

CNIX® Providers^{.net}

Web Service Plug-In



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CNIX Technologies is pleased to announce the first COMPLETE customized Web Service Plug-in for Microsoft® .Net Providers is now available.

Only \$399CDN≈\$399USD per site license.

- | | | |
|---|---|---|
| 1. Introduction | 5. Sample Codes | 9. End User License Agreement |
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1. Introduction

CNIX .Net Providers Web Service Plug-in for SQL Server is an extended .Net web state-management framework based on Microsoft® ASP.Net 2.0 specifications and guidelines. It is a complete framework consisting of Membership Provider, Role Provider, Site Map Provider, Session State Provider, Profile Provider, Web Event Provider and Web Parts Personalization Provider.

CNIX .Net Providers Web Service Plug-in is ideal for SOA and secured n-tier implementation.

2. What's in CNIX .Net Providers Web Service Plug-in?

CNIX .Net Providers Web Service Plug-in includes many exciting features in addition to the standard Microsoft® ASP.Net 2.0 providers framework.

Refer to the following table for information about the latest features and enhancements.

Features	
Single Sign-On capable	✓ Users only need to sign on once to access multiple web applications with the same credentials
Shared Session State capable	✓ Multiple web applications can easily pass information to each other as session state variables. Ideal for applications spawned by a single sign-on
Web Service	✓ The Web Service Edition is ideal for SOA and

	secured n-tier implementation. The <i>Service Consumers</i> library integrates with the front end web application typically located in the DMZ, while the <i>Service Providers</i> are located within your internal network and communicates with the database backend.
Exceptions - Error Trapping	✓ Multilingual exception resource files in: 简体中文 (Chinese-Simplified) 繁體中文 (Chinese-Traditional) Nederlands (Dutch) English Français (French) 日本語 (Japanese)
Samples codes	✓ Multilingual in: 简体中文 (Chinese-Simplified) 繁體中文 (Chinese-Traditional) Nederlands (Dutch) English Français (French) Deutsch (German) 日本語 (Japanese) Español (Spanish)
Microsoft® SharePoint® 2007 customization instructions	✓
Product Documentation	✓
Support	✓ 1 year unlimited e-mail support
Software Upgrade	✓ 1 year unlimited product bug fixes and upgrades as they become available
Trial Software	✓

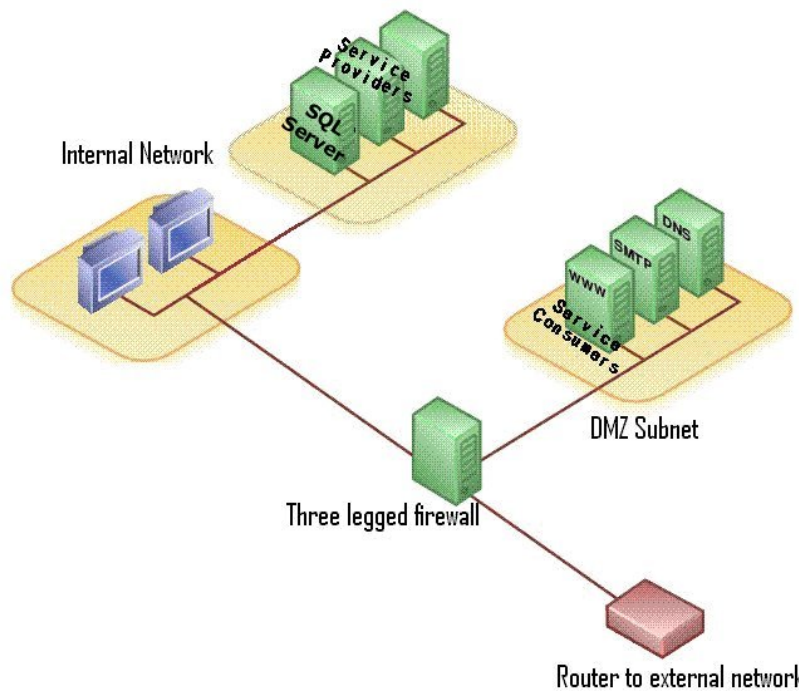
Table/Diagram 1. Feature Summary

3. How CNUX .Net Providers Web Service Plug-in Works

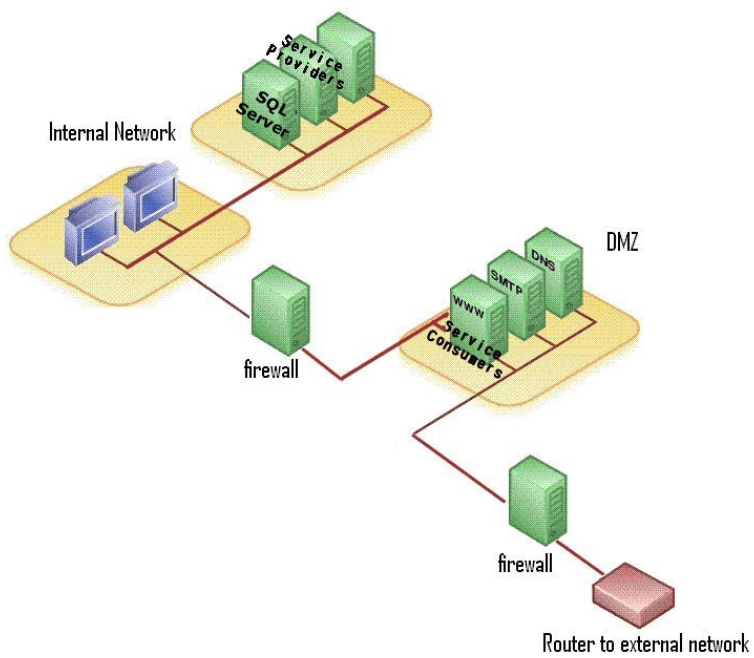
The web service providers are split into two parts: Service Consumers and Service Providers.

The Service Consumers library integrates seamlessly with the front end web application typically located in the DMZ, while the Service Providers are located within your internal network and communicates with the database backend.

Diagrams 2 & 3 below are two commonly used network configurations when DMZ is used to host web applications:



Table/Diagram 2. Secured N-tier network model using DMZ and a three legged firewall



Table/Diagram 3. Secured N-tier network model using DMZ and dual firewalls

The following two sections explain how the CNUX .Net Providers Service Consumers and Service Providers work in conjunction with the Microsoft® ASP.Net services.

3.1 Service Consumers on Web Server

In the top layer of the Web Server - Service Consumers portion (see diagram 4) are UI controls such as Login, CreateUserWizard and other .Net application codes that call Microsoft® ASP.Net services. In the second layer lie the base classes for Microsoft® ASP.Net services. These services do not communicate with the Service Providers directly. Instead all operations are done via the CNUX.ProvidersServiceConsumer Concrete Classes.

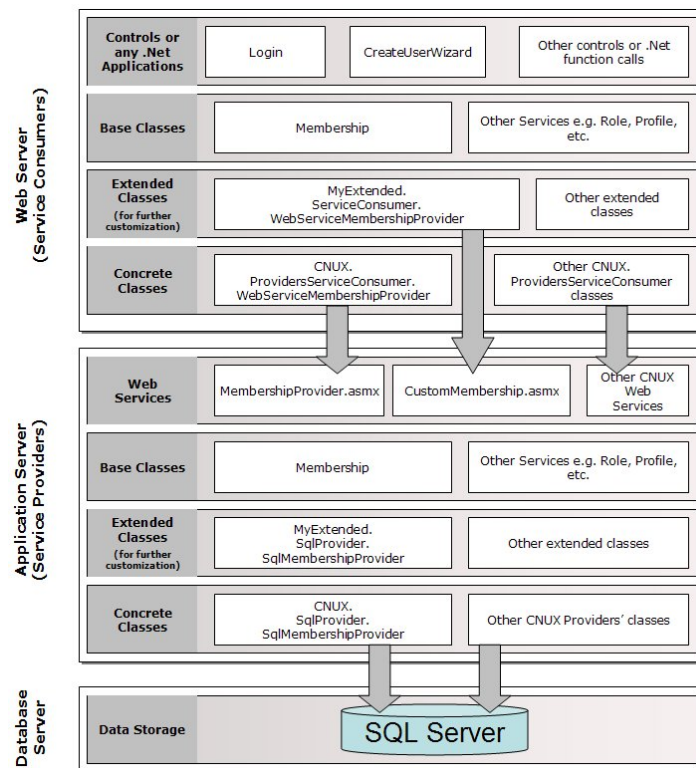
If any controls need to be customized and are calling methods are not already available within the Microsoft® ASP.Net services framework, the CNUX.ProvidersServiceConsumer concrete classes can be inherited and extended/overridden in the extended classes layer. In general this approach can be used for moving custom data between Service Consumers and Service Providers, or performing functionalities that are not within the scope of Microsoft® ASP.Net services.

All CNUX.ProvidersServiceConsumer classes and custom extended classes communicate with their respective Service Providers ASMX objects via SOAP messages.

3.2 Service Providers on Application Server

In the top layer of the Application Server - Service Providers portion (see diagram 4) are ASMX objects that communicate with the Service Consumers. These Service Providers in turn call Microsoft® ASP.Net services in the second layer. These services do not store and manage data in the data storage directly. Instead all operations are done via the CNUX providers as Concrete Classes.

If any methods of the concrete classes need to be further customized, the concrete classes can be inherited and extended/overridden in the extended classes layer.



Table/Diagram 4. CNUX .Net Providers Web Service Plug-in Model

4. Features

- 4.1. [Compatibility](#)
- 4.2. [Programmability](#)
- 4.3. [Provider Types](#)
- 4.4. [100% thread safe](#)
- 4.5. [Transaction control](#)
- 4.6. [Exceptions – Error trapping](#)
- 4.7. [Support all Microsoft® documented ASP Roles and Views](#)
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- 4.9. [Shared Session State](#)
- 4.10. [Database Failover/ Database Clustering](#)

4.1. Compatibility

ASP.NET Web Site Administration Tool

Home Security Application **Provider** How do I use this tool?

Use this page to select a provider for each feature.

Membership Provider

WebServiceMembershipProvider

Role Provider

WebServiceRoleProvider

Back

All CNUX .Net Providers are built for the Microsoft® ASP.Net Framework 2.0, 3.0 and 3.5, and 100% compliant and compatible with the information and requirements documented in the Microsoft® ASP.Net 2.0 model.

There is no behavioural difference when compared to the out-of-the box .Net Providers for SQL Server provided by Microsoft®.

CNUX .Net Membership Provider and Role Provider are 100% Compatible with Microsoft® ASP.Net Web Site Administration Tool.

Other providers are not applicable.

CNUX .Net Membership Provider and Role Provider are 100% compatible with Microsoft® SharePoint® 2007 server.

Please note that Microsoft® SharePoint® 2007 server does not support customization of providers other than Membership and Role.

Central Administration

Home Operations Application Management Site Actions

Central Administration > Application Management > Authentication Providers > Edit Authentication

Edit Authentication

Web Application: <http://cnuxv07-2003web19190/>

Zone: Default

Authentication Type: Forms

Membership Provider Name: CNUXMembershipProvider19190

Role Manager Name: CNUXRoleProvider19190

4.2. Programmability

Programming with CNUX .Net Providers is a snap. CNUX .Net Providers offers concrete classes that can be easily incorporated into any web projects using the Microsoft® Visual Studio® environment by placing the CNUX .Net Providers module in your Microsoft® Visual Studio® project's *bin* directory and modify a couple of settings in the *web.config* file.

```

web.config
22 </compilation>
23
24 <siteMap defaultProvider="WebServiceSiteMapProvider">
25   <providers>
26     <clear />
27     <!--<add name="default" type="System.Web.XmlSiteMapProvider" siteMapFile="web.sitemap"
28         securityTrimmingEnabled="true" />-->
29     <add name="WebServiceSiteMapProvider" type="CNUX.ProvidersServiceConsumer.WebServiceSiteMapProvider" />
30   </providers>
31 </siteMap>
32
33 <membership defaultProvider="WebServiceMembershipProvider" userIsOnlineTimeWindow="15">
34   <providers>
35     <clear />
36     <add name="WebServiceMembershipProvider" type="CNUX.ProvidersServiceConsumer.WebServiceMembershipProv
37   </providers>
38 </membership>
39
40 <roleManager enabled="true" defaultProvider="WebServiceRoleProvider">
41   <providers>
42     <clear />
43     <add providerUrl="http://vcnux96-xp-pro/SQLServerProvider-ServiceProvider/RoleProvider.aspx" appl
44         name="WebServiceRoleProvider" type="CNUX.ProvidersServiceConsumer.WebServiceRoleProvider" />
45   </providers>
46 </roleManager>
47
48 <profile defaultProvider="WebServiceProfileProvider" enabled="true">
49   <providers>
50     <clear />
51     <add name="WebServiceProfileProvider" type="CNUX.ProvidersServiceConsumer.WebServiceProfileProvider" />
52   </providers>
53 </profile>

```

```

HyExtendedProvider.cs
1 namespace HyExtendedProvider.SqlProvider
2 {
3   using System;
4   using System.Data;
5   using System.Configuration;
6   using System.Web;
7   using System.Web.Security;
8   using System.Web.UI;
9   using System.Web.UI.WebControls;
10  using System.Web.UI.WebControls.WebParts;
11  using System.Web.UI.HtmlControls;
12  using System.Data.SqlClient;
13  using System.Windows.Forms;
14
15
16  /// <summary>
17  /// Summary description for testprovider
18  /// </summary>
19  public class SqlMembershipProvider : CNUX.SqlProvider.SqlMembershipProvider
20  {
21    private string _SqlConnectionString;
22
23    private SqlParameter CreateInputParam(string paramName, SqlDbType dbType, object objValue)
24    {
25

```

The Microsoft® ASP.Net Providers base classes expose methods that can be called from your client code. Code calls are forwarded to the concrete CNUX .Net Providers classes which provide the implementation.

All CNUX .Net Providers classes are derived from the abstract Microsoft® ASP.Net providers classes and therefore can be replaced or extended with any implementation you require via inheritance should any further customization be required.

4.3. Provider Types

The following table illustrates all the services and the corresponding CNUX .Net Providers:

Service	CNUX .Net Provider
Membership	CNUX.SqlProvider.SqlMembershipProvider
Role Management	CNUX.SqlProvider.SqlRoleProvider
Site Map	CNUX.SqlProvider.SqlSiteMapProvider
Profile	CNUX.SqlProvider.SqlProfileProvider
Session State	CNUX.SqlProvider.SqlSessionStateStore
Web Events	CNUX.SqlProvider.SqlWebEventProvider
Web Parts Personalization	CNUX.SqlProvider.SqlPersonalizationProvider

Table/Diagram 5. CNUX .Net Providers table

Service	CNIX .Net Provider Service Consumer
Membership	CNIX.ProvidersServiceConsumer.WebServiceMembershipProvider
Role Management	CNIX.ProvidersServiceConsumer.WebServiceRoleProvider
Site Map	CNIX.ProvidersServiceConsumer.WebServiceSiteMapProvider
Profile	CNIX.ProvidersServiceConsumer.WebServiceProfileProvider
Session State	CNIX.ProvidersServiceConsumer.WebServiceSessionStateStore
Web Events	CNIX.ProvidersServiceConsumer.WebServiceWebEventProvider
Web Parts Personalization	CNIX.ProvidersServiceConsumer.WebServicePersonalizationProvider

Table/Diagram 6. CNIX .Net Service Consumers table

4.4. 100% thread safe

All CNIX .Net Providers conform to the Thread Safety requirements as documented in <http://msdn2.microsoft.com/en-us/library/aa479030.aspx>.

Without thread safety the code can produce data corruption and hard to reproduce sporadic errors due to the following summarized nature of Microsoft® ASP.Net providers architecture:

- Microsoft® ASP.Net providers are instanced once and shared among requests
- Each request is processed on a different thread drawn from a thread pool
- A provider can be accessed by multiple threads concurrently

4.5. Transaction control

Transactions are applied to all singleton/multiple method calls and database updates to guarantee atomicity according to suggestions as documented in <http://msdn2.microsoft.com/en-us/library/aa479030.aspx>.

4.6. Exceptions - Error trapping

All CNIX .Net Providers trap all errors and throw exceptions according to guidelines as documented in <http://msdn2.microsoft.com/en-us/library/aa479030.aspx>.

Server Error in '/Intro_CS' Application.

Een geldige ProductKey wordt vereist. Neem AUB contact op met CNIX Technologies Inc. bij contact@cnix.ca voor meer informatie.

Description: An unhandled exception occurred during the execution of the current web request. Please review the stack trace for more information about the error and where it originated in the code.

Exception Details: System.Configuration.Provider.ProviderException: 須持有有效產品匙。請使用contact@cnix.ca聯絡CNIX科技有限公司查詢更多資料。

Source Error:

An unhandled exception was generated during the execution of the current web request. Information regarding the origin and location of the exception can be identified using the exception stack trace below.

須持有有效產品匙。請使用contact@cnix.ca聯絡CNIX科技有限公司查詢更多資料。

Description: An unhandled exception occurred during the execution of the current web request. Please review the stack trace for more information about the error and where it originated in the code.

Exception Details: System.Configuration.Provider.ProviderException: 須持有有效產品匙。請使用contact@cnix.ca聯絡CNIX科技有限公司查詢更多資料。

Source Error:

An unhandled exception was generated during the execution of the current web request. Information regarding the origin and location of the exception can be identified using the exception stack trace below.

In addition, Exception Messages thrown by CNIX .Net Providers are sensitive to the user's web browser settings and display in the corresponding language. Currently Exception Messages are provided in 简体中文 (Chinese-Simplified), 繁體中文 (Chinese-Traditional), Nederlands (Dutch), English, Français (French) and 日本語 (Japanese).

4.7. Support all Microsoft® documented ASP Roles and Views

CNIX .Net Providers support all the ASP Roles as follows:

CNIX .Net Providers supported Roles	ASP.Net Providers supported Roles for SQL Server
aspnet_WebEvent_FullAccess	Same
aspnet_Roles_ReportingAccess	Same
aspnet_Roles_FullAccess	Same
aspnet_Roles_BasicAccess	Same
aspnet_Profile_ReportingAccess	Same
aspnet_Profile_FullAccess	Same
aspnet_Profile_BasicAccess	Same
aspnet_Personalization_ReportingAccess	Same
aspnet_Personalization_FullAccess	Same
aspnet_Personalization_BasicAccess	Same
aspnet_Membership_ReportingAccess	Same
aspnet_Membership_FullAccess	Same
aspnet_Membership_BasicAccess	Same
aspnet_WebEvent_FullAccess	Same

Table/Diagram 7. CNIX .Net Providers supported ASP Roles vs. Microsoft® ASP.Net Providers supported Roles for SQL Server

CNIX .Net Providers support all the ASP Views as follows:

CNIX .Net Providers supported Views
vw_aspnet_Applications
vw_aspnet_Users
vw_aspnet_MembershipUsers
vw_aspnet_Roles
vw_aspnet_UsersInRoles
vw_aspnet_Profiles
vw_aspnet_WebPartState_Path
vw_aspnet_WebPartState_Shared
vw_aspnet_WebPartState_User

Table/Diagram 8. CNIX .Net Providers supported ASP Views

For more information about ASP Roles and Views, please refer to <http://msdn2.microsoft.com/en-us/library/ms164596.aspx>.

4.8. Implementation Completeness

CNIX .Net Providers have implemented the full contract defined by the Microsoft® ASP.Net providers base class related to custom database access. Here is a list of all the CNIX .Net Providers and their methods and properties:

Provider : Base Class	Custom Methods and Properties
SqlMembershipProvider : MembershipProvider	ApplicationName ChangePassword ChangePasswordQuestionAndAnswer CreateUser DeleteUser EnablePasswordReset EnablePasswordRetrieval FindUsersByEmail FindUsersByName GetAllUsers GetNumberOfUsersOnline GetPassword GetUser GetUserNameByEmail Initialize MaxInvalidPasswordAttempts MinRequiredNonAlphanumericCharacters MinRequiredPasswordLength PasswordAttemptWindow PasswordFormat PasswordStrengthRegularExpression RequiresQuestionAndAnswer RequiresUniqueEmail ResetPassword UnlockUser UpdateUser ValidateUser

Table/Diagram 9. CNUX .Net Membership Provider and its custom methods and properties

Provider : Base Class	Custom Methods and Properties
SqlRoleProvider : RoleProvider	AddUsersToRoles ApplicationName CreateRole DeleteRole FindUsersInRole GetAllRoles GetRolesForUser GetUsersInRole Initialize IsUserInRole RemoveUsersFromRoles RoleExists

Table/Diagram 10. CNUX .Net Role Provider and its custom methods and properties

Provider : Base Class	Custom Methods and Properties
SqlSiteMapProvider : StaticSiteMapProvider	Initialize BuildSiteMap

Table/Diagram 11. CNUX .Net Site Map Provider and its custom methods and properties

Provider : Base Class	Custom Methods and Properties
SqlSessionStateStore : SessionStateStoreProviderBase	CreateNewStoreData CreateUninitializedItem Dispose EndRequest GetItem GetItemExclusive Initialize InitializeRequest ReleaseItemExclusive RemoveItem ResetItemTimeout SetAndReleaseItemExclusive SetItemExpireCallback

Table/Diagram 12. CNUX .Net Session State Provider and its custom methods and properties

Provider : Base Class	Custom Methods and Properties
SqlProfileProvider : ProfileProvider	ApplicationName DeleteInactiveProfiles DeleteProfiles (ProfileInfoCollection) DeleteProfiles (string[]) FindInactiveProfilesByUserName FindProfilesByUserName GetAllInactiveProfiles GetAllProfiles GetNumberOfInactiveProfiles GetPropertyValues Initialize SetPropertyValues

Table/Diagram 13. CNUX .Net Profile Provider and its custom methods and properties

Provider : Base Class	Custom Methods and Properties
SqlWebEventProvider : BufferedWebEventProvider	Initialize ProcessEvent ProcessEventFlush Shutdown

Table/Diagram 14. CNUX .Net Web Event Provider and its custom methods and properties

Provider : Base Class	Custom Methods and Properties
SqlPersonalizationProvider : PersonalizationProvider	ApplicationName FindState GetCountOfState ResetState ResetUserState

Table/Diagram 15. CNUX .Net Web Parts Personalization Provider and its custom methods and properties

Consumer : Base Class	Custom Methods and Properties
WebServiceMembershipProvider : MembershipProvider	ApplicationName ChangePassword ChangePasswordQuestionAndAnswer CreateUser DeleteUser EnablePasswordReset EnablePasswordRetrieval FindUsersByEmail FindUsersByName GetAllUsers GetNumberOfUsersOnline GetPassword GetUser GetUserNameByEmail Initialize MaxInvalidPasswordAttempts MinRequiredNonAlphanumericCharacters MinRequiredPasswordLength PasswordAttemptWindow PasswordFormat PasswordStrengthRegularExpression RequiresQuestionAndAnswer RequiresUniqueEmail ResetPassword UnlockUser UpdateUser ValidateUser

Table/Diagram 16. Membership Service Consumer + custom methods & properties

Consumer : Base Class	Custom Methods and Properties
WebServiceRoleProvider : RoleProvider	AddUsersToRoles ApplicationName CreateRole DeleteRole FindUsersInRole GetAllRoles GetRolesForUser GetUsersInRole Initialize IsUserInRole RemoveUsersFromRoles RoleExists

Table/Diagram 17. Role Service Consumer + custom methods & properties

Consumer : Base Class	Custom Methods and Properties
WebServiceSiteMapProvider : StaticSiteMapProvider	Initialize BuildSiteMap

Table/Diagram 18. Site Map Service Consumer + custom methods & properties

Consumer : Base Class	Custom Methods and Properties
WebServiceSessionStateStore : SessionStateStoreProviderBase	CreateNewStoreData CreateUninitializedItem Dispose EndRequest GetItem GetItemExclusive Initialize InitializeRequest ReleaseItemExclusive RemoveItem ResetItemTimeout SetAndReleaseItemExclusive SetItemExpireCallback

Table/Diagram 19. Session State Service Consumer + custom methods & properties

Consumer : Base Class	Custom Methods and Properties
WebServiceProfileProvider : ProfileProvider	ApplicationName DeleteInactiveProfiles DeleteProfiles (ProfileInfoCollection) DeleteProfiles (string[]) FindInactiveProfilesByUserName FindProfilesByUserName GetAllInactiveProfiles GetAllProfiles GetNumberOfInactiveProfiles GetPropertyValues Initialize SetPropertyValues

Table/Diagram 20. Profile Service Consumer + custom methods & properties

Consumer : Base Class	Custom Methods and Properties
WebServiceWebEventProvider : BufferedWebEventProvider	Initialize ProcessEvent ProcessEventFlush Shutdown

Table/Diagram 21. Web Event Service Consumer + custom methods & properties

Consumer : Base Class	Custom Methods and Properties
WebServicePersonalizationProvider : PersonalizationProvider	ApplicationName FindState GetCountOfState ResetState ResetUserState

Table/Diagram 22. Web Parts Personalization Service Consumer + custom methods & properties

4.9. Shared Session State

Shared Session State is an enhanced feature of CNUX .Net Providers. It allows multiple web applications to pass information to and from one another. It supports passing of all complex data types, such as collections, that are supported by Microsoft® ASP.Net Session State management.

This feature is particularly useful for environments where a single sign-on application is used for general user authentication and multiple web applications can be invoked or spawned within it once a user's identity is verified. From there on information can be passed to and from the sign-on application and the spawned applications.

4.10. Database Failover/Database Clustering

All CNUX .Net Providers can be deployed to Database Failover/Database Clustering environments.

5. Sample Codes



To help you get started with programming with CNUX .Net Providers, we provide code examples to illustrate how easily each customized state-management provider can be incorporated into your software. These sample programs are provided in 简体中文 (Chinese-Simplified), 繁體中文 (Chinese-Traditional), Nederlands (Dutch), English, Français (French), Deutsch (German), 日本語 (Japanese) and Español (Spanish). (Language specific Microsoft® Visual Studio® is required for controls to display in native languages).

In addition to programming examples, we also include a sample Custom Membership web site to demonstrate how the framework can be incorporated into your existing environment and applications.

Details on how to setup CNUX .Net Providers for SharePoint® 2007 are also included.

Note: All sample codes are NOT REDISTRIBUTABLE.

6. Product Documentation

A complete User Guide that includes

- Programming guide that includes set up, extendibility
- Code examples description



Web Service Plug-in for SQL Server User Guide v2.0.1

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7. Pricing

Only \$399CDN≈\$399USD per site license.

8. Support and Software Upgrade

1 year unlimited e-mail support and product upgrade as new releases become available.

9. End User License Agreement

You need [Adobe Acrobat Reader](#) to access the [CNUX .Net Providers EULA file](#) .

10. Trial Software

Trial software is available upon request with the following limitations:

- During execution random 20 second delays will happen.

Please feel free to request a copy of [CNUX .Net Providers – Trial Version](#) now!

11. Limitations

- Sitemap: Currently automatic reloading of site map data based on data-change monitoring is not implemented.
- Session State: Currently it does not support session state partitioning.

12. Release Notes

You can access the [Release Notes](#) here.

Please feel free to request a copy of [CNUX .Net Providers – Trial Version](#) now!

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