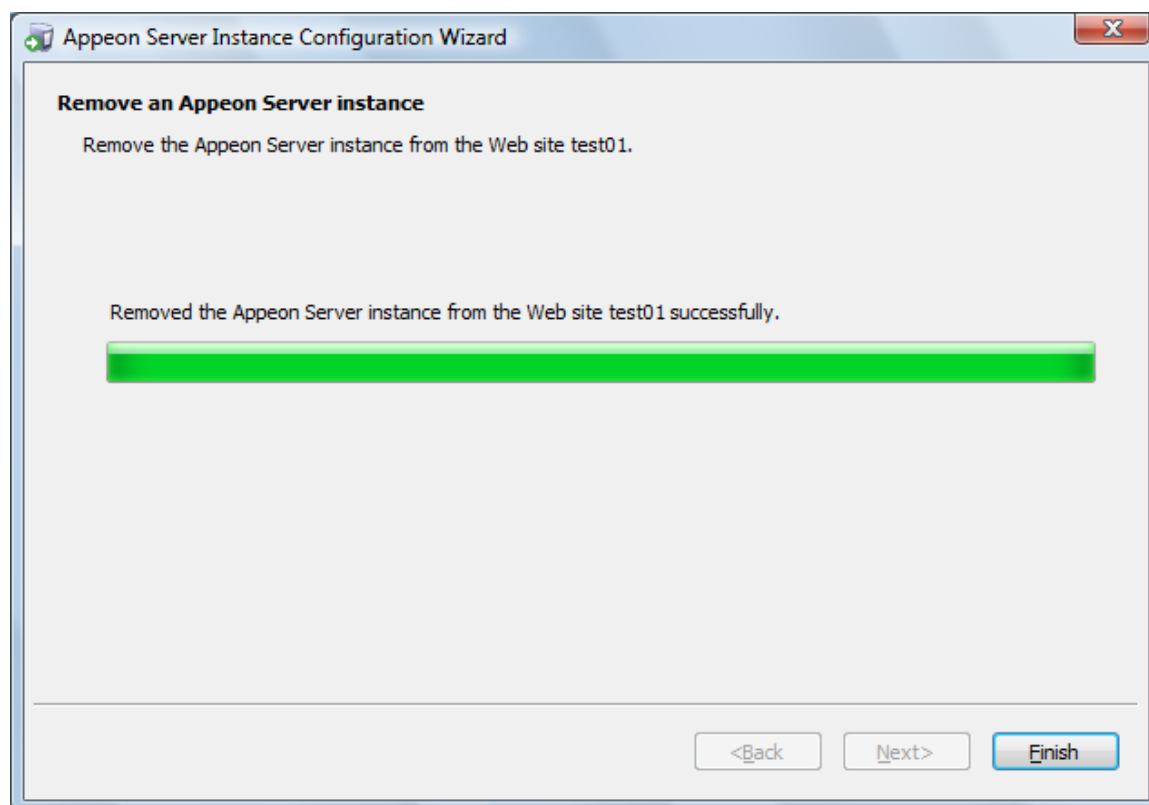
**Figure 4.46: Select a Web site**

Step 4: In the popup Warning window, click **Yes** to confirm the deletion (or click **No** to cancel the deletion).

**Figure 4.47: Confirm deletion**

The Wizard will be removing the Apeon Server instance from the selected Web site.

Step 5: Click **Finish** to exit.

**Figure 4.48: Deletion complete**

### 4.4.3 Appeon Developer installation

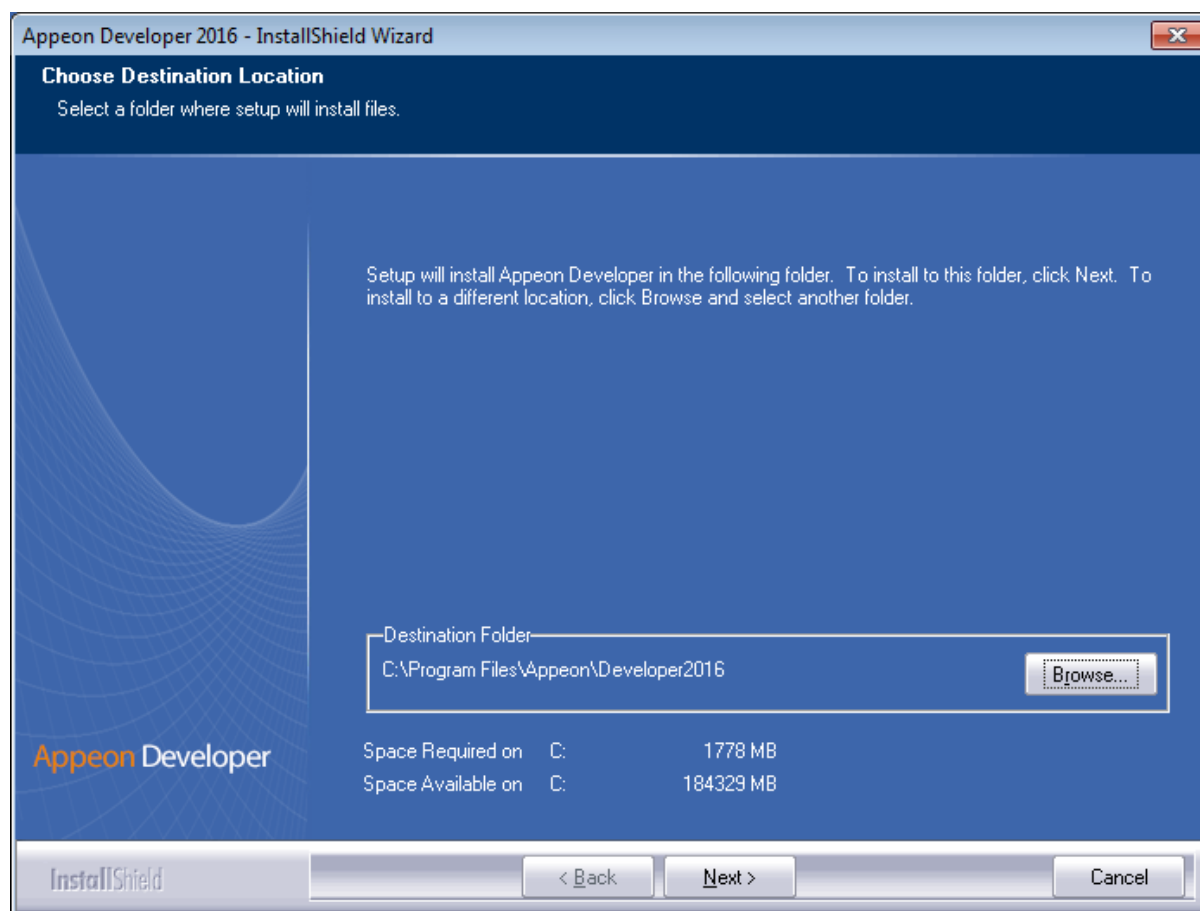
#### 4.4.3.1 Prerequisites

- The Developer PC meets the system requirements in [Appeon Developer requirements](#). Verify that PowerBuilder 9.0.3, 10.2.1, 10.5.2, 11.2, 11.5, 12.0, 12.5, 12.5.2, or 12.6 is installed or updated by running the PowerBuilder Setup program. You cannot install or update the software by copying files and folders from another source.
- Verify that PowerBuilder has been upgraded to the latest available build.
- Shut down PowerBuilder, ASA/SQL Anywhere, and any other Windows programs before beginning the installation process.
- Verify in Windows Task Manager that the following processes are not running under the Process tab: **EonADTxx.exe** and **pbxxx.exe**. If these processes are running, be sure to end them.

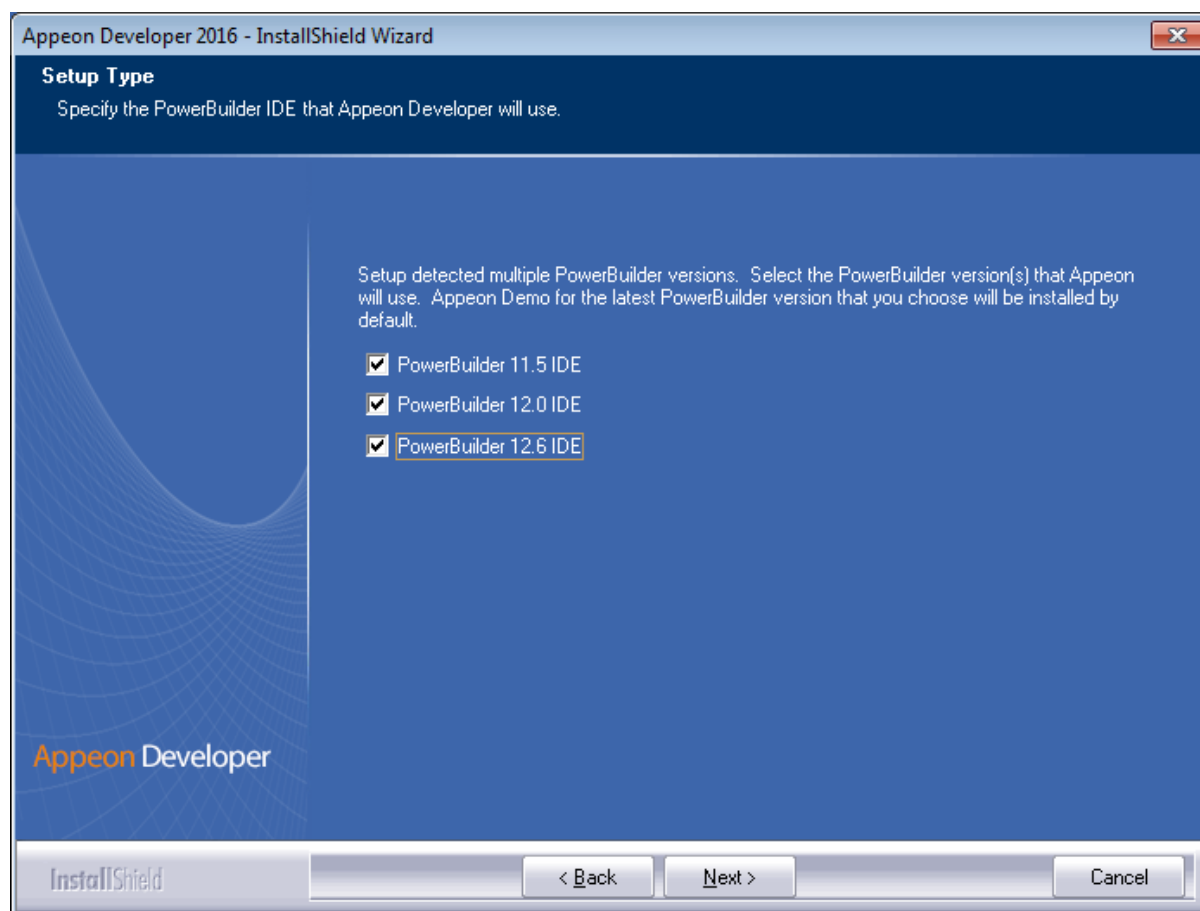
#### 4.4.3.2 Installation instructions

Step 1: Launch the **Appeon for PowerBuilder 2016 Setup** program and select to install **Appeon Developer** (see [Starting the installation](#)).

Step 2: Click **Next** to install Appeon Developer to the default location, or click **Browse** to select another location.

**Figure 4.49: Appeon Developer location**

Step 3: If you have more than one PowerBuilder installed, you will be given a choice of which version(s) to integrate into Appeon Developer.

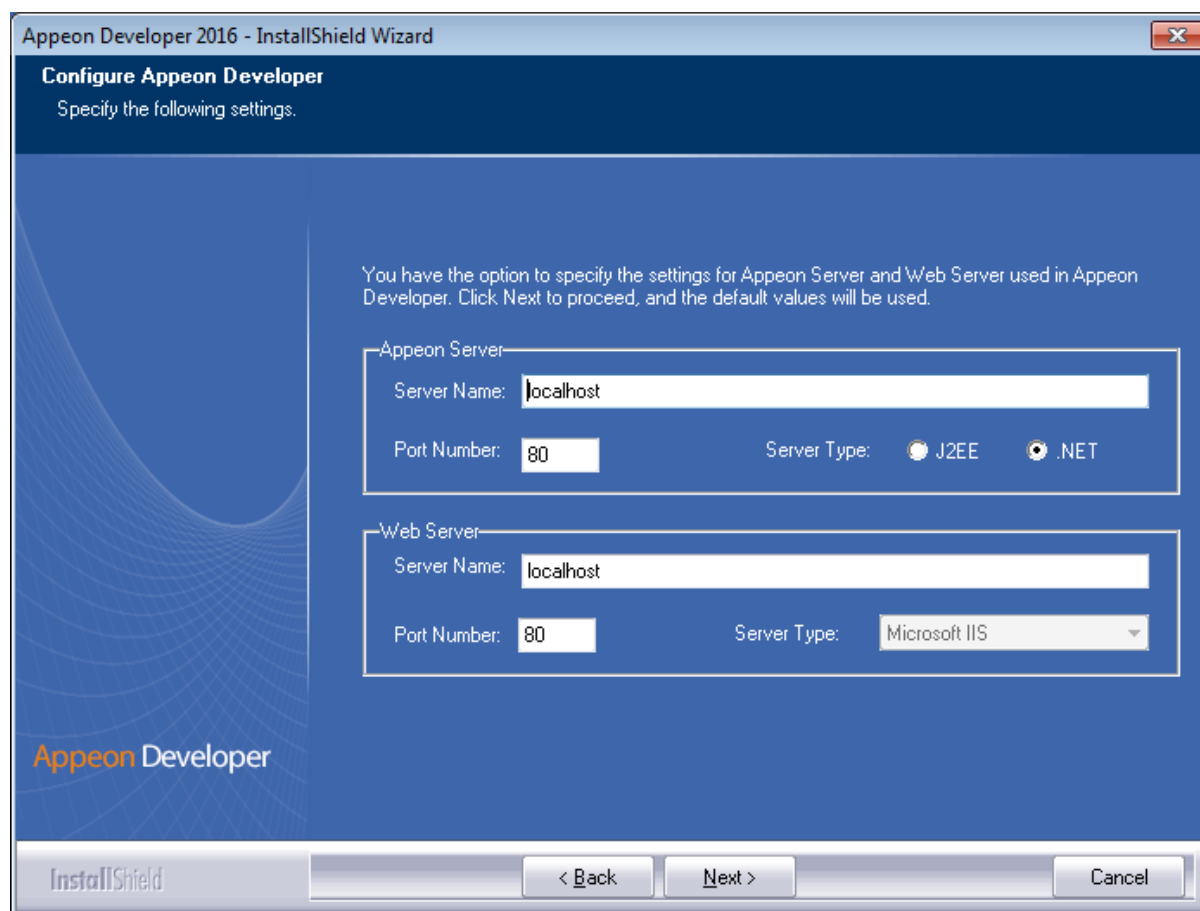
**Figure 4.50: PowerBuilder IDE**

Step 4: Specify the server name and port number for Appeon Server and Web server used in Appeon Developer. Click **Next**.

If you want to use an Appeon Server that has been already installed to the same machine where Appeon Developer is being installed, use the default values. If you want to use a remote Appeon Server, specify the server name and port number of the remote server. The setup program can automatically configure the **Server Profile** and **Deployment Profile** in the **Appeon Developer Configuration** window for the specified servers.

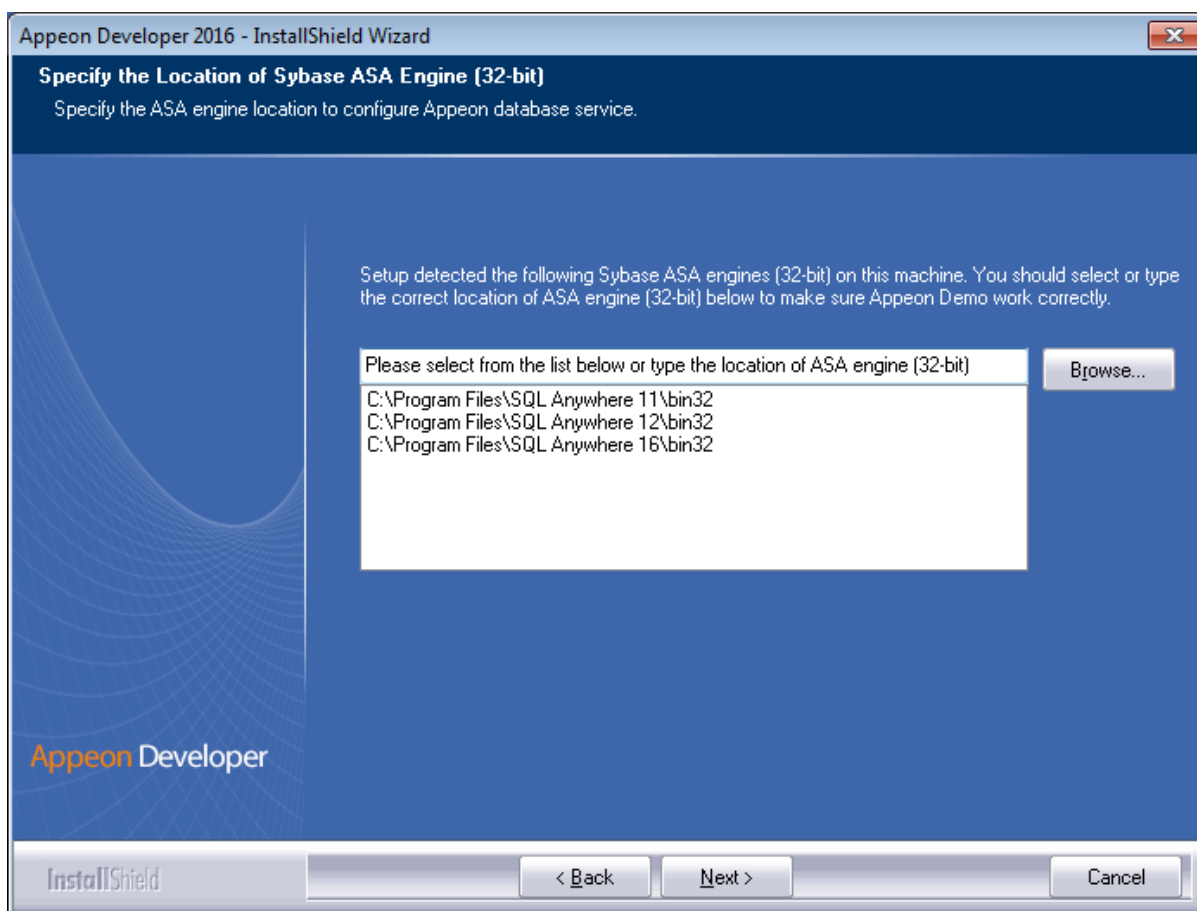
You can change these settings in the **Configure** tool of Appeon Developer after the installation when necessary. For detailed instructions, refer to Section 4.2.3, “Managing server profiles” in *Appeon Developer User Guide*.



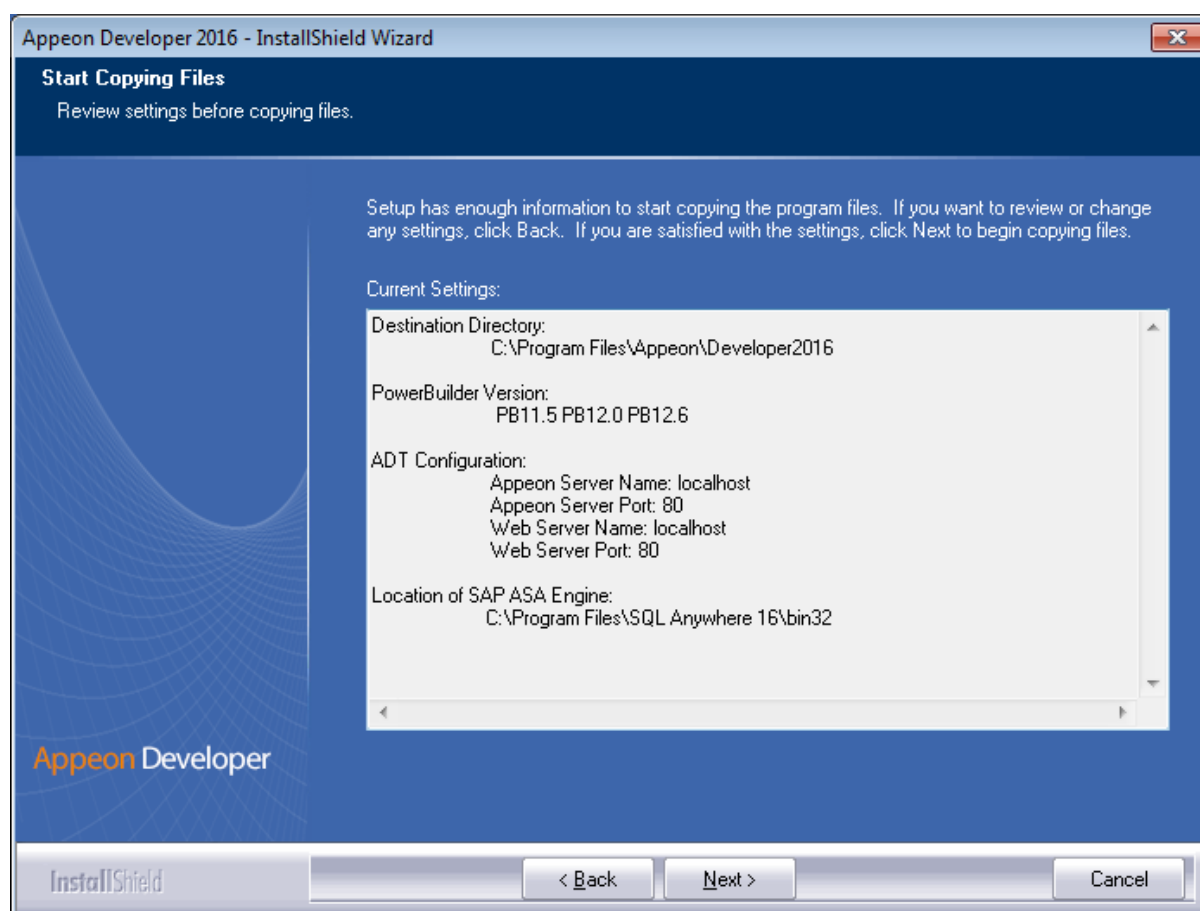
**Figure 4.51: Configure Appeon Developer**

Step 5: Select the location of SAP SQL Anywhere engine (32-bit) for running Appeon Demos.

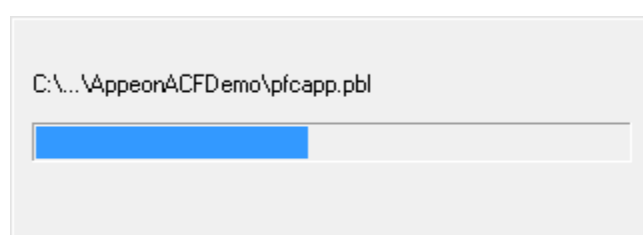
As Appeon Demos connect with a 32-bit SAP SQL Anywhere database, therefore, you will need to select a 32-bit SAP SQL Anywhere engine. Setup lists all copies of 32-bit SAP SQL Anywhere engines detected in your machine.

**Figure 4.52: SQL Anywhere for Appeon Demo**

Step 6: Check the summary of settings.

**Figure 4.53: Summary of settings**

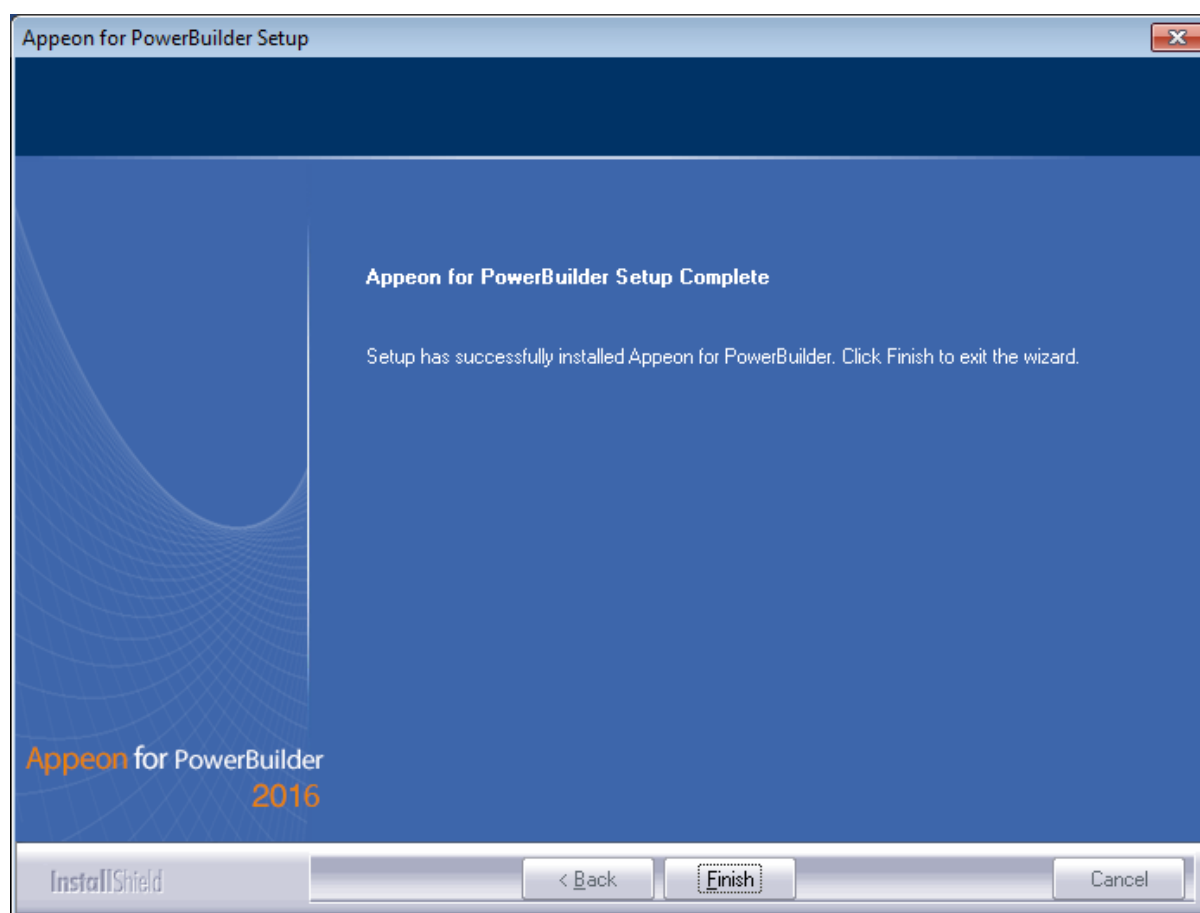
Click **Back** to change any unwanted settings or click **Next** and Setup will begin copying files.

**Figure 4.54: Appeon Developer installation progress**

During the installation process of Appeon Developer, the **Microsoft Visual C++ Redistributable Package** will be automatically installed, to support the running of Appeon Emulator in Appeon Developer.

Step 7: Wait until the installation is complete.

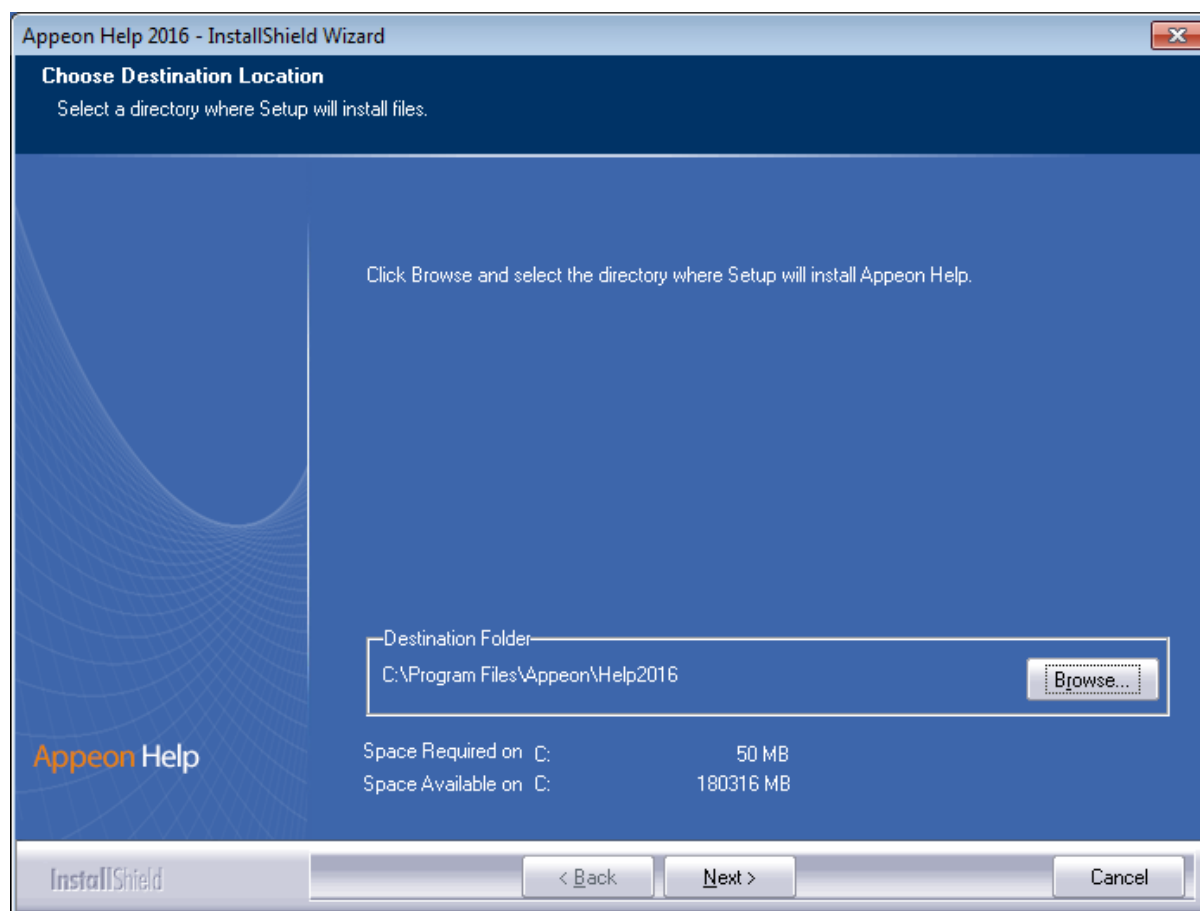
Step 8: Click **Finish** to exit.

**Figure 4.55: Setup complete**

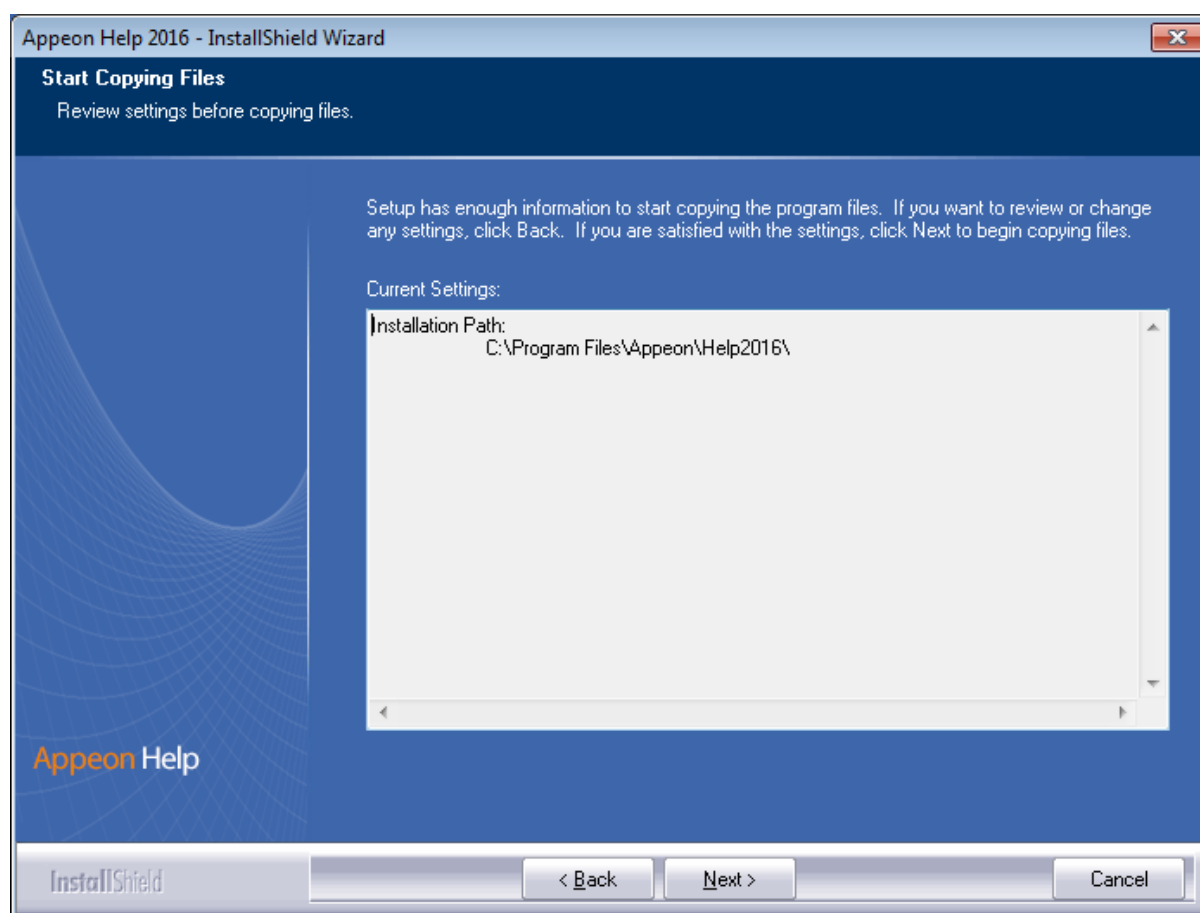
#### 4.4.4 Appeon Help installation

Step 1: Launch the **Appeon for PowerBuilder 2016 Setup** program and select to install **Appeon Help** (see [Starting the installation](#)).

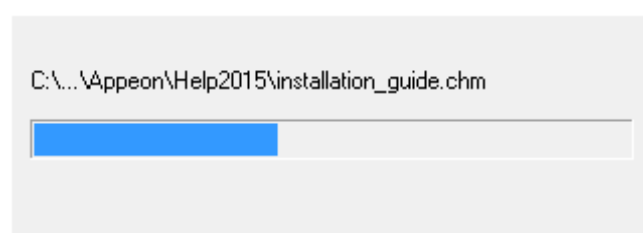
Step 2: Click **Next** to install Appeon Help to the default location, or click **Browse** to select another location.

**Figure 4.56: Help location**

Step 3: Check the summary of settings.

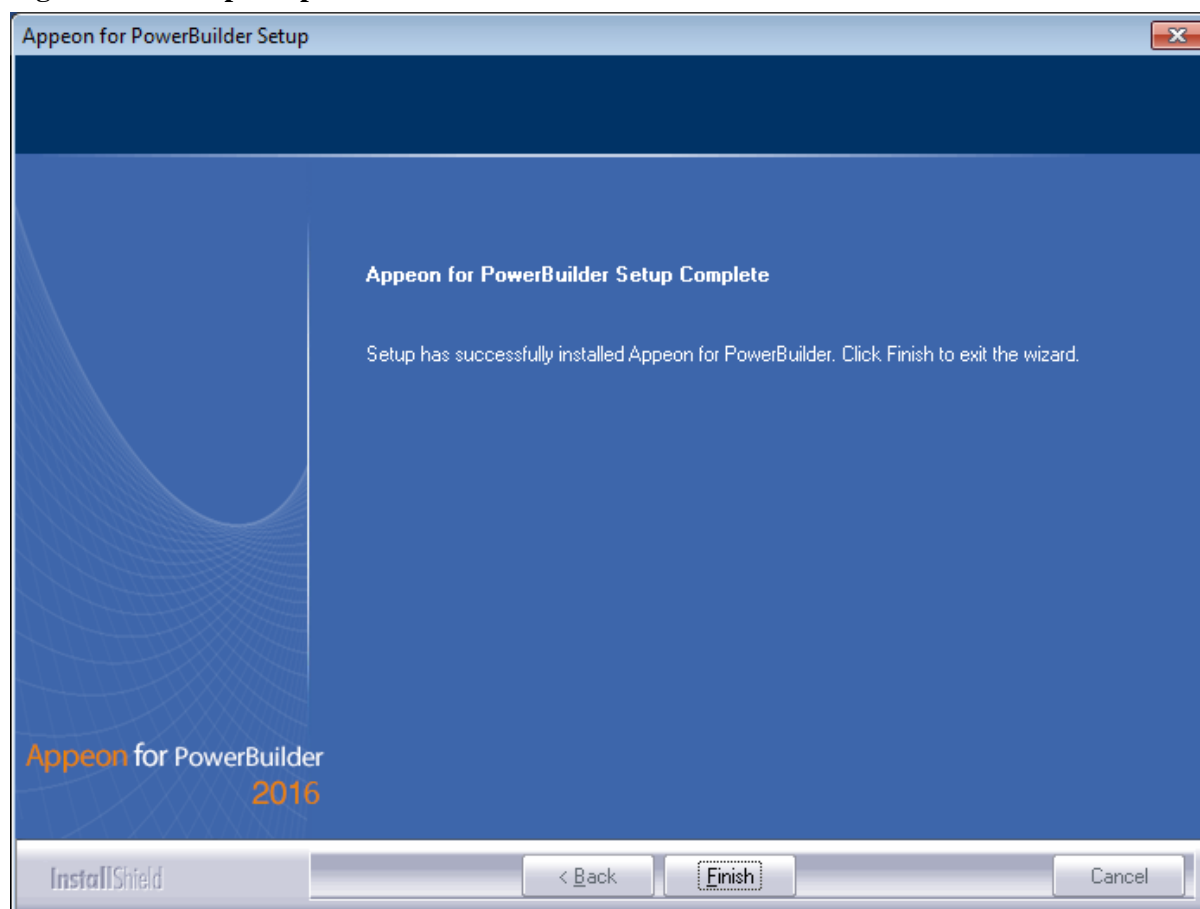
**Figure 4.57: Summary of settings**

Click **Back** to change any unwanted settings or click **Next** and Setup will begin copying files.

**Figure 4.58: Appeon Help installation process**

Step 4: Wait until the installation is complete.

Step 5: Click **Finish** to exit when the installation is complete.

**Figure 4.59: Setup complete**

#### 4.4.5 Appeon Server Web Component installation (for remote Web servers only)

If you set up an individual machine (separate from the application server) as the remote Web server, you will need to install the Appeon Server Web Component. If not, you do not need to run the installation of the Appeon Server Web Component separately since it is included in Appeon Server.

##### 4.4.5.1 Prerequisites

- Install IIS 6.0, 7.0, 7.5, 8.0, or 10 on Windows Server 2012 R2, 2008 R2, or 2003.
- Shut down the IIS service and any other Windows programs before beginning the installation process.

##### 4.4.5.1.1 Prerequisites if Web Component installed to multiple Web servers

Appeon Server Web Component can be installed to multiple remote Web servers. Make sure all remote Web servers meet the above requirements and repeat the installation steps for the Appeon Server Web Component on each Web server.

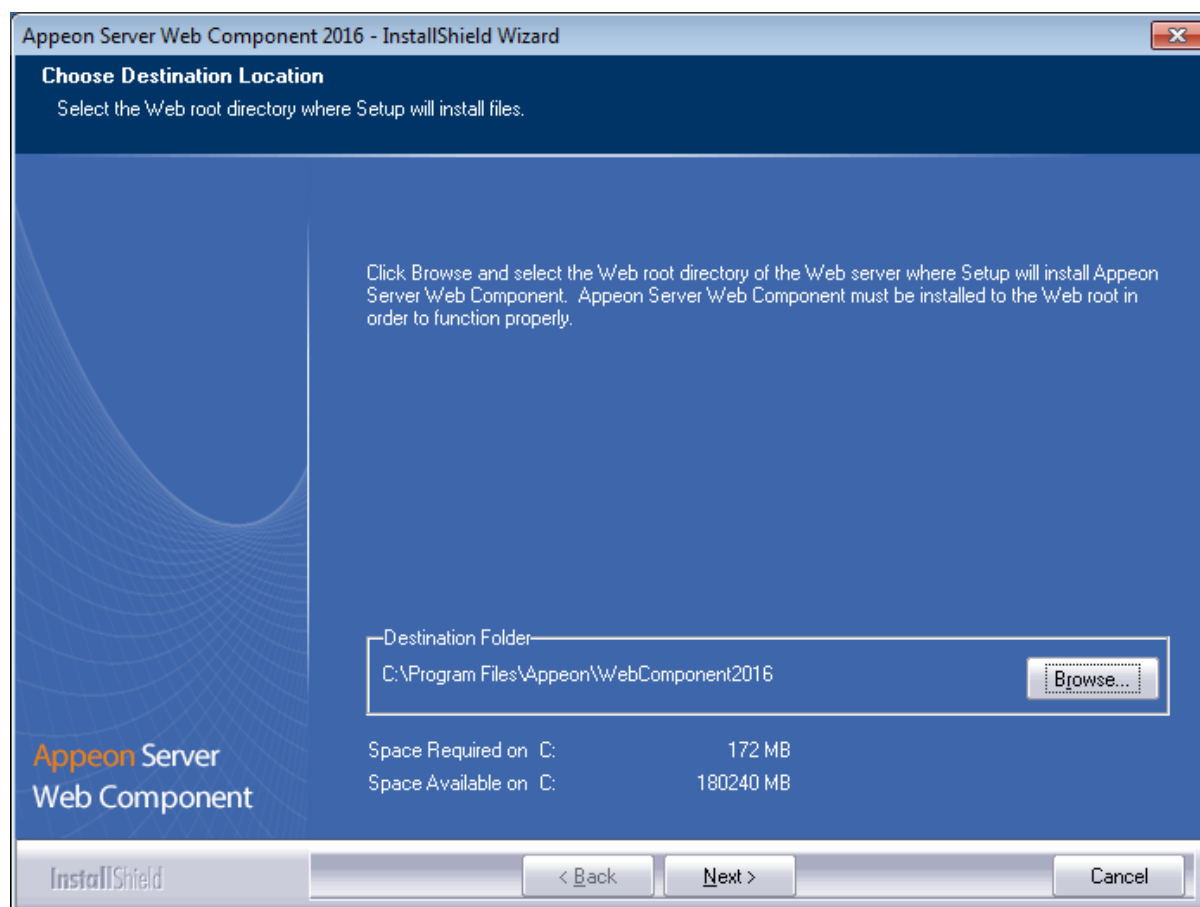
##### 4.4.5.2 Installation instructions

Step 1: Launch the **Appeon for PowerBuilder 2016 Setup** program and select to install **Appeon Server Web Component** (see [Starting the installation](#)).

Step 2: Click **Browse** to select the Web root for the IIS Web server (for example, "C:\Inetpub\wwwroot") or use the default installation path.

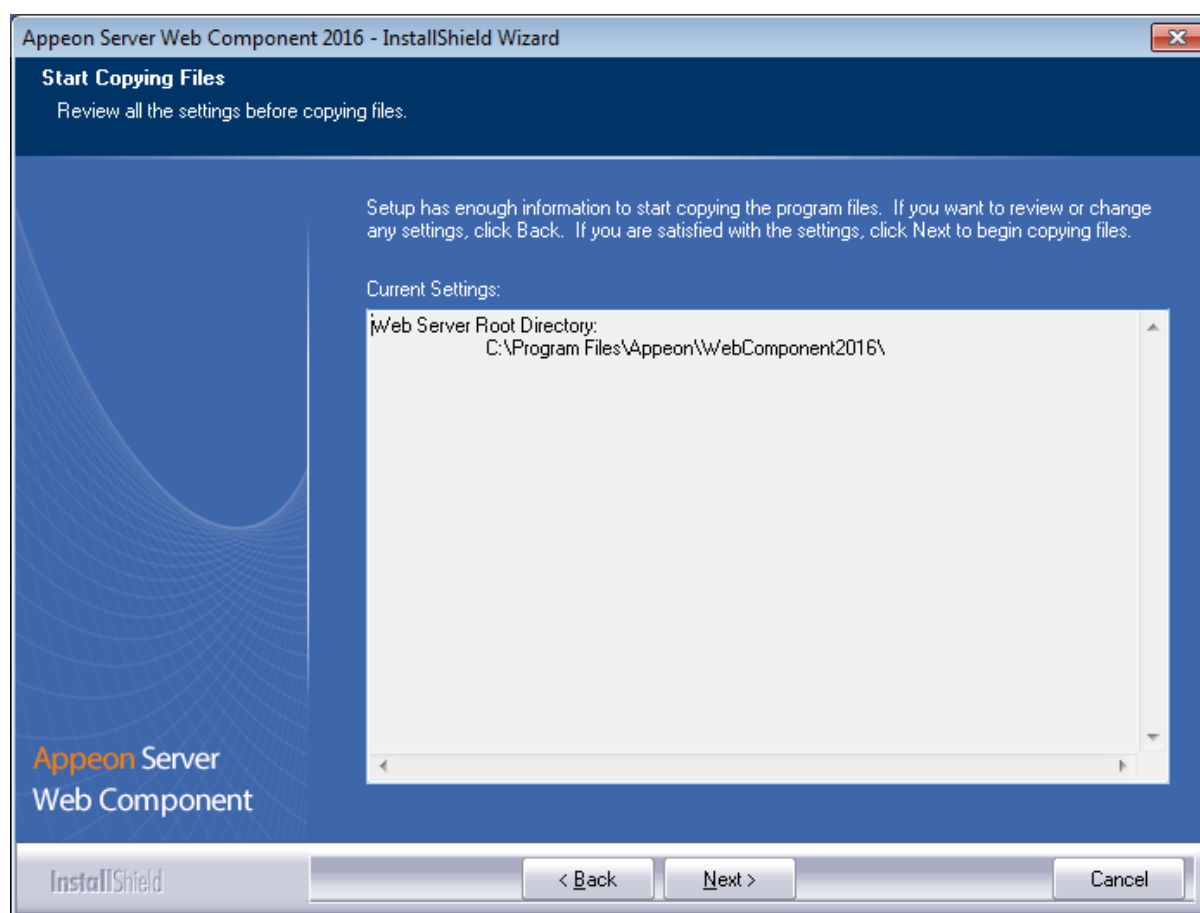
If Appeon Server Web Component is installed to the default path: "C:\Program Files\Appeon\WebComponent2016", you would need to manually copy it to the IIS Web root later in order to run the Appeon application.

**Figure 4.60: Appeon Server Web Component location**

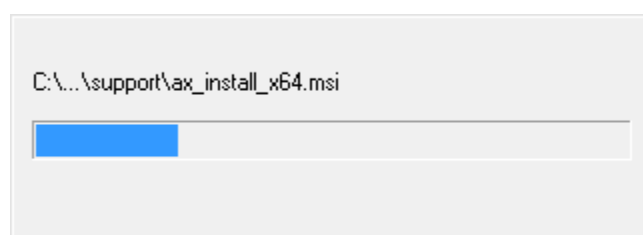


Step 3: Check the summary of settings.

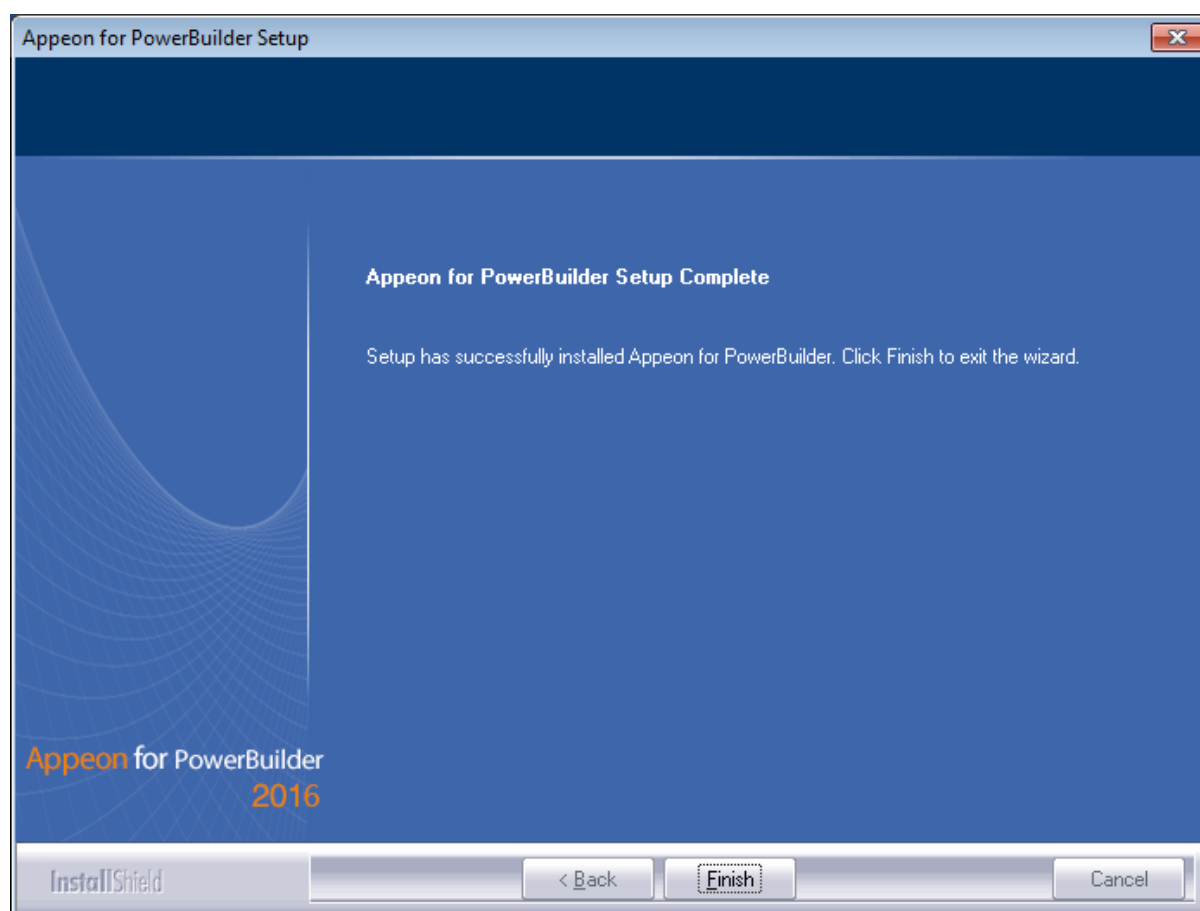


**Figure 4.61: Summary of settings**

Click **Back** to change any unwanted settings or click **Next** and Setup will begin copying files.

**Figure 4.62: Appeon Server Web Component installation progress**

Step 4: Click **Finish** when the installation is complete.

**Figure 4.63: Setup Complete**

#### 4.4.5.2.1 Installing and configuring Appeon plug-in

To ensure the remote Web server works with Appeon Server, install and configure the Appeon plug-in for the Web server. Instructions for installing and configuring the Appeon plug-in are provided in Web Server Configuration Guide.

## 4.5 Appeon upgrade installation

### 4.5.1 Before you upgrade

If you have installed Appeon 6.5 or a later version, you can upgrade to Appeon for PowerBuilder 2016, but you cannot upgrade from Appeon 6.2 or an earlier version. If you are using Appeon 6.2 or an earlier version, uninstall it and then install Appeon for PowerBuilder 2016.

Note that applications deployed with the old version and the demo applications must be redeployed with Appeon for PowerBuilder 2016 after the upgrade.

Before upgrading to Appeon for PowerBuilder 2016, upgrade the system environment as required in [Installation requirements](#).

In addition to the system environment requirements, you should meet the installation prerequisites listed in [Appeon new installation](#) before upgrading each Appeon component.

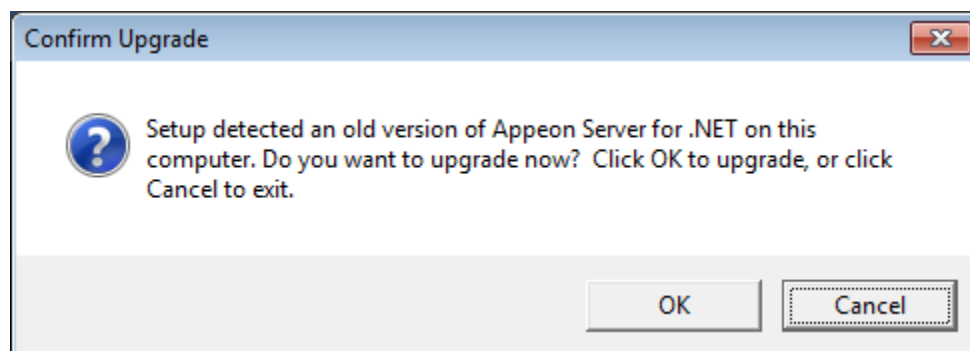
## 4.5.2 Upgrading to Appeon for PowerBuilder 2016

### 4.5.2.1 Upgrading Appeon Server

Step 1: Launch the **Appeon for PowerBuilder 2016 Setup** program and select to install **Appeon Server for .NET** (see [Starting the installation](#)).

Step 2: Click the **OK** button in the **Confirm Upgrade** message box.

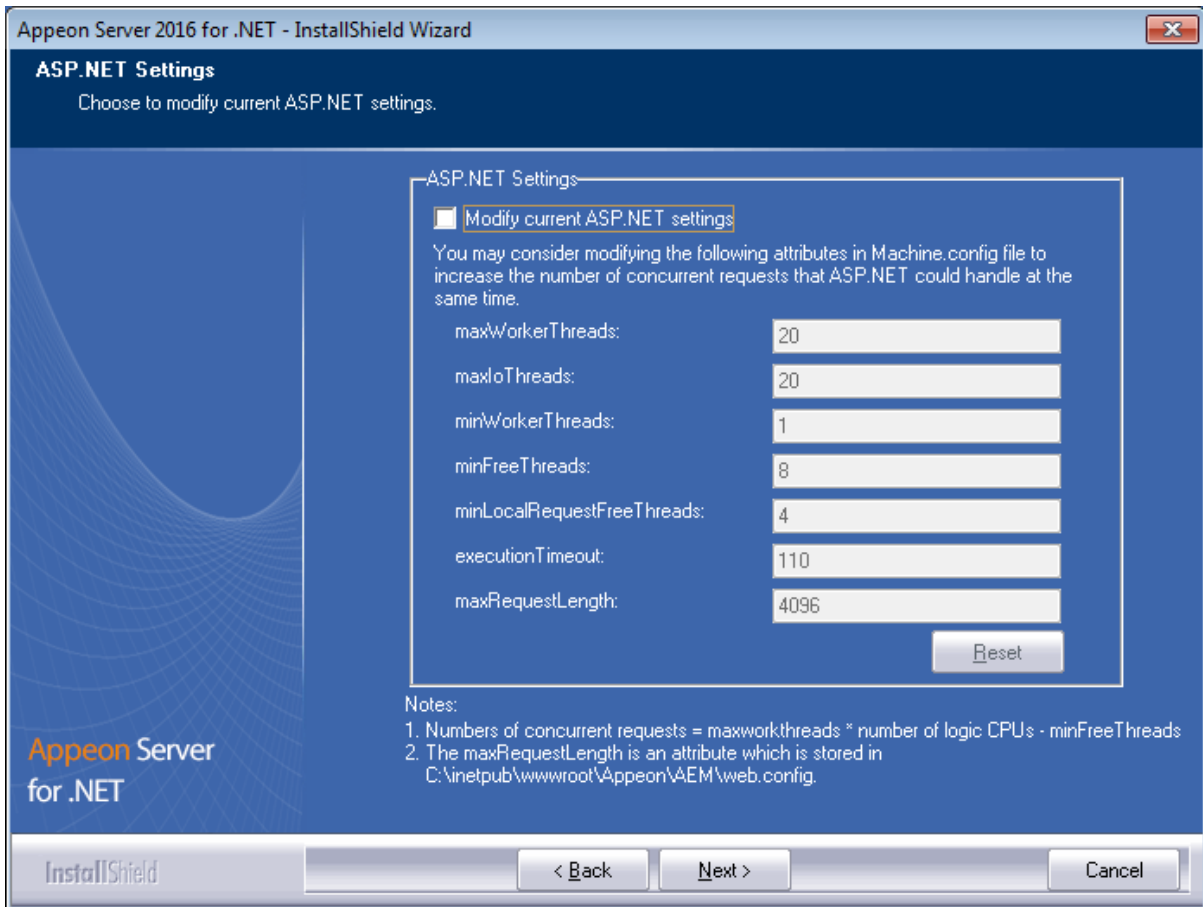
**Figure 4.64: Confirm upgrade**



Step 3: Specify the settings for ASP.NET when necessary, and then click **Next**.

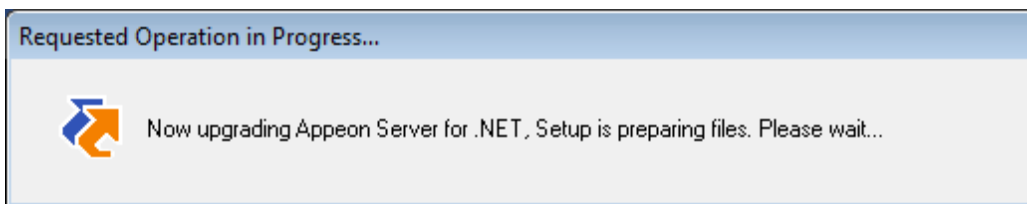
Select the **Modify current ASP.NET settings** checkbox and then modify the attribute values; or click **Reset** to restore the default values. These values are used to determine the maximum number of concurrent users that Appeon Server can support, therefore, setting proper values can help improve the Appeon Server performance. For detailed instructions, refer to Section 3.5.2, “Microsoft IIS server” in *Appeon Performance Tuning Guide*.

**Figure 4.65: ASP .NET settings**



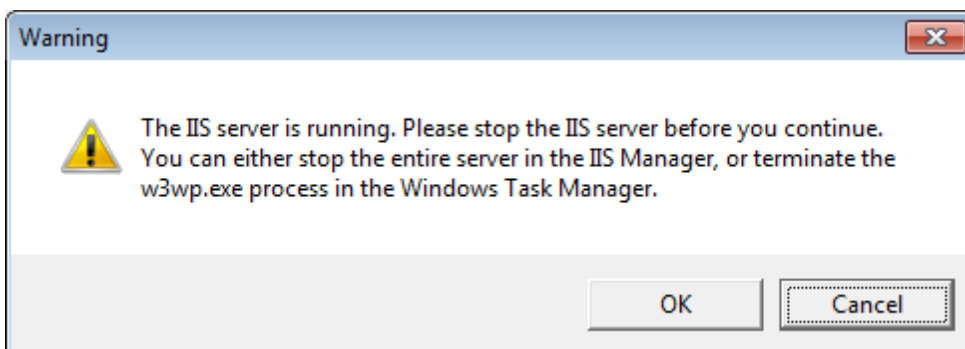
When the **Next** button is clicked, a message box opens indicating that the upgrade is preparing files.

**Figure 4.66: Setup is preparing files**



Before the upgrade process starts, if the setup program detects that IIS server is running, a warning message will pop up reminding you to stop it, as shown in the following figure.

**Figure 4.67: Check Task Manager**

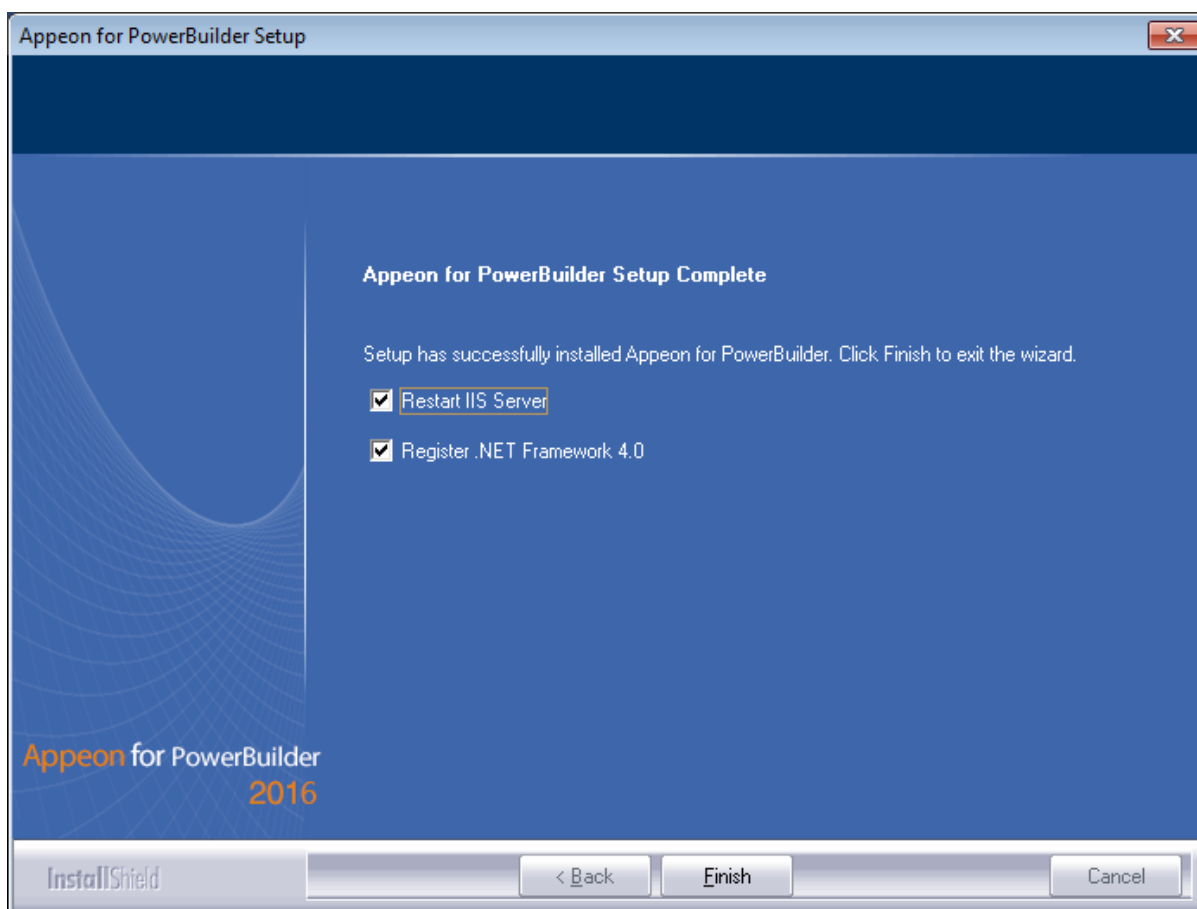


The upgrade process uninstalls the old version of Appeon Server (including Appeon Server instances if any), backs up configurations and begins the installation of **Appeon Server** (including Appeon Server instances if any) based on the backup information. This will take several minutes.

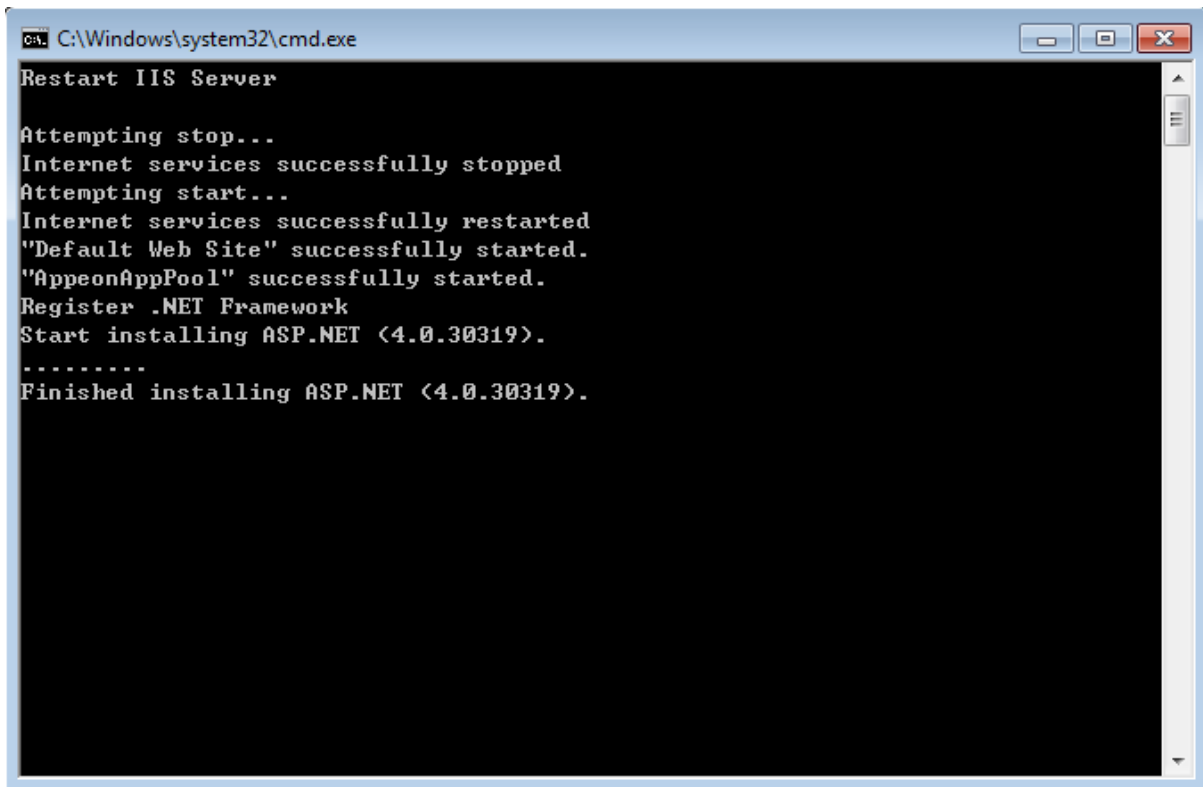
Step 4: When setup is complete, click **Finish** to complete the installation of Appeon Server.

It is recommended that you keep **Restart IIS Server** and **Register .NET Framework 4.0** selected when clicking **Finish**.

**Figure 4.68: Setup is complete**



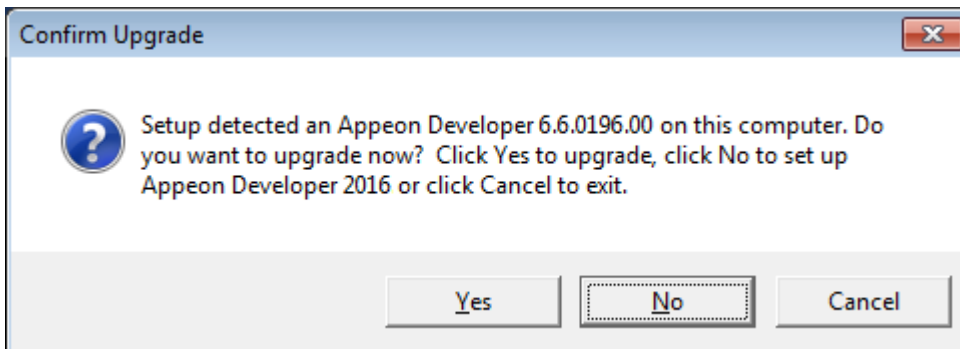
The setup program will restart the IIS server and then register .NET Framework, as shown in the following figure.

**Figure 4.69: Register .NET Framework**

#### 4.5.2.2 Upgrading Appeon Developer

Step 1: Launch the **Appeon for PowerBuilder 2016 Setup** program and select to install **Appeon Developer** (see [Starting the installation](#)).

Step 2: Click the **Yes** button in the **Confirm Upgrade** message box.

**Figure 4.70: Confirm upgrade**

Once you click the **Yes** button, a message box opens indicating that Setup is preparing files.

**Figure 4.71: Setup is preparing files**

The upgrade process uninstalls the old version of Appeon Developer, backs up configurations then begins the installation of **Appeon Developer** based on the backup information. This will take several minutes.

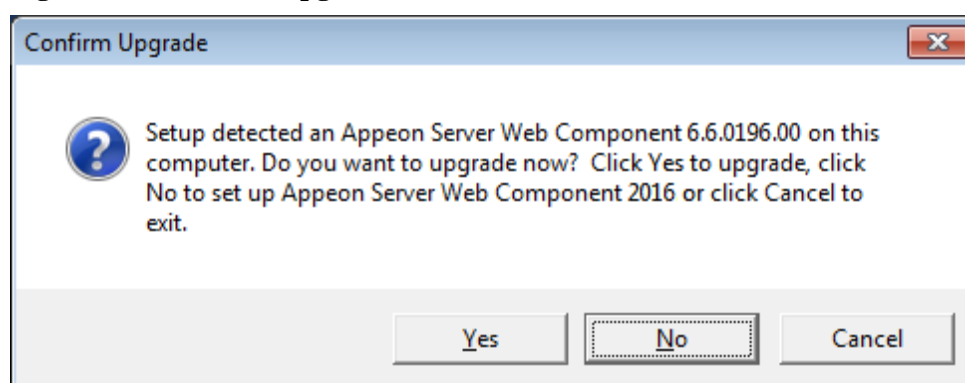
Step 3: Click the **Finish** button when the upgrade is complete.

#### 4.5.2.3 Upgrading Appeon Server Web Component

Step 1: Launch the **Appeon for PowerBuilder 2016 Setup** program and select to install **Appeon Server Web Component** (see [Starting the installation](#)).

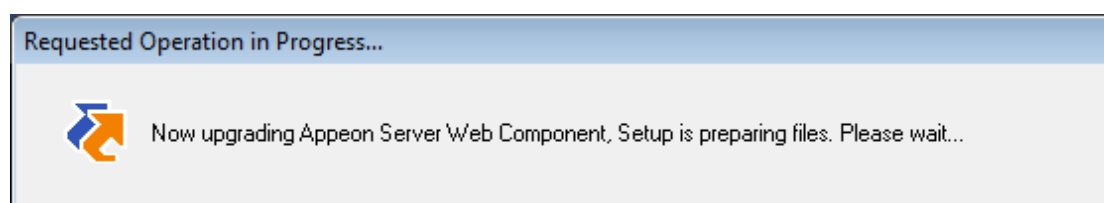
Step 2: Click the **Yes** button in the **Confirm Upgrade** message box.

**Figure 4.72: Confirm upgrade**



Once you click the **Yes** button, a message box opens indicating that Setup is preparing files.

**Figure 4.73: Setup is preparing files**



The upgrade process uninstalls the old version of Appeon Server Web Component then begins the installation of **Appeon Server Web Component**. This will take several minutes.

Step 3: Click the **Finish** button when the upgrade is complete.

#### 4.5.3 Upgrade configuration settings manually

After the product upgrade, most configurations made in the old version are retained and will continue to work in Appeon for PowerBuilder 2016. However, because the configuration settings of Appeon for PowerBuilder 2016 have been adjusted, it is recommended that you review the configuration settings in Appeon Developer and Appeon Server AEM to become familiar with the new settings and make sure the old ones are not lost or mis-configured.

After verifying all settings, Appeon applications deployed with the old version and Appeon Demos must be redeployed in Appeon for PowerBuilder 2016.

Note: If the application uses Appeon Workarounds PBL, you must use the new Appeon Workarounds PBL to replace those of the old version.

### 4.5.3.1 Settings lost in upgrade (for Appeon Demos)

- The Data Source settings in AEM.

You need to manually create the following data sources: **appeonsample** and **appeonsample2**. The **appeonsample** data source connects to `appeonsampleforserver` ASA/SQL Anywhere ODBC data source, and the **appeonsample2** data source connects to `appeonsample2forserver` ASA/SQL Anywhere ODBC data source.

- The transaction object settings in AEM.

You need to manually map transaction object(s) to data source, mainly, map `sqlca` to `appeonsample`. For `appeon_code_examples`, you also need to map `its_sql` to `appeonsample` and `its_sqt` to `appeonsample2`.

## 4.6 Troubleshoot Appeon installation problems

Chapter 1, *Troubleshooting Appeon Install in Troubleshooting* provides solutions to some common problems with installing Appeon for PowerBuilder. If you could not find a solution for your problem, it could be because it is a new problem or an intricate problem that happens only under specific circumstance or environment. In both cases, it is highly recommended that you follow steps below to generate and send the log file to us for investigation.

Step 1: Go to the **Appeon** folder in the installation package, open the **Product.ini** file in the text editor, find the **RecordDllLog** parameter in this file and set the value to **1** (this will enable the logging functionality), by default the value is 0 (which disables logging).

For example:

```
[DllLog]
RecordDllLog=1
```

Step 2: Run the installation package and reproduce the installation error.

Step 3: Go to `...\System32\AppeonInstallLog` (or `...\SystemWOW64\AppeonInstallLog` in 64-bit machine) and find the log files there.

Each Appeon component will have a separate log file, for example, `AppeonADT2014.txt` for Appeon Developer, `AppeonDNS2014.txt` for Appeon Server.



## 5 Configuring Appeon Server Cluster

Appeon provides its own tools and plug-ins to configure an Appeon Server cluster and implement the load balancing and failover functionalities. An Appeon Server cluster is essentially a group of IIS servers, each with Appeon Server and Appeon plug-in installed.

Following are high level steps for configuring an Appeon Server cluster. For detailed instructions, please refer to Chapter 6, *Tutorial 5: Configure Appeon Server Cluster* in *Appeon Mobile Tutorials (Mobile only)*. The instructions are exactly the same for Appeon Web and Appeon Mobile.

1. Install **Appeon Server** to multiple IIS servers.
2. Create **Appeon Server cluster** in AEM.
3. Configure the **Web server** for the Appeon Server cluster.
4. Install an Appeon application to the Appeon Server cluster and Web server(s).

## 6 Post-Installation Configuration Tasks

### 6.1 Overview

The previous chapters provide instructions on how to set up Appeon system architecture, including installing Appeon for PowerBuilder components, as well as configuring Appeon Server cluster. Once the Appeon system is set up and before you start deploying applications, the post-installation configuration tasks listed in the following table will help ensure that the deployed applications run as desired. Post-installation configuration tasks refer to configurations required for Appeon system architecture that affect the running of all applications but do not include configuration tasks performed in Appeon Developer and Appeon Enterprise Manager for specific applications.

**Table 6.1: Post-installation tasks**

Task	Description	Detailed Instructions Given in...
Configuration for the Web client PC	The IE security settings and Windows login user privileges may prevent downloading the Appeon Xcelerator plug-in for the Web application.	<a href="#">Configuration for client machine</a>
System language setting	Configuration required for the Web client, Appeon Server and database server.  The operating system language settings can affect the characters that are displayed in the Appeon Web application.	<a href="#">System language settings</a>
Configuration for supporting dynamic DataWindows	Configuration required for database server.  Configuration at the database server is required for support of dynamic DataWindows.	Section 11.5, “Dynamic DataWindow” in <i>Supported PB Features for Appeon Web (Web only)</i>
Configuration for fixing an ASE issue	Appeon provides several SQL files for you modifying the chain modes of stored procedures in ASE database to avoid the following error:  "Select error: Stored procedure... may be run only in unchained transaction mode"	Section 4.6.2, “ASE Chained mode issue” in <i>Troubleshooting</i>

### 6.2 Configuration for Web client PC

Running Appeon Web application on the client machine is dependent on the Appeon Xcelerator plug-in. To ensure (only for the first time) the Appeon Xcelerator plug-in can be downloaded and installed automatically when the application is run, the following configuration on the client machine is required.

For more information about the Appeon Xcelerator plug-in and the manual installation method, refer to Section 5.1.2, “Installing Appeon Xcelerator plug-in” in *Supported PB Features for Appeon Web (Web only)*.

## 6.2.1 Verifying Web browser settings

There are a few settings in the Web browser that may affect the running of the Appeon Web application, such as the JavaScript and the plug-in settings. By default, these settings are enabled (appropriate for running the Web application) in Edge/Chrome/Firefox/Opera except Internet Explorer. Normally you would not need to go through the following section if you use Edge/Chrome/Firefox/Opera, unless you encounter problems when running the Web application. However, if you use Internet Explorer, you are recommended to configure Internet Explorer according to the following section.

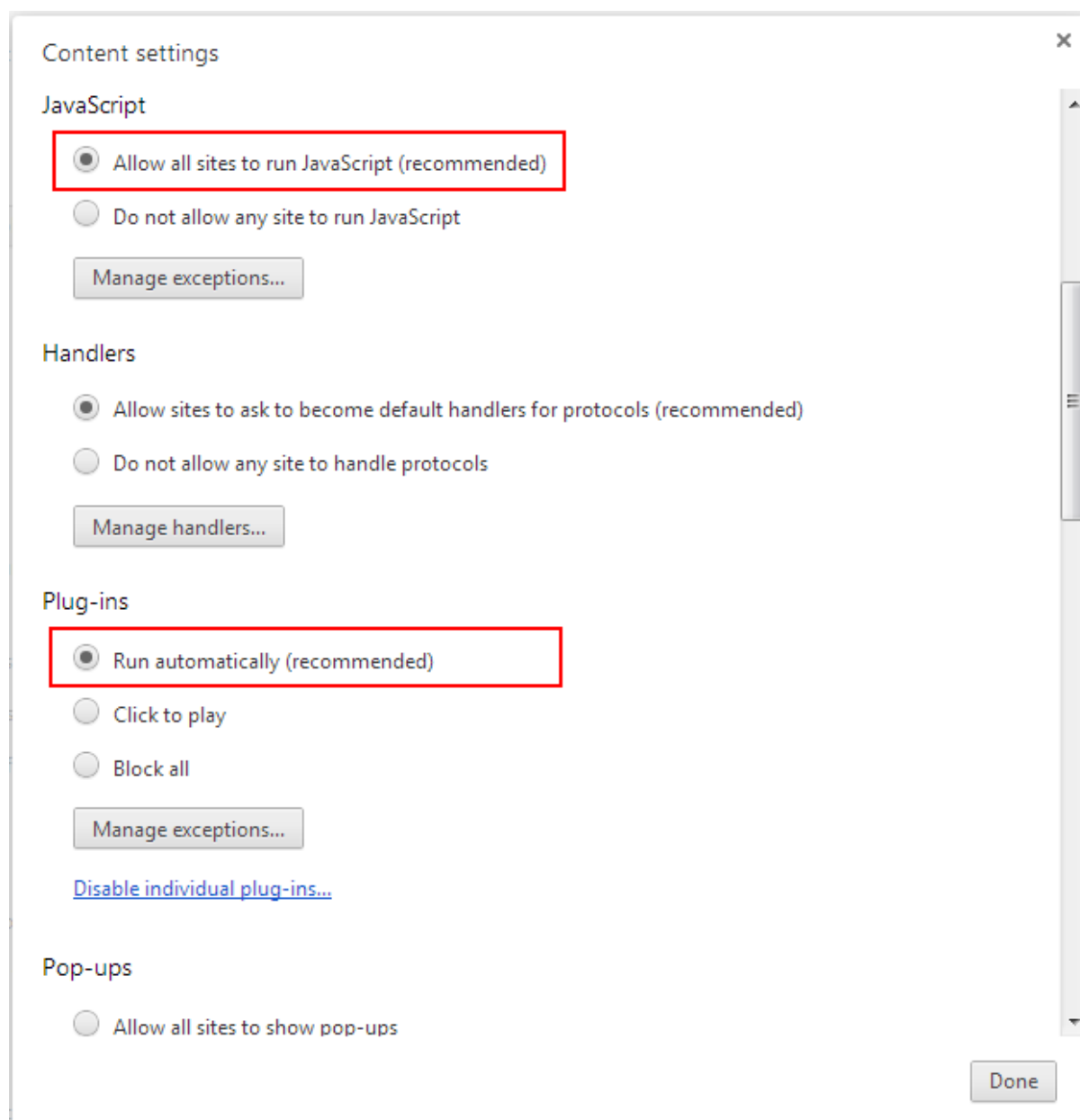
### 6.2.1.1 Verifying Chrome/Firefox/Opera settings

If you use Chrome/Firefox/Opera as the Web browser, you should be able to directly run the Appeon Web application in it without any problems, with the default settings of these browsers, however, if you encounter runtime problems, or if you have changed the default settings before, you are recommended to double check that the following two settings are enabled in the browser:

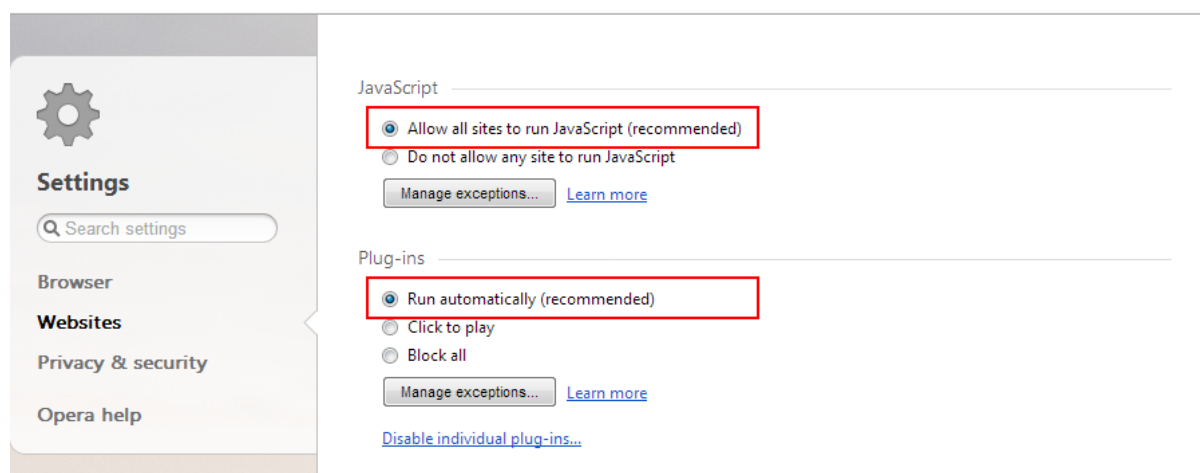
- Enable JavaScript
- Enable plug-in

For Firefox, these two settings are automatically enabled and cannot be changed manually. Therefore, you normally need not to verify the settings in Firefox.

For Chrome, go to **Settings**, then click the **Show advanced settings** link, then click the **Content Settings** button under **Privacy**, and then verify the settings are enabled. If you have to disable these two settings for some reason, then make sure you add the URL of the Appeon Web application to the exception list.

**Figure 6.1: Settings in Chrome**

For Opera, go to **Settings**, then select **Websites**, and then verify the settings are enabled. If you have to disable these two settings for some reason, then make sure you add the URL of the Apeon Web application to the exception list.

**Figure 6.2: Settings in Opera**

### 6.2.1.2 Configuring IE settings

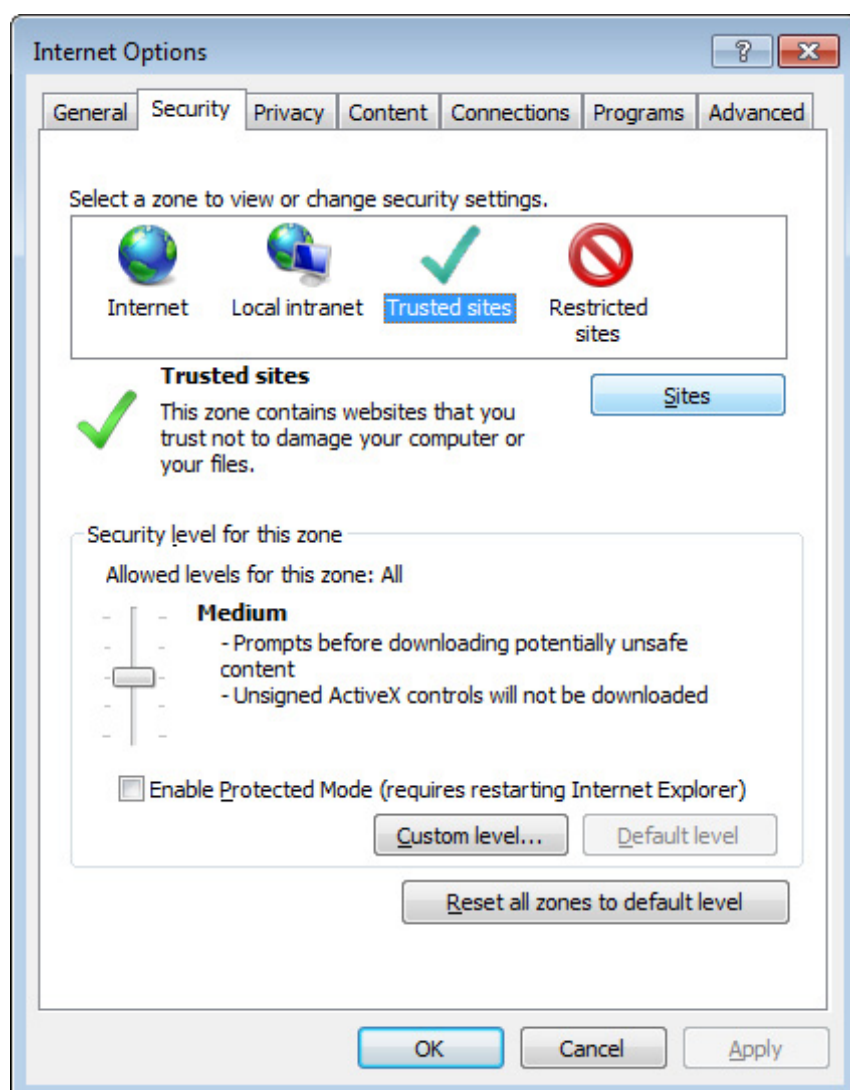
If you use Internet Explorer, we recommend you add the URL of the deployed application to the **Trusted Sites** zone in Internet Explorer, because the default security settings of this zone are appropriate for downloading and installing the Appeon Xcelerator plug-in. However, if you do not want to add the URL to the Trusted Sites zone, you will need to make sure the security settings (listed in Step 4 below) are enabled for the appropriate zone. The following are detailed steps to add the URL to the Trusted Sites zone.

Step 1: In Internet Explorer, on the **Tools** menu, click **Internet Options**.

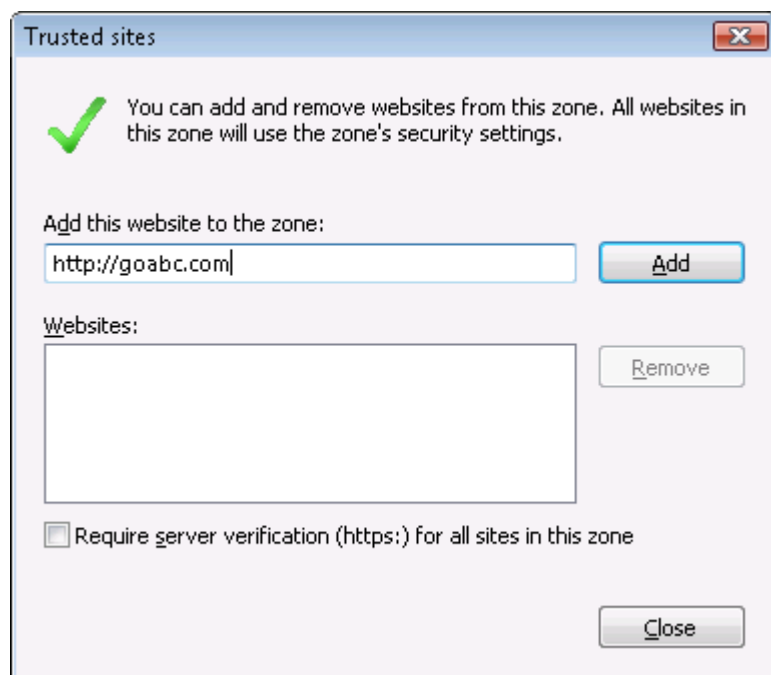
Step 2: In the Internet Options window, select the **Security** tab. Then select the **Trusted sites** Web content zone, and click the **Sites** button.

**Note:** **Enable Protected Mode** on the **Security** tab should not be selected (it is not selected by default). If there is any reason this option must be turned on, please make sure to follow the instructions in Section 4.1.3, "'Failed to get resource from Appeon Server' error" in *Troubleshooting* to resolve the issue caused by this option.

For IE 11, you should also make sure both "**Enable Enhanced Protected Mode**" and "**Enable 64-bit processes for Enhanced Protected Mode**" (the latter is available in Windows 8.1 only) are unchecked in the **Advanced** tab.

**Figure 6.3: IE security settings**

Step 3: In the Trusted sites window, input the URL of the deployed application to the "Add this website to the zone" box. Uncheck the checkbox of "Require server verification (https:) for all sites in this zone". Click **Add** then click **Close** to return to the Internet Options window.

**Figure 6.4: Trusted sites**

Step 4: Click **OK** to save the settings and close IE.

### 6.2.2 Logging in as administrator or normal user

No special privilege is required to download and install the Appeon Xcelerator plug-in, no matter you use Edge, Chrome, Firefox, Opera, or Internet Explorer, which means, you can log into the Windows OS with any user.

Note when running the Appeon Web application for the first time, the Web browser would prompt you to run the Appeon cross-browser plug-in with two options: "**only this time**" or "**always run for this site**". It is highly recommended that you select the "**always run for this site**" option, especially for Chrome, because the application will fail to run in Chrome if you select "**only this time**".

### 6.3 System language settings

Sometimes the Windows language settings can affect the characters displayed in the Appeon Web application. To avoid any such display issues, verify that:

- The language of the data in the database used by the application matches the Windows language settings on the machine where Appeon Server is installed.
- The language of the data in the database used by the application matches the Windows language settings on each Client machine where the Web application will be viewed.
- The language of the data in the database used by the Appeon-deployed Web application matches Windows language settings on the machine where Appeon Developer is installed.

To set the language settings in Windows:

Step 1: Open Windows Start Menu and select Settings | Control Panel.

Step 2: Double-click **Regional Options**.

Step 3: Select the appropriate language from the **Your locale** DropDownListBox.

Step 4: Click the **Set Default** button. The Select System Local window displays.

Step 5: Select the appropriate locale. Verify that it is the same as that selected in the **Your locale** list box in Regional Options.

Step 6: Click **OK** to return to the Regional Options window.

Step 7: Verify that the language selected in the **Your locale** 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.

Step 8: Click **Apply** and **OK** in the Regional Options window to accept the settings.



## 7 Uninstalling Appeon for PowerBuilder 2016

### 7.1 Overview

To uninstall Appeon for PowerBuilder 2016, uninstall each of its components separately. The uninstall process reverses the actions performed by the Appeon setup program. Uninstallation does not delete any user created files in Appeon, such as application files generated while deploying the demo applications or your own application to Appeon Server. Delete these files manually from the Web root.

Do not try to reverse installation steps or uninstall Appeon by deleting files manually or changing your Registry. This can create serious problems with your system in general and new Appeon releases in particular.

There are two ways to uninstall Appeon components:

- Launch the uninstall program of the Appeon component from Windows **Start** menu | **Programs** | **Appeon for PowerBuilder 2016**.
- Launch **Add/Remove Programs** from the Windows **Control Panel**. Select the Appeon component and click **Change/Remove** to begin the uninstall process.

### 7.2 Uninstalling Appeon Developer

Step 1: Shut down PowerBuilder and any other SAP software.

Step 2: Verify that Appeon Developer and other Windows programs have been shut down.

Open **Windows Task Manager**, switch to the **Process** tab and verify that the following processes are not running. If they are running, end them:

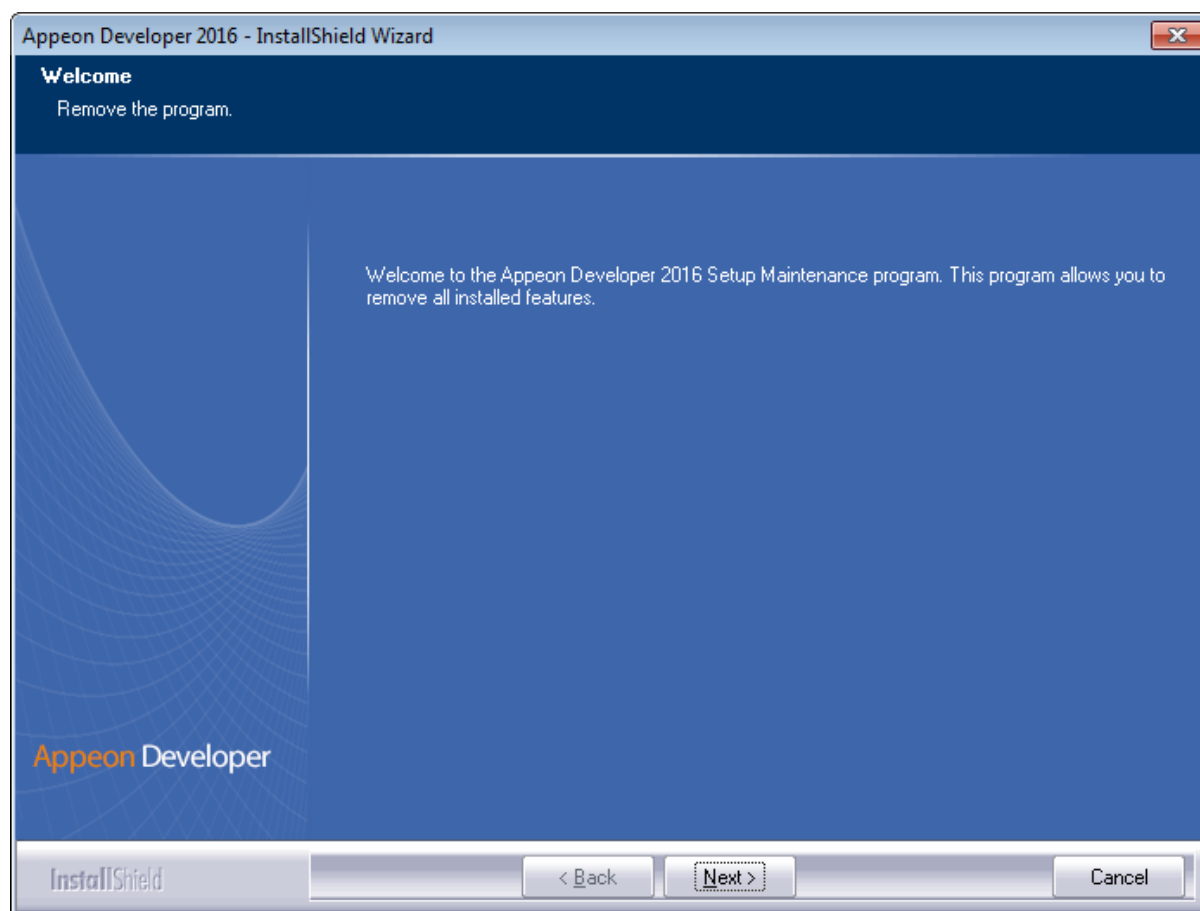
- EonADTxx.exe
- pbxxx.exe

If EonADTxx.exe is running when attempting to uninstall Appeon Developer, the Appeon setup program will detect that the processes are running and an error message will appear.

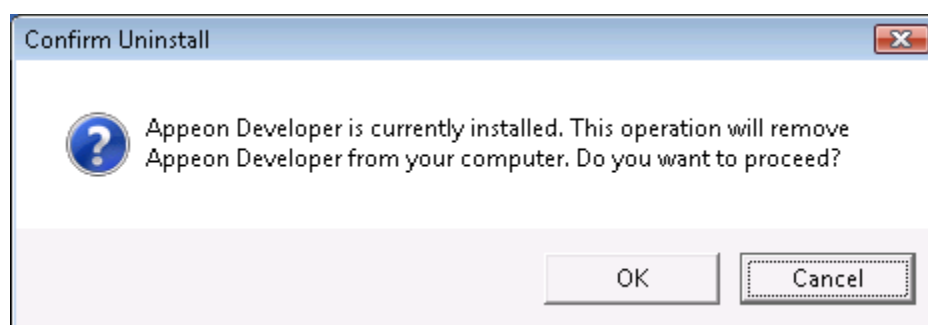
End the processes in the **Processes** tab of **Windows Task Manager** before clicking the **OK** button on the message box. If you click **OK** before ending the process, the message box will continue to display and will not allow you to continue until the processes are ended. In this case, click **Cancel** in the message box, end the process and begin the uninstall process again.

Step 3: Select Windows **Start** | **Control Panel**; under **Programs**, click **Uninstall a program**; select **Appeon Developer 2016** and click **Uninstall** to begin the uninstall process.

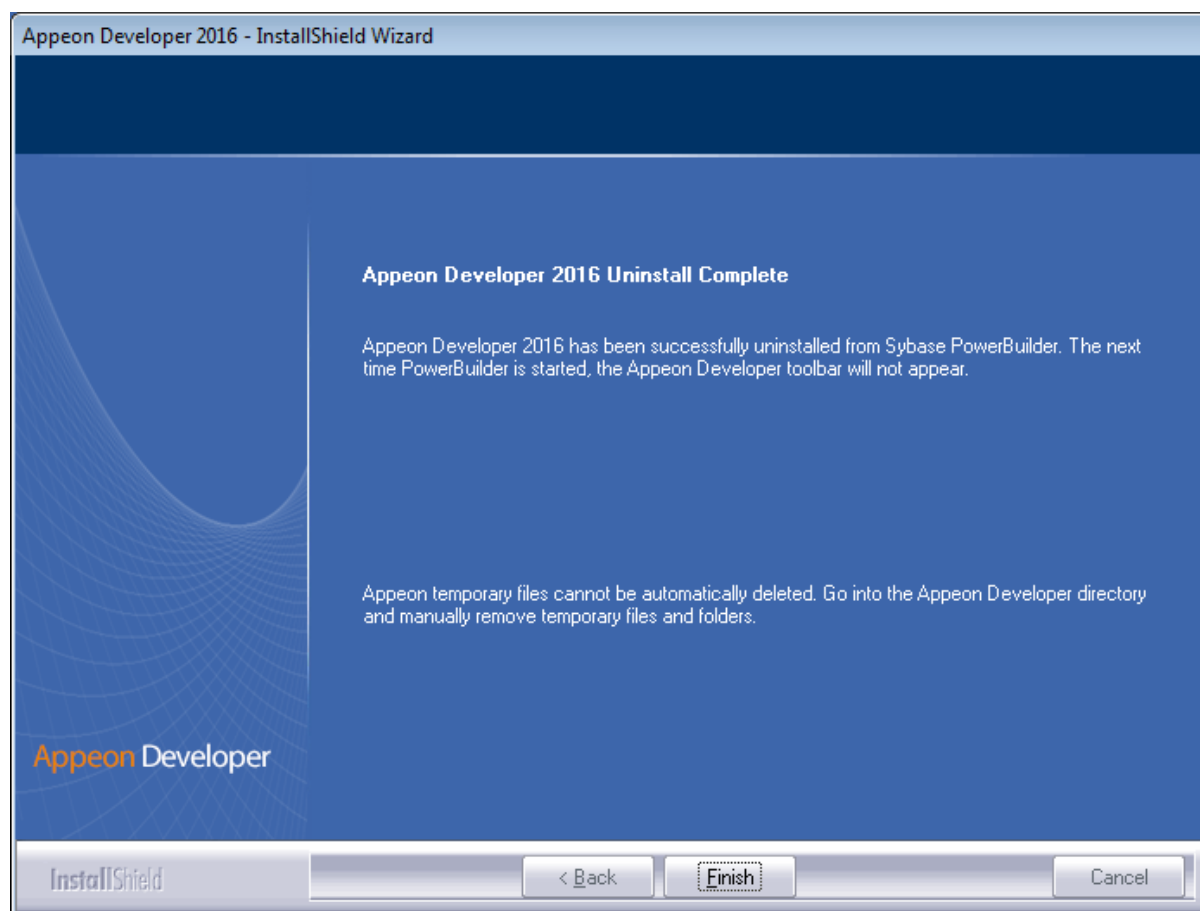
Step 4: Click **Next**.

**Figure 7.1: Remove Appeon Developer**

Step 5: Click **OK** to confirm the removal of Appeon Developer.

**Figure 7.2: Confirm uninstall**

Step 6: Click **Finish** when uninstall is complete.

**Figure 7.3: Appeon Developer uninstall complete**

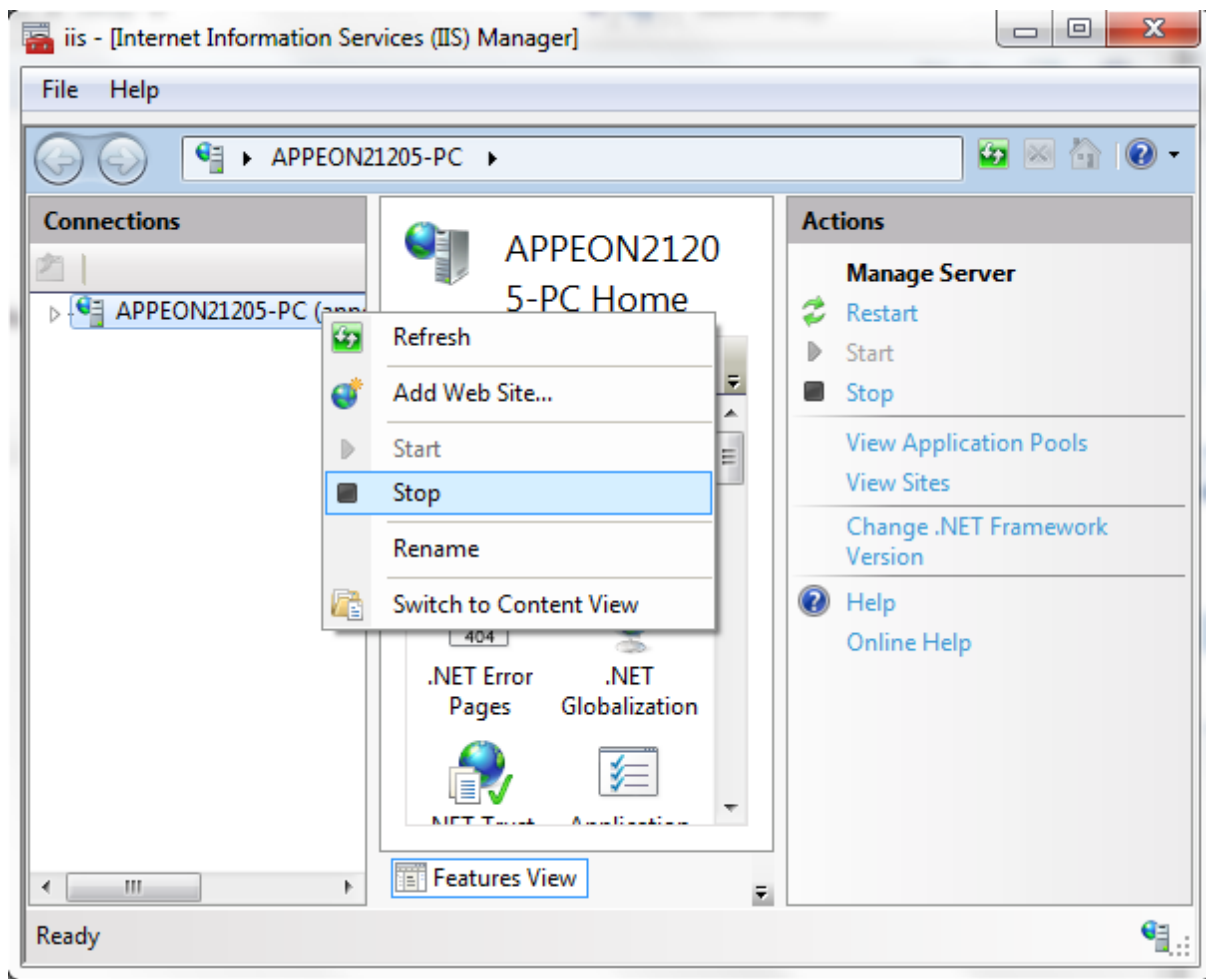
Step 7: Use Windows Explorer to manually delete the folder where Appeon Developer was installed. This will remove all Appeon Developer files that are not automatically uninstalled.

## 7.3 Uninstalling Appeon Server

Step 1: Shut down all Windows programs.

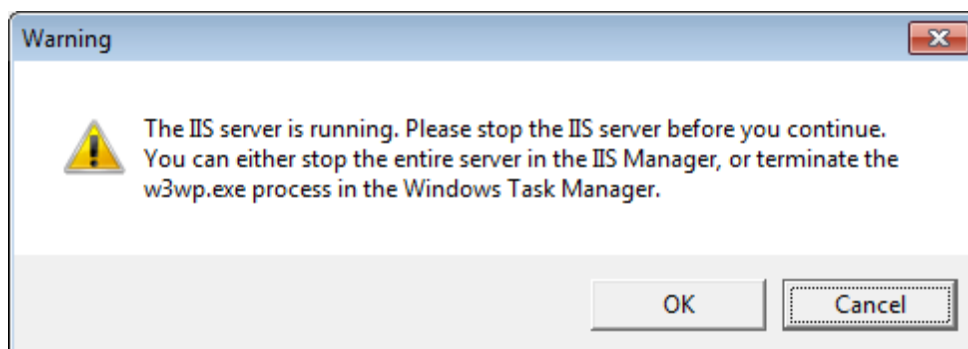
Step 2: Stop IIS server.

To stop the server in the IIS Manager, right click the **top** node (not the website node) in the left tree and select **Stop** from the popup menu. This will stop the entire IIS server, as shown in the following figure.

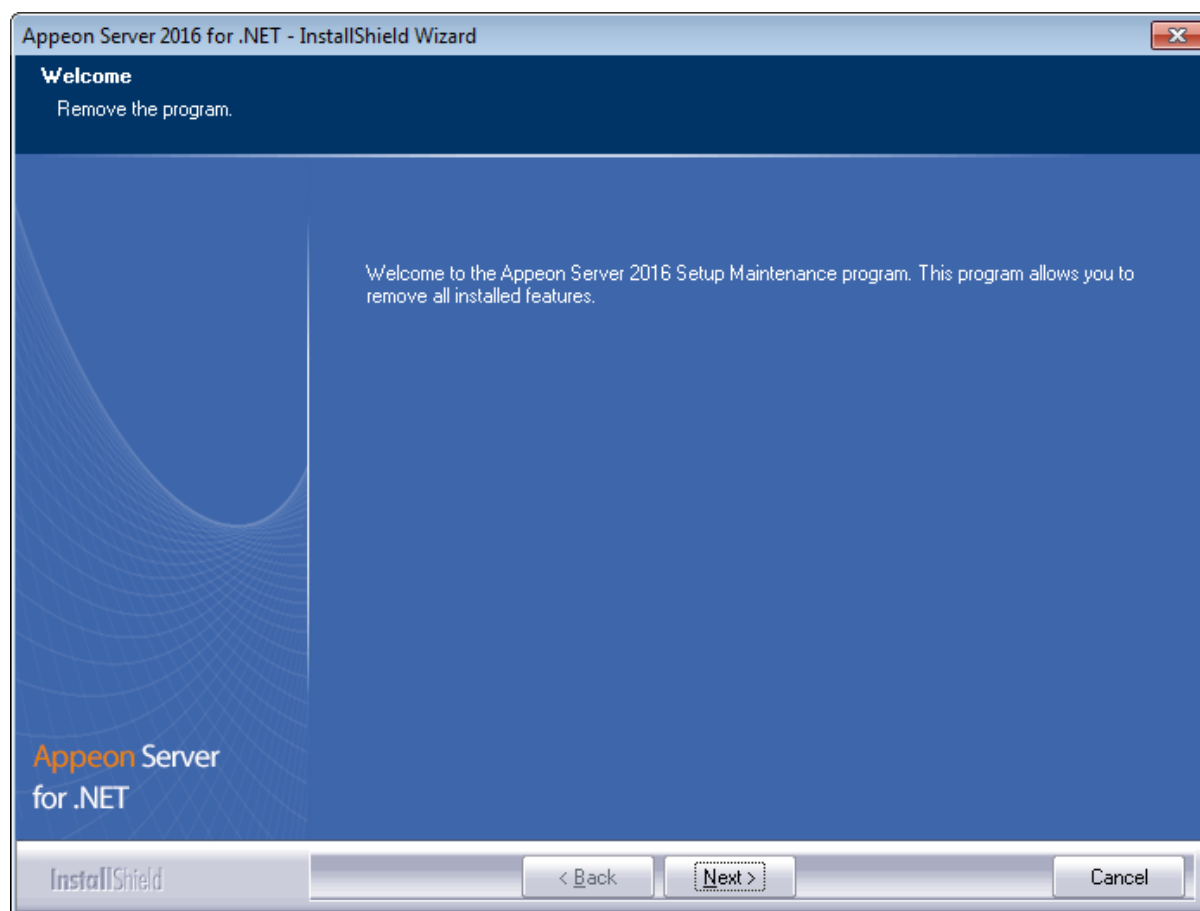
**Figure 7.4: Stop the server in IIS Manager**

Step 3: Select Windows **Start | Control Panel**; under **Programs**, click **Uninstall a program**; select **Appeon Server 2016 for .NET** and click **Uninstall** to begin the uninstall process.

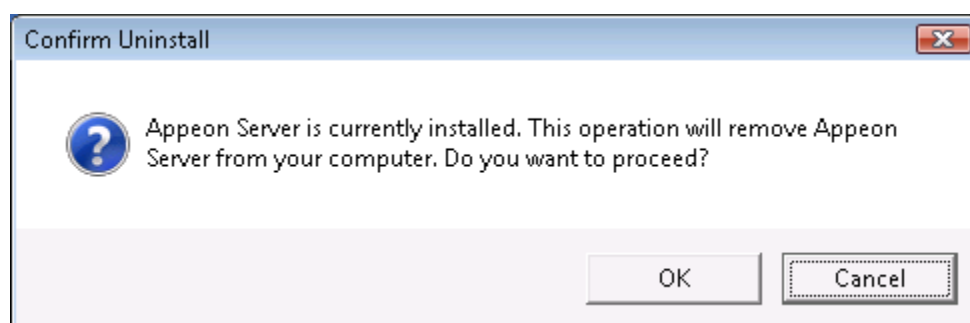
Before uninstall process starts, if the setup program detects that the IIS server is running, a warning message will pop up reminding you to terminate it, as shown in the following figure.

**Figure 7.5: Stop IIS server**

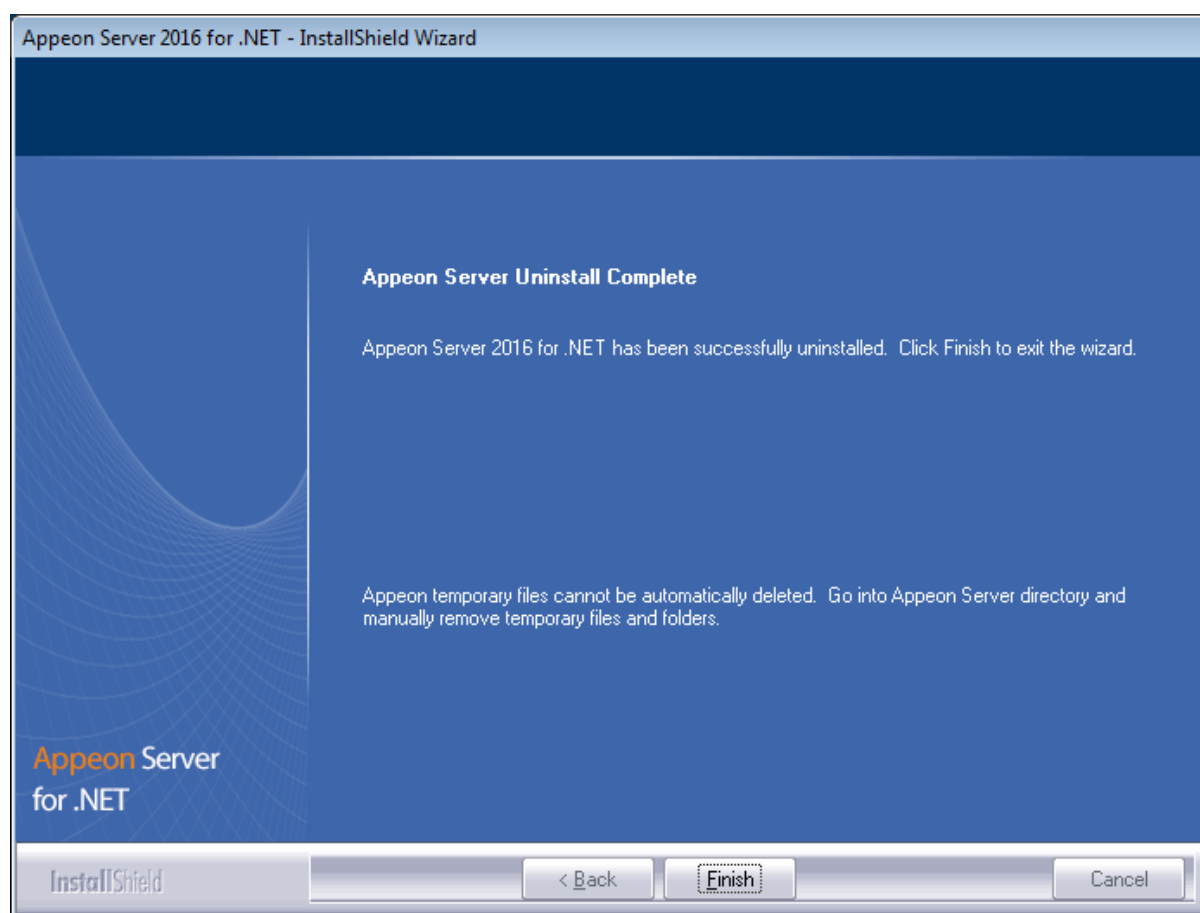
Step 4: Click **Next**.

**Figure 7.6: Remove Appeon Server**

Step 5: Click **OK** to confirm the removal of Appeon Server.

**Figure 7.7: Confirm uninstall**

Step 6: Click **Finish** to exit when uninstall is complete.

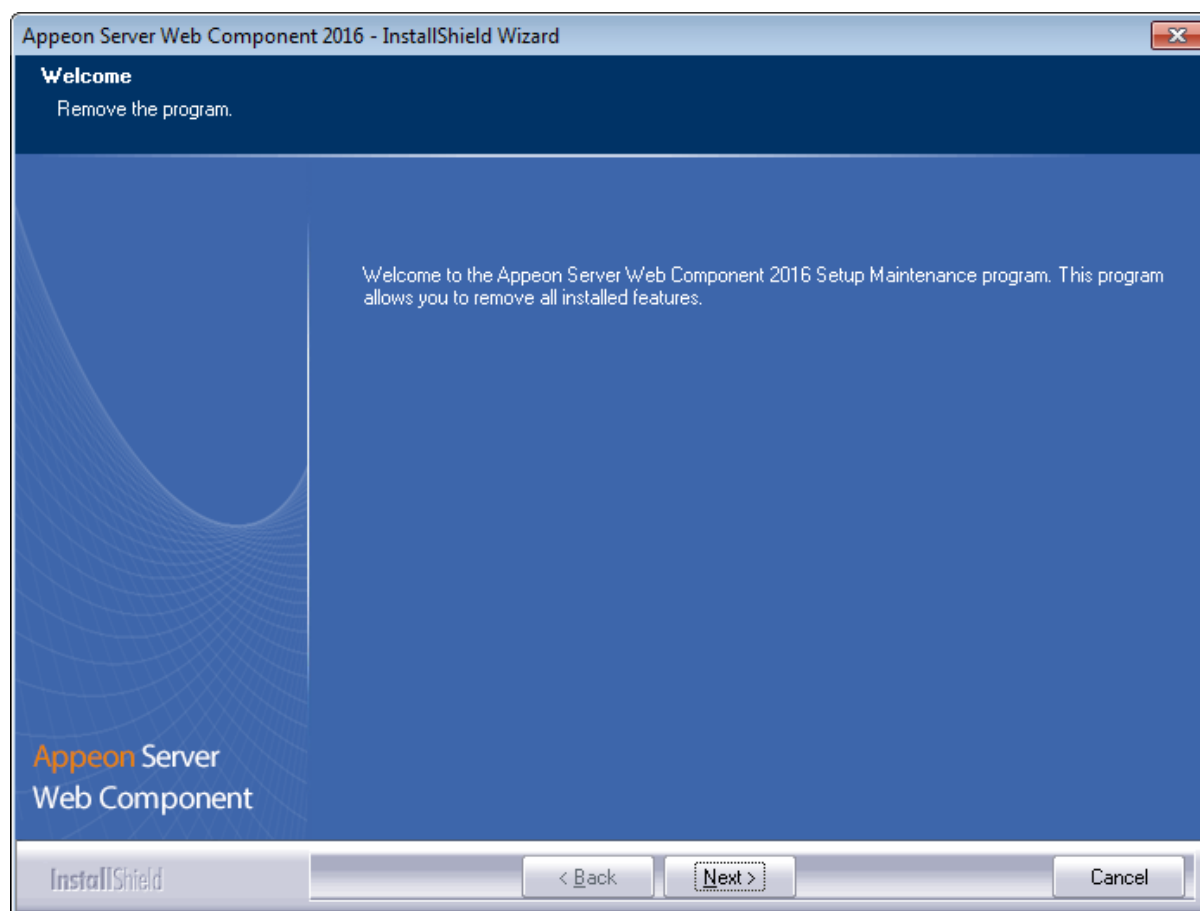
**Figure 7.8: Appeon Server uninstall complete**

## 7.4 Uninstalling Appeon Server Web Component (for remote Web servers only)

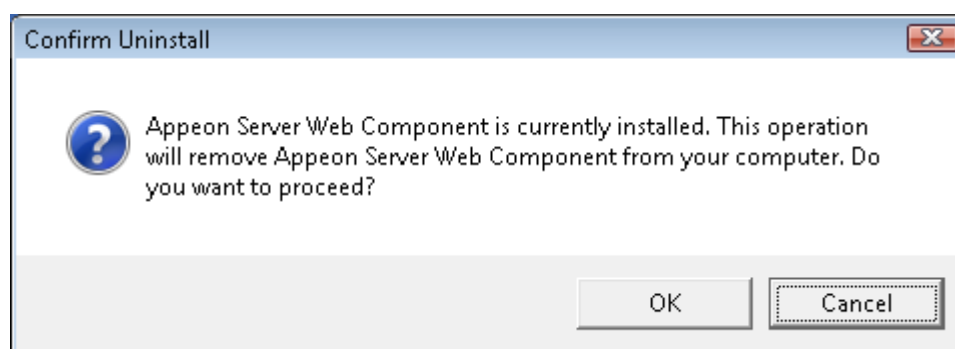
Step 1: Shut down all Windows programs as well as the IIS service.

Step 2: Select Windows **Start | Control Panel**; under **Programs**, click **Uninstall a program**; select **Appeon Server Web Component 2016** and click **Uninstall** to begin the uninstall process.

Step 3: Click **Next**.

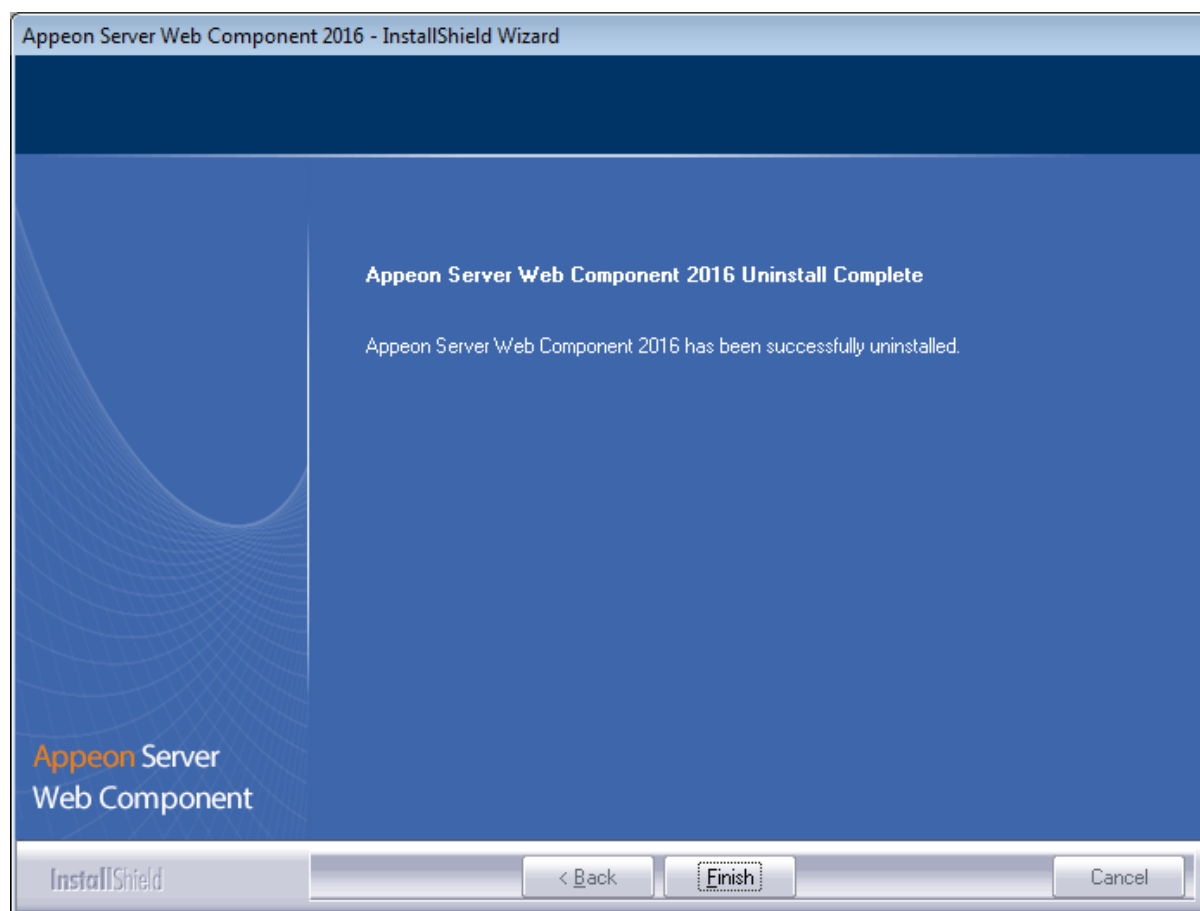
**Figure 7.9: Remove Appeon Server Web Component**

Step 4: Click **OK** to confirm the removal of Appeon Server Web Component.

**Figure 7.10: Confirm uninstall**

Step 5: Wait until uninstall is complete.

Step 6: Click **Finish** to exit.

**Figure 7.11: Appeon Server Web Component uninstall complete**

#### 7.4.1 Uninstalling Web Component if multiple remote Web servers are involved

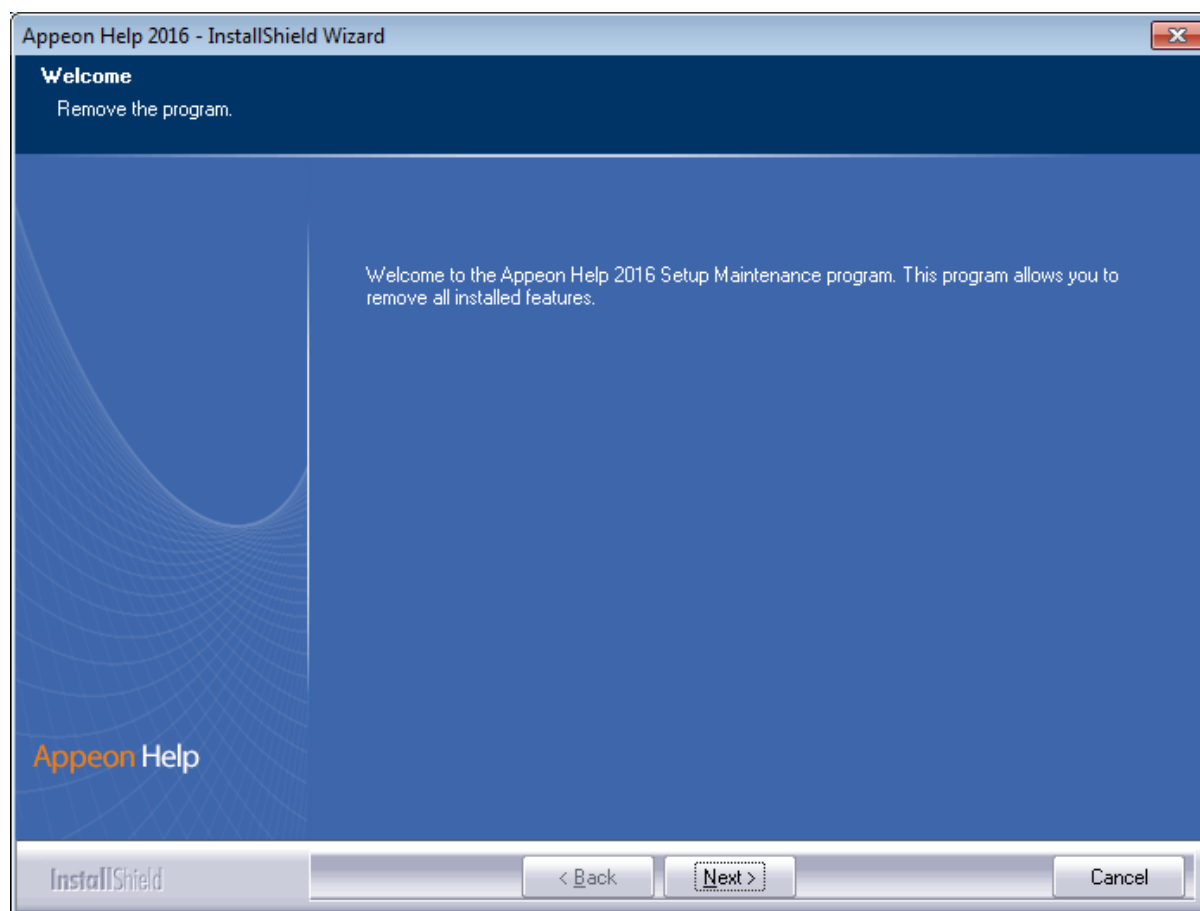
Repeat the Web Component uninstall steps for each remote Web server.

### 7.5 Uninstalling Appeon Help

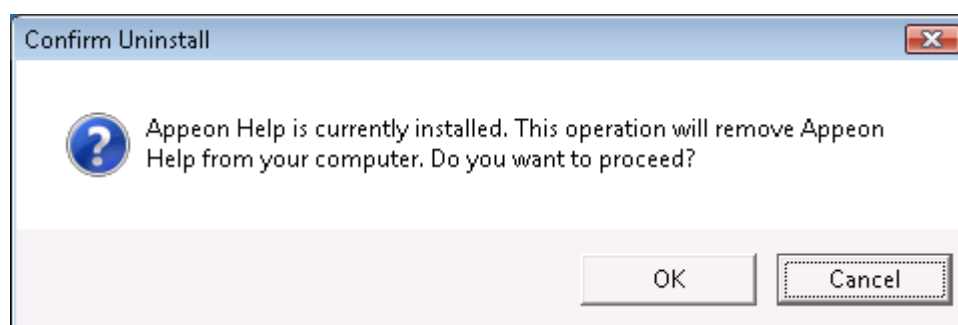
Step 1: Select Windows **Start | Control Panel**; under **Programs**, click **Uninstall a program**; select **Appeon Help 2016** and click **Uninstall** to begin the uninstall process.

Step 2: Click **Next**.



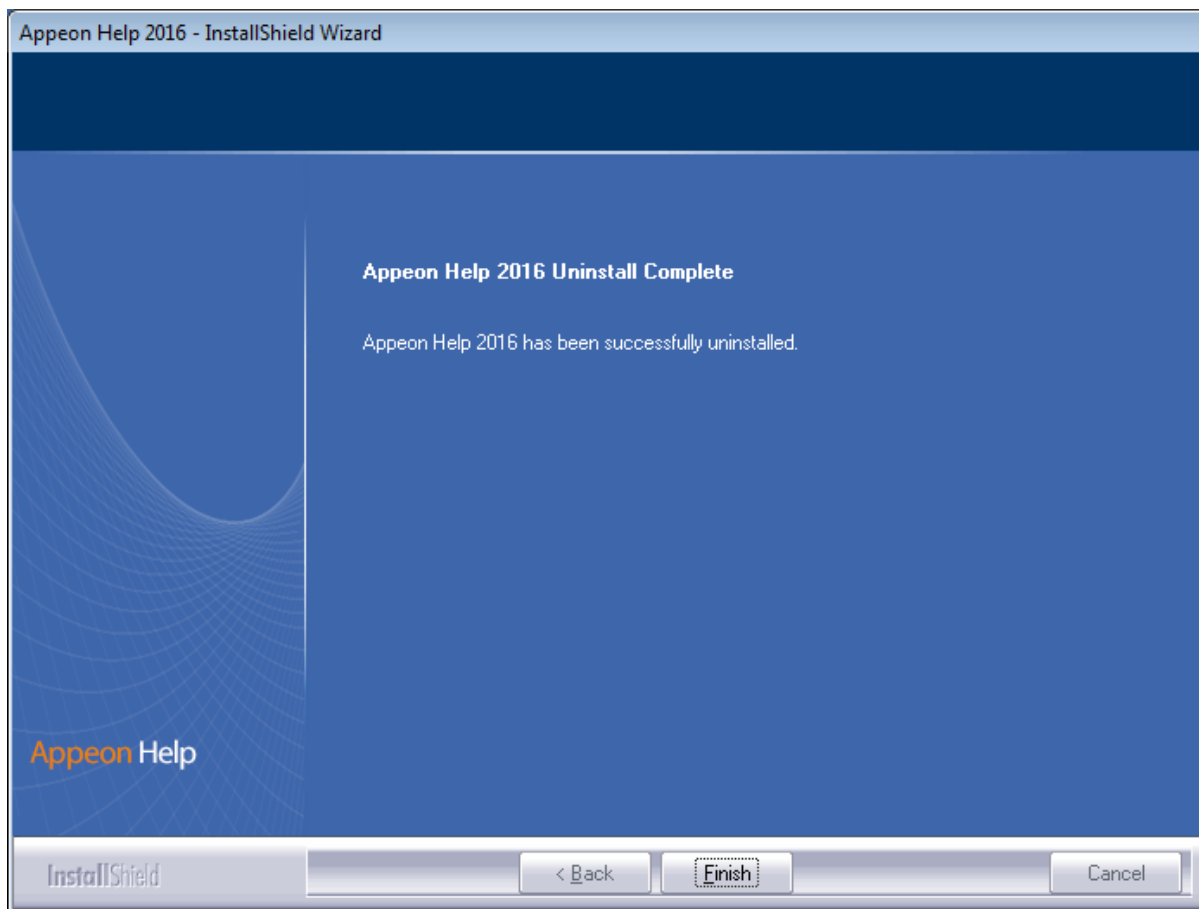
**Figure 7.12: Remove Appeon Help**

Step 3: Click **OK** to confirm the removal of the Appeon Help.

**Figure 7.13: Confirm uninstall**

Step 4: Click **Finish** when uninstall is complete.

**Figure 7.14: Appeon Help uninstall complete**



# Index

## A

- Appeon components, [8](#)
  - Appeon Developer, [8](#)
  - Appeon Help, [9](#)
  - Appeon Server, [8](#)
  - Appeon Server Web Component, [8](#)
  - Appeon Workspace, [8](#)
- Appeon Developer, [8](#)
- Appeon Developer installation, [58](#)
  - installation instruction, [58](#)
  - prerequisites, [58](#)
- Appeon Developer requirements, [11](#)
  - hardware requirements, [12](#)
  - software requirements, [11](#)
- Appeon editions, [7](#)
- Appeon Help, [9](#)
- Appeon Help installation, [64](#)
- Appeon Server, [8](#)
- Appeon Server cluster, [16](#)
- Appeon Server installation
  - prerequisites, [22](#)
- Appeon Server instance configuration, [46](#)
- Appeon Server requirements, [10](#)
  - hardware requirements, [11](#)
  - software requirements, [10](#)
  - Web Server requirements, [11](#)
- Appeon Server Web Component, [8](#)
- Appeon Server Web Component installation, [67](#)
  - installation instruction, [67](#)
  - prerequisites, [67](#)
- Appeon Workspace, [8](#)

## B

- before you upgrade, [70](#)

## C

- Client Database requirements, [13](#)
- Client requirements, [10](#)
  - hardware requirements, [10](#)
  - software requirements, [10](#)
- Configuration for Web client PC, [78](#)
- configure Appeon Server cluster, [77](#)
- configure IE settings, [81](#)
- create an Appeon Server instance on IIS Web site, [46](#)

## D

- database server requirements, [12](#)
- Developer PC, [15](#)

## H

- hardware requirements, [10](#), [11](#), [12](#)

## I

- install .NET Framework 4.x, [23](#)
- install IIS 10 on Windows 10, [24](#)
- install IIS 6.0 on Windows Server 2003, [36](#)
- install IIS 7.0 on Windows Server 2008, [32](#)
- install IIS 7.0 on Windows Vista, [35](#)
- install IIS 7.5 on Windows 7, [31](#)
- install IIS 7.5 on Windows Server 2008 R2, [27](#)
- install IIS 8.0 on Windows 8, [25](#)
- install IIS 8.0 on Windows Server 2012, [26](#)
- installation instructions, [38](#), [58](#), [67](#)
- installation scenarios, [14](#)
  - Appeon Server cluster, [16](#)
  - remote Appeon Server and Web server, [15](#)
- Installation scenarios
  - Developer PC, [15](#)

## L

- log in as administrator or normal user, [83](#)

## P

- prerequisites, [22](#), [58](#), [67](#)

## R

- remote Appeon Server and Web server, [15](#)
- remove an Appeon Server instance from IIS Web site, [55](#)

## S

- server database requirements, [13](#)
- settings lost in upgrade, [76](#)
- software requirements, [10](#), [10](#), [11](#)
- start the installation, [17](#)
- Synchronization requirements, [13](#)
- synchronization server requirements, [13](#)
- system architecture, [4](#)
- system language settings, [83](#)

## U

- uninstall Appeon Developer, [85](#)
- uninstall Appeon Help, [92](#)
- uninstall Appeon Server, [87](#)

uninstall Appeon Server Web Component, [90](#)  
upgrade Appeon Developer, [74](#)  
upgrade Appeon Server, [71](#)  
upgrade Appeon Server Web Component, [75](#)  
upgrade configuration settings manually, [75](#)

## V

verify Chrome/Firefox/Opera settings, [79](#)  
verify Web browser settings, [79](#)

## W

Web Server requirements, [11](#)