Appeon Mobile Tutorials (Mobile only)

Appeon® for PowerBuilder® 2015 FOR WINDOWS & UNIX & LINUX

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1 About This Book

1.1 Audience

This book is intended for PowerBuilder developers who want to install Appeon Mobile, 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 or Android 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:

Gives general introduction to Appeon for PowerBuilder and its editions.

• Getting Started (for Appeon Mobile):

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

• New Features Guide:

Introduces new features and changes in Appeon for PowerBuilder.

• Appeon Mobile Tutorials:

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

• Appeon Mobile (Offline) Tutorials:

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

• Appeon Installation Guide:

Provides instructions on how to install Appeon for PowerBuilder successfully.

• Installation Guide on Cloud Platform:

Provides instructions on how to install Appeon for PowerBuilder on the cloud-based platform such as Windows Azure and AWS EC2 and S3.

• Mobile UI Design & Development Guide:

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

• Migration Guidelines for Appeon Web:

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

• Supported PB Features:

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

• Appeon Developer User Guide:

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

• Workarounds & API Guide:

Provides resolutions for unsupported features and various APIs to facilitate you to implement the features (including Web and mobile) that are not easy or impossible to implement in the PowerBuilder IDE.

• Appeon Workspace User Guide:

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

• Appeon Server Configuration Guide:

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

• Web Server Configuration Guide:

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

• Troubleshooting Guide:

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

• Appeon Performance Tuning Guide:

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

• Testing Appeon Web Applications with QTP:

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

1.4 If you need help

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

2 Tutorial 1: Set up the Environment

You will need to go through the following tasks to set up the Appeon Mobile 2015 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 Android or iOS device.

- 1 Windows PC: used as the development machine and the Appeon Server
- 1 Android or iOS device: used as the mobile client

The 32-bit version of **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 or 8.1 (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 <u>Task 1.2</u>: <u>Uninstall previous version of 64-bit Appeon</u>.

- Internet Explorer 9, 10, or 11
- PowerBuilder 9.x, 10.x, 11.x, or 12.x
- (Optional) Sybase ASA/SQL Anywhere (32-bit engine) 8.0.2, 9.0, 10.0.1, 11.0, 12.0, or 16.0 (for running the demos included with the Appeon installation)
- .NET Framework 4.x

For Windows 7, you will need to first download the .NET Framework 4.0 setup program from <u>http://www.microsoft.com/en-us/download/details.aspx?id=17718</u>.

• IIS 7.x or 8.x

See Task 1.3: Install IIS and Task 1.4: Configure IIS.

• Appeon Mobile 2015

Install Appeon Server and Appeon Developer. See <u>Task 2: Install Appeon Server & Appeon Developer</u>.

Software requirements for the Android or iOS device:

• Android OS: 4.2 or above

iOS: 6.0 or above

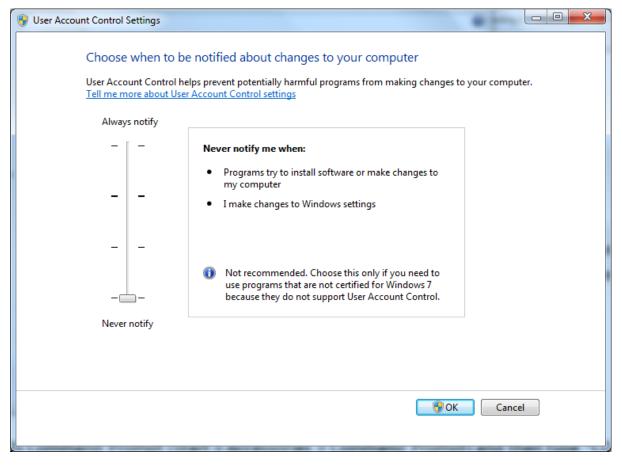
Appeon Workspace

See Task 4: Install Appeon Workspace (on the Android or iOS device)

2.1.1 Task 1.1: Disable UAC (User Account Control)

On the Windows PC, go to the **Control Panel** > **User Accounts** and disable UAC by setting the slider to "**Never notify**" (see screenshot below). After you have disabled UAC you **MUST** restart the computer. If you do not restart the computer the change will NOT take effect.

Figure 2.1: Disable UAC



2.1.2 Task 1.2: 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 configurations. 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 2.2: Stop the entire IIS Manager

Vi Internet Information Services (IIS) Manager			
HXXIA-PC >		😰 🖂 🔞 -	
File View Help			
Connections		Actions	
2	HXXIA-PC	Manage Server	
HXXIA-P Churic DC hurie) Refresh Add Web Site	Home	 Restart Start Stop 	
Start Stop		View Application Pools View Sites	
Rename	.NET Compilation	Change .NET Framework Version	
Switch to Conter	nt View	Help Online Help	
Ready		¶.:	

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 <u>Task 2: Install</u> <u>Appeon Server & Appeon Developer</u>.

2.1.3 Task 1.3: Install IIS

IIS is not installed on Windows 7 or 8.1 by default. You need to manually install it.

Before you install IIS, make sure you have installed .NET Framework 4.x. To install .NET Framework 4.x for Windows 8.1, please go to the **Turn Windows features on or off** and check the box for .NET 4.5; for Windows 7, please download the setup program from <u>http://</u>www.microsoft.com/en-us/download/details.aspx?id=17718 and install .NET Framework 4.0.

Below are steps for installing IIS. If you already have IIS installed, please carefully verify the correct IIS options are checked (see screenshots below). By default, not all the required components will be installed.

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 2.3: Select the Web Management Tools

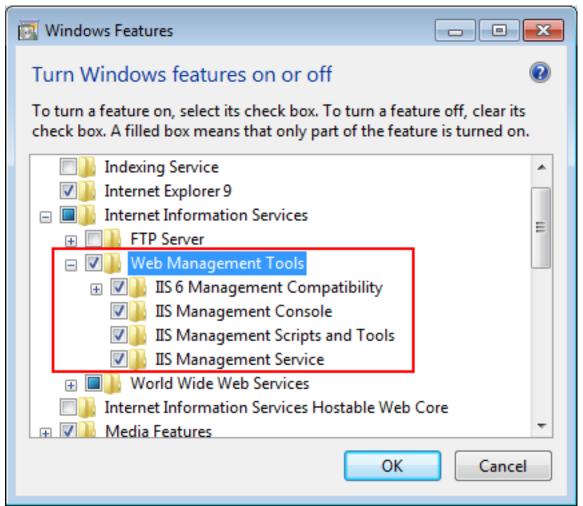
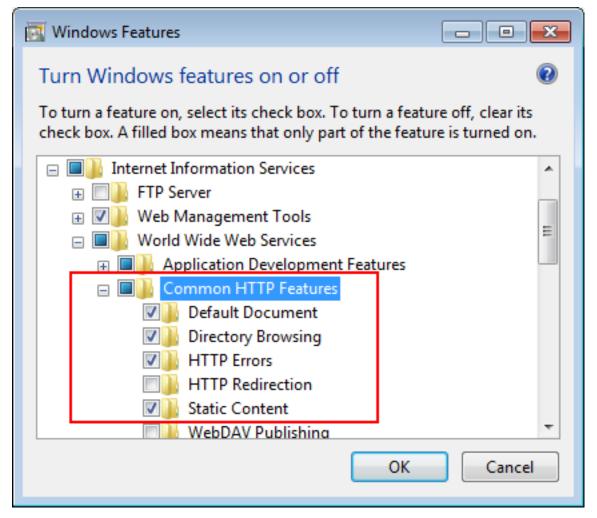


Figure 2.4: Select the Application Development Features

Windows Features	×
Turn Windows features on or off	?
To turn a feature on, select its check box. To turn a feature off, clear is check box. A filled box means that only part of the feature is turned o	
Internet Information Services	*
🕀 🖃 🔛 Web Management Tools	_
🖃 🔲 🎍 World Wide Web Services	E
Application Development Features	
.NET Extensibility	
ASP ASP	
ASP.NET	
CGI	
ISAPI Extensions	
ISAPI Filters	
Server-Side Includes	-
OK Canc	el

Figure 2.5: 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, this will display **IP Address** as an asterisk "*".

Step 4: Run http://*IP_Address*:80/ in Internet Explorer. If the IIS 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.

2.1.4 Task 1.4: Configure IIS

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

Step 1: Right click the C:\Inetpub\wwwroot folder 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 2.6: Select IIS_IUSRS

🚶 www.root Properties 🛛 💌			
General Sharing Security Previous Versions Customize			
Object name: C:\inetpub\wwwroot			
Group or user names:			
& Users (hoxia-PC\Users)			
& IIS_IUSRS (hoxia-PC\IIS_IUSRS)			
Se TrustedInstaller			
· · · · · · · · · · · · · · · · · · ·			
III			
To change permissions, click Edit.			
Permissions for IIS_IUSRS Allow Deny			
Full control			
Modify			
Read & execute 🗸 🗉			
List folder contents			
Read			
Write			
For special permissions or advanced settings, Advanced			
Learn about access control and permissions			
OK Cancel Apply			

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 2.7: Select Full control for IIS_IUSRS

길 Permissions for wwwroot	— ×			
Security	Security			
Object name: C:\inetpub\www	root			
Group or user names:				
& CREATOR OWNER				
& SYSTEM				
Administrators (hxxia-PC\Adm	pinistrators)			
Users (hoxia-PC\Users)				
IIS_IUSRS (hoxia-PC\IIS_IU	SRS)			
StrustedInstaller				
	Add <u>R</u> emove			
Permissions for IIS_IUSRS	Allow Deny			
Full control				
Modify				
Read & execute				
List folder contents				
Read	✓			
Learn about access control and permissions				
ОК	Cancel <u>A</u> pply			

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/SQL Anywhere database server installed, select to install the demo; otherwise, do not install the demo since the demo requires ASA/SQL Anywhere database server to be previously installed.

Step 5: If you selected to install the **Demo Applications**, specify the path for the ASA/SQL Anywhere 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/AEM/. If AEM is launched successfully, then Appeon Server is installed successfully.

2.3 Task 3: Configure the network connection

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

NOTE: Mobile Internet is supported by Appeon Mobile. 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.

2.4 Task 4: Install Appeon Workspace (on the Android or iOS device)

On the Android or iOS device, visit the Appeon Workspace download center (http://*Server_IP*:80/AWS), and then click the download button to download and install Appeon Workspace.

(く) 🖉 http://localhost/AWS/ タマ C× 🏈 Appeon Workspace Downl ×	A ★ Ø
<u>F</u> ile <u>E</u> dit <u>V</u> iew F <u>a</u> vorites <u>T</u> ools <u>H</u> elp	
Download Appeon W	/orkspace
For iOS	For Android
Appeon Workspace for iPad, iPhone, iPod Touch	Appeon Workspace for Android-based smartphones and tablets
🥳 Download 🔮	in Download 🔮
Why Use Appeon W Appeon Workspace is an alternative method for distributing the nativ over the traditional methods because it: • Simplify distributing and running applications • Facilitate application upgrade (especially for apps hosted as Sa • Securely manage applications • Facilitate application debug • Support Mobile + Multi-Cloud runtime environment	e mobile application, it is highly recommended

Figure 2.8: Appeon Workspace download center

Notes:

- For the iOS 7.1 device, you will have to download the .ipa file to the PC through IE browser, and then synchronize it from the PC to the iOS device using iTunes. Reason is since iOS 7.1, Apple requires the enterprise apps manifest file to be served over HTTPS, which means, you will have to configure the SSL certificate on your Web server. If you have no SSL certificate configured, then install from the download center will fail.
- For the Android device, you must enable the Unknown resources option (in Settings > Security) on the device before you can install apps that are not downloaded from Google Play.

3 Tutorial 2: Config, Deploy & Run the Application

This tutorial will use the Appeon Mobile for .NET edition to walk you through configuring, deploying and running the mobile application.

3.1 Task 1: Configure the database type

Step 1: On the Appeon Developer toolbar, click the **Configure** icon (2).

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

🗴 Appeon Developer Configuration 📃 💌				
Application Profiles DB Type Profiles	Server Profiles Deployment	Profiles Data Source Profiles		
Database Type Configuration <u>I</u> he Database Type profile tells Appeon for PowerBuilder which database type is used to convert PowerBuilder SQL statements. Configure the profiles below, then associate profiles with individual application in the Application Profiles DB Settings tab.				
Supported Database Types		Configured	<u>^</u>	
MSSQLServer		No		
Oracle 8i		No		
Oracle 9i		No	E	
Sybase ASE		No		
Sybase ASA UltraLite		Yes		
IBM DB2 UDB		No		
Sybase IQ		No		
IBM Informix		No		
Oracle 10g/11g		No	*	
			Co <u>n</u> figure	
		ОК	Cancel	

Step 4: On the **Database Type Profile Configuration** window, do the following (take **Sybase ASA | UltraLite** 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

🗴 Database Type Profile Configuration 🥢 💌				
For each database type used in your application(s), you must provide an ODBC or Native Interface connection to a database of that type in order for Appeon Developer to connect to the data source during deployment. You need only provide one connection to each type of database used in your application. Database Settings				
Database Type:	Sybase ASA UltraLite			
Database Interface:	ODBC Interface	Native Interface		
Syntax:	✓ Enclose table and column names in Quotes			
Outer Join Syntax:	ANSI	•		
ODBC Interface <u>D</u> ata Source: Appen <u>U</u> ser ID: <u>P</u> assword:	onSample 👻	Native Interface Server: User ID: Password: Database:		
O	DBC Ad <u>m</u> inistrator	Rejease:		

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 <u>Task 3</u>: <u>Configure and deploy the application</u>.

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

🗴 Appeon Developer Configuration 📃 💌				
Application Profiles DB Type Profiles S	erver Profiles Deployment Profiles Data Source Profile:	s		
Data Source Configure the data source only if your a Servers will be automatically displayed Appeon <u>S</u> erver: Local Appeon Se		cted Appeon		
Name	DB Host	<u>E</u> dit		
appeonsample appeonsample2	AppeonSampleForServer AppeonSample2ForServer	<u>A</u> dd		
youhoops SAPTechEd2012	YouHoopsForServer SAPTechEd2012ForServer	Delete		
		OK Cancel		

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

Steps for configuring a data source for Sybase ASA/SQL Anywhere 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.

Add Data Source		— ×	
<u>N</u> ame:	Unnamed1		
Database			
<u>D</u> river:	ODBC Driver	•	
<u>H</u> ost:			
P <u>o</u> rt:	1433		
OD <u>B</u> C Data Source:	AppeonSample	•	
<u>U</u> ser Name:	dba]	
Password:	•••		
Character Set:	ASCII		
Session Mode:	DEFAULT	DEFAULT	
Maximum Connection F	Pool Size:	100	
Minimum Connection P	ool Size:	10	
Connection Timeout (se <u>c</u> onds):		0	
Command Timeout (seconds): 30		30	
Connection Lifetime (se	conds):	0	
Other Options:			
Dynamic Database Connection			
Iest		OK Cancel	

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 user name, and the password are correct.

🗴 Add Data Source		
<u>N</u> ame:	northwind	
Database		
<u>D</u> river:	MS SQL Server Native D)river 🔻
<u>H</u> ost:	192.0.0.205	
P <u>o</u> rt:	1433	
Databas <u>e</u> Name:	northwind	
<u>U</u> ser Name:	sa	
Password:	I	
Character Set:	ASCII	
Session Mode:	DEFAULT	
Maximum Connection F	Pool Size:	100
Minimum Connection Pool Size:		10
Connection Timeout (se	econds):	0
Command Timeout (sec	onds):	30
Connection Lifetime (seconds):		0
Other Options:		
Dynamic Database Connection Pooling		
Iest		OK Cancel

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 <u>Task 3: Configure and</u> <u>deploy the application</u>.

3.3 Task 3: Configure and deploy the application

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

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. The same text will be displayed in the **Web Folder** text box and the **Mobile App Name** text box. You can modify these fields to use different text.

- 2. Select Mobile from the Project Type dropdown list box.
- 3. Select a device type from the **Device Type** dropdown list box.

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**.

4. In the **Mobile App Icon** text box, specify an icon for your application by clicking **Browse** to select the image file of the PNG or JPG format. 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 low-resolution display and 172 x 172 pixels (or above) for high-resolution display (such as 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 shrunk to fit properly. If you leave this field empty, the default icon will be displayed in Appeon Workspace.

5. 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.

🗄 Appeon Developer Configuration Wizard				
Welcome	Please configure the following options:			
	Application Profile Name:	appname		
Configure basic settings	Web Folder:	appname		
 Select PBL files Configure deployment settings 	Project Type:		-	
Select DB types	Device Type:	Tablet	•	
Declare transaction object(s)	Mobile App Name:	appname		
	Mobile App Icon:		Browse	
Select image files	Mobile App Description:		*	
Select INI files				
Deploy External Files			~	
Summary				
Help	< <u>B</u> ack	Next > Cancel	<u>F</u> inish	

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

📳 Appeon Developer Configuration Wizard			
Welcome	Select the P	BL files used in your application:	
Configure basic settings Select PBL files	<u>P</u> BT:		
 Configure deployment settings Select DB types Declare transaction object(s) 	PBL <u>V</u> ersion: PBL File <u>L</u> ist:	■ Keep PBT Updated PowerBuilder 11.5	
 Select image files Select INI files 			
 Deploy External Files Summary 	۲	Add	
Help		< <u>B</u> ack Next > Cancel Einish	

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)

📳 Appeon Developer Configuration Wizard				
Welcome	Please select the Appeon Server(s) and We that your application will be deployed to:	eb server(s)		
Configure basic settings	Deployment Profile Name: Local Deployment	•		
Select PBL files	Appeon Servers			
Configure deployment settings	Selected Name	<u>E</u> dit		
Select DB types	Local Appeon Server	Add		
Declare transaction object(s)		Delete		
Colort image files	Web Servers			
Select image files	Selected Name	Ed <u>i</u> t		
Select INI files	Local Web Server	Add		
Deploy External Files		Delete		
Summary				
Help	< <u>B</u> ack Next > Cancel	<u> </u>		

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

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

Figure 3.9: Select the database type(s)

📳 Appeon Developer Configuration Wizar	rd			x
Welcome	Select the database type(s) used by your application:			
Configure basic settings Select PBL files Configure deployment settings	necessary to setting enat	nust specify the database type(s) that your applicati o specify the exact database(s) used in this particul ples Appeon Developer to apply the correct type of he correct database syntax for PowerBuilder SQL s	ar application. database drive	This r for
Select DB types	Used Supported Database Types Configured			
Declare transaction object(s)		MSSQLServer	No	=
		Oracle 8i	No	-
Colort impres files		Oracle 9i	No	
Select image files		Sybase ASE	No	-
Select INI files		Sybase ASA UltraLite	Yes	-
Deploy External Files		IBM DB2 UDB	No Na	-
Summary	<u>E</u> dit			
Help		< <u>B</u> ack <u>N</u> ext > Cancel	<u> </u>	

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

Figure 3.10: Specify the transaction object

🗄 Appeon Developer Configuration Wizard				
Welcome	Please specify the transaction object(s) used in the application and the corresponding data source(s):			
Configure basic settings	Transaction Object	Data Source	DB Type	
Select PBL files				
Configure deployment settings				
Select DB types				
Declare transaction object(s)				
Select image files				
Select INI files				
Deploy External Files				
Summary		Configure	Delete	
Help	< <u>B</u> ack	Next > Cancel	<u>F</u> inish	

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 has not been configured in Task 2: Configure the database connection, you should click Add, and then follow Step 4 in Task 2: Configure the database connection to create it.

dd Transaction	Object				
<u>T</u> ransaction Ob	oject:	sqica			
Database Ty <u>p</u> e	9:	Sybase ASE 12.x/	Sybase ASE 12.x/15.x		
<u>D</u> ata Source:					
If your Appeon source in the b Data Source Appeon <u>S</u> erv	elow Data Sou	NET edition, you can rce group box.	also select, edit, add, or de	elete the data	
Selected	Name		DB Host		
<u>E</u> dit	<u>A</u> dd.	<u>D</u> elete			
			ОК	Cancel	

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
		2 - programment		

Appeon Deployment Wizard - sales				x
Appeon Deployment Wizard - sales				~
Deployment Information				
Application deployed:		sales		
Deployment mode:		Full Application Deploy	ment	
Deployment profile used:		Local Deployment		
Deployment Task Summary				
Task		Status	Time	
Task 1: Application Source Code Expo	t	Completed	< 1 Minutes	
Task 2: Appeon Application File Genera	ation	Completed	< 1 Minutes	
Task 3: Appeon Application Deploymer	ıt	Completed	< 1 Minutes	
		Completed		
Total Time Elapsed for Automatic Conv	ersion		< 3 Minutes	
Log Information				
Warnings and Errors Summary:	Errors: 0 :	Warnings: 0	View Log	
warnings and Errors Summary.	Ellois. 0 ,	wannings. o		
Reports				
Features Analysis report available:			Analysis Depart	
r eatures Analysis report available.			Analysis Report	
		<u> </u>	Finish and <u>D</u> ebug Finish and <u>R</u> un.	

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

Before you run the application on the Android or iOS device, 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 and a mobile application using Appeon Mobile):

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

Trusted sites	×
You can add and remove websites from this zone this zone will use the zone's security settings.	e. All websites in
Add this website to the zone:	
http://192.168.1.117/	Add
Websites:	
http://223.255.243.247	Remove
http://appcrm.appeon.com	
http://appeon.gnway.net	
http://most.cloudapp.net	
Require server verification (https:) for all sites in this	zone
	Glose

Figure 3.14: Add "localhost"

Trusted sites	×
You can add and remove websites from this zone this zone will use the zone's security settings.	e. All websites in
Add this website to the zone:	
http://localhost/	Add
Websites:	
http://223.255.243.247	Remove
http://appcrm.appeon.com	
http://appeon.gnway.net http://most.cloudapp.net	
Require server verification (https:) for all sites in this	zone
	Close

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 the **Web Folder** field in Step 1 of <u>Task 3</u>: <u>Configure and deploy the application</u>.

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 <u>Tutorial 3: Develop &</u> <u>Debug with Appeon Mobile</u>.

3.5 Task 5: Run the mobile version of the application (on the Android or iOS device)

Now that you have run the application successfully in IE, you are ready to run your application on the Android or iOS device.

Step 1: Configure the network connection. See Task 3 in Tutorial 1: Set up the Environment.

Step 2: Install Appeon Workspace. See Task 4 in Tutorial 1: Set up the Environment.

Step 3: Tap the **AppeonMobile** icon on your Android or iOS device to launch Appeon Workspace.

Step 4: Tap the **New** icon $(\textcircled{\bullet})$ 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 Web 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 ((S)) 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 Android or iOS device. For detailed instructions on how to use the Appeon Developer toolset you may refer to Appeon Developer User Guide.

4.1 Point 1: Mobile 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 Chapter 2, *Best Practices* in *Mobile UI Design & Development Guide* (*Mobile only*), including the **Window** subsection. We have compiled valuable tips and suggestions that will help you develop user-friendly mobile applications.

Once you have a good understanding of Chapter 2, *Best Practices* in *Mobile UI Design & Development Guide (Mobile only)*, we strongly recommend using the **Size Calculator** tool

(**FF**) in the Appeon Developer toolbar to properly size the application windows and controls to display appropriate on the Android or iOS device.

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 Supported PB Features for Appeon Mobile (Mobile only) 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 Chapter 13, *Developing with Code Insight* in *Appeon Developer User Guide*.

Step 2: Run the **UFA** tool (^(b)) from the Appeon Developer toolbar to generate the unsupported features report. For details about how to run the UFA report, see Chapter 5, *Using UFA Tool* in *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** 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 Supported PB Features for Appeon Mobile (Mobile only) to see if your application contains any unsupported features.

Step 6: If after cross-referencing the Supported PB Features for Appeon Mobile (Mobile only) 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** (¹) from the Appeon Developer toolbar.

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** (¹) 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 9 or later. There are also special configurations you need to perform in the Appeon Developer and Internet Explorer. Please see Chapter 7, *Debugging Appeon Web Applications* in *Appeon Developer User Guide* for more information about how to properly configure your environment for the Appeon Debugger. **Please note that Appeon Mobile 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 to be a native mobile application using the Appeon Developer Toolbar, you can choose to run the mobile app immediately in Appeon Workspace (see Appeon Workspace User Guide (Mobile only) for detailed instructions), or package the app and publish it to the online application store (such as Apple App Store, Google Play etc.) or distribute it over-the-air (such as by email, Web site etc.). In this section, you will go through all the required steps for packaging and distributing an Appeon Mobile app as a standalone native app.

5.2 Package & Distribute iOS Apps

You will need to go through the following tasks to package and distribute the Appeon Mobile app as a standalone native iOS app.

- 1. Task 1: Prepare the Xcode environment.
- 2. Task 2: Generate the Xcode project.
- 3. Task 3: Create the app archive.
- 4. Task 4: Distribute the app archive.

5.2.1 Task 1: Prepare the Xcode environment

5.2.1.1 Task 1.1: Prepare the Mac machine

Buy a Mac machine and install the latest Xcode on the Mac machine, because 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 (generated by the Appeon Application Package Wizard) and create the app archive;
- 3. distribute the app archive.

5.2.1.1.1 Install Xcode

Click <u>https://developer.apple.com/xcode/</u> to download and install the latest Xcode, which is 5.1 by the time of writing.

You will need an Apple ID registered as an Apple Developer to access the Xcode tool. See <u>Task 1.2</u>: <u>Create an Apple ID</u> 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 latest Xcode tool at the above mentioned website. For more information on Xcode, see Xcode User Guide.

5.2.1.2 Task 1.2: Create an Apple ID

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

5.2.1.3 Task 1.3: 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.

Below is a brief introduction to the three distribution types that are commonly used (detailed instructions for these distribution types are provided with in <u>Section 5.2.4</u>, "<u>Task 4</u>: <u>Distribute the app archive</u>"):

• **App Store Distribution**: allows you to submit the app for publication to the Apple 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 <u>Registering Devices</u> <u>Using Member Center</u> in the Apple document *App Distribution Guide*.

Figure 5.1: 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)	\checkmark	×	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	\checkmark	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.

5.2.1.4 Task 1.4: Create & install distribution certificates

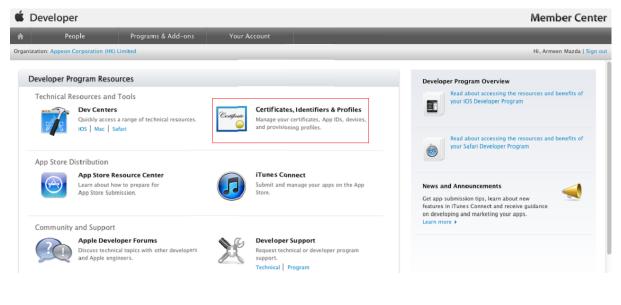
Before you can create and install the provisioning profile, you need to create and install the distribution certificates. You only need to install the distribution certificates for the very first time. Follow steps below to create and install them.

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

Figure 5.2: Member Center

🗯 Developer	Technologies	Resources	Programs	Support	Member Center	Q Search Developer	D
Member Cent	er						
Manage your account and access the re your Developer Program from the Memb	er Center. Sign in using t			Sign in to the	Member Center		
and Password associated with your De	veloper Program.			Apple ID			
				Password			
		-		Forgot Passwo	ord?	Sign In	
	Not registered as a	an Apple Develor	er? Learn m	ore about our pi	rograms 🕨		

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



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 5.4: Download the AppleWWDRCA.cer

🗯 Developer		Technologies	Resources	Programs	Support	Member Center	Q Search Developer
Certificates, Identi	fiers & F	Profiles					Armeen Mazda 🔻
iOS Apps	•			Add iO	S Certific	ate	+ Q
 Certificates All Pending 	٢	Select Type	Request	Generate of certifie	Down	load /ou need?	
 Development Distribution 							
Identifiers Devices	0	Developme	nt				
 Provisioning Profiles All Development Distribution 	۲	Sign devel	h Notificatio	ions of your i	SL (Sandbo		ople Push Notification service
						required for each a	

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....

Keychain Access File About Keychain Access	Edit s	View Window Help
Preferences	ж,	
Keychain First Aid	₹¥A	
Certificate Assistant	•	Open
Ticket Viewer	₹₩K	Create a Certificate
Services	•	Create a Certificate Authority Create a Certificate For Someone Else as a Certificate Authority
Hide Keychain Access	жH	Request a Certificate From a Certificate Authority
Hide Others Show All	∵жн	Set the default Certificate Authority Evaluate a Certificate
Quit Keychain Access	жQ	
	Preferences Keychain First Aid Certificate Assistant Ticket Viewer Services Hide Keychain Access Hide Others Show All	Keychain First Aid て新名 Certificate Assistant こ Ticket Viewer て新K Services ト Hide Keychain Access 新H Hide Others 新WH Show All

Figure 5.5: 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 5.6: Certificate Assistant

00	Certificate Assistant
	Enter information Enter information for the certificate you are requesting. Click Continue to request a certificate from the CA.
Cert	User Email Address: Common Name: mac7 CA Email Address: Required Request is: Saved to the CA Saved to disk Let me specify key pair information
	Continue

Step 7: Specify a filename (usually *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 5.7: Download Distribution Certificate

Download, Install and Backup

Download your certificate to your Mac, then double click the .cer file to install in Keychain Access. Make sure to save a backup copy of your private and public keys somewhere secure.

Certificate	Name: Type: Expires:	iOS Distribution: Appeon Corporation (HK) Limited iOS Distribution May 08, 2014
		Download

Documentation

For more information on using and managing your certificates read:

App Distribution Guide

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.

00	Keychain Access		
Click to lock the	login keychain.	Q	
Keychains login Micrertificates System System Roots	IPhone Distribution: Appeon Corporation (HK) Limited Issued by: Apple Worldwide Developer Relations Certification Authority Expires: Saturday, 9 November 2013 1:45:30 PM China Standard Time This certificate is marked as trusted for this account		
	Name	▲ Kind	Date Modified
	[92.0.0.129 [93.0.	Internet password	Today, 5:09 PM
	[0] 192.0.060	Internet password	Today, 5:08 PM
	@ 192.0.1.98 @ 192.0.3.112	Internet password Internet password	Today, 5:08 PM Today, 5:08 PM
Category	@ 192.0.3.112 @ 192.0.3.116	Internet password	Today, 5:08 PF
All Items	Apple Persistent State Encryption	application password	9/10/2012 8:4
Z. Passwords	Apple Vorldwide Developer Relations Certification Authority	certificate	
Secure Notes	Armeen Mazda	private key	
My Certificates	aw.apple.com (Passwords not saved)	Internet password	Today, 5:08 PM
🚏 Keys	iPhone Developer: Armeen Mazda (6YKPA94G65)	certificate	
📴 Certificates	iPhone Distribution: Appeon Corporation (HK) Limited	certificate	
	(g) rambo	Internet password	Today, 5:08 PM
	A Remote Desktop Connection 2 Password for 192.0.1.98	application password	22/01/2013 1
	A Remote Desktop Connection 2 Password for 192.168.168.252	application password	1/09/2012 8:5
	A Safari	application password	Today, 5:09 PM
	A SVN: http://192.0.0.193	application password	10/10/2012 1
	SVN: http://192.0.0.193/mobdev/trunk/	application password	
	A SVN: http://192.0.0.193/mobiletest/	application password	
	20. SUN: NTW: //107 0.0.103/cun/	application paceword	21/03/2013 1
	+ i Copy 20 items		

Figure 5.8: Installed Certificate

5.2.1.5 Task 1.5: 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 <u>Creating Store Provisioning Profiles</u>, and <u>Creating Ad Hoc</u> <u>Provisioning Profiles</u> 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 <u>Task 1.4: Create & install</u> <u>distribution certificates</u> 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 5.9: Installed provisioning profile

00					Organizer - Devices			12 ²
				Devices R	epositories Projects Archives Documentation			
LIBRARY							Q- Profile Name	
🔀 Provisioning Profiles	Name	A Platform	Creation	Expiration	App Identifier	Team	Status	
Ø Software Images	Appeon Product Mobile Provision for AdHoc	iOS Profile	29/01/13	8/11/13	ERV593G6X6.com.appeon.mobile.*	Unknown	Valid profile	
Device Logs	Appeon Product Mobile Provision for AdHoc	iOS Profile	4/12/12	9/11/13	ERV593G6X6.com.appeon.mobile.*	Unknown	Valid profile	
Screenshots	Appeon Product Mobile Provision for AppStore	iOS Profile	8/12/12	9/11/13	ERV593G6X6.com.appeon.mobile.*	Unknown	Valid 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.

5.2.2 Task 2: Generate the Xcode project

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

You can select **Package a Native Mobile Project** or **Customize and Package Appeon Workspace** to package the app files into an Xcode project, and the steps (in this task as well as the subsequent tasks) are the same for both projects.

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 Section 11.3, "Packaging a standalone mobile project" in *Appeon Developer User Guide* or Section 11.4, "Customizing and packaging Appeon Workspace" 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.

These two zip packages are compressed according to the standard of Mac, therefore, they have to be decompressed on the Mac machine.

Step 2: Copy the above two zip packages to the Mac machine.

		SAP TechEd2012 	Demo_install	M N
FAVORITES All My Files Applications Desktop Documents	Appeon_Mobile_Tu torials.chm	ZIP AppeonMobile.fra mework.zip	SAP TechEd2012 Demo.zip	
 Downloads Movies Music Pictures 		Zip pac		

Step 3: On the Mac machine, extract the above two zip packages respectively.

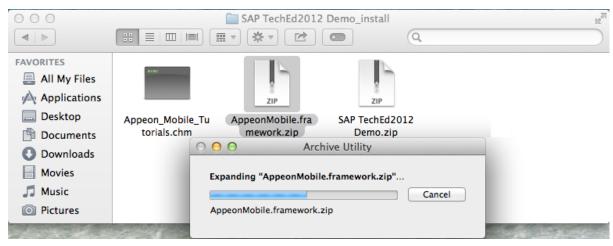
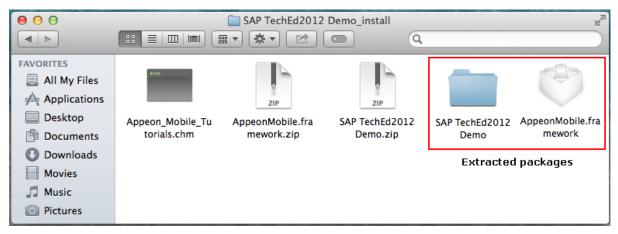


Figure 5.11: Extracting the packages on the Mac machine

Figure 5.12: Extracted packages on the Mac machine



Step 4: Copy the extracted **AppeonMobile.framework** folder into the **reference** folder under the extracted app package.

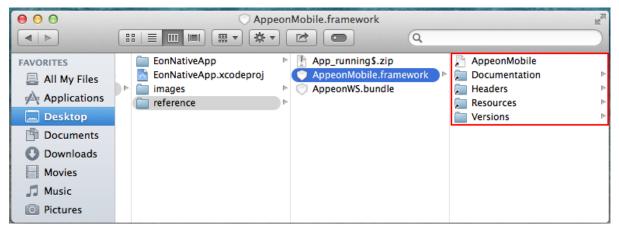
The following screenshot shows the **reference** folder that contains the **AppeonMobile.framework** folder that was copied.

Figure 5.13: reference folder

00	📄 reference 👷
FAVORITES	Appeon_Moutorials.chm 📄 EonNativeApp 🕨 🖺 App_running\$.zip
All My Files	🚹 AppeonMobamework.zip 🛛 EonNativeApp.xcodeproj 💿 AppeonMobile.framework 🕨
Applications	SAP TechEd2012 Demo images SAP TechEd2012 Demo.zip reference
🔜 Desktop	
Documents	
Downloads	
Movies	
🎜 Music	
Pictures	

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

Figure 5.14: AppeonMobile.framework folder



Make sure you do Step 3 & 4 on the Mac machine, not on the Windows machine.

5.2.3 Task 3: 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 <u>Task 2: Generate the Xcode project</u>.

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

🗯 Xcode File Edit View Navigate Editor	Product Window	Help	
900	Run	₩R	EonNativeApp.xcodeproj
EonNativeApp > iPhone 6.1 Simulator Stop Scheme Image: Stop Image: Scheme	Test Profile Analyze Archive	೫ሀ ೫∣ ଫ̂೫₿	Xcode
EonNativeApp 1 target, iOS SDK 6.1 images	Build For Perform Action	* *	
EonNativeApp Frameworks Products	Build Clean Stop	ቻ8 ℃ ቾK ⊮.	
	Scheme Destination	•	Select Next Scheme ^%] Select Previous Scheme ^%[
	Generate Output	•	✓ EonNativeApp
	Debug Debug Workflow Attach to Process	* * *	Edit Scheme % < New Scheme Manage Schemes

Figure 5.15: 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.

	EonNativeApp	iOS Devi	ce	÷	
	Scheme	20) Levels	Destination	Breakpoint	5
► Diamet Build 1 target		Build Configuration	Release		•
▶ ⊯ Run EonNa Debug	tiveApp	Archive Name	EonNativeApp		
Test Debug		Options	🗹 Reveal Archiv	e in Organizer	
Release	NativeA				
Analyze Debug					
► 🙉 Archive Release					
Duplicate Sc	heme Manage	Schemes			ОК

Figure 5.16: Archive Release

Step 4: (Optional) Click the target project for the app, select the **General** tab (or the **Summary** tab if Xcode 4.x), 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 about how to configure the settings in Xcode, read <u>Configuring Your Xcode</u> <u>Project for Distribution</u> 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.

🗯 Xcode File Edit View F	ind Navigate Editor Product Debug So	urce Control Window Help appeon Q 📰
00	📩 EonNativeApp.xcodep	proj
🕨 📄 🛛 🔥 EonNa 🔪 📱 iOS Device	Archive EonNativeApp: Succeeded Yesterday at 2:13	РМ 🛕 🔲 🖾 🗖 🔲 🗖
EonNativeApp.xcodeproj		+
🖬 🎞 🔍 🔬 🗢 🚍 🗭 🗐	🏭 🔺 🕨 📩 EonNativeApp	
 EonNativeApp 1 target, iOS SDK 7.0 	🗈 À EonNativeApp 🗧 General Capabilities	Info Build Settings Build Phases Build Rules
▶ images	Basic All Combined Levels	Q* Yes •
The Fornative App	Neiease	165 ¥
h AppUrl.h	▼ Code Signing	
h AppDelegate.h	Setting	A EonNativeApp
MainStoryboard_iPhone.storyboard	Code Signing Entitlements	keychainaccessgroups.plist
MainStoryboard_iPad.storyboard	▼Code Signing Identity	Automatic
h ViewController.h	Debug	iPhone Developer: Armeen Mazda (6YKPA94G65) \$
M ViewController.mm	Any iOS SDK \$ Release	Identities from Profile "EnterPrise_Appeon": (HK) Limited C
Supporting Files keychainaccessgroups.plist	Any iOS SDK +	C 🗸 iPhone Distribution: Appeon Corporation (HK) Limited
EonNativeApp-Info.plist	Code Signing Resource Rules Path	Other
h EonNativeApp-Prefix.pch	Other Code Signing Flags	
hfoPlist.strings	Provisioning Profile	EnterPrise_Appeon 🛊
m main.m	Debug	EnterPrise_Appeon 🛊
Settings.bundle	Any iOS SDK ‡	EnterPrise_Appeon 🛊
Frameworks	Release	EnterPrise_Appeon 🛊
Products	Any iOS SDK ‡	EnterPrise_Appeon \$

Figure 5.17: Code signing

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

Figure 5.18: Archive

📹 Xcode File Edi	t View Navigate	Editor	Product W	Vindow	Help	
Run Stop	Scheme		Run Test Profile Analyze		第R 第U 第I 企業B	
EonNativeApp.xcode	proj		Archive			
Image: Second state Image: Second st	PROJECT	ativeApp	Build For Perform A	Action	+	
 ZipArchive InAppSettingsKit 	TARGETS	Basic Setting	Build		жB	Res

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

Figure 5.19: Archive list

00		Organizer - Archives	R _M
	Device	es Repositories Projects Archives Documentation	n
SAPTechED			
Aws	APPEON	SAPTechED EonNativeApp Archive Type: IOS App Archive Creation Date: May 10, 2013 10:20 AM Version: Unspecified Identifier: com.appeon.mobile.SAPTechED Estimated App Store Size: Estimate Size	Validate Distribute
	Name Creation		Q= Name
	EonNativeApp May 10, 2	2013 Show in Finder	
		Delete Archive	
		Archives Organizer Help	

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

5.2.3.1 Task 3.1 (Optional): Import the certificate

MobiLink supports the encrypted transmission of the synchronous data stream by using HTTPS. If you want to use HTTPS for the encrypted transmission of the synchronous data stream, you should add the certificate file into the project. The following steps take **EonNativeApp** as an example.

1. Right click **EonNativeApp** and select **Add Files to ''EonNativeApp...''** to choose the certificate file, as shown in the following figure.

Figure 5.20: Add files to "EonNativeApp"

00			EonNativeApp.xcodeproj	
EonNativeApp > iPad > iOS 6.0		EonNativeApp: Ready	Today at 上午10:34	<u>^</u> 1
EonNativeApp.x	codeproj			
A 🔶	🚃 🗩 📮 🔛 🖣 🕨 Eon Na	ativeApp		
EonNativeApp 1 target, iOS SDK 7.0	Show in Finder	General Capabilities	Info Build Settings	Build Phases Build Rules
images	Open with External Editor			
EonNativeApp	Open As			
Frameworks	Show File Inspector	Bundle Identifier	com.appeon.mobile.EonNativeApp	
Products	New File			
	New Project	Version		
	Add Files to "EonNativeApp"	Build	1.0	
	Delete	Team	None ‡	
	New Group			
	New Group from Selection			
	Sort by Name			
	Sort by Type	Deployment Target		
	Find in Selected Groups	Devices	Universal \$	
	Source Control		iPhone iPad	
	Project Navigator Help	Main Interface	MainStoryboard_iPhone 💌	
		Device Orientation	✓ Portrait ✓ Upside Down	
			✓ Upside Down ✓ Landscape Left	
			Landscape Right	
		Status Bar Style	Default \$	
			Hide during application launch	
			- Hide during application latifich	

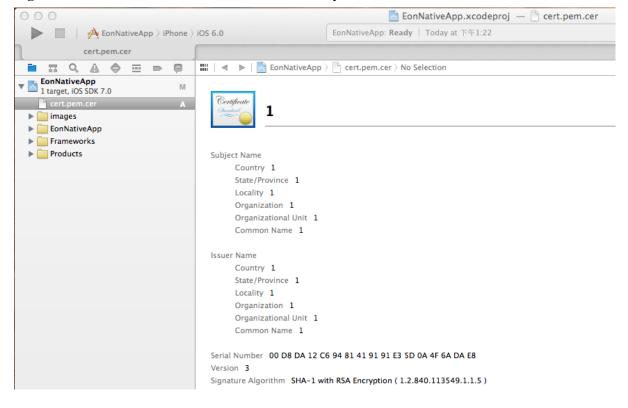
2. In this example, choose the cer.pem.cer file. Make sure to select the **Copy items into destination group's folder (if needed)** checkbox, as shown in the following figure. Click **Add**.

0		📩 EonNativeApp	o.xcodeproj
EonNativeApp) iPad) iOS	6.0	EonNativeApp: Ready Today at 上午10:34	▲ 1
EonNativeApp.xcodeproj			nea miserio di sevenene bavis⊀.
FonNativeAnn		🔳 💷 📾 📰 🔻	¢) Q
I target, IOS SDK 7.0 M Images – EonNativeApp M Frameworks Products	Vertex dentit	ions Appeon Mobile dev1.0 Appeon Mobile dev1.5 appeondb.db cert.pem.cer dds cert.pem.cer dbmlsync.txt http_debug thtp_debug https.zip integratiolone_install	Name cert.pem.cer Kind certificate Size 644 bytes Created 2013年10月23日下午4:16 Modified 2013年10月23日下午4:16 Last opened 今天上午9:16
		Destination ✓ Copy items into desti Folders O Create groups for any O Create folder reference Add to targets ✓ ▲ EonNativeApp	
	New Fold		Cancel Add

Figure 5.21: Select the destination checkbox

3. The certificate file is added successfully and is placed in the position parallel to other folders under the **EonNativeApp** directory, as shown in the following figure.

Figure 5.22: The certificate file is added successfully.



5.2.3.2 Task 3.2 (Optional): Configure the bundle identifier

In order for the apps running on the same mobile device to be recognized as running on one device not on multiple devices by the Appeon License file, you will need to always input the same Apple ID for all apps and specify the same bundle identifier for the same app. For details, refer to Section 5.3.4.1.1, "Product Activation" in *Appeon Server Configuration Guide for .NET* or in Appeon Server Configuration Guide for J2EE.

Follow steps below to specify the consistent **Bundle Identifier** in the Xcode project:

Step 1: Find the **keychainaccessgroups.plist** file by expanding **EonNativeApp** > **Supporting Fills**, as shown in the following figure. The **keychainaccessgroups.plist** file is in the same directory as the **EonNativeApp.xcodeproc** file.

The key for the app in the **keychainaccessgroups.plist** file is made up of two parts: Apple ID + Bundle Identifier, in this format "AppleID.BundleIdentifier", take 6DQU2XGFEE.com.appeon.mobile.1.0.2 for example, 6DQU2XGFEE is the Apple ID, com.appeon.mobile.1.0.2 is the Bundle Identifier.

Figure 5.23: Keychain access group

🗯 Xcode File Edit View F	ind Navigate Editor Pr	oduct Debug S	ource Control	Window H	Help	appeon	ର ≔
00	EonNativeApp.xc	odeproj — 📄 keyc	hainaccessgroup	s.plist			M
EonNa > IOS Device	Archive EonNativeApp: Succee	ded Yesterday at 2:1	3 PM	<mark>∆</mark> 3			
keychainaccessgroups.plist							-1
🖬 R Q 🖉 🖨 🗭 🗐	🏭 🔺 🕨 🚵 EonNativeApp 👌	EonNativeApp >	Supporting Files $ angle$	keychainaco	cessgroups.pl	st $ angle$ No Selection	
EonNativeApp	Key	Type	Value				
1 target, iOS SDK 7.0	▼ Root	Dictionary	(1 item)				
images	keychain-access-groups	🔾 🖨 🛛 Array	🛊 (5 items)				
EonNativeApp	ltem 0	String	6DQU2XGFEE.co	m.appeon.mob	ile.1.0.2		
h AppUrl.h	ltem 1	String	6DQU2XGFEE.co	m.appeon.mob	ile.1.0.3		
h AppDelegate.h	ltem 2	String	6DQU2XGFEE.co	m.appeon.mob	ile.1.0.4		
AppDelegate.mm	Item 3	String	6DQU2XGFEE.co	m.appeon.mob	ile.1.0.5		
📄 MainStoryboard_iPhone.storyboard	ltem 4	String	6DQU2XGFEE.co	m.appeon.mob	ile.1.0.6		
📑 MainStoryboard_iPad.storyboard							
h ViewController.h							
M ViewController.mm							
🔻 🧰 Supporting Files							
📄 keychainaccessgroups.plist							
EonNativeApp-Info.plist							
h EonNativeApp-Prefix.pch							
InfoPlist.strings							
m main.m							
Settings.bundle							
Frameworks							
Products							

Step 2: Check that the Apple ID in the **keychainaccessgroups.plist** file is correct and is the same as the Apple ID in the provisioning profile.

If the Apple ID in the **keychainaccessgroups.plist** file is incorrect, you can input the correct Apple ID, then click the menu **Product** -> **Clean**, and then click **Product** -> **Archive** to create the IPA file again.

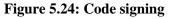
Step 3: Copy the Bundle Identifier from the keychainaccessgroups.plist file.

Step 4: Click the target project for the app, select the **General** tab (or the **Summary** tab if Xcode 4.x), and then paste to the **Bundle Identifier** field. By default, the **Bundle Identifier** on this tab is different from the one in the **keychainaccessgroups.plist** file.

Also make sure the same **Bundle Identifier** is input when uploading the app to the App Store.

If you want to make change to the **Bundle Identifier**, please make sure the same **Bundle Identifier** is used consistently in all three areas: the **keychainaccessgroups.plist** file, the **General** tab (or the **Summary** tab if Xcode 4.x), and the App Store upload process.

Step 5: Select **Building Settings**, drag down the screen to find the **Code Signing** group, modify the **Code Signing Entitlements** to "keychainaccessgroups.plist" if it is not displayed, then click **Release**, and then select the corresponding code signing profile. Make sure that the code signing profile matches the value specified in the keychain-access-groups in the keychainaccessgroups.plist, or there may be errors.



🗯 Xcode File Edit View F	ind Navigate Editor Product Debug	Source Control Window Help appeon	Q Ⅲ
00	📩 EonNativeApp.xcc	odeproj	R _M
🕨 🔲 🛛 📥 EonNa 🔪 📕 iOS Device	Archive EonNativeApp: Succeeded Yesterday at 2	2:13 PM 🛕 3 📃 🚺 🗹 📘	
EonNativeApp.xcodeproj			+
🗎 II Q A 🗢 🖃 🗭 🗐	🛗 🔺 🕨 📩 EonNativeApp		
EonNativeApp 1 target, iOS SDK 7.0 images images images	EnNativeApp & General Capabilitie Basic All Combined Levels	s Info Build Settings Build Phases Build Ru (Q= res =	ies
h AppUrl.h h AppDelegate.h m AppDelegate.mm	▼ Code Signing Setting	A EonNativeApp	0
MainStoryboard_iPhone.storyboard	Code Signing Entitlements	keychainaccessgroups.plist	
MainStoryboard_iPad.storyboard	Code Signing Identity	Automatic	
h ViewController.h	Debug	iPhone Developer: Armeen Mazda (6YKPA94G65) ‡	
m ViewController.mm	Any iOS SDK ‡	Identities from Profile "EnterPrise_Appeon"1 (HK) Limited	0
Supporting Files	Release	🧯 🖌 iPhone Distribution: Appeon Corporation (HK) Limited	K
keychainaccessgroups.plist	Any iOS SDK 🛊	Phone Distribution: Appeon Corporation (HK) Limited	÷.
EonNativeApp-Info.plist	Code Signing Resource Rules Path		
h EonNativeApp-Prefix.pch	Other Code Signing Flags		
InfoPlist.strings	Provisioning Profile	EnterPrise_Appeon 🗘	
m main.m	Debug	EnterPrise_Appeon 🛊	
Settings.bundle	Any iOS SDK 🛊	EnterPrise_Appeon 🛊	
Frameworks	Release	EnterPrise_Appeon 🛊	
Products	Any iOS SDK \$	EnterPrise_Appeon 🛊	

5.2.4 Task 4: 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 Apple App Store. Refer to Section 5.2.4.1, "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 <u>Section 5.2.4.2</u>, "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 <u>Section 5.2.4.2</u>, "<u>Method 2: In-house or Ad-Hoc distribution</u>" 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.

5.2.4.1 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 <u>App Store Submission Tutorials</u> to submit your app to the iOS App Store.

5.2.4.2 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 5.25: Select distribution method

	Select the method of distribution:	
	 Submit to the iOS App Store Sign, package and submit application to the iOS App Store. Save for Enterprise or Ad-Hoc Deployment Sign and package application for distribution outside of the iOS App Store. Export as Xcode Archive Export the entire Xcode archive of this application. 	Validate
NEW APPLICATION. APP	Cancel Previous Next	

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 5.26: Choose an identity

	Devices Repositories Proje	Archives Documentation
TANK TANK ANT	Code Signing Ide	Val Don't Re-sign Appeon Product Mobile Provision for AdHoc (from '(null), for ✓ Appeon Corporation (HK) Limited (iOS Distribution) Appeon0626 (from '(null)', for 'com.appeon.*') Armeen Mazda (iOS Development) Refresh code signing identity
	Cancel	Previous Next

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.

Navigate Editor Produ	ict Window Help		4) 🔺 🛄 🖣
0 0 0	Organizer – Archives		H21
	Devices Repositories Projects Archives Documentatio	n k	
SAPTechED	Save As: EonNativeApp		
	(◄ ▶) (# □ □□ □□ □□ □□ □□ □□ □□	٩	Validate
A part of the second seco	FAVORITES Name Ame Applications CertificateSigningRcertSigningRequest Desktop sales Downloads SAPTechED Movies SAPTechED.zip Music Save for Enterprise Distribution Application URL: Required Title: Required Subtitle: Large Image URL: Small Image URL: Small Image URL:	Date Modified Today 10:08 AM Yesterday 4:36 PM Yesterday 10:00 AM Today 9:44 AM Today 9:41 AM Feb 18, 2013 10:50 A	Distribute
	Add Shine Effect to Images		-
	New Folder Can	cel Save	

Figure 5.27: 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 <u>the section called "Install apps using iTunes"</u> 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 <u>the section called "Install apps using iPhone Configuration Utility</u>" for detailed instructions.
- Post the .ipa file and .plist file on a secure Web server, and users perform the installation wirelessly. See <u>the section called "Install apps wirelessly"</u> 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 <u>Distributing Enterprise Apps for iOS</u> <u>Devices</u>.

5.2.4.2.1 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.

5.2.4.2.2 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.

5.2.4.2.3 Install apps wirelessly

Before installing the app, you will need to first post the app to a Web server.

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.

5.3 Package & Distribute Android Apps

Compared to iOS apps, the steps for packaging and distributing the Android apps are a lot simpler. Once you package the app files using the Appeon Developer toolbar, you will get an Android application package (APK) that can readily be distributed using any approach, including publishing in the Android app marketplace such as Google Play, or serving the app from a Web site or emailing the app directly to users.

Therefore, you need to go through the following two tasks mainly.

- 1. Task 1: Generate the Android application package (APK).
- 2. Task 2: Distribute the Android APK.

5.3.1 Task 1: Generate the Android application package (APK)

On the Appeon Developer machine, use the **Package** tool in the Appeon Developer toolbar to package the app files into an Android APK file.

You can select **Package a Native Mobile Project** or **Customize and Package Appeon Workspace** to package the app files into an Android APK file. During the package process, you can press F1 to get help on the fields. See Section 11.3, "Packaging a stand-alone mobile project" in *Appeon Developer User Guide* or Section 11.4, "Customizing and packaging Appeon Workspace" in *Appeon Developer User Guide* for detailed instructions.

After the package process is complete, you will find an APK file generated under the specified destination folder. Get the APK file and distribute the app using any approach that meets your needs.

5.3.2 Task 2: Distribute the Android APK

This section only highlights three distribution approaches. For more details about these three approaches, refer to <u>http://developer.android.com/distribute/open.html</u>.

• Distributing through an App Marketplace.

For detailed instructions on how to publish on Google Play -- the premier marketplace for Android apps, refer to <u>http://developer.android.com/distribute/googleplay/publish/</u> index.html.

- Distributing your application through email
- Distributing through a web site

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 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: Get to understand the architecture of an Appeon Server cluster.
- 2. Task 2: Install Appeon Server to multiple application servers.
- 3. Task 3: Create the Appeon Server cluster in AEM.
- 4. Task 4: Configure the Web server for the Appeon Server cluster.
- 5. Task 5: Install an Appeon application to the Appeon Server cluster and Web server(s).

6.1 Task 1: Understand the cluster architecture

The following graphic illustrates the architecture of the client, the Web server cluster, and the Appeon Server cluster.

- The Web server can be a cluster of Web servers or a single Web server, depending on the demands. Configuring the Web server cluster is not an Appeon task, therefore, it is not mentioned in any Appeon documentation; to explore this topic, you could refer to the user documents provided by the Web server vendor. Generally, a single Web server is sufficient to support the Appeon Server cluster.
- If there is only one Web server, it can be on an independent machine separated from the Appeon Server, or it can be on the same machine where Appeon Server resides. If it is on the same machine with Appeon Server, make sure the Appeon Server and the Web server are set up on different Web sites.
- There are two load balancing algorithms: **random** and **sequence**. The following graphic uses **sequence** which distributes the user requests to the Appeon Server in sequential order.

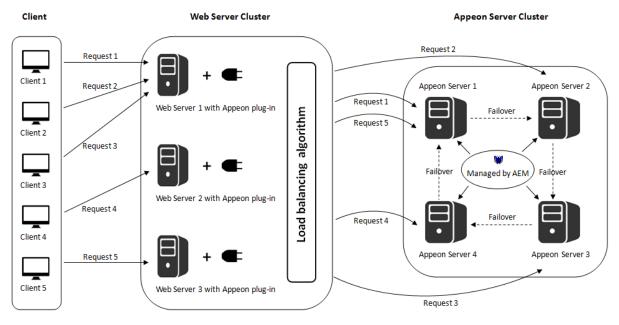


Figure 6.1: Cluster architecture

6.2 Task 2: 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 Installation Guide for .NET.

Step 2: Install Appeon Server to each application server by following the installation instructions in the **Appeon Server installation** section in Installation Guide for .NET. 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.

6.3 Task 3: Create an 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 then configure the load balancing and failover functionalities for 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 Section 5.3.3.1, "Cluster" in *Appeon Server Configuration Guide for .NET* or Appeon Server Configuration Guide for J2EE.

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

Step 5: Click Save to synchronize AEM settings to the other servers in the 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 6.2: Cluster

V	<u>/elcome</u> > <u>Serve</u>	er > <u>Resource</u> > Cluster				^	
	Cluster Server Lis	Duster Server List					
	The following disp	olays information for all Appeon Se	ervers in the cluster. P	lease add the local	machine first before you add any other server.		
	Actions	IP Address	Port	Status			
	Add Appeon Ser	Remove All					
	Load Balancing						
	Load balancing algo	rithm: Random Sequence 					
	Failover						
	Enable Session	Enable Session Backup					
:							
	Request I	evel					
	Enable Heartb	eat Backup					
	Enable Re	mote Backup					
	Interval T	ime 30 se	conds				
	Mirror	Backup					
	Rotat	Rotation Backup					
	Enable Lo	Enable Logical Restore with Status Monitor					
	Save						

6.4 Task 4: Configure the Web server for the Appeon Server cluster

6.4.1 Task 4.1: Install the Appeon Server Web Component on Web server

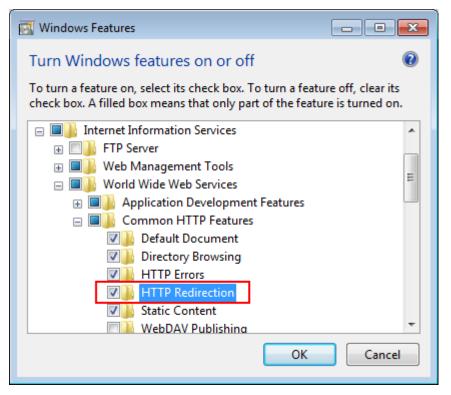
Step 1: Set up one or more separate Web site(s) as Web server(s).

If the Web server is on the same machine with Appeon Server, make sure the Appeon Server and the Web server are set up on different Web sites that use different port number and root directory.

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

If the Web server is the IIS server, you should make sure the **HTTP Redirection** feature (as shown below) is selected and installed, otherwise, the application URL and AEM URL cannot be redirected successfully.

Figure 6.3: HTTP Redirection



Step 2: Install **Appeon Server Web Component** to the Web root (or document root) of each Web server. For example, the default Web root for IIS is C:\inetpub\wwwroot, the default document root for Apache 2.0 is C:\Program Files\Apache Group\Apache2\htdocs.

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

6.4.2 Task 4.2: Configure the Web server with the Appeon plug-in

6.4.2.1 Type 1: IIS Web server

6.4.2.1.1 Method 1: Automatic configuration

Installing and configuring 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 **WebComponent2015**\appeon**IISSupport**\ directory, and this folder is the Appeon cluster plug-in installation package, as shown in the following figure.

Figure	6.4:	Appeon	Cluster	plugin
--------	------	--------	---------	--------

<u>E</u> dit <u>V</u> iew <u>T</u> ools <u>H</u> elp						
rganize 👻 Include in library 👻	Share with 👻 New folder				8== •	
4 퉬 WebComponent2013	^ Name	Date modified	Туре	Size		
4 퉲 appeon	APBCluster	4/25/2013 11:22 AM	File folder			
Apache13Support	appeon	4/25/2013 11:22 AM	File folder			
Apache20Support	AppeonCloud	4/25/2013 11:22 AM	File folder			
Apache22Support	a AppeonCluster	4/23/2013 11:01 AM	Application	262 KB		
▲ 🎽 IISSupport	AppeonCluster.exe	4/23/2013 10:56 AM	XML Configuratio	1 KB		
4 🍌 Appeon Cluster plugin	AppeonCluster	4/25/2013 11:29 AM	Text Document	1 KB		
APBCluster	E instance	4/25/2013 11:27 AM	XML Configuratio	1 KB		
> 🎉 appeon	Interop.ActiveDs	4/23/2013 10:56 AM	DLL File	94 KB		
AppeonCloud	Interop.IISOle	4/23/2013 10:56 AM	DLL File	10 KB		
b conf	Interop.IWshRuntimeLibrary	4/23/2013 10:56 AM	DLL File	37 KB		
	Iog4net	4/23/2013 10:56 AM	DLL File	244 KB		
	📄 log4net	4/23/2013 10:56 AM	XML File	1,258 KB		
a a septice sertificite of serte	🚳 regiis	4/23/2013 10:56 AM	Windows Batch File	1 KB		
Beyond Compare 3 Bonjour	ilentinstall	4/23/2013 10:56 AM	Configuration sett	3 KB		
D Sonjour D S						
DVD Maker						
Google	*					

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 6.5: Create plugin on a Web site

🕡 Appeon Cluster Plug-in Installation Wizard	x
Welcome to Appeon Cluster Plug-in Installation Wizard Select an option to continue.	
Create an Appeon Cluster Plug-in on an existing Web site Select this option to create an Appeon Cluster Plug-in on an existing Web site.	
Create an Appeon Cluster Plug-in on a new Web site Select this option to create a new Web site and an Appeon Cluster Plug-in.	
Remove an Appeon Cluster Plug-in	
Select this option to remove the Appeon Cluster Plug-in from an existing Web site.	
< <u>B</u> ack <u>N</u> ext> <u>C</u> ance	

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 6.6: Configure the Web site

4	Appeon Cluster Plug-in Installation Wizard	x
	Create an Appeon Cluster Plug-in on a new Web site	
	Enter the information below to create the new Web site and the new Appeon Cluster Plug-in.	
	New Web Site	
	Description:	
1	TCP Port:	
	Home Directory: Browse	
1	Existing Web Site	
	Sites Default Web Site[TCP Port=80;Home Directory=C:\inetpub\wwwroot] Test[TCP Port=80;Home Directory=C:\Program Files\Inetpub\wwwroot]	
-	< <u>B</u> ack <u>N</u> ext> <u>C</u> ancel	

Step 5: Select to install a 32-bit or 64-bit Appeon cluster plug-in, and click **Next**. The program will detect if the server is on 32-bit OS or 64-bit OS and disable the inappropriate option.

32-bit plug-in works with 32-bit server and 64-bit server, and 64-bit plug-in works with 64-bit server only.

Figure 6.7: Select run mode

appeon Cluster Plug-in Installation Wizard	×
Create an Appeon Cluster Plug-in on a new Web site	
Select Appeon Cluster Plug-in run mode.	
Oreate a new Appeon Cluster Plug-in (32-bit)	
The Appeon Cluster Plug-in will run as a 32-bit program.	
 Create a new Appeon Cluster Plug-in (64-bit) 	
The Appeon Cluster Plug-in will run as a 64-bit program.	
8	
< <u>B</u> ack	lext> <u>C</u> ancel

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 the Web browser.

Appeon Cluster Plug-in Installatio	n Wizard
Specify the Windows administrat	or user name and password
Enter the username and password	of an administrator group member for the IIS application pool.
The user name and password is an administrator user name and p	required by Appeon Cluster Plug-in to support the cluster environment. It must be bassword of the Windows operating system login account.
Usemame:	
Password:	
Confirm Password:	
	< <u>Back</u> <u>N</u> ext> <u>C</u> ancel

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

Figure 6.9: Create the plug-in

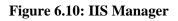
ſ	appeon Cluster Plug-in Installation Wizard	×
	Create an Appeon Server on a new Web site Create the Web site "AppeonCluster" and Appeon Cluster Plug-in.	
	Created the Appeon Cluster Plug-in on the Web site AppeonCluster successfully.	
	< <u>B</u> ack <u>N</u> ext> <u>Finis</u>	<u>n</u>

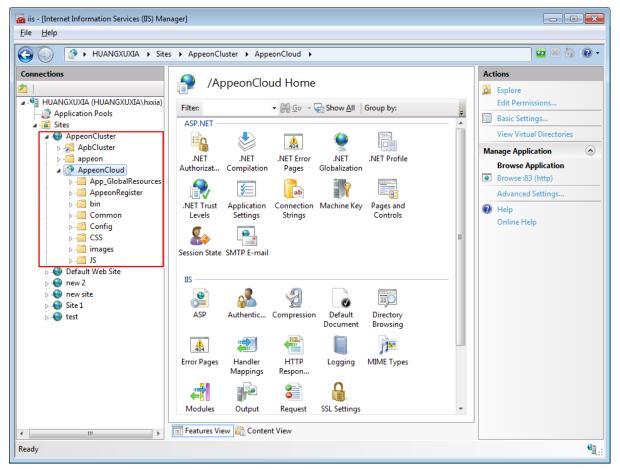
Configuring redirections to Appeon Servers

After successfully installing and configuring the Appeon cluster plug-in, you can find **AppeonCloud** Web console (though it is named "Cloud", it also applies to non-cloud platform) under the specified IIS Web site, as shown in the figure below. You can configure here to which Appeon Server(s) and in what order the user requests should be redirected. Detailed instructions are provided below.

Another important advantage that the cluster provides is **failover**. To enable the **failover** functionality, you will need to go to Appeon Server AEM, add Appeon Servers to the cluster and configure the failover settings there. For details, refer to Section 5.3.3.1, "Cluster" in *Appeon Server Configuration Guide for .NET* or Appeon Server Configuration Guide for J2EE.

The Appeon cluster currently supports three kinds of platforms including Local (non-cloud platform), Amazon Web Services and Windows Azure. The AppeonCloud console will display different settings according to the specific platform.





Step 1: Run the **AppeonCloud** console (browse the console in the right **Actions** pane in the IIS manager). The **Appeon Cluster Manager** displays.

Step 2: Input the user name and password (both "admin") to log into the **Appeon Cluster Manager**.

Step 3: Click **Cluster Settings**. The following settings will be display for the non-cloud platform.

Add the Appeon Servers to the list one by one. The Web server will redirect the user requests to the Appeon Servers in the list.

- Specify the host name (or IP address) and port number of Appeon Server.
- Click **Save**. Appeon Server will be added to the cluster.

Figure 6.11: Local cluster settings

A	ppeon Cluster Manager > Local Cluster Setting					
⊟	Local Cluster Setting					
	Sets cluster type that is used to store cluster information.					
	Host:					
	Port:		80			
					Sav	e
	Actions	Host			Port	
	Delete	localhos	t		80	
	Delete 192.0.2.113			80		

Step 4: Configure the other settings of the cluster if necessary, such as load balancing algorithm, timeout, and interval.

Figure 6.12: Cluster settings

Cluster Information Setting		
Configures information (such as load balance, timeout, etc.) that is used for Appeon Cluster.		
Load Balancing Setting:	Random Sequence	
Timeout Setting:	120	
Interval Setting:	5	
	Save	

Table 6.1: More cluster settings

Settings	Description
Load Balancing	Specify the load balancing algorithm which determined how requests will be distributed among the servers in the cluster. Random indicates that the plug-in distributes requests across Appeon Servers in random order, regardless of the status of Appeon Server; Sequence indicates that the plug-in distributes requests to Appeon Server in an allocated order.
Timeout	Specify the timeout for distributing a request, and the default value is 30 seconds.
Interval	Specify the interval (in seconds) for the plug-in to refresh the Appeon Server list.

6.4.2.1.2 Method 2: Manual configuration

Configuring 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. Installing Appeon Server Web component to the Web root of the IIS server.

Make sure you have installed Appeon Server Web Component to the Web root of the IIS server. To verify it, go to the IIS Web root (by default C:\inetpub\wwwroot) and check if

there is an **appeon** folder which at least contains the **IISSupport** and **weblibrary_ax** subfolders. If any folder is missing, go to the default installation directory of Appeon Server Web Component (C:\Program Files\Appeon\WebComponent2015) and manually copy the entire **appeon** folder to the IIS Web root.

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, "**C:\inetpub\wwwroot** **ApbCluster**".

Step 5: Click OK.

Figure 6.13: Add virtual directory

Add Virtual Directory			? 🗙
Site name: Path:	Default Web Site /		
<u>A</u> lias:			
ApbCluster			
Example: images			
<u>P</u> hysical patł	n:		
C:\inetpub\wwwroot\ApbCluster			
Pass-through authentication			
<u>C</u> onnect as	Test Settings]	
		ОК	Cancel

Step 6: Right click the ApbCluster virtual directory and select Edit Permissions.

Step 7: Choose the **Security** tab, and then click the **Edit** button.

Figure 6.14: ApbCluster properties

👃 ApbCluster Properties 🛛 💌			
General Sharing Security Previous Versions Customize			
Object name: C:\inetpub\wwwroot\ApbCluster			
Group or user names:			
& Everyone			
& CREATOR OWNER			
SYSTEM			
Al Administratore (HI IANGYI IYIA) Administratore)			
To change permissions, click Edit.			
Permissions for Everyone Allow Deny			
Full control			
Modify 🗸			
Read & execute 🗸 🗉			
List folder contents 🗸			
Read 🗸			
Write 🗸 🔻			
For special permissions or advanced settings, Advanced			
Learn about access control and permissions			
OK Cancel Apply			

Step 8: Select **IIS_IUSRS**, for example, IIS_IUSRS (HUANGXUXIA\IIS_IUSRS) from the **Group or user names** list, and then select the **Allow** check box for **Modify** and **Write** in the **Permissions for IIS_IUSRS** list.

Figure 6.15: ApbCluster permissions

Permissions for ApbCluster			×
Security			
Object name: C:\inetpub\www.	oot\ApbCluster		
Group or user names:			
SYSTEM			
Administrators (HUANGXUXIA	(\Administrators)		
& Users (HUANGXUXIA\Users)			
IIS_IUSRS (HUANGXUXIA\II			=
8 TrustedInstaller			-
* III		- F	
	A <u>d</u> d	<u>R</u> emove	
Permissions for IIS_IUSRS	Allow	Deny	
Modify			*
Modify Read & execute	V		^
	V V		* E
Read & execute			
Read & execute List folder contents			
Read & execute List folder contents Read Write			
Read & execute List folder contents Read	Missions		

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

3. Copying the 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 (**C:\inetpub** **wwwroot\ApbCluster** 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 application pool used by the current Web site. If you use **ApbCluster64.dll**, then set this option to **False**.

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

Go to the Appeon Server machine where you have created the cluster in its AEM, copy the **cluster-config.xml** file from %appeon_server_install_directory%\appeon\plugin\IIS directory to the newly created virtual directory (**C:\inetpub\wwwroot\ApbCluster** in this guide).

Note: The **cluster-config.xm**l file acts as the redirector configuration file which helps the Web server redirect requests to the Appeon Servers according to the IP addresses/ports of Appeon Servers, and the load balancing algorithm that it stores. This file should not be modified manually as it will be 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 from Appeon Server and replace the old file in the virtual directory and restart IIS.

```
<?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).
- filters 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 the Appeon plug-in as ISAPI Filters.

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

Step 2: Select **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** **ApbCluster\ApbCluster.dll** in this guide). Click **OK**.

Figure 6.16: Add ISAPI filter

А	dd ISAPI Filter	? 💌
	<u>F</u> ilter name:	_
	ApbCluster	
	Executable:	
	C:\inetpub\wwwroot\ApbCluster\ApbCluster.dll	
	ОК	Cancel

6. Copying the redirector configuration file (ApbCluster.cfg).

Copy the **ApbCluster.cfg** redirector configuration file from **appeon\IISSupport\conf**\ to the virtual directory (**C:\inetpub\wwwroot\ApbCluster** in this guide) and edit the file when necessary.

```
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 (or ApbCluster64.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 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: Select the local machine (the top node), 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 the descriptive text in the **Description** box, and then select **Allow extension path to execute**.

Step 5: Click OK.

Figure 6.17: Add ISAPI or CGI

Add ISAPI or CGI Restriction	? 🔀
ISAPI or CGI path:	
C:\inetpub\wwwroot\ApbCluster\ApbCluster.dll	
Description:	
ApbCluster for Default Web Site	
Allow extension path to execute	
ОК	Cancel

8. Enabling ISAPI-dll.

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

Step 2: Expand **Default Web Site**, select **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 6.18: Edit feature permissions

Edit Feature Permissions	? 💌
Permissions:	
<u> R</u> ead	
✓ Script	
✓ Execute	
ОК	Cancel

9. Adding MIME type for loading the pages without extension names or pages without MIME types defined.

Step 1: Select **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 6.19: Add MIME type

Add MIM	IE Type
File na	me <u>e</u> xtension:
MIME	type:
applica	ation/octet-stream
	OK Cancel

10.Restarting IIS.

Restart IIS to make the new settings effective.

Configuring 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. Installing Appeon Server Web component to the Web root of the IIS server.

Make sure you have installed Appeon Server Web Component to the Web root of the IIS server. To verify it, go to the IIS Web root (by default C:\inetpub\wwwroot) and check if there is an **appeon** folder which contains the **IISSupport** and **weblibrary_ax** sub-folders. If any folder is missing, go to the default installation directory of Appeon Server Web Component (C:\Program Files\Appeon\WebComponent2015) and manually copy the entire **appeon** folder to the IIS Web root.

2. Specifying the 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**.

😻 Internet Information Services (D	efault Web Site Properties	? ×
Section View Window Image: section Image: section Image: section Image: section Image: section Image: section Image: section Image: section Image: section Image: section <thima< td=""><td>Directory Security HTTP Headers Custom Errors Web Site Performance ISAPI Filters Hom The content for this resource should come from:</td><td>e Directory Documents</td></thima<>	Directory Security HTTP Headers Custom Errors Web Site Performance ISAPI Filters Hom The content for this resource should come from:	e Directory Documents
	Local path: c:\inetpub\wwwroot Image: Script source access Image: Script source access Image: Bead Image: Image:	Br <u>o</u> wse
	Application settings Application name: Default Application Starting point: <default site="" web=""> Execute permissions: Scripts only Application protection: Medium (Pooled)</default>	Configuration
Vti_txt Web Service Extensions Default NNTD Virtual Server	OK Cancel	Apply Help

Figure 6.20: Web site properties

3. Creating the 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 for the mapping directory: **Read**, **Run scripts** (such as **ASP**), and **Execute** (such as **ISAPI application or CGI**)

Figure 6.21: Virtual directory

Virtual Directory Creation Wizard
Virtual Directory Access Permissions Set the access permissions for this virtual directory.
Allow the following permissions:
 ✓ <u>B</u>ead ✓ Run <u>scripts</u> (such as ASP) ✓ <u>Execute</u> (such as ISAPI applications or CGI) ✓ <u>W</u>rite Br<u>o</u>wse
To complete the wizard, click Next .
< <u>B</u> ack <u>N</u> ext > Cancel

4. Copying the 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 application pool used by the current Web site. If you use **ApbCluster64.dll**, then set this option to **False**.

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

Go to the Appeon Server machine where you have created the cluster in its AEM, copy the **cluster-config.xml** file from %appeon_server_install_directory%\appeon\plugin\IIS directory to the newly created virtual directory (**d:\isplugin** in this guide).

Note: The **cluster-config.xm**l file acts as the redirector configuration file which helps the Web server redirect requests to the Appeon Servers according to the IP addresses/ports of Appeon Servers, and the load balancing algorithm that it stores. This file should not be modified manually as it will be 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 from Appeon Server and replace the old file in the virtual directory and restart IIS.

```
<?xml version="1.0" encoding="UTF-8" ?>
<cluster-config local="true" log="debug" timeout="30" polling="5"</pre>
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 **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. Copying the redirector configuration file (ApbCluster.cfg).

Copy the **ApbCluster.cfg** redirector configuration file from appeon\IISSupport\conf\ to the virtual directory (d:\iisplugin in this guide) and edit the file when necessary.

```
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 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.

- → € 🖬 🗿 🗟 🔗 💂 →	II.		
Internet Information Services TEST37 (local computer) FTP Sites Web Sites Web Service Extensions Default NNTP Virtual Server	Allow Prohibit Properties Tasks Add a new Web service extension Allow all Web service extension for a specific application Prohibit all Web service Extended (Standard /	V Web Service Extension V All Unknown CGI Extensions All Unknown ISAPI Extensions Active Server Pages ASP.NET v1.1.4322 easerver_extensions FrontPage Server Extensions 2002 Internet Data Connector Server Side Includes WebDAV V	Status Prohibited Prohibited Allowed Allowed Allowed Allowed Allowed Allowed

Figure 6.22: 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 6.23: MIME Types

😻 Internet Information Services ()	(IS) Manager	_ 🗆 ×
File Action View Window File Action View Window File Internet Information Services FTP Sites Web Sites Web Service Extensions Default NNTP Virtual Serve	EST37 (local computer) Properties Internet Information Services Estable Direct Metabase Edit MIME Types Registered MIME types (file extensions): * application/octet-stream New Edit MIME Type Extension: MIME type: application/octet-stream	
	MIME type: application/octet-stream	Þ

10.Restarting IIS.

Restart IIS to make the new settings effective.

Configuring IIS 7.x with J2EE server

J2EE servers refer to the Java application 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 **Default Web Site** will be used as examples in the following guide.

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

Make sure you have installed Appeon Server Web Component to the Web root of the IIS server. To verify it, go to the IIS Web root (by default C:\inetpub\wwwroot) and check if there is an **appeon** folder which contains the **IISSupport** and **weblibrary_ax** sub-folders. If any folder is missing, go to the default installation directory of Appeon Server Web Component (C:\Program Files\Appeon\WebComponent2015) and manually copy the entire **appeon** folder to the IIS Web root.

2. Creating a virtual directory.

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

Step 2: Right click **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, "**C:\inetpub\wwwroot** **ApbCluster**".

Step 5: Click OK.

Figure 6.24: Add virtual directory

Add Virtual Dire	ectory		? 💌
Site name: Path:	Default Web Site /		
<u>A</u> lias:			
ApbCluster			
Example: im	ages		
<u>P</u> hysical path	h:		
C:\inetpub\v	wwwroot\ApbCluster		
Pass-throug	h authentication		_
Connect as	Test Settings		
		ОК	Cancel

Step 6: Right click the **ApbCluster** virtual directory and select **Edit Permissions**.

Step 7: Choose the **Security** tab page and then click the **Edit** button.

Figure 6.25: appeoncluster properties

🚶 ApbCluster Properties 🛛 💌
General Sharing Security Previous Versions Customize
Object name: C:\inetpub\wwwroot\ApbCluster
Group or user names:
& Everyone
& CREATOR OWNER
& SYSTEM
Administratore (HIIANGXIIXIA\Administratore)
4
To change permissions, click Edit.
Permissions for Everyone Allow Deny
Full control
Modify 🗸
Read & execute 🗸 🗉
List folder contents
Read
Write 🗸 👻
For special permissions or advanced settings, Ad <u>vanced</u>
Learn about access control and permissions

Step 8: Select **IIS_IUSRS**, for example, IIS_IUSRS (HUANGXUXIA\IIS_IUSRS) from the **Group or user names** list, and then select the **Allow** check box for **Modify** and **Write** in the **Permissions for IIS_IUSRS** list.

Figure 6.26: appeoncluster properties

Permissions for ApbCluster		— ×
Security		
Object name: C:\inetpub\www	oot\ApbCluster	
<u>G</u> roup or user names:		
SYSTEM		
& Administrators (HUANGXUXI)	A\Administrators)	
& Users (HUANGXUXIA\Users)		
STIS_IUSRS (HUANGXUXIA		E
& TrustedInstaller		+
▲ []		•
	A <u>d</u> d	Remove
Permissions for IIS_IUSRS	Allow	Deny
Permissions for IIS_IUSRS Modify	Allow	Deny
	Allow	
Modify	Allow	
Modify Read & execute		
Modify Read & execute List folder contents		
Modify Read & execute List folder contents Read Write		
Modify Read & execute List folder contents Read		

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

3. Copying the 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 (**C:\inetpub** **wwwroot\ApbCluster** 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 application pool used by the current Web site. If you use **ApbCluster64.dll**, then set this option to **False**.

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

Go to the Appeon Server machine where you have created the cluster in its AEM, copy the **cluster-config.xml** file from %appeon_server_install_directory%\repository \<instancename>\config directory to the newly created virtual directory (**C:\inetpub** **wwwroot\ApbCluster** in this guide). %appeon_server_install_directory% is the installation directory of Appeon Server, and <instancename> refers to the name of a server instance.

Note: The **cluster-config.xm**l file acts as the redirector configuration file which helps the Web server redirect requests to the Appeon Servers according to the IP addresses/ports

of Appeon Servers, and the load balancing algorithm that it stores. This file should not be modified manually as it will be 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 from Appeon Server and replace the old file in the virtual directory and restart IIS.

```
<?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).
- filters 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 the Appeon plug-in as ISAPI Filters.

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

Step 2: Select 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* *ApbCluster\ApbCluster.dll* in this guide). Click **OK**.

Add ISAPI Filter	? 💌
<u>F</u> ilter name:	
ApbCluster	
Executable:	
C:\inetpub\wwwroot\ApbCluster\ApbCl	luster.dll
	_
	OK Cancel

6. Copying the redirector configuration file (ApbCluster.cfg).

Copy the **ApbCluster.cfg** redirector configuration file from **appeon\IISSupport\conf**\ to the virtual directory (**C:\inetpub\wwwroot\ApbCluster** in this guide) and edit the file when necessary.

```
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. On indicates logging is enabled; Off indicates logging is disabled.
- 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: Select the local machine (the top node), 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 the descriptive text in the **Description** box, and then select **Allow extension path to execute**.

Step 5: Click OK.

Figure 6.28: Add ISAPI or CGI

Add ISAPI or CGI Restriction	? 💌
ISAPI or CGI path:	
C:\inetpub\wwwroot\ApbCluster\ApbCluster.dll	
Description:	
ApbCluster for Default Web Site	
Allow extension path to execute	
ОК	Cancel

8. Enabling ISAPI-dll.

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

Step 2: Expand **Default Web Site**, select **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 6.29: Edit feature permissions

Edit Feature Permissions	? 🗙
Permissions:	
✓ <u>R</u> ead	
✓ Script	
Execute	
ОК	Cancel

9. Adding MIME type for loading the pages without extension names or pages without MIME types defined.

Step 1: Select **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 6.30: Add MIME type

Add MIME Type	? 💌
File name <u>e</u> xtension: *	
MIME type:	
application/octet-str	eam
	OK Cancel

10.Restarting IIS.

Restart IIS to make the new settings effective.

Configuring IIS 6.0 with J2EE server

J2EE servers refer to the Java application 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. Installing Appeon Server Web component to the Web root of the IIS server.

Make sure you have installed Appeon Server Web Component to the Web root of the IIS server. To verify it, go to the IIS Web root (by default C:\inetpub\wwwroot) and check if there is an **appeon** folder which contains the **IISSupport** and **weblibrary_ax** sub-folders. If any folder is missing, go to the default installation directory of Appeon Server Web Component (C:\Program Files\Appeon\WebComponent2015) and manually copy the entire **appeon** folder to the IIS Web root.

2. Specifying the properties of the 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** from the **Execute Permissions** dropdown list.

Figure 6.31: Default Web site properties

ault Web Site Prope	erties		?
Directory Security	HTTP Headers ISAPI Filters	Custom Errors	Server Extensions Documents
When connecting to this resource, the content should come from:			
ē	A directory locat	ted on this computer	
C	A share located	on another computer	
0	A redirection to	a <u>U</u> RL	
Lo <u>c</u> al Path:	c:\inetpub\www.r	oot	Browse
 □ Script source acc ☑ Read □ Write □ Directory browsing 		 Log visits Index this resource 	,
Application Settings			
Application name:	Default Applic	cation	R <u>e</u> move
Starting point:	<default td="" web<=""><td>) Site></td><td></td></default>) Site>	
	California		Configuration
Execute Permissions:	I Scrints only		
Execute Permissions: Application Protection			Unjoad
Execute <u>Permissions</u> : Applicatio <u>n</u> Protectior		iled)	Unjoad
-		ied)	Unjoad
_		led)	

3. Creating a virtual directory.

Step 1: Right click **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	6.32:	Apbcluster	properties
	0.0-		proper des

ApbCluster Properties	? ×		
Virtual Directory Documents Directory Security HTTP Headers Custom Errors When connecting to this resource, the content should come from: • A directory located on this computer • A share located on another computer			
C A redirection to a <u>U</u> RL			
Lo <u>c</u> al Path: D:\iisplugin	Browse		
□ Script source access ▼ Log visits ▼ Bead ▼ Index this resource □ Write □ Directory browsing			
Application Settings			
Application name: ApbCluster	R <u>e</u> move		
Starting point: <default \apbcluster<="" td=""> Execute Permissions: Scripts and Executables</default>	Configuration		
Application Protection: Medium (Pooled)	Unjoad		
OK Cancel <u>App</u>	ly Help		

4. Copying the 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 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 application pool used by the current Web site. If you use **ApbCluster64.dll**, then set this option to **False**.

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

Copy the **cluster-config.xml** file from *%appeon%\repository\<instancename>\config* to the virtual directory: *d:\iisplugin*.

% appeon% is the installation directory of Appeon Server, and <instancename> refers to the name of the Appeon Server instance.

Note: The **cluster-config.xm**l file acts as the redirector configuration file which helps the Web server redirect requests to the Appeon Servers according to the IP addresses/ports of Appeon Servers, and the load balancing algorithm that it stores. This file should not be modified manually as it will be 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 from Appeon Server 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 Default Web Site and choose Properties.

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

7. Copying the redirector configuration file (ApbCluster.cfg).

Copy the **ApbCluster.cfg** redirector configuration file from **appeon\IISSupport\conf**\ to the virtual directory:d:\iispulgin, and edit the file when necessary.

```
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 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.

9. Adding MIME type for loading the pages without extension names or pages without MIME types defined.

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 6.33: MIME Type

MIME Type	X
Extension:	*
	OK Cancel

10.Restarting IIS.

Restart IIS to make the new settings effective.

6.4.2.2 Type 2: Apache Web server

6.4.2.2.1 Manual configuration

Configuring Apache 2.0/22 with J2EE servers

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

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

Make sure you have installed Appeon Server Web Component to the document root of the Apache Web server. To verify it, go to the Apache document root (by default %APACHE %\htdocs) and check if there is an **appeon** folder which contains the **Apache20Support**, **Apache22Support** and **weblibrary_ax** sub-folders. If any folder is missing, go to the default installation directory of Appeon Server Web Component (C:\Program Files \Appeon\WebComponent2015) and manually copy the entire **appeon** folder to the Apache document root.

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 the Appeon Server instance.

Note: The **cluster-config.xml** file acts as the redirector configuration file which helps the Web server redirect requests to Appeon Servers according to the IP addresses/ports of Appeon Servers, and the load balancing algorithm that it stores. This file should not be

modified manually as it will be 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 the Java application servers, such as EAServer, WebLogic, WebSphere, JBoss, JEUS etc. The configuration is the same for the J2EE application servers that Appeon supports.

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

Make sure you have installed Appeon Server Web Component to the document root of the Apache Web server. To verify it, go to the Apache document root (by default %APACHE %\htdocs) and check if there is an **appeon** folder which contains the **Apache20Support**, **Apache22Support** and **weblibrary_ax** sub-folders. If any folder is missing, go to the default installation directory of Appeon Server Web Component (C:\Program Files \Appeon\WebComponent2015) and manually copy the entire **appeon** folder to the Apache document root.

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 which helps the Web server redirect requests to Appeon Servers according to the IP addresses/ports of Appeon Servers, and the load balancing algorithm that it stores. This file should not be modified manually as it will be 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.

6.5 Task 5: 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 Chapter 6, *Deploying PowerBuilder Applications* in *Appeon Developer User Guide*, or run the deployment project generated by using the **Appeon Application Package Wizard** (see Section 11.3, "Packaging a stand-alone mobile project" in *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**.

6.5.1 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.

6.5.2 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.

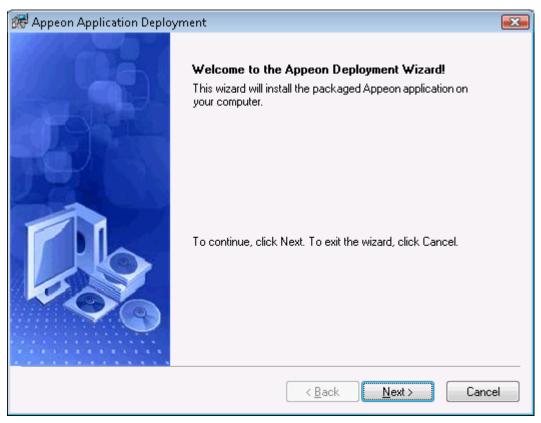


Figure 6.34: Welcome page

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 6.35: Select the configuration file

🕷 Appeon Application Deployment 🛛 💦			
Select an Existing Deploy-config File Image: Config File Please select an existing deploy-config file for quick configuration. Image: Config File			
The wizard automatically loads the configuration file for the current package and uses the settings in this file as the default settings for the subsequent steps. You can modify the settings in this file or select another configuration file.			
Note: You can clear the configuration file path in the Destination File box and click Next to configure the settings manually.			
S\Appeon\WebAppPackage\appeon_code_examples_install\ini\config.xml Browse			
< <u>B</u> ack <u>N</u> ext > Cancel			

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.

🕷 Appeon Application Deployment 🛛 💽
Specify Deployment Settings Image: Deployment Setting
Please specify the URL for the application.
Application Profile Name: appeon_code_examples Application URL http://web_server:port/appeon_code_examples
< <u>B</u> ack <u>N</u> ext > Cancel

Figure 6.36: 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 Section 4.2.3, "Managing server profiles" in *Appeon Developer User Guide*.

Figure 6.37: Specify server settings

💏 Appeon Application Deployment 👘			EX
Server Settings			
Please select the Appeon Server and t	he Web Server.		15 p
Appeon Servers			
Selected Profile Name		erver Type	<u>E</u> dit
■ 192.0.1.56_EAServer		J2EE	<u>A</u> dd
•	111		Delete
Web Servers Selected Profile Name			Edįt
■ 192.0.1.56_EAServer			Add
			Delete
	< <u>B</u> ac	k <u>N</u> ext>	Cancel

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 Section 5.2.1, "Generating Stub/Skeleton in EAServer" in *Migration Guidelines for Appeon Web (Web only)*.

Figure 6.38: Specify EAServer settings

🕏 Appeon Application Deployment 🛛 💽
EAServer Settings
Please select whether to deploy EAServer components.
Please select whether to deploy EAServer components. To deploy components, please specify the EAServer configuration settings.
Note: if the EAServer Components option is not selected, the step for selecting NVO components will be skipped.
EAServer Components
Profile Name Server Name Port Number Login Edit
<u>A</u> dd
۰ III ا
< <u>B</u> ack <u>N</u> ext > Cancel

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 6.39: Edit EAServer Profile

😹 Edit EAServer Profil	e	×	
<u>P</u> rofile Name:			
<u>S</u> erver Name:			
P <u>o</u> rt Number:			
Login Name:			
P <u>a</u> ssword:			
Note: Input the real IP address in the Server Name field. For example, 192.0.0.1.			
Iest	OK Cance	:	

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 6.40: Deploy NVOs

🕷 Appeon Application Deployment 🧧	2
Deploy NVOs Please select which EAServer components to deploy.	
Please select which EAServer components will be deployed to the specified EAServer.	
EAServer List: 192.0.1.56	
	_
< <u>B</u> ack <u>N</u> ext > Cancel	

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

Figure 6.41: Deploy AEM settings

🗺 Appeon Application Deployment 👘	
Deploy AEM Settings Please specify how to deploy the AEM s	ettings.
Please select whether to deploy the AEM Appeon Server.	1 settings and connection cache settings to the specified
Connection Caches	
If a connection cache with the san	e name already exists in the Appeon Server, then
⊚ <u>O</u> verwrite it	Do not overwrite it
	< <u>B</u> ack <u>N</u> ext > Cancel

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

Figure 6.42: Specify location for the Appeon Undeployment Tool

😹 Appeon Application Deployment
Install the Appeon Undeployment Tool Please select the folder where the Appeon Undeployment Tool will be installed.
Please specify where the Appeon Undeployment Tool will reside. The deploy-config file and the deploy log will also be stored in this folder.
C:\Program Files\Appeon\Undeploy\appeon_code_examples Browse
< <u>B</u> ack <u>N</u> ext > Cancel

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.

No. Destination File Source File Edit Add Delete	Please specify the files that you want to replace for the application package. No. Destination File Edit Add Add	🛃 App	eon A	Application Deployment	X
No. Destination File Source File Add	No. Destination File Source File Edit				
<u>A</u> dd		Ple	ase sj	pecify the files that you want to	replace for the application package.
			No.	Destination File	Source File
					<u>A</u> dd
		-			Delete
	4 III >>				
	4 III >	-			
	(الله الله الله الله الله الله الله الله				
			•		•
					< <u>B</u> ack <u>N</u> ext > Cancel

Figure 6.43: Specify files to replace for the application package

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

Figure 6.44: Deploying the application

💏 Appeo	in Applicat	ion Deployment 🧧	×Ì
	ng the Ap deployment	plication wizard is performing the requested operations.	
18	Please wai minutes.	it while the deployment wizard is deploying the application. This may take several	
	Time	Run Information	
٩	18:19:23	Deploying application name to Appeon Server	
	18:19:24	Deploying INI file(s) to Appeon Server	
٩	18:19:24	Deploying DataWindow SQL to Appeon Server	
٩	18:19:24	Committing changes to Appeon Server	
٩	18:19:25	Deploying embedded SQL to Appeon Server	
•	18:19:25	Committing changes to Appeon Server	
٩	18:19:25	Deploying DataWindow Syntax to Appeon Server	
•			
			_
		< <u>B</u> ack <u>N</u> ext > Cancel	ו

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 6.45: Deployment complete

😹 Appeon Application Deployment 🛛 💽		
	Finished deploying the Appeon application. The deployment wizard has finished installing the application and the related settings to the computer. Image: Bun Application Now Image: Yiew Log Click Finish to exit the wizard.	
	< <u>B</u> ack <u>F</u>inish Cancel	

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