Appeon Mobile Tutorials

Appeon® for PowerBuilder® 2013

FOR WINDOWS & UNIX & LINUX

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Contents

1 About This Book

1.1 Audience

This book is intended for users who want to install Appeon Mobile 1.0, deploy and run the mobile application, package and distribute the application, or configure the Appeon Server cluster.

1.2 How to use this book

There are six chapters in this book.

Chapter 1: About This Book

A general description of this book

Chapter 2: Tutorial 1: Set up the Environment

Detailed instructions for setting up the Appeon Mobile 1.0 environment.

Chapter 3: Tutorial 2: Config, Deploy & Run the Application

Detailed instructions for configuring and deploying an existing PowerBuilder application, and then running the application on mobile device.

Chapter 4: Tutorial 3: Develop & Debug with Appeon Mobile

High-level guidelines for developing and debugging the application with Appeon Mobile.

Chapter 5: Tutorial 4: Package & Distribute Native Mobile Apps

Detailed instructions for packaging and distributing the app as a native iOS app.

Chapter 6: Tutorial 5: Configure Appeon Server Cluster

Detailed instructions for configuring an Appeon Server cluster.

1.3 Related documents

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

- Introduction to Appeon:

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

- New Features Guide:

  Introduces new features and changes in Appeon for PowerBuilder.

- Appeon Mobile Tutorials:

  Gives instructions on deploying, running, and debugging Appeon applications, distributing native mobile apps, and configuring Appeon server clusters.

- Appeon Installation Guide:

Provides instructions on how to install Appeon for PowerBuilder successfully.

- Development Guidelines for Appeon Mobile:

  Introduces general guidelines on developing apps with Appeon Mobile.

- Migration Guidelines for Appeon Web:

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

- Features Help for Appeon:

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

- Appeon Developer User Guide:

  Provides instructions on how to use the Appeon Developer toolbar in Appeon for PowerBuilder.

- Workarounds & API Guide:

  Provides resolutions for issues, such as unsupported features, etc,. encountered when using Appeon for PowerBuilder.

- Appeon Workspace User Guide:

  Gives a general introduction on Appeon Workspace and provides detailed instructions on how to use the app.

- Appeon Server Configuration Guide:

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

- Web Server Configuration Guide:

  Describes configuration instructions for Web Servers to work with a single Appeon Server or an Appeon Server cluster.

- Troubleshooting:

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

- Appeon Performance Tuning Guide:

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

- Testing Appeon Web Applications with QTP:

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

1.4 If you need help

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

2 Tutorial 1: Set up the Environment

You will need to go through the following tasks to set up the Appeon Mobile 1.0 environment for deploying and running the mobile application:

2.1 Task 1: Prepare the machine

The simplest scenario will be used in this guide, which requires 1 Windows PC and 1 iPad or iPhone.

- **1 Windows PC**: used as the development machine and the Appeon Server
- **1 iPad or iPhone**: used as the mobile client

The **Appeon Mobile for .NET** edition will be used to walk you through this guide, so please prepare the environment according to the following requirements.

Software requirements for **Windows PC**:

- Windows 7 (32-bit or 64-bit)

  Appeon Mobile 32-bit version can be installed to the 64-bit OS without any special considerations. But if you have installed **Appeon for PowerBuilder 64-bit** version before please uninstall it first. See Task 1.1: Uninstall previous version of 64-bit Appeon.

- Internet Explorer 8, 9, or 10
- PowerBuilder 9.x, 10.x, 11.x, or 12.x
- (Optional) Sybase Adaptive Server Anywhere (32-bit engine) 8.0.2, 9.0, 10.0.1, 11.0, or 12.0 (for running the demos included with the Appeon installation)
- .NET Framework 4.0

  Download the .NET Framework 4.0 setup program from http://www.microsoft.com/en-us/download/details.aspx?id=17718.

- IIS 7.5

  See Task 1.2: Install IIS and Task 1.3: Configure IIS.

- Appeon Server
- Appeon Developer

  See Task 2: Install Appeon Server & Appeon Developer

Software requirements for the iPad or iPhone:

- iOS 5.1 or above
- Appeon Workspace

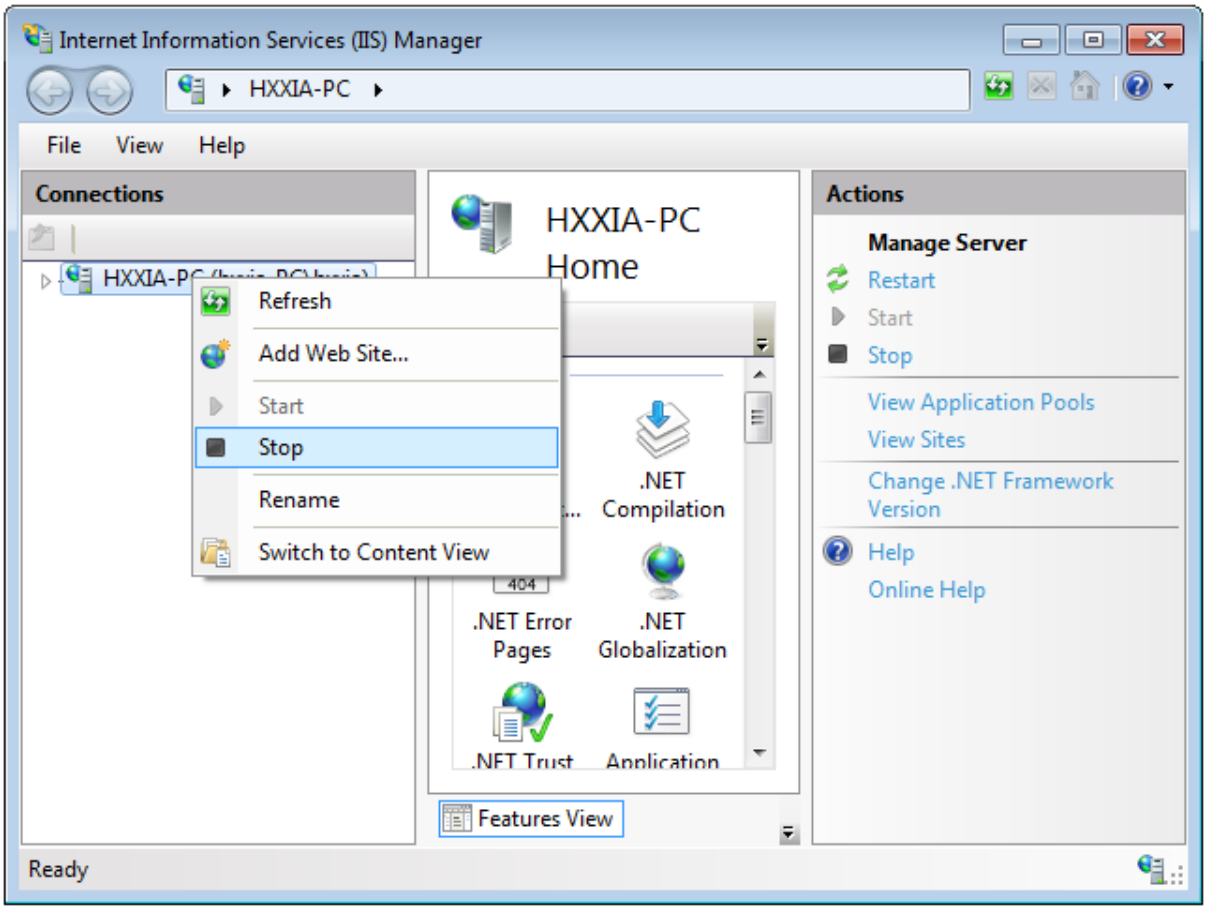
  See Task 3: Install Appeon Workspace (on the iPad or iPhone)

2.1.1 Task 1.1: Uninstall previous version of 64-bit Appeon

If you are using a 64-bit machine you can install **Appeon Mobile (32-bit)** to the 64-bit OS without any special considerations. But if you have a previous version of **Appeon for PowerBuilder (64-bit)** already installed on this machine then you must uninstall it first.

Step 1: Open **IIS Manager**, right click the **top** node (not the website node) in the treeview and select **Stop** from the popup menu. This will stop the entire IIS.

Figure 2.1: Stop the entire IIS Manager



Step 2: Close any opened window, especially Sybase PowerBuilder and IIS Manager.

Step 3: Uninstall all of the Appeon components including Appeon Server, Appeon Developer, and Appeon Help. You will need to uninstall these components one by one.

Step 4: Verify Appeon is cleanly uninstalled by the following two steps:

- Double check the **Control Panel\Programs\Programs and Features** and make sure no Appeon component is listed.
- Open a command prompt window and then type "regedit"<Enter>. Double check that no **ADT** or **ASN** keys are listed under HKEY_LOCAL_MACHINE\SOFTWARE\Appeon \<version_number>.

Step 5: Clear the Internet Explorer cache and temporary files.

Step 6: Delete the entire Appeon folder from C:\Users\User_Name\AppData\Roaming\.

Step 7: Delete all the Appeon application folders from the IIS Web root. For example, under *C:\inetpub\wwwroot* at minimum you should delete the following folders, appeon, appeon_acf_demo, appeon_code_examples, pet_world, sales_application_demo.

Step 8: Restart the machine.

Step 9: Start IIS by right-clicking the **top** node in the treeview in the IIS Manager and selecting **Start** from the popup menu.

After that, you can proceed to install Appeon Mobile by following steps in Task 2: Install Appeon Server & Appeon Developer.

2.1.2 Task 1.2: Install IIS

IIS 7.5 is not installed on Windows 7 by default. You need to manually install it. Before you install IIS 7.5 make sure you have installed .NET Framework 4.0. If it is not installed please download the setup program from http://www.microsoft.com/en-us/download/details.aspx?id=17718 and install .NET Framework 4.0 first.

Below are steps for installing IIS.

Step 1: Click **Start** and then click **Control Panel**. In Control Panel, click **Programs** and then click **Turn on or off Windows features**.

Step 2: Select the check box of **Internet Information Services**, then expand the list and select the items under **Web Management Tools, Application Development Features** and **Common HTTP Features** according to the figure below. Click **OK** to let Windows finish the install.

Figure 2.2: Select the Web Management Tools

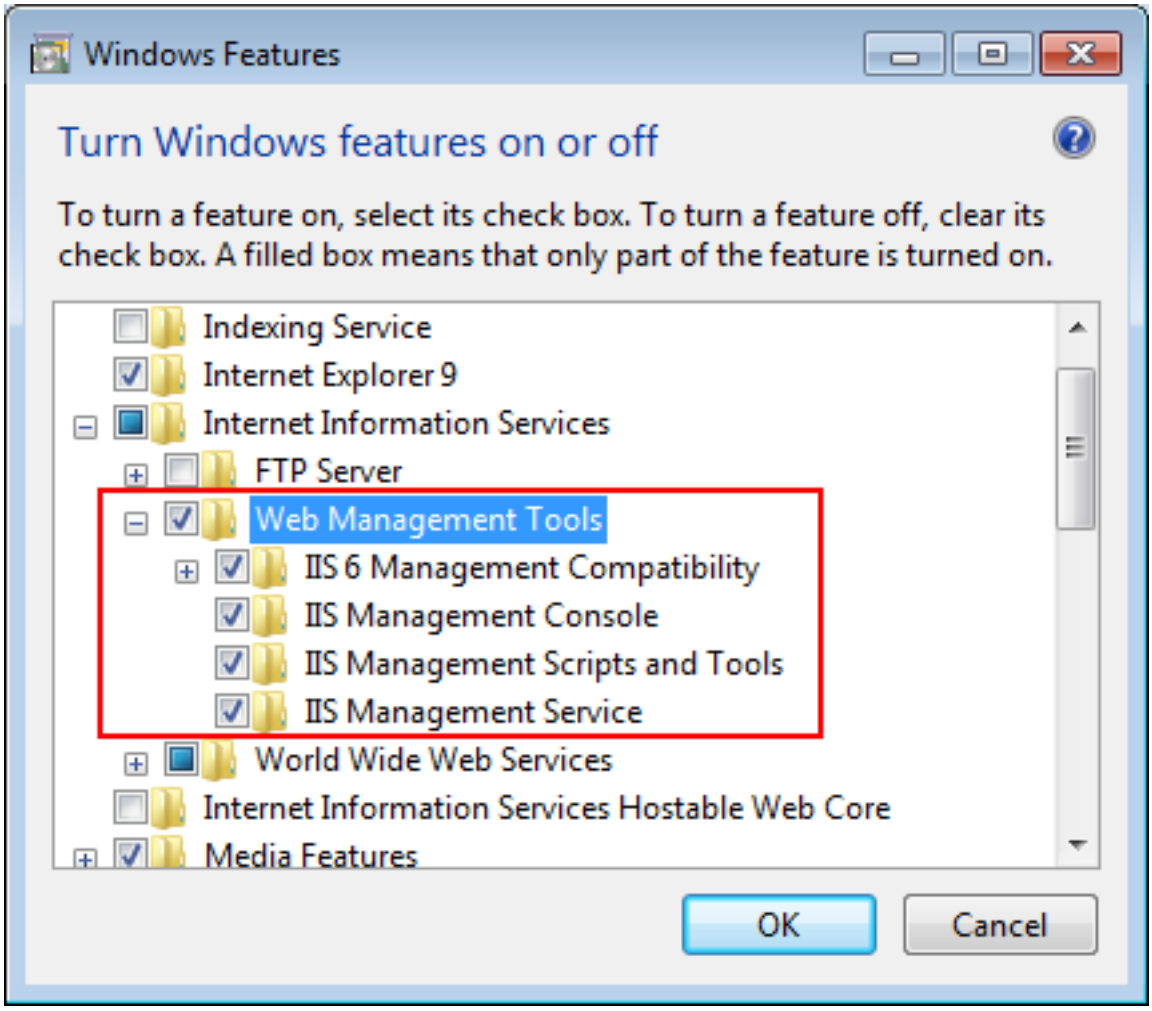


Figure 2.3: Select the Application Development Features

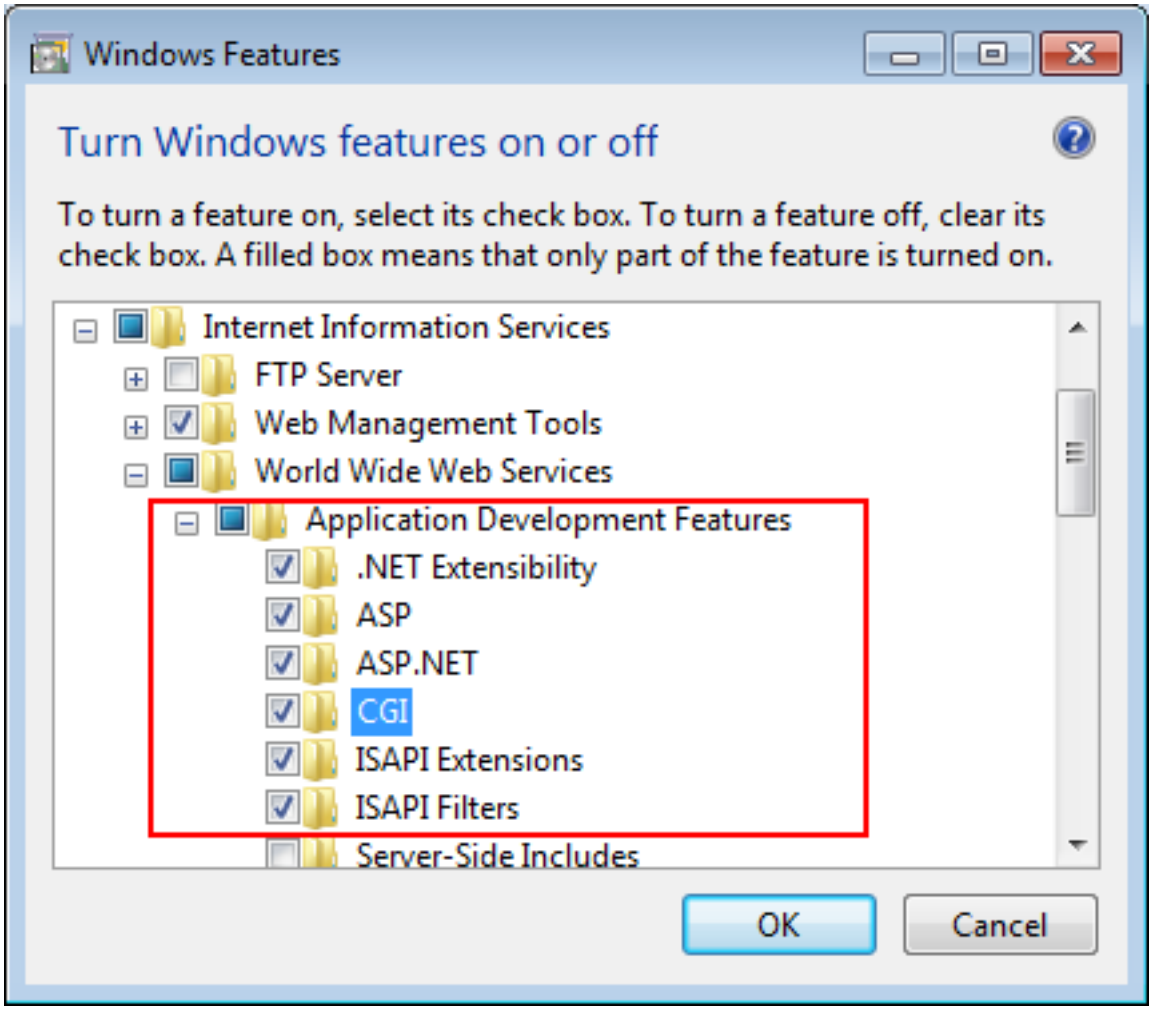
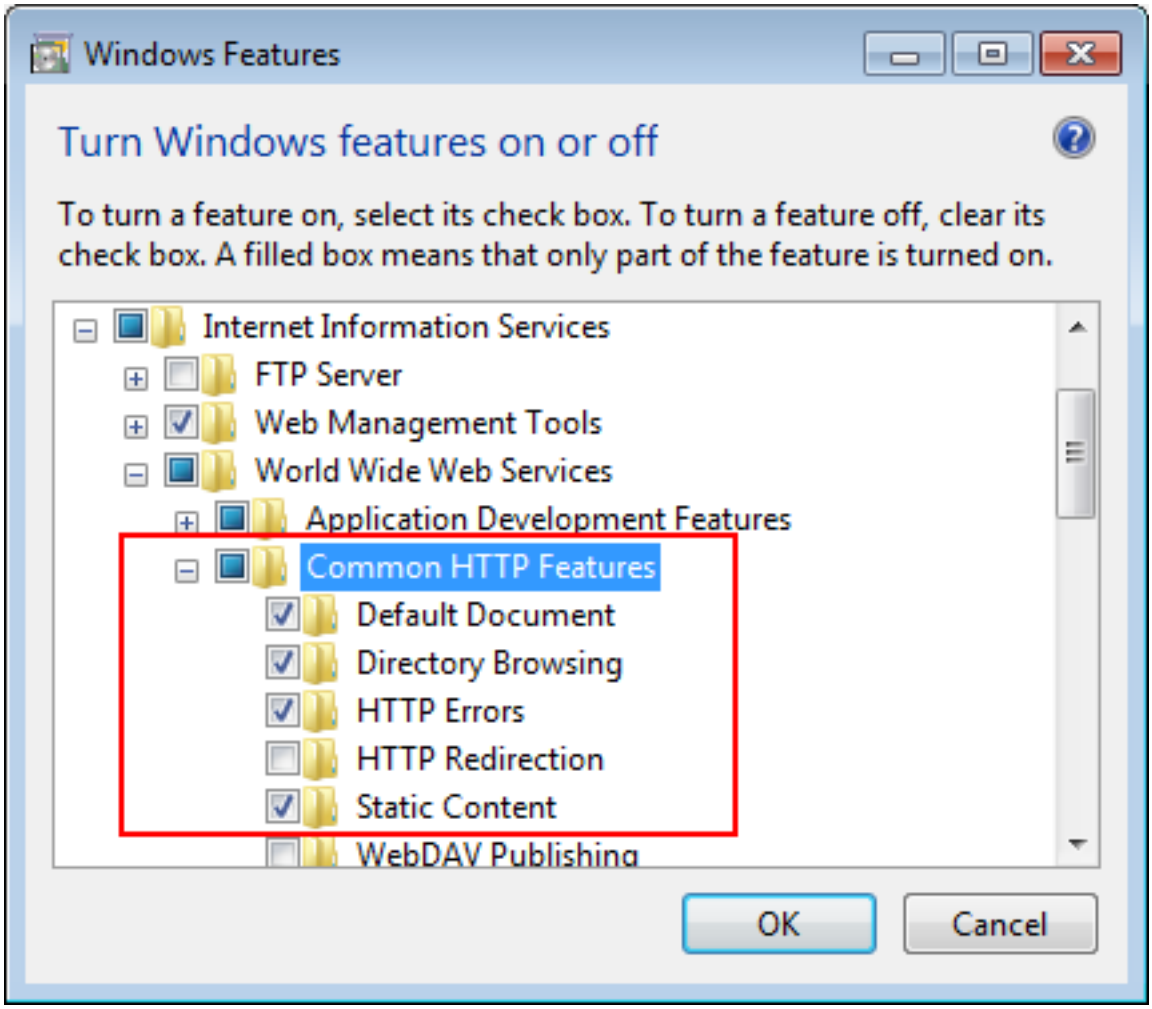


Figure 2.4: Select the Common HTTP Features



Step 3: After IIS is installed, go to **IIS Manager**, right click the **Default Web Site**, select **Binding**, and make sure **IP Address** is indicated with an asterisk "*". If not, please click **Edit** and select **All Unassigned** for the IP address.

Step 4: Run http://*IP_Address*:80/ in Internet Explorer. If the welcome screen displays, then IIS is working properly.

Tip: to obtain the IP address of the server, open a command prompt window and then type **ipconfig**<Enter>. Remember this IP address as it is also needed when you configure the mobile app in Appeon Workspace.

If IIS is not working, please re-install IIS or fix the IIS configuration by following the IIS help.

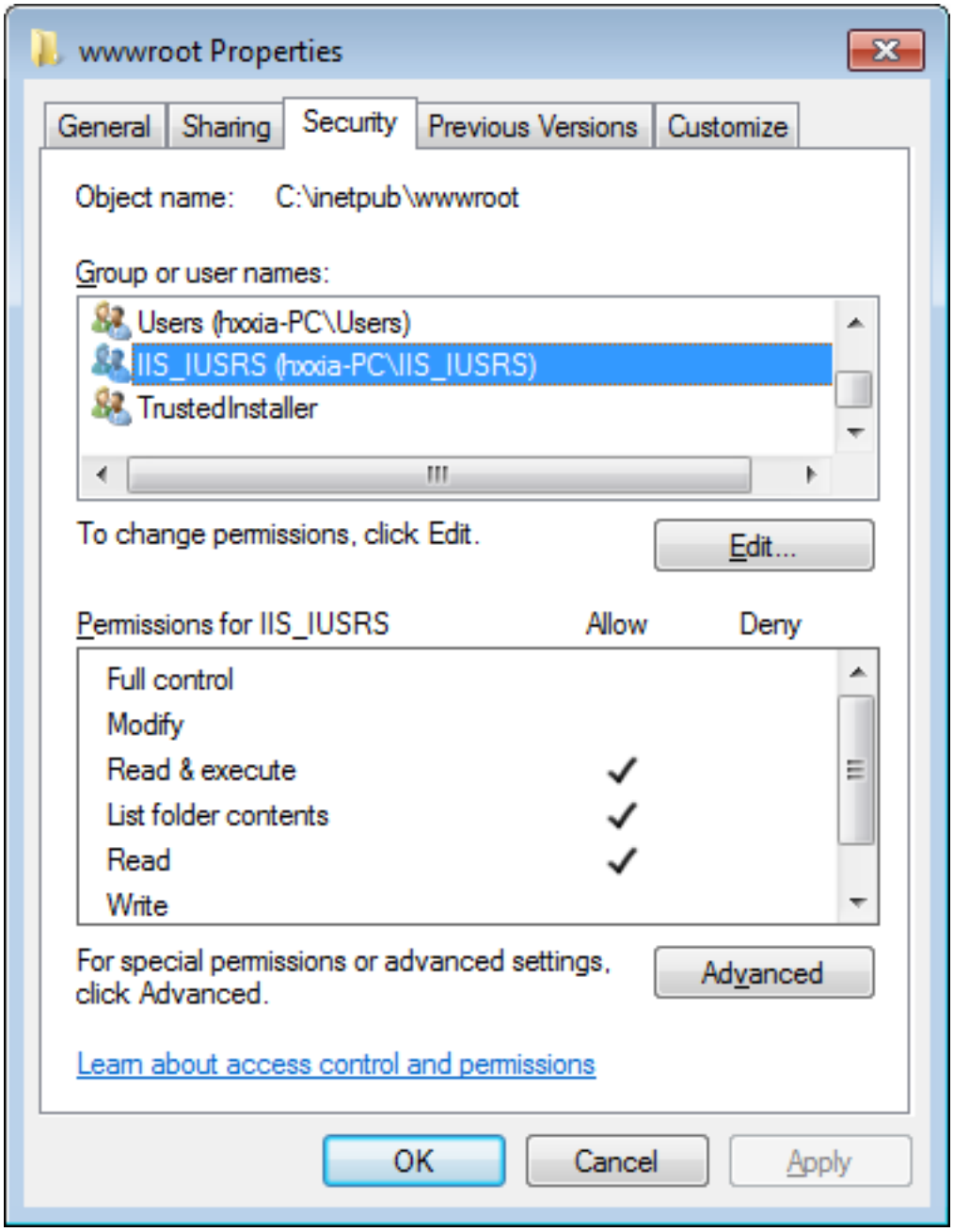
2.1.3 Task 1.3: Configure IIS

Follow steps below to grant IIS_IUSRS account with full controls to the IIS Web root folder:

Step 1: Right click **C:\Inetpub\wwwroot** and select **Properties** from the popup menu.

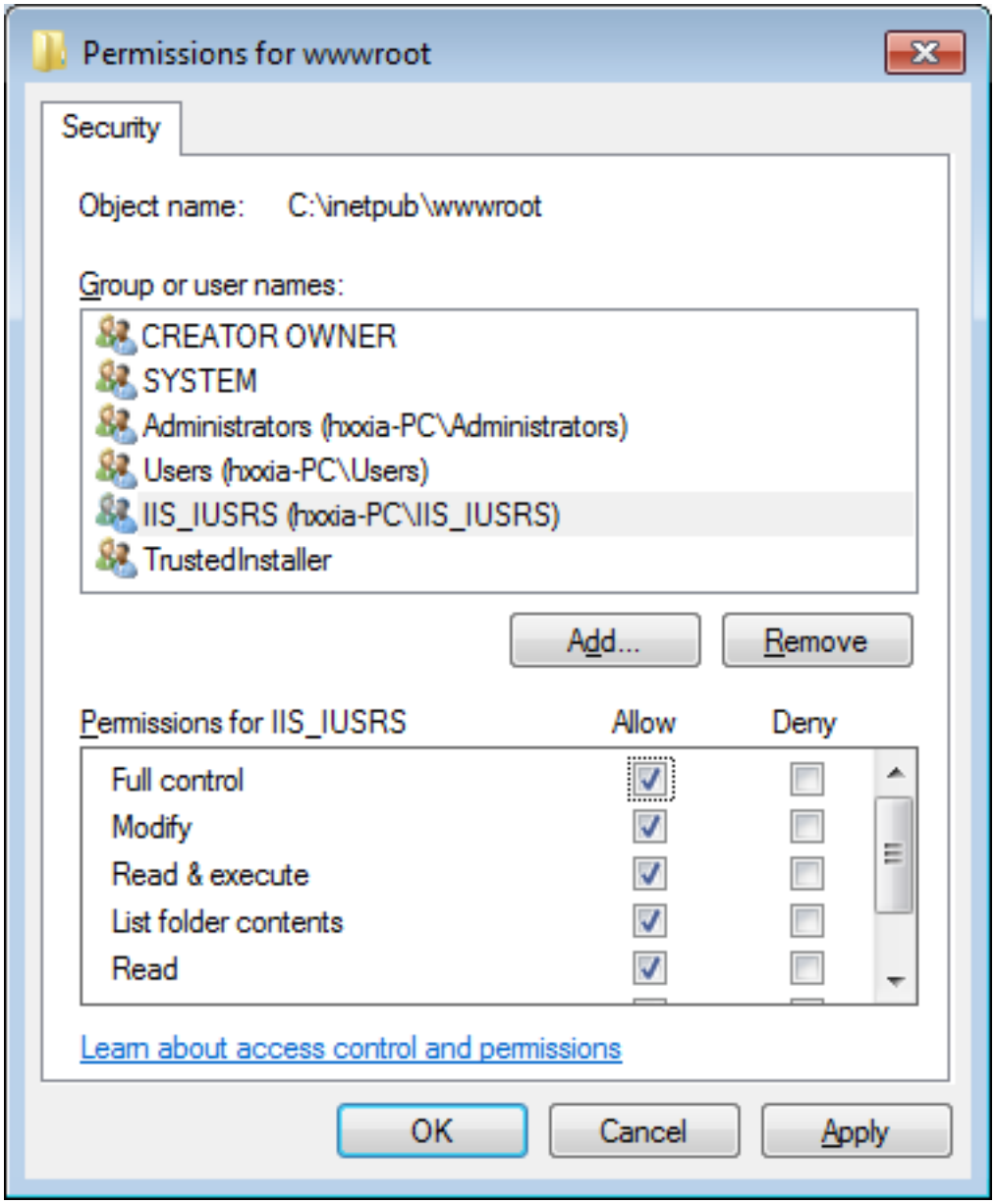
Step 2: On the **Security** tab, select **IIS_IUSRS** in the **Group or user names** list box, and then click the **Edit** button.

Figure 2.5: Select IIS_IUSRS



Step 3: Select **IIS_IUSRS** in the **Group or user names** list box, and then select the **Allow** check box for the **Full control**.

Figure 2.6: Select Full control for IIS_IUSRS



Step 4: Click **OK** to save the settings.

2.2 Task 2: Install Appeon Server and Appeon Developer

2.2.1 Task 2.1: Install Appeon Server and Appeon Developer

On the Windows PC, install Appeon Server and Appeon Developer by the following steps.

Step 1: Start IIS server: open IIS Manager, right click the **top** node (not the website node) in the treeview and select **Start** from the popup menu.

Step 2: Launch the Appeon product setup program by double-clicking **setup.exe**. Click **Next** until you reach the screen for selecting the product components. Make sure the checkboxes for **Appeon Server for .NET** and **Appeon Developer** are selected.

Step 3: Click **Next** until you reach the screen for specifying the IIS Web site where Appeon Server will be installed. Make sure **Select an existing Web Site** and **Default Web Site** are selected.

Step 4: Click **Next**. Choose whether to install the **Demo Applications**. If you have ASA database server installed, select to install the demo; otherwise, do not install the demo since the demo requires ASA database server to be previously installed.

Step 5: If you selected to install the **Demo Applications**, specify the path for the ASA database server engine.

Step 6: Click **Next** until Setup begins copying files for the Appeon Server installation.

When Appeon Server installation is completed, Appeon Developer installation automatically starts.

Step 7: Click **Next** until Setup begins copying files for the Appeon Developer installation.

Step 8: When the installation is completed, select the checkbox for **Restart IIS Server** and **Register .NET Framework 4.0** and then click **Finish**.

You can also restart IIS by typing **iisreset** in the command prompt window.

2.2.2 Task 2.2: Verify the installation

On the Windows PC, run http://*IP_Address*:80/. If AEM is launched successfully, then Appeon Server is installed successfully.

2.3 Task 3: Install Appeon Workspace (on the iPad or iPhone)

On the iPad or iPhone, search for **Appeon** in Apple Store and then tap **Install** to download and install Appeon Workspace.

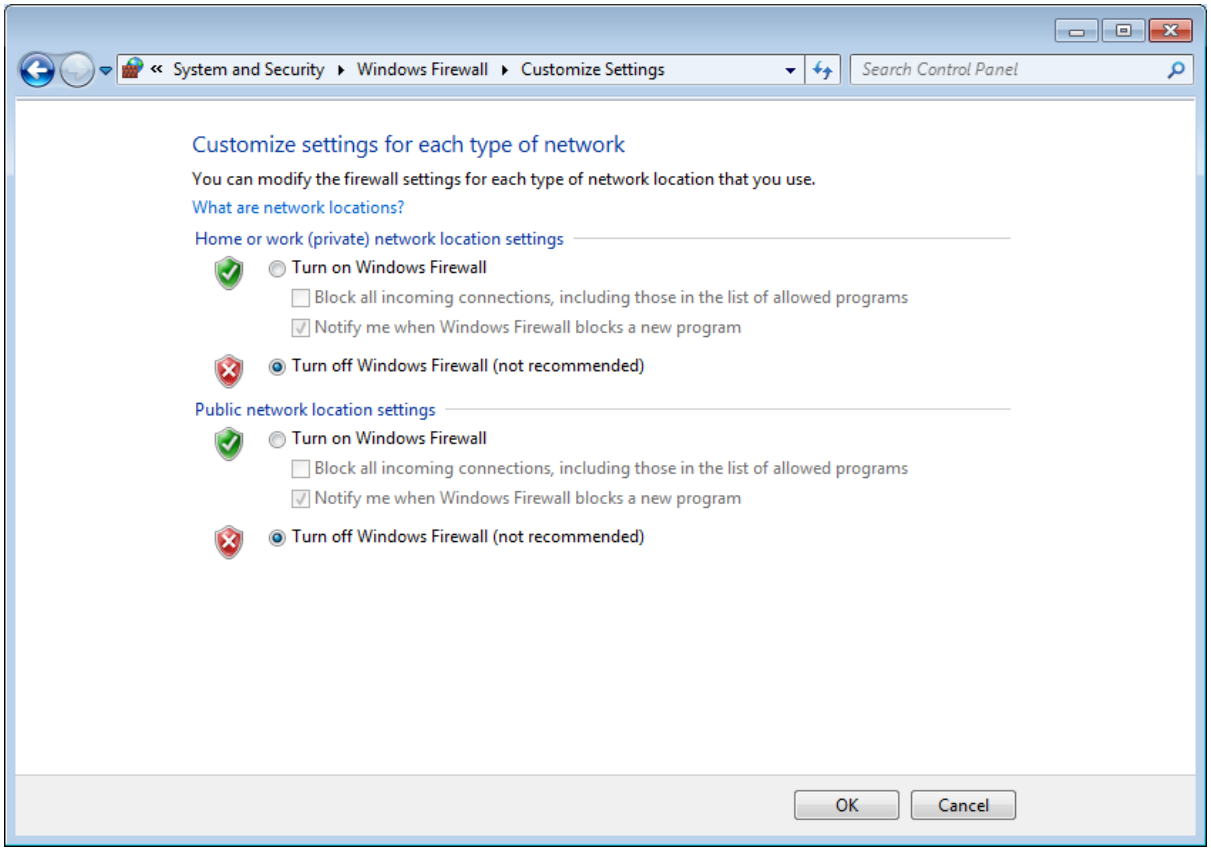
You can also download Appeon Workspace from iTunes Store to your PC and then synchronize it to the iPad or iPhone via iTunes.

2.4 Task 4: Configure the network connection

Step 1: On the Windows PC first disable all anti-virus software. It is highly likely that the anti-virus software will prevent the Appeon Server from running properly and/or your iPad/ iPhone connecting to the Appeon Server. For example, there are known conflicts with AVG and Avast, just to mention a few popular free anti-virus commonly used.

Step 2: On the Windows PC, turn off the Windows firewall for both the Home and Work network locations (**Control Panel** > **Windows Firewall**).

Figure 2.7: Turn off the Windows firewall



Step 3: Check and make sure the Windows PC and the iPad or iPhone connected to the same Wi-Fi router. To verify this, on the iPad or iPhone, open the Safari Web browser and type http://*Server_IP*:80/. If AEM is launched successfully, it means that the Appeon Server is properly installed and that the iPad or iPhone is able to connect to the Windows PC.

NOTE: Mobile Internet is supported in Appeon Mobile 1.0. However, in order for the Appeon Workspace to connect to your Appeon Server you will need an external IP address. You can verify that your external IP address is properly working by typing *http://External_IP_Address:80* into a Web browser of any device connected to the Internet. If you get a page not found error or other HTTP error then your network is not configured properly for external access.

3 Tutorial 2: Config, Deploy & Run the Application

This tutorial will use the Appeon Mobile for .NET edition to walk you through the following tasks:

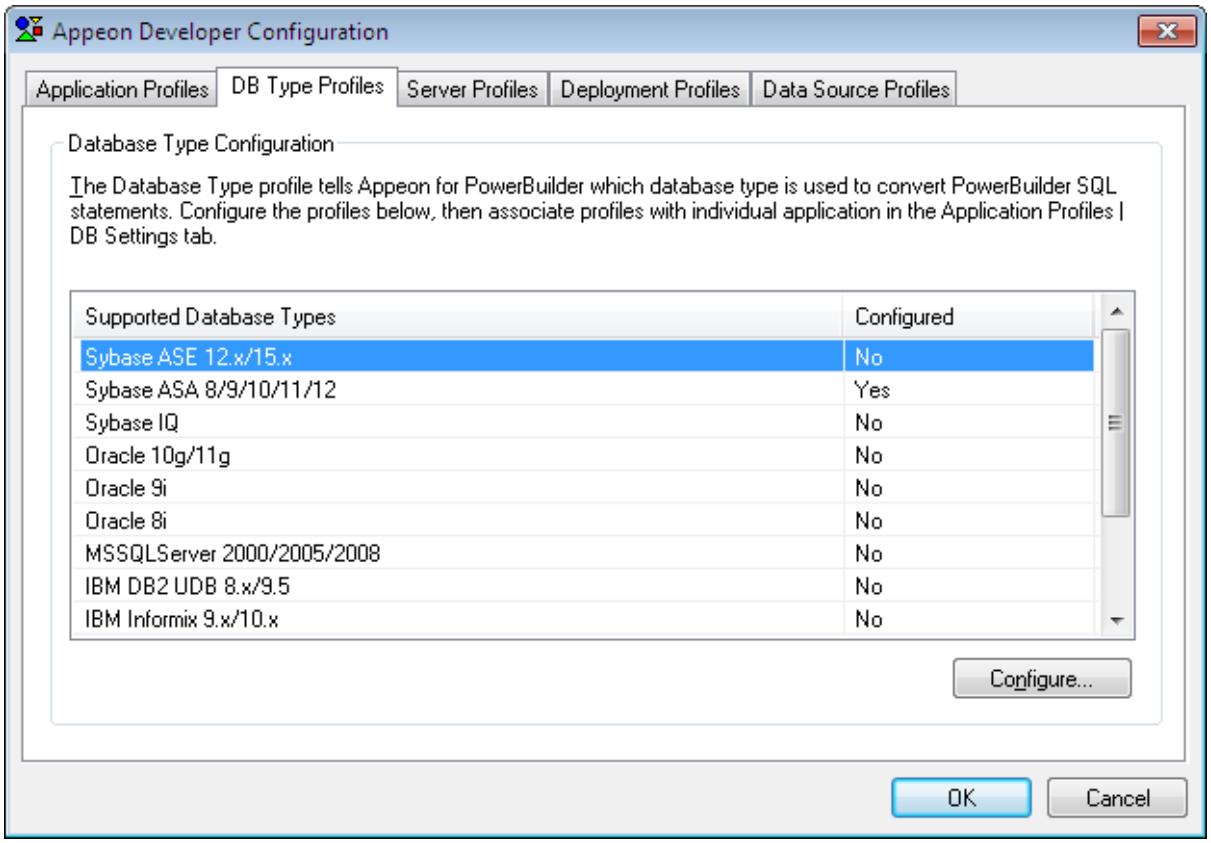
3.1 Task 1: Configure the database type

Step 1: On the Appeon Developer toolbar, click the **Configure** icon ( ).

Step 2: On the **Appeon Developer Configuration** window, click the **DB Type Profile** tab.

Step 3: View the **Configured** column of the database type used by your application, if it displays **Yes**, you can skip the remaining steps in this task. Otherwise, select the database type used by your application, and then click **Configure**.

Figure 3.1: DB Type Profile in ADT



Step 4: On the **Database Type Profile Configuration** window, do the following (take **Sybase ASA** as an example):

1. Select the **ODBC Interface** radio button from the **Database Interface** option.

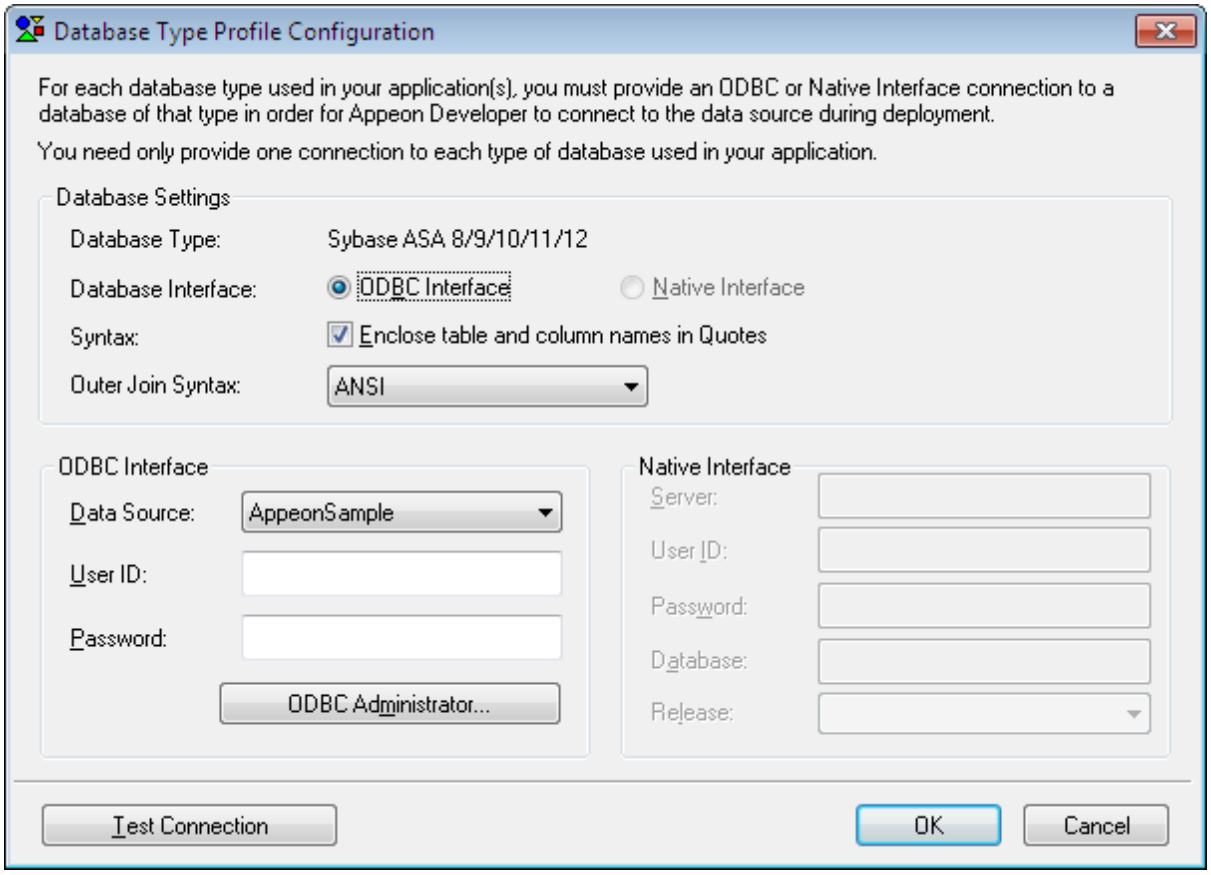
2. Select a data source from the **Data Source** dropdown list box. It can be any data source (ODBC DSN) provided it is the same type as used by your application. It does NOT have to be the actual ODBC DSN used by your particular application. The database type is what is important and that a connection can be established to the specified ODBC DSN.

3. Keep the rest as default, and then click **Test Connection**.

4. Make sure that the database connection is successful.

5. Click **OK**.

Figure 3.2: Database Type Profile Configuration



Now the **Configured** column of your database type will be indicated by **Yes**. You can select the database type when you create the application profile for your application in Task 3: Configure and deploy the application.

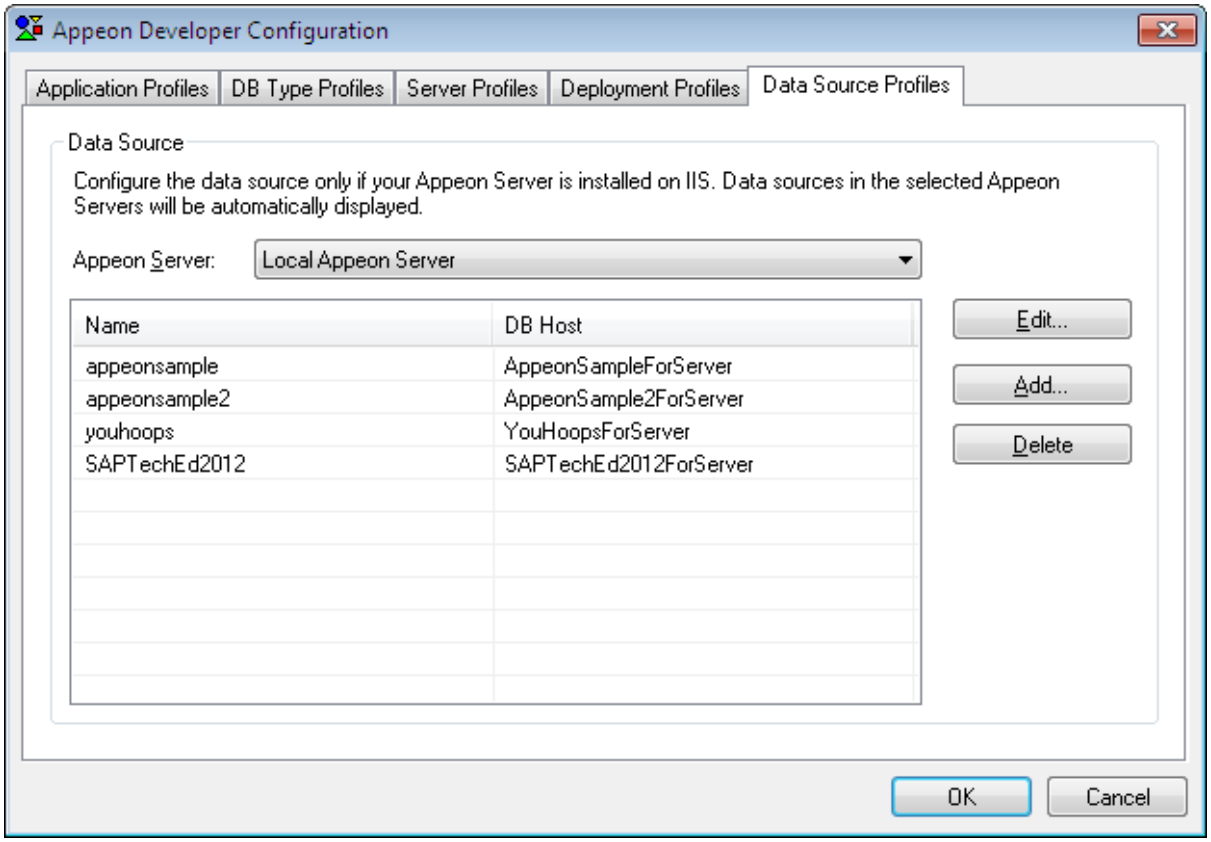
3.2 Task 2: Configure the database connection

Step 1: In the **Appeon Developer Configuration** window, click the **Data Source Profile** tab.

Step 2 -- Select **Local Appeon Server** from the **Appeon Server** dropdown list box.

Step 3: Click the **Add** button to create a data source in the selected Appeon Server.

Figure 3.3: Connection Cache Profiles



Step 4 -- On the **Add Data Source** window, specify the data source settings. Below we take **Sybase ASA** and **Microsoft SQL Server** database as examples.

Steps for configuring a data source for **Sybase ASA** database:

1. In the **Name** text box, input any text you like as the name of the data source.

2. Select **ODBC Driver** from the **Driver** dropdown listbox.

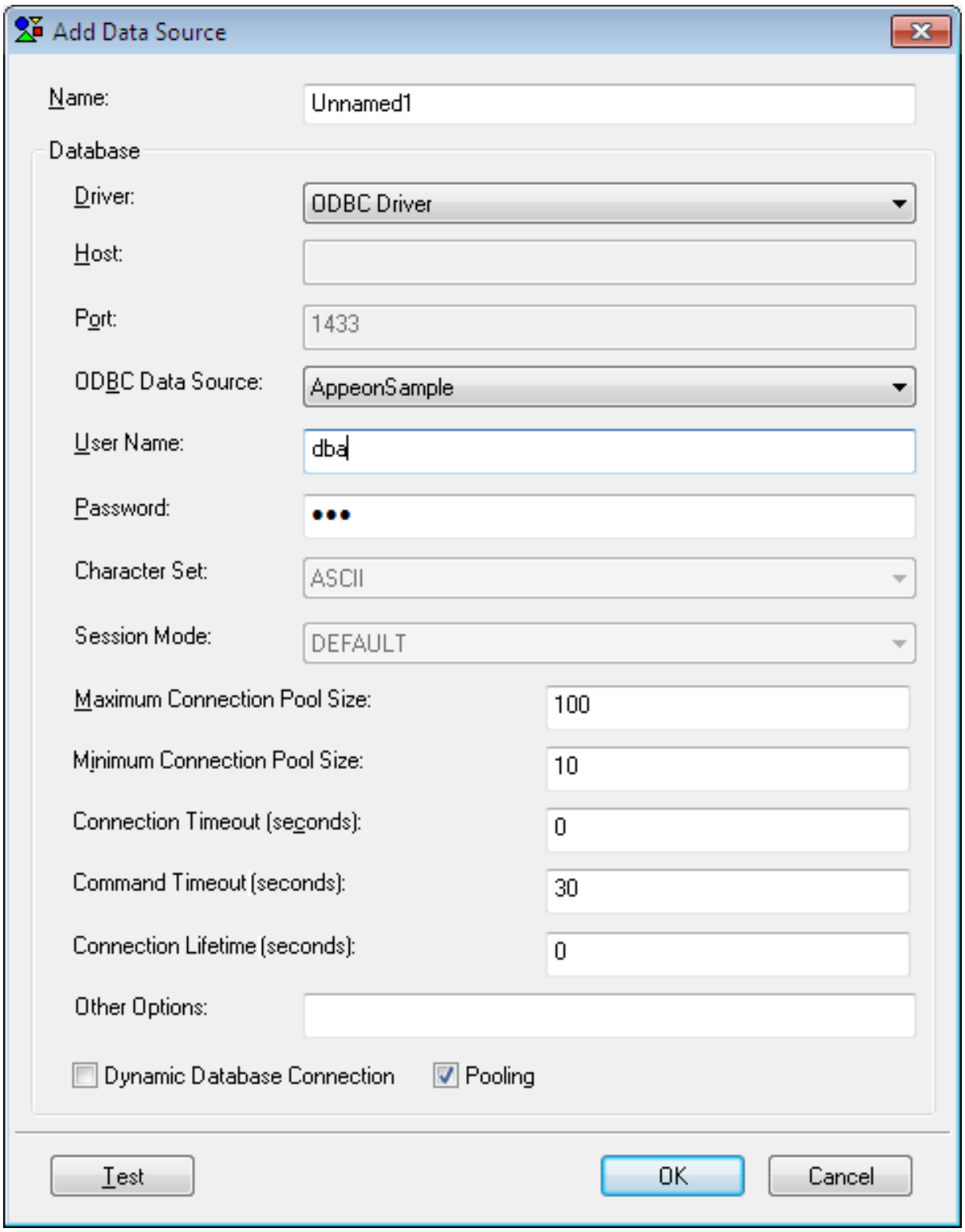
3. Select the data source from the **ODBC Data Source** dropdown listbox.

4. Input the database login user name and password respectively in the **User Name** text box and the **Password** text box.

5. Keep the rest as default, and then click **Test**. Make sure the test is successful.

6. Click **OK**.

Figure 3.4: Add Data Source



Steps for configuring a data source for **Microsoft SQL Server** database:

1. In the **Name** text box, input any text you like as the name of the data source.

2. Select **MS SQL Server Native Driver** from the **Driver** dropdown listbox.

3. Input the IP address or machine name of the database server in the **Host** field.

4. Input the port number of the database server in the **Port** field.

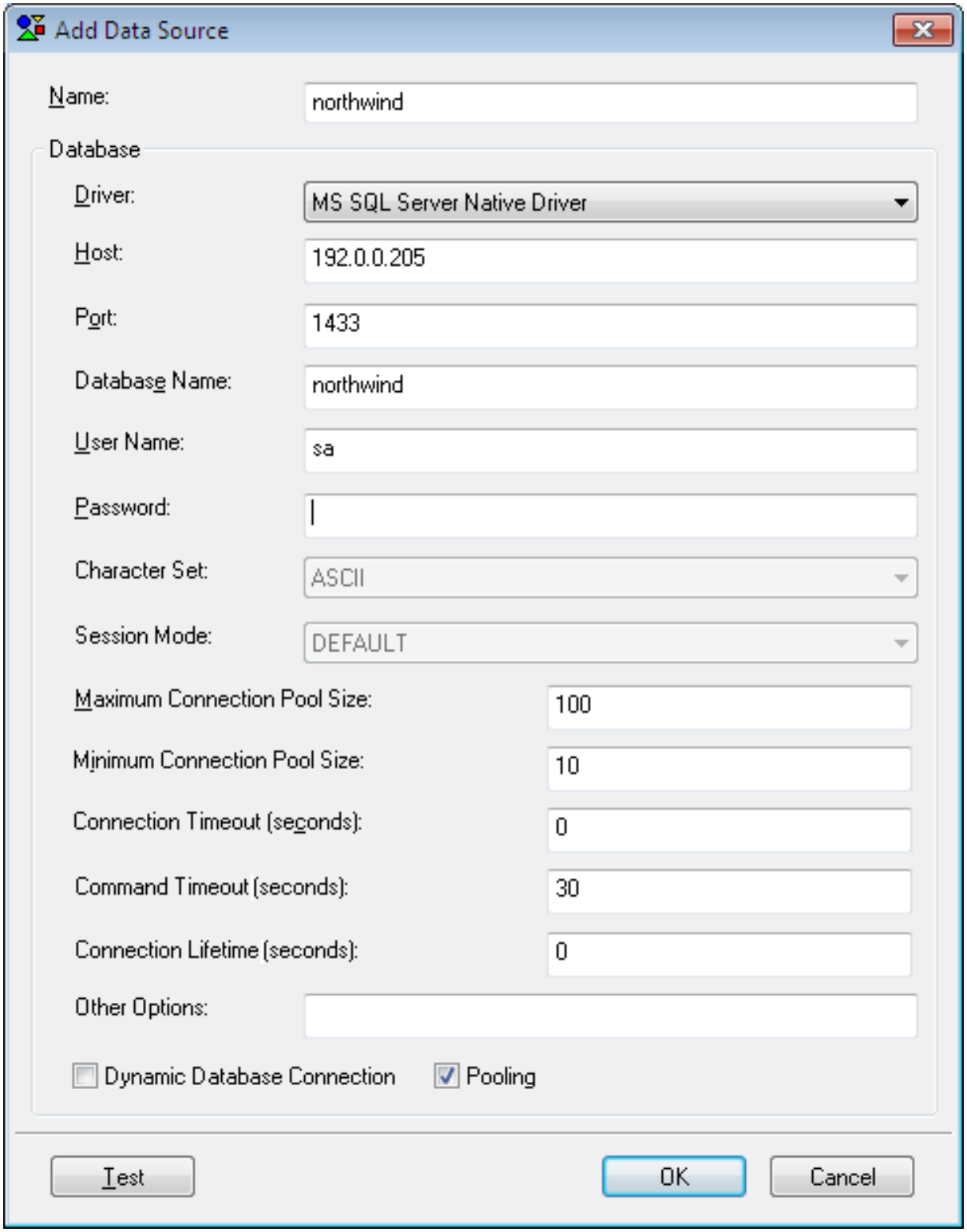
5. Input the database name, database login user name and password respectively in the **Database Name**, the **User Name** and the **Password** text boxes.

6. Keep the rest as default, and then click **Test**. Make sure the test is successful.

7. Click **OK**.

Tip: you should check with your SQL Server administrator to verify the port number, the username, and the password are correct.

Figure 3.5: MS SQL Server Native Driver



Now the data source you added will be listed in the **Data Source Profiles** tab. You can select it when you create the application profile for your application in Task 3: Configure and deploy the application.

3.3 Task 3: Configure and deploy the application

Step 1: On the Appeon Developer toolbar click the first icon **Config Wizard** ().

Step 2: In the welcome screen click **Next**.

Step 3: Specify following settings and then click **Next**.

1. Specify the application profile name in the **Application Profile Name** text box.

2. Specify the application URL in the **Web Folder** text box.

3. Select a project type from the **Project Type** dropdown list box.

Make sure **Mobile** is selected from the **Project Type** dropdown list box. The specified text is also used as the name of the folder created under the Web root of the Web server for storing the files when the application is deployed.

4. Select a device type from the **Device Type** dropdown list box.

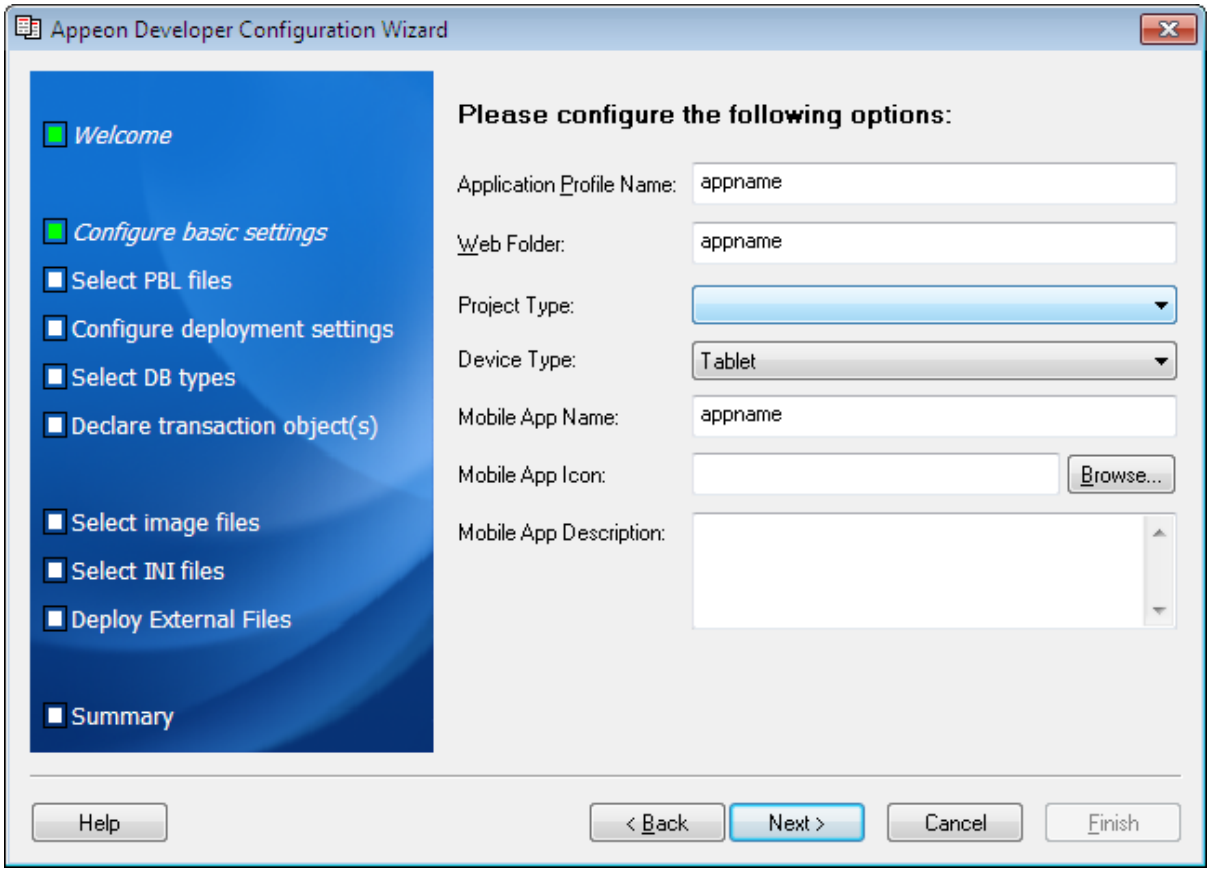
Tablet, Smartphone, and Both are listed for choices. For applications that are designed for tablets, select "Tablet"; for applications that are designed for smartphones, select "Smartphone"; for applications that are designed for both devices, select "Both".

5. Enter an app name in the **Mobile App Name** text box.

6. In the **Mobile App Icon** text box, specify an icon for your application by clicking **Browse** to select the image file of the following format: PNG, GIF, JPG, BMP, and ICO. The image that you choose will be displayed as the application icon in the Appeon Workspace. Recommended size is 86 x 86 pixels (or above) for non-retina display and 172 x 172 pixels (or above) for retina display. To ensure the best display quality in both high-resolution and low-resolution screens, you must supply an image of 172 x 172 or above. The image will be automatically adjusted to fit properly. If you leave this field empty, the default icon will be displayed in Appeon Workspace.

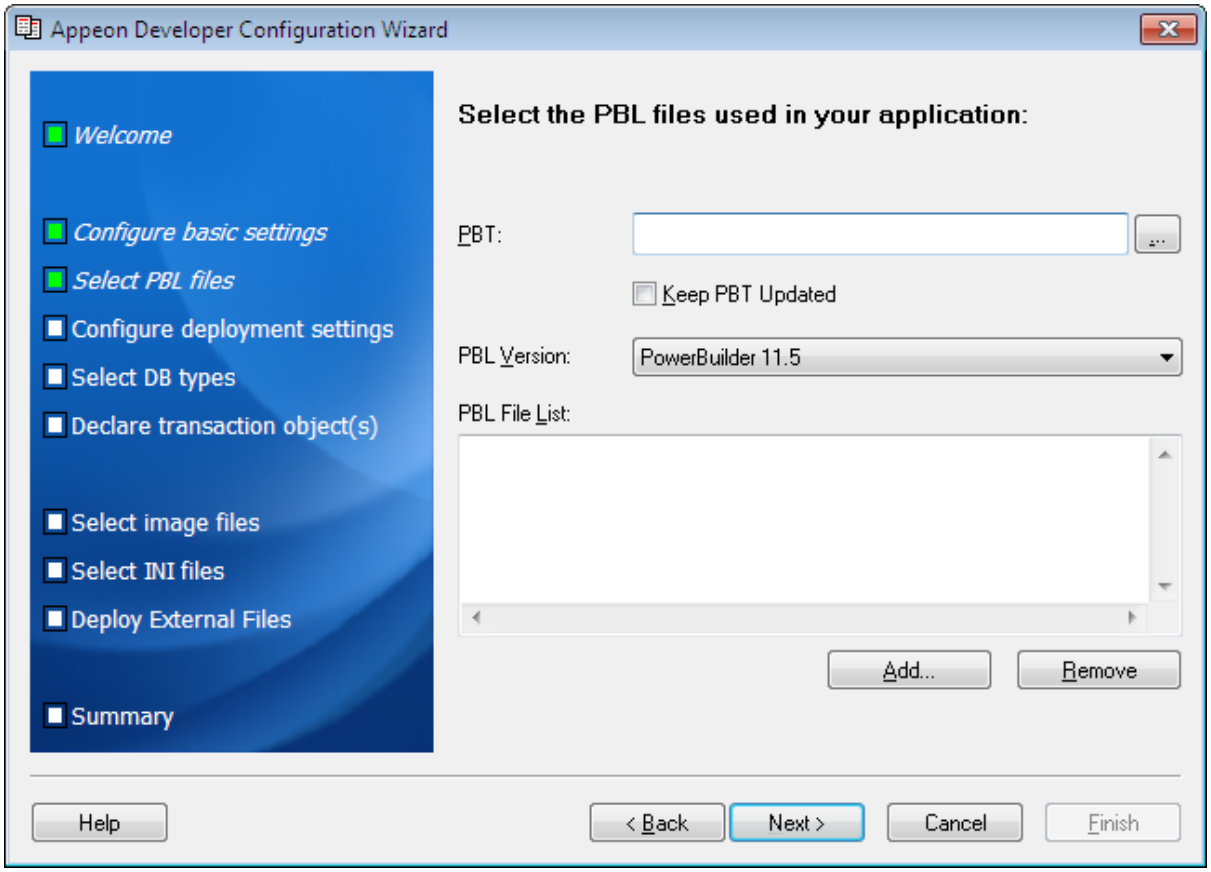
7. Enter a brief description in the **Mobile App Description** text box. This description will be displayed in the Appeon Workspace next to the application icon. If you leave this field empty, no app description will be displayed in the Appeon Workspace.

Figure 3.6: Appeon Developer Configuration Wizard



Step 4: Add the PBT from the **PBT** dropdown list box (and all related PBLs will be automatically added for you) or add the PBL files individually that are used in your application by clicking the **Add File** button in the **PBL File List** group box, and then select a PBL version from the **PBL Version** dropdown list box. Click **Next**.

Figure 3.7: Add the PBT in ADT Wizard

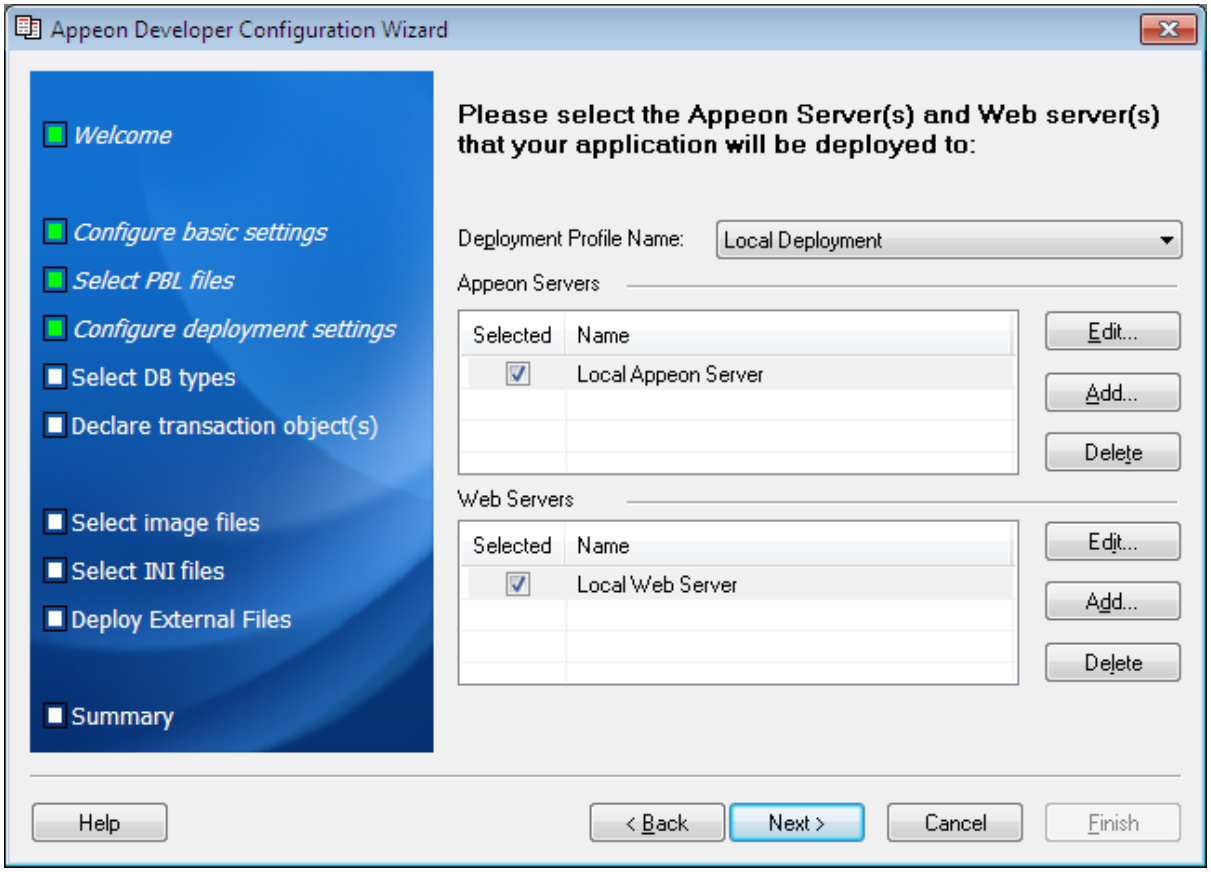


Step 5: Keep the default settings and click **Next**.

Since you have installed Appeon Developer and Appeon Server on the same machine, you can directly use the **Local Appeon Server** profile, the **Local Web Server** profile, and the **Local Deployment** profile, all of which are configured automatically by the product setup program.

When you click **Next** the config wizard will automatically test the connection to the server. You will not be able to proceed if the connection test failed.

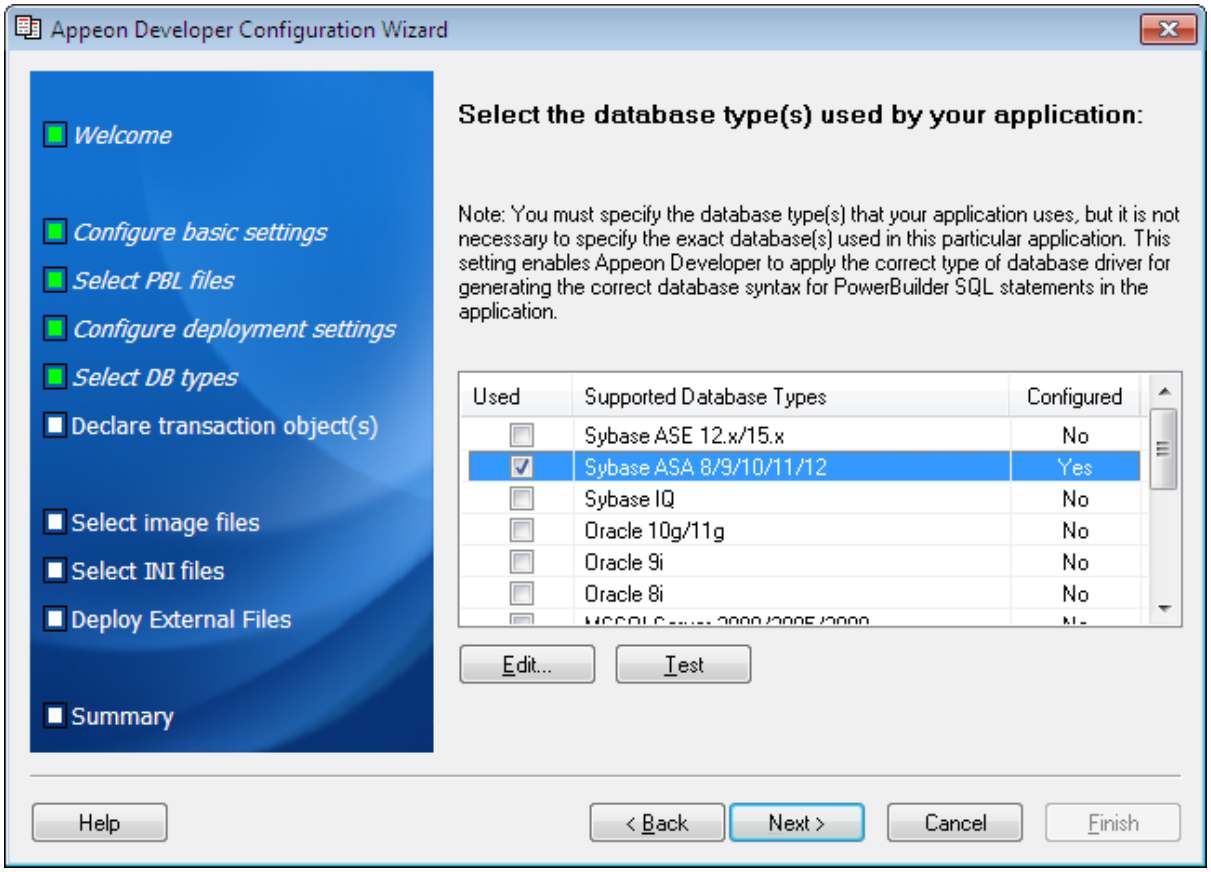
Figure 3.8: Select the Appeon Server(s) and Web Server(s)



Step 6: Select the database type used by your application and click **Next**.

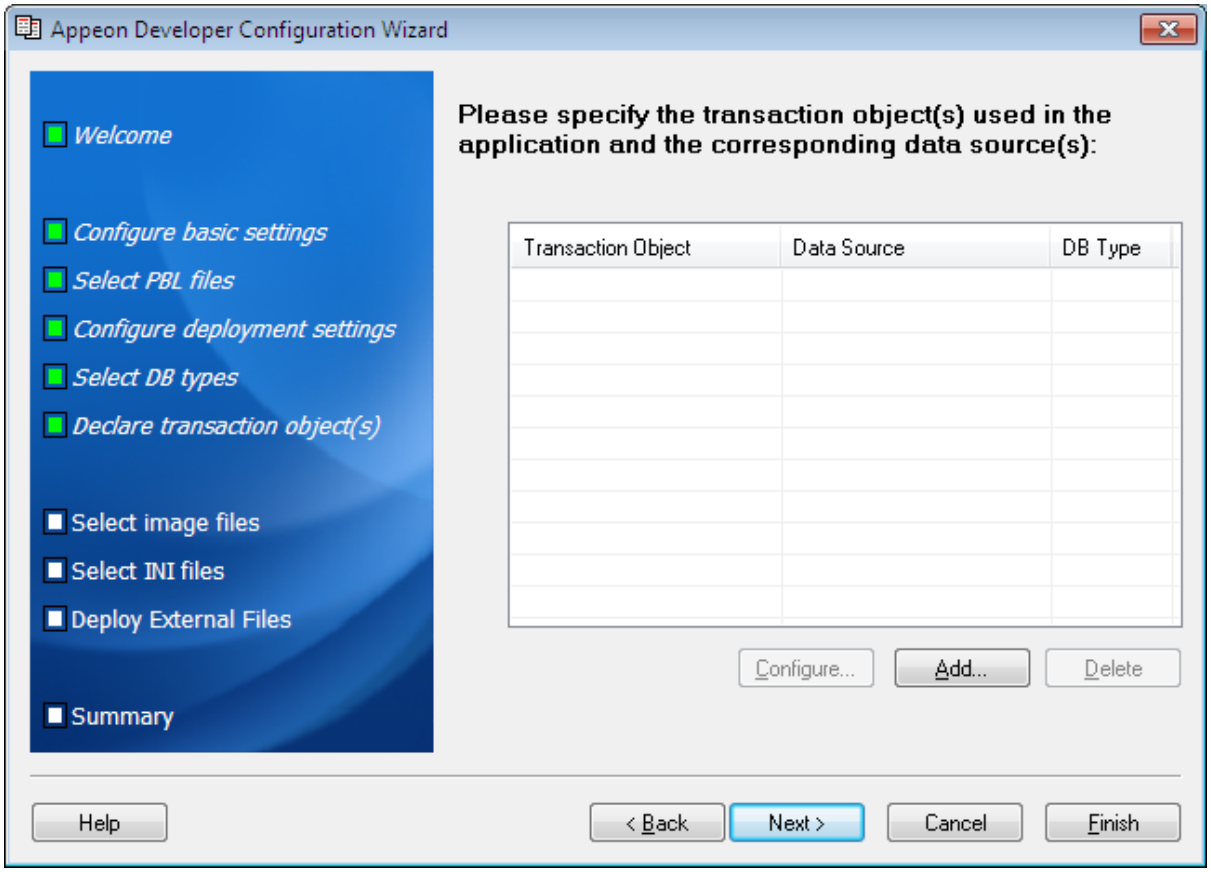
If the required database type has not been configured, you should highlight the database type, then click **Edit**, and then follow Step 4 in Task 1: Configure the database type to configure it.

Figure 3.9: Select the database type(s)



Step 7: Click **Add** to specify the transaction object(s) used in your application.

Figure 3.10: Specify the transaction object



In the **Add Transaction Object** window, specify the following settings:

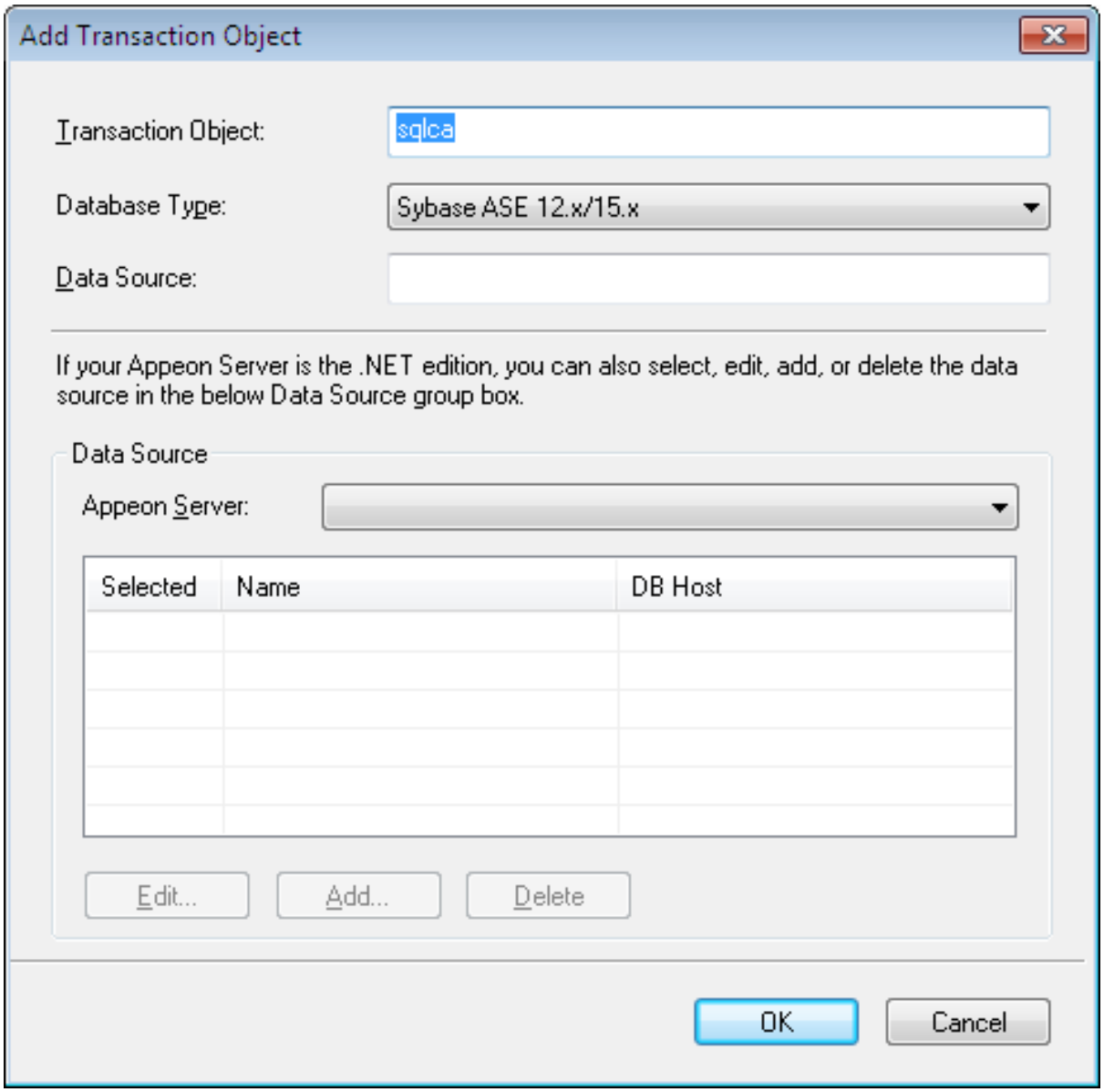
a. Input the transaction object name used by the application to the **Transaction Object** text box. Default transaction object for most PB applications is **SQLCA**.

b. Select the database type from the **Database Type** list box.

c. Select **Local Appeon Server** from the **Appeon Server** dropdown list box.

d. Select the data source from the table. The data source should connect to the same database that the PowerBuilder application connects to. If the required data source does not exist, you should click **Add**, and then follow Step 4 in Task 2: Configure the database connection to create it.

Figure 3.11: Select the connection cache



Tip: If you have more than one transaction object you can add additional transaction objects by repeating the above steps.

Step 8: Click **Browse** to select the image file or the folder that contains the image files, if any. Click **Next**.

Step 9: Click **Add File** or **Add Directory** to select the INI file, if any. Click **Next**.

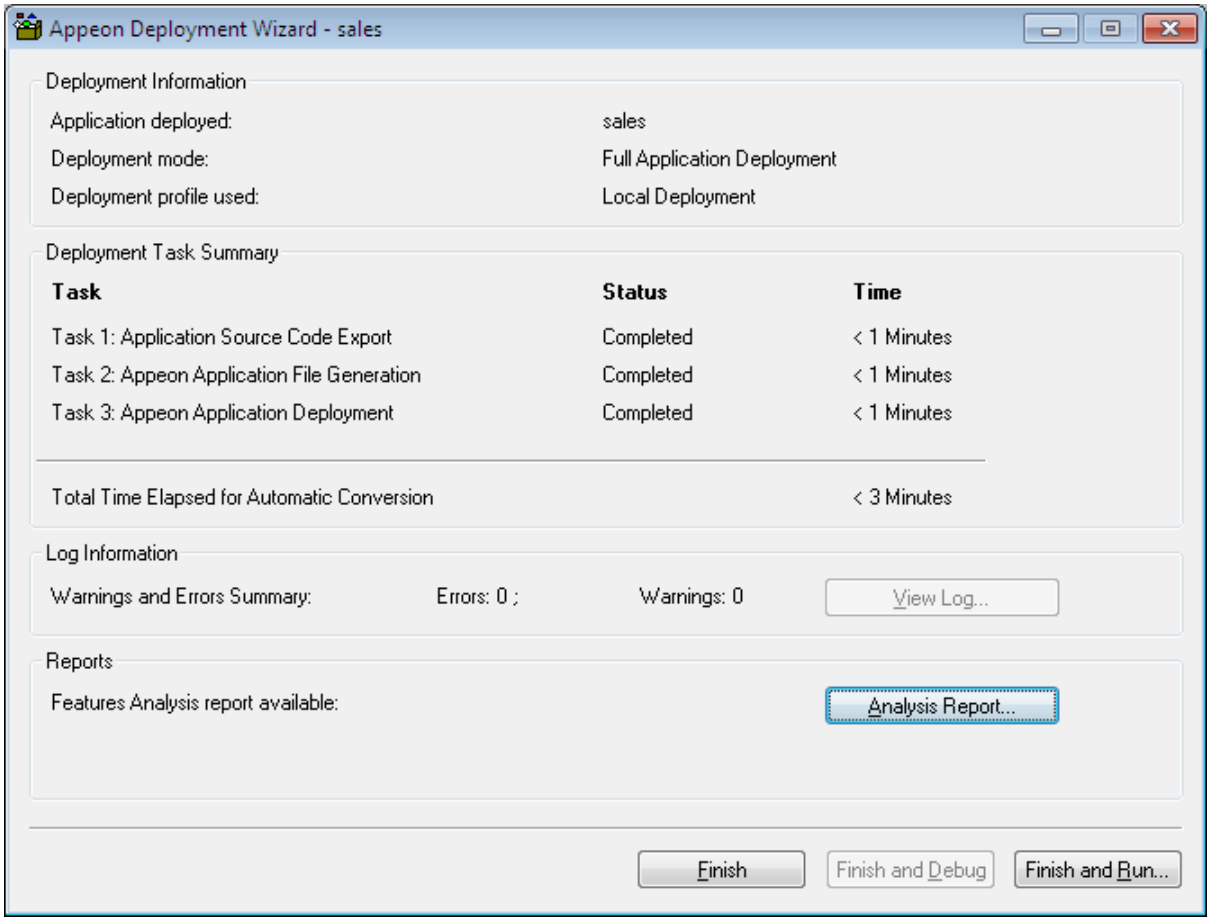
Step 10: Click **Add File** or **Add Directory** to select any other external files such as TXT file etc., if any. Click **Next**.

Step 11: In the configuration summary screen, keep the **Deploy the application now** option as selected. Click **Finish**.

Once you click **Finish**, the **Appeon Deployment Wizard** automatically starts deploying the application. To manually starts **Appeon Deployment Wizard**, you can click the **Deploy** icon ( ) on the Appeon Developer toolbar.

Step 12: Click **Finish** when the deployment process is complete.

Figure 3.12: Appeon Deployment Wizard_sales



3.4 Task 4: Run the Web version of the application (in IE)

Before you run the application on the iPad or iPhone, make sure your application can run successfully in the Internet Explorer Web browser (to aid debugging your application is automatically deployed as both a Web application using Appeon Web 6.6 and a mobile application using Appeon Mobile 1.0):

Step 1: Open Internet Explorer and navigate to the trusted sites list (**Internet Option > Security > Trusted Sites > Sites**). Uncheck the **HTTPS** checkbox and add the IP address of your IIS as well as the localhost. For example, if your IP address is 192.168.1.117 then it should look as follows:

Figure 3.13: Add the IP address of IIS

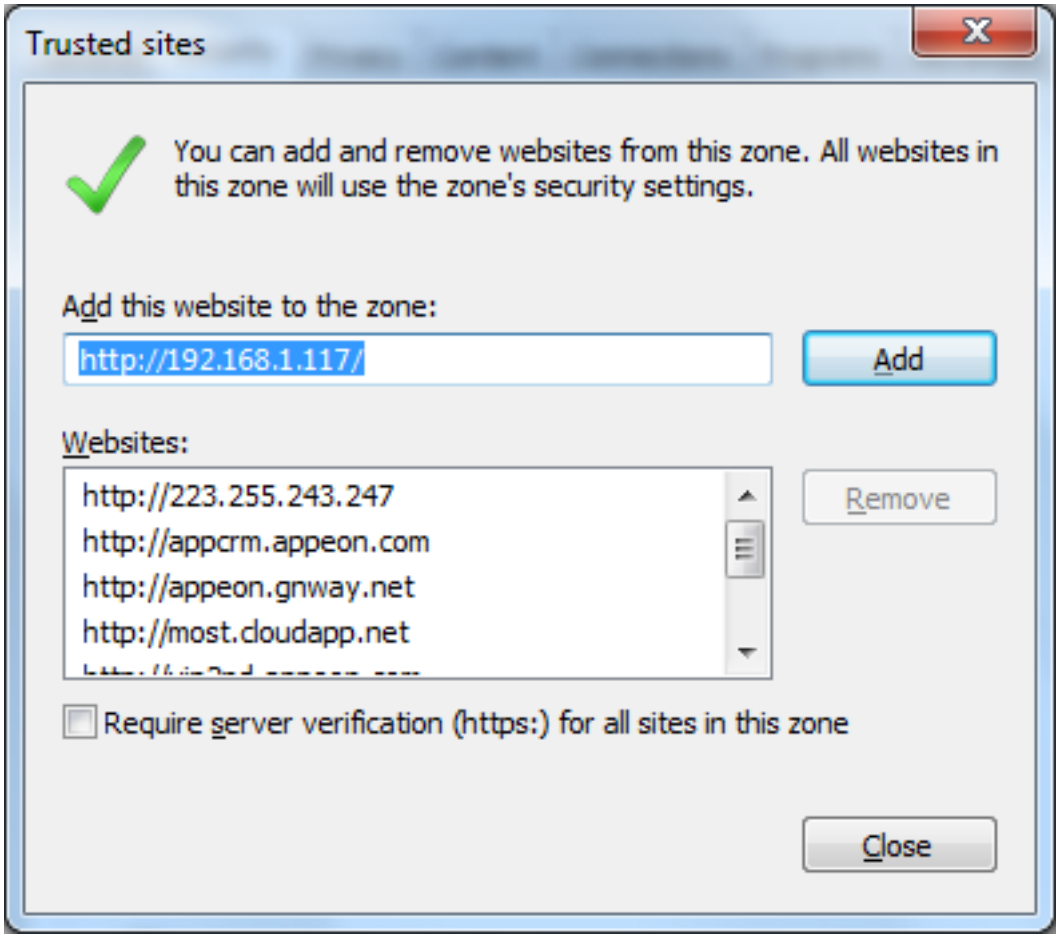
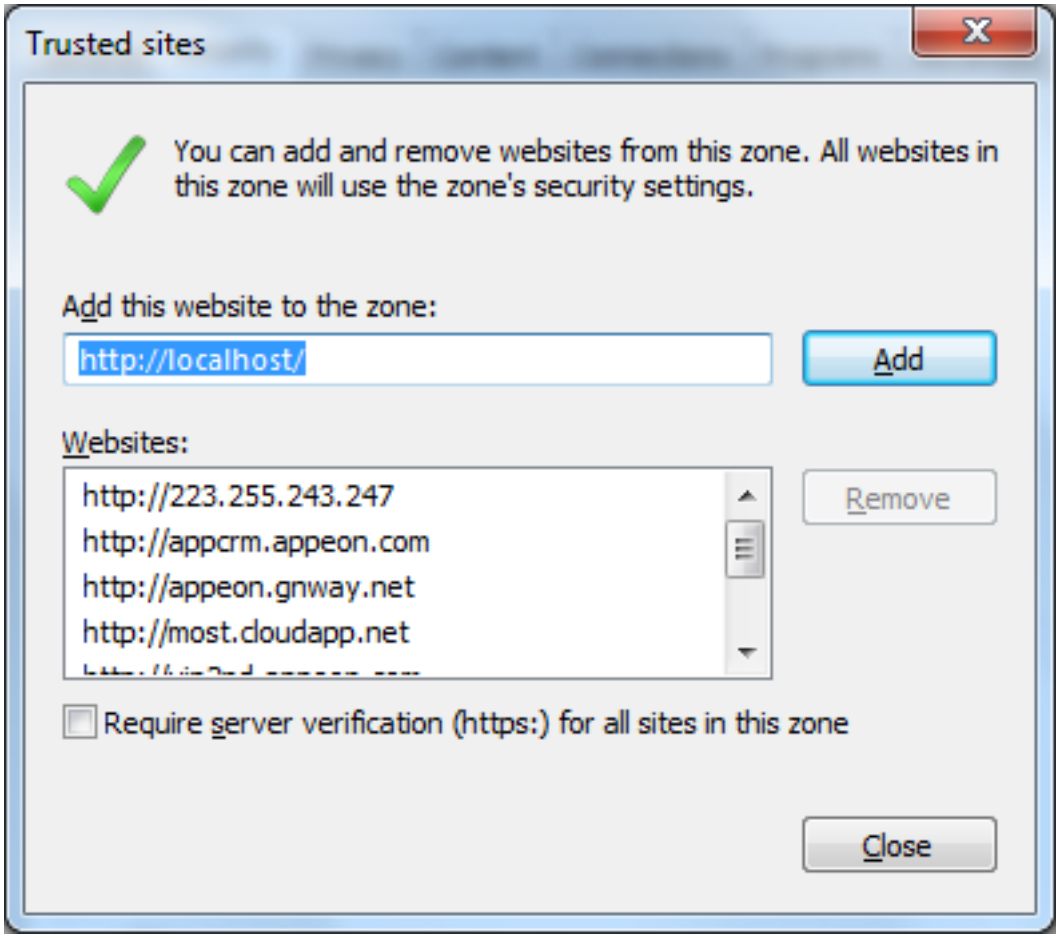


Figure 3.14: Add the IP address of localhost



Step 2: Input the application URL in the Internet Explorer address bar and start the application. The application URL must contain index.htm, for example http://192.168.1.117/myApplication/index.htm.

Note: The application URL is specified in Step 3 of Task 3: Configure and deploy the application.

Step 3: Install the Web browser plug-in, when you are prompted. You will be prompted twice, please accept both times.

Step 4: When the application is loaded successfully in Internet Explorer, test it carefully.

If you notice any issues, please debug the application according to the Tutorial 3: Develop & Debug with Appeon Mobile.

3.5 Task 5: Run the mobile version of the application (on the iPad or iPhone)

Now that you have run the application successfully in IE, you are ready to run your application on the iPad or iPhone.

Step 1: Install Appeon Workspace. See Task 3 in Tutorial 1: Set up the Environment.

Step 2: Configure the network connection. See Task 4 in Tutorial 1: Set up the Environment.

Step 3: Tap the **AppeonMobile** icon on your iPad or iPhone to launch Appeon Workspace.

Step 4: Tap the **New** icon () to the left of the title bar.

Step 5: In the **App URL** text box, enter the application URL in this format: *http://server_ip:port/app_name*. For example, if your IIS IP address is 192.168.1.117 on port 80 and you specified myApplication in the Appeon Developer configuration as the URL folder name then the URL would be http://192.168.1.117:80/myApplication/.

Step 6: Tap the **Test Connection** button to test the server connections. If successful please proceed to Step 7, otherwise please enter the correct URL.

Step 7: Tap the **Back** icon () on the title bar to save the information and return to the main screen of the Appeon Workspace.

Once you return to the main screen of the Appeon Workspace, the downloading and installation process of the application occurs automatically.

Step 8: After the installation process has completed, tap the application icon on the main screen to run the mobile app that is installed.

4 Tutorial 3: Develop & Debug with Appeon Mobile

Please keep in mind the following points when developing and debugging Appeon Mobile applications for the iPad/iPhone. For detailed instructions on how to use the Appeon Developer toolset you may refer to the Appeon Developer User Guide.

4.1 Point 1: iPad UI Considerations

Many aspects of the UI for mobile applications differ significantly from traditional PowerBuilder best practices. How you layout controls on the window, the size of the window, controls, and other visual objects, and how the user expects to interact with your application are fundamentally different for mobile devices.

Please carefully read the Best Practices section of *Development Guidelines*, including the **Window** subsection of the Best Practices. We have compiled valuable tips and suggestions that will help you develop user-friendly mobile applications.

Once you have a good understanding of the Best Practices, we strongly recommend using the **Size Calculator** tool () in the Appeon Developer toolbar to properly size the application windows and controls to display appropriate on the iPad or iPhone.

4.2 Point 2: Unsupported Features

Appeon Mobile supports nearly all the same features as Appeon Web. Those experienced with Appeon Web know that it supports many powerful PB features. So you should be able to build equally robust applications with Appeon Mobile also.

When developing applications for Appeon Mobile, it is critical to ensure that your application does not contain unsupported features. Appeon provides several tools to assist you with this:

- Tool 1: The **UFA** tool () in the Appeon Developer toolbar will automatically scan your application and list major unsupported features found based on a keyword scan.
- Tool 2: The **Code Insight** tool () in the Appeon Developer toolbar will pop-up a window, when you are writing dot notation in the PB script editor, that prevents you from writing PowerScript that is unsupported.
- Tool 3: The Features Help is a searchable online help that lists all unsupported features.

These tools have some limitations. Please keep in mind the following limitations when using these tools:

- The **UFA** tool uses a keyword scan. As such, not all unsupported features can be found, especially those that are dynamically occurring in runtime.
- The **Code Insight** tool is limited to unsupported PowerScript and essentially based on keywords (like the **UFA** tool). As such, it will not prevent all unsupported features from being added to the application, such as unsupported objects, unsupported expressions, etc.

We recommend you develop your mobile applications with Appeon Developer as follows:

Step 1: Use the **Code Insight** tool () from the Appeon Developer toolbar to code PowerScript that is compatible with Appeon Mobile. For details about how to configure and use the **Code Insight** tool, see the Appeon Developer User Guide.

Step 2: Run the **UFA** tool () from the Appeon Developer toolbar to generate the unsupported features report. For details about how to run the UFA report, see the Appeon Developer User Guide.

Step 3: Remove or rewrite any unsupported features found by the **UFA** tool. Please make note of the unsupported features found such that in the future you do not reintroduce these same unsupported features.

Step 4: After you have deployed the application, attempt to run the Web version in the Internet Explorer Web browser. The Web version is based on Appeon Web 6.6 that has been on the market for over 10 years. As such, if you find something in your application is not working in the Web version chances are it is an unsupported feature rather than a product bug.

Step 5: Since the **UFA** tool and **Code Insight** cannot prevent 100% unsupported features, should you find something that does not work in the Web version please go back to the object or area of PowerScript in question and cross-reference that with the Features Help to see if your application contains any unsupported features.

Step 6: If after cross-referencing the Features Help you believe your application is free of unsupported features but it fails to run or operate properly please contact <support@appeon.com> for help.

4.3 Point 3: Previewing & Debugging

To preview the application UI and layout, use the **Appeon Workspace Emulator** () from the Appeon Developer toolbar.

Note: Please ensure UAC is turned off before you run the Appeon Workspace Emulator, otherwise you may encounter an error saying "Failed writing received data to disk/ application".

To debug the application business logic, first ensure that the UFA report does not contain any unsupported features, or at least no unsupported features in the area of the application you are trying to debug. Then, launch the **Appeon Debugger** () from the Appeon Developer toolbar, which will load the Web version of your application in the IE Web browser.

The **Appeon Debugger** requires the Microsoft Script debugger to be installed on your system and that your Internet Explorer is version 8, 9 or 10. There are also special configurations you need to perform in the Appeon Developer and Internet Explorer. Please see the Appeon Developer User Guide for more information about how to properly configure your environment for the Appeon Debugger.

Please note that Appeon Mobile 1.0 does not contain a mobile-specific debugger, so we have included the Web debugger in lieu. While not exactly the same, it can still help to identify problems in the application business logic or areas that Appeon is having trouble converting.

5 Tutorial 4: Package & Distribute Native Mobile Apps

5.1 Overview

After you successfully deploy a PowerBuilder application as a native mobile application using the Appeon Developer Toolbar, you can choose to run the app immediately in Appeon Workspace, or package the app and distribute it to the iOS App Store. By distributing the app to the App Store, it can be downloaded and installed just like other native iOS apps. In this section, you will go through all the required steps for packaging the distributing an Appeon Mobile app as a standalone native iOS app:

1. Task 1: Generate the Xcode project.
2. Task 2: Prepare a Mac machine and your Apple ID
3. Task 3: Enroll in an Apple Developer Program
4. Task 4: Create & install distribution certificates and provisioning profiles.
5. Task 5: Create the app archive.
6. Task 6: Distribute the app archive.

5.2 Task 1: Generate the Xcode project

Step 1: Use the **Package** tool in the Appeon Developer toolbar to package the app files into an Xcode project.

During the package process, you will be able to specify the settings, such as the app name, icons, etc., that are required by the Xcode project. See the *Packaging a native mobile project* section in *Appeon Developer User Guide* for detailed instructions.

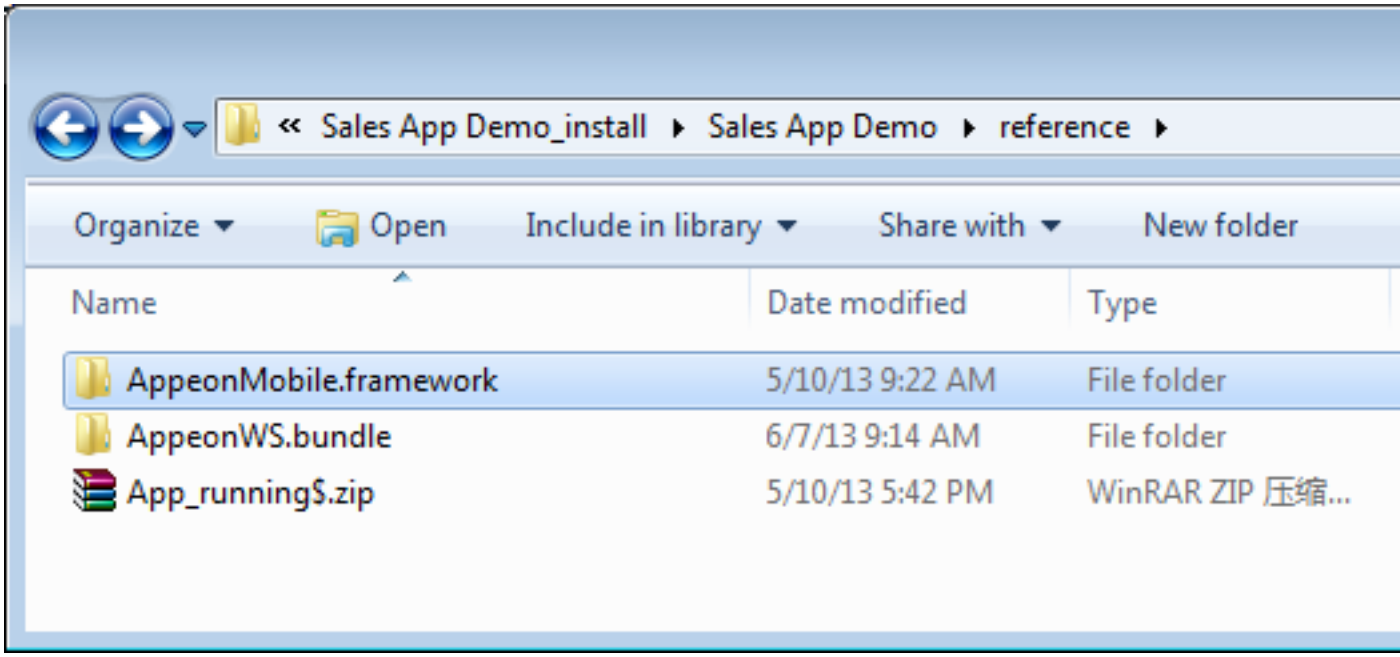
After the package process is complete, you will find the following two zip packages generated under the specified destination folder.

- The zip package of the application.
- AppeonMobile.framework.zip: this zip package is necessary for all apps (including the customized Appeon Workspace) to be distributed on iOS.

Step 2: Extract the above two zip packages respectively and then copy the extracted **AppeonMobile.framework** folder into the **reference** folder under the extracted app package.

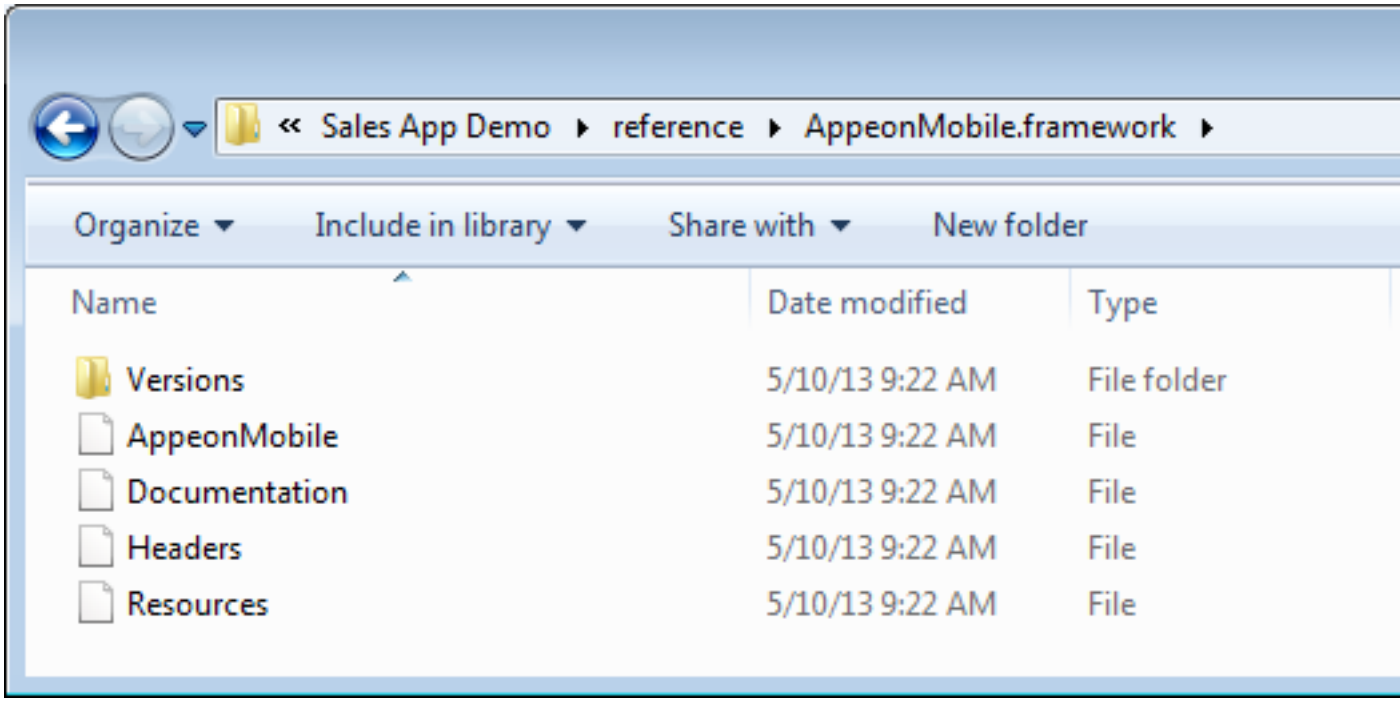
The following screenshot shows the **reference** folder where the **AppeonMobile.framework** folder should be copied.

Figure 5.1: reference folder



The following screenshot shows the **AppeonMobile.framework** folder and the subfolders and files it contains.

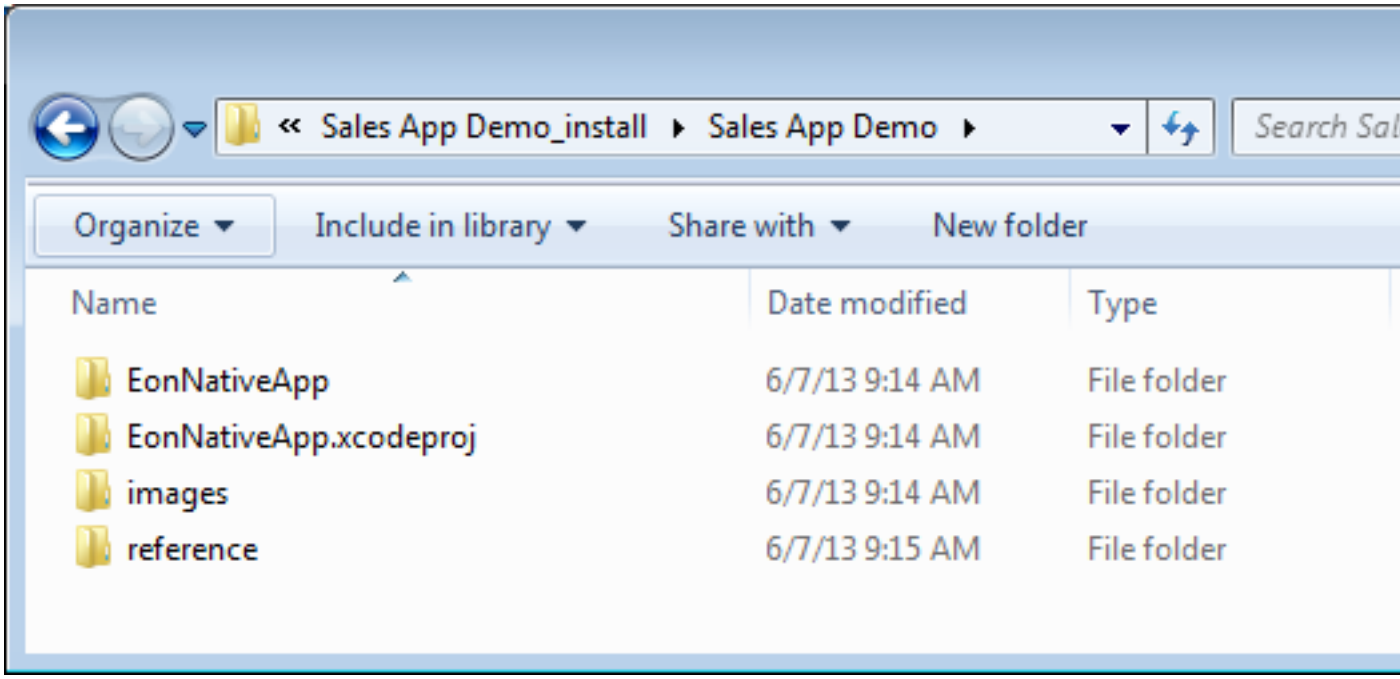
Figure 5.2: AppeonMobile.framework folder



Step 3: Copy the entire app folder to a Mac machine.

The following screenshot shows the subfolders that the app folder (*Sales App Demo* for example) contains.

Figure 5.3: app folder



5.3 Task 2: Prepare the Mac machine and your Apple ID

5.3.1 Task 2.1: Prepare the Mac machine

Buy a Mac machine and install Xcode on the Mac machine.

You will need to have a Mac machine with the Xcode tool installed already to

1. create and install the distribution certificate and the provisioning profile;
2. run the Xcode project and create the app archive;
3. distribute the app archive.

5.3.1.1 Install Xcode

Click https://developer.apple.com/xcode/ to download and install the Xcode tool.

You will need an Apple ID registered as an Apple Developer to access the Xcode tool. See Task 2.2 Create an Apple ID to create an Apple ID, and then sign in with your Apple ID, follow the onscreen instructions to register your Apple ID as an Apple developer, and download and install the Xcode tool at the above mentioned website.

For more information on Xcode, see Xcode User Guide.

5.3.2 Task 2.2: Create an Apple ID

Follow the onscreen instructions on My Apple ID to create an Apple ID if you do not have one.

5.4 Task 3: Enroll in an Apple Developer Program

Enroll in an Apple Developer program at https://developer.apple.com/programs/start/ios/.

Carefully compare the programs and choose one that suits you best, because different distribution types (App Store, Ad Hoc, In-House, etc.) will be available in different programs, for example, **App Store Distribution** is available in **iOS Developer** program only, while **In-House Distribution** is available in **iOS Developer Enterprise** program only.

Here is a brief introduction to the three distribution types that are commonly used and are provided with detailed instructions in Section 5.7, "Task 6: Distribute the app archive" in this tutorial:

- **App Store Distribution**: allows you to submit the app for publication to the iOS App Store.

  You would need to enroll in the **iOS Developer** program.

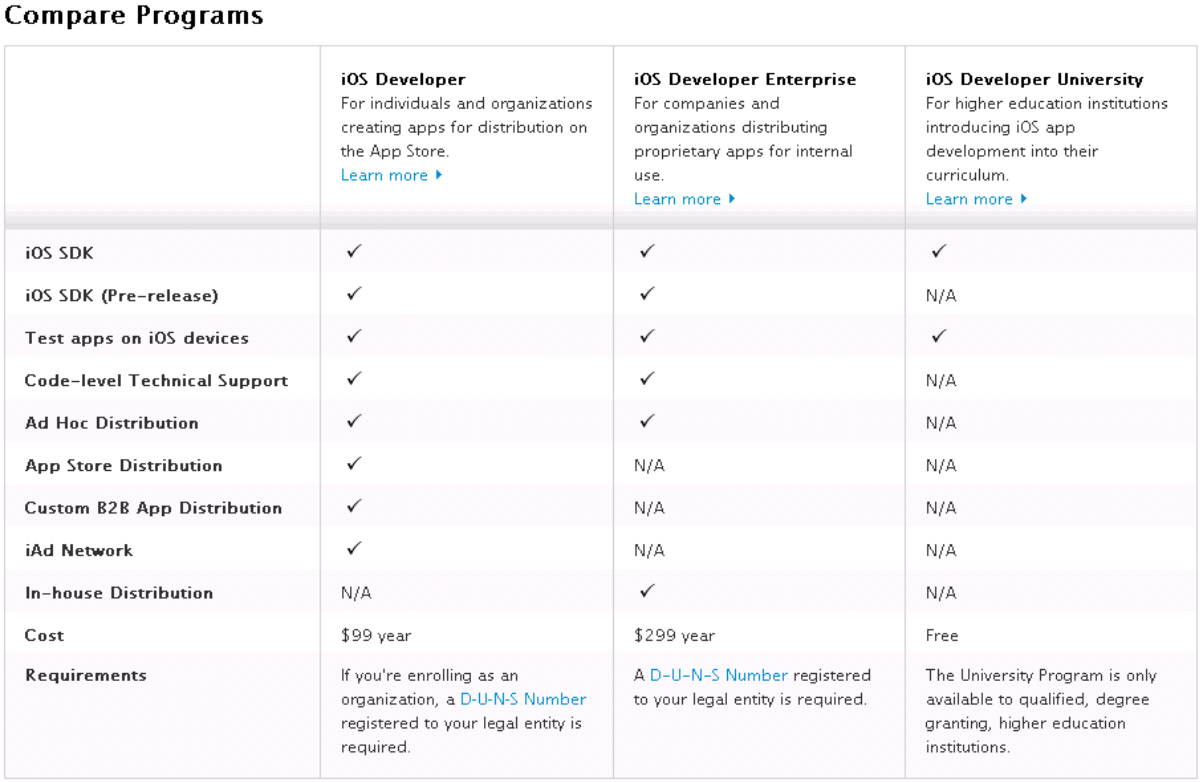
- **In-House Distribution**: allows you to install the app to an unlimited number of devices inside your company.

  You would need to enroll in the **iOS Developer Enterprise** program.

- **Ad Hoc Distribution**: allows you to install the app on a limited number (up to 100) of registered devices.

  You would need to enroll either in the **iOS Developer** program or the **iOS Developer Enterprise** program. And you would need to register the devices by their unique device ID (UDID) and add them to the provisioning profile. For details, refer to Registering Devices Using Member Center in Apple document *App Distribution Guide*.

Figure 5.4: Compare programs



Compare Programs

	iOS Developer For individuals and organizations creating apps for distribution on the App Store. Learn more	iOS Developer Enterprise For companies and organizations distributing proprietary apps for internal use. Learn more	iOS Developer University For higher education institutions introducing iOS app development into their curriculum. Learn more
iOS SDK	✓	✓	✓
iOS SDK (Pre-release)	✓	✓	N/A
Test apps on iOS devices	✓	✓	✓
Code-level Technical Support	✓	✓	N/A
Ad Hoc Distribution	✓	✓	N/A
App Store Distribution	✓	N/A	N/A
Custom B2B App Distribution	✓	N/A	N/A
iAd Network	✓	N/A	N/A
In-house Distribution	N/A	✓	N/A
Cost	$99 year	$299 year	Free
Requirements	If you're enrolling as an organization, a D-U-N-S Number registered to your legal entity is required.	A D-U-N-S Number registered to your legal entity is required.	The University Program is only available to qualified, degree granting, higher education institutions.

5.5 Task 4: Create & install distribution certificates and provisioning profiles

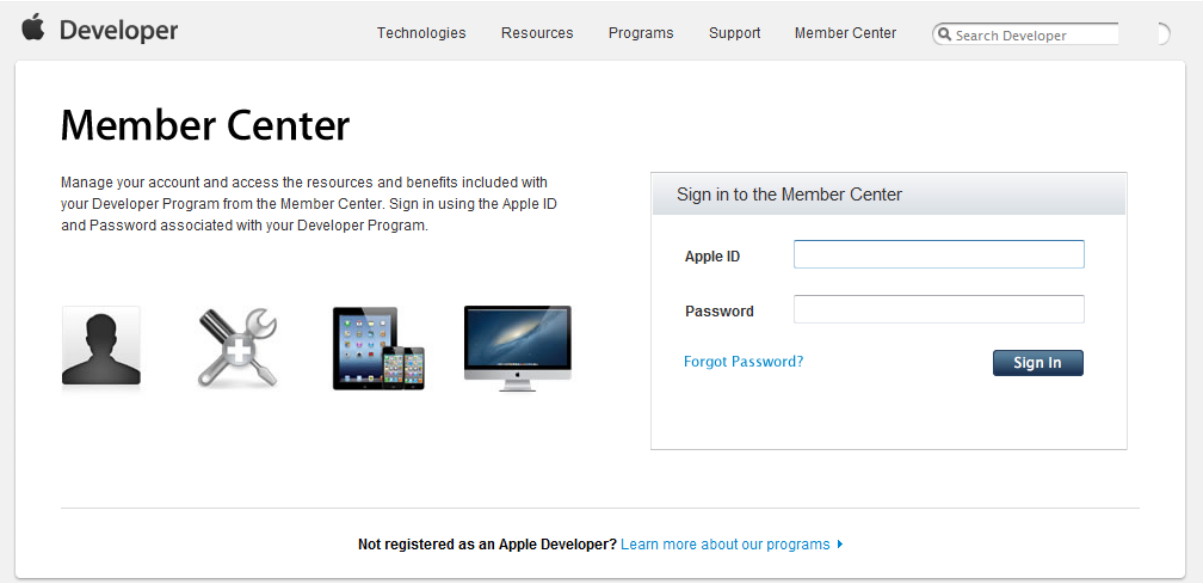
This section introduces how to create and install the distribution certificates and the provisioning profiles.

5.5.1 Task 4.1: Create & install distribution certificates

Before you can create and install the provisioning profile, you need to create and install the distribution certificates. You only need to install the distribution certificates for the very first time. Follow steps below to create and install them.

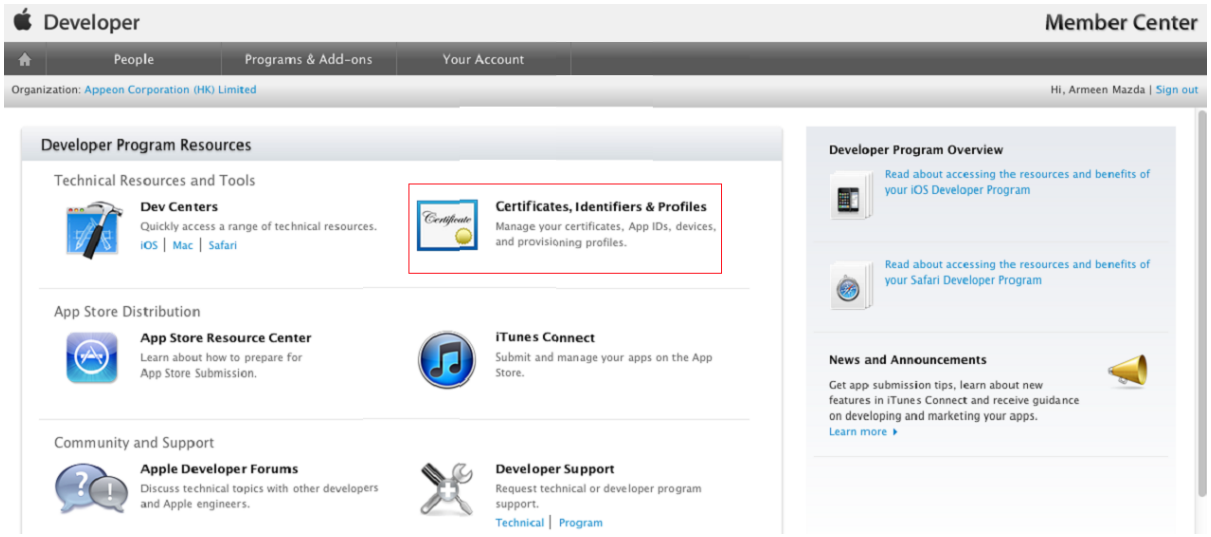
Step 1: On your Mac machine, log in to the Member Center with your Apple ID and Password.

Figure 5.5: Member Center



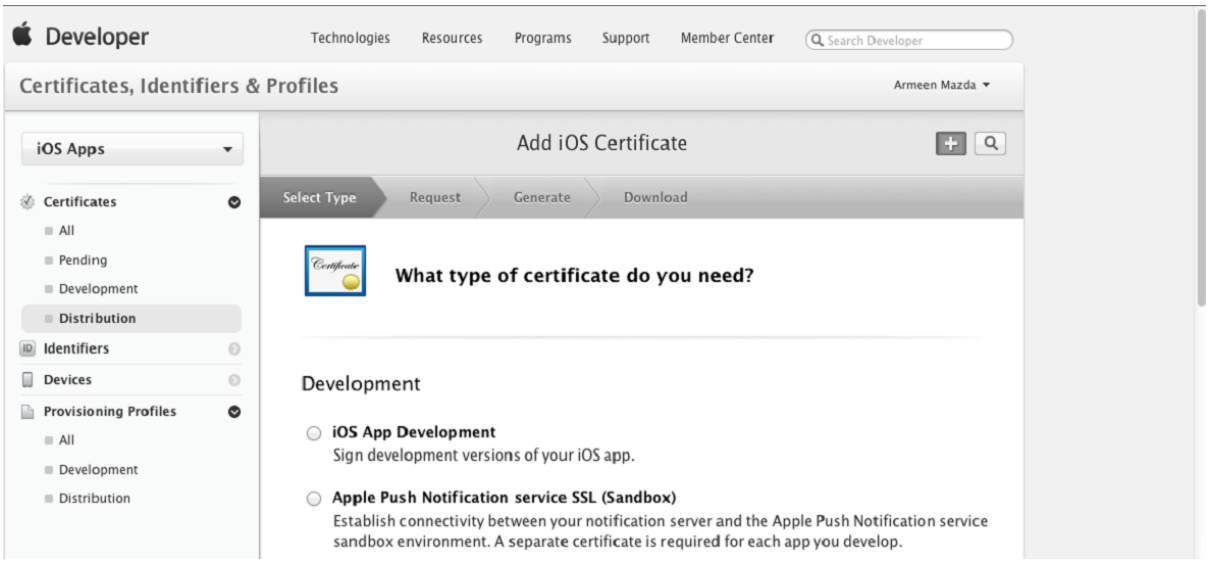
Step 2: Click the icon or text for **Certificates, Identifiers & Profiles** under **Developer Program Resources**.

Figure 5.6: Certificates, Identifiers & Profiles



Step 3: Choose **Certificates** > **Distribution**, click the add certificate icon (), and then drag down the page and click **Worldwide Developer Relations Certificate Authority** to download the AppleWWDRCA.cer.

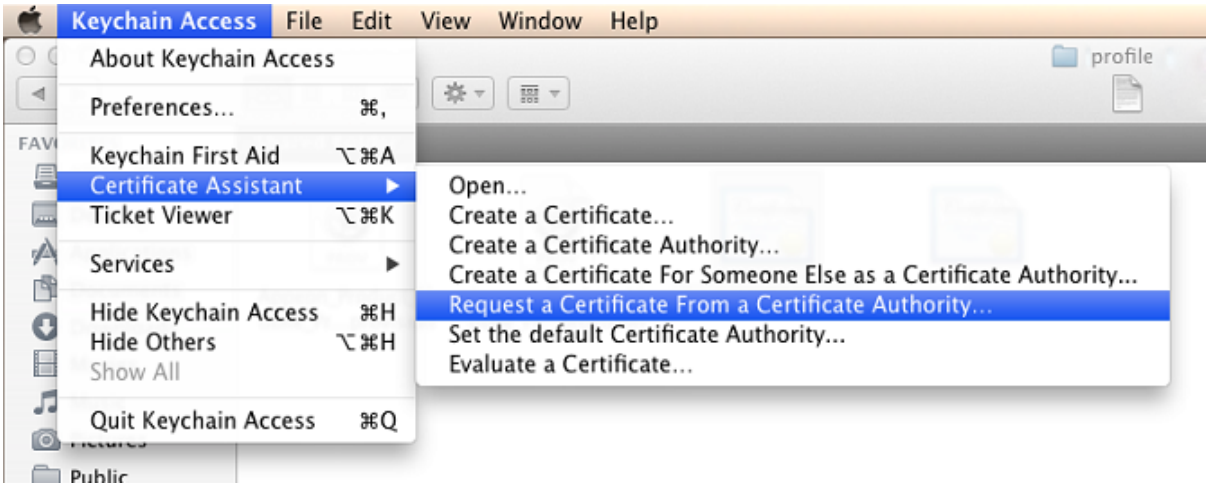
Figure 5.7: Download the AppleWWDRCA.cer



Step 4: Double-click the downloaded AppleWWDRCA.cer to open the Keychain Access and install it.

Step 5: Choose **Keychain Access** > **Certificate Assistant** > **Request a Certificate From a Certificate Authority...**.

Figure 5.8: Request a Certificate



Step 6: In the **Certificate Assistant** dialog box, do the following:

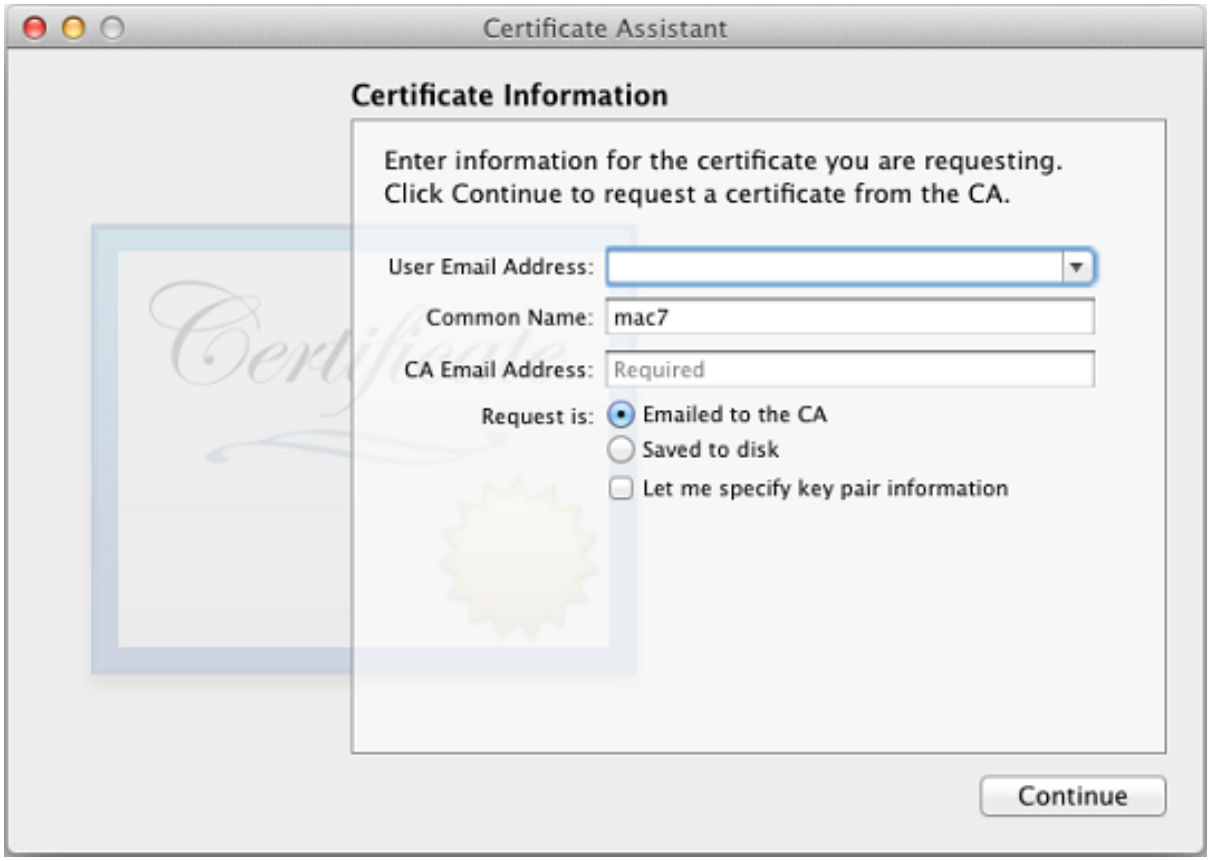
1. In the **User Email Address** text box, enter your email address (use the same address as you used to register in the iOS Developer Program);

2. In the **Common Name** text box, enter a name (use the same name as you used to register in the iOS Developer Program);

3. In the **CA Email Address** text box, enter your CA email address;

4. Select the **Save to disk** radio button and click **Continue**.

Figure 5.9: Certificate Assistant



Step 7: Specify a filename (usually the *CertifocateSigningRequest.certSigningRequest* by default) and click **Save**.

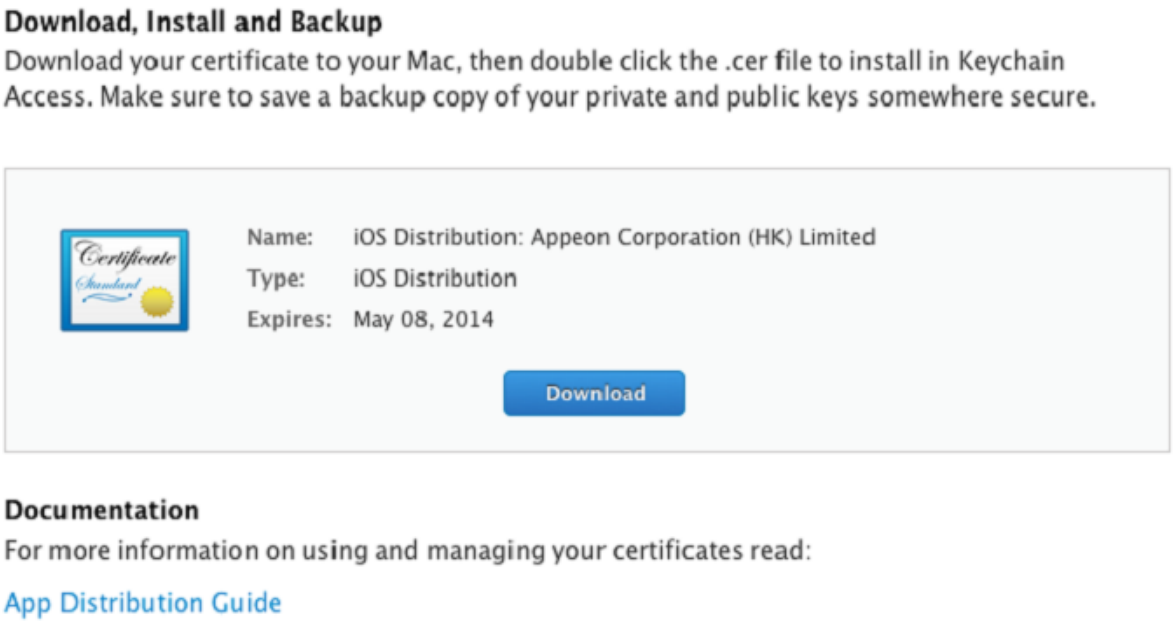
The CertifocateSigningRequest.certSigningRequest file is then saved, and you are ready to submit the generated CSR file.

Step 8: Go back to **Certificates, Identifiers & Profiles**, select a certificate type and then click **Continue**. On the page that appears, read the information and click **Continue** again.

Step 9: Click **Choose File** to select the saved CSR (CertifocateSigningRequest.certSigningRequest) file, and then click **Generate**.

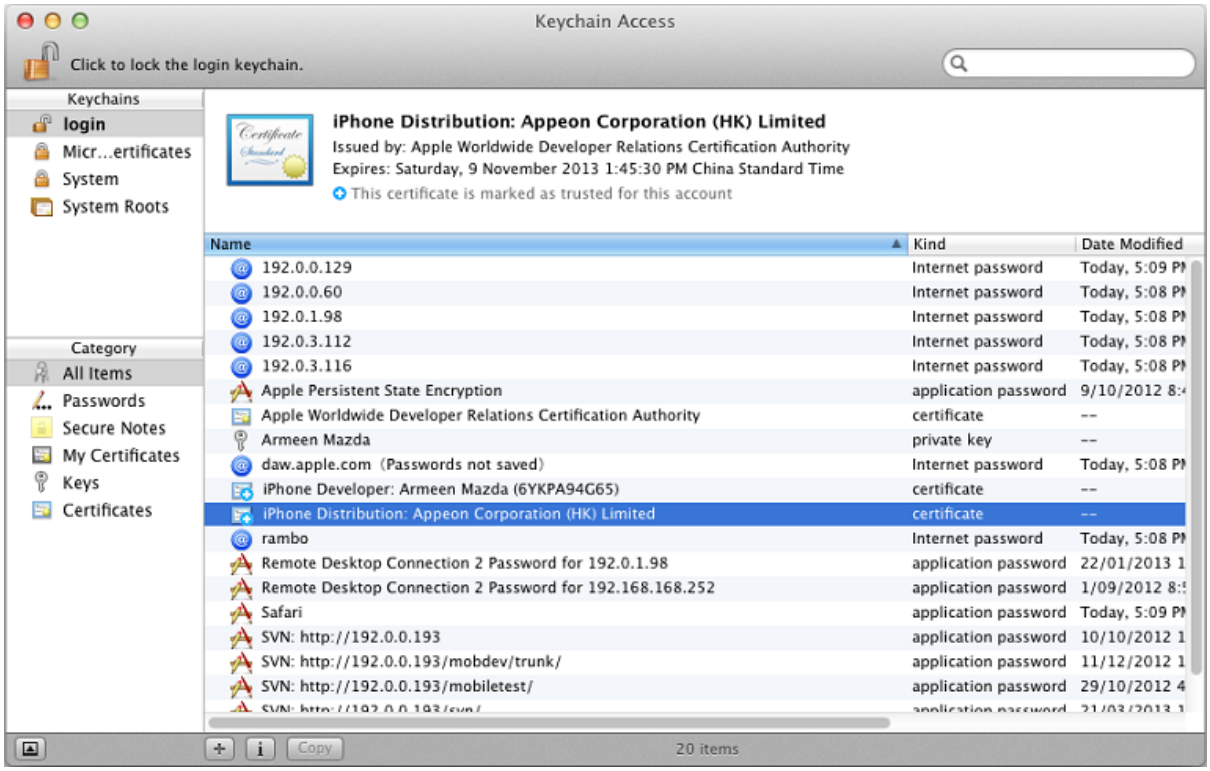
Step 10: Click **Download**.

Figure 5.10: Download Distribution Certificate



Step 11: Double-click the downloaded distribution certificate (ios_distribution.cer) file to open the **Keychain Access** and install your certificate in your default keychain (usually the login keychain). The certificate is then listed in the Keychain, as shown in the following figure.

Figure 5.11: Installed Certificate



5.5.2 Task 4.2: Create & install distribution provisioning profiles

Depending on how you will distribute the app (App Store, In-House, or Ad Hoc), you need to create different distribution provisioning profiles.

The steps for creating the different distribution provisioning profiles are similar. To create a **Store** provisioning profile or an **In-House** provisioning profile, you select 1) an App ID and 2) a single distribution certificate. To create an **Ad Hoc** provisioning profile, you select 1) an App ID, 2) a single distribution certificate, and 3) multiple test devices. For details, refer to the below steps, or refer to Creating Store Provisioning Profiles, and Creating Ad Hoc Provisioning Profiles in the Apple document *App Distribution Guide*.

Step 1: Go back to **Certificates, Identifiers & Profiles**, then choose **Provisioning Profiles** > **Distribution**, and then click the add icon ().

Step 2: Select a distribution type and click **Continue** in the **Select Type** tag.

You will be provided with different distribution types according to the programs you enrolled in. If you enrolled in the **Apple Developer** program, you would choose between **App Store** and **Ad Hoc**; if you enrolled in the **Apple Developer Enterprise** program, you would choose between **Ad Hoc** and **In-House**.

Step 3: Select your App ID and click **Continue**.

Step 4: Select the distribution certificate you have created in Task 4.1: Create & install distribution certificates and click **Continue**.

Step 5: Select the devices you want to use for testing, and click **Continue**.

Note: This step is only required for creating the **Ad Hoc** provisioning profile.

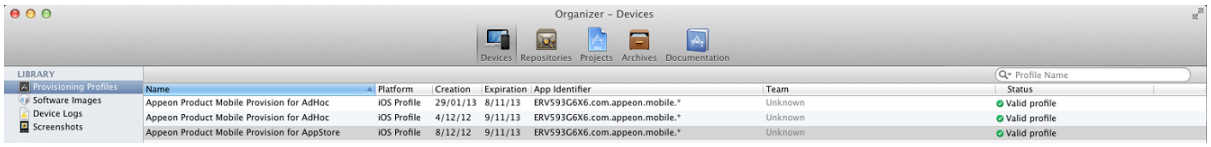
Step 6: Enter a profile name and click **Generate**.

Step 7: After the profile is generated, click **Download** to download and use it.

Step 8: Double-click the downloaded file to install the provisioning profile in Xcode.

Step 9: In **Xcode**, choose **Window** > **Organizer**, and then click **Device**. The installed provisioning file is listed.

Figure 5.12: Installed provisioning profile



Now that you have finished creating and installing the distribution certificate and the provisioning profile containing code signing, you are ready to create the app archive.

5.6 Task 5: Create the app archive

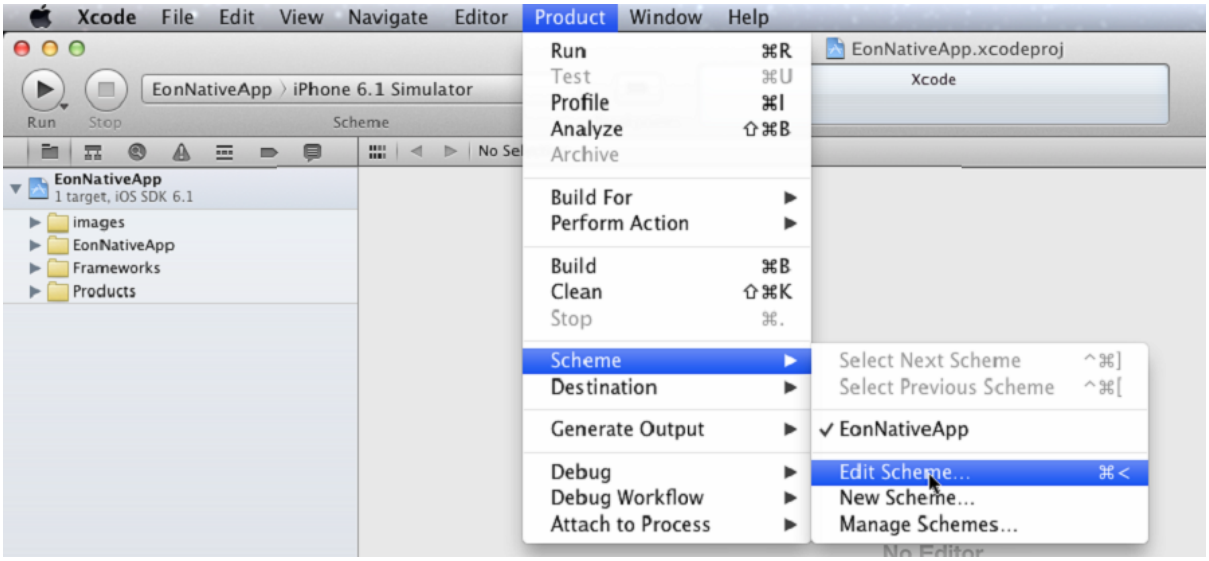
Since you have configured all the required information for the Xcode project, such as, the app icons, URL, etc., by using the **Package** tool in the Appeon Developer Toolbar, you are ready to create an app archive right away.

Step 1: In the extracted app package folder, double-click the **EnoNativeApp.xcodeproj** project to open the Xcode.

Make sure you have extracted the zip packages and copied the extracted **AppeonMobile.framework** folder to the **reference** folder according to Task 1: Generate the Xcode project.

Step 2: Choose **Product** > **Scheme** > **Edit Scheme** to open the scheme editor, as shown in the following figure.

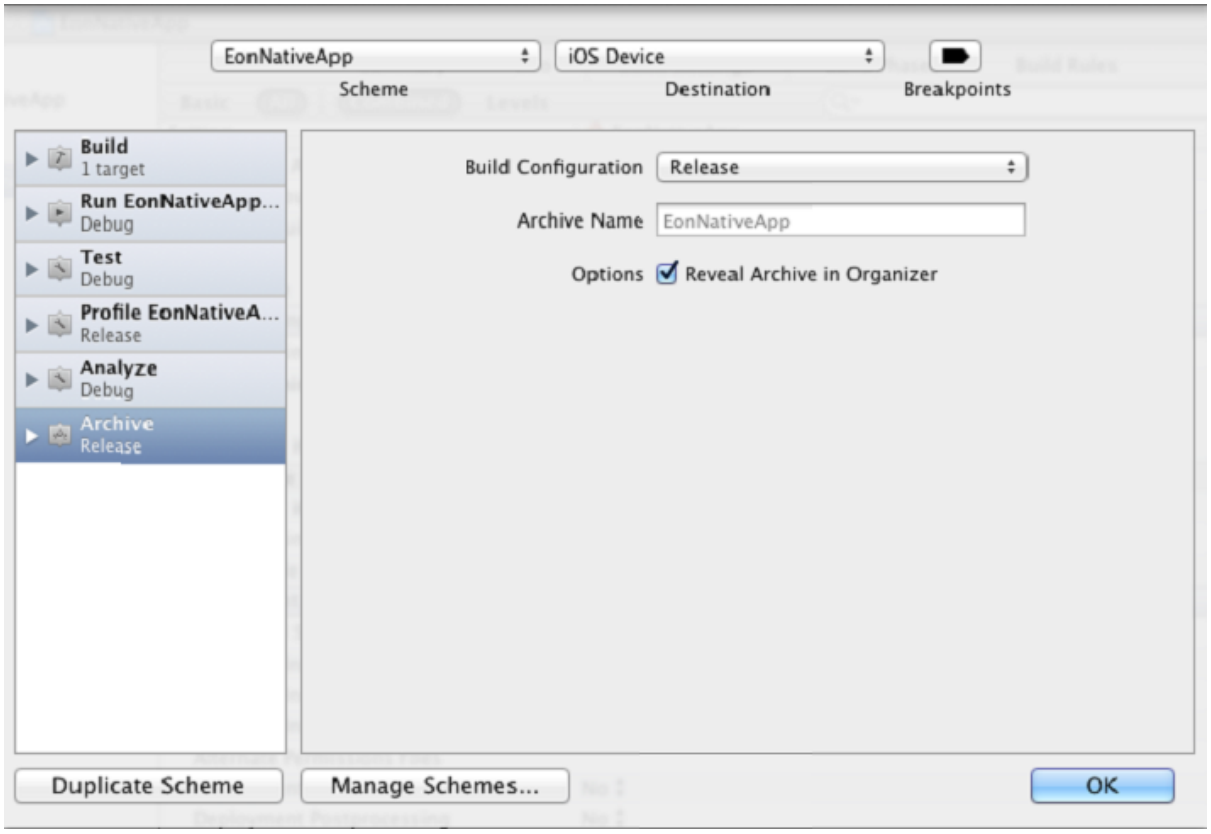
Figure 5.13: Edit Scheme



Step 3: In the scheme editor, do the following:

1. In the left column, select **Archive**;
2. Select the project from **Scheme**;
3. Select **iOS Device** from **Destination**;
4. Select **Release** from **Build Configuration**;
5. Modify the archive name or use the default name in the **Archive Name** field.
6. Click **OK** to save the settings.

Figure 5.14: Archive Release

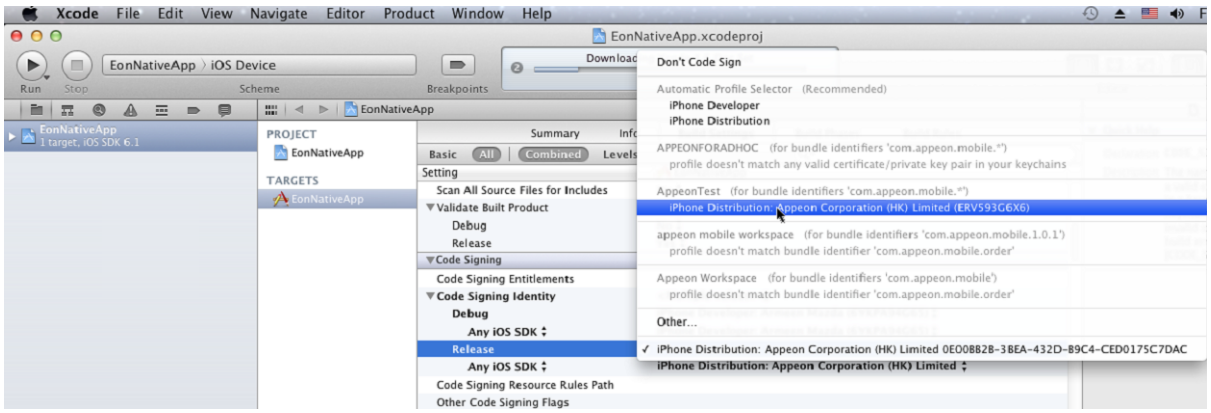


Step 4: (Optional) Click the target project for the app, select **Summary**, and then configure the Xcode project for distribution. All the information specified in the **Appeon Developer Package** tool can be reconfigured here and you can also configure those that are not listed in the **Appeon Developer Package** tool (only the required information are listed for configuration in the **Appeon Developer Package** tool).

For details, read Configuring Your Xcode Project for Distribution in the Apple document *App Distribution Guide*.

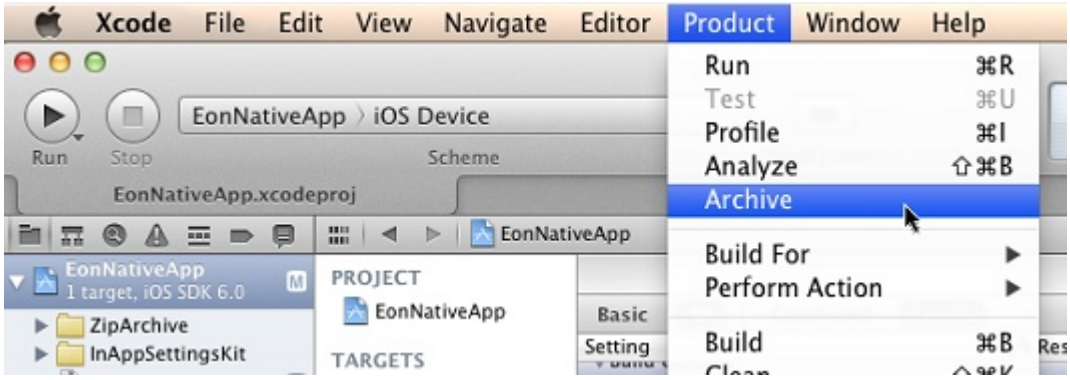
Step 5: Select **Building Settings**, drag down the screen to find the **Code Signing** group, then click **Release**, and then select the corresponding code signing profile.

Figure 5.15: Code signing



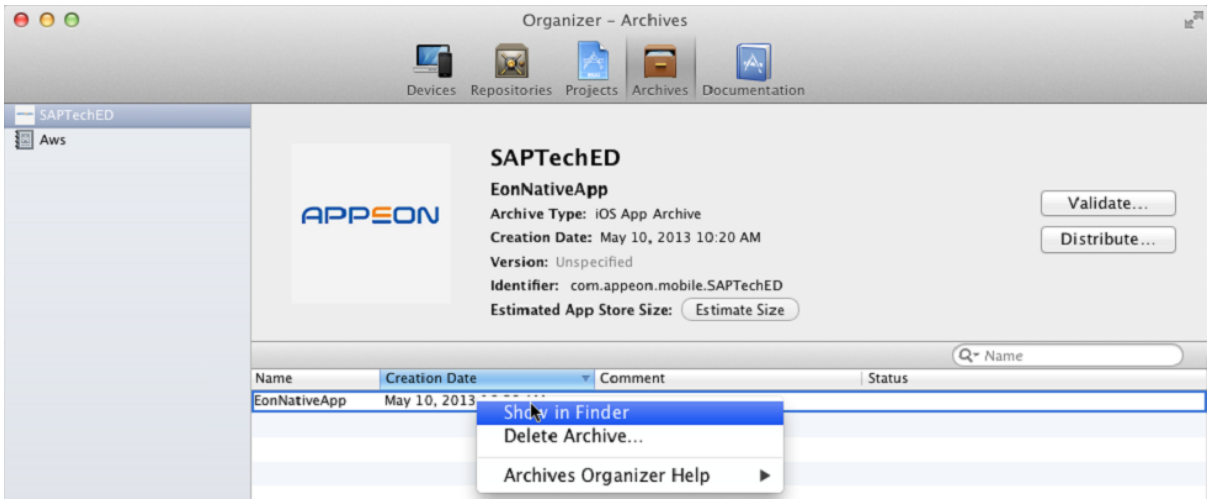
Step 6: In **Xcode**, choose **Product** > **Archive**.

Figure 5.16: Archive



After the project is built successfully, it will appear in the Archives organizer, as shown below.

Figure 5.17: Archive list



Now the app archive is ready. You can submit the archive to App Store or save the file for enterprise or Ad-Hoc distribution.

5.7 Task 6: Distribute the app archive

Xcode allows you to distribute the app archive in the following methods:

- App Store distribution: submits the app for publication to the iOS App Store. Refer to Section 5.7.1, “Method 1: App Store distribution” for detailed instructions.
- In-House distribution: installs the app to an unlimited number of devices inside your company. Refer to Section 5.7.2, “Method 2: In-house or Ad-Hoc distribution” for detailed instructions.
- Ad Hoc distribution: installs the app on a limited number (up to 100) of registered devices. Refer to Section 5.7.2, “Method 2: In-house or Ad-Hoc distribution” for detailed instructions.

The detailed instructions for Ad Hoc distribution and In-House distribution are the same, though their provisioning profiles are different.

- Export as Xcode Archive: this method is not relevant to our distribution strategy, hence it is left out of this tutorial.

5.7.1 Method 1: App Store distribution

Step 1: In the Archives organizer, select the application archive you want to distribute, and click **Distribute**.

Step 2: Select **Submit to the iOS App Store** and click **Next**. Then follow instructions in App Store Submission Tutorials to submit your app to the iOS App Store.

5.7.2 Method 2: In-house or Ad-Hoc distribution

Step 1: In the Archives organizer, select the application archive you want to distribute.

Step 2: Optionally, click the **Validate** button.

You can validate the archive and fix any problems before distributing it.

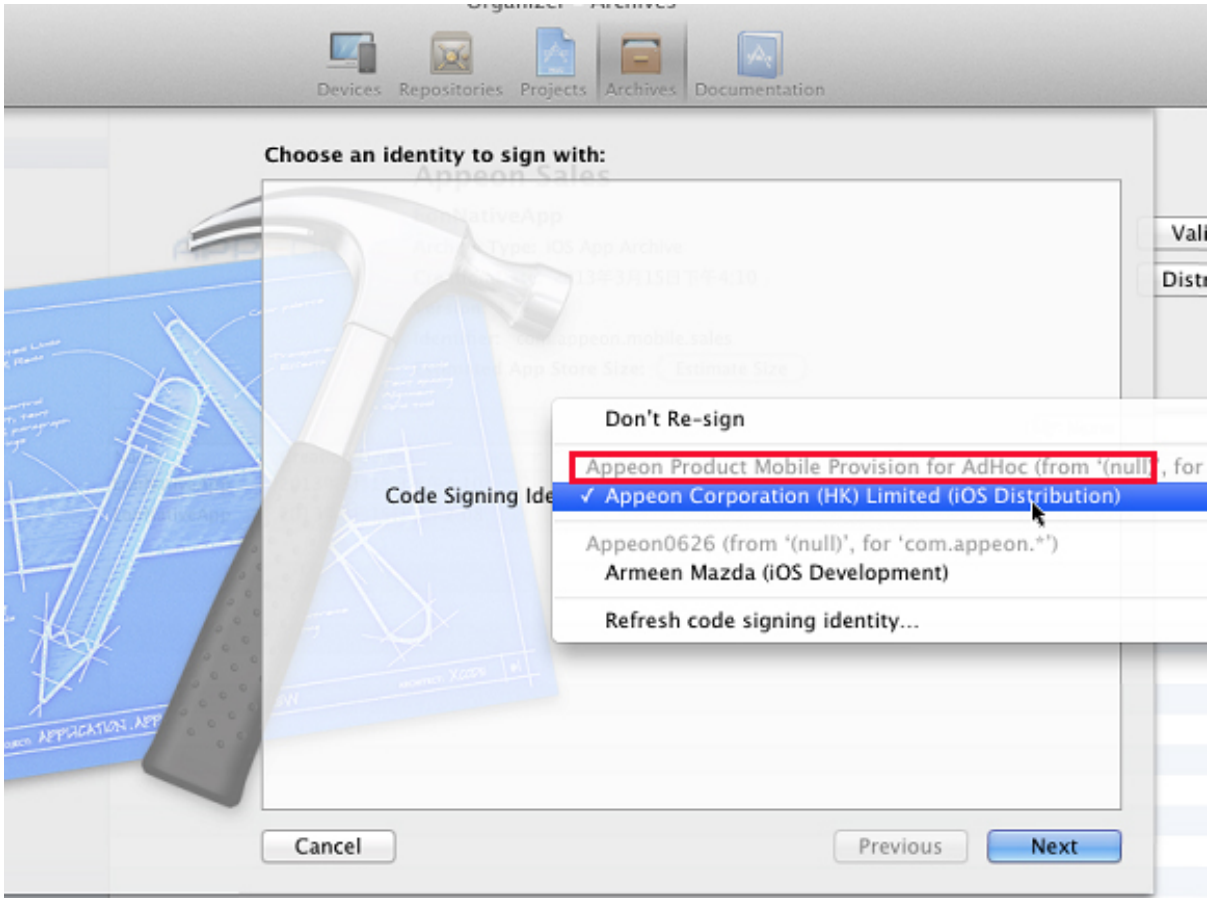
Step 3: Click the **Distribute** button.

Step 4: Select **Save for Enterprise or Ad-Hoc Deployment** and click **Next**.

Figure 5.18: Select distribution method

Step 5: Choose your distribution certificate (the one contained in your distribution provisioning profile) from the **Code Signing Identity** pop-up menu and then click **Next**, as shown in the following figure.

Figure 5.19: Choose an identity

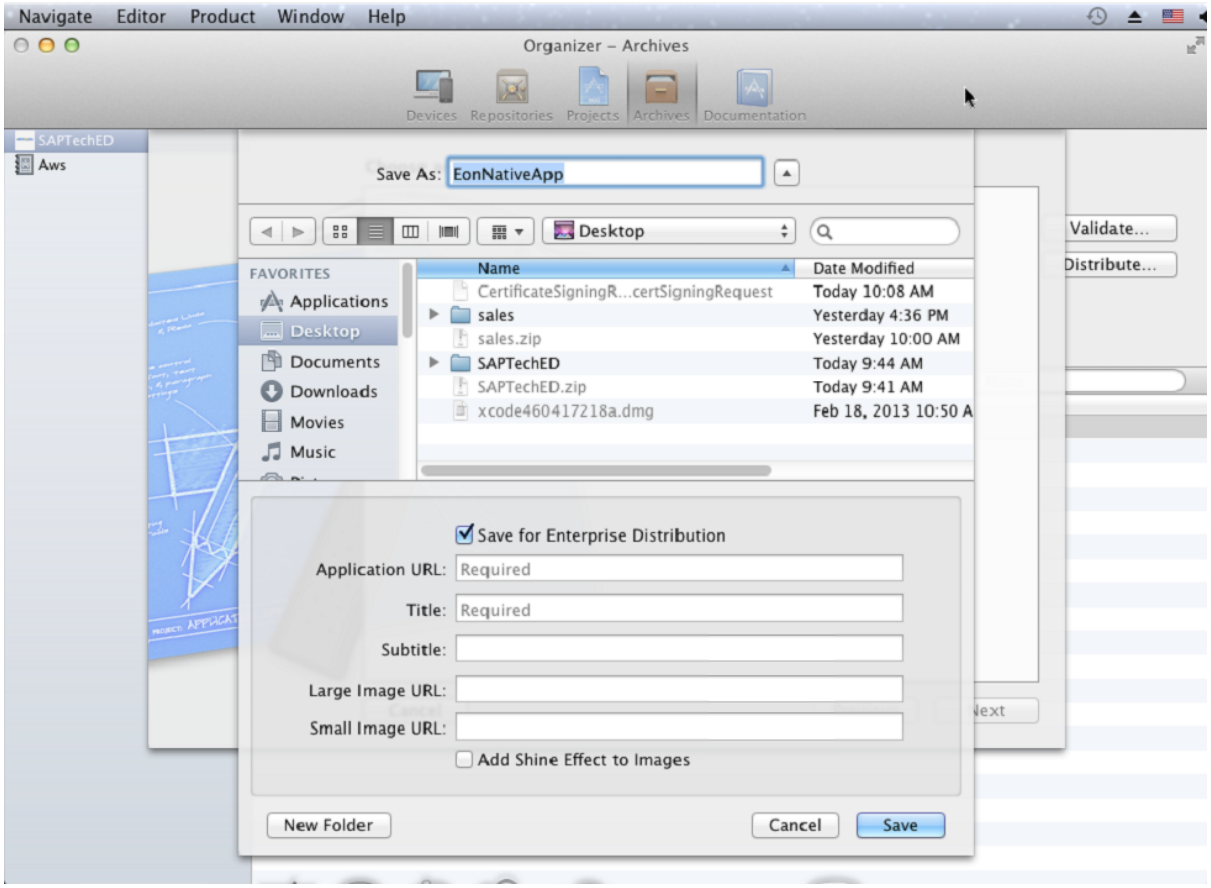


Step 6: Specify the file name and the location of the IPA file and the relevant settings.

- Select the **Save for Enterprise Distribution** check box.
- In the **Application URL** field, specify the URL to the IPA file on a server.
- In the **Title** field, specify the app name that will be displayed during installation.
- In the **Large Image URL** and the **Small Image URL** fields, specify the app icon that will be displayed during installation.
- Click **Save**.

A .ipa file and a .plist file will be generated. The above settings will be saved in an XML manifest (.plist) file.

Figure 5.20: Save for Enterprise Distribution



Now you can distribute the app to your users in the following four ways:

- Distribute the .ipa file and .plist file to your users, and users perform the installation using **iTunes**. See the section called “Install apps using iTunes” for detailed instructions.
- Distribute the .ipa file and .plist file to your users, and users perform the installation using **iPhone Configuration Utility** or **Apple Configurator** (Using **Apple Configurator** is left out in this tutorial). See the section called “Install apps using iPhone Configuration Utility” for detailed instructions.
- Post the .ipa file and .plist file on a secure Web server, and users perform the installation wirelessly. See the section called “Install apps wirelessly” for detailed instructions.
- Use your MDM server to instruct managed devices to install the app, if your MDM server supports it. This is left out in this tutorial.

For more information on deploying apps, refer to Distributing Enterprise Apps for iOS Devices.

5.7.2.1 Install apps using iTunes

Step 1: Copy the .ipa file for the app to a machine (either Windows or Mac) with iTunes already installed.

Step 2: In **iTunes**, choose **File** > **Add to Library**, and then select the .ipa file.

Step 3: Connect a device to the computer, and then select it in the **Device** list in **iTunes**.

Step 4: Click the **Apps** tab, and then select the **Sync Apps** checkbox and the app in the list.

Step 5: Click **Apply** (or **Sync**).

If your user's computers are managed, you can deploy the files to their computers and ask them to sync their device. iTunes automatically installs the files found in iTunes Mobile Application and Provisioning Profiles folders.

5.7.2.2 Install apps using iPhone Configuration Utility

Step 1: Copy the .ipa file for the app to a machine (either Windows or Mac) with **iPhone Configuration Utility** already installed.

Step 2: In **iPhone Configuration Utility**, choose **File** > **Add to Library**, and then select the .ipa file.

Step 3: Connect a device to the computer, and then select it in the **Device** list.

Step 4: Click the **Applications** tab, and then select the .ipa file.

Step 5: Click **Install**.

5.7.2.3 Install apps wirelessly

Step 1: Construct and configure the server.

1. Install IIS on the server.
2. Copy the app (.ipa) file, the manifest (.plist) file, and the icons to a location on the IIS website that is accessible to the users.
3. Create a page that links to the manifest file.

   Here is a sample link:

```
<a href="itms-services://?action=download-manifest&url=http://example.com/
?manifest.plist">Install App</a>
```

Step 2: Set the MIME type of the server, so the server can correctly transfer the manifest file and the application.

- For Mac OS X Server, use the Server Admin to add the following MIME types to the Web service's **MIME Types** settings:

  application/octet-stream ipa

  text/xml plist

- For IIS, use the IIS Manager to add the following MIME types on the server's **Properties** page:

  .ipa application/octet-stream

  .plist text/xml

Now your app is ready for installation.

Step 3: Distribute the URL for downloading the manifest file by SMS or email to the users.

Step 4: The user clicks the URL to download the manifest file from the website to the iOS device, and the manifest file instructs the device to download and install the apps referenced in the manifest file.

6 Tutorial 5: Configure Appeon Server Cluster

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

Following are high level steps for configuring an Appeon Server cluster. For detailed instructions, you may need to go through the documents and sections as specified below.

1. Task 1: Install Appeon Server to multiple application servers.

2. Task 2: Create Appeon Server cluster in AEM.

3. Task 3: Configure the Web server for the Appeon Server cluster.

4. Task 4: Install an Appeon application to the Appeon Server cluster and Web server(s).

6.1 Task 1: Install Appeon Server to multiple application servers

Step 1: Set up a group of application servers.

The application server must be of the same type and of the same version. Appeon supports the following application server types: .NET IIS, JBoss, WebLogic, WebSphere, JEUS, EAServer, and NetWeaver. For more details, refer to the **Appeon Server requirements** section in *Appeon Installation Guide*.

Step 2: Install Appeon Server to each application server by following the installation instructions in the **Appeon Server installation** section in *Appeon Installation Guide*. In the **Select Components** page, make sure you select to install the appropriate edition of Appeon Server, for example, select Appeon Server for .NET if the application server is .NET/IIS.

6.2 Task 2: Create Appeon Server cluster in AEM

Once you have installed Appeon Server to several application servers, you can use the AEM **Cluster** tool to create an Appeon Server cluster and configure the load balancing and failover settings of the cluster. The following are the detailed instructions.

Step 1: Log into AEM. Each Appeon Server has an AEM. You only need to log in to one of them for the cluster, make configurations there, and then synchronize the settings to the other AEMs in the cluster.

Step 2: In the **Server** | **Resource | Cluster** tool, add the Appeon Servers one by one. It is **important** that the first Appeon Server you add is the one hosting the AEM you are currently logged into.

1. Click the **Add Appeon Server** button under the **Cluster Server List** table. The **Add New Appeon Server** page opens.

2. Verify that the Appeon Server to be configured is running and provide the required information (IP address, port, AEM user name, and password). For example:

- IP address: 161.0.0.1

  Use the IP address or machine name of the Appeon Server when adding an Appeon Server. Do not use "localhost" or "127.0.0.1". The IP address or machine name and port number must match the settings of HTTP listeners in the application server.

- Port: 80
- AEM User Name: admin
- AEM Password: admin

3. Click the **Save and Add** button to add the other Appeon Servers. The program will automatically test the connection and add the Appeon Server if the test is successful.

   Adding an Appeon Server will succeed only if:

   - The Appeon Server is new to AEM.
   - The information provided is correct.
   - The Appeon Server is running.
   - The first Appeon Server that you add is the one hosting AEM you are currently logged into.

The Appeon Servers listed in the **Cluster Server List** group will work as a cluster in supporting the requests from their associated Web server.

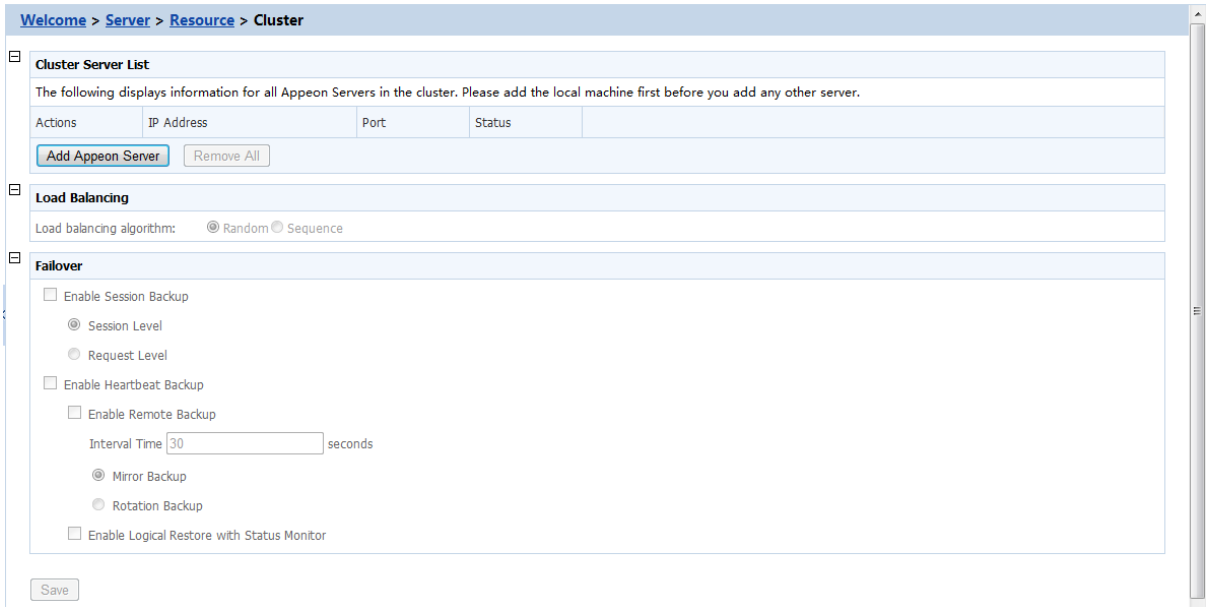
Step 3: Configure the load balancing and the fail-over settings by following instructions in the *Cluster* section in the *Server Configuration Guide*.

Step 4: Check status of Appeon Servers and verify that all servers are running.

Step 5: Click **Save** to synchronize AEM settings to the other servers in a cluster.

Once an Appeon Server is added to the cluster server list, you can use the AEM which maintains the list to manage all servers in the cluster. Whenever you change the settings of this AEM and click **Save**, the settings will be saved to the other servers in the cluster. Therefore, you do not need to repeat the configuration in each AEM. However, not all of the AEM settings will be synchronized, because some settings are not necessary to be the same for all servers.

Figure 6.1: Cluster



6.3 Task 3: Configure the Web server for the Appeon Server cluster

6.3.1 Task 3.1: Install the Appeon Server Web Component on Web server

Step 1: Set up one or more separate Web server(s).

For detailed system requirements, refer to the **(Optional) Web server requirements** section in *Appeon Installation Guide*.

Step 2: Install the **Appeon Server Web Component** on each Web server.

For detailed instructions, please follow the installation instructions in **Appeon Server Web Component installation** section in *Appeon Installation Guide*.

6.3.2 Task 3.2: Configure the Web server with the Appeon plug-in

6.3.2.1 Type 1: IIS Web server

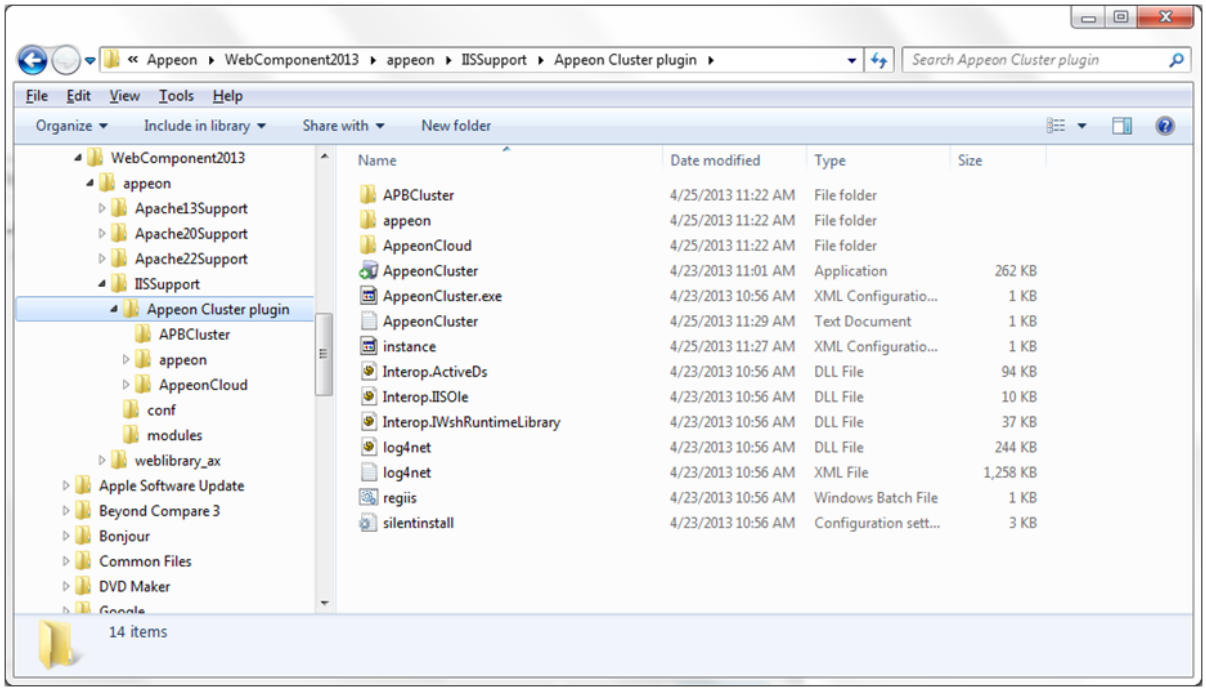
6.3.2.1.1 Method 1: Automatic configuration

Installing Appeon Cluster Plug-in

Step 1: Get the Appeon cluster plug-in installation package.

After you install **Appeon Server Web Component**, you can find the **Appeon Cluster plugin** folder under the **WebComponent2013\appeon\IISSupport** directory, and this folder is the Appeon cluster plug-in installation package, as shown in the following figure.

Figure 6.2: Appeon Cluster plugin



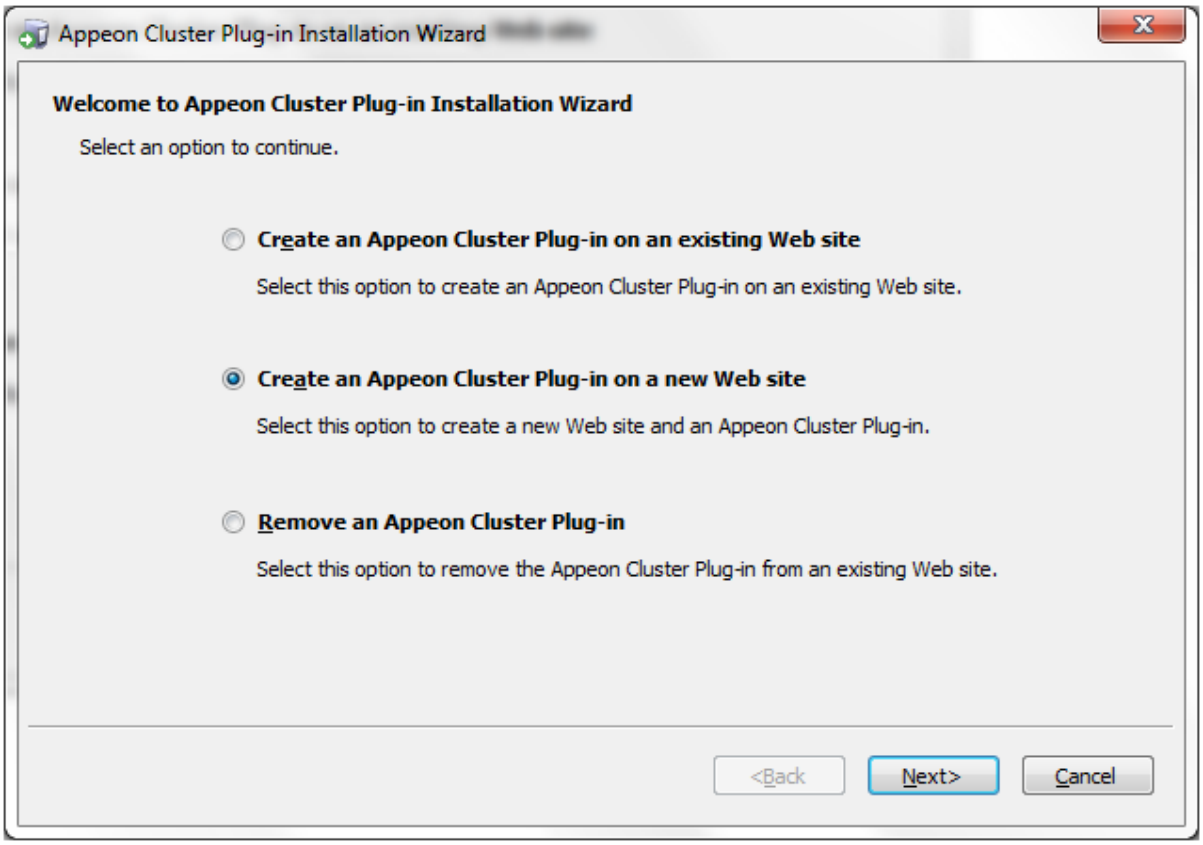
Step 2: Copy the **Appeon Cluster plugin** folder to the Web server in the cluster, and then double-click **AppeonCluster.exe** under this folder.

The **Appeon Cluster Plug-in Installation Wizard** is displayed.

Step 3: Select **Create an Appeon Cluster Plug-in on a new Web site**, and click **Next**.

If you want to install to an existing Web site, select **Create an Appeon Cluster Plug-in on an existing Web site**, and click **Next**.

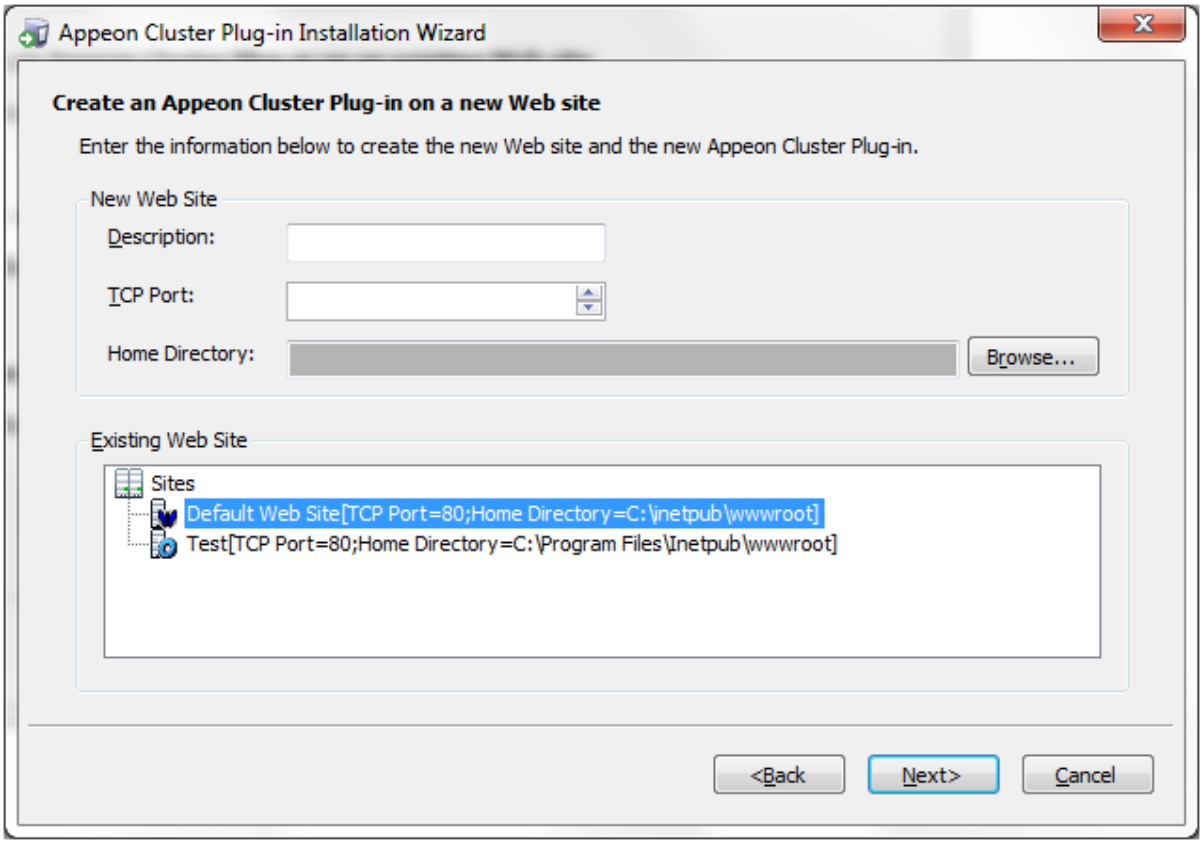
Figure 6.3: Create plugin on a Web site



Step 4: To create the Appeon cluster plug-in on a new Web site, configure **Description**, **Port** and **Home Directory**, then click **Next**.

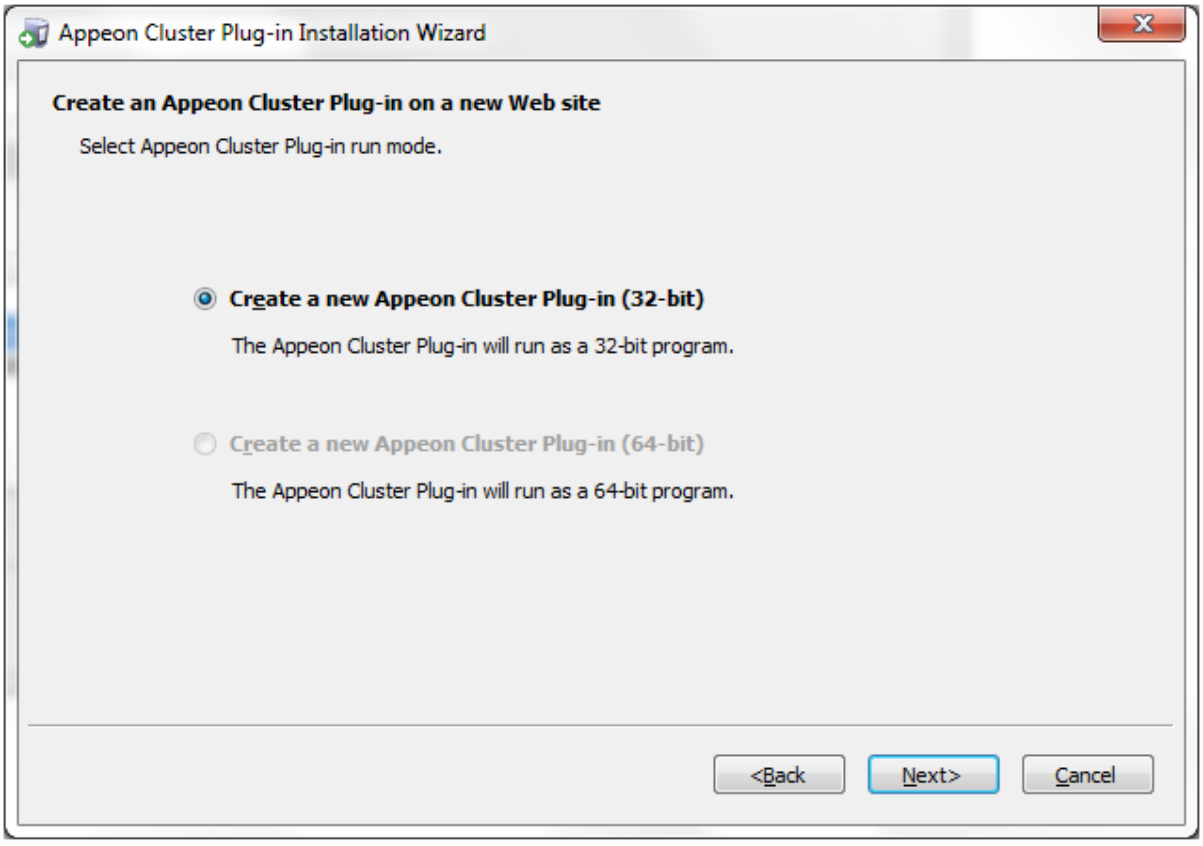
The new Web site will be created.

Figure 6.4: Configure the Web site



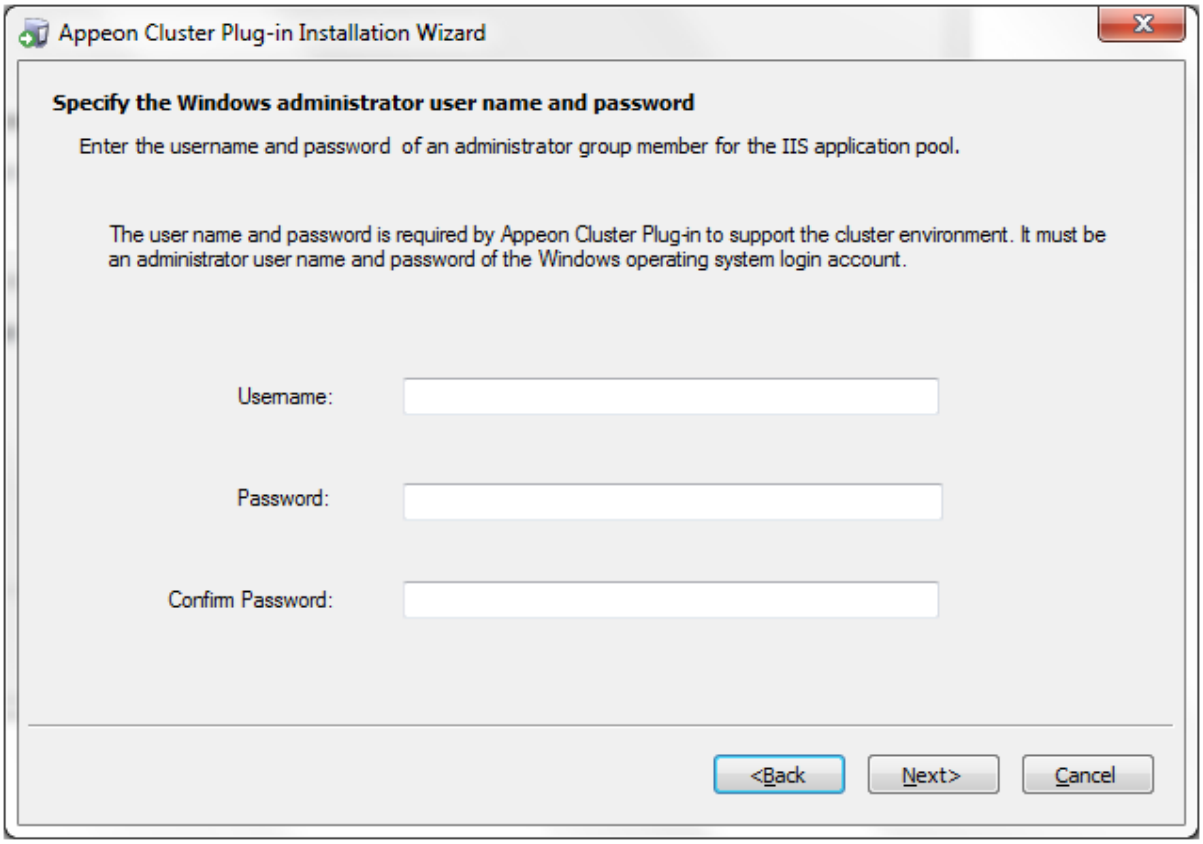
Step 5: Select the Appeon cluster plug-in run mode (32 bit or 64 bit), and click **Next**.

Figure 6.5: Select run mode



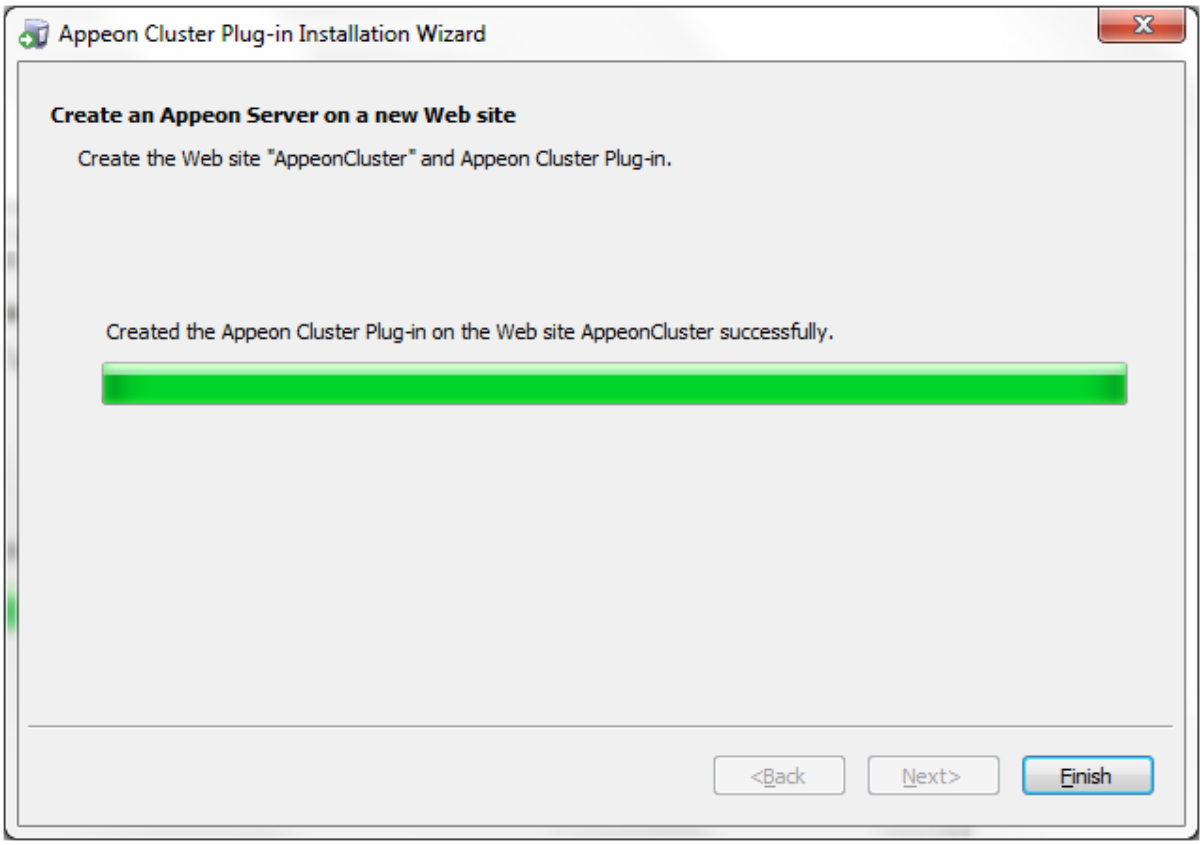
Step 6: Specify the Windows administrator user name and password, and click **Next**. Make sure to input the correct user name and password, otherwise you may not be able to access the Appeon Cluster Manager in Internet Explorer.

Figure 6.6: Windows administrator username and password



Step 7: When the plug-in is created successfully, click **Finish** to exit the **Appeon Cluster Plug-in Installation Wizard**.

Figure 6.7: Create the plug-in



6.3.2.1.2 Method 2: Manual configuration

Configuring Windows IIS 7.x with .NET server

Choose an existing Web site, or create a new site. The Default Web Site will be used as examples in the following guide.

1. Copying the Appeon Server Web component to the Web root of the IIS server.

   During the installation of Appeon Server Web Component, an **IISSupport** folder will be created under the directory which (if you did not specify) is C:\Program Files\Appeon \WebComponent2013\appeon by default. **IISSupport** contains files and components that help IIS 7.x run with the Appeon Server cluster. Check if the **appeon\IISSupport** folder exists under the Web root of the IIS server, if not, perform the following steps to copy it from an existing Appeon Server Web Component installation directory:

   Step 1: Create an **appeon** folder under the Web root of IIS server (**for example, C: \inetpub\wwwroot**).

   Step 2: Copy the **IISSupport** folder from the installation path to the created **appeon** folder (for example, C:\Inetpub\wwwroot\appeon).

2. Creating a virtual directory.

   Step 1: Open **Control Panel** | **Administrative Tools** | **Internet Information Service (IIS) Manager**.

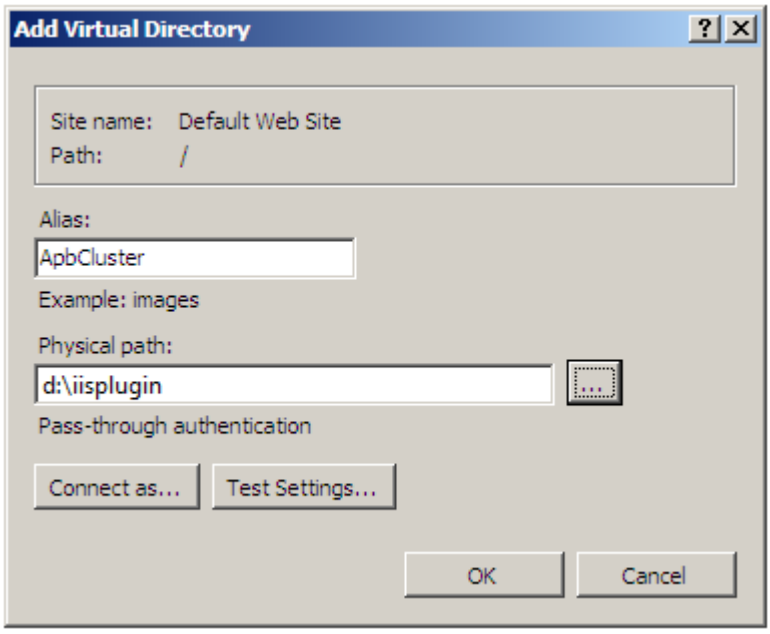
   Step 2: Right click the **Default Web Site** and select **Add Virtual Directory**.

Step 3: Input the alias name, for example, "**ApbCluster**".

Step 4: Choose a local path in the **Physical** path box; for example, "d:\iisplugin".

Step 5: Click **OK**.

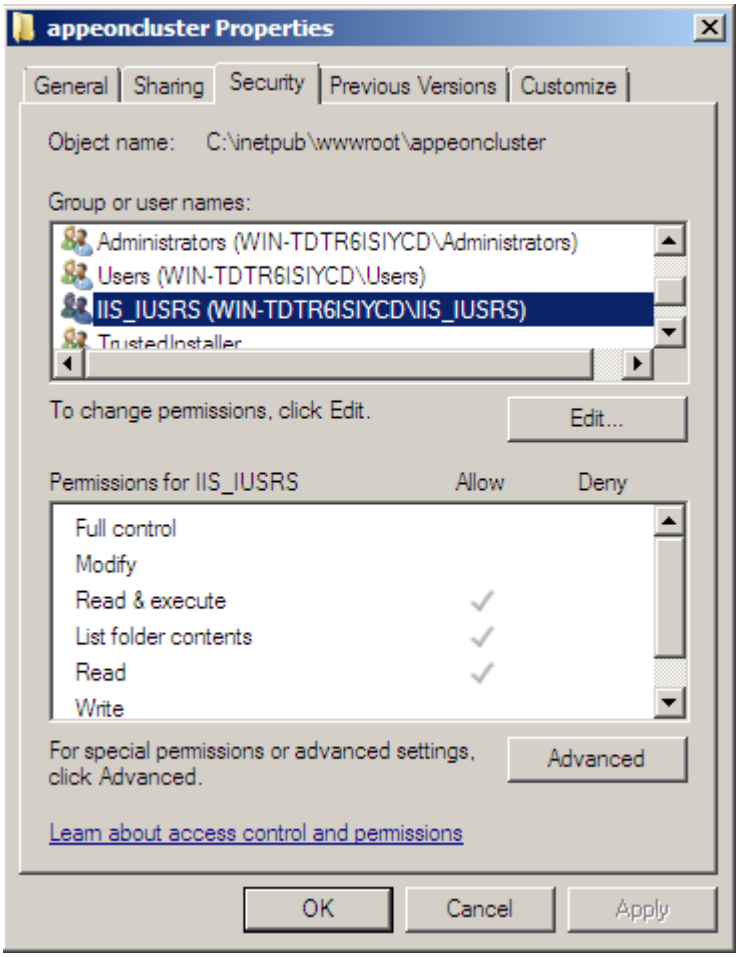
Figure 6.8: Add virtual directory



Step 6: Right click the **ApbCluster** Virtual Directory and select **Edit Permissions**.

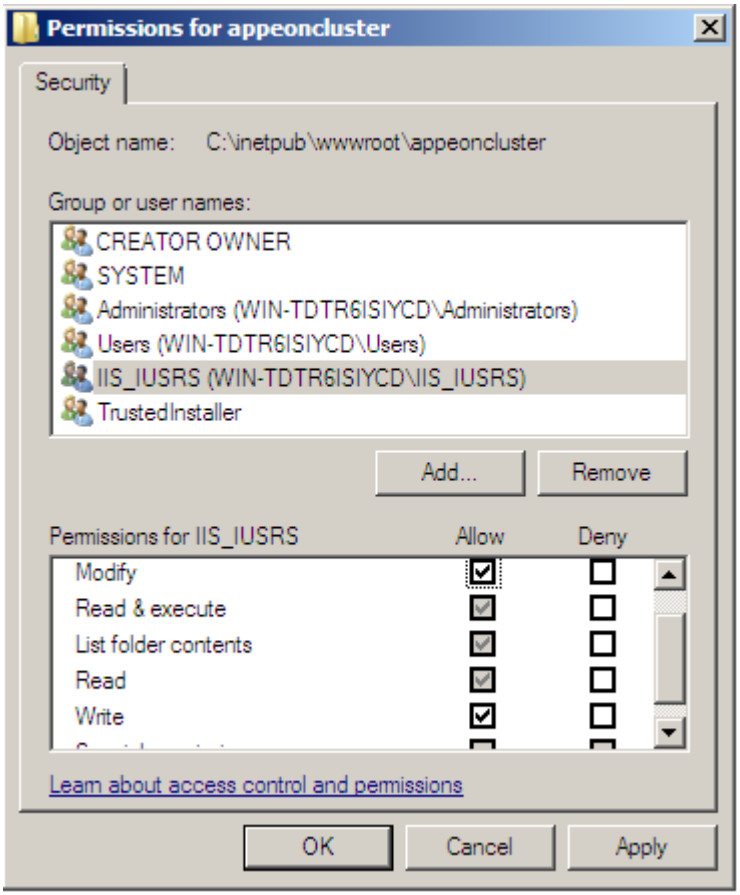
Step 7: Choose the **Security** tab page, select **IIS_IUSRS (WIN-TDTR6ISIYCD \IIS_IUSRS)** in the **Group or user names** list box, and then click the **Edit** button.

Figure 6.9: appeoncluster properties



Step 8: Select **IIS_IUSRS (WIN-TDTR6ISIYCD\IIS_IUSRS)** in the **Group or user names** list box, and then select **Modify** and **Write** in the **Allow** column of the **Permissions for IIS_IUSRS** list box.

Figure 6.10: appeoncluster permissions



Step 9: Click **OK** to go back to the IIS window.

3. Copying Appeon plug-in (ApbCluster.dll or ApbCluster64.dll).

   Copy the **ApbCluster.dll** (for 32-bit OS) or **ApbCluster64.dll** (for 64-bit OS) plug-in from appeon\IISSupport\modules to the newly created virtual directory (d:\iisplugin in this guide) .

   In the 64-bit OS, you can either use **ApbCluster.dll** or **ApbCluster64.dll**. If you use **ApbCluster.dll**, you will need to set the **Enable 32-Bit Applications** to **True** for the **AppeonAppPool** application pool, as shown in figure below. If you use **ApbCluster64.dll**, then set this option to **False**.

4. Editing Appeon Cluster configuration file (cluster-config.xml).

   Step 1: Copy the **cluster-config.xml** configuration file to the newly created virtual directory ("d:\iisplugin" in this guide).

   cluster-config.xml resides in the %appeon%\plugin\IIS directory under the Appeon Server installation directory. You can get it from any machine with Appeon Server .NET installed.

   Step 2: Modify the following information in the cluster-config.xml file: Appeon Server IP address, Appeon Server port number, and load balancing algorithm.

```
<?xml version="1.0" encoding="UTF-8" ?>
<cluster-config local="true" log="debug" timeout="30" polling="5"
arithmetic="sequence">
    <extention>/ApbCluster/ApbCluster.dll</extention>
    <filters>
        <filter>/AEM</filter>
        <filter>/servlet</filter>
        <filter>/reportfile</filter>
        <filter>/imagefile</filter>
        <filter>/dwfile</filter>
        <filter>/ajsdown</filter>
    </filters>
    <servers>
        <server host="192.0.0.168" port="88"/>
        <server host="192.0.3.131" port="80"/>
        <server host="192.0.3.145" port="80"/>
    </servers>
</cluster-config>
```

Notes:

- **Local** specifies whether to read the configurations on the local server or the cloud server. For the cloud server, set **Local** to **False**.
- **log** specifies the level of information to be recorded in the log file. It can be set to the following level: **debug**, **info**, **warning**, **error**, or **off**.
- **timeout** specifies the number of seconds the Web server waits between sending an HTTP request to Appeon Server and receiving information from it. The HTTP connection timeout value is 2 times of this value.
- **polling** indicates the number of seconds when the configurations will be read again.
- **arithmetic**="random" indicates that the random algorithm is used to pick an Appeon Server; **arithmetic**="sequence" indicates that the round-robin algorithm is used.
- **extention** specifies the location of the virtual directory which contains ApbCluster.dll (or ApbCluster64.dll), that is /virtual-directory-alias-name/ApbCluster.dll (/ApbCluster/ApbCluster.dll in this guide).
- **filter** specifies the type of pages to redirect.
- **host** indicates the IP address (recommended) or machine name of the Appeon Server.
- **port** indicates the port number of the Appeon Server.

5. Installing Appeon plug-in as ISAPI Filters.

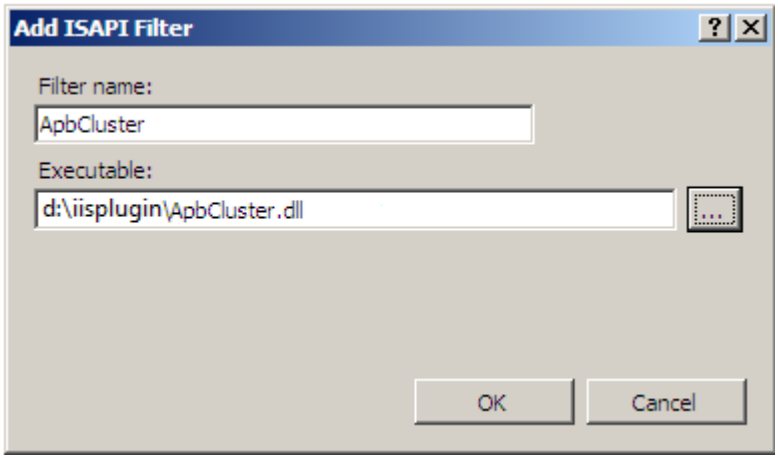
   Step 1: Open **Control Panel** | **Administrative Tools** | **Internet Information Services (IIS) Manager**.

   Step 2: Click the **Default Web Site** and then double-click **ISAPI Filters** on the right side.

   Step 3: Right-click the blank area on the **ISAPI Filters** page, and click **Add**.

Step 4: Input **ApbCluster** in the **Filter name** box and specify **ApbCluster.dll** (or **ApbCluster64.dll**) as the ISAPI filter in the **Executable** box (d:\iisplugin\ApbCluster.dll in this guide). Click **OK**.

Figure 6.11: Add ISAPI filter



6. Creating the redirector configuration file.

   Step 1: Create the redirector configuration file as the name **ApbCluster.cfg** under the virtual directory (d:\iisplugin in this guide).

   Step 2: Copy and paste the following to the file:

```
Extension_URI=/ApbCluster/ApbCluster.dll
MatchExpression=/AEM
MatchExpression=/servlet
MatchExpression=/reportfile
MatchExpression=/imagefile
MatchExpression=/dwfile
MatchExpression=/ajsdown
Log=On
```

   Notes:

   - The **Extension_URI** command points to the virtual directory where ApbCluster.dll resides, that is /virtual-directory-alias-name/ApbCluster.dll (/ApbCluster/ApbCluster.dll in this guide).
   - The **MatchExpression** command specifies the pages to be redirected.
   - The **Log** command specifies whether logging is enabled. On indicates logging is enabled; Off indicates logging is disabled.
   - The **TimeOut** command specifies the number of seconds the Web server waits between sending an HTTP request to Appeon Server and receiving information from it. The HTTP connection timeout value is 2 times of this value.
   - The commands and parameters are case insensitive.

7. Setting ISAPI and CGI Restrictions.

Step 1: Open **Control Panel** | **Administrative Tools** | **Internet Information Services (IIS) Manager**.

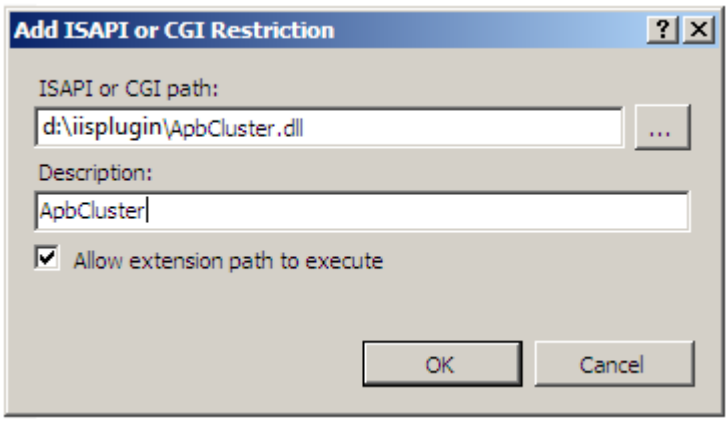
Step 2: Right-click the local machine, and then double-click **ISAPI and CGI Restrictions** on the right side.

Step 3: Right-click the blank area of the **ISAPI and CGI Restrictions** page and click **Add**.

Step 4: Specify the local path of **ApbCluster.dll** (or **ApbCluster64.dll**) in the **ISAPI or CGI path** box and input **ApbCluster** in the **Description** box, and then select **Allow extension path to execute**.

Step 5: Click **OK**.

Figure 6.12: Add ISAPI or CGI



8. Enabling ISAPI-dll.

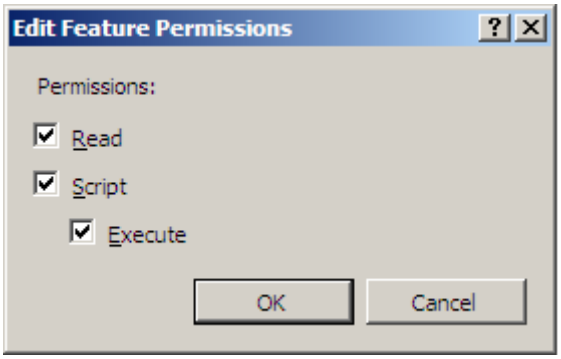
Step 1: Open **Control Panel** | **Administrative Tools** | **Internet Information Services (IIS) Manager**.

Step 2: Expand the **Default Web Site**, click **ApbCluster**, and then double-click **Handler Mappings** on the right side.

Step 3: Right-click **ISAPI-dll**, and select **Edit Feature Permissions**.

Step 4: Select **Read**, **Script**, **Execute**, and click **OK**.

Figure 6.13: Edit feature permissions



9. Adding MIME type.

   Add a MIME type for loading the files with no extensions or MIME type definition.

   Step 1: Click the **Default Web Site** and then double-click **MIME Types** on the right of the page.

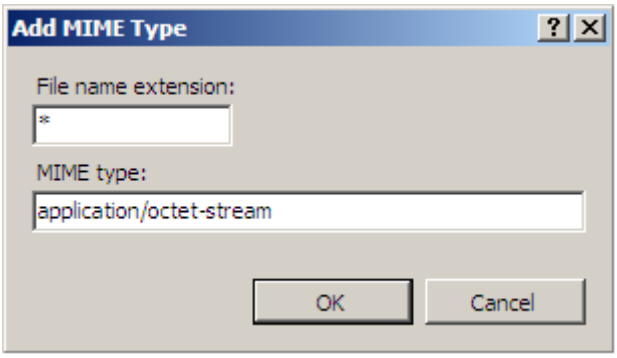
   Step 2: Right-click the blank area of the **MIME Types** page, and click **Add**.

   Step 3: Specify the following settings:

   - Extension: *
   - MIME Type: application/octet-stream

   Step 4: Click **OK**.

   Figure 6.14: Add MIME type



10. Restarting IIS.

    Restart IIS to make the new settings effective.

Configuring Windows IIS 6.0 with .NET server

Choose an existing Web site, or create a new site. The following takes the existing Default Web Site as an example.

1. Copying the Appeon Server Web component to the Web root of the IIS server.

   During the installation of Appeon Server Web Component, an **IISSupport** folder will be created under the directory which (if you did not specify) is C:\Program Files\Appeon \WebComponent2013\appeon by default. **IISSupport** contains files and components that help IIS 6.0 run with the Appeon Server cluster. Check if the **appeon\IISSupport** folder exists under the Web root of the IIS server, if not, perform the following steps to copy it from an existing Appeon Server Web Component installation directory:

   Step 1: Create an **appeon** folder under the Web root of IIS server (**for example, C: \inetpub\wwwroot**).

   Step 2: Copy the **IISSupport** folder from the installation path to the created appeon folder (**for example, C:\inetpub\wwwroot\appeon**).

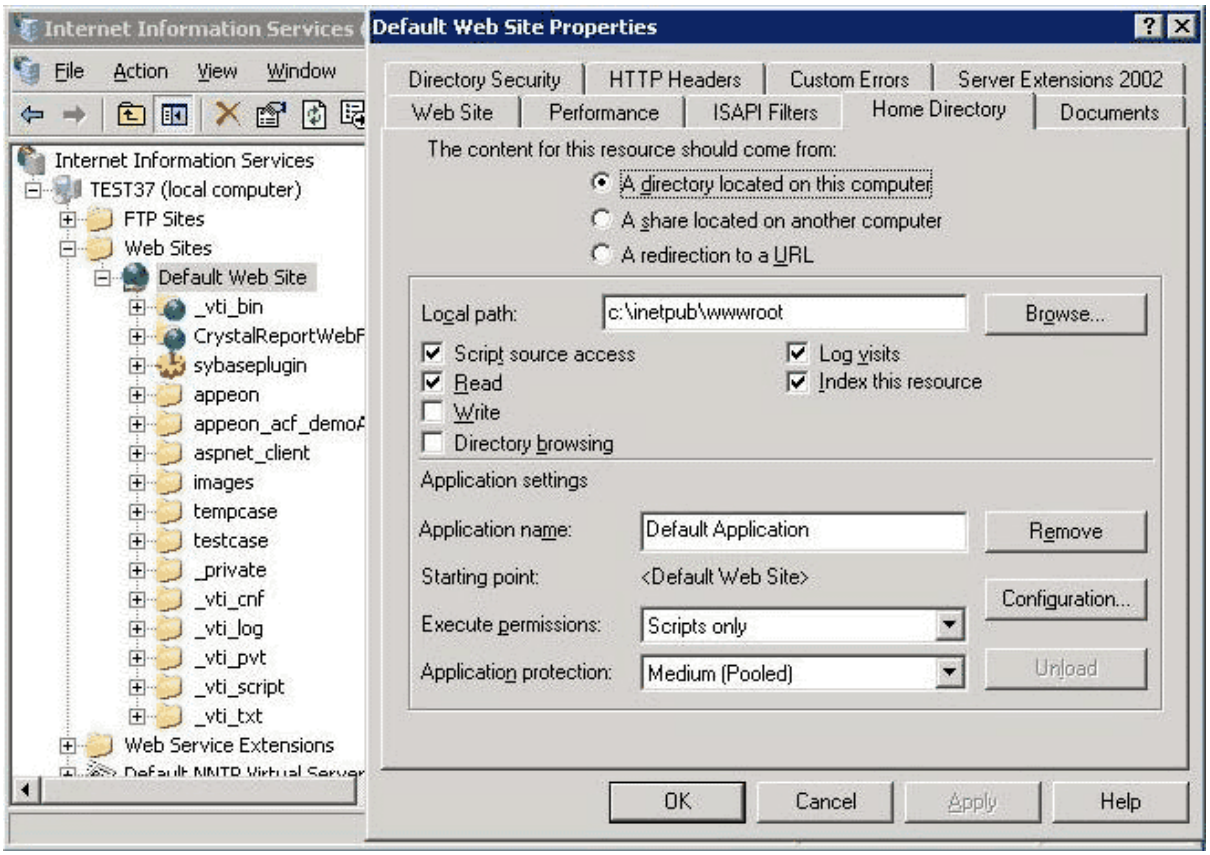
2. Specifying properties of IIS Web site.

   Step 1: Open **Control Panel** | **Administrative Tools** | **Internet Service Manager**.

Step 2: Right click **Web Sites** | **Default Web Site** and select **Properties**.

Step 3: In the **Default Web Site Properties** window, select the **Home Directory** tab and set the **Execute permissions** to **Scripts only**.

Figure 6.15: Web site properties



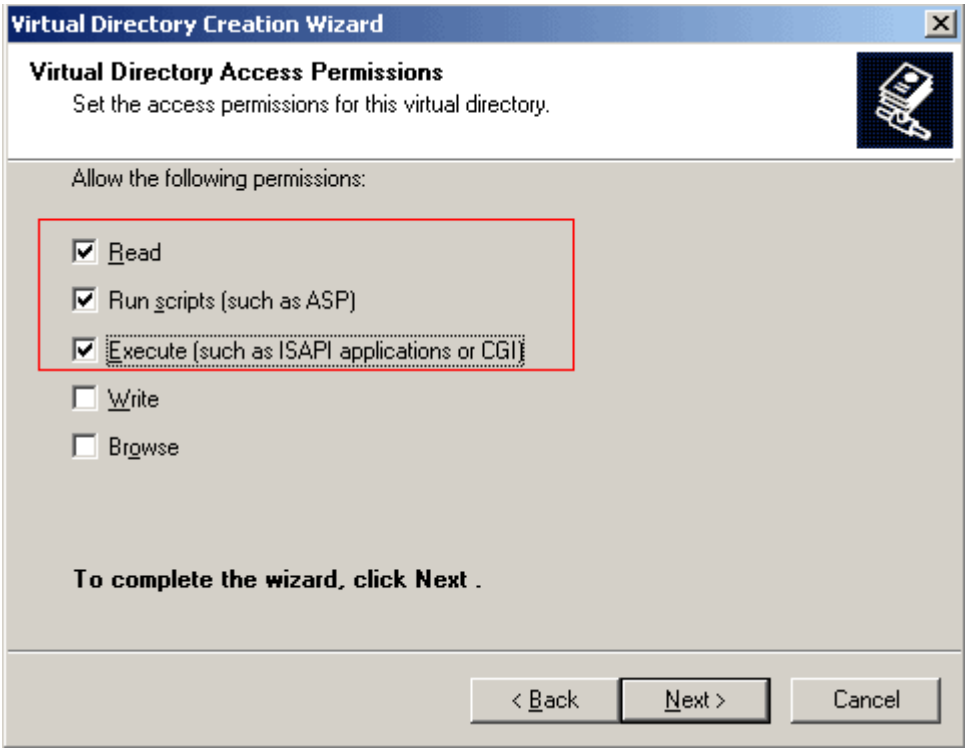
3. Creating virtual directory.

   Step 1: Right click the **Default Web Site** and select **New** | **Virtual Directory**.

   Step 2: Input the alias name (for example, "ApbCluster"), and select a mapping directory (for example, "d:\iisplugin").

   Step 3: Allow the following permissions to the mapping directory: **Read**, **Run scripts** (**such as ASP**), and **Execute** (**such as ISAPI application or CGI**)

Figure 6.16: Virtual directory



4. Copying Appeon plug-in.

   Copy the **ApbCluster.dll** (for 32-bit OS) or **ApbCluster64.dll** (for 64-bit OS) plug-in from **appeon\IISSupport\modules** to the newly created virtual directory (d:\iisplugin in this guide) .

   In the 64-bit OS, you can either use **ApbCluster.dll** or **ApbCluster64.dll**. If you use **ApbCluster.dll**, you will need to set the **Enable 32-Bit Applications** to **True** for the **AppeonAppPool** application pool, as shown in figure below. If you use **ApbCluster64.dll**, then set this option to **False**.

5. Editing Appeon Cluster configuration file.

   Step 1: Copy the configuration file **Cluster-config.xml** to the newly created virtual directory ("d:\iisplugin" in this guide).

   cluster-config.xml resides in the %appeon%\plugin\IIS directory under the Appeon Server installation directory. You can get it from any machine with Appeon Server .NET installed.

   Step 2: Modify the following information in the cluster-config.xml file: Appeon Server IP address, Appeon Server port number, and load balancing algorithm, etc.

```
<?xml version="1.0" encoding="UTF-8" ?>
<cluster-config local="true" log="debug" timeout="30" polling="5"
arithmetic="sequence">
    <extention>/ApbCluster/ApbCluster.dll</extention>
    <filters>
        <filter>/AEM</filter>
        <filter>/servlet</filter>
        <filter>/reportfile</filter>
        <filter>/imagefile</filter>
        <filter>/dwfile</filter>
        <filter>/ajsdown</filter>
    </filters>
    <servers>
        <server host="192.0.0.168" port="88"/>
        <server host="192.0.3.131" port="80"/>
        <server host="192.0.3.145" port="80"/>
    </servers>
</cluster-config>
```

Notes:

- **Local** specifies whether to read the configurations on the local server or the cloud server. For the cloud server, set **Local** to **False**.
- **log** specifies the level of information to be recorded in the log file. It can be set to the following level: **debug**, **info**, **warning**, **error**, or **off**.
- **timeout** specifies the number of seconds the Web server waits between sending an HTTP request to Appeon Server and receiving information from it. The HTTP connection timeout value is 2 times of this value.
- **polling** indicates the number of seconds when the configurations will be read again.
- **arithmetic**="random" indicates that the random algorithm is used to pick an Appeon Server; **arithmetic**="sequence" indicates that the round-robin algorithm is used.
- **extention** specifies the location of the virtual directory which contains ApbCluster.dll (or ApbCluster64.dll), that is /virtual-directory-alias-name/ApbCluster.dll (/ApbCluster/ApbCluster.dll in this guide).
- **filter** specifies the type of pages to redirect.
- **host** indicates the IP address (recommended) or machine name of the Appeon Server.
- **port** indicates the port number of the Appeon Server.

6. Installing IIS filter.

   Step 1: Right click the **Default Web Site** and select **Properties**.

   Step 2: In the **Default Web Site Properties** window, select the **ISAPI Filters** tab. Click **Add** to add **ApbCluster.dll** (or **ApbCluster64.dll**) as the ISAPI filter. Click **OK**.

7. Creating redirector configuration file.

Create the redirector configuration file as the name **ApbCluster.cfg** under the virtual directory d:\iisplugin and copy the following commands to the file:

```
Extension_URI=/ApbCluster/ApbCluster.dll
MatchExpression=/AEM
MatchExpression=/servlet
MatchExpression=/reportfile
MatchExpression=/imagefile
MatchExpression=/dwfile
MatchExpression=/ajsdown
Log=On
```

Notes:

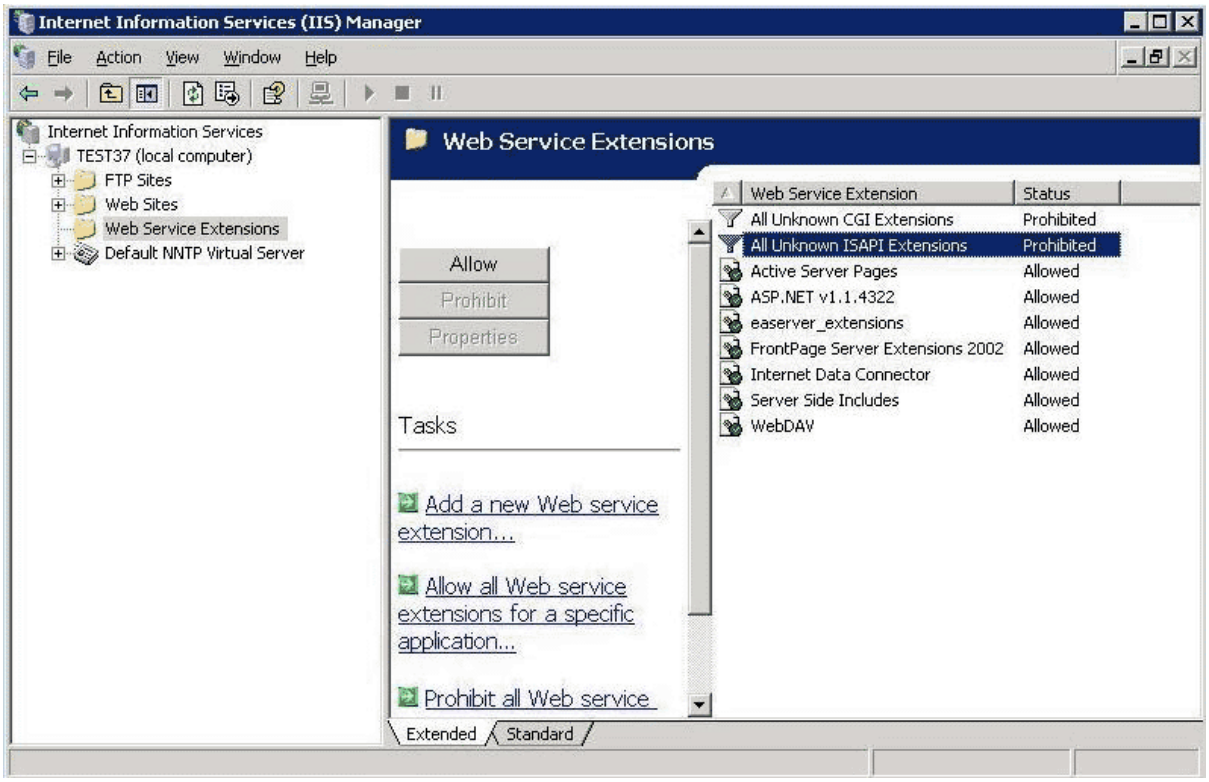
- The **Extension_URI** command points to the virtual directory where ApbCluster.dll resides (/ApbCluster/ApbCluster.dll in this example).
- The **MatchExpression** command specifies the pages to be redirected.
- The **Log** command specifies whether logging is enabled. On indicates logging is enabled; Off indicates logging is disabled.
- The **TimeOut**command specifies the number of seconds the Web server waits between sending an HTTP request to Appeon Server and receiving information from it. The HTTP connection timeout value is 2 times of this value.
- The commands and parameters are case insensitive.

8. Activating ISAPI.

   Step 1: Select the **Web Services Extension**.The ISAPI status will be displayed on the right.

   Step 2: Select **All Unknown ISAPI Extensions** and click the **Allow** button.

Figure 6.17: Allow ISAPI



9. Adding new MIME type.

   Step 1: Right click the Local computer and select **Properties**.

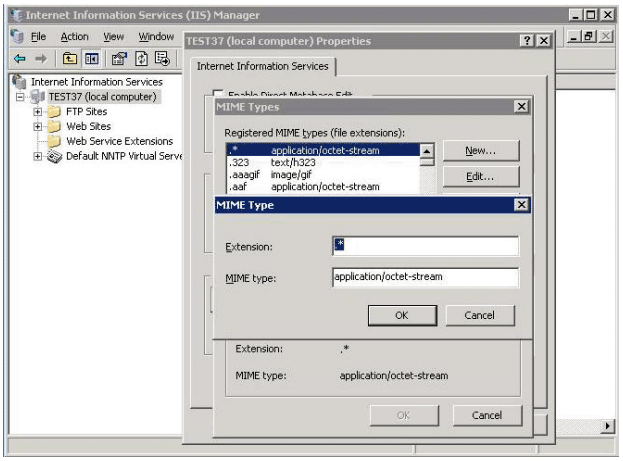
   Step 2: In the properties window, click the **MIME Types** button. In the **MIME Types** window, click **New**.

   Input the following information:

   - Extension: *
   - MIME type: application/octet-stream

   This is to ensure that pages without extension names or pages without MIME types defined can be accessed.

Figure 6.18: MIME Types



10.Restarting IIS.

Restart IIS to make the new settings effective.

Configuring IIS 7.x with J2EE server

J2EE servers refer to Java servers, such as EAServer, WebLogic, WebSphere, JBoss, JEUS etc. The configuration is the same for the J2EE application servers than Appeon supports.

Choose an existing Web site, or create a new site. The Default Web Site will be used as examples in the following guide.

1. Copying the Appeon Server Web component to the Web root of the IIS server.

   During the installation of Appeon Server Web Component, an **IISSupport** folder will be created under the directory which (if you did not specify) is C:\Program Files\Appeon \WebComponent2013\appeon by default. **IISSupport** contains files and components that help IIS 7.x run with the Appeon Server cluster. Check if the **appeon\IISSupport** folder exists under the Web root of the IIS server, if not, perform the following steps to copy it from an existing Appeon Server Web Component installation directory:

   Step 1: Create an **appeon** folder under the Web root of IIS server (**for example, C: \Inetpub\wwwroot**).

   Step 2: Copy the **IISSupport** folder from the installation path to the created **appeon** folder (**for example, C:\inetpub\wwwroot\appeon**).

2. Creating a virtual directory.

   Step 1: Open **Control Panel** | **Administrative Tools** | **Internet Information Service (IIS) Manager**.

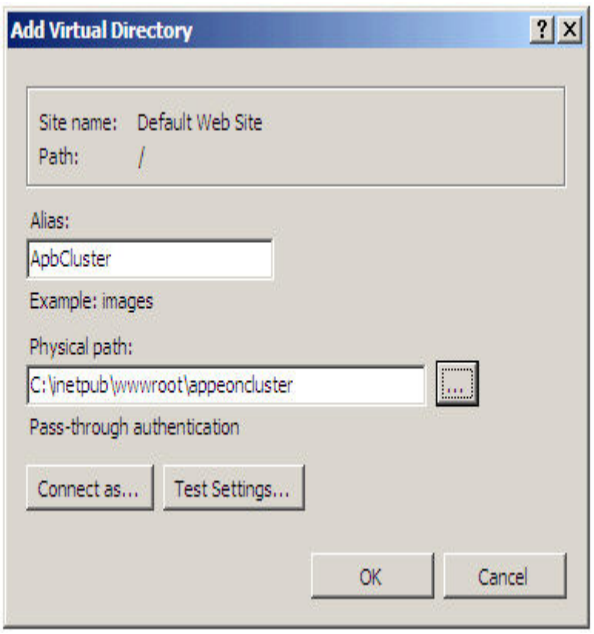
   Step 2: Right click the **Default Web Site** and select **Add Virtual Directory**.

   Step 3: Input the alias name, for example, "**ApbCluster**".

   Step 4: Choose a local path in the **Physical** path box; for example, "d:\iisplugin".

   Step 5: Click **OK**.

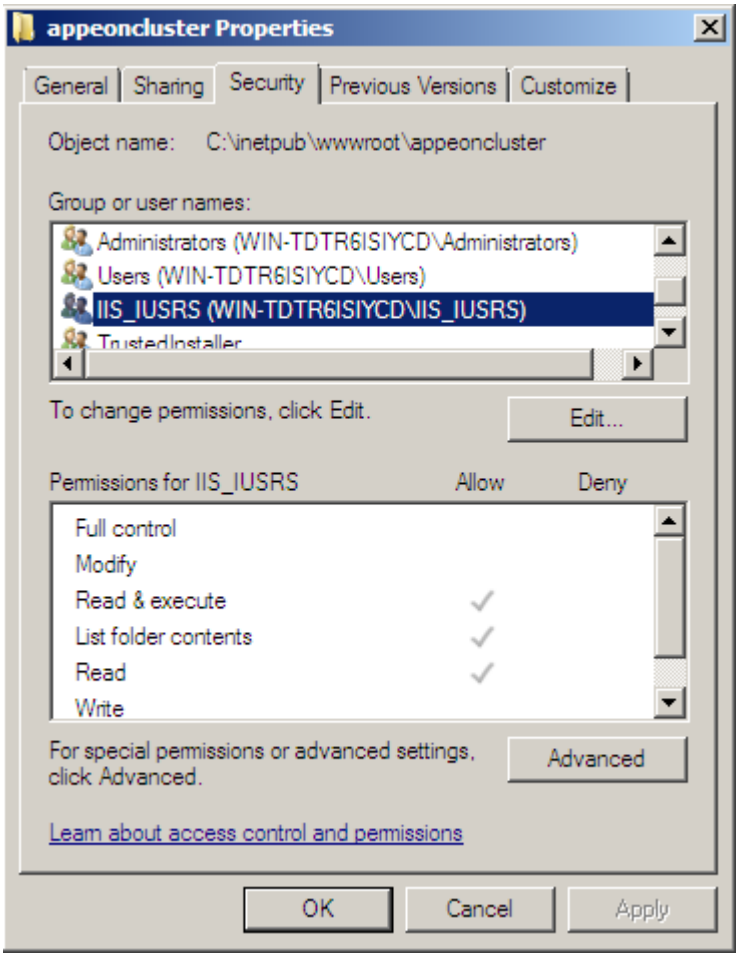
Figure 6.19: Add virtual directory



Step 6: Right click the **ApbCluster** Virtual Directory and select **Edit Permissions**.

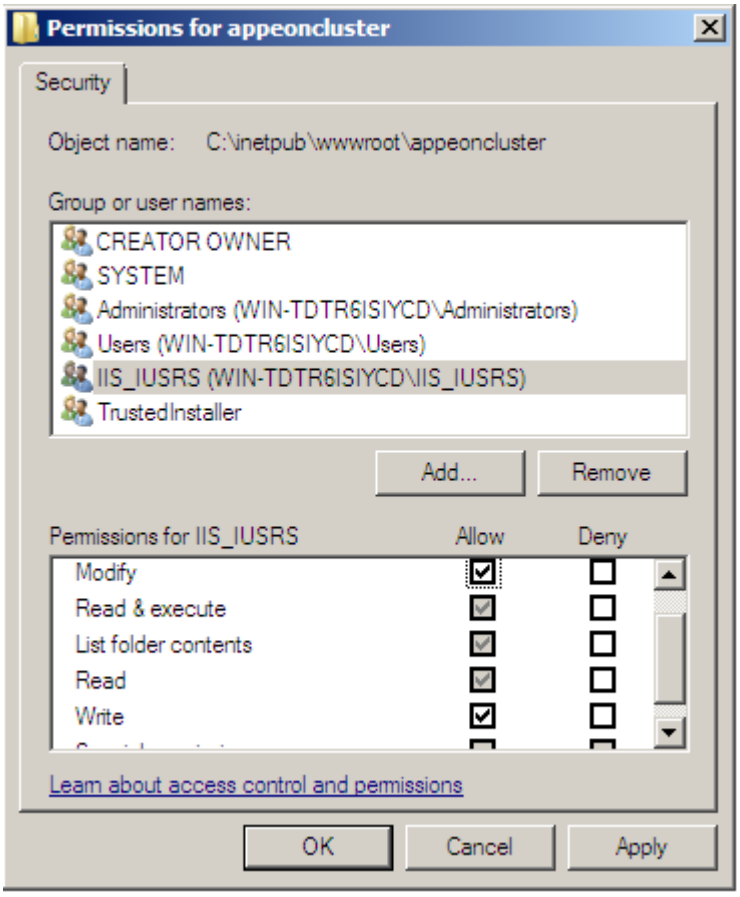
Step 7: Choose the **Security** tab page, select **IIS_IUSRS (WIN-TDTR6ISIYCD \IIS_IUSRS)** in the **Group or user names** list box, and then click the **Edit** button.

Figure 6.20: appeoncluster properties



Step 8: Select **IIS_IUSRS (WIN-TDTR6ISIYCD\IIS_IUSRS)** in the **Group or user names** list box, and then select **Modify** and **Write** in the **Allow** column of the **Permissions for IIS_IUSRS** list box.

Figure 6.21: appeoncluster properties



Step 9: Click **OK** to go back to the IIS window.

3. Copying Appeon plug-in (ApbCluster.dll or ApbCluster64.dll).

   Step 1: Copy the **ApbCluster.dll** (for 32-bit OS) or **ApbCluster64.dll** (for 64-bit OS) plug-in from appeon\IISSupport\modules.

   Step 2: Paste it to the newly created virtual directory: C:\inetpub\wwwroot\appeoncluster in this guide.

   In the 64-bit OS, you can either use **ApbCluster.dll** or **ApbCluster64.dll**. If you use **ApbCluster.dll**, you will need to set the **Enable 32-Bit Applications** to **True** for the **AppeonAppPool** application pool, as shown in figure below. If you use **ApbCluster64.dll**, then set this option to **False**.

4. Copying Appeon Cluster configuration file (cluster-config.xml).

   Step 1: Copy the **cluster-config.xml** file from %appeon%\repository\<instancename> \config. %appeon% is the installation directory of Appeon Server, and <instancename> refers to the name of a server instance.

   Step 2: Paste it into the newly created virtual directory: C:\inetpub\wwwroot \appeoncluster in this guide.

   Note: The **cluster-config.xml** file acts as the redirector configuration file as it helps Web server redirect requests to Appeon Servers according to the IP addresses of Appeon

Servers, the ports and load balancing algorithm that it stores. This file cannot be modified manually and is automatically updated when you change the settings in the Cluster tool of AEM. Each time after you change the settings, be sure to copy this file and replace the old file in the virtual directory and restart IIS.

5. Installing Appeon plug-in as ISAPI Filters.

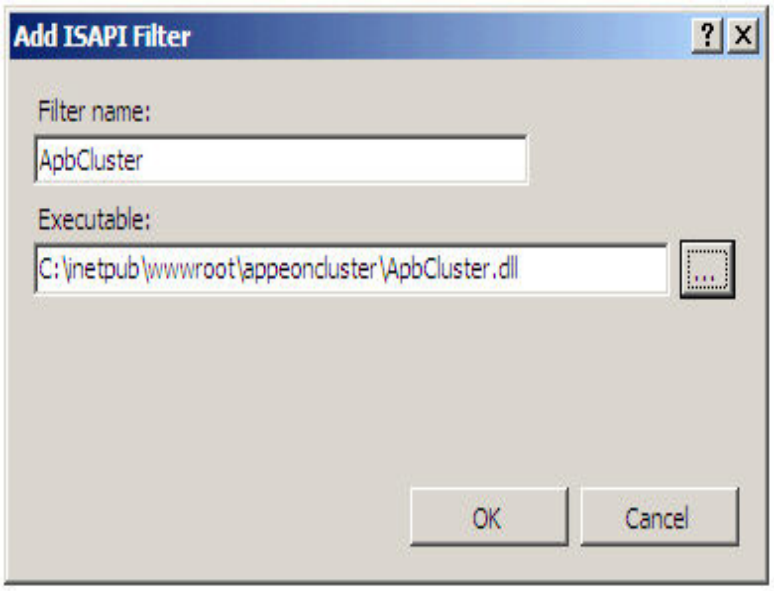
   Step 1: Open **Control Panel** | **Administrative Tools** | **Internet Information Service (IIS) Manager**.

   Step 2: Click the **Default Web Site** and then double-click **ISAPI Filters** on the right side.

   Step 3: Right-click the blank area on the **ISAPI Filters** page, and click **Add**.

   Step 4: Input **ApbCluster** in the Filter name box and specify **ApbCluster.dll** (or **ApbCluster64.dll**) as the ISAPI filter in the **Executable** box (*C:\inetpub\wwwroot\appeoncluster\ApbCluster.dll* in this guide). Click **OK**.

Figure 6.22: Add ISAPI filter



6. Creating the redirector configuration file.

   Step 1: Create the redirector configuration file as the name **ApbCluster.cfg** under the virtual directory (*C:\inetpub\wwwroot\appeoncluster*) in this guide.

   Step 2: Copy and paste the following to the file:

```
Extension_URI=/ApbCluster/ApbCluster.dll
MatchExpression=/AEM
MatchExpression=/servlet
MatchExpression=/reportfile
MatchExpression=/imagefile
MatchExpression=/dwfile
MatchExpression=/ajsdown
Log=On
```

   Notes:

- The **Extension_URI** command specifies the location of the virtual directory which contains ApbCluster.dll (or ApbCluster64.dll), that is /virtual-directory-alias-name/ApbCluster.dll (/ApbCluster/ApbCluster.dll in this guide).
- The **MatchExpression** commands specify the type of pages to redirect.
- The **Log** command specifies whether to enable logging.
- The **TimeOut** command specifies the number of seconds the Web server waits between sending an HTTP request to Appeon Server and receiving information from it. The HTTP connection timeout value is 2 times of this value.
- **The commands and parameters are case insensitive.**

7. Setting ISAPI and CGI Restrictions.

   Step 1: Open **Control Panel** | **Administrative Tools** | **Internet Information Services (IIS) Manager**.

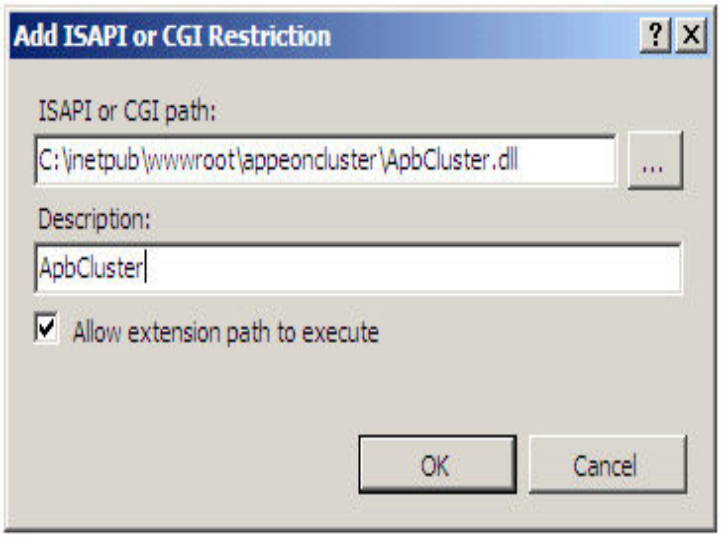
   Step 2: Right-click the local machine, and then double-click **ISAPI and CGI Restrictions** on the right side.

   Step 3: Right-click the blank area of the **ISAPI and CGI Restrictions** page and click Add.

   Step 4: Specify the local path of **ApbCluster.dll** (or **ApbCluster64.dll**) in the **ISAPI or CGI path** box and input **ApbCluster** in the **Description** box, and then select **Allow extension path to execute**.

   Step 5: Click **OK**.

Figure 6.23: Add ISAPI or CGI



8. Enabling ISAPI-dll.

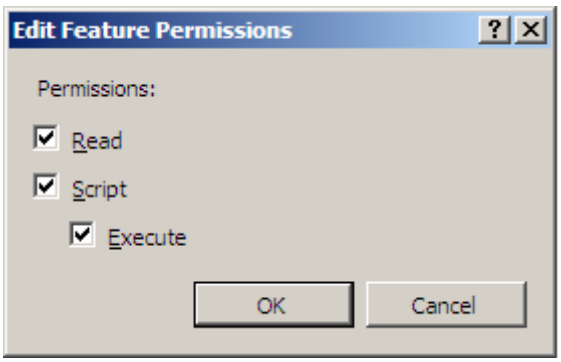
   Step 1: Open **Control Panel** | **Administrative Tools** | **Internet Information Services (IIS) Manager**.

Step 2: Expand the **Default Web Site**, click **ApbCluster**, and then double-click **Handler Mappings** on the right side.

Step 3: Right-click **ISAPI-dll**, and select **Edit Feature Permissions**.

Step 4: Select **Read**, **Script**, **Execute**, and click **OK**.

Figure 6.24: Edit feature permissions



9. Adding MIME type.

   Add a MIME type for loading the files with no extensions or MIME type definition.

   Step 1: Click the **Default Web Site** and then double-click MIME Types on the right of the page.

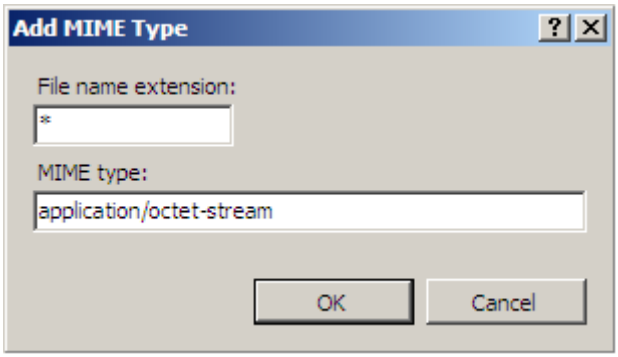
   Step 2: Right-click the blank area of the **MIME Types** page, and click **Add**.

   Step 3: Specify the following settings:

   - Extension: *
   - MIME Type: application/octet-stream

   Step 4: Click **OK**.

Figure 6.25: Add MIME type



10. Restarting IIS.

    Restart IIS to make the new settings effective.

Configuring IIS 6.0 with J2EE server

J2EE servers refer to Java servers, such as EAServer, WebLogic, WebSphere, JBoss, JEUS etc. The configuration is the same for the J2EE application servers that Appeon supports.

Choose an existing Web site, or create a new site. The following takes the existing Default Web Site as an example.

1. Copying the Appeon Server Web component to the Web root of the IIS server.

   During the installation of Appeon Server Web Component, an **IISSupport** folder will be created under the directory which (if you did not specify) is *C:\Program Files\Appeon \WebComponent2013\appeon* by default. **IISSupport** contains files and components that help IIS 7.x run with the Appeon Server cluster. Check if the **appeon\IISSupport** folder exists under the Web root of the IIS server, if not, perform the following steps to copy it from an existing Appeon Server Web Component installation directory:

   Step 1: Create an **appeon** folder under the Web root of IIS server (**for example, C: \inetpub\wwwroot**).

   Step 2: Copy the **IISSupport** folder from the installation path to the created **appeon** folder (**for example, C:\inetpub\wwwroot\appeon**).

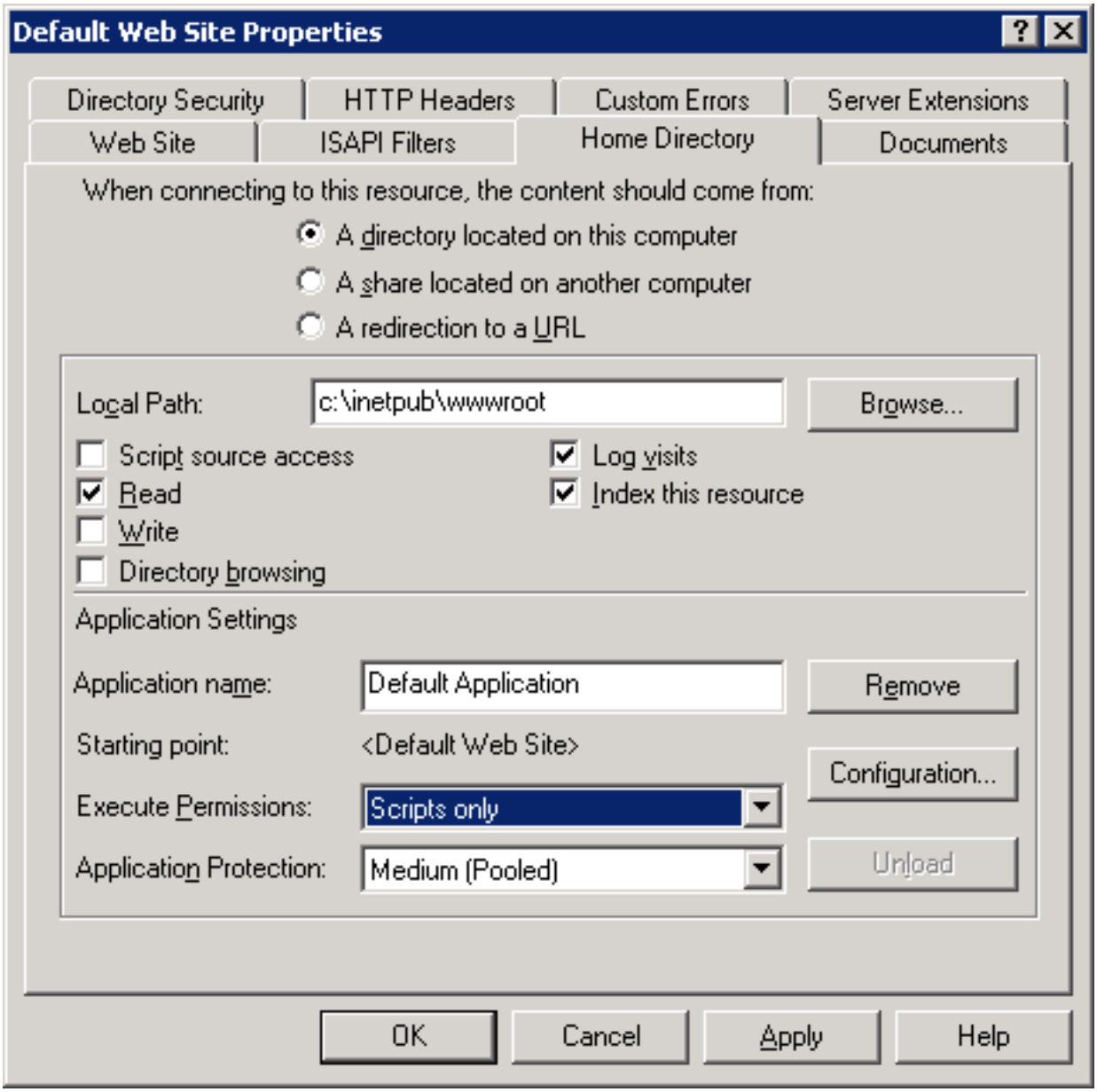
2. Specifying properties of IIS Web site.

   Step 1: Open **Control Panel** | **Administrative Tools** | **Internet Information Service (IIS) Manager**.

   Step 2: Right click the **Default Web Site** and select **Add Virtual Directory**.

   Step 3: Click the **Home Directory** tab and select **Scripts only** in the **Execute Permissions** dropdown list.

Figure 6.26: Default Web site properties



3. Creating a virtual directory.

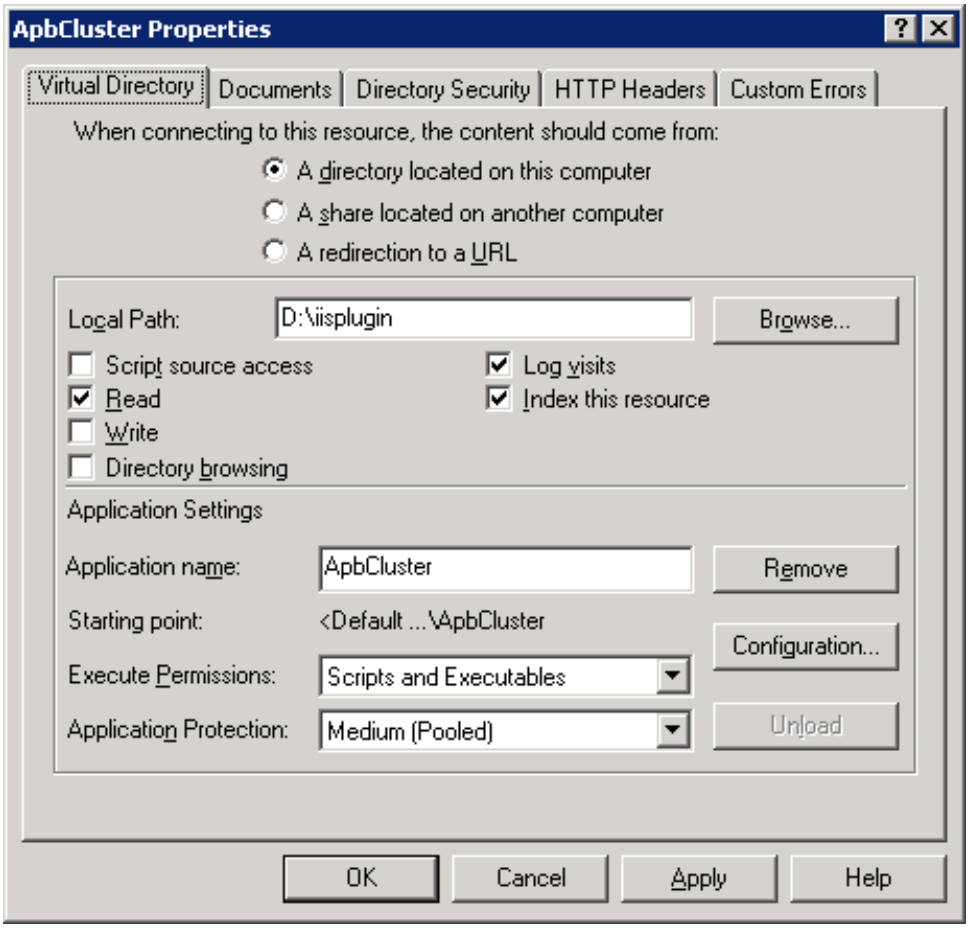
   Step 1: Right click the **Default Web Site** and select **New**.

   Step 2: Click the **Virtual Directory** tab and input **ApbCluster** in the **Application name** box.

   Step 3: Choose a local path; for example, *d:\iisplugin*.

   Step 4: Enable read, run script, and execute on the virtual directory. Or select **Read** and **selecting Scripts and Executables** from the **Execute Permissions** dropdown list.

Figure 6.27: Apbcluster properties



4. Copying Appeon plug-in.

   Step 1: Copy the **ApbCluster.dll** (for 32-bit OS) or **ApbCluster64.dll** (for 64-bit OS) plug-in from **appeon\IISSupport\modules**.

   Step 2: Paste it to the virtual directory: d:\iisplugin.

   In the 64-bit OS, you can either use **ApbCluster.dll** or **ApbCluster64.dll**. If you use **ApbCluster.dll**, you will need to set the **Enable 32-Bit Applications** to **True** for the **AppeonAppPool** application pool, as shown in figure below. If you use **ApbCluster64.dll**, then set this option to **False**.

5. Copying Appeon Cluster configuration file (cluster-config.xml).

   Step 1: Copy the **cluster-config.xml** file from *%appeon%\repository\<instancename>\config*. %appeon% is the installation directory of Appeon Server, and <instancename> refers to the name of a server instance.

   Step 2: Paste it to the virtual directory: *d:\iisplugin*.

   Note: The **cluster-config.xml** file acts as the redirector configuration file as it helps Web server redirect requests to Appeon Servers according to the IP addresses of Appeon Servers, the ports and load balancing algorithm that it stores. This file cannot be modified manually and is automatically updated when you change the settings in the Cluster tool of

AEM. Each time after you change the settings, be sure to copy this file and replace the old file in the virtual directory and restart IIS.

6. Installing Appeon plug-in as ISAPI Filters.

   Step 1: Open **Control Panel** | **Administrative Tools** | **Internet Information Service (IIS) Manager**.

   Step 2: Right click the **Default Web Site** and choose **Properties**.

   Step 3: Click the **ISAPI Filters** tab page. Click **Add** to add **ApbCluster.dll** (or **ApbCluster64.dll**). Click **OK**.

7. Creating the ApbCluster.cfg file.

   Step 1: Create the **ApbCluster.cfg** file in the virtual directory d:\iispulgin.

   Step 2: Copy and paste the following:

```
Extension_URI=/ApbCluster/ApbCluster.dll
MatchExpression=/AEM
MatchExpression=/servlet
MatchExpression=/reportfile
MatchExpression=/imagefile
MatchExpression=/dwfile
MatchExpression=/ajsdown
Log=On
```

   Notes:

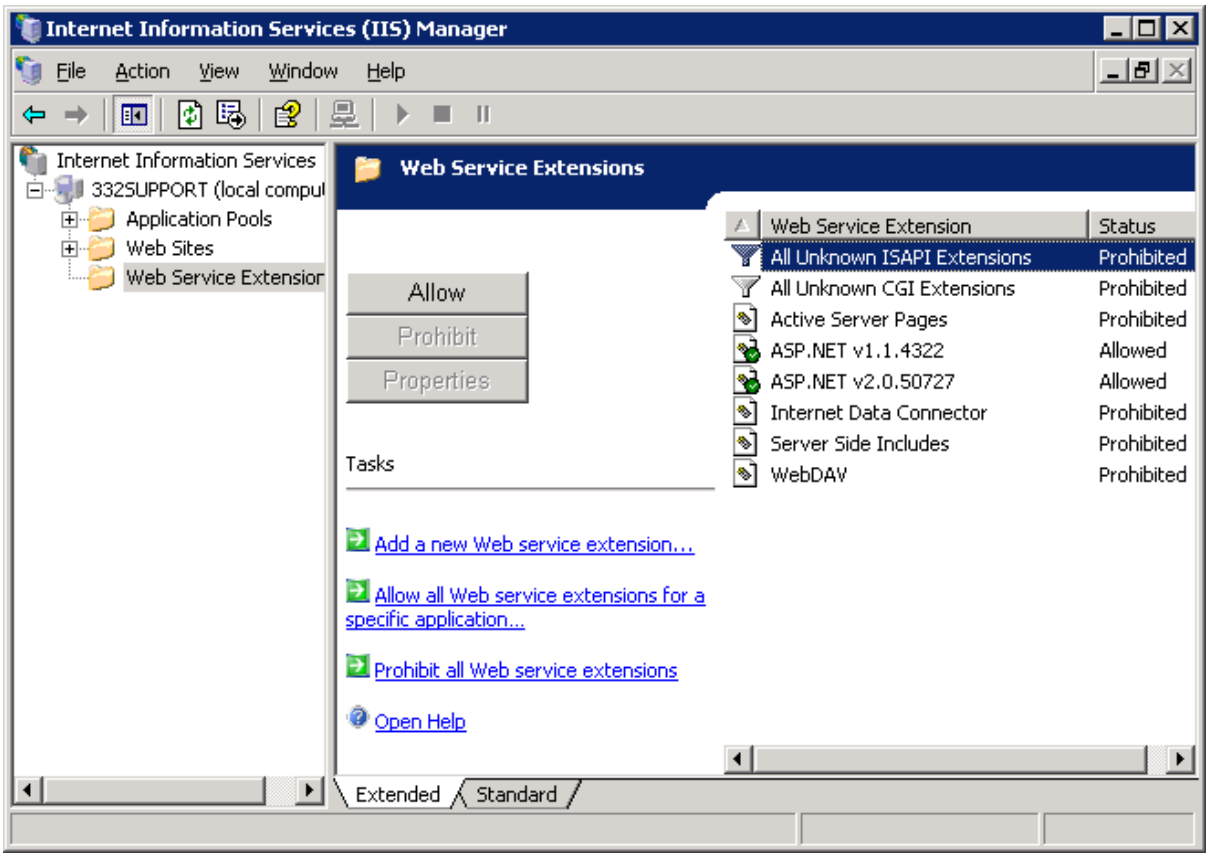
   - The **Extension_URI** command specifies the location of the virtual directory which contains ApbCluster.dll (or ApbCluster64.dll), that is /virtual-directory-alias-name/ ApbCluster.dll (/ApbCluster/ApbCluster.dll in this guide).
   - The **MatchExpression** commands specify the type of pages to redirect.
   - The **Log** command specifies whether to enable logging.
   - The **TimeOut** command specifies the number of seconds the Web server waits between sending an HTTP request to Appeon Server and receiving information from it. The HTTP connection timeout value is 2 times of this value.
   - **The commands and parameters are case insensitive.**

8. Enabling Web Services Extension.

   Step 1: Click **Web Services Extension** in the IIS Manager.

   Step 2: **Select All Unknown ISAPI Extensions** and click the **Allow** button.

Figure 6.28: IIS Manager



9. Adding MIME type.

   Add a MIME type for loading the files with no extensions or MIME type definition.

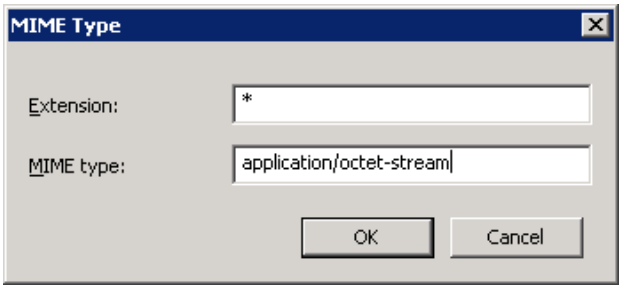
   Step 1: Right click the Local computer and select **Properties**.

   Step 2: Click the **MIME Types** button.

   Step 3: Click the **New** button and specify the following settings:

   - Extension: *
   - MIME type: application/octet-stream

Figure 6.29: MIME Type



10. Restarting IIS.

    Restart IIS to make the new settings effective.

6.3.2.2 Type 2: Apache Web server

6.3.2.2.1 Method 1: Manual configuration

Configuring Apache 2.0/22 with J2EE servers

J2EE servers refer to Java servers, such as EAServer, WebLogic, WebSphere, JBoss, JEUS etc. The configuration is the same for the J2EE application servers than Appeon supports.

1. Copying the Appeon Server Web component to the Web root of the Apache server.

   Before configuration, make sure that you have copied Appeon Server Web Component from the installation path to %APACHE%\htdocs, where %APACHE% refers to the home directory of Apache.

   a. Create an **appeon** folder under the Web root of Apache server (%Apache%\htdocs\).

   b. Copy the **Apache20Support** or **Apache22Support** folder from the installation path to the created **appeon** folder (%Apache%\htdocs\appeon).

2. Copying Appeon plug-in.

   Copy the **mod_appeon2.so** or **mod_appeon22.so** plug-in file from %APACHE%\htdocs \appeon\Apache2xSupport\modules to the %APACHE%\modules folder.

3. Copying Appeon Cluster configuration file.

   Copy the **cluster-config.xml** file from the %appeon%\repository\<instancename>\config folder to the %APACHE%\conf folder, where %appeon% is the installation directory of Appeon Server, and <instancename> refers to the name of a server instance.

   Note: The **cluster-config.xml** file acts as the redirector configuration file as it helps Web server redirect requests to Appeon Servers according to the IP addresses of Appeon Servers, the ports and load balancing algorithm that it stores. This file cannot be modified manually and is automatically updated when you change the settings in the Cluster tool of AEM. Each time after you change the settings, be sure to copy this file and replace the old file in the %APACHE%\conf folder and restart Apache.

4. Modifying httpd.conf.

   If the application server (such as EAServer, WebLogic, WebSphere, JBoss, or JEUS) is running on Windows, add the following statements into the httpd.conf file under the %APACHE%\conf folder (take mod_appeon2.so as an example):

```
LoadModule appeon_module modules\mod_appeon2.so
<IfModule mod_appeon.c>
MatchExpression /AEM
MatchExpression /servlet
MatchExpression /reportfile
MatchExpression /imagefile
MatchExpression /dwfile
MatchExpression /ajsdown
</IfModule>
```

If the application server is running on UNIX/LINUX, add the following statements into the httpd.conf file under the %APACHE%\conf folder (take mod_appeon2.so as an example):

```
LoadModule appeon_module modules/mod_appeon2.so
<IfModule mod_appeon.c>
MatchExpression /AEM
MatchExpression /servlet
MatchExpression /reportfile
MatchExpression /imagefile
MatchExpression /dwfile
MatchExpression /ajsdown
</IfModule>
```

5. Restarting Apache.

   Restart Apache for the new settings to take effect.

Configuring Apache 1.3 with J2EE servers

J2EE servers refer to Java servers, such as EAServer, WebLogic, WebSphere, JBoss, JEUS etc. The configuration is the same for the J2EE application servers than Appeon supports.

1. Copying the Appeon Server Web component to the Web root of the Apache server.

   Before configuration, make sure that you have copied Appeon Server Web Component from the installation path to %APACHE%\htdocs, where %APACHE% refers to the home directory of Apache.

   a. Create an **appeon** folder under the Web root of Apache server (%Apache%\htdocs\).

   b. Copy the **Apache20Support** or **Apache22Support** folder from the installation path to the created **appeon** folder (%Apache%\htdocs\appeon).

2. Copying Appeon plug-in.

   Copy the **mod_appeon.so** plug-in file from %APACHE%\htdocs\appeon \Apache13Support\modules to the %APACHE%\modules folder.

3. Copying Appeon Cluster configuration file.

   Copy the **cluster-config.xml** file from the %appeon%\repository\<instancename>\config folder to the %APACHE%\conf folder, where %appeon% is the installation directory of Appeon Server, and <instancename> refers to the name of a server instance.

   Note: The **cluster-config.xml** file acts as the redirector configuration file as it helps Web server redirect requests to Appeon Servers according to the IP addresses of Appeon Servers, the ports and load balancing algorithm that it stores. This file cannot be modified manually and is automatically updated when you change the settings in the Cluster tool of AEM. Each time after you change the settings, be sure to copy this file and replace the old file in the %APACHE%\conf folder and restart Apache.

4. Modifying httpd.conf.

   Add the following statements into the httpd.conf file under the %APACHE%\conf folder:

```
LoadModule appeon_module modules\mod_appeon.so
<IfModule mod_appeon.c>
MatchExpression /AEM
MatchExpression /servlet
MatchExpression /reportfile
MatchExpression /imagefile
MatchExpression /dwfile
MatchExpression /ajsdown
</IfModule>
```

5. Restarting Apache.

   Restart Apache for the new settings to take effect.

6.4 Task 4: Deploy or Install the application to the Appeon Server cluster and Web server(s)

To install an Appeon application to the Appeon Server cluster and Web server(s), you can either deploy the application via the **Appeon Deployment Wizard** (see *Appeon Developer User Guide*), or run the deployment project generated by using the **Appeon Application Package Wizard** (see *Appeon Developer User Guide*). This section will talk about how to install an application by running the deployment project generated via the **Appeon Application Package Wizard**.

6.4.1 Points to note before installation

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

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

6.4.2 Installing an application

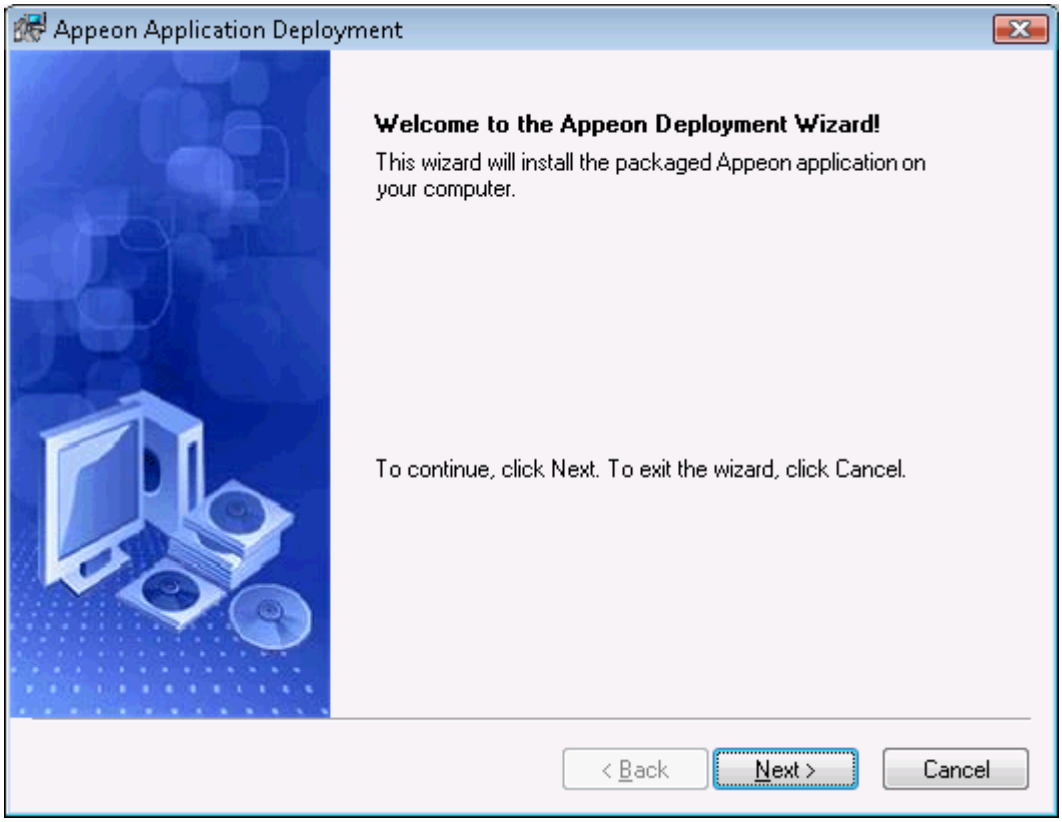
You can copy the generated package to any computer running Windows and install the application to any number of Appeon Servers and Web servers. Installing an application using the generated package is the same as deploying an application using the **Appeon Deployment Wizard**.

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

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

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

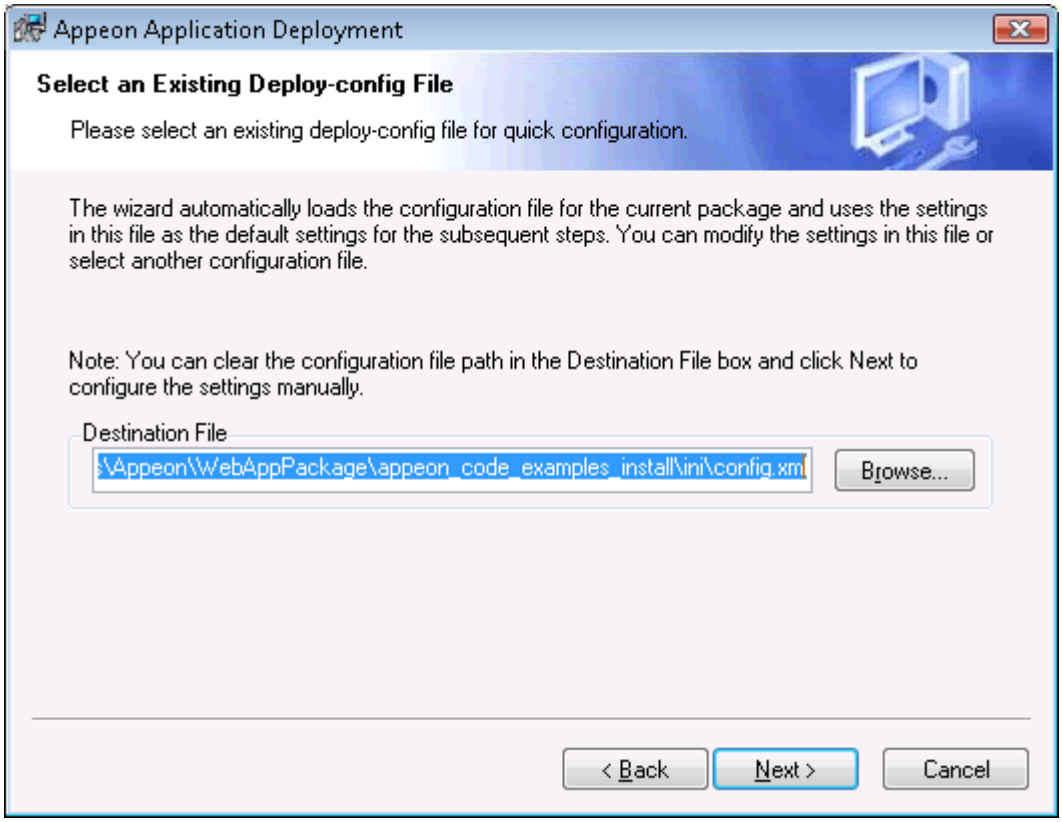
Figure 6.30: Welcome page



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

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

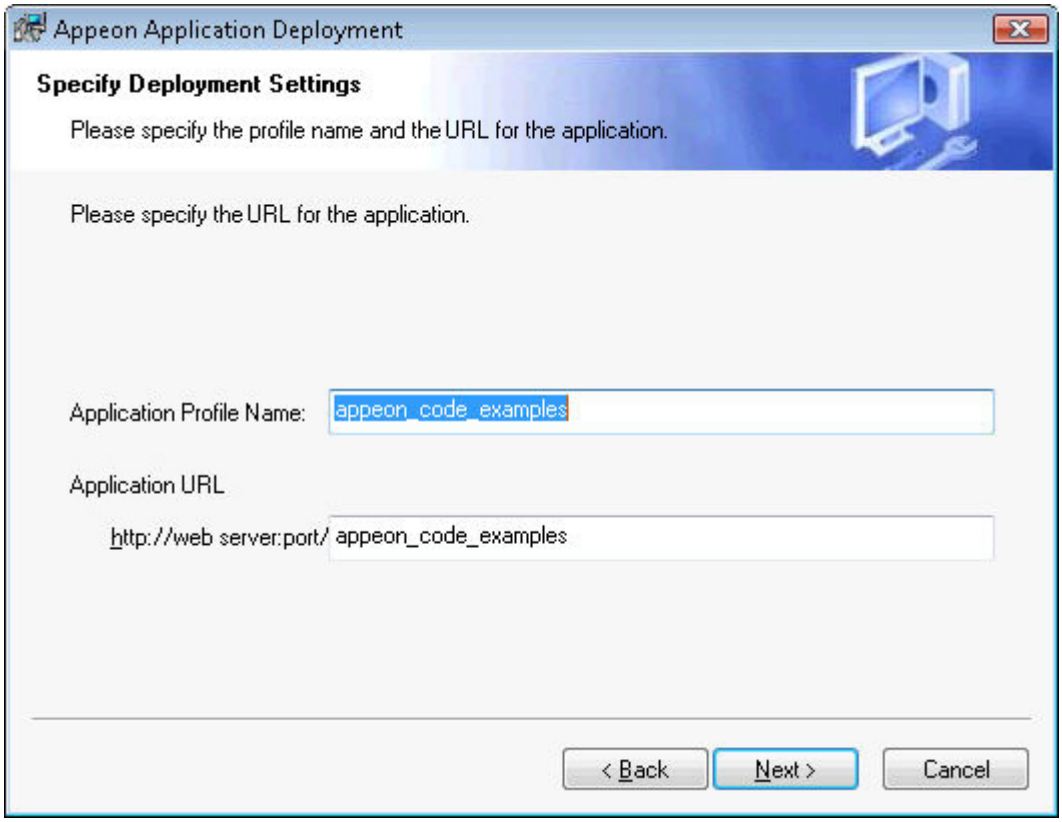
Figure 6.31: Select the configuration file



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

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

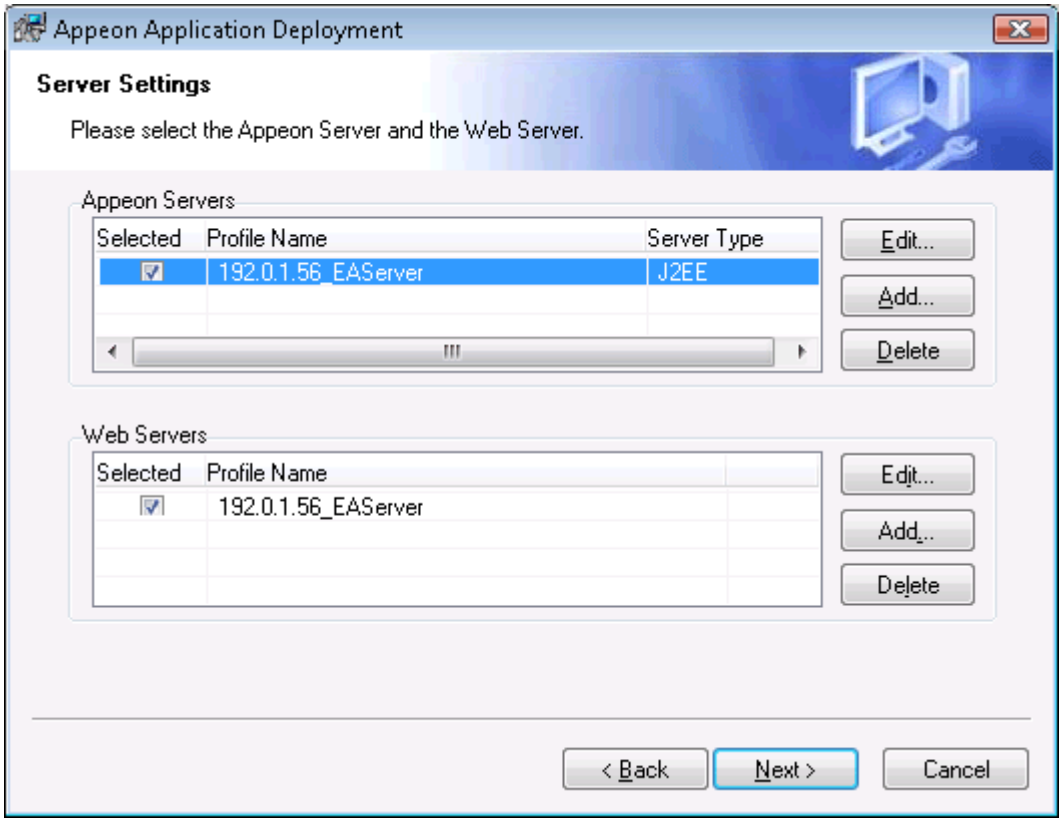
Figure 6.32: Specify Application Profile Name and Application URL



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

To install the application to an Appeon Server cluster, please create an Appeon Server profile for each Appeon Server in the cluster. For detailed instructions on how to create the Appeon Server profile and Web server profile, refer to the **Managing server profiles** section in *Appeon Developer User Guide*.

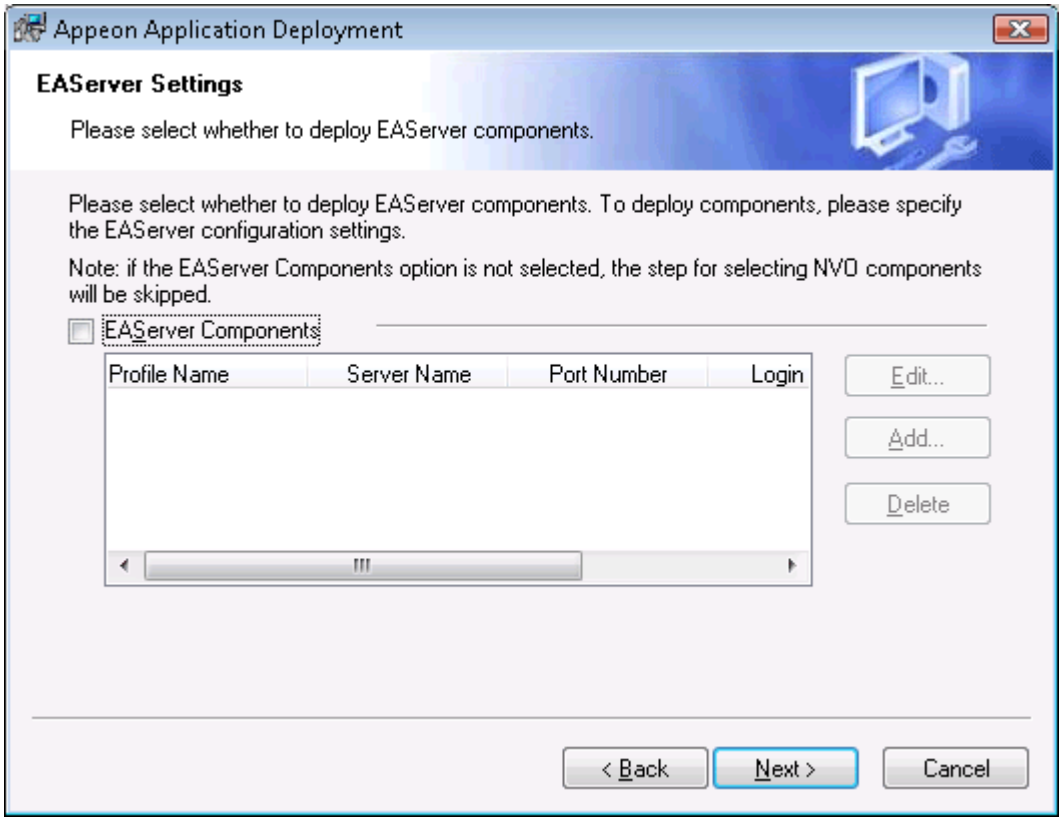
Figure 6.33: Specify server settings



Step 6: Select whether to deploy EAServer components.

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

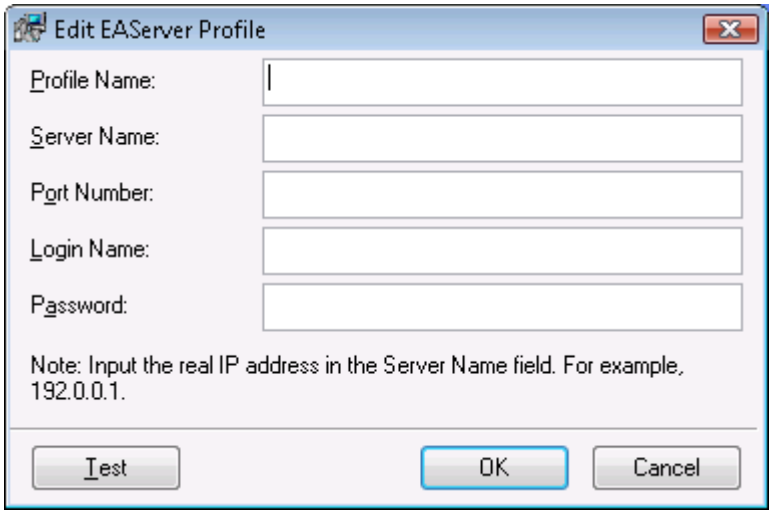
Figure 6.34: Specify EAServer settings



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

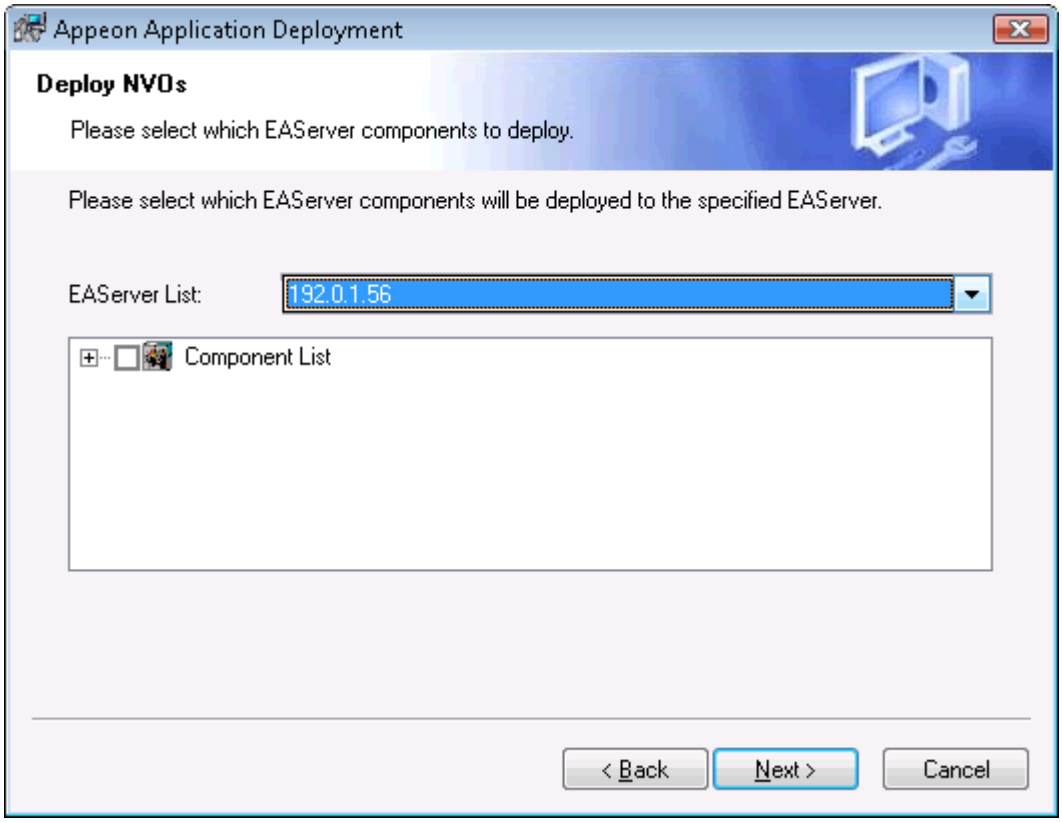
- Click **Add** to open the Edit EAServer Profile dialog box.
- Input the connection parameters: profile name, host name or IP address, port number, user name and password.
- Click **Test** to verify the connection and the click **OK** to finish the creation.

Figure 6.35: Edit EAServer Profile



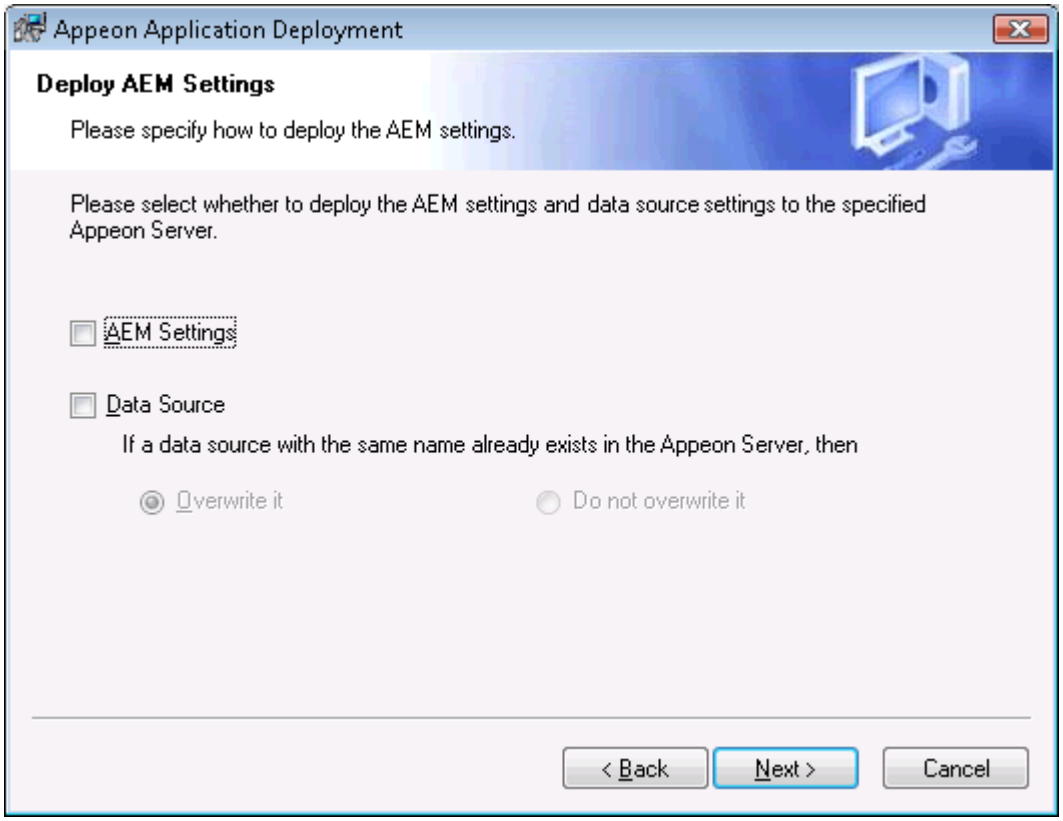
Step 7: If the **EAServer Components** option is selected in the previous step, select the EAServer profile from the list and the components to deploy. Click **Next** to proceed.

Figure 6.36: Deploy NVOs



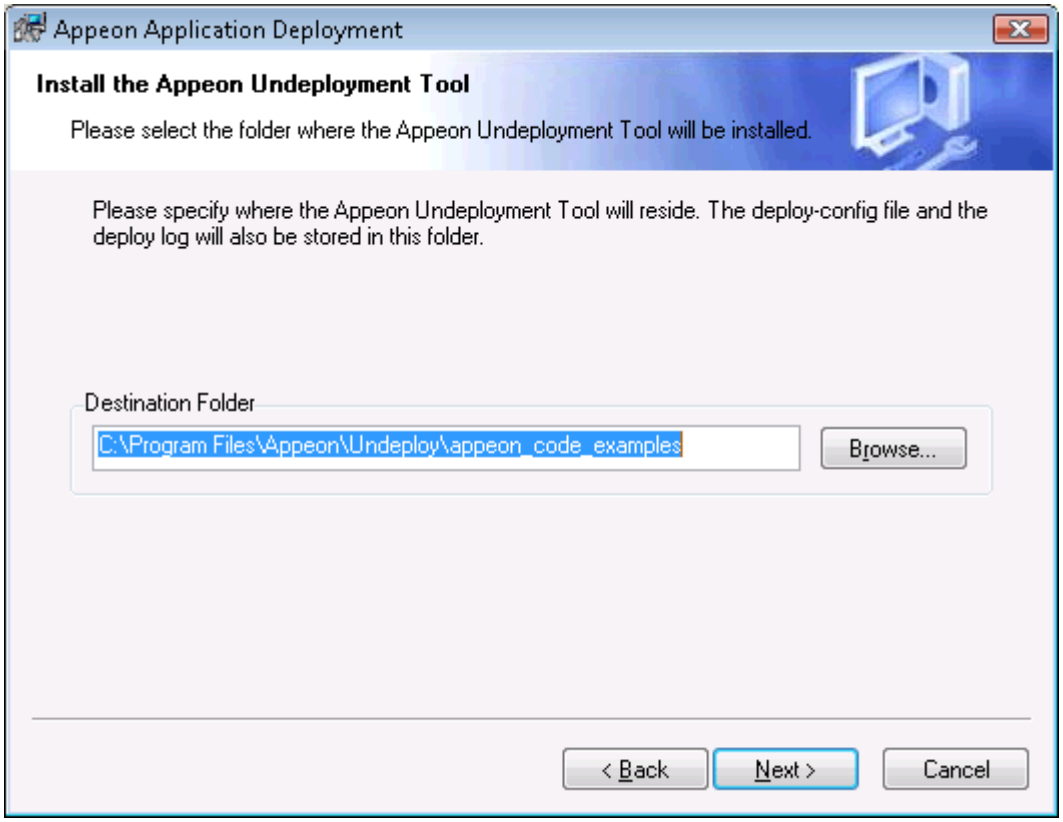
Step 8: Select whether to install AEM settings and data sources for the current application and click **Next**.

Figure 6.37: Deploy AEM settings



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

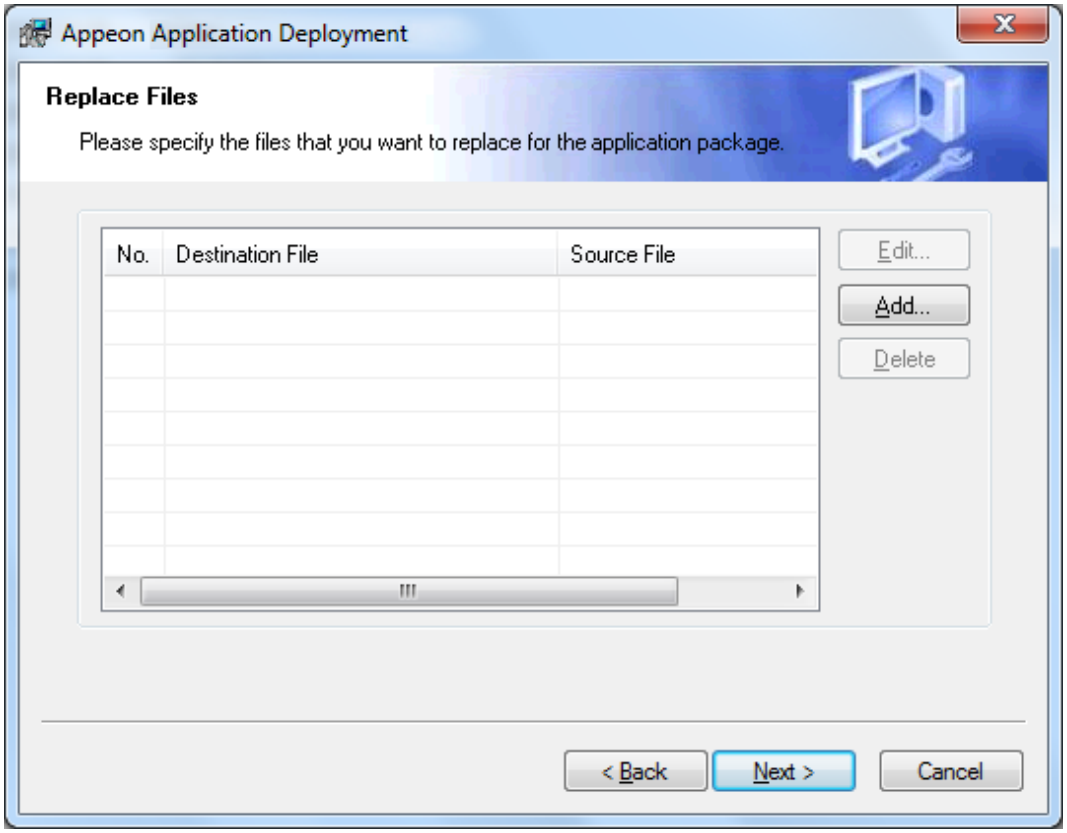
Figure 6.38: Specify location for the Appeon Undeployment Tool



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

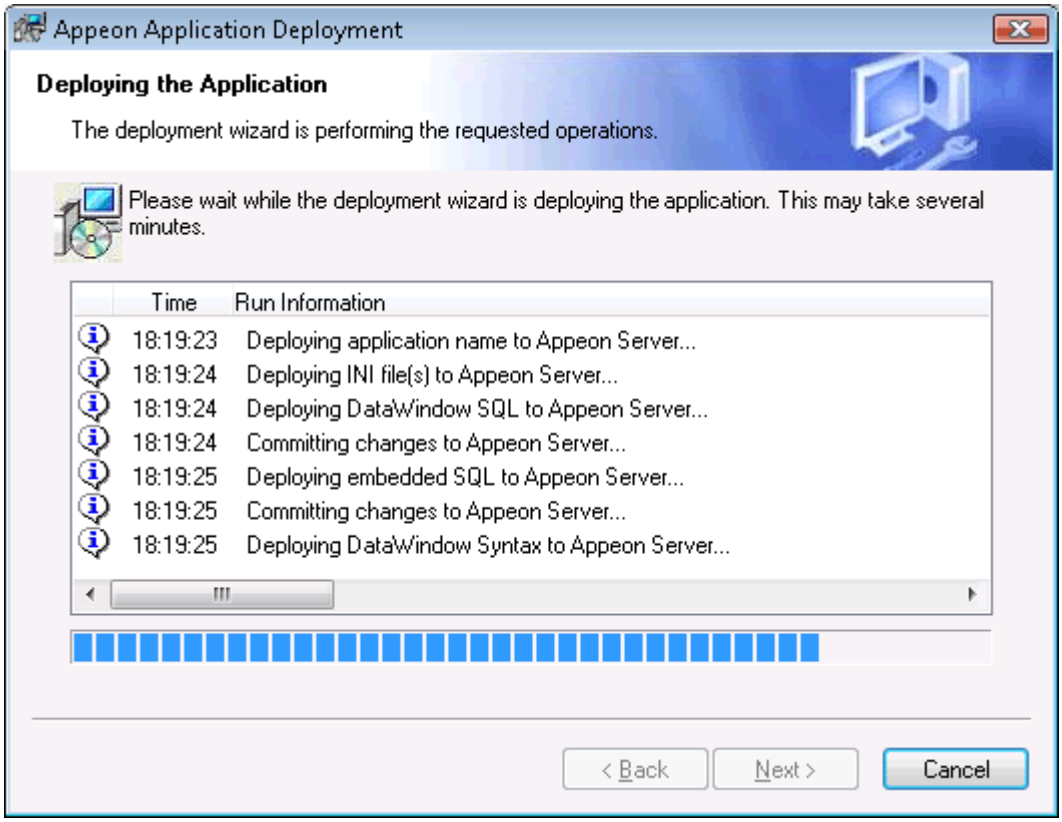
Files (also called "destination file") under the "wcode" folder of Appeon application package can be replaced by files of the same type (also called "source file"), so that the source file will be installed instead of the destination file. When you click the **Add** button, the **File Replacement** dialog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

Figure 6.39: Specify files to replace for the application package



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

Figure 6.40: Deploying the application

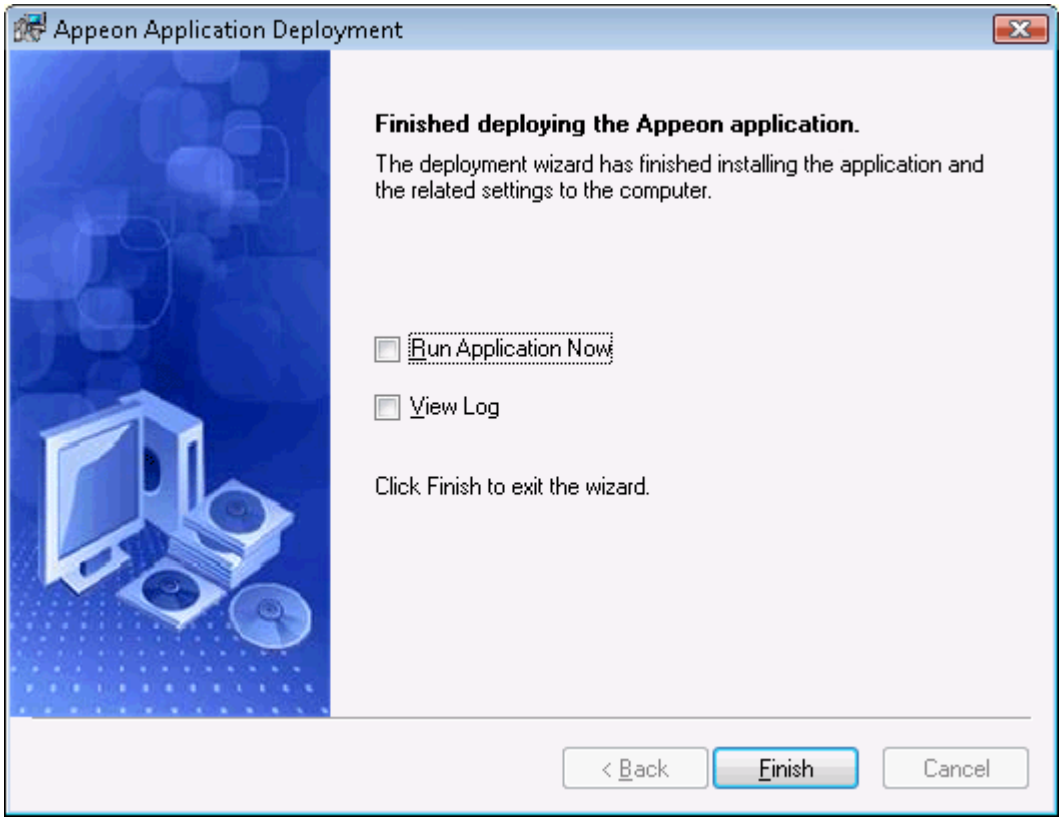


Step 12: Once the operation is complete, click **Finish** to exit the installation wizard.

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

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

Figure 6.41: Deployment complete



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