**Implementing a Profile Provider**

This page is specific to

**Microsoft Visual Studio 2008/.NET Framework 3.5**

Other versions are also available for the following:

[Microsoft Visual Studio 2005/.NET Framework 2.0](http://msdn.microsoft.com/en-us/library/0580x1f5(VS.80).aspx)

[.NET Framework 3.0](http://msdn.microsoft.com/en-us/library/0580x1f5(VS.85).aspx)

[Microsoft Visual Studio 2010/.NET Framework 4](http://msdn.microsoft.com/en-us/library/0580x1f5(VS.100).aspx)

The ASP.NET profile feature enables you to easily use different providers. You can use the [SqlProfileProvider](http://msdn.microsoft.com/en-us/library/system.web.profile.sqlprofileprovider.aspx) class that is included with the .NET Framework or you can implement your own provider.

You create a custom profile provider when:

* You need to store profile information in a data source, such as in a FoxPro database or in an Oracle database, that is not supported by the profile providers included with the .NET Framework.
* You need to manage profile information using a database schema that is different from the database schema used by the providers included with the .NET Framework. A common example is that you want to integrate profile information with user data in an existing SQL Server database.

http://i.msdn.microsoft.com/Global/Images/clear.gif Required Classes

To implement a profile provider, you create a class that inherits the [System.Web.Profile..::.ProfileProvider](http://msdn.microsoft.com/en-us/library/system.web.profile.profileprovider.aspx) abstract class. The [ProfileProvider](http://msdn.microsoft.com/en-us/library/system.web.profile.profileprovider.aspx) abstract class in turn inherits the [System.Configuration..::.SettingsProvider](http://msdn.microsoft.com/en-us/library/system.configuration.settingsprovider.aspx) abstract class, which inherits the [System.Configuration.Provider..::.ProviderBase](http://msdn.microsoft.com/en-us/library/system.configuration.provider.providerbase.aspx) abstract class. Because of this inheritance chain, in addition to the required members of the [ProfileProvider](http://msdn.microsoft.com/en-us/library/system.web.profile.profileprovider.aspx) class, you must implement the required members of the [SettingsProvider](http://msdn.microsoft.com/en-us/library/system.configuration.settingsprovider.aspx) and [ProviderBase](http://msdn.microsoft.com/en-us/library/system.configuration.provider.providerbase.aspx) classes.

The following tables describe the properties and methods that you must implement from the [ProviderBase](http://msdn.microsoft.com/en-us/library/system.configuration.provider.providerbase.aspx), [SettingsProvider](http://msdn.microsoft.com/en-us/library/system.configuration.settingsprovider.aspx), and [ProfileProvider](http://msdn.microsoft.com/en-us/library/system.web.profile.profileprovider.aspx) abstract classes. To review an implementation of each member, see the [How to: Build and Run the Profile Provider Example](http://msdn.microsoft.com/en-us/library/8zs47k7y.aspx).

**ProviderBase Members**

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| --- | --- |
| **Member** | **Description** |
| [Initialize](http://msdn.microsoft.com/en-us/library/system.configuration.provider.providerbase.initialize.aspx) method | Takes as input the name of the provider instance and a [NameValueCollection](http://msdn.microsoft.com/en-us/library/system.collections.specialized.namevaluecollection.aspx) of configuration settings. Used to set options and property values for the provider instance, including implementation-specific values and options specified in the machine configuration or Web.config file. |

**SettingsProvider Members**

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| **Member** | **Description** |
| [ApplicationName](http://msdn.microsoft.com/en-us/library/system.configuration.settingsprovider.applicationname.aspx) property | The application name that is stored with each profile. The profile provider uses the application name to store profile information separately for each application. This enables multiple ASP.NET applications to use the same data source without a conflict if the same user name is created in different applications. Alternatively, multiple ASP.NET applications can share a profile data source by specifying the same application name. |
| [GetPropertyValues](http://msdn.microsoft.com/en-us/library/system.configuration.settingsprovider.getpropertyvalues.aspx) method | Takes as input a [SettingsContext](http://msdn.microsoft.com/en-us/library/system.configuration.settingscontext.aspx) and a [SettingsPropertyCollection](http://msdn.microsoft.com/en-us/library/system.configuration.settingspropertycollection.aspx) object.  The [SettingsContext](http://msdn.microsoft.com/en-us/library/system.configuration.settingscontext.aspx) provides information about the user. You can use the information as a primary key to retrieve profile property information for the user. Use the [SettingsContext](http://msdn.microsoft.com/en-us/library/system.configuration.settingscontext.aspx) object to get the user name and whether the user is authenticated or anonymous.  The [SettingsPropertyCollection](http://msdn.microsoft.com/en-us/library/system.configuration.settingspropertycollection.aspx) contains a collection of [SettingsProperty](http://msdn.microsoft.com/en-us/library/system.configuration.settingsproperty.aspx) objects. Each [SettingsProperty](http://msdn.microsoft.com/en-us/library/system.configuration.settingsproperty.aspx) object provides the name and type of the property as well as additional information such as the default value for the property and whether the property is read-only. The [GetPropertyValues](http://msdn.microsoft.com/en-us/library/system.configuration.settingsprovider.getpropertyvalues.aspx) method populates a [SettingsPropertyValueCollection](http://msdn.microsoft.com/en-us/library/system.configuration.settingspropertyvaluecollection.aspx) with [SettingsPropertyValue](http://msdn.microsoft.com/en-us/library/system.configuration.settingspropertyvalue.aspx) objects based on the [SettingsProperty](http://msdn.microsoft.com/en-us/library/system.configuration.settingsproperty.aspx) objects provided as input. The values from the data source for the specified user are assigned to the [PropertyValue](http://msdn.microsoft.com/en-us/library/system.configuration.settingspropertyvalue.propertyvalue.aspx) properties for each [SettingsPropertyValue](http://msdn.microsoft.com/en-us/library/system.configuration.settingspropertyvalue.aspx) object and the entire collection is returned.  Calling the method also updates the [LastActivityDate](http://msdn.microsoft.com/en-us/library/system.web.profile.profileinfo.lastactivitydate.aspx) value for the specified user profile to the current date and time. |
| [SetPropertyValues](http://msdn.microsoft.com/en-us/library/system.configuration.settingsprovider.setpropertyvalues.aspx) method | Takes as input a [SettingsContext](http://msdn.microsoft.com/en-us/library/system.configuration.settingscontext.aspx) and a [SettingsPropertyValueCollection](http://msdn.microsoft.com/en-us/library/system.configuration.settingspropertyvaluecollection.aspx) object.  The [SettingsContext](http://msdn.microsoft.com/en-us/library/system.configuration.settingscontext.aspx) provides information about the user. You can use the information as a primary key to retrieve profile property information for the user. Use the [SettingsContext](http://msdn.microsoft.com/en-us/library/system.configuration.settingscontext.aspx) object to get the user name and whether the user is authenticated or anonymous.  The [SettingsPropertyValueCollection](http://msdn.microsoft.com/en-us/library/system.configuration.settingspropertyvaluecollection.aspx) contains a collection of [SettingsPropertyValue](http://msdn.microsoft.com/en-us/library/system.configuration.settingspropertyvalue.aspx) objects. Each [SettingsPropertyValue](http://msdn.microsoft.com/en-us/library/system.configuration.settingspropertyvalue.aspx) object provides the name, type, and value of the property as well as additional information such as the default value for the property and whether the property is read-only. The [SetPropertyValues](http://msdn.microsoft.com/en-us/library/system.configuration.settingsprovider.setpropertyvalues.aspx) method updates the profile property values in the data source for the specified user.  Calling the method also updates the [LastActivityDate](http://msdn.microsoft.com/en-us/library/system.web.profile.profileinfo.lastactivitydate.aspx) and [LastUpdatedDate](http://msdn.microsoft.com/en-us/library/system.web.profile.profileinfo.lastupdateddate.aspx) values for the specified user profile to the current date and time. |

**ProfileProvider Members**

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| **Member** | **Description** |
| [DeleteProfiles](http://msdn.microsoft.com/en-us/library/system.web.profile.profileprovider.deleteprofiles.aspx) method | Takes as input a string array of user names and deletes from the data source all profile information and property values for the specified names where the application name matches the [ApplicationName](http://msdn.microsoft.com/en-us/library/system.configuration.settingsprovider.applicationname.aspx) property value.  If your data source supports transactions, it is recommended that you include all delete operations in a transaction and that you roll back the transaction and throw an exception if any delete operation fails. |
| [DeleteProfiles](http://msdn.microsoft.com/en-us/library/system.web.profile.profileprovider.deleteprofiles.aspx) method | Takes as input a collection of [ProfileInfo](http://msdn.microsoft.com/en-us/library/system.web.profile.profileinfo.aspx) objects and deletes from the data source all profile information and property values for each profile where the application name matches the [ApplicationName](http://msdn.microsoft.com/en-us/library/system.configuration.settingsprovider.applicationname.aspx) property value.  If your data source supports transactions, it is recommended that you include all delete operations in a transaction and roll back the transaction and throw an exception if any delete operation fails. |
| [DeleteInactiveProfiles](http://msdn.microsoft.com/en-us/library/system.web.profile.profileprovider.deleteinactiveprofiles.aspx) method | Takes as input a [ProfileAuthenticationOption](http://msdn.microsoft.com/en-us/library/7427y1ec.aspx) value and a [DateTime](http://msdn.microsoft.com/en-us/library/system.datetime.aspx) object and deletes from the data source all profile information and property values where the last activity date is less than or equal to the specified date and time and where the application name matches the [ApplicationName](http://msdn.microsoft.com/en-us/library/system.configuration.settingsprovider.applicationname.aspx) property value. The [ProfileAuthenticationOption](http://msdn.microsoft.com/en-us/library/7427y1ec.aspx) parameter specifies whether only anonymous profiles, only authenticated profiles, or all profiles are to be deleted.  If your data source supports transactions, it is recommended that you include all delete operations in a transaction and roll back the transaction and throw an exception if any delete operation fails. |
| [GetAllProfiles](http://msdn.microsoft.com/en-us/library/system.web.profile.profileprovider.getallprofiles.aspx) method | Takes as input a [ProfileAuthenticationOption](http://msdn.microsoft.com/en-us/library/7427y1ec.aspx) value, an integer that specifies the page index, an integer that specifies the page size, and a reference to an integer that will be set to the total count of profiles. Returns a [ProfileInfoCollection](http://msdn.microsoft.com/en-us/library/system.web.profile.profileinfocollection.aspx) that contains [ProfileInfo](http://msdn.microsoft.com/en-us/library/system.web.profile.profileinfo.aspx) objects for all profiles in the data source where the application name matches the [ApplicationName](http://msdn.microsoft.com/en-us/library/system.configuration.settingsprovider.applicationname.aspx) property value. The [ProfileAuthenticationOption](http://msdn.microsoft.com/en-us/library/7427y1ec.aspx) parameter specifies whether only anonymous profiles, only authenticated profiles, or all profiles are to be returned.  The results returned by the [GetAllProfiles](http://msdn.microsoft.com/en-us/library/system.web.profile.profileprovider.getallprofiles.aspx) method are constrained by the page index and page size values. The page size value specifies the maximum number of [ProfileInfo](http://msdn.microsoft.com/en-us/library/system.web.profile.profileinfo.aspx) objects to return in the [ProfileInfoCollection](http://msdn.microsoft.com/en-us/library/system.web.profile.profileinfocollection.aspx). The page index value specifies which page of results to return, where 1 identifies the first page. The parameter for total records is an out parameter (you can use **ByRef** in Visual Basic) that is set to the total number of profiles. For example, if the data store contains 13 profiles for the application and the page index value is 6 with a page size of 5, the [ProfileInfoCollection](http://msdn.microsoft.com/en-us/library/system.web.profile.profileinfocollection.aspx) returned contains the sixth through the tenth profiles. The total records value is set to 13 when the method returns. |
| [GetAllInactiveProfiles](http://msdn.microsoft.com/en-us/library/system.web.profile.profileprovider.getallinactiveprofiles.aspx) method | Takes as input a [ProfileAuthenticationOption](http://msdn.microsoft.com/en-us/library/7427y1ec.aspx) value, a [DateTime](http://msdn.microsoft.com/en-us/library/system.datetime.aspx) object, an integer that specifies the page index, an integer that specifies the page size, and a reference to an integer that will be set to the total count of profiles. Returns a [ProfileInfoCollection](http://msdn.microsoft.com/en-us/library/system.web.profile.profileinfocollection.aspx) that contains [ProfileInfo](http://msdn.microsoft.com/en-us/library/system.web.profile.profileinfo.aspx) objects for all profiles in the data source where the last activity date is less than or equal to the specified [DateTime](http://msdn.microsoft.com/en-us/library/system.datetime.aspx) and where the application name matches the [ApplicationName](http://msdn.microsoft.com/en-us/library/system.configuration.settingsprovider.applicationname.aspx) property value. The [ProfileAuthenticationOption](http://msdn.microsoft.com/en-us/library/7427y1ec.aspx) parameter specifies whether only anonymous profiles, only authenticated profiles, or all profiles are to be returned.  The results returned by the [GetAllInactiveProfiles](http://msdn.microsoft.com/en-us/library/system.web.profile.profileprovider.getallinactiveprofiles.aspx) method are constrained by the page index and page size values. The page size value specifies the maximum number of [ProfileInfo](http://msdn.microsoft.com/en-us/library/system.web.profile.profileinfo.aspx) objects to return in the [ProfileInfoCollection](http://msdn.microsoft.com/en-us/library/system.web.profile.profileinfocollection.aspx). The page index value specifies which page of results to return, where 1 identifies the first page. The parameter for total records is an out parameter (you can use **ByRef** in Visual Basic) that is set to the total number of profiles. For example, if the data store contains 13 profiles for the application and the page index value is 2 with a page size of 5, the [ProfileInfoCollection](http://msdn.microsoft.com/en-us/library/system.web.profile.profileinfocollection.aspx) returned contains the sixth through the tenth profiles. The total records value is set to 13 when the method returns. |
| [FindProfilesByUserName](http://msdn.microsoft.com/en-us/library/system.web.profile.profileprovider.findprofilesbyusername.aspx) method | Takes as input a [ProfileAuthenticationOption](http://msdn.microsoft.com/en-us/library/7427y1ec.aspx) value, a string containing a user name, an integer that specifies the page index, an integer that specifies the page size, and a reference to an integer that will be set to the total count of profiles. Returns a [ProfileInfoCollection](http://msdn.microsoft.com/en-us/library/system.web.profile.profileinfocollection.aspx) that contains [ProfileInfo](http://msdn.microsoft.com/en-us/library/system.web.profile.profileinfo.aspx) objects for all profiles in the data source where the user name matches the specified user name and where the application name matches the [ApplicationName](http://msdn.microsoft.com/en-us/library/system.configuration.settingsprovider.applicationname.aspx) property value. The [ProfileAuthenticationOption](http://msdn.microsoft.com/en-us/library/7427y1ec.aspx) parameter specifies whether only anonymous profiles, only authenticated profiles, or all profiles are to be returned.  If your data source supports additional search capabilities, such as wildcard characters, you can provide more extensive search capabilities for user names.  The results returned by the [FindProfilesByUserName](http://msdn.microsoft.com/en-us/library/system.web.profile.profileprovider.findprofilesbyusername.aspx) method are constrained by the page index and page size values. The page size value specifies the maximum number of [ProfileInfo](http://msdn.microsoft.com/en-us/library/system.web.profile.profileinfo.aspx) objects to return in the [ProfileInfoCollection](http://msdn.microsoft.com/en-us/library/system.web.profile.profileinfocollection.aspx). The page index value specifies which page of results to return, where 1 identifies the first page. The parameter for total records is an out parameter (you can use **ByRef** in Visual Basic) that is set to the total number of profiles. For example, if the data store contains 13 profiles for the application and the page index value is 2 with a page size of 5, the [ProfileInfoCollection](http://msdn.microsoft.com/en-us/library/system.web.profile.profileinfocollection.aspx) returned contains the sixth through the tenth profiles. The total records value is set to 13 when the method returns. |
| [FindInactiveProfilesByUserName](http://msdn.microsoft.com/en-us/library/system.web.profile.profileprovider.findinactiveprofilesbyusername.aspx) method | Takes as input a [ProfileAuthenticationOption](http://msdn.microsoft.com/en-us/library/7427y1ec.aspx) value, a string containing a user name, a [DateTime](http://msdn.microsoft.com/en-us/library/system.datetime.aspx) object, an integer that specifies the page index, an integer that specifies the page size, and a reference to an integer that will be set to the total count of profiles. Returns a [ProfileInfoCollection](http://msdn.microsoft.com/en-us/library/system.web.profile.profileinfocollection.aspx) that contains [ProfileInfo](http://msdn.microsoft.com/en-us/library/system.web.profile.profileinfo.aspx) objects for all profiles in the data source where the user name matches the specified user name, where the last activity date is less than or equal to the specified [DateTime](http://msdn.microsoft.com/en-us/library/system.datetime.aspx), and where the application name matches the [ApplicationName](http://msdn.microsoft.com/en-us/library/system.configuration.settingsprovider.applicationname.aspx) property value. The [ProfileAuthenticationOption](http://msdn.microsoft.com/en-us/library/7427y1ec.aspx) parameter specifies whether only anonymous profiles, only authenticated profiles, or all profiles are to be returned.  If your data source supports additional search capabilities, such as wildcard characters, you can provide more extensive search capabilities for user names.  The results returned by the [FindInactiveProfilesByUserName](http://msdn.microsoft.com/en-us/library/system.web.profile.profileprovider.findinactiveprofilesbyusername.aspx) method are constrained by the page index and page size values. The page size value specifies the maximum number of [ProfileInfo](http://msdn.microsoft.com/en-us/library/system.web.profile.profileinfo.aspx) objects to return in the [ProfileInfoCollection](http://msdn.microsoft.com/en-us/library/system.web.profile.profileinfocollection.aspx). The page index value specifies which page of results to return, where 1 identifies the first page. The parameter for total records is an out parameter (you can use **ByRef** in Visual Basic) that is set to the total number of profiles. For example, if the data store contains 13 profiles for the application and the page index value is 2 with a page size of 5, the [ProfileInfoCollection](http://msdn.microsoft.com/en-us/library/system.web.profile.profileinfocollection.aspx) returned contains the sixth through the tenth profiles. The total records value is set to 13 when the method returns. |
| [GetNumberOfInactiveProfiles](http://msdn.microsoft.com/en-us/library/system.web.profile.profileprovider.getnumberofinactiveprofiles.aspx) method | Takes as input a [ProfileAuthenticationOption](http://msdn.microsoft.com/en-us/library/7427y1ec.aspx) value and a [DateTime](http://msdn.microsoft.com/en-us/library/system.datetime.aspx) object and returns a count of all profiles in the data source where the last activity date is less than or equal to the specified [DateTime](http://msdn.microsoft.com/en-us/library/system.datetime.aspx) and where the application name matches the [ApplicationName](http://msdn.microsoft.com/en-us/library/system.configuration.settingsprovider.applicationname.aspx) property value. The [ProfileAuthenticationOption](http://msdn.microsoft.com/en-us/library/7427y1ec.aspx) parameter specifies whether only anonymous profiles, only authenticated profiles, or all profiles are to be counted. |

http://i.msdn.microsoft.com/Global/Images/clear.gif ApplicationName

Because profile providers store profile information separately for each application, you must ensure that your data schema includes the application name and that queries and updates also include the application name. For example, the following command is used to retrieve a property value from a database based on the user name and whether the profile is anonymous, and ensures that the [ApplicationName](http://msdn.microsoft.com/en-us/library/system.configuration.settingsprovider.applicationname.aspx) value is included in the query.

[Copy Code](javascript:CopyCode('ctl00_MTCS_main_ctl115_ctl00_ctl01_code');" \o "Copy Code)

SELECT Property FROM PropertyTable

WHERE Username = 'user1' AND IsAnonymous = False

AND ApplicationName = 'MyApplication'