Installation Guide for WebSphere Windows

Appeon® PowerServer® 2017 Windows

FOR WINDOWS

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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 PowerServer.

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 PowerServer 2017 for WebSphere Windows and its system architecture.

Chapter 3: Installation Requirements

The system requirements for installing Appeon PowerServer 2017 for WebSphere Windows.

Chapter 4: Installing Appeon PowerServer 2017

Instructions for installing and upgrading PowerServer, PowerServer Toolkit, and PowerServer Web Component.

Chapter 5: Configuring PowerServer Cluster

Instructions for configuring a PowerServer 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 PowerServer 2017

Instructions for uninstalling Appeon PowerServer 2017 for WebSphere Windows.

1.3 Related documents

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

- Introduction to Appeon:

  Gives general introduction to Appeon PowerServer and its editions.

- Getting Started (for PowerServer Mobile):

  Guides you though installing PowerBuilder and Appeon PowerServer, and developing and deploying a mobile application.

- New Features Guide:

  Introduces new features and changes in Appeon PowerServer.

- PowerServer Mobile Tutorials:

  Gives instructions on deploying, running, and debugging the mobile application, distributing native mobile apps, and configuring the PowerServer cluster.

- PowerServer Mobile (Offline) Tutorials:

  Gives instructions on setting up the PowerServer Mobile (Offline) environment, and configuring, deploying, running, updating, and debugging the offline application.

- Appeon Installation Guide:

  Provides instructions on how to install Appeon PowerServer successfully.

- Mobile UI Design & Development Guide:

  Introduces general guidelines on designing and developing the mobile app and UI.

- Migration Guidelines for PowerServer 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.

- PowerServer Toolkit User Guide:

  Provides instructions on how to use the PowerServer Toolkit in Appeon PowerServer.

- 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.

- PowerServer Configuration Guide:

  Provides instructions on how to configure PowerServer Monitor, establish connections between PowerServer and database servers, and configure AEM for maintaining PowerServer and the deployed applications.

- Web Server Configuration Guide:

  Describes configuration instructions for different types of Web servers to work with the PowerServer.

- 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 UFT:

  Provides instructions on how to test Appeon Web applications with UFT.

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

Appeon PowerServer 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.

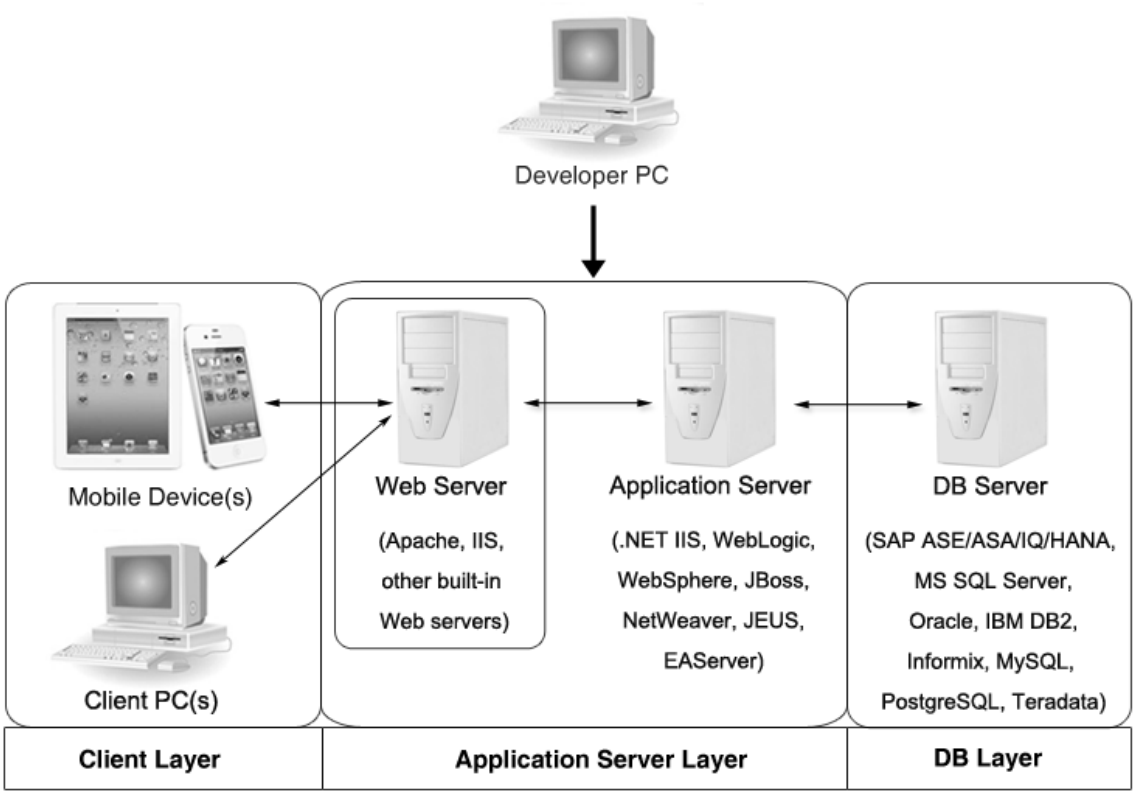
From the native source code of PowerBuilder applications, Appeon PowerServer can generate n-tier applications that can run on the Web or mobile environment. The application that run on the Web environment can automatically and precisely replicate the Client/Server user interface with HTML running in 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.

Appeon PowerServer 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

Appeon PowerServer 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 PowerServer 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.	PowerServer Toolkit	PowerBuilder
Middle tier	Web Server	Responds incoming requests from the client tier, and dispatches requests to the application server.	PowerServer Web Component	WebSphere HTTP Server or any WebSphere-

Tier	Role	Purpose	Appeon Componer	Third-party Software
		Hosts the presentation layer of the deployed Web applications.		compatible Web server
	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.	PowerServer	WebSphere Application Server
Data tier	Database Server	Hosts the application database.	None	JDBC-compliant RDBMS supported by Appeon. Please see Database server requirements for more information.

- 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 PowerServer 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

PowerServer, 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 Editions and components

Appeon PowerServer 2017 provides the following editions for the Windows platform.

Table 2.2: Appeon editions

Edition	Component	Description
PB Edition	• PowerServer Toolkit • PowerServer Mobile • Appeon Workspace • PowerServer (PB Edition) Help	1) PB Edition is the only one edition that includes PowerServer Toolkit. 2) PB Edition is only provided in the **PowerBuilder Universal Edition**. 3) PB Edition includes PowerServer Mobile only, but not PowerServer Web, therefore it's called PowerServer Mobile (PB Edition). 4) PB edition runs on the .NET IIS server only, but not on the J2EE server. 5) The PowerServer clustering service is provided. 6) Product activation is required within 30 days.
Enterprise Edition	• PowerServer Mobile & PowerServer Web • Appeon Workspace • PowerServer Help	1) PowerServer Toolkit is not provided. 2) The PowerServer clustering service is provided. 3) Product activation is required within 30 days.
Workgroup Edition	• PowerServer Mobile & PowerServer Web • Appeon Workspace • PowerServer Help	1) PowerServer Toolkit is not provided. 2) Product activation is required within 30 days.
Developer Edition	• PowerServer Mobile & PowerServer Web • Appeon Workspace	1) PowerServer Toolkit is not provided.

Edition	Component	Description
	• PowerServer Help	2) The maximum number of online users is 5. 3) Product activation is required within 30 days.
Trial Edition	• PowerServer Mobile & PowerServer Web • Appeon Workspace • PowerServer Help	1) PowerServer Toolkit is not provided. 2) Trial Edition has a 30-day time bomb. 3) The PowerServer clustering service is provided. 4) The maximum number of online user is unlimited.

2.3.1 PowerServer Toolkit

PowerServer Toolkit 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.

Note

Starting from version 2017, **PowerServer Toolkit** is only available in **PowerServer (PB edition)** which can be installed from the **PowerBuilder Universal Edition** installation package. **PowerServer Toolkit 2017** can deploy apps to PowerServer 2017 or 2016 (in version 2016, PowerServer is called Appeon Server).

2.3.2 PowerServer Mobile/Web

PowerServer Mobile/Web 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.

PowerServer also includes AEM and PowerServer Web Component.

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

During the PowerServer Mobile/Web installation, the PowerServer Web Component is automatically installed to the WebSphere HTTP Server, therefore, if you are using one WebSphere as both the Web server and the application server, you will NOT need to run the PowerServer Web Component installation.

Note

PowerServer Mobile (PB Edition) is activated differently from the other editions. For detailed instructions on activating **PowerServer Mobile (PB Edition)**, please

follow the Activating PowerServer Mobile (PB Edition) section in the Appeon License User Guide.

2.3.3 PowerServer Web Component

PowerServer Web Component is installed with PowerServer Web/Mobile automatically as aforementioned.

PowerServer Web Component resides in the Web server. It consists of the Web server redirector plug-in (that dispatches the user requests to the PowerServer) 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 PowerServer, for example, for load balancing purpose, you will need to install PowerServer 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.

2.3.4 Appeon Workspace (for 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 PowerServer 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.

2.3.5 PowerServer Help

PowerServer 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.

PowerServer 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 9, 10, or 11

  iOS devices: iPad 2/3/4/Mini/Air, iPhone 4/4S/5/5C/5S/6/6 Plus/7, iPad Pro 12.9-inch.

- Google Android 4.2, 4.3, 4.4, 5.0, 6.x, or 7.0, all 32-bit

  Android devices that have been certified by Appeon include the recent and popular Samsung phones and tablets, Google Nexus 6P, Google Nexus 7, LG Nexus 4 E960 (smartphone), 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 55), Google Chrome (35 thru 60), or Opera (30 thru 47)
- Windows 7, Windows 8.1, or Windows 10
- (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 PowerServer requirements

3.2.1 Software requirements

- Windows Operating System that is supported by WebSphere Application Server
- IBM® WebSphere® Application Server 6.1, 7.0, 8.0, and 8.5

  Please make sure that the WebSphere Application Server is started by JDK 1.6 or above.

  Please also make sure that the following system environment variables includes the correct JDK directories:

  - `JAVA_HOME`: includes the JDK home directory, for example, C:\Program Files\Java \jdk1.6.0_24.

- `CLASSPATH`: includes the JDK lib directory and the tools.jar file, for example, %JAVA_HOME%\lib;%JAVA_HOME%\lib\tools.jar.
- `Path`: includes the JDK bin directory, for example, %JAVA_HOME%\bin.

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)
- 900 MB hard drive space (for WebSphere Application Server installation) plus 500 MB hard drive space (for PowerServer installation)

3.2.3 (Optional) Third-party Web Server requirements

- Apache 1.3, 2.0, or 2.2, or Microsoft IIS 7.5, 8.0, or 10
- 50 MB hard drive space (for PowerServer Web Component installation)

To make the third-party Web server work with PowerServer, you must have the Web server redirector plug-in installed and configured. For detailed instructions, refer to Web Server Configuration Guide.

3.3 Database Server requirements

Appeon PowerServer 2017 can connect to any of the following database servers:

- SAP SQL Anywhere 8.0.2, 9.0, 10.0.1, 11.0, 12.0, 16.0, or 17.0 with SAP iAnywhere or jConnect JDBC driver
- SAP SQL Anywhere WEB Edition with SAP jConnect or iAnywhere JDBC driver
- SAP Adaptive Server Enterprise (ASE) 12.5.x or 15.x with SAP jConnect or iAnywhere JDBC Driver
- SAP IQ 12.6.x, 12.7.x or 15 with jConnect JDBC driver
- SAP HANA 1.00.36 with SAP In-Memory Database JDBC driver
- IBM DB2 UDB 8.1, 8.2, 9.5 or 10 with IBM JDBC driver
- Informix 9.x, 10.x or 11.x with IBM JDBC driver
- Microsoft SQL Server 2000 SP4, 2005 SP1, 2008, 2012, 2014, or 2016 with MSFT JDBC driver or JTDS driver
- MySQL 5.5.x or 5.6.x with Connector/J driver
- Oracle 8i, 9i, 10g, 11g or 12c with Oracle JDBC Driver

- Teradata 13.00.00.27 with Teradata JDBC driver
- PostgreSQL 9.2 with PostgreSQL JDBC driver

For instructions on downloading and installing the driver files, refer to Section 4.2.4, “JDBC driver preparation” in *PowerServer Configuration Guide for J2EE*.

3.4 Offline synchronization requirements

3.4.1 Client Database requirements

Appeon PowerServer 2017 supports the following client/offline databases:

- UltraLite 17

  Upgrade your UltraLite database (both the local database and the server database) to version 17, as PowerServer 2017 supports only UltraLite 17 and does not support 12 any more.

- SQLite 3.x

3.4.2 Synchronization Server requirements

Appeon PowerServer 2017 supports the following offline synchronization server:

- MobiLink Server 17 (included in SQL Anywhere 17 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.

3.4.3 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.

4 Installing Appeon PowerServer 2017

4.1 Overview

PowerServer 2017 (on Windows) consists of the following major components: PowerServer Toolkit, PowerServer Mobile & PowerServer Web, PowerServer Help, and Appeon Workspace.

Table 4.1: Appeon components

Component	Description	Installed on
PowerServer Toolkit	A plug-in to the PowerBuilder IDE installed to the developer's PC. **Note** Starting from version 2017, **PowerServer Toolkit** is only available in **PowerServer (PB edition)** which can be installed from the **PowerBuilder Universal Edition** installation package.	PowerBuilder on Windows operating system.
PowerServer Mobile & PowerServer Web	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. PowerServer also includes AEM and PowerServer Web Component.	WebSphere Application Server on Windows operating system.
PowerServer 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 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 PowerServer 2017 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 PowerServer 2017 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 2016, 2012 R2, or 2008 R2 Microsoft Internet Explorer, Microsoft Edge, Mozilla Firefox, Google Chrome, or Opera PowerBuilder IBM WebSphere Application Server SAP SQL Anywhere (Optional) SAP ASE, SAP IQ, Oracle, Microsoft SQL Server, Informix, IBM DB2, Teradata, MySQL, PostgreSQL, or SAP HANA depending on application database	Computer 1: PowerServer Toolkit PowerServer

4.2.3 Remote PowerServer using WebSphere HTTP Server

Table 4.3: Remote PowerServer 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, or 7 Microsoft Internet Explorer, Microsoft Edge, Mozilla Firefox, Google Chrome, or Opera PowerBuilder SAP SQL Anywhere	Computer 1: PowerServer Toolkit
Computer 2 serves as Web server, application server and database server.	Computer 2: Microsoft Windows Server 2016, 2012 R2, or 2008 R2 IBM WebSphere Application Server SAP SQL Anywhere, SAP ASE, SAP IQ, Oracle, Microsoft SQL Server, Informix, IBM DB2, Teradata, MySQL, PostgreSQL, or SAP HANA depending on application database	Computer 2: PowerServer

4.2.4 Remote PowerServer using a third-party Web server

Table 4.4: Remote PowerServer 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, or 7 Microsoft Internet Explorer, Microsoft Edge, Mozilla Firefox, Google Chrome, or Opera PowerBuilder SAP SQL Anywhere	Computer 1: PowerServer Toolkit
Computer 2 serves as Web server	Computer 2: Microsoft IIS or Apache	Computer 2: PowerServer Web Component
Computer 2 serves as Web server, application server and database server.	Computer 2: Microsoft Windows Server 2016, 2012 R2, or 2008 R2 IBM WebSphere Application Server SAP SQL Anywhere, SAP ASE, SAP IQ, Oracle, Microsoft SQL Server, Informix, IBM DB2, Teradata, MySQL, PostgreSQL, or SAP HANA depending on application database	Computer 2: PowerServer

4.2.5 PowerServer Cluster

Table 4.5: PowerServer 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, or 7 Microsoft Internet Explorer, Microsoft Edge, Mozilla Firefox, Google Chrome, or Opera PowerBuilder SAP SQL Anywhere	Computer 1: PowerServer Toolkit
Computer 2 is the database server.	Computer 2: SAP SQL Anywhere, SAP ASE, SAP IQ, Oracle, Microsoft SQL Server, Informix, IBM DB2, Teradata, MySQL, PostgreSQL, or SAP HANA depending on application database	Computer 2: None
Computer 3 is the Web server.	Computer 3: Microsoft IIS or Apache	Computer 3:

Scenarios	Requirements	Appeon Components
		PowerServer Web Component
Computers 4 to n are a group of WebSphere Application Servers.	Computers 4 to n: Microsoft Windows Server 2016, 2012 R2, or 2008 R2 IBM WebSphere Application Server	Computers 4 to n: PowerServer (After installing PowerServer to each WebSphere Application Server, configure the PowerServer as a cluster. Refer to Configuring PowerServer Cluster for details)

4.3 Two installation methods

Appeon PowerServer 2017 for WebSphere provides two installation methods: **new installation** and **upgrade installation**.

- If your computer has not installed any version of Appeon PowerServer, the setup program automatically takes the new installation method.
- If your computer has 2013 R2 or an earlier version installed, you must uninstall the version, prepare the environment for Appeon PowerServer 2017 installation, and then use the setup program to install. The setup program takes the new installation method.
- If your computer has 2015 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 PowerServer 2017 Setup** program starts. The entry page has several options to guide you through the various installation tasks.

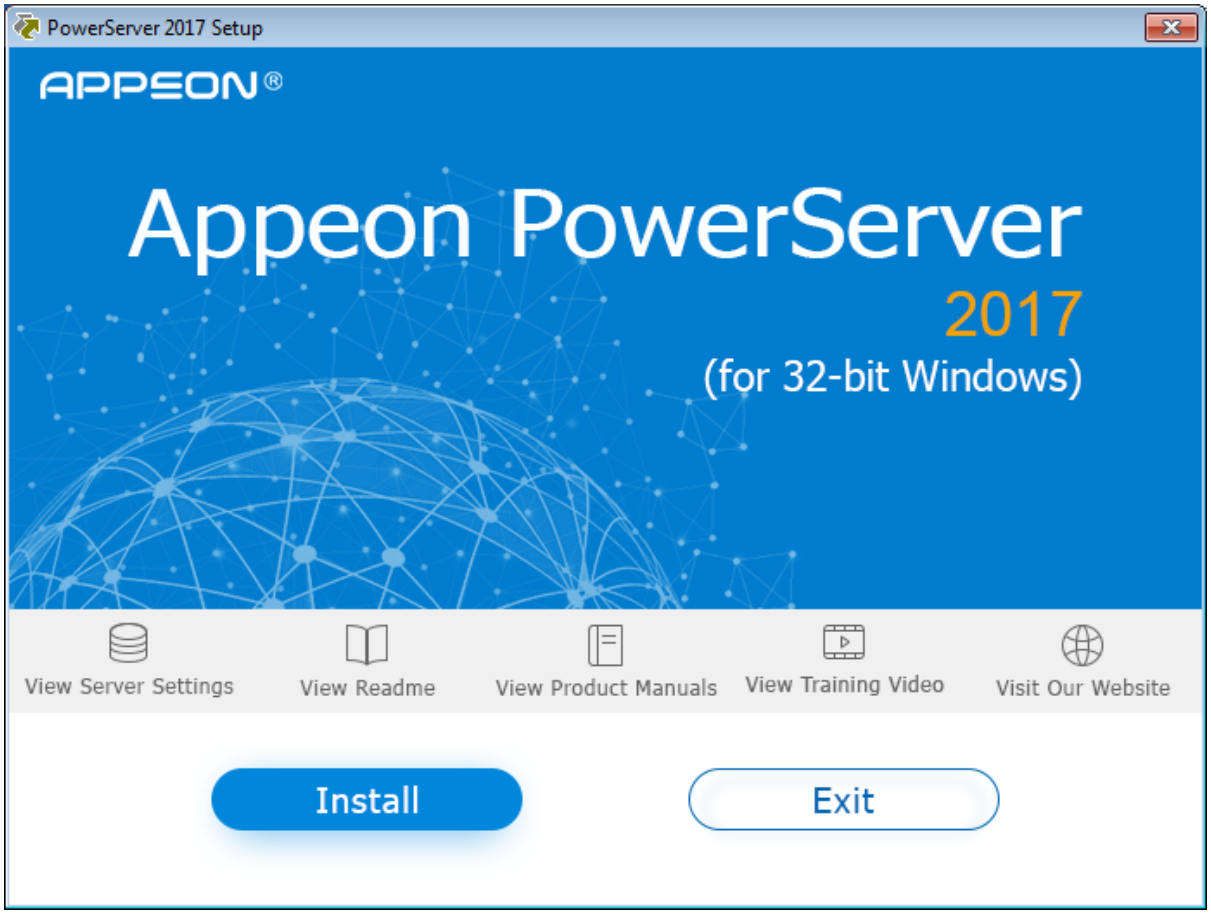
- **View Server Settings**: Click this button to ensure that the application server settings are appropriate for the PowerServer Mobile/Web installation.
- **View Readme**: Click this button to read the key system requirements and installation information for the product.

- **View Product Manuals**: Click this button to read the user manuals for the product.
- **View Training Video**: Click this button to watch the video to learn how to install the product.
- **Visit Our Web Site**: Click this button to visit the Appeon web site.
- **Install**: Click this button to start installing the product.
- **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 PowerServer



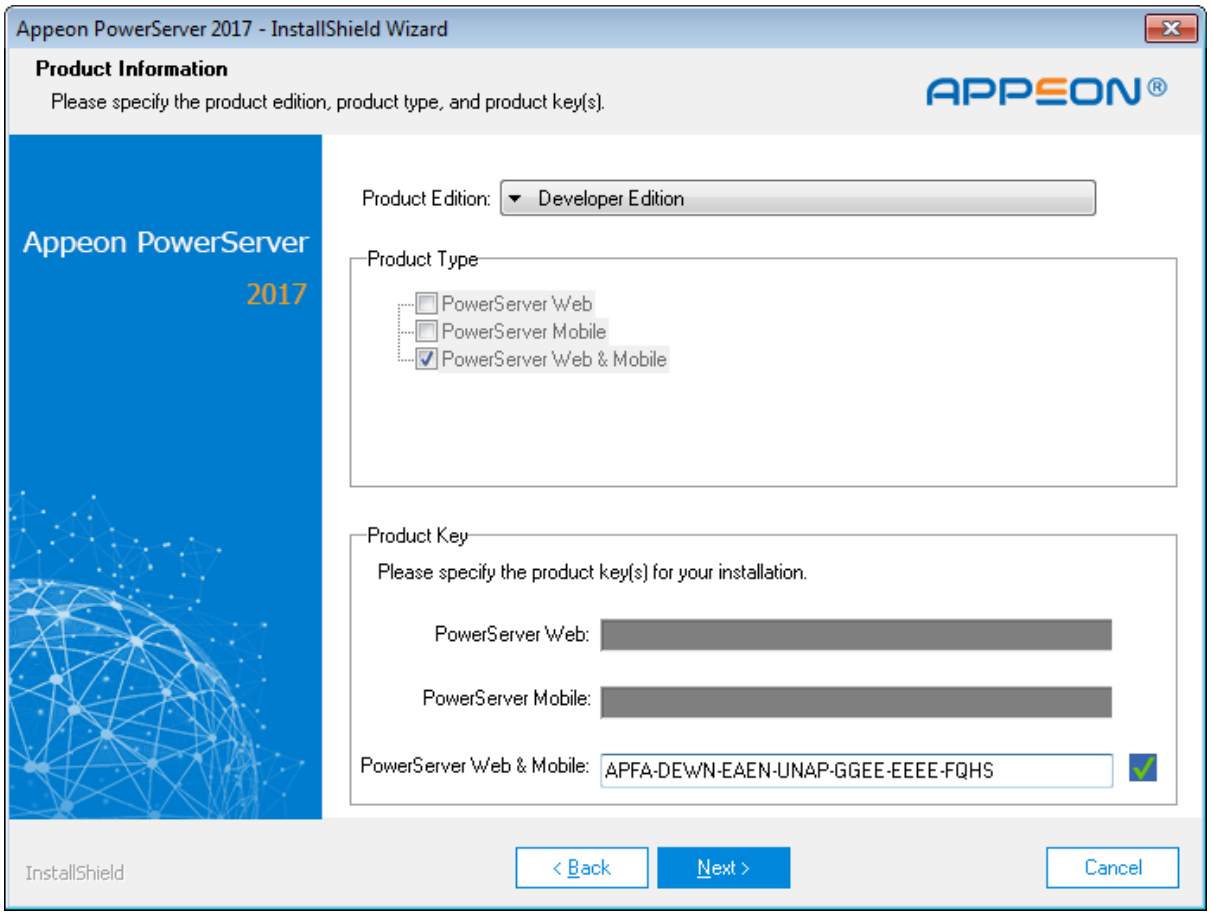
Step 3: Click **Next** on the introduction screen.

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

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

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

Figure 4.2: Product edition, type and key page

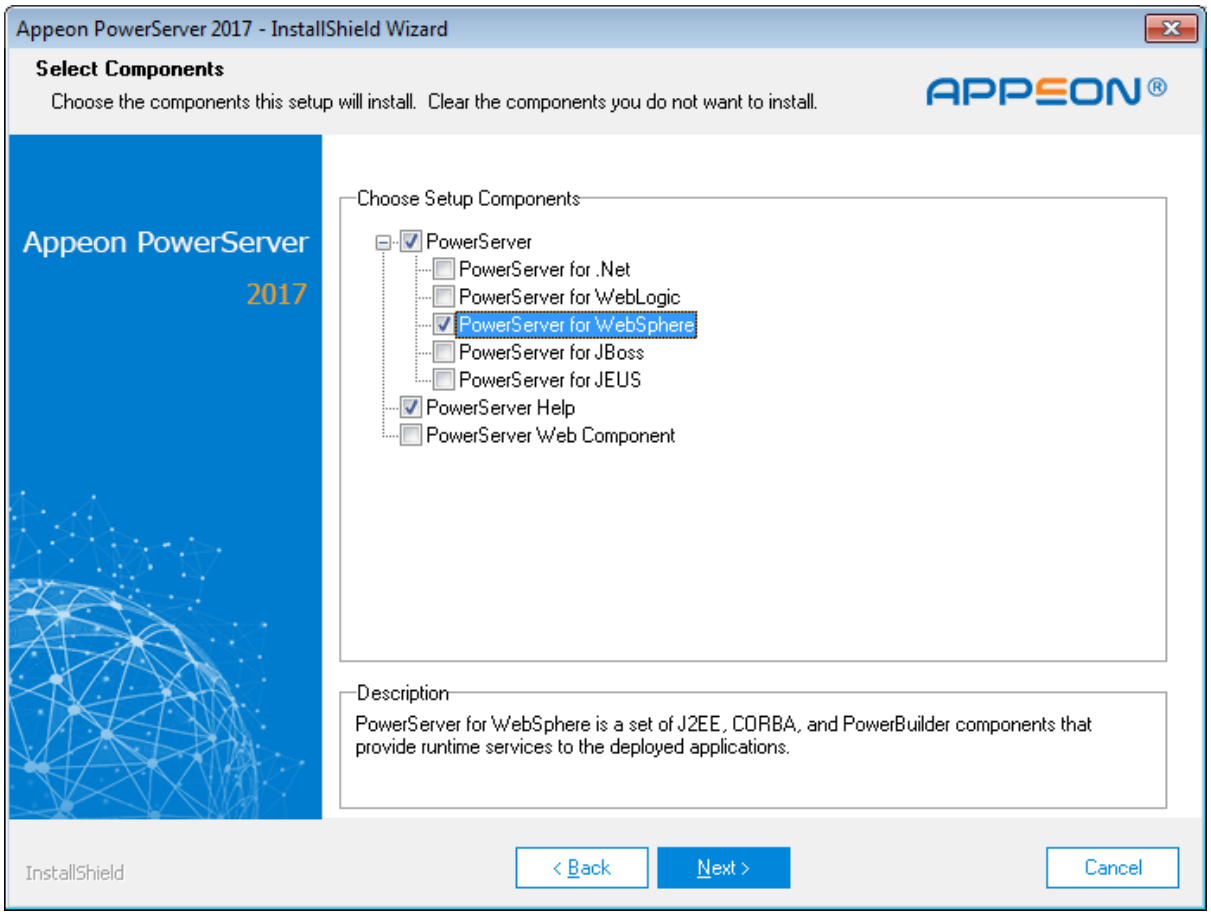


Step 6: Select the component(s) you want to install and click **Next**. The Setup program will install the selected component(s) in the order listed.

For the WebSphere application server, be sure to select **PowerServer for WebSphere**, as shown in the following figure.

For Developer Edition and Trial Edition, if more than one application servers such as WebSphere, WebLogic, JBoss etc. are installed on the same computer, you can repeatedly run the setup program to install PowerServer to these application servers, for example, you can first run the setup program and select **PowerServer for WebSphere** to install PowerServer to the WebSphere Application Server, you can then run the setup program again and select **PowerServer for WebLogic** to install PowerServer to the WebLogic application server.

Figure 4.3: Select components



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

- For PowerServer Mobile/Web installation instructions, refer to PowerServer Mobile/Web installation.
- For PowerServer Help installation instructions, refer to PowerServer Help installation.
- For PowerServer Web Component installation instructions, refer to PowerServer Web Component installation.

Note

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

4.4.2 PowerServer Mobile/Web installation

Follow the instructions below to install PowerServer to the WebSphere Application Server.

Step 1: Verify that WebSphere Application Server, as well as any other programs you may be running, is stopped.

Step 2: Launch the **Appeon PowerServer 2017 Setup** program and select to install **PowerServer for WebSphere** (see Starting the installation). Wait until PowerServer completes the preparation.

Step 3: Click **Browse** to specify the home directory of the WebSphere Application Server where PowerServer will be installed, for example, C:\Program Files\IBM\WebSphere \AppServer. Click **Next**.

Step 4: Specify the user name and password for AEM.

Step 5: Check the summary of settings. Click **Back** to change any unwanted settings or click **Next** to have Setup begin copying files.

At the click of the **Next** button, the installation program begins copying files to your computer.

Step 6: Wait until PowerServer Mobile/Web installation is completed.

PowerServer has been successfully installed to the specified WebSphere Application Server home directory.

Step 7: Choose whether to **Start PowerServer**. It is selected by default. To manually start PowerServer from the Windows shortcut later, uncheck the box, then click **Finish** to end the installation of PowerServer.

For details about starting PowerServer, refer to Starting/Stopping PowerServer.

4.4.2.1 Deploying appeonserver.ear package

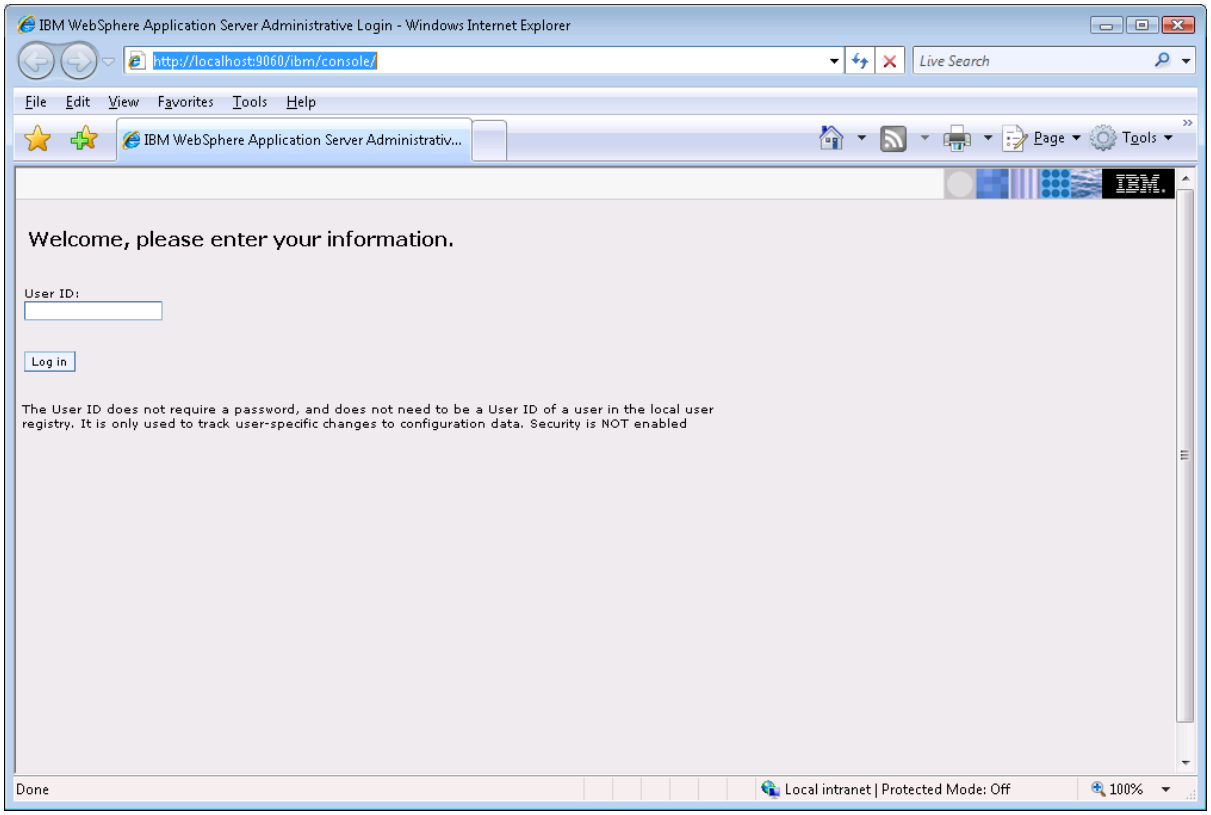
After installing PowerServer to the WebSphere Application Server home directory, you must deploy the PowerServer EAR package (appeonserver.ear) manually, via the WebSphere Application Server Administrative Console.

Follow the instructions below to deploy the appeonserver.ear package to WebSphere Application Server (taking WebSphere AS 7.0 as an example).

Step 1: Start WebSphere Application Server from Windows **Start** | **Programs** | **Appeon PowerServer 2017** | **PowerServer for WebSphere** | **Start WebSphere**. For details on starting WebSphere Application Server, refer to Starting/Stopping PowerServer.

Step 2: Access WebSphere Application Server Administrative Console from **Programs** | **Appeon PowerServer 2017** | **PowerServer for WebSphere** | **WebSphere Manager**. The WebSphere Login window will appear.

Figure 4.4: WebSphere Login window

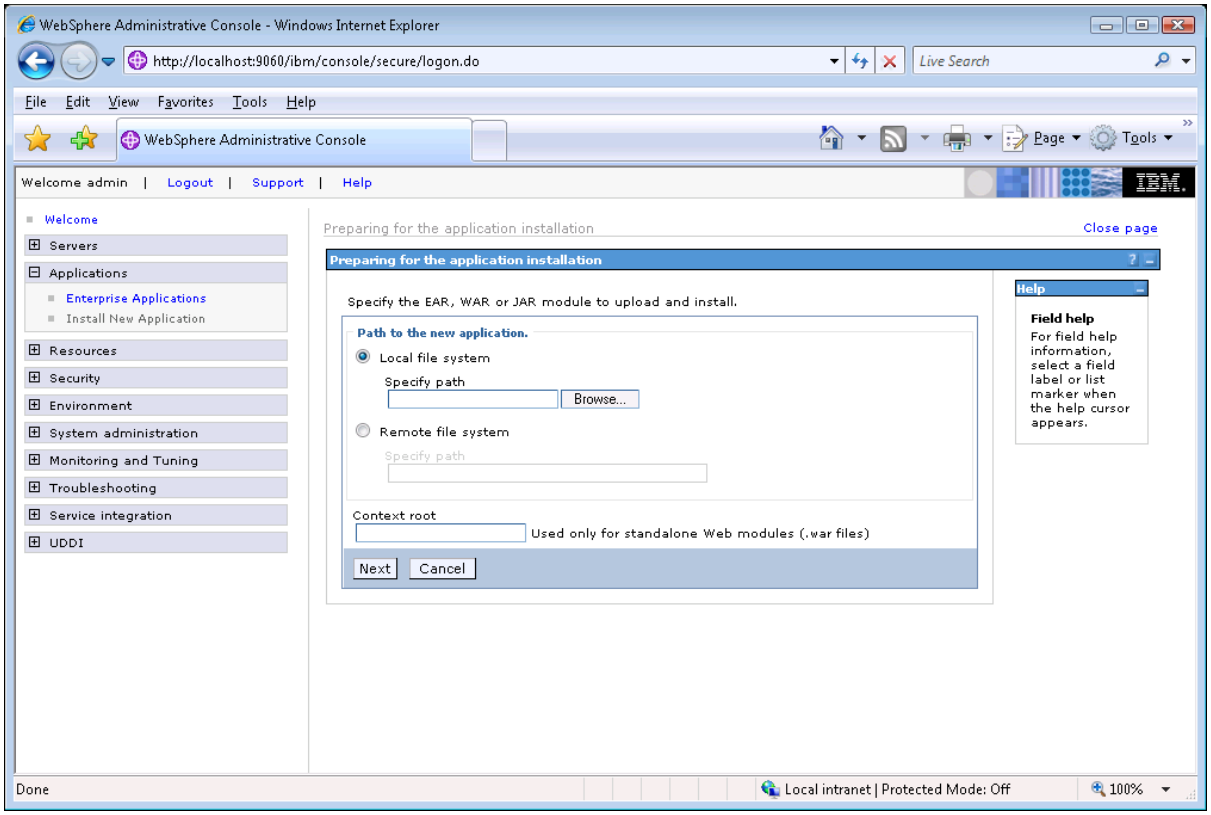


Step 3: Log in to the WebSphere console with the appropriate user ID.

Step 4: Expand the **Applications** node and click **Install New Application** in the left pane.

Step 5: Click the **Browse** button on the **Preparing for the application installation** window that appears in the right pane and select the appeonserver.ear package installed to the home directory of the WebSphere Application Server.

Figure 4.5: Select appeonserver.ear package



If the appeonserver.ear package is not installed on the local machine, select **Server path** and specify the location for appeonserver.ear.

Step 6: Follow the prompts and click **Next**. It is safe to use the default settings.

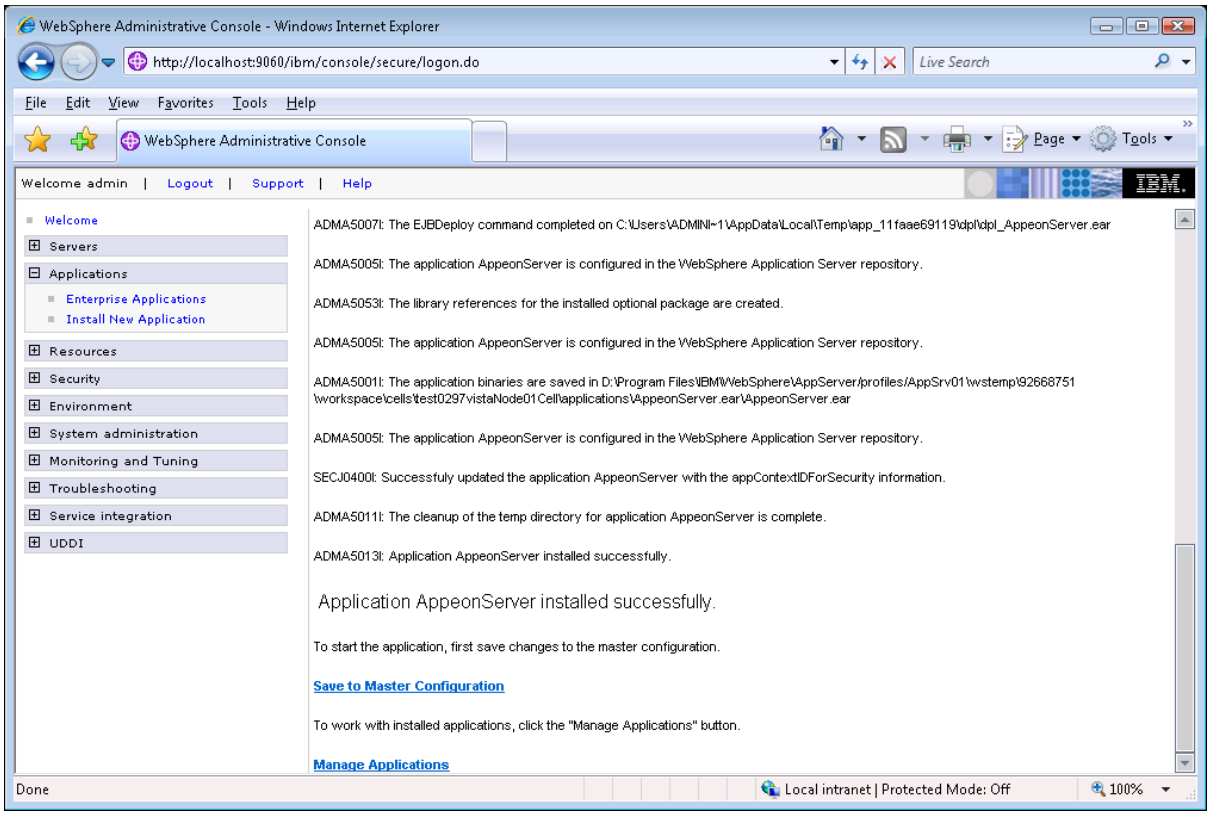
During this process, you may encounter **Application Security Warnings** from WebSphere. You can simply disregard these warnings, because the appeonserver.ear application requires no security settings to be set on WebSphere.

Step 7: Click **Finish** to complete the installation.

Check to make sure that the installation was successful.

The name used to identify the application (appeonserver.ear) is **AppeonServer** by default.

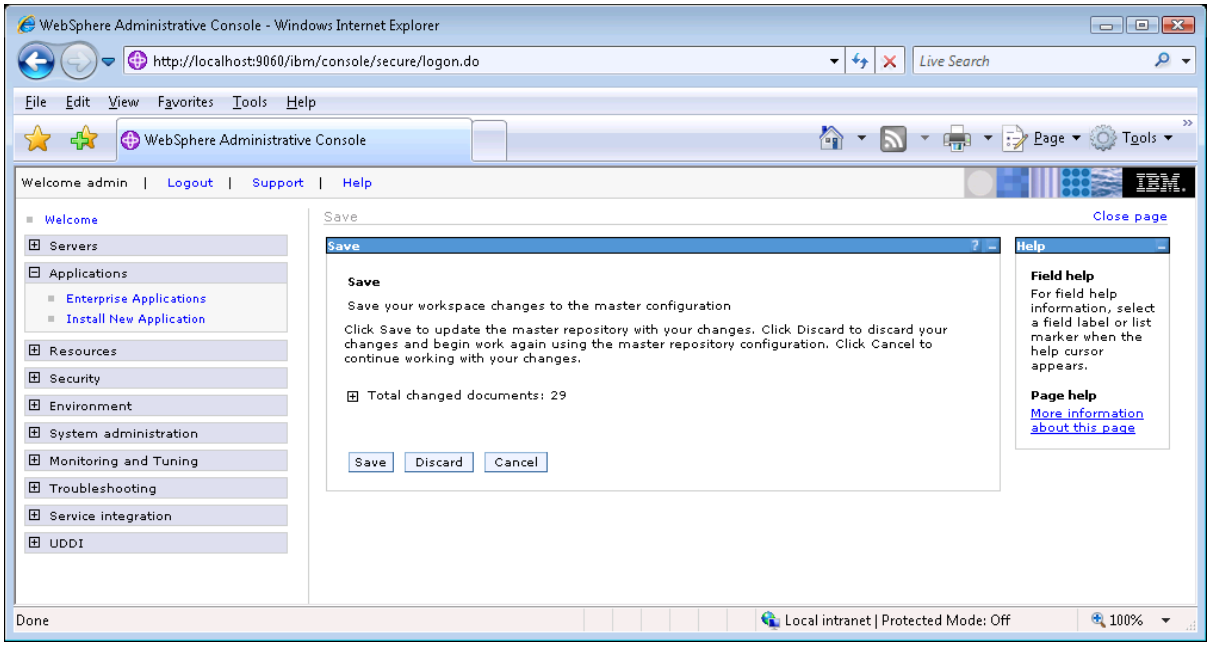
Figure 4.6: Check installed status



Step 8: Click the **Save to Master Configuration** link.

Step 9: Click the **Save** button to save the new installation to the master configuration.

Figure 4.7: save the new installation



Step 10: Restart the WebSphere server to enable new configurations.

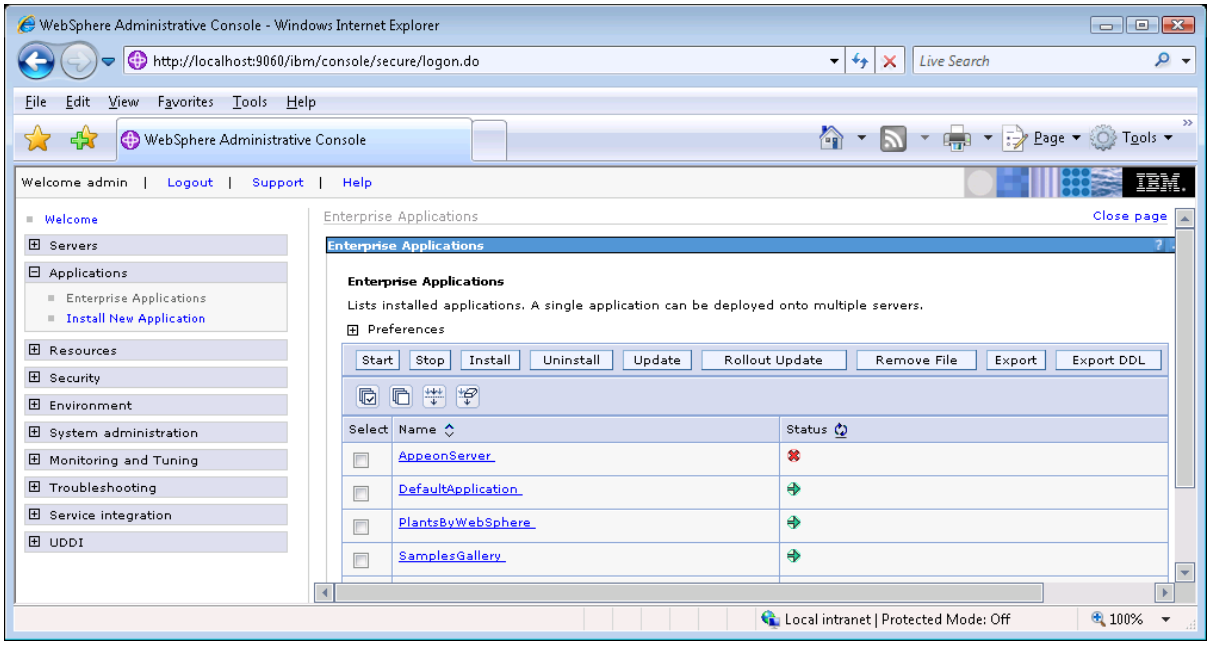
Step 11: Ensure that the newly installed application: **AppeonServer** (the default application name for appeonserver.ear), is started.

Expand the **Application** node and click **Enterprise Applications** in the left pane. **AppeonServer** is listed as an installed application in the table in the right pane.

- Check to make sure that **AppeonServer** has successfully started ( ).
- If the initial status of **AppeonServer** is stopped ( ), select **AppeonServer** by checking the appropriate box on th left and click the Start button to start it.

AppeonServer will start automatically when WebSphere Application Server is started.

Figure 4.8: AppeonServer starts automatically



Step 12: Launch AEM to further verify that the PowerServer EAR Package is successfully deployed.

Open the Windows **Start** menu and select: **Programs** | **Appeon PowerServer 2017** | **PowerServer for WebSphere** | **AEM**, or directly enter the following URL in the Web browser address bar: http://host:port/AEM, for example, http://localhost:9080/AEM. If the AEM logon window can be opened, the PowerServer EAR package is deployed correctly and is ready for use.

4.4.3 PowerServer Web Component installation (for third-party Web servers only)

Note

If you use a third-party Web server (such as Apache or IIS) or set up an individual machine (separate from the application server) as the Web server, you will need to install the PowerServer Web Component. If not, you do not need to run the installation of the PowerServer Web Component separately since it is included in PowerServer.

4.4.3.1 Prerequisites

- Install a third-party Web server that is compatible with the WebSphere Application Server redirector plug-in. For a list of compatible third-party Web servers, refer to (Optional) Third-party Web server requirements.
- Stop the Web server and any other Windows programs before beginning the installation process.

Prerequisites if Web Component installed to multiple Web servers

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

4.4.3.2 Installation instructions

Step 1: Launch the **Appeon PowerServer 2017 Setup** program and select to install **PowerServer Web Component** (see Starting the installation).

Step 2: Click **Browse** to select the Web root (or document root) for the Web server. Below lists the default Web root (or document root) of the Web server:

Apache 2.0: C:\Program Files\Apache Group\Apache2\htdocs
IIS: C:\inetpub\wwwroot

If PowerServer Web Component is installed to the default path: "C:\Program Files\Appeon \WebComponent2017", instead of the Web root (or document root) of the Web server, you would need to manually copy it to the Web root (or document root) later in order to run the Appeon application.

Step 3: Check the summary of settings. Click **Back** to change any unwanted settings or click **Next** and Setup will begin copying files.

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

4.4.3.3 Configuring the Appeon redirector plug-in

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

4.4.4 PowerServer Help installation

Step 1: Launch the **Appeon PowerServer 2017 Setup** program and select to install **PowerServer Help** (see Starting the installation).

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

Step 3: Check the summary of settings. Click **Back** to change any unwanted settings or click **Next** and Setup will begin copying files.

Step 4: Wait until the installation is complete.

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

4.5 Appeon upgrade installation

4.5.1 Before you upgrade

If you have installed Appeon 2015 or a later version, you can upgrade to Appeon PowerServer 2017, but you cannot upgrade from Appeon 2013 R2 or an earlier version. If you are using Appeon 2013 R2 or an earlier version, uninstall it and then install Appeon PowerServer 2017.

Note that applications deployed with the old version and the demo applications must be redeployed with Appeon PowerServer 2017 after the upgrade.

Before upgrading to Appeon PowerServer 2017, 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 component.

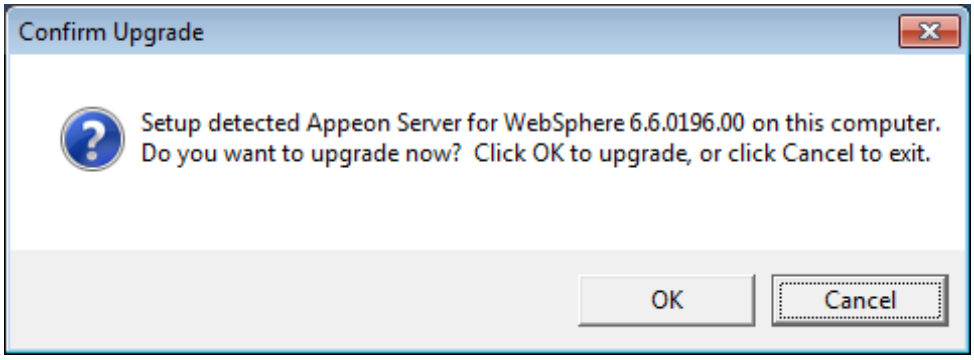
4.5.2 Upgrading to PowerServer 2017

4.5.2.1 Upgrading PowerServer

Step 1: Launch the **Appeon PowerServer 2017 Setup** program and select to install **PowerServer for WebSphere** (see Starting the installation).

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

Figure 4.9: Confirm upgrade



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

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

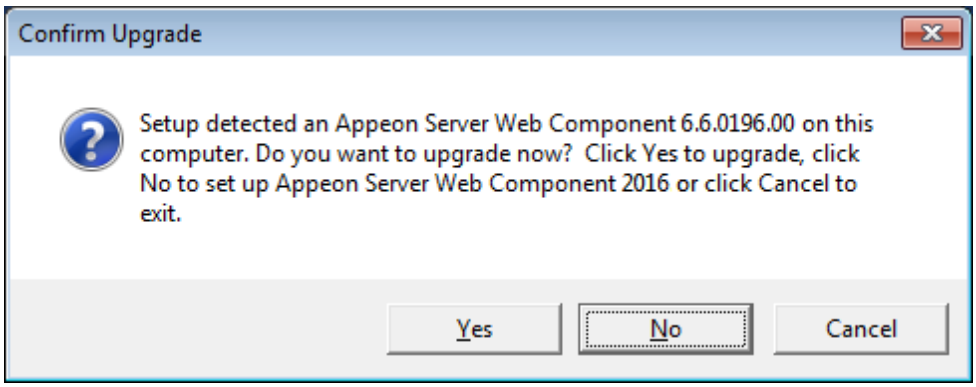
Step 3: Click the **Finish** button when the upgrade is complete.

4.5.2.2 Upgrading PowerServer Web Component

Step 1: Launch the **Appeon PowerServer 2017 Setup** program and select to install **PowerServer Web Component** (see Starting the installation).

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

Figure 4.10: Confirm upgrade



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

The upgrade process uninstalls the old version of PowerServer Web Component then begins the installation of **PowerServer 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 PowerServer 2017. However, because the configuration settings of Appeon PowerServer 2017 have been adjusted, it is recommended that you review the configuration settings in PowerServer Toolkit and 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 PowerServer 2017.

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

4.6 Starting/Stopping PowerServer

4.6.1 Starting PowerServer

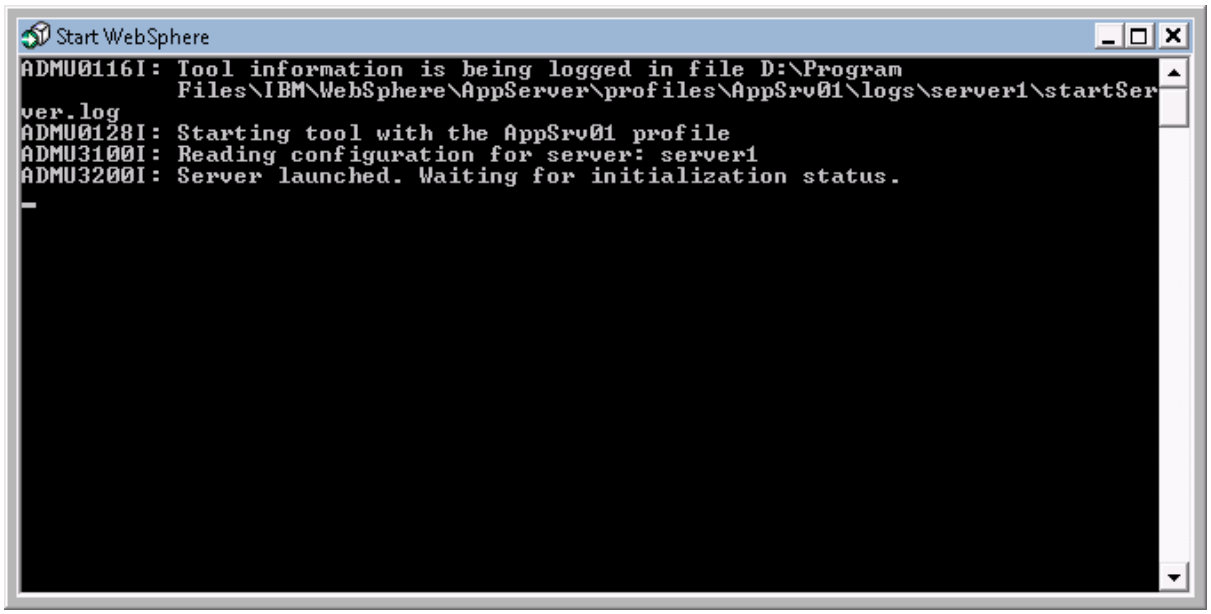
Once PowerServer has been installed and integrated into WebSphere Application Server, starting WebSphere Application Server will automatically start PowerServer. To start WebSphere Application Server/PowerServer:

Open the Windows **Start** menu and select **Programs** | **Appeon PowerServer 2017** | **PowerServer for WebSphere** | **Start WebSphere**.

For Windows 7/2008/8/8.1 with UAC turned on, if you are running on a non-Administrator Windows account (such as an Administrators group member or a User group member), please right click the **Start WebSphere** shortcut menu and then select **Run as administrator** to start WebSphere Application Server/PowerServer.

When the server startup process is completed, the following message will appear in the command window.

Figure 4.11: Start WebSphere

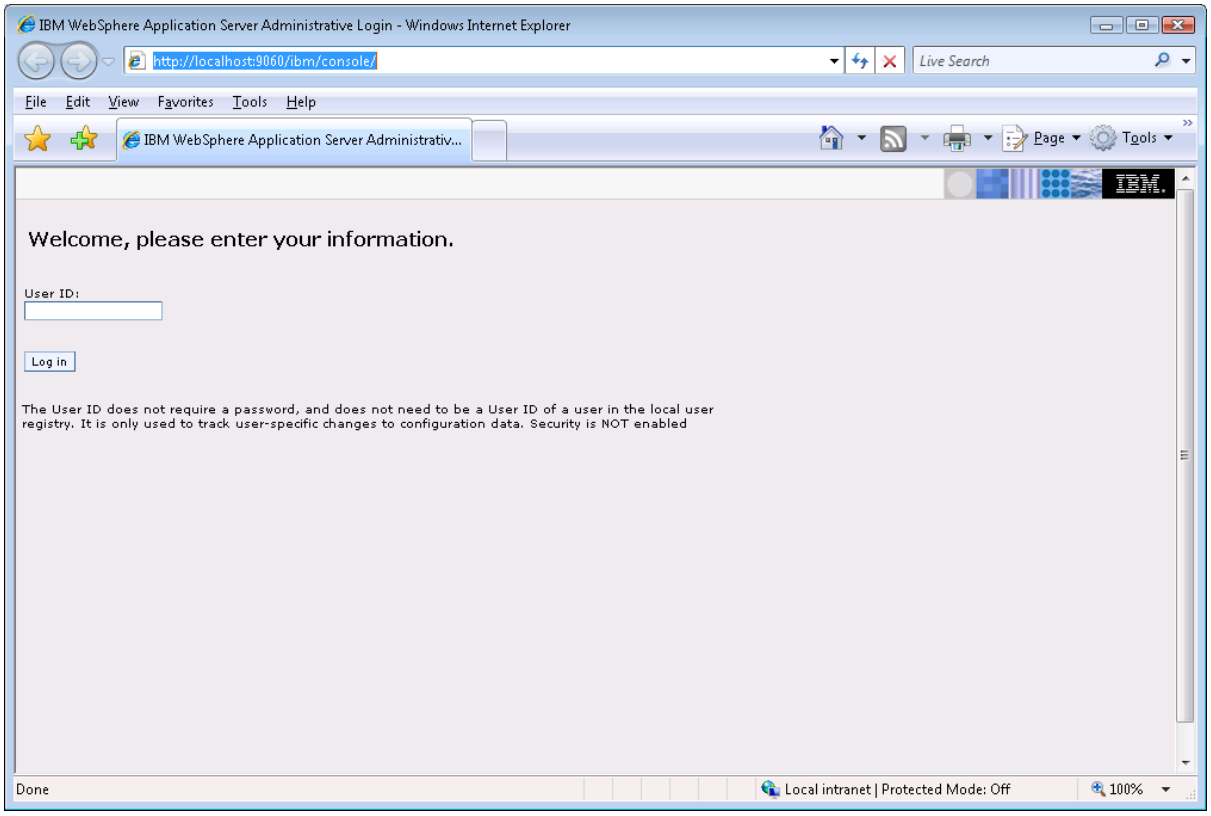


4.6.2 Logging in to WebSphere Application Server Administrative Console

Step 1: From the computer on which the WebSphere Application Server is running, open the Windows **Start** menu and select: **Programs** | **Appeon PowerServer 2017** | **PowerServer for WebSphere** | **WebSphere Manager**.

The WebSphere Application Server Administrative Login page appears.

Figure 4.12: WebSphere Application Server Administrative Login page



Step 2: Log in the Administrative Console using the appropriate user name.

The **WebSphere Application Server Administrative Console** main page will appear.

4.6.3 Stopping PowerServer

Stopping WebSphere Application Server will shut down PowerServer.

To stop WebSphere Application Server, open the Windows **Start** menu and select **Programs | IBM WebSphere | PowerServer | Stop the Server**.

If you have any problems in using WebSphere Application Server, refer to the WebSphere Application Server documents at http://www7b.software.ibm.com/wsdd/zones/was/.

4.7 Troubleshoot Appeon installation problems

Chapter 1, *Troubleshooting Appeon Install* in *PowerServer Troubleshooting Guide* provides solutions to some common problems with installing Appeon PowerServer. 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, AppeonADT2017.txt for PowerServer Toolkit, AppeonDNS2017.txt for PowerServer.

5 Configuring PowerServer Cluster

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

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

1. Install **PowerServer** to multiple WebSphere servers.
2. Create **PowerServer cluster** in AEM.
3. Configure the **Web server** for the PowerServer cluster.
4. Install an Appeon application to the PowerServer 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 PowerServer components, as well as configuring PowerServer 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 PowerServer Toolkit and AEM 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.	Configuration for client machine
System language setting	Configuration required for the Web client PC, PowerServer and database server. The operating system language settings can affect the characters that are displayed in the Web application.	System language settings
Database JDBC driver preparation	Configuration required for PowerServer. You should copy the corresponding JDBC driver files for the database server in use to the WebSphere server installation folder in the machine hosting PowerServer.	Section 4.2.4, “JDBC driver preparation” in *PowerServer Configuration Guide for J2EE*
Configuration for supporting DataWindow Data Cache feature	Configuration required for database server and Web server. The DataWindow Data Cache feature can cache DataWindow data that are frequently used on the Web server to improve runtime performance, but will not work until you fulfill the configuration requirements for database server(s) and Web server(s). This feature is not available for Web servers running on Unix\Linux.	Section 5.4.8.3, “DataWindow Data Cache” in *PowerServer Configuration Guide for J2EE*
Configuration for supporting dynamic DataWindows	Configuration required for database server.	Section 11.5, “Dynamic DataWindow” in *Supported*

Task	Description	Detailed Instructions Given in...
	Configuration at the database server is required for support of dynamic DataWindows.	*PB Features for PowerServer Web*
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 4.6.1, “ASE Chained mode issue” in *PowerServer Troubleshooting Guide*

6.2 Configuration for Web client PC

Running the deployed 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 Web 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 PowerServer Web*.

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. 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:

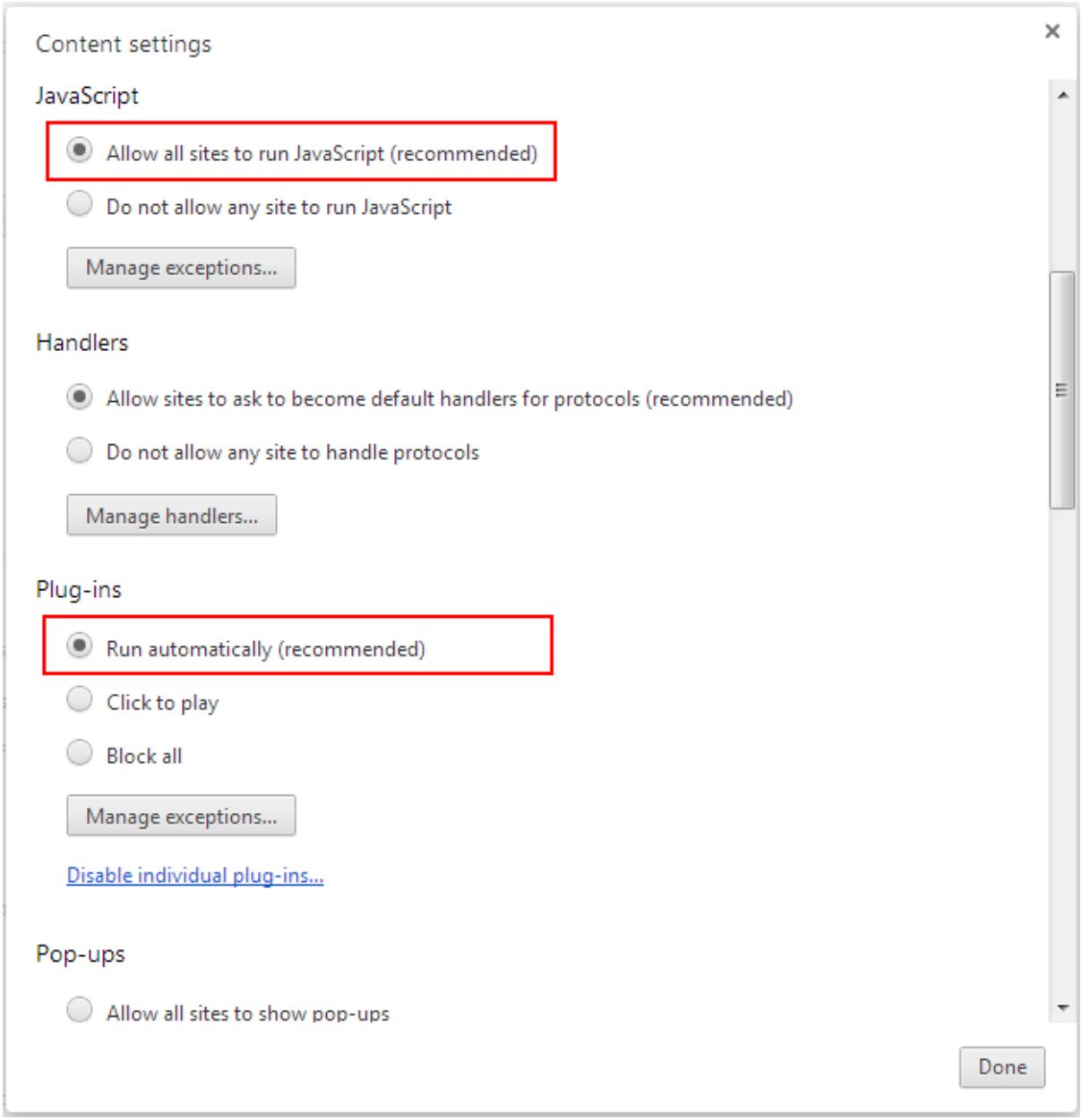
- Enable JavaScript
- Enable plug-in

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

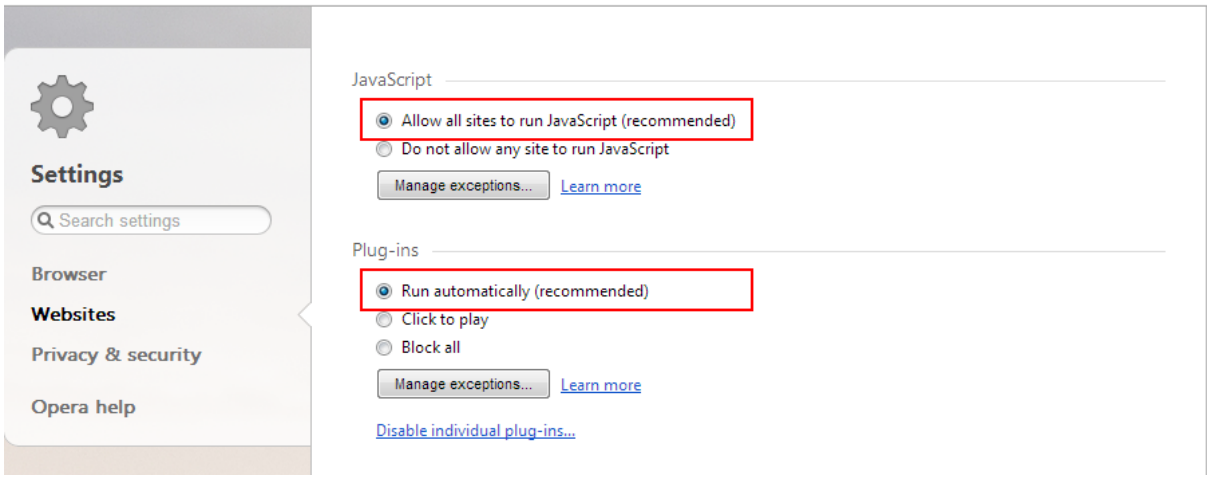
to disable these two settings for some reason, then make sure you add the URL of the Appeon Web application to the exception list.

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 Appeon 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.

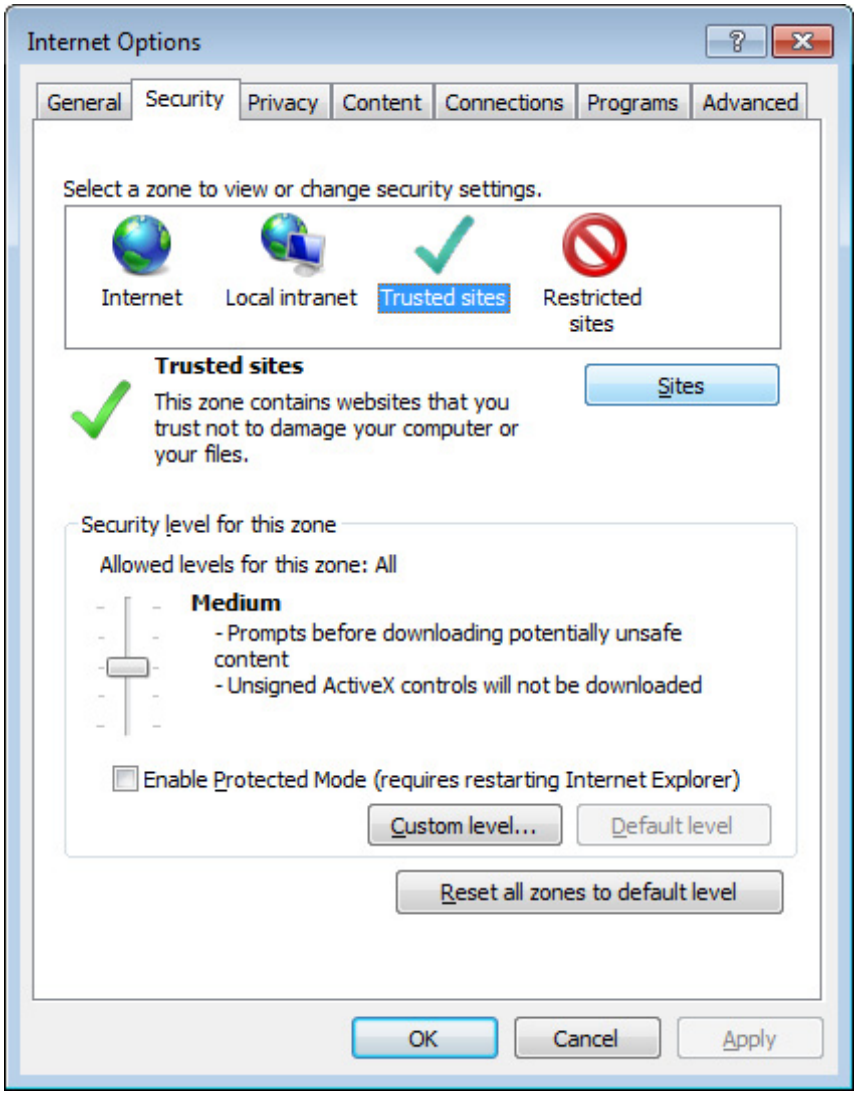
Step 1: In Internet Explorer, on the **Tools** menu, click **Internet Options**.

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 4.1.5, “"Failed to get resource from PowerServer" error” in *PowerServer Troubleshooting Guide* to resolve the issue caused by this option.

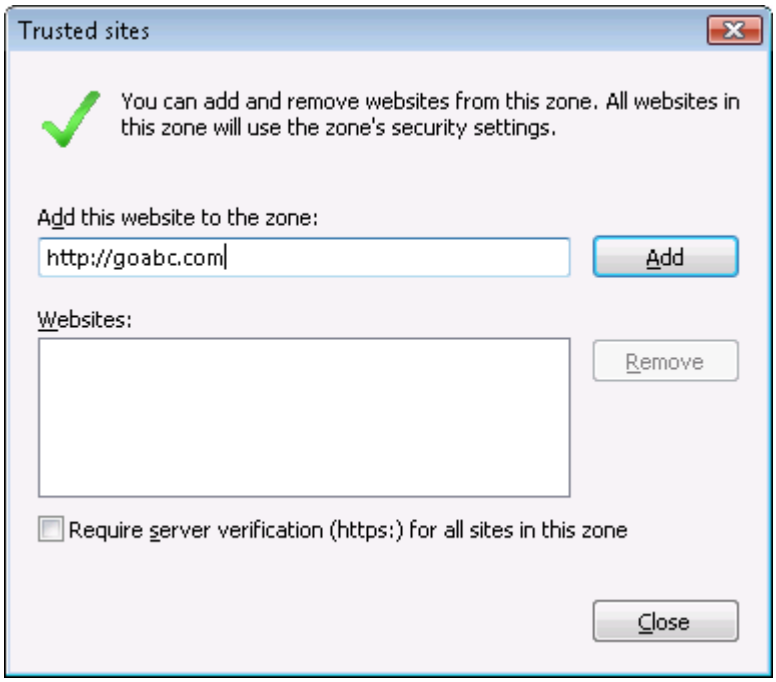
For IE 11, you should also make sure both "**Enable Enhanced Protected Mode**" and "**Enable 64-bit processes for Enhanced Protected Mode**" (the latter is available in Windows 8.1 only) are unchecked in the **Advanced** tab.

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 operating system 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 operating system language settings on the machine where PowerServer 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 PowerServer Toolkit is installed.

To set the language settings in Windows operating system:

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.

To set the language settings in Unix\Linux operating system:

Step 1: Change to the etc/default folder and edit the init file.

Step 2: Set the value of the LANG command to the appropriate language. You can use command "locale -a" to view the locale languages supported by the operating system.

7 Uninstalling Appeon PowerServer 2017

7.1 Overview

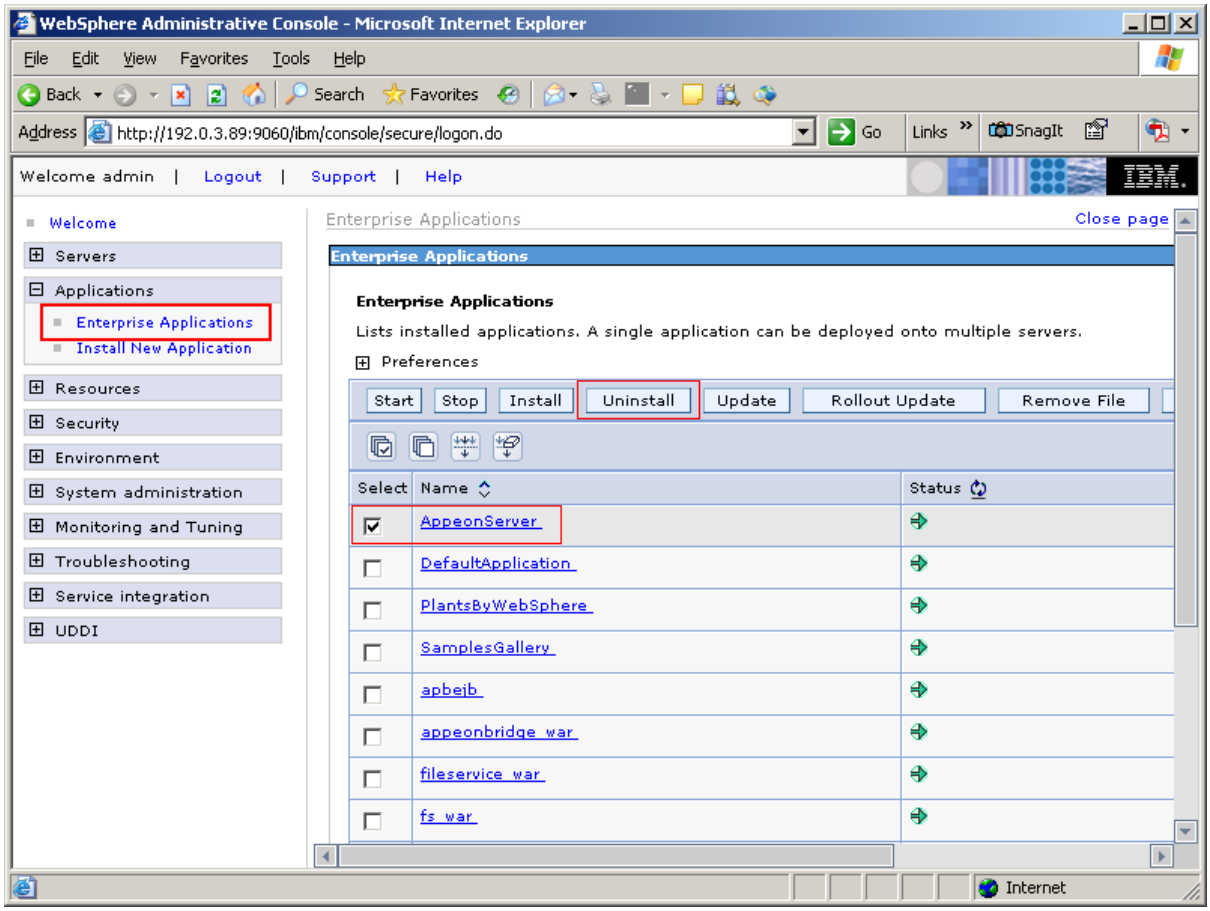
To uninstall Appeon PowerServer 2017, uninstall each of its components separately. The uninstall process reverses the actions performed by the Appeon setup program. Uninstall does not delete any files created by the user in Appeon, such as application files generated while deploying the demo applications or your own application to PowerServer. Delete these files manually from the Web root (or document root) of the Web server.

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.

7.2 Uninstalling PowerServer

Step 1: Undeploy the **AppeonServer** application from the WebSphere Application Server Console.

Figure 7.1: Undeploy the AppeonServer application from the Console



Step 2: Shut down PowerServer and WebSphere Application Server.

Step 3: Select Windows **Start** | **Control Panel**; under **Programs**, click **Uninstall a program**; select **Appeon PowerServer 2017 for WebSphere** and click **Uninstall** to begin the uninstall process.

Step 4: Click **Next** and then **OK** to confirm the removal of PowerServer.

Step 5: Click **Finish** when PowerServer is completely uninstalled.

Step 6: After the uninstall process is complete, remove any files or folders left in the PowerServer installation folder.

7.3 Uninstalling PowerServer Web Component (for third-party Web servers only)

Step 1: Shut down all Windows programs as well as the Web server.

Step 2: Select Windows **Start** | **Control Panel**; under **Programs**, click **Uninstall a program**; select **Appeon PowerServer Web Component 2017** and click **Uninstall** to begin the uninstall process.

Step 3: Click **Next** and then **OK** to confirm the removal of PowerServer Web Component.

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

7.3.1 Uninstalling Web Component if multiple Web servers are involved

Repeat the Web Component uninstall steps for each third-party Web server.

7.4 Uninstalling PowerServer Help

Step 1: Select Windows **Start** | **Control Panel**; under **Programs**, click **Uninstall a program**; select **Appeon PowerServer Help 2017** and click **Uninstall** to begin the uninstall process.

Step 2: Click **Next** and then **OK** to confirm the removal of PowerServer Help.

Step 3: Click **Finish** when uninstall is complete.

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