Installation Guide for JBoss/WildFly Unix\Linux

Appeon® PowerServer® 2020 Unix\Linux

FOR UNIX\LINUX

Contents

1 Introduction

1.1 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.

1.2 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 1.1: System architecture
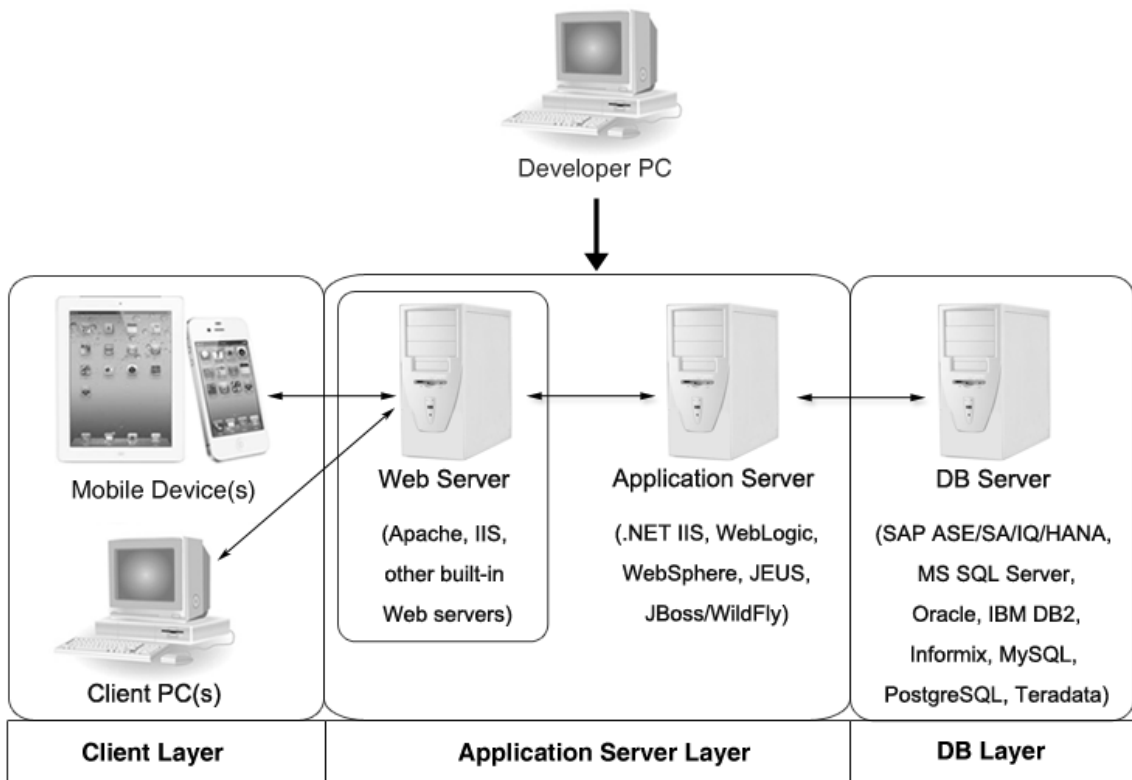
PowerServer applications deploy to the standard n-tier architecture - the client tier, middle tier (application server), and data tier (database) are logically separated. Each tier should have appropriate PowerServer components and/or third-party software installed according to its role within the architecture. The following table briefly lists the tiers, roles, their purposes and the required Appeon/third-party software.

Table 1.1: Tiers in the Appeon architecture

Tier	Role	Purpose	PowerServer Components	Third-party Software
Client tier	Mobile Device	Runs the PowerServer native mobile applications.	Appeon Workspace (Optional)	None
	Client PC	Runs the PowerServer 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	JBoss/WildFly Web server or any JBoss-compatible Web server

Tier	Role	Purpose	PowerServer Component	Third-party Software
		Hosts the presentation layer of the deployed Web applications.		
	Application Server	Hosts the DataWindows of the PowerServer 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. PowerServer 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	WildFly or JBoss EAP
Data tier	Database Server	Hosts the application database.	None	JDBC-compliant RDBMS supported by PowerServer. 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 a PowerServer-certified database.

1.3 Editions and components

Appeon PowerServer 2020 provides the following editions for the Unix/Linux platform.

Table 1.2: Appeon editions

Edition	Platform	Component	Description
Enterprise Edition	IBM AIX, Sun Solaris, HP Unix, RedHat Linux	• PowerServer Mobile & PowerServer Web • Appeon Workspace (for Mobile only)	1) PowerServer Toolkit and PowerServer Help are not provided. 2) The PowerServer clustering service is provided in Enterprise Edition only.
Workgroup Edition	IBM AIX, Sun Solaris, HP Unix, RedHat Linux	• PowerServer Mobile & PowerServer Web • Appeon Workspace (for Mobile only)	PowerServer Toolkit and PowerServer Help are not provided.

1.3.1 PowerServer Mobile/Web

PowerServer Mobile/Web is a set of server components that is deployed to the application server. It provides the PowerServer 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 Mobile/Web 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 JBoss/WildFly Web Server, therefore, if you are using one WildFly or JBoss EAP as both the Web server and the application server, you will NOT need to run the PowerServer Web Component installation.

1.3.2 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.

1.3.3 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 a free native mobile application which can only be distributed internally or privately. It is also included as an invisible component when you package and compile the PowerServer mobile application as the iOS application archive (IPA) file or Android application package (APK) file.

2 Installation Requirements

2.1 Client requirements

2.1.1 Software requirements

Requirements for the mobile device:

- Apple iOS 11, 12, or 13

  iOS devices: iPad Mini/Air, iPad Pro, and iPhone.

- Google Android 6.x (32-bit), 7.x, 8.x, 9.x, or 10.x

  Android devices that have been certified by PowerServer include the recent and popular Samsung phones and tablets, Google Nexus, and Google Pixel.

Requirements for the Web client PC:

- Microsoft Internet Explorer 11, Microsoft Edge (27 thru 44), Mozilla Firefox (63 thru 72), Google Chrome (50 thru 78), or Opera (45 thru 65)

- Windows 7, Windows 8.1, or Windows 10

- (Optional) Adobe Acrobat Reader 6.0 or above (for viewing printed PDF DataWindows or reports)

2.1.2 Hardware requirements

Requirements for the Web client PC:

- Intel processor(s) running at 1.8 GHz or faster

- At least 2 GB Free RAM

2.2 PowerServer requirements

2.2.1 Software requirements

- Unix OS (such as IBM AIX, Sun Solaris, or HP Unix), or Linux (such as RedHat Linux) that is supported by WildFly and JBoss EAP

- WildFly 18 or JBoss EAP 7.2

  Please make sure that WildFly or JBoss EAP is started by JDK 8.

  Please also make sure that the following system environment variables includes the correct JDK directories (which may affect the auto-deployment of the built-in Appeon Workspace WAR file):

  - `JAVA_HOME`: includes the JDK home directory, for example, /usr/Java/jdk1.8.0_60.

- CLASSPATH: includes the JDK lib directory and the tools.jar file, for example, .: $JAVA_HOME/lib:$JAVA_HOME/lib/tools.jar. Note that values are separated with colon (":") and the period (".") indicates the current directory.

- Path: includes the JDK bin directory, for example, $JAVA_HOME/bin.

2.2.2 Hardware requirements

- Processor(s)

  Linux: 86 Pentium IV above, X86 AMD above

  IBM AIX: IBM Power4

  Solaris: UltraSparcIII, Solaris X86 Pentium

  HP-Unix: HP Itanium, HP PA-Risc

- At least 2 GB Free RAM (4 GB Free RAM recommended)

- 900 MB hard drive space (for WildFly or JBoss EAP installation) plus 500 MB hard drive space (for PowerServer Mobile/Web installation)

2.2.3 (Optional) Third-party Web Server requirements

- Apache 1.3, 2.0, or 2.2 on Windows or Unix\Linux, 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.

2.3 Database Server requirements

Appeon PowerServer 2020 can connect to any of the following database servers:

- SAP SQL Anywhere 16.0 or 17.0 with SAP iAnywhere or jConnect JDBC driver, or

  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

- 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 2012, 2014, 2016, 2017, or 2019 with MSFT JDBC driver or JTDS driver

- MySQL 5.5.x or 5.6.x with Connector/J driver

- Oracle 11g, 12c, 18c, or 19c with Oracle JDBC driver

- PostgreSQL 9.2 or 12.x with PostgreSQL JDBC driver

For instructions on downloading and installing the driver files, refer to Section 3.2.4, "JDBC driver preparation" in *PowerServer Configuration Guide for J2EE.*

2.4 Offline synchronization requirements

2.4.1 Client Database requirements

Appeon PowerServer 2020 supports the following client/offline databases:

- UltraLite 17

  Note that SAP SQL Anywhere provides no 64-bit UltraLite database for Android OS. To work around this limitation, you can set up the 32-bit Appeon Workspace and the 32-bit UltraLite database on the 64-bit Android OS.

- SQLite 3.x

2.4.2 Synchronization Server requirements

Appeon PowerServer 2020 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.

2.4.3 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.

3 Installing Appeon PowerServer 2020

3.1 Overview

Appeon PowerServer 2020 (on UNIX\LINUX) consists of the following components: PowerServer Mobile & PowerServer Web, and Appeon Workspace. To deploy the application to PowerServer and Web servers running on Unix\Linux, you can use the PowerServer Toolkit installed from the **PowerServer (PB Edition)**.

Table 3.1: PowerServer components

Component	Description	Installed on
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.	WildFly or JBoss EAP on Unix\Linux operating system.
Appeon Workspace (for Mobile only)	A native mobile application installed on the mobile device to simplify distributing, downloading, and running the PowerServer mobile applications.	Mobile Device.

3.2 Installation scenarios

3.2.1 Overview

Appeon PowerServer 2020 works with n-tier architecture: different PowerServer 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 2020 should be installed according to network architecture.

3.2.2 Remote PowerServer using JBoss/WildFly Web Server

Table 3.2: Remote PowerServer and Web server installation

Scenarios	Requirements	PowerServer 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	Computer 2:	Computer 2:

Scenarios	Requirements	PowerServer Components
Web server, application server and database server.	Unix\Linux WildFly or JBoss EAP SAP SQL Anywhere, SAP ASE, SAP IQ, Oracle, Microsoft SQL Server, Informix, IBM DB2, MySQL, or PostgreSQL depending on application database	PowerServer

3.2.3 Remote PowerServer using a third-party Web server

Table 3.3: Remote PowerServer and Web server installation

Scenarios	Requirements	PowerServer 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: Unix\Linux WildFly or JBoss EAP SAP SQL Anywhere, SAP ASE, SAP IQ, Oracle, Microsoft SQL Server, Informix, IBM DB2, MySQL, or PostgreSQL depending on application database	Computer 2: PowerServer

3.2.4 PowerServer Cluster

Table 3.4: PowerServer cluster installation

Scenarios	Requirements	PowerServer 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

Scenarios	Requirements	PowerServer Components
Computer 2 is the database server.	Computer 2: SAP SQL Anywhere, SAP ASE, SAP IQ, Oracle, Microsoft SQL Server, Informix, IBM DB2, MySQL, or PostgreSQL depending on application database	Computer 2: None
Computer 3 is the Web server.	Computer 3: Microsoft IIS or Apache	Computer 3: PowerServer Web Component
Computers 4 to n are a group of JBoss/WildFly application server.	Computers 4 to n: Unix\Linux WildFly or JBoss EAP	Computers 4 to n: PowerServer (After installing PowerServer to each JBoss/WildFly server, configure the PowerServer as a cluster. Refer to Configuring PowerServer Cluster for details)

3.3 Two installation methods

Appeon PowerServer 2020 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 2015 or an earlier version installed, you must uninstall the version, prepare the environment for Appeon PowerServer 2020 installation, and then use the setup program to install. The setup program takes the new installation method.

- If your computer has 2016 or a later version installed, the setup program automatically takes the upgrade installation method.

3.4 PowerServer new installation

3.4.1 PowerServer Mobile/Web installation

To install PowerServer Mobile/Web on the Unix\Linux platform, you will go through the same installation process as that used for the Windows platform. The only difference is, with the Unix\Linux platform, you will complete the installation process in command line mode, instead of using graphical user interfaces.

Step 1: Verify that WildFly or JBoss EAP, as well as any other programs you may be running, is stopped.

Step 2: Open the *Appeon4JBoss* folder from the PowerServer setup program and run the install.sh file using the command below:

```
./install.sh
```

Notes:

1. If you copy the PowerServer setup program to the computer before installation, make sure that the directory does not contain special characters or spaces.

2. When you input the command, please be aware that file names and directory names are case sensitive.

The welcome message is displayed, which indicates that the installation process has started. Follow the step-by-step prompts to install PowerServer.

Step 3: Press **Enter** or input **Next** to proceed.

```
Step 1. Welcome Message
 ------------------------

 #################################################################

 Welcome to PowerServer 2020 for JBoss installation!

 #################################################################

 Press Enter to start the installation [Exit][Next]>
```

You can also input **n**, **N**, **next** or **Next** to indicate **Next**, **p**, **P**, **previous**, or **Previous** to indicate **Previous**, and **e**, **E**, **exit** or **Exit** to indicate **Exit**. Notice that the input is case sensitive.

Step 4: Specify a JDK 8 to be used during the setup progress. The setup program will check whether the JAVA_HOME variable exists and whether it points to a valid JDK. If it is valid, the JDK path will be automatically displayed as below; if it is not valid, please set a valid JDK location.

```
Step 2. Set JDK path
 ---------------------
 #################################################################

 WildFly requires JDK 1.8; and JBoss EAP requires JDK 1.6 or above.

 #################################################################

 JDK path is (e.g."/home/jdk1.8.0_60")

 Press Enter to continue [Exit][Next]>
```

Step 5: According to the license you purchase, select the Product Type.

```
Step 3. Please choose Product Type

 #################################################################

 1. PowerServer Web
 2. PowerServer Mobile
```

```
3. PowerServer Web and PowerServer Mobile
4. PowerServer Web & Mobile


Please select a number to continue OR [Exit][Previous][Next]>
```

Step 6: Enter the Product Key that is shipped with the product.

```
Step 4. Product Key for PowerServer Web & Mobile
------------------------

 ################################################################

 The format of the product key provided by Appeon should be XXXX-XXXX
 -XXXX-XXXX-XXXX-XXXX-XXXX. All characters should be capitalized.

 ################################################################

 Please input the product key or [Exit][Previous]>
```

Step 7: Specify the home directory of WildFly or JBoss EAP as the PowerServer Mobile/
Web installation directory, for example, /home/appeon/wildfly-18.0.0.Final.

```
Step 5. Install Directory
------------------------

 Please input the home directory of JBoss/WildFly server you want to install
 PowerServer 2020
 (e.g. .../wildfly-18.0.0.Final) or [Exit][Previous]>

 PowerServer 2020 will be installed in //home/appeon/wildfly-18.0.0.Final
```

Step 8: Choose a JBoss/WildFly server instance where the PowerServer EAR package
(appeonserver.ear) will be deployed.

```
Step 6. Choose JBoss Instance
------------------------

 Appeon detects the following JBoss server instances::

  standalone

 Please input an instance name to continue OR [Exit][Previous][Next]>
```

Step 9: Confirm the setup settings.

```
Step 7. Confirm Information
------------------------

 ################################################################

              Confirm the installation

  The product type is "PowerServer Web & Mobile"
  The product key for PowerServer Web & Mobile is "XXXX-XXXX-XXXX-XXXX-XXXX-XXXX-
XXXX"
  The installation directory is "/home/AppServer/wildfly-18.0.0.Final"
  The instance name is "standalone"

  AEM Console:
     Username: admin
     Password: admin

  The installer will start installing the files on your system.
```

```
  Go back if you want to change any settings for the installation.

 ###############################################################

 Please select an option to continue[Exit][Previous][Next]>
```

Press **Enter** to begin copying the required files or input **p** or **Previous** to modify the setup settings.

Step 10: When the installation is complete, choose whether to start PowerServer.

```
 ###############################################################

 Congratulations! The installation has been successfully completed.

 ###############################################################

 Start PowerServer
 -----------------------------

 Do you want to start the PowerServer now? [Yes|No]>
```

To start PowerServer immediately input **y**. To start it later input **n**. Refer to Starting/Stopping PowerServer for how to manually start PowerServer using commands.

3.4.2 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.

3.4.2.1 Prerequisites

- Install a third-party Web server that is compatible with the JBoss/WildFly 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 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.

3.4.2.2 Installation instructions

There is no Setup program for installing PowerServer Web Component on Unix\Linux. You can directly copy the PowerServer Web Component source files to the Web root (or document root) of the Web server on Unix\Linux.

Step 1: Locate the **AppeonWebComponent.tar** file in the **AppeonWebComponent** folder on the PowerServer setup program.

Step 2: Decompress the **AppeonWebComponent.tar** file into the Web root (or document root) of the Web server. For example, the document root of Apache 1.3 is $Apache/htdocs.

3.4.2.3 Installing and configuring the Web server redirector plug-in

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

3.5 PowerServer upgrade installation

3.5.1 Overview

If you have installed Appeon 2016 or a later version, you can upgrade to Appeon PowerServer 2020, but you cannot upgrade from Appeon 2015 or an earlier version. If you are using Appeon 2015 or an earlier version, uninstall it and then install Appeon PowerServer 2020.

Note that applications deployed with the old version and the demo applications must be redeployed with Appeon PowerServer 2020 after the upgrade.

3.5.2 Upgrading PowerServer

To upgrade PowerServer on the Unix\Linux platform, you will go through the same upgrade installation process as that used for the Windows platform. The only difference is, with the Unix\Linux platform, you will complete the installation process in command line mode, instead of using graphical user interfaces.

Step 1: Verify that WildFly or JBoss EAP application server, as well as any other programs you may be running, is stopped.

Step 2: Open the **Appeon4JBoss** folder from the Appeon installation program and then run the **upgrade.sh** file using the command below:

```
./upgrade.sh
```

Note: File names and directory names are case sensitive.

The welcome message is displayed, which indicates that the upgrade installation process has started. Follow the step-by-step prompts to install PowerServer.

Step 3: Press **Enter** or input **Next** to proceed.

```
Step 1. Welcome Message
-----------------------


##############################################################

Welcome to PowerServer 2020 for JBoss upgrade!

##############################################################

Press Enter to start the upgrade [Exit][Next]>
```

You can also input **n**, **N**, **next** or **Next** to indicate **Next**, **p**, **P**, **previous**, or **Previous** to indicate **Previous**, and **e**, **E**, **exit** or **Exit** to indicate **Exit**. Notice that the input is case sensitive.

Step 4: Specify a JDK 8 to be used during the setup progress. The setup program will check whether the JAVA_HOME variable exists and whether it points to a valid JDK. If it is valid, the JDK path will be automatically displayed as below; if it is not valid, please set a valid JDK location.

```
Step 2. Set JDK path
--------------------
################################################################

WildFly requires JDK 1.8; and JBoss EAP requires JDK 1.6 or above.

################################################################

JDK path is (e.g."/home/jdk1.8.0_60")

Press Enter to continue [Exit][Next]>
```

Step 5: According to the license you purchase, select the Product Type.

```
Step 3. Please choose Product Type

################################################################

1. PowerServer Web
2. PowerServer Mobile
3. PowerServer Web and PowerServer Mobile
4. PowerServer Web & Mobile


Please select a number to continue OR [Exit][Previous][Next]>
```

Step 6: Enter the Product Key that is shipped with the product.

```
Step 4. Product Key for PowerServer Web & Mobile
------------------------

################################################################

The format of the product key provided by Appeon should be XXXX-XXXX
-XXXX-XXXX-XXXX-XXXX-XXXX. All characters should be capitalized.

################################################################

Please input the product key or [Exit][Previous]>
```

Step 7: Input the path of PowerServer which you want to upgrade. Press **Enter**. The upgrade installation procedure will automatically check whether the path you input is valid.

```
Step 5. Upgrade Directory
------------------------

Please input the directory of PowerServer needs to upgrade
(e.g. .../[Jboss root diretory] or [Exit][Previous]>
```

Step 8: Confirm the setup settings.

```
Step 6. Confirm Information
------------------------
```

```
##############################################################

                  Confirm the installation

 The product type is "PowerServer Web & Mobile"
 The product key for PowerServer Web & Mobile is "XXXX-XXXX-XXXX-XXXX-XXXX-XXXX-
XXXX"
 The Upgrade directory is "/home/AppServer/wildfly-18.0.0.Final"
 PowerServer 2020 EAR file will be copied to "/home/AppServer/
wildfly-18.0.0.Final/appeon".
 Please re-deploy this application manually in JBoss Console
 after this upgrade process is completed.


 ##############################################################

 Please select an option to continue[Exit][Previous][Next]>
```

Press **Enter** to begin copying the required files or input **p** or **Previous** to modify the setup settings.

Step 9: Wait until the upgrade installation is complete.

```
##################################################################

Congratulations! The upgrade for JBoss has been completed successfully.

##################################################################
```

3.5.3 Upgrading PowerServer Web Component

Prerequisites

- Stop the Web server and any other programs before beginning the upgrade process.

- If PowerServer Web Component is installed to multiple Web servers, repeat the upgrade steps for the PowerServer Web Component on each Web server.

Upgrade instructions

There is no Setup program for upgrading PowerServer Web Component on Unix\Linux. You can directly copy the PowerServer Web Component source files to the Web root (or document root) of the Web server on Unix\Linux.

Step 1: Locate the **AppeonWebComponent.tar** file in the **AppeonWebComponent** folder on the PowerServer installation program.

Step 2: Decompress the **AppeonWebComponent.tar** file into the Web root (or document root) of the Web server. For example, the document root of Apache 1.3 is $Apache/htdocs.

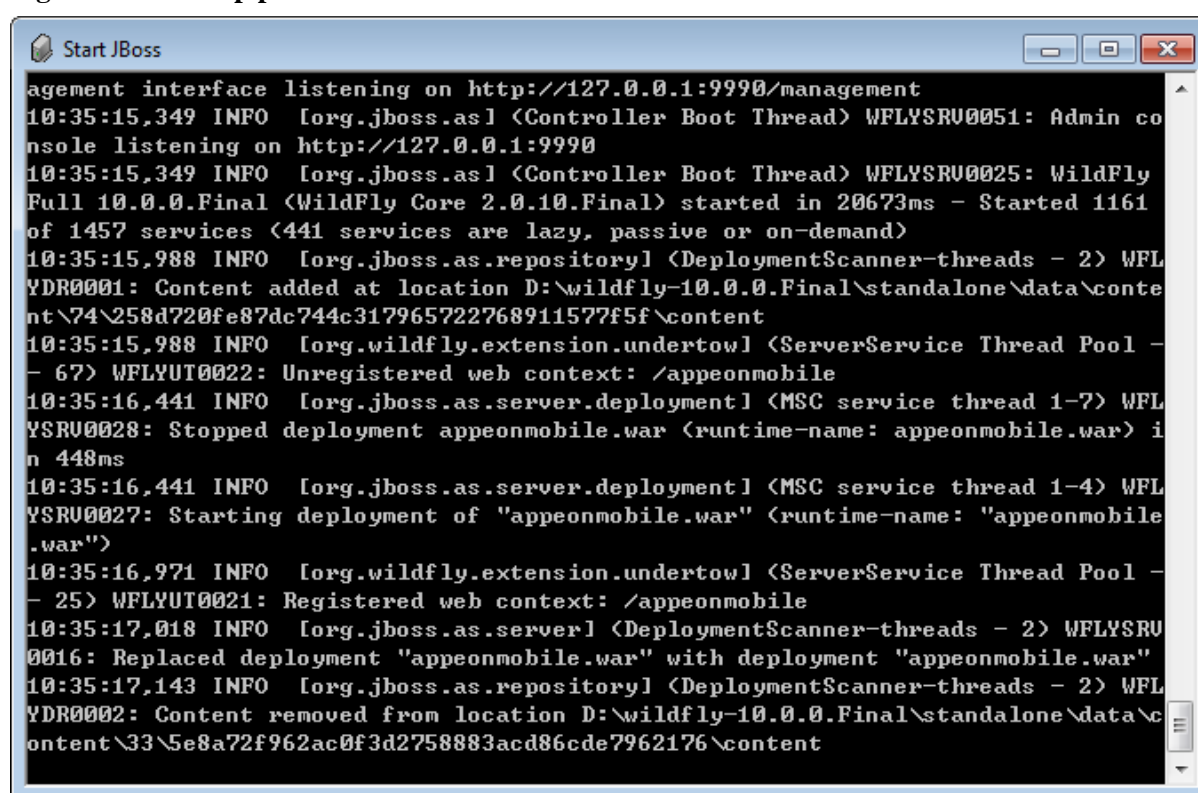## 3.6 Starting/Stopping PowerServer

3.6.1 Starting PowerServer

Change to the $appeon/bin/ folder, for example, /export/home/wildfly-18.0.0.Final/appeon/bin/ and run the **appeonserverstart.sh** file.

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

If the error "Cannot run program "jar": CreateProcess error=2, The system cannot find the file specified" appears in the command window, please check that the following system environment variables includes the correct values and then restart the server:

- The *JAVA_HOME* system environment variable includes the JDK home directory, for example, /usr/Java/jdk1.8.0_60.

- The *CLASSPATH* system environment variable includes the JDK lib directory and the tools.jar file, for example, .:$JAVA_HOME/lib:$JAVA_HOME/lib/tools.jar. Note that values are separated with colon (":") and the period (".") indicates the current directory.

- The *Path* system environment variable includes the JDK bin directory, for example, $JAVA_HOME/bin.

Figure 3.1: Startup process information

3.6.2 Logging in to WildFly or JBoss EAP Management Interface

Step 1: Enter the following URL in a Web browser to access the WildFly or JBoss EAP Management Interface.

- From the computer on which WildFly or JBoss EAP is running: http://localhost:9990/console

- From any other computer: http://*HOST*:9990/console

  HOST indicates the machine name or the IP address of the computer on which WildFly or JBoss EAP is running. Make sure no other programs are using the same port.

Step 2: Input the user name and password to log in to the management interface.

Below is the main page of the WildFly Management Interface after login.

Figure 3.2: WildFly Management Interface main page
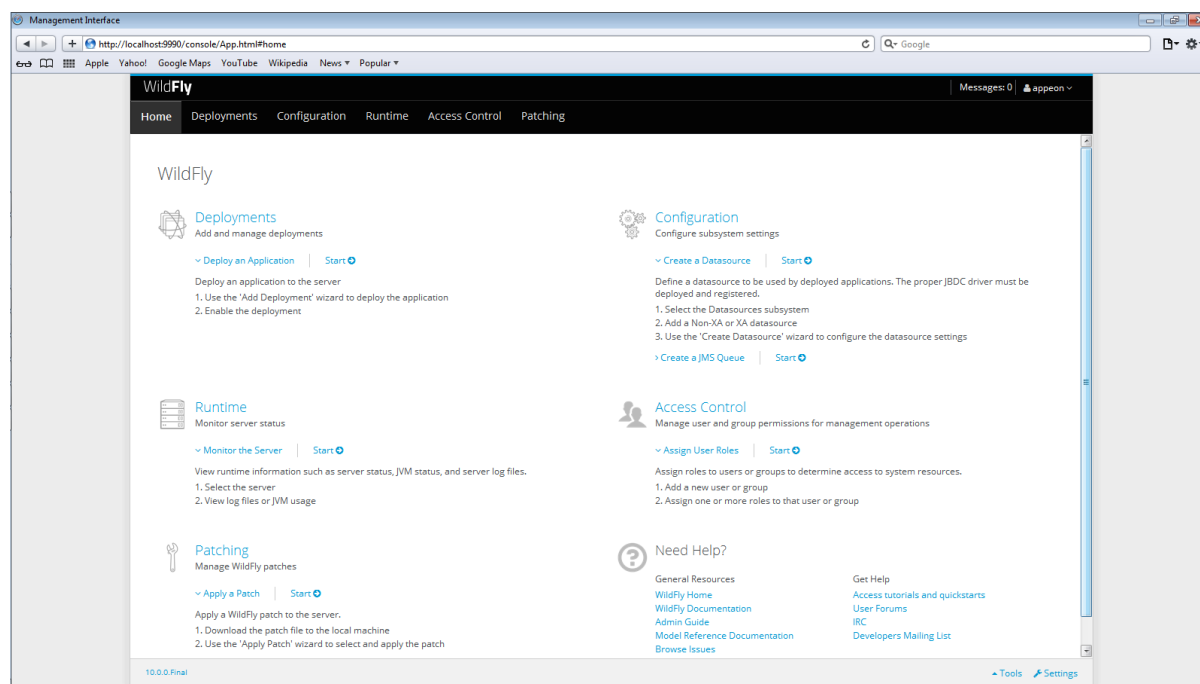
3.6.3 Stopping PowerServer

Stopping WildFly or JBoss EAP will shut down PowerServer.

If you have any problems in using WildFly or JBoss EAP, refer to the JBoss documents at https://docs.jboss.org/author/dashboard.action.

4 Configuring PowerServer Cluster

Appeon PowerServer 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 JBoss/WildFly 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 5, *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 JBoss/WildFly servers.

2. Create **PowerServer cluster** in AEM.

3. Configure the **Web server** for the PowerServer cluster.

4. Install a PowerServer application to the PowerServer cluster and Web server(s).

5 Post-Installation Configuration Tasks

5.1 Overview

The previous chapters provide instructions on how to set up PowerServer system architecture, including installing Appeon PowerServer components, as well as configuring PowerServer cluster. Once the PowerServer 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 5.1: 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 JBoss/WildFly server installation folder in the machine hosting PowerServer.	Section 3.2.4, "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 4.4.8.3, "DataWindow Data Cache" in *PowerServer Configuration Guide for J2EE*
Configuration for supporting dynamic DataWindows	Configuration required for database server.	Section 10.5, "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 PowerServer 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*

5.2 Configuration for Web client PC

Running the deployed Web application in the Web browser 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 4.1.2, "Installing Appeon Xcelerator plug-in" in *Supported PB Features for PowerServer Web*.

Note

To run an IWA (Installable Web App) on the client machine, refer to Section 7.3.3, "Installing IWA apps" in *PowerServer Toolkit User Guide*.

5.2.1 Verifying Web browser settings

There are a few settings in the Web browser that may affect the running of the PowerServer 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.

5.2.1.1 Verifying Chrome/Firefox/Opera settings

If you use Chrome/Firefox/Opera as the Web browser, you should be able to directly run the PowerServer 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 PowerServer Web application to the exception list.

Figure 5.1: Settings in Chrome
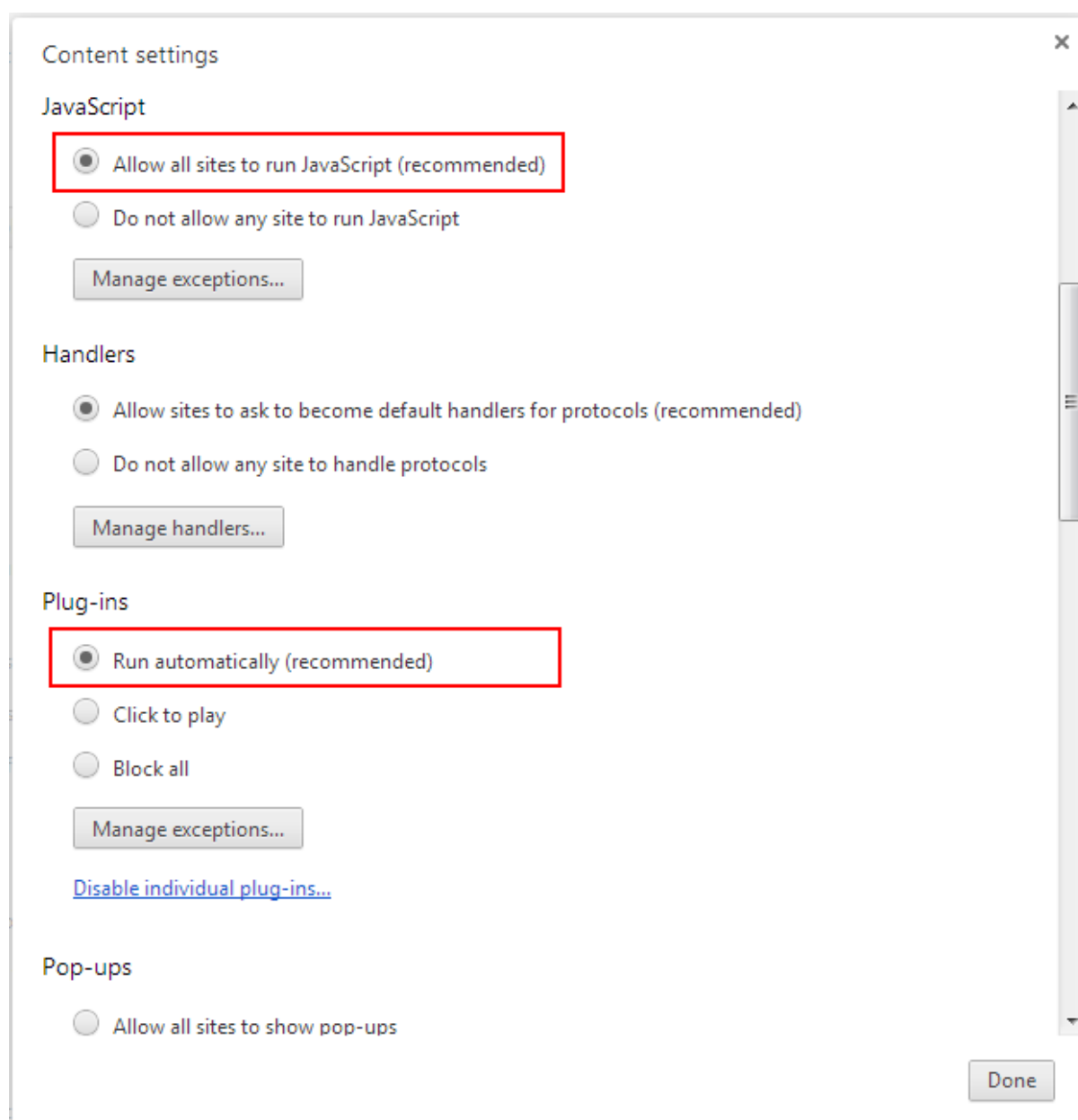
For Opera, go to **Settings**, then select **Websites**, and then verify the settings are enabled. If you have to disable these two settings for some reason, then make sure you add the URL of the PowerServer Web application to the exception list.

Figure 5.2: Settings in Opera
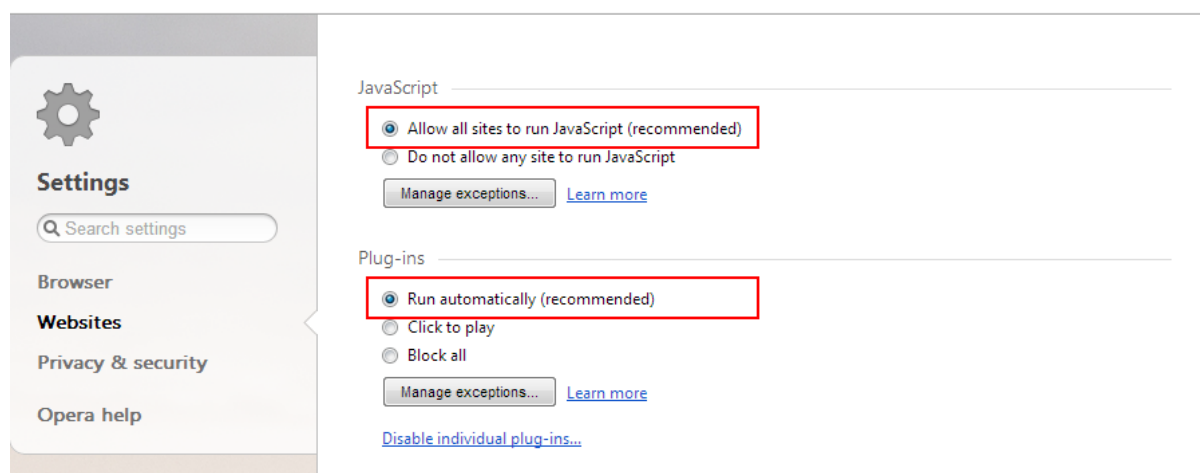

5.2.1.2 Configuring IE settings

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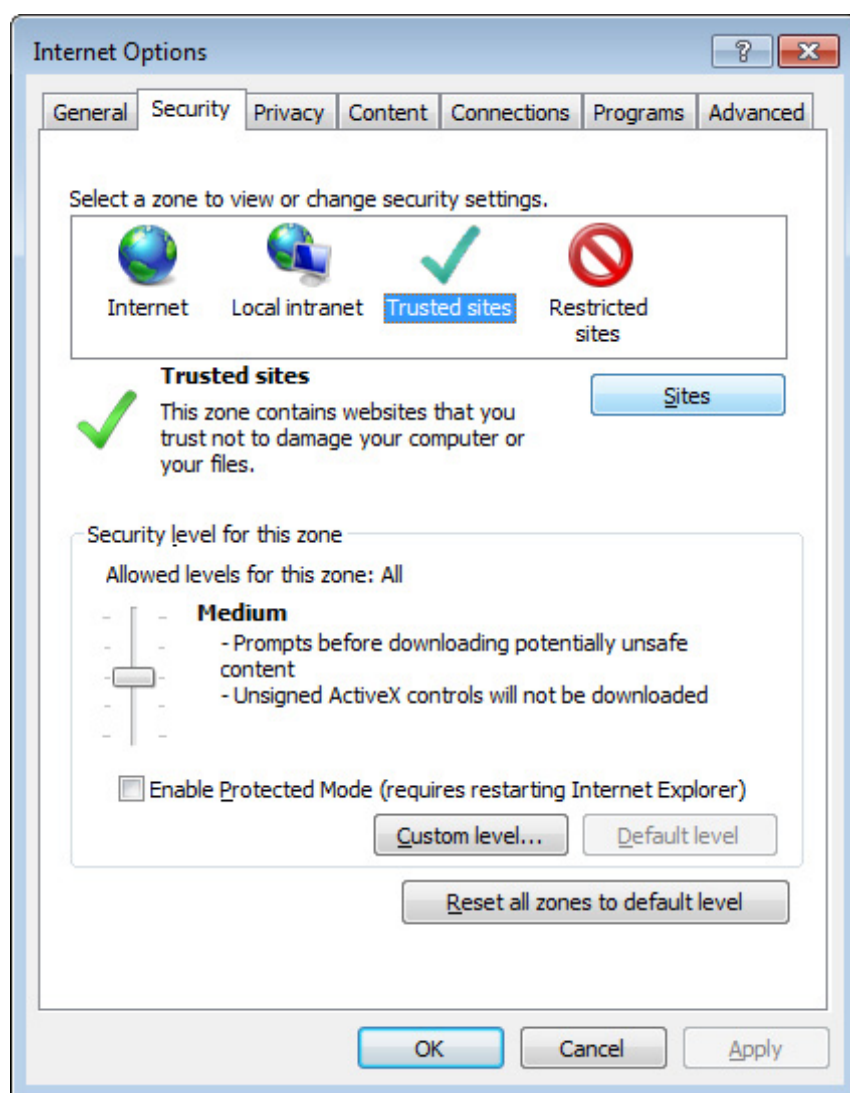
Step 3: In the Trusted sites window, input the URL of the deployed application to the "Add this website to the zone" box. Uncheck the checkbox of "Require server verification (https:) for all sites in this zone". Click **Add** then click **Close** to return to the Internet Options window.

Figure 5.4: Trusted sites
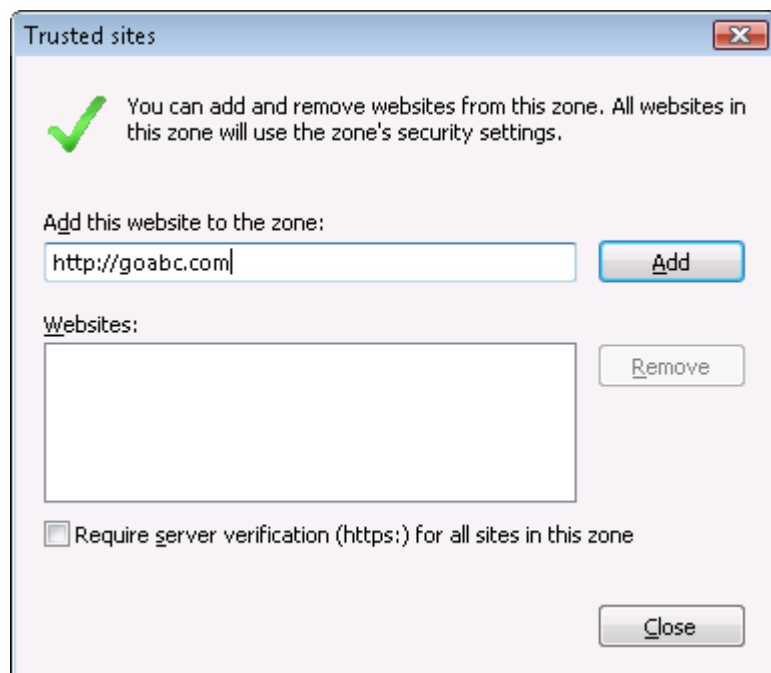
Step 4: Click **OK** to save the settings and close **IE**.

5.2.2 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 PowerServer 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**".

5.3 System language settings

Sometimes the operating system language settings can affect the characters displayed in the deployed 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 PowerServer-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.

6 Uninstalling Appeon PowerServer 2020

6.1 Overview

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

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

6.2 Uninstalling PowerServer

Step 1: Stop all running programs including PowerServer Mobile/Web and JBoss/WildFly application server.

Step 2: Run the **apbuninstall.sh** file in the **_uninst** folder under the PowerServer Mobile/ Web installation directory, for example, /export/home/wildfly-18.0.0.Final/appeon/_uninst.

Step 3: Input **y** and press **Enter** to confirm the removal of PowerServer.

Step 4: After the uninstall process is complete, remove any files or folders left in the Appeon installation folder.

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

To uninstall PowerServer Web Component on Unix\Linux, you directly go to the Web root of the Web server and remove the entire **appeon** folder.

6.3.1 Uninstalling Web Component if multiple Web servers are involved

Repeat the Web Component uninstall steps for each Web server.

Index

A
Appeon editions, 4
Appeon Workspace, 5

C
Client Database requirements, 8
Client requirements, 6
   hardware requirements, 6
   software requirements, 6
Configuration for Web client PC, 22
configure IE settings, 24
configure PowerServer cluster, 20

D
database server requirements, 7

H
hardware requirements, 6, 7

I
installation instructions, 14
installation scenarios, 9
   PowerServer cluster, 10
   Remote PowerServer using a third-party
   Web server, 10
   Remote PowerServer using JBoss/WildFly
   Web Server, 9

L
log in as administrator or normal user, 26

P
PowerServer, 4
PowerServer cluster, 10
PowerServer components
   Appeon Workspace, 5
   PowerServer, 4
   PowerServer Web Component, 4
PowerServer Mobile/Web installation, 11
PowerServer requirements, 6
   hardware requirements, 7
   software requirements, 6
   Web Server requirements, 7
PowerServer Web Component, 4
PowerServer Web Component installation,
14
   installation instruction, 14

   prerequisites, 14
prerequisites, 14

R
Remote PowerServer using a third-party Web
server, 10
Remote PowerServer using JBoss/WildFly
Web Server, 9

S
server database requirements, 8
software requirements, 6, 6
Synchronization requirements, 8
synchronization server requirements, 8
system architecture, 1
system language settings, 26

U
uninstall PowerServer, 28
uninstall PowerServer Web Component, 28
upgrade PowerServer, 15
upgrade PowerServer Web Component, 17

V
verify Chrome/Firefox/Opera settings, 22
verify Web browser settings, 22

W
Web Server requirements, 7